Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details
1	Mining & Construction	EARTH MOVERS	452CV01006	TRANSMISSION CONTROL VALVE ASSY	15 No's	The transmission control valve is used to redirect oil to the selected clutches for shifting of gears in Transmission assy.Specification: 5 spool solenoid operated control valve assembly Transmission speeds: 8 forward 8 reverse Operating pressure: 31 bar	C. C		Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in
2	Mining & Construction	EARTH MOVERS	451TM03412	SHIFT CONTROL	45 No's	Shift control valve is a part of transmission control valve used in motor grader equipment to select different speed ranges.  Specification:  Transmission Speeds: 6 forward, 5 reverse.  Operating pressure: 31 bar			Ph : 08153 262 124 Mob: 97409 56244
3	Mining & Construction	EARTH MOVERS	2321500120	PR.CONTROL VALVE	45 No's	Pressure control valve is a part of transmission control valve used in motor grader equipment to select different speed ranges.  Specification: Transmission Speeds: 6 forward, 5 reverse Operating pressure: 31 bar			
4	Mining & Construction	EARTH MOVERS	125FD02038	FLOATING SEAL KIT	120 No's	The floating seal is used to seal protect components in Final drive assembly from mud and soil.  Specification: O-Ring material: Nitrile rubber O-Ring shore hardness: 60±15 Seal Ring material: FC9Cr6Mo	90		
5	Mining & Construction	EARTH MOVERS	156FD02303	TRACK DRIVE	110 No's	Track drive is used in Excavator for moving of equipment from one place to another place in mining area and also helps to position the equipment in comfortable working position with the help of independent LH and RH hydrostatic circuits.	TRACK DRIVE		
6	Mining & Construction	EARTH MOVERS	130EG00122	KIT, PV780 LCD PANEL	105 No's	CAN (Control Area Network) based 7" electronic display monitors all the engine, transmission and other equipment critical parameters continuously. Some parameters are directly connected to display and other parameters are connected through CAN converter by using two cables (CAN low and CAN high). Display shows all parameters in analogue form and it provides audio visual alarm to the operator in case any			

7" Colour display

Sender CAN

Temperature Sensor

parameter crosses the specified limit.

Specifications: Display: 7" Colour TFT LCD

Inputs: 3 Analog (0-5V, 4-20 mA or Resistive), 5 Discrete and

Outputs: 1 no. 500mA switched Low, Frequency Out (2Hz – 3 KHz)
Communication: J1939, CAN Open, RS485 and USB host
Operating Temperature: -400C to +850C

Vibration: random vibration, 7.86 Grms, 3 axis.

Resolution: WVGA, 800 X 480 pixles Contrast ratio: 400:1 Flash Memory: 2 GB RAM: 128 MB SRAM USB: 2.0 host Video input: 3 NTSC/PAL Operating voltage: 6-36 VDC

1 Frequency in (2Hz-10 KHz)

Protection: IP67

Sender CAN: Operating Voltage: 7 – 35 VDC

Shock: ±50G in 3 axis

						LIST OF ITEMS FOR INDIGE	INIDATION		
SI.no	Business Group	Division	Part no	Description	Approximate annual	Brief spec	Photograph	Remarks	Contact Details
	Group				requirement				
7	Mining & Construction	EARTH MOVERS	1565001077	SWING MACHINERY	55 No's	Swing Machinery: Swing drive is used to revolve the upper structure of Excavator as per the positions of Dumpers for easy loading and faster loading of coal/ over burden in the mining fields.			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in
8	Mining & Construction	EARTH MOVERS	451TM03291	LUB VALVE	45 No's	Lub valve is a part of transmission control valve used in motor grader equipment to lubricate bearings discs etc. Specification: Transmission Speeds: 6 forward, 5 reverse Operating pressure: 31 bar			Ph: 08153 262 124 Mob: 97409 56244
9	Mining & Construction	EARTH MOVERS	113CVB0029	RELIEF VALVE(W/C)	55 No's	Relief pressure: 20 kg/cm2. Max. Flow: 74.4 Lpm. Weight: 3.8 Kgs.			
10	Mining & Construction	EARTH MOVERS	BSP0146178	RECOIL SPRING	110 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications:  SI.  No. Parameter  1 Coil dia in mm  2 Mean coil dia in mm  1 78  3 Free length in mm  760  4 No of coils  1 11  5 No of active coils  9  6 Spring rate in kg/mm  96.14  7 Test load in kg  2 5,520  8 Squareness (max) in deg at both ends  1  9 Flatness (max) in mm at both ends  0.5			

					1			
SI.no Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
Group				annual				
11 Mining & Construction	EARTH MOVERS	817AC02049	TECH. SCOPE (AC WITH HEATER SPLIT TYPE )	requirement 15 No's	COMPRESSOR SPECIFICATION:  DISPLACEMENT PER REVOLUTION 154.9 cc/rev. MAX. ALLOWABLE R.P.M 6000 R.P.M MAX. ALLOWABLE C.P.M 6000 R.P.M OIL (SP-15) 175 cc  REFRIGERANT R.134 a CLUTCH SPECIFICATION: RATED VOLTAGE DC 24V  BREAKING TORQUE 3.5 kgf-m min @ 24V POWER CONSUMPTION 35 ~ 40 watts ( max) BELT TYPE B.—TYPE, V-BELT PULLEY DIAMETER @ 156.75mm CONDENSER: TYPE HEAVY DUTY REMOTE (CORE TYPE IN FRONT OF ROC) CAPACITY 44,500 BTU/hr EVAPORATOR: TYPE FULLY DUCTABLE INTEGRATED FILTRATION FLOOR MOUNTED COOLING CAPACITY 25,000 BTU/hr (7.6 kw) HEATING CAPACITY 47,800 BTU/hr (5.2 kw) AIR FLOW 540 cu.m/hr (320 cfm) ACTO MEET THE COOLING OF CABIN SIZE: LENGTH 1600 mm, HEIGHT 1745 mm,WIDTH 940 mm COOLING TEMPERATURE INSIDE THE CABIN: 20°C @ 50°C AMBIENT INSTALLATION KIT AS PER SUPPLIER SCOPE	INTERNAL PROBLEM OF THE CHECK MAKING PROBLEMANING AND		Name: Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph: 08153 262 124 Mob: 97409 56244
12 Mining & Construction	EARTH MOVERS	2352211140	BUSHING	60 No's	The buses are used in motor grade final drive assembly between stationary and oscillating part. Specification: Material: Phenolic Oleoresin Hardness: 80HRM min. Compression strength: 11kg/mm2 Min Specific gravity: 1.3 to 1.4			
13 Mining & Construction	EARTH MOVERS	BSP0160244	RECOIL SPRING	120 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.  Specifications: SI.  No. Parameter BSP01 60244  1 Coil dia in mm 60  2 Mean coil dia in mm 244  3 Free length in mm 1008  4 No of coils 11  5 No of active coils 9  6 Spring rate in kg/mm 92.90  7 Test load in kg 92.90  8 Squareness (max) In deg at both ends 1  9 Flatness (max) in mm at both ends 0.5			

						LIST OF ITEMS FOR INDIGE	<u>NISATION</u>		
Sl.no	Business Group	Division	Part no	Description	Approximate annual	Brief spec	Photograph	Remarks	Contact Details
14	Mining & Construction	EARTH MOVERS	BSP0144158	RECOIL SPRING	requirement 90 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.  Specifications:  No. Parameter BSP01 44158  Coil dia in mm 44  Man en coil dia in mm 158  Free length in mm 819  No of coils 13  Free length in mm 819  Son of active coils 11  Son of active coils 11  Son of active coils 11  Spring rate in kg/mm 86.39  Test load in kg 20100  Squareness (max) in deg at both ends 1  Flatness (max) in mm at both ends 0.5			Name: Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph: 08153 262 124 Mob: 97409 56244
15	Mining & Construction	EARTH MOVERS	761AS02093	MASTER CYLINDER	10 No's	Master cylinder for Wheel loader and Wheel dozer application. It is used in Brake system which is air over hydraulic type. The brakes chambers are connected to master cylinders where the air pressure pushes the oil to apply brake. When brake pedal is depressed, piston in the master cylinder is pushed by plunger due to air pressure from brake chamber. This makes the oil to flow out from master cylinder outlet to apply pressure on piston in final drive of the axle. In turn the piston (in axle) pushes the clutch plates to come in close contact with discs which rotates, so when they are held, the rotation is stopped and brakes are applied to stop the machine.  Specification:  Bore: 638.1 mm  Stroke: 75 mm  Working media: Mineral oil Max. pressure rating: Max brake pressure = 100bar (front & rear axle)			
16	Mining & Construction	EARTH MOVERS	BSP0146193	RECOIL SPRING	110 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.  Sprocket or other Rollers.  No. Parameter BSP01 46193  1 Coil dia in mm 193  3 Free length in mm 193  3 Free length in mm 583  4 No of coils 8.56  5 No of active coils 6.56  6 Spring rate in kg/mm 94.90  7 Test load in kg 20,100  8 Squareness (max) in deg at both ends 1  9 Flatness (max) in mm at both ends 0.5			
17	Mining & Construction	EARTH MOVERS	758TH91197	GEAR BRG.TBL	20 No's	Gear bearing is used Turn Table assembly for tyre handling application.  Material: 42CrMo4/46Cr4N Module: 5No. Of teeth:84			

I.no Busine	000	Division	Part no	Description	Approximate	LIST OF ITEMS FOR INDIGE Brief spec	Photograph	Remarks	Contact Dotails
Group		Division	Рап по	Description	annual	Brief spec	Pnotograph	Remarks	Contact Details
18 Mining 8 Construc		EARTH MOVERS	2352511700	CHAIN	requirement 60 No's	The Chain is used to give drive to front and rear wheels of Tandem assembly by taking input drive from Final drive assembly in BG605 Motor Grader.  Specification:  No of links:50nos  Pitch : 63.50  Minimum Fracture strength: 50,000Kg  Minimum Deformation load: 24,000Kg			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in
9 Mining 8 Construc		EARTH MOVERS	758TH91229	GEAR BRG.TBL	10 No's	Gear bearing is used Turn Table assembly for tyre handling application. Specification: Material : 42CrMo4/ 46Cr4N Module : 6 No. Of teeth :93			Ph : 08153 262 124 Mob: 97409 56244
20 Mining 8 Construc		EARTH MOVERS	761PZ01126	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment.  Specification: Compressed length :500mm Silp : 90mm Operating speed : 2800rpm max Operating angle : 6deg Max. Torque : 3100Nm Mechanics : 9C			
Mining 8 Construc		EARTH MOVERS	355PZ91088	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment.  Specification: Compressed length::550mm Sip::80mm Operating speed::2400rpm max Max. Torque::2400Nm Mechanics::7C			
Mining 8 Construc		EARTH MOVERS	456PZ02005	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment.  Specification: Compressed length :232mm Slip : 51mm Operating speed : 2400rpm max Max. Torque : 3020Nm Mechanics : 7C			
23 Mining 8 Construc		EARTH MOVERS	355PZ91071	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment. Specification: Compressed length :390mm Slip : S0mm Operating speed : 2400rpm max Max. Torque : 3020Nm Mechanics : 7C	C		

<u> </u>		I	I= .	I=	INISATION	T	Ta		
SI.no		Division	Part no	Description	1	Brief spec	Photograph	Remarks	Contact Details
	Group				annual				
24	Mining & Construction	EARTH MOVERS	761PZ01101	PROPELLER SHAFT	requirement 20 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment.  Specification: Compressed length: 570mm Slip: 130mm Operating speed: 2800rpm max Operating angle: 6deg Max. Torque: 3100Nm Mechanics: 9C			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244
25	Mining & Construction	EARTH MOVERS	355P291063	PROPELLER SHAFT	10 No's	The propeller shaft is used to transmit power from engine to Wheels through transmission, drop box and axle of loader equipment.  Specification: Compressed length: 210mm Slip: 30mm Operating speed: 1400rpm max Operating angle: 15deg Max. Torque: 585Nm Mechanics: 6C			1000. 37403 30244
26	Mining & Construction	EARTH MOVERS	451BP02019	CENTER BRAKE ASSY	45 No's	The centre brake assembly is used for Parking brake application in motor grader equipment.  Specification:  Max. Allowable brake torque: 500kgm.			
27	Mining & Construction	EARTH MOVERS	BSP0163277	RECOIL SPRING	90 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.  Specifications:  SI.  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			
28	Mining & Construction	EARTH MOVERS	757EG11026	SMART ALARM,BACKUP	90 No's	Smart alarm gives audio warning when equipment reverse gear is engaged. Alarm intensity varies depending on the surrounding noise.  Specification: Operating voltage: 12-24VDC Maximum current drawn: 600mA Sound level: 87 – 1128b (Automatic) Operating temperature: 40DC to +85 OC Protection: Spike & Surge protected Enclosure: Epoxy sealed against mud water & vibration Duty cycle: 1 pulse per second, 50% ON 50% OFF Frequency: 1250Hz Case: Steel			

	INDIGENISATION

Sl.nc	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group			Jess. Puer.	annual requirement		· notograph	No.	contact Betails
29	Mining & Construction	EARTH MOVERS	953EG83482	LED ROOF LAMP	120 No's	LED roof lamp fitted inside (to roof) the operator cabin provides illumination during night time when ever lamp switch is ON.This lap gives white colour illumination. Specification: Operating voltage: 24VDC Power Consumption: GW Light Colour: White Case material: Steel			Name: Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph: 08153 262 124
30	Mining & Construction	EARTH MOVERS	BSP0140165	Recoil Springs	60 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.  Specifications:  SI.  NO. Parameter  BSP01 40165  1 Coil dia in mm  40  2 Mean coil dia in mm  548  3 Free length in mm  648  4 No of Coils  5 No of active coils  5 No of active coils  6 Spring rate in kg/mm  62.80  7 Test load in kg  8 Squareness (max) In deg at both ends  1 Flatness (max) in mm at both ends  0.5			Mob: 97409 56244
31	Mining & Construction	EARTH MOVERS	BSP0150183	Recoil Springs	70 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.  Specifications: SI.  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	(OOTANIE)		
32	Mining & Construction	EARTH MOVERS	BSP0146178	Recoil Springs	110 No's	The heavy duty Recoil springs for Dozer (Heavy Duty) and Excavators application. These recoil springs absorb energy when the equipment encounters a sudden load in its travel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers. Specifications:  SI.  No. Parameter  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 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 Flatness (max) in mm at both ends  0.5			

						LIST OF ITEMS FOR INDIGE			
SI.nc	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details
33	Mining & Construction	EARTH MOVERS	2352211590	SEAL RING	110 No's	The Seal Ring is used to arrest oil leakage during piston actuation in final drive assembly.  Specification:-Material - Rareflon;Pressure : 40 bar;Temperature : 120 deg max.			Name : Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115
34	Mining & Construction	EARTH MOVERS	701821706	SEALRING	150 No's	The Seal Ring is used to arrest oil leakage during piston actuation in transmission. Specification:-Material: HSBsC3;Maximum pressure: 20 bar;Oil temperature: 120 deg max;Peripheral speed: 20m/s	som!		e - mail: g@beml.co.in Ph : 08153 262 124 Mob: 97409 56244
35	Mining & Construction	EARTH MOVERS	130CT00284	TRACK SHOE PROFILE	180 Tons	Single grouser track shoes for crawler type 416 hp Bull Dozers ( heavy duty earthmoving application). Shoes are hot rolled and hardened for better strength and toughness. The shoes are made of Born grade steel material to meet the wear resistance requirement thereby enhancing the life of the track chain.1. DESCRIPTION: HOT ROLLED TRACK SHOE STOCK 2. CHEMICAL COMPOSITION: C 0.28 - 0.33 Mn 1.0 - 1.3 Si 0.25 - 0.35 Cr 0.35 - 0.65 S 0.03 Max P 0.03 Max B 0.0005 - 0.003 Mo 0.08 - 0.15 3. Mechanical properties as per BEML unit standard B1202-00. Hardness at 1.5 mm below Quenched end: 49-56 HRC Hardness at 1.5 mm below Quenched end: 39-50 HRC 4. SUPPLY CONDITION: NORMALIZED	130CT00284 — TRACK SHOE PROFILE DOZER		
36	Mining & Construction	EARTH MOVERS	125CT00326	TRACK SHOE PROFILE	210 Tons	Single grouser track shoes for crawler type 416 hp Bull Dozers (heavy duty earthmowing application). Shoes are hot rolled and hardened for better strength and toughness. The shoes are made of Born grade steel material to meet the wear resistance requirement thereby enhancing the life of the track chain.MATEMAL PROPERTIES:  1. DESCRIPTION : HOT ROLLED TRACK SHOE STOCK  2. CHEMICAL COMPOSITION:  C 0.28 - 0.33  Mn 1.0 - 1.3  Si 0.25 - 0.35  Cr 0.35 - 0.65  5 0.03 Max  P 0.03 Max  P 0.03 Max  B 0.0005 - 0.003  Mo 0.08 - 0.15  3. Mechanical properties as per BEML unit standard B1202-00.  Hardness at 1.5 mm below Quenched end: 49-56 HRC Hardness at 1.5 mm below Quenched end: 39-50 HRC  4. SUPPLY CONDITION: NORMALIZED	125CT00328—TRACK SHOE PROFILE DOZER		

LIST	ΩF	ITEM	IS FOR	INDIGENISATION	

						LIST OF ITEMS FOR INDIGE	<u>NISATION</u>		
Sl.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group				annual				
					requirement				
37	Mining & Construction	EARTH MOVERS	155CTB0025	TRACK SHOE PROFILE	81 Tons	Triple grouser track shoes for crawler type 147 hp Excavator (heavy duty earthmoving application). Shoes are hot rolled and hardened for better strength and toughness. The shoes are made of Born grade steel material to meet the wear resistance requirement thereby enhancing the life of the track chain.MATERIAL PROPERTIES:  tain.MATERIAL PROPERTIES:  1. DESCRIPTION: HOT ROLLED TRACK SHOE STOCK 2. CHEMICAL COMPOSITION:  C 0.28 - 0.33 Mn 10 - 1.3 Si 0.25 - 0.35 Cr 0.35 - 0.65 S 0.03 Max P 0.03 Max B 0.0005 - 0.003 M0 0.08 - 0.15 3. Mechanical properties as per BEML unit standard B1020-00. Hardness at 1.5 mm below Quenched end: 49-56 HRC			Name: Sekar.V Designation: CGM (R&D) R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph: 08153 262 124 Mob: 97409 56244
						Hardness at 15 mm below Quenched end: 39-50 HRC  4. SUPPLY CONDITION: NORMALIZED			
38	Mining & Construction	EARTH MOVERS	2352211580	SEAL RING	15 No's	4. SUPPLY CUNDITION: NORMALIZED The Seal Ring is used to arrest oil leakage during piston actuation in final drive assembly. Specification: Material - Rareflon; Pressure: 40 bar; Temperature: 120 deg max.			
39	Mining & Construction	EARTH MOVERS	130El91124	CUSHION	360 No's	Vibration isolator (Cushion) used for engine mounting at 4 mounting locations of 416 hp Bull Dozer application. Cushions are heavy duty type with better damping characteristics to prevent transmission of shocks from the equipment to the engine in order to improve the life of the engine components.	5-100 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		
40	Mining & Construction	EARTH MOVERS	130EI91132	CUSHION	180 No's	Vibration isolator (Cushion) used for engine mounting at 4 mounting locations of 416 hp Bull Dozer application. Cushions are heavy duty type with better damping characteristics to prevent transmission of shocks from the equipment to the engine in order to improve the life of the engine components.	Management of the second of th		
41	Mining & Construction	EARTH MOVERS	130EI91149	CUSHION	180 No's	Vibration isolator (Cushion) used for engine mounting at 4 mounting locations of 416 hp Bull Dozer application. Cushions are heavy duty type with better damping characteristics to prevent transmission of shocks from the equipment to the engine in order to improve the life of the engine components.	ACIO.  ACIONESTO ANICONE  MINISTRA CARRIORA  MINIST		
42	Mining & Construction	EARTH MOVERS	2321519530	SNAP RING	100 No's	The double layer snap ring is used to arrest axial motion of ring gear and planetary assembly in transmission. Specification:- Material: SWRH 67/82 B;Hardness: 42~48 HRc			
43	Mining & Construction	EARTH MOVERS	985TM11147	SNAP RING	50 No's	The double layer snap ring is used to arrest axial motion of ring gear and planetary assembly in transmission. Specification:- Material: SWRH 67/82 B; Hardness : 42~48 HRc	Control Contro		
			<u> </u>			1			

Sl.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group				annual				
					requirement				
44	Mining & Construction	Hydraulic & Power line	442071480374	Synchromesh 4th & 5th Gear	50 No's	This assy consists of carrier, Connecting Sleeve , Synchro cones for which input Raw materials are Forging. It involves , Turning, hobbing, Tooth Chamfering, internal shaping , GCQT & Special process Molycoat	330F148054-33NG/1006081-337-29G/310		Name: Madhusudan B.H Designation: DGM (R&D), R & D Complex BEML Ltd, BEML Nagar Kolar Gold Fields - 563 115 e - mail: g@beml.co.in Ph: 08153 264044 Mob: 7406897591
45	Mining & Construction	Hydraulic & Power line	442071480384	Synchromesh constant mesh	50 No's	This assy consists of carrier, Connecting Sleeve , Synchro cone for which input Raw materials are Forging. It involves , Turning, hobbing, internal shaping , Swaging ,GCQT & Special process Molycoat	MOTIONIA HIGHWAY (MI) IN		
46	Mining & Construction	Hydraulic & Power line	716516870	NYLOC NUT	50 No's	In the above Nylock nuts, the Nut materials are quenched and tempered to 24~28 HRc.			
47	Mining & Construction	Hydraulic & Power line	716513638	NYLOC NUT	50 No's	In the above Nylock nuts, the Nut materials are quenched and tempered to 24°28 HRc.			

					LIST OF ITEMS FOR INDIGE			
usiness iroup	Division	Part no	Description	Approximate annual	Brief spec	Photograph	Remarks	Contact Details
				requirement				
lining & onstruction	Truck	953EG80074	Proximity warning system for dump trucks	200 No's	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: 9-3ZVDC Opperating 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 cones divided into programmed range Minimum Resolution: 1 foot  Note; The usage of device on equipment is certified by department of telecommunication government of India	Sensor And Display		Name: Sudharshan K S Designation: CGM (R&D), R & D Complex, BEML Ltd Belvadi post Mysore - 570 018 e - mail: sudhiks@beml.co.in Ph: 0821 2400348 Mob: 9731561734
flining & onstruction	Truck	953EG03404	Emergency steering Motor for dump trucks	250 No's	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 Revolution Direction: Clockwise Duty Cycle: 90 Sec for Continuous operation.	Emergency Steering Motor		

<u>LIST</u>	OF	<u>ITEMS</u>	FOR	INDIGE	NISA	<u> TION</u>
					T .	

					1	LIST OF ITEMS FOR INDIGE			
		Division	Part no	Description		Brief spec	Photograph	Remarks	Contact Details
	Group				annual				
					requirement				
50	Mining & Construction	Truck	451EGB0088	Kit ,Dash board system(Murphy 1905)	50 No's	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire). If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification:	Display		Name: Sudharshan K S Designation: CGM (R&D) , R & D Complex, BEML Ltd Belvadi post Mysore - 570 018 e - mail: sudhiks@beml.co.in Ph: 0821 2400348 Mob: 9731561734
51	Mining & Construction	Truck	452EGB0118	MURPHY KIT(MECHANICAL ENGINE & TRANS)	20 No's	Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis	Controller		
	Mining & Construction	Truck	931EGB0107	DASH BOARD SYSTEM KIT	10 No's	Protocols: J1939, MMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113  Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol	D borni  Elizaro  Linux  Linx  Linux  Linx  Linux  Linx  Linx  Linx  Linx  Linx  Linx  Linx		
53	Mining & Construction	Truck	938EGB0102	DASH BOARD KIT (MURPHY)	15 No's				
54	Mining & Construction	Truck	953EGB0236	MURPHY KIT(PV780 ) ELEC ENGINE , MECH TRANS	36 No's				
55	Mining & Construction	Truck	953EGB0252	MURPHY KIT PV780(ELEC ENGINE & TRANS)	36 No's				

						LIST OF ITEMS FOR INDIG			
Sl.no	Business Group	Division	Part no	Description	annual	Brief spec	Photograph	Remarks	Contact Details
56	Mining & Construction	Truck	958EGB0138	MURPHY KIT PV780(ELEC ENGINE & TRANS)	requirement 150 No's				Name: Sudharshan K S Designation: CGM (R&D), R & D Complex, BEML Ltd Belvadi post Mysore - 570 018 e - mail: sudhiks@beml.co.in Ph: 0821 2400348
57	Mining & Construction	Truck	958EGB0146	MURPHY KITPV780(MECH ENGINE& ELEC TRANS)	150 No's				Mob: 9731561734
58	Mining & Construction	Truck	991EGB1063	MURPHY DASHBOARD KIT(PV780)	7 No's				
59	Mining & Construction	Truck	992EGB0032	MURPHY DASHBOARD KIT(PV780)	8 No's				
60	Mining & Construction	Truck	994EGB0029	KIT CENTRALISED DISPLAY(MURPHY)	3 No's				

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

Sl.no B	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group	2.0.0.0		Jessen paron	annual requirement				Contact Details
70 D	Defence	Palakkad	442925810194	DEFLECTOR RH	150 No's	TECHNICAL SPECIFICATION: Injection molded plastic Item Size: 515x190x3mm Weight: 350gms Protection Item fitted to cabin			Name: Rajashekaran.R Designation: DGM (R&D), Palakkad Complex, BEML Ltd KINFRA Park,Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph: 0491 2565291
71 D	Defence	Palakkad	442925810204	DEFLECTOR LH	150 No's	TECHNICAL SPECIFICATION: Injection molded plastic Item Size: 515x190x3mm Weight: 350gms Protection Item fitted to cabin			Mob: 9496001526
72 Di	Defence	Palakkad	443312039000	BOARD LAMP	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.167 A Nominal wattage : 4 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulbs : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)			
73 D	refence	Palakkad	442099701524	OIL PRESSURE GAUGE SENSOR 38 0070 25 with Switch coupling SPOJKA SPINACE 442601144000	150 No's	TECHNICAL SPECIFICATION: Mechanical Specification: (a) Pressure setting: '4.5 ± 10% bar upward (b) Operating pressure : 15 bar (c) Maximum over pressure : 30 bar for 1 minute duration (d) Torque : 30 Nm max. (e) Medium : Motor Oil/ Air Electrical Specification: (a) Rated voltage : 12 / 24V DC (b) Test Voltage : 13.5V (c) Max. Voltage sag : 150mV at 1000mA (d) Permissible electrical load : Max. 30W at resistive load 10W at inductive load & inductance 400mH (e) Protection to DIN 40050 : Plug in connection with contact Area : IP 66 Connecting Components: IP 64			
74 D	efence	Palakkad	442075300214	ENGINE BRAKE	150 No's	TECHNICAL SPECIFICATION: Operating Air Pressure : 8 bar Air Cylinder stroke : 40 mm Cylinder Bore Diameter : 40 mm Exhaust Pipe Diameter : 4 Inch Weight : 3.5 kg			
75 D	Defence	Palakkad	442070034000	STEERING GEAR BOX	150 No's	TECHNICAL SPECIFICATION: TYPE: Worm type with one finger Gear ratio: 25.5 Total number of steering wheel turns to achieve a full lock: 5 2/3 Weight: 42Kg Oil specification: Servo Gear Super 80W-90 (IOC)			

I IST OF	ITEMS FOR	INDICENT	CVLIUVI
LIST OF	LI EIVIS FUR	INDIGENI	SALIUN

Sl.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group				annual requirement				
76	Defence	Palakkad	443743050000	SUBPRESSURE INDICATOR	150 No's	TECHNICAL SPECIFICATION: Nominal Voltage : 24V Set pressure: 6+0.6Kpa			Name: Rajashekaran.R Designation: DGM (R&D), Palakkad Complex, BEML Ltd KINFRA Park,Menon park road Kanjikode East, Palakkad - 678 621
77	Defence	Palakkad	443999108000	CUT OFF SWITCH, TRW 31116	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 1.16 A Max Nominal wattage : 28 W Torque for tightening : 50 N-m Max Type of switch : NC (Normally Closed)	N M		e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526
78	Defence	Palakkad	443311026000	WATERTIGHT HEAD LAMP DIA 160 MM	450 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 3.125 / 2.91 A Nominal wattage : 75 / 70 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)			
79	Defence	Palakkad	443311065000	FOG HEADLAMP 891017-2	300 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 2.91 A Nominal wattage : 70 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Finding water of the complied for bulb : AIS 034 (As per CMVR)			
80	Defence	Palakkad	443312035000	REAR LAMP, LH	150 No's	BRIEF DESCRIPTION: The Rear Cluster LH Lamp (443312035000) used on BEMI- TATRA vehicle and is mounted on the rear of a vehicle used for three illumination applications mentioned below. (i) The lamp used to draw the attention to the presence of stationary vehicle. (Parking lamp). (ii) To indicate other road-users to the rear of the vehicle that its driver is applying the service brake (Stop lamp). (iii) To be operated by the driver, signals the latter's intension to change the direction in which the vehicle is proceeding (Direction indicator lamp). The assembly is made up of die cast aluminum, cold drawn steel sheet and is powder finished to Olive Green.  TECHNICAL SPECIFICATION: Nominal voltage : 24 V			
						Nominal current : 0.875 A, 0.875/0.208 A Nominal wattage : 21 W, 21/5 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulbs : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)			
81	Defence	Palakkad	443312037000	REAR LAMP, RH	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.875 A, 0.875/0.208 A Nominal wattage : 21 W, 21/5 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulbs : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)			

	INDIGENISATION

SI.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group				annual requirement				
82	Defence	Palakkad	443853040000	STARTER MOTOR PUSH BUTTON	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 10 A Max Torque for tightening switch : 10 kgf.cm Max Type of switch : NO (Normally Open)			Name: Rajashekaran.R Designation: DGM (R&D), Palakkad Complex, BEML Ltd KINFRA Park,Menon park road Kanjikode East, Palakkad - 678 621 e - mail: gap@beml.co.in Ph: 0491 2565291
83	Defence	Palakkad	443853026000	PUSH BUTTON SWITCH	150 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 4 A Max Type of switch : NO (Normally Open) Connection : Water tight			Mob: 9496001526
84	Defence	Palakkad	442080361004	WATERTIGHT LAMPS	300 No's	TECHNICAL SPECIFICATION: Nominal voltage : 24 V Nominal current : 0.16 A Nominal wattage : 4 W Standard to be complied for lamp : AIS 012 & AIS 008 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)			
85	Defence	Palakkad	443312009000	WATER TIGHT LAMP	150 No's	TECHNICAL SPECIFICATION: Supply Voltage: 24V DC Wattage: 21 W Bulb base: Ba 15S Lens color: White (Clear) Life: > 500000 hrs Operating temperature range: -40° to +70° Finish: Aluminium die casting, Steel parts by galvanic cadmium and Chromate plated, Copper parts are nickel plated.			
86	Defence	Palakkad	442973100074	SIDE COVER, LH	150 No's	Side cover is Protective sheet metal cover. Fixed below cabin door. Materi used: Cold rolled carbon sheet. Sheet thickness: 1mm Over Length of side cover: 1021mm Out surface of side cover coated with enamel synthetic Paint. And inner side painted Rubberized paint	al		
87	Defence	Palakkad	442973100054	SIDE COVER, RH	150 No's	Side cover is Protective sheet metal cover. Fixed below cabin door. Materi used: Cold rolled carbon sheet. Sheet thickness: 1mm Over Length of side cover: 1021mm Out surface of side cover coated with enamel synthetic Paint. And inner side painted Rubberized paint			
88	Defence	Palakkad	321880164000	AIR DUCT	150 No's	TECHNICAL SPECIFICATION: Size: 800x600x5 Matt: Polyster Glass Laminated Material Colour: Graphite Black	110		

LICT OF	ITEME EOD	INDIGENISATION

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

I.no Business Group	Division	Part no	Description	Approximate annual	Brief spec	Photograph	Remarks	Contact Details
				requirement				
97 Defence	Palakkad	442072801014	FRONT BRACKET, LH	50 No's	TECHNICAL SPECIFICATION: Size: 250x85x40 Matt: Carbon Steel Casting,Gr-1 IS: 2707-1996			Name: Rajashekaran.R Designation: DGM (R&D), Palakkad Complex, BEML Ltd KINFRA Park,Menon park road Kanjikode East, Palakkad - 678 621
98 Defence	Palakkad	321841025000	CANISTER KANYSTR 5 L OMYVACE CEL. SKEL	150 No's	TECHNICAL SPECIFICATION: Material: Blow molded plastic Size: 285x240x125mm Capacity: Sits			e - mail: gap@beml.co.in Ph : 0491 2565291 Mob: 9496001526
99 Defence	Palakkad	443311119000	TURN INDICATOR UKAZATEL SMERU 892 007	600 No's	TECHNICAL SPECIFICATION: Supply Voltage : 24V DC Wattage : 21 W Bullb base : 8a 15S Lens color : White (Clear) Life : > 500000 hrs Operating temperature range : -40° to +70° Finish : Aluminium die casting, Steel parts by galvanic cadmium and chromate plated, Copper parts are nickel plated. Water Resisances : Water tight. Standard to be complied for lamp : AIS 034 (As per CMVR) Standard to be complied for bulb : AIS 034 (As per CMVR) Environmental standard : JSS 55555 – 2012 (Rev3)			
100 Defence	Palakkad	443429860000	INDICATOR SNIMAC OTACEK 2159.20002501	150 No's	Specification:  Nominal Voltage : 6.5 – 30 V  Current : 16mA at 30V  Operating temp: -30 Deg to +145 deg protection: En 60529 , IP: 67  Vibration Resistance: 30g			
Defence	Palakkad	442079026714	ORANGE BEACON Maják AEB - úprava	300 No's	Used on the cabin for beacon lamp Appaication TECHNICAL SPECIFICATION: Nominal Voltage : 24 V Nominal wattage: 21W			

