



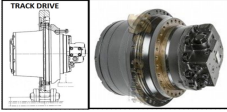









LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
1	Mining & Construction	EARTH MOVERS	452CV01006	TRANSMISSION CONTROL VALVE ASSY	15 No's	The transmission control valve is used to redirect oil to the selected clutches for shifting of gears in Transmission assy. Specification: 5 spool solenoid operated control valve assembly Transmission speeds: 8 forward & 8 reverse Operating pressure : 31 bar			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	60
2	Mining & Construction	EARTH MOVERS	451TM03412	SHIFT CONTROL	45 No's	Shift control valve is a part of transmission control valve used in motor grader equipment to select different speed ranges. Specification: Transmission Speeds : 6 forward, 5 reverse. Operating pressure : 31 bar				154
3	Mining & Construction	EARTH MOVERS	2321500120	PR.CONTROL VALVE	45 No's	Pressure control valve is a part of transmission control valve used in motor grader equipment to select different speed ranges. Specification: Transmission Speeds : 6 forward, 5 reverse Operating pressure : 31 bar				154
4	Mining & Construction	EARTH MOVERS	125FD02038	FLOATING SEAL KIT	120 No's	The floating seal is used to seal protect components in Final drive assembly from mud and soil. Specification:- O-Ring material : Nitrile rubber O-Ring shore hardness : 60±15 Seal Ring material : FC9Cr6Mo				1736
5	Mining & Construction	EARTH MOVERS	156FD02303	TRACK DRIVE	110 No's	Track drive is used in Excavator for moving of equipment from one place to another place in mining area and also helps to position the equipment in comfortable working position with the help of independent LH and RH hydrostatic circuits.				311
6	Mining & Construction	EARTH MOVERS	130EG00122	KIT, PV780 LCD PANEL	105 No's	CAN (Control Area Network) based 7" electronic display monitors all the engine, transmission and other equipment critical parameters continuously. Some parameters are directly connected to display and other parameters are connected through CAN converter by using two cables (CAN low and CAN high). Display shows all parameters in analogue form and it provides audio visual alarm to the operator in case any parameter crosses the specified limit. Display Specifications: Display: 7" Colour TFT LCD Resolution: WVGA, 800 X 480 pixels Contrast ratio: 400:1 Flash Memory: 2 GB RAM: 128 MB SRAM USB: 2.0 host Video input: 3 NTSC/PAL Operating voltage: 6-36 VDC Inputs: 3 Analog (0-5V, 4-20 mA or Resistive), 5 Discrete and 1 Frequency in (2Hz-10 KHz) Outputs: 1 no. 500mA switched Low, Frequency Out (2Hz – 3 KHz) Communication: J1939, CAN Open, RS485 and USB host Operating Temperature: -40OC to +85OC Protection: IP67 Vibration: random vibration, 7.86 Grms, 3 axis. Shocks: ±50G in 3 axis Sender CAN: Operating Voltage: 7 – 35 VDC Input: 4 no. Resistive or -2 to +35 VDC Output: SAE J1939 protocol and 2 no. 250mA.	 7" Colour display  Sender CAN  Temperature Sensor			397





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7	Mining & Construction	EARTH MOVERS	156SO01077	SWING MACHINERY	55 No's	Swing Machinery: Swing drive is used to revolve the upper structure of Excavator as per the positions of Dumpers for easy loading and faster loading of coal/ over burden in the mining fields.			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	147
8	Mining & Construction	EARTH MOVERS	451TM03291	LUB VALVE	45 No's	Lub valve is a part of transmission control valve used in motor grader equipment to lubricate bearings discs etc. Specification: Transmission Speeds : 6 forward, 5 reverse Operating pressure : 31 bar				145
9	Mining & Construction	EARTH MOVERS	113CVB0029	RELIEF VALVE(W/C)	55 No's	Relief pressure : 20 kg/cm ² . Max. Flow : 74.4 Lpm. Weight : 3.8 Kgs.				245
10	Mining & Construction	EARTH MOVERS	BSP0146178	RECOIL SPRING	110 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications : Sl. Parameter BSP01 46178 1 Coil dia in mm 47 2 Mean coil dia in mm 178 3 Free length in mm 760 4 No of coils 11 5 No of active coils 9 6 Spring rate in kg/mm 96.14 7 Test load in kg 25,620 8 Squareness (max) In deg at both ends 1 9 Flatness (max) in mm at both ends 0.5				374







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11	Mining & Construction	EARTH MOVERS	817AC02049	TECH. SCOPE (AC WITH HEATER SPLIT TYPE)	15 No's	<p>COMPRESSOR SPECIFICATION: DISPLACEMENT PER REVOLUTION 154.9 cc/rev. MAX. ALLOWABLE R.P.M 6000 R.P.M MAX. ALLOWABLE CONTINUOUS R.P.M 4000 R.P.M OIL (SP-15) 175 cc REFRIGERANT R134 a</p> <p>CLUTCH SPECIFICATION: RATED VOLTAGE DC 24V BREAKING TORQUE 3.5 kgf-m min @ 24V POWER CONSUMPTION 35 ~ 40 watts (max) BELT TYPE B – TYPE, V-BELT PULLEY DIAMETER @ 156.75mm</p> <p>CONDENSER : TYPE HEAVY DUTY REMOTE (CORE TYPE IN FRONT OF ROC) CAPACITY 44,500 BTU/hr</p> <p>EVAPORATOR : TYPE FULLY DUCTABLE INTEGRATED FILTRATION FLOOR MOUNTED COOLING CAPACITY 26,000 BTU/hr (7.6 Kw) HEATING CAPACITY 17,800 BTU/hr (5.2 Kw) AIR FLOW 540 cu.m/hr (320 cfm)</p> <p>AC TO MEET THE COOLING OF CABIN SIZE : LENGTH 1600 mm ,HEIGHT 1745 mm,WIDTH 940 mm COOLING TEMPERATURE INSIDE THE CABIN : 20°C @ 50°C AMBIENT INSTALLATION KIT AS PER SUPPLIER SCOPE</p>			<p>Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244</p>	69																														
12	Mining & Construction	EARTH MOVERS	2352211140	BUSHING	60 No's	<p>The buses are used in motor grade final drive assembly between stationary and oscillating part.</p> <p>Specification:- Material: Phenolic Oleoresin Hardness: 80HRM min. Compression strength : 11kg/mm2 Min Specific gravity : 1.3 to 1.4</p>				234																														
13	Mining & Construction	EARTH MOVERS	BSP0160244	RECOIL SPRING	120 No's	<p>The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.</p> <p>Specifications :</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Parameter</th> <th>BSP01 60244</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Coil dia in mm</td> <td>60</td> </tr> <tr> <td>2</td> <td>Mean coil dia in mm</td> <td>244</td> </tr> <tr> <td>3</td> <td>Free length in mm</td> <td>1008</td> </tr> <tr> <td>4</td> <td>No of coils</td> <td>11</td> </tr> <tr> <td>5</td> <td>No of active coils</td> <td>9</td> </tr> <tr> <td>6</td> <td>Spring rate in kg/mm</td> <td>92.90</td> </tr> <tr> <td>7</td> <td>Test load in kg</td> <td>29,900</td> </tr> <tr> <td>8</td> <td>Squareness (max) In deg at both ends</td> <td>1</td> </tr> <tr> <td>9</td> <td>Flatness (max) in mm at both ends</td> <td>0.5</td> </tr> </tbody> </table>	Sl. No.	Parameter	BSP01 60244	1	Coil dia in mm	60	2	Mean coil dia in mm	244	3	Free length in mm	1008	4	No of coils	11	5	No of active coils	9	6	Spring rate in kg/mm	92.90	7	Test load in kg	29,900	8	Squareness (max) In deg at both ends	1	9	Flatness (max) in mm at both ends	0.5				492
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14	Mining & Construction	EARTH MOVERS	BSP0144158	RECOIL SPRING	90 No's	<p>The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.</p> <p align="right">Specifications :</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Parameter</th> <th>BSP01 44158</th> </tr> </thead> <tbody> <tr><td>1</td><td>Coil dia in mm</td><td>44</td></tr> <tr><td>2</td><td>Mean coil dia in mm</td><td>158</td></tr> <tr><td>3</td><td>Free length in mm</td><td>819</td></tr> <tr><td>4</td><td>No of coils</td><td>13</td></tr> <tr><td>5</td><td>No of active coils</td><td>11</td></tr> <tr><td>6</td><td>Spring rate in kg/mm</td><td>86.39</td></tr> <tr><td>7</td><td>Test load in kg</td><td>20100</td></tr> <tr><td>8</td><td>Squareness (max) In deg at both ends</td><td>1</td></tr> <tr><td>9</td><td>Flatness (max) in mm at both ends</td><td>0.5</td></tr> </tbody> </table>	Sl. No.	Parameter	BSP01 44158	1	Coil dia in mm	44	2	Mean coil dia in mm	158	3	Free length in mm	819	4	No of coils	13	5	No of active coils	11	6	Spring rate in kg/mm	86.39	7	Test load in kg	20100	8	Squareness (max) In deg at both ends	1	9	Flatness (max) in mm at both ends	0.5			<p>Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244</p>	278
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15	Mining & Construction	EARTH MOVERS	761AS02093	MASTER CYLINDER	10 No's	<p>Master cylinder for Wheel loader and Wheel dozer application. It is used in Brake system which is air over hydraulic type. The brakes chambers are connected to master cylinders where the air pressure pushes the oil to apply brake. When brake pedal is depressed, piston in the master cylinder is pushed by plunger due to air pressure from brake chamber. This makes the oil to flow out from master cylinder outlet to apply pressure on piston in final drive of the axle. In turn the piston (in axle) pushes the clutch plates to come in close contact with discs which rotates, so when they are held, the rotation is stopped and brakes are applied to stop the machine.</p> <p>Specification: Bore : ø38.1 mm Stroke : 75 mm Working media : Mineral oil Max. pressure rating: Max brake pressure = 100bar (front & rear axle)</p>			119																															
16	Mining & Construction	EARTH MOVERS	BSP0146193	RECOIL SPRING	110 No's	<p>The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.</p> <p align="right">Specifications :</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Parameter</th> <th>BSP01 46193</th> </tr> </thead> <tbody> <tr><td>1</td><td>Coil dia in mm</td><td>46</td></tr> <tr><td>2</td><td>Mean coil dia in mm</td><td>193</td></tr> <tr><td>3</td><td>Free length in mm</td><td>583</td></tr> <tr><td>4</td><td>No of coils</td><td>8.56</td></tr> <tr><td>5</td><td>No of active coils</td><td>6.56</td></tr> <tr><td>6</td><td>Spring rate in kg/mm</td><td>94.90</td></tr> <tr><td>7</td><td>Test load in kg</td><td>20,100</td></tr> <tr><td>8</td><td>Squareness (max) In deg at both ends</td><td>1</td></tr> <tr><td>9</td><td>Flatness (max) in mm at both ends</td><td>0.5</td></tr> </tbody> </table>	Sl. No.	Parameter	BSP01 46193	1	Coil dia in mm	46	2	Mean coil dia in mm	193	3	Free length in mm	583	4	No of coils	8.56	5	No of active coils	6.56	6	Spring rate in kg/mm	94.90	7	Test load in kg	20,100	8	Squareness (max) In deg at both ends	1	9	Flatness (max) in mm at both ends	0.5			379	
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17	Mining & Construction	EARTH MOVERS	758TH91197	GEAR BRG.TBL	20 No's	<p>Gear bearing is used Turn Table assembly for tyre handling application.</p> <p>Specification: Material : 42CrMo4/ 46Cr4N Module : 5No. Of teeth :84</p>			32																															





LIST OF ITEMS FOR INDIGENISATION

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18	Mining & Construction	EARTH MOVERS	2352511700	CHAIN	60 No's	The Chain is used to give drive to front and rear wheels of Tandem assembly by taking input drive from Final drive assembly in BG605 Motor Grader. Specification: No of links:50nos Pitch : 63.50 Minimum Fracture strength: 50,000Kg Minimum Deformation load: 24,000Kg			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	134
19	Mining & Construction	EARTH MOVERS	758TH91229	GEAR BRG.TBL	10 No's	Gear bearing is used Turn Table assembly for tyre handling application. Specification: Material : 42CrMo4/ 46Cr4N Module : 6 No. Of teeth :93				16
20	Mining & Construction	EARTH MOVERS	761P201126	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :500mm Slip : 90mm Operating speed : 2800rpm max Operating angle : 6deg Max. Torque : 3100Nm Mechanics : 9C				13
21	Mining & Construction	EARTH MOVERS	355P291088	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :550mm Slip : 80mm Operating speed : 2400rpm max Max. Torque : 2400Nm Mechanics : 7C				24
22	Mining & Construction	EARTH MOVERS	456P202005	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :232mm Slip : 51mm Operating speed : 2400rpm max Max. Torque : 3020Nm Mechanics : 7C				32
23	Mining & Construction	EARTH MOVERS	355P291071	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :390mm Slip : 50mm Operating speed : 2400rpm max Max. Torque : 3020Nm Mechanics : 7C				24





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24	Mining & Construction	EARTH MOVERS	761PZ01101	PROPELLER SHAFT	20 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :570mm Slip : 130mm Operating speed : 2800rpm max Operating angle : 6deg Max. Torque : 3100Nm Mechanics : 9C			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	25																														
25	Mining & Construction	EARTH MOVERS	355PZ91063	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :210mm Slip : 30mm Operating speed : 1400rpm max Operating angle : 15deg Max. Torque : 585Nm Mechanics : 6C				24																														
26	Mining & Construction	EARTH MOVERS	451BP02019	CENTER BRAKE ASSY	45 No's	The centre brake assembly is used for Parking brake application in motor grader equipment. Specification: Max. Allowable brake torque : 500kgm.				50																														
27	Mining & Construction	EARTH MOVERS	BSP0163277	RECOIL SPRING	90 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications : Sl. <table border="1"> <thead> <tr> <th>No.</th> <th>Parameter</th> <th>BSP01 63277</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Coil dia in mm</td> <td>63</td> </tr> <tr> <td>2</td> <td>Mean coil dia in mm</td> <td>277</td> </tr> <tr> <td>3</td> <td>Free length in mm</td> <td>1179</td> </tr> <tr> <td>4</td> <td>No of coils</td> <td>11</td> </tr> <tr> <td>5</td> <td>No of active coils</td> <td>9</td> </tr> <tr> <td>6</td> <td>Spring rate in kg/mm</td> <td>82.35</td> </tr> <tr> <td>7</td> <td>Test load in kg</td> <td>33,700</td> </tr> <tr> <td>8</td> <td>Squareness (max) In deg at both ends</td> <td>1</td> </tr> <tr> <td>9</td> <td>Flatness (max) in mm at both ends</td> <td>0.5</td> </tr> </tbody> </table>	No.	Parameter		BSP01 63277	1	Coil dia in mm	63	2	Mean coil dia in mm	277	3	Free length in mm	1179	4	No of coils	11	5	No of active coils	9	6	Spring rate in kg/mm	82.35	7	Test load in kg	33,700	8	Squareness (max) In deg at both ends	1	9	Flatness (max) in mm at both ends	0.5			180
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28	Mining & Construction	EARTH MOVERS	757EG11026	SMART ALARM, BACKUP	90 No's	Smart alarm gives audio warning when equipment reverse gear is engaged. Alarm intensity varies depending on the surrounding noise. Specification: Operating voltage: 12-24VDC Maximum current drawn: 600mA Sound level: 87 – 112db (Automatic) Operating temperature: -40DC to +85 DC Protection: Spike & Surge protected Enclosure: Epoxy sealed against mud water & vibration Duty cycle: 1 pulse per second, 50% ON 50% OFF Frequency: 1250Hz Case: Steel			817																															

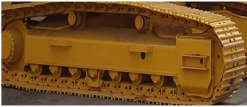

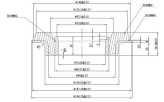
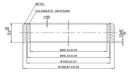
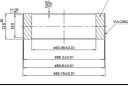


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29	Mining & Construction	EARTH MOVERS	953EG83482	LED ROOF LAMP	120 No's	LED roof lamp fitted inside (to roof) the operator cabin provides illumination during night time when ever lamp switch is ON.This lap gives white colour illumination. Specification: Operating voltage: 24VDC Power Consumption: 6W Light Colour: White Case material: Steel			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	836
30	Mining & Construction	EARTH MOVERS	BSP0140165	Recoil Springs	60 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications : Sl. Parameter BSP01 40165 1 Coil dia in mm 40 2 Mean coil dia in mm 165 3 Free length in mm 648 4 No of coils 10.5 5 No of active coils 8.5 6 Spring rate in kg/mm 62.80 7 Test load in kg 13,400 8 Squareness (max) In deg at both ends 1 9 Flatness (max) in mm at both ends 0.5				530
31	Mining & Construction	EARTH MOVERS	BSP0150183	Recoil Springs	70 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications : Sl. Parameter BSP01 50183 1 Coil dia in mm 50 2 Mean coil dia in mm 183 3 Free length in mm 822 4 No of coils 12 5 No of active coils 10 6 Spring rate in kg/mm 95.5 7 Test load in kg 22,200 8 Squareness (max) In deg at both ends 1 9 Flatness (max) in mm at both ends 0.5				154
32	Mining & Construction	EARTH MOVERS	BSP0146178	Recoil Springs	110 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications : Sl. Parameter BSP01 46178 1 Coil dia in mm 47 2 Mean coil dia in mm 178 3 Free length in mm 760 4 No of coils 11 5 No of active coils 9 6 Spring rate in kg/mm 96.14 7 Test load in kg 25,620 8 Squareness (max) In deg at both ends 1 9 Flatness (max) in mm at both ends 0.5				374




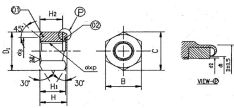

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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
33	Mining & Construction	EARTH MOVERS	2352211590	SEAL RING	110 No's	The Seal Ring is used to arrest oil leakage during piston actuation in final drive assembly. Specification:-Material - Rareflon;Pressure : 40 bar;Temperature : 120 deg max.			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	150
34	Mining & Construction	EARTH MOVERS	701821706	SEAL RING	150 No's	The Seal Ring is used to arrest oil leakage during piston actuation in transmission. Specification:-Material : HSBc3;Maximum pressure: 20 bar ;Oil temperature : 120 deg max.;Peripheral speed : 20m/s				150
35	Mining & Construction	EARTH MOVERS	130CT00284	TRACK SHOE PROFILE	180 Tons	Single grouser track shoes for crawler type 416 hp Bull Dozers (heavy duty earthmoving application). Shoes are hot rolled and hardened for better strength and toughness. The shoes are made of Born grade steel material to meet the wear resistance requirement thereby enhancing the life of the track chain.1. DESCRIPTION : HOT ROLLED TRACK SHOE STOCK 2. CHEMICAL COMPOSITION: C 0.28 - 0.33 Mn 1.0 - 1.3 Si 0.25 - 0.35 Cr 0.35 - 0.65 S 0.03 Max P 0.03 Max B 0.0005 - 0.003 Mo 0.08 - 0.15 3. Mechanical properties as per BEML unit standard B1202-00. Hardness at 1.5 mm below Quenched end: 49-56 HRC Hardness at 15 mm below Quenched end: 39-50 HRC 4. SUPPLY CONDITION: NORMALIZED				1995
36	Mining & Construction	EARTH MOVERS	125CT00326	TRACK SHOE PROFILE	210 Tons	Single grouser track shoes for crawler type 416 hp Bull Dozers (heavy duty earthmoving application). Shoes are hot rolled and hardened for better strength and toughness. The shoes are made of Born grade steel material to meet the wear resistance requirement thereby enhancing the life of the track chain.MATERIAL PROPERTIES: 1. DESCRIPTION : -HOT ROLLED TRACK SHOE STOCK 2. CHEMICAL COMPOSITION: C 0.28 - 0.33 Mn 1.0 - 1.3 Si 0.25 - 0.35 Cr 0.35 - 0.65 S 0.03 Max P 0.03 Max B 0.0005 - 0.003 Mo 0.08 - 0.15 3. Mechanical properties as per BEML unit standard B1202-00. Hardness at 1.5 mm below Quenched end: 49-56 HRC Hardness at 15 mm below Quenched end: 39-50 HRC 4. SUPPLY CONDITION: NORMALIZED				1529

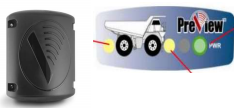

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
37	Mining & Construction	EARTH MOVERS	155CTB0025	TRACK SHOE PROFILE	81 Tons	<p>Triple grouser track shoes for crawler type 147 hp Excavator (heavy duty earthmoving application). Shoes are hot rolled and hardened for better strength and toughness. The shoes are made of Boron grade steel material to meet the wear resistance requirement thereby enhancing the life of the track chain.MATERIAL PROPERTIES:</p> <p>1. DESCRIPTION : HOT ROLLED TRACK SHOE STOCK</p> <p>2. CHEMICAL COMPOSITION:</p> <p>C 0.28 - 0.33 Mn 1.0 - 1.3 Si 0.25 - 0.35 Cr 0.35 - 0.65 S 0.03 Max P 0.03 Max B 0.0005 - 0.003 Mo 0.08 - 0.15</p> <p>3. Mechanical properties as per BEML unit standard B1202-00. Hardness at 1.5 mm below Quenched end: 49-56 HRC Hardness at 15 mm below Quenched end: 39-50 HRC</p> <p>4. SUPPLY CONDITION: NORMALIZED</p>			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244	252
38	Mining & Construction	EARTH MOVERS	2352211580	SEAL RING	15 No's	The Seal Ring is used to arrest oil leakage during piston actuation in final drive assembly.Specification:-Material - Rarefion;Pressure : 40 bar;Temperature : 120 deg max.				29
39	Mining & Construction	EARTH MOVERS	130E91124	CUSHION	360 No's	Vibration isolator (Cushion) used for engine mounting at 4 mounting locations of 416 hp Bull Dozer application. Cushions are heavy duty type with better damping characteristics to prevent transmission of shocks from the equipment to the engine in order to improve the life of the engine components.				1608
40	Mining & Construction	EARTH MOVERS	130E91132	CUSHION	180 No's	Vibration isolator (Cushion) used for engine mounting at 4 mounting locations of 416 hp Bull Dozer application. Cushions are heavy duty type with better damping characteristics to prevent transmission of shocks from the equipment to the engine in order to improve the life of the engine components.				784
41	Mining & Construction	EARTH MOVERS	130E91149	CUSHION	180 No's	Vibration isolator (Cushion) used for engine mounting at 4 mounting locations of 416 hp Bull Dozer application. Cushions are heavy duty type with better damping characteristics to prevent transmission of shocks from the equipment to the engine in order to improve the life of the engine components.				784
42	Mining & Construction	EARTH MOVERS	2321519530	SNAP RING	100 No's	The double layer snap ring is used to arrest axial motion of ring gear and planetary assembly in transmission. Specification:-Material: SWRH 67/82 B;Hardness : 42~48 HRC				273
43	Mining & Construction	EARTH MOVERS	985TM11147	SNAP RING	50 No's	The double layer snap ring is used to arrest axial motion of ring gear and planetary assembly in transmission. Specification:-Material: SWRH 67/82 B; Hardness : 42~48 HRC				143

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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
44	Mining & Construction	Hydraulic & Power line	442071480374	Synchromesh 4th & 5th Gear	50 No's	This assy consists of carrier, Connecting Sleeve, Synchro cones for which input Raw materials are Forging. It involves, Turning, hobbing, Tooth Chamfering, internal shaping, GCQT & Special process Molycoat			Name : Madhusudan B.H Designation: DGM (R&D), R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 264044 Mob: 7406897591	50
45	Mining & Construction	Hydraulic & Power line	442071480384	Synchromesh constant mesh	50 No's	This assy consists of carrier, Connecting Sleeve, Synchro cone for which input Raw materials are Forging. It involves, Turning, hobbing, internal shaping, Swaging, GCQT & Special process Molycoat				50
46	Mining & Construction	Hydraulic & Power line	716516870	NYLOC NUT	50 No's	In the above Nylock nuts, the Nut materials are quenched and tempered to 24-28 HRC.				300
47	Mining & Construction	Hydraulic & Power line	716513638	NYLOC NUT	50 No's	In the above Nylock nuts, the Nut materials are quenched and tempered to 24-28 HRC. 				300

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
48	Mining & Construction	Truck	953EG0074	Proximity warning system for dump trucks	200 No's	<p>The system consist of sensor and display which will detects both moving and stationary objects in a pre-defined coverage area and reports the distance of the closest object via visual range indicators and an audible signal to a vehicle operator. To ensure the safety of operator & equipment as per the compliance of DGMS.</p> <p>Specification: Electrical Specification: Operating Voltage: 9-32VDC Operating Temperature: -40 to 85 oC Vibration: 25G RMS, 3 Axis Shock: 25G 3 Axis</p> <p>Operating Characteristics: Maximum Range: 32 feet (10m) Programmable Ranges: 10 to 32 feet (3m to 10m) Warning Ranges: 5 zones divided into programmed range Minimum Resolution: 1 foot</p> <p>Note ; The usage of device on equipment is certified by department of telecommunication government of India</p>	 <p align="center">Sensor And Display</p>		<p>Name : Sudharshan K S Designation: CGM (R&D) , R & D Complex, BEML Ltd Belvadi post Mysore - 570 018 e - mail: sudhiks@beml.co.in Ph : 0821 2400348 Mob: 9731561734</p>	728
49	Mining & Construction	Truck	953EG03404	Emergency steering Motor for dump trucks	250 No's	<p>Emergency Steering Motor is used to supply the auxiliary power to the steering unit in case of Hydraulic pump failure or Engine failure. This is an supplementary power pack to regular steering system & also to meet the safety norms of DGMS requirement.</p> <p>Specification: Electrical Specification: Description: DC Motor Power Rating: 3.5KW Operating Voltage: 24VDC Operating Temperature: -40 to 110 oC Insulation Type: B Revolution Direction: Clockwise Duty Cycle: 90 Sec for Continuous operation.</p>	 <p align="center">Emergency Steering Motor</p>			567

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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years	
50	Mining & Construction	Truck	451EGB0088	Kit ,Dash board system(Murphy 1905)	50 No's	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication. Display Specification: Display: 7"			Name : Sudharshan K S Designation: CGM (R&D) , R & D Complex, BEML Ltd Belvadi post Mysore - 570 018 e - mail: sudhiks@beml.co.in Ph : 0821 2400348 Mob: 9731561734	50	
51	Mining & Construction	Truck	452EGB0118	MURPHY KIT(MECHANICAL ENGINE & TRANS)	20 No's	Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000(GPS), CAN Open, Free Form CAN Emission: SAE J1113				20	
52	Mining & Construction	Truck	931EGB0107	DASH BOARD SYSTEM KIT	10 No's	Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol				10	
53	Mining & Construction	Truck	938EGB0102	DASH BOARD KIT (MURPHY)	15 No's						15
54	Mining & Construction	Truck	953EGB0236	MURPHY KIT(PV780) ELEC ENGINE , MECH TRANS	36 No's						36
55	Mining & Construction	Truck	953EGB0252	MURPHY KIT PV780(ELEC ENGINE & TRANS)	36 No's						36

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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
56	Mining & Construction	Truck	958EG0138	MURPHY KIT PV780(ELEC ENGINE & TRANS)	150 No's				Name : Sudharshan K S Designation: CGM (R&D) , R & D Complex, BEML Ltd Belvadi post Mysore - 570 018 e - mail: sudhiks@beml.co.in Ph : 0821 2400348 Mob: 9731561734	150
57	Mining & Construction	Truck	958EG0146	MURPHY KITPV780(MECH ENGINE& ELEC TRANS)	150 No's			150		
58	Mining & Construction	Truck	991EG01063	MURPHY DASHBOARD KIT(PV780)	7 No's			10		
59	Mining & Construction	Truck	992EG00032	MURPHY DASHBOARD KIT(PV780)	8 No's			10		
60	Mining & Construction	Truck	994EG00029	KIT CENTRALISED DISPLAY(MURPHY)	3 No's			3		






LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
61	Mining & Construction	Engine	4128380678	Air Compressor	109 No's	Air compressor used on Heavy duty diesel engines Type - Water Cooled Construction - Twin Cylinder Volume - 442 cc			Name : Tamilselvan Designation: GM (R&D) , Engine Division,BEML Ltd Belvadi post Mysore - 570 018 e - mail: gp@beml.co.in Ph : 0821 2402447 Mob: 9731561744	342
62	Mining & Construction	Engine	6151813112	Air Compressor	42 No's	Air compressor used on Heavy duty diesel engines Type - Water Cooled Construction - Single Cylinder Volume - 340 cc				134
63	Mining & Construction	Engine	6162332060	Piston ring assembly	1950 No's	Piston Rings for Heavy Duty Diesel Engines (170 bore dia) Material: KPR3 of ES1119 dia-170mm ; thickness - 4mm				11055
64	Mining & Construction	Engine	6211312033	Piston ring assembly	798 No's	Piston Rings for Heavy Duty Diesel Engines (140 bore dia) Material: KPR3 of ES1119 dia-140mm ; thickness - 4mm				3360
65	Mining & Construction	Engine	6150312033	Piston ring assembly	1056 No's	Piston Rings for Heavy Duty Diesel Engines (125 bore dia) Material: KPR3 of ES1119 dia-125mm ; thickness - 4mm				2317
66	Mining & Construction	Engine	6137312040	Piston ring assembly	798 No's	Piston Rings for Heavy Duty Diesel Engines (105 bore dia) Material: KPR3 of ES1119 dia-105mm ; thickness - 4mm				2279
67	Mining & Construction	Engine	6162131812	Gasket cylinder head	1950 No's	Cylinder head gasket for heavy duty diesel engines (170 bore dia) Material - SPCCTA PLATE Thickness - 2 mm size - 230 x 340 mm				15216
68	Mining & Construction	Engine	6210171814	Gasket cylinder head	798 No's	Cylinder head gasket for heavy duty diesel engines (140 bore dia) Material - SPCCTA PLATE Thickness - 2 mm				3587
69	Mining & Construction	Engine	6150171813	Gasket cylinder head	1056 No's	Cylinder head gasket for heavy duty diesel engines (125 bore dia) Material - SPCCTA PLATE Thickness - 2 mm size - 160 x 260 mm				3094

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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
70	Defence	Palakkad	442925810194	DEFLECTOR RH	150 No's	TECHNICAL SPECIFICATION: Injection molded plastic Item Size: 515x190x3mm Weight :350gms Protection Item fitted to cabin			Name : Rajashekar.R Designation: DGM (R&D) , Palakkad Complex, BEML Ltd KINFRA Park, Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526	150
71	Defence	Palakkad	442925810204	DEFLECTOR LH	150 No's	TECHNICAL SPECIFICATION: Injection molded plastic Item Size: 515x190x3mm Weight :350gms Protection Item fitted to cabin				150
72	Defence	Palakkad	443312039000	BOARD LAMP	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.167 A Nominal wattage : 4 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulbs : AIS 034 (As per CMVR) Environmental standard : ISS 55555 – 2012 (Rev3)				150
73	Defence	Palakkad	442099701524	OIL PRESSURE GAUGE SENSOR 38 0070 25 with Switch coupling SPOJKA SPINACE 442601144000	150 No's	TECHNICAL SPECIFICATION: Mechanical Specification: (a) Pressure setting : 4.5 ± 10% bar upward (b) Operating pressure : 15 bar (c) Maximum over pressure : 30 bar for 1 minute duration (d) Torque : 30 Nm max. (e) Medium : Motor Oil/ Air Electrical Specification: (a) Rated voltage : 12 / 24V DC (b) Test Voltage : 13.5V (c) Max. Voltage sag : 150mV at 1000mA (d) Permissible electrical load : Max. 30W at resistive load 10W at inductive load & inductance 400mH (e) Protection to DIN 40050 : Plug in connection with contact Area : IP 66 Connecting Components: IP 64				150
74	Defence	Palakkad	442075300214	ENGINE BRAKE	150 No's	TECHNICAL SPECIFICATION: Operating Air Pressure : 8 bar Air Cylinder stroke : 40 mm Cylinder Bore Diameter : 40 mm Exhaust Pipe Diameter : 4 Inch Weight : 3.5 kg				150
75	Defence	Palakkad	442070034000	STEERING GEAR BOX	150 No's	TECHNICAL SPECIFICATION : TYPE : Worm type with one finger Gear ratio : 25.5 Total number of steering wheel turns to achieve a full lock : 5 2/3 Weight : 42Kg Oil specification : Servo Gear Super 80W-90 (IOC)				150

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
76	Defence	Palakkad	443743050000	SUBPRESSURE INDICATOR	150 No's	TECHNICAL SPECIFICATION: Nominal Voltage : 24V Set pressure: 6±0.6kpa			Name : Rajashekar.R Designation: DGM (R&D) , Palakkad Complex, BEML Ltd KINFRA Park, Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526	150
77	Defence	Palakkad	443999108000	CUT OFF SWITCH, TRW 31116	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 1.16 A Max Nominal wattage : 28 W Torque for tightening : 50 N-m Max Type of switch : NC (Normally Closed)				250
78	Defence	Palakkad	443311026000	WATERTIGHT HEAD LAMP DIA 160 MM	450 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 3.125 / 2.91 A Nominal wattage : 75 / 70 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : ISS 5555 – 2012 (Rev3)				450
79	Defence	Palakkad	443311065000	FOG HEADLAMP 891017-2	300 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 2.91 A Nominal wattage : 70 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : ISS 5555 – 2012 (Rev3)				300
80	Defence	Palakkad	443312035000	REAR LAMP, LH	150 No's	BRIEF DESCRIPTION: The Rear Cluster LH Lamp (443312035000) used on BEML-TATRA vehicle and is mounted on the rear of a vehicle used for three illumination applications mentioned below. (i) The lamp used to draw the attention to the presence of stationary vehicle. (Parking lamp). (ii) To indicate other road-users to the rear of the vehicle that its driver is applying the service brake (Stop lamp). (iii) To be operated by the driver, signals the latter's intension to change the direction in which the vehicle is proceeding (Direction indicator lamp). The assembly is made up of die cast aluminum, cold drawn steel sheet and is powder finished to Olive Green. TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.875 A, 0.875/0.208 A Nominal wattage : 21 W, 21/5 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulbs : AIS 034 (As per CMVR) Environmental standard : ISS 5555 – 2012 (Rev3)				753
81	Defence	Palakkad	443312037000	REAR LAMP, RH	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.875 A, 0.875/0.208 A Nominal wattage : 21 W, 21/5 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulbs : AIS 034 (As per CMVR) Environmental standard : ISS 5555 – 2012 (Rev3)				850






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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
82	Defence	Palakkad	443853040000	STARTER MOTOR PUSH BUTTON	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 10 A Max Torque for tightening switch : 10 kgf.cm Max Type of switch : NO (Normally Open)			Name : Rajashekar.R Designation: DGM (R&D) , Palakkad Complex, BEML Ltd KINFRA Park, Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526	150
83	Defence	Palakkad	443853026000	PUSH BUTTON SWITCH	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 4 A Max Type of switch : NO (Normally Open) Connection : Water tight				150
84	Defence	Palakkad	442080361004	WATERTIGHT LAMPS	300 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.16 A Nominal wattage : 4 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : ISS 55555 – 2012 (Rev3)				300
85	Defence	Palakkad	443312009000	WATER TIGHT LAMP	150 No's	TECHNICAL SPECIFICATION: Supply Voltage : 24V DC Wattage : 21 W Bulb base : Ba 155 Lens color : White (Clear) Life : > 50000 hrs Operating temperature range : -40° to +70° Finish : Aluminium die casting. Steel parts by galvanic cadmium and Chromate plated, Copper parts are nickel plated.				150
86	Defence	Palakkad	442973100074	SIDE COVER, LH	150 No's	Side cover is Protective sheet metal cover. Fixed below cabin door. Material used: Sheet Cold rolled carbon sheet. Over Length of side thickness : 1mm cover : 1021mm Out surface of side cover coated with enamel synthetic Paint. And inner side painted Rubberized paint				150
87	Defence	Palakkad	442973100054	SIDE COVER, RH	150 No's	Side cover is Protective sheet metal cover. Fixed below cabin door. Material used: Sheet Cold rolled carbon sheet. Over Length of side thickness : 1mm cover : 1021mm Out surface of side cover coated with enamel synthetic Paint. And inner side painted Rubberized paint				150
88	Defence	Palakkad	321880164000	AIR DUCT	150 No's	TECHNICAL SPECIFICATION: Size: 800x600x5 Matl: Polyester Glass Laminated Material Colour : Graphite Black				150



LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
89	Defence	Palakkad	273243014000	SEALING SECTION	150 No's	TECHNICAL SPECIFICATION: Synthetic rubber Inner Diameter :477/-2 mm Hardness:56-65 IRHD Provided as a gasket/Protective cover to Air duct.			Name : Rajashekar.R Designation: DGM (R&D) , Palakkad Complex, BEML Ltd KINFRA Park, Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526	150
90	Defence	Palakkad	442954165654	AIR DUCT GASKET	150 No's	TECHNICAL SPECIFICATION: Synthetic rubber Hardness:55-64(SH. A) Provided as a Protective gasket to Air duct.				150
91	Defence	Palakkad	443621019000	TELESCOPIC DAMPER	600 No's	TECHNICAL SPECIFICATION: Extended length : 652 mm Compressed Length : 412 mm Stroke Length : 240 mm Bush Diameter : 24 mm Weight : 5 kg				600
92	Defence	Palakkad	442073900544	STEERING BOOSTER WITH JOINT	150 No's	TECHNICAL SPECIFICATION : MODEL : RV 78 - 26311.42 TYPE : Double Acting WORKING FLUID : Servo System 32 (IOC) MAX PRESSURE : 11 MPa WEIGHT : 20 Kg HYDRAULIC PORT : M18X1.5				150
93	Defence	Palakkad	442079070054	SOCKET	150 No's	TECHNICAL SPECIFICATION: Nominal Voltage : 24V Nominal Current : 6A No. of Poles : 1				285
94	Defence	Palakkad	442075915584	SPRING HOSE	150 No's	BRIEF DESCRIPTION: BEML TATRA Vehicle is fitted with flexible metal hose pipe connected to the Engine Exhaust system for discharge of gases. TECHNICAL SPECIFICATION: MATERIAL : STAINLESS STEEL 1.4301 (AISI 304) RING : STAINLESS STEEL (1.5mm Thick) EXHAUST TUBE OD : 106.5 mm EXHAUST TUBE ID : 102.5 mm				150
95	Defence	Palakkad	442030050804	CROSS GRIDER	50 No's	TECHNICAL SPECIFICATION: 1.5% Manganese Casting. Mounted to Chassis and bolted to Backbone tube. Load bearing Item				50
96	Defence	Palakkad	442072801004	FRONT BRACKET, RH	50 No's	TECHNICAL SPECIFICATION: Size: 250x85x40 Mat: Carbon Steel Casting, Gr-1 IS: 2707-1996				50




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Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
97	Defence	Palakkad	442072801014	FRONT BRACKET, LH	50 No's	TECHNICAL SPECIFICATION: Size: 250x85x40 Matl: Carbon Steel Casting,Gr-1 IS: 2707-1996			Name : Rajashekar.R Designation: DGM (R&D) , Palakkad Complex, BEML Ltd KINFRA Park, Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526	50
98	Defence	Palakkad	321841025000	CANISTER KANYSTR 5 L OMYVACE CEL. SKEL	150 No's	TECHNICAL SPECIFICATION: Material : Blow molded plastic Size: 285x240x125mm Capacity: 5lts				150
99	Defence	Palakkad	443311119000	TURN INDICATOR UKAZATEL SMERU 892 007	600 No's	TECHNICAL SPECIFICATION: Supply Voltage : 24V DC Wattage : 21 W Bulb base : Ba 155 Lens color : White (Clear) Life : > 50000 hrs Operating temperature range : -40° to +70° Finish : Aluminium die casting, Steel parts by galvanic cadmium and Chromate plated, Copper parts are nickel plated. Water Resisances : Water tight. Standard to be complied for lamp : AIS 012 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)				600
100	Defence	Palakkad	443429860000	INDICATOR SNIMAC OTACEK 2159.20002501	150 No's	Specification: Nominal Voltage : 6.5 – 30 V Current : 16mA at 30V Operating temp: -30 Deg to +145 deg protection: En 60529 , IP: 67 Vibration Resistance: 30g				150
101	Defence	Palakkad	442079026714	ORANGE BEACON Maják AEB úprava	300 No's	Used on the cabin for beacon lamp Appaication TECHNICAL SPECIFICATION: Nominal Voltage: 24 V Nominal wattage: 21W				300


LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
102	Rail & Metro	BANGALORE COMPLEX	9422100803	CURRENT COLLECTOR SYSTEM, 750V DC-RH	192 No's	750 VDC THIRD RAIL CURRENT COLLECTION SYSTEM RH TYPE WITH CAST IRON SHOE , FUSE AND BRACKET, HIGH POWER CABLE BETWEEN COLLECTOR SHOE TO FUSE BOX, AND ALL MISCELLANEOUS (MALE & FEMALE CONNECTOR, PIN , SOCKET AND HARDWARE FOR INSTALLATION) PTS No: GR/TD/3499 Rev 1 dated 17.02.17		Sl no. 102 to 106 Current Collector Device items to be indigenized from same source	NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	192
103	Rail & Metro	BANGALORE COMPLEX	9422100804	CURRENT COLLECTOR SYSTEM, 750V DC-LH	192 No's	750 VDC THIRD RAIL CURRENT COLLECTION SYSTEM LH TYPE WITH CAST IRON SHOE FUSE AND BRACKET, HIGH POWER CABLE BETWEEN COLLECTOR SHOE TO FUSE BOX AND ALL MISCELLANEOUS (MALE & FEMALE CONNECTOR, PIN , SOCKET AND HARDWARE FOR INSTALLATION) PTS No: GR/TD/3499 Rev 1 dated 17.02.17				192
104	Rail & Metro	BANGALORE COMPLEX	94221063	MANUAL HAND LEVER FOR CCD	48 No's	MANUAL HAND LEVER FOR CCD AS PER PTS:GR/TD/3499				48
105	Rail & Metro	BANGALORE COMPLEX	94221064	STRINGER CONNECTOR MALE	96 No's	STRINGER CONNECTOR MALE WITH BOX(PIN HOUSED IN BOX ALONG WITH GLAND, LUG S & OTHER ACCESSORIES) AS PER PTS:GR/TD/3499				112
106	Rail & Metro	BANGALORE COMPLEX	94221065	STRINGER CONNECTOR FEMALE	24 No's	STRINGER CONNECTOR FEMALE (WITH COVER AND DUMMY PLUG) AS PER PTS:GR/TD/3499				24


LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
107	Rail & Metro	BANGALORE COMPLEX	94221025	LED BASED SALOON LIGHT(L-1302MM)	4032 No's	LED BASED SALOON LIGHT (1302MM) FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481	 		NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	4032
108	Rail & Metro	BANGALORE COMPLEX	94221026	LED BASED SALOON LIGHT(L=690MM)	288 No's	LED BASED SALOON LIGHT (690MM) FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				288
109	Rail & Metro	BANGALORE COMPLEX	94221027	GANGWAY LIGHT-LED	120 No's	GANGWAY LIGHT-LED FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				141
110	Rail & Metro	BANGALORE COMPLEX	94221030	CAB MAIN LIGHT-LED	48 No's	CAB MAIN LIGHT-LED FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				48
111	Rail & Metro	BANGALORE COMPLEX	94221031	HEAD LIGHT-LED	48 No's	HEAD LIGHT-LED FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				56
112	Rail & Metro	BANGALORE COMPLEX	94221032	MARKER AND TAIL LIGHT-LED	48 No's	MARKER AND TAIL LIGHT-LED FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				56
113	Rail & Metro	BANGALORE COMPLEX	94221033	FLASHER LIGHT-LED	48 No's	FLASHER LIGHT-LED FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				48
114	Rail & Metro	BANGALORE COMPLEX	94221034	DRIVING CONSOLE LIGHT-LED	48 No's	DRIVING CONSOLE LIGHT-LED FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/34				56
115	Rail & Metro	BANGALORE COMPLEX	94221035	AUTO DIMMER	144 No's	AUTODIMMER FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				85
116	Rail & Metro	BANGALORE COMPLEX	94221036	SENSOR	288 No's	SENSOR FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481				170
117	Rail & Metro	BANGALORE COMPLEX	94221097	DC-DC CONVERTER, DRIVER CONSOLE LIGHT	48 No's	DC-DC CONVERTER FOR DRIVING CONSOLE LIGHT(110V-24V DC) FOR KMRC-L-RS (3R) PROJECT AS PER PTS GR/TD/3481	48			
118	Rail & Metro	BANGALORE COMPLEX	9425608701	PROTECTION FILM 195x150x0.5T	2448 No's	PROTECTION FILM 195x150x0.5T		2448		
119	Rail & Metro	BANGALORE COMPLEX	9425608702	PROTECTION FILM 150x130x0.5T	1728 No's	PROTECTION FILM 150x130x0.5T		1728		
120	Rail & Metro	BANGALORE COMPLEX	9425608703	PROTECTION FILM 200x130x0.5T	1152 No's	PROTECTION FILM 200x130x0.5T		1152		
121	Rail & Metro	BANGALORE COMPLEX	9425608704	PROTECTION FILM 250x130x0.5T	1056 No's	PROTECTION FILM 250x130x0.5T		1056		
122	Rail & Metro	BANGALORE COMPLEX	9425608705	PROTECTION FILM 410x130x0.5T	96 No's	PROTECTION FILM 410x130x0.5T		96		
123	Rail & Metro	BANGALORE COMPLEX	9425608706	PROTECTION FILM 720x160x0.5T	96 No's	PROTECTION FILM 720x160x0.5T		96		
124	Rail & Metro	BANGALORE COMPLEX	9425608707	PROTECTION FILM 150x100x0.5T	96 No's	PROTECTION FILM 150x100x0.5T		96		
125	Rail & Metro	BANGALORE COMPLEX	9425608708	PROTECTION FILM 120x40x0.5T	288 No's	PROTECTION FILM 120x40x0.5T		308		
126	Rail & Metro	BANGALORE COMPLEX	9425608709	PROTECTION FILM 225x40x0.5T	480 No's	PROTECTION FILM 225x40x0.5T		480		
127	Rail & Metro	BANGALORE COMPLEX	9425608710	PROTECTION FILM 350x40x0.5T	96 No's	PROTECTION FILM 350x40x0.5T		96		
128	Rail & Metro	BANGALORE COMPLEX	9425608711	PROTECTION FILM 410x40x0.5T	96 No's	PROTECTION FILM 410x40x0.5T		96		
129	Rail & Metro	BANGALORE COMPLEX	9425608712	PROTECTION FILM 510x150x0.5T	96 No's	PROTECTION FILM 510x150x0.5T		96		
130	Rail & Metro	BANGALORE COMPLEX	9425608713	PROTECTION FILM 480x100x0.5T	96 No's	PROTECTION FILM 480x100x0.5T		96		
131	Rail & Metro	BANGALORE COMPLEX	9425608714	PROTECTION FILM 480x40x0.5T	96 No's	PROTECTION FILM 480x40x0.5T		96		
132	Rail & Metro	BANGALORE COMPLEX	9425608715	PROTECTION FILM 250x100x0.5T	96 No's	PROTECTION FILM 250x100x0.5T		96		

