





LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
1	EARTH MOVERS	452CV01006	TRANSMISSION CONTROL VALVE ASSY	15	Nos	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		
2	EARTH MOVERS	451TM03412	SHIFT CONTROL	45	Nos	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		
3	EARTH MOVERS	2352511700	CHAIN	60	Nos	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		
4	EARTH MOVERS	451BP02019	CENTER BRAKE ASSY	45	Nos	The centre brake assembly is used for Parking brake application in motor grader equipment. Specification: Max. Allowable brake torque : 500kgm.		
5	EARTH MOVERS	BSP0163277	RECOIL SPRING	90	Nos	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. 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		

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6	EARTH MOVERS	953EG83482	LED ROOF LAMP	120	Nos	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																																
7	EARTH MOVERS	BSP0140165	Recoil Springs	60	Nos	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="0"> <tr> <td>No.</td> <td>Parameter</td> <td>BSP01 40165</td> </tr> <tr> <td>1</td> <td>Coil dia in mm</td> <td>40</td> </tr> <tr> <td>2</td> <td>Mean coil dia in mm</td> <td>165</td> </tr> <tr> <td>3</td> <td>Free length in mm</td> <td>648</td> </tr> <tr> <td>4</td> <td>No of coils</td> <td>10.5</td> </tr> <tr> <td>5</td> <td>No of active coils</td> <td>8.5</td> </tr> <tr> <td>6</td> <td>Spring rate in kg/mm</td> <td>62.80</td> </tr> <tr> <td>7</td> <td>Test load in kg</td> <td>13,400</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> </table>	No.	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		
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8	EARTH MOVERS	BSP0150183	Recoil Springs	70	Nos	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="0"> <tr> <td>No.</td> <td>Parameter</td> <td>BSP01 50183</td> </tr> <tr> <td>1</td> <td>Coil dia in mm</td> <td>50</td> </tr> <tr> <td>2</td> <td>Mean coil dia in mm</td> <td>183</td> </tr> <tr> <td>3</td> <td>Free length in mm</td> <td>822</td> </tr> <tr> <td>4</td> <td>No of coils</td> <td>12</td> </tr> <tr> <td>5</td> <td>No of active coils</td> <td>10</td> </tr> <tr> <td>6</td> <td>Spring rate in kg/mm</td> <td>95.5</td> </tr> <tr> <td>7</td> <td>Test load in kg</td> <td>22,200</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> </table>	No.	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		
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9	EARTH MOVERS	BSP0146178	Recoil Springs	110	Nos	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="0"> <tr> <td>No.</td> <td>Parameter</td> <td>BSP01 46178</td> </tr> <tr> <td>1</td> <td>Coil dia in mm</td> <td>47</td> </tr> <tr> <td>2</td> <td>Mean coil dia in mm</td> <td>178</td> </tr> <tr> <td>3</td> <td>Free length in mm</td> <td>760</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>96.14</td> </tr> <tr> <td>7</td> <td>Test load in kg</td> <td>25,620</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> </table>	No.	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		
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10	Truck	953EG80074	Proximity warning system for dump trucks	200	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>	 <p align="center">Sensor And Display</p>	
11	Truck	953EG03404	Emergency steering Motor for dump trucks	250	Nos	<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>	
12	Palakkad	443312039000	BOARD LAMP	150	Nos	<p>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 : JSS 55555 – 2012 (Rev3)</p>		
13	Palakkad	442099701524	OIL PRESSURE GAUGE SENSOR 38 0070 25 with Switch coupling SPOJKA SPINACE 442601144000	150	Nos	<p>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</p> <p>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</p>		
14	Palakkad	442075300214	ENGINE BRAKE	150	Nos	<p>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</p>		






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15	Palakkad	442070034000	STEERING GEAR BOX	150	Nos	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)		



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16	Palakkad	443743050000	SUBPRESSURE INDICATOR	150	Nos	TECHNICAL SPECIFICATION: Nominal Voltage : 24V Set pressure: 6+0.6Kpa		
17	Palakkad	443999108000	CUT OFF SWITCH, TRW 31116	150	Nos	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)		
18	Palakkad	443311026000	WATERTIGHT HEAD LAMP DIA 160 MM	450	Nos	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 : JSS 55555 – 2012 (Rev3)		
19	Palakkad	443311065000	FOG HEADLAMP 891017-2	300	Nos	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 : JSS 55555 – 2012 (Rev3)		
20	Palakkad	443312037000	REAR LAMP, RH	150	Nos	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 : JSS 55555 – 2012 (Rev3)		


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21	Palakkad	443853040000	STARTER MOTOR PUSH BUTTON	150	Nos	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)		
22	Palakkad	443853026000	PUSH BUTTON SWITCH	150	Nos	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 4 A Max Type of switch : NO (Normally Open) Connection : Water tight		
23	Palakkad	442080361004	WATERTIGHT LAMPS	300	Nos	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 : JSS 5555 – 2012 (Rev3)		
24	Palakkad	443312009000	WATER TIGHT LAMP	150	Nos	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.		
25	Palakkad	321880164000	AIR DUCT	150	Nos	TECHNICAL SPECIFICATION: Size: 800x600x5 Mat: Polyester Glass Laminated Material Colour : Graphite Black		
26	Palakkad	442079070054	SOCKET	150	Nos	TECHNICAL SPECIFICATION: Nominal Voltage : 24V Nominal Current : 6A No. of Poles : 1		
27	Palakkad	443429860000	INDICATOR SNIMAC OTACEK 2159.20002501	150	Nos	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		




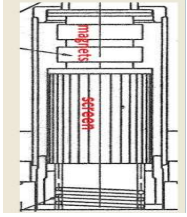
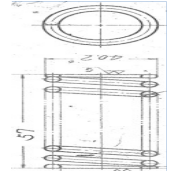
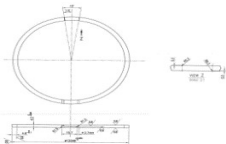
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28	Palakkad	442079026714	ORANGE BEACON Maják AEB - úprava	300	Nos	Used on the cabin for beacon lamp Appaication TECHNICAL SPECIFICATION: Nominal Voltage : 24 V Nominal wattage: 21W		