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

						LIST OF ITEMS FOR INDIGE	INISATION		
Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph	Remarks	Contact Details
107	Rail & Metro	BANGALORE COMPLEX	94221025	LED BASED SALOON LIGHT(L- 1302MM)	4032 No's	LED BASED SALOON LIGHT (1302MM) FOR KMRCL- RS (3R) PROJECT AS PER PTS GR/TD/3481			NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML
108	Rail & Metro	BANGALORE COMPLEX	94221026	LED BASED SALOON LIGHT(L=690MM)	288 No's	LED BASED SALOON LIGHT (690MM) FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			LTD POST BOX-7501, NEW TIPPASANDRA
109	Rail & Metro	BANGALORE COMPLEX	94221027	GANGWAY LIGHT-LED	120 No's	GANGWAY LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825
110	Rail & Metro	BANGALORE COMPLEX	94221030	CAB MAIN LIGHT-LED	48 No's	CAB MAIN LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
111	Rail & Metro	BANGALORE COMPLEX	94221031	HEAD LIGHT-LED	48 No's	HEAD LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
112	Rail & Metro	BANGALORE COMPLEX	94221032	MARKER AND TAIL LIGHT-LED	48 No's	MARKER AND TAIL LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
113	Rail & Metro	BANGALORE COMPLEX	94221033	FLASHER LIGHT-LED	48 No's	FLASHER LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
	Rail & Metro	BANGALORE COMPLEX	94221034	DRIVING CONSOLE LIGHT-LED	48 No's	DRIVING CONSOLE LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/34			
115	Rail & Metro	BANGALORE COMPLEX	94221035	AUTO DIMMER	144 No's	AUTODIMMER FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
116	Rail & Metro	BANGALORE COMPLEX	94221036	SENSOR	288 No's	SENSOR FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
117	Rail & Metro	BANGALORE COMPLEX	94221097	DC-DC CONVERTER, DRIVER CONSOLE LIGHT	48 No's	DC-DC CONVERTER FOR DRIVING CONSOLE LIGHT(110V-24V DC) FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481			
118	Rail & Metro	BANGALORE COMPLEX	9425608701	PROTECTION FILM 195x150x0.5T	2448 No's	PROTECTION FILM 195x150x0.5T			
119	Rail & Metro	BANGALORE COMPLEX	9425608702	PROTECTION FILM 150x130x0.5T	1728 No's	PROTECTION FILM 150x130x0.5T			
	Rail & Metro	BANGALORE COMPLEX	9425608703	PROTECTION FILM 200x130x0.5T	1152 No's	PROTECTION FILM 200x130x0.5T			
121	Rail & Metro	BANGALORE COMPLEX	9425608704	PROTECTION FILM 250x130x0.5T	1056 No's	PROTECTION FILM 250x130x0.5T			
	Rail & Metro	BANGALORE COMPLEX	9425608705	PROTECTION FILM 410x130x0.5T	96 No's	PROTECTION FILM 410x130x0.5T			
		BANGALORE COMPLEX	9425608706	PROTECTION FILM 720x160x0.5T	96 No's	PROTECTION FILM 720x160x0.5T			
	Rail & Metro	BANGALORE COMPLEX	9425608707	PROTECTION FILM 150x100x0.5T	96 No's	PROTECTION FILM 150x100x0.5T			
	Rail & Metro	BANGALORE COMPLEX	9425608708	PROTECTION FILM 120x40x0.5T	288 No's	PROTECTION FILM 120x40x0.5T			
		BANGALORE COMPLEX	9425608709	PROTECTION FILM 225x40x0.5T	480 No's	PROTECTION FILM 225x40x0.5T	1		
	Rail & Metro	BANGALORE COMPLEX	9425608710	PROTECTION FILM 350x40x0.5T	96 No's	PROTECTION FILM 350x40x0.5T			
	Rail & Metro	BANGALORE COMPLEX	9425608711	PROTECTION FILM 410x40x0.5T	96 No's	PROTECTION FILM 410x40x0.5T			
		BANGALORE COMPLEX	9425608712	PROTECTION FILM 510x150x0.5T	96 No's	PROTECTION FILM 510x150x0.5T			
130	Rail & Metro	BANGALORE COMPLEX	9425608713	PROTECTION FILM 480x100x0.5T	96 No's	PROTECTION FILM 480x100x0.5T			
131	Rail & Metro	BANGALORE COMPLEX	9425608714	PROTECTION FILM 480x40x0.5T	96 No's	PROTECTION FILM 480x40x0.5T			
132	Rail & Metro	BANGALORE COMPLEX	9425608715	PROTECTION FILM 250x100x0.5T	96 No's	PROTECTION FILM 250x100x0.5T			

SI.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Photograph
133	Rail & Metro	BANGALORE COMPLEX	9425608716	PROTECTION FILM 530x40x0.5T	96 No's	PROTECTION FILM 530x40x0.5T	
134	Rail & Metro	BANGALORE COMPLEX	9425608717	PROTECTION FILM 150x140x0.5T	96 No's	PROTECTION FILM 150x140x0.5T	- 800
135	Rail & Metro	BANGALORE COMPLEX	9425608718	PROTECTION FILM 300x120x0.5T	96 No's	PROTECTION FILM 300x120x0.5T	
136	Rail & Metro	BANGALORE COMPLEX	9425608719	PROTECTION FILM 130x60x0.5T	96 No's	PROTECTION FILM 130x60x0.5T	
137	Rail & Metro	BANGALORE COMPLEX	9425608720	PROTECTION FILM 310x40x0.5T	96 No's	PROTECTION FILM 310x40x0.5T	A 181
138	Rail & Metro	BANGALORE COMPLEX	9425608721	PROTECTION FILM 280x130x0.5T	96 No's	PROTECTION FILM 280x130x0.5T	
139	Rail & Metro	BANGALORE COMPLEX	9425608722	PROTECTION FILM 240x90x0.5T	96 No's	PROTECTION FILM 240x90x0.5T	week!
140	Rail & Metro	BANGALORE COMPLEX	9425608723	PROTECTION FILM 210x90x0.5T	96 No's	PROTECTION FILM 210x90x0.5T	
141	Rail & Metro	BANGALORE COMPLEX	9425608724	PROTECTION FILM 255x25x0.5T	96 No's	PROTECTION FILM 255x25x0.5T	
142	Rail & Metro	BANGALORE COMPLEX	9425608725	PROTECTION FILM 135x40x0.5T	96 No's	PROTECTION FILM 135x40x0.5T	
143	Rail & Metro	BANGALORE COMPLEX	9425608731	PROTECTION FILM 220x130x0.5T	816 No's	PROTECTION FILM 220x130x0.5T	V
144	Rail & Metro	BANGALORE COMPLEX	9425608732	PROTECTION FILM 260x130x0.5T	192 No's	PROTECTION FILM 260x130x0.5T	3 3 3 3 3
145	Rail & Metro	BANGALORE COMPLEX	9425608733	PROTECTION FILM 520x130x0.5T	96 No's	PROTECTION FILM 520x130x0.5T	
146	Rail & Metro	BANGALORE COMPLEX	9425608734	PROTECTION FILM 550x130x0.5T	96 No's	PROTECTION FILM 550x130x0.5T	
147	Rail & Metro	BANGALORE COMPLEX	9425608737	PROTECTION FILM 300x220x0.5T	96 No's	PROTECTION FILM 300x220x0.5T	
148	Rail & Metro	BANGALORE COMPLEX	9425608739	PROTECTION FILM 270x95x0.5T	96 No's	PROTECTION FILM 270x95x0.5T	
149	Rail & Metro	BANGALORE COMPLEX	9425608740	PROTECTION FILM 195x190x0.5T	96 No's	PROTECTION FILM 195x190x0.5T	The state of the s
150	Rail & Metro	BANGALORE COMPLEX	9425608741	PROTECTION FILM 150x80x0.5T	672 No's	PROTECTION FILM 150x80x0.5T	
151	Rail & Metro	BANGALORE COMPLEX	9425608742	PROTECTION FILM 215x40x0.5T	48 No's	PROTECTION FILM 215x40x0.5T	
152	Rail & Metro	BANGALORE COMPLEX	9425608743	PROTECTION FILM 180x40x0.5T	528 No's	PROTECTION FILM 180x40x0.5T	
153	Rail & Metro	BANGALORE COMPLEX	9425608744	PROTECTION FILM 150x120x0.5T	192 No's	PROTECTION FILM 150x120x0.5T	
154	Rail & Metro	BANGALORE COMPLEX	9425608745	PROTECTION FILM 490x80x0.5T	48 No's	PROTECTION FILM 490x80x0.5T	
155	Rail & Metro	BANGALORE COMPLEX	9425608746	PROTECTION FILM 465x85x0.5T	48 No's	PROTECTION FILM 465x85x0.5T	
156	Rail & Metro	BANGALORE COMPLEX	9425608747	PROTECTION FILM 260x220x0.5T	96 No's	PROTECTION FILM 260x220x0.5T	
157	Rail & Metro	BANGALORE COMPLEX	9425608748	PROTECTION FILM 260x80x0.5T	48 No's	PROTECTION FILM 260x80x0.5T	
158	Rail & Metro	BANGALORE	9425608750	PROTECTION FILM 285x80x0.5T	48 No's	PROTECTION FILM 285x80x0.5T	
159	Rail & Metro	BANGALORE COMPLEX	9425608751	PROTECTION FILM 285x40x0.5T	48 No's	PROTECTION FILM 285x40x0.5T	
160	Rail & Metro	BANGALORE COMPLEX	9425608752	PROTECTION FILM 210x190x0.5T	48 No's	PROTECTION FILM 210x190x0.5T	
161	Rail & Metro	BANGALORE	9425608753	PROTECTION FILM 15x115x0.5T	576 No's	PROTECTION FILM 15x115x0.5T	
162	Rail & Metro	COMPLEX BANGALORE	9425608754	PROTECTION FILM 15x250x0.5T	192 No's	PROTECTION FILM 15x250x0.5T	
163	Rail & Metro	COMPLEX BANGALORE COMPLEX	9425608755	PROTECTION FILM 15x270x0.5T	96 No's	PROTECTION FILM 15x270x0.5T	
164	Rail & Metro	BANGALORE	9425608756	PROTECTION FILM 15x320x0.5T	96 No's	PROTECTION FILM 15x320x0.5T	
165	Rail & Metro	COMPLEX BANGALORE	9425608757	PROTECTION FILM 15x390x0.5T	192 No's	PROTECTION FILM 15x390x0.5T	
166	Rail & Metro	COMPLEX BANGALORE	9425608758	PROTECTION FILM 15x570x0.5T	96 No's	PROTECTION FILM 15x570x0.5T	
167	Rail & Metro	BANGALORE COMPLEX	9425608759	PROTECTION FILM 20x110x0.5T	96 No's	PROTECTION FILM 20x110x0.5T	



Remarks

NAME: K C SHASHIKANTH
DESIGNATION: GM (R&D),
BANGALORE COMPLEX, BEML
LTD
POST BOX-7501, NEW
TIPPASANDRA
BANGALORE – 560 075
e - mail: kcs@rd.beml.co.in
PH: 080-2502 2786
MOB: 9731397825

**Contact Details** 

Sl.no	Business Group	Division	Part no	Description	Approximate annual	Brief spec	Photograph
168	Rail & Metro	BANGALORE	9425608760	PROTECTION FILM 20x270x0.5T	requirement 96 No's	PROTECTION FILM 20x270x0.5T	
169	Rail & Metro	BANGALORE	9425608761	PROTECTION FILM 20x440x0.5T	96 No's	PROTECTION FILM 20x440x0.5T	
170	Rail & Metro	BANGALORE	9425608762	PROTECTION FILM 20x530x0.5T	96 No's	PROTECTION FILM 20x530x0.5T	
171	Rail & Metro	BANGALORE	9425608763	PROTECTION FILM 45x150x0.5T	96 No's	PROTECTION FILM 45x150x0.5T	
172	Rail & Metro	BANGALORE	9425608764	PROTECTION FILM 50x430x0.5T	96 No's	PROTECTION FILM 50x430x0.5T	
173	Rail & Metro	BANGALORE	9425608765	PROTECTION FILM 50x330x0.5T	96 No's	PROTECTION FILM 50x330x0.5T	
174	Rail & Metro	BANGALORE	9425608766	PROTECTION FILM 55x410x0.5T	192 No's	PROTECTION FILM 55x410x0.5T	
175	Rail & Metro	COMPLEX BANGALORE	9425608767	PROTECTION FILM 60x60x0.5T	96 No's	PROTECTION FILM 60x60x0.5T	
176	Rail & Metro	BANGALORE	9425608768	PROTECTION FILM 70x210x0.5T	96 No's	PROTECTION FILM 70x210x0.5T	
177	Rail & Metro	BANGALORE	9425608769	PROTECTION FILM 75x300x0.5T	96 No's	PROTECTION FILM 75x300x0.5T	
178	Rail & Metro	BANGALORE	9425608770	PROTECTION FILM 50x80x0.5T	96 No's	PROTECTION FILM 50x80x0.5T	
179	Rail & Metro	BANGALORE	9425608771	PROTECTION FILM 90x170x0.5T	96 No's	PROTECTION FILM 90x170x0.5T	4000
180	Rail & Metro	COMPLEX BANGALORE	9425608772	PROTECTION FILM 95x100x0.5T	288 No's	PROTECTION FILM 95x100x0.5T	
181	Rail & Metro	BANGALORE	9425608773	PROTECTION FILM 45x250x0.5T	96 No's	PROTECTION FILM 45x250x0.5T	
182	Rail & Metro	BANGALORE	9425608774	PROTECTION FILM 30x150x0.5T	288 No's	PROTECTION FILM 30x150x0.5T	
183	Rail & Metro	COMPLEY BANGALORE	9425608775	PROTECTION FILM 20x180x0.5T	48 No's	PROTECTION FILM 20x180x0.5T	
184	Rail & Metro	BANGALORE	9425608776	PROTECTION FILM 20x220x0.5T	48 No's	PROTECTION FILM 20x220x0.5T	
185	Rail & Metro	COMPLEY BANGALORE	9425608777	PROTECTION FILM 25x80x0.5T	96 No's	PROTECTION FILM 25x80x0.5T	3665
186	Rail & Metro	BANGALORE	9425608778	PROTECTION FILM 25x280x0.5T	48 No's	PROTECTION FILM 25x280x0.5T	
187	Rail & Metro	BANGALORE	9425608779	PROTECTION FILM 30x70x0.5T	48 No's	PROTECTION FILM 30x70x0.5T	2000000
188	Rail & Metro	COMPLEY BANGALORE	9425608780	PROTECTION FILM 30x130x0.5T	48 No's	PROTECTION FILM 30x130x0.5T	
189	Rail & Metro	COMPLEY BANGALORE	9425608781	PROTECTION FILM 30x260x0.5T	48 No's	PROTECTION FILM 30x250x0.51	
		COMPLEX	9425608781		48 No's		
190	Rail & Metro	BANGALORE		PROTECTION FILM 30x495x0.5T		PROTECTION FILM 30x495x0.5T	1000
191	Rail & Metro Rail & Metro	BANGALORE COMPLEX BANGALORE	9425608783 9425608784	PROTECTION FILM 30x515x0.5T  PROTECTION FILM 60x260x0.5T	48 No's 48 No's	PROTECTION FILM 30x515x0.5T  PROTECTION FILM 60x260x0.5T	
	Rail & Metro	COMPLEX	9425608784	PROTECTION FILM 60X260X0.51	48 No's	PROTECTION FILM 60X260X0.5T	
193		BANGALORE					
194	Rail & Metro	BANGALORE	9425608786	PROTECTION FILM 70x150x0.5T	96 No's	PROTECTION FILM 70×150×0.5T	
195	Rail & Metro	BANGALORE	9425608787	PROTECTION FILM 70x260x0.5T	48 No's	PROTECTION FILM 70x260x0.5T	
196	Rail & Metro	BANGALORE	9425608788	PROTECTION FILM 145x220x0.5T	48 No's	PROTECTION FILM 145x220x0.5T	
197	Rail & Metro	BANGALORE	9425608789	PROTECTION FILM 95x100x0.5T	48 No's	PROTECTION FILM 95x100x0.5T	
198	Rail & Metro	BANGALORE COMPLEX	9425608790	PROTECTION FILM 30x320x0.5T	48 No's	PROTECTION FILM 30x320x0.5T	
199	Rail & Metro	BANGALORE COMPLEX	9425608791	PROTECTION FILM 50x150x0.5T	48 No's	PROTECTION FILM 50x150x0.5T	
200	Rail & Metro	BANGALORE COMPLEX	9425608792	PROTECTION FILM 60x150x0.5T	48 No's	PROTECTION FILM 60x150x0.5T	
201	Rail & Metro	BANGALORE COMPLEX	9425640127	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256401	
202	Rail & Metro	BANGALORE	9425640128	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256401	
203	Rail & Metro	BANGALORE	9425640129	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256401	
204	Rail & Metro	BANGALORE	9425670022	PROTECTION FILM 0.5T	96 No's	PROTECTION FILM 0.5T TO DWG NO 94256700	
205	Rail & Metro	BANGALORE	9425670120	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	
206	Rail & Metro	BANGALORE	9425670121	PROTECTION FILM 0.5T	144 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	
207	Rail & Metro	BANGALORE	9425670122	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	
208	Rail & Metro	BANGALORE	9425670123	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	
209	Rail & Metro	BANGALORE	9425670124	PROTECTION FILM 0.5T	48 No's	PROTECTION FILM 0.5T TO DWG NO 94256701	



Remarks

NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML

**Contact Details** 

LTD

POST BOX-7501, NEW TIPPASANDRA BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in

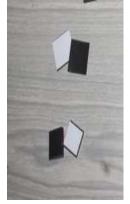
PH: 080-2502 2786

MOB: 9731397825

Sl.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group	2.0.0.0		2000.1000	annual	Siles spec	. notograpii	The state of the s	Contact Details
	Group				requirement				
210	Rail & Metro	BANGALORE	94221802	1.5 Sqmm CABLE, 750V/1300V	2169120 Mtrs	HALOGEN FREE, THIN WALL 600V/1000V SINGLE CONDUCTOR			NAME: K C SHASHIKANTH
		COMPLEX				1.5 Sqmm CABLE.			
211	Rail & Metro	BANGALORE	94221803	2.5 Sqmm CABLE, 750V/1300V	79584 Mtrs	HALOGEN FREE, THIN WALL 600V/1000V SINGLE CONDUCTOR			DESIGNATION: GM (R&D),
		COMPLEX				2.5 Sqmm CABLE.			BANGALORE COMPLEX, BEML
212	Rail & Metro	BANGALORE COMPLEX	94221804	1.5 Sqmm (2 X1.5) CABLE W/O SHIE	72576 Mtrs	HALOGEN FREE, THIN WALL 600/1000V TWO CONDUCTORS  1.5 Sqmm (2 X1.5) CABLE WITHOUT SHIELD.			LTD
		COM LEX				2.5 Square (2 X2.5) & BEE WITTOOT STREED.			POST BOX-7501, NEW
213	Rail & Metro	BANGALORE	94221805	2x1.0/1.2 Sqmm CABLE SHIELDED, 1	323712 Mtrs	TWO CONDUCTORS' CABLE (2X1.0/1.2Sqmm), HALOGEN FREE			TIPPASANDRA
		COMPLEX				INSULATION, SHIELDED AND HALOGEN FREE JACKETED,			BANGALORE - 560 075
214	Rail & Metro	BANGALORE	94221806	3x0.5 Sqmm CABLE SHIELDED, 750/	25248 Mtrs	600/1000V 105°C.  THREE CONDUCTORS' CABLE (3X0.5Sqmm), HALOGEN FREE			
214	Rail & Metro	COMPLEX	94221800	3XU.3 SQITITI CABLE SHIELDED, 750/	25246 IVILIS	INSULATION, SHIELDED AND HALOGEN FREE JACKETED,			e - mail: kcs@rd.beml.co.in
		COM LEX				600/1000V 105°C.			PH: 080-2502 2786
215	Rail & Metro	BANGALORE	94221807	3x1.0/1.2 Sqmm CABLE SHIELDED,	90048 Mtrs	THREE CONDUCTORS' CABLE (3X1.0/1.2Sqmm), HALOGEN			MOB: 9731397825
		COMPLEX				FREE INSULATION, SHIELD ED AND HALOGEN FREE JACKETED,			
216	Rail & Metro	BANGALORE	94221808	4x1.0/1.2 Sgmm CABLE SHIELDED, 7	6240 Mtrs	600/1000V 105°C. FOUR CONDUCTOR CABLE (4X1.0/1.2MM2), HALOGEN FREE			
210	Kall & Wello	COMPLEX	54221808	4X1.0/1.2 3qiiiii CABLE SHIELDED, I	0240 IVILIS	INSULATION, SHIELDED AND HALOGEN FREE JACKETED,			
						600/1000V 105°C.			
217	Rail & Metro	BANGALORE	94221809	6 Sqmm, 600/1000V POWER CABLE	34464 Mtrs	6MM2, 600/1000V HALOGEN FREE POWER CABLE.			
		COMPLEX							
218	Rail & Metro	BANGALORE COMPLEX	94221811	16 Sqmm, 600/1000V POWER CABL	49104 Mtrs	16 Sqmm, 600/1000V HALOGEN FREE POWER CABLE			
219	Rail & Metro	BANGALORE	94221812	35 Sqmm, 600/1000V POWER CABL	36768 Mtrs	35 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.			
		COMPLEX						SI no. 210 to 232 Cable items to be	
220	Rail & Metro	BANGALORE	94221813	50 Sqmm, 600/1000V POWER CABL	9504 Mtrs	50 Sqmm600/1000V HALOGEN FREE POWER CABLE.		indigenized from same source	
221	Rail & Metro	COMPLEX BANGALORE	94221814	70 Sgmm, 600/1000V POWER CABL	8256 Mtrs	70 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.		mangemeet from same source	
221	Kall & Wello	COMPLEX	54221814	70 3411111, 000/ 1000V FOWER CABL	8230 WILIS	70 Sqriiii, 000/1000V HALOGEN PREE POWER CABLE.			
222	Rail & Metro	BANGALORE	94221815	95 Sqmm, 600/1000V POWER CABL	14160 Mtrs	95 Sqmm, 600/1000V HALOGEN FREE POWER CABLE.			
		COMPLEX							
223	Rail & Metro	BANGALORE COMPLEX	94221816	6 Sqmm, 1800/3000V, HV POWER (	2688 Mtrs	6 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE POWER CABLE.			
224	Rail & Metro	BANGALORE	94221817	35 Sqmm,1800/3000V, HV POWER	5472 Mtrs	35 Sqmm,1800/3000V HALOGEN FREE HIGH VOLTAGE POWER	The state of the s		
		COMPLEX	3-22-017	== 5q,1000,5000 V, 110 V ER	3472 1111.13	CABLE.			
225	Rail & Metro	BANGALORE	94221818	70 Sqmm,1800/3000V, HV POWER	3504 Mtrs	70 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE			
226	Rail & Metro	COMPLEX BANGALORE	94221819	95 Sqmm, 1800/3000V, HV POWER	14592 Mtrs	POWER CABLE.  95 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE			
226	Rail & IVIETTO	COMPLEX	94221819	95 Sqmm, 1800/3000V, HV POWER	14592 IVITIS	POWER CABLE.			
227	Rail & Metro	BANGALORE	94221820	150 Sqmm, 1800/3000V, HV POWE	3168 Mtrs	150 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE			
		COMPLEX		·		POWER CABLE.			
228	Rail & Metro	BANGALORE	94221821	185 Sqmm, 1800/3000V, HV POWE	15984 Mtrs	185 Sqmm, 1800/3000V HALOGEN FREE HIGH VOLTAGE			
229	Rail & Metro	COMPLEX BANGALORE	94221822	185 Sgmm, 1800/3000V, HV POWE	8544 Mtrs	POWER CABLE.  185 Sqmm, 1800/3000V, HALOGEN FREE HIGH VOLTAGE	-		
223	Inail & IVIEU	COMPLEX	34221022	103 3qiiiii, 1800/3000V, RV POWE	OJ44 IVILIS	POWER CABLE FLEXIBLE.			
230	Rail & Metro	BANGALORE	94221823	2*1.5 Sqmm FIRE RESISTANCE CABL	100032 Mtrs	FIRE RESISTANCE TWO CONDUCTORS SHIELDED AND JACKETED			
		COMPLEX				CABLE (2*1.5Sqmm)	1		
231	Rail & Metro	BANGALORE COMPLEX	94221825	100 ohm CAT 5e 4X AWG 22/7 WITI	42720 Mtrs	120 ohm MVB BLACK CABLE ( 2 x 0.5 mm² + 1 x 0.5 mm² RED, BLUE, BLACK)			
232	Rail & Metro	BANGALORE	94221826	120 Ohm MVB Cable	8640 Mtrs	100 Ohm CAT 5e 4xAWG 22/7 WITH FOAM.	1		
232	man & IVICTIO	COMPLEX	34221020	120 Ollili IVIVB Cable	OU+U IVILIS	100 Olilli CAT JE MANWO 22/7 WITH FORWI.			

		T	I			1-16	-1	I= .	
SI.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph	Remarks	Contact Details
	Group				annual				
					requirement				
233	Rail & Metro	BANGALORE	94216107	FLOOR BOARD-1	288 No's	FLOOR BOARD - 1 TO DRAWING No. 942-16107 AND			NAME: K C SHASHIKANTH
		COMPLEX				CONFORMING TO PTS DOC. No GR/TD/3428			
234	Rail & Metro	BANGALORE	94216108	FLOOR BOARD-2	392 No's	FLOOR BOARD - 2 TO DRAWING No. 942-16108 AND			DESIGNATION: GM (R&D),
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			BANGALORE COMPLEX, BEML
235	Rail & Metro	BANGALORE	94216109	FLOOR BOARD-3	48 No's	FLOOR BOARD - 3 TO DRAWING No. 942-16109 AND			LTD
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			
236	Rail & Metro	BANGALORE	94216110	FLOOR BOARD-4	48 No's	FLOOR BOARD - 4 TO DRAWING No. 942-16110 AND			POST BOX-7501, NEW
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			TIPPASANDRA
237	Rail & Metro	BANGALORE	94216111	FLOOR BOARD-5	288 No's	FLOOR BOARD - 5 TO DRAWING No. 942-16111 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			BANGALORE – 560 075
238	Rail & Metro	BANGALORE	94216112	FLOOR BOARD-6	144 No's	FLOOR BOARD - 6 TO DRAWING No. 942-16112 AND	The state of the s		e - mail: kcs@rd.beml.co.in
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			PH: 080-2502 2786
239	Rail & Metro	BANGALORE	94216113	FLOOR BOARD-7	144 No's	FLOOR BOARD - 7 TO DRAWING No. 942-16113 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			MOB: 9731397825
240	Rail & Metro	BANGALORE	94216114	FLOOR BOARD-8	144 No's	FLOOR BOARD - 8 TO DRAWING No. 942-16114 AND		SI no. 233 to 247 Floor Board items to be	
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428		indigenized from same source	
241	Rail & Metro	BANGALORE	94216115	FLOOR BOARD-9	288 No's	FLOOR BOARD - 9 TO DRAWING No. 942-16115 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			
242	Rail & Metro	BANGALORE	94216116	FLOOR BOARD-10	48 No's	FLOOR BOARD - 10 TO DRAWING No. 942-16116 AND			
		COMPLEX				CONFORMING TO PTS DOC. No. GR/TD/3428			
243	Rail & Metro	BANGALORE	94216117	FLOOR BOARD-11	288 No's	FLOOR BOARD - 11 TO DRAWING No. 942-16117 AND			
		COMPLEX				CONFORMING TO PTS DOC. No. GR/TD/3428			
244	Rail & Metro	BANGALORE	94216118	FLOOR BOARD-12	48 No's	FLOOR BOARD - 12 TO DRAWING No. 942-16118 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			
245	Rail & Metro	BANGALORE	94216119	FLOOR BOARD-12	96 No's	FLOOR BOARD - 13 TO DRAWING No. 942-16119 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			
246	Rail & Metro	BANGALORE	94216120	FLOOR BOARD-14	96 No's	FLOOR BOARD - 14 TO DRAWING No. 942-16120 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			
247	Rail & Metro	BANGALORE	94216121	FLOOR BOARD-15	48 No's	FLOOR BOARD - 15 TO DRAWING No. 942-16121 AND			
		COMPLEX				CONFORMING TO PTS DOC. No.GR/TD/3428			
248	Rail & Metro	BANGALORE	94216139	Floor Covering Wheelchair	48 No's	FLOOR COVERING WHEELCHAIR TO DRAWING No. 942-16139.			
		COMPLEX							
			R307495003	Floor covering-2.5mmthk X					
249	Rail & Metro	BANGALORE	R307495003	2metre width X 21metre Roll	288 No's	FLOOR COVERING-2.5mm THK x 2m WIDTH x 21m ROLL,		SI no. 248 to 250 Floor covering items to	
		COMPLEX		Zinete width X Ziniete Non		TRAVELLER CLASSIC R15 PALLADIUM 8805 AND CONFIRMING		_	
			D007047400			TO PTS DOC. No. GR/TD/3531.		be indigenized from same source	
250	Rail & Metro	BANGALORE	R607917100	Floor Covering Joint Welding Rod	3456 No's	FLOOR COVERING JOINT WELDING ROD - Ø5mm x 100m ROLL,			
		COMPLEX				WELDING ROD CR 50 & COLOUR MATCHING WITH THE FLOOR			
						COVERING COLOUR PALLADIUM 8805.			
251	Rail & Metro	BANGALORE	942161031	FLOOR PACKING1-THK2MM x	1440 No's	FLOOR PACKING-1 TO DRAWING No. 942-16103 AND			
		COMPLEX		W38MM x L1480MM		CONFORMING TO PTS DOC. NO. GR/TD/1766			
252	Rail & Metro	BANGALORE	942161032	FLOOR PACKING2-THK2MM x	1440 No's	FLOOR PACKING-2 TO DRAWING No. 942-16103 AND			
		COMPLEX		W61MM x L1648MM		CONFORMING TO PTS DOC. NO. GR/TD/1766			
253	Rail & Metro	BANGALORE	942161033	FLOOR PACKING3-THK2MM x	5760 No's	FLOOR PACKING-3 TO DRAWING No. 942-16103 AND			
233	Naii & Wictio	COMPLEX	342101033	W40MM x L500MM	37001403	CONFORMING TO PTS DOC. NO. GR/TD/1766			
		COIVII LEX		VV-OVIIVI X ESCOIVIIVI		CONFORMING TO 115 DOC. NO. GIV 1D/1700			
254	Rail & Metro	BANGALORE	942161034	FLOOR PACKING4-THK1MM x	6912 No's	FLOOR PACKING-4 TO DRAWING No. 942-16103 AND			
		COMPLEX		W35MM x L1420MM		CONFORMING TO PT S DOC. NO. GR/TD/1766			
255	Rail & Metro	BANGALORE	942161035	FLOOR PACKING5-THK3MM x	41472 No's	FLOOR PACKING-5 TO DRAWING No. 942-16103 AND			
		COMPLEX		W20MM x L40MM		CONFORMING TO PTS DOC. NO.GR/TD/1766	A STATE OF THE STA		
256	Rail & Metro	BANGALORE	942161036	FLOOR PACKING6-THK2MM x	48384 No's	FLOOR PACKING-6 TO DRAWING No. 942-16103 AND	SECTION AND THE PROPERTY OF THE PARTY OF THE		
230	nan ex Ivieu 0	COMPLEX	342101030	1	40304 NU S	CONFORMING TO PTS DOC. NO.GR/TD/1766			
		ICOMPLEX	1	W40MM x L40MM	1		1	1	

						LIST OF ITEMS FOR INDIC	GEINI
Sl.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec	Ph
257	Rail & Metro	BANGALORE COMPLEX	90960306	GUIDE PACKING (18A)	3456 No's	GUIDE PACKING 18A TO DWG NO. 90960306	
258	Rail & Metro	BANGALORE COMPLEX	94260142	GUIDE PACKING (10AX10A)	576 No's	GIUDE PACKING (10Ax10A) TO DWG NO 94260142	
259	Rail & Metro	BANGALORE COMPLEX	94260304	PACKING RUBBER-EPDM	14976 No's	PACKING RUBBER TO DRWG NO : 94260304	
260	Rail & Metro	BANGALORE COMPLEX	94260305	PACKING RUBBER-EPDM	13824 No's	PACKING RUBBER TO DRWG NO : 94260305	
261	Rail & Metro	BANGALORE COMPLEX	90956582	PACKING	864 No's	PACKING TO DRG NO,909 56582	
262	Rail & Metro	BANGALORE COMPLEX	94250126	PACKING	2901 No's	PACKING TO DRG No. 94250126	
263	Rail & Metro	BANGALORE COMPLEX	94250129	PACKING-ETU	6994 No's	PACKING-ETU TO DRG No. 94250129	
264	Rail & Metro	BANGALORE COMPLEX	94250130	PACKING-PIB	10491 No's	PACKING-PIB TO DRG No. 94250130	
265	Rail & Metro	BANGALORE COMPLEX	94250131	PACKING-SOCKET	2901 No's	PACKING-SOCKET TO DRG No. 94250131	
266	Rail & Metro	BANGALORE COMPLEX	94256150	PACKING	3480 mtrs	PACKING TO DRG No. 94256150	
267	Rail & Metro	BANGALORE COMPLEX	94256173	PACKING T2, W 30mm, L 1000mm	9860 mtrs	PACKING T2, W 30mm, L 1000mm TO DRG NO. 94256173	
268	Rail & Metro	BANGALORE COMPLEX	94256174	PACKING T2, W 50mm, L 1000mm	797.5 mtrs	PACKING T2, W 50mm, L 1000mm T0 DRG NO. 94256174	
269	Rail & Metro	BANGALORE COMPLEX	94256175	PACKING T2, W 60mm, L 1000mm	217.5 mtrs	PACKING T2, W 60mm, L 1000mm TO DRG NO. 94256175	
270	Rail & Metro	BANGALORE COMPLEX	94256176	PACKING T2, W 80mm, L 1000mm	568145 mtrs	PACKING T2, W 80mm, L 1000mm TO DRG NO. 94256176	
271	Rail & Metro	BANGALORE COMPLEX	94256177	PACKING T4, W 30mm, L 1000mm	268145 mtrs	PACKING T4, W 30mm, L 1000mm TO DRG NO. 94256177	
272	Rail & Metro	BANGALORE COMPLEX	94256178	PACKING T4, W 60mm, L 1000mm	72.5 mtrs	PACKING T4, W 60mm, L 1000mm TO DRG NO. 94256178	
273	Rail & Metro	BANGALORE COMPLEX	94256179	PACKING T4, W 80mm, L 1000mm	9280 mtrs	PACKING T4, W 80mm, L 1000mm TO DRG NO. 94256179	
274	Rail & Metro	BANGALORE COMPLEX	94256180	PACKING T5, W 30mm, L 1000mm	2030 mtrs	PACKING T5, W 30mm, L 1000mm TO DRG NO. 94256180	
275	Rail & Metro	BANGALORE COMPLEX	94256181	PACKING T5, W 60mm, L 1000mm	73 mtrs	PACKING T5, W 60mm, L 1000mm TO DRG NO. 94256181	



Remarks

NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML POST BOX-7501, NEW TIPPASANDRA

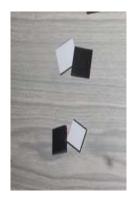
BANGALORE - 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786