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
133	Rail & Metro	BANGALORE COMPLEX	9425608716	PROTECTION FILM 530x40x0.5T	96 No's	PROTECTION FILM 530x40x0.5T			NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	96
134	Rail & Metro	BANGALORE COMPLEX	9425608717	PROTECTION FILM 150x140x0.5T	96 No's	PROTECTION FILM 150x140x0.5T				112
135	Rail & Metro	BANGALORE COMPLEX	9425608718	PROTECTION FILM 300x120x0.5T	96 No's	PROTECTION FILM 300x120x0.5T				96
136	Rail & Metro	BANGALORE COMPLEX	9425608719	PROTECTION FILM 130x60x0.5T	96 No's	PROTECTION FILM 130x60x0.5T				96
137	Rail & Metro	BANGALORE COMPLEX	9425608720	PROTECTION FILM 310x40x0.5T	96 No's	PROTECTION FILM 310x40x0.5T				96
138	Rail & Metro	BANGALORE COMPLEX	9425608721	PROTECTION FILM 280x130x0.5T	96 No's	PROTECTION FILM 280x130x0.5T				96
139	Rail & Metro	BANGALORE COMPLEX	9425608722	PROTECTION FILM 240x90x0.5T	96 No's	PROTECTION FILM 240x90x0.5T				96
140	Rail & Metro	BANGALORE COMPLEX	9425608723	PROTECTION FILM 210x90x0.5T	96 No's	PROTECTION FILM 210x90x0.5T				112
141	Rail & Metro	BANGALORE COMPLEX	9425608724	PROTECTION FILM 255x25x0.5T	96 No's	PROTECTION FILM 255x25x0.5T				96
142	Rail & Metro	BANGALORE COMPLEX	9425608725	PROTECTION FILM 135x40x0.5T	96 No's	PROTECTION FILM 135x40x0.5T				112
143	Rail & Metro	BANGALORE COMPLEX	9425608731	PROTECTION FILM 220x130x0.5T	816 No's	PROTECTION FILM 220x130x0.5T				816
144	Rail & Metro	BANGALORE COMPLEX	9425608732	PROTECTION FILM 260x130x0.5T	192 No's	PROTECTION FILM 260x130x0.5T				192
145	Rail & Metro	BANGALORE COMPLEX	9425608733	PROTECTION FILM 520x130x0.5T	96 No's	PROTECTION FILM 520x130x0.5T				96
146	Rail & Metro	BANGALORE COMPLEX	9425608734	PROTECTION FILM 550x130x0.5T	96 No's	PROTECTION FILM 550x130x0.5T				96
147	Rail & Metro	BANGALORE COMPLEX	9425608737	PROTECTION FILM 300x220x0.5T	96 No's	PROTECTION FILM 300x220x0.5T				96
148	Rail & Metro	BANGALORE COMPLEX	9425608739	PROTECTION FILM 270x95x0.5T	96 No's	PROTECTION FILM 270x95x0.5T				96
149	Rail & Metro	BANGALORE COMPLEX	9425608740	PROTECTION FILM 195x190x0.5T	96 No's	PROTECTION FILM 195x190x0.5T				96
150	Rail & Metro	BANGALORE COMPLEX	9425608741	PROTECTION FILM 150x80x0.5T	672 No's	PROTECTION FILM 150x80x0.5T	672			
151	Rail & Metro	BANGALORE COMPLEX	9425608742	PROTECTION FILM 215x40x0.5T	48 No's	PROTECTION FILM 215x40x0.5T	48			
152	Rail & Metro	BANGALORE COMPLEX	9425608743	PROTECTION FILM 180x40x0.5T	528 No's	PROTECTION FILM 180x40x0.5T	528			
153	Rail & Metro	BANGALORE COMPLEX	9425608744	PROTECTION FILM 150x120x0.5T	192 No's	PROTECTION FILM 150x120x0.5T	192			
154	Rail & Metro	BANGALORE COMPLEX	9425608745	PROTECTION FILM 490x80x0.5T	48 No's	PROTECTION FILM 490x80x0.5T	48			
155	Rail & Metro	BANGALORE COMPLEX	9425608746	PROTECTION FILM 465x85x0.5T	48 No's	PROTECTION FILM 465x85x0.5T	48			
156	Rail & Metro	BANGALORE COMPLEX	9425608747	PROTECTION FILM 260x220x0.5T	96 No's	PROTECTION FILM 260x220x0.5T	96			
157	Rail & Metro	BANGALORE COMPLEX	9425608748	PROTECTION FILM 260x80x0.5T	48 No's	PROTECTION FILM 260x80x0.5T	48			
158	Rail & Metro	BANGALORE COMPLEX	9425608750	PROTECTION FILM 285x80x0.5T	48 No's	PROTECTION FILM 285x80x0.5T	48			
159	Rail & Metro	BANGALORE COMPLEX	9425608751	PROTECTION FILM 285x40x0.5T	48 No's	PROTECTION FILM 285x40x0.5T	48			
160	Rail & Metro	BANGALORE COMPLEX	9425608752	PROTECTION FILM 210x190x0.5T	48 No's	PROTECTION FILM 210x190x0.5T	48			
161	Rail & Metro	BANGALORE COMPLEX	9425608753	PROTECTION FILM 15x115x0.5T	576 No's	PROTECTION FILM 15x115x0.5T	576			
162	Rail & Metro	BANGALORE COMPLEX	9425608754	PROTECTION FILM 15x250x0.5T	192 No's	PROTECTION FILM 15x250x0.5T	192			
163	Rail & Metro	BANGALORE COMPLEX	9425608755	PROTECTION FILM 15x270x0.5T	96 No's	PROTECTION FILM 15x270x0.5T	224			
164	Rail & Metro	BANGALORE COMPLEX	9425608756	PROTECTION FILM 15x320x0.5T	96 No's	PROTECTION FILM 15x320x0.5T	96			
165	Rail & Metro	BANGALORE COMPLEX	9425608757	PROTECTION FILM 15x390x0.5T	192 No's	PROTECTION FILM 15x390x0.5T	192			
166	Rail & Metro	BANGALORE COMPLEX	9425608758	PROTECTION FILM 15x570x0.5T	96 No's	PROTECTION FILM 15x570x0.5T	112			
167	Rail & Metro	BANGALORE COMPLEX	9425608759	PROTECTION FILM 20x110x0.5T	96 No's	PROTECTION FILM 20x110x0.5T	140			




LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
168	Rail & Metro	BANGALORE COMPLEX	9425608760	PROTECTION FILM 20x270x0.5T	96 No's	PROTECTION FILM 20x270x0.5T			NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	96
169	Rail & Metro	BANGALORE COMPLEX	9425608761	PROTECTION FILM 20x440x0.5T	96 No's	PROTECTION FILM 20x440x0.5T				96
170	Rail & Metro	BANGALORE COMPLEX	9425608762	PROTECTION FILM 20x530x0.5T	96 No's	PROTECTION FILM 20x530x0.5T				96
171	Rail & Metro	BANGALORE COMPLEX	9425608763	PROTECTION FILM 45x150x0.5T	96 No's	PROTECTION FILM 45x150x0.5T				96
172	Rail & Metro	BANGALORE COMPLEX	9425608764	PROTECTION FILM 50x430x0.5T	96 No's	PROTECTION FILM 50x430x0.5T				96
173	Rail & Metro	BANGALORE COMPLEX	9425608765	PROTECTION FILM 50x330x0.5T	96 No's	PROTECTION FILM 50x330x0.5T				96
174	Rail & Metro	BANGALORE COMPLEX	9425608766	PROTECTION FILM 55x410x0.5T	192 No's	PROTECTION FILM 55x410x0.5T				96
175	Rail & Metro	BANGALORE COMPLEX	9425608767	PROTECTION FILM 60x60x0.5T	96 No's	PROTECTION FILM 60x60x0.5T				112
176	Rail & Metro	BANGALORE COMPLEX	9425608768	PROTECTION FILM 70x210x0.5T	96 No's	PROTECTION FILM 70x210x0.5T				96
177	Rail & Metro	BANGALORE COMPLEX	9425608769	PROTECTION FILM 75x300x0.5T	96 No's	PROTECTION FILM 75x300x0.5T				96
178	Rail & Metro	BANGALORE COMPLEX	9425608770	PROTECTION FILM 50x80x0.5T	96 No's	PROTECTION FILM 50x80x0.5T				96
179	Rail & Metro	BANGALORE COMPLEX	9425608771	PROTECTION FILM 90x170x0.5T	96 No's	PROTECTION FILM 90x170x0.5T				96
180	Rail & Metro	BANGALORE COMPLEX	9425608772	PROTECTION FILM 95x100x0.5T	288 No's	PROTECTION FILM 95x100x0.5T				288
181	Rail & Metro	BANGALORE COMPLEX	9425608773	PROTECTION FILM 45x250x0.5T	96 No's	PROTECTION FILM 45x250x0.5T				168
182	Rail & Metro	BANGALORE COMPLEX	9425608774	PROTECTION FILM 30x150x0.5T	288 No's	PROTECTION FILM 30x150x0.5T				288
183	Rail & Metro	BANGALORE COMPLEX	9425608775	PROTECTION FILM 20x180x0.5T	48 No's	PROTECTION FILM 20x180x0.5T				48
184	Rail & Metro	BANGALORE COMPLEX	9425608776	PROTECTION FILM 20x220x0.5T	48 No's	PROTECTION FILM 20x220x0.5T				56
185	Rail & Metro	BANGALORE COMPLEX	9425608777	PROTECTION FILM 25x80x0.5T	96 No's	PROTECTION FILM 25x80x0.5T				96
186	Rail & Metro	BANGALORE COMPLEX	9425608778	PROTECTION FILM 25x280x0.5T	48 No's	PROTECTION FILM 25x280x0.5T				48
187	Rail & Metro	BANGALORE COMPLEX	9425608779	PROTECTION FILM 30x70x0.5T	48 No's	PROTECTION FILM 30x70x0.5T				48
188	Rail & Metro	BANGALORE COMPLEX	9425608780	PROTECTION FILM 30x130x0.5T	48 No's	PROTECTION FILM 30x130x0.5T	48			
189	Rail & Metro	BANGALORE COMPLEX	9425608781	PROTECTION FILM 30x260x0.5T	48 No's	PROTECTION FILM 30x260x0.5T	48			
190	Rail & Metro	BANGALORE COMPLEX	9425608782	PROTECTION FILM 30x495x0.5T	48 No's	PROTECTION FILM 30x495x0.5T	48			
191	Rail & Metro	BANGALORE COMPLEX	9425608783	PROTECTION FILM 30x515x0.5T	48 No's	PROTECTION FILM 30x515x0.5T	48			
192	Rail & Metro	BANGALORE COMPLEX	9425608784	PROTECTION FILM 60x260x0.5T	48 No's	PROTECTION FILM 60x260x0.5T	48			
193	Rail & Metro	BANGALORE COMPLEX	9425608785	PROTECTION FILM 70x130x0.5T	48 No's	PROTECTION FILM 70x130x0.5T	56			
194	Rail & Metro	BANGALORE COMPLEX	9425608786	PROTECTION FILM 70x150x0.5T	96 No's	PROTECTION FILM 70x150x0.5T	96			
195	Rail & Metro	BANGALORE COMPLEX	9425608787	PROTECTION FILM 70x260x0.5T	48 No's	PROTECTION FILM 70x260x0.5T	48			
196	Rail & Metro	BANGALORE COMPLEX	9425608788	PROTECTION FILM 145x220x0.5T	48 No's	PROTECTION FILM 145x220x0.5T	48			
197	Rail & Metro	BANGALORE COMPLEX	9425608789	PROTECTION FILM 95x100x0.5T	48 No's	PROTECTION FILM 95x100x0.5T	48			
198	Rail & Metro	BANGALORE COMPLEX	9425608790	PROTECTION FILM 30x320x0.5T	48 No's	PROTECTION FILM 30x320x0.5T	48			
199	Rail & Metro	BANGALORE COMPLEX	9425608791	PROTECTION FILM 50x150x0.5T	48 No's	PROTECTION FILM 50x150x0.5T	48			
200	Rail & Metro	BANGALORE COMPLEX	9425608792	PROTECTION FILM 60x150x0.5T	48 No's	PROTECTION FILM 60x150x0.5T	48			
201	Rail & Metro	BANGALORE COMPLEX	9425640127	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256401	96			
202	Rail & Metro	BANGALORE COMPLEX	9425640128	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256401	96			
203	Rail & Metro	BANGALORE COMPLEX	9425640129	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256401	96			
204	Rail & Metro	BANGALORE COMPLEX	9425670022	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256700	96			
205	Rail & Metro	BANGALORE COMPLEX	9425670120	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	48			
206	Rail & Metro	BANGALORE COMPLEX	9425670121	PROTECTION FILM 0.5T	144 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	144			
207	Rail & Metro	BANGALORE COMPLEX	9425670122	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	48			
208	Rail & Metro	BANGALORE COMPLEX	9425670123	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	48			
209	Rail & Metro	BANGALORE COMPLEX	9425670124	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	48			

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
210	Rail & Metro	BANGALORE COMPLEX	94221802	1.5 Sqmm CABLE, 750V/1300V	2169120 Mtrs	HALOGEN FREE, THIN WALL 600V/1000V SINGLE CONDUCTOR 1.5 Sqmm CABLE.	 	<p align="center">Sl no. 210 to 232 Cable items to be indigenized from same source</p>	<p>NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825</p>	3855088
211	Rail & Metro	BANGALORE COMPLEX	94221803	2.5 Sqmm CABLE, 750V/1300V	79584 Mtrs	HALOGEN FREE, THIN WALL 600V/1000V SINGLE CONDUCTOR 2.5 Sqmm CABLE.				166237
212	Rail & Metro	BANGALORE COMPLEX	94221804	1.5 Sqmm (2 X1.5) CABLE W/O SHI	72576 Mtrs	HALOGEN FREE, THIN WALL 600/1000V TWO CONDUCTORS 1.5 Sqmm (2 X1.5) CABLE WITHOUT SHIELD.				104086
213	Rail & Metro	BANGALORE COMPLEX	94221805	2x1.0/1.2 Sqmm CABLE SHIELED,	323712 Mtrs	TWO CONDUCTORS' CABLE (2X1.0/1.2Sqmm), HALOGEN FREE INSULATION, SHIELED AND HALOGEN FREE JACKETED, 600/1000V 105°C.				640360
214	Rail & Metro	BANGALORE COMPLEX	94221806	3x0.5 Sqmm CABLE SHIELED, 750	25248 Mtrs	THREE CONDUCTORS' CABLE (3X0.5Sqmm), HALOGEN FREE INSULATION, SHIELED AND HALOGEN FREE JACKETED, 600/1000V 105°C.				37358
215	Rail & Metro	BANGALORE COMPLEX	94221807	3x1.0/1.2 Sqmm CABLE SHIELED,	90048 Mtrs	THREE CONDUCTORS' CABLE (3X1.0/1.2Sqmm), HALOGEN FREE INSULATION, SHIELED AND HALOGEN FREE JACKETED, 600/1000V 105°C.				140348
216	Rail & Metro	BANGALORE COMPLEX	94221808	4x1.0/1.2 Sqmm CABLE SHIELED,	6240 Mtrs	FOUR CONDUCTOR CABLE (4X1.0/1.2MM2), HALOGEN FREE INSULATION, SHIELED AND HALOGEN FREE JACKETED, 600/1000V 105°C.				11240
217	Rail & Metro	BANGALORE COMPLEX	94221809	6 Sqmm, 600/1000V POWER CABL	34464 Mtrs	6MM2, 600/1000V HALOGEN FREE POWER CABLE.				80067
218	Rail & Metro	BANGALORE COMPLEX	94221811	16 Sqmm, 600/1000V POWER CAB	49104 Mtrs	16 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.				118358
219	Rail & Metro	BANGALORE COMPLEX	94221812	35 Sqmm, 600/1000V POWER CAB	36768 Mtrs	35 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.				57348
220	Rail & Metro	BANGALORE COMPLEX	94221813	50 Sqmm, 600/1000V POWER CAB	9504 Mtrs	50 Sqmm600/1000V HALOGEN FREE POWER CABLE.				17394
221	Rail & Metro	BANGALORE COMPLEX	94221814	70 Sqmm, 600/1000V POWER CAB	8256 Mtrs	70 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.				12416
222	Rail & Metro	BANGALORE COMPLEX	94221815	95 Sqmm, 600/1000V POWER CAB	14160 Mtrs	95 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.				22760
223	Rail & Metro	BANGALORE COMPLEX	94221816	6 Sqmm, 1800/3000V, HV POWER	2688 Mtrs	6 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.				5330
224	Rail & Metro	BANGALORE COMPLEX	94221817	35 Sqmm,1800/3000V, HV POWER	5472 Mtrs	35 Sqmm,1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.				10894
225	Rail & Metro	BANGALORE COMPLEX	94221818	70 Sqmm,1800/3000V, HV POWER	3504 Mtrs	70 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.				8799
226	Rail & Metro	BANGALORE COMPLEX	94221819	95 Sqmm, 1800/3000V, HV POWER	14592 Mtrs	95 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.				25181
227	Rail & Metro	BANGALORE COMPLEX	94221820	150 Sqmm, 1800/3000V, HV POWE	3168 Mtrs	150 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.				5932
228	Rail & Metro	BANGALORE COMPLEX	94221821	185 Sqmm, 1800/3000V, HV POWE	15984 Mtrs	185 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.				28646
229	Rail & Metro	BANGALORE COMPLEX	94221822	185 Sqmm, 1800/3000V, HV POWE	8544 Mtrs	185 Sqmm, 1800/3000V, HALOGEN FREE HIGH VOLTAGE POWER CABLE FLEXIBLE.				15963
230	Rail & Metro	BANGALORE COMPLEX	94221823	2*1.5 Sqmm FIRE RESISTANCE CAB	100032 Mtrs	FIRE RESISTANCE TWO CONDUCTORS SHIELED AND JACKETED CABLE (2*1.5Sqmm)				158052
231	Rail & Metro	BANGALORE COMPLEX	94221825	100 ohm CAT 5e 4X AWG 22/7 WIT	42720 Mtrs	120 ohm MVB BLACK CABLE { 2 x 0.5 mm ² + 1 x 0.5 mm ² RED, BLUE, BLACK}				36559
232	Rail & Metro	BANGALORE COMPLEX	94221826	120 Ohm MVB Cable	8640 Mtrs	100 Ohm CAT 5e 4xAWG 22/7 WITH FOAM.				10692

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
233	Rail & Metro	BANGALORE COMPLEX	94216107	FLOOR BOARD-1	288 No's	FLOOR BOARD - 1 TO DRAWING No. 942-16107 AND CONFORMING TO PTS DOC. No.GR/TD/3428		Sl no. 233 to 247 Floor Board items to be indigenized from same source	NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	288
234	Rail & Metro	BANGALORE COMPLEX	94216108	FLOOR BOARD-2	392 No's	FLOOR BOARD - 2 TO DRAWING No. 942-16108 AND CONFORMING TO PTS DOC. No.GR/TD/3428				392
235	Rail & Metro	BANGALORE COMPLEX	94216109	FLOOR BOARD-3	48 No's	FLOOR BOARD - 3 TO DRAWING No. 942-16109 AND CONFORMING TO PTS DOC. No.GR/TD/3428				48
236	Rail & Metro	BANGALORE COMPLEX	94216110	FLOOR BOARD-4	48 No's	FLOOR BOARD - 4 TO DRAWING No. 942-16110 AND CONFORMING TO PTS DOC. No.GR/TD/3428				48
237	Rail & Metro	BANGALORE COMPLEX	94216111	FLOOR BOARD-5	288 No's	FLOOR BOARD - 5 TO DRAWING No. 942-16111 AND CONFORMING TO PTS DOC. No.GR/TD/3428				288
238	Rail & Metro	BANGALORE COMPLEX	94216112	FLOOR BOARD-6	144 No's	FLOOR BOARD - 6 TO DRAWING No. 942-16112 AND CONFORMING TO PTS DOC. No.GR/TD/3428				144
239	Rail & Metro	BANGALORE COMPLEX	94216113	FLOOR BOARD-7	144 No's	FLOOR BOARD - 7 TO DRAWING No. 942-16113 AND CONFORMING TO PTS DOC. No.GR/TD/3428				144
240	Rail & Metro	BANGALORE COMPLEX	94216114	FLOOR BOARD-8	144 No's	FLOOR BOARD - 8 TO DRAWING No. 942-16114 AND CONFORMING TO PTS DOC. No.GR/TD/3428				144
241	Rail & Metro	BANGALORE COMPLEX	94216115	FLOOR BOARD-9	288 No's	FLOOR BOARD - 9 TO DRAWING No. 942-16115 AND CONFORMING TO PTS DOC. No.GR/TD/3428				288
242	Rail & Metro	BANGALORE COMPLEX	94216116	FLOOR BOARD-10	48 No's	FLOOR BOARD - 10 TO DRAWING No. 942-16116 AND CONFORMING TO PTS DOC. No. GR/TD/3428				48
243	Rail & Metro	BANGALORE COMPLEX	94216117	FLOOR BOARD-11	288 No's	FLOOR BOARD - 11 TO DRAWING No. 942-16117 AND CONFORMING TO PTS DOC. No. GR/TD/3428				288
244	Rail & Metro	BANGALORE COMPLEX	94216118	FLOOR BOARD-12	48 No's	FLOOR BOARD - 12 TO DRAWING No. 942-16118 AND CONFORMING TO PTS DOC. No.GR/TD/3428				48
245	Rail & Metro	BANGALORE COMPLEX	94216119	FLOOR BOARD-12	96 No's	FLOOR BOARD - 13 TO DRAWING No. 942-16119 AND CONFORMING TO PTS DOC. No.GR/TD/3428				96
246	Rail & Metro	BANGALORE COMPLEX	94216120	FLOOR BOARD-14	96 No's	FLOOR BOARD - 14 TO DRAWING No. 942-16120 AND CONFORMING TO PTS DOC. No.GR/TD/3428				96
247	Rail & Metro	BANGALORE COMPLEX	94216121	FLOOR BOARD-15	48 No's	FLOOR BOARD - 15 TO DRAWING No. 942-16121 AND CONFORMING TO PTS DOC. No.GR/TD/3428				48
248	Rail & Metro	BANGALORE COMPLEX	94216139	Floor Covering Wheelchair	48 No's	FLOOR COVERING WHEELCHAIR TO DRAWING No. 942-16139.		Sl no. 248 to 250 Floor covering items to be indigenized from same source		48
249	Rail & Metro	BANGALORE COMPLEX	R307495003	Floor covering-2.5mthk X 2metre width X 21metre Roll	288 No's	FLOOR COVERING-2.5mm THK x 2m WIDTH x 21m ROLL, TRAVELLER CLASSIC R15 PALLADIUM 8805 AND CONFIRMING TO PTS DOC. No. GR/TD/3531.				288
250	Rail & Metro	BANGALORE COMPLEX	R607917100	Floor Covering Joint Welding Rod	3456 No's	FLOOR COVERING JOINT WELDING ROD - Ø5mm x 100m ROLL, WELDING ROD CR 50 & COLOUR MATCHING WITH THE FLOOR COVERING COLOUR PALLADIUM 8805.				3456
251	Rail & Metro	BANGALORE COMPLEX	942161031	FLOOR PACKING1-THK2MM x W38MM x L1480MM	1440 No's	FLOOR PACKING-1 TO DRAWING No. 942-16103 AND CONFORMING TO PTS DOC. NO. GR/TD/1766				1440
252	Rail & Metro	BANGALORE COMPLEX	942161032	FLOOR PACKING2-THK2MM x W61MM x L1648MM	1440 No's	FLOOR PACKING-2 TO DRAWING No. 942-16103 AND CONFORMING TO PTS DOC. NO. GR/TD/1766				1440
253	Rail & Metro	BANGALORE COMPLEX	942161033	FLOOR PACKING3-THK2MM x W40MM x L500MM	5760 No's	FLOOR PACKING-3 TO DRAWING No. 942-16103 AND CONFORMING TO PTS DOC. NO. GR/TD/1766				5760
254	Rail & Metro	BANGALORE COMPLEX	942161034	FLOOR PACKING4-THK1MM x W35MM x L1420MM	6912 No's	FLOOR PACKING-4 TO DRAWING No. 942-16103 AND CONFORMING TO PT S DOC. NO. GR/TD/1766				6912
255	Rail & Metro	BANGALORE COMPLEX	942161035	FLOOR PACKING5-THK3MM x W20MM x L40MM	41472 No's	FLOOR PACKING-5 TO DRAWING No. 942-16103 AND CONFORMING TO PTS DOC. NO.GR/TD/1766				41472
256	Rail & Metro	BANGALORE COMPLEX	942161036	FLOOR PACKING6-THK2MM x W40MM x L40MM	48384 No's	FLOOR PACKING-6 TO DRAWING No. 942-16103 AND CONFORMING TO PTS DOC. NO.GR/TD/1766				48384

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
257	Rail & Metro	BANGALORE COMPLEX	90960306	GUIDE PACKING (18A)	3456 No's	GUIDE PACKING 18A TO DWG NO. 90960306	 		NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	3456
258	Rail & Metro	BANGALORE COMPLEX	94260142	GUIDE PACKING (10AX10A)	576 No's	GUIDE PACKING (10AX10A) TO DWG NO 94260142				576
259	Rail & Metro	BANGALORE COMPLEX	94260304	PACKING RUBBER-EPDM	14976 No's	PACKING RUBBER TO DRWG NO : 94260304				14976
260	Rail & Metro	BANGALORE COMPLEX	94260305	PACKING RUBBER-EPDM	13824 No's	PACKING RUBBER TO DRWG NO : 94260305				13824
261	Rail & Metro	BANGALORE COMPLEX	90956582	PACKING	864 No's	PACKING TO DRG NO,909 56582				864
262	Rail & Metro	BANGALORE COMPLEX	94250126	PACKING	2901 No's	PACKING TO DRG No. 94250126				2901
263	Rail & Metro	BANGALORE COMPLEX	94250129	PACKING-ETU	6994 No's	PACKING-ETU TO DRG No. 94250129				6994
264	Rail & Metro	BANGALORE COMPLEX	94250130	PACKING-PIB	10491 No's	PACKING-PIB TO DRG No. 94250130				10491
265	Rail & Metro	BANGALORE COMPLEX	94250131	PACKING-SOCKET	2901 No's	PACKING-SOCKET TO DRG No. 94250131				2901
266	Rail & Metro	BANGALORE COMPLEX	94256150	PACKING	3480 mtrs	PACKING TO DRG No. 94256150				3480
267	Rail & Metro	BANGALORE COMPLEX	94256173	PACKING T2, W 30mm, L 1000mm	9860 mtrs	PACKING T2, W 30mm, L 1000mm TO DRG NO. 94256173				9860
268	Rail & Metro	BANGALORE COMPLEX	94256174	PACKING T2, W 50mm, L 1000mm	797.5 mtrs	PACKING T2, W 50mm, L 1000mm TO DRG NO. 94256174				798
269	Rail & Metro	BANGALORE COMPLEX	94256175	PACKING T2, W 60mm, L 1000mm	217.5 mtrs	PACKING T2, W 60mm, L 1000mm TO DRG NO. 94256175				218
270	Rail & Metro	BANGALORE COMPLEX	94256176	PACKING T2, W 80mm, L 1000mm	568145 mtrs	PACKING T2, W 80mm, L 1000mm TO DRG NO. 94256176				568145
271	Rail & Metro	BANGALORE COMPLEX	94256177	PACKING T4, W 30mm, L 1000mm	268145 mtrs	PACKING T4, W 30mm, L 1000mm TO DRG NO. 94256177				268145
272	Rail & Metro	BANGALORE COMPLEX	94256178	PACKING T4, W 60mm, L 1000mm	72.5 mtrs	PACKING T4, W 60mm, L 1000mm TO DRG NO. 94256178				73
273	Rail & Metro	BANGALORE COMPLEX	94256179	PACKING T4, W 80mm, L 1000mm	9280 mtrs	PACKING T4, W 80mm, L 1000mm TO DRG NO. 94256179				9280
274	Rail & Metro	BANGALORE COMPLEX	94256180	PACKING T5, W 30mm, L 1000mm	2030 mtrs	PACKING T5, W 30mm, L 1000mm TO DRG NO. 94256180				2030
275	Rail & Metro	BANGALORE COMPLEX	94256181	PACKING T5, W 60mm, L 1000mm	73 mtrs	PACKING T5, W 60mm, L 1000mm TO DRG NO. 94256181				75

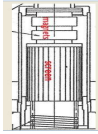
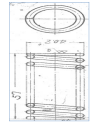



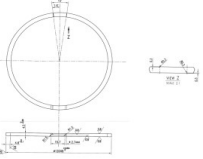
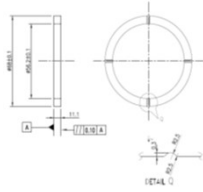

LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
276	Rail & Metro	BANGALORE COMPLEX	94256182	PACKING T1, W 80mm, L 1000mm	1740 Mtrs	PACKING T1, W 80mm, L 1000mm TO DRG NO. 94256182	 	<p>Sl no. 251 to 333 Floor packing, Packing rubber, rubber seal, guide packing and packing items to be indigenized from same source</p>	<p>NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825</p>	1740
277	Rail & Metro	BANGALORE COMPLEX	94219316	PACKING EPDM 3MM THKx30MMx2000MM	13989 No's	PACKING EPDM 3MM THKx30MMx2000MM TO DRAWING NO 94219316				13989
278	Rail & Metro	BANGALORE COMPLEX	94219317	PACKING EPDM 2MM THKx30MMx2000MM	13989 No's	PACKING EPDM 2MM THKx30MMx2000MM TO DRAWING NO 94219317				13989
279	Rail & Metro	BANGALORE COMPLEX	94219319	PACKING EPDM 5MM THKx40MMx50MM	13094 No's	PACKING EPDM 5MM THKx40MMx50MM TO DRAWING NO 94219319				13094
280	Rail & Metro	BANGALORE COMPLEX	94219365	PAD PACKING EPDM 16MM THKx15MMx80MM	30240 No's	PAD, PACKING TO DRAWING NO 94219365				30240
281	Rail & Metro	BANGALORE COMPLEX	94219368	PAD PACKING SILICON 1MM THKx30MMx36MM	37872 No's	PAD, PACKING TO DRAWING NO 94219368				37872
282	Rail & Metro	BANGALORE COMPLEX	9421931801	PACKING SILICON 5MM THKx30MMx60MM	48322 No's	PACKING SILICON 5MM THK TO DRAWING NO 9421931801				48322
283	Rail & Metro	BANGALORE COMPLEX	9421931802	PACKING SILICON 3MM THKx30MMx60MM	61179 No's	PACKING SILICON 3MM THK TO DRAWING NO 9421931802				61179
284	Rail & Metro	BANGALORE COMPLEX	9421932501	PACKING SILICON 3MM THKx30MMx100MM	8702 No's	PACKING SILICON 3MM THKx30MMx100MM TO DRAWING NO 9421932501				8702
285	Rail & Metro	BANGALORE COMPLEX	9421932502	PACKING SILICON 3MM THKx30MMx90MM	8702 No's	PACKING SILICON 3MM THKx30MMx90MM TO DRAWING NO 9421932502				8702
286	Rail & Metro	BANGALORE COMPLEX	9421932503	PACKING SILICON 3MM THKx30MMx140MM	11602 No's	PACKING SILICON 3MM THKx30MMx140MM TO DRAWING NO 9421932503				11602
287	Rail & Metro	BANGALORE COMPLEX	9421932504	PACKING SILICON 3MM THKx30MMx80MM	2901 No's	PACKING SILICON 3MM THKx30MMx80MM TO DRAWING NO 9421932504				2901
288	Rail & Metro	BANGALORE COMPLEX	9421932505	PACKING SILICON 3MM THKx25MMx80MM	2901 No's	PACKING SILICON 3MM THKx25MMx80MM TO DRAWING NO 9421932505				2901
289	Rail & Metro	BANGALORE COMPLEX	9421932506	PACKING SILICON 3MM THKx30MMx190MM	5801 No's	PACKING SILICON 3MM THKx30MMx190MM TO DRAWING NO 9421932506				5801
290	Rail & Metro	BANGALORE COMPLEX	9421932507	PACKING SILICON 3MM THKx30MMx40MM	2901 No's	PACKING SILICON 3MM THKx30MMx40MM TO DRAWING NO 9421932507				2901
291	Rail & Metro	BANGALORE COMPLEX	9421932508	PACKING SILICON 3MM THKx30MMx40MM	8702 No's	PACKING SILICON 3MM THKx30MMx40MM TO DRAWING NO 9421932508				8702
292	Rail & Metro	BANGALORE COMPLEX	9421932509	PACKING SILICON 2MM THKx30MMx40MM	2901 No's	PACKING SILICON 2MM THKx30MMx40MM TO DRAWING NO 9421932509				2901
293	Rail & Metro	BANGALORE COMPLEX	9421932510	PACKING SILICON 3MM THKx30MMx20MM	5801 No's	PACKING SILICON 3MM THKx30MMx20MM TO DRAWING NO 9421932510				5801





LIST OF ITEMS FOR INDIGENISATION

Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details	Quantity procured during last 3 years
294	Rail & Metro	BANGALORE COMPLEX	94214102	RUBBER STOP	298 No's	RUBBER, STOP TO LATEST DRG NO. 94214102			NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML LTD POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825	298
295	Rail & Metro	BANGALORE COMPLEX	94214105	STOPPER RUBBER	1193 No's	STOPPER, RUBBER TO LATEST DRG NO. 94214105				1193
296	Rail & Metro	BANGALORE COMPLEX	94218110	RUBBER PROFILE WEATHER STRIP 16200MM	298 No's	RUBBER PROFILE WEATHER STRIP TO DRAWING NO 94218110				298
297	Rail & Metro	BANGALORE COMPLEX	942231071	SEAT RUBBER PROFILE-A	16293 No's	SEAT RUBBER PROFILE-A TO DRAWING NO. 942-23107-1				16293
298	Rail & Metro	BANGALORE COMPLEX	942231072	SEAT RUBBER PROFILE-A	13392 No's	SEAT RUBBER PROFILE-A TO DRAWING NO. 942-23107-2				133392
299	Rail & Metro	BANGALORE COMPLEX	942231073	SEAT RUBBER PROFILE-A	6398 No's	SEAT RUBBER PROFILE-A TO DRAWING NO. 942-23107-3				6398
300	Rail & Metro	BANGALORE COMPLEX	942231191	SEAT RUBBER PROFILE-C	4947 No's	SEAT RUBBER PROFILE-C TO DRAWING NO. 942-23119-1				4947
301	Rail & Metro	BANGALORE COMPLEX	942231192	SEAT RUBBER PROFILE-C	2901 No's	SEAT RUBBER PROFILE-C TO DRAWING NO. 942-23119-2				2901
302	Rail & Metro	BANGALORE COMPLEX	942231193	SEAT RUBBER PROFILE-C	298 No's	SEAT RUBBER PROFILE-C TO DRAWING NO. 942-23119-3				298
303	Rail & Metro	BANGALORE COMPLEX	9421935607	RUBBER SEAL PROFILE 7	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935607				298
304	Rail & Metro	BANGALORE COMPLEX	9421935608	RUBBER SEAL PROFILE 8	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935608				298
305	Rail & Metro	BANGALORE COMPLEX	9421935609	RUBBER SEAL PROFILE 9	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935609				298
306	Rail & Metro	BANGALORE COMPLEX	9421935610	RUBBER SEAL PROFILE 10	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935610				298
307	Rail & Metro	BANGALORE COMPLEX	9422214201	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214201				298
308	Rail & Metro	BANGALORE COMPLEX	9422214202	RUBBER SEAL	3795 No's	RUBBER SEAL TO LATEST DRAWING 9422214202				3795
309	Rail & Metro	BANGALORE COMPLEX	9422214203	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214203				298
310	Rail & Metro	BANGALORE COMPLEX	9422214204	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214204				298
311	Rail & Metro	BANGALORE COMPLEX	9422214205	RUBBER SEAL	1749 No's	RUBBER SEAL TO LATEST DRAWING 9422214205				1749
312	Rail & Metro	BANGALORE COMPLEX	9422214206	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214206				298
313	Rail & Metro	BANGALORE COMPLEX	9422214207	RUBBER SEAL	1450 No's	RUBBER SEAL TO LATEST DRAWING 9422214207				1450
314	Rail & Metro	BANGALORE COMPLEX	9422214208	RUBBER SEAL	1450 No's	RUBBER SEAL TO LATEST DRAWING 9422214208				1450
315	Rail & Metro	BANGALORE COMPLEX	9422214209	RUBBER SEAL	576 No's	RUBBER SEAL TO LATEST DRAWING 9422214209				576
316	Rail & Metro	BANGALORE COMPLEX	9422214211	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214211				298
317	Rail & Metro	BANGALORE COMPLEX	9422214212	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214212				298
318	Rail & Metro	BANGALORE COMPLEX	9422214213	RUBBER SEAL	3497 No's	RUBBER SEAL TO LATEST DRAWING 9422214213				3497
319	Rail & Metro	BANGALORE COMPLEX	94256149	PROTECTIVE RUBBER	3480 Mtrs	RUBBER PROTECTIVE TO DRG No. 94256149				3480
320	Rail & Metro	BANGALORE COMPLEX	94219320	RUBBER PROFILE-C SILICON L=90MM	26229 No's	RUBBER, PROFILE-C SILICON L=90MM TO DRAWING NO 94219320				26229
321	Rail & Metro	BANGALORE COMPLEX	9421935601	RUBBER SEAL PROFILE 1	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935601				1450
322	Rail & Metro	BANGALORE COMPLEX	9421935602	RUBBER SEAL PROFILE 2	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935602				1450
323	Rail & Metro	BANGALORE COMPLEX	9421935603	RUBBER SEAL PROFILE 3	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935603				1450
324	Rail & Metro	BANGALORE COMPLEX	9421935604	RUBBER SEAL PROFILE 4	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935604				1450
325	Rail & Metro	BANGALORE COMPLEX	9421935605	RUBBER SEAL PROFILE 5	1749 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935605				1749
326	Rail & Metro	BANGALORE COMPLEX	9421935606	RUBBER SEAL PROFILE 6	1749 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935606				1749
327	Rail & Metro	BANGALORE COMPLEX	9422214210	RUBBER SEAL	1749 No's	RUBBER, SEAL TO DRAWING NO 9422214210	1749			
328	Rail & Metro	BANGALORE COMPLEX	94223109	SEAT PACKING	3199 No's	SEAT PACKING-2 TO DRAWING NO. 942-23109	3199			
329	Rail & Metro	BANGALORE COMPLEX	94229155	PACKING, STOPPER	13094 No's	PACKING STOPPER TO DRAWING No. 942-29155 AND CONFORMING T	13094			
330	Rail & Metro	BANGALORE COMPLEX	94260143	GUIDE PACKING (10AX10AX10AX10)	144 No's	GIUDE PACKING (10Ax10Ax10Ax10A) TO DWG NO 94260143	144			
331	Rail & Metro	BANGALORE COMPLEX	94260144	GUIDE PACKING (10AX10AX22A)	144 No's	GIUDE PACKING (10Ax10Ax22A) TO DWG NO 94260144	144			
332	Rail & Metro	BANGALORE COMPLEX	94260145	GUIDE PACKING (18AX10AX22A)	144 No's	GIUDE PACKING (18Ax10Ax22A) TO DWG NO 94260145	144			
333	Rail & Metro	BANGALORE COMPLEX	94260146	GUIDE PACKING (10AX22AX22A)	144 No's	GIUDE PACKING (10Ax22Ax22A) TO DWG NO 94260146	144			
334	Rail & Metro	BANGALORE COMPLEX	94218010	CAB MASK ASSEMBLY	48 No's	CAB MASK ASSY TO LATEST DRG NO 94218010.	 <p>To be indigenized from Interior Panel supplier along with Panels</p>	48		

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years																								
335	Mining & Construction	EARTH MOVERS	452FD91003	MAGNET ASSY M1	15	Nos	Magnet assembly used in motor grader final drive assembly, it helps in preventing the entry of debris and metal particles in bearings and seals and enhancing the life of assembly. Rated flow: 63 L/min, Filtration size: 149 micron, max flow rate: 75 L/min, max oil temp: 120°C, Min Oil Temp: -50°C		Magnet assembly used in motor grader final drive assembly, it helps in preventing the entry of debris and metal particles in bearings and seals and enhancing the life of assembly	15																								
336	Mining & Construction	EARTH MOVERS	452FD11015	SPRING M1	15	Nos	Spring is assisting the Magnet Strainer seat properly in the assembly. Coil Dia: 3.2mm, total no of winding: 5, Effective no of windings: 3 winding direction: clock wise, free height: 57mm, load: 13.8kg, height: 37mm		Spring is assisting the Magnet Strainer seat properly in the assembly	15																								
337	Mining & Construction	EARTH MOVERS	116BR91568	LINING	300	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.	300																								
338	Mining & Construction	EARTH MOVERS	125BR92085	LINING	330	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.	330																								
339	Mining & Construction	EARTH MOVERS	125BR92093	LINING	500	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.	500																								
340	Mining & Construction	EARTH MOVERS	130CS92769	SEAL RING	200	Nos	Seal Ring is mad between rotatir <table border="1" data-bbox="1025 963 1256 1059"> <thead> <tr> <th>PROPERTY</th> <th>UNIT</th> <th>MINIMUM VALUE</th> <th>MAXIMUM VALUE</th> </tr> </thead> <tbody> <tr> <td>TENSILE STRENGTH</td> <td>MPa</td> <td>100</td> <td>120</td> </tr> <tr> <td>YIELD STRENGTH</td> <td>MPa</td> <td>60</td> <td>70</td> </tr> <tr> <td>ELONGATION</td> <td>%</td> <td>10</td> <td>15</td> </tr> <tr> <td>IMPACT</td> <td>J</td> <td>10</td> <td>15</td> </tr> <tr> <td>COMPRESSION</td> <td>MPa</td> <td>100</td> <td>120</td> </tr> </tbody> </table>	PROPERTY	UNIT	MINIMUM VALUE	MAXIMUM VALUE	TENSILE STRENGTH	MPa	100	120	YIELD STRENGTH	MPa	60	70	ELONGATION	%	10	15	IMPACT	J	10	15	COMPRESSION	MPa	100	120		Seal Ring is made of Polytetrafluoroethylen (PTFE) and its used in bevel gear shaft of 420 hp Engine . Main function of the seal ring is provided sealing of steering oil between rotating shaft and fixed collar there by ensuring the proper functioning of steering system.	380
PROPERTY	UNIT	MINIMUM VALUE	MAXIMUM VALUE																															
TENSILE STRENGTH	MPa	100	120																															
YIELD STRENGTH	MPa	60	70																															
ELONGATION	%	10	15																															
IMPACT	J	10	15																															
COMPRESSION	MPa	100	120																															
341	Mining & Construction	EARTH MOVERS	130CT21199	SPACER	25000	Nos	This Spacer is an iron type sintered thrust rings applicable to Sealed type Track link (SALT type). This thrust rings should have an oil bearing quality. This part should be carburised and hardened and tempered to achieve the mechanical properties. 1. DESCRIPTION : SPACER 2. CHEMICAL COMPOSITION: (Weight %) C= 0.5-0.8, Cu= 1.0 - 2.0, Ni= 1.0 to 3.0, Mo=0.2 to 1.0, Fe=Remaining. 3. Mechanical properties :Density: 6.7 to 7.2 g/cm ³ , Hardness: 36 to 45 HRC, Tensile strength: 70 to 85 kg/mm ² , Transverse breaking: min 100 kg/mm ² , Impact strength: min 0.6 kg-m/cm ² , Squeezing test strength: min 105 kg/mm ² , Percentage of oil contain: min 5 in volume, Compressive strength : min 120 kg/mm ² , Warpage : max 0.2 mm, Surface roughness: max 10.		This Spacer is an iron type sintered thrust rings applicable to Sealed type Track link (SALT type). This thrust rings should have an oil bearing quality. This part should be carburised and hardened and tempered to achieve the mechanical properties.	25000																								
342	Mining & Construction	EARTH MOVERS	130BR93299	LINING	400	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.	400																								