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29	BANGALORE COMPLEX	94216107	FLOOR BOARD-1	288	Nos	FLOOR BOARD - 1 TO DRAWING No. 942-16107 AND CONFORMING TO PTS DOC. No GR/TD/3428			
30	BANGALORE COMPLEX	94216108	FLOOR BOARD-2	392	Nos	FLOOR BOARD - 2 TO DRAWING No. 942-16108 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
31	BANGALORE COMPLEX	94216109	FLOOR BOARD-3	48	Nos	FLOOR BOARD - 3 TO DRAWING No. 942-16109 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
32	BANGALORE COMPLEX	94216110	FLOOR BOARD-4	48	Nos	FLOOR BOARD - 4 TO DRAWING No. 942-16110 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
33	BANGALORE COMPLEX	94216111	FLOOR BOARD-5	288	Nos	FLOOR BOARD - 5 TO DRAWING No. 942-16111 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
34	BANGALORE COMPLEX	94216112	FLOOR BOARD-6	144	Nos	FLOOR BOARD - 6 TO DRAWING No. 942-16112 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
35	BANGALORE COMPLEX	94216113	FLOOR BOARD-7	144	Nos	FLOOR BOARD - 7 TO DRAWING No. 942-16113 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
36	BANGALORE COMPLEX	94216114	FLOOR BOARD-8	144	Nos	FLOOR BOARD - 8 TO DRAWING No. 942-16114 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
37	BANGALORE COMPLEX	94216115	FLOOR BOARD-9	288	Nos	FLOOR BOARD - 9 TO DRAWING No. 942-16115 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
38	BANGALORE COMPLEX	94216116	FLOOR BOARD-10	48	Nos	FLOOR BOARD - 10 TO DRAWING No. 942-16116 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
39	BANGALORE COMPLEX	94216117	FLOOR BOARD-11	288	Nos	FLOOR BOARD - 11 TO DRAWING No. 942-16117 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
40	BANGALORE COMPLEX	94216118	FLOOR BOARD-12	48	Nos	FLOOR BOARD - 12 TO DRAWING No. 942-16118 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
41	BANGALORE COMPLEX	94216119	FLOOR BOARD-12	96	Nos	FLOOR BOARD - 13 TO DRAWING No. 942-16119 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
42	BANGALORE COMPLEX	94216120	FLOOR BOARD-14	96	Nos	FLOOR BOARD - 14 TO DRAWING No. 942-16120 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
43	BANGALORE COMPLEX	94216121	FLOOR BOARD-15	48	Nos	FLOOR BOARD - 15 TO DRAWING No. 942-16121 AND CONFORMING TO PTS DOC. No.GR/TD/3428			
44	BANGALORE COMPLEX	94216139	Floor Covering Wheelchair	48	Nos	FLOOR COVERING WHEELCHAIR TO DRAWING No. 942-16139.			
45	BANGALORE COMPLEX	R307495003	Floor covering-2.5mmthk X 2metre width X 21metre Roll	288	Nos	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.			
46	BANGALORE COMPLEX	R607917100	Floor Covering Joint Welding Rod	3456	Nos	FLOOR COVERING JOINT WELDING ROD - Ø5mm x 100m ROLL, WELDING ROD CR 50 & COLOUR MATCHING WITH THE FLOOR COVERING COLOUR PALLADIUM 8805.			
47	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 oi 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	
48	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	
49	EARTH MOVERS	113FD91526	SEAL RING	250	Nos	Specification:Molbendenum sulphide D3 material, Tensile Strength: 140~260Kg/Cm2, Specific Gravity: 4.12±0.06		Used in Dozers for Steering assembly function.	


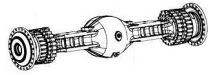
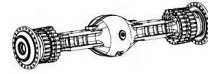
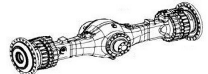

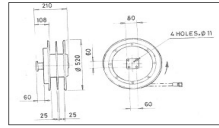
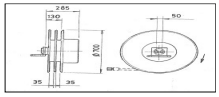

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50	EARTH MOVERS	113HC02045	RIPPER HYD CYLINDER	3	Nos	Normal load When extended 33.2 tons at 165 kg/cm2 When retracted 23.9 tons at 165 kg/cm2 Test load When extended 48.9 tons at 248 kg/cm2 When retracted 38.9 tons at 248 kg/cm2 Cylinder size in mm (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.
51	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.
52	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.
53	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.
54	EARTH MOVERS	BSP0136136	RECOIL SPRING	150	Nos	Specifications : Part no. BSP01 36136 Sl. 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.
55	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: BSLBC-3, ID:Ø150, OD:Ø160, WIDTH;114mm		
56	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		

LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
57	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		
58	EARTH MOVERS	761AX02252	FRONT AXLE ASSY	3	Nos	Drive Axle is one of the main aggregate in a drivel 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 Total axle ration: 27 Flange to Flange : 2600 mm Rotation direction: CW Input flange : 9C Service brake : 2xMultiple disc brake.
59	EARTH MOVERS	355AX02116	FRONT AXLE ASSY	15	Nos	Drive Axle is one of the main aggregate in a drivel 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 Total axle ration: 23.334 Flange to Flange to : 2083 mm Wheel tread : 2044 mm Rim bolt circle : 425 mm Rotation direction: CW Input flange : 7C Service brake : 2xMultiple disc brake.
60	EARTH MOVERS	355AX02124	REAR AXLE ASSY	15	Nos	Drive Axle is one of the main aggregate in a drivel 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 Total axle ration: 23.334 Flange to Flange : 2083 mm Wheel tread : 2044 mm Rim bolt circle : 425 mm Rotation direction: CCW Input flange : 7C Service brake : Wet Multiple disc brake (both ends)
61	EARTH MOVERS	761AX02269	REAR AXLE ASSY	3	Nos	Drive Axle is one of the main aggregate in a drivel 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 Total axle ration: 27 Flange to Flange to : 2600 mm Rotation direction: CCW Input flange : 9C Service brake : Wet Multiple disc brake (both ends)
62	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
63	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
64	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

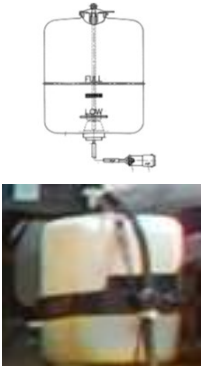

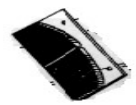




LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
65	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
66	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
67	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
68	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
69	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
70	EARTH MOVERS	CFL0910050	SNAP RING	65	Nos	OD=53.6 mm, width 4mm, Thickness T=2.3 mm Snap ring, Material : SWRH5 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.
71	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


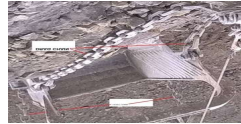


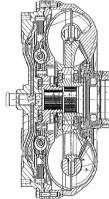



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ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
72	EARTH MOVERS	155EC02074	TANK	1	Nos	Material for tank: Poly propylene. Specification: 1. Water capacity (total capacity): 3.4 lts ± 1.1 lts 2. Empty tank weight: 355g. 3. Level switch operating position: the level switch is turned off when remaining quantity 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. 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
73	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.
74	EARTH MOVERS	376AX91631	Brake Lining	350	Nos	Consists of Friction pad and Backup plate		Brake Lining
75	EARTH MOVERS	376AX91275	Bearing	2	Nos	SIZE CODE :32024		Bearing
76	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.
77	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.
78	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.