MOB: 9731397825

**Contact Details** 

SI.no	Business Group	Division	Part no	Description	Approximate annual requirement	Brief spec
276	Rail & Metro	BANGALORE COMPLEX	94256182	PACKING T1, W 80mm, L 1000mm	1740 Mtrs	PACKING T1, W 80mm, L 1000mm TO DRG NO. 94256182
277	Rail & Metro	BANGALORE COMPLEX	94219316	PACKING EPDM 3MM THKx30MMx2000MM	13989 No's	PACKING EPDM 3MM THKx30MMx2000MM TO DRAWING NO 94219316
278	Rail & Metro	BANGALORE COMPLEX	94219317	PACKING EPDM 2MM THKx30MMx2000MM	13989 No's	PACKING EPDM 2MM THKx30MMx2000MM TO DRAWING NO 94219317
279	Rail & Metro	BANGALORE COMPLEX	94219319	PACKING EPDM 5MM THKx40MMx50MM	13094 No's	PACKING EPDM 5MM THKx40MMx50MM TO DRAWING NO 94219319
280	Rail & Metro	BANGALORE COMPLEX	94219365	PAD PACKING EPDM 16MM THKx15MMx80MM	30240 No's	PAD, PACKING TO DRAWING NO 94219365
281	Rail & Metro	BANGALORE COMPLEX	94219368	PAD PACKING SILICON 1MM THKx30MMx36MM	37872 No's	PAD, PACKING TO DRAWING NO 94219368
282	Rail & Metro	BANGALORE COMPLEX	9421931801	PACKING SILICON 5MM THKx30MMx60MM	48322 No's	PACKING SILICON 5MM THK TO DRAWING NO 9421931801
283	Rail & Metro	BANGALORE COMPLEX	9421931802	PACKING SILICON 3MM THKx30MMx60MM	61179 No's	PACKING SILICON 3MM THK TO DRAWING NO 9421931802
284	Rail & Metro	BANGALORE COMPLEX	9421932501	PACKING SILICON 3MM THKx30MMx100MM	8702 No's	PACKING SILICON 3MM THKx30MMx100MM TO DRAWING NO 9421932501
285	Rail & Metro	BANGALORE COMPLEX	9421932502	PACKING SILICON 3MM THKx30MMx90MM	8702 No's	PACKING SILICON 3MM THKx30MMx90MM TO DRAWING NO 9421932502
286	Rail & Metro	BANGALORE COMPLEX	9421932503	PACKING SILICON 3MM THKx30MMx140MM	11602 No's	PACKING SILICON 3MM THKx30MMx140MM TO DRAWING NO 9421932503
287	Rail & Metro	BANGALORE COMPLEX	9421932504	PACKING SILICON 3MM THKx30MMx80MM	2901 No's	PACKING SILICON 3MM THKx30MMx80MM TO DRAWING NO 9421932504
288	Rail & Metro	BANGALORE COMPLEX	9421932505	PACKING SILICON 3MM THKx25MMx80MM	2901 No's	PACKING SILICON 3MM THKx25MMx80MM TO DRAWING NO 9421932505
289	Rail & Metro	BANGALORE COMPLEX	9421932506	PACKING SILICON 3MM THKx30MMx190MM	5801 No's	PACKING SILICON 3MM THKx30MMx190MM TO DRAWING NO 9421932506
290	Rail & Metro	BANGALORE COMPLEX	9421932507	PACKING SILICON 3MM THKx30MMx40MM	2901 No's	PACKING SILICON 3MM THKx30MMx40MM TO DRAWING NO 9421932507
291	Rail & Metro	BANGALORE COMPLEX	9421932508	PACKING SILICON 3MM THKx30MMx40MM	8702 No's	PACKING SILICON 3MM THKx30MMx40MM TO DRAWING NO 9421932508
292	Rail & Metro	BANGALORE COMPLEX	9421932509	PACKING SILICON 2MM THKx30MMx40MM	2901 No's	PACKING SILICON 2MM THKx30MMx40MM TO DRAWING NO 9421932509
293	Rail & Metro	BANGALORE COMPLEX	9421932510	PACKING SILICON 3MM THKx30MMx20MM	5801 No's	PACKING SILICON 3MM THKx30MMx20MM TO DRAWING NO 9421932510





NAME: K C SHASHIKANTH
DESIGNATION: GM (R&D),
BANGALORE COMPLEX, BEML
LTD
POST BOX-7501, NEW
TIPPASANDRA

BANGALORE – 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786

MOB: 9731397825

**Contact Details** 

SI no. 251 to 333 Floor packing, Packing rubber, rubber seal, guide packing and packing items to be indigenized from same source

Remarks

# **NISATION**

Sl.no	Business	Division	Part no	Description	Approximate	Brief spec	Photograph
	Group				annual requirement		
294	Rail & Metro	BANGALORE	94214102	RUBBER STOP	298 No's	RUBBER, STOP TO LATEST DRG NO. 94214102	
295	Rail & Metro	COMPLEX BANGALORE	94214105	STOPPER RUBBER	1193 No's	STOPPER, RUBBER TO LATEST DRG NO. 94214105	1
296	Rail & Metro	COMPLEX BANGALORE	94218110	RUBBER PROFILE WEATHER STRIP	298 No's	RUBBER PROFILE WEATHER STRIP TO DRAWING NO 94218110	1
297	Rail & Metro	BANGALORE BANGALORE	942231071	SEAT RUBBER PROFILE-A	16293 No's	SEAT RUBBER PROFILE-A TO DRAWING NO. 942-23107-1	
298	Rail & Metro	COMPLEX BANGALORE	942231072	SEAT RUBBER PROFILE-A	13392 No's	SEAT RUBBER PROFILE-A TO DRAWING NO. 942-23107-2	
299	Rail & Metro	COMPLEX BANGALORE	942231073	SEAT RUBBER PROFILE-A	6398 No's	SEAT RUBBER PROFILE-A TO DRAWING NO. 942-23107-3	
300	Rail & Metro	COMPLEX BANGALORE	942231191	SEAT RUBBER PROFILE-C	4947 No's	SEAT RUBBER PROFILE-C TO DRAWING NO. 942-23119-1	
301	Rail & Metro	COMPLEX BANGALORE	942231192	SEAT RUBBER PROFILE-C	2901 No's	SEAT RUBBER PROFILE-C TO DRAWING NO. 942-23119-2	
302	Rail & Metro	COMPLEX BANGALORE	942231193	SEAT RUBBER PROFILE-C	298 No's	SEAT RUBBER PROFILE-C TO DRAWING NO. 942-23119-3	
303	Rail & Metro	COMPLEX BANGALORE	9421935607	RUBBER SEAL PROFILE 7	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935607	
304	Rail & Metro	COMPLEX BANGALORE	9421935608	RUBBER SEAL PROFILE 8	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935608	
305	Rail & Metro	COMPLEX BANGALORE	9421935609	RUBBER SEAL PROFILE 9	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935609	
306	Rail & Metro	COMPLEX BANGALORE	9421935610	RUBBER SEAL PROFILE 10	298 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935610	
307	Rail & Metro	COMPLEX BANGALORE	9422214201	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214201	
308	Rail & Metro	COMPLEX BANGALORE	9422214202	RUBBER SEAL	3795 No's	RUBBER SEAL TO LATEST DRAWING 9422214202	
309	Rail & Metro	COMPLEX BANGALORE	9422214203	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214203	100
310	Rail & Metro	COMPLEX BANGALORE	9422214204	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214204	
311		COMPLEX BANGALORE	9422214205	RUBBER SEAL	1749 No's		
	Rail & Metro	COMPLEX				RUBBER SEAL TO LATEST DRAWING 9422214205	
312	Rail & Metro	BANGALORE COMPLEX	9422214206	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214206	
313	Rail & Metro	BANGALORE COMPLEX	9422214207	RUBBER SEAL	1450 No's	RUBBER SEAL TO LATEST DRAWING 9422214207	
314	Rail & Metro	BANGALORE COMPLEX	9422214208	RUBBER SEAL	1450 No's	RUBBER SEAL TO LATEST DRAWING 9422214208	
315	Rail & Metro	BANGALORE COMPLEX	9422214209	RUBBER SEAL	576 No's	RUBBER SEAL TO LATEST DRAWING 9422214209	
316	Rail & Metro	BANGALORE COMPLEX	9422214211	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214211	
317	Rail & Metro	BANGALORE COMPLEX	9422214212	RUBBER SEAL	298 No's	RUBBER SEAL TO LATEST DRAWING 9422214212	
318	Rail & Metro	BANGALORE COMPLEX	9422214213	RUBBER SEAL	3497 No's	RUBBER SEAL TO LATEST DRAWING 9422214213	
319	Rail & Metro	BANGALORE COMPLEX	94256149	PROTECTIVE RUBBER	3480 Mtrs	RUBBER PROTECTIVE TO DRG No. 94256149	
320	Rail & Metro	BANGALORE COMPLEX	94219320	RUBBER PROFILE-C SILICON L=90MM	26229 No's	RUBBER, PROFILE-C SILICON L=90MM TO DRAWING NO 94219	3
321	Rail & Metro	BANGALORE COMPLEX	9421935601	RUBBER SEAL PROFILE 1	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935601	
322	Rail & Metro	BANGALORE COMPLEX	9421935602	RUBBER SEAL PROFILE 2	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935602	
323	Rail & Metro	BANGALORE COMPLEX	9421935603	RUBBER SEAL PROFILE 3	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935603	
324	Rail & Metro	BANGALORE COMPLEX	9421935604	RUBBER SEAL PROFILE 4	1450 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935604	_
325	Rail & Metro	BANGALORE COMPLEX	9421935605	RUBBER SEAL PROFILE 5	1749 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935605	
326	Rail & Metro	BANGALORE COMPLEX	9421935606	RUBBER SEAL PROFILE 6	1749 No's	RUBBER, SEAL, PROFILE TO DRAWING NO 9421935606	
327	Rail & Metro	BANGALORE	9422214210	RUBBER SEAL	1749 No's	RUBBER, SEAL TO DRAWING NO 9422214210	1
328	Rail & Metro	COMPLEX BANGALORE	94223109	SEAT PACKING	3199 No's	SEAT PACKING-2 TO DRAWING NO. 942-23109	
329	Rail & Metro	COMPLEX BANGALORE	94229155	PACKING, STOPPER	13094 No's	PACKING STOPPER TO DRAWING No. 942-29155 AND CONFORM	·
330	Rail & Metro	COMPLEX BANGALORE	94260143	GUIDE PACKING (10AX10AX10AX10	144 No's	GIUDE PACKING (10Ax10Ax10Ax10A) TO DWG NO 94260143	1
331	Rail & Metro	COMPLEX BANGALORE	94260144	GUIDE PACKING (10AX10AX22A)	144 No's	GIUDE PACKING (10Ax10Ax22A) TO DWG NO 94260144	1
331		COMPLEX	1	1			1
332	Rail & Metro	BANGALORE COMPLEX	94260145	GUIDE PACKING (18AX10AX22A)	144 No's	GIUDE PACKING (18Ax10Ax22A) TO DWG NO 94260145	1



Remarks

NAME: K C SHASHIKANTH DESIGNATION: GM (R&D), BANGALORE COMPLEX, BEML POST BOX-7501, NEW TIPPASANDRA BANGALORE - 560 075 e - mail: kcs@rd.beml.co.in PH: 080-2502 2786 MOB: 9731397825

**Contact Details** 

Cl no	LIST OF ITEMS FOR INDIGENISATION  no Business Division Part no Description Approximate Brief spec Photograph Remarks Contact Details												
		DIVISION	raitillo	Description		bilei spec	Filotograpii	Remarks	Contact Details				
	Group				annual								
					requirement								
334	Rail & Metro	BANGALORE COMPLEX	94218010	CAB MASK ASSEMBLY	48 No's	CAB MASK ASSY TO LATEST DRG NO 94218010.		To be indigenized from Intirior Panel supplier along with Panels					

LIST OF ITEMS FOR INDIGENISATION										
Cumulative il No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	
35	Mining & Construction	EARTH MOVERS	452FD91003	MAGNET ASSY M1	15	Nos	Magnet assembly used in motor grader final drive assembly, it helps in preventing the entry of debris and metal particles in bearings and seals and enhancing the life of assembly. Rated flow: 63 L/min, Filtration size: 149 micron, max flow rate: 75 L/min, max of 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 enhancing the life of assembly	
6	Mining & Construction	EARTH MOVERS	452FD11015	SPRING M1	15	Nos	Spring is assisting the Magnet Strainer seat properly in the assembly.Coil Dia:3.2mm, total no of windings: 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	
7	Mining & Construction	EARTH MOVERS	116BR91568	LINING	300	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical compor of a braking systems. These are the materials which comes in contact w the outer drum of the steering clutch/rotor in order to slow them dow Brake lining is attached to metal backing such as a brake shoe, usually w heat resistant rivets or joints.	
8	Mining & Construction	EARTH MOVERS	125BR92085	LINING	330	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical compor of a braking systems. These are the materials which comes in contact we need to the outer drum of the steering clutch/rotor in order to slow them dow Brake lining is attached to metal backing such as a brake shoe, usually we heat resistant rivets or joints.	
9	Mining & Construction	EARTH MOVERS	125BR92093	LINING	500	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/robor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical compor of a braking systems. These are the materials which comes in contact whe outer drum of the steering dutch/rotor in order to slow them dow Brake lining is attached to metal backing such as a brake shoe, usually wheat resistant rivets or joints.	
0	Mining & Construction	EARTH MOVERS	130CS92769	SEAL RING	200	Nos	Seal Ring is made of Polytetrafluroethylen (PTFE) and its used in bevel gear shaft of 420 hp Engine. Main function of the seal ring is provided sealing of steering oil between rotating shaft and fixed collar there by ensuring the proper functioning of steering system.	1	Seal Ring is made of Polytetrafluroethylen (PTFE) and its used in bevel shaft of 420 hp Engine. Main function of the seal ring is provided seal steering oil between rotating shaft and fixed collar there by ensuring t proper functioning of steering system.	
1	Mining & Construction	EARTH MOVERS	130CT21199	SPACER	25000	Nos	This Spacer is an iron type sintered thrust rings applicable to Sealed type Track link (SALT type). This thrust rings hould have an oil bearing quality. This part should be carburised and hardened and tempered to achieve the mechanical properties.  1. DESCRIPTION: SPACER 2. CHEMICAL COMPOSITION: (Weight %) C = 0.5-0.8, Cu = 1.0 - 2.0, Ni = 1.0 to 3.0, Mo-0.2 to 1.0, Fee-Remaining. 3. Mechanical properties: Density: 6.7 to 7.2 g/cm3 , Hardness: 36 to 45 HRC, Tensile strength: 70 to 85 kg/mm2, Transverse breaking:min 100 kg/mm2, Impact strength: min 0.6 kg/m/m/2, Squeezing test strength: min 105 kg/mm2, Percentage of oil contain: min 5 in volume, Compressive strength: min 120 kg/mm2, Warpage: max 0.2 mm, Surface roughness: max 10.	THE STATE OF THE S	This Spacer is an iron type sintered thrust rings applicable to Sealed ty Track link (SALT type). This thrust rings hould have an oil bearing quality This part should be carburised and hardened and tempered to achieve me	
:	Mining & Construction	EARTH MOVERS	130BR93299	LINING	400	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Brake linings are often also called brake pads, and are a critical compo of a braking systems. These are the materials which comes in contact the outer drum of the steering clutch/rotor in order to slow them dow Brake lining is attached to metal backing such as a brake shoe, usually heat resistant rivets or joints.	

LIST O	F ITEMS FC	OR INDIGENISATION
--------	------------	-------------------

	<u> </u>								
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks
343	Mining & Construction	EARTH MOVERS	451TM13757	WASHER	400	Nos	Thrust Washers used in carrier to with stand axial thrust and there by protecting the transmission assembly Thickness: 2 + 0.6 mm, Material: PBP-1H., OD: 60mm,		Thrust Washers used in carrier to with stand axial thrust and there by protecting the transmission assembly
344	Mining & Construction	EARTH MOVERS	182EG80053	SPEED SENSOR	25	Nos	The speed sensor works on Magnetic pickup principle and generates frequency signal depending on engine flywheel teeth.  1. Principle: Nagnetic pickup  2. Output voltage: 1.0 V p-p Min  3. Resistance: 600 Q  4. Operating temperature: -50°C to +120°C  5. Vibration: 15G (5Hz - 200Hz)  6. Mounting details: MZ2X1.5  7. Shock: 100G (20ms Max)		The speed sensor works on Magnetic pickup principle and generates frequency signal depending on engine flywheel teeth.
345	Mining & Construction	EARTH MOVERS	113BR91484	LINING BRAKE	1000	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the stering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints. Material: 18-1 V Thickness in mm: 9 Outer radius of lining surface: 194		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering dutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.
346	Mining & Construction	EARTH MOVERS	113BR91492	LINING BRAKE	1200	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints. Material :BL-IV		Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.
347	Mining & Construction	EARTH MOVERS	113FD91526	SEAL RING	250	Nos	Specification: Molbendenum sulphide D3 material, Tensile Strength: 140°260kg/Cm2, Specific Gravity: 4.12±0.06	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Used in Dozers for Steering assembly function.
348	Mining & Construction	EARTH MOVERS	113HC02045	RIPPER HYD CYLINDER	3	Nos	Normal load When extended 33.2 tons at 165 kg/cm2 When retracted 23.9 tons at 165 kg/cm2 Test load When extended 48.9 tons at 248 kg/cm2 When retracted 3.9 tons at 248 kg/cm2 Cylinder size in mm (Bore C.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;	104 S	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.
349	Mining & Construction	EARTH MOVERS	118EG02041	DISPLAY KIT	25	Nos	1. Display size: 3.8" 2. Display Type: QVGA (320 X 240 Pixels) 3. Input pins: 4no Resistive analog, 3no 0-5V, 4-20mA analog or digital, 1no frequency. 4. Outputs: 2:no 500mA. 5. Communications supported: CAN2.0B, J1939, Proprietary messaging and RS485 serial. 6. Operating temperature: -40°C to +85°C 7. Sealing: IP67 8. Vibration: 7.86g (5-2000Hz) 9. Shock: 50g in 3 axis	50000	Display is CAN based 3.8 inch monochrome LCD display used for real time monitoring of equipment critical parameters. It is also provides Audio-Visual alarm to the operator in case of any abnormality in the parameters.

	LIST OF ITEMS FOR INDIGENISATION										
	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks		
350	Mining & Construction	EARTH MOVERS	125CT11091	SPACER	25	Nos	OD of the spacer= 59 mm; ID of the spacer = 49.3 mm;		Spacers are used in track link assemblies, these will serve as a guide for se assy. These spacers are provided in between the bushing and track link.		
351	Mining & Construction	EARTH MOVERS	130CC91023	HANDLE-LOCK	25	Nos	Material: Handle: Glass reinforced nylon: Brass threaded inserts		Push button handles are designed for Operator cabin doors of off-highwa equipment's Dozers, Excavators and Loaders application.		
352	Mining & Construction	EARTH MOVERS	130CC91031	LATCH LH (With Bell Crank Handle)	350	Nos	Material:Internal latch components: heat treated, smooth edge stamped steel Case halves: high strength steel Springs: non-corrosive stainless steel. Finish:Zinc plated, clear chromate steel components.		A latch is a type of door or window fastener.a spring-loaded door lock that can be opened by a key from outside Designed For Off-highway applications Door thicknesses of 47.6mm or greater Door weights of 23-91 kg Door seal pressures of 23-68 kg Applications where push button handle actuation is desired.		
	Mining & Construction	EARTH MOVERS	130CC91048	LATCH RH (With Bell Crank Handle)	250	Nos	Material:Internal latch components: heat treated, smooth edge stamped steel Case halves: high strength steel Springs: non-corrosive stainless steel. Finish:Zinc plated, clear chromate steel components.		Description: A latch is a type of door or window fastener, a spring-loaded door lock that can be opened by a key from outside Designed For Off-highway applications Door thicknesses of 47.6mm or greater Door weights of 23-91 kg Door seal pressures of 23-68 kg Applications where push button handle actuation is desired.		
	Mining & Construction	EARTH MOVERS	130CC91056	STRIKER BOLT	600	Nos	MATERIAL:Typical materials include AISI 4140 and AISIC10B21 steel (or equivalent), heat treated FINISH:Zinc plated with clear chromate		Description: The striker is primarily responsible for precise and flush door closure and also for keeping the door securely closed. Subsequently, the striker, as the decisive counterpart for the latch, is a central element with enormous importance for flawless function of the entire closure system.		
	Mining & Construction	EARTH MOVERS	155FD02005	FLOAT SEAL ASSY[KIT]	150	Nos	Specification:- O-Ring material : Nitrile rubber O-Ring shore hardness : 60±15 Seal Ring material : FC9Cr6Mo	60	The floating seal is used to seal protect components in Final drive assemb from mud and soil.		
156	Mining & Construction	EARTH MOVERS	156EG02197	DISPLAY KIT	25	Nos	1. Display size: 3.8" 2. Display Type: QVGA (320 X 240 Pixels) 3. Input pins: 4no Resistive analog, 3no 0-5V, 4-20mA analog or digital, 1no frequency. 4. Outputs: 2no 500mA. 5. Communications supported: CAN2.0B, 11939, Proprietary messaging and RS485 serial. 6. Operating temperature: -40°C to +85°C 7. Sealing: IP67 8. Vibration: 786g (5-2000Hz) 9. Shock: 50g in 3 axis	00000	Display is CAN based 3.8 inch monochrome LCD display used for real time monitoring of equipment critical parameters. It is also provides Audio-Vis alarm to the operator in case of any abnormality in the parameters.		
357	Mining & Construction	EARTH MOVERS	182EG02203	ISOLATION SWITCH	150	Nos	No. Of poles: 02.     Operating Voltage: 6- 36V DC.     Coperating: 2000A intermittent 30sec ON- 3mins OFF and 300A continuous.     Mounting: Through hole for 3/4" Dia mounting stem.     Operating temperature:40°C to +85°C.		Isolation switch is used in battery main power circuit lines (Either in positi or in negative line) to isolate battery supply when equipment is not in use to carryout welding work.		
	Mining & Construction	EARTH MOVERS	376AX02003	REAR AXLE ASSEMBLY	25	Nos	1) Total reduction -20.521 2) Max.load on axle -19000 kg		Drive Axie is one of the main aggregate in a drivel system. Its main functio is to transmit torque and take the load.		

	LIST OF ITEMS FOR INDIGENISATION										
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks		
359	Mining & Construction	EARTH MOVERS	376AX02011	FRONT AXLE ASSEMBLY	25	Nos	1) Total reduction -20.521 2) Max.load on axle -19000 kg		Drive Axle is one of the main aggregate in a drivel system. Its main function is to transmit torque and take the load.		
	Mining & Construction	EARTH MOVERS	376TC02005	TORQUE CONVERTER	25	Nos	Stall ratio: 3.21		Torque converter is a single stage and single phase torque converter		
	Mining & Construction	EARTH MOVERS	376TM03004	TRAMSMISSION PUMP ASSY.	25	Nos	1)Displacement - 32cc 2) operating pressure -30 bar		The transmission pump is used to pump the transmission oil required for engagement of clutch in transmission, working of torqueconvertor and lubrication of transmission and torque convertor		
	Mining & Construction	EARTH MOVERS	452TM71743	SEALRING	30	Nos	Specification:- Material - PTFE-G2 Pressure : 40 bar Temperature : 120 deg max.	GL375A717Ab	The Seal Ring is used to arrest oil leakage during piston actuation in Transmission assembly		
	Mining & Construction	EARTH MOVERS	757EG11026	SMART ALARM,BACKUP	250	Nos	1. Operating voltage: 12-32V DC 2. Current rating: < 1A 3. Output level: 87 - 112 db automatically 4. Operating temperature: -40°C to +85°C 5. Duty cycle: 1 Pulse per sec (50% ON - 50% OFF) 6. Frequency: 1250Hz 7. Protection: Surge and spike protected.		Smart alarm is used as safety device to give audio warning when equipment reverse gear is engaged. The alarm automatically changes its sound intensity depending on surrounding noise level.		
	Mining & Construction	EARTH MOVERS	817EG02245	нот ѕwiтсн	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.		
	Mining & Construction	EARTH MOVERS	862AC91007	COMPRESSOR	2	Nos	8 Cu.inch capacity, poly V groove pully,24V direct mount rotary compressor		Compresser is used when Air conditioned cabin is used. Cold low pressure refrigerent is changed to hot high pressure refrigerent.		
366	Mining & Construction	EARTH MOVERS	862AC91015	COMPRESSOR FITTINGS	2	Nos	Includes compressor installation accessories such as service valves etc.				
367	Mining & Construction	EARTH MOVERS	BSP0136136	RECOIL SPRING	150	Nos	Specifications : Part no. BSP01 36136		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 ravel. These are used in the under carriages of earthmoving equipment and serve to prevent damage to the track, Sprocket or other Rollers.		
	Mining & Construction	EARTH MOVERS	113FD91089	BUSHING	125	Nos	Bush is a bimetal material & used in Dozer Final drive assy between stationary and rotating parts. Material:outer: Cold rolled steel, Inner: LBC-3(Lead bronze Casting ), ID: Ø298, OD: Ø303, WIDTH; 60mm				

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

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
378	Mining & Construction	EARTH MOVERS	985TM11147	SNAP RING	115	Nos	Doubble Coil Snap ring, Material: Spring Steel, OD: Ø219.7, WIDTH; 10mm						
379	Mining & Construction	EARTH MOVERS	175FDB0039	FLOATING SEAL ASSY	30	Nos	Float Seal Assembly comprises of Seal Ring and O-ring and used between stationar and rotating part						
380	Mining & Construction	EARTH MOVERS	1755061273	SEAL	1	Nos	Seal used in Swing circle / Slew ring to avoid leakage of Grease and entry of dust in to the assembly. Material: Neoprene rubber, Shore Hardness: 75 Hs						
381	Mining & Construction	EARTH MOVERS	1755061257	SEAL	1	Nos	Seal used in Swing circle / Slew ring to avoid leakage of Grease and entry of dust in to the assembly. Material: Neoprene rubber, Shore Hardness: 75 Hs						
382	Mining & Construction	EARTH MOVERS	125FD02054	FLOATING SEAL ASSY.	5	Nos	Float Seal Assembly comprises of Seal Ring and O-ring and used between stationar and rotating part						
383	Mining & Construction	EARTH MOVERS	113TC71258	SEALRING	2	Nos	Seal ring used in Dozer Torque converter assembly. Material: PTFE, I.D: Ø130, width: 4.9, thickness: 4mm						

	LIST OF ITEMS FOR INDIGENISATION											
	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
384	Mining & Construction	EARTH MOVERS	452TM52798	COUPLING	20	Nos	Used for connecting Transmission output to Final drive assembly in Motor Grader. Spline details: 85x21x3.75, Material: Plain Carbon steel, Mechanics: 9C					
385	Mining & Construction	EARTH MOVERS	175FD02016	FLOATING SEAL ASSY.	5	Nos	Float Seal Assembly comprises of Seal Ring and O-ring and used between stationary and rotating part	60				
	Mining & Construction	EARTH MOVERS	116CS93313	DISC	75	Nos	Disc used for Dozer Steering clutch assembly. Material: Sintered alloy friction material, No of teeth: 128, Pressure angle: 14.5 deg, PCD: Dia384					
	Mining & Construction	EARTH MOVERS	113FD31407	SEAL RING ASSY	2	Nos	Seal Ring used between rotating and stationary part and is a part of Float Seal Assembly used in Final drive assy to arrest oil leakage. Material: FC9CrMo ID: Ø298 OD: Ø328, WIDTH: 20 mm					
388	Mining & Construction	EARTH MOVERS	116CS91028	DISC	30	Nos	Disc used for Dozer Steering clutch assembly. Material: Sintered alloy friction material, No of teeth: 128, Pressure angle: 14.5 deg, PCD: Dia384					
	Mining & Construction	EARTH MOVERS	116AC02019	AC INSTALLATION KIT	25	Nos	Total Air conditioning kit with both Heating and Cooling modes. Kit consistsroof mounted integrated evaporator and condenser, Engine driven compressor along with crimped hoses.	To the state of th	CAPACITIES: Cooling 25000 BTU, Heating: 45000 BTU.			
	Mining & Construction	EARTH MOVERS	116AC02027	COMPRESSOR UNIT	25	Nos	Total Air conditioning kit with both Heating and Cooling modes. Kit consistsroof mounted integrated evaporator and condenser, Engine driven compressor along with crimped hoses.	y siden	Heater /Air conditioner Kit to p/no. 116ACB0017 consisting sl.no.1 to 3 is to be supplied			
391	Mining & Construction	EARTH MOVERS	116AC02002	HEATER AC UNIT	25	Nos	Total Air conditioning kit with both Heating and Cooling modes. Kit consistsroof mounted integrated evaporator and condenser, Engine driven compressor along with crimped hoses.					

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
392	Mining & Construction	EARTH MOVERS	116BR21072	LINING	60	Nos	Brake linings are often also called brake pads, and are a critical component of a braking systems. These are the materials which comes in contact with the outer drum of the steering clutch/rotor in order to slow them down. Brake lining is attached to metal backing such as a brake shoe, usually with heat resistant rivets or joints.		Material :BL-W1, Thickness in mm: 9.5, Outer radius of lining surface in mm: 227, Material of the lining shall correspond to Miyoshi Asbestors co Itd. Products special woven asbesto used in oil. Requirements: 1. The lining shall withstand the following operating conditions Max surface pressure= 20 kg/Sqcm, Mean surface pressure= 10 kg/sqcm, Max peripheral speeds 22.2 m/sec, Mean peripheral speed = 13.4 m/sec, Min Bending strength = 4.5 kg/Sqmm				
393	Mining & Construction	EARTH MOVERS	116CTB0075	TRACK SHOE PROFILE	1800(Mtrs)	Nos	This is single grouser type track shoe mainly used for general soil applications excluding rocky grounds. This track shoe provides the large traction force because of its shape and allows the machine to travel on general ground conditions.		Material: The material and dimensions should corresponds to BEML Std "B1201". Length of the track shoe in mm = 560.				
394	Mining & Construction	EARTH MOVERS	113CTB0056	TRACK SHOE PROFILE	3000(Mtrs)	Nos	This is single grouser type track shoe mainly used for general soil applications excluding rocky grounds. This track shoe provides the large traction force because of its shape and allows the machine to travel on general ground conditions.		Material: The material and dimensions should corresponds to BEML Std "B1201". Length of the track shoe in mm = 510.				
395	Mining & Construction	EARTH MOVERS	113TF93047	BUSHING	125	Nos	Bushing is a combination of metallic plate and Teflon-Impregnated Bronze lining. This is mainly used in Tack frame assembly of Bull dozers.		Material: 1. Back Plate: Gr. "O" IS:513 and 2. Lining: BSB PTFE ( Teflon- Impregnated Bronge)				
	Mining & Construction	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.				
397	Mining & Construction	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  Flange to Flange: 2083 mm Rim bolt circle: 425 mm Rotation direction: CW Input flange: 7C brake.  Total axde ration: 23.334 Wheel tread: 2044 mm Rotation direction: CW Service brake: 2xMultiple disc				
	Mining & Construction	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	<b>0</b>	Mounting type: Center Trunion Flange to Flange: 2083 mm Kim bolt circle: 425 mm Knot circle: 425 mm Knotation direction: CCW Input flange: 7C brake ( both ends)  Total axle ration: 23.334 Wheel tread: 2044 mm Rotation direction: CCW Service brake: Wet Multiple disc				
	Mining & Construction	EARTH MOVERS	761AX02269	REAR AXLE ASSY	3	Nos	Drive Axie is one of the main aggregate in a drivel system. Its main function is to transmit torque and take the load. Drive axie requirement is for Wheel loader and Wheel dozer application		Mounting type:/Center Trunion Total axle ration: 27 Flange to Flange : 2600 mm Rotation direction: CCW Input flange : 9C brake (both ends)  Total axle ration: 27 Service brake : Wet Multiple disc Service brake : Wet Multiple disc				

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
400	Mining & Construction	EARTH MOVERS	355TM91092	TRANSMISSION ASSY	15	Nos	The transmission is composed of a hydraulic torque converter and a rear mounted multi-speed powershift transmission with integrated transfer case. The torque converter is a wear free starting device which is infinitely variable adpating itself to the required situation. Drive axle requirement is for Wheel dozer and Tyre handler application		Type: Power shift Speeds: 4 Forward 3 Reverse Center distance between output an input shaft: 540 mm			
401	Mining & Construction	EARTH MOVERS	456HS03017	HOSE REEL 3/4 INCH	1	Nos	Hose reels are fitted on the Crane to transfer hydraulic oil to the hook hydraulic motor.	200 A 100 A	Type: Spring operated 2-port Hose reel (without hose)  Maximum flow : 85 Ltrs/min  Max. Pressure : 300 bar  Port size : 3/4" BSP			
402	Mining & Construction	EARTH MOVERS	456HS03025	HOSE REEL 1 INCH	1	Nos	Hose reels are fitted on the Crane to transfer hydraulic oil to the hook hydraulic motor.	25 S S S S S S S S S S S S S S S S S S S	Type: Spring operated 2-port Hose reel (without hose) Maximum flow : 135 Ltrs/min Max. Pressure : 300 bar Port size : 1° BSP			
403	Mining & Construction	EARTH MOVERS	799HS02934	SWING DRIVE	8	Nos	Motor displacement : 44.1 cc/rev, Gear Box ratio 1: 18.01, hydraulic motor speed 1587 rpm max, gear box out put speed 87 rpm max, gearbox out put torque 2359 Nm max.Pinion data m8,z10,PA20deg_x0.5,d80, da101.4, b67		Hydraulic motor driven gear box for the swing operation of the 7.5 ton hydraulic excavator. Its is having in built hydraulically released parking brake.			
404	Mining & Construction	EARTH MOVERS	799НS02926	TRAVEL DRIVE	12	Nos	Motor displacement : 44.1 cc/rev and 23.5 cc/rev, Gear Box ratio 1: 53.0, Max pressure 250 bar, max flow 72 [pm, hydraulic motor speed 2840/1568 rpm max.,gear box out put speed 55.5/29.8 rpm max., gearbox out put torque 4432/8307 Nm max.		Hydraulic motor driven gear box for the travel operation of the 7.5 ton hydraulic excavator. Its is having in built hydraulically released parking brake and two speed.			
405	Mining & Construction	EARTH MOVERS	183PH90012	BUTTERFLY VALVE	4	Nos	Port size is 4" or 101.6 mm		Butterfly valves are mounted on the suction line before the pump inlet. As an additional safety feature the valves can be locked in off / on position and an electrical interfock is provided with in built limit switch for hydraulic aggregates safety			
406	Mining & Construction	EARTH MOVERS	183РН90029	COMPENSATOR	4	Nos	four bolt mounting with port size of 4". Push pull +/- 10mm, Offset +/- 10mm and Angular +/- 10 degree.	(a)	Compensators are made up of nitrile rubber and are designed to absorb vibrations as well as axial, radial angular misalignment.			
407	Mining & Construction	EARTH MOVERS	7905002019	SLEWING RING	12	Nos	OD 800 mm, thickness 55, Single ball bearing, Internal gear m8, Pressure angle 20 deg. no of teeth 76, PCD 608.		Slewing ring or swing circle is big size bearing used on hydraulic excavator for 360 deg free swing function.			