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
343	Mining & Construction	EARTH MOVERS	451TM13757	WASHER	400	Nos	Thrust Washers used in carrier to with stand axial thrust and there by protecting the transmission assembly Thickness : 2 +/- 0.5mm, Material: PBP-1H, OD: 60mm,		Thrust Washers used in carrier to with stand axial thrust and there by protecting the transmission assembly	400
344	Mining & Construction	EARTH MOVERS	182EG80053	SPEED SENSOR	25	Nos	The speed sensor works on Magnetic pickup principle and generates frequency signal depending on engine flywheel teeth. 1. Principle : Magnetic pickup 2. Output voltage : 1.0 V p-p Min 3. Resistance : 600 Ω 4. Operating temperature : -50°C to +120°C 5. Vibration : 15G (5Hz - 200Hz) 6. Mounting details : M22X1.5 7. Shock : 100G (20ms Max)		The speed sensor works on Magnetic pickup principle and generates frequency signal depending on engine flywheel teeth.	25
345	Mining & Construction	EARTH MOVERS	113BR91484	LINING BRAKE	1000	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints. Material :BL-IV Thickness in mm : 9 Outer radius of lining surface : 194		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.	2736
346	Mining & Construction	EARTH MOVERS	113BR91492	LINING BRAKE	1200	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints. Material :BL-IV Thickness in mm : 9 Outer radius of lining surface : 194		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.	3756
347	Mining & Construction	EARTH MOVERS	113FD91526	SEAL RING	250	Nos	Specification: Molbdenum sulphide D3 material, Tensile Strength: 140~260Kg/Cm2, Specific Gravity: 4.12±0.06		Used in Dozers for Steering assembly function.	439
348	Mining & Construction	EARTH MOVERS	113HC02045	RIPPER HYD CYLINDER	3	Nos	Normal load When extended 33.2 tons at 165 kg/cm2 When retracted 23.9 tons at 165 kg/cm2 Test load When extended 48.9 tons at 248 kg/cm2 When retracted 38.9 tons at 248 kg/cm2 Cylinder size in mm (Bore O.D x thickness) = 180 x 10 Piston rod dia in mm = 75; Open cylinder length in mm = 1080; Closed cylinder length in mm = 730; Stroke in mm = 350;		Specification:-A Hydraulic cylinder is a mechanical actuator that is used to give a unidirectional force through a unidirectional stroke. The hydraulic cylinders get their power from the pressurized hydraulic fluid, which is typically oil. The cylinder consists of a barrel in which a piston connected to a piston rod moves back and forth.	3
349	Mining & Construction	EARTH MOVERS	118EG02041	DISPLAY KIT	25	Nos	1. Display size: 3.8" 2. Display Type: QVGA (320 X 240 Pixels) 3. Input pins: 4no. - Resistive analog, 3no. - 0-5V, 4-20mA analog or digital, 1no. - frequency. 4. Outputs : 2no. - 500mA. 5. Communications supported : CAN2.OB, J1939, Proprietary messaging and RS485 serial. 6. Operating temperature: -40°C to +85°C 7. Sealing : IP67 8. Vibration : 7.86g (5-2000Hz) 9. Shock : 50g in 3 axis		Display is CAN based 3.8 inch monochrome LCD display used for real time monitoring of equipment critical parameters. It is also provides Audio-Visual alarm to the operator in case of any abnormality in the parameters.	109








LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
350	Mining & Construction	EARTH MOVERS	125CT11091	SPACER	25	Nos	OD of the spacer= 59 mm ; ID of the spacer = 49.3 mm ;		Spacers are used in track link assemblies, these will serve as a guide for seal assy. These spacers are provided in between the bushing and track link.	83356
351	Mining & Construction	EARTH MOVERS	130CC91023	HANDLE-LOCK	25	Nos	Material:Handle: Glass reinforced nylon: Brass threaded inserts		Push button handles are designed for Operator cabin doors of off-highway equipment's Dozers, Excavators and Loaders application.	1984
352	Mining & Construction	EARTH MOVERS	130CC91031	LATCH LH (With Bell Crank Handle)	350	Nos	Material:Internal latch components: heat treated, smooth edge stamped steel Case halves: high strength steel Springs: non-corrosive stainless steel. Finish:Zinc plated, clear chromate steel components.		A latch is a type of door or window fastener.a spring-loaded door lock that can be opened by a key from outside Designed For Off-highway applications Door thicknesses of 47.6mm or greater Door weights of 23-91 kg Door seal pressures of 23-68 kg Applications where push button handle actuation is desired.	845
353	Mining & Construction	EARTH MOVERS	130CC91048	LATCH RH (With Bell Crank Handle)	250	Nos	Material:Internal latch components: heat treated, smooth edge stamped steel Case halves: high strength steel Springs: non-corrosive stainless steel. Finish:Zinc plated, clear chromate steel components.		Description: A latch is a type of door or window fastener.a spring-loaded door lock that can be opened by a key from outside Designed For Off-highway applications Door thicknesses of 47.6mm or greater Door weights of 23-91 kg Door seal pressures of 23-68 kg Applications where push button handle actuation is desired.	855
354	Mining & Construction	EARTH MOVERS	130CC91056	STRIKER BOLT	600	Nos	MATERIAL:Typical materials include AISI 4140 and AISI10B21 steel (or equivalent), heat treated FINISH:Zinc plated with clear chromate		Description: The striker is primarily responsible for precise and flush door closure and also for keeping the door securely closed. Subsequently, the striker, as the decisive counterpart for the latch, is a central element with enormous importance for flawless function of the entire closure system.	2065
355	Mining & Construction	EARTH MOVERS	155FD02005	FLOAT SEAL ASSY[KIT]	150	Nos	Specification:- O-Ring material : Nitrile rubber O-Ring shore hardness : 60±15 Seal Ring material : FC9Cr6Mo		The floating seal is used to seal protect components in Final drive assembly from mud and soil.	273
356	Mining & Construction	EARTH MOVERS	156EG02197	DISPLAY KIT	25	Nos	1. Display size: 3.8" 2. Display Type: QVGA (320 X 240 Pixels) 3. Input pins: 4no. - Resistive analog, 3no. - 0-5V, 4-20mA analog or digital, 1no. - frequency. 4. Outputs : 2no. - 500mA, 5. Communications supported : CAN2.0B, J1939, Proprietary messaging and RS485 serial. 6. Operating temperature: -40°C to +85°C 7. Sealing : IP67 8. Vibration : 7.86g (5-2000Hz) 9. Shock : 50g in 3 axis		Display is CAN based 3.8 inch monochrome LCD display used for real time monitoring of equipment critical parameters. It is also provides Audio-Visual alarm to the operator in case of any abnormality in the parameters.	130
357	Mining & Construction	EARTH MOVERS	182EG02203	ISOLATION SWITCH	150	Nos	1. No. Of poles : 02. 2. Operating Voltage: 6- 36V DC. 3. Current rating : 2000A intermittent 30sec ON- 3mins OFF and 300A continuous. 4. Mounting : Through hole for 3/4" Dia mounting stem. 5. Operating temperature : -40°C to +85°C		Isolation switch is used in battery main power circuit lines (Either in positive or in negative line) to isolate battery supply when equipment is not in use or to carryout welding work.	882
358	Mining & Construction	EARTH MOVERS	376AX02003	REAR AXLE ASSEMBLY	25	Nos	1) Total reduction -20.521 2)Max.load on axle -19000 kg		Drive Axle is one of the main aggregate in a drivel system. Its main function is to transmit torque and take the load.	51

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
359	Mining & Construction	EARTH MOVERS	376AX02011	FRONT AXLE ASSEMBLY	25	Nos	1) Total reduction -20.521 2)Max.load on axle -19000 kg		Drive Axle is one of the main aggregate in a drivel system. Its main function is to transmit torque and take the load.	56
360	Mining & Construction	EARTH MOVERS	376TC02005	TORQUE CONVERTER	25	Nos	Stall ratio : 3.21		Torque converter is a single stage and single phase torque converter	52
361	Mining & Construction	EARTH MOVERS	376TM03004	TRAMSMISSION PUMP ASSY.	25	Nos	1)Displacement - 32cc 2) operating pressure -30 bar		The transmission pump is used to pump the transmission oil required for engagement of clutch in transmission, working of torqueconverter and lubrication of transmission and torque converter	25
362	Mining & Construction	EARTH MOVERS	452TM71743	SEAL RING	30	Nos	Specification:- Material - PTFE-G2 Pressure : 40 bar Temperature : 120 deg max.		The Seal Ring is used to arrest oil leakage during piston actuation in Transmission assembly	59
363	Mining & Construction	EARTH MOVERS	757EG11026	SMART ALARM,BACKUP	250	Nos	1. Operating voltage : 12-32V DC 2. Current rating : < 1A 3. Output level : 87 - 112 db automatically 4. Operating temperature : -40°C to +85°C 5. Duty cycle : 1 Pulse per sec (50% ON - 50% OFF) 6. Frequency : 1250Hz 7. Protection : Surge and spike protected.		Smart alarm is used as safety device to give audio warning when equipment reverse gear is engaged. The alarm automatically changes its sound intensity depending on surrounding noise level.	817
364	Mining & Construction	EARTH MOVERS	817EG02245	HOT SWITCH	10	Nos	1. Operating Voltage: 6- 36V DC. 2. Switching type : SPDT snap action. 3. Terminals : Common , NO and NC 4. Temperature set value : 104°C/220°F 5. Current rating : 1A (Max) 6. Mounting : M16X1.5		HOT switch is a direct mount switch that closes when hydraulic oil reaches desired preset value. This is used to provide warning to the operator when hydraulic oil reaches high temperature.	39
365	Mining & Construction	EARTH MOVERS	862AC91007	COMPRESSOR	2	Nos	8 Cu.inch capacity, poly V groove pully,24V direct mount rotary compressor		Compressor is used when Air conditioned cabin is used. Cold low pressure refrigerent is changed to hot high pressure refrigerent.	2
366	Mining & Construction	EARTH MOVERS	862AC91015	COMPRESSOR FITTINGS	2	Nos	Includes compressor installation accessories such as service valves etc.			2
367	Mining & Construction	EARTH MOVERS	BSP0136136	RECOIL SPRING	150	Nos	Specifications : Part no. BSP01 36136 Sl. No. Parameter 1 Coil dia in mm 36 2 Mean coil dia in mm 136 3 Free length in mm 693.5 4 No of coils 13.5 5 No of active coils 11.5 6 Spring rate in kg/mm 54.40 7 Test load in kg 11250 8 Squareness (max) In deg at both ends 1 9 Flatness (max) in mm at both ends 0.5		The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.	578
368	Mining & Construction	EARTH MOVERS	113FD91089	BUSHING	125	Nos	Bush is a bimetal material & used in Dozer Final drive assy between stationary and rotating parts. Material:outer: Cold rolled steel, Inner: LBC-3(Lead bronze Casting), ID:Ø298, OD:Ø303, WIDTH;60mm			338





LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
369	Mining & Construction	EARTH MOVERS	130FD92441	BUSHING	80	Nos	Bush is a bimetal material & used in Dozer Final drive assy between stationary and rotating parts. Material:outer: Cold rolled steel, Inner: B5BLBC-3, ID:Ø150, OD:Ø160, WIDTH;114mm			482
370	Mining & Construction	EARTH MOVERS	452FD91871	SEAL RING	20	Nos	Seal is used in Differential lock area in Motor grader. Material: RIK439Cast iron for piston Ring), ID:Ø262, OD:Ø270, WIDTH;4mm,Hardness:85~100HB			20
371	Mining & Construction	EARTH MOVERS	155FD71107	SPACER	80	Nos	Spacer used in Excavator Swing machinery Assembly to with stand axial thrust.. Material: 93NP(Polymaid), ID:Ø112, OD:Ø142, WIDTH;5mm.			200
372	Mining & Construction	EARTH MOVERS	451TM12193	SPRING	65	Nos	Bellivelli Spring used as a return spring in Motor Grader transmission. Material: Spring Steel, ID:Ø121, OD:Ø209, WIDTH;2.5mm.			65
373	Mining & Construction	EARTH MOVERS	451TM12209	SPRING	70	Nos	Bellivelli Spring used as a return spring in Motor Grader transmission. Material: Spring Steel, ID:Ø121, OD:Ø198, WIDTH;2.0mm.			70
374	Mining & Construction	EARTH MOVERS	451TM12217	SPRING	400	Nos	Wavey Spring used as a return spring in Motor Grader transmission. Material: Spring Steel, ID:Ø282, Thickness;3.0mm.			400
375	Mining & Construction	EARTH MOVERS	451TM12209	SPRING	70	Nos	Bellivelli Spring used as a return spring in Motor Grader transmission. Material: Spring Steel, ID:Ø121, OD:Ø198, WIDTH;2.0mm.			70
376	Mining & Construction	EARTH MOVERS	113FD91997	BUSHING	130	Nos	Bush is a bimetal material & used in Dozer Final drive assy between stationary and rotating parts. Material:outer: Cold rolled steel, Inner: LBC-3(Lead bronze Casting), ID:Ø105, OD:Ø115, WIDTH;78mm			382
377	Mining & Construction	EARTH MOVERS	125CS21068	RING SEAL	500	Nos	Ring Seal used in Dozer Steeign clutch assy. material: PBC-2A(Phosphor bronze) ID:134.2,OD:145, Thickness:4.5mm			1111





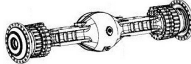



LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
378	Mining & Construction	EARTH MOVERS	985TM11147	SNAP RING	115	Nos	Double Coil Snap ring, Material: Spring Steel, OD:Ø219.7, WIDTH:10mm			143
379	Mining & Construction	EARTH MOVERS	175FDB0039	FLOATING SEAL ASSY	30	Nos	Float Seal Assembly comprises of Seal Ring and O-ring and used between stationary and rotating part			160
380	Mining & Construction	EARTH MOVERS	1755O61273	SEAL	1	Nos	Seal used in Swing circle / Slew ring to avoid leakage of Grease and entry of dust in to the assembly. Material: Neoprene rubber, Shore Hardness: 75 Hs			1
381	Mining & Construction	EARTH MOVERS	1755O61257	SEAL	1	Nos	Seal used in Swing circle / Slew ring to avoid leakage of Grease and entry of dust in to the assembly. Material: Neoprene rubber, Shore Hardness: 75 Hs			1
382	Mining & Construction	EARTH MOVERS	125FD02054	FLOATING SEAL ASSY.	5	Nos	Float Seal Assembly comprises of Seal Ring and O-ring and used between stationary and rotating part			757
383	Mining & Construction	EARTH MOVERS	113TC71258	SEAL RING	2	Nos	Seal ring used in Dozer Torque converter assembly. Material: PTFE, I.D: Ø130, width: 4.9, thickness: 4mm			2


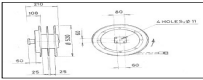
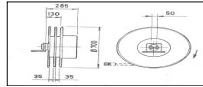





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384	Mining & Construction	EARTH MOVERS	452TM52798	COUPLING	20	Nos	Used for connecting Transmission output to Final drive assembly in Motor Grader. Spline details: 85x21x3.75, Material: Plain Carbon steel, Mechanics: 9C			20
385	Mining & Construction	EARTH MOVERS	175FD02016	FLOATING SEAL ASSY.	5	Nos	Float Seal Assembly comprises of Seal Ring and O-ring and used between stationary and rotating part			5
386	Mining & Construction	EARTH MOVERS	116CS93313	DISC	75	Nos	Disc used for Dozer Steering clutch assembly. Material: Sintered alloy friction material, No of teeth: 128, Pressure angle: 14.5 deg, PCD: Dia384			384
387	Mining & Construction	EARTH MOVERS	113FD31407	SEAL RING ASSY	2	Nos	Seal Ring used between rotating and stationary part and is a part of Float Seal Assembly used in Final drive assy to arrest oil leakage. Material: FC9CrMo ID: Ø298. OD:Ø328, WIDTH:20 mm			4
388	Mining & Construction	EARTH MOVERS	116CS91028	DISC	30	Nos	Disc used for Dozer Steering clutch assembly. Material: Sintered alloy friction material, No of teeth: 128, Pressure angle: 14.5 deg, PCD: Dia384			141
389	Mining & Construction	EARTH MOVERS	116AC02019	AC INSTALLATION KIT	25	Nos	Total Air conditioning kit with both Heating and Cooling modes. Kit consists roof mounted integrated evaporator and condenser, Engine driven compressor along with crimped hoses.		CAPACITIES: Cooling 25000 BTU, Heating: 45000 BTU.	50
390	Mining & Construction	EARTH MOVERS	116AC02027	COMPRESSOR UNIT	25	Nos	Total Air conditioning kit with both Heating and Cooling modes. Kit consists roof mounted integrated evaporator and condenser, Engine driven compressor along with crimped hoses.		Heater /Air conditioner Kit to p/no. 116ACB0017 consisting sl.no.1 to 3 is to be supplied	49
391	Mining & Construction	EARTH MOVERS	116AC02002	HEATER AC UNIT	25	Nos	Total Air conditioning kit with both Heating and Cooling modes. Kit consists roof mounted integrated evaporator and condenser, Engine driven compressor along with crimped hoses.			154

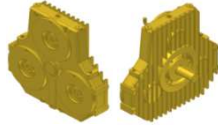
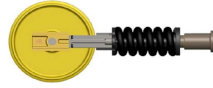






LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
392	Mining & Construction	EARTH MOVERS	116BR21072	LINING	60	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Material:BL-W1, Thickness in mm : 9.5, Outer radius of lining surface in mm : 227, Material of the lining shall correspond to Miyoshi Asbestors co ltd. Products special woven asbesto used in oil. Requirements: 1. The lining shall withstand the following operating conditions Max surface pressure= 20 kg/Sqcm, Mean surface pressure= 10 kg/ sqcm, Max peripheral speed= 22.2 m/sec, Mean peripheral speed = 13.4 m/sec, Min Bending strength = 4.5 kg/Sqmm	129
393	Mining & Construction	EARTH MOVERS	116CTB0075	TRACK SHOE PROFILE	1800(Mtrs)	Nos	This is single grouser type track shoe mainly used for general soil applications excluding rocky grounds. This track shoe provides the large traction force because of its shape and allows the machine to travel on general ground conditions.		Material: The material and dimensions should corresponds to BEML Std "B1201". Length of the track shoe in mm = 560.	1800
394	Mining & Construction	EARTH MOVERS	113CTB0056	TRACK SHOE PROFILE	3000(Mtrs)	Nos	This is single grouser type track shoe mainly used for general soil applications excluding rocky grounds. This track shoe provides the large traction force because of its shape and allows the machine to travel on general ground conditions.		Material: The material and dimensions should corresponds to BEML Std "B1201". Length of the track shoe in mm = 510.	3000
395	Mining & Construction	EARTH MOVERS	113TF93047	BUSHING	125	Nos	Bushing is a combination of metallic plate and Teflon-impregnated Bronze lining. This is mainly used in Tack frame assembly of Bull dozers.		Material: 1. Back Plate : Gr. "O" IS:513 and 2. Lining: B5B PTFE (Teflon-impregnated Bronze)	256
396	Mining & Construction	EARTH MOVERS	761AX02252	FRONT AXLE ASSY	3	Nos	Drive Axle is one of the main aggregate in a drivsl system. Its main function is to transmit torque and take the load.Drive axle requirement is for Wheel loader and Wheel dozer application		Mounting type: Rigid Flange to Flange : 2600 mm Input flange : 9C Service brake : 2xMultiple disc brake. Total axle ration: 27 Rotation direction: CW	5
397	Mining & Construction	EARTH MOVERS	355AX02116	FRONT AXLE ASSY	15	Nos	Drive Axle is one of the main aggregate in a drivsl system. Its main function is to transmit torque and take the load.Drive axle requirement is for Wheel dozer and Tyre handler application		Munting type: Rigid Flange to Flange : 2083 mm Rim bolt circle : 425 mm Input flange : 7C Total axle ration: 23.334 Wheel tread : 2044 mm Rotation direction: CW Service brake : 2xMultiple disc brake.	15
398	Mining & Construction	EARTH MOVERS	355AX02124	REAR AXLE ASSY	15	Nos	Drive Axle is one of the main aggregate in a drivsl system. Its main function is to transmit torque and take the load. Drive axle requirement is for Wheel dozer and Tyre handler application		Mounting type: Center Trunion Flange to Flange : 2083 mm Rim bolt circle : 425 mm Input flange : 7C Total axle ration: 23.334 Wheel tread : 2044 mm Rotation direction: CCW Service brake : Wet Multiple disc brake (both ends)	15
399	Mining & Construction	EARTH MOVERS	761AX02269	REAR AXLE ASSY	3	Nos	Drive Axle is one of the main aggregate in a drivsl system. Its main function is to transmit torque and take the load. Drive axle requirement is for Wheel loader and Wheel dozer application		Mounting type:Center Trunion Flange to Flange : 2600 mm Input flange : 9C Total axle ration: 27 Rotation direction: CCW Service brake : Wet Multiple disc brake (both ends)	5



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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
400	Mining & Construction	EARTH MOVERS	355TM91092	TRANSMISSION ASSY	15	Nos	The transmission is composed of a hydraulic torque converter and a rear mounted multi-speed powershift transmission with integrated transfer case. The torque converter is a wear free starting device which is infinitely variable adapting itself to the required situation. Drive axle requirement is for Wheel dozer and Tyre handler application		Type: Power shift Speeds : 4 Forward 3 Reverse Center distance between output an input shaft : 540 mm	15
401	Mining & Construction	EARTH MOVERS	456HS03017	HOSE REEL 3/4 INCH	1	Nos	Hose reels are fitted on the Crane to transfer hydraulic oil to the hook hydraulic motor.		Type: Spring operated 2-port Hose reel (without hose) Maximum flow : 85 Ltrs/min Max. Pressure : 300 bar Port size : 3/4" BSP	1
402	Mining & Construction	EARTH MOVERS	456HS03025	HOSE REEL 1 INCH	1	Nos	Hose reels are fitted on the Crane to transfer hydraulic oil to the hook hydraulic motor.		Type: Spring operated 2-port Hose reel (without hose) Maximum flow : 135 Ltrs/min Max. Pressure : 300 bar Port size : 1" BSP	1
403	Mining & Construction	EARTH MOVERS	799HS02934	SWING DRIVE	8	Nos	Motor displacement : 44.1 cc/rev, Gear Box ratio 1: 18.01, hydraulic motor speed 1587 rpm max., gear box out put speed 87 rpm max., gear box out put torque 2359 Nm max. Pinion data m8, z10, PA20deg, x0.5, d80, da101.4, b67		Hydraulic motor driven gear box for the swing operation of the 7.5 ton hydraulic excavator. Its is having in built hydraulically released parking brake.	20
404	Mining & Construction	EARTH MOVERS	799HS02926	TRAVEL DRIVE	12	Nos	Motor displacement : 44.1 cc/rev and 23.5 cc/rev, Gear Box ratio 1: 53.0, Max pressure 250 bar, max flow 72 lpm, hydraulic motor speed 2840/1568 rpm max., gear box out put speed 55.5/29.8 rpm max., gear box out put torque 4432/8307 Nm max.		Hydraulic motor driven gear box for the travel operation of the 7.5 ton hydraulic excavator. Its is having in built hydraulically released parking brake and two speed.	42
405	Mining & Construction	EARTH MOVERS	183PH90012	BUTTERFLY VALVE	4	Nos	Port size is 4" or 101.6 mm		Butterfly valves are mounted on the suction line before the pump inlet. As an additional safety feature the valves can be locked in off / on position and an electrical interlock is provided with in built limit switch for hydraulic aggregates safety	24
406	Mining & Construction	EARTH MOVERS	183PH90029	COMPENSATOR	4	Nos	four bolt mounting with port size of 4". Push pull +/- 10mm, Offset +/- 10mm and Angular +/- 10 degree.		Compensators are made up of nitrile rubber and are designed to absorb vibrations as well as axial, radial angular misalignment.	21
407	Mining & Construction	EARTH MOVERS	790SO02019	SLEWING RING	12	Nos	OD 800 mm, thickness 55, Single ball bearing, Internal gear m8, Pressure angle 20 deg, no of teeth 76, PCD 608.		Slewing ring or swing circle is big size bearing used on hydraulic excavator for 360 deg free swing function.	15










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408	Mining & Construction	EARTH MOVERS	183PO90015	PTO ASSY.	2	Nos	Power rating 900KW, input speed 1500, out put speed 2000 rpm, Input by shaft dia 80 with keyway.		Power Take OFF is a Gear Box to transfer power from Electric motor to 3 hydraulic pumps	12
409	Mining & Construction	EARTH MOVERS	790TF02029	IDLER ASSY	4	Nos	Roller dia 380 mm, Maximum length 744 mm, Minimum length 664 mm.		Used in the installation of track parts in the hydraulic excavator	88
410	Mining & Construction	EARTH MOVERS	790TF31684	SPROCKET RIM	10	Nos	No of teeth 21, width of teeth 46mm, OD of sprocket 495mm dia, ID 380mm dia, Flange thickness 12mm, No holes on the flange (Picture shows the holes its only representation).		Used in the installation of track parts in the hydraulic excavator, part of the final drive.	40
411	Mining & Construction	EARTH MOVERS	184AC90035	ROOF TOP CONDENSOR	1	Nos	capacity : 38,800 BTU/hr, Dual fan, low profile for cabs with minimal roof space, two fan of size 11 inch diameter producing 970 CFM, current draw 15 amps@13.6 VDC		ROOF TOP CONDENSOR is a part of air conditioning system used on hydraulic excavators cabins.	11
412	Mining & Construction	EARTH MOVERS	157CT80014	TRACK SHOE PROFILE	1000(Mts)	MTRS	Triple grouser type Material: The material and dimensions should corresponds to BEML Std "B1201"; Hot rolled low alloy steel for track shoes Length of the track shoe is 610mm±3		This is triple grouser type track shoe mainly used for general soil applications excluding rocky grounds. This track shoe provides the large traction force because of its shape and allows the machine to travel on general ground conditions.	1000
413	Mining & Construction	EARTH MOVERS		SPACER	2	Nos	Material: PBP-1H, ID: 135, OD:160 and Thickness:5mm Chemical composition and Mechanical properties as per JIS:H3110		Spacer is used in Swing Machinery Assembly to with stand impact loads	2
414	Mining & Construction	EARTH MOVERS	2052571152	SEAL	5	Nos	Material: Neoprene rubber Shore Hardness: 72 ±5 Hs Tensile Strength:100kg/cm2		Seal used in Swing circle / Slew ring to avoid leakage of Grease and entry of dust in to the assembly.	25
415	Mining & Construction	EARTH MOVERS	1755021631	SPACER	25	Nos	Material:Gr.PCuSn6, IS1385, ID: 57, OD:84 and Thicknes:5mm		Spacer is used in Swing Machinery Assembly to with stand impact loads	110




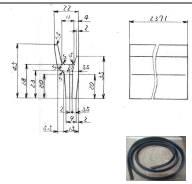

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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
416	Mining & Construction	EARTH MOVERS	601TW02003	HYDRAULIC WINCH (BOOM)	7	Nos	<ol style="list-style-type: none"> Bare drum first layer line pull (kg) : 19960 Rope diameter (mm) : 26 No. of speed ratio in both directions : 02(Two) Max. Speed (m/min) : 36.3 Min speed (m/min) : 17.0 Controlled free fall : Not required Drum diameter(mm) : 305 Hydraulic system pressure of the equipment(kg/sq.cm) : 140 Hydraulic system flow of the equipment : (litres/min) : 400 Cable capacity on the drum(m) : 95 As a safety device, the winch should have an automatic braking system i.e., As soon as pressure in the hydraulic system drops below certain limit, the brake should engage automatically. Application : 100 Ton pipe layer 		Two speed hoist hydraulic Winch. The winch is compact with totally sealed gearing and automatic disc brake. The motor is externally mounted.	7
417	Mining & Construction	EARTH MOVERS	601TW02011	HYDRAULIC WINCH (HOOK)	7	Nos	<ol style="list-style-type: none"> Bare drum first layer line pull (kg) : 19960 Rope diameter (mm) : 26 No. of speed ratio in both directions : 02(Two) Max. Speed (m/min) : 36.3 Min speed (m/min) : 17.0 Controlled free fall : Provided Drum diameter(mm) : 305 Hydraulic system pressure of the equipment(kg/sq.cm) : 140 Hydraulic system flow of the equipment : (litres/min) : 400 Cable capacity on the drum(m) : 95 As a safety device, the winch should have an automatic braking system i.e., As soon as pressure in the hydraulic system drops below certain limit, the brake should engage automatically. Application : 100 Ton pipe layer 		Two speed hoist hydraulic Winch with controlled free fall. The winch is compact with totally sealed gearing and automatic disc brake. The motor is externally mounted.	7
418	Mining & Construction	EARTH MOVERS	CSR0101004	SEAL RING	25	Nos	<p>SEAL Ring, Material : Special cast iron piston ring, OD=100mm, Thickness T=4mm Anticorrosion:PM PV Value, kg/cm2s :2.5 Max pressure, kg/cm2 : 15 Max peripheral speed, m/s: 20 Max oil temperature, -C: 120 Oil used: H10 & T30</p>		SEAL Ring for torque flow transmission	25
419	Mining & Construction	EARTH MOVERS	CSR0102005	SEAL RING	40	Nos	<p>SEAL Ring, Material : Special cast iron piston ring, OD=200mm, Thickness T=5mm Anticorrosion: PM Max pressure, kg/cm2 : 15 Max peripheral speed, m/s: 20 Max oil temperature, -C: 120 Oil used: H10, T30</p>		SEAL Ring for torque flow transmission	40
420	Mining & Construction	EARTH MOVERS	CSR0102455	SEAL RING	65	Nos	<p>SEAL Ring, Material: Special cast iron piston ring, OD=245mm, Thickness T=5mm Anticorrosion:PM Max pressure, kg/cm2 : 15 Max peripheral speed, m/s: 20 Max oil temperature, -C: 120 Oil used: T30,H10,</p>		SEAL Ring for torque flow transmission	65
421	Mining & Construction	EARTH MOVERS	CSR012205	SEAL RING	75	Nos	<p>SEAL Ring, Material:Phosphorous brnze casting or equivalent of PBC-2A for piston ring, OD=220mm, Thickness T=5mm Max pressure, kg/cm2 : 15 Max peripheral speed, m/s: 20 Max oil temperature, -C: 120 Oil used: H10 & T30</p>		SEAL Ring for torque flow transmission	75


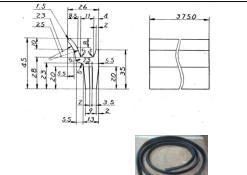

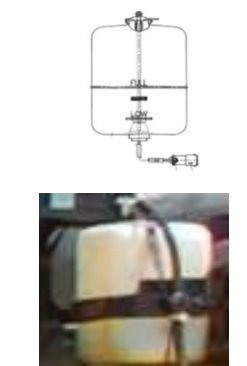
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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
422	Mining & Construction	EARTH MOVERS	CSR0120452	SEAL RING	125	Nos	SEAL Ring, Material:HSBc3 for piston ring, OD=045mm, Thickness T=1.90 mm Material:HSBc3 Max pressure, kg/cm2 : 20 Max peripheral speed, m/s : 20 Max oil temperature, -C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission	125
423	Mining & Construction	EARTH MOVERS	CSR0120603	SEAL RING	110	Nos	SEAL Ring, Material:HSBc3 for piston ring, OD=060mm, Thickness T=2.5 mm PV Value, kg/cm2s :120 Max pressure, kg/cm2 : 20 Max peripheral speed, m/s : 20 Max oil temperature, -C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission, special cast iron piston ring	110
424	Mining & Construction	EARTH MOVERS	CSR0100954	SEAL RING	20	Nos	SEAL Ring, Material: special cast iron piston ring, OD=095mm, Thickness T=3.8 mm Anticorrosion:PM Max pressure, kg/cm2 : 15 Max peripheral speed, m/s : 20 Max oil temperature, -C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission, special cast iron piston ring	20
425	Mining & Construction	EARTH MOVERS	CSR0101104	SEAL RING	25	Nos	SEAL Ring, Material:special cast iron piston ring, OD=110mm, Thickness T=4.3 mm Anticorrosion:PM PV Value, kg/cm2s :2.5 Max pressure, kg/cm2 : 15 Max peripheral speed, m/s : 20 Max oil temperature, -C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission	25
426	Mining & Construction	EARTH MOVERS	CSR012005	SEAL RING	40	Nos	SEAL Ring, Material:special cast iron piston ring, OD=200mm, Thickness T=5 mm PV Value, kg/cm2s : 50 Max pressure, kg/cm2 : 15 Max peripheral speed, m/s : 20 Max oil temperature, -C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission	40
427	Mining & Construction	EARTH MOVERS	CSR0111004	SEAL RING	25	Nos	SEAL Ring, Material:special cast iron piston ring, OD=100mm, Thickness T=4 mm PV Value, kg/cm2s : 50 Max pressure, kg/cm2 : 15 Max peripheral speed, m/s : 20 Max oil temperature, -C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission	25
428	Mining & Construction	EARTH MOVERS	125FD02038	FLOATING SEAL KIT	300	Nos	Contact division for technical clarifications		Float Seal Assembly comprises of Seal Ring and O-ring and used between stationary and rotating part	1736
429	Mining & Construction	EARTH MOVERS	CFL0910050	SNAP RING	65	Nos	OD=53.6 mm, width 4mm, Thickness T=2.3 mm Snap ring, Material : SWRHS Rust preventive treatment: C6001-10 Heat treatment: Quench & Tempered Hardness: 42 - 50 HRC.		Snap ring for hole is also called as retainer ring used to lock the components in the bore or hole of the block assys.	65
430	Mining & Construction	EARTH MOVERS	CSB0203525	BUSHING	80	Nos	BUSHING (BIMETAL) Back Metal: C1006-03 & Inside TEFLON impregnated Bronze. Dimensions: OD is 39+0.075 to 0.115; Length L is 25-0.3 & thickness 2.0 - 0.04mm		Bushing for torque flow transmission	80


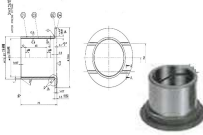







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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
431	Mining & Construction	EARTH MOVERS	CSB0101235	BUSHING	25	Nos	BUSHING (BIMETAL) Back Metal: C1006-03 & Inside TEFLON Impregnated Bronze. Dimensions: OD is 125+0.120 to 0.185; Length L is 35-0.3 & thickness 2.5 - 0.10 to -0.03mm		Bushing for excavaotr Idler assembly	25
432	Mining & Construction	EARTH MOVERS	CSB0104530	BUSHING	70	Nos	BUSHING (BIMETAL) Back Metal: C1006-03& Inside TEFLON Impregnated Bronze. Dimensions: OD is 50+0.075 to 0.115; Length L is 30-0.3 & thickness 2.5 - 0.05mm		Bushing for torque flow transmission	70
433	Mining & Construction	EARTH MOVERS	CVW0140004	VALVE	25	Nos	HYDRAULIC AGGREGATES Body Material: C3604 BE Plug Material: C3604 BE Material: PBW2-H Tube Material: C2600T-0		Valve used for draining Coolant from Radiator	25
434	Mining & Construction	EARTH MOVERS	160TF62015	SEAL (Drum ring seal)	10	Nos	Working temperature range: (-30°C ~ +80°C) Material shall be: F406-1		The seal is used for peventing grease leakage between under carriage swing circle bearing and revolving frame during 360°swing on the level and slope angle not more than 35°.	10
435	Mining & Construction	EARTH MOVERS	171CO02161	LEVER	45	Nos	Performance: 1) Output lever stroke and the amount of play(Rattling) : Stroke = ±40 mm(Range from 0 to 40 is adjustable by means of the adjust bolt). 2.Input lever operating effort(at the input lever tip) : Low idle position 5.0±0.5 kg + (Load on the Output side x 70/280) Position other than low-idle position : 1.5 ± 0.5 kg +(Load on the output side X 70/280) 3. Clutch capacity(in the output lever pin hole) : Normal loading (Rated) 20 kg min Momentary loading (Peak) 30 kg min 4.Vibration resistance : 7 G min 5. Applicable temp.range : -30 ° ~ + 80 °C 6. Input lever limit operating effort : No abnormalities at the input lever, clutch etc. 7. Input lever mounting angle : Variable every 10° by changing the serration meshing		This lever is used for acceleration and deceleration of engine	45

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436	Mining & Construction	EARTH MOVERS	155TFB0042	FLOATING SEAL ASSY	10	Nos	<p>MATERIAL SHALL SATISFY FOLLOWING PHYSICAL PROPERTIES:</p> <p>Ambient temp test</p> <ol style="list-style-type: none"> 1. Hardness IRHD : 70±5 (Test method ASTM D676) 2. Tensile strength kg/sq.cm(min) : 100 (Test method ASTM D1414) 3. Elongation % (min) : 150 (Test method ASTM D1414) <p>Air heat aging test</p> <ol style="list-style-type: none"> 1. Change of hardness JIS HS (max) : ±15 (Test method ASTM D573/D865) 2. Change of T.S % (Max) : -10 (Test method ASTM D573/D865) 3. Change of Elongation % (max) : -60 (Test method ASTM D573/D865) <p>Compression permanent strain %(max) : 30 (Test method ASTM D395)</p> <p>OIL PROOF TEST (Test oil JIS no. 1)</p> <ol style="list-style-type: none"> 1. change of hardness Jis Hs : 0 ~ +10 (Test method ASTM D471) 2. change OF T.S % MAX : - 15 (Test method ASTM D471) 3. change of ELONG % MAX : - 40 (Test method ASTM D471) 4. CHANGE OF VOLUME % : -10 ~0 (Test method ASTM D471) <p>OIL PROOF TEST (Test oil JIS no. 3)</p> <ol style="list-style-type: none"> 1. change of hardness Jis Hs : -20 ~ 0 (Test method ASTM D471) 2. change OF T.S % MAX : - 45 (Test method ASTM D471) 3. change of ELONG % MAX : - 45 (Test method ASTM D471) 4. CHANGE OF VOLUME % : 0 ~ +45 (Test method ASTM D471) 		This float seal assembly is used in track roller	10
437	Mining & Construction	EARTH MOVERS	175TF92217	SEAL	10	Nos	<p>Working temperature range: (-40°C ~ +80°C) and Material shall be: F406-1</p>		The seal is used for preventing grease leakage between under carriage swing circle bearing and revolving frame during 360° swing on the level and slope angle not more than 35°.	40
438	Mining & Construction	EARTH MOVERS	171PH92077	SWING DRAIN FILTER	1	Nos	<p>SPCIFICATIONS :</p> <ol style="list-style-type: none"> 1) Rated flow : 120 l/min. 2) Pressure loss : 0.5 Kg/cm² max. (EO10-CD oil, with 120 l/min. flow at 80°C) 3) Pressure difference strength : 7 Kg/cm² max. 4) Filter rating : 10 µ. 5) Filter area : 5000 cm² max. 6) Test pressure : 16 Kg/cm² max. 7) Vibration test conditions : 10 times max. with same test sample for X and Y axis. oil at 80° c pressure 10 Kg/cm², acceleration 9g ; frequency 50 Hz. 8) Working temperature range : -30° to 120°C 9) Effectiveness of the filter : after throwing -in 50g. pressure loss shall be 1.5 Kg/cm² or less and efficiency 90 % over (filtering degree 0.03 vol % or less) 		The Filter is used for between Swing Motor to Hydraulic Tank	32
439	Mining & Construction	EARTH MOVERS	155EC02074	TANK	1	Nos	<p>Material for tank: Poly propylene.</p> <p>Specification:</p> <ol style="list-style-type: none"> 1. Water capacity (total capacity): 3.4 lts ± 1 lts 2. Empty tank weight: 355g. 3. Level switch operating position: the level switch is turned off when remaining q'ty gets to 0.43 lts ± 0.1 lts (the switch is "on" in the normal condition). 4. Current flowing in the level switch shall be limited to 0.5a max. (including rush current). 5. Pressure check: no leakage shall be detected with air pressure of 0.5kg/cm (with cap removed). 6. Heat resistance: no cracks or leakage shall be detected after left to stand for 200h at 100°C. 7. Falling ball test: when dropping a 200g steel ball from a height of 500mm. Naturally on the tank, it should not have cracks or leakage. (in -30°C atmosphere). 8. The following tolerances apply to dimensions for which no tolerances are specified. <ol style="list-style-type: none"> A) max. 50mm- tolerance ±1 b) over 50 to 200mm max. tolerance ±2 c) 200 min.-tolerance ±3 d) angle: 3' 09. Vibration resistance: no faults are detected after applying a 3g vibration 10 times min. Vertically. 10. Level switch durability: no faults are detected after operating 5000 cycles with on for 1 sec. And off for 1 sec. 11. There shall be no interference inside between level switch float and pipes. 		This tank is used for deration	1



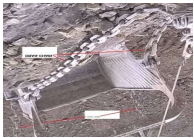







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440	Mining & Construction	EARTH MOVERS	175TFB0012	FLOATING SEAL ASSY.	140	Nos	Specification: O-Ring material : Nitrile rubber O-Ring hardness : 60±5Hs, Tensile strength: 100 Kg/cm ² O-Ring Elongation : 30 % Seal Ring material : FC9Cr6Mo		The floating seal is used to seal protect components in idler assembly from mud and soil.	140
441	Mining & Construction	EARTH MOVERS	155TF92709	BUSHING	225	Nos	1).No black skin, pin holes & cracks allowed on sliding parts. 2).Sinter O3 & O4 no separations allowed. 3).Tensile breaking load on friction welded parts shall be 7 ton or more. 4). Completely remove burrs after oil grooving. 5).KES General tolerance may not apply to the cylindrical of the inside diametrical part of the bushing after press fitting.		This part is used idler shaft assembly area	704
442	Mining & Construction	EARTH MOVERS	175PH02831	RELIEF VALVE ASSY.	1	Nos	Performance : Set pressure(cracking pressure) : 340 ±5 ⁰ Kg/cm ² at 5 l/min. Total flow pressure : 380 Kg/cm ² max. At 60 l/min. Receipt pressure : 310 Kg/cm ² min. At 5 l/min.		This Relief valve assy. is used for boom & arm line	1
443	Mining & Construction	EARTH MOVERS	817ACB0055	AC(SPLIT TYPE)	1	Nos	SPECIFICATIONS: COMPRESSOR: VOLTAGE : DC 24V CLUTCH : 125 mm CONDENSER : HEAVY DUTY REMOTE MOUNT CAPACITY 44,500 BTU/hr WEIGHT : 33.6 Kg CONDENSOR COIL : COPPER TUBING, ALUMINIUM FINS AND PLATED STEEL HEADERS. HEATER A/C UNIT : COOLING CAPACITY 26,000 BTU/hr (7.6 Kw) HEATING CAPACITY 17,800 BTU/hr (5.2 Kw) AIR FLOW 540 cu.m/hr (320 cfm)		Proprietary item and complete drawing details not available ; Based on the technical scope , general specifications , performance requirements and overall size of the aggregates , these are to be developed by interested Vendors.	2
444	Mining & Construction	EARTH MOVERS	985TC91002	DISC	500	Nos	a) Material: Core Plate- C1101 OR C45 , Friction Facing-Toshiba1020 b) Heat Treatment: Induction hardening at Tooth Portion c) Dimension: OD-400mm, ID-309 mm Thickness of Plate- 3.8mm, Thickness of Facing material-0.8mmx2, Disc thickness-5.4 mm		Disc with Internal Gear Toothing for clutch operations in Planetary Transmission	5050
445	Mining & Construction	EARTH MOVERS	376TM91263	Oil Seal	7	Nos	FB 60x85x12		Oil Seal	34
446	Mining & Construction	EARTH MOVERS	376BR11126	Pressure Reducing Valve	2	Nos	Working pressure : 35 bar Max. Flow : 30 lpm		The pressure reducing valve is used to allow the required pressure in the line, by bypassing the excess pressure	34
447	Mining & Construction	EARTH MOVERS	376AX91267	Oil Seal	20	Nos	FB 150x180x15-D		Oil Seal	174
448	Mining & Construction	EARTH MOVERS	376AX91623	Brake	12	Nos	Working pressure : 100 bar		The brake systems is of air over hydraulic type. The brakes are pressed against the disc which is mounted on axle with the help of pressurised brake fluid.	182












LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
449	Mining & Construction	EARTH MOVERS	376AX91631	Brake Lining	350	Nos	Consists of Friction pad and Backup plate		Brake Lining	1202
450	Mining & Construction	EARTH MOVERS	762TF11527	BOLT	100	Nos	M14x1.5, 50L, 12.4 grade bolt for mounting track chain pads of BL10C / BL11C equipment.		BOLT	200
451	Mining & Construction	EARTH MOVERS	376BR02005	Air booster pump	60	Nos	Pressure of air : 8 bar conversion ratio : 1:18		The Air booster pump is used increase pressure of brake fluid to required level with aid of compressed air	203
452	Mining & Construction	EARTH MOVERS	376AX91372	O-Ring 320*3.1	8	Nos	320x3.1		O-Ring	110
453	Mining & Construction	EARTH MOVERS	376AX91275	Bearing	2	Nos	SIZE CODE :32024		Bearing	54
454	Mining & Construction	EARTH MOVERS	376BR11118	Air Brake Valve	5	Nos	Pressure of air : 8 bar working temp. : -30 deg C to 80 deg C		The Air brake valve is a directional valve used to direct the compressed air to air booster	7
455	Mining & Construction	EARTH MOVERS	376TM91214	Oil Seal	1	Nos	FB65x90x12		Oil Seal	30
456	Mining & Construction	EARTH MOVERS	376AX91226	Oil Seal	2	Nos	FB65x90x10F		Oil seal	7
457	Mining & Construction	EARTH MOVERS	862AX02044	Front Axle	2	Nos	1) Total reduction -24.08 2)Max.load on axle -20000 kg		Drive Axle is one of the main aggregate in drive system. Its main function is to transmit torque and to take the load.	5
458	Mining & Construction	EARTH MOVERS	862AX02052	Rear Axle	2	Nos	1) Total reduction -24.08 2)Max.load on axle -20000 kg		Drive Axle is one of the main aggregate in drive system. Its main function is to transmit torque and to take the load.	5