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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
79	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
80	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
81	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
82	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.
83	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		
84	ENGINE	6136218050	THRUST BEARING	36	Nos	Thrust bearing used on heavy duty diesel engines (105 bore dia) Material: Back Metal - SPCCL (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 95 mm ; Outer Dia - 116 mm ; Thickness(T) - 2.5 mm		
85	ENGINE	6150218050	THRUST BEARING	204	Nos	Thrust bearing used on heavy duty diesel engines (125 bore dia) Material: Back Metal - SPCCL (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 122 mm ; Outer Dia - 139 mm ; Thickness(T) - 4 mm		
86	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		





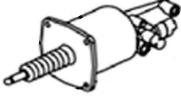
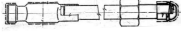
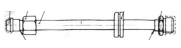
LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
87	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		
88	ENGINE	6162234231	SEAL,REAR	77	Nos	USED IN FLYWHEEL HOUSING FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) FOR SHAFT - DIMENSION TOLRENCE - $\phi 170 \pm 0.010$, MATERIAL FINISH: SECM 3H 1-25 HRC 45-50 FOR HOUSING- DIMENSION TOLRENCE : $\phi 230H7 \pm 0.046$ MATERIAL FINISH: FC125, SEALING MEDIA TYPE :CD/SE 10 W-30		
89	ENGINE	6136424410	SPRING,VALVE	1553	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA) MATERIAL -SWOSC-V, BAR DIAMETER - $\phi 43$, MEAN COIL DIAMETER - $\phi 292$, FREE HEIGHT -63.6mm		
90	ENGINE	6162434420	SPRING,VALVE,INNER	7904	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) MATERIAL -SWOSC-V, BAR DIAMETER - $\phi 40$, MEAN COIL DIAMETER - $\phi 30.6 \pm 0.3$, FREE HEIGHT -59.3mm		
91	ENGINE	6162434440	SPRING,VALVE OUTER	7828	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) MATERIAL -SWOSC-V, BAR DIAMETER - $\phi 55 \pm 0.03$, MEAN COIL DIAMETER - $\phi 42.1$, FREE HEIGHT -65.6mm		
92	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- $\phi 0.34$ TEST METHOD - KES 06.167.61 ,SACK VOLUME- 3.66MM ³ ,SEAT PASS AREA RATIO -1.39		
93	ENGINE	7861914210	SENSOR OIL LEVEL	14	Nos	oil level sensor for heavy duty diesel engine; Switch-flot type; principle- lead switch; voltage drop of switch- 0.05 v max at 0.3A rated current; insulation resistance-1M Ω min at DC 200 v ; applicable liquid- water and oil		
94	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.		

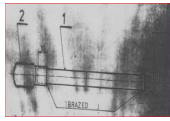

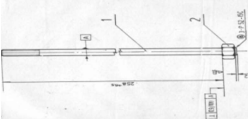
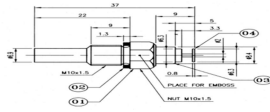
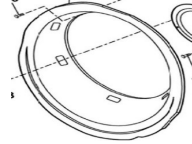
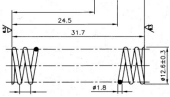

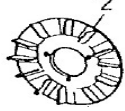
LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
95	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		
96	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)		
97	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)		
98	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		
99	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		
100	ENGINE	442076632424	OIL SUPPLY TUBE	25	Nos	ASSEMBLY OF 4 SUB-PARTS, TUBE - OD Ø8 x 1mm WALL THICKNESS, WEIGHT : 0.204 kg		
101	ENGINE	442073420094	CONNECTION	25	Nos	ASSEMBLY OF 5 SUB-PARTS, MFG PROCESS : BRAZING, WEIGHT : 0.3 kg		




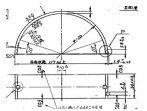
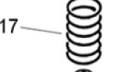
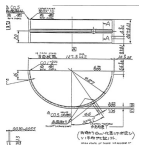
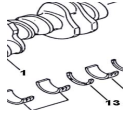
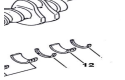
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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
102	ENGINE	442076631144	FUEL SUPPLY TUBE	25	Nos	Assembly: 3 components Weight :0.162 Kg Material :CSN137972.02 1.Tube 2.Connector 3.Pipe Adaptor		
103	ENGINE	442070211284	SUCTION TUBE (VVNV)	25	Nos	SUCTION TUBE ASSEMBLY CONTAINING 4 PARTS		
104	ENGINE	442079940074	BOLT	25	Nos	CONTAINING TWO PARTS MATERIAL : CSN 41 4331.9, CSN 4 1523.0 NUT:M10 SCREW:M8		
105	ENGINE	443429108989	SENSOR(380 060 360 010)	25	Nos	MATERIAL - NYLON 66, FREE CUTTING BRASS,BRASS 124mm OUTER DIA : 8.4mm INNER DIA : WEIGHT: 160g LENGTH : 6.3mm		
106	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.D0 FOR ALL COMPONENTS		
107	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)		
108	ENGINE	130050780284	SPACER INSERT	25	Nos	MATERIAL: CSN 41 1109.0, CSN426510 WEIGHT: 0.018KG OD: ø9h11 MM LENGTH: 7 MM		
109	ENGINE	443930131570	VENTILATOR FAN	25	Nos	MATERIAL: CSN 426312 32 WEIGHT: 0.65KG DIAMETER: ø190±0.3 MM THICKNESS: 1.6 MM		

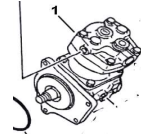

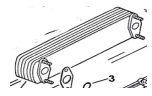
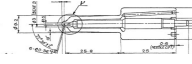