	LIST OF ITEMS FOR INDIGENISATION											
							Brief spec		Remarks			
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph				
408	Mining & Construction	EARTH MOVERS	183PO90015	PTO ASSY.	2	Nos	Power rating 900kW, input speed 1500, out put speed 2000 rpm, input by shaft dia 80 with keyway.		Power Take OFF is a Gear Box to transfer power from Electric motor to 3 hydraulic pumps			
	Mining & Construction	EARTH MOVERS	790TF02029	IDLER ASSY	4	Nos	Roller dia 380 mm, Maximum length 744 mm, Minimum length 664 mm.		Used in the installation of track parts in the hydraulic excavator			
410	Mining & Construction	EARTH MOVERS	790TF31684	SPROCKET RIM	10	Nos	No of teeth 21, width of teeth 46mm, OD of sprocket 495mm dia, ID 380mm dia, Flange thickness 12mm, No holes on the flange (Picture shows the holes its only representation).	O	Used in the installation of track parts in the hydraulic excavator, part of the final drive.			
411	Mining & Construction	EARTH MOVERS	184AC90035	ROOF TOP CONDENSOR	1	Nos	capacity: 38,800 BTU/hr, Dual fan, low profile for cabs with minimal roof space, two fan of size 11 inch diameter producing 970 CFM, current draw 15 amps@13.6 VDC	Assor.	ROOF TOP CONDENSOR is a part of air conditioning system used on hydraulic excavators cabins.			
	Mining & Construction	EARTH MOVERS	157CTB0014	TRACK SHOE PROFILE	1000(Mts)	Nos	Triple grouser type Material: The material and dimensions should corresponds to BEML Std "B1201"; Hot rolled low alloy steel for track shoes Length of the track shoe is 610mm±3		This is triple grouser type track shoe mainly used for general soil applications excluding rocky grounds. This track shoe provides the large traction force because of its shape and allows the machine to travel on general ground conditions.			
413	Mining & Construction	EARTH MOVERS		SPACER	2	Nos	Material: PBP-1H, IID: 135, OD:160 and Thickness:5mm Chemical composition and Mechanical properties as per JIS:H3110		Spacer is used in Swing Machinery Assembly to with stand impact loads			
414	Mining & Construction	EARTH MOVERS	2052571152	SEAL	5	Nos	Material: Neoprene rubber Shore Hardness: 72 ±5 Hs Tensile Strength:100kg/cm2		Seal used in Swing circle / Slew ring to avoid leakage of Grease and entry of dust in to the assembly.			
415	Mining & Construction	EARTH MOVERS	1755021631	SPACER	25	Nos	Material:Gr.PCuSn6, IS1385, ID: 57, OD:84 and Thicknes:5mm		Spacer is used in Swing Machinery Assembly to with stand impact loads			

	<u>LIST OF THE MISTOR THE FIGURE AND T</u>											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
416	Mining & Construction	EARTH MOVERS	601TW02003	HYDRAULIC WINCH (BOOM)	7	Nos	1. Bare drum first layer line pull (kg): 19960 2. Rope diameter (mm): 26 3. No. of speed ratio in both directions: 02(Two) Max. Speed (m/min): 36.3 Min speed (m/min): 36.3 Min speed (m/min): 17.0 4. Controlled free fall : Not required 5. Drum diameter(mm): 305 6. Hydraulic system pressure of the equipment(kg/sq.cm): 140 7. Hydraulic system flow of the equipment: (iltres/min): 400 8. Cable capacity on the drum(m): 95 9. As a safety device, the winch should have an automatic braking system i.e., As soon as pressure in the hydraulic system drops below certain limit, the brake should engage automatically. 10. Application: 100 Ton pipe layer		Two speed hoist hydraulic Winch. The winch is compact with totally sealed gearing and automatic disc brake. The motor is externally mounted.			
417	Mining & Construction	EARTH MOVERS	601TW02011	HYDRAULIC WINCH (HOOK)	7	Nos	1. Bare drum first layer line pull (kg): 19960 2. Rope diameter (mm): 26 3. No. of speed ratio in both directions: 02(Two) Max. Speed (m/min): 36.3 Min speed (m/min): 37.0 Min speed (m/min): 37.0 4. Controlled free fall: Provided 5. Drum diameter(mm): 305 6. Hydraulic system pressure of the equipment(kg/sq.cm): 140 7. Hydraulic system flow of the equipment: (litres/min): 400 8. Cable capacity on the drum(m): 93 9. As a safety device, the winch should have an automatic braking system i,e, As soon as pressure in the hydraulic system drops below certain limit, the brake should engage automatically. 10. Application: 100 Too pipe layer		Two speed hoist hydraulic Winch with controlled free fall. The winch is compact with totally sealed gearing and automatic disc brake. The motor is externally mounted.			
418	Mining & Construction	EARTH MOVERS	CSR0101004	SEALRING	25	Nos	SEAL Ring.  Material: Special cast iron piston ring,  OD=100mm, Thickness T=4mm  Anticorrosion:PM  PV Value, kg/cm2s: 2:5  Max pressure, kg/cm2: 1:5  Max peripheral speed, m/s: 20  Max oil temperature, -C: 120  Oil used: H10 & T30		SEAL Ring for torque flow transmission			
419	Mining & Construction	EARTH MOVERS	CSR0102005	SEAL RING	40	Nos	SEAL Ring.  Material: Special cast iron piston ring,  OD=200mm, Thickness T=5mm  Anticorrosion: PM  Max pressure, kg/cm2 : 15  Max peripheral speed, m/s: 20  Max oil temperature, vc: 120  Oil used: H10,T30		SEAL Ring for torque flow transmission			
420	Mining & Construction	EARTH MOVERS	CSR0102455	SEALRING	65	Nos	SEAL Ring, Material: Special cast iron piston ring, 00=245mm, Thickness T=5mm Anticorrosion:PM Max pressure, kg/cm2 : 15 Max peripheral speed, m/s : 20 Max oil temperature, "C: 120 Oil used: T30,H10,		SEAL Ring for torque flow transmission			
421	Mining & Construction	EARTH MOVERS	CSR012205	SEAL RING	75	Nos	SEAL Ring, MaterialFhospherous branze casting or equivalent of PBC-2A for piston ring. OD=220mm, Thickness T=5mm Max pressure, kg/cm2 : 15 Max peripheral speed, m/s: 20 Max oil temperature, ~C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission			

	EST OF TIERS FOR INDIGENISATION										
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks		
422	Mining & Construction	EARTH MOVERS	CSR0120452	SEAL RING	125	Nos	SEAL Ring, Material HSBs.C3 for piston ring, OD=045mm, Thickness T=1.90 mm Material HSBs.C3 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		
423	Mining & Construction	EARTH MOVERS	CSR0120603	SEAL RING	110	Nos	SEAL Ring, Material HSSC 3 for piston ring, 00=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		
424	Mining & Construction	EARTH MOVERS	CSR0100954	SEALRING	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		
	Mining & Construction	EARTH MOVERS	CSR0101104	SEALRING	25	Nos	SEAL Ring, Material-special cast iron piston ring, 00=110mn, Thickness T=4.3 mm Anticorrosion:PM PV Value, kg/cm2s :2.5 Max pressure, kg/cm2 :15 Max prespheral speed, m/s: 20 Max oil temperature, "C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission		
426	Mining & Construction	EARTH MOVERS	CSR012005	SEAL RING	40	Nos	SEAL Ring, Materialspecial cast iron piston ring, 00=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		
427	Mining & Construction	EARTH MOVERS	CSR0111004	SEAL RING	25	Nos	SEAL Ring, Materials special cast iron piston ring, 00=100mm, Thickness T=4 mm PV Value, kg/cm2: 50 Max pressure, kg/cm2: 15 Max peripherals speed, m/s: 20 Max oil temperature, °C: 120 Oil used: H10 & T30		SEAL Ring for torque flow transmission		
428	Mining & Construction	EARTH MOVERS	125FD02038	FLOATING SEAL KIT	300	Nos	Cotact division for technical clarifications		Float Seal Assembly comprises of Seal Ring and O-ring and used between stationary and rotating part		
429	Mining & Construction	EARTH MOVERS	CFL0910050	SNAP RING	65	Nos	OD=53.6 mm, width 4mm, Thickness T=2.3 mm Snap ring, Material : SWRH5 Rust prevently 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 component in the bore or hole of the block assys.		
430	Mining & Construction	EARTH MOVERS	CSB0203525	BUSHING	80	Nos	BUSHING (BIMETAL) Back Metal: C1006-03 & Inside TEFLON Impregnated Bronze. Dimensions: OD is 39+0.075 to 0.115; Length L is 25-0.3 & thickness 2.0 - 0.04mm		Bushing for torque flow transmission		

LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks		
431	Mining & Construction	EARTH MOVERS	CSB0101235	BUSHING	25	Nos	BUSHING (BIMETAL) Back Metal: C1006-03 & Inside TEFLON impregnated Bronze. Dimensions: OD is 125+0.120 to 0.185; Length L is 35-0.3 & thickness 2.5 - 0.10 to -0.03mm		Bushing for excavaotr (diler assembly		
432	Mining & Construction	EARTH MOVERS	CSB0104530	BUSHING	70	Nos	BUSHING (BIMETAL) Back Metal: C1006-038 Inside TELDO, Impregnated Bronze. Dimensions: OD is 50+0.075 to 0.115; Length L is 30-0.3 & thickness 2.5 - 0.05mm		Bushing for torque flow transmission		
433	Mining & Construction	EARTH MOVERS	CVW0140004	VALVE	25	Nos	HYDRAULIC AGGREGATES BOdy Material: C3604 BE Plug Material: C3604 BE Material: PSW2-H Tube Material: C2600T-0	ommonth of the second	Valve used for draining Coolant from Radiator		
434	Mining & Construction	EARTH MOVERS	160TF62015	SEAL (Drum ring seal)	10	Nos	Working temperature range: (-30°C ~ +80°C) Material shall be: F406-1	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	The seal is used for peventing grease leakage between under carriage swin circle bearing and revolving frame during 360°swing on the level and slope angle not more than 35°.		
435	Mining & Construction	EARTH MOVERS	171C002161	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 imput lever tip): Low idle position 5.00.5 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. Wibration 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		

LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks		
436	Mining & Construction	EARTH MOVERS	155TFB0042	FLOATING SEAL ASSY	10	Nos	Seal: The material and dimensions should corresponds to FC15Cr 3Mo MATERIAL SHALL SATISFY FOLLOWING PHYSICAL PROPERTIES: Ambient temp test 1. Hardness IRHD: 70±5 (Test method ASTM D676) 2. Tensile strength kg/sc_cm/(min): 100 (Test method ASTM D1414) 3. Elongation % (min): 150 (Test method ASTM D1414) Air heat aging test 1. Change of Thardness JIS HS (max): ±15 (Test method ASTM D573/D865) 2. Change of T.S % (Max): ±0 (Test method ASTM D573/D865) 3. Change of Tognation % (max): ±00 (Test method ASTM D373/D865) Compression permanent strain % (max): 30 (Test method ASTM D395) OIL PROOF TEST (Test oil JIS no. 1) 1.change of hardness JIS HS: 0° ~ ±10 (Test method ASTM D471) 2.change of TS. % MAX: - 15 (Test method ASTM D471)	SEF	This float seal assembly is used in track roller		
							2.chaige OF 1.5 % MAX: - 40 (Test method ASTM D471) 3.chaige of ELDNG % MAX: - 40 (Test method ASTM D471) 4.CHANGE OF VOLUME %:-10 °0 (Test method ASTM D471) OIL PROOF TEST (Test oil JIS no. 3) 1.chaige of hardness Jis Hs: -20 °0 (Test method ASTM D471) 2.chaige OF 1.5 % MAX: - 45 (Test method ASTM D471) 3.chaige of ELDNG % MAX: - 45 (Test method ASTM D471) 4.CHANGE OF VOLUME %: 0 °+45 (Test method ASTM D471)	O RING			
437	Mining & Construction	EARTH MOVERS	175TF92217	SEAL	10	Nos	Working temperature range: (-40°C ~+80°C) and Material shall be: F406-1	23   25   25   25   25   25   25   25	The seal is used for peventing grease leakage between under carriage swing circle bearing and revolving frame during 360'swing on the level and slope angle not more than 35'.		
438	Mining & Construction	EARTH MOVERS	171PH92077	SWING DRAIN FILTER	1	Nos	SPCIFICATIONS:  1)Rated flow: 120 I/min.  2)Pressure loss: 0.5 Kg/cm² max.(£010-CD oil,with 120 I/min. flow at 80°c)  3)Pressure difference strength: 7 Kg/cm² max.  4)Filter rating: 10 µ.  5)Filter area: 5000 cm² max.  6)Test pressure: 16 Kg/cm² max.  7)Vibration test conditions: 10 times max. with same test sample for X and Y axis.  oil at 80°c pressure 10 Kg/cm², accelaration 9g; frequency 50 Hz.  8)Working temperature range: -30° to 120°c  9)Effectiveness of the filter: after throwing -in 50g, pressure loss shall be 1.5  Kg/cm² or less and efficiency 90 % over (filtering degree 0.03 vol % or less)		The Filter is used for between Swing Motor to Hydraulic Tank		
439	Mining & Construction	EARTH MOVERS	155EC02074	TANK	1	Nos	Material for tank: Poly propylene. Specification:  1. Water capacity (total capacity): 3.4 lts ±.1 lts  2. Empty tank weight: 35/g.  3. Level switch operating position: the level switch is turned off when remaining q ty gets to 0.43 lts ±0.1 lts (the switch is 'on' in the normal condition).  4. Current flowing in the level switch shall be leimited 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 mintolerance ±3  0.9. Whation 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.		This tank is used for deration		

	EST OF THE MISTOR THE MISTOR											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
	Mining & Construction	EARTH MOVERS	175TFB0012	FLOATING SEAL ASSY.	140		Specification:  O-Ring material: Nitrile rubber  O-Ring hardness: 60±5Hs, Tensile strength: 100 Kg/cm²  O-Ring Elongation: 30 %.  Seal Ring material: FC9Cr6Mo	<b>6</b> 0	The floating seal is used to seal protect components in Idler assembly from mud and soil.			
	Mining & Construction	EARTH MOVERS	155TF92709	BUSHING	225		1). No black skin, pin holes & cracks allowed on sliding parts. 2). Sinter 03 & 04 no separations allowed. 3). Tensile breaking load on friction welded parts shall be 7 ton or more. 4). Completely remove burrs after oil grooving. 5). KES General tolerance may not apply to the cylidricaly of the inside diametrical part of the bushing after press fitting.		This part is used idler shaft assyembly area			
	Mining & Construction	EARTH MOVERS	175PH02831	RELIEF VALVE ASSY.	1	N	Performance: Set pressure(cracking pressure): 340 °, g° Kg/cm² at 5 l/min. Total flow pressure: 380 Kg/cm² max. At 60 l/min. Receft pressure: 310 Kg/cm² min. At 5 l/min.		This Relief viave assy. is used for boom & arm line			
443	Mining & Construction	EARTH MOVERS	817ACB0055	AC(SPLIT TYPE)	1	Nos	SPECIFICATIONS: COMPRESSOR: VOLTAGE: DC 24W CULTCH: 125 mm CONDENSE: HEAVY DUTY REMOTE MOUNT CAPACITY 44,500 STU/hr WEIGHT: 33.6 Kg CONDENSOR COIL: COPPER TUBING, ALUMINIUM FINS AND PLATED STEEL HEADERS. HEATER A/C UNIT: COOLING CAPACITY 25,000 BTU/hr (7.6 Kw) HEATING CAPACITY 17,800 BTU/hr (5.2 Kw) AIR FLOW: 540 cu.m/hr (320 cfm)		Proprietary item and complete drawing details not available; Based on the technical scope, general specifications, performance requirements and overall size of the aggregates, these are to be developed by interested Vendors.			
	Mining & Construction	EARTH MOVERS	985TC91002	DISC	500		a) Material: Core Plate- C1101 OR C45, Friction Facing-Toshba1020 b) Heat Treatment: Induction hardening at Tooth Portion C) Dimension: OD-400mm, ID-309 mm Thickness of Plate- 3.8mm, Thickness of Facing material-0.8mmx2, Disc thickness-5.4 mm	0	Disc with Internal Gear Toothing for clutch operations in Planetary Transmission			
	Mining & Construction	EARTH MOVERS	376TM91263	Oil Seal	7	Nos	F8 60x85x12	0	Oil Seal			
	Mining & Construction	EARTH MOVERS	376BR11126	Pressure Reducing Valve	2	Nos	Working pressure: 35 bar Max. Flow: 30 lpm		The pressure reducing valve is used to allow the required pressure in the line, by bypassing the excess pressure			
	Mining & Construction	EARTH MOVERS	376AX91267	Oil Seal	20	Nos	FB 150x180x15-D	0	Oil Seal			
	Mining & Construction	EARTH MOVERS	376AX91623	Brake	12	Nos	Working pressure: 100 bar		The brake systems is of air over hydraulic type. The brakes are pressed against the disc which is mounted on axle with the help of pressuriesed brake fluid.			

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
449	Mining & Construction	EARTH MOVERS	376AX91631	Brake Lining	350	Nos	Consists of Friction pad and Backup plate		Brake Lining			
450	Mining & Construction	EARTH MOVERS	762TF11527	BOLT	100	Nos	M14x1.5, 50t, 12.4 grade bolt for mounting track chain pads of BL10C / BL11C equipment.	MILE MINOS AND	BOLT			
451	Mining & Construction	EARTH MOVERS	376BR02005	Air booster pump	60	Nos	Pressure of air : 8 bar conversion ratio : 1:18		The Air booster pump is used increase pressure of brake fliud to required level with aid of compressed air			
452	Mining & Construction	EARTH MOVERS	376AX91372	O-Ring 320*3.1	8	Nos	320x3.1	0	O-Ring			
453	Mining & Construction	EARTH MOVERS	376AX91275	Bearing	2	Nos	SIZE CODE :32024		Bearing			
454	Mining & Construction	EARTH MOVERS	376BR11118	Air Brake Valve	5	Nos	Pressure of air : 8 bar working temp. : -30 deg C to 80 deg C		The Air brake valve is a directional valve used to direct the compressed air to air booster			
455	Mining & Construction	EARTH MOVERS	376TM91214	Oil Seal	1	Nos	FB65×90×12	0	Oil Seal			
456	Mining & Construction	EARTH MOVERS	376AX91226	Oil Seal	2	Nos	FB65x90x10F	0	Oil seal			
457	Mining & Construction	EARTH MOVERS	862AX02044	Front Axle	2	Nos	1) Total reduction -24.08 2)Max.load on axle -20000 kg		Drive Axle is one of the main aggregate in drive system. Its main function is to transmit torque and to take the load.			
458	Mining & Construction	EARTH MOVERS	862AX02052	Rear Axie	2		1) Total reduction -24.08 2)Max.load on axle -20000 kg	430	Drive Axle is one of the main aggregate in drive system. Its main function is to transmit torque and to take the load.			

	Г	1				<u> </u>	OF ITEMS FOR INDIGENISATION		1-
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks
	Mining & Construction	EARTH MOVERS	862TM02008	Transmission	2	Nos	4F / 3R direct mount, automatic powershift transmission with integral torque converter		Composed of a hydrodynamic torque converter and a rear-mounted multi- speed powershift transmission with integrated transfer case. It can be shifted manually or fully-automatically by means of the Electronic unit. An engine-dependent, coaxial power take-off is planned to drive hydraulic pump.
460	Mining & Construction	EARTH MOVERS	652TF03003	TRACK CHAIN ASSY.(TRIPLE GROUSER)	1	Nos	Triple Grouser track chain assy. With 34 links, 3 Master pin arrangement. Used for underground mining application.		Track Chain assy. With triple grouser pads. Width - 330mm, Overall length - 5289.55mm
461	Mining & Construction	EARTH MOVERS	2012Z14277	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
	Mining & Construction	EARTH MOVERS	201ZZ13899	CHAIN, HOIST	25	Nos	Hoist chain consisting of two end(stud) links and 9 connecting links, Length shall be 2.8m. please refer drawing for requirement	K (0)	a)Hoist chains are manufactured in high strength cast steel b)Tensile strength requirement is 896MPa ()Yield strength requirement is 758MPa d)End links are filted with high manganese bush
	Mining & Construction	EARTH MOVERS	197TF12941	PROPEL BRAKE WITHOUT HUB	1	Nos	a) Brake Slip Torque (New) = 5016 Nm. b) Brake Slip Torque (Worn) = 4474 Nm. c)Air Pressure for full release - 03 Bar d) Maximum speed = 2500 RPM. e) Maximum Air pressure = 08 Bar		a) Spring set Air released disc brakes mounted on the non drive end of electrical motor shaft     b) In the event of power failure or loss of air pressure, brakes will automatically set to stop the machinery motion.     c) The brakes cannot be released for operation untill the Air pressure reaches the operating pressure.
	Mining & Construction	EARTH MOVERS	CSR0111205	SEALRING	500	Nos	SEAL Ring, Material:Phospherous branze casting or equivalent of PBC:2A for piston ring. OD=120mm, Thickness T=4.6mm Max pressure, kg/cm2 : 15 Max peripheral speed, m/s: 20 Max oil temperature, °C: 120 Oil used: 110.8 T30		SEAL Ring for torque flow transmission
	Mining & Construction	EARTH MOVERS	156HR91527	Chisel point	50	Nos	Refer drawing Rock breaker kit to part no: 156HRB0108 OPERATING WEIGHT: 1500 ~ 1700kg BODY TYPE: BOX/OPEN IMPACT RATE: 350 ~ 700 bpm OPERATING PRESSURE: 150 ~ 180 bar OIL FLOW: 130 ~ 150 lpm RELIEF PRESSURE: 190 ~ 210 bar TOOL DIAMETER (Chisel & Moil): 130mm (min) / Suitable for 22ton class rock breaker HOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker MOSE DIAMETER: 25mm (min) / Suitable for 22ton class rock breaker		Parts of Rock breaker assembly of 22 ton class excavator.  Rock breaker, used in a mining and construction equipment for the demolition of structure and breaking rocks into smaller sizes. It is an attachment to the excavator and works on the principle of hydraulics. The rock breaker hammer applies high pressure from its small canister which hap pressurized hydraulic oil stored in it. They are much more powerful than other hand-held hammers and its force is varied based on the force of piston strokes and its size. The rock breaker hammer is operated by using the excavator main pump hydraulic oil from the optional spool on the control valve
466	Mining & Construction	EARTH MOVERS	156HR90977	O ring	13	Nos	INSTALLATION KIT: Piping kit, Hose kit, Adaptor kit, and Fasteners kit  Note: sl. 01 ~ 13 are the parts / internal components of rock breaker assembly and it is properitary in nature. So design, specification, drawing details are not available.	0	
	Mining & Construction	EARTH MOVERS	156HR90944	Set step seal	13	Nos		0	
	Mining & Construction	EARTH MOVERS	156HR90985	Back up ring	42	Nos			

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
469	Mining & Construction	EARTH MOVERS	156HR91284	Chisel pin	20	Nos							
470	Mining & Construction	EARTH MOVERS	156HR90969	Gas seal	12	Nos		O					
471	Mining & Construction	EARTH MOVERS	156HR90911	U-packing	12	Nos							
472	Mining & Construction	EARTH MOVERS	156HR90903	buffer seal	12	Nos							
473	Mining & Construction	EARTH MOVERS	156HR91292	Stop pin	30	Nos							
474	Mining & Construction	EARTH MOVERS	156HR91316	FRONT HEAD PIN	20	Nos		1					
475	Mining & Construction	EARTH MOVERS	156HR92142	STOP PIN	2	Nos		1					
476	Mining & Construction	EARTH MOVERS	156HR92134	MOUNTING PIN	2	Nos							
477	Construction	EARTH MOVERS	156HR91632	Hex bolt M16X2 Length 140mm	6	Nos							
478	Construction	HYDRAULIC & POWERLINE	CFN4412222	Nyloc Nut M22 x 2.5p	92	Nos	Nylock Nuts are used in the Hydraulic Cylinder Assemblies to Lock the Piston in the Piston Rod and to Hold in Position. Nylock Nut shall not get loosened during						
479	Construction	HYDRAULIC & POWERLINE	CFN4412426	Nyloc Nut M24 x 3p	78	Nos	continuous operation of extension and retraction of Cylinder.  Material:						
480	Construction	POWERLINE HYDRAULIC &	CFN4413033	Nyloc Nut M30 x 3p	34	Nos	a) Nut Material- SAE1045/C45;Hardness:24~28 Rc (Q&T); b) Gasket: Nylon 6 / Nylon 66; c) Nyloc nuts should retain their locking ability up to 250 °F (121°C), Chemical and						
481	Construction	POWERLINE HYDRAULIC &	CFN4413638	Nyloc Nut M36 x 3p	208	Nos	c) Nyloc nuts should retain their locking ability up to 250 °F (121°C), Chemical and physical properties of Nylon material are enclosed for reference.						
482	Construction	POWERLINE HYDRAULIC &	CFN4413941	Nyloc Nut M39 x 3p	174	Nos							
483	Construction	POWERLINE HYDRAULIC &	CFN4414547	Nyloc Nut M45 x 3p	174	Nos							
484	Construction	POWERLINE HYDRAULIC &	CFN4415252	Nyloc Nut M52 x 3p	334	Nos							
485	Construction	POWERLINE HYDRAULIC &	CFN4416870	Nyloc Nut M68 x 4p	436	Nos							
486	Construction Mining &	POWERLINE HYDRAULIC & POWERLINE	955HC99066 935SU91411	Nyloc Nut 1.3/8"-12UN-3B Nyloc Nut 1.1/2"-12UN-3B	116	Nos							
488	Mining &	HYDRAULIC & POWERLINE	CSB0205030	BUSHING	228	Nos	Bushings are used in hydraulic cylinder rod or Suspension piston rod application. Bushing provide outstanding dry bearing properties of Polytetrafluoroethylene						

		1	I		T	1	Prinference		Remarks
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	кетагк
489	Mining & Construction	HYDRAULIC & POWERLINE	CSB0206530	BUSHING	140	Nos	(PTFE) and combines them with strength, stability and good wear resistance, excellent heat conductivity and low thermal expansion.		
490	Mining & Construction	HYDRAULIC & POWERLINE	CSB0207515	BUSHING	160	Nos	Bushings consists of three bonded layers: The Bushes are loaded with PTFE based sliding layer, sintered tin bronze layer and Cold Rolled Carbon steel backing strip		
491	Mining & Construction	HYDRAULIC & POWERLINE	CSB0207530	BUSHING	160	Nos	support. The PTFE impregnated sliding layer provides low co-efficient of friction, the bronze layer guarantees the coupling of self lubricating mixture and good loss		
492	Mining & Construction	HYDRAULIC & POWERLINE	CSB0201020	BUSHING	126	Nos	of heat produced during operation.  Material:		
493	Mining &	HYDRAULIC &	CSB0201040	BUSHING	276	Nos	Back Metal : JIS SPCD (Cold Rolled Carbon steel Strip/sheet Backing) (JIS G3141) The back metal shall be subjected to a flash tin-plating		
494	Construction Mining &	POWERLINE HYDRAULIC &	CSB0208040	BUSHING	126	Nos	Tenzile Strength: 270 N/mm2 Min.(27.5 Kg/mm2 Min.) Elongation %: 40 Min.		
495	Construction Mining & Construction	POWERLINE HYDRAULIC & POWERLINE	CSB0201235	BUSHING	5	Nos	Bushing : Teflon Impregnated Bronze. Coating Thickness : 0.3 max		
496	Mining &	HYDRAULIC &	CSB0206515	BUSHING	140	Nos			
497	Construction Mining &	POWERLINE HYDRAULIC &	CSB0201140	BUSHING	124	Nos			
498	Construction Mining &	POWERLINE HYDRAULIC &	CSB0209020	BUSHING	296	Nos	-		
499	Mining & Construction	POWERLINE  HYDRAULIC & POWERLINE	CSB0209035	BUSHING	296	Nos			
500	Mining & Construction	HYDRAULIC & POWERLINE	787AX62947	O-RING	58	Nos	i. Material : HNBR-1A ii. SHORE (HARDNESS) : 70±5; iii. Operating Temperature : - 40 to +150 deg C iv. Dimension ID: :Ø27282; (Inner Dia.) IC/s: Ø3.6±0.1; (Wire Dia.)	a lorger chainster	
501	Mining & Construction	HYDRAUUC & POWERLINE	985BR02526	FLOATING SEAL ASSY(BIG)	25	Nos	Floating Seal are special form of Mechanical seals, which is characterized by use of an oring as the secondary sealing element. The Seal surface is formed by a cone which is in contact with the Oring which is compressed axially and radially.  Material:  1. Seal Ring ID: 508 mm  5) Seal Ring 00: 548 mm  c) Width: 30mm  c) Width: 30mm  c) Width: 30mm  d) For in Color Seal mm  c) Wigth: 30mm  c) HARDNESS (SHORE A): 6015  d) Oring Diameter: 18 mm  b) Oring ID: 508 S10 mm  c) HARDNESS (SHORE A): 6015  d) TENSILE STRENGTH (Mpa): 13 mm. e) ELONGATION AT BREAK(93): 350 min. f) DERATING TEMP: (Max.): 150°C  Duront its very common in the cast iron seal market. This ledeburitic cast iron with fine graphite inclusions is known for its excellent wear resistance in connection with good tribological qualities	985 BR 02528 FLOATING SEAL	
502	Mining & Construction	HYDRAULIC & POWERLINE	985BR02534	FLOATING SEAL ASSY(BIG)	208	Nos	Floating Seal are special form of Mechanical seak, which is characterized by use of an oring as the secondary sealing element. The Seal surface is formed by a cone which is in contact with the Oring which is compressed axially and radially.  I. Seal Ring ID: 382  I. Seal Ring ID: 382  I. Seal Ring BO: 385  I. Seal Ring BO: 385  I. Seal Ring BO: 405  C.) Width: 20mm  II. Oring Material: HNBR 60 (Colour - Black)  a) Oring Diameter: 12 mm  II. Oring Material: HNBR 60 (Colour - Black)  a) Oring Diameter: 12 mm  II. Oring Material: HNBR 60 (Colour - Black)  a) Oring Diameter: 12 mm  J. Or	985 BR (25M) PEGATING SEAL  FLOATING SEAL	

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
503	Mining & Construction	HYDRAULIC & POWERLINE	778AX03128	FLOATING SEAL ASSY	116	Nos	Floating Seal are special form of Mechanical seals, which is characterized by use of an oring as the secondary sealing element. The Seal surface is formed by a cone which is in contact with the Oring which is compressed axially and radially.  Material:  Seal Ring Material: Duronit V a) Seal Ring ID: 262 b) Seal Ring DD: 288 c) Width: 20mm ii. Oring Material: HNBR 60 (Colour - Black) a) Oring Diameter: 1.2 mm b) Oring ID: Dia 266 mm c) HARDNESS (SHORE A) . 6015 d) TENSILE STRENGTH (Mpa): 14 min. e) ELONGATION AT BREAK(S): 350 min. f) OPERATING EMPM. (Max): 150°C Duronit is very common in the cast iron seal market. This ledeburitic cast iron with fine graphite inclusions is known for its excellent wear resistance in connection with good tribological qualities	TOTAL SEAL				
504	Mining & Construction	HYDRAULIC & POWERLINE	985BR95248	DISC	990	Nos	Disc with Internal Gear Toothing for Brake Application in Rear Axle Assembly Material:  i. Plate : CSS Mn 75 (B1105)  ii. Hardness of Plate : 22 HRC  iii. Surface Treatment of Plate Sand Blast before Adhesion  iv. Facing Material: DAIKIN R/M Co. Ltd  v. Size:  a)  Outer diameter : 660mm  b) Inner diameter : 515mm  c) Thickness : 5.1mm	985 BR 95248 DISC				
505	Mining & Construction	HYDRAULIC & POWERLINE	778AX92156	DISC	1392	Nos	Disc with Internal Gear Toothing for Brake Application in Rear Axle Assembly Material:  I. Plate : SAE 4140  II. Hardness of Plate : 22 HRC  III. Facing Material: D-0526-4; DAIKIN R/M Co. Ltd  Iv. Size :  a) Outer diameter : 480mm  b) Inner diameter : 330mm  c) Thickness : 5.1mm	775AY92156 DISC				
506	Mining & Construction	HYDRAULIC & POWERLINE	985BR15219	PLATE	924	Nos	Plate with External Gear Toothing for Brake Application in Rear Axle Assembly Material:  I. Plate: C55 Mn 75 (B1105); IS:1570  II. Hardness of Plate: 22 "28 HRC  III. Stae:  a) Outer diameter: 681mm  b) Inner diameter: 510mm  c) Thickness: 2.4mm	985 BR 15219 PLATE				
507	Mining & Construction	HYDRAULIC & POWERLINE	985BR95223	DAMPER	232	Nos	Damper Assembly (Plate & Seat) with External Gear Toothing for Brake Application in Rear Asle Assembly Material:  L Core Plate: CSS Mn 75 (81105) ; IS:1570  II. Hardness of Plate: Min 22 HRC  III. Seat: Mica Gork CL-28  Iv. Size:  a) Outer diameter: 681mm  b) Inner diameter: 510mm c) Thickness: 6.9mm	985 BR 95223    DAMPER				
508	Mining & Construction	HYDRAULIC & POWERLINE	778AX92059	DAMPER	232	Nos	Damper Assembly (Plate & Seat) with External Gear Toothing for Brake Application in Rear Aule Assembly Material:  i. Core Plate: CSF; SAE 1050; IS:1570 ii. Hardness of Plate: Min 22 HRC sand Blast before Adhesion iv. Seat: Mica Cork CL-28 v. Size: a) Outer diameter: 495mm ib Inner diameter: 495mm c) Thickness: 0 Thi	928-XX9289 DA-ME-K	Coal Dies for Newson Tammiries and			
509	Mining & Construction	HYDRAULIC & POWERLINE	CSR0110653	SEAL RING	274	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113 ) b)Dimension: OD-65mm, Width-2.7mm, Thickness-3mm		Seal Ring for Planetary Transmission used to prevent oil leaking around the shaft.			
510	Mining & Construction	HYDRAULIC & POWERLINE	CSR0111004	SEAL RING	46	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113 ) b)Dimension: OD-100mm, Width-4mm, Thickness-3mm					