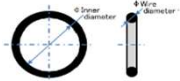


LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
459	Mining & Construction	EARTH MOVERS	862TM02008	Transmission	2	Nos	4F / 3R direct mount, automatic powershift transmission with integral torque converter		Composed of a hydrodynamic torque converter and a rear-mounted multi-speed powershift transmission with integrated transfer case. It can be shifted manually or fully-automatically by means of the Electronic unit. An engine-dependent, coaxial power take-off is planned to drive hydraulic pump.	5
460	Mining & Construction	EARTH MOVERS	652TF03003	TRACK CHAIN ASSY.(TRIPLE GROUSER)	1	Nos	Triple Grouser track chain assy. With 34 links, 3 Master pin arrangement. Used for underground mining application.		Track Chain assy. With triple grouser pads. Width - 330mm, Overall length - 5289.55mm	2
461	Mining & Construction	EARTH MOVERS	201ZZ14277	CHAIN,DRAG	1	Nos	Drag chain consisting of two end links and 25 connecting links Length shall be 9.4m.please refer drawing for requirement		a)Drag chains are manufactured in high strength cast steel b)Tensile strength requirement is 896MPa c)Yield strength requirement is 758MPa	16
462	Mining & Construction	EARTH MOVERS	201ZZ13899	CHAIN,HOIST	25	Nos	Hoist chain consisting of two end(stud) links and 9 connecting links, Length shall be 2.8m.please refer drawing for requirement		a)Hoist chains are manufactured in high strength cast steel b)Tensile strength requirement is 896MPa c)Yield strength requirement is 758MPa d)End links are fitted with high manganese bush	25
463	Mining & Construction	EARTH MOVERS	197TF12941	PROPEL BRAKE WITHOUT HUB	1	Nos	a) Brake Slip Torque (New) = 5016 Nm. b) Brake Slip Torque (Worn) = 4474 Nm. c)Air Pressure for full release = 03 Bar d) Maximum speed = 2500 RPM. e) Maximum Air pressure = 08 Bar		a) Spring set Air released disc brakes mounted on the non drive end of electrical motor shaft b) In the event of power failure or loss of air pressure,brakes will automatically set to stop the machinery motion. c) The brakes cannot be released for operation until the Air pressure reaches the operating pressure.	1
464	Mining & Construction	EARTH MOVERS	CSR0111205	SEAL RING	500	Nos	SEAL Ring, Material:Phosphorous bronze casting or equivalent of PBC-2A for piston ring. OD=120mm, Thickness T=4.6mm Max pressure, kg/Cm2 :15 Max peripheral speed, m/s : 20 Max oil temperature, °C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission	500
465	Mining & Construction	EARTH MOVERS	156HR91527	Chisel point	50	Nos				111
466	Mining & Construction	EARTH MOVERS	156HR90977	O ring	13	Nos				24
467	Mining & Construction	EARTH MOVERS	156HR90944	Set step seal	13	Nos				24
468	Mining & Construction	EARTH MOVERS	156HR90985	Back up ring	42	Nos				42

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
469	Mining & Construction	EARTH MOVERS	156HR91284	Chisel pin	20	Nos	Refer drawing Rock breaker kit to part no: 156HRB0108 OPERATING WEIGHT : 1600 ~ 1700kg BODY TYPE : BOX/OPEN IMPACT RATE : 350 ~ 700 bpm OPERATING PRESSURE : 150 ~ 180 bar OIL FLOW : 130 ~ 150 lpm RELIEF PRESSURE : 190 ~ 230 bar TOOL DIAMETER (Chisel & Moll) : 130mm (min) / Suitable for 22ton class rock breaker HOSE DIAMETER : 25mm (min) / Suitable for 22ton class rock breaker CARRIER WEIGHT : 22ton MODE OF OPERATION : Hydraulic with gas assisted INSTALLATION KIT : Piping kit, Hose kit, Adaptor kit, and Fasteners kit Note: sl. 01 ~ 13 are the parts / internal components of rock breaker assembly and it is proprietary in nature. So design, specification, drawing details are not available.		Parts of Rock breaker assembly of 22 ton class excavator. Rock breaker, used in a mining and construction equipment for the demolition of structure and breaking rocks into smaller sizes. It is an attachment to the excavator and works on the principle of hydraulics. The rock breaker hammer applies high pressure from its small canister which has pressurized hydraulic oil stored in it. They are much more powerful than other hand-held hammers and its force is varied based on the force of piston strokes and its size. The rock breaker hammer is operated by using the excavator main pump hydraulic oil from the optional spool on the control valve	20
470	Mining & Construction	EARTH MOVERS	156HR90969	Gas seal	12	Nos				33
471	Mining & Construction	EARTH MOVERS	156HR90911	U-packing	12	Nos				33
472	Mining & Construction	EARTH MOVERS	156HR90903	buffer seal	12	Nos				33
473	Mining & Construction	EARTH MOVERS	156HR91292	Stop pin	30	Nos				77
474	Mining & Construction	EARTH MOVERS	156HR91316	FRONT HEAD PIN	20	Nos				49
475	Mining & Construction	EARTH MOVERS	156HR92142	STOP PIN	2	Nos				6
476	Mining & Construction	EARTH MOVERS	156HR92134	MOUNTING PIN	2	Nos				6
477	Mining & Construction	EARTH MOVERS	156HR91632	Hex bolt M16X2 Length 140mm	6	Nos				18
478	Mining & Construction	HYDRAULIC & POWERLINE	CFN4412222	Nyloc Nut M22 x 2.5p	92	Nos		Nyloc Nuts are used in the Hydraulic Cylinder Assemblies to Lock the Piston in the Piston Rod and to Hold in Position. Nylock Nut shall not get loosened during continuous operation of extension and retraction of Cylinder. Material: a) Nut Material- SAE1045/C45;Hardness:24~28 Rc (Q&T); b) Gasket: Nylon 6 / Nylon 66 ; c) Nyloc nuts should retain their locking ability up to 250 °F (121°C), Chemical and physical properties of Nylon material are enclosed for reference.		
479	Mining & Construction	HYDRAULIC & POWERLINE	CFN4412426	Nyloc Nut M24 x 3p	78	Nos	100			
480	Mining & Construction	HYDRAULIC & POWERLINE	CFN4413033	Nyloc Nut M30 x 3p	34	Nos	600			
481	Mining & Construction	HYDRAULIC & POWERLINE	CFN4413638	Nyloc Nut M36 x 3p	208	Nos	272			
482	Mining & Construction	HYDRAULIC & POWERLINE	CFN4413941	Nyloc Nut M39 x 3p	174	Nos	174			
483	Mining & Construction	HYDRAULIC & POWERLINE	CFN4414547	Nyloc Nut M45 x 3p	174	Nos	330			
484	Mining & Construction	HYDRAULIC & POWERLINE	CFN4415252	Nyloc Nut M52 x 3p	334	Nos	334			
485	Mining & Construction	HYDRAULIC & POWERLINE	CFN4416870	Nyloc Nut M68 x 4p	436	Nos	436			
486	Mining & Construction	HYDRAULIC & POWERLINE	955HC99066	Nyloc Nut 1.3/8"-12UN-3B	274	Nos	1115			
487	Mining & Construction	HYDRAULIC & POWERLINE	935SU91411	Nyloc Nut 1.1/2"-12UN-3B	116	Nos	289			
488	Mining & Construction	HYDRAULIC & POWERLINE	CSB0205030	BUSHING	228	Nos		228		

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
489	Mining & Construction	HYDRAULIC & POWERLINE	CSB0206530	BUSHING	140	Nos	Bushings are used in hydraulic cylinder rod or Suspension piston rod application. Bushing provide outstanding dry bearing properties of Polytetrafluoroethylene (PTFE) and combines them with strength, stability and good wear resistance, excellent heat conductivity and low thermal expansion. Bushings consists of three bonded layers: The Bushes are loaded with PTFE based sliding layer, sintered tin bronze layer and Cold Rolled Carbon steel backing strip support. The PTFE impregnated sliding layer provides low co-efficient of friction, the bronze layer guarantees the coupling of self lubricating mixture and good loss of heat produced during operation. Material: Back Metal : JIS SPDC (Cold Rolled Carbon steel Strip/sheet Backing) (JIS G3141) The back metal shall be subjected to a flash tin-plating Tensile Strength : 270 N/mm ² Min.(27.5 Kg/mm ² Min.) Elongation % : 40 Min. Bushing : Teflon Impregnated Bronze. Coating Thickness : 0.3 max			140
490	Mining & Construction	HYDRAULIC & POWERLINE	CSB0207515	BUSHING	160	Nos		160		
491	Mining & Construction	HYDRAULIC & POWERLINE	CSB0207530	BUSHING	160	Nos		160		
492	Mining & Construction	HYDRAULIC & POWERLINE	CSB0201020	BUSHING	126	Nos		126		
493	Mining & Construction	HYDRAULIC & POWERLINE	CSB0201040	BUSHING	276	Nos		276		
494	Mining & Construction	HYDRAULIC & POWERLINE	CSB0208040	BUSHING	126	Nos		126		
495	Mining & Construction	HYDRAULIC & POWERLINE	CSB0201235	BUSHING	5	Nos		16		
496	Mining & Construction	HYDRAULIC & POWERLINE	CSB0206515	BUSHING	140	Nos		140		
497	Mining & Construction	HYDRAULIC & POWERLINE	CSB0201140	BUSHING	124	Nos		124		
498	Mining & Construction	HYDRAULIC & POWERLINE	CSB0209020	BUSHING	296	Nos		296		
499	Mining & Construction	HYDRAULIC & POWERLINE	CSB0209035	BUSHING	296	Nos			296	
500	Mining & Construction	HYDRAULIC & POWERLINE	787AX62947	O-RING	58	Nos	i. Material : HNBR-1A ii. SHORE (HARDNESS) : 70±5 iii. Operating Temperature : - 40 to +150 deg C iv. Dimension ID : Ø273±3 ; (Inner Dia.) C/s : Ø3.6±0.1 ; (Wire Dia.)			193
501	Mining & Construction	HYDRAULIC & POWERLINE	985BR02526	FLOATING SEAL ASSY(BIG)	25	Nos	Floating Seal are special form of Mechanical seals, which is characterized by use of an oring as the secondary sealing element. The Seal surface is formed by a cone which is in contact with the Oring which is compressed axially and radially. Material: i. Seal Ring Material : Duronit V a) Seal Ring ID : 508 mm b) Seal Ring OD : 548 mm c) Width : 30mm ii. Oring Material : HNBR 60 (Colour - Black) a) Oring Diameter : 18 mm b) Oring ID : Dia 510 mm c) HARDNESS (SHORE A) : 60±5 d) TENSILE STRENGTH (Mpa) : 14 min. e) ELONGATION AT BREAK(%) : 350 min. f) OPERATING TEMP. (Max.) : 150°C Duronit is very common in the cast iron seal market. This ledeburitic cast iron with fine graphite inclusions is known for its excellent wear resistance in connection with good tribological qualities			506
502	Mining & Construction	HYDRAULIC & POWERLINE	985BR02534	FLOATING SEAL ASSY(BIG)	208	Nos	Floating Seal are special form of Mechanical seals, which is characterized by use of an oring as the secondary sealing element. The Seal surface is formed by a cone which is in contact with the Oring which is compressed axially and radially. Material: i. Seal Ring Material : Duronit V a) Seal Ring ID : 382 b) Seal Ring OD : 405 c) Width : 20mm ii. Oring Material : HNBR 60 (Colour - Black) a) Oring Diameter : 12 mm b) Oring ID : Dia 377 mm c) HARDNESS (SHORE A) : 60±5 d) TENSILE STRENGTH (Mpa) : 14 min. e) ELONGATION AT BREAK(%) : 350 min. f) OPERATING TEMP. (Max.) : 150°C Duronit is very common in the cast iron seal market. This ledeburitic cast iron with fine graphite inclusions is known for its excellent wear resistance in connection with good tribological qualities			1045

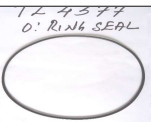
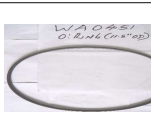
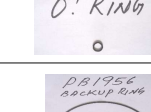
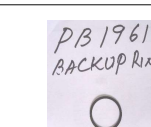
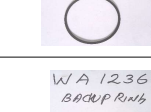
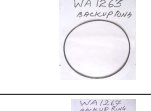
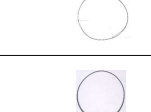

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
503	Mining & Construction	HYDRAULIC & POWERLINE	778AX03128	FLOATING SEAL ASSY	116	Nos	<p>Floating Seal are special form of Mechanical seals, which is characterized by use of an oring as the secondary sealing element. The Seal surface is formed by a cone which is in contact with the Oring which is compressed axially and radially.</p> <p>Material:</p> <p>i. Seal Ring Material : Duronit V a) Seal Ring ID : 262 b) Seal Ring OD : 288 c) Width : 20mm</p> <p>ii. Oring Material : HNBR 60 (Colour - Black) a) Oring Diameter : 12 mm b) Oring ID : Dia 266 mm c) HARDNESS (SHORE A) : 60±5 d) TENSILE STRENGTH (Mpa) : 14 min. e) ELONGATION AT BREAK(%) : 350 min. f) OPERATING TEMP. (Max.) : 150°C</p> <p>Duronit is very common in the cast iron seal market. This ledeburitic cast iron with fine graphite inclusions is known for its excellent wear resistance in connection with good tribological qualities</p>			468
504	Mining & Construction	HYDRAULIC & POWERLINE	985BR95248	DISC	990	Nos	<p>Disc with Internal Gear Toothing for Brake Application in Rear Axle Assembly</p> <p>Material:</p> <p>i. Plate : C55 Mn 75 (B1105) ii. Hardness of Plate : 22 HRC</p> <p>iii. Surface Treatment of Plate Sand Blast before Adhesion iv. Facing Material : DAIKIN R/M Co. Ltd</p> <p>v. Size : a) Outer diameter : 660mm b) Inner diameter : 515mm c) Thickness : 5.1mm</p>			6037
505	Mining & Construction	HYDRAULIC & POWERLINE	778AX92156	DISC	1392	Nos	<p>Disc with Internal Gear Toothing for Brake Application in Rear Axle Assembly</p> <p>Material:</p> <p>i. Plate : SAE 4140 ii. Hardness of Plate : 22 HRC</p> <p>iii. Facing Material : D-0526-4 ; DAIKIN R/M Co. Ltd</p> <p>iv. Size : a) Outer diameter : 480mm b) Inner diameter : 330mm c) Thickness : 5.1mm</p>			3925
506	Mining & Construction	HYDRAULIC & POWERLINE	985BR15219	PLATE	924	Nos	<p>Plate with External Gear Toothing for Brake Application in Rear Axle Assembly</p> <p>Material:</p> <p>i. Plate : C55 Mn 75 (B1105) ; IS:1570 ii. Hardness of Plate : 22 ~ 28 HRC</p> <p>iii. Size : a) Outer diameter : 681mm b) Inner diameter : 510mm c) Thickness : 2.4mm</p>			5394
507	Mining & Construction	HYDRAULIC & POWERLINE	985BR95223	DAMPER	232	Nos	<p>Damper Assembly (Plate & Seat) with External Gear Toothing for Brake Application in Rear Axle Assembly</p> <p>Material:</p> <p>i. Core Plate : C55 Mn 75 (B1105) ; IS:1570 ii. Hardness of Plate : Min 22 HRC iii. Seat : Mica Cork CL-28</p> <p>iv. Size : a) Outer diameter : 681mm b) Inner diameter : 510mm c) Thickness : 6.9mm</p>			1080
508	Mining & Construction	HYDRAULIC & POWERLINE	778AX92059	DAMPER	232	Nos	<p>Damper Assembly (Plate & Seat) with External Gear Toothing for Brake Application in Rear Axle Assembly</p> <p>Material:</p> <p>i. Core Plate : C55 ; SAE 1050; IS:1570 ii. Hardness of Plate : Min 22 HRC</p> <p>iii. Surface Treatment of Plate Sand Blast before Adhesion</p> <p>iv. Seat : Mica Cork CL-28 v. Size : a) Outer diameter : 495mm b) Inner diameter : 346mm c) Thickness : 6.9mm</p>			666
509	Mining & Construction	HYDRAULIC & POWERLINE	CSRO110653	SEAL RING	274	Nos	<p>a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b) Dimension: OD-65mm, Width-2.7mm, Thickness-3mm</p>			274
510	Mining & Construction	HYDRAULIC & POWERLINE	CSRO111004	SEAL RING	46	Nos	<p>a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b) Dimension: OD-100mm, Width-4mm, Thickness-3mm</p>			46

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
511	Mining & Construction	HYDRAULIC & POWERLINE	CSR0111205	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-120mm, Width-4.6mm, Thickness-4mm			46
512	Mining & Construction	HYDRAULIC & POWERLINE	CSR0111805	SEAL RING	300	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-180mm, Width-5mm, Thickness-4mm		300	
513	Mining & Construction	HYDRAULIC & POWERLINE	CSR0112455	SEAL RING	92	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-245mm, Width-5mm, Thickness-4mm		92	
514	Mining & Construction	HYDRAULIC & POWERLINE	CSR0112605	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-260mm, Width-5mm, Thickness-4mm		46	
515	Mining & Construction	HYDRAULIC & POWERLINE	CSR0120352	SEAL RING	92	Nos	a) Material: HSBc3 b)Dimension: OD-35mm, Width-1.7mm, Thickness-2.5mm		105	
516	Mining & Construction	HYDRAULIC & POWERLINE	CSR0120753	SEAL RING	1	Nos	a) Material: HSBc3 b)Dimension: OD-35mm, Width-1.7mm, Thickness-2.5mm		1	
517	Mining & Construction	HYDRAULIC & POWERLINE	CSR0120854	SEAL RING	92	Nos	a) Material: HSBc3 b)Dimension: OD-75mm, Width-3.1mm, Thickness-3mm		92	
518	Mining & Construction	HYDRAULIC & POWERLINE	CSR0121606	SEAL RING	92	Nos	a) Material: HSBc3 b)Dimension: OD-160mm, Width-5.8mm, Thickness-4.5mm		92	
519	Mining & Construction	HYDRAULIC & POWERLINE	CSR0131205	SEAL RING	2	Nos	a) Material: TFE-2 b)Dimension: OD-120mm, Width-4.6mm, Thickness-3.95mm		2	
520	Mining & Construction	HYDRAULIC & POWERLINE	CSR0131907	SEAL RING	2	Nos	a) Material: TFE-2 b)Dimension: OD-190mm, Width-6.5mm, Thickness-5.95mm		2	
521	Mining & Construction	HYDRAULIC & POWERLINE	113TM21648	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-120mm, Width-3.5mm, Thickness-3mm		170	
522	Mining & Construction	HYDRAULIC & POWERLINE	113TM21818	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-155mm, Width-3.5mm, Thickness-3mm		100	
523	Mining & Construction	HYDRAULIC & POWERLINE	113TM21883	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-155mm, Width-3.5mm, Thickness-3mm		150	
524	Mining & Construction	HYDRAULIC & POWERLINE	985TM91419	THRUST WASHER	736	Nos	Thrust washer for Supporting Planet gears in Transmission a) Material: SP21 Manufactured by M/s Dupon b)Dimension: OD-66.5mm, ID-38.3mm, Thickness-2mm		Thrust washers made of DuPont Vespel® SP-21 polyimide are durable, maintenance-free components used in planetary transmission assemblies. Dupont SP21: is a 15 % (by weight) graphite filled polymer & standard material for Thrust Washers because it offers the best combination of mechanical strength and wear resistance, low friction for lubricated or non-lubricated applications. It also has long term thermal stability.	4071
525	Mining & Construction	HYDRAULIC & POWERLINE	985TM92091	THRUST WASHER	736	Nos	Thrust washer for Supporting Planet gears in Transmission a) Material: SP21 Manufactured by M/s Dupon b)Dimension: OD-90mm, ID-57.2mm, Thickness-3mm		3367	
526	Mining & Construction	HYDRAULIC & POWERLINE	985TM92642	THRUST WASHER	736	Nos	Thrust washer for Supporting Planet gears in Transmission a) Material: SP21 Manufactured by M/s Dupon b)Dimension: OD-63mm, ID-35.15mm, Thickness-2mm		3746	
527	Mining & Construction	HYDRAULIC & POWERLINE	825EG02027	DISPLAY KIT- EQUIPMENT	10	Nos	1. Display size: 7" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs : 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.OB,CAN 2.OA, CANopen, Proprietary messaging, RS485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing : IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) 12. Shock: 50g in 3 axis 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard: tactile buttons		Software configuration for each variant must be developed by vendor in conjunction with R&D-KGF and display should be supplied along with required configuration loaded into it	10
528	Mining & Construction	HYDRAULIC & POWERLINE	820EG02141		10	Nos			10	
529	Mining & Construction	HYDRAULIC & POWERLINE	821EG02018		10	Nos			18	
530	Mining & Construction	HYDRAULIC & POWERLINE	821EG81294	DISPLAY-TRANSMISSION	10	Nos	1. Display size: 4.3" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs : 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.OB,CAN 2.OA, CANopen, Proprietary messaging, RS485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing : IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) 12. Shock: 50g in 3 axis 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard: tactile buttons		Software configuration for each variant must be developed by vendor in conjunction with R&D-KGF and display should be supplied along with required configuration loaded into it	47
531	Mining & Construction	HYDRAULIC & POWERLINE	953EG03786		10	Nos			10	
532	Mining & Construction	HYDRAULIC & POWERLINE	955EG03588		10	Nos			10	
533	Mining & Construction	HYDRAULIC & POWERLINE	TF4098	O-RING (2.750 x 3.000 x 0.125)	116	Nos	i. Material : SAE 120R CLASS-1 ii. SHORE (HARDNESS) : 70 DUROMETER Operating Temperature : - 40 to +150 deg C These O-rings shall comply with the following specifications: SAE J14 (1976) and SAE J120a (1976) Material : Synthetic Rubber 70 Durometer.			196
534	Mining & Construction	HYDRAULIC & POWERLINE	TD8594	O-RING (3.250 x 3.500 x 0.125)	274	Nos			5262	
535	Mining & Construction	HYDRAULIC & POWERLINE	VH7521	O-RING (4.500 x 5.000 x 0.250)	14	Nos			21	

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
536	Mining & Construction	HYDRAULIC & POWERLINE	WA4748	O-RING (5.625 x 6.000 x 0.875)	411	Nos				666
537	Mining & Construction	HYDRAULIC & POWERLINE	TG1045	O-RING (7.000 x 7.250 x 0.125)	116	Nos				116
538	Mining & Construction	HYDRAULIC & POWERLINE	TL4377	O-RING (7.250 x 7.500 x 0.125)	274	Nos				445
539	Mining & Construction	HYDRAULIC & POWERLINE	WA0267	O-RING (8.250 x 8.500 x 0.125)	580	Nos	i. Material : SAE SB915 CLASS-1 ii. SHORE (HARDNESS) : 90 DUROMETER iii. Operating Temperature : - 40 to +150 deg C These O-rings shall comply with the following specifications: SAE J14 (1976) and SAE J120a (1976) Material : Synthetic Rubber 90 Durometer.			1474
540	Mining & Construction	HYDRAULIC & POWERLINE	WA0451	O-RING (11.000 x 11.500 x 0.250)	16	Nos				16
541	Mining & Construction	HYDRAULIC & POWERLINE	WA0277	O-RING (11.500 x 11.750 x 0.125)	14	Nos				17
542	Mining & Construction	HYDRAULIC & POWERLINE	VN9910	O-RING, HYDRAULIC FOR SAE STRAIGHT THREAD BOSS FITTINGS	58	Nos	Material : Synthetic Rubber, Compound SB915, SAE-J515. Thrad Size : 0.375 x 24 SAE No : 3-1. Inside Dia : 0.301 ± 0.005 Radial Width : 0.064 ± 0.003 These O-rings shall comply with latest version of SAE specification J515. Material : Synthetic Rubber Compound SB915.			75
543	Mining & Construction	HYDRAULIC & POWERLINE	PB1956	RING, BACK-UP – 262	116	Nos	Material : DISOGRIN 9250 URETHANE (PART NO. 073-262). Premium polyurethane, TODI base. Inside Dia : 6.935 ± 0.035 Radial Width : 0.118 ± 0.004 Thickness : 0.040 ± 0.003 Max Working Pressure : 6000 PSI (421 Kg/cm ²) Max Working Temp : 300°F (148.8 °C) Max Speed : 4 ft/s (1.21 m/s) Shore Hardness : 92 Durometer. Specific Gravity : 1.17			231
544	Mining & Construction	HYDRAULIC & POWERLINE	PB1961	RING, BACK-UP – 262	232	Nos	Material : DISOGRIN 9250 URETHANE (PART NO. 073-262). Premium polyurethane, TODI base. Inside Dia : 1.480 ± 0.007 Radial Width : 0.118 ± 0.004 Thickness : 0.040 ± 0.003 Max Working Pressure : 6000 PSI (421 Kg/cm ²) Max Working Temp : 300°F (148.8 °C) Max Speed : 4 ft/s (1.21 m/s) Shore Hardness : 92 Durometer. Specific Gravity : 1.17			232
545	Mining & Construction	HYDRAULIC & POWERLINE	TM6638	RING, BACK-UP – 262	116	Nos	Material : DISOGRIN 9250 URETHANE (PART NO. 073-262). Premium polyurethane, TODI base. Inside Dia : 2.735 ± 0.014 Radial Width : 0.118 ± 0.004 Thickness : 0.040 ± 0.003 Max Working Pressure : 6000 PSI (421 Kg/cm ²) Max Working Temp : 300°F (148.8 °C) Max Speed : 4 ft/s (1.21 m/s) Shore Hardness : 92 Durometer. Specific Gravity : 1.17			190
546	Mining & Construction	HYDRAULIC & POWERLINE	WA1236	BACK UP RING	274	Nos	I.D. : 3.256 ± 0.015 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			863
547	Mining & Construction	HYDRAULIC & POWERLINE	WA1263	BACK UP RING	274	Nos	I.D. : 7.268 ± 0.023 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			438
548	Mining & Construction	HYDRAULIC & POWERLINE	WA1267	BACK UP RING	464	Nos	I.D. : 8.268 ± 0.030 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			2107
549	Mining & Construction	HYDRAULIC & POWERLINE	WA1277	BACK UP RING	14	Nos	I.D. : 11.518 ± 0.030 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			17
550	Mining & Construction	HYDRAULIC & POWERLINE	WA1279	BACK UP RING	56	Nos	I.D. : 13.018 ± 0.030 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			93

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
551	Mining & Construction	HYDRAULIC & POWERLINE	WA1425	BACK UP RING	14	Nos	I.D. : 4.551 ± 0.015 Radial Section : 0.236 ± 0.006 Axial Thickness : 0.117 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			21
552	Mining & Construction	HYDRAULIC & POWERLINE	WA1451	BACK UP RING	16	Nos	I.D. : 11.024 ± 0.030 Radial Section : 0.236 ± 0.006 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			16
553	Mining & Construction	HYDRAULIC & POWERLINE	WA4749	BACK UP RING	411	Nos	I.D. : 5.528 +0.015/-0.023 Radial Section : 0.183 ± 0.005 Axial Thickness : 0.076 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)			685
554	Mining & Construction	HYDRAULIC & POWERLINE	135TM91712	DISC	46	Nos	Disc with Internal Gear Toothing for clutch operations in Planetary Transmission a) Material: Core Plate- SAE1045H OR JIS:S45C , Friction Facing-Toshiba1020 b) Heat Treatment: Induction hardening at Tooth Portion c) Dimension: OD-530mm, ID-415.5 mm Thickness of Plate- 3.8mm, Thickness of Facing material-0.8mmx2, Disc thickness-5.4 mm			98
555	Mining & Construction	HYDRAULIC & POWERLINE	135TM91834	DISC	12	Nos	Disc with Internal Gear Toothing for clutch operations in Planetary Transmission a) Material: Core Plate- SAE1045H OR JIS:S45C , Friction Facing-Toshiba1020 b) Heat Treatment: Induction hardening at Tooth Portion c) Dimension: OD-425mm, ID-331.5 mm Thickness of Plate- 3.8mm, Thickness of Facing material-0.8mmx2, Disc thickness-5.4 mm			44
556	Mining & Construction	HYDRAULIC & POWERLINE	985TM12346	RING	46	Nos	a)Material: SWRH 67~SWRH82 b) Hardness: 42~48 Hrc c) OD- 343mm, WIDTH-10mm, No. of Turns-2		Ring used for locking Ring Gear and Carrier in planetary transmission	153
557	Mining & Construction	HYDRAULIC & POWERLINE	125TM23431	SEAL RING.	440	Nos	a) Material: HS8c3 b)Dimension: OD-120mm, Width-3.5mm, Thickness-3mm			805
558	Mining & Construction	HYDRAULIC & POWERLINE	125TM23715	SEAL RING	616	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-250mm, Width-6.5mm, Thickness-4mm			616
559	Mining & Construction	HYDRAULIC & POWERLINE	135TC91061	SEAL RING	2	Nos	a) Material: NPR Cast Iron- Manufactured by Nippon Piston Ring or rquivalent b)Dimension: OD-260mm, Width-6mm, Thickness-5mm			50
560	Mining & Construction	HYDRAULIC & POWERLINE	130TM22417	SEAL RING	130	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-185mm, Width-5mm, Thickness-4mm			479
561	Mining & Construction	HYDRAULIC & POWERLINE	985TM21086	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-185mm, Width-5.8mm, Thickness-4.5mm			180
562	Mining & Construction	HYDRAULIC & POWERLINE	985TM21101	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-310mm, Width-4mm, Thickness-4mm			187
563	Mining & Construction	HYDRAULIC & POWERLINE	985TM22309	SEAL RING	46	Nos	a) Material: HS8c3 b)Dimension: OD-270mm, Width-4mm, Thickness-4mm			300
564	Mining & Construction	HYDRAULIC & POWERLINE	985TM22682	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) b)Dimension: OD-175mm, Width-6.3mm, Thickness-4mm			136
565	Mining & Construction	HYDRAULIC & POWERLINE	953TM96015	SEAL RING	230	Nos	a) Material: HS8c3 b)Dimension: OD-135mm, Width-5.1mm, Thickness-4mm			960
566	Mining & Construction	HYDRAULIC & POWERLINE	135TM71049	SEAL RING	2	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PFEG2 OR Equivalent b) O.D- 463.6mm, I.D-455mm, Thickness-3.8mm		Material properties: Specific gravity-2.21, Tensile strength-230kg/cm ² , Elongation-270%, Hardness -63 Durometer	10
567	Mining & Construction	HYDRAULIC & POWERLINE	135TM72086	SEAL RING	2	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PFEG2 OR Equivalent b) O.D- 448.6mm, I.D-440mm, Thickness-3.8mm			10
568	Mining & Construction	HYDRAULIC & POWERLINE	135TM72094	SEAL RING	2	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PFEG2 OR Equivalent b) O.D- 508.6mm, I.D-500mm, Thickness-3.8mm			10
569	Mining & Construction	HYDRAULIC & POWERLINE	135TM72183	SEAL RING	2	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PFEG2 OR Equivalent b) O.D- 259.5mm, I.D-253mm, Thickness-2.8mm			10
570	Mining & Construction	HYDRAULIC & POWERLINE	135TM72004	SEAL RING	8	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PFEG2 OR Equivalent b) O.D-513.6mm, I.D-505mm, Thickness-3.8mm		Material properties: Specific gravity-2.24, Tensile strength-170kg/cm ² , Elongation-210%, Hardness -57~70 Durometer	24
571	Mining & Construction	HYDRAULIC & POWERLINE	135TM72012	SEAL RING	2	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PFEG2 OR Equivalent b) O.D-438.6mm, I.D-430mm, Thickness-3.8mm			10
572	Mining & Construction	HYDRAULIC & POWERLINE	985TC71093	SEAL RING	43	Nos	a)Make: NIHON PILLAR LOGYO KK MAKE #4370 or Equivalent b) Material to be of N.P.KK MAKE ds (ptfe W) Filler or Equiv expansion force 142kg/cm ² , Elongation 123%, thermal expansion co-efficient in 11.9x10 ⁻⁷ c) O.D-185mm, width -6.5mm, Thickness-4.5mm			205

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
573	Mining & Construction	HYDRAULIC & POWERLINE	12STM93465	SPRING.	440	Nos	Wave Spring for Clutch retraction in Planetary Transmission Material: Gr1 IS4454 Part-1 of 1981 b) Heat Treatment :Q&T- 38~45 HRc c).I.D: 401, Width: 3, Thickness-1.65mm			2385
574	Mining & Construction	HYDRAULIC & POWERLINE	130TM93122	SPRING	14388	Nos	a) Material: Gr.3 IS4454 Part-1 b) Heat Treatment :Q&T- 40~46 HRc c).I.D: 20.7mm, Width:4mm, Thickness-3mm			40530
575	Mining & Construction	HYDRAULIC & POWERLINE	12STM93457	SPRING WASHER	10452	Nos	a) Material: Gr.2 IS4454 Part-1 b) Heat Treatment :Q&T- 40~46 HRc c) I.D: 17mm, Width:5mm, Thickness-2mm			41441
576	Mining & Construction	HYDRAULIC & POWERLINE	113TM11741	SPRING	49	Nos	a) Material: Carbon Tool Steel (JIS G 4401-1956), class 5 b) Heat treatment: 42~48HRc c) O.D: 225mm, I.D: 120mm, Thickness: 3mm			145
577	Mining & Construction	HYDRAULIC & POWERLINE	955TC02259	T/C ELEMENT ASSY	5	Nos	Torque converter element assembly consists of Stator, Pump and Turbine. Torque converter is a fluid coupling device that also acts as a torque multiplier during initial acceleration. a) T/C Type- Single stage, 3 Element, 2 Phase b) Stall Ratio-2.07:1 c) Effective in all forward ranges			7
578	Mining & Construction	HYDRAULIC & POWERLINE	CGR0301125	WEAR RING	274	Nos	O.D. : 110 Thickness : 3.0 +0/-0.08 Length : 25 -0.05/-0.25 Material : PTR-FLE (Phenol Resin with cloth) Specific Gravity : 1.20 (Min) Bending Strngth : 10~18 Kg/mm ² Compression Strength : 11~20 Kg/mm ² Water Absorption Rate: 2.4 % Max.		The function of an hydraulic Wear Ring (or Guide ring) is to guide the piston and piston rod of an hydraulic cylinder, absorbing transverse forces. At the same time, the Wear Ring prevents metal-to-metal contact, optimizing the performance of the sealing system. Fabric-reinforced Polyester Resin - This strip material is for heavy-duty applications where there are high radial forces.	275
579	Mining & Construction	HYDRAULIC & POWERLINE	CGR0401315	WEAR RING	20	Nos	O.D. : 130 Thickness : 3.5 +0/-0.08 Length : 15 -0.05/-0.25 Material : PTR-FLE (Phenol Resin with cloth) Specific Gravity : 1.20 (Min) Bending Strngth : 10~18 Kg/mm ² Compression Strength : 11~20 Kg/mm ² Water Absorption Rate: 2.4 % Max.		The use of woven fabric-reinforced polyester resin produces a dimensionally accurate rectangular strip which can be cut to any length. Low coefficient of friction and high compressive strength makes it an ideal bearing material and it is used in temperatures ranging from -40 degrees to 130 degrees.	20
580	Mining & Construction	HYDRAULIC & POWERLINE	CGR0301330	WEAR RING	78	Nos	O.D. : 130 Thickness : 3.5 +0/-0.08 Length : 30 -0.1/-0.3 Material : PTR-FLE (Phenol Resin with cloth) Specific Gravity : 1.20 (Min) Bending Strngth : 10~18 Kg/mm ² Compression Strength : 11~20 Kg/mm ² Water Absorption Rate: 2.4 % Max.			78
581	Mining & Construction	HYDRAULIC & POWERLINE	CGR0401620	WEAR RING	272	Nos	O.D. : 160 Thickness : 3.5 +0/-0.08 Length : 20 -0.05/-0.25 Material : PTR-FLE (Phenol Resin with cloth) Specific Gravity : 1.20 (Min) Bending Strngth : 10~18 Kg/mm ² Compression Strength : 11~20 Kg/mm ² Water Absorption Rate: 2.4 % Max.			272
582	Mining & Construction	HYDRAULIC & POWERLINE	CGR0302555	WEAR RING	130	Nos	O.D. : 250 Thickness : 4.0 +0/-0.08 Length : 55 -0.15/-0.35 Material : PTR-FLE (Phenol Resin with cloth) Specific Gravity : 1.20 (Min) Bending Strngth : 10~18 Kg/mm ² Compression Strength : 11~20 Kg/mm ² Water Absorption Rate: 2.4 % Max.			130

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
583	Mining & Construction	HYDRAULIC & POWERLINE	PB6437	ROD SEAL	274	Nos	Size : 5.000 x 5.625 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			445
584	Mining & Construction	HYDRAULIC & POWERLINE	PB6547	ROD SEAL	14	Nos	Size : 3.750 x 4.375 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			23
585	Mining & Construction	HYDRAULIC & POWERLINE	PB6553	ROD SEAL	96	Nos	Size : 8.500 x 9.125 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016			149
586	Mining & Construction	HYDRAULIC & POWERLINE	PB6559	ROD SEAL	30	Nos	Size : 10.500 x 11.125 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			41
587	Mining & Construction	HYDRAULIC & POWERLINE	PB7323	ROD SEAL	274	Nos	Size : 6.500 x 7.125 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			440
588	Mining & Construction	HYDRAULIC & POWERLINE	VZ3178	ROD SEAL	274	Nos	Size : 2.000 x 2.500 x 0.417 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 90A5 Durometer. Tensile Strength: 6000 PSI Min. Working Pressure: 3500 PSI Temp Range : -40° to +225°F Test Pressure : 5000 PSI No Leakage Allowed M/s.DISOGRIN Material : Urethane No. 9250			863
589	Mining & Construction	HYDRAULIC & POWERLINE	VZ4432	ROD SEAL	274	Nos	Size : 2.500 x 3.000 x 0.417 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 90A5 Durometer. Tensile Strength: 6000 PSI Min. Working Pressure: 3500 PSI Temp Range : -40° to +225°F Test Pressure : 5000 PSI No Leakage Allowed M/s.DISOGRIN Material : Urethane No. 9250			274
590	Mining & Construction	HYDRAULIC & POWERLINE	953SU91159	ROD SEAL	66	Nos	Size : 273.05 x 298.45 x 20.95 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			554
591	Mining & Construction	HYDRAULIC & POWERLINE	959SU91253	ROD SEAL	132	Nos	Size : 210x235x21 Material: Base Material: Polyurethane Elastomer (Iron Rubber) Back up Ring Material : Rareflon (PTFE Resin) Pressure Range : 0-70 Mpa Temperature Range : -35°C-100°C Speed Range : 0.3 ~ 1 m/s.			132
592	Mining & Construction	HYDRAULIC & POWERLINE	991SU91168	ROD SEAL	30	Nos	Size : 12"x13" x 0.8" Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			61












LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
593	Mining & Construction	HYDRAULIC & POWERLINE	992HC91105	ROD SEAL	16	Nos	Size : 5.5"x6.0" x 0.577" Material: Base Material: Lubrithane U-1003 E Black. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.			23
594	Mining & Construction	HYDRAULIC & POWERLINE	992SU91214	ROD SEAL	16	Nos	Size : 10.5"x11.5" x 0.75" -Operating Pressure: up to 6,000 psi -Dual Lip Design -Integrated backup ring for security (high pressure) -Intermittent Pressure to 125% (7,500 psi) Material : Wear Resistant polyurethane Operating Temp Range : -40° to +250°F			24
595	Mining & Construction	HYDRAULIC & POWERLINE	PB6808	ROD SEAL	116	Nos	Size : 3.75"x4.25" x 0.558" -Operating Pressure: up to 3500 psi -Operating Temp Range : -40° to +225°F -Test Pressure : 5000 psi (No Leakage Allowed) Material : Polyurethane Elastomer			148
596	Mining & Construction	HYDRAULIC & POWERLINE	PB6809	ROD SEAL	116	Nos	Size : 5.25"x5.75" x 0.558" -Operating Pressure: up to 3500 psi -Operating Temp Range : -40° to +225°F -Test Pressure : 5000 psi (No Leakage Allowed) Material : Polyurethane Elastomer			214
597	Mining & Construction	HYDRAULIC & POWERLINE	PB6810	ROD SEAL	116	Nos	Size : 6.75"x7.25" x 0.558" -Operating Pressure: up to 3500 psi -Operating Temp Range : -40° to +225°F -Test Pressure : 5000 psi (No Leakage Allowed) Material : Polyurethane Elastomer			359
598	Mining & Construction	HYDRAULIC & POWERLINE	991SU91151	WIPER SEAL (12.000" x 13.255" x 0.501")	30	Nos	Spring Loaded U-Cup wiper Seal for Heavy duty Application of Reciprocating Hydraulic Cylinder and Suspension Application			61
599	Mining & Construction	HYDRAULIC & POWERLINE	992HC91113	WIPER SEAL (5.500" x 6.125" x 0.413")	16	Nos	i) a) Seal Material : Lubrethane Rubber U-1004 E 55D Red. b) Spring Material : Stainless Steel		23	
600	Mining & Construction	HYDRAULIC & POWERLINE	PB6560	WIPER SEAL (10.500" x 11.125" x 0.413")	30	Nos	ii) SHORE D (HARDNESS) : 55, iii) Operating Temperature : -40 to +110 deg C iv) Operating Velocity : Upto 1 m/sec(3.2 ft/s). v) Operating Pressure Range : 0-400 bar (5 800 psi).		37	
601	Mining & Construction	HYDRAULIC & POWERLINE	PB6554	WIPER SEAL (8.500" x 9.125" x 0.413")	96	Nos			138	
602	Mining & Construction	HYDRAULIC & POWERLINE	PB6548	WIPER SEAL (5.000" x 5.625" x 0.413")	14	Nos			25	
603	Mining & Construction	HYDRAULIC & POWERLINE	PB6438	WIPER SEAL (3.750" x 4.375" x 0.413")	274	Nos			451	
604	Mining & Construction	HYDRAULIC & POWERLINE	PB7320	WIPER SEAL (6.500" x 7.125" x 0.413")	274	Nos			445	
605	Mining & Construction	HYDRAULIC & POWERLINE	953SU91167	WIPER SEAL	132	Nos	Size : 10.750" x 11.750" x 0.550" Material: Base Material: Lubrithane U-1003 E Red. Ring Material :NBR-A8501 Shore hardness: 95 Durometer. Shore hardness: 70A Durometer. Operating Pressure Range : 0-400 bar (5 800 psi). Max Speed : 1 m/s.(3.2 ft/s). Temperature Range : -30°C to +100°C			454
606	Mining & Construction	HYDRAULIC & POWERLINE	992SU91222	WIPER SEAL	16	Nos	Size : 10.500" x 11.250" x 0.688"(Groove) Material: Base Material: NBR, PTFE SEAL LIP, BRONZE. BACK Up Ring Material: POM poly-acetal Shore hardness: 80 Durometer. Temperature Range : -40°F to +250°F Operating Pressure Range : 7500 psi.			29
607	Mining & Construction	HYDRAULIC & POWERLINE	1956392190	WIPER SEAL (d x D x t x h)(80 x 94 x 8 x 11)	10	Nos	Snap-in Wiper Seals for Reciprocal Movement for Heavy duty Application with Pressure Plate or Circlip Retaining. i) a) Seal Material : Iron Rubber (U801) or Polyurethane Shore 90A, b) Retaining Ring Material : Steel			10
608	Mining & Construction	HYDRAULIC & POWERLINE	1446392170	WIPER SEAL (d x D x t x h)(65 x 79 x 8 x 11)	148	Nos	ii) Operating Temperature : - 25 to +110 deg C Operating Velocity : Upto 1 m/sec		148	












LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
609	Mining & Construction	HYDRAULIC & POWERLINE	VA3214	WIPER SEAL (3.750" x 4.115" x 0.122")	116	Nos	Material : DISOGRIN 9250 URETHANE . Premium polyurethane, TDI base. Max Working Pressure : 6000 PSI (421 Kg/cm ²) Temp : 300°F (148.8 °C) Max Speed : 4 ft/s (1.21 m/s) Shore Hardness : 92 Durometer.	Max Working		234
610	Mining & Construction	HYDRAULIC & POWERLINE	VA3215	WIPER SEAL (5.250" x 5.678" x 0.138")	116	Nos		Specific Gravity : 1.17		234
611	Mining & Construction	HYDRAULIC & POWERLINE	VA3216	WIPER SEAL (6.150" x 7.240" x 0.154")	116	Nos				446
612	Mining & Construction	HYDRAULIC & POWERLINE	VZ3177	WIPER SEAL (2.000" x 2.500" x 0.250")	274	Nos	Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Operating Pressure Range : 6000 psi. Max Speed : 1 m/s.(3.2 ft/s).	Temperature Range : -40°F to +225°F		841
613	Mining & Construction	HYDRAULIC & POWERLINE	VZ4044	WIPER SEAL (2.500" x 3.000" x 0.330")	14	Nos				21
614	Mining & Construction	HYDRAULIC & POWERLINE	953SU91207	Buffer Seal (10.750" x 11.560" x 0.320")	132	Nos	Buffer seal with nitrile rubber O-ring energizer, PTFE/Nylon slide ring			496
615	Mining & Construction	HYDRAULIC & POWERLINE	PB6436	Buffer Ring (3.719" x 4.375" x 0.247")	274	Nos	i) a) Seal (Energiser) Material : Nitrile Rubber, b) Slide Ring Material : Oil filled Nylon (P-2505) ii) SHORE A (HARDNESS) : 70			447
616	Mining & Construction	HYDRAULIC & POWERLINE	PB6546	Buffer Ring (5.000" x 5.625" x 0.247")	14	Nos	iii) Operating Temperature : - 25 to +110 deg C iv) Operating Pressure : Upto 500 Bar. v) Operating Velocity : Upto 2 m/sec			23
617	Mining & Construction	HYDRAULIC & POWERLINE	PB6558	Buffer Ring (10.500" x 11.125" x 0.247")	30	Nos				41
618	Mining & Construction	HYDRAULIC & POWERLINE	PB7321	Buffer Seal (6.500" x 7.125" x 0.247")	274	Nos				445
619	Mining & Construction	HYDRAULIC & POWERLINE	992SU91206	Buffer Ring (10.500" x 11.330" x 0.571")	16	Nos	Material: Base Material: NBR, PTFE SEAL LIP, BRONZE. BACK Up Ring Material: POM poly-acetal Shore hardness: 80 Durometer. Operating Pressure Range : 7500 psi. Temperature Range : -40°F to +250°F			30
620	Mining & Construction	HYDRAULIC & POWERLINE	992HC91098	Buffer Ring (5.500" x 6.125" x 0.247")	16	Nos	Buffer seal with polyurethane sealing ring, integrated polyacetal or polyamide antlextrusion ring: i) a) Seal Material : Lubrethane Rubber, b) Slide Ring/Anti-extrusion Ring Material : Polyamide or Polyacetal ii) SHORE A (HARDNESS) : 93, iii) Operating Temperature : - 25 to +110 deg C iv) Operating Pressure : Upto 600 Bar. v) Operating Velocity : Upto 1 m/sec			23
621	Mining & Construction	HYDRAULIC & POWERLINE	991SU91176	Buffer Ring (12.000" x 12.750" x 0.320")	30	Nos				61
622	Mining & Construction	ENGINE	6150711620	BUSHING	130	Nos	Bushing (Tacho Drive) for Heavy Duty Diesel Engines (125 bore dia) Material: JIS SBK1218 OD= 17 mm ID= 7.9 mm			182
623	Mining & Construction	ENGINE	6211312130	PISTON	550	Nos	Piston for Heavy Duty Diesel Engines (140 bore dia) Material: Spheroidal Graphite (ES1130) Hardness:248-321 HB Tensile Strength = 75 kg/mm ² min. Yield Strength = 45 kg/mm ² min. Elongation = 4%min.			1734
624	Mining & Construction	ENGINE	6631214371	BUSHING	140	Nos	Bushing used on heavy duty diesel engines (105 bore dia) Material : 1) BACKING JIS SPCE-S 2) BEARING ALLOY LBC6 mm ; Thickness : 3.5 mm	Dia : 107		279
625	Mining & Construction	ENGINE	6136218050	THRUST BEARING	36	Nos	Thrust bearing used on heavy duty diesel engines (105 bore dia) Material: Back Metal - SPCL (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 95 mm ; Outer Dia - 116 mm ; Thickness(T) - 2.5 mm			440