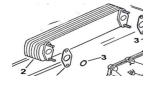


LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
110	ENGINE	443936214310	PINION LUBRICATING FELT	25	Nos	MATERIAL: F33, GRADE A WIDTH: 8 MM THICKNESS: 1 MM		
111	ENGINE	442070210984	INTAKE PIPE ADOPTER	25	Nos	ASSEMBLY: 2 PARTS WEIGHT: 0.22KG WIDTH:10-1 MM		
112	ENGINE	6002111930	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		
113	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 KKI 4A of KES 07.472.2, Back metal: Material as per SPCC1		
114	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		
115	ENGINE	6210218010	MEATL ASSY	3	Nos	STD PART NO-4123180111 (6210-21-8110) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAYER-KK148, NICKEL,BACK METAL-SAE1010 WIDTH-40±0.13, DIA-Ø127, RADIAL THICKNESS-3.5		
116	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		
117	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 - KLB6B, F250		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
118	ENGINE	6210813122	AIR COMPRESSOR	23	Nos	stroke- 85x60, 340 cc/rev at 2300 rpm		
119	ENGINE	6210815120	SPACER	25	Nos	material- FC 25 or SS41P		
120	ENGINE	6211612111	ELEMENT	25	Nos	surface treatment- C6001-10, length- 340±0.3, width- 100		
121	ENGINE	6212113120	NOZZLE	25	Nos	spray angle- 155°, suction volume- 1.5 mm ³ , lift - 0.5mm, Nozzle hole div- 0.36x6, seat dia- 3, separation- 60°±3°		
122	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		
123	ENGINE	6212612111	ELEMENT,OIL COOLER	25	Nos	surface treatment- C6001-10, length- 340±0.3, width- 100		
124	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		
125	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		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
126	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		
127	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		
128	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		
129	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.		
130	TRUCK	958EG12046	BRACKET (HEAVY DUTY MONITOR MOUNT)	18	Nos	Material: Aluminium Finish: Black Spray The Bracket should capable for heavy duty operation		
131	TRUCK	931EG81247	HOLE PLUG (DUMMY SWITCH)	25	Nos	The hole plug is used as a dummy switch. Material: FRP or ABS Finish: Black		
132	TRUCK	931EG81352	MOUNTING PANEL (END UNIT)	68	Nos	The Panel is used to mount single Switch. Material: FRP or ABS Finish: Black		
133	TRUCK	953EG82542	HOLE PLUG	1252	Nos	The hole plug is used as a dummy switch. Material: FRP or ABS Finish: Black		

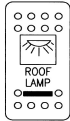

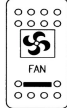
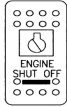
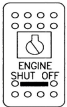

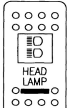
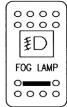
LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
134	TRUCK	953EG82559	MOUNTING PANEL WITH 3 HOLES	355	Nos	The Panel is used to mount three switches. Material: FRP or ABS Finish: Black		
135	TRUCK	953EG82567	MOUNTING PANEL WITH 6 HOLES	660	Nos	The Panel is used to mount six switches. Material: FRP or ABS Finish: Black		
136	TRUCK	953EG83288	BATTERY CUT OFF SWITCH	259	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A LED Illumination: Amber Color		
137	TRUCK	787EG81173	HAZARD LIGHT ROCKER SWITCH	137	Nos	Switch Type: ON-OFF (Double Pole) Termination/Base: .250 (Tab) Contact Rating: 250VAC, 10A	 Otv.	
138	TRUCK	787EG81181	WIND SHIELD WASHER ROCKER SWITCH	100	Nos	Switch Type: Momentary-ON (Single Pole) Termination/Base: .250 (Tab) Contact Rating: 250VAC, 10A		
139	TRUCK	931EG81109	MOUNTING PANEL (6 HOUSING)	110	Nos	The Panel is used to mount six switches. Material: FRP or ABS Finish: Black		
140	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		
141	TRUCK	953EG82486	DUMP BRAKE SWITCH	38	Nos	Deleted from equipment BOM through ECN. In future this switch is not required.		

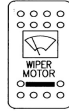
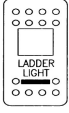
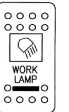

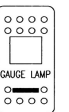



LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
142	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		
143	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		
144	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		
145	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		
146	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		
147	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		
148	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		
149	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		





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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
150	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		
151	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		
152	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		
153	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		
154	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		
155	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		
156	TRUCK	985EG81883	CIRCUIT BREAKER - 5A	2957	Nos	Operating Voltage: 18 to 32V Amp Operating Temperature: -40 to 85 deg C Current Rating: 5		
157	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		

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ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
158	TRUCK	991EG82268	SWITCH MOUNT HOUSING (SINGLE HOUSING)	106	Nos	The Panel is used to mount single Switch. Material: FRP or ABS Finish: Black		
159	TRUCK	451EG80096	KIT, DISPLAY AND CONTROLLER(COBO)	50	Nos	This system is an alternate source for Murphy dash board system		
160	TRUCK	787EG80147	KIT, DISPLAY AND CONTROLLER(COBO)	50	Nos	Contact division for technical clarifications		
161	TRUCK	958EG80227	KIT, ROCKER SWITCHES (COBO)	130	Nos	These switches are alternate source for carlingtech switches		
162	TRUCK	958EG83506	TERMINAL BLOCK (20 POINTS)	227	Nos	Number of Terminal:20 Material: Tin Plated Brass Current withstanding capacity : 150A		
163	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		
164	TRUCK	451EG03345	ME CAN PLUS(MURPHY)	50	Nos	Deleted from equipment BOM through ECN. In future not required.		
165	TRUCK	451EG82775	PRESSURE SENDER (0-100 PSI)	53	Nos	Pressure Range: 0-100 PSI Output : 240 to 73 ohm Thread Size: 1/8" NPT		



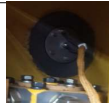




LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
166	TRUCK	807440000	SWITCH	149	Nos	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.		
167	TRUCK	955RC03398	POWER WINDOW LH	205	Nos	Power window Motor : 24V DC Motor. Power window motor to be supplied with linkages and cable drive		
168	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: Electrical Specification: Description: DC Motor Power Rating: 3.5KW Operating Voltage: 24VDC Operating Temperature: -40 to 110 oC Insulation Type: B		
169	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		
170	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		
171	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		
172	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		
173	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		



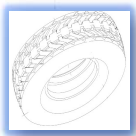

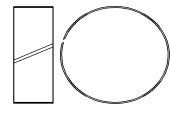
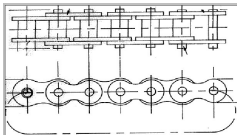
LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
174	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		
175	TRUCK	953EG80074	Collision Avoidance System-kit	17	Nos	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. Specification: Electrical Specification: Operating Voltage: 9-32VDC Operating Temperature: -40 to 85 oC Vibration: 25G RMS, 3 Axis Shock: 25G 3 Axis 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 <i>Note - The usage of device on equipment is certified by department of Deleted from BOM through ECN. Future not required.</i>		
176	TRUCK	882300000122	FUEL GAUGE AND DIAL (VZ 0796/VZ 0797)	100	Nos			
177	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		
178	TRUCK	958EG82533	TWIN SITE FUEL LEVEL SENSOR(6243500029N)	137	Nos	Float Length: 381 mm Float angle: 150 deg Output : Twin Site 0-90 Ohm		
179	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		
180	TRUCK	985EG91798	LED WHITE	1117	Nos	Type: BA9S LED Bulb Emitting Color: White Operating Voltage : 24V DC		