#### LIST OF ITEMS FOR INDIGENISATION Remarks Cumulative Approximate Division Part no Description UoM Photograph SI No. Group Annual requirement Mining & HYDRAULIC & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) 511 SEAL RING onstruction POWERLINE b)Dimension: OD-120mm, Width-4.6mm, Thickness-4mm Mining & HYDRAULIC & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) 512 CSR0111805 SEAL RING POWERLINE b)Dimension: OD-180mm, Width-5mm, Thickness-4mm Construction HYDRAULIC & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) Mining & 513 CSR0112455 SEAL RING b)Dimension: OD-245mm, Width-5mm, Thickness-4mm POWERLINE Construction HYDRAULIC & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) Mining & 514 SEAL RING Construction POWERLINE b)Dimension: OD-260mm, Width-5mm, Thickness-4mm Mining & HYDRAIIIIC & a) Material: HSBsC3 515 CSR0120352 SEAL RING Construction POWERLINE b)Dimension: OD-35mm, Width-1.7mm, Thickness-2.5mm Mining & HYDRAULIC & a) Material: HSBsC3 516 CSR0120753 SEAL RING POWERLINE b)Dimension: OD-35mm, Width-1.7mm, Thickness-2.5mm Construction Mining & HYDRAULIC & a) Material: HSBsC3 517 CSR0120854 SEAL RING Nos Construction POWERLINE b)Dimension: OD-75mm, Width-3.1mm, Thickness-3mm Mining & HYDRAIIIC & a) Material: HSBsC3 CSR0121606 Construction POWERLINE b)Dimension: OD-160mm, Width-5.8mm, Thickness-4.5mm Mining & HYDRAULIC & a) Material: TFE-2 519 CSR0131205 SEAL RING b)Dimension: OD-120mm, Width-4.6mm, Thickness-3.95mm POWERLINE Construction Mining & 520 CSR0131907 SEAL RING Construction POWERLINE b)Dimension: OD-190mm, Width-6.5mm, Thickness-5.95mm Mining & HYDRAIIIC & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) 521 Construction POWERLINE b)Dimension: OD-120mm, Width-3.5mm, Thickness-3mm Mining & HYDRAULIC & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) 522 113TM21818 SEAL RING POWERLINE b)Dimension: OD-155mm, Width-3.5mm, Thickness-3mm Construction Mining & a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113) 523 113TM21883 SEAL RING Nos Construction POWERLINE b)Dimension: OD-155mm, Width-3.5mm, Thickness-3mm Thrust washer for Supporting Planet gears in Transmission Thrust washers made of DuPont Vespel® SP-21 polyimide are durable, a) Material: SP21 Manufactured by M/s Dupon maintenance-free components used in planetary transmission assemblies b)Dimension: OD-66.5mm, ID-38.3mm, Thickness-2mm Dupont SP21: is a 15 % (by weight) graphite filled polymer & standard Mining & HYDRAULIC & 524 985TM91419 THRUST WASHER 736 material for Thrust Washers because it offers the best combination of Construction POWERLINE mechanical strength and wear resistance, low friction for lubricated or nonlubricated applications. It also has long term thermal stability. Thrust washer for Supporting Planet gears in Transmission HYDRAULIC & Mining & 525 985TM92091 HRUST WASHER a) Material: SP21 Manufactured by M/s Dupon Construction b)DimensioN: OD-90mm, ID-57,2mm, Thickness-3mm Thrust washer for Supporting Planet gears in Transmission a) Material: SP21 Manufactured by M/s Dupon Mining & HYDRAULIC & 526 985TM92642 HRUST WASHER 736 b)Dimension: OD-63mm, ID-35.15mm, Thickness-2mm Construction POWERLINE 1. Display size: 7" Software configuration for each variant must be developed by vendor in 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels conjunction with R&D-KGF and display should be supplied along with YDRAULIC & Mining & 825EG02027 527 POWERLINE 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to required configuration loaded into it 10KHz), 5 nos- digital high 1. Outputs : 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.0B,CAN 2.0A, CANopen, Proprietary Mining & YDRAULIC & 528 820EG02141 messaging, RS485 serial and USB onstruction POWERLINE 5. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C DISPLAY KIT- EQUIPMENT 8. Sealing: IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) Mining & YDRAULIC & 12. Shock: 50g in 3 axis 529 821EG02018 Construction POWERLINE 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard: tactile button: Software configuration for each variant must be developed by vendor in 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels conjunction with R&D-KGF and display should be supplied along with HYDRAULIC & Mining & 530 821EG81294 3. Input pins: 3 nos. - 0-5V DC/4 -20mA/resistive analog, 1no. - frequency(2Hz to required configuration loaded into it POWERLINE Construction 10KHz). 5 nos- digital high 4. Outputs: 1no. - digital low, 1 no- PWM 5. Communications supported : CAN2.0B, CAN 2.0A, CANopen, Proprietary Mining & HYDRAULIC & messaging, RS485 serial and USB 531 953EG03786 Construction POWERLINE 5. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C DISPLAY-TRANSMISSION 8. Sealing: IP67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration : 7.86g (5-2000Hz) Mining & HYDRAULIC & 532 955EG03588 12. Shock : 50g in 3 axis POWERLINE Construction 13. Video I/P: 1 no- NTSC/PAL 14. Keyboard- tactile buttons i. Material : SAE 120R CLASS-1 Mining & HYDRAULIC & TF4098 O-RING (2.750 x 3.000 x 0.125) ii SHORE (HARDNESS) · 70 DUROMETER WA 4748 SEBL O:RING Construction POWERLINE Operating Temperature : - 40 to +150 deg C These O-rings shall comply with the following specifications: SAE J14 (1976) and SAE J120a (1976) HYDRAULIC & Material : Synthetic Rubber 70 Durometer. TD8594 PRING (3.250 x 3.500 x 0.125) onstruction POWERLINE YDRAULIC & Mining & VH7521 O-RING (4.500 x 5.000 x 0.250) Construction OWERLINE

-, ,-~~

	LIST OF ITEMS FOR INDIGENISATION												
	Brief spec   Remarks												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph					
536	Mining & Construction	HYDRAULIC & POWERLINE	WA4748	O-RING (5.625 x 6.000 x 0.875)	411	Nos		0: RING SEAL					
537	Mining & Construction	HYDRAULIC & POWERLINE	TG1045	O-RING (7.000 x 7.250 x 0.125)	116	Nos							
538	Mining & Construction	HYDRAULIC & POWERLINE	TL4377	O-RING (7.250 x 7.500 x 0.125)	274	Nos							
539	Mining & Construction	HYDRAULIC & POWERLINE	WA0267	O-RING (8.250 x 8.500 x 0.125)	580	Nos	i. Material : SAE SB915 CLASS-1 ii. SHORE (HARDNESS) : 90 DUROMETER iii.  Operating Temperature : -40 to +150 deg C These O-rings shall comply	WA 0451 0: Ruh (115" op)					
540	Mining & Construction	HYDRAULIC & POWERLINE	WA0451	O-RING (11.000 x 11.500 x 0.250)	16	Nos	with the following specifications: SAE J14 (1976) and SAE J120a (1976) Material: Synthetic Rubber 90 Durometer.						
541	Mining & Construction	HYDRAULIC & POWERLINE	WA0277	O-RING (11.500 x 11.750 x 0.125)	14	Nos							
542	Mining & Construction	HYDRAULIC & POWERLINE	VN9910	O-RING, HYDRAULIC FOR SAE STRAIGHT THREAD BOSS FITTINGS	58	Nos	Material: Synthetic Rubber, Compound S8915. SAE-JS15. Thead Size: 0.375 x 24 Inside Dia: 0.301 ± 0.005 Width: 0.064 ± 0.003 These O-rings shall comply with latest version of SAE specification JS15. Material: Synthetic Rubber Compound S8915.	VN 9910 0: RING					
543	Mining & Construction	HYDRAULIC & POWERLINE	PB1956	RING, BACK-UP – 262	116	Nos	Material : DISOGRIN 9250 URETHANE (PART NO. 073-262).   Premium polyurethane, TODI base.   Inside Dai : 6.35 ± 0.035	DB1956 ackup Ring					
544	Mining & Construction	HYDRAULIC & POWERLINE	PB1961	RING, BACK-UP – 262	232	Nos	Material : DISOGRIN 9250 URETHANE (PART NO. 073-262).   Premium polyurethane, TDDI base.   Radial Width : 0.118 ± 1.000	PB 1961 BACKUP RING					
545	Mining & Construction	HYDRAULIC & POWERLINE	TM6638	RING, BACK-UP – 262	116	Nos	Material : DISOGRIN 9250 URETHANE (PART NO. 073-262).   Premium polyurethane, TODI base.   Radial Width : 0.118 ±	TM 6638 BACKUP RING					
546	Mining & Construction	HYDRAULIC & POWERLINE	WA1236	BACK UP RING	274	Nos	I.D. : 3.256 ± 0.015 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material: Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)	WA 1236 BROWP RING					
547	Mining & Construction	HYDRAULIC & POWERLINE	WA1263	BACK UP RING	274	Nos	LD. :7.268 ± 0.023 Radial Section :0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)	WA 12.65 auxiep Dup					
548	Mining & Construction	HYDRAULIC & POWERLINE	WA1267	BACK UP RING	464	Nos	I.D. : 8.268 ± 0.030 Radial Section : 0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)	WAS 12 GO					
549	Mining & Construction	HYDRAULIC & POWERLINE	WA1277	BACK UP RING	14	Nos	I.D. :11.518 ± 0.030 Radial Section -0.118 ± 0.004 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40° to +250° F(-40° C to +121°C)	ph of the					
550	Mining & Construction	HYDRAULIC & POWERLINE	WA1279	BACK UP RING	56	Nos	I.D. :13.018 ± 0.030 Radial Section -0.118 ± 0.000 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40° to -250° f.40° to +121° C)						

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
551	Mining & Construction	HYDRAULIC & POWERLINE	WA1425	BACK UP RING	14	Nos	I.D. :4.551 ± 0.015 Radial Section :0.236 ± 0.006 Axial Thickness : 0.117 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)	0				
552	Mining & Construction	HYDRAULIC & POWERLINE	WA1451	BACK UP RING	16	Nos	I.D. : 11.024 ± 0.030 Radial Section : 0.236 ± 0.006 Axial Thickness : 0.050 Material : Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber) : 90 Durometer. Working Temperature Range : -40°F to +250°F (-40°C to +121°C)	0				
553	Mining & Construction	HYDRAULIC & POWERLINE	WA4749	BACK UP RING	411	Nos	I.D. :5.528 +0.015/-0.023 Radial Section :0.1383 ± 0.005 Axial Thickness: 0.076 Material: Nitrile Based Synthetic Rubber or Glass filled TFE (25% Glass) Hardness (Rubber): 90 Durometer. Working Temperature Range: -40°F to +250°F (-40°C to +121°C)	0				
554	Mining & Construction	HYDRAULIC & POWERLINE	135TM91712	DISC	46	Nos	Disc with Internal Gear Toothing for clutch operations in Planetary Transmission a) Material:  Core Plate - SAE1045H OR JIS-545C , Friction Facing-Toshiba1020  b) Heat Treatment: Induction hardening at Tooth Portion  C) Dimension: OD-\$30mm, ID-415.5 mm Thickness of Plate- 3.8mm, Thickness of Facing material- 0.8mmx2, Disc thickness- 5.4 mm					
555	Mining & Construction	HYDRAULIC & POWERLINE	135TM91834	DISC	12	Nos	Disc with Internal Gear Toothing for clutch operations in Planetary Transmission a) Material:  Core Plate- SAE1045H OR JIS-S45C , Friction Facing-Toshiba 1020 b) Heat Treatment: Induction hardening at Tooth Portion () Dimension: 00-425mm, ID-331.5 mm Thickness of Plate- 3.8mm, Thickness of Facing material-0.8mmx2, Disc thickness-5.4 mm					
556	Mining & Construction	HYDRAULIC & POWERLINE	985TM12346	RING	46	Nos	a)Material: SWRH 67"SWRH82 b) Hardness: 42"48 HRc C) OD-343mm, WIDTH-10mm, No. of Turns-2		Ring used for locking Ring Gear and Carrier in planetary transmission			
557	Mining & Construction	HYDRAULIC & POWERLINE	125TM23431	SEAL RING.	440	Nos	a) Material: HSBs3 b)Dimension: OD-120mm, Width-3.5mm, Thickness-3mm					
558	Mining & Construction	HYDRAULIC & POWERLINE	125TM23715	SEAL RING	616	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113 ) b)Dimension: OD-250mm, Width-6.5mm, Thickness-4mm					
559	Mining & Construction	HYDRAULIC & POWERLINE	135TC91061	SEAL RING	2	Nos	a) Material: NPR Cast iron- Manufactured by Nippon Piston Ring or rquivalent b)Dimension: OD-260mm, Width-6mm, Thickness-5mm					
560	Mining &	HYDRAULIC &	130TM22417	SEAL RING	130	Nos	a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113)					
561	Construction Mining &	POWERLINE HYDRAULIC &	985TM21086	SEAL RING	46	Nos	b)Dimension: OD-185mm, Width-5mm, Thickness-4mm a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113)					
562	Construction Mining &	HYDRAULIC &	985TM21101	SEAL RING	46	Nos	b)Dimension: OD-185mm, Width-5.8mm, Thickness-4.5mm a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113)					
	Construction Mining &	POWERLINE HYDRAULIC &	985TM22101 985TM22309	SEAL RING	46	Nos	b)Dimension: OD-310mm, Width-4mm, Thickness-4mm a) Material: HSBsC3					
563	Construction Mining &	POWERLINE HYDRAULIC &	985TM22309	SEAL RING	46		b)Dimension: OD-270mm, Width-4mm, Thickness-4mm a) Material: Phosphor Bronze Casting or PBC2A (JIS H 5113)	1				
565	Construction Mining &	POWERLINE HYDRAULIC &	9851M22682 953TM96015		220	Nos	b)Dimension: OD-175mm, Width-6.3mm, Thickness-4mm a) Material: HSBsC3	-				
303	Construction	POWERLINE	2221M20012	SEAL RING	230	Nos	b)Dimension: OD-135mm, Width-5.1mm, Thickness-4mm a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PTFEG2		Material properties: Specific gravity-2.21,			
566	Mining & Construction	HYDRAULIC & POWERLINE	135TM71049	SEAL RING	2	Nos	OR Equivalent b) O.D-463.6mm, I.D-455mm, Thickness-3.8mm		Tensile strength-230kg/cm², Elongation-270%, Hardness -63 Durometer			
567	Mining & Construction	HYDRAULIC & POWERLINE	135TM72086	SEAL RING	2	Nos	a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PTFEG2 OR Equivalent b) O.D-					
568	Mining &	HYDRAULIC & POWERLINE	135TM72094	SEAL RING	2	Nos	448.6mm, I.D-440mm, Thickness-3.8mm a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PTFEG2 OR Equivalent b) O.D-					
569	Construction Mining &	HYDRAULIC &	135TM72183	SEAL RING	2	Nos	508.6mm, I.D-500mm, Thickness-3.8mm a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PTFEG2 OR Equivalent b) O.D-					
570	Construction Mining &	POWERLINE HYDRAULIC &	135TM72004	SEAL RING	8	Nos	259.5mm, I.D-253mm, Thickness-2.8mm a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PTFEG2 OR Equivalent b)		Material properties: Specific gravity-2.24, Tensile strength-170kg/cm <sup>2</sup> ,			
	Construction Mining &	POWERLINE HYDRAULIC &			-		O.D-513.6mm, I.D-505mm, Thickness-3.8mm  a)Material: NOK MAKE RAREFLON 40WF or Nippon Pillar make PILAFLEN PTFEG2	1	Elongation-210% , Hardness -57~70 Durometer			
571	Mining & Construction	POWERLINE	135TM72012	SEAL RING	2	Nos	OR Equivalent b) O.D-438.6mm, I.D-430mm, Thickness-3.8mm					
572	Mining & Construction	HYDRAULIC & POWERLINE	985TC71093	SEAL RING	43	Nos	a)Make: NIHON PILLAR LOGYO KK MAKE #4370 or Equivalent b) Material to be of N.P. KK MAKE dS (ptfe W\; Filler) or Equiv expansion force 142kg/cm², Elongation 123%, thermal expansion co-efficient in 11.9x10° c) O.D-185mm, width -6.5mm, Thickness-4.5mm					

#### LIST OF ITEMS FOR INDIGENISATION Brief spec Remarks Cumulative Approximate Part no Division Description UoM Photograph SI No. Annual requirement Group Wave Spring for Clutch retraction in Planetary Transmission Material: Gr1 IS4454 Part-1 of 1981 b) Heat Treatment :Q&T- 38~45 HRc c) I.D: 401, Width: 3, Thickness-1.65mm HYDRAULIC & Mining & 573 125TM93465 SPRING. POWERLINE Construction a) Material: Gr.3 IS4454 Part-1 b) Heat Treatment :Q&T- 40~46 HRc Mining & HYDRAULIC & c) I.D: 20.7mm. Width:4mm. Thickness-3mm 574 130TM93122 SPRING 14388 Construction POWERLINE a) Material: Gr.2 IS4454 Part-1 b) Heat Treatment :Q&T-40~46 HRc c) I.D: 17mm, Mining & HYDRAULIC & 125TM93457 SPRING WASHER 10452 Construction POWERLINE a) Material: Carbon Tool Steel (JIS G 4401-1956), class 5 b) Heat treatment: 42~48HRc c) O.D: 225mm, I.D: 120mm, Thickness: 3mm Mining & HYDRAULIC & 576 113TM11741 SPRING Construction POWERLINE 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 HYDRAULIC & Mining & 955TC02259 T/C ELEMENT ASSY c) Effective in all forward ranges POWERLINE Construction : 110 0715601315 WEAR RING The function of an hydraulic Wear Ring (or Guide ring) is to guide the piston Thickness : 3.0 +0/-0.08 : 25 -0.05/-0.25 piston rod of an hydraulic cylinder, absorbing transverse forces. Material: PTR-FLE (Phenol Resin with cloth) At the same time, the Wear Ring prevents metal-to-metal contact, Mining & HYDRAIIIC & Specific Gravity: 1.20 (Min) optimizing the WEAR RING POWERLINE performance of the sealing system. Construction Bending Strngth: 10~18 Kg/mm<sup>2</sup> Fabric-reinforced Polyester Resin - This strip material is for heavy-duty applications where Compression Strength: 11~20 Kg/mm<sup>2</sup> there are Water Absorption Rate: 2.4 % Max. high radial forces. The use of woven fabric-reinforced polyester resin produces a dimensionally 0715601315 accurate rectangular strip : 3.5 +0/-0.08 Thickness which can be cut to any length. WEAR RING : 15 -0.05/-0.25 Low coefficient of friction and high compressive strength makes it an ideal Length Material : PTR-FLE (Phenol Resin with cloth) bearing material and it is used in temperatures ranging from -40 degrees to Mining & HYDRAULIC & Specific Gravity: 1.20 (Min) 579 CGR0401315 WEAR RING Construction POWERLINE Bending Strngth: 10~18 Kg/mm Compression Strength: 11~20 Kg/mm<sup>2</sup> Water Absorption Rate: 2.4 % Max. : 130 0715501330 Thickness : 3.5 +0/-0.08 WEAR RING : 30 -0.1/-0.3 Material : PTR-FLE (Phenol Resin with cloth) Mining & HYDRAULIC & CGR0301330 Specific Gravity: 1.20 (Min) 580 WEAR RING Construction POWERLINE Bending Strngth: 10~18 Kg/mm2 Compression Strength : 11~20 Kg/mm<sup>2</sup> Water Absorption Rate: 2.4 % Max Thickness : 3.5 +0/-0.08 : 20 -0.05/-0.25 Material : PTR-FLE (Phenol Resin with cloth) Specific Gravity: 1.20 (Min) HYDRAULIC & Mining & 581 CGR0401620 WEAR RING 272 Bending Strngth: 10~18 Kg/mm Construction POWERLINE Compression Strength: 11~20 Kg/mm<sup>2</sup>

Water Absorption Rate: 2.4 % Max.

Specific Gravity: 1.20 (Min)

Bending Strngth: 10~18 Kg/mm<sup>2</sup> Compression Strength: 11~20 Kg/mm<sup>2</sup> Water Absorption Rate: 2.4 % Max.

: 4.0 +0/-0.08 : 55 -0.15/-0.35 Material: PTR-FLE (Phenol Resin with cloth)

Thickness

130

Mining &

HYDRAULIC &

POWERLINE

CGR0302555

WEAR RING

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative	Business				Approximate		Brief spec		Remarks			
SI No.	Group	Division	Part no	Description	Annual requirement	UoM		Photograph				
583	Mining & Construction	HYDRAULIC & POWERLINE	PB6437	ROD SEAL	274	Nos	Size : 5.000 x 5.625 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material : Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.	P.B. 6437 Rod SEAL				
584	Mining & Construction	HYDRAULIC & POWERLINE	PB6547	ROD SEAL	14	Nos	Size : 3.750 x 4.375 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material - Carbovylated Nitrile C 7016 Shore hardness: 80A Durometer.	P8 65 67 SEAL R.D.				
585	Mining & Construction	HYDRAULIC & POWERLINE	PB6553	ROD SEAL	96	Nos	Size: 8: 500 v. 9.125 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material: Carboxylated Nitrile C 7016	2546 RD				
586	Mining & Construction	HYDRAULIC & POWERLINE	PB6559	ROD SEAL	30	Nos	Size : 10.500 x11.125 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material: Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.					
587	Mining & Construction	HYDRAULIC & POWERLINE	PB7323	ROD SEAL	274	Nos	Size : 6.500 x7.125 x 0.580 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Up Material : Carbovylated Nitrile C 7016 Shore hardness: 80A Durometer.	PB 7323 SEAL ROD				
588	Mining & Construction	HYDRAULIC & POWERLINE	VZ3178	ROD SEAL	274	Nos	Size 2: 2000 x 2: 500 x 0.417 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 90±5 Durometer. Tenzile Strength: 6000 PSI Min. Working Pressure: 3500 PSI Temp Range : 40" to +225" Test Pressure: 5000 PSI No Leakage Allowed M/s.DISOGRIN Material: Urethane No. 9250	NZ 3178 ROD SEAL				
589	Mining & Construction	HYDRAULIC & POWERLINE	VZ4432	ROD SEAL	274	Nos	Size : 2.500 x3.000 x 0.417 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 90±5 Durometer. Tenzile Strength: 6000 PSI Min. Working Pressure: 3500 PSI Temp Range : -40" to +22.5"F Test Pressure: 5000 PSI No Leakage Allowed M/s_DISOGRIN Material: Urethane No. 9250					
590	Mining & Construction	HYDRAULIC & POWERLINE	953SU91159	ROD SEAL	66	Nos	Size : 273.05 x298.45 x 20.95 Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Lip Material: Carboxylated Nitrile C 7016 Shore hardness: 80A Durometer.	9535071157				
591	Mining & Construction	HYDRAULIC & POWERLINE	959SU91253	ROD SEAL	132	Nos	Size : 210x235x21 Material: Base Material: Polyurethane Elastomer (Iron Rubbber ) Back up Ring Material : Rareflon (PTFE Resin) Pressure Range : 0-70 Mpa Temperature Range : -35°C~100°C Speed Range : 0.3 ~ 1 m/s.	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
592	Mining & Construction	HYDRAULIC & POWERLINE	9915U91168	ROD SEAL	30	Nos	Size: 12"x13" x 0.8" Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Up Material: Carbovylated Nitrile C 7016 Shore hardness: 80A Durometer.	The second secon				

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative	Rusiness				Approximate		Brief spec		Remarks				
	Group	Division	Part no	Description	Annual requirement	UoM		Photograph					
593	Mining & Construction	HYDRAULIC & POWERLINE	992HC91105	ROD SEAL	16	Nos	Size : 5.5"x6.0" x 0.577" Material:  Base Material: Lubrithane U-1003 E Black.  Shore hardness: 95 Durometer.  Lip Material: Carbovylated Nitrile C 7016  Shore hardness: 80A Durometer.	992 HC 91105.					
594	Mining & Construction	HYDRAULIC & POWERLINE	992SU91214	ROD SEAL	16	Nos	Size: 1.05"x1.15" v.0.75"  -Operating Pressure: up to 6,000 psi -Dual Lip Design -Integrated backup ring for security (high pressure) -Intermittent Pressure to 1.25% (7,500 psi) Material: Wear Resistant polyurethane Operating Temp Range: -40" to +250"F						
	Mining & Construction	HYDRAULIC & POWERLINE	PB6808	ROD SEAL	116	Nos	Size : 3.75"x4.25" x 0.558"  -Operating Pressure: up to 3500 psi  -Operating Temp Range : -40" to +225"F  -Test Pressure : 5000 psi (No Leakage Allowed)  Material : Polyurethane Elastomer						
596	Mining & Construction	HYDRAULIC & POWERLINE	PB6809	ROD SEAL	116	Nos	Size : 5.25"\s.75" x 0.558"  -Operating Pressure: up to 3500 psi -Operating Temp Range: -40" to +225"F -Test Pressure: 5000 psi (No Leakage Allowed) Material: Polyurethane Elastomer						
	Mining & Construction	HYDRAULIC & POWERLINE	PB6810	ROD SEAL	116	Nos	Size: 6.75"x7.25" x 0.558"  -Operating Pressure: up to 3500 psi -Operating Temp Range: -40" to +225"F  -Test Pressure: 5000 psi (No Leakage Allowed)  Material: Polyurethane Elastomer	0					
598	Mining & Construction	HYDRAULIC & POWERLINE	991SU91151	WIPER SEAL (12.000"x 13.255" x 0.501")	30	Nos	Spring Loaded U-Cup wiper Seal for Heavy duty Application of Reciprocating Hydraulic Cylinder and Suspension Application 1) a) Seal Material: Lubrethane Rubber U-1004 E 55D Red.	DR7320 DR (1,20					
599	Mining & Construction	HYDRAULIC & POWERLINE	992HC91113	WIPER SEAL (5.500" x 6.125" x 0.413")	16	Nos	b) Spring Material : Stainless Steel ii) SHORE D (HARDNESS) : 55, iii) Operating Temperature :- 40 to +110 deg C	PB 7320 PB 6438 WIPER ROD WIPER ROD					
600	Mining & Construction	HYDRAULIC & POWERLINE	PB6560	WIPER SEAL (10.500" x 11.125" x 0.413")	30	Nos	iii) Operating Velocity : Upto 1 Mysc(3.2 ft/s). v) Operating Pressure Range : 0~400 bar (5 800 psi).	WIPERRO					
601	Mining & Construction	HYDRAULIC & POWERLINE	PB6554	WIPER SEAL (8.500" x 9.125" x 0.413")	96	Nos							
602	Mining & Construction	HYDRAULIC & POWERLINE	PB6548	WIPER SEAL (5.000" x 5.625" x 0.413")	14	Nos							
603	Mining & Construction	HYDRAULIC & POWERLINE	PB6438	WIPER SEAL (3.750" x 4.375" x 0.413")	274	Nos							
604	Mining & Construction	HYDRAULIC & POWERLINE	PB7320	WIPER SEAL (6.500" x 7.125" x 0.413")	274	Nos							
	Mining & Construction	HYDRAULIC & POWERLINE	953SU91167	WIPER SEAL	132		Size : 10.750" x 11.750" x 0.550" Material: Base Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Ring Material: NBR- A8501 Shore hardness: 70A Durometer. Operating Pressure Range: 0 * 0400 bar (5 800 ps). Max Speed: 1 m/s.(3.2 ft/s). Temperature Range: -30°C to +100°C	95350 91169 WIPE & ERIL					
606	Mining & Construction	HYDRAULIC & POWERLINE	992SU91222	WIPER SEAL	16	Nos	Size : 10.500" x 11.250" x 0.688"(Groove)  Base Material: MBR, PTFE SEAL LIP, BRONZE.  BACK Up Ring Material: POM poly-acetal  Shore hardness: 80 Durometer.  Operating Pressure Range : 7500 psi.  Temperature Range : -40°F to  +250°F	992 SU 91222 WI FER STAL					
607	Mining & Construction	HYDRAULIC & POWERLINE	1956392190	WIPER SEAL (d x D x t x h)(80 x 94 x 8 x 11)	10	Nos	Snap-in Wiper Seals for Reciprocal Movement for Heavy duty Application with Pressure Plate or Circlip Retaining.  i) a) Seal Material : Iron Rubber (U801) or Polyurethane Shore 90A,						
608	Mining & Construction	HYDRAULIC & POWERLINE	1446392170	WIPER SEAL (d x D x t x h)(65 x 79 x 8 x 11)	148	Nos	b) Retaining Ring Material : Steel ii) Operating Temperature : - 25 to +110 deg C Operating Velocity : Upto 1 m/sec						

							Brief spec		Remarks
Cumulative I No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph	
609	Mining & Construction	HYDRAULIC & POWERLINE	VA3214	WIPER SEAL (3.750" x 4.115" x 0.122")	116	Nos	Material : DISOGRIN 9250 URETHANE . Premium polyurethane, TODI base. Max Working Pressure : 6000 PSI (421 Kg/cm²) Max Working (148.8 °C) Max Working Temp : 300°F (148.8 °C)	VA 3214 VA 3216 WIPER ROD WIPER ROD	
510	Mining & Construction	HYDRAULIC & POWERLINE	VA3215	WIPER SEAL (5.250" x 5.678" x 0.138")	116	Nos	Max Speed : 4 ft/s (1.21 m/s) Shore Hardness : 92 Durometer. Specific Gravity : 1.17		
611	Mining & Construction	HYDRAULIC & POWERLINE	VA3216	WIPER SEAL (6.150" x 7.240" x 0.154")	116	Nos			
612	Mining & Construction	HYDRAULIC & POWERLINE	VZ3177	WIPER SEAL (2.000" x 2.500" x 0.250")	274	Nos	Material: Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Operating Pressure Range: 5000 psl. Max Speed: 1 m/s/(3.2 ft/s). Temperature Range: -40°F	WPER SEPT VZ3177 WIPER ROD	
613	Mining & Construction	HYDRAULIC & POWERLINE	VZ4044	WIPER SEAL (2.500" x 3.000" x 0.330")	14	Nos	Max Speed : 1 m/s.(3.2 ft/s). Temperature Range : -40°F to +225°F	0	
614	Mining & Construction	HYDRAULIC & POWERLINE	953SU91207	Buffer Seal (10.750" x 11.560" x 0.320")	132	Nos	Buffer seal with nitrile rubber O-ring energizer, PTFE/Nylon slide ring i) a) Seal (Energiser) Material : Nitrile Rubber,		
615	Mining & Construction	HYDRAULIC & POWERLINE	PB6436	Buffer Ring (3.719" x 4.375" x 0.247")	274	Nos	b) Slide Ring Material : Oil filled Nylon (P-2505) ii) SHORE A (HARDNESS) : 70 iii) Operating Temperature : - 25 to +110 deg C	PB 6558 BUHER SEAL BUHER SEAL	
616	Mining & Construction	HYDRAULIC & POWERLINE	PB6546	Buffer Ring (5.000" x 5.625" x 0.247")	14	Nos	iv) Operating Pressure : Upto 500 Bar. v) Operating Velocity : Upto 2 m/sec		
517	Mining & Construction	HYDRAULIC & POWERLINE	PB6558	Buffer Ring (10.500" x 11.125 x 0.247)	30	Nos			
518	Mining & Construction	HYDRAULIC & POWERLINE	PB7321	Buffer Seal (6.500" x 7.125" x 0.247")	274	Nos	Material:		
619	Mining & Construction	HYDRAULIC & POWERLINE	992SU91206	Buffer Ring (10.500" x 11.330" x 0.571")	16	Nos	Material: MBR, PTFE SEAL LIP, BRONZE. BBACK Up Ring Material: POM poly-acetal Shore hardness: 80 Durometer. Operating Pressure Range: 7500 psi. Temperature Range: -40°F to +250°F	Of the second second	
620	Mining & Construction	HYDRAULIC & POWERLINE	992HC91098	Buffer Ring (5.500" x 6.125"x 0.247")	16	Nos	Buffer seal with polyurethane sealing ring, integrated polyacetal or polyamide antextrusion ring; i) a) Seal Material : Luberthan Rubber, b) Silde Ring/Anti-extrusion Ring Material : Polyamide or Polyacetal	992 HC 910 98 BUHER SIGL 5.5"	
621	Mining & Construction	HYDRAULIC & POWERLINE	991SU91176	Buffer Ring (12.000" x 12.750" x 0.320")	30	Nos	ii) SHORE A (HARDNESS) : 93, iii) Operating Temperature : -25 to +110 deg C iv) Operating Pressure : Upto 600 Bar. v) Operating Velocity : Upto 1 m/sec		
622	Mining & Construction	ENGINE	6150711620	BUSHING	130	Nos	Bushing (Tacho Drive) for Heavy Duty Diesel Engines (125 bore dia) Material: JIS 58X1218 OD= 17 mm ID= 7.9 mm		
623	Mining & Construction	ENGINE	6211312130	PISTON	550	Nos	Piston for Heavy Duty Diesel Engines (140 bore dia) Material: Spheroidal Graphite (ES1130) Hardness:248-2321 HB Tensile Strength = 75 kg/mm² min. Yelld Strength = 45 kg/mm² min. Elongation = 49/min.		
624	Mining & Construction	ENGINE	6631214371	BUSHING	140	Nos	Bushing used on heavy duty diesel engines (105 bore dia) Material :  1) BACKING JIS SPCE-S  2) BEARING ALLOY LBG6 Dia : 107  mm ; Thickness : 3.5 mm		
625	Mining & Construction	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		

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks
626	Mining & Construction	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 - KLBCGB Inner Dia - 122 mm; Outer Dia - 139 mm; Thickness(T) - 4 mm		
627	Mining & Construction	ENGINE	6162238050	THRUST BEARING	254	Nos	Thrust bearing used on heavy duty diesel engines (170 bore dia) Material: Back Metal - SAE 1017 (KES 06.164.17); Bearing Alloy - KLBC68 Inner Dia - 153 mm; Outer Dia - 175 mm; Thickness(T) - 4 mm		
628	Mining & Construction	ENGINE	6210218050	THRUST BEARING	92	Nos	Thrust bearing used on heavy duty diesel engines (140 bore dia) Material: Back Metal - SAE 1010 (KES 06.164.17) ; Bearing Alloy - KLBC6B Inner Dia - 132.7 mm ; Outer Dia - 150.5 mm ;Thickness(T) - 4 mm		
629	Mining & Construction	ENGINE	6212312170	PISTON	67	Nos	Piston for Heavy Duty Diesel Engines (140 bore dia) Material: Spheroidal Graphite (E51130) Hardness:248-232-HB Tensile Strength = 75 kg/mm² min. Yeild Strength = 45 kg/mm² min. Elongation = 4%min.		
630	Mining & Construction	ENGINE	DK1566052320	FLEX PLATE ASSY.	259	Nos	MATERIAL-M09C01, OD-94mm, ID-44mm , 4 Nos HOLE (OD-18, ID-8)		
631	Mining & Construction	ENGINE	DK1566054320	FLEX PLATE ASSY.	47	Nos	ID = 44mm, OD = 93.8mm, Thickness =0.5mm X 6 plates, Holes : PCD-72mm X 8.3mm holes -4 No's. Material : Spring steel,		
632	Mining & Construction	ENGINE	DK1566055320	FLEX PLATE ASSY.	566	Nos	ID = 52 mm, OD = 110 mm, Thickness =0.5mm X 4 plates, Holes : PCD-85 mm X 10.2 mm holes -4 No's. Material : Spring steel,		
	Mining & Construction	ENGINE	0924600110	FLEX PLATE ASSY.	6	Nos	Heavy Duty Diesel Engines (140 Dia) outer Diameter: Ø128mm Inner Diameter @65mm material: 15:2507(1992) GRADE 5(75C6)		
634	Mining & Construction	ENGINE	6162234231	SEAL,REAR	77	Nos	USED IN FLYWHEEL HOUSING FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) FOR SHART - DIMENSION TOLRENCE: Ø 170±0 010, MATERIAL FINISH: SECM 3H 1- 25 HRC.45±0 FOR HOUSING: DIMENSION TOLRENCE: Ø 230H7±0.046 MATERIAL FINISH: FC125, SEALING MEDIA TYPE: CD/SE 10 W-30		
	Mining & Construction	ENGINE	6136424410	SPRING, VALVE	1553	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA) MATRIAL -SW0SC-V, BAR DIAMETER - Ø43, MEAN COIL DIAMETER - Ø292 , FREE HEIGHT -63.6mm		
636	Mining & Construction	ENGINE	6162434420	SPRING, VALVE, INNER	7904	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) MATRIAL-SW05C-V, BAR DIAMETER - Ø40 , MEAN COIL DIAMETER - Ø30.6±0.3 , FREE HEIGHT -59.3mm		