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
626	Mining & Construction	ENGINE	6150218050	THRUST BEARING	204	Nos	Thrust bearing used on heavy duty diesel engines (125 bore dia) Material: Back Metal - SPCL (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 122 mm ; Outer Dia - 139 mm ; Thickness(T) - 4 mm			272
627	Mining & Construction	ENGINE	6162238050	THRUST BEARING	254	Nos	Thrust bearing used on heavy duty diesel engines (170 bore dia) Material: Back Metal - SAE 1017 (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 153 mm ; Outer Dia - 175 mm ; Thickness(T) - 4 mm			502
628	Mining & Construction	ENGINE	6210218050	THRUST BEARING	92	Nos	Thrust bearing used on heavy duty diesel engines (140 bore dia) Material: Back Metal - SAE 1010 (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 132.7 mm ; Outer Dia - 150.5 mm ; Thickness(T) - 4 mm			195
629	Mining & Construction	ENGINE	6212312170	PISTON	67	Nos	Piston for Heavy Duty Diesel Engines (140 bore dia) Material: Spheroidal Graphite (ES1130) Hardness:248-321 HB Tensile Strength = 75 kg/mm ² min. Yield Strength = 45 kg/mm ² min. Elongation = 4%min.			149
630	Mining & Construction	ENGINE	DK1566052320	FLEX PLATE ASSY.	259	Nos	MATERIAL-M09C01,OD-94mm,ID-44mm , 4 Nos HOLE (OD-18,ID-8)			685
631	Mining & Construction	ENGINE	DK1566054320	FLEX PLATE ASSY.	47	Nos	ID = 44mm, OD = 93.8mm, Thickness =0.5mm X 6 plates, Holes : PCD-72mm X 8.3mm holes -4 No's. Material : Spring steel,			204
632	Mining & Construction	ENGINE	DK1566055320	FLEX PLATE ASSY.	566	Nos	ID = 52 mm, OD = 110 mm, Thickness =0.5mm X 4 plates, Holes : PCD-85 mm X 10.2 mm holes -4 No's. Material : Spring steel,			1565
633	Mining & Construction	ENGINE	0924600110	FLEX PLATE ASSY.	6	Nos	Heavy Duty Diesel Engines (140 Dia) outer Diameter: Ø128mm Inner Diameter Ø65mm material : IS:2507(1992) GRADE S(75C6)			6
634	Mining & Construction	ENGINE	6162234231	SEAL,REAR	77	Nos	USED IN FLYWHEEL HOUSING FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) FOR SHAFT -DIMENSION TOLRENCE : Ø170±0.010,MATERIAL FINISH: SECM 3H 1-25 HRC-45-50 FOR HOUSING- DIMENSION TOLRENCE :Ø230H7±0.046 MATERIAL FINISH: FC125, SEALING MEDIA TYPE :CD/SE 10 W-30			300
635	Mining & Construction	ENGINE	6136424410	SPRING,VALVE	1553	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA) MATRIAL -SWOSC-V, BAR DIAMETER - Ø43, MEAN COIL DIAMETER - Ø292 , FREE HEIGHT- 63.6mm			3925
636	Mining & Construction	ENGINE	6162434420	SPRING,VALVE,INNER	7904	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) MATRIAL -SWOSC-V, BAR DIAMETER - Ø40 , MEAN COIL DIAMETER - Ø30.6±0.3 , FREE HEIGHT -59.3mm			21423



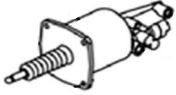


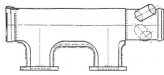
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
637	Mining & Construction	ENGINE	6162434440	SPRING,VALVE OUTER	7828	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) MATERIAL -SWOSC-V, BAR DIAMETER - Ø55±0.03, MEAN COIL DIAMETER - Ø42.1 , FREE HEIGHT -65.6mm			18174
638	Mining & Construction	ENGINE	6162133720	NOZZLE,FUEL INJECTION	58	Nos	USED IN Fuel Injector FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) NO OF HOLES- 8 HOLE DIA-Ø0.34 TEST METHOD - KES 06.167.61 ,SACK VOLUME- 3.66MM ³ ,SEAT PASS AREA RATIO -1.39			306
639	Mining & Construction	ENGINE	7861914210	SENSOR OIL LEVEL	14	Nos	oil level sensor for heavy duty diesel engine; Switch-float type; principle- lead switch; voltage drop of switch- 0.05 v max at 0.3A rated current; insulation resistance-1MΩ min at DC 200 v; applicable liquid- water and oil			51
640	Mining & Construction	ENGINE	5122180666	PR SWITCH	334	Nos	pressure sensor for heavy duty diesel engine . current capacity : 3 AMPS max 24 Volts DC ; Actuating pressure- ON at 1.3 kg/cm ² ; OFF at 0.7 kg/cm ² ; Applicable fluid-oil .			1820
641	Mining & Construction	ENGINE	6127713231	BUSHING,TACHO DRIVE	216	Nos	Bushing Tach drive for heavy duty diesel engine (170 bore dia); mareial- JIS SBK 1218 ; Mass- 0.55 kg ; external dia- ø21 ; internal dia-ø7.8.			529
642	Mining & Construction	ENGINE	6212616121	CORE	8	Nos	After cooler core for heavy duty diesel engine (140 bore dia) ; Mass-18.1 kg ; Fin material-JIS C1221R ; Plate material-JIS C1020P ; Core type - Fin pitch 3/2P ; total radiation area air side-5.73 m ² ; Fin (calculated on one surface)- 5.73m ² (5 fins),Plate calculated on one surface-0.85 m ² (10 fins),Water passage sectional area -15.2cm ² , Water capacity-1.3 Lit.			41
643	Mining & Construction	ENGINE	6162133701	NOZZLE ASSY	154	Nos	Heavy Duty Diesel Engines (170 bore dia) Nozzle characteristics: opening pressure on delivery 270~278 kgf/cm2 nomial 265kgf/cm2 pressure spring constant 27kgf/mm Spray Cone Angle 160° Nozzle Hole Diameter 0.34mmx8			484
644	Mining & Construction	ENGINE	6212113101	INJECTOR ASSY	9	Nos	Heavy Duty Diesel Engines (140 bore dia) for this Application current part no.4127182169 by m/s bosch(DWG NO.E083379700) Nozzle Opening Pressure:250 Bar (Minimum)			116
645	Mining & Construction	ENGINE	6162636112	CORE ASSY.	33	Nos	Heavy Duty Diesel Engines (170 bore dia) Core Type: side layer Fin pitch : 3 mm Pitch , Water capacity : 0.7 Liter Total Radiation Area 3.28m ² weight : 11kg Operating pressure 2.7kg/cm ² Fin material :C1221R			137
646	Mining & Construction	ENGINE	5128100623	TURBOCHARGER (S1120)	98	Nos	Heavy Duty Diesel Engines (170 bore dia) Exhaust Gas Inlet Diameter: Ø138.9±0.7 Exhaust Gas Outlet Diameter: Ø101.5 Air Inlet Diameter: Ø140.7±0.1 Air Outlet Diameter: Ø95			246
647	Mining & Construction	ENGINE	5127185551	FUEL CUT-OFF VALVE ASSY	630	Nos	STOP VALVE WITH DEUTCH MALE CONNECTOR-DT042P RUN-STOP VALVE G4-24V			1652

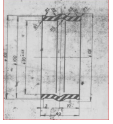
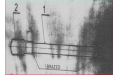
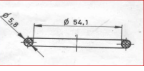
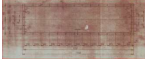
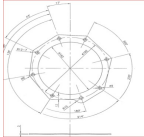
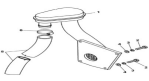

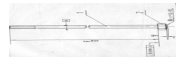
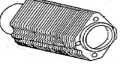
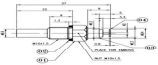

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
648	Mining & Construction	ENGINE	5129901579	HNZ EG KIT (BD155/BD355)	65	Nos	Heavy Duty Diesel Engines (170 SERIES BD155/355) this EG kit is consist of following component: 1.Electronic Governor (5129901457) 2.DCU (5129901538) 3.Adapter KIT (5129901465) 4.speed sensor (5129901473) 5.Potentiometer (5129901546) 6.Temp Sensor (oil/coolant) (5129901498) 7.Boost Pressure Sensor(5129901513) 8.Foot pedal (5129901521) 9.Panoptes mobile DGP-4.3" (5129901554) 10.engine harness (5128281124) 11.Vehicle harness (5128281149) 12.Oil pressure Sensor (5129901481)			156
649	Mining & Construction	ENGINE	5229900458	HNZ EG KIT (BE1000)	18	Nos	Heavy Duty Diesel Engines (170 Series BE1000) this EG kit is consist of following component: 1.Electronic Governor (5129901457) 2.DCU (5129901538) 3.Adapter KIT (5129901465) 4.speed sensor (5129901473) 5.Potentiometer (5129901546) 6.Temp Sensor (oil/coolant) (5129901498) 7.Boost Pressure Sensor(5129901513) 8.Foot pedal (5129901521) 9.Panoptes mobile DGP-4.3" (5129901554) 10.engine harness (5128281124) 11.Vehicle harness (5128281157) 12.Oil pressure Sensor (5129901481)			99
650	Mining & Construction	ENGINE	130010660094	PUMP BODY I	25	Nos	Pump Body used on TATRA Engine Type :- Air Cooled Material: FG200 , IS:6331 Allowable Tensile Strength:170 Mpa Hardness : 170~220 HB			25
651	Mining & Construction	ENGINE	323141371000	UPPER THRUST BEARING-6037-06/00 (111 141 371 000)	25	Nos	Pump Body used on TATRA Engine Type :- Air Cooled Material of Steel Back : SAE 1010 Alloy Layer: SAE48 SINTERED ON TO STEEL BACK SPEC: OD=154 mm ID=131 mm Thickness=3 mm			25
652	Mining & Construction	ENGINE	2070170454	PUMP GEAR WHEEL	25	Nos	Pump Gear Wheel used on TATRA Engine (130070170454) Type :- Air Cooled Consists of Gear (130012270604)-MATERIAL-42Cr ₄ Mo ₂ IS:5517 ,OD=51.5x8 mm, ID=22x7mm Bush (130050312024) MATERIAL-Sn-7.0°9.0 , P-0.02~0.3 , Pb-0.05 , Cu=Balance UTS=540MPa , Hardness=160~190 BHN , Elongation=8% OD=22x7 ID=18D8			25
653	Mining & Construction	ENGINE	2070170444	PUMP GEAR WHEEL	25	Nos	Pump Gear Wheel used on TATRA Engine (130070170444) Type :- Air Cooled MATERIAL-42Cr ₄ Mo ₂ IS:5517-(LATEST YEAR) UTS=800~950 MPa Consists of Bush (130050312024) and Gear W/O Teeth (130012270594)			25
654	Mining & Construction	ENGINE	2070170434	PUMP GEAR WHEEL	25	Nos	Pump Gear Wheel used on TATRA Engine (130070170444) Type :- Air Cooled P.C.D=38.5 Module=5.5 No of Teeth=7 Pressure angle=20 Helix angle=0 Shift Coeff=0.2735 Root Dia=29.4-0.6 Base Dia =18.089/36.178 Face Width=17 Consists of Bush (130050312414) MATERIAL-CuSn8 -HARD AS PER CSN 42.3018.3. OD=22x7 ID=18D8 Gear W/O Teeth (130012260094)MATERIAL-42Cr ₄ Mo ₂ IS:5517-(LATEST YEAR) UTS=800~950 MPa			25


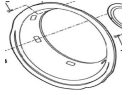
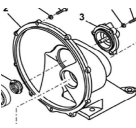
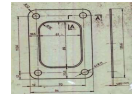

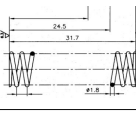
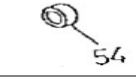


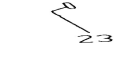
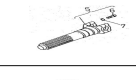
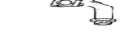
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
655	Mining & Construction	ENGINE	442070480284	PUMP COVER	25	Nos	Pump Body used on TATRA Engine Type :- Air Cooled Parts are: 1. Lubrication Pump Cover(130010730354) 2. Plunger (130053460334) 3. Spring (130050512404) 4. Safety Valve Plug (130051361374)			25
656	Mining & Construction	ENGINE	2012270634	DRIVE GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = ϕ 51.5c8, WIDTH = 50 mm, WEIGHT : 0.35 kg			25
657	Mining & Construction	ENGINE	2012270624	PUMP GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = ϕ 51.5c8, WIDTH = 55 mm, WEIGHT : 0.38kg			25
658	Mining & Construction	ENGINE	2012270614	PUMP GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 42Cr4Mo2 - IS:5517, TEETH TIP OD = ϕ 51.5c8, WIDTH = 17 mm, WEIGHT : 0.15 kg			25
659	Mining & Construction	ENGINE	443612223000	CLUTCH BOOSTER KNORR VG 3284	25	Nos	ASSEMBLY OF 45 SUB-PARTS, MAX PRESSURES : BRAKE FLUID 120 BAR & COMPRESSED AIR 12.5 BAR, WEIGHT : 2.8 kg			25
660	Mining & Construction	ENGINE	442076632424	OIL SUPPLY TUBE	25	Nos	ASSEMBLY OF 4 SUB-PARTS, THICKNESS, TUBE : OD ϕ 8 x 1mm WALL WEIGHT : 0.204 kg			25
661	Mining & Construction	ENGINE	130010800034	HOUSING COVER	25	Nos	MATERIAL : CSN 42 4331.01, CSN 42 1430.13, CSN 42 4331.71 MFG PROCESS : ALUMINIUM GRAVITY DIE CASTING, OUTER DIA : ϕ 225			25
662	Mining & Construction	ENGINE	442073420094	CONNECTION	25	Nos	ASSEMBLY OF 5 SUB-PARTS, MFG PROCESS : BRAZING, WEIGHT : 0.3 kg			25
663	Mining & Construction	ENGINE	442070332084	INTAKE MANIFOLD FRONT	25	Nos	ASSEMBLY OF 4 SUB-PARTS, MFG PROCESS : WELDING			25
664	Mining & Construction	ENGINE	442070332054	INTAKE MANIFOLD REAR	25	Nos	ASSEMBLY OF 7 SUB-PARTS, LENGTH : 386 mm, WEIGHT : 2.45 kg, MFG PROCESS : WELDING			25




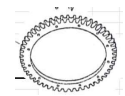
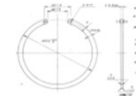
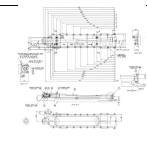
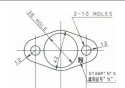
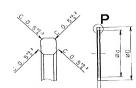
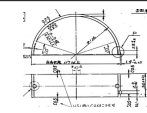
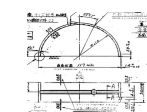
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
665	Mining & Construction	ENGINE	442054390034	INTAKE LINE RUBBER HOSE	25	Nos	Material: Rubber Mixture 1456 OD:φ103 mm ID: φ90 mm			587
666	Mining & Construction	ENGINE	442076631144	FUEL SUPPLY TUBE	25	Nos	Assembly: 3 components Weight :0.162 Kg Material :CSN137972.02 1.Tube 2.Connector 3.Pipe Adaptor			154
667	Mining & Construction	ENGINE	442054171764	O RING (SEALING RING)	25	Nos	Material: EEE 6233-2 Weight:0.007 kg ID:φ54.1 mm			60
668	Mining & Construction	ENGINE	442054032844	LOWER COVER GASKET	25	Nos	width:1132 mm height: 344 mm weight :0.05 kg Material:			910
669	Mining & Construction	ENGINE	442054032734	GASKET 3mm	25	Nos	Material: vulcanized rubber PCD:φ192 mm ID:φ162 mm			677
670	Mining & Construction	ENGINE	130076631274	DEARATION SYSTEM	25	Nos	COMPLETE DE AERATION CONTAINING 12 PARTS WEIGHT: 1.96KG			74
671	Mining & Construction	ENGINE	442070211284	SUCTION TUBE ASSEMBLY (VVNV)	25	Nos	SUCTION TUBE ASSEMBLY CONTAINING 4 PARTS			25
672	Mining & Construction	ENGINE	442079940074	BOLT	25	Nos	CONTAINING TWO PARTS MATERIAL : CSN 41 4331.9, CSN 4 1523.0 NUT:M10 SCREW:M8			262
673	Mining & Construction	ENGINE	442010010254	CYLINDER	25	Nos	MATERIAL : CSN 42 046312 INNER DIA : 124mm OUTER DIA : 149mm LENGTH : 260mm			33
674	Mining & Construction	ENGINE	443429108989	SENSOR(380 060 360 010)	25	Nos	MATERIAL :NYLON 66, FREE CUTTING BRASS,BRASS INNER DIA : 124mm OUTER DIA : 8.4mm LENGTH : 6.3mm WEIGHT: 160g			232
675	Mining & Construction	ENGINE	130010680064	GUIDE WHEEL	25	Nos	WEIGHT: 3.10 Kgs , MATERIAL: CSN-42.4331.01 (ALLUMINIUM CASTING ALLOYS), DIMENSION; BLADE DIA. φ370.09 mm, IMPELLER INNER DIA . φ210 mm, IMPELLER OUTER DIA. φ240.			27

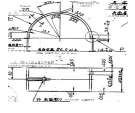


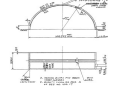
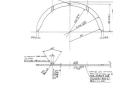
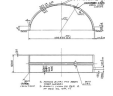
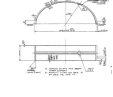
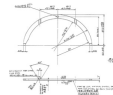
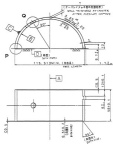
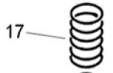
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
676	Mining & Construction	ENGINE	442070720454	BLADE WHEEL ASSY.	25	Nos	ASSEMBLY 3 COMPONENTS; 1. BLADE WHEEL JACKET 2. BLADE WHEEL HUB C/W BLADES 3. GASKET , TOTAL WEIGHT; 9.4 Kgs MATERIAL; FOR BLADE WHEEL JACKET- CSN-42.4331.01 (ALLUMINIUM CASTING ALLOYS), FOR BLADE WHEEL HUB- SAME MATERIAL AND FOR GASKET- HEAT RESISTANT NEOPRINE RUBBER			25
677	Mining & Construction	ENGINE	442070600124	AIR DUCT	25	Nos	ASSEMBLY 3 COMPONENTS; 1. AIR DUCT 2. HOLDER 3. STAY, WEIGHT; N/A , DIMENSION; DIAMETER Ø430 ±0.5, MATERIAL; IS:513-86, Gr.DD FOR ALL COMPONENTS			234
678	Mining & Construction	ENGINE	130028961804	FAN HOUSING BRACKET	25	Nos	WEIGHT; N/A, DIMENSION; TOTAL DIA. Ø225 , 6 THRU HOLES PITCH CIRCLE DIA. Ø220 mm AND 3 THREDED HOLES PITCH DIA. Ø230, MATERIALS; CSN-42 2420, CSN 1241.00			52
679	Mining & Construction	ENGINE	442054280054	GASKET 2 MM (TURBINE)	25	Nos	ASSEMBLY COMPONENTS: 1. DUCTILE SHEET (MATERIAL; CSN 425 365), 2. INSERT JERIT E' (MATERIAL; CSN 029021), 3. COVERING PLATE (MATERIAL; CSN 42 5365). TOTAL WEIGHT; 0.05 Kgs, DIMENSION; TOTAL LENGH; 136.6 mm AND BREADTH; 94 mm, THICKNESS; 1.85 ± 0.15			348
680	Mining & Construction	ENGINE	130035210484	REAR SHEET RH	25	Nos	DIMENSION- TOTAL LENGTH: 199 mm, BEND RADIUS; 80 mm, WEIGHT; 0.11 Kgs , MATERIALS; GR/CR3, IS:513			142
681	Mining & Construction	ENGINE	130050512154	SPRING	25	Nos	DIMENSION- SPRING WIRE DIA; Ø1.8 mm, NO. OF ACTIVE TURNS; 9, TOTAL NO. OF TURNS; 11 mm, TOTAL LENGTH; 31.7 mm, WEIGHT; 0.08 Kgs, MATERIAL; Gr-DM, IS:4454 (PT-1)			3175
682	Mining & Construction	ENGINE	130050780284	SPACER INSERT	25	Nos	MATERIAL: CSN 41 1109.0, CSN426510 WEIGHT: 0.018KG OD: Ø9H11 MM LENGTH: 7 MM			26
683	Mining & Construction	ENGINE	443930131570	VENTILATOR FAN	25	Nos	MATERIAL: CSN 426312 32 WEIGHT: 0.65KG DIAMETER: Ø190±0.3 MM THICKNESS: 1.6 MM			42
684	Mining & Construction	ENGINE	130050953684	SPACER WASHER	25	Nos	MATERIAL: CSN 41 331.21, CSN 42 6312.22 WEIGHT: 0.010KG ID: Ø57 MM THICKNESS: 1 MM			969
685	Mining & Construction	ENGINE	443936214310	PINION LUBRICATING FELT	25	Nos	MATERIAL: F33, GRADE A WIDTH: 8 MM THICKNESS: 1 MM			60
686	Mining & Construction	ENGINE	442071080484	CLUTCH SHAFT	25	Nos	ASSEMBLY: 3 PARTS WEIGHT: 6.5KG WIDTH:159.5±0.1 MM			93
687	Mining & Construction	ENGINE	442070210984	INTAKE PIPE ADOPTER	25	Nos	ASSEMBLY: 2 PARTS WEIGHT: 0.22KG WIDTH:10-1 MM			162

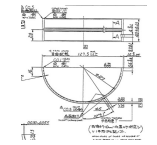
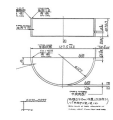
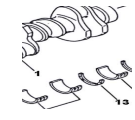

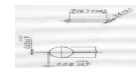
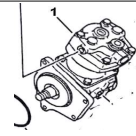
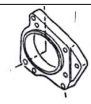
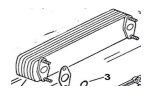
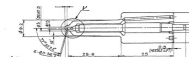

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
688	Mining & Construction	ENGINE	442053111114	HOSE 22/30-265	25	Nos	MATERIAL: NITRILE RUBBER COLOUR: BLACK MM LENGTH: 265x2 MM ID: ø22			329
689	Mining & Construction	ENGINE	6001816820	ELEMENT ASSY OUTER	10	Nos	Heavy Duty Diesel Engines (105 Dia) Effective Filtration Area:6.8 m² (38.1WIDTH x439.1 HEIGHT x208 PLEATS Total length 442.15mm			219
690	Mining & Construction	ENGINE	600211930	SENSOR OIL FILTER	231	Nos	ALARM ASSY FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA.) INSULATION RESISTANCE: 1Mohm WORKING DIFFERENTIAL PR.:1.5(0 TO +0.4 kg/cm2, WITHSTAND PR.: 20kg/cm2			231
691	Mining & Construction	ENGINE	6130321321	GEAR RING	77	Nos	GEAR FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA.) MATERIAL: C1101 NUMBER OF TEETH: 126, ID: 370+0.1mm, THICKNESS: 16+0.2mm			77
692	Mining & Construction	ENGINE	6136611130	RING,SNAP	60	Nos	RING (SNAP) FOR HEAVY DUTY DIESEL ENGINES(140 BORE DIA.) MATERIAL: JIS SWRH62A, PART IDENTICAL TO KES 04071-00150, RUST PREVENTION TREATMENT: KP-9 COATING OUTER DIA.: 157.5(0 TO + .25) mm, THICKNESS: 4(-0.05 TO 0)mm			60
693	Mining & Construction	ENGINE	6136612104	OIL COLLER ASSY	1602	Nos	OIL COOLER ASSY FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA.) TYPE: WATER COOLED COOLER ELEMENT: RADIATION AREA-0.253m2, CAPACITY-0.22L MAX. PITCH LENGTH: 661mm, MAX PITCH WIDTH: 119mm MATERIAL: COVER BODY-JISAD12, PLUG-S541B-D, VALVE O.C.-S45C-D, GASKET-GA-1C, PLUG O.C.- S541B-D, CASE VALVE-ADC10 OR ADC12, PLUG-S43C OR Eq., WASHER- SH/SPH/SPCCT Eq. OR SUPERIOR, WASHER-JIS SWRH62/67/72 Eq. OR SUPERIOR, NUT-S43C Eq. OR SUPERIOR, O RING- SR-1, O RING- ES 2316, O RING-NBR-1A			1602
694	Mining & Construction	ENGINE	6136612281	GASKET	7	Nos	GASKET FOR HEAVY DUTY DIESEL ENGINE MATERIAL: GAF-1A ID:36mm, PITCH: 54mm			10
695	Mining & Construction	ENGINE	615011930	GROMMET,OIL	70	Nos	GROMMET FOR HEAVY DUTY DIESEL ENGINES(125 BORE DIA.) MATERIAL: AS PER ES 2332, ID: 13mm, OD: 18mm, THICKNESS: 2.8+0.1mm			70
696	Mining & Construction	ENGINE	6150288010	BEARING,MAIN,US 0.50 1 PA	1	Nos	Same for both Upper & Lower Bearing Outer Dia : 116 mm, Radial Thickness :3.25 mm, Width : 34 mm Specifications of Trimetal Surface layer : Plating of Tin, Lead & Copper alloy P8 , thickness 0.02 Alloy layer: Material as per KJ 4A of KES 07.472.2, Back metal: Material as per SPCC1			441
697	Mining & Construction	ENGINE	6150298010	BEARING,MAIN,US 0.25,1 PA	154	Nos	Same for both Upper & Lower Bearing Outer Dia : 116 mm, Radial Thickness :3.125 mm, Width : 34 mm Specifications of Trimetal Surface layer : Plating of Tin, Lead & Copper alloy P8 , thickness 0.02 Alloy layer: Material as per KJ 4A of KES 07.472.2, Back metal: Material as per SPCC1			154

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
698	Mining & Construction	ENGINE	6150383040	BEARING,CRANKPIN,US 0.50,	511	Nos	Same for both Upper & Lower Bearing Outer Dia : 86 mm (min), Radial Thickness :2.75 mm, Width : 40 mm Specifications of Trimetal Surface layer : Plating of Tin, Lead & Copper alloy P8 , thickness 0.02 Alloy layer: Material as per KJ1 4A of KES 07.472.2, Back metal: Material as per SPCC1			511
699	Mining & Construction	ENGINE	6162232250	CREVICE SEAL	24	Nos	Inner Dia : 180 mm, Outer Dia : 193.15 mm, Width : 13.2 mm Material : ES2320 or ES2340			1602
700	Mining & Construction	ENGINE	6162268050	BEARING,THRUST,US1.00 1 S	84	Nos	Inner Dia : 153 mm, Outer Dia : 175 mm, Width : 4.5 mm Material : Back metal : SAE 1017, Bearing Alloy : KLBC 6 3			84
701	Mining & Construction	ENGINE	6162278010	BEARING,MAIN,ONE PAIR U/50.75MM	868	Nos	Same for both Upper & Lower Bearing Outer Dia : 148.525 mm (min), Radial Thickness : 4.375 mm, Width : 50 mm, Back metal Thickness : 3.75 ~ 4.05 Material : Bearing Alloy : KJ1 4B of KES 07.472.2, Overlay : ES 1405, Back metal : SAE 1017			868
702	Mining & Construction	ENGINE	6162278050	BEARING,THRUST,US0.75 1 S	70	Nos	Inner Dia : 153 mm, Outer Dia : 175 mm, Width : 4.375 mm, Thickness : 3.83 ~ 4.03 Material : Back metal : SAE 1017, Bearing Alloy : KLBC 6 3			70
703	Mining & Construction	ENGINE	6162288010	BEARING,MAIN,ONE PAIR U/S 0.50MM	2	Nos	Same for both Upper & Lower Bearing Outer Dia : 148.525 mm (min), Radial Thickness : 4.25 mm, Width : 50 mm, Back metal Thickness : 3.5 ~ 3.8 Material : Bearing Alloy : KJ1 4B of KES 07.472.2, Overlay : ES 1405, Back metal : SAE 1017			350
704	Mining & Construction	ENGINE	6162298010	BEARING,MAIN,ONE PAIR U/S 0.25MM	5	Nos	Same for both Upper & Lower Bearing Outer Dia : 148.525 mm (min), Radial Thickness : 4.125 mm, Width : 50 mm, Back metal Thickness : 3.5 ~ 3.8 Material : Bearing Alloy : KJ1 4B of KES 07.472.2, Overlay : ES 1405, Back metal : SAE 1017			748
705	Mining & Construction	ENGINE	6162298050	BEARING,THRUST,US 0.25 1	15	Nos	BEARING STD PART NO-5123180351(6162-29-8210) MATERIAL:BACK METAL SAE1017, BEARING ALLOY KLBC6B THICKNESS:4.125 OD-Ø175, ID- Ø153			55
706	Mining & Construction	ENGINE	6162383041	BEARING,CR PIN 1 PAIR,US 0.50MM	54	Nos	STD PART NO-5123100606 (6162-38-3420) DIA-Ø115.013, WIDTH-58±0.1 RADIAL THICKNESS-3.75 FLASH PLATING-Sn, OVERLAY-P9 ALLOY LAYER-LS17, BACK METAL-ES1424			216
707	Mining & Construction	ENGINE	6162434410	VALVE SPRING	5	Nos	PART CLOSED, EXISTING PART NO-5221110036(6162-43-4440) L-65.6, Ø42.1, WIRE DIA-Ø5.5±0.03, NO OF COILS-6.5			2485

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
708	Mining & Construction	ENGINE	6210218010	MEATL ASSY	3	Nos	STD PART NO-4123180111 (6210-21-8110) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAYER-KKJAB, NICKEL, BACK METAL-SAE1010 WIDTH-40±0.13, DIA-Ø127, RADIAL THICKNESS-3.5			168
709	Mining & Construction	ENGINE	6210268050	THRUST BEARING 1.00	2	Nos	STD PART NO-4123180614 (6210-26-8120) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAYER-KLB6CB, NICKEL, BACK METAL-SAE1010 DIA-OD-Ø150.5, ID-Ø132.7, RADIAL THICKNESS-4.5			17
710	Mining & Construction	ENGINE	6210278050	BEARING, THRUST, U/S 0.75	17	Nos	STD PART NO-4123180606 (6210-27-8210) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAYER-KLB6CB, BACK METAL-SAE1010 OD-Ø150.5, ID-Ø132.7 RADIAL THICKNESS-4.375			17
711	Mining & Construction	ENGINE	6210288050	THRUST BEARING 0.5	170	Nos	Thickness : 4.250(-0.07, -0.12), Thickness of the back metal: 3.68±0.10, Thickness of oil groove : 3.63 ± 0.15 Material : Back strip-SAE1010, Bearing alloy - KLB6CB, F250			170
712	Mining & Construction	ENGINE	6210612550	O RING	5	Nos	material- SR-1, ID-26.7±0.45, OD-30.1			92
713	Mining & Construction	ENGINE	6210813122	AIR COMPRESSOR	23	Nos	stroke- 85x60, 340 cc/rev at 2300 rpm			23
714	Mining & Construction	ENGINE	6210815120	SPACER	25	Nos	material- FC 25 or S541P			25
715	Mining & Construction	ENGINE	6211612111	ELEMENT	25	Nos	surface treatment- C6001-10, length- 340±0.3, width- 100			25
716	Mining & Construction	ENGINE	6212113120	NOZZLE	25	Nos	spray angle- 155°, suction volume- 1.5 mm3, lift - 0.5mm, Nozzle hole div- 0.36x6, seat dia- 3, separation- 60°±3°			73
717	Mining & Construction	ENGINE	6212161440	VALVE GUIDE	25	Nos	Material: Tarcalloyte , Tensile Strength : 25.5 kg/mm ² Hardness HRB90~103, ID=9.5+0.1, OD = 16 mm, Length = 72.5m, Hardness : 90~ 103 BHN			632


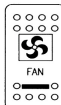
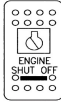
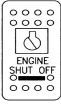
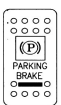
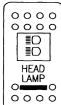
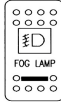
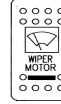
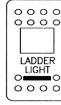
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
718	Mining & Construction	ENGINE	6212612111	ELEMENT,OIL COOLER	25	Nos	surface treatment- C6001-10, length- 340±0.3, width- 100			25
719	Mining & Construction	ENGINE	6212652610	THERMOVALVE	25	Nos	max operating temp- 135°C, valve opening temp- 85°C, valve opening inspection- 85±1.5°C, operating fuel- engine oil			84
720	Mining & Construction	TRUCK	452EG87333	PRESSURE SENDER (0-400 PSI)	143	Nos	Pressure Range: 0-400 PSI Pressure Type: Gauge Pressure Medium: Oil Output Type: Current Output Output Range: 4-20mA Operating Voltage: 10-32 Volt Temperature Range: -40 to 125 deg C Pressure Port: 1/8 inch NPT			420
721	Mining & Construction	TRUCK	958EG81829	PRESSURE SENDER (60 BAR)	137	Nos	Pressure Range: 0-60 bar Pressure Type: Gauge Pressure Medium: Oil Output Type: Current Output Output Range: 4-20mA Operating Voltage: 10-32 Volt Temperature Range: -40 to 125 deg C Pressure Port: 1/8 inch NPT			461
722	Mining & Construction	TRUCK	985EG86913	PRESSURE SENSOR (0-150BAR)	188	Nos	Pressure Range: 0-150 bar Pressure Type: Gauge Pressure Medium: Oil Output Type: Current Output Output Range: 4-20mA Operating Voltage: 10-32 Volt Temperature Range: -40 to 125 deg C Pressure Port: M14 X1.5			1897
723	Mining & Construction	TRUCK	991EG82105	SENSOR (PRESSURE)	60	Nos	Pressure Range: 0-250 bar Pressure Type: Gauge Pressure Medium: Oil Output Type: Current Output Output Range: 4-20mA Operating Voltage: 10-32 Volt Temperature Range: -40 to 125 deg C Pressure Port: M14 X1.5			60
724	Mining & Construction	TRUCK	953EG88545	FRONT CAMERA	18	Nos	Operating voltage: 12 volt Operating Temperature: -20 to 70 deg. C Power Consumption: 1.44 W Protection : IP69K			340
725	Mining & Construction	TRUCK	955EG82539	CABLE CAMARA	18	Nos	Cable Length: 20 mtr The Cable to be Provided with suitable interconnector The cable should be water and dust proof.			311
726	Mining & Construction	TRUCK	958EG12046	BRACKET (HEAVY DUTY MONITOR MOUNT)	18	Nos	Material: Aluminium Finish: Black Spray The Bracket should capable for heavy duty operation			495
727	Mining & Construction	TRUCK	931EG81247	HOLE PLUG (DUMMY SWITCH)	25	Nos	The hole plug is used as a dummy switch. Material: FRP or ABS Finish: Black			204
728	Mining & Construction	TRUCK	931EG81352	MOUNTING PANEL (END UNIT)	68	Nos	The Panel is used to mount single Switch. Material: FRP or ABS Finish: Black			116



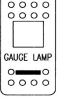





LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
729	Mining & Construction	TRUCK	953EG82542	HOLE PLUG	1252	Nos	The hole plug is used as a dummy switch. Material: FRP or ABS Finish: Black			2916
730	Mining & Construction	TRUCK	953EG82559	MOUNTING PANEL WITH 3 HOLES	355	Nos	The Panel is used to mount three switches. Material: FRP or ABS Finish: Black			1042
731	Mining & Construction	TRUCK	953EG82567	MOUNTING PANEL WITH 6 HOLES	660	Nos	The Panel is used to mount six switches. Material: FRP or ABS Finish: Black			1313
732	Mining & Construction	TRUCK	953EG83288	BATTERY CUT OFF SWITCH	259	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A LED Illumination: Amber Color			425
733	Mining & Construction	TRUCK	787EG81173	HAZARD LIGHT ROCKER SWITCH	137	Nos	Switch Type: ON-OFF (Double Pole) Termination/Base: .250 (Tab) Contact Rating: 250VAC, 10A			525
734	Mining & Construction	TRUCK	787EG81181	WIND SHIELD WASHER ROCKER SWITCH	100	Nos	Switch Type: Momentary-ON (Single Pole) Termination/Base: .250 (Tab) Contact Rating: 250VAC, 10A			111
735	Mining & Construction	TRUCK	931EG81109	MOUNTING PANEL (6 HOUSING)	110	Nos	The Panel is used to mount six switches. Material: FRP or ABS Finish: Black			110
736	Mining & Construction	TRUCK	931EG81174	ON-OFF SWITCH (PARKING)	15	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Red -Actuator Color Black-Flush Bracket			15
737	Mining & Construction	TRUCK	953EG82486	DUMP BRAKE SWITCH	38	Nos	Deleted from equipment BOM through ECN. In future this switch is not required.			24
738	Mining & Construction	TRUCK	953EG83263	ROOF LAMP SWITCH	326	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black -Actuator Color Black-Flush Bracket LED Illumination: Amber Color			643

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
739	Mining & Construction	TRUCK	953EG83271	WIND SHIELD WASHER SWITCH	399	Nos	Switch Type: (ON)-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			784
740	Mining & Construction	TRUCK	953EG83296	FAN SWITCH	326	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			736
741	Mining & Construction	TRUCK	953EG83303	ENGINE SHUT OFF SWITCH((ON)-OFF)	348	Nos	Switch Type: (ON)-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Red -Actuator Color Black-Flush Bracket LED Illumination: Red Color			354
742	Mining & Construction	TRUCK	953EG83311	ENGINE SHUT OFF SWITCH (OFF-ON)	149	Nos	Switch Type: ON-(OFF) Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Red -Actuator Color Black-Flush Bracket LED Illumination: Red Color			369
743	Mining & Construction	TRUCK	953EG83328	PARKING BRAKE SWITCH	193	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Grey-Actuator Color Black-Flush Bracket LED Illumination: Red Color			532
744	Mining & Construction	TRUCK	953EG83352	HEAD LAMP SWITCH	329	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			1343
745	Mining & Construction	TRUCK	953EG83369	FOG LAMP SWITCH	329	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			657
746	Mining & Construction	TRUCK	953EG83385	WIPER MOTOR SWITCH	399	Nos	Switch Type: (ON)-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			755
747	Mining & Construction	TRUCK	953EG83393	LADDER LIGHT SWITCH	455	Nos	Switch Type: ON-ON Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			754

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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
748	Mining & Construction	TRUCK	953EG83417	WORK LAMP SWITCH	123	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			234
749	Mining & Construction	TRUCK	953EG83425	DIFFERENTIAL LOCK SWITCH	70	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			100
750	Mining & Construction	TRUCK	953EG83433	GAUGE LAMP SWITCH	309	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color			636
751	Mining & Construction	TRUCK	958EG82006	SWITCH (POWER WINDOW)	198	Nos	Switch Type: (ON)-OFF-(ON) Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Grey-Actuator Color Black-Flush Bracket			496
752	Mining & Construction	TRUCK	985EG81883	CIRCUIT BREAKER - SA	2957	Nos	Operating Voltage: 18 to 32V Amp Operating Temperature: -40 to 85 deg C Current Rating: 5			8335
753	Mining & Construction	TRUCK	985EG81912	CIRCUIT BREAKER,20A.CLB-103-11B2N-R-F/20	1055	Nos	Operating Voltage: 18 to 32V Amp Operating Temperature: -40 to 85 deg C Current Rating: 20			7191
754	Mining & Construction	TRUCK	991EG82268	SWITCH MOUNT HOUSING (SINGLE HOUSING)	106	Nos	The Panel is used to mount single Switch. Finish: Black Material: FRP or ABS			322
755	Mining & Construction	TRUCK	451EG80096	KIT, DISPLAY AND CONTROLLER(COBO)	50	Nos	This system is an alternate source for Murphy dash board system			50
756	Mining & Construction	TRUCK	787EG80147	KIT, DISPLAY AND CONTROLLER(COBO)	50	Nos	Contact division for technical clarifications			50
757	Mining & Construction	TRUCK	958EG80227	KIT, ROCKER SWITCHES (COBO)	130	Nos	These switches are alternate source for carlingtech switches			130
758	Mining & Construction	TRUCK	787EG81084	LED LAMP RED	591	Nos	Operating Voltage: 10 to 32V Operating Temperature: -40 to 85 deg C Lens : Red Color			2186

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
759	Mining & Construction	TRUCK	787EG81092	LED LAMP YELLOW	1136	Nos	Operating Voltage: 10 to 32V Operating Temperature: -40 to 85 deg C Lens : Amber Color			3811
760	Mining & Construction	TRUCK	953EG81287	BATTERY CUTOFF SWITCH	192	Nos	Switch Type: OFF-ON Intermitent Current: 2000Amp Continuous Current: 300 A Terminal: 2 Nos. 1/2"-20 Copper stud Case: Plated Steel			560
761	Mining & Construction	TRUCK	958EG83506	TERMINAL BLOCK (20 POINTS)	227	Nos	Number of Terminal:20 Material: Tin Plated Brass Current withstanding capacity : 150A			675
762	Mining & Construction	TRUCK	953EG87979	SOLID STATE ELECTRONIC FLASHER	264	Nos	Input Voltage: 9-32V Minimum Operating current: .01 Amps Current: 12 Amp Temperature Range: -20 to 85 deg C	Maximum Operating 		900
763	Mining & Construction	TRUCK	451EG03337	PV450 DISPLAY UNIT	53	Nos	Display Specification: Display: 4.3" Resolution: WVGA, 480 x 272pixels Flash memory: 256MB RAM: 128Mbytes SDRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113			130
764	Mining & Construction	TRUCK	451EG03345	ME CAN PLUS(MURPHY)	50	Nos	Deleted from equipment BOM through ECN. In future not required.			50
765	Mining & Construction	TRUCK	451EG03353	ME CAN(MURPHY)	53	Nos	Controller Specification: Operating Voltage: 7-35VDC Operating Temperature: -20 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol			114
766	Mining & Construction	TRUCK	451EG82775	PRESSURE SENDER (0-100 PSI)	53	Nos	Pressure Range: 0-100 PSI Output : 240 to 73 ohm Thread Size: 1/8" NPT			150
767	Mining & Construction	TRUCK	451EG83399	Me Can Plus(1905)	51	Nos	Controller Specification: Operating Voltage: 7-35VDC Operating Temperature: -20 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol			89

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
768	Mining & Construction	TRUCK	452EG02829	2-WIRE TEMP SENDER	401	Nos	Type: 2 Wire sensor Temperature Range: 40 to 150 deg C Output : 1029 to 40 Ohm Thread: 1/2" NPT			764
769	Mining & Construction	TRUCK	953EG82267	TEMPERATURE SENDER UNIT (MURPHY)	261	Nos	Type: 2 Wire sensor Temperature Range: 40 to 150 deg C Output : 1029 to 40 Ohm Thread: M16 X 1.5			630
770	Mining & Construction	TRUCK	T007298522105	USB TO PORT C Cable	9	Nos	Cable is used to Upload the Software to LCD display and to Download the stored fault through Pen Drive			9
771	Mining & Construction	TRUCK	T007298522205	USB TO CAN CONVERTOR CABLE	14	Nos	1. The CAN Convertor Cable provide interface between I/O Module and Laptop. 2. The Cable is used to download the .Hex file and Config file to the I/O Module. 3. The Cable is used to monitor real time data and also used to record the data.			14
772	Mining & Construction	TRUCK	452EG02809	I/O MODULE	17	Nos	Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol			36
773	Mining & Construction	TRUCK	452EG03246	MURPHY I/O UNIT (ELEC ENGINE&MECH TRAN)	17	Nos	Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol			17
774	Mining & Construction	TRUCK	452EG03368	PV 780 DISPLAY	17	Nos	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication. Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113			21

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
775	Mining & Construction	TRUCK	452EG03376	DISPLAY UNIT(MURPHY PV 780)	17	Nos	<p>Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication.</p> <p>Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113</p>			17
776	Mining & Construction	TRUCK	931EG02603	I/O MODULE	5	Nos	<p>Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol</p>			27
777	Mining & Construction	TRUCK	938EG02315	PV 780 DISPLAY UNIT (QST30C)	10	Nos	<p>Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication.</p> <p>Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113</p>			29
778	Mining & Construction	TRUCK	938EG02331	I/O MODULE (MURPHY)	10	Nos	<p>Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol</p>			29
779	Mining & Construction	TRUCK	953EG02587	I/O MODULE	31	Nos	<p>Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol</p>			45
780	Mining & Construction	TRUCK	953EG04369	PV 780 DISPLAY	6	Nos	<p>Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication.</p> <p>Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113</p>			26


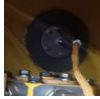





LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
781	Mining & Construction	TRUCK	958EG02034	I/O MODULE(MURPHY)	97	Nos	<p>Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol</p>			266
782	Mining & Construction	TRUCK	958EG02042	I/O MODULE(MECH ENGIN & ELECT TRANS)	40	Nos	<p>Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol</p>			132
783	Mining & Construction	TRUCK	958EG02245	PV 780 DISPLAY (OSK19C)	97	Nos	<p>Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN_low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication.</p> <p>Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113</p>			124
784	Mining & Construction	TRUCK	958EG02253	PV 780 DISPLAY (KTTA19C)	40	Nos	<p>Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN_low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication.</p> <p>Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: J1939, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113</p>			50
785	Mining & Construction	TRUCK	953EG83482	LED ROOF LAMP	322	Nos	<p>LED roof lamp fitted inside (to roof) the operator cabin provides illumination during night time when ever lamp switch is ON.This lap gives white colour illumination.</p> <p>Specification: Operating voltage: 24VDC Power Consumption: 6W Light Colour: White Case material: Steel</p>			836
786	Mining & Construction	TRUCK	807440000	SWITCH	149	Nos	<p>SPST • Normally Off • On with plunger depressed, spring return to Off Terminals: two screw. Mounting stem: 3/4"-16 UNF-2A thread, 31/64" long with aluminum gasket/washer.</p>			149
787	Mining & Construction	TRUCK	5610661510	SWITCH	192	Nos	<p>This relay is used to supply the battery power to steering motor in case of failure of hydraulic pump. Voltage: 24 V DC Rated Current: 1500 A Operating Temperature: -50 to 60 deg C</p>			551