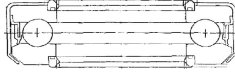



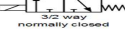




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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
181	TRUCK	985AS02698	LOW PRESSURE SWITCH (5629711140)	147	Nos	Pressure Port: PT 1/4" Switch Type: SPST NC Set Point : 75±5 PSI Operating Temperature: -50 to 70 deg C Media: Pneumatic Protection: IP65		
182	TRUCK	985AS02705	STOP LIGHT SWITCH (5610661220)	183	Nos	Pressure Port: PT 1/4" Switch Type: SPST NO		
183	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		
184	TRUCK	931EG81563	CONNECTOR (TOT SENSOR) (6029 199 003)	44	Nos	Use to connector TOT sensor to the Harness		
185	TRUCK	766WT12016	TYRE	30	Nos	Radial Tyre 24 R 35 E4 ** Rock Deep Thread with O ring		
186	TRUCK	953WT02005	TYRE RADIAL	42	Nos	RADIAL PLY TYRE: 27.00 R 49 ROCK DEEP TREAD TRA CODE: E4 LOAD CARRYING CAPACITY OF EACH TYRE: 29850 Kg		
187	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)		
188	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 :- En4 quench & temper 48/54 hrc 5. Quantity per equipment :- 4 6.Average 7..Minimum break strength break strength 27,500 kg or more		

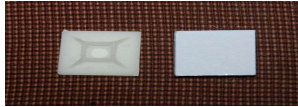
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ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
189	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	<p>Seal:- Steel</p> 	
190	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	 	
191	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	 	
192	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 Tempertaure Range:- -30 Deg C to 80 Deg C 5) Holding Temperature Range:-30 Deg C to 80 Deg C	 	
193	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		
194	BANGALORE COMPLEX	R601181100	SABATAK 760 XXL	7680	Nos	LED BASED SALOON LIGHT (1302MM) FOR KMRL-RS (3R) PROJECT AS PER PTS GR/TD/3481		
195	BANGALORE COMPLEX	R601181200	SABACLEAN 48	57.6	Nos	LED BASED SALOON LIGHT (690MM) FOR KMRL-RS (3R) PROJECT AS PER PTS GR/TD/3481		
196	BANGALORE COMPLEX	94214005	SALOON TO CAB DOOR ASSY	48	SET	GANGWAY LIGHT-LED FOR KMRL-RS (3R) PROJECT AS PER PTS GR/TD/3481		





LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
197	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		
198	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		
199	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		
200	BANGALORE COMPLEX	94218084	ELECTRICAL WIPER SYSTEM	48	SET	PROTECTION FILM 150x130x0.5T		
201	BANGALORE COMPLEX	90921834	MOUNT BASE-DAMB-30	52800	Nos	PROTECTION FILM 410x130x0.5T		
202	BANGALORE COMPLEX	90921160	COVER BUSHING (4.8)	28800	Nos	PROTECTION FILM 720x160x0.5T		
203	BANGALORE COMPLEX	R306688020	FLOOR CUSHIONING 4mmTHK x 160mmWIDTH x 5m ROLL	1038.864	Roll	PROTECTION FILM 150x100x0.5T		
204	BANGALORE COMPLEX	R306688021	FLOOR CUSHIONING 10mm THK x 40mm WIDTH x 5m ROLL	4011.072	Roll	PROTECTION FILM 120x40x0.5T		


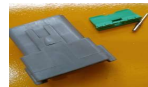
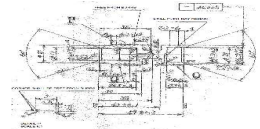
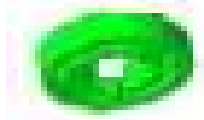
LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks																												
205	BANGALORE COMPLEX	R306688022	FLOOR CUSHIONING 10mm THK x 50mm WIDTH x 5m ROLL	226.272	Roll	PROTECTION FILM 225x40x0.5T																														
206	BANGALORE COMPLEX	R306688023	FLOOR CUSHIONING 19mm THK x 50mm WIDTH x 5m ROLL	65.184	Roll	PROTECTION FILM 350x40x0.5T																														
207	BANGALORE COMPLEX	94218087	SUN BLIND ASSY	48	Nos	PROTECTION FILM 480x100x0.5T																														
208	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.																												
209	EARTH MOVERS	CEK0120000	STARTER SWITCH	1500	Nos	<table border="1"> <thead> <tr> <th colspan="3">Maximum Allowable Current</th> <th>unit: A</th> </tr> </thead> <tbody> <tr> <td>Rated voltage</td> <td>12V</td> <td>24V</td> <td></td> </tr> <tr> <td>BR Circuit</td> <td>20</td> <td>10</td> <td></td> </tr> <tr> <td>ACC Circuit</td> <td>20</td> <td>15</td> <td></td> </tr> <tr> <td>R₁ Circuit</td> <td>40</td> <td>40</td> <td></td> </tr> <tr> <td>R₂ Circuit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>C Circuit</td> <td>Instant 75 Holding 22</td> <td>Instant 75 Holding 22</td> <td></td> </tr> </tbody> </table>	Maximum Allowable Current			unit: A	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.
Maximum Allowable Current			unit: A																																	
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																																		
210	EARTH MOVERS	130EG81212	TEMP SENSOR	65	Nos	1. Temp. Range: 40oCto 150oC 2. Type: Resistive.		It is used for sensing the temperature of Engine oil/coolant and feed signal to temperature gauge.																												
211	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.																												
212	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																												





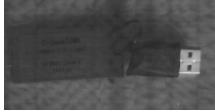



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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
213	EARTH MOVERS	790TF52363	LINK R H	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly
214	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
215	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
216	EARTH MOVERS	790TF12405	SPACER	150	Nos		Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly
217	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		
218	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		
219	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		
220	EARTH MOVERS	376AX91161	Bearing	4	Nos			


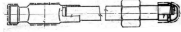
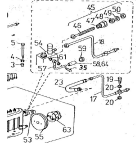
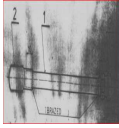

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
221	EARTH MOVERS	376TM92551	Oil pipe (forward)	5	Nos			
222	EARTH MOVERS	376TM92568	Oil Pipe (reverse)	1	Nos			
223	EARTH MOVERS	376TM91693	Driven Disc	100	Nos			
224	EARTH MOVERS	376TM91499	Driving disc	10	Nos			
225	ENGINE	5129901562	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.		
226	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 : KKI4B, Surface Layer : Tin Lead P-77		
227	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 = KJ5A (F780), Flash platin g: ES1405)		
228	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 = KJ5A (F780), Flash platin g: ES1405)		