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
637	Mining & Construction	ENGINE	6162434440	SPRING, VALVE OUTER	7828	Nos	USED IN CYLINDER HEAD FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) MATRIAL -SW05C-V, BAR DIAMETER - Ø5520.03, MEAN COIL DIAMETER - Ø42.1 , FREE HEIGHT -65.6mm						
	Mining & Construction	ENGINE	6162133720	NOZZLE,FUEL INJECTION	58	Nos	USED IN Fuel Injector FOR HEAVY DUTY DIESEL ENGINES(170 BORE DIA) NO OF HOLES- 8 HOLE DIA-\$0.34 TEST METHOD - KES 06.167.61 ,SACK VOLUME- 3.66MM* ,SEAT PASS AREA RATIO -1.39						
639	Mining & Construction	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 $0.3$ A rated current; insulation resistance- $1$ M $\Omega$ min at DC $200$ v; applicable liquid- water and oil						
	Mining & Construction	ENGINE	51Z2180666	PR SWITCH	334	Nos	pressure sensor for heavy duty diesel engine. current capacity: 3 AMPS max. 24 Volts DC; Actuating pressure- ON at 1.3 kg/cm <sup>2</sup> ; OFF at 0.7 kg/cm <sup>2</sup> ; Applicable fluid-oil.						
641	Mining & Construction	ENGINE	6127713231	BUSHING,TACHO DRIVE	216	Nos	Bushing Tach drive for heavy duty diesel engine (170 bore dia); mareial- JIS SBK 1218; Mass-0.55 kg; external dia- ø21; internal dia- ø7.8.						
	Mining & Construction	ENGINE	6212616121	CORE	8	Nos	After cooler core for heavy duty diesel engine (140 bore dia); Mass-18.1 kg; Fin material-IIS C1221R; Plate material-IIS C1020P; Core type - Fin pitch 3/2P; total radiation area iside-5.73 m²; Fin (calculated on one surface) - 5.73 m² (5 fins), Plate calculated on one surface-0.85 m² (10 fins), Water passage sectional area -15.2cm², Water capcity-1.3 Ut.						
643	Mining & Construction	ENGINE	6162133701	NOZZLE ASSY	154	Nos	Heavy Duty Diesel Engines (170 bore dia)  Nozzle characteristics: opening pressure on delivery 270°-278 kgf/cm2 nomial 265kgf/cm2 pressure spring constant 27kgf/mm Spray Cone Angle 160°  Nozzle Hole Diameter 0.34mmx8						
644	Mining & Construction	ENGINE	6212113101	INJECTOR ASSY	9	Nos	Heavy Duty Diesel Engines (140 bore dia) for this Application current part no.41Z7182169 by m/s bosch( DWG NO.E083379700)  Nozzle Opening Pressure:250 Bar (Minimum)						
	Mining & Construction	ENGINE	6162636112	CORE ASSY.	33	Nos	Heavy Duty Diesel Engines (170 bore dia) Core Type: side layer Fin pitch: 3 mm Pitch, Water capacity: 0.7 Liter Total Radiation Area 3.28m² weight: 11kg Operating pressure 2.7kg/cm² Fin material: C1221R						
646	Mining & Construction	ENGINE	51Z8100623	TURBOCHARGER (SJ120)	98	Nos	Heavy Duty Diesel Engines (170 bore dia)  £xhuast Gas Outlet Diameter:  Ø138.920.7  £xhuast Gas Outlet Diameter:  Ø140.720.1  Air Outlet Diameter:  Ø95						
	Mining & Construction	ENGINE	5127185551	FUEL CUT-OFF VALVE ASSY	630	Nos	STOP VALVE WITH DEUTCH MALE CONNECTOR-DT042P RUN-STOP VALVE G4-24V						

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
648	Mining & Construction	ENGINE	5129901579	HNZ EG KIT ( BD155/BD355 )	65	Nos	Heavy Duty Diesel Engines (170 SERIES BD155/355) this EG kit is Consist of following component:  1. Electronic Governor (5129901457) 2. DCU (5129901457) 3. Adapter Kit (5129901465) 4. speed sensor (5129901473) 5. Potentiometer (5129901466) 6. Temp Sensor (oil/coolant) (5129901498) 7. Boost Pressure Sensor(5129901513) 8. Foot pedal (5129901521) 9. Panoptes mobile DGP-4.3" (5129901554) 10. engine harmes (5128281149) 11. Vehicle harness (5128281149) 11. Vehicle harness (5128281149)					
649	Mining & Construction	ENGINE	52Z9900458	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 (5129901457)   3.Adapter Kit (5129901465)   4.Speed sensor (5129901473)   5.Potentiometer (5129901546)   6.Temp Sensor (oil/coolant) (5129901498)   7.Boost Pressure Sensor(512990151)   8.Foot pedal (5129901521)   9.Panoptes mobile DGP-4.3" (5129901554)   10.engine harness (51282811174)   11.Vehick harness (5128281157)   12.Oil pressure sensor (5129901481)					
650	Mining & Construction	ENGINE	130010660094	PUMP BODY I	25	Nos	Pump Body used on TATRA Engine Type :- Air Cooled Material: F6200, Is.6331 Allowable Tensile Strength:170 Mpa Hardness: 170°-220 HB					
651	Mining & Construction	ENGINE	323141371000	UPPER THRUST BEARING-6037-06/00 (111 141 371 000)	25	Nos	Pump Body used on TATRA Engine Type: - AIr Cooled Material of Steel Back : SAE 1010 Alloy Layer: SAE 48 SINTERED ON TO STEEL BACK SPEC: OD=154 mm ID=131 mm Thickness=3 mm	77 80-				
652	Mining & Construction	ENGINE	2070170454	PUMP GEAR WHEEL	25	Nos	Pump Gear Wheel used on TATRA Engine (130070170454) Type: -Air Cooled Consists of Gear (130012270604)-MATERIAL-42Cr <sub>4</sub> Mo <sub>2</sub> IS:5517,0D=51.5c8 mm, ID=22H7mm Bush (130050312024) MATERIAL-Sn-7.0 <sup>-9.0</sup> , P-0.02 <sup>-0.3</sup> , Pb-0.05, Cu=Balance UTS=540MPa, Hardness=160 <sup>-1</sup> 190 BHN, Elongation=8% OD=2277 ID=18D8	Source Control of the				
653	Mining & Construction	ENGINE	2070170444	PUMP GEAR WHEEL	25	Nos	Pump Gear Wheel used on TATRA Engine (130070170444) Type: - Air Cooled MATERIAL-4ZC <sub>1,M</sub> O <sub>2</sub> IS:5517-(LATEST YEAR) UTS-800 <sup>-9</sup> 50 MPa Consists of Bush (130050312024) and Gear W/O Teeth (130012270594)	15000000000000000000000000000000000000				
654	Mining & Construction	ENGINE	2070170434	PUMP GEAR WHEEL	25	Nos	Pump Gear Wheel used on TATRA Engine (130070170444) Type: Air Cooled P.C.D=38.5 Modules 5.5 Modules 5.5 No of Teeth=7 Pressure angle=20 Helka angle=0 Shift Coeff=0.2735 Root Dia=29.4-0.6 Base Dia =18.089/36.178 Face Width=17 Consists of Bush (130050312414) MATERIAL-CuSn8-HARD AS PER CSN 42.3018.3. OD=227 ID=1808 Cear W/O Teeth (130012260094) MATERIAL-42Cr <sub>4</sub> Mo <sub>2</sub> IS:5517-(LATEST YEAR) UTS=800~950 MPa					

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
	Mining & Construction	ENGINE	442070480284	PUMP COVER	25	Nos	Pump Body used on TATRA Engine Type: - Air Cooled Parts are:  1. Lubrication Pump Cover(130010730354)  2. Plunger (130053460334)  3. Spring (1300512404)  4. Safety Valve Plug (130051361374)	3 4 5					
656	Mining & Construction	ENGINE	2012270634	DRIVE GEAR WHEEL	25	Nos	MATERIAL: FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 50 mm, WEIGHT: 0.35 kg						
	Mining & Construction	ENGINE	2012270624	PUMP GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 55 mm, WEIGHT : 0.38kg						
658	Mining & Construction	ENGINE	2012270614	PUMP GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 42Cr4Mo2 - IS:5517, TEETH TIP OD = $\emptyset$ 51.5c8, WIDTH = 17 mm, WEIGHT : 0.15 kg						
659	Mining & Construction	ENGINE	443612223000	CLUTCH BOOSTER KNORR VG 3284	25	Nos	ASSEMBLY OF 45 SUB-PARTS, MAX PRESSURES : BRAKE FLUID 120 BAR & COMPRESSED AIR 12.5 BAR, WEIGHT : 2.8 kg						
	Mining & Construction	ENGINE	442076632424	OIL SUPPLY TUBE	25	Nos	ASSEMBLY OF 4 SUB-PARTS, TUBE : OD Ø8 x 1mm WALL THICKNESS, WEIGHT : 0.204 kg						
	Mining & Construction	ENGINE	130010800034	HOUSING COVER	25		MATERIAL: CSN 42 4331.01, CSN 42 1430.13, CSN 42 4331.71  MFG PROCESS: ALUMINIUM GRAVITY DIE CASTING,  OUTER DIA: Ø225						
662	Mining & Construction	ENGINE	442073420094	CONNECTION	25	Nos	ASSEMBLY OF 5 SUB-PARTS, MFG PROCESS : BRAZING, WEIGHT : 0.3 kg	da <b>d - 11 − 16</b> 00					
	Mining & Construction	ENGINE	442070332084	INTAKE MANIFOLD FRONT	25	Nos	ASSEMBLY OF 4 SUB-PARTS, MFG PROCESS : WELDING						
664	Mining & Construction	ENGINE	442070332054	INTAKE MANIFOLD REAR	25	Nos	ASSEMBLY OF 7 SUB-PARTS, LENGTH: 386 mm, WEIGHT: 2.45 kg, MFG PROCESS: WELDING						

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
665	Mining & Construction	ENGINE	442054390034	INTAKE LINE RUBBER HOSE	25	Nos	Material: Rubber Mixture 1456 OD:ø103 mm ID: ø90 mm						
666	Mining & Construction	ENGINE	442076631144	FUEL SUPPLY TUBE	25	Nos	Assembly: 3 components Weight: 0.162 Kg Material: CSN137972.02 1.Tube 2.Connector 3.Pipe Adaptor	2					
667	Mining & Construction	ENGINE	442054171764	O RING (SEALING RING)	25	Nos	Material: EEE 6233-2 Weight-0.007 kg ID:ø54.1 mm	6 54.1					
	Mining & Construction	ENGINE	442054032844	LOWER COVER GASKET	25	Nos	width:1132 mm height: 344 mm weight:0.05 kg Material:						
669	Mining & Construction	ENGINE	442054032734	GASKET 3mm	25	Nos	Material: vulcanized rubber PCD:ø192 mm ID:ø162 mm						
	Mining & Construction	ENGINE	130076631274	DEARATION SYSTEM	25	Nos	COMPLETE DE AERATION CONTAINING 12 PARTS WEIGHT: 1.96KG						
671	Mining & Construction	ENGINE	442070211284	SUCTION TUBE (VVNV)	25	Nos	SUCTION TUBE ASSEMBLY CONTAINING 4 PARTS						
672	Mining & Construction	ENGINE	442079940074	BOLT	25	Nos	CONTAINING TWO PARTS MATERIAL: CSN 41 4331.9, CSN 4 1523.0 NUT:M10 SCREW:M8	THE STATE OF THE S					
673	Mining & Construction	ENGINE	442010010254	CYLINDER	25	Nos	MATERIAL: CSN 42 046312 INNER DIA: 124mm OUTER DIA: 149mm LENGTH: 260mm						
	Mining & Construction	ENGINE	443429108989	SENSOR(380 060 360 010)	25	Nos	MATERIAL: NYLON 66, FREE CUTTING BRASS, BRASS : 124mm OUTER DIA: 8.4mm LENGTH: 6.3mm WEIGHT: 160g	2 000 000 000 000 000 000 000 000 000 0					
675	Mining & Construction	ENGINE	130010680064	GUIDE WHEEL	25	Nos	WEIGHT; 3.10 Kgs , MATERIAL; CSN-42.4331.01 (ALLUMINIUM CASTING ALLOYS), DIMENSION; BLADE DIA. Ø370.09 mm, IMPELLER INNER DIA . Ø210 mm, IMPELLER OUTER DIA. Ø240.						

						LIST O	FITEMS FOR INDIGENISATION		
							Brief spec		Remarks
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph	
676	Mining & Construction	ENGINE	442070720454	BLADE WHEEL ASSY.	25	Nos	ASSEMBLY 3 COMPONENTS; 1. BLADE WHEEL JACKET 2. BLADE WHEEL HUB C/W BLADES 3. GASKET, TOTAL WEIGHT; 34 Kg MATERIAL; FOR BLADE WHEEL HUB-JACKET: CSN-42433-L01 (ALLUMINIUM CASTING ALLOYS), FOR BLADE WHEEL HUB-SAME MATERIAL AND FOR GASKET- HEAT RESISTANT NEOPRINE RUBBER		
677	Mining & Construction	ENGINE	442070600124	AIR DUCT	25	Nos	ASSEMBLY 3 COMPONENTS; 1. AIR DUCT 2. HOLDER 3. STAY, WEIGHT; N/A, DIMENSION; DIAMETER Ø430 ±0.5, MATERIAL; IS:513-86, Gr.DD FOR ALL COMPONENTS		
678	Mining & Construction	ENGINE	130028961804	FAN HOUSING BRACKET	25	Nos	WEIGHT; N/A, DIMENSION; TOTAL DIA. Ø225 , 6 THRU HOLES PITCH CIRCLE DIA. Ø220 mm AND 3 THREDED HOLES PITCH DIA. Ø230, MATERIALS; CSN-42 2420, CSN 1241.00		
679	Mining & Construction	ENGINE	442054280054	GASKET 2 MM (TURBINE)	25	Nos	ASSEMBLY COMPONENTS: 1. DUCTILE SHEET (MATERIAL; CSN 425 365), 2. INSERT JERN F. (MATERIAL; CSN 029021), 3. COVERING PLATE (MATERIAL; CSN 42 5365). TOTAL WEIGHT, 0.05 Kgs, DIMENSION; TOTAL LENTGH; 136.6 mm AND BREADTH; 94 mm, THIKNESS; 1.85 ± 0.15		
680	Mining & Construction	ENGINE	130035210484	REAR SHEET RH	25	Nos	DIMENSION- TOTAL LENGTH; 199 mm, BEND RADIUS; 80 mm, WEIGHT; 0.11 Kgs , MATERIALS; GrCR3, IS:S13		
681	Mining & Construction	ENGINE	130050512154	SPRING	25	Nos	DIMENSION- SPRING WIRE DIA; Ø1.8 mm, NO. OF ACTIVE TURNS; 9, TOTAL NO. OF TURNS; 11 mm, TOTAL LENGTH; 31.7 mm, WEIGHT; 0.08 Kgs, MATERIAL; Gr-DM, IS:4454 (PT-1)	20.5.	
682	Mining & Construction	ENGINE	130050780284	SPACER INSERT	25	Nos	MATERIAL: CSN 41 1109.0, CSN426510 WEIGHT: 0.018KG OD: ø9h11 MM LENGTH: 7 MM	<b>Q</b> 54	
683	Mining & Construction	ENGINE	443930131570	VENTILATOR FAN	25	Nos	MATERIAL: CSN 426312 32 WEIGHT: 0.65KG DIAMETER: Ø190±0.3 MM THICKNESS: 1.6 MM		
684	Mining & Construction	ENGINE	130050953684	SPACER WASHER	25	Nos	MATERIAL: CSN 41 331.21, CSN 42 6312.22 WEIGHT: 0.010KG ID: 857 MM THICKNESS: 1 MM	<b>@</b>	
685	Mining & Construction	ENGINE	443936214310	PINION LUBRICATING FELT	25	Nos	MATERIAL: F33, GRADE A WIDTH: 8 MM THICKNESS: 1 MM	23	
686	Mining & Construction	ENGINE	442071080484	CLUTCH SHAFT	25	Nos	ASSEMBLY: 3 PARTS WEIGHT: 6.5KG WIDTH:159.5+0.1 MM	and the state of t	
687	Mining & Construction	ENGINE	442070210984	INTAKE PIPE ADOPTER	25	Nos	ASSEMBLY: 2 PARTS WEIGHT: 0.22KG WIDTH:10-1 MM		

	Priof race Remarks									
	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	
688	Mining & Construction	ENGINE	442053111114	HOSE 22/30-265	25	Nos	MATERIAL: NITRILE RUBBER COLOUR: BLACK ID: ø22 MM LENGTH: 265±2 MM	45-[7]		
689	Mining & Construction	ENGINE	6001816820	ELEMENT ASSY OUTER	10	Nos	Heavy Duty Diesel Engines (105 Dia) Effective Filtration Area: 6.8 m² (38.1WIDTH x439.1 HEIGHT x208 PLEATS Total length 442.15mm			
690	Mining & Construction	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	<b>&amp;</b> —		
691	Mining & Construction	ENGINE	6130321321	GEAR RING	77	Nos	GEAR FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA.) MATERIAL: C1101 NUMBER OF TEETH: 126, ID: 370+0.1mm, THICKNESS: 16+0.2mm			
692	Mining & Construction	ENGINE	6136611130	RING,SNAP	60	Nos	RING (SNAP) FOR HEAV DUTY DIESEL ENGINES(140 BORE DIA.) MATERIAL: JIS SWRH62A, PART IDENDICAL TO KES 04071-00150, RUST PREVENTION TREATMENT: KP-9 COATING OUTER DIA.: 157.5(0 TO + .25) mm, THICKNESS: 4(-0.05 TO 0)mm			
693	Mining & Construction	ENGINE	6136612104	OIL COLLER ASSY	1602		OIL COOLER ASSY FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA.) TYPE: WATER COOLED  COOLER TEMENT: RADIATION AREA 0.253m2, CAPACITY-0.22I. MAX. PITCH LENGTH: 661mm, MAX PITCH WIDTH: 119mm  MATERIAL: COVER BODY-IJSAGC12, PLIUG-SS41B-D, VALVE O.CS45C-D, GASKET- GA-1C, PLUG-O.CSS41B-D, CASE VALVE-ADC10 OR ADC12, PLIUG-S342 OR Eq.  WASHERSIKPHS/PSCCTE q. OR SUPERIOR, WASHER-IIS SWRREG/G7/72 Eq. OR  SUPERIOR, NUT-S43C Eq. OR SUPERIOR, O RING-SR-1, O RING-ES 2316, O RING- NBR-1A			
694	Mining & Construction	ENGINE	6136612281	GASKET	7	Nos	GASKET FOR HEAVY DUTY DIESEL ENGINE MATERIAL: GAF-1A ID:36mm, PITCH: 54mm	2-13 MOLES 33 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25		
695	Mining & Construction	ENGINE	6150111930	GROMMET,OIL	70	Nos	GROMMET FOR HEAVY DUTY DIESEL ENGINES(125 BORE DIA.) MATERIAL: AS PER ES 2332, ID: 13mm, OD: 18mm, THICKNESS: 2.8+0.1mm	, st 1 = 1		
696	Mining & Construction	ENGINE	6150288010	BEARING,MAIN,US 0.50 1 PA	1	Nos	Same for both Upper & Lower Bearing Outer Dia: 116 mm, Radial Thickness: 3.25 mm, Width: 34 mm Specifications of Trimetal Surface layer: Plating of Tim, Lead & Copper alloy P8, thickness 0.02 Alloy Jayer: Material as per KSU 4A of KES 07.472.2, Back metal: Material as per SPCC1			
697	Mining & Construction	ENGINE	6150298010	BEARING,MAIN,US 0.25,1 PA	154		Same for both Upper & Lower Bearing Outer Dia : 116 mm, Radial Thickness :3.125 mm, Width : 34 mm Specifications of Trimetal Surface layer : Plating of Tin, Lead & Copper alloy P8 , thickness 0.02 Alloy layer: Material as per KSU 4A of KES 07.472.2, Back metal: Material as per SPCC1			

#### LIST OF ITEMS FOR INDIGENISATION Brief spec Remarks Cumulative Business Approximate Division Part no Description UoM Photograph SI No. Group Annual requirement Same for both Upper & Lower Bearing Outer Dia: 86 mm (min), Radial Thickness: 2.75 mm, Width: 40 mm Specifications of Trimetal Surface layer : Plating of Tin, Lead & Copper alloy P8 , thickness 0.02 Mining & Alloy layer: Material as per KKJ 4A of KES 07.472.2, ENGINE 6150383040 BEARING, CRANKPIN, US 0.50, Construction Back metal: Material as per SPCC1 Inner Dia: 180 mm, Outer Dia: 193.15 mm, Width: 13.2 mm Material: ES2320 or FS2340 Mining & 6162232250 CREVICE SEAL Construction Inner Dia: 153 mm, Outer Dia: 175 mm, Width: 4.5 mm Material : Back metal : SAE 1017, Bearing Alloy : KLBC 6 3 Mining & 6162268050 BEARING, THRUST, US 1.00 1 S 700 ENGINE Same for both Upper & Lower Bearing Outer Dia: 148.525 mm (min), Radial Thickness: 4.375 mm, Width: 50 mm, Back metal Thickness: 3.75 ~ 4.05 Mining & Material: Bearing Alloy: KKJ 4B of KES 07.472.2, Overlay: ES 1405, 701 ENGINE 6162278010 BEARING, MAIN, ONE PAIR U/S0.75MM Construction Back metal : SAE 1017 Inner Dia: 153 mm, Outer Dia: 175 mm, Width: 4.375 mm, Back metal Thickness: 3.83 ~ 4.03 Material : Back metal : SAE 1017, Bearing Alloy : KLBC 6 3 Mining & 702 6162278050 ENGINE BEARING THRUST USO 75 1 S Construction Same for both Upper & Lower Bearing Outer Dia: 148.525 mm (min), Radial Thickness: 4.25 mm. Width : 50 mm, Back metal Thickness : 3.5 ~ 3.8 Material : Bearing Alloy : KKJ 4B of KES 07.472.2, Overlay : ES 1405, Mining & 703 ENGINE 6162288010 BEARING, MAIN, ONE PAIR U/S 0.50MM Back metal : SAE 1017 Construction Same for both Upper & Lower Bearing Outer Dia : 148.525 mm (min), Radial Thickness : 4.125 mm, Width: 50 mm, Back metal Thickness : 3.5 ~ 3.8 Material 4B of KES 07.472.2, Overlay : ES 1405, Back metal : SAE 1017 Material: Bearing Alloy: KKJ 6162298010 BEARING, MAIN, ONE PAIR U/S 0.25MM NGINE Construction BEARING STD PART NO-51Z3180351(6162-29-8210) MATERIAL: BACK METAL SAE1017, BEARING ALLOY KLBC6B THICKNESS:4.125 OD-Ø175, ID- Ø153 705 NGINE 6162298050 BEARING, THRUST, US 0.25 1 Construction STD PART NO-51Z3100606 (6162-38-3420) DIA-Ø115.013, WIDTH-58±0.1 RADIAL THICKNESS-3.75 FLASH PLATING-Sn, OVERLAY-P9 ALLOY LAYER-LS17, BACK METAL-ES1424 Mining & 6162383041 706 BEARING.CR PIN 1 PAIR.US 0.50MM ENGINE Construction PART CLOSED, EXISTING PART NO-52Z1110036(6162-43-4440) L-65.6, Ø42.1, WIRE DIA-Ø5.5±0.03, Mining & 707 6162434410 ENGINE VALVE SPRING Construction

	LIST OF ITEMS FOR INDIGENISATION  Brief spec Remarks											
	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
708	Mining & Construction	ENGINE	6210218010	MEATL ASSY	3	Nos	STD PART NO-4123180111 (6210-21-8110) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAVER-KIVAB, NICKEL,BACK METAL-SAE1010 WIDTH-40±0.13, DIA-Ø127, RADIAL THICKNESS-3.5	The state of the s				
709	Mining & Construction	ENGINE	6210268050	THRUST BEARING 1.00	2	Nos	STD PART NO-4123180614 (6210-26-8120) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAVER-KLIBGES, NICKEL, BACK METAL-SAE1010 DIA-OD-Ø150.5,ID-Ø132.7, RADIAL THICKNESS-4.5	78 F2 202 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
710	Mining & Construction	ENGINE	6210278050	BEARING,THRUST,U/S 0.75	17	Nos	STD PART NO-4123180605 (6210-27-8210) FLASH PLATING-ES1405, OVERLAY-ES1405 ALLOY LAYER-KLB6CB, BACK METAL-SAE1010 OD-9150.5, In O9132.7 RADIAL THICKNESS-4-375					
711	Mining & Construction	ENGINE	6210288050	THRUST BEARING 0.5	170	Nos	Thickness: 4.250(-0.07, -0.12), Thickness of the back metal: 3.68±0.10, Thickness of oil groove: 3.63±0.15 Material: Back strip-SAE1010, Bearing alloy - KLBC6B, F250	Ert.				
712	Mining & Construction	ENGINE	6210612550	O RING	5	Nos	material- SR-1, ID-26.7±0.45, OD-30.1	The same and the s				
713	Mining & Construction	ENGINE	6210813122	AIR COMPRESSOR	23	Nos	stroke- 85x60, 340 cc/rev at 2300 rpm					
714	Mining & Construction	ENGINE	6210815120	SPACER	25	Nos	material-FC 25 or SS41P					
715	Mining & Construction	ENGINE	6211612111	ELEMENT	25	Nos	surface treatment- C6001-10, length- 340±0.3, width- 100					
716	Mining & Construction	ENGINE	6212113120	NOZZLE	25	Nos	spray angle- 155°, suction volume- 1.5 mm3, lift - 0.5mm, Nozzle hole div- 0.36x6, seat dia- 3, separation- 60° ±3°					
717	Mining & Construction	ENGINE	6212161440	VALVE GUIDE	25	Nos	Material: Tarcalloyte, Tensile Strength : 25.5 kg/mm² Hardness HRB90*103, ID=9.5+0.1, OD = 16 mm, Length = 72.5m, Hardness : 90*103 BHN	- <u></u>				

	<u>EST OF TEMPS FOR INDIGENISATION</u>											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
718	Mining & Construction	ENGINE	6212612111	ELEMENT, OIL COOLER	25	Nos	surface treatment- C6001-10, length- 340±0.3, width- 100					
	Mining & Construction	ENGINE	6212652610	THERMOVALVE	25	Nos	max operating temp- 135°C, valve opening temp- 85°C, valve opening inspection- 85±1.5°C, operating fuel- engine oil	<b>a</b>				
	Mining & Construction	TRUCK	452EG87333	PRESSURE SENDER (0-400 PSI)	143		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					
	Mining & Construction	TRUCK	958EG81829	PRESSURE SENDER (60 BAR)	137		Pressure Range: 0-60 bar Pressure Type: Gauge Pressure Medium: Oil Output Type: Current Output Output Range: 42-DanA Operating Voltage: 10-32 Volt Temperature Range: -40 to 125 deg C Pressure Port: 1/8 inch NPT					
722	Mining & Construction	TRUCK	985EG86913	PRESSURE SENSOR (0-150BAR)	188		Pressure Range: 0-150 har Pressure Type: Gauge Pressure Medium: Oil Output Type: Curren Output Output Range: 4-20mA Operating Voltage: 10-32 Volt Temperature Range: 40 to 125 deg C Pressure Port: M14 X1.5					
	Mining & Construction	TRUCK	991EG82105	SENSOR (PRESSURE)	60		Pressure Range: 0-250 har Pressure Type: Gauge Pressure Medium: Oil Output Type: Curren Output Output Range: 4-20mA Operating Voltage: 10-32 Volt Temperature Range: -40 to 125 deg C Pressure Port: M14 X1.5					
	Mining & Construction	TRUCK	953EG88545	FRONT CAMERA	18	Nos	Operating voltage: 12 volt Operating Temperature: -20 to 70 deg. C Power Consumption: 1.44 W Protection : IP69K					
	Mining & Construction	TRUCK	955EG82539	CABLE CAMARA	18	Nos	Cable Length: 20 mtr The Cable to be Provided with suitable interconnector The cable should be water and dust proof.					
	Mining & Construction	TRUCK	958EG12046	BRACKET (HEAVY DUTY MONITOR MOUNT)	18	Nos	Material: Aluminium Finish: Black Spray The Bracket should capable for heavy duty operation					
	Mining & Construction	TRUCK	931EG81247	HOLE PLUG (DUMMY SWITCH)	25	Nos	The hole plug is used as a dummy switch. Material: FRP or ABS Finish: Black	1.000 pp. 91)  CONTURA VHS CLE PLUG (No wing serialions)				
728	Mining & Construction	TRUCK	931EG81352	MOUNTING PANEL (END UNIT)	68	Nos	The Panel is used to mount single Switch. Material: FRP or ABS Finish: Black					

	LIST OF ITEMS FOR INDIGENISATION  Brief spec											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph	Remarks			
729	Mining & Construction	TRUCK	953EG82542	HOLE PLUG	1252	Nos	The hole plug is used as a dummy switch. Material: FRP or ABS Finish: Black	ANT TO RELEASE AND ANY				
730	Mining & Construction	TRUCK	953EG82559	MOUNTING PANEL WITH 3 HOLES	355	Nos	The Panel is used to mount three switches. Material: FRP or ABS Finish: Black					
731	Mining & Construction	TRUCK	953EG82567	MOUNTING PANEL WITH 6 HOLES	660	Nos	The Panel is used to mount six switches. Material: FRP or ABS Finish: Black					
732	Mining & Construction	TRUCK	953EG83288	BATTERY CUT OFF SWITCH	259	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A LED Illumination: Amber Color	Marie				
733	Mining & Construction	TRUCK	787EG81173	HAZARD LIGHT ROCKER SWITCH	137	Nos	Switch Type: ON-OFF (Double Pole) Termination/Base: .250 (Tab) Contact Rating: 250VAC, 10A	Otv.				
734	Mining & Construction	TRUCK	787EG81181	WIND SHIELD WASHER ROCKER SWITCH	100	Nos	Switch Type: Momentary-ON (Single Pole) Termination/Base: .250 (Tab) Contact Rating: 250VAC, 10A	•				
735	Mining & Construction	TRUCK	931EG81109	MOUNTING PANEL (6 HOUSING)	110	Nos	The Panel is used to mount six switches. Material: FRP or ABS Finish: Black					
736	Mining & Construction	TRUCK	931EG81174	ON-OFF SWITCH (PARKING)	15	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VPC, 15A Color: Red -Actuator Color Black-Flush Bracket					
737	Mining & Construction	TRUCK	953EG82486	DUMP BRAKE SWITCH	38	Nos	Deleted from equipment BOM through ECN. In future this switch is not required.	(2)				
738	Mining & Construction	TRUCK	953EG83263	ROOF LAMP SWITCH	326	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A. Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	COO				

	LIST OF ITEMS FOR INDIGENISATION  Brief spec												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
739	Mining & Construction	TRUCK	953EG83271	WIND SHIELD WASHER SWITCH	399	Nos	Switch Type: (ON)-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	WIND SHELD WASHER					
740	Mining & Construction	TRUCK	953EG83296	FAN SWITCH	326	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	FAN COOCO					
741	Mining & Construction	TRUCK	953EG83303	ENGINE SHUT OFF SWITCH((ON)-OFF)	348	Nos	Switch Type: (ON)-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Red -Actuator Color Black-Flush Bracket LED Illumination: Red Color	DNCME BNCME SWI OF OOOO					
742	Mining & Construction	TRUCK	953EG83311	ENGINE SHUT OFF SWITCH (OFF-ON)	149	Nos	Switch Type: ON-(OFF) Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Red -Actuator Color Black-Flush Bracket LED Illumination: Red Color	ENGNE. SWITOFF					
743	Mining & Construction	TRUCK	953EG83328	PARKING BRAKE SWITCH	193	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Grey-Actuator Color Black-Flush Bracket LED Illumination: Red Color	PREMICE BRACE COOC					
744	Mining & Construction	TRUCK	953EG83352	HEAD LAMP SWITCH	329	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	OOOOO BO HEAD LAMP COOOO					
745	Mining & Construction	TRUCK	953EG83369	FOG LAMP SWITCH	329	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	© C C LIMP					
746	Mining & Construction	TRUCK	953EG83385	WIPER MOTOR SWITCH	399	Nos	Switch Type: (ON)-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED illumination: Amber Color						
747	Mining & Construction	TRUCK	953EG83393	LADDER LIGHT SWITCH	455	Nos	Switch Type: ON-ON Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	LUDDER LUGHT O O O O					

	LIST OF ITEMS FOR INDIGENISATION  Brief spec Remarks											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
748	Mining & Construction	TRUCK	953EG83417	WORK LAMP SWITCH	123	Nos	Switch Type: ON-OFF Termination/Base: 250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	WORK CAMP CO				
749	Mining & Construction	TRUCK	953EG83425	DIFFERENTIAL LOCK SWITCH	70	Nos	Switch Type: ON-OFF Termination/Base: .250 (Tab) Contact Rating: 24VDC, 15A. Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	DIFFERNIAL OOK OOK OOK				
750	Mining & Construction	TRUCK	953EG83433	GAUGE LAMP SWITCH	309	Nos	Switch Type: ON-OFF Termination/Base: 250 (Tab) Contact Rating: 24VDC, 15A Color: Black-Actuator Color Black-Flush Bracket LED Illumination: Amber Color	CALICE LAMP				
751	Mining & Construction	TRUCK	958EG82006	SWITCH (POWER WINDOW)	198	Nos	Switch Type: (ON)-OFF-(ON) Termination/Base: .250 (Tab) Contact Rating: 24VDC, ISA Color: Grey-Actuator Color Black-Flush Bracket					
752	Mining & Construction	TRUCK	985EG81883	CIRCUIT BREAKER - 5A	2957	Nos	Operating Voltage: 18 to 32V Current Rating: 5 Amp Operating Temperature: -40 to 85 deg C					
753	Mining & Construction	TRUCK	985EG81912	CIRCUIT BREAKER, 20A.CLB-103-1182N-R-F/20	1055	Nos	Operating Voltage: 18 to 32V Current Rating: 20 Amp Operating Temperature: -40 to 85 deg C	Carlotte				
754	Mining & Construction	TRUCK	991EG82268	SWITCH MOUNT HOUSING (SINGLE HOUSING)	106	Nos	The Panel is used to mount single Switch. Material: FRP or ABS Finish: Black					
755	Mining & Construction	TRUCK	451EGB0096	KIT, DISPLAY AND CONTROLLER(COBO)	50	Nos	This system is an alternate source for Murphy dash board system					
756	Mining & Construction	TRUCK	787EGB0147	KIT, DISPLAY AND CONTROLLER(COBO)	50	Nos	Contact division for technical clarifications					
757	Mining & Construction	TRUCK	958EGB0227	KIT, ROCKER SWITCHES (COBO)	130	Nos	These switches are alternate source for carlingtech switches					
758	Mining & Construction	TRUCK	787EG81084	LED LAMP RED	591	Nos	Operating Voltage: 10 to 32V Operating Temperature: -40 to 85 deg C Lens: Red Color					

	LIST OF ITEMS FOR INDIGENISATION    Brief spec   Remarks												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
759	Mining & Construction	TRUCK	787EG81092	LED LAMP YELLOW	1136	Nos	Operating Voltage: 10 to 32V Operating Temperature: -40 to 85 deg C Lens : Amber Color						
760	Mining & Construction	TRUCK	953EG81287	BATTERY CUTOFF SWITCH	192	Nos	Switch Type: OFF-ON Intermitent Current: 2000Amp Continuous Current: 300 A Terminal: 2 No. 1/2*-20 Copper stud Case: Plated Steel						
761	Mining & Construction	TRUCK	958EG83506	TERMINAL BLOCK (20 POINTS)	227	Nos	Number of Terminal: 20 Material: Tin Plated Brass Current withstanding capacity : 150A	**************************************					
762	Mining & Construction	TRUCK	953EG87979	SOLID STATE ELECTRONIC FLASHER	264	Nos	Input Voltage: 9-32V Minimum Operating current: .01 Amps Current: 12 Amp Temperature Range: -20 to 85 deg C						
763	Mining & Construction	TRUCK	451EG03337	PV450 DISPLAY UNIT	53		Display Specification: Display 4.3"  Resolution: WVGA, 480 x 272pixels Flash memory: 256MB  RAM: 128MPytes SDRAM  USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IPF Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: 1393, MMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113						
764	Mining & Construction	TRUCK	451EG03345	ME CAN PLUS(MURPHY )	50	Nos	Deleted from equipment BOM through ECN. In future not required.						
	Mining & Construction	TRUCK	451EG03353	ME CAN(MURPHY)	53	Nos	Controller Specification: Operating Voltage: 7-35VDC Operating Temperature: -20 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: 4406 in 3 Axis Protocols: J1939 CAN protocol	MCGE (E					
766	Mining & Construction	TRUCK	451EG82775	PRESSURE SENDER (0-100 PSI)	53	Nos	Pressure Range: 0-100 PSI Output : 240 to 73 ohm Thread Size: 1/8" NPT						
767	Mining & Construction	TRUCK	451EG83399	Me Can Plus(1905)	51	Nos	Controller Specification: Operating Femperature: 20 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1333 CAN protocol						