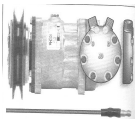
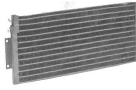
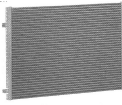




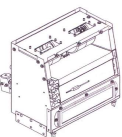
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
788	Mining & Construction	TRUCK	955RC03398	POWER WINDOW LH	205	Nos	Power window Motor : 24V DC Motor. Power window motor to be supplied with linkages and cable drive			739
789	Mining & Construction	TRUCK	953EG03404	EMERGENCY STEERING MOTOR ASSY.	161	Nos	Emergency Steering Motor is used to supply the auxiliary power to the steering unit in case of Hydraulic pump failure or Engine failure. This is an supplementary power pack to regular steering system & also to meet the safety norms of DGMS requirement. Specification: Description: DC Motor Power Rating: 3.5KW Operating Voltage: 24VDC Operating Temperature: -40 to 110 oC Insulation Type: B Revolution Direction: Clockwise Duty Cycle: 90 Sec for Continuous operation.			567
790	Mining & Construction	TRUCK	992EG03128	HID (FOG LAMP)	16	Nos	Voltage: 24 V DC Input current: 1.5A Lens: Yellow , Clear Lens Bulb: 35W D15 IP Rating: IP68 Operating Temperature: -40 to 85 deg C Color Temperature: 4250K			100
791	Mining & Construction	TRUCK	938EG03036	HEAD LAMP (HID LOW BEAM)	44	Nos	Voltage: 24 V DC Input current: 1.5A Lens: Low Beam Bulb: 35W D15 IP Rating: IP68 Operating Temperature: -40 to 85 deg C Color Temperature: 4250K			106
792	Mining & Construction	TRUCK	938EG03044	HEAD LAMP (HID HIGH BEAM)	44	Nos	Voltage: 24 V DC Input current: 1.5A Lens: High beam Bulb: 35W D15 IP Rating: IP68 Operating Temperature: -40 to 85 deg C Color Temperature: 4250K			106
793	Mining & Construction	TRUCK	985EG02997	HEAD LAMP (RECTANGULAR SHAPE)	1042	Nos	Voltage: 24 V DC Lens: White, Clear lens Bulb: 70W IP Rating: IP68 Operating Temperature: -40 to 85 deg C			3477
794	Mining & Construction	TRUCK	985EG03522	FOG LAMP (RECTANGULAR SHAPE)	386	Nos	Voltage: 24 V DC Lens: Yellow, Clear lens Bulb: 70W IP Rating: IP68 Operating Temperature: -40 to 85 deg C			1076
795	Mining & Construction	TRUCK	985EG03563	HEAD LAMP (WITH HIGH BEAM LENS)	450	Nos	Voltage: 24 V DC Lens: High Beam Pattern Bulb: 70W IP Rating: IP68 Operating Temperature: -40 to 85 deg C			1385
796	Mining & Construction	TRUCK	2370615250	SWITCH	554	Nos	This Positive cut off battery relay is used to cut off the battery when key switch is in off condition Voltage: 24 V DC Operating Current: 100 A Instantaneous Current: 1000A IP Rating: IP68 Operating Temperature: -40 to 85 deg C			929

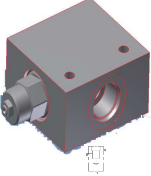
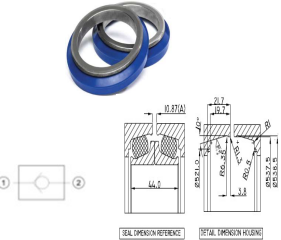
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
797	Mining & Construction	TRUCK	953EG80074	Collision Avoidance System-kit	17	Nos	<p>The system consist of sensor and display which will detects both moving and stationary objects in a pre-defined coverage area and reports the distance of the closest object via visual range indicators and an audible signal to a vehicle operator. To ensure the safety of operator & equipment as per the compliance of DGMS.</p> <p>Specification: Electrical Specification: Operating Voltage: 9-32VDC Operating Temperature: -40 to 85 oC Vibration: 25G RMS, 3 Axis Shock: 25G 3 Axis</p> <p>Operating Characteristics: Maximum Range: 32 feet (10m) Programmable Ranges: 10 to 32 feet (3m to 10m) Warning Ranges: 5 zones divided into programmed range Minimum Resolution: 1 foot</p> <p>Note ; The usage of device on equipment is certified by department of telecommunication government of India</p>			728
798	Mining & Construction	TRUCK	452EG87341	FUEL LEVEL SENSOR	17	Nos	Float Length:13-1/4" ± 1/8" Output: 0- 90 Ohm Temperature:-30 to 60 deg			40
799	Mining & Construction	TRUCK	882300000122	FUEL GAUGE AND DIAL (VZ 0796/VZ 0797)	100	Nos	Deleted from BOM through ECN. Future not required.			242
800	Mining & Construction	TRUCK	953FL02034	TWIN SITE FUEL LEVEL GAUGE ASSY	49	Nos	Float Length: 447±3 mm Float angle: 150 deg Output : Twin Site 0-90 Ohm			135
801	Mining & Construction	TRUCK	958EG82533	TWIN SITE FUEL LEVEL SENSOR(6243500029N)	137	Nos	Float Length: 381 mm Float angle: 150 deg Output : Twin Site 0-90 Ohm			159
802	Mining & Construction	TRUCK	955EG11241	SWITCH	152	Nos	Pressure Port: 9/16"-18 UNF Switch Type: SPST NC Set Point : 1800 PSI Max Operating Pressure: 4500 PSI Operating Temperature: -30 to 120 deg C Media: Oil Protection: IP65			366
803	Mining & Construction	TRUCK	985EG91798	LED WHITE	1117	Nos	Type: BA9S LED Bulb Emitting Color: White Operating Voltage : 24V DC			3541
804	Mining & Construction	TRUCK	985AS02698	LOW PRESSURE SWITCH (5629711140)	147	Nos	Pressure Port: PT 1/4" Switch Type: SPST NC Set Point : 75±5 PSI Operating Temperature: -50 to 70 deg C Media: Pneumatic Protection: IP65			334

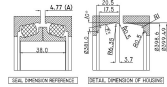



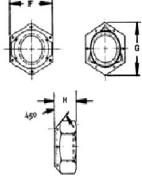
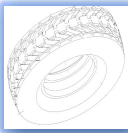
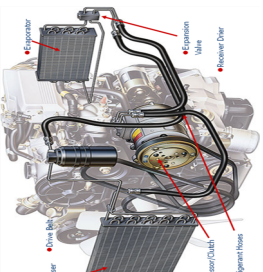
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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
805	Mining & Construction	TRUCK	985AS02705	STOP LIGHT SWITCH (5610661220)	183	Nos	Pressure Port: PT 1/4" Switch Type: SPST NO			298
806	Mining & Construction	TRUCK	931EG02588	SENSOR (TRANS OIL TEMP) (0501 322 534)	12	Nos	Nominal Voltage: 6-24V DC Operating Current : 1< 0.1A Operating Temperature: -30 to 150 deg C Resistance Values: 1152 to 18.7 Ohm			12
807	Mining & Construction	TRUCK	931EG81563	CONNECTOR (TOT SENSOR) (6029 199 003)	44	Nos	Use to connector TOT sensor to the Harness			44
808	Mining & Construction	TRUCK	955AC02151	COMPRESSOR	183	Nos	Voltage: 24V Mount: Ear Clutch: 6 1/4" (158mm) Variable 1 Groove			616
809	Mining & Construction	TRUCK	985AC02216	CONDENSER	7	Nos	<u>Multi Flow:</u> Constructed with 0.0051 inch thick zinc coated cross flow tubes. Fin spacing is 14 fins per inch. Four pass design. <u>Overall width:</u> 36 5/16", <u>Fin width:</u> 33 3/4", <u>Height:</u> 11 1/8", <u>Thickness:</u> 1 1/8"			21
810	Mining & Construction	TRUCK	959AC02088	CONDENSER	36	Nos	<u>Multi Flow:</u> Constructed with 0.0051 inch thick zinc coated cross flow tubes. Fin spacing is 14 fins per inch. Four pass design. <u>Overall width:</u> 25 3/4" <u>Fin width:</u> 24" <u>Height:</u> 10 3/4" <u>Thickness:</u> 1"			53
811	Mining & Construction	TRUCK	959AC02055	2.5" Flush mount ball louvers	86	Nos	Ball louvers with 2 1/2" Hose Adaptor. 100% shut off			158
812	Mining & Construction	TRUCK	959AC02169	2.5" Defrost Hose	86	Nos	2 1/2" Defrost Hose (9 ft)			158
813	Mining & Construction	TRUCK	953AC72286	3" hose	288	Nos	3" Defrost Hose (9 ft)			524
814	Mining & Construction	TRUCK	778AC02148	AC / HEATER UNIT (BACK WALL)	147	Nos	BTU: 28000 BTU/HR AIR Flow: 320 CFM (540 C.M./Hr) WEIGHT: 47 lbs/ 21 Kgs MOTORS: Three speed-double shaft motor with 2 blowers CURRENT DRAWN: 8.9 Amps @ 27.2 DC for the blower motor plus 2 amps for compressor clutch CONTROLS: AC switch, fan speed switch, fresh air control switch Refrigerant: R-134a TOTAL QUANTITY OF REFRIGERENT: 1.2 Kgs and 1.5 Kgs			507
815	Mining & Construction	TRUCK	959AC02071	AC / HEATER UNIT (FRONT WALL)	36	Nos	BTU (HEATING): 33400 BTU/HR BTU (COOLING): 24150 BTU/HR AIR Flow: 405 CFM WEIGHT: 25 Kgs MOTORS: Three speed-double shaft motor with 2 blowers MAX CURRENT: 9.9A for the units Refrigerant: R-134a			49


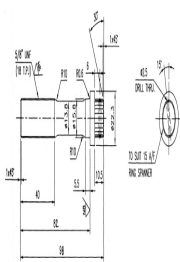
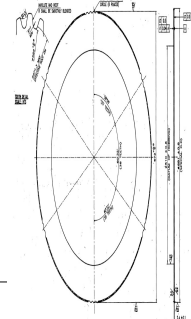
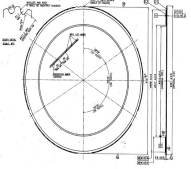
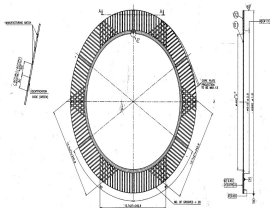
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Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
816	Mining & Construction	TRUCK	955H502961	Hoist Control Valve Assembly	137	Nos	<p>Pilot operated spool type control valve used in hoist circuit. This is located between hoist cylinders and hydraulic pump. This is used to achieve the function of Hoist, Lower, hold and float condition. Valve has inbuilt relief valves.</p> <p><u>Specification:</u> Flow through control valve : 356 lpm Operating pressure : 2750 psi MaxPilot pressure : 150 psi Oil : C4 SAE 30 Operating Temp : -28.9°C ~ 93.3°C Main relief valve set at : 2750±50 psi @ 90 gpm Leakage rate -Spool- @ all ports 78cc/min Load check- @ all ports 492cc/min</p>			289
817	Mining & Construction	TRUCK	PB8049	Overcenter assembly	137	Nos	<p>Over center valve/counter balance valve is used to control the movement of the body during over center condition i.e., when the center of gravity of the dump body and load shifts behind the hoist body pivot pin.</p> <p><u>Specification</u> Pressure Setting : 70~280 bar with 0.3 bar check Standard setting : 210 bar Seal Material : BUNA N Capacity : 60 gpm Pilot Ratio : 3:1 <u>Ports:</u> Port 1 & 2 : 1-5/16"-12 UNF Port 3 : 9/16"-18 UNF</p>			279
818	Mining & Construction	TRUCK	PB8341	Check Valve	137	Nos	<p>Check Valve with Orifice in Poppet : An In-line style check valve intended for blocking fluid flow Flow from (2) to (1) is blocked with a spring bias to assist in Static and low load conditions. Flow from (1) to (2) is allowed with a standard crack pressure Of 3-5 psi.</p> <p><u>Specification:</u> Operating pressure : 3500 psi Standard crack pressure : 3-5 psi Temperature range : 250° F to -40° F Inlet Port : 1.312-12 UN 37° JIC Male thread Outlet Port : 1.312-12 UN 37° JIC Female thread</p>			152
819	Mining & Construction	TRUCK	PB8338	Check Valve	137	Nos	<p>An in-line style, poppet type check valve intended for blocking fluid flow.</p> <p>Flow from (2) to (1) is blocked with a spring bias to assist in static and low load conditions. Flow from (1) to (2) is allowed with a standard crack pressure Of 3-5 psi</p> <p><u>Specification:</u> Operating pressure 3500 psi Standard crack pressure 3-5 psi Temperature range 250° F to -40° F</p> <p><u>Features</u></p> <ul style="list-style-type: none"> • Includes o-ring. • Special crack pressures available upon request. • Hydraulic oils - general. • Bolt pattern for sae standard pressure (code 61). • Low pressure drop. • No internal packings. • Low internal leakage, 5 dpm. • Aluminum body and steel poppet 			235
820	Mining & Construction	TRUCK	PC0894	Seal Assembly	274	Nos	<p>Seals provide protection for internal working components like bearings and gears in abrasive applications and permit the use of oil as a lubricant instead of grease resulting in less friction and longer life. In most applications, the lubricant installed at the factory is permanent with no periodic lubrication or adjustment required.</p> <p><u>Specification:</u> Ding Material : FKM - Black Hardness : 55~65 Shore A Temperature range : -25°C ~ +120°C Operating Speed : 4 m/s</p>			782

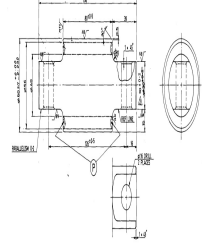




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821	Mining & Construction	TRUCK	TA8404	Seal Assembly	274	Nos	<table border="1"> <tr> <th colspan="9">CHEMICAL COMPOSITION (B)</th> </tr> <tr> <th>%</th> <th>C</th> <th>Si</th> <th>Mn</th> <th>Cr</th> <th>Ni</th> <th>Mo</th> <th>V</th> <th>P</th> <th>S</th> </tr> <tr> <td>MIN</td> <td>3.0</td> <td>0.4</td> <td>0.3</td> <td>1.2</td> <td>5.5</td> <td>-</td> <td>0.3</td> <td>-</td> <td>-</td> </tr> <tr> <td>MAX</td> <td>3.6</td> <td>0.7</td> <td>0.9</td> <td>1.7</td> <td>4.3</td> <td>0.4</td> <td>0.6</td> <td>0.3</td> <td>0.1</td> </tr> </table> 	CHEMICAL COMPOSITION (B)									%	C	Si	Mn	Cr	Ni	Mo	V	P	S	MIN	3.0	0.4	0.3	1.2	5.5	-	0.3	-	-	MAX	3.6	0.7	0.9	1.7	4.3	0.4	0.6	0.3	0.1		1030
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822	Mining & Construction	TRUCK	PB3014	Bushing - Extended Race	274	Nos	<p>This Bush is used in mounting of PANHARD ROD to CENTRE CASE of rear axle assembly</p> <p><u>Specification:</u> Refer M/s. RBC Bearings part no.B44-EL</p>			609																																						
823	Mining & Construction	TRUCK	PB3060	Split Outer Race	822	Nos	<p>This outer race is used for mounting of BALL STUD to TIE ROD in Tie rod assembly.</p> <p><u>Specification:</u> Refer M/s. RBC Bearings part no.B24-9L-36</p>			4389																																						
824	Mining & Construction	TRUCK	WA3051/955HS61435	O Ring	192	Nos	<p>This o ring is used in Pressure line of hydraulic system</p> <p><u>Specification:</u> ID 7.6 mm c/s: 1.05mm Synthetic rubber : BUNA-N Compound Temperature : -40°F ~ 250° F Shore A : 90±5 Should conform to SAE J515</p>			0																																						
825	Mining & Construction	TRUCK	VL2993	NUT	274	Nos	<p><u>LOCK NUT-GRADE -C, UNC THREAD</u> <u>Proof Stress:</u> 150000 psi <u>Rockwell Hardness</u> 26~34 This prevailing - torque type steel hexagon locknuts shall be in conformance with current IFI 100 and 101 . SurfaceFinish : Zinc Plating shall conform to ASTM B633 Type II finish, Thickness class FE/Zn 5 Minimum corrosion resistance, Type II</p> <table border="1"> <thead> <tr> <th rowspan="2">NOMINAL SIZE</th> <th colspan="2">WIDTH ACROSS FLATS P</th> <th colspan="2">WIDTH ACROSS CORNERS G</th> <th colspan="2">THICKNESS H</th> </tr> <tr> <th>MAX</th> <th>MIN</th> <th>MAX</th> <th>MIN</th> <th>MAX</th> <th>MIN</th> </tr> </thead> <tbody> <tr> <td>.75-10</td> <td>1.127</td> <td>1.088</td> <td>1.299</td> <td>1.240</td> <td>.665</td> <td>.617</td> </tr> </tbody> </table> 	NOMINAL SIZE	WIDTH ACROSS FLATS P		WIDTH ACROSS CORNERS G		THICKNESS H		MAX	MIN	MAX	MIN	MAX	MIN	.75-10	1.127	1.088	1.299	1.240	.665	.617		1500																			
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826	Mining & Construction	TRUCK	766WT12016	TYRE	30	Nos	Radial Tyre 24 R 35 E4 ** Rock Deep Thread with O ring			228																																						
827	Mining & Construction	TRUCK		AC KIT WITH HEATER OPTION	1) 147 2) 183 3) 140 4) 148	Nos	<p><u>REQUIREMENTS:</u> 1. CABIN VOLUME : 3478871200 mm³ 2. NO OF PERSONS IN THE CABIN : 2 AC Systems are much like a mother, who uses a sponge to soak up milk from a spilled glass. She soaks it up and then wrings the milk out of the sponge and into the sink. Similarly, an AC system soaks up heat in the cab using evaporation and then squeezes the heat into the outside air using condensation.</p> <p>Air conditioners have two basic layouts: the expansion valve system and the accumulator system. AC primarily uses the expansion valve system With five basic components</p> <p>1. Expansion device: A restriction in the liquid line of the system, purposely designed to cause a pressure drop.</p> <p>2. Evaporator: A device that removes heat from the cab air by exchanging it into boiling refrigerant.</p> <p>3. Compressor: Provides the mechanical energy to move refrigerant and manipulate pressures. This is the heart of the system.</p> <p>4. Condenser: Designed to exchange heat from the refrigerant to the outside air. Similar to the evaporator.</p>			147																																						
828	Mining & Construction	TRUCK								183																																						
829	Mining & Construction	TRUCK	1)778AC02148							140																																						
830	Mining & Construction	TRUCK	2)955AC02151							148																																						
831	Mining & Construction	TRUCK	3)778AC02131							5																																						
832	Mining & Construction	TRUCK	4)955AC02321							5																																						

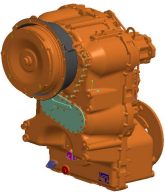
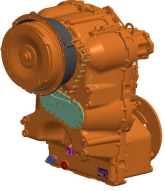

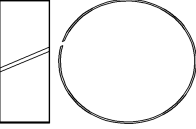
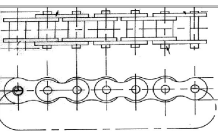
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833	Mining & Construction	TRUCK					5. Drier Filter Device: A storage container for extra refrigerant that usually contains a drying agent called desiccant and a filter to screen out contaminants.			5																																																			
834	Mining & Construction	TRUCK	959PD10833	Cap screw 5/8 UNF 18 TPI	168	Nos	<p>MATERIAL : En19/En24 TO BS:970-1983. ASTM GRAIN SIZE NO. 5-8 OR EQUIVALENT AS PER IS:2853-1964. INCLUSION RATING SHALL BE LESS THAN SEVERITY LEVEL 3 (THIN AND THICK) OF IS: 4163-1982.</p> <p>MACHINICAL PROPERTIES :</p> <p>a. TENSILE STRENGTH (STRESS) MIN. 105 kg/mm² b. YIELD POINT 90 kg/mm² c. PROOF LOAD (STRESS) MIN. 85 kg/mm² d. IMPACT STRENGTH 7 kg/mm²</p> <p>HEAT TREATMENT :</p> <p>a. HARDEN & TEMPER TO 32~38 Rc. b. THE THREAD AREA MUST BE SUBJECTED TO THE COLD FORMING AFTER THE HEAT TREATMENT.</p>			5494																																																			
835	Mining & Construction	TRUCK	985BR15219	PLATE	3014	Nos	<table border="1"> <thead> <tr> <th colspan="3">SPUR - GEAR</th> </tr> <tr> <th>GEAR TOOTH PROFILE</th> <th>TOOTH PROFILE</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>TOOTH PROFILE</td> <td>FULL DEPTH TOOTH</td> <td></td> </tr> <tr> <td>TOOL</td> <td>MODULE</td> <td>3</td> </tr> <tr> <td></td> <td>PRESSURE ANGLE</td> <td>14.5°</td> </tr> <tr> <td>No. OF TEETH</td> <td></td> <td>226</td> </tr> <tr> <td>STD. PITCH CIRCLE DIAMETER</td> <td></td> <td>678.000</td> </tr> <tr> <td>AMOUNT OF SHIFT</td> <td></td> <td>-</td> </tr> <tr> <td>TOOTH THICKNESS</td> <td>CROSS OVER</td> <td>172.44-8.31(19)</td> </tr> <tr> <td></td> <td>OVER PIN DIMENSION</td> <td>- ()</td> </tr> <tr> <td>CROWNING</td> <td></td> <td>-</td> </tr> <tr> <td>ACCURACY</td> <td></td> <td>CLASS 'T'</td> </tr> <tr> <td>LENGTH OF ACTION AT TOOTH TOP</td> <td></td> <td>-</td> </tr> <tr> <td>LENGTH OF ACTION AT TOOTH BOTTOM</td> <td></td> <td>-</td> </tr> <tr> <td>BASE CIRCLE DIA</td> <td></td> <td>-</td> </tr> <tr> <td>ROOT DIAMETER</td> <td></td> <td>-</td> </tr> <tr> <td>MATING GEAR PART No.</td> <td></td> <td>985 BR 45043</td> </tr> </tbody> </table>	SPUR - GEAR			GEAR TOOTH PROFILE	TOOTH PROFILE	STANDARD	TOOTH PROFILE	FULL DEPTH TOOTH		TOOL	MODULE	3		PRESSURE ANGLE	14.5°	No. OF TEETH		226	STD. PITCH CIRCLE DIAMETER		678.000	AMOUNT OF SHIFT		-	TOOTH THICKNESS	CROSS OVER	172.44-8.31(19)		OVER PIN DIMENSION	- ()	CROWNING		-	ACCURACY		CLASS 'T'	LENGTH OF ACTION AT TOOTH TOP		-	LENGTH OF ACTION AT TOOTH BOTTOM		-	BASE CIRCLE DIA		-	ROOT DIAMETER		-	MATING GEAR PART No.		985 BR 45043			5394
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836	Mining & Construction	TRUCK	985BR95223	DAMPER ASSY.	548	Nos	<table border="1"> <thead> <tr> <th colspan="3">SPUR - GEAR</th> </tr> <tr> <th>GEAR TOOTH PROFILE</th> <th>TOOTH PROFILE</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>TOOTH PROFILE</td> <td>FULL DEPTH TOOTH</td> <td></td> </tr> <tr> <td>TOOL</td> <td>MODULE</td> <td>3</td> </tr> <tr> <td></td> <td>PRESSURE ANGLE</td> <td>14.5°</td> </tr> <tr> <td>No. OF TEETH</td> <td></td> <td>226</td> </tr> <tr> <td>STD. PITCH CIRCLE DIA</td> <td></td> <td>678.000</td> </tr> <tr> <td>AMOUNT OF SHIFT</td> <td></td> <td>-</td> </tr> <tr> <td>TOOTH THICKNESS</td> <td>CROSS OVER</td> <td>172.44-8.31(19)</td> </tr> <tr> <td></td> <td>OVER PIN DIMENSION</td> <td>- ()</td> </tr> <tr> <td>CROWNING</td> <td></td> <td>-</td> </tr> <tr> <td>ACCURACY</td> <td></td> <td>CLASS 'T'</td> </tr> <tr> <td>LENGTH OF ACTION AT TOOTH TOP</td> <td></td> <td>-</td> </tr> <tr> <td>LENGTH OF ACTION AT TOOTH BOTTOM</td> <td></td> <td>-</td> </tr> <tr> <td>BASE CIRCLE DIAMETER</td> <td></td> <td>-</td> </tr> <tr> <td>ROOT DIAMETER</td> <td></td> <td>-</td> </tr> <tr> <td>MATING GEAR PART No.</td> <td></td> <td>985 BR 45043</td> </tr> </tbody> </table>	SPUR - GEAR			GEAR TOOTH PROFILE	TOOTH PROFILE	STANDARD	TOOTH PROFILE	FULL DEPTH TOOTH		TOOL	MODULE	3		PRESSURE ANGLE	14.5°	No. OF TEETH		226	STD. PITCH CIRCLE DIA		678.000	AMOUNT OF SHIFT		-	TOOTH THICKNESS	CROSS OVER	172.44-8.31(19)		OVER PIN DIMENSION	- ()	CROWNING		-	ACCURACY		CLASS 'T'	LENGTH OF ACTION AT TOOTH TOP		-	LENGTH OF ACTION AT TOOTH BOTTOM		-	BASE CIRCLE DIAMETER		-	ROOT DIAMETER		-	MATING GEAR PART No.		985 BR 45043			1080
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837	Mining & Construction	TRUCK	985BR95248	DISC	3288	Nos	<table border="1"> <thead> <tr> <th colspan="3">INTERNAL - GEAR</th> </tr> <tr> <th>GEAR TOOTH FORM</th> <th>TOOTH FORM</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>TOOTH FORM</td> <td>FULL DEPTH TOOTH</td> <td></td> </tr> <tr> <td>TOOL</td> <td>MODULE</td> <td>3</td> </tr> <tr> <td></td> <td>PRESSURE ANGLE</td> <td>14.5°</td> </tr> <tr> <td>No. OF TEETH</td> <td></td> <td>166</td> </tr> <tr> <td>STD. PITCH CIRCLE DIAMETER</td> <td></td> <td>498.000</td> </tr> <tr> <td>AMOUNT OF ADDENDUM MODIFICATION</td> <td></td> <td>-</td> </tr> <tr> <td>TOOTH THICKNESS</td> <td>OVER PIN DIMENSION</td> <td>+1.31 491.20+0.42 (S)</td> </tr> <tr> <td>ACCURACY</td> <td></td> <td>CLASS 'T'</td> </tr> <tr> <td>LENGTH OF ACTION AT TOOTH TOP</td> <td></td> <td>-</td> </tr> <tr> <td>LENGTH OF ACTION AT ROOT OF TOOTH</td> <td></td> <td>-</td> </tr> <tr> <td>PART No. OF MATING GEAR</td> <td></td> <td>985 BR 45051</td> </tr> </tbody> </table>	INTERNAL - GEAR			GEAR TOOTH FORM	TOOTH FORM	STANDARD	TOOTH FORM	FULL DEPTH TOOTH		TOOL	MODULE	3		PRESSURE ANGLE	14.5°	No. OF TEETH		166	STD. PITCH CIRCLE DIAMETER		498.000	AMOUNT OF ADDENDUM MODIFICATION		-	TOOTH THICKNESS	OVER PIN DIMENSION	+1.31 491.20+0.42 (S)	ACCURACY		CLASS 'T'	LENGTH OF ACTION AT TOOTH TOP		-	LENGTH OF ACTION AT ROOT OF TOOTH		-	PART No. OF MATING GEAR		985 BR 45051			6037												
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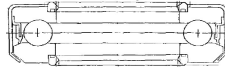
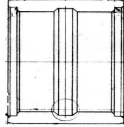

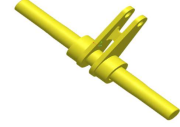





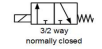
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
838	Mining & Construction	TRUCK	985EC02297	CUSHION	98	Nos	<p>SHAPE AND DIMENSIONS ARE IDENTICAL TO 581-61-21520 A</p> <p>(P) PORTION SHALL BE COATED WITH KES 07-629-4. UREA (URETHENE)</p> <p>HARDNESS OF RUBBER 90±5 HS (DIE)</p> <p>SPRING CONSTANT — AXIAL DIRECTION (STATIC) 100 ± 15 Kgs/mm.</p> <p>RADIAL DIRECTION (STATIC) 1800 ± 270 Kgs/mm.</p> <p>ALLOWABLE LOAD — AXIAL DIRECTION 250 Kgs/mm.</p> <p>RADIAL DIRECTION 800 Kgs/mm.</p>			160
839	Mining & Construction	TRUCK	985AS02608	BRAKE CHAMBER ASSY	156	Nos	<p>1. CHARACTERISTIC</p> <p>2-1 MAX OPERATING AIR PRESSURE 9 kgf/cm²</p> <p>2-2 AIR CYLINDER DIAMETER 100</p> <p>2-3 STROKE 100</p> <p>2-4 AIR CYLINDER PRESSURE PROOF 18 kgf/cm²</p> <p>2-5 MASTER CYLINDER DIAMETER 40</p> <p>2-6 DELIVERY OIL 480 (CLAT STROKE 99)</p> <p>2-7 APPLICATION OIL ENGINE OIL #10W OR #30</p> <p>2-8 OPERATING TEMPERATURE RANGE -30°C ~ +110°C</p> <p>2-9 MASTER CYLINDER PRESSURE PROOF 18 kgf/cm² MIN</p> <p>2-10 AIR TIGHT RESISTANCE FREE FROM LEAKAGE AT THE EVERY PORTION WITH PRESSURIZED AIR TO 8 kgf/cm²</p> <p>2-11 OPERATE FULL STROKE WITH PRESSURIZED AIR TO 1 kgf/cm² AND WHEN CHANGE TO EXHAUST, IT TO PUT BACK IN IT'S PLACE</p> <p>2-12 REBOUND TIMES OF RETURN TO BE WITHIN 6 SECONDS AT PISTON FULL STROKE HOWEVER FILL UP WITH OIL AND OUTLET PORT TO BE CLOSED STATE</p> <p>2-13 FREE FROM ABNORMALITY AT EVERY PORTIONS AFTER 2×10⁶ TIMES OPERATION WITH PRESSURIZED AIR TO 8 kgf/cm² AND 90% OF FULL STROKE</p> <p>2-14 MASS APPROXIMATELY 18 kgf</p> <p>2-15 SURFACE TREATMENT OR PAINT APPLY MFE 2-C (COLORED) TO THE INSIDE AND OUTSIDE SURFACE OF AIR CYLINDER PAINT BLACK TO OUTSIDE SURFACE OF MASTER CYLINDER</p>			342
840	Mining & Construction	TRUCK	985AS02616	REAR BRAKE CHAMBER	156	Nos	<p>CHARACTERISTIC OF ASSEMBLY</p> <p>2-1 MAX OPERATING AIR PRESSURE 9 kgf/cm²</p> <p>2-2 DIAMETER OF AIR CYLINDER 100</p> <p>2-3 STROKE 100</p> <p>2-4 PRESSURE PROOF OF AIR CYLINDER 18 kgf/cm²</p> <p>2-5 DIAMETER OF MASTER CYLINDER 40</p> <p>2-6 OIL DELIVERY 120 CC (1 STROKE 99)</p> <p>2-7 OPERATING OIL ENGINE OIL #10W</p> <p>2-8 OPERATING TEMPERATURE RANGE -30°C ~ +110°C</p> <p>2-9 PRESSURE PROOF OF MASTER CYLINDER 18 kgf/cm² MIN</p> <p>2-10 AIR TIGHTNESS ANY PORTION TO BE FREE FROM LEAKAGE AT 8 kgf/cm² AIR PRESSURE</p> <p>2-11 AFTER OPERATION OF FULL STROKE AND EXHAUST AT 1 kgf/cm² AIR PRESSURE, IT SHOULD RETURN TO THE FIRST POSITION</p> <p>2-12 RETURNING TIME OF FULL STROKE OF PISTON TO BE MAX 6 SECONDS HOWEVER, FILLED WITH OIL AND EXHAUST PORT TO BE SHUTTING</p> <p>2-13 ENDURANCE AFTER 2×10⁶ TIMES OPERATION AT 8 kgf/cm² AIR PRESSURE AND 90% OF FULL STROKE, ANY PORTION TO BE FREE FROM DEFECTS</p> <p>2-14 WEIGHT APPROXIMATELY 18 kgf</p> <p>2-15 SURFACE TREATMENT AND PAINT COAT INNER AND OUTER SURFACE OF AIR CYLINDER WITH MFE 2-C (COLORED) AND OUTER SURFACE OF MASTER CYLINDER WITH BLACK</p>			396
841	Mining & Construction	TRUCK	953WT02005	TYRE RADIAL	42	Nos	<p>RADIAL PLY TYRE: 27.00 R 49</p> <p>ROCK DEEP TREAD</p> <p>TRA CODE: E4</p> <p>LOAD CARRYING CAPACITY OF EACH TYRE: 29850 Kg</p>			132
842	Mining & Construction	TRUCK	452AC02467	A/C INSTALLATION KIT	12	Nos	<p>Roof top AC is placed at the top of the cabin .It houses condenser,blower,expansionvalve etc in the single unit.</p> <p>Specification</p> <p>BTU'S Heating — 45,000 BTU/Hr @ 100°F (13.2 kW @ 37.8°C) air temp. rise</p> <p>Cooling — 25,000 BTU/Hr with 36°F (7.3 kW with 2.2°C) refrigerant temp. and 80°F (26.7°C) wet bulb entering air</p> <p>AIR FLOW 355 CFM (580 m³/h)</p> <p>WEIGHT 65 lbs.</p> <p>MOTORS Evaporator — One 12 VDC, three speed (24 VDC available)</p> <p>Condenser — One 12 VDC low profile (24 VDC available)</p> <p>CURRENT 38.2 amps @ 13.6 VDC (includes 4 amps for A/C clutch)</p> <p>DRAW 19.1 amps @ 27.2 VDC (includes 2 amps for A/C clutch)</p>			73







LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
843	Mining & Construction	TRUCK	451TM02068	TRANSMISSION ASSY.	50	Nos	The Transmission is coupled with engine directly using flex plates. The Transmission is having inbuilt oil pump and filter for circulation and purification of transmission oil. Specification:- Type - Power Shift Electro Hydraulic type Drop - 540mm, Engine Connection - Direct mounting, Flywheel housing type - SAE 3, No. of gears - 6 F/ 3 R. Transmission driven PTO - 2 nos. (SAE C Type & SAE B Type) Operating Pressure - 18 bar (Max.)			50
844	Mining & Construction	TRUCK	931TM02014	TRANSMISSION ASSY.	50	Nos	The Transmission is coupled with engine directly using flex plates. The Transmission is having inbuilt oil pump and filter for circulation and purification of transmission oil. Specification:- Type - Power Shift Electro Hydraulic type Drop - 500mm, Engine Connection - Direct mounting, Flywheel housing type - SAE 3, No. of gears - 6 F/ 3 R. Transmission driven PTO - 1 no. (SAE C Type) Operating Pressure - 18 bar (Max.)			50
845	Mining & Construction	TRUCK	931AX80024	SEAL KIT & LIP SEALS	10	Nos	Part of Tandem Axle to part no. 931AX02018 (M/S. Oerlikon Graziano, Italy) Seal Kit used to arrest the external dust entering inside the tandem axle.			15
846	Mining & Construction	TRUCK	931AX12613		10					10
847	Mining & Construction	TRUCK	931AX12727		10					10
848	Mining & Construction	TRUCK	2322251740	BUSHING	273	Nos	Item CHARACTERISTICS 1) Specific gravity 1.3 to 1.4 2) Tensile strength 1000kg/cm3 or more 3) Bending strength 1000kg/cm3 or more 4) Compression strength 2000kg/cm3 or more (how ever this shall be applied to vertical laminated direction) 5) Impact strength 18 kg-cm/cm3 or more with 20T notch 6) Hardness 80 or more 7) Compression strength 11 kg/mm2 8) Oil content 1% or more 9) Color tone Black 10) Product wrapping material Use raminated craft paper for wrapping oiled product			519
849	Mining & Construction	TRUCK	2322352151	CHAIN	280	Nos	Used in BG 605 Equipment in Tandem Axle Material and heat treatment 1. Link:- SAE 1050- quench & temper 39-45 hrc 2. Bush:- 15 cr3 gas carburise ,quench & temper 3.roller :- surface hardness 55/60 hrc case depth 0.4-0.7 mm core hardness 30-36 hrc 4. Pin :- End quench & temper 48/54 hrc 5. Quantity per equipment :- 4 break strength 27,500 kg or more strength 23,000 kg or more 6.Average 7..Minimum break			438

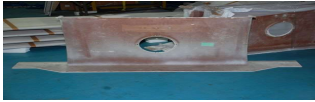
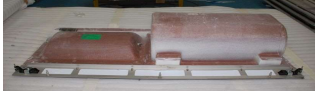




LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years	
850	Mining & Construction	TRUCK	2352711280	BEARING	34	Nos	Used in BG 825 Motor grader king pin thrust bearing. Case:- Carbon Steel Phosphate coating treatment Shaft fit :- Dia 60.58 Seal Ring:- Carbon Steel Carbon Steel Inner Ring:- 60-64 HRC,One no Outer Ring:-60-64 HRC,One No Ball:-61-66 HRC , No of Balls:- 20 Standard Static Rated Load :- 14200 kg	Seal:- Steel			82
851	Mining & Construction	TRUCK	2352711581	BUSHING	34	Nos	Used in Leaning system cylinder, in the axle. STKM 17A /S53C Case Depth 1-2 mm	Material:-			45
852	Mining & Construction	TRUCK	2357015920	DISC	100	Nos	Assembled in Circle Reverse gear and acts as slip plate				1390
853	Mining & Construction	TRUCK	451SC02071	SHAFT	10	Nos	Used in BG 605 I and BG 605A Motor Grader for scarifier application. Used to lift and drop the scarifier attachment				40
854	Mining & Construction	TRUCK	451SC02096	ARM	10	Nos	Used in BG 605 I and BG 605A Motor Grader for scarifier application. Used to lift and drop the scarifier attachment				80
855	Mining & Construction	TRUCK	451WA41148	SIDE EDGE	106	Nos	It is Part of Working System Assy to part no. 451wa01003 Supplied by 1) M/s. USCO SP-A, (Ilay 2) M/s. USG Product (FE) PTE Ltd, Singapore) 3) Crown Parts & Machine Inc, USA. Specification: Curve length is 481.8mm x 156 x 15.9 t				251
856	Mining & Construction	TRUCK	2354411920	Solenid Valve Assy	17	Nos	Nominal Voltage: 20-30V DC Fluid: Air Maximum Operating Press.:9 bar Operating Temperature: -20 to 65 deg C Port: 1/4" PT		 		21
857	Mining & Construction	TRUCK	2354411930	VALVE	17	Nos	Nominal Voltage: 20-30V DC Fluid: Air Maximum Operating Press.:9 bar Operating Temperature: -20 to 65 deg C Port: 1/4" PT		 		24



LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
858	Mining & Construction	TRUCK	4250611150	VALVE	17	Nos	Specification: 1) Rated Voltage :-24 V DC 2)Applicable Voltage Range:- 20-30 V DC 3)Applicable Pressure Range:- 3 kg/cm2- 9kg/cm2 4) Applicable Tempartaure Range:- -30 Deg C to 80 Deg C 5) Holding Temperature Range:-30 Deg C to 80 Deg C			20
859	Rail & Metro	BANGALORE COMPLEX	94282001	AIR SPRING, ASS'Y	576	Nos	750 VDC THIRD RAIL CURRENT COLLECTION SYSTEM RH TYPE WITH CAST IRON SHOE , FUSE AND BRACKET, HIGH POWER CABLE BETWEEN COLLECTOR SHOE TO FUSE BOX, AND ALL MISCELLANEOUS (MALE & FEMALE CONNECTOR, PIN , SOCKET AND HARDWARE FOR INSTALLATION) PTS No: GR/TD/3499 Rev 1 dated 17.02.17			576
860	Rail & Metro	BANGALORE COMPLEX	5558303501	APPLICATOR LH	288	Nos	750 VDC THIRD RAIL CURRENT COLLECTION SYSTEM LH TYPE WITH CAST IRON SHOE FUSE AND BRACKET, HIGH POWER CABLE BETWEEN COLLECTOR SHOE TO FUSE BOX AND ALL MISCELLANEOUS (MALE & FEMALE CONNECTOR, PIN , SOCKET AND HARDWARE FOR INSTALLATION) PTS No: GR/TD/3499 Rev 1 dated 17.02.17		SI No. 860 to 861 " APPLICATOR ITEMS" to be indigenized from same source	288
861	Rail & Metro	BANGALORE COMPLEX	5558303502	APPLICATOR RH	288	Nos	MANUAL HAND LEVER FOR CCD AS PER PTS:GR/TD/3499			288
862	Rail & Metro	BANGALORE COMPLEX	55583034	ANTI-ROLL BAR ROD	576	Nos	STINGER CONNECTOR MALE WITH BOX(PIN HOUSED IN BOX ALONG WITH GLAND, LUG S & OTHER ACCESSORIES) AS PER PTS:GR/TD/3499			576
863	Rail & Metro	BANGALORE COMPLEX	R107919000	SR 911 GREY (300 ML TUBE)	8880	Nos	STINGER CONNECTOR FEMALE (WITH COVER AND DUMMY PLUG) AS PER PTS:GR/TD/3499			21185
864	Rail & Metro	BANGALORE COMPLEX	R601181100	SABATAK 760 XXL	7680	Nos	LED BASED SALOON LIGHT (1302MM) FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481		SI No. 864 to 865 " CLEANING AGENTS" to be indigenized from same source	7680
865	Rail & Metro	BANGALORE COMPLEX	R601181200	SABACLEAN 48	57.6	Nos	LED BASED SALOON LIGHT (690MM) FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			60
866	Rail & Metro	BANGALORE COMPLEX	94214005	SALOON TO CAB DOOR ASSY	48	SET	GANGWAY LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481		SI No. 866 to 871 " CAB DOOR ASSEMBLY ITEMS" to be indigenized from same source	48


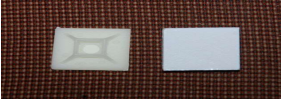
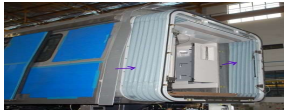
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
867	Rail & Metro	BANGALORE COMPLEX	9421400013	ACCESSORIES FOR CAB SIDE DOOR ASSY(LH)	48	SET	CAB MAIN LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			48
868	Rail & Metro	BANGALORE COMPLEX	9421400014	ACCESSORIES FOR CAB SIDE DOOR ASSY(RH)	48	SET	HEAD LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			48
869	Rail & Metro	BANGALORE COMPLEX	9421400015	ACCESSORIES FOR SALOON TO CAB DOOR ASSY	48	SET	MARKER AND TAIL LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			48
870	Rail & Metro	BANGALORE COMPLEX	94214004300	CAB SIDE DOOR ASSY KIT LH	48	SET	FLASHER LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			48
871	Rail & Metro	BANGALORE COMPLEX	94214004301	CAB SIDE DOOR ASSY KIT RH	48	SET	DRIVING CONSOLE LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/34			48
872	Rail & Metro	BANGALORE COMPLEX	94218011300	CAB SKIRT ASSEMBLY	48	Nos	PROTECTION FILM 250x100x0.5T		SI No. 872 to 888 " INTERIOR PANELS ASSEMBLY ITEMS" to be indigenized from same source	48
873	Rail & Metro	BANGALORE COMPLEX	94218011301	CAB SKIRT ASSEMBLY	48	Nos	PROTECTION FILM 530x40x0.5T			48
874	Rail & Metro	BANGALORE COMPLEX	942ACCSCAB	ACCESSORIES FOR CAB PANELS DM CAR	48	SET	PROTECTION FILM 150x140x0.5T			48
875	Rail & Metro	BANGALORE COMPLEX	942ACCSDM	ACCESSORIES FOR PANELS INTERIOR DM CAR	48	SET	PROTECTION FILM 300x120x0.5T			48
876	Rail & Metro	BANGALORE COMPLEX	942ACCSM	ACCESSORIES FOR PANELS INTERIOR M CAR	48	SET	PROTECTION FILM 130x60x0.5T			48
877	Rail & Metro	BANGALORE COMPLEX	942ACCST	ACCESSORIES FOR PANELS INTERIOR T CAR	48	SET	PROTECTION FILM 310x40x0.5T			48
878	Rail & Metro	BANGALORE COMPLEX	942CLACCSM	ACCESSORIES FOR CEILING PANELS M CAR	48	SET	PROTECTION FILM 280x130x0.5T			48
879	Rail & Metro	BANGALORE COMPLEX	942PANELCABDM	INTERIOR PANELS FOR CAB DM CAR	48	SET	PROTECTION FILM 240x90x0.5T			48


LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
880	Rail & Metro	BANGALORE COMPLEX	942PANELDM	INTERIOR & EXTERIOR PANELS FOR DM CAR	48	SET	PROTECTION FILM 210x90x0.5T			48
881	Rail & Metro	BANGALORE COMPLEX	942PANELM	INTERIOR & EXTERIOR PANELS FOR M CAR	48	SET	PROTECTION FILM 255x25x0.5T			48
882	Rail & Metro	BANGALORE COMPLEX	942PANELT	INTERIOR & EXTERIOR PANELS FOR T CAR	48	SET	PROTECTION FILM 135x40x0.5T			48
883	Rail & Metro	BANGALORE COMPLEX	94239102	END FAIRING ROOF	240	Nos	PROTECTION FILM 220x130x0.5T			240
884	Rail & Metro	BANGALORE COMPLEX	94239103300	END FAIRING SIDE	240	Nos	PROTECTION FILM 260x130x0.5T			240
885	Rail & Metro	BANGALORE COMPLEX	94239103301	END FAIRING SIDE	240	Nos	PROTECTION FILM 520x130x0.5T			240
886	Rail & Metro	BANGALORE COMPLEX	94218004	DRIVER DESK & CONSOLE ASSY	48	Nos	PROTECTION FILM 550x130x0.5T			48
887	Rail & Metro	BANGALORE COMPLEX	94218257	FOOT PLATE-1	96	Nos	PROTECTION FILM 410x40x0.5T			96
888	Rail & Metro	BANGALORE COMPLEX	94218258	FOOT PLATE-2	96	Nos	PROTECTION FILM 510x150x0.5T			96
889	Rail & Metro	BANGALORE COMPLEX	9422105501	Earthing Contact Assembly (A type)	288	SET	AUTODIMMER FOR KMRCCL-RS (3R) PROJECT AS PER PTS GR/TD/3481		SI No. 889 to 892 " EARTHING CONTACT ASSEMBLY ITEMS" to be indigenised from same source.	288
890	Rail & Metro	BANGALORE COMPLEX	9422105502	Earthing Contact Assembly (B type)	48	SET	SENSOR FOR KMRCCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			48
891	Rail & Metro	BANGALORE COMPLEX	9422105503	Earthing Contact Assembly (C type)	96	SET	DC-DC CONVERTER FOR DRIVING CONSOLE LIGHT(110V-24V DC) FOR KMRCCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			96
892	Rail & Metro	BANGALORE COMPLEX	9422105504	Earthing Contact Assembly (D type)	48	SET	PROTECTION FILM 195x150x0.5T			48
893	Rail & Metro	BANGALORE COMPLEX	94218084	ELECTRICAL WIPER SYSTEM	48	SET	PROTECTION FILM 150x130x0.5T			48
894	Rail & Metro	BANGALORE COMPLEX	90921712	CRIMP SPLICE SOLDER SLEEVE	42000	Nos	PROTECTION FILM 200x130x0.5T		SI No. 894 to 897 " ELECTRICAL ACCESSORIES ITEMS" to be indigenised from same source.	42000





LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
895	Rail & Metro	BANGALORE COMPLEX	90921835	SLEEVE 1.5 Sq,mm	57600	Nos	PROTECTION FILM 250x130x0.5T		SI No. 898 to 901 " FLOOR CUSHIONING ITEMS" to be indigenised from same source.	75000
896	Rail & Metro	BANGALORE COMPLEX	90921834	MOUNT BASE-DAMB-30	52800	Nos	PROTECTION FILM 410x130x0.5T			52800
897	Rail & Metro	BANGALORE COMPLEX	90921160	COVER BUSHING (4.8)	28800	Nos	PROTECTION FILM 720x160x0.5T			28800
898	Rail & Metro	BANGALORE COMPLEX	R306688020	FLOOR CUSHIONING 4mmTHK x 160mmWIDTH x 5m ROLL	1038.864	Roll	PROTECTION FILM 150x100x0.5T			1039
899	Rail & Metro	BANGALORE COMPLEX	R306688021	FLOOR CUSHIONING 10mm THK x 40mm WIDTH x 5m ROLL	4011.072	Roll	PROTECTION FILM 120x40x0.5T			4012
900	Rail & Metro	BANGALORE COMPLEX	R306688022	FLOOR CUSHIONING 10mm THK x 50mm WIDTH x 5m ROLL	226.272	Roll	PROTECTION FILM 225x40x0.5T			227
901	Rail & Metro	BANGALORE COMPLEX	R306688023	FLOOR CUSHIONING 19mm THK x 50mm WIDTH x 5m ROLL	65.184	Roll	PROTECTION FILM 350x40x0.5T			66
902	Rail & Metro	BANGALORE COMPLEX	94218087	SUN BLIND ASSY	48	Nos	PROTECTION FILM 480x100x0.5T		48	
903	Rail & Metro	BANGALORE COMPLEX	94255002	GANGWAY ASSEMBLY	240	Nos	PROTECTION FILM 480x40x0.5T		240	
904	Rail & Metro	BANGALORE COMPLEX	R136393022	R136393022,2.0 mm THICK STAINLESS STEEL TO SIZE OF WIDTH 1250mm x 2050 mm LEGTH TO GRADE SUS 301L DLT DF OF SPECIFICATION GR TD 1456	2736	Sq Mtrs	PROTECTION FILM 300x220x0.5T		SI No. 904 to 905 " STAINLESS STEEL RAW MATERIALS" to be procured from same source.	2736
905	Rail & Metro	BANGALORE COMPLEX	R136393025	R136393025,2.0mm thick stainless steel sheet to size of width 1250 mm x3500 mm length to grade SUS301L DLT (DF) of specification GR TD 1456 Rev.2	8208	Sq Mtrs	PROTECTION FILM 270x95x0.5T			8208

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years																		
906	Mining & Construction	EARTH MOVERS	CHSD113070	O RING	90	Nos	O Ring Material: NBR-1B Ref:BEML std.C5003-01 ; ID: 69.620.25; Cross section dia: 3.5x0.10		This O ring is used in C-crane Hydraulic system	90																		
907	Mining & Construction	EARTH MOVERS	130EG81812	LCD PANEL	5	Nos	1. Display size: 7" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs : 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.0B,CAN 2.0A, CANopen, Proprietary messaging, RS485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing : IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) 12. Shock : 50g in 3 axis 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard: tactile buttons		CAN (Control Area Network) based 7" electronic display monitors all the engine, transmission and other equipment critical parameters continuously. Some parameters are directly connected to display and other parameters are connected through CAN converter by using two cables (CAN low and CAN high). Display shows all parameters in analogue / Bargraph/alpha numeric form and it provides audio visual alarm to the operator in case any parameter crosses the specified limit.	13																		
908	Mining & Construction	EARTH MOVERS	171EG81687	P.B.SWITCH	65	Nos	1. Rated voltage:24 VDC 2. Rated current : 10Amp 3.Type of contacts: 1NO + 1NC 4. Termination: M3.5 screw terminals 5. Knob color/type: Red Push button (mom-on)/mushroom head. 6. Mounting hole:Ø22.2 mm		Push Button (PB) switch is used to shut-off fuel solenoid valve of the engine.	85																		
909	Mining & Construction	EARTH MOVERS	CEK0120000	STARTER SWITCH	1500	Nos	 Maximum Allowable Current unit: A <table border="1" style="display: inline-table;"> <thead> <tr> <th>Rated voltage</th> <th>12V</th> <th>24V</th> </tr> </thead> <tbody> <tr> <td>BR Circuit</td> <td>20</td> <td>10</td> </tr> <tr> <td>ACC Circuit</td> <td>20</td> <td>15</td> </tr> <tr> <td>R₁ Circuit</td> <td>40</td> <td>40</td> </tr> <tr> <td>R₂ Circuit</td> <td></td> <td></td> </tr> <tr> <td>C Circuit</td> <td>Instant 75 Holding 22</td> <td>Instant 75 Holding 22</td> </tr> </tbody> </table>	Rated voltage	12V	24V	BR Circuit	20	10	ACC Circuit	20	15	R ₁ Circuit	40	40	R ₂ Circuit			C Circuit	Instant 75 Holding 22	Instant 75 Holding 22		Starter key is used to power up the electrical system of equipment, by connecting the batteries to the equipment.	1500
Rated voltage	12V	24V																										
BR Circuit	20	10																										
ACC Circuit	20	15																										
R ₁ Circuit	40	40																										
R ₂ Circuit																												
C Circuit	Instant 75 Holding 22	Instant 75 Holding 22																										
910	Mining & Construction	EARTH MOVERS	130EG81967	SENDER-CAN	4	Nos	1. Operating Voltage: 7 – 35 VDC 2. Input: 4 no. Resistive or -2 to +35 VDC 3. Output: SAE J1939 protocol and 2 no. 250mA. 4. Protection: IP65 5. Operating temperature: -40°C to +85°C		SenderCAN is used for converting Analogue/digital/pulse signal into CAN signal.	8																		
911	Mining & Construction	EARTH MOVERS	130EG81212	TEMP SENSOR	65	Nos	1. Temp. Range: 40oCto 150oC 2. Type: Resistive. <table border="1" style="display: inline-table;"> <thead> <tr> <th colspan="2">Resistance VS Temperature</th> </tr> <tr> <th>Temperature</th> <th>Resistance (Ohm)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>1097</td> </tr> <tr> <td>60</td> <td>497.8</td> </tr> <tr> <td>80</td> <td>235.25</td> </tr> <tr> <td>100</td> <td>123.75</td> </tr> <tr> <td>120</td> <td>74.0</td> </tr> <tr> <td>140</td> <td>40</td> </tr> </tbody> </table>	Resistance VS Temperature		Temperature	Resistance (Ohm)	40	1097	60	497.8	80	235.25	100	123.75	120	74.0	140	40		It is used for sensing the temperature of Engine oil/coolant and feed signal to temperature gauge.	105		
Resistance VS Temperature																												
Temperature	Resistance (Ohm)																											
40	1097																											
60	497.8																											
80	235.25																											
100	123.75																											
120	74.0																											
140	40																											
912	Mining & Construction	EARTH MOVERS	125AC92367	REMOTE CONDENSER 24V	5	Nos	Specifications: Condenser : Roof top condenser Capacity : around 39,000 btu/hr Weight :less than 14 kg		Proprietary item and complete drawing details not available ; Based on the technical scope , general specifications , performance requirements and overall size of the aggregates , these are to be developed by interested Vendors.	24																		
913	Mining & Construction	EARTH MOVERS	82SEGO2019	HAND THROTTLE CONTROL	2	Nos	Potentiometer: 5KΩ Excitation: 5V±0.5V DC output: 0.5V to 4.5V DC Protection: IP67 Turn direction: Clock wise, single turn		Hand Throttle control is used to provide electrical command to Electronic engine ECU for Engine speed control on M&C machines.	5																		


LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
914	Mining & Construction	EARTH MOVERS	130IP81099	DISPLAY	8	Nos	1. Display size: 4.3" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs : 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.0B, CAN 2.0A, CANopen, Proprietary messaging, RS485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing : IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) 12. Shock : 50g in 3 axis 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard- tactile buttons		Display is used to represent Engine parameters of equipment	8
915	Mining & Construction	EARTH MOVERS	821EG81294	TRANSMISSION DISPLAY	90	Nos	1. Display size: 4.3" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs : 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.0B, CAN 2.0A, CANopen, Proprietary messaging, RS485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing : IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) 12. Shock : 50g in 3 axis 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard- tactile buttons		Display is used to represent Transmission parameters of equipment	90
916	Mining & Construction	EARTH MOVERS	474EG02354	RELAY,BATTERY	40	Nos	1.Operating Voltage: 10 to 16V DC 2.Rated current: 120A (Continuous) :800A (30 sec) 3.Excitation current:0.5A (max) 4.insulation resistance:min 100MQ (500V DC) 5. Operating Temp: -20°C to +80°C 6. Expected mechanical life: 10*7 operations		Battery Relay is heavy duty relay used to isolate battery power supply from the equipment. This relay is "positive cut-off" and isolates the battery positive from the remaining equipment circuit.	80
917	Mining & Construction	EARTH MOVERS	790TF02053	TRACK SHOE ASSY	20	sets	Triple grouser shoe, shoe width 450mm, No of shoes per side 40, Shoe link pitch 140mm.		Used in the installation of track parts in the hydraulic excavator.	58
918	Mining & Construction	EARTH MOVERS	790TF12398	BUSHING MASTER	60	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	101
919	Mining & Construction	EARTH MOVERS	790TF52363	LINK R H	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	360
920	Mining & Construction	EARTH MOVERS	790TF12373	BUSH	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	185
921	Mining & Construction	EARTH MOVERS	790TF52355	LINK L H	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	401
922	Mining & Construction	EARTH MOVERS	790TF12381	PIN TRACK	140	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	206
923	Mining & Construction	EARTH MOVERS	790TF12405	SPACER	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	220

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
924	Mining & Construction	EARTH MOVERS	790TF02045	CARRIER ROLLER ASSY	50	Nos	Roller dia 90mm, Pin Dia 35mm, Flange dia 120mm		Used in the installation of track parts in the hydraulic excavator	95
925	Mining & Construction	EARTH MOVERS	790TF02037	TRACK ROLLER ASSY	150	Nos	Roller dia 135mm, roller width 112mm.		Used in the installation of track parts in the hydraulic excavator, part of the final drive.	272
926	Mining & Construction	EARTH MOVERS	376AX91989	Brake disc	3	Nos	OD : 450mm, ID= 203mm, t=16mm, Wheel mounting holes:16xdia 18.2 on pod 232			26
927	Mining & Construction	EARTH MOVERS	374EG70074	DELPHI CONNECTOR	20	Nos	1. Operating Voltage: 8 – 32 VDC 2. No of cavities: 2 3. Protection: IP67 4. Operating temperature: -10°C to +100°C 5. Type: Plug			565
928	Mining & Construction	EARTH MOVERS	374EG70066	CONNECTOR	10	Nos	1. Operating Voltage: 8 – 32 VDC 2. No of cavities: 12 3. Protection: IP67 4. Operating temperature: -10°C to +85°C 5. Type: Receptacle			60
929	Mining & Construction	EARTH MOVERS	380CV11269	Valve	15	Nos	Component of the Transmission control valve assy Material : C1101 Input (Base) material shall be supplied in normalised condition with hardness in the range of 175 ~229 BHN HT: "Q"portion shall be Induction hardened and tempered to 55 HRC; Case depth : 1~2 mm			15
930	Mining & Construction	EARTH MOVERS	376TM91741	Oil Seal	25	Nos	Note: Item SI no. 04 to 10 are the parts / internal components of transmission to part no. 376TM02008 and proprietary in nature. So design, specification, drawing details are not available.			94
931	Mining & Construction	EARTH MOVERS	376AX91161	Bearing	4	Nos				10
932	Mining & Construction	EARTH MOVERS	376TM92551	Oil pipe (forward)	5	Nos				15
933	Mining & Construction	EARTH MOVERS	376TM92568	Oil Pipe (reverse)	1	Nos				5
934	Mining & Construction	EARTH MOVERS	376TM91693	Driven Disc	100	Nos				331
935	Mining & Construction	EARTH MOVERS	376TM91499	Driving disc	10	Nos				12
936	Mining & Construction	EARTH MOVERS	376TM91799	Seal Ring	25	Nos				100
937	Mining & Construction	HYDRAULIC & POWERLINE	992HC91138	SEAL 7.500"	16	Nos	i) a) Expander Material : A-8504 Nitrile Rubber Low Temperature NBR-LT, Shore hardness : 70A b) Slide Ring Material : P2501 Polyamide or Polyacetal with PA 6.6 + 30% glass fibres.			23
938	Mining & Construction	HYDRAULIC & POWERLINE	992HC91154	SEAL 11.500"	16	Nos	iii) Operating Temperature : -25 to +110 deg C iii) Operating Pressure : Upto 600 Bar. iv) Operating Velocity : Upto 1 m/sec			23
939	Mining & Construction	HYDRAULIC & POWERLINE	PB8611	SEAL 5.500"	16	Nos				445
940	Mining & Construction	HYDRAULIC & POWERLINE	991HC91189	PISTON SEAL 7.375"	16	Nos	Piston seal with HNBR ring energizer, PTFE/Nylon slide ring i) a) Expander Material : C-7021 HNBR Rubber Shore hardness : 70A b) Slide Ring Material : P2551 Polyamide or Polyacetal with PA 6.6 + 40% glass fibres. ii) Operating Temperature : -25 to +110 deg C iii) Operating Pressure : Upto 600 Bar.			23


LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
941	Mining & Construction	HYDRAULIC & POWERLINE	991HC91197	PISTON SEAL 9.500"	30	Nos	iv) Operating Velocity : Upto 1 m/sec			41
942	Mining & Construction	HYDRAULIC & POWERLINE	991HC91204	PISTON SEAL 11.750"	14	Nos				25
943	Mining & Construction	HYDRAULIC & POWERLINE	VN4087	PISTON SEAL ASSEMBLY (Bore Dia. 5.000")	14	Nos	Piston Seal Assembly Consists of One Teflon Seal and Expander Seal. Teflon Seal Requirements : Seals Shall be 25%±5% by weight, Glass filled PTFE Physical and Mechanical Properties: i) Tensile Strength : 2000 PSI Minimum. ii) Shore Hardness D : 65±5 Durometer. iii) Ultimate Elongation : 200% Minimum. iv) Specific Gravity : 2.15-2.23. v) Deformation under Load @ 1200 PSI : 4-8% @ 2000 PSI : 9-11%. Expander Requirements: Material : Nitrile (Buna'N') polymers Physical and Mechanical Properties: i) Tensile Strength : 1500 PSI Minimum. ii) Shore Hardness D : 70±5 Durometer. iii) Ultimate Elongation : 250% Minimum. iv) Temperature Range : -65°F ~ 225°F. v) Modulus @ 100% (Tear resistance) : 500 PSI vi) Heat resistance 70 hrs @ 257°F Change in Hardness point : 0 to +18 Change in Tensile Strength Max. : -25 Change in Ultimate elongation Max. % : -50. vii) Compression Set 22 hrs @ 212°F Max. % : 40 Max. viii) Low Temperature Brittleness Non Brittle after 5 hrs @ -65°F - Pass.			23
944	Mining & Construction	HYDRAULIC & POWERLINE	WA2676	PISTON SEAL ASSEMBLY (Bore Dia. 3.500")	274	Nos	Piston Seal Assembly Consists of One Seal Ring, Elastomer and Two Back up rings. Seal Ring Material : POM or Polyamide Bronze Filled Material Energiser Material : NBR Material i) Dynamic Pressure Range : 7250 PSI. ii) Shore Hardness D : 70±5 Durometer. iii) Temperature Range : -22°F ~ 212°F. Back up Ring Material : Polyacetal(POM) based material with glass fibers. i) Radial Pressure Range : Max.5800 PSI @ 70°F Max.3625 PSI @ >140°F ii) Shore Hardness D : 70±5 Durometer. iii) Temperature Range : -40°F ~ 230°F.			813
945	Mining & Construction	HYDRAULIC & POWERLINE	950HC91355	PISTON SEAL	116	Nos	Buffer seal with nitrile rubber O-ring energizer, PTFE/Nylon slide ring (Energiser) Material : Nitrile Rubber, Oil filled Nylon (P-2505) i) SHORE A (HARDNESS) : 70 Temperature : - 25 to +110 deg C Upto 500 Bar. i) a) Seal b) Slide Ring Material : iii) Operating Temperature : iv) Operating Pressure : v) Operating Velocity : Upto 2 m/sec			166
946	Mining & Construction	HYDRAULIC & POWERLINE	PB6552	Buffer Seal (8.500" x 9.125" x 0.247")	96	Nos	Seal Ring Material: NBR-1B (HARDNESS) : 88±5 i) SHORE A (HARDNESS) : 70 ii) Operating Temperature : - 30 to +100 °C iii)Applicable Pressure : 140 Kg/cm² and above.			142
947	Mining & Construction	HYDRAULIC & POWERLINE	175HM61289	SEAL	618	Nos	Seal Ring Material: NBR-1B (HARDNESS) : 88±5 i) SHORE A (HARDNESS) : 70 ii) Operating Temperature : - 30 to +100 °C iii)Applicable Pressure : 140 Kg/cm² and above.			3079
948	Mining & Construction	HYDRAULIC & POWERLINE	DA2068	BEARING (Bore Ø5.000" x 10.188"-0.191" x w1.000")	14	Nos	Bearings and Wear Rings accommodate radial loads of forces acting on the cylinder assembly/Suspension Assy and guide the rod in the cylinder head/Gland as well as the piston in the cylinder bore and prevents from scoring damages to sliding surfaces.			23
949	Mining & Construction	HYDRAULIC & POWERLINE	PB6545	BEARING (Rod Ø5.000" x 10.124"-0.127" x w1.000")	14	Nos	Guides are made of polymer materials and, therefore, avoid metal-to-metal contact between moving parts in a working hydraulic cylinder. Material : Reinforced High Strength Nylon P2501, LW560-87 Glass Tensile Strenth : 26,000 P.S.I. min.			29
950	Mining & Construction	HYDRAULIC & POWERLINE	PB6549	BEARING (Bore Ø7.380" x 10.124"-0.127" x w1.250")	28	Nos				47
951	Mining & Construction	HYDRAULIC & POWERLINE	PB6551	BEARING (Rod Ø8.500" x 10.124"-0.127" x w1.000")	96	Nos				144
952	Mining & Construction	HYDRAULIC & POWERLINE	PB6555	BEARING (Bore Ø9.500" x 10.124"-0.127" x w1.250")	30	Nos				62





LIST OF ITEMS FOR INDIGENISATION

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
953	Mining & Construction	HYDRAULIC & POWERLINE	PB6557	BEARING (Rod Ø10.500" x t0.124"-0.127" x w1.000")	30	Nos	Elongation : 3%, Flexure Modulus : 13,00,000 P.S.I., min Compression Strength : 24,000 P.S.I. min Hardness, Rockwell R : 121 Working Temperature : -40 deg.C to +120 deg.C Working Stroke Speed : 1.0 m/sec, Max.			79
954	Mining & Construction	HYDRAULIC & POWERLINE	PB7324	BEARING (Rod Ø6.500" x t0.124"-0.127" x w1.000")	274	Nos			445	
955	Mining & Construction	HYDRAULIC & POWERLINE	PB7325	BEARING (Bore Ø7.500" x t0.124"-0.127" x w0.750")	340	Nos			1082	
956	Mining & Construction	HYDRAULIC & POWERLINE	PB7444	BEARING (Bore Ø11.750" x t0.124"-0.127" x w1.250")	14	Nos			43	
957	Mining & Construction	HYDRAULIC & POWERLINE	VA3204	WEAR RING (Bore Ø4.500" x t0.124"-0.127" x w0.750")	116	Nos			182	
958	Mining & Construction	HYDRAULIC & POWERLINE	VA3205	WEAR RING (Bore Ø6.000" x t0.122"-0.127" x w0.750")	390	Nos			1459	
959	Mining & Construction	HYDRAULIC & POWERLINE	VA3206	WEAR RING (Bore Ø7.380" x t0.124"-0.127" x w0.750")	116	Nos			427	
960	Mining & Construction	HYDRAULIC & POWERLINE	VA3211	WEAR RING (Rod Ø3.750" x t0.124"-0.127" x w1.250")	390	Nos			537	
961	Mining & Construction	HYDRAULIC & POWERLINE	VA3212	WEAR RING (Bore Ø5.500" x t0.124"-0.127" x w1.000")	390	Nos			856	
962	Mining & Construction	HYDRAULIC & POWERLINE	VA3213	WEAR RING (Rod Ø6.750" x t0.124"-0.127" x w1.000")	182	Nos			353	
963	Mining & Construction	HYDRAULIC & POWERLINE	VZ3691	BEARING (Bore Ø3.500" x t0.122"-0.127" x w0.750")	274	Nos			851	
964	Mining & Construction	HYDRAULIC & POWERLINE	992HC91121	BEARING 5.5" (Rod Ø5.500" x t0.123"-0.125" x w1.000")	16	Nos			59	
965	Mining & Construction	HYDRAULIC & POWERLINE	992HC91146	BEARING 7.5" (Bore Ø7.500" x t0.123"-0.125" x w1.250")	16	Nos			41	
966	Mining & Construction	HYDRAULIC & POWERLINE	992HC91162	BEARING 11.5" (Bore Ø11.500" x t0.123"-0.125" x w1.250")	16	Nos	41			
967	Mining & Construction	HYDRAULIC & POWERLINE	992SU91182	BEARING (Rod Ø266.65 x t2.5 x w76)	16	Nos	Bronze Bearings accommodate radial loads of forces acting on the Suspension Assy and guide the rod in the Gland and prevents from scoring damages to sliding surfaces. Material : ASTM B-147-72 Manganese Bronze Alloy No.863 (or) ASTM 148-71 Aluminium Bronze Alloy No. 955 HT Tensile Strength : 759 Mpa. (Min) Yield Strength : 414 Mpa. (min)			24
968	Mining & Construction	HYDRAULIC & POWERLINE	375HC71014	WEAR RING (Bore Ø120 x t3 x w15)	468	Nos	This Wear Ring Phenolic/fabric composite consists of cotton fabric bound with thermoset phenolic resin. Its structure and the ability of the fabric fibres to absorb a certain amount of oil make phenolic guides almost self-lubricating. Phenolic guides are suitable for medium and heavy duty applications. Material : Cotton Cloth fabric (50%) bound with thermoset Phenolic Resin (50%) Bending Strength : 12 Kg/Sq.mm, (min). Specific Gravity : 1.39 ~ 1.43 Co-efficient of Friction : 0.08 ~ 0.12 Compression Strength : 25 Kg/Sq.mm (min) Hardness, Rockwell M : 110 ~ 126 Working Temperature : -40 deg.C to +140 deg.C Working Stroke Speed : 0.5 m/sec, Max.			1005
969	Mining & Construction	HYDRAULIC & POWERLINE	958SU91288	WEAR RING (Bore Ø250 x t6 x w40)	274	Nos				1587
970	Mining & Construction	HYDRAULIC & POWERLINE	568S011172	WEAR RING (Bore Ø250 x t6 x w130)	300	Nos				300
971	Mining & Construction	HYDRAULIC & POWERLINE	985HM21064	SIDE PLATE	530	Nos	Application: Also called as Thrust Plates and used in External Gear Pumps (High Pressure Pumps generally working @ 215 Bar) and is installed between Rotating Gear Face inside the Pump Case and fixed Mounting Bracket or Cover. Function: Thrust Plates are used to provide Axial and Radial compensation in the Gear Pumps and it will be floating in the gap between the Gear and Cover Faces and maintain lubrication between faces and provides space for sealing to avoid internal leakage from high pressure delivery side to low pressure suction side. Material for Forging: A. MATERIAL : CSM3 B. CHEMISTRY(WT%): COPPER:58~63, ZINC: REMAINDER, LEAD:0.3 MAX., ALUMINIUM : 0.5~1.5; MANGANESE :1.0~2.0, SILICON:0.5~1.5, IMPURITIES :1.0 MAX. C. MECHANICAL PROPERTIES : YIELD POINT : 350 N/mm2 MIN. % ELONGATION : 10 MIN. HARDNESS, BHN (1000/10) : 150 MIN.			7776
972	Mining & Construction	HYDRAULIC & POWERLINE	171HM22091	SIDE PLATE	598	Nos	Material for Casting: A. MATERIAL : HTB3 OF BS:1400 B. CHEMISTRY(WT%): COPPER:55 MIN. ,TIN : 0.2 MAX., ZINC: REMAINDER,			2438










LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	Quantity procured during last 3 years
973	Mining & Construction	HYDRAULIC & POWERLINE	171HM23144	SIDE PLATE	116	Nos	LEAD:0.2 MAX., NICKEL : 1.00 MAX., IRON : 1.5~3.25 MIN. ALUMINIUM : 3.0~6.0 MIN; MANGANESE :4.0 MAX., SILICON:0.1 MAX, IMPURITIES :0.2 MAX. C. MECHANICAL PROPERTIES : TENZILE STRENGTH : 740 N/mm2 MIN. YIELD POINT : 400 N/mm2 MIN. % ELONGATION : 11 MIN. HARDNESS, BHN (1000/10) : 150 MIN.			140

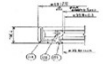
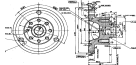
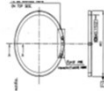



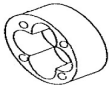
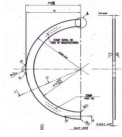
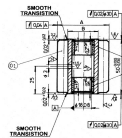
LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
974	Mining & Construction	ENGINE	6008153811	HEATER	27	Nos	Heater for, engine (125 bore dia); Material: (body-ADC-12, Heater-FCHR2, Insulator-Mica); capacity-2.45 KW; Rated voltage and current- DC 22V 110A insulation resistance 1M Ω; element surface Heating capacity 620°c in 30 sec ; 825°c in 50 sec; 950°c in 60 sec.			27
975	Mining & Construction	ENGINE	11Z2180153	PR SWITCH	47	Nos	pressure sensor for heavy duty diesel engine ; current capacity : 3 AMP\$ max 24 Volts DC ; Actuating pressure- ON at 1.3 kg/cm² Off at 0.7 kg/cm² ; Applicable fluid-oil .			130
976	Mining & Construction	ENGINE	33G1300069	Turbocharger Assy - FU-YUAN P/N D87-E	5	Nos	Heavy Duty Diesel Engines (140 bore dia) Air Inlet diameter: 136.7mm Air outlet diameter: 88mm			5
977	Mining & Construction	ENGINE	51Z9901457	Electronic Governor	1	Nos	Stroke 15mm -22mm Size ISO 14405 height 106.5mm 5 PIN connector pin assignment Pin -1 Motor(-) Pin -2 motor (+) Pin -3 FB common (-) Pin -4 FB Measurement (+) Pin -5 FB REFERENCE (+)			112
978	Mining & Construction	ENGINE	51Z9901481	Oil pressure Sensor	25	Nos	3 pin connector, Type M10x1 -6g Operating pressure range 0-10bar , Operating voltage 0.5-4.5V			55
979	Mining & Construction	ENGINE	51Z9901562	DC DESK 2000 Dongle-4	25	Nos	DcDesk 2000 DONGLE LEVEL-4 IS SOFTWARE LOCK, LOOKS SIMILAR TO PEN DRIVE (BUT NOT PEN-DRIVE) WITH SOFTWARE 144.X.XX VERSION 5.18 AND PRE-LOADED IN THE DEVICE.			25
980	Mining & Construction	ENGINE	6136125280	RING, SEAL	160	Nos	RING : SUS-440 EQUIVALENT (RIK-SP-3) EXPANDER : INCONEL 718			160
981	Mining & Construction	ENGINE	6136611350	SEAL	108	Nos	PACKING : NOK T599, PACKING : NOK 31BF SPRING : SWP, PLATE : SPCC			108
982	Mining & Construction	ENGINE	6162631514	WATER SEAL	389	Nos	PACKING MATERIAL A: FR SERIES (EQUIV TO NOK.F422) PACKING MATERIAL B: NBR SERIES (EQUIV TO NOK.A834)			1464
983	Mining & Construction	ENGINE	6210611510	OIL SEAL	36	Nos	PACKING : 5708 (NOK), SPRING : SWP, RING : SPCC			36

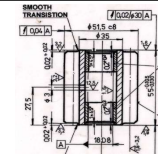
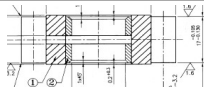
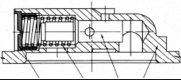





LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
984	Mining & Construction	ENGINE	6210611520	OIL SEAL	213	Nos	PACKING : 5708 (NOK), SWP, SPRING : RING : SPCC			213
985	Mining & Construction	ENGINE	6134515121	CATRIDGE	100	Nos	CARTRIDGE FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA.), FILTRATION AREA: 0.53m2, NORMAL FILTRATION RATING:20µ, FILT RATE: 95%, APPLICABLE TEMPERATURE: 30 - 120 DEG C. OD: 107.7mm, HEIGHT: 170.5mm, THREAD: 1 1/8-16UN, MATERIAL: BODY-SPCC, ELEMENT-FILTER PAPER, SEAT-SS41P SPG, PACKING-ACRYLIC RUBBER AND NBR, SPRING-SK5.			250
986	Mining & Construction	ENGINE	6136298010	MAIN BRG.SET,U/S 0.25	70	Nos	105-Main Bearing Set consists of Upper & lower Std.Bearings (7 No's). Both bearings must have , Width = 30mm, Semi Outer Dia = 91mm, Thickness : 3.00 mm, Back metal : SPCC1, Intermediate Layer : KJ4B, Surface Layer : Tin Lead P-77			70
987	Mining & Construction	ENGINE	6137K19901	GASKET KIT	48	Nos	Contact R&D for technical details. Contact details enclosed at Annexure-3			50
988	Mining & Construction	ENGINE	6151K19901	GASKET KIT	4	Nos	Contact R&D for technical details. Contact details enclosed at Annexure-3			20
989	Mining & Construction	ENGINE	6162393042	METAL ASSY	517	Nos	170-series Engine Con-Rod Big end bearing : Under size 0.25mm. Width : 58mm, Semi Outer dia = 115.51, Std.Thickness : 4.00mm, Bearing is DIADO make. Back metal : ES1424, Alloy layer : LS17 and Kp-9 surface coated.			1041
990	Mining & Construction	ENGINE	6210118811	GASKET	348	Nos	140-series Rocker Cover Gasket (O-ring : Material SR-1, DIA-Ø3.7±0.1			2053
991	Mining & Construction	ENGINE	6210118820	GASKET	991	Nos	140-series Rocker Cover Gasket (O-ring : Material SR-1, DIA-Ø3.7±0.1			991
992	Mining & Construction	ENGINE	6210373041	BEARING,PR PIN,1 PAIR,U/S	18	Nos	140-Conrod- upper & lower bearing set , Under size 0.75mm (Upper bearing : Width = 46mm, Semi Outer dia = 95mm, Std.thickness = 2.5mm, Back metal : ES 1425, alloy layer : LS17, Lower Bearing : Width = 46mm, Semi Outer =95mm Std.thickness =2.5mm, Back metal = SAE 1017, Alloy layer = KJSA (F780), Flash platin g: ES1405)			198
993	Mining & Construction	ENGINE	6210383041	BEARING,PR PIN,1 PAIR,U/S	60	Nos	140-Conrod- upper & lower bearing set , Under size 0.50mm (Upper bearing : Width = 46mm, Semi Outer dia = 95mm, Std.thickness = 2.5mm, Back metal : ES 1425, alloy layer : LS17, Lower Bearing : Width = 46mm, Semi Outer =95mm Std.thickness =2.5mm, Back metal = SAE 1017, Alloy layer = KJSA (F780), Flash platin g: ES1405)			60
994	Mining & Construction	ENGINE	6210393041	METAL ASSY	42	Nos	140-Conrod- upper & lower bearing set , Under size 0.25mm (Upper bearing : Width = 46mm, Semi Outer dia = 95mm, Std.thickness = 2.5mm, Back metal : ES 1425, alloy layer : LS17, Lower Bearing : Width = 46mm, Semi Outer =95mm Std.thickness =2.5mm, Back metal = SAE 1017, Alloy layer = KJSA (F780), Flash platin g: ES1405)			233
995	Mining & Construction	ENGINE	6210616441	GASKET	85	Nos	material- GA-1C, thickness=0.8			85

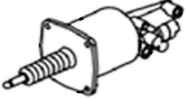
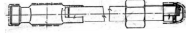
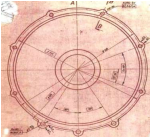


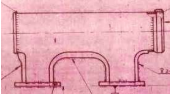
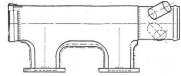
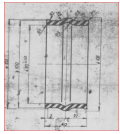
LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
996	Mining & Construction	ENGINE	6211611533	SEAL	28	Nos	BSA6D140-Engine Water pump seal : Performance to confirm to KESD 07012. Packing :5705 (NOK), SPRING : SWP, RING : SPCC			28
997	Mining & Construction	ENGINE	2010200664	FRONT PIN	25	Nos	Ø178 X 86 FORGING TO SPEC 45C8			25
998	Mining & Construction	ENGINE	326972012282	PISTON RING MINUTE TYPE 6-2282.01/4	25	Nos	Ø120 X 3 THICK STEEL RING FOR PISTON.			663
999	Mining & Construction	ENGINE	990100849000	NOZZLE DOP 140 S 624-411666041-1B	25	Nos	DIESEL INJECTOR NOZZLE WITH SIDE FUEL ENTRY			25
1000	Mining & Construction	ENGINE	442077400954	SET OF GASKET	25	Nos	CELLULOSE BASED 47 NUMBER OF GASKET WITH DIFFERENT SIZE			30
1001	Mining & Construction	ENGINE	273111531555	SEALING RING (124.2X3.913.0157)	25	Nos	Ø125 X 3 SQUARE C/S RUBBER O-RING			656
1002	Mining & Construction	ENGINE	278422408001	GASKET 625-4003	25	Nos	CELLULOSE BASED GASKET			25
1003	Mining & Construction	ENGINE	130010660094	PUMP BODY I	25	Nos	Ø154 x 3 THICK , SAE 1010 STEEL WITH SAE 48 SINTERED			25
1004	Mining & Construction	ENGINE	323141371000	UPPER THRUST BEARING-6037-06/00 (111 141 371 000)	25	Nos	Ø52 X 50 FORGED SPUR GEAR WITH TWO COPPER BUSH PRESSED			252
1005	Mining & Construction	ENGINE	2070170454	PUMP GEAR WHEEL	25	Nos	Ø52 X 55 FORGED SPUR GEAR WITH TWO COPPER BUSH PRESSED			25

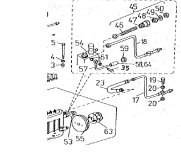

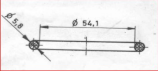
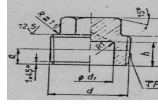
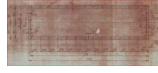


LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1006	Mining & Construction	ENGINE	2070170444	PUMP GEAR WHEEL	25	Nos	Ø52 X 17 FORGED SPUR GEAR WITH TWO COPPER BUSH PRESSED			25
1007	Mining & Construction	ENGINE	2070170434	PUMP GEAR WHEEL	25	Nos	LUBRICATION PUMP COVER ASSY WITH CAST IRON HOUSING, SPRING, PLUG			25
1008	Mining & Construction	ENGINE	442070480284	PUMP COVER	25	Nos	MATERIAL : FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 50 mm, WEIGHT : 0.35 kg			103
1009	Mining & Construction	ENGINE	2012270634	DRIVE GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 55 mm, WEIGHT : 0.38kg			25
1010	Mining & Construction	ENGINE	2012270624	PUMP GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 42Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 17 mm, WEIGHT : 0.15 kg			25
1011	Mining & Construction	ENGINE	2012270614	PUMP GEAR WHEEL	25	Nos	PART OF FUEL INJECTOR			25
1012	Mining & Construction	ENGINE	443713054000	NOZZLE	25	Nos	PART OF STARTER MOTOR			25
1013	Mining & Construction	ENGINE	990115006000	PRESSURE MAGNET	25	Nos	ASSEMBLY OF 45 SUB-PARTS, MAX PRESSURES : BRAKE FLUID 120 BAR & COMPRESSED AIR 12.5 BAR, WEIGHT : 2.8 kg			25

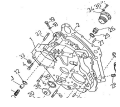
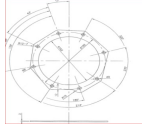
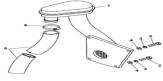


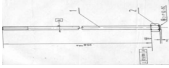
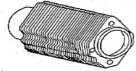
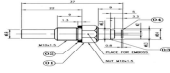

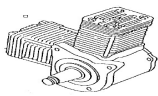
LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1014	Mining & Construction	ENGINE	443612223000	CLUTCH BOOSTER KNORR VG 3284	25	Nos	ASSEMBLY OF 4 SUB-PARTS, 1mm WALL THICKNESS, WEIGHT : 0.204 kg TUBE : OD Ø8 x			25
1015	Mining & Construction	ENGINE	442076632424	OIL SUPPLY TUBE	25	Nos	MATERIAL : CSN 42 4331.01, CSN 42 1430.13, CSN 42 4331.71 GRAVITY DIE CASTING, MFG PROCESS : ALUMINIUM OUTER DIA : Ø225			25
1016	Mining & Construction	ENGINE	130010800034	HOUSING COVER	25	Nos	ASSEMBLY OF 5 SUB-PARTS, : BRAZING, MFG PROCESS WEIGHT : 0.3 kg			25
1017	Mining & Construction	ENGINE	442073420094	CONNECTION	25	Nos	Ø70 X 40 CAST IRON			25
1018	Mining & Construction	ENGINE	442075050334	LID TO CLUTCH	25	Nos	ASSEMBLY OF 4 SUB-PARTS, WELDING MFG PROCESS :			25
1019	Mining & Construction	ENGINE	442070332084	INTAKE MANIFOLD FRONT	25	Nos	ASSEMBLY OF 7 SUB-PARTS, WEIGHT : 2.45 kg, MFG PROCESS : WELDING LENGTH : 386 mm,			25
1020	Mining & Construction	ENGINE	442070332054	INTAKE MANIFOLD REAR	25	Nos	Material: Rubber Mixture 1456 OD:Ø103 mm ID: Ø90 mm			25
1021	Mining & Construction	ENGINE	442054390034	INTAKE LINE RUBBER HOSE	25	Nos	PART OF FIP			587






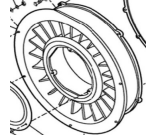
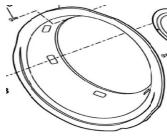
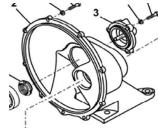
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1022	Mining & Construction	ENGINE	443979651374	FUEL FEEDER ZS 46-1374	25	Nos	Assembly: 3 components Material :CSN137972.02 Weight :0.162 Kg			74
1023	Mining & Construction	ENGINE	442076631144	FUEL SUPPLY TUBE	25	Nos	1.Tube 3.Pipe Adaptor 2.Connector			154
1024	Mining & Construction	ENGINE			25	Nos	DRAWING NOT AVAILABLE			25
1025	Mining & Construction	ENGINE	443972227480	NECK JS 6	25	Nos	Material: EEE 6233-2 ID:φ54.1 mm Weight:0.007 kg	PART OF FIP		25
1026	Mining & Construction	ENGINE	442054171764	O RING (SEALING RING)	25	Nos	SCREW PLUG WITH TAPER THREAD, MATERIAL : STEEL			60
1027	Mining & Construction	ENGINE	311113166000	PLUG M18X1.5 ONA 1913.05	25	Nos	width:1132 mm height: 344 mm weight :0.05 kg Material:			42
1028	Mining & Construction	ENGINE	442054032844	LOWER COVER GASKET	25	Nos	φ270 X 36 THICK TORSIONAL DAMPER FOR DIESEL ENGINE REWORKING IN 023 400-0103 on both sides			910
1029	Mining & Construction	ENGINE	452330180008	TORSION DAMPER	25	Nos	φ154 x 3 THICK , SAE 1010 STEEL WITH SAE 48 SINTERED			58
1030	Mining & Construction	ENGINE	323434181743	UPPER THRUST BEARING	25	Nos	φ154 x 3 THICK , SAE 1010 STEEL WITH SAE 48 SINTERED			395
1031	Mining & Construction	ENGINE	323434181763	LOWER THRUST BEARING	25	Nos	600 X 450 X 125 ALUMINIUM CASTING			402

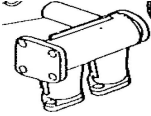
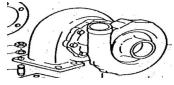
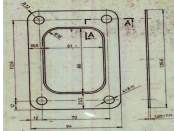
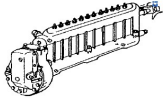

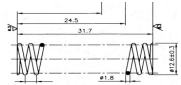

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1032	Mining & Construction	ENGINE	130010750374	FRONT COVER	25	Nos	Material: vulcanized rubber PCD:φ192 mm ID:φ162 mm			25
1033	Mining & Construction	ENGINE	442054032734	GASKET 3mm	25	Nos	COMPLETE DEAERATION CONTAINING 12 PARTS WEIGHT: 1.96KG			677
1034	Mining & Construction	ENGINE	130076631274	DEARATION SYSTEM	25	Nos	OIL PRESSURE SWITCH FOR 8 BAR PRESSURE			74
1035	Mining & Construction	ENGINE	443852042000	SWITCH	25	Nos	SUCTION TUBE ASSEMBLY CONTAINING 4 PARTS			1197
1036	Mining & Construction	ENGINE	442070211284	SUCTION TUBE (VVVV)	25	Nos	CONTAINING TWO PARTS MATERIAL : CSN 41 4331.9, CSN 4 1523.0 NUT:M10 SCREW:M8			25
1037	Mining & Construction	ENGINE	442079940074	BOLT	25	Nos	MATERIAL : CSN 42 046312 OUTER DIA : 149mm INNER DIA : 124mm LENGTH : 260mm			262
1038	Mining & Construction	ENGINE	442010010254	CYLINDER	25	Nos	MATERIAL : NYLON 66, FREE CUTTING BRASS, BRASS INNER DIA : 124mm OUTER DIA : 8.4mm LENGTH : 6.3mm WEIGHT: 160g			33
1039	Mining & Construction	ENGINE	443429108989	SENSOR(380 060 360 010)	25	Nos	φ120 X 5 THICK STEEL PISTON RING			232
1040	Mining & Construction	ENGINE	327972522285	PISTON SCRAPPER RING 7-2285-52-Q/3	25	Nos	TWIN CYLINDER COMPRESSOR (4102)			39
1041	Mining & Construction	ENGINE	443614002800	COMPRESSOR 4102	25	Nos	PART OF COMPRESSOR			556

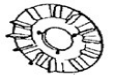







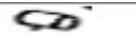
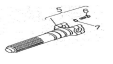

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1042	Mining & Construction	ENGINE	443915930125	CRANKSHAFT	25	Nos	PART OF COMPRESSOR			25
1043	Mining & Construction	ENGINE	443919810203	VALVE	25	Nos	PART OF COMPRESSOR			1975
1044	Mining & Construction	ENGINE	278432515035	GASKET/625 8901/	25	Nos	PART OF COMPRESSOR			1301
1045	Mining & Construction	ENGINE	443915660112	CYLINDER HEAD	25	Nos	WEIGHT; 3.10 Kgs , MATERIAL; CSN-42.4331.01 (ALLUMINIUM CASTING ALLOYS), DIMENSION; BLADE DIA. Ø370.09 mm, IMPELLER INNER DIA . Ø210 mm, IMPELLER OUTER DIA. Ø240.			301
1046	Mining & Construction	ENGINE	130010680064	GUIDE WHEEL	25	Nos	ASSEMBLY 3 COMPONENTS; 1. BLADE WHEEL JACKET 2. BLADE WHEEL HUB C/W BLADES 3. GASKET , TOTAL WEIGHT; 9.4 Kgs MATERIAL; FOR BLADE WHEEL JACKET- CSN-42.4331.01 (ALLUMINIUM CASTING ALLOYS), FOR BLADE WHEEL HUB- SAME MATERIAL AND FOR GASKET- HEAT RESISTANT NEOPRINE RUBBER			27
1047	Mining & Construction	ENGINE	442070720454	BLADE WHEEL ASSY.	25	Nos	ASSEMBLY 3 COMPONENTS; 1. AIR DUCT 2. HOLDER 3. STAY, WEIGHT; N/A , DIMENSION; DIAMETER Ø430 ±0.5, MATERIAL; IS:513-86, Gr.DD FOR ALL COMPONENTS			25
1048	Mining & Construction	ENGINE	442070600124	AIR DUCT	25	Nos	WEIGHT; N/A, DIMENSION; TOTAL DIA. Ø225 , 6 THRU HOLES PITCH CIRCLE DIA. Ø220 mm AND 3 THREADED HOLES PITCH DIA. Ø230, MATERIALS; CSN-42 2420, CSN 1241.00			234
1049	Mining & Construction	ENGINE	130028961804	FAN HOUSING BRACKET	25	Nos	Ø100 X 340 SHEET METAL FABRICATED TUBE			52