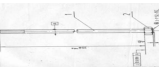
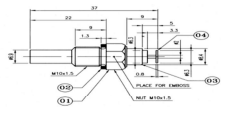

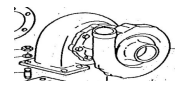
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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
229	ENGINE	6210393041	METAL ASSY	42	Nos	140-Conrod- upper & lower bearing set , Under size 0.25mm (Upper bearing : Width = 46mm, Semi Outer dia = 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 = KJ5A (F780), Flash platin g: ES1405)		
230	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		
231	ENGINE	442076632424	OIL SUPPLY TUBE	25	Nos	MATERIAL : CSN 42 4331.01, CSN 42 1430.13, CSN 42 4331.71 MFG PROCESS : ALUMINIUM GRAVITY DIE CASTING, OUTER DIA : Ø225		
232	ENGINE	443979651374	FUEL FEEDER ZS 46-1374	25	Nos	Assembly: 3 components Weight :0.162 Kg Material :CSN137972.02		
233	ENGINE	442076631144	FUEL SUPPLY TUBE	25	Nos	1.Tube 2.Connector 3.Pipe Adaptor		
234	ENGINE		FUEL SUPPLY TUBE	25	Nos	DRAWING NOT AVAILABLE		
235	ENGINE	443972227480	NECK JS 6	25	Nos	Material: EEE 6233-2 Weight:0.007 kg ID:Ø54.1 mm	PART OF FIP	
236	ENGINE	323434181743	UPPER THRUST BEARING	25	Nos	Ø154 x 3 THICK , SAE 1010 STEEL WITH SAE 48 SINTERED		

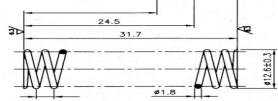



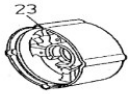
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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
237	ENGINE	323434181763	LOWER THRUST BEARING	25	Nos	600 X 450 X 125 ALUMINIUM CASTING		
238	ENGINE	130076631274	DEARATION SYSTEM	25	Nos	OIL PRESSURE SWITCH FOR 8 BAR PRESSURE		
239	ENGINE	443852042000	SWITCH	25	Nos	SUCTION TUBE ASSEMBLY CONTAINING 4 PARTS		
240	ENGINE	442070211284	SUCTION TUBE (VVNV)	25	Nos	CONTAINING TWO PARTS MATERIAL : CSN 41 4331.9, CSN 4 1523.0 NUT:M10 SCREW:M8		
241	ENGINE	442079940074	BOLT	25	Nos	MATERIAL : CSN 42 046312 INNER DIA : 124mm OUTER DIA : 149mm LENGTH : 260mm		
242	ENGINE	443429108989	SENSOR(380 060 360 010)	25	Nos	Ø120 X 5 THICK STEEL PISTON RING		
243	ENGINE	327972522285	PISTON SCRAPPER RING 7-2285-52-0/3	25	Nos	TWIN CYLINDER COMPRESSOR (4102)		
244	ENGINE	486512130518	TURBO BLOWER LH-K-36-006	25	Nos	ASSEMBLY COMPONENTS: 1. DUCTILE SHEET (MATERIAL: CSN 425 365), 2. INSERT JERIT É (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, THICKNESS; 1.85 ± 0.15		








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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
245	ENGINE	107560205063	PIN 5X63	25	Nos			
246	ENGINE	443975801269	LIFTER	25	Nos			
247	ENGINE	443971022604	ADJUSTING NUT	25	Nos			
248	ENGINE	130050512154	SPRING	25	Nos	MATERIAL: CSN 41 1109.0, CSN426510 OD: ϕ 9x11 MM LENGTH: 7 MM WEIGHT: 0.018KG		
249	ENGINE	443930131570	VENTILATOR FAN	25	Nos	MATERIAL: CSN 41 331.21, CSN 42 6312.22 ID: ϕ 57 MM THICKNESS: 1 MM WEIGHT: 0.010KG		
250	ENGINE	130050953684	SPACER WASHER	25	Nos	PART OF ALTERNATOR		
251	ENGINE	443936014910	SUPPORTING RING	25	Nos	PART OF ALTERNATOR		
252	ENGINE	443930131710	REAR COVER	25	Nos	PART OF ALTERNATOR		


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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
253	ENGINE	443930132100	TERMINAL BOARD	25	Nos	MATERIAL: F33, GRADE A WIDTH: 8 MM THICKNESS:		
254	ENGINE	443936214310	PINION LUBRICATING FELT	25	Nos	PART OF ALTERNATOR		
255	ENGINE	443938329100	SWITCH COIL	25	Nos	Ø530 X 320 ALUMINIUM CASTING		
256	ENGINE	130016100224	CLUTCH HOUSING	25	Nos	Ø34 X 25 COPPER BEARING		
257	ENGINE	130070220344	TUBE	25	Nos	ASSEMBLY: 2 PARTS MM WEIGHT: 0.22KG WIDTH:10-1		
258	ENGINE	443933980170	OUTER PLATE	25	Nos			
259	ENGINE	323141377000	Thrust Bearing 6037-04/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine		
260	ENGINE	323141371000	Thrust Bearing 6037-02/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine		





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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
261	ENGINE	323141373000	Thrust Bearing 6038-02/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine		
262	ENGINE	323141375000	Thrust Bearing 6038-04/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine		
263	ENGINE	442070060974	Part of Crank shaft	344	Nos	Part of Crankshaft. Hollow type casting. Fillet Rolling at journal corners to achieve required hardness.		
264	ENGINE	443614029000	Compressor 4192	86	Nos	Diesel cooled air compressor		
265	BANGALORE COMPLE	94221157	EXTERIOR CAMERA, DM CAR_LEFT	48	NO	EXTERIOR CAMERA, DM CAR_LEFT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		
266	BANGALORE COMPLE	94221158	EXTERIOR CAMERA, DM CAR_RIGHT	48	NO	EXTERIOR CAMERA, DM CAR_RIGHT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		
267	BANGALORE COMPLE	94221159	EXTERIOR CAMERA, M CAR_LEFT	48	NO	EXTERIOR CAMERA, M CAR_LEFT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		
268	BANGALORE COMPLE	94221160	EXTERIOR CAMERA, M CAR_RIGHT	48	NO	EXTERIOR CAMERA, M CAR_RIGHT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
269	BANGALORE COMPLE	94221144	GOOSE NECK MICROPHONE + PTT BUTTON	48	NO	GOOSENECK MICROPHONE + PTT BUTTON, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
270	BANGALORE COMPLE	94221145	CAB LOUDSPEAKER	48	NO	CAB LOUDSPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
271	BANGALORE COMPLE	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.		
272	BANGALORE COMPLE	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.		
273	BANGALORE COMPLE	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.		
274	BANGALORE COMPLE	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.		
275	BANGALORE COMPLE	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.		
276	BANGALORE COMPLE	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.		