	LIST OF ITEMS FOR INDIGENISATION    Brief spec   Remarks												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
768	Mining & Construction	TRUCK	452EG02829	2-WIRE TEMP SENDER	401	Nos	Type: 2 Wire sensor Temperature Range: 40 to 150 deg C Output: 1202 to 40 Ohm Thread: 1/2" NPT						
769	Mining & Construction	TRUCK	953EG82267	TEMPERATURE SENDER UNIT (MURPHY)	261	Nos	Type: 2 Wire sensor Temperature Range: 40 to 150 deg C Output: 1029 to 40 Ohm Thread: M16 X 1.5						
	Mining & Construction	TRUCK	T007298522105	USB TO PORT C Cable	9	Nos	Cable is used to Upload the Software to LCD display and to Download the stored fault through Pen Drive						
	Mining & Construction	TRUCK	T007298522205	USB TO CAN CONVERTOR CABLE	14	Nos	The CAN Convertor Cable provide interface between I/o Module and Laptop.     The Cable is used to download the .Hex file and Config file to the I/O Module.     The Cable is used to monitor real time data and also used to record the data.						
772	Mining & Construction	TRUCK	452EG02809	I/O MODULE	17	Nos	Controller Specification: Operating Voltage: 8-36/VDC Operating Temperature: -40 to +85 oC Protection: 1967 Vibration: Random Vibration 5 Grms, 3 Axis Shock: -400 in 3 Axis Protocols: 11939 CAN protocol	C) Seed					
	Mining & Construction	TRUCK	452EG03246	MURPHY I/O UNIT (ELEC ENGINE&MECH TRAN)	17	Nos	Controller Specification: Operating Femperature: 40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol	O bere					
774	Mining & Construction	TRUCK	452EG03368	PV 780 DISPLAY	17	Nos	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN, high (yellow wire) and CAN low (green wire). If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbytes SRAM USB: 2.0 host USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IPG7 Vibration: Random Vibration 7.8 G Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: 11939, MMEA2000(GPS), CAN Open, Free Form CAN Emission: SAE J1113						

	LIST OF TILINIS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
775	Mining & Construction	TRUCK	452EG03376	DISPLAY UNIT(MURPHY PV 780)	17	Nos	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN, high (yellow wire) and CAN low (green wire).If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification: Display 7:" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbyles SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: £50G in 3 Axis Protocols: 11339, NMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113					
776	Mining & Construction	TRUCK	931EG02603	I/O MODULE	5	Nos	Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: 40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: 11393 CAN protocol	O bend mare				
777	Mining & Construction	TRUCK	938EG02315	PV 780 DISPLAY UNIT (QST30C)	10	Nos	Centralized dashboard system which continuously montor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN, high (yellow wire) and CAN low (green wire). If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification: Display 7:" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128MPyles SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis Protocols: 13939, MMEA2000[GPS], CAN Open, Free Form CAN Emission: SAE J1113					
778	Mining & Construction	TRUCK	938EG02331	VO MODULE (MURPHY)	10		Controller Specification: Operating Yeltage: 8-36/D/C Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1939 CAN protocol	O bond				
779	Mining & Construction	TRUCK	953EG02587	I/O MODULE	31	Nos	Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: 180 Protection: 180 Vibration: Random Vibration 5 Grms, 3 Axis Shock: 4406 in 3 Axis Protocols: J1939 CAN protocol	C bend				
780	Mining & Construction	TRUCK	953EG04369	PV 780 DISPLAY	6	Nos	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN, high (yellow wire) and CAN low (green wire). If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification: Display 7:" Resolution: WVGA, 800 x 480pixels Flash memory: 2GB RAM: 128Mbyles SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 7.86 Grms, 3 Axis Shock: ±50G in 3 Axis					

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
781	Mining & Construction	TRUCK	958EG02034	I/O MODULE(MURPHY)	97	Nos	Controller Specification: Operating Voltage: 8-36VDC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: 11393 CAN protocol	C bend				
782	Mining & Construction	TRUCK	958EG02042	I/O MODULE(MECH ENGIN & ELECT TRANS)	40	Nos	Controller Specification: Operating Ventage: 8-36/DC Operating Temperature: -40 to +85 oC Protection: IP67 Vibration: Random Vibration 5 Grms, 3 Axis Shock: ±40G in 3 Axis Protocols: J1339 CAN protocol	O bend				
783	Mining & Construction	TRUCK	958EG02245	PV 780 DISPLAY (QSK19C)	97	Nos	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wife system CAN, high (yellow wire) and CAN low (freen wire). If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification: Display?  The system of the system CAN System of the system of t					
784	Mining & Construction	TRUCK	958EG02253	PV 780 DISPLAY (KTTA19C)	40	Nos	Centralized dashboard system which continuously monitor all the parameter of the equipment. The system is based on CAN(Controller Area Network) technology, which is two wire system CAN_high (yellow wire) and CAN low (green wire). If any parameter crosses it specified limit it will alert the operator by visual and audio indication.  Display Specification: Display: 7" Resolution: WVGA, 800 x 480pixels Flash memory. 2GB RAM: 128Mbytes SRAM USB: 2.0 host Operating Voltage: 6-36VDC Operating Voltage: 6-36VDC Operating Temperature: -40 to +85 oC Protection: 180 Slock: ±506 in 3 Avis Protocols: 13939, MMEA2000(GPS), CAN Open, Free Form CAN Emission: SAE III13					
785	Mining & Construction	TRUCK	953EG83482	LED ROOF LAMP	322	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					
786	Mining & Construction	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.					
787	Mining & Construction	TRUCK	5610661510	SWITCH	192	Nos	This relay is used to supply the battery power to steering motor in case of failure of hydroalic pump. Voltage: 24 V DC Rated Current: 1500 A Operating Temperature: -50 to 60 deg C					

						LIST O	F ITEMS FOR INDIGENISATION		
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks
788	Mining & Construction	TRUCK	955RC03398	POWER WINDOW LH	205	Nos	Power window Motor: 24V DC Motor.  Power window motor to be supplied with linkages and cable drive		
789	Mining & Construction	TRUCK	953EG03404	EMERGENCY STEERING MOTOR ASSY.	161	Nos	Emergency Steering Motor is used to supply the auxiliary power to the steering unt 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: 8 Revolution Direction: Clockwise Duty Cycle: 90 Sec for Continuous operation.		
790	Mining & Construction	TRUCK	992EG03128	HID (FOG LAMP)	16	Nos	Voltage: 24 V DC Input current: 1.5A Lens: Yellow , Clear Lens Bulb: 35W D15 IP Rating: IP68 Operating Temperature: -40 to 85 deg C Color Temperature: -4250K		
	Mining & Construction	TRUCK	938EG03036	HEAD LAMP (HID LOW BEAM)	44	Nos	Voltage: 24 V DC Input current: 1.5A Lens: Low Beam Bulb: 35W D15 IP Rating: IP68 Operating Temperature: - 40 to 85 deg C Color Temperature: 4250K		
	Mining & Construction	TRUCK	938EG03044	HEAD LAMP (HID HIGH BEAM)	44	Nos	Voltage: 24 V DC Input current: 1.5A Lens: High beam Bulb: 35W D1S IP Rating: IP68 Operating Temperature: -40 to 85 deg C Color Temperature: 4250K		
	Mining & Construction	TRUCK	985EG02997	HEAD LAMP (RECTANGULAR SHAPE)	1042	Nos	Voltage: 24 V DC Lens: White, Clear lens Bulb: 70W IP Rating: IP68 Operating Temperature: -40 to 85 deg C		
794	Mining & Construction	TRUCK	985EG03522	FOG LAMP (RECTANGULAR SHAPE)	386	Nos	Voltage: 24 V DC Lens: Yellow, Clear lens Bulb: 70W IP Rating: IP68 Operating Temperature: -40 to 85 deg C		
	Mining & Construction	TRUCK	985EG03563	HEAD LAMP (WITH HIGH BEAM LENS)	450	Nos	Voltage: 24 V DC Lens: High Beam Pattern Bulb: 70W IP Rating: IP68 Operating Temperature: -40 to 85 deg C		
796	Mining & Construction	TRUCK	2370615250	SWITCH	554	Nos	This Positive cut off battery relay is used ot cut off the battery when key switch is in off condition Voltage: 24 V DC Operating Current: 100 A Instantenous Current: 1000A IP Rating: IP68 Operating Temperature: -40 to 85 deg C		

LIST OF ITEMS FOR INDIGENISATION	1
----------------------------------	---

Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
	Mining & Construction	TRUCK	953EGB0074	Collision Avoidence 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 Shock: 25G 3 Axis Operating Characteristics: Maximum Range: 32 feet (10m) Programmable Ranges: 10 to 32 feet (3m to 10m) Warning Ranges: 52 rones divided into programmed range Minimum Resolution: 1 foot Note; The usage of device on equipment is certified by department of telecommunication government of India	Proview				
	Mining & Construction	TRUCK	452EG87341	FUEL LEVEL SENSOR	17	Nos	Float Length:13-1/4" ± 1/8" Output: 0- 90 Ohm Temperature: -30 to 60 deg					
	Mining & Construction	TRUCK	882300000122	FUEL GAUGE AND DIAL (VZ 0796/VZ 0797)	100	Nos	Deleted from BOM through ECN. Future not required.					
800	Mining & Construction	TRUCK	953FL02034	TWIN SITE FUEL LEVEL GAUGE ASSY	49	Nos	Float Length: 447±3 mm Float angle: 150 deg Output : Twin Site 0-90 Ohm					
	Mining & Construction	TRUCK	958EG82533	TWIN SITE FUEL LEVEL SENSOR(6243S00029N)	137	Nos	Float Length: 381 mm Float angle: 150 deg Output : Twin Site 0-90 Ohm					
	Mining & Construction	TRUCK	955EG11241	SWITCH	152	Nos	Pressure Port: 9/16"-18 UNF Switch Type: SPST NC Set Point: 1800 PSI Max Operating Pressure: 4500 PSI Operating Temperature: -30 to 120 deg C Media: Oil Protection: IP65	=====				
	Mining & Construction	TRUCK	985EG91798	LED WHITE	1117	Nos	Type: BA9S LED Bulb Emitting Color: White Operating Voltage: 24V DC					
	Mining & Construction	TRUCK	985AS02698	LOW PRESSURE SWITCH (5629711140)	147	Nos	Pressure Port: PT 1/4" Switch Type: SPST NC Set Point: 75±5 PSI Operating Temperature: -50 to 70 deg C Media: Penumatic Protection: IP65	12				

	LIST OF ITEMS FOR INDIGENISATION											
	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
805	Mining & Construction	TRUCK	985A502705	STOP LIGHT SWITCH (5610661220)	183	Nos	Pressure Port: PT 1/4" Switch Type: SPST NO					
806	Mining & Construction	TRUCK	931EG02588	SENSOR (TRANS OIL TEMP) (0501 322 534)	12	Nos	Nominal Voltage: 6-24V DC Operating Current : 1< 0.1A Operating Temperature: - 30 to 150 deg C Resistance Values: 1152 to 18.7 Ohm					
807	Mining & Construction	TRUCK	931EG81563	CONNECTOR (TOT SENSOR) (6029 199 003)	44	Nos	Use to connector TOT sensor to the Harness					
808	Mining & Construction	TRUCK	955AC02151	COMPRESSOR	183	Nos	Yoltage: 24V Mount: Far Clutch: 6 1/4" (158mm) Variable 1 Groove					
809	Mining & Construction	TRUCK	985AC02216	CONDENSER	7	Nos	Multi Flow: Constructed with 0.0051 inch thick zinc coated cross flow tubes. Fin spacing is 14 fins per inch. Four pass design.  Overall width: 36 3/16", Fin width: 33 3/4", Height: 11 1/8", Thickness: 1 1/8"					
810	Mining & Construction	TRUCK	959AC02088	CONDENSER	36	Nos	Multi Flow: Constructed with 0.0051 inch thick zinc coated cross flow tubes. Fin spacing is 14 fins per inch. Four pass design.  Overall width, 25 3/4"  Fin width: 24" Height: 10 3/4"  Thickness: 1"					
811	Mining & Construction	TRUCK	959AC02055	2.5" Flush mount ball louvers	86	Nos	Ball louvers with 2 1/2" Hose Adaptor. 100% shut off					
812	Mining & Construction	TRUCK	959AC02169	2.5" Defrost Hose	86	Nos	2 1/2" Defrost Hose (9 ft)					
813	Mining & Construction	TRUCK	953AC72286	3" hose	288	Nos	3" Defrost Hose (9 ft)					
814	Mining & Construction	TRUCK	778AC02148	AC / HEATER UNIT (BACK WALL)	147	Nos	BTU_28000 BTU/HR AIR Flow; 320 CFM (540 C.M/Hr) WEIGHT: 47 lbs/ 21 Kgs MOTORS: Three speed-double shaft motor with 2 blowers CURRENT DRAWN: 8.9 Amps @ 27.2 DC for the blower motor plus 2 amps for compressor clutch CONTROLS: AC switch, fan speed switch, fresh air control switch Refrigerent: R-134a TOTAL QUANTITY OF REFRIGERENT: 1.2 Kgs and 1.5 Kgs	3				
815	Mining & Construction	TRUCK	959AC02071	AC / HEATER UNIT (FRONT WALL)	36	Nos	BTU (HEATING): 33400 BTU/HR AIR Flow: 405 CFM WEIGHT: 25 Kgs MOTORS: Three speed-double shaft motor with 2 blowers MAX. CURRENT: 9-9A for the units Refrigerent: R-134a					

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
816	Mining & Construction	TRUCK	955H502961	Hoist Control Valve Assembly	137	Nos	Pilot operated spool type control valve used in holst circuit. This is located between holst cylinders and hydraulic pump. This is used to acleve the function of Holst, Lower, hold and float condition. Valve has inbuilt relief valves.  Specification: Flow through control valve: 356 pm Operating pressure: 2750 psi MaxPilot pressure: 150 psi Oil: (C4 SAE 30 Operating Temp: -28.9°C~93.3°C Main relief valve set at: 2750:55 psi @ 90 gpm Leakager psool-@ all ports 78cc/min Load check-@ all ports 492cc/min						
817	Mining & Construction	TRUCK	PBS049	Overcenter assembly	137	Nos	Over center valve/counter balance valve is used to control the movement of the body during over center condition i.e., when the center of gravity of the dump body and load shifts behind the hoist body pivot pin.  Specification  Pressure Setting: 70-280 bar with 0.3 bar check Standard setting: 210 bar Seal Material : BUNA N Capacity : 60 gpm Pilot Ratio : 3:1 Ports; Port 1 & 2:1-5/16"-12 UNF Port 3 : 9/16"-18 UNF						
818	Mining & Construction	TRUCK	PBS341	Check Valve	137	Nos	Check Valve with Orifice in Poppet:  An In-line style check valve intended for blocking fluid flow Flow from (2) to (1) is blocked with a spring bias to assist in Static and low load conditions. Flow from (1) to (2) is allowed with a standard crack pressure 073-5 psi. Specification: Operating pressure : 3500 psi Standard crack pressure :3-5 psi Temperature range : 250° F to -40° F Inlet Port : 1.312-12 UN 37° JIC Maile thread Outlet Port : 1.312-12 UN 37° JIC Female thread	O LONG CE					
819	Mining & Construction	TRUCK	PB8338	Check Valve	137	Nos	An in-line style, poppet type check valve intended for blocking fluid flow.  Flow from (2) to (3) is blocked with a spring bias to assist in static and low load conditions.  Flow from (1) to (2) is allowed with a standard crack pressure Of 3-5 psi Specification:  Operating pressure 3500 psi Standard crack pressure 3-5 psi Temperature range 250° F to -40° F  Features  Includes o-ring.  Special crack pressures available upon request.  Hydraulic Dis- general.  Bolt pattern for sae standard pressure (code 61).  Low pressure drop.  No internal packings.  Low internal leakage, 5 dpm.  Aluminum body and steel poppet	310 315 315 315 315 315 315 315 315 315 315					
820	Mining & Construction	TRUCK	PC0894	Seal Assembly	274	Nos	Seals provide protection for internal working components like bearings and gears in abrasive applications and permit the use of oil as a lubricant instead of grease resulting in less friction and longer life. In most applications, the lubricant installed at the factory is permanent with no periodic lubrication or adjustment required.  Specification:  Oing Material : FKM - Black Hardness : 35°65 Short A A Temperature range : -25°C ~ +120°C Operating Speed : 4 m/s	EX. FRENCH PRISES					

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
821	Mining & Construction	TRUCK	TA8404	Seal Assembly	274	Nos	CHEMICAL COMPOSITION (B)	ATT AND ADDRESS OF THE PARTY OF				
822	Mining & Construction	TRUCK	PB3014	Bushing - Extended Race	274	Nos	This Bush is used in mounting of PANHARD ROD to CENTRE CASE of rear axie assembly <u>Specification:</u> Refer M/s. RBC Bearings part no.B44-EL					
	Mining & Construction	TRUCK	PB3060	Split Outer Race	822	Nos	This outer race is used for mounting of BALL STUD to TIE ROD in Tie rod assembly.  Specification:  Refer M/s. RBC Bearings part no.B24-9L-36					
824	Mining & Construction	TRUCK	WA3051/955HS61435	O Ring	192	Nos	This o ring is used in Pressure line of hydraulic system  Specification: ID 7.6 mm c/s: 1.05mm  Synthetic rubber: BUNA-N Compound  Temperature: -40°F ~ 250° F  Shore A: 9025  Should conform to SAE J515	0				
825	Mining & Construction	TRUCK	VI.2993	NUT	274	Nos	LOCK NUT-GRADE -C, LINC THREAD Proof Stress: 150000 psi Rockwell Hardness 26"> Rockwell Har					
	Mining & Construction	TRUCK	766WT12016	TYRE	30	Nos	Radial Tyre 24 R 35 E4 ** Rock Deep Thread with O ring					
827	Mining & Construction	TRUCK					REQUIREMENTS:  1. CABIN VOLUME: 3478871200 mm3  2. NO OF PERSONS IN THE CABIN: 2  AC Systems are much like a mother, who uses a sponge to soak up milk from a spilled glass. She soaks it up and then wrings the milk out of the sponge and into the sink. Similarly, an AC system soaks up heat in the cab using evaporation and then squeezes the heat into the outside air using condensation.	Copperate Cher				
828	Mining & Construction	TRUCK			1) 147		Air conditioners have two basic layouts: the expansion valve system and the accumulator system. AC primarily uses the expansion valve system With five basic					
829	Mining & Construction	TRUCK	L)778AC02148 2)955AC02151 B)778AC02131	AC KIT WITH HEATER OPTION	2) 183 3) 140	Nos	components  1. Expansion device: A restriction in the liquid line of the system, purposely designed to cause a pressure drop.					
	Mining & Construction	TRUCK	4)955AC02321		4) 148		designed to cause a pressure crop.  2. Evaporator: A device that removes heat from the cab air by exchanging it into boiling refrigerant.	0				
831	Mining & Construction	TRUCK	1				3. Compressor: Provides the mechanical energy to move refrigerant and manipulate pressures. This is the heart of the system.	8.9				
832	Mining & Construction	TRUCK					4. Condenser: Designed to exchange heat from the refrigerant to the outside air. Similar to the evaporator.	ser •0				

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
833	Mining & Construction	TRUCK					Drier Filter Device: A storage container for extra refrigerant that usually contains a drying agent called desiccant and a filter to screen out contaminants.	day a				
834	Mining & Construction	TRUCK	959PD10833	Cap screw 5/8 UNF 18 TPI	168	Nos	MATERIAL: En19/En24 TO BS:970-1983.  ASTM GRAIN SIZE NO. 5-8 OR EQUIVALENT AS PER IS:2853-1964. INCLISION RATING SHALL BE LESS THAN SEVERITY LEVEL 3  (THIN AND THICK) OF IS: 4163-1982.  MACHINICAL PROPERTIES:  a. TENSILE STRENGTH (STRESS) MIN. 105 kg/mm² b. YELD POINT 30 kg/mm² c. PROOF LOAD (STRESS) MIN. 85 kg/mm² d. IMPACT STRENGHT 7 kg/mm²  HEAT TREATMENT: a. HARDEN & TEMPER TO 32~38 Rc. b. THE THERALM MUST BE SUBJECTED TO THE COLD FORMING AFTER THE HEAT TREATMENT.	16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
835	Mining & Construction	TRUCK	985BR15219	PLATE	3014	Nos	SPUR — GEAR  GEAR TOOTH PROFILE STANDARD  TOOL MODULE -3  PRESSURE ANGLE 14.5°  No. OF TEETH 226  STD. PITCH CIRCLE DUAMETER 2  STD. PITCH CIRCLE DUAMETER 2  STD. PITCH CIRCLE DUAMETER 2  CROWNING — 172.44—8.19(19)  CROWNING — ()	100 mm m m m m m m m m m m m m m m m m m				
836	Mining & Construction	TRUCK	985BR95223	DAMPER ASSY.	548	Nos	SPUR - GEAR  GEAR TOOTH PROPILE STANDARD  TOOTH PROPILE FULL DEPTH TOOTH  MODULE 3  NO. OF THE SESSURE ANGLE 14.57  NO. OF THE SESSURE ANGLE 14.57  STD. PITCH CIRCLE DIA 220,000  AMOUNT OF SHIFT					
837	Mining & Construction	TRUCK	985BR95248	DISC	3288	Nos	CEAR TOOTH FORM STANDARD  TOOL TOOTH FORM FULL DEPTH TOOTH  MODULE 3 PRESSURE ANGLE 14.5  No. OF TEETH 198.000  AMOUNT OF ADDITIONAL MODIFICATION OF TEETH 198.000  AMOUNT OF ADDITIONAL MODIFICATION OF TEETH 198.000  ACCURACY CLASS TO THE TOOTH TOOTH 198.000  ACCURACY CLASS TO TOOTH					

	LIST OF ITEMS FOR INDIGENISATION												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
838	Mining & Construction	TRUCK	985EC02297	CUSHION	98	Nos	SHAPE AND DIMENSIONS ARE IDENTICAL TO 561-61-21500 \( \triangle \)  OPPORTION SHALL BE COLATED WITH KES 07-609-4. URA(URETHENE)  HARDNESS OF RUBBER 50:5 HS (REF)  SPRING CONSTANT — AXIA DIRECTION (STATIC) 100:15 Kigs/mim.  RADIAL DIRECTION (STATIC) 1800:270 Kigs/mim.  ALLOWARLE LOAD — AXIAL DIRECTION 250 Kigs/mim.  RADIAL DIRECTION 800 Kigs/mim.						
839	Mining & Construction	TRUCK	985AS02608	BRAKE CHAMBER ASSY	156	Nos	CHARACTERISTIC  1. HAS OPERATING AIR PRESSURE 1825/cm² 1.2 AIR CYLINDER PRESSURE 1825/cm² 1.4 AIR CYLINDER PRESSURE 1805/cm² 1.5 AIR CYLINDER PRESSURE 1805/cm² 1.5 AIR CYLINDER PRESSURE 1805/cm² 1.6 AIR CYLINDER PRESSURE 1800 CLCAT STROKE 97) 1.7 APPLICATION OIL EMBINE OIL HIDW OR H 30 CCAT 1.8 OPERATION OIL EMBINE OIL HIDW OR H 30 CCAT 1.8 OPERATION OIL EMBINE OIL HIDW OR H 30 CCAT 1.8 OPERATE FULL TERROR TERROR THE CATE OF THE FUEL OIL THE F						
840	Mining & Construction	TRUCK	985AS02616	REAR BRAKE CHAMBER	156	Nos	CHARACTERISTIC OF ASSEMBLY  2.1 MAN. STENSING AIR PRESSURE 9 \$5.70 m²  2.1 MAN. STENSING AIR PRESSURE 9 \$2.00  2.2 STROKE 9 \$1.00  2.4 PRESSURE PROOF OF AIR CILINDER 15 \$3/0 m²  2.5 BIANETER OF MASTER CILINDER 15 \$3/0 m²  2.5 BIANETER OF MASTER CILINDER 15 \$3/0 m²  2.6 OFFERTING FENTEATURE BANGE -30°C ~ 10°C C  2.7 OFFERTING FENTEATURE BANGE -30°C ~ 10°C C  2.9 PRESSURE PROOF OF MASTER CILINDER 31°C SAFOR MIN  2.10 AIR TIGHT NESS GE AT 8 \$3/0 m² AIR PRESSURE AIR SAFOR S						
841	Mining & Construction	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						
842	Mining & Construction	TRUCK	452AC02467	A/CINSTALLATION KIT	12	Nos	Roof top AC is placed at the top of the cabin. It houses condensor, blower, expansionvalve etc in the single unit.  Specification BTU'S Heating – 45,000 BTU/Hr @ 100°F (13.2 kW @ 37.8°C) air temp. rise Cooling – 25,000 BTU/Hr with 36°F (7.3 kW with 2.2°C) refrigerant temp. and 80°F (26.7°C) wet bub entering air AIR FLOW 355 CFM (580 m3/h) WEIGHT 65 libs.  MOTORS Evaporator – One 12 VDC, three speed (24 VDC available) Condenser – One 12 VDC wp rofile (24 VDC available) CURRENT 38.2 amps @ 13.6 VDC (includes 4 amps for A/C clutch) DRAW 19.1 amps @ 27.2 VDC (includes 2 amps for A/C clutch)						

			LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks					
843	Mining & Construction	TRUCK	451TM02068	TRANSMISSION ASSY.	50	Nos	The Transmission is coupled with engine diretly using flex plates. The Transmission is having inbuit oil pump and filter for circulation and purification of transmission oil.  Specification: Type - Power Shift Electro Hydraulic type Drop - 540mm, Engine Connection - Direct mounting, Flywheel housing type - SAE 3, No. of gears - 6 F / 3 R.  Transmission driven PTO - 2 nos. (SAE C Type & SAE B Type) Operating Pressure - 18 bar (Max.)							
844	Mining & Construction	TRUCK	931TM02014	TRANSMISSION ASSY.	50	NOS	The Transmission is coupled with engine diretly using flex plates. The Transmission is having inbuit oil pump and filter for circulation and purification of transmission oil.  Specification:- Type - Power Shift Electro Hydraulic type Drop - S00mm, Engine Connection - Direct mounting, Flywheel housing type - SAE 3, No. of gears - 6 F / 3 R.  Transmission driven PTO - 1 no. (SAE C Type) Operating Pressure - 18 bar (Max.)							
845	Mining & Construction	TRUCK	931AXB0024		10		Part of Tandem Axle to part no. 931AX02018 (M/s. Oerlikon Graziano, Itlay) Seal Kit used to arrest the external dust entering inside the tandem axle.							
846	Mining & Construction	TRUCK	931AX12613	SEAL KIT & LIP SEALS	10	Nos								
847	Mining & Construction	TRUCK	931AX12727		10									
848	Mining & Construction	TRUCK	2322251740	BUSHING	273	Nos	Item CHARACTERISTICS 1)Specific gravity 1.3 to 1.4 2) Tensiles strength 1000kg/cm3 or more 3)Bending strength 1000kg/cm3 or more 4) Compression strength 2000kg/cm3 or more with 200 notice in the second of the							
849	Mining & Construction	TRUCK	2322352151	CHAIN	280	Nos	Used in BG 605 Equipment in Tandem Axle Material and heat treatment 1. Indix: -SAE 1050- quench & temper 39-45 hrc 2. Bush: -15 cr3 gas carburise, quench & temper 3. Follow - Surface hardness 55/60 hr 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 break strength 7.7500 kg or more 7. Minimum break							

## LIST OF ITEMS FOR INDIGENISATION

	<u> </u>											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
	Mining & Construction	TRUCK	2352711280	BEARING	34	Nos	Used in BG 825 Motor grader king pin thrust bearing.  Case:- Carbon Steel Phospate 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 Steel Ball:-61-66 HRC, No of Balls:- 20 Standard Static Rated Load:- 14200 kg					
851	Mining & Construction	TRUCK	2352711581	BUSHING	34	Nos	Used in Leaning system cylinder, in the asle.  Material:- STKM 174, PS2C Case Depth 1-2 mm					
852	Mining & Construction	TRUCK	2357015920	DISC	100	Nos	Assembled in Circle Reverse gear and acts as slip plate	0				
	Mining & Construction	TRUCK	451SC02071	SHAFT	10	Nos	Used in BG 605 I and BG 605A Motor Grader for scarifier application. Used to lift and drop the scarifier attachment					
854	Mining & Construction	TRUCK	451SC02096	ARM	10	Nos	Used in BG 605 I and BG 605A Motor Grader for scarifier application. Used to lift and drop the scarifier attachment					
855	Mining & Construction	TRUCK	451WA41148	SIDE EDGE	106	Nos	t is Part of Working System Assy to part no. 451wa01003 Supplied by 1) M/s. USCO SP.A, Itlay 2) M/s. USG Product (FE) PTE Ltd, Singapore) 3) Crown Parts & Machine Inc, USA. Specification: Curve length is 481.8mm x 156 x 15.9 t	Sortion				
856	Mining & Construction	TRUCK	2354411920	Solenid Valve Assy	17	Nos	Nominal Voltage: 20-30V DC Fluid: Air Maximum Operating Press.:9 bar Operating Temperature: -20 to 65 deg C Port: 1/4° PT	ZZ MM NO may normal y cleaner				
857	Mining & Construction	TRUCK	2354411930	VALVE	17	Nos	Nominal Voltage: 20-30V DC Fluid: Air Maximum Operating Press.:9 bar Operating Temperature: -20 to 65 deg C Port: 1/4" PT	32 way normally closed				

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks			
858	Mining & Construction	TRUCK	4250611150	VALVE	17		Specification:  1) Rated Voltage :-24 V DC 2) Applicable Voltage Range:- 20-30 V DC 3) Applicable Pressure Range:- 3 kg/cm2-9kg/cm2 4) Applicable Tempartaure Range:30 Deg C to 80 Deg C 5) Holding Temperature Range:30 Deg C to 80 Deg C	3.2 way normally closed				
859	Rail & Metro	BANGALORE COMPLEX	94282001	AIR SPRING, ASS'Y	576		750 VDC THIRD RAIL CURRENT COLLECTION SYSTEM RH TYPE WITH CAST IRON SHOE, F. FUSE AND BRACKET, HIGH POWER CABLE BETWEEN COLLECTOR SHOE TO FUSE BOX, AND ALL MISCELLANDOUS (MALE & FRAMALE CONNECTOR, PIN, SOCKET AND HARDWARE FOR INSTALLATION) PTS No: GR/TD/3499 Rev 1 dated 17.02.17					
860	Rail & Metro	BANGALORE COMPLEX	5558303501	APPLICATOR LH	288		750 VDC THIRD RAIL CURRENT COLLECTION SYSTEM LH TYPE WITH CAST IRON SHOE FUSE AND BRACKET, HIGH POWER CABLE BETWEEN COLLECTOR SHOE TO FUSE BOX AND ALL MISCELLANGOUS (MALE & FRAMLE CONNECTOR, PIN, SOCKET AND HARDWARE FOR INSTALLATION) PTS No: GR/TD/3499 Rev 1 dated 17.02.17		Si No. 860 to 861 " APPLICATOR ITEMS" to be indigenized from same source			
861	Rail & Metro	BANGALORE COMPLEX	5558303502	APPLICATOR RH	288	Nos	MANUAL HAND LEVER FOR CCD AS PER PTS:GR/TD/3499					
862	Rail & Metro	BANGALORE COMPLEX	55583034	ANTI-ROLL BAR ROD	576	Nos	STINGER CONNECTOR MALE WITH BOX( PIN HOUSED IN BOX ALONG WITH GLAND, LUG S & OTHER ACCESSORIES) AS PER PTS:GR/TD/3499	0				
863	Rail & Metro	BANGALORE COMPLEX	R107919000	SR 911 GREY (300 ML TUBE)	8880	Nos	STINGER CONNECTOR FEMALE (WITH COVER AND DUMMY PLUG) AS PER PTS:GR/TD/3499	SR 911 Statis 				
864	Rail & Metro	BANGALORE COMPLEX	R601181100	SABATACK 760 XXL	7680	Nos	LED BASED SALOON LIGHT (1302MM) FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481		SI No. 864 to 865 " CLEANING AGENTS" to be indigenized from same source			
865	Rail & Metro	BANGALORE COMPLEX	R601181200	SABACLEAN 48	57.6	Nos	LED BASED SALOON LIGHT (690MM) FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481					
866	Rail & Metro	BANGALORE COMPLEX	94214005	SALOON TO CAB DOOR ASSY	48	SET	GANGWAY LIGHT-LED FOR KMRCL-RS (3R) PROJECT AS PER PTS GR/TD/3481		SI No. 866 to 871 " CAB DOOR ASSEMBLY ITEMS" to be indigenized from same source			

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

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

	LIST OF ITEMS FOR INDIGENISATION  Brief cage  Remarks												
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks				
895	Rail & Metro	BANGALORE COMPLEX	90921835	SLEEVE 1.5 Sq.mm	57600	Nos	PROTECTION FILM 250x130x0.5T						
896	Rail & Metro	BANGALORE COMPLEX	90921834	MOUNT BASE-DAMB-30	52800	Nos	PROTECTION FILM 410x130x0.5T						
897	Rail & Metro	BANGALORE COMPLEX	90921160	COVER BUSHING (4.8)	28800	Nos	PROTECTION FILM 720x160x0.5T						
898	Rail & Metro	BANGALORE COMPLEX	R306688020	FLOOR CUSHIONING 4mmTHK x 160mmWIDTH x 5m ROLL	1038.864	Roll	PROTECTION FILM 150x100x0.5T		SI No. 898 to 901 " FLOOR CUSHIONING ITEMS" to be indigenised from same source.				
899	Rail & Metro	BANGALORE COMPLEX	R306688021	FLOOR CUSHIONING 10mm THK x 40mm WIDTH x 5m ROLL	4011.072	Roll	PROTECTION FILM 120x40x0.5T						
900	Rail & Metro	BANGALORE COMPLEX	R306688022	FLOOR CUSHIONING 10mm THK x 50mm WIDTH x 5m ROLL	226.272	Roll	PROTECTION FILM 225x40x0.5T						
901	Rail & Metro	BANGALORE COMPLEX	R306688023	FLOOR CUSHIONING 19mm THK x 50mm WIDTH x 5m ROLL	65.184	Roll	PROTECTION FILM 350x40x0.5T						
902	Rail & Metro	BANGALORE COMPLEX	94218087	SUN BLIND ASSY	48	Nos	PROTECTION FILM 480x100x0.5T						
903	Rail & Metro	BANGALORE COMPLEX	94255002	GANGWAY ASSEMBLY	240	Nos	PROTECTION FILM 480x40x0.5T						
904	Rail & Metro	BANGALORE COMPLEX	R136393022	R136393022,2.0 mm THICK STAINLESS STEEL TO SIZE OF WIDTH 1250mm x 2050 mm LEGTH TO GRADE SUS 301L DLT DF OF SPECIFICATION GR TD 1456	2736	Sq Mtrs	PROTECTION FILM 300x220x0.5T		SI No. 904 to 905 " STAINLESS STEEL RAW MATERIALS" to be procured from same source.				
905	Rail & Metro	BANGALORE COMPLEX	R136393025	R136393025,2.0mm thick stainless steel sheet to size of width 1250 mm x3500 mm length to grade SUS3011 DLT (DF) of specification GR TD 1456 Rev.2	8208	Sq Mtrs	PROTECTION FILM 270x95x0.5T						

						LIST O	EMS FOR INDIGENISATION			
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	
906	Mining & Construction	EARTH MOVERS	CHS0113070	O RING	90	Nos	O Ring Material: NBR-1B Ref:BEML std. C5003-01; ID: 69.6±0.25; Cross section dia: 3.5±0.10	0	This O ring is used in C-crane Hydraulic system	
907	Mining & Construction	EARTH MOVERS	130EG81812	LCD PANEL	5	Nos	1. Display size: 7" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pixs: 3 nos 0-5V DC/4 -20mA/resistive analog, 1no frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs: 1no digital high un, 1 no- PWM 5. Communications supported: CANZ.0B, CAN 2.0A, CANopen, Proprietary messaging, RS485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing: 1967 9. RAM: 128Mbytes SRAM 10. Flash memory: ZGB 11. Vibration: 7. R6g (5-2000Hz) 12. Shock: 50g in 3 axt 31. Video (VP. 1 no- VTSC/PAL 14. Keyboard: tactile buttons		CAN (Control Area Network) based 7° electronic display monitors all the engine, transmission and other equipment critical parameters continuously. Some parameters are directly connected to display and other parameters are connected through CAN converter by using two cables (CAN low and CAN high). Display shows all parameters in analogue / Bargraph/alpha numeric form and it provides audio visual alarm to the operator in case any parameter crosses the specified limit.	
908	Mining & Construction	EARTH MOVERS	171EG81687	P.B.SWITCH	65	Nos	1. Rated voltage:24 VDC 2. Rated current : 10Amp 3.Type of contacts: 1NO + 1NC 4. Termination: M3.5 screw terminals 5. Knob color/type: Red Push button (mom-on)/mushroom head. 6. Mounting hole: Ø22.2 mm		Push Button (PB) switch is used to shut-off fuel solenoid valve of the engine.	
909	Mining & Construction	EARTH MOVERS	CEK0120000	STARTER SWITCH	1500	Nos			Starter key is used to power up the electrical system of equipment, by connecting the batteries to the equipment.	
910	Mining & Construction	EARTH MOVERS	130EG81967	SENDER-CAN	4	Nos	1. Operating Voltage: 7 – 35 VDC 2. Input: 4 no. Resistive or -2 to +35 VDC 3. Output: \$5.1 1938 protocol and 2 no. 250mA. 4. Protection: IP65 5. Operating temperature: -40°C to +85°C	4	SenderCAN is used for converting Analogue/digital/pulse signal into CAN signal.	
911	Mining & Construction	EARTH MOVERS	130EG81212	TEMP SENSOR	65	Nos	1. Temp. Range: 400cto 150oC 2. Type: Resistive.    Resistance V5 Temperature   Temper	Han	It is used for sensing the temperature of Engine oil/coolant and feed signal to temperature gauge.	
912	Mining & Construction	EARTH MOVERS	125AC92367	REMOTE CONDENSER 24V	5	Nos	Specifications: Condenser: Roof top condenser Capacity: around 39,000 btu/hr Weight:less than 14 kg		Proprietary item and complete drawing details not available; Based on the technical scope, general specifications, performance requirements and overall size of the aggregates, these are to be developed by interested Vendors.	
913	Mining & Construction	EARTH MOVERS	825EG02019	HAND THROTTLE CONTROL	2	Nos	Potentiometer: SKO Excitation: SV±0.5V DC output: 0.5V to 4.5V DC Protection: IP67 Turn direction: Clock wise, single turn		Hand Throttle control is used to provide electrical command to Electronic engine ECU for Engine speed control on M&C machines.	