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1050	Mining & Construction	ENGINE	442070332574	INTAKE MANIFOLD FRONT (LH)	25	Nos	X36 TURBO CHARGER			38
1051	Mining & Construction	ENGINE	486512130518	TURBO BLOWER LH-K-36-006	25	Nos	ASSEMBLY COMPONENTS: 1. DUCTILE SHEET (MATERIAL; CSN 425 365), 2. INSERT JERIT E' (MATERIAL; CSN 029021), 3. COVERING PLATE (MATERIAL; CSN 42 5365). TOTAL WEIGHT; 0.05 Kgs, DIMENSION; TOTAL LENTGH; 136.6 mm AND BREADTH; 94 mm, THIKNESS; 1.85 ± 0.15			220
1052	Mining & Construction	ENGINE	442054280054	GASKET 2 MM (TURBINE)	25	Nos	PART OF MOTORPAL FIP FOR 12 CYLINDER ENGINE.			348
1053	Mining & Construction	ENGINE	278432605113	GASSKET (CROSS- 43)	25	Nos	DIMENSION- TOTAL LENGTH; 199 mm, BEND RADIUS; 80 mm, WEIGHT; 0.11 Kgs , MATERIALS; GrCR3, IS:513			33
1054	Mining & Construction	ENGINE	107560205063	PIN 5X63	25	Nos				25
1055	Mining & Construction	ENGINE	443975801269	LIFTER	25	Nos				37
1056	Mining & Construction	ENGINE	443971022604	ADJUSTING NUT	25	Nos				34
1057	Mining & Construction	ENGINE	130035210484	REAR SHEET RH	25	Nos	DIMENSION- SPRING WIRE DIA; Ø1.8 mm, NO. OF ACTIVE TURNS;9, TOTAL NO. OF TURNS; 11 mm, TOTAL LENGTH; 31.7 mm, WEIGHT; 0.08 Kgs, MATERIAL; Gr-DM, IS:4454 (PT-1)			142
1058	Mining & Construction	ENGINE	130050512154	SPRING	25	Nos	MATERIAL: CSN 41 1109.0, CSN426510 WEIGHT: 0.018KG OD: Ø9H11 MM LENGTH: 7 MM			3175
1059	Mining & Construction	ENGINE	130050780284	SPACER INSERT	25	Nos	MATERIAL: CSN 426312 32 DIAMETER: Ø190±0.3 MM WEIGHT: 0.65KG THICKNESS: 1.6 MM			26

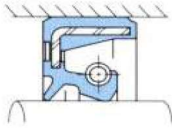


LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1060	Mining & Construction	ENGINE	443930131570	VENTILATOR FAN	25	Nos	MATERIAL: CSN 41 331.21, CSN 42 6312.22 WEIGHT: 0.010KG ID: ø57 MM THICKNESS: 1 MM			42
1061	Mining & Construction	ENGINE	130050953684	SPACER WASHER	25	Nos	PART OF ALTERNATOR			969
1062	Mining & Construction	ENGINE	443936014910	SUPPORTING RING	25	Nos	PART OF ALTERNATOR			227
1063	Mining & Construction	ENGINE	443930131710	REAR COVER	25	Nos	PART OF ALTERNATOR			25
1064	Mining & Construction	ENGINE	443930132100	TERMINAL BOARD	25	Nos	MATERIAL: F33, GRADE A WIDTH: 8 MM THICKNESS: 1 MM			853
1065	Mining & Construction	ENGINE	443936214310	PINION LUBRICATING FELT	25	Nos	PART OF ALTERNATOR			60
1066	Mining & Construction	ENGINE	443938329100	SWITCH COIL	25	Nos	ø530 X 320 ALUMINIUM CASTING			800
1067	Mining & Construction	ENGINE	130016100224	CLUTCH HOUSING	25	Nos	ø34 X 25 COPPER BEARING			114
1068	Mining & Construction	ENGINE	111427150343	BUSH PS 2530 KU	25	Nos	ASSEMBLY: 3 PARTS WEIGHT: 6.5KG WIDTH:159.5+0.1 MM			157
1069	Mining & Construction	ENGINE	442071080484	CLUTCH SHAFT	25	Nos	PART OF NON-EURO OIL COOLER			93
1070	Mining & Construction	ENGINE	130070220344	TUBE	25	Nos	ASSEMBLY: 2 PARTS WEIGHT: 0.22KG WIDTH:10-1 MM			91

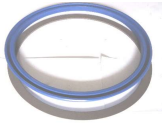



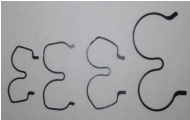

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1071	Mining & Construction	ENGINE	442070210984	INTAKE PIPE ADOPTER	25	Nos	MATERIAL: NITRILE RUBBER ID: ø22 MM COLOUR: BLACK LENGTH: 265±2 MM			162
1072	Mining & Construction	ENGINE	442053111114	HOSE 22/30-265	25	Nos	PART NO NOT AVAILABLE IN PARTS BOOK			329
1073	Mining & Construction	ENGINE	443933980170	OUTER PLATE	25	Nos				2295
1074	Mining & Construction	ENGINE	442013830054	Clutch plate of fan drive	516	Nos	Flex plate used in Fan Drive Shaft			516
1075	Mining & Construction	ENGINE	323141377000	Thrust Bearing 6037-04/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine			86
1076	Mining & Construction	ENGINE	323141371000	Thrust Bearing 6037-02/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine			252
1077	Mining & Construction	ENGINE	323141373000	Thrust Bearing 6038-02/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine			86
1078	Mining & Construction	ENGINE	323141375000	Thrust Bearing 6038-04/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine			86
1079	Mining & Construction	ENGINE	442070060974	Part of Crank shaft	344	Nos	Part of Crankshaft. Hollow type casting. Fillet Rolling at journal corners to achive required hardness.			344
1080	Mining & Construction	ENGINE	273110420000	Gasket 10x14/11 BTA-SK-2415 (Valve stem seal)	1376	Nos	Bonded Rubber seal used in cylinder head valve stem area of Beml-Tatra Engines			1376
1081	Mining & Construction	ENGINE	443900112000	Thermostatic	86	Nos	Thermost used for oil supply regulation in Cooler Body sub assembly in Beml-Tatra Engine			86
1082	Mining & Construction	ENGINE	443614029000	Compressor 4192	86	Nos	Diesel cooled air compressor			86
1083	Mining & Construction	ENGINE	442053111904	Hose	516	Nos	Diesel Spill Hose			516
1084	Mining & Construction	ENGINE	442053111944	Hose - 450 mm	86	Nos	Starter Motor Air vent hose			86

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1085	Mining & Construction	HYDRAULIC & POWERLINE	125HM91483	OIL SEAL (Ø35 x Ø55 x 11)	286	Nos	This Oil Seal is used in the Hydraulic Pump Assemblies between the Drive Shaft and its Housing (Bracket) to prevent the leakage of hydraulic Oil from the Bearing Clearances between Rotating Drive Gear shaft and Housing. Structure: Metallic Backed Rubber O.D with Double lipped design Material: Seal Material: AR4 (Acrylic Rubber) or NBR, Spring: Plano Wire, Metal Casing: Cold Rolled or Hot Rolled Steel Sheet Conditions: Peripheral velocity: 0~4m/s Allowable Eccentricity while in setting oil temperature: Max. 100 deg.C Pressure: 1 bar (max)			286
1086	Mining & Construction	HYDRAULIC & POWERLINE	985HM91032	OIL SEAL (Ø39 x Ø62 x 11)	275	Nos				3154
1087	Mining & Construction	HYDRAULIC & POWERLINE	985HMB9051	PLANE BEARING	550	Nos	Plain Bearing / Journal Bearings used for rotational motion in Hydraulic Pump Application driving Gear Shaft. Bushing provide outstanding dry bearing properties of Polytetrafluoroethylene (PTFE) and combines them with strength, stability and good wear resistance, excellent heat conductivity and low thermal expansion. Bushings consists of three bonded layers: The Bushes are loaded with PTFE based sliding layer, sintered tin bronze layer and Cold Rolled Carbon steel backing strip support. The PTFE impregnated sliding layer provides low co-efficient of friction, the bronze layer guarantees the coupling of self lubricating mixture and good loss of heat produced during operation. Material: Back Metal : JIS SPCD (Cold Rolled Carbon steel Strip/sheet Backing)(JIS G3141) Tensile Strength : 270 N/mm ² Min.(27.5 Kg/mm ² Min.) Elongation % : 40 Min. Bushing : Teflon Impregnated Bronze. Thickness-0.3 max Working Temperature : -200 to +280 deg.C, Maximum Sliding Speed : 10 m/sec, Maximum PU Value : 10 N/sq.mm x m/sec Co-efficient of Friction : 0.01 to 0.05			14616
1088	Mining & Construction	HYDRAULIC & POWERLINE	181HC11175	BUSHING	25	Nos	Bushings are used in hydraulic cylinder rod or Suspension piston rod application. Bushing provide outstanding dry bearing properties of Polytetrafluoroethylene (PTFE) and combines them with strength, stability and good wear resistance, excellent heat conductivity and low thermal expansion. Bushings consists of three bonded layers: The Bushes are loaded with PTFE based sliding layer, sintered tin bronze layer and Cold Rolled Carbon steel backing strip support. The PTFE impregnated sliding layer provides low co-efficient of friction, the bronze layer guarantees the coupling of self lubricating mixture and good loss of heat produced during operation. Material: Back Metal : JIS SPCD (Cold Rolled Carbon steel Strip/sheet Backing)(JIS G3141) The back metal shall be subjected to a flash tin-plating Tensile Strength : 270 N/mm ² Min.(27.5 Kg/mm ² Min.) Elongation % : 40 Min. Bushing : Teflon Impregnated Bronze. Thickness-0.3 max			25
1089	Mining & Construction	HYDRAULIC & POWERLINE	175HC91491	BUSHING	174	Nos				635

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1090	Mining & Construction	HYDRAULIC & POWERLINE	821HC91162	PACKING ROD	10	Nos	Size : $\varnothing 80 \times \varnothing 95 \times 12$ (9+3) Material: Base Seal Material: Lubrithane U-1029 Light Blue. Shore hardness: 95 Shore A. Backup Ring Material : PTFE with 40% Bronze Shore Hardness: 65 Shore D. Operating Pressure Range : 0~400 bar (5 800 psi). Max Speed : 1 m/s.(3.2 ft/s). Temperature Range : -30°C to +110°C			26
1091	Mining & Construction	HYDRAULIC & POWERLINE	992SU91174	PISTON T SEAL (Bore $\varnothing 13.250'' \times \varnothing 12.790''$)	16	Nos	The Unique Design Piston T-Seal provides a compact double acting seal for use in a new design for heavy duty applications where a more bulky type of seal had been required. This proven seal combines a tough, resilient, T-Shaped sealing ring with precisely dimensioned, pressure-actuated non-extrusion Rings for High Pressure Applications. Material: Base Seal Material: Nitrile Rubber (NBR) Shore hardness: 75 Shore A. Anti-extrusion Ring Material : Virgin TFE, Operating Pressure Range : 0~415 bar (6000 psi). Max Speed : 1 m/s.(3.2 ft/s). Temperature Range : -30°C to +120°C			19
1092	Mining & Construction	HYDRAULIC & POWERLINE	992SU91352	PISTON T SEAL (Bore $\varnothing 13.780'' \times \varnothing 13.290''$)	16	Nos	Material: Base Seal Material: Nitrile Rubber (NBR) Shore hardness: 75 Shore A. Anti-extrusion Ring Material : Virgin TFE, Operating Pressure Range : 0~415 bar (6000 psi). Max Speed : 1 m/s.(3.2 ft/s). Temperature Range : -30°C to +120°C			17
1093	Mining & Construction	HYDRAULIC & POWERLINE	PB6327	PISTON T-SEAL (Bore $\varnothing 6.001'' \times \varnothing 5.524'' \times$	411	Nos	Operating Pressure Range : 0~415 bar (6000 psi). Max Speed : 1 m/s.(3.2 ft/s). Temperature Range : -30°C to +120°C			695
1094	Mining & Construction	HYDRAULIC & POWERLINE	985HM61079	SEAL RING (To be made as per dwg. Dime	550	Nos	Seal Rings are fitted on the Static side of Thrust Plate/Side Plate on the Hydraulic Pump Assy to arrest the leakage of oil from High pressure delivery side to the Low pressure suction side. Material: Flourine Rubber FKM 1E, Temperature : -20 to +160 deg.C, Working Pressure : 140 Bar (min)			8751
1095	Mining & Construction	HYDRAULIC & POWERLINE	992SU91077	UPPER BEARING	16	Nos	Application: Assembled with Piston in Front suspension for reducing the wear between Piston & Housing structure. Dimensions: O.D- $\varnothing 350$ mm, Thk-2.5mm, Length-152.4mm Material: ASTM B 584 (SAE430B/UNS C86300) Chemical Composition: Cu-60~66, Sn-0.20, Pb-0.20, Zn-22~28, Ni-1, Fe:2~4, Al: 0.5~1.5, Mn:1~1.5 Mechanical Requirements: Tensile Strength: 821 MPa Yield Strength Min : 462MPa Elongation: 18%			17

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1096	Mining & Construction	HYDRAULIC & POWERLINE	992SU91085	LOWER BEARING	32	Nos	Application: Placed in between the Gland and Rod structure in Front suspension for reducing the wear . Dimensions: O.D-φ304.7mm, Thk-2.5mm, Length-152.4mm Material: ASTM B 584 (SAE430B/UNS C86300) Chemical Composition: Cu-60~66, Sn-0.20, Pb-0.20, Zn-22~28, Ni-1, Fe:2~4, Al: 0.5~1.5, Mn:1~1.5 Mechanical Requirements: Tensile Strength: 821 MPa Yield Strength Min : 462MPa Elongation: 18%			34
1097	Mining & Construction	HYDRAULIC & POWERLINE	VC2624	PIN ROLL	274	Nos	Application: To lock the castle nut. General: Pins Spring Type C Heavy Duty (Spirol) conform to SAE J 496 for dimensions and specifications for coiled spring pins series A Material: High Carbon Steel Black Oil Finish			817
1098	Mining & Construction	HYDRAULIC & POWERLINE	171HM93112	PLANE BEARING	116	Nos	Application: Used in Hydraulic pump assembly to support drive and driven gear Material: Lead Bronze Alloy conforming to JIS H 1251 (KLBC 6B). Equivalent Material: JISLBC6, SAE794, SAE799 Chemical Composition: Sn-3.0~4.0, Pb-21.0~25.0, Zn-0.75Max, Ni-0.5Max, Sb-0.35Max, Fe-0.25Max, Cu-Remaining Mechanical properties: Hardness with Back Plate Hv (5kg) - 35~60 Tensile strength - 11.1 kg/mm ² Shearing Strength - 10.0 kg/mm ² Plate Inside with Pb-Sn Thickness: 0.01~0.03 (Pb 90% Sn 10%)			1180
1099	Mining & Construction	HYDRAULIC & POWERLINE	640000466700	LOWER BEARINGFRONT	116	Nos	Application: Placed in between the Lower bearing retainer and Rod structure in Front suspension for reducing the wear . Material: Phenolic resin (PM-1)			116
1100	Mining & Construction	HYDRAULIC & POWERLINE	640000466902	UPPER BEARING FRONT	116	Nos	Application: Assembled with Upper bearing retainer in Front suspension for reducing the wear between retainer & Housing structure. Material: Turcite 225 Tubing with 8.575"OD & 8.025"ID			116
1101	Mining & Construction	HYDRAULIC & POWERLINE	PC0455	O RING	56	Nos	This O Ring is used in the Suspension Cylinder Application for Gland Sealing for sealing against External leakage between Gland and Tube. Material : NBR Material with Hardness 70 Shore A.			108
1102	Mining & Construction	HYDRAULIC & POWERLINE	640000479102	U CUP ROD SEAL	116	Nos	Rod Seals (Double Lip type) used in the Suspension Cylinder Application for sealing against external leakage during reciprocal movement of Piston Rod. Material: Polyurethane or Lubrethane or Urethane, -Operating Pressure: up to 6,000 psi -Dual Lip Design -Intermittent Pressure to 125% (7,500 psi) Material : Wear Resistant polyurethane Operating Temp Range : -40° to +120°C			116

LIST OF ITEMS FOR INDIGENISATION

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1103	Mining & Construction	HYDRAULIC & POWERLINE	640000478800	WIPER SEAL	116	Nos	Also called as Dust SealsBase are used for protecting the Rod seals and internal components from entry of dust or foreign materials. Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Operating Pressure Range : 0~400 bar (5 800 psi). Max Speed : 1 m/s. (3.2 ft/s). Temperature Range : -30°C to +100°C			116
1104	Mining & Construction	HYDRAULIC & POWERLINE	640000479201	WIPER SEAL	116	Nos				116
1105	Mining & Construction	HYDRAULIC & POWERLINE	9925U91141	DAMPER	16	Nos	Dampers are used in Suspensions as mechanical stopper and to observe the impact of the moving barrel structure. Material: Polyurthane with Hardness 90 Shore A			16
1106	Mining & Construction	HYDRAULIC & POWERLINE	116HC91205	PACKING ROD	142	Nos	i) a) Seal Material : Iron Rubber (U801) or Polyurethane Shore 90A, b) Retaining Ring Material : Steel ii) Operating Temperature : - 25 to +110 deg C iii) Operating Velocity : Upto 1 m/sec			461
1107	Mining & Construction	HYDRAULIC & POWERLINE	TY1503	SEAL	14	Nos	Material: Aluminium Bronze ASTM B-148 Alloy No. 954 (Gr.C) Tensile Strength : 75,000 PSI. Yield Strength : 30,000 PSI. Elongation: 12% , Hardness : 150 HB,			14
1108	Mining & Construction	HYDRAULIC & POWERLINE	PB6628	SNAP RING	30	Nos	Material : SAE1065 Oil Dipped, Hardness : 43~48 HRc			30
1109	Mining & Construction	HYDRAULIC & POWERLINE	175HM61223	SEALING RING	116	Nos	Seal Rings are fitted on the Static side of Thrust Plate/Side Plate on the Hydraulic Pump Assy to arrest the leakage of oil from High pressure delivery side to the Low pressure suction side. Material: Flourine Rubber FKM- 1E, Working Temperature : -20 to +160 deg.C, Working Pressure : 140 Bar (min)			400
1110	Rail & Metro	BANGALORE COMPLEX	94221155	DIGITAL VIDEO RECORDER	48	NO	DIGITAL VIDEO RECORDER, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		SI No. 1110 to 1131 " PUBLIC ADDRESS & PUBLIC INFORMATION SYSTEM" to be indigenised from same source.	48

LIST OF ITEMS FOR INDIGENISATION

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1111	Rail & Metro	BANGALORE COMPLEX	94221156	SALOON CAMERA	576	NO	CCTV CAMERA SALOON, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT			576
1112	Rail & Metro	BANGALORE COMPLEX	94221157	EXTERIOR CAMERA, DM CAR_LEFT	48	NO	EXTERIOR CAMERA, DM CAR_LEFT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT			53
1113	Rail & Metro	BANGALORE COMPLEX	94221158	EXTERIOR CAMERA, DM CAR_RIGHT	48	NO	EXTERIOR CAMERA, DM CAR_RIGHT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		48	
1114	Rail & Metro	BANGALORE COMPLEX	94221159	EXTERIOR CAMERA, M CAR_LEFT	48	NO	EXTERIOR CAMERA, M CAR_LEFT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		48	
1115	Rail & Metro	BANGALORE COMPLEX	94221160	EXTERIOR CAMERA, M CAR_RIGHT	48	NO	EXTERIOR CAMERA, M CAR_RIGHT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		48	
1116	Rail & Metro	BANGALORE COMPLEX	94221161	CCTV HMI	48	NO	CCTV HMI, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT			48
1117	Rail & Metro	BANGALORE COMPLEX	94221140	CCU WITH TCMS & RADIO INTERFACE	48	NO	CENTRAL CONTROL UNIT, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			48
1118	Rail & Metro	BANGALORE COMPLEX	94221141	MAIN COMMUNICATION CONTROL PANEL	48	NO	MAIN COMMUNICATION CONTROL PANEL, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			48
1119	Rail & Metro	BANGALORE COMPLEX	94221142	DIGITAL VIDEO ANNOUNCEMENT UNIT	48	NO	DIGITAL VIDEO ANNOUNCEMENT UNIT, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			48

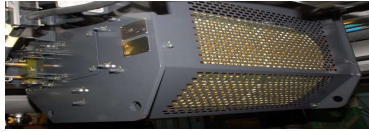



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1120	Rail & Metro	BANGALORE COMPLEX	94221143	AUXILIARY COMMUNICATION CONTROL	48	NO	AUXILIARY COMMUNICATION CONTROL PANEL, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			48
1121	Rail & Metro	BANGALORE COMPLEX	94221144	GOOSE NECK MICROPHONE + PTT BUTTON	48	NO	GOOSENECK MICROPHONE + PTT BUTTON, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			48
1122	Rail & Metro	BANGALORE COMPLEX	94221145	CAB LOUDSPEAKER	48	NO	CAB LOUDSPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			48
1123	Rail & Metro	BANGALORE COMPLEX	94221146	AUDIO AMPLIFIER UNIT (AAU)	144	NO	AUDIO AMPLIFIER UNIT (AAU), PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			144
1124	Rail & Metro	BANGALORE COMPLEX	94221147	INTERIOR LOUDSPEAKERS	1152	NO	INTERIOR LOUDSPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			1152
1125	Rail & Metro	BANGALORE COMPLEX	94221148	EXTERNAL LOUD SPEAKER	576	NO	EXTERNAL LOUD SPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			576
1126	Rail & Metro	BANGALORE COMPLEX	94221149	PASSENGER EMERGENCY ALARM UNIT	576	NO	PASSENGER EMERGENCY ALARM UNIT, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			576
1127	Rail & Metro	BANGALORE COMPLEX	94221150	PAD PUSH BUTTON	576	NO	PAD PUSH BUTTON, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT			576





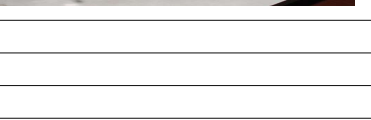
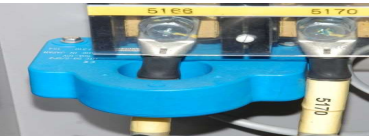

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1128	Rail & Metro	BANGALORE COMPLEX	94221151	TFT DISPLAY	864	NO	TFT DISPLAY, PAPIS SYSTEM FOR KMRLC-RS(3R) PROJECT		Sl No. 1132 to 1230 "PROPULSION SYSTEM ITEMS" to be indigeized from same source.	864
1129	Rail & Metro	BANGALORE COMPLEX	94221152	FRONTAL DESTINATION INDICATOR (FDI/TNI)	48	NO	FRONTAL DESTINATION INDICATOR/TRAIN NUMBER INDICATOR, PAPIS SYSTEM FOR KMRLC-RS(3R) PROJECT			48
1130	Rail & Metro	BANGALORE COMPLEX	94221153	28 PORT ETHERNET SWITCH	96	NO	SWITCH 28 PORTS, PAPIS SYSTEM FOR KMRLC-RS(3R) PROJECT			96
1131	Rail & Metro	BANGALORE COMPLEX	94221154	16 PORT ETHERNET SWITCH	48	NO	SWITCH 16 PORTS, PAPIS SYSTEM FOR KMRLC-RS(3R) PROJECT			48
1132	Rail & Metro	BANGALORE COMPLEX	94221086	VIDEO DISPLAY UNIT	48	NO	TMS DISPLAY UNIT TO DRG. NO. 94221086 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1133	Rail & Metro	BANGALORE COMPLEX	94221087	ANTENNA	48	NO	WIFI ANTENNA TO DRG. NO. 94221087 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1134	Rail & Metro	BANGALORE COMPLEX	94221088	SPEAKER	48	NO	SPEAKER CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			48
1135	Rail & Metro	BANGALORE COMPLEX	94221066	VVVF INVERETER BOX	96	NO	VVVF INVERTER CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE			96



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1136	Rail & Metro	BANGALORE COMPLEX	94221067	TRACTION MOTOR	384	NO	TRACTION MOTOR CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE			384
1137	Rail & Metro	BANGALORE COMPLEX	94221068	SIV BOX / APS	96	NO	AUXILIARY POWER SUPPLY CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE <-&-> CONNECTORS.			96
1138	Rail & Metro	BANGALORE COMPLEX	94221069	POWER EXTENSION BOX	48	NO	POWER EXTENSION BOX TO DRG. NO. 94221069 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1139	Rail & Metro	BANGALORE COMPLEX	94221070	SHORE SUPPLY BOX	96	NO	SHORE SUPPLY BOX TO DRG. NO. 94221070 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1140	Rail & Metro	BANGALORE COMPLEX	94221071	BATTERY CONTROL PARTS	96	NO	BATTERY CONTROL PARTS TO DRG. NO. 94221071 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1141	Rail & Metro	BANGALORE COMPLEX	94221072	FILTER INDUCTOR	96	NO	FILTER INDUCTOR TO DRG. NO. 94221072 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS			96
1142	Rail & Metro	BANGALORE COMPLEX	94221073	BRAKE RESISTOR	96	NO	BRAKE RESISTOR TO DRG. NO. 94221073 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1143	Rail & Metro	BANGALORE COMPLEX	94221074	MASTER CONTROLLER	48	NO	MASTER CONTROLLER TO DRG. NO. 94221074 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1144	Rail & Metro	BANGALORE COMPLEX	94221075	PWM GENERATOR	48	NO	PWM GENERATOR TO DRG. NO. 94221075 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1145	Rail & Metro	BANGALORE COMPLEX	94221076	HSCB BOX	96	NO	HSCB BOX TO DRG. NO. 94221076 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96

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Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during 3 years
1146	Rail & Metro	BANGALORE COMPLEX	94221077	MS BOX	96	NO	MS BOX TO DRG. NO. 94221077 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1147	Rail & Metro	BANGALORE COMPLEX	94221078	MS2 BOX	96	NO	MS2 BOX TO DRG. NO. 94221078 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1148	Rail & Metro	BANGALORE COMPLEX	94221079	KEY BOX	48	NO	KEY BOX CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE.			48
1149	Rail & Metro	BANGALORE COMPLEX	94221080	LIGHTNING ARRESTER	96	NO	LIGHTNING ARRESTER TO DRG. NO. 94221080 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1150	Rail & Metro	BANGALORE COMPLEX	94221081	TMS CONTROL CENTRAL UNIT	48	NO	CONTROL CENTRAL UNIT TO DRG. NO. 94221081 AND CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1151	Rail & Metro	BANGALORE COMPLEX	94221202	CONNECTOR (PLUG)	336	NO	CONNECTOR(PLUG) CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			336
1152	Rail & Metro	BANGALORE COMPLEX	94221205	SOCKET CONTACT	23088	NO	SOCKET CONTACT CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			23088
1153	Rail & Metro	BANGALORE COMPLEX	94221206	CONNECTOR	384	NO	CONNECTOR CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			384
1154	Rail & Metro	BANGALORE COMPLEX	94221207	CT	96	NO	CT CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			96
1155	Rail & Metro	BANGALORE COMPLEX	94221208	POWER SUPPLY	96	NO	POWER SUPPLY CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			96
1156	Rail & Metro	BANGALORE COMPLEX	94221209	CONNECTOR	144	NO	CONNECTOR CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			144

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1157	Rail & Metro	BANGALORE COMPLEX	94221210	CONNECTOR	144	NO	CONNECTOR CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.	 		144
1158	Rail & Metro	BANGALORE COMPLEX	94221211	PIN CONTACT	7200	NO	PIN CONTACT CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		7200	
1159	Rail & Metro	BANGALORE COMPLEX	94221213	CANNON PLUG	48	NO	CANNON PLUG CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		48	
1160	Rail & Metro	BANGALORE COMPLEX	94221216	CONNECTOR	96	NO	CONNECTOR CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		96	
1161	Rail & Metro	BANGALORE COMPLEX	94221218	SOCKET CONTACT	2304	NO	SOCKET CONTACT TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		2304	
1162	Rail & Metro	BANGALORE COMPLEX	94221219	CONNECTOR	1728	NO	CONNECTOR CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		1728	
1163	Rail & Metro	BANGALORE COMPLEX	94221220	MALE CONTACT	6912	NO	MALE CONTACT CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		6912	
1164	Rail & Metro	BANGALORE COMPLEX	94221222	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		48	
1165	Rail & Metro	BANGALORE COMPLEX	94221223	SOCKET CONTACT	132864	NO	SOCKET CONTACT CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		132864	
1166	Rail & Metro	BANGALORE COMPLEX	94221226	CONNECTOR ASSY	576	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		576	
1167	Rail & Metro	BANGALORE COMPLEX	94221227	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		144	
1168	Rail & Metro	BANGALORE COMPLEX	94221228	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		144	
1169	Rail & Metro	BANGALORE COMPLEX	94221229	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		48	
1170	Rail & Metro	BANGALORE COMPLEX	94221231	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		144	
1171	Rail & Metro	BANGALORE COMPLEX	94221232	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		144	
1172	Rail & Metro	BANGALORE COMPLEX	94221233	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		48	
1173	Rail & Metro	BANGALORE COMPLEX	94221236	CONNECTOR ASSY	288	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		288	
1174	Rail & Metro	BANGALORE COMPLEX	94221237	CONNECTOR ASSY	96	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		96	
1175	Rail & Metro	BANGALORE COMPLEX	94221239	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		48	
1176	Rail & Metro	BANGALORE COMPLEX	94221240	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		48	
1177	Rail & Metro	BANGALORE COMPLEX	94221241	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	48		
1178	Rail & Metro	BANGALORE COMPLEX	94221242	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	48		
1179	Rail & Metro	BANGALORE COMPLEX	94221243	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	48		
1180	Rail & Metro	BANGALORE COMPLEX	94221244	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	48		
1181	Rail & Metro	BANGALORE COMPLEX	94221245	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	144		
1182	Rail & Metro	BANGALORE COMPLEX	94221246	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	144		
1183	Rail & Metro	BANGALORE COMPLEX	94221247	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	144		
1184	Rail & Metro	BANGALORE COMPLEX	94221248	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	48		
1185	Rail & Metro	BANGALORE COMPLEX	94221249	CONNECTOR ASSY	144	NO	CONNECTOR ASSY AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	144		
1186	Rail & Metro	BANGALORE COMPLEX	94221250	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	144		
1187	Rail & Metro	BANGALORE COMPLEX	94221254	CONNECTOR ASSY	240	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	240		
1188	Rail & Metro	BANGALORE COMPLEX	94221255	CONNECTOR ASSY	240	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	240		
1189	Rail & Metro	BANGALORE COMPLEX	94221256	CONNECTOR ASSY	240	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	240		
1190	Rail & Metro	BANGALORE COMPLEX	94221257	CONNECTOR ASSY	240	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	240		
1191	Rail & Metro	BANGALORE COMPLEX	94221258	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	48		

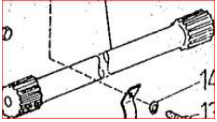
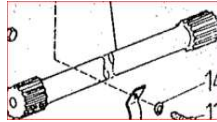




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1192	Rail & Metro	BANGALORE COMPLEX	94221259	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1193	Rail & Metro	BANGALORE COMPLEX	94221260	CONNECTOR ASSY	144	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			144
1194	Rail & Metro	BANGALORE COMPLEX	94221261	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1195	Rail & Metro	BANGALORE COMPLEX	94221262	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1196	Rail & Metro	BANGALORE COMPLEX	94221263	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1197	Rail & Metro	BANGALORE COMPLEX	94221264	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1198	Rail & Metro	BANGALORE COMPLEX	94221265	CONNECTOR ASSY	48	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1199	Rail & Metro	BANGALORE COMPLEX	94221266	SOCKET CONTACT	1536	NO	SOCKET CONTACT AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			1536
1200	Rail & Metro	BANGALORE COMPLEX	94221267	CONNECTOR ASSY	192	NO	CONNECTOR ASSY AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			192
1201	Rail & Metro	BANGALORE COMPLEX	94221268	CONNECTOR ASSY	96	NO	CONNECTOR ASSY AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			96
1202	Rail & Metro	BANGALORE COMPLEX	94221269	CONNECTOR ASSY	96	NO	CONNECTOR ASSY AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			96
1203	Rail & Metro	BANGALORE COMPLEX	94221270	CONNECTOR ASSY	96	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			96
1204	Rail & Metro	BANGALORE COMPLEX	94221271	CONNECTOR ASSY	96	NO	CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			96
1205	Rail & Metro	BANGALORE COMPLEX	94221273	SET OF CONNECTOR ASSY	48	NO	SET OF CONNECTOR ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1206	Rail & Metro	BANGALORE COMPLEX	94221274	CN(DM)2	48	NO	CN(DM)2 CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1207	Rail & Metro	BANGALORE COMPLEX	94221082	CN(DM)1	48	NO	COMMUNICATION NODE1 (CN1:DMC) TO DRG. NO. 94221082 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1208	Rail & Metro	BANGALORE COMPLEX	94221275	CN(T/M)2	96	NO	CN(T/M)2 CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			96
1209	Rail & Metro	BANGALORE COMPLEX	94221083	CN(T/M)1	96	NO	COMMUNICATION NODE1 (CN1:TC/MC) TO DRG. NO. 94221083 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1210	Rail & Metro	BANGALORE COMPLEX	94221276	RIO(DM)2	48	NO	RIO(DM)2 CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1211	Rail & Metro	BANGALORE COMPLEX	94221084	RIO(DM)1	48	NO	REMOTE IO UNIT (RIO:DMC) TO DRG. NO. 94221084 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			48
1212	Rail & Metro	BANGALORE COMPLEX	94221277	RIO(T/M)2	96	NO	RIO(T/M)2 CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			96
1213	Rail & Metro	BANGALORE COMPLEX	94221085	RIO(T/M)1	96	NO	REMOTE IO UNIT (RIO:TC/MC) TO DRG. NO. 94221085 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.			96
1214	Rail & Metro	BANGALORE COMPLEX	94221203	CONNECTOR(PLUG)	192	NO	CONNECTOR(PLUG) CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			192
1215	Rail & Metro	BANGALORE COMPLEX	94221204	CONNECTOR(PLUG)	96	NO	CONNECTOR(PLUG) CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			96
1216	Rail & Metro	BANGALORE COMPLEX	94221212	QE-POL-POST	288	NO	QE-POL-POST CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.			288
1217	Rail & Metro	BANGALORE COMPLEX	94221214	SOCKET CONTACT	864	NO	SOCKET CONTACT CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			864
1218	Rail & Metro	BANGALORE COMPLEX	94221215	SOCKET CONTACT	576	NO	SOCKET CONTACT CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			576
1219	Rail & Metro	BANGALORE COMPLEX	94221217	SOCKET CONTACT	384	NO	SOCKET CONTACT CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			384
1220	Rail & Metro	BANGALORE COMPLEX	94221221	RING MARK ASSY	48	NO	RING MARK ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1221	Rail & Metro	BANGALORE COMPLEX	94221224	NAME PLATE	288	NO	NAME PLATE CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			288
1222	Rail & Metro	BANGALORE COMPLEX	94221225	RING MARK ASSY	144	NO	RING MARK ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			144

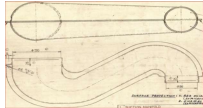


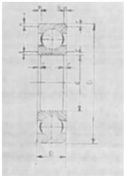
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1223	Rail & Metro	BANGALORE COMPLEX	94221230	RING MARK ASSY	144	NO	RING MARK ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			144
1224	Rail & Metro	BANGALORE COMPLEX	94221234	NAME PLATE	240	NO	NAME PLATE CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			240
1225	Rail & Metro	BANGALORE COMPLEX	94221235	RING MARK ASSY	240	NO	RING MARK ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			240
1226	Rail & Metro	BANGALORE COMPLEX	94221238	PIN CONTACT	864	NO	PIN CONTACT CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION.			864
1227	Rail & Metro	BANGALORE COMPLEX	94221251	COVER	1152	NO	COVER CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			1152
1228	Rail & Metro	BANGALORE COMPLEX	94221252	NAME PLATE	48	NO	NAME PLATE CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1229	Rail & Metro	BANGALORE COMPLEX	94221253	RING MARK ASSY	48	NO	RING MARK ASSY AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1230	Rail & Metro	BANGALORE COMPLEX	94221272	RING MARK ASSY	48	NO	RING MARK ASSY CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.			48
1231	Rail & Metro	BANGALORE COMPLEX	R605812000	CLEANING AGENT, HY-SC # 2200	2880	L	CLEANING AGENT, HY-SC # 2200		SI No. 1231 to 1235 " CLEANING AGENTS" to be indigenized from same source	7140
1232	Rail & Metro	BANGALORE COMPLEX	R605805000	CLEANING AGENT - SR - 600 (1 KG CAN)	1440	CAN	R605805000,CLEANING AGENT SR600			2710
1233	Rail & Metro	BANGALORE COMPLEX	R605803000	CLEANING AGENT - SEACLEAN - Z	720	L	R605803000,CLEANING AGENT SEACLEAN - Z			720
1234	Rail & Metro	BANGALORE COMPLEX	R605802000	CLEANING AGENT - SOLVENT - YUSOL TF	720	L	R605802000,CLEANING AGENT SOLVENT YUSOL TF			750
1235	Rail & Metro	BANGALORE COMPLEX	R607909000	MOL - 5005 Gray (tube)- Spot sealer	216	NO	R607909000,MOL 5005 Gray tube Spot sealer			305

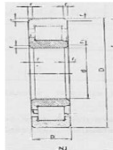
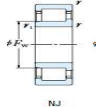
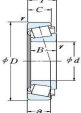
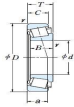
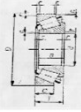
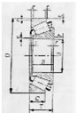
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during last 3 years
1238	Defence	Palakkad	442028660474	TORSION BAR LH	25	Nos	TECHNICAL SPECIFICATION: Load bearing Front Axle suspension Item Rolled bar Size:1900xØ80mm Weight :15 kg Approx			61
1239	Defence	Palakkad	442028660464	TORSION BAR RH	25	Nos	TECHNICAL SPECIFICATION: Load bearing Front Axle suspension Item Rolled bar Size:1900xØ80mm Weight :15 kg Approx			61
1240	Defence	Palakkad	443612280001	CONTROL VALVE	25	Nos	TECHNICAL SPECIFICATION: Regulates and Controls Air supply for brake application. MEDIUM : COMPRESSED AIR BODY : CASTING OPERATING PRESSURE : 8 BAR WORKING TEMPERATURE : -40°to 80°C			3406
1241	Defence	Palakkad	443612386806	COUPLING HEAD	25	Nos	TECHNICAL SPECIFICATION: Coupling element serves for functioning of Trailer brake with Hose connections Casting with Rubber packing Dimensions : 130x60x90 Operating Medium: AIR			1756
1242	Defence	Palakkad	443612386806	HEAD COUPLING	25	Nos	TECHNICAL SPECIFICATION: Coupling element serves for functioning of Trailer brake Casting with Rubber packing Dimensions : 130x60x90 Operating Medium: AIR			1756
1243	Defence	Palakkad	443612015807	AIR PRESSURE GOVERNOR	25	Nos	TECHNICAL SPECIFICATION: Maintains the operating Air pressure for tyre inflator, safety valve . Medium: Compressed Air Body : Casting Relief valve Setting Pressure:980±100kpa (10±1KP/cm2) Working Temperature : -40°to60°C Internal threading for connection fitting:M22x1.5mm			1943





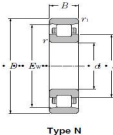
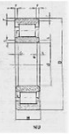
LIST OF ITEMS FOR INDIGENISATION

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during last 3 years
1246	Defence	Palakkad	130070332264	SUCTION MANIFOLD ASSY	25	Nos	TECHNICAL SPECIFICATION: Suction Tube item connecting to Air cylinder with spot welding Assembling. sheetmetal/fabrication item(Flame/ Spot welding) Air tight at Pressure :0.01Mpa Material : Gr-EDD,IS:513-94 DimensionsL:550x190x110mm			108
1247	Defence	Palakkad	443857019012	SOCKET	25	Nos	TECHNICAL SPECIFICATION: Seven pole socket - N-Type Mounting hole pitch: 74.6 mm Electrical configuration: 24 V No of poles : 7 Pins : Dia6.4mm (01 No), Dia 4.8mm (6Nos) Std:- Electrical connection: 1.Common Return Lead 2. Rear left out line, tail light, & registration plate. 3.Left directional indicator 4. brake light 5.right directional indicator 6. . Rear right out line, tail light, & registration plate. 7.Unoccupied			555
1248	Defence	Palakkad	443857085012	7-POLE SOCKET	25	Nos	TECHNICAL SPECIFICATION: Seven pole socket - S-Type Mounting hole pitch: 74.6 mm Electrical configuration: 24 V No of poles : 7 Pins : Dia8.3mm (01 No), Dia 4.8mm (6Nos) Std:- Electrical connection: 1.Common Return Line 2. not connected 3.Reverse light 4. current supply 5.checking connection (trailer) 6. additional current supply 7.rear fog light			508
1249	Defence	Hydraulic & Powerline	112162200103	BALL BEARING	25	Nos	BALL BEARING 6220AC3 CSN 02 4630 Single row deep groove ball bearing ZKL-6220A d=100 mm, D= 180 mm			25

LIST OF ITEMS FOR INDIGENISATION

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during last 3 years
1250	Defence	Hydraulic & Powerline	112422200503	ROLLER BEARING	25	Nos	ROLLER BEARING NJ 220 B C3 CSN 02 4670 ROLLER BEARING NTN NJ 220C3/NSK NJ 220C3 d=100 mm, D= 180 mm			25
1251	Defence	Hydraulic & Powerline	112428092003	ROLLER BEARING	25	Nos	ROLLER BEARING NTN NJ2309EC3/NSK NJ2309EC3/SKF NJ2309EC3 d=45 mm, D= 100 mm			50
1252	Defence	Hydraulic & Powerline	112712100100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.30210A CSN 02 4720 TAPPER ROLLER BEARING NTN 4T 30210/ NSK HR 30210J d=50 mm, D= 90 mm			117
1253	Defence	Hydraulic & Powerline	112712140100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.30214A CSN 02 4720 TAPERED ROLLER BEARING NTN 32314/ NSK HR 30214J/ SKF 30214 d=70 mm, D= 125 mm			25
1254	Defence	Hydraulic & Powerline	112717180100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32218A CSN 02 4720 TAPERED ROLLER BEARING NTN 32218U/ NSK HR 32018J d=90 mm, D= 160 mm			25
1255	Defence	Hydraulic & Powerline	112717200100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32220A CSN 02 4720 TSPERED ROLLER BEARING TIMKEN 32220 d=100 mm, D= 180 mm			25



LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during last 3 years
1256	Defence	Hydraulic & Powerline	112718100500	TAPERED ROLLER BRG	25	Nos	TAPERED ROLLER BRG NSK HR32310CJ/SKF 32310B d=50 mm, D= 110 mm			63
1257	Defence	Hydraulic & Powerline	112718120500	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32312B CSN 02 4720 TAPERED ROLLER BRG. ZKL 32312B/ FAG 32312B d=60 mm, D= 130 mm			521
1258	Defence	Hydraulic & Powerline	112718130100	T.R.BEARING	25	Nos	T.R.BEARING NTN 32313U/ NSK HR 32313J d=65 mm, D= 140 mm			25
1259	Defence	Hydraulic & Powerline	112727152000	TAPER ROLLER BEARING	25	Nos	TAPER ROLLER BEARING 33215			25
1260	Defence	Hydraulic & Powerline	324163174988	BALL BEARING	25	Nos	BALL BEARING 6317 N/P 64 CSN 02 4640 Ball Bearing NTN 6317NC4/ NSK 6317NC4/ SKF 6317NC4 d=85 mm, D= 180 mm			25
1261	Defence	Hydraulic & Powerline	324414101241	ROLLER BEARING	25	Nos	ROLLER BEARING NU 410 BNC3 CSN 02 4670 d=50 mm, D= 100 mm			80

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during last 3 years
1262	Defence	Hydraulic & Powerline	324417172072	ROLLER BEARING	25	Nos	ROLLER BEARING NU 2217 EN C3 CSN 02 4670Z ROLLER BEARING NTN NU2217ENC3/ NSK NU2217 d=85 mm, D= 150 mm			25
1263	Defence	Hydraulic & Powerline	111 111 010 000	BUSHING	25	Nos	BUSHING 2015 KU 23 X 20 X 15			25
1264	Defence	Hydraulic & Powerline	112545041000	BEARING	25	Nos	BEARING INA 60X68X46 F85001			25
1265	Defence	Hydraulic & Powerline	112545043000	BEARING	25	Nos	BEARING INA 72X80X46 F87651			25
1266	Defence	Hydraulic & Powerline	112545044000	BEARING	25	Nos	BEARING INA 85X93X55 F90754			25
1267	Defence	Hydraulic & Powerline	112545052000	BEARING	25	Nos	BEARING INA 55X63X32 F92414			25

LIST OF ITEMS FOR INDIGENISATION

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqmnt	UoM	Brief Specifications	Photograph	Remarks	Quantity procured during last 3 years
1268	Defence	Hydraulic & Powerline	112545042000	BEARING	25	Nos	BEARING INAK 65 X 73 X 3			25
1269	Defence	Hydraulic & Powerline	112545045000	BEARING	25	Nos	BEARING I0K 100X107X21			25