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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
277	BANGALORE COMPLE	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.		
278	BANGALORE COMPLE	94221079	KEY BOX	48	NO	KEY BOX TO MELCO PART NO. MS-2438 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE.		
279	BANGALORE COMPLE	94221202	CONNECTOR (PLUG)	336	NO	CONNECTOR(PLUG) TO MELCO PART NO. VGE1D28-21SN AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
280	BANGALORE COMPLE	94221205	SOCKET CONTACT	23088	NO	SOCKET CONTACT TO MELCO PART NO. RCS16M-23D28 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
281	BANGALORE COMPLE	94221206	CONNECTOR	384	NO	CONNECTOR TO MELCO PART NO. MYSN105T(6348200175) AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
282	BANGALORE COMPLE	94221209	CONNECTOR	144	NO	CONNECTOR TO MELCO PART NO. QE4501A-50S AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
283	BANGALORE COMPLE	94221210	CONNECTOR	144	NO	CONNECTOR TO MELCO PART NO. QE4401-50P AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
284	BANGALORE COMPLE	94221211	PIN CONTACT	7200	NO	PIN CONTACT TO MELCO PART NO. 031-50565-002 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
285	BANGALORE COMPLE	94221213	CANNON PLUG	48	NO	CANNON PLUG TO MELCO PART NO. QE4501A-305-F0 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
286	BANGALORE COMPLE	94221216	CONNECTOR	96	NO	CONNECTOR TO MELCO PART NO SG102955R00002 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		
287	BANGALORE COMPLE	94221218	SOCKET CONTACT	2304	NO	SOCKET CONTACT TO MELCO PART NO. SC201153 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		
288	BANGALORE COMPLE	94221219	CONNECTOR	1728	NO	CONNECTOR TO MELCO PART NO. H60A353001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
289	BANGALORE COMPLE	94221220	MALE CONTACT	6912	NO	MALE CONTACT TO MELCO PART NO. H9N6901001 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		
290	BANGALORE COMPLE	94221222	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H39B293G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
291	BANGALORE COMPLE	94221223	SOCKET CONTACT	132864	NO	SOCKET CONTACT TO MELCO PART NO. H39B210001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
292	BANGALORE COMPLE	94221226	CONNECTOR ASSY	576	NO	CONNECTOR ASSY TO MELCO PART NO. H39B293G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
293	BANGALORE COMPLE	94221227	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
294	BANGALORE COMPLE	94221228	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
295	BANGALORE COMPLE	94221229	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
296	BANGALORE COMPLE	94221231	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
297	BANGALORE COMPLE	94221232	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
298	BANGALORE COMPLE	94221233	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
299	BANGALORE COMPLE	94221236	CONNECTOR ASSY	288	NO	CONNECTOR ASSY TO MELCO PART NO. H39B293G07 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
300	BANGALORE COMPLE	94221237	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H39B294G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
301	BANGALORE COMPLE	94221239	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
302	BANGALORE COMPLE	94221240	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
303	BANGALORE COMPLE	94221241	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
304	BANGALORE COMPLE	94221242	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
305	BANGALORE COMPLE	94221243	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
306	BANGALORE COMPLE	94221244	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
307	BANGALORE COMPLE	94221245	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6220G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
308	BANGALORE COMPLE	94221246	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
309	BANGALORE COMPLE	94221247	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
310	BANGALORE COMPLE	94221248	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
311	BANGALORE COMPLE	94221249	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
312	BANGALORE COMPLE	94221250	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
313	BANGALORE COMPLE	94221254	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
314	BANGALORE COMPLE	94221255	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
315	BANGALORE COMPLE	94221256	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
316	BANGALORE COMPLE	94221257	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		


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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
317	BANGALORE COMPLE	94221258	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
318	BANGALORE COMPLE	94221259	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
319	BANGALORE COMPLE	94221260	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6220G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
320	BANGALORE COMPLE	94221261	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
321	BANGALORE COMPLE	94221262	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
322	BANGALORE COMPLE	94221263	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
323	BANGALORE COMPLE	94221264	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
324	BANGALORE COMPLE	94221265	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		




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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
325	BANGALORE COMPLE	94221266	SOCKET CONTACT	1536	NO	SOCKET CONTACT TO MELCO PART NO. H39B210G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
326	BANGALORE COMPLE	94221267	CONNECTOR ASSY	192	NO	CONNECTOR ASSY TO MELCO PART NO. H39B294003 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
327	BANGALORE COMPLE	94221268	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
328	BANGALORE COMPLE	94221269	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
329	BANGALORE COMPLE	94221270	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
330	BANGALORE COMPLE	94221271	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
331	BANGALORE COMPLE	94221273	SET OF CONNECTOR ASSY	48	NO	SET OF CONNECTOR ASSY TO MELCO PART NO. MS-A2031A AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
332	BANGALORE COMPLE	94221274	CN(DM)2	48	NO	CN(DM)2 TO MELCO PART NO. MS-A1947 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
333	BANGALORE COMPLE	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.		
334	BANGALORE COMPLE	94221275	CN(T/M)2	96	NO	CN(T/M)2 TO MELCO PART NO. MS-A1949 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
335	BANGALORE COMPLE	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.		
336	BANGALORE COMPLE	94221276	RIO(DM)2	48	NO	RIO(DM)2 TO MELCO PART NO. MS-A1947 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
337	BANGALORE COMPLE	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.		
338	BANGALORE COMPLE	94221277	RIO(T/M)2	96	NO	RIO(T/M)2 TO MELCO PART NO. MS-A1953 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
339	BANGALORE COMPLE	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.		
340	BANGALORE COMPLE	94221203	CONNECTOR(PLUG)	192	NO	CONNECTOR(PLUG) TO MELCO PART NO. VGE1D28-21SW AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		

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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
341	BANGALORE COMPLE	94221204	CONNECTOR(PLUG)	96	NO	CONNECTOR(PLUG) TO MELCO PART NO. VGE1D28-21SX AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
342	BANGALORE COMPLE	94221212	QE-POL-POST	288	NO	QE-POL-POST TO MELCO PART NO. QE-POL-POST AND CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION.		
343	BANGALORE COMPLE	94221214	SOCKET CONTACT	864	NO	SOCKET CONTACT TO MELCO PART NO. 031-50794-002 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
344	BANGALORE COMPLE	94221215	SOCKET CONTACT	576	NO	SOCKET CONTACT TO MELCO PART NO. 031-50675-002 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
345	BANGALORE COMPLE	94221217	SOCKET CONTACT	384	NO	SOCKET CONTACT TO MELCO PART NO. SC201186 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.		
346	BANGALORE COMPLE	94221221	RING MARK ASSY	48	NO	RING MARK ASSY TO MELCO PART NO. H7M6218G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
347	BANGALORE COMPLE	94221224	NAME PLATE	288	NO	NAME PLATE TO MELCO PART NO. H39B247001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
348	BANGALORE COMPLE	94221225	RING MARK ASSY	144	NO	RING MARK ASSY TO MELCO PART NO. H7M6218G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		