LICT OF	ITENAC	FOR	INIDICENICAT	IONI
LIST OF	I I EIVIS	FUK	INDIGENISAT	IUN

			T						Remarks	
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	
914	Mining & Construction	EARTH MOVERS	130IP81099	DISPLAY	8	Nos	1. Display size: 4.3" 2. Display Type: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos0-5V DC/4-20mA/resistive analog, 1no frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs: 1no digital low, 1 no- PWM 5. Communications supported: CAN2.0B, CAN 2.0A, CANopen, Proprietary messaging, 85485 serial and USB 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration: 7.86g (5-2000Hz) 12. Shock: 50g in 3 axis 13. Video V[9: 1 no -MTSC/PAL 14. Keyboard- tactile buttons		Display is used to represent Engine parameters of equipment	
915	Mining & Construction	EARTH MOVERS	821EG81294	TRANSMISSION DISPLAY	90	Nos	1. Display size: 4.3" 2. Display rype: color transmissive TFT LCD,WVGA, 800 x 480 pixels 3. Input pins: 3 nos0-5V DC/4-2DmA/resistive analog, 1 no frequency(2Hz to 10KHz), 5 nos- digital high 4. Outputs: 1 no digital low, 1 no- PWM 5. Communications supported: CAN2.0B, CAN 2.0A, CANopen, Proprietary messaging, RS485 serial and US8 6. operating voltage: 8 to 32V DC, reverse polarity protected 7. Operating temperature: -40°C to +85°C 8. Sealing: 1P67 9. RAM: 128Mbytes SRAM 10. Flash memory: 2GB 11. Vibration: 7.86g (5-2000Hz) 12. Shock: 50g in 3 axis 13. Video I/F: 1 no -MTSC/PAL 14. Keyboard- tactile buttons		Display is used to represent Transmission parameters of equipment	
916	Mining & Construction	EARTH MOVERS	474EG02354	RELAY,BATTERY	40	Nos	1.Operating Voltage: 10 to 16V DC 2.Rated current: 120A (Continuous) ::800A (30 sec) 3.Excitation current:0.5A (max) 4.Insulation resistance:min 100MD (500V DC) 5. Operating Temp: -20V to +80°C 6. Expected mechanical life: 107 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.	
917	Mining & Construction	EARTH MOVERS	790TF02053	TRACK SHOE ASSY	20	sets	Triple grouser shoe, shoe width 450mm, No of shoes per side 40, Shoe link pitch 140mm.		Used in the installation of track parts in the hydraulic excavator.	
918	Mining & Construction	EARTH MOVERS	790TF12398	BUSHING MASTER	60	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	
919	Mining & Construction	EARTH MOVERS	790TF52363	LINK R H	150	Nos	The design data and drawings are not available as these are internal details of the BETS Track shoe assembly to Part no. 79UTF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	
920	Mining & Construction	EARTH MOVERS	790TF12373	BUSH	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	
921	Mining & Construction	EARTH MOVERS	790TF52355	LINK L H	150	Nos	The design data and drawings are not available as these are internal details of the BETS Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	
922	Mining & Construction	EARTH MOVERS	790TF12381	PINTRACK	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	
923	Mining & Construction	EARTH MOVERS	790TF12405	SPACER	150	Nos	The design data and drawings are not available as these are internal details of the BE75 Track shoe assembly to Part no. 790TF02053	Part of BE75 Track shoe assembly to Part no. 790TF02053	Component of BE75 Track shoe assembly	
						_				

							LIST O	F ITEMS FOR INDIGENISATION		
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Brief spec	Photograph	Remarks
924	Mining & Construction	EARTH MOVERS	790TF02045	CARRIER ROLLER ASSY	50	Nos		Roller dia 90mm, Pin Dia 35mm, Flange dia 120mm		Used in the installation of track parts in the hydraulic excavator
925	Mining & Construction	EARTH MOVERS	790TF02037	TRACK ROLLER ASSY	150	Nos		Roller dia 135mm, roller width 112mm.	A Property	Used in the installation of track parts in the hydraulic excavator, part of the final drive.
926	Mining & Construction	EARTH MOVERS	376AX91989	Brake disc	3	Nos		OD : 450mm, ID= 203mm, t=16mm, Wheel mounting holes:16xdia 18.2 on pcd 232		
927	Mining & Construction	EARTH MOVERS	374EG70074	DELPHI CONNECTOR	20	Nos		Operating Voltage: 8 – 32 VDC     No of cavities: 2     No of cavities: 2     Protection: IP67     Operating temperature: -10°C to +100°C     Type: Plug	Same Same	
928	Mining & Construction	EARTH MOVERS	374EG70066	CONNECTOR	10	Nos		Operating Voltage: 8 – 32 VDC     No of cavities: 12     Notection: IP67     Operating temperature: -10°C to +85°C     Type: Receptacle		
929	Mining & Construction	EARTH MOVERS	380CV11269	Valve	15	Nos		Component of the Transmission control valve assy Matelai: C1101 Input (Base) material shall be supplied in normalised condition with hardness in the range of 175 -229 BHN HT: "C'portion shall be induction hardened and tempered to 55 HRC; Case depth: 1~2 mm		
930	Mining & Construction	EARTH MOVERS	376TM91741	Oil Seal	25	Nos		Note: Item Sl.no. 04 to 10 are the parts / internal components of transmission to part no. 376TM02008 and properitary in nature. So design, specification, drawing details are not available.	0	
931	Mining & Construction	EARTH MOVERS	376AX91161	Bearing	4	Nos			0	
932	Mining & Construction	EARTH MOVERS	376TM92551	Oil pipe (forward)	5	Nos			>	
	Mining & Construction	EARTH MOVERS	376TM92568	Oil Pipe (reverse)	1	Nos			~	
934	Mining & Construction	EARTH MOVERS	376TM91693	Driven Disc	100	Nos			0	
935	Mining & Construction	EARTH MOVERS	376TM91499	Driving disc	10	Nos			0	
	Mining & Construction	EARTH MOVERS	376TM91799	Seal Ring	25	Nos			0	
	Mining & Construction	HYDRAULIC & POWERLINE	992HC91138	SEAL 7.500"	16		Nos	i) a) Expander Material : A-8504 Nitrile Rubber Low Temperature NBR-LT, Shore hardness : 70A b) Slide Ring Material : P2501 Polyamide or Polyacetal with PA 6.6 + 30% glass fibres.		
	Mining & Construction	HYDRAULIC & POWERLINE	992HC91154	SEAL 11.500"	16	Nos		ii) Operating Temperature : -25 to +110 deg C iii) Operating Pressure : Upto 600 Bar. iv) Operating Velocity : Upto 1 m/sec		
939	Mining & Construction	HYDRAULIC & POWERLINE	PB8611	SEAL 5.500"	16	Nos				
	Mining & Construction	HYDRAULIC & POWERLINE	991HC91189	PISTON SEAL 7.375"	16		Nos	Piston seal with HNBR ring energizer,PTFE/Nylon slide ring i) a) Expander Material: C-7021 HNBR Rubber Shore hardness: 70A b) Slide Ring Material: P2551 Polyamide or Polyacetal with PA 6.6 + 40% glass fibres. ii) Operating Temperature :- 25 to +110 deg C iii) Operating Pressure : Upto 600 Bar.	991 H C 91197 PISTON SEAL 95"	

	LIST OF ITEMS FOR INDIGENISATION										
							Brief spec		Remarks		
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph			
							iv) Operating Velocity : Upto 1 m/sec				
941	Mining &	HYDRAULIC &	00411504407	DISTONATION OF SOOIL		Non	Topic Injute				
941		POWERLINE	991HC91197	PISTON SEAL 9.500"	30	Nos		_( )			
942		HYDRAULIC & POWERLINE	991HC91204	PISTON SEAL 11.750"	14	Nos					
							Piston Seal Assembly Consists of One Teflon Seal and Expander Seal.				
							Teflon Seal Requirements : Seals Shall be 25%±5% by weight, Glass filled PTFE Physical and Mechanical Properties: i) Tensile Strength : 2000 PSI Minimum.				
							ii) Shore Hardness D : 65±5 Durometer. iii) Ultimate Elongation : 200% Minimum.	VN4087 PISTON SEAL			
943	Mining & Construction	HYDRAULIC & POWERLINE	VN4087	PISTON SEAL ASSEMBLY (Bore Dia. 5.000")	14	Nos	iv) Specific Gravity : 2.15-2.23. v) Deformation under Load @ 1200 PSI : 4-8%	DISTON SEAL			
							@ 2000 PSI : 9-11%. Expander Requirements:	/			
							Material : Nitrile (Buna'N' ) polymers Physical and Mechanical Properties:				
							i) Tensile Strength : 1500 PSI Minimum. ii) Shore Hardness D : 70±5 Durometer.				
							iii) Ultimate Elongation : 250% Minimum. iv) Temperature Range : -65°F ~ 225°F.				
	Mining &	HYDRAULIC &		PISTON SEAL ASSEMBLY (Bore Dia.			v) Modulus @ 100% (Tear resistance) : 500 PSI vi) Heat resistance 70 hrs @ 257°F Change in Hardness point : 0 to +18				
944		POWERLINE	WA2676	3.500")	274	Nos	Change in Tenzile Strength Max.: -25 Change in Ultimate elongation Max. %: -50.				
							vii) Compression Set 22 hrs @ 212°F Max. % : 40 Max.				
							Non Brittle after 5 hrs @-65°F - Pass.				
							Piston Seal Assembly Consists of One Seal Ring, Elastomer and Two Back up rings.  Seal Ring Material: POM or				
							Polyamide Bronze Filled Material Energiser Material : NBR Material i) Dynamic Pressure Range : 7250 PSI.				
							ii) Shore Hardness D : 70±5 Durometer. iii) Temperature Range : -22°F ~ 212°F. Back up Ring				
							Material: Polyacetal(POM) based material with glass fibers. i) Radial Pressure Range: Max.5800 PSI @ 70°F Max.3625 PSI @ >140°F				
945	Mining & Construction	HYDRAULIC & POWERLINE	950HC91355	PISTON SEAL	116	Nos	ii) Shore Hardness D : 70±5 Durometer. iii) Temperature Range : -40°F ~ 230°F.				
							Talige : 40 1 230 1.				
								12, 12			
							Buffer seal with nitrile rubber O-ring energizer,				
							PTFE/Nylon slide ring i) a) Seal (Energiser) Material : Nitrile Rubber, b) Slide Ring Material :				
045	Mining &	HYDRAULIC &	ancera.			No.	Oil filled Nylon (P-2505) ii) SHORE A (HARDNESS) : 70 iii) Operating				
946		POWERLINE	PB6552	Buffer Seal (8.500" x 9.125" x 0.247")	96	Nos	Temperature :- 25 to +110 deg C iv) Operating Pressure : Upto 500 Bar. v) Operating Velocity : Upto 2 m/sec				
							(HARDNESS) :88±5 ii) Operating Temperature :- 30 to +100 °C iii)Applicable Pressure :140 Kg/cm² and				
947		HYDRAULIC & POWERLINE	175HM61289	SEAL	618	Nos	above.				
	Mining &	HYDRAULIC &		BEARING (Bore Ø5.000" x			Boarings and Woor Pings accommodate and allowed a figures and				
948	Construction	POWERLINE HYDRAULIC &	DA2068	t0.188~0.191" x w1.000")  BEARING (Rod Ø5.000" x	14	Nos	Bearings and Wear Rings accommodate radial loads of forces acting on the cylinder assembly/Suspension Assy and guide the rod in the cylinder head/Gland as well as the piston in the cylinder bore and prevents from	0.0.1			
949	Construction Mining &	POWERLINE HYDRAULIC &	PB6545	t0.124~0.127" x w1.000") BEARING (Bore Ø7.380" x	14	Nos	scoring damages to sliding surfaces.	PB 6545 \17 3691			
950	Construction	POWERLINE HYDRAULIC &	PB6549	t0.124~0.127" x w1.250") BEARING (Rod Ø8.500" x	28	Nos	Guides are made of polymer materials and, therefore, avoid metal-to-metal contact between moving parts in a working hydraulic cylinder.	BEARING			
951 952	Construction Mining &	POWERLINE HYDRAULIC &	PB6551 PB6555	t0.124~0.127" x w1.000") BEARING (Bore Ø9.500" x	30	Nos	Material: Glass Reinforced High Strength Nylon P2501, LW560-87	PB 6545 VZ 3691 BEARING BEARING			
332	Construction	POWERLINE	FB0000	t0.124~0.127" x w1.250")	30	1	Tensile Streneth : 26.000 P.S.I. min.				

	LIST OF ITEMS FOR INDIGENISATION										
							Brief spec		Remarks		
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM		Photograph			
953	Mining & Construction	HYDRAULIC & POWERLINE	PB6557	BEARING (Rod Ø10.500" x t0.124~0.127" x w1.000")	30	Nos	Elongation : 3%,  Flexure Modulus : 13,00,000 P.S.I., min				
954	Mining & Construction	HYDRAULIC & POWERLINE	PB7324	BEARING (Rod Ø6.500" x t0.124~0.127" x w1.000")	274	Nos	Compression Strength : 24,000 P.S.I. min Hardness, Rockwell				
955	Mining & Construction	HYDRAULIC & POWERLINE	PB7325	BEARING (Bore Ø7.500" x t0.124~0.127" x w0.750")	340	Nos	R : 121 Working Temperature :-40 deg.C to +120 deg.C Working Stroke Speed : 1.0 m/sec, Max.				
956	Mining &	HYDRAULIC &	PB7444	BEARING (Bore Ø11.750" x	14	Nos					
957	Construction Mining &	POWERLINE HYDRAULIC &	VA3204	t0.124~0.127" x w1.250") WEAR RING (Bore Ø4.500" x	116	Nos	_				
958	Construction Mining &	POWERLINE HYDRAULIC &	VA3205	t0.124~0.127" x w0.750") WEAR RING (Bore Ø6.000" x	390	Nos					
	Construction Mining &	POWERLINE HYDRAULIC &		t0.122~0.127" x w0.750") WEAR RING (Bore Ø7.380" x			_	992 HC 91121 BEARING 5.5"			
959	Construction	POWERLINE	VA3206	t0.124~0.127" x w0.750")	116	Nos		BEARING 5.5"			
960	Mining & Construction	HYDRAULIC & POWERLINE	VA3211	WEAR RING (Rod Ø3.750" x t0.124~0.127" x w1.250")	390	Nos					
961	Mining & Construction	HYDRAULIC & POWERLINE	VA3212	WEAR RING (Bore Ø5.500" x t0.124~0.127" x w1.000"	390	Nos					
962	Mining & Construction	HYDRAULIC & POWERLINE	VA3213	WEAR RING (Rod Ø6.750" x t0.124~0.127" x w1.000")	182	Nos					
963	Mining &	HYDRAULIC & POWERLINE	VZ3691	BEARING (Bore Ø3.500" x	274	Nos		A A			
964	Construction Mining &	HYDRAULIC &	992HC91121	t0.122~0.127" x w0.750") BEARING 5.5" (Rod Ø5.500" x	16	Nos	-				
965	Construction Mining &	POWERLINE HYDRAULIC &		t0.123~0.125" x w1.000") BEARING 7.5" (Bore Ø7.500" x		Nos	_				
	Construction Mining &	POWERLINE HYDRAULIC &	992HC91146	t0.123~0.125" x w1.250") BEARING 11.5" (Bore Ø11.500" x	16						
966	Construction	POWERLINE	992HC91162	t0.123~0.125" x w1.250")	16	Nos	Bronze Bearings accommodate radial loads of forces acting on the				
967	Mining & Construction	HYDRAULIC & POWERLINE	992SU91182	BEARING (Rod Ø266.65 x t2.5 x w76)	16	Nos	Suspension Assy and guide the rod in the Gland and prevents from scoring damages to sliding surfaces.  Material: ASTM B-147 72 Manganesh Bronze Alloy No.863 (or) ASTM 148-71 Aluminium Bronze Alloy No. 955 HT Tensile Strength : 759 Mpa. (Min) Yield Strength : 414 Mpa. (min)				
968	Mining & Construction	HYDRAULIC & POWERLINE	375HC71014	WEAR RING (Bore Ø120 x t3 x w15)	468	Nos	This Wear Ring Phenolic/fabric composite consists of cotton fabric bound with thermoset phenolic resin. Its structure and the ability of the fabric fibres to absorb a certain amount of oil make phenolic guides almost self-lubricating. Phenolic guides are suitable for medium and heavy duty applications.  Cotton Cloth fabric (50%)				
969	Mining & Construction	HYDRAULIC & POWERLINE	958SU91288	WEAR RING (Bore Ø250 x t6 x w40)	274	Nos	bound with thermoset Phenolic Resin (50%) Bending Strength : 12 kg/S <sub>4</sub> ,mm, (min). Specific Gravity :1.39 ~ 1.43 Co-efficient of Friction : 0.08 ~ 0.12 Compression Strength : 25 Kg/S <sub>4</sub> ,mm (min) Hardness,				
970	Mining & Construction	HYDRAULIC & POWERLINE	5685011172	WEAR RING (Bore Ø250 x t6 x w130)	300	Nos	Rockwell M : 110 * 126 Working Temperature :-40 deg.C to +140 deg.C Working Stroke Speed : 0.5 m/sec, Max.				
971	Mining & Construction	HYDRAULIC & POWERLINE	985HM21064	SIDE PLATE	530	Nos	Application: Also called as Thrust Plates and used in External Gear Pumps (High Pressure Pumps generally working @ 215 Bar) and is installed between Rotating Gear Face inside the Pump Case and fixed Mounting Bracket or Cover.  Function: Thrust Plates are used to provide Axial and Radial compensation in the Gear Pumps and it will be floating in the gap between the Gear and Cover Faces and maintain lubrication between faces and provides space for sealing to avoid internal leakage from high pressure delivery side to low pressure suction side.  Material for Forging:  Material for Forging:  A. MATERIAL: CSM3  B.	88			
972	Mining & Construction	HYDRAULIC & POWERLINE	171HM22091	SIDE PLATE	598	Nos	CHEMISTRY(WT%): COPPER:S8~63 , ZINC: REMAINDER, LEAD:0.3 MAX., ALUMINIUM: 0.5~1.5; MANGANESE: 1.0~2.0, SILICON:0.5~1.5, IMPURITIES: 1.0 MAX. C. MECHANICAL PROPERTIES: TENZILE STRENGTH: 640 N/mm2 MIN. YIELD POINT: 350 N/mm2 MIN. SELONGATION: 10 MIN. HARDNESS, BHN (1000/10): 150 MIN. HARDNESS, BHN (2000/10): 150 MIN. MARTERIAL: HTB3 OF BS:1400 CHEMISTRY(WT%): COPPER:S5 MIN., TIN: 0.2 MAX., ZINC: REMAINDER,	SIDE PLATE			

	LIST OF ITEMS FOR INDIGENISATION									
Cumulative SI No.	Business Group	Division	Part no	Description	Approximate Annual requirement	UoM	Brief spec	Photograph	Remarks	
973		HYDRAULIC & POWERLINE	171HM23144	SIDE PLATE	116	Nos	LEAD-0.2 MAX., NICKEL: 1.00 MAX., IRON: 1.5°3.25 MIN. ALUMINIUM: 3.0°6.0 MIN; MANGANESE: 4.0 MAX., SILICON:0.1 MAX, IMPURITIES: 0.2 MAX. C. MECHANICAL PROPERTIES: TENZILE STRENGTH: 740 N/mm2 MIN. YIELD POINT: 400 N/mm2 MIN. % ELONGATION: 11 MIN. HARDNESS, BHN (1000/10): 150 MIN.	SIDE PLATE		

LIST OF ITE	EMS FOR INDIGENISATION
-------------	------------------------

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

LIST OF ITEMS FOR INDIGENIS	SATION
-----------------------------	--------

	EST OF TENSTON INDIGENISATION								
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
984	Mining & Construction	ENGINE	6210611520	OIL SEAL	213	Nos	PACKING : 5708 (NOK), SPRING : SWP, RING : SPCC		
985	Mining & Construction	ENGINE	6134515121	CATRIDGE	100		CARTRIDGE FOR HEAVY DUTY DIESEL ENGINES(105 BORE DIA.), FILTRATION AREA: 0.53m2, NORMAL FILTRATION AREA: 0.53m2, NORMAL FILTRATION ARTING: 20µ, FILT RATE: 95%, APPLICABLE TEMPERATURE: 30 - 120 DEG C. 00: 107.7mm, HEIGHT: 170.5mm, THREAD: 1 1/8-16UN, MATERIAL: BODY-SPCE, ELEMENT-FILTER PAPER, SEAT-SS41P SPG, PACKING-ACRYLIC RUBBER AND NBR, SPRING-SKS.		
986	Mining & Construction	ENGINE	6136298010	MAIN BRG,SET,U/S 0.25	70	Nos	105-Main Bearing Set consists of Upper & lower Std. Bearings (7 No's). Both bearings must have , Width = 30mm, Semi Outer Dia = 91mm, Thickness : 3.00 mm, Back metal : SPCC1, Intermediate Layer : KKJ4B, Surface Layer : Tin Lead P-77		
987	Mining & Construction	ENGINE	6137K19901	GASKET KIT	48	Nos	Contact R&D for technical details. Contact details enclosed at Annexure-3		
988	Mining & Construction	ENGINE	6151K19901	GASKET KIT	4	Nos	Contact R&D for technical details. Contact details enclosed at Annexure-3		
989	Mining & Construction	ENGINE	6162393042	METAL ASSY	517	Nos	170-series Engine Con-Rod Big end bearing : Under size 0.25mm. Width : S8mm, Semi Outer dia = 115.51, Std.Thickness : 4.00mm, Bearing is DIADO make. Back metal : E51424, Alloy layer : LS17 and Kp-9 surface coated.		
990	Mining & Construction	ENGINE	6210118811	GASKET	348	Nos	140-series Rocker Cover Gasket (O-ring : Material SR-1, DIA-Ø3.7±0.1		
991	Mining & Construction	ENGINE	6210118820	GASKET	991	Nos	140-series Rocker Cover Gasket (O-ring : Material SR-1, DIA-Ø3.7±0.1		
992	Mining & Construction	ENGINE	6210373041	BEARING,PR PIN,1 PAIR,U/S	18	Nos	140-Conrod- upper & lower bearing set , Under size 0.75mm (Upper bearing : Width = 46mm, Semi Outer dia = 95mm, Std. thickness = 2.5mm, Back metal : E5 1425, alloy layer : L517, Lower Bearing : Width = 46mm, Semi Outer =95mm Std. thickness = 2.5mm, Back metal = SAE 1017, Alloy layer = KJ5A (F780), Flash platin g: ES1405)		
993	Mining & Construction	ENGINE	6210383041	BEARING,PR PIN,1 PAIR,U/S	60	Nos	140-Conrod- upper & lower bearing set , Under size 0.50mm (Upper bearing : Width = 46mm, Semi Outer dia = 95mm, Std. thickness = 2.5mm, Back metal : E5 1425, alloy layer : L517, Lower Bearing : Width = 46mm, Semi Outer =95mm Std.thickness =2.5mm, Back metal = SAE 1017, Alloy layer = KJ5A (F780), Flash platin g: E51405)		
994	Mining & Construction	ENGINE	6210393041	METAL ASSY	42	Nos	140-Conrod- upper & lower bearing set , Under size 0.25mm (Upper bearing : Width = 46mm, Semi Outer dia = 95mm, Std. thickness = 2.5mm, Back metal : ES 1425, alloy layer : LS17, Lower Bearing : Width = 46mm, Semi Outer =95mm Std.thickness = 2.5mm, Back metal = SAE 1017, Alloy layer = KJSA (F780), Flash platin g: ES1405)	A	
995	Mining & Construction	ENGINE	6210616441	GASKET	85	Nos	material- GA-1C, thickness=0.8		
		1	1				l-	I .	1

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

	LIST OF ITEMS FOR INDIGENISATION										
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks		
1006	Mining & Construction	ENGINE	2070170444	PUMP GEAR WHEEL	25	Nos	Ø52 X 17 FORGED SPUR GEAR WITH TWO COPPER BUSH PRESSED	### ### ### ### ### ### ### ### ### ##			
1007	Mining & Construction	ENGINE	2070170434	PUMP GEAR WHEEL	25	Nos	LUBRICATION PUMP COVER ASSY WITH CAST IRON HOUSING, SPRING, PLUG				
1008	Mining & Construction	ENGINE	442070480284	PUMP COVER	25	Nos	MATERIAL: FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 50 mm, WEIGHT: 0.35 kg				
1009	Mining & Construction	ENGINE	2012270634	DRIVE GEAR WHEEL	25	Nos	MATERIAL : FORGING TO SPECIFICATION 40Cr4Mo2 - IS:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 55 mm, WEIGHT : 0.38kg				
1010	Mining & Construction	ENGINE	2012270624	PUMP GEAR WHEEL	25	Nos	MATERIAL: FORGING TO SPECIFICATION 42Cr4Mo2 - I5:5517, TEETH TIP OD = Ø51.5c8, WIDTH = 17 mm, WEIGHT: 0.15 kg				
1011	Mining & Construction	ENGINE	2012270614	PUMP GEAR WHEEL	25	Nos	PART OF FUEL INJECTOR				
1012	Mining & Construction	ENGINE	443713054000	NOZZLE	25	Nos	PART OF STARTER MOTOR				
1013	Mining & Construction	ENGINE	990115006000	PRESSURE MAGNET	25	Nos	ASSEMBLY OF 45 SUB-PARTS, MAX PRESSURES: BRAKE FLUID 120 BAR & COMPRESSED AIR 12.5 BAR, WEIGHT: 2.8 kg				

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks			
1014	Mining & Construction	ENGINE	443612223000	CLUTCH BOOSTER KNORR VG 3284	25	Nos	ASSEMBLY OF 4 SUB-PARTS, TUBE : OD Ø8 x 1mm WALL THICKNESS, WEIGHT : 0.204 kg					
1015	Mining & Construction	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					
1016	Mining & Construction	ENGINE	130010800034	HOUSING COVER	25	Nos	ASSEMBLY OF 5 SUB-PARTS, MFG PROCESS : BRAZING, WEIGHT : 0.3 kg					
1017	Mining & Construction	ENGINE	442073420094	CONNECTION	25	Nos	Ø70 X 40 CAST IRON					
1018	Mining & Construction	ENGINE	442075050334	LID TO CLUTCH	25	Nos	ASSEMBLY OF 4 SUB-PARTS, MFG PROCESS: WELDING					
1019	Mining & Construction	ENGINE	442070332084	INTAKE MANIFOLD FRONT	25	Nos	ASSEMBLY OF 7 SUB-PARTS, LENGTH : 386 mm, WEIGHT : 2.45 kg, MFG PROCESS : WELDING					
1020	Mining & Construction	ENGINE	442070332054	INTAKE MANIFOLD REAR	25	Nos	Material: Rubber Mixture 1456 OD:ø103 mm ID: ø90 mm					
1021	Mining & Construction	ENGINE	442054390034	INTAKE LINE RUBBER HOSE	25	Nos	PART OF FIP	and and a second				

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks			
1022	Mining & Construction	ENGINE	443979651374	FUEL FEEDER ZS 46-1374	25	Nos	Assembly: 3 components Weight :0.162 Kg Material :CSN137972.02					
1023	Mining & Construction	ENGINE	442076631144	FUEL SUPPLY TUBE	25	Nos	1.Tube 2.Connector 3.Pipe Adaptor	2 1				
1024	Mining & Construction	ENGINE			25	Nos	DRAWING NOT AVAILABLE					
1025	Mining & Construction	ENGINE	443972227480	NECK JS 6	25	Nos	Material: EEE 6233-2 Weight: 0.007 kg ID: \$954.1 mm	PART OF FIP				
1026	Mining & Construction	ENGINE	442054171764	O RING (SEALING RING)	25	Nos	SCREW PLUG WITH TAPER THREAD, MATERIAL: STEEL	\$ 24.7				
1027	Mining & Construction	ENGINE	311113166000	PLUG M18X1.5 ONA 1913.05	25	Nos	width:1132 mm height: 344 mm weight :0.05 kg Material:	22 See 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1				
1028	Mining & Construction	ENGINE	442054032844	LOWER COVER GASKET	25	Nos	Ø270 X 36 THICK TORSIONAL DAMPER FOR DIESEL ENGINE					
1029	Mining & Construction	ENGINE	452330180008	TORSION DAMPER	25	Nos	Ø154 x 3 THICK , SAE 1010 STEEL WITH SAE 48 SINTERED					
1030	Mining & Construction	ENGINE	323434181743	UPPER THRUST BEARING	25	Nos	Ø154 x 3 THICK , SAE 1010 STEEL WITH SAE 48 SINTERED					
1031	Mining & Construction	ENGINE	323434181763	LOWER THRUST BEARING	25	Nos	600 X 450 X 125 ALUMINIUM CASTING					

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks			
1032	Mining & Construction	ENGINE	130010750374	FRONT COVER	25	Nos	Material: vulcanized rubber PCD:ø192 mm ID:ø162 mm					
1033	Mining & Construction	ENGINE	442054032734	GASKET 3mm	25	Nos	COMPLETE DEAERATION CONTAINING 12 PARTS WEIGHT: 1.96KG					
1034	Mining & Construction	ENGINE	130076631274	DEARATION SYSTEM	25	Nos	OIL PRESSURE SWITCH FOR 8 BAR PRESSURE					
1035	Mining & Construction	ENGINE	443852042000	SWITCH	25	Nos	SUCTION TUBE ASSEMBLY CONTAINING 4 PARTS	<del>\$</del> -				
1036	Mining & Construction	ENGINE	442070211284	SUCTION TUBE (VVNV)	25	Nos	CONTAINING TWO PARTS MATERIAL: CSN 41 4331.9, CSN 4 1523.0 NUT:M10 SCREW:M8					
1037	Mining & Construction	ENGINE	442079940074	BOLT	25	Nos	MATERIAL : CSN 42 046312 INNER DIA : 124mm OUTER DIA : 149mm LENGTH : 260mm					
1038	Mining & Construction	ENGINE	442010010254	CYLINDER	25	Nos	MATERIAL:NYLON 66, FREE CUTTING BRASS,BRASS INNER DIA: 124mm OUTER DIA: 8.4mm LENGTH: 6.3mm WEIGHT: 160g					
1039	Mining & Construction	ENGINE	443429108989	SENSOR(380 060 360 010)	25	Nos	Ø120 X 5 THICK STEEL PISTON RING	The state of the s				
1040	Mining & Construction	ENGINE	327972522285	PISTON SCRAPPER RING 7-2285-52-0/3	25	Nos	TWIN CYLINDER COMPRESSOR (4102)					
1041	Mining & Construction	ENGINE	443614002800	COMPRESSOR 4102	25	Nos	PART OF COMPRESSOR					

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks			
1042	Mining & Construction	ENGINE	443915930125	CRANKSHAFT	25	Nos	PART OF COMPRESSOR					
1043	Mining & Construction	ENGINE	443919810203	VALVE