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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
349	BANGALORE COMPLE	94221230	RING MARK ASSY	144	NO	RING MARK ASSY TO MELCO PART NO. H7M6218G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
350	BANGALORE COMPLE	94221234	NAME PLATE	240	NO	NAME PLATE TO MELCO PART NO. H60A376001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
351	BANGALORE COMPLE	94221235	RING MARK ASSY	240	NO	RING MARK ASSY TO MELCO PART NO. H7M6218G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
352	BANGALORE COMPLE	94221238	PIN CONTACT	864	NO	PIN CONTACT TO MELCO PART NO. H39B210002 AND CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION.		
353	BANGALORE COMPLE	94221252	NAME PLATE	48	NO	NAME PLATE TO MELCO PART NO. H60A376002 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
354	BANGALORE COMPLE	94221253	RING MARK ASSY	48	NO	RING MARK ASSY TO MELCO PART NO. H7M6218G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
355	BANGALORE COMPLE	94221272	RING MARK ASSY	48	NO	RING MARK ASSY TO MELCO PART NO. H7N6218G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
356	BANGALORE COMPLE	R605812000	CLEANING AGENT, HY-SC # 2200	2880	L	CLEANING AGENT, HY-SC # 2200 OF M/s. HANYANG CHEMICAL, KOREA		



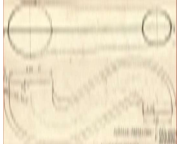


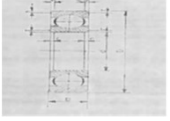
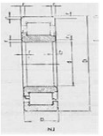
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357	BANGALORE COMPLE	R605805000	CLEANING AGENT - SR - 600 (1 KG CAN)	1440	CAN	R605805000,CLEANING AGENT SR600 OF M/s NAMBANG CNA Co.LTD, KOREA IN cans of 1kg each.		
358	BANGALORE COMPLE	R605803000	CLEANING AGENT - SEACLEAN - Z	720	L	R605803000,CLEANING AGENT SEACLEAN - Z		
359	BANGALORE COMPLE	R605802000	CLEANING AGENT - SOLVENT - YUSOL TF	720	L	R605802000,CLEANING AGENT SOLVENT YUSOL TF		
360	BANGALORE COMPLE	R607909000	MOL - 500S Gray (tube)- Spot sealer	216	NO	R607909000,MOL 500S Gray tube Spot sealer of make DONG-A Hitech		
361	Palakkad	442028660474	TORSION BAR LH	25	Nos	TECHNICAL SPECIFICATION: Load bearing Front Axle suspension Item Rolled bar Size:1900xØ80mm Weight :15 kg Approx		
362	Palakkad	442028660464	TORSION BAR RH	25	Nos	TECHNICAL SPECIFICATION: Load bearing Front Axle suspension Item Rolled bar Size:1900xØ80mm Weight :15 kg Approx		
363	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		
364	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		

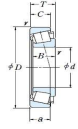
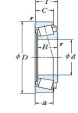
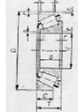
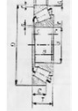




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Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
365	Palakkad	443612386806	HEAD COUPLING	25	Nos	TECHNICAL SPECIFICATION: Coupling element serves for functioning of Trailer brake Casting with Rubber packing Dimensions : 130x60x90 Operating Medium: AIR		
366	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		
367	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,JS:513-94 DimensionsL:550x190x110mm		
368	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.		
369	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		
370	H&P	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		
371	H&P	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		
372	H&P	112428092003	ROLLER BEARING	25	Nos	ROLLER BEARING NTN NJ2309EC3/NSK NJ2309EC3/SKF NJ2309EC3 d=45 mm, D= 100 mm		

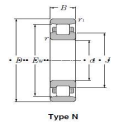
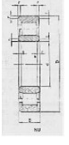
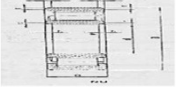





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373	H&P	112712100100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.30210A CSN 02 4720 TAPPER ROLLER BEARING NTN 4T 30210/ NSK HR 30210J d=50 mm, D= 90 mm		
374	H&P	112712140100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.30214A CSN 02 4720 TAPERED ROLLER BEARING NTN 32314/ NSK HR 30214J/ SKF 30214 d=70 mm, D= 125 mm		
375	H&P	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		
376	H&P	112717200100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32220A CSN 02 4720 TSPERED ROLLER BEARING TIMKEN 32220 d=100 mm, D= 180 mm		
377	H&P	112718100500	TAPERED ROLLER BRG	25	Nos	TAPERED ROLLER BRG NSK HR32310CJ/SKF 32310B d=50 mm, D= 110 mm		
378	H&P	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		
379	H&P	112718130100	T.R.BEARING	25	Nos	T.R.BEARING NTN 32313U/ NSK HR 32313J d=65 mm, D= 140 mm		
380	H&P	112727152000	TAPER ROLLER BEARING	25	Nos	TAPER ROLLER BEARING 33215		


LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
381	H&P	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		
382	H&P	324414101241	ROLLER BEARING	25	Nos	ROLLER BEARING NU 410 BNC3 CSN 02 4670 d=50 mm, D= 100 mm		
383	H&P	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		
384	H&P	111 111 010 000	BUSHING	25	Nos	BUSHING 2015 KU 23 X 20 X 15		
385	H&P	112545041000	BEARING	25	Nos	BEARING INA 60X68X46 F85001		
386	H&P	112545043000	BEARING	25	Nos	BEARING INA 72X80X46 F87651		
387	H&P	112545044000	BEARING	25	Nos	BEARING INA 85X93X55 F90754		
388	H&P	112545052000	BEARING	25	Nos	BEARING INA 55X63X32 F92414		

LIST OF ITEMS FOR DEVELOPMENT -MAKE IN INDIA

ANNEX-1

Sl.no	Division	Part no	Description	Approximate annual requirement (Qty)	UoM	Brief spec	Photograph	Remarks
389	H&P	112545042000	BEARING	25	Nos	BEARING INAK 65 X 73 X 3		
390	H&P	112545045000	BEARING	25	Nos	BEARING IOK 100X107X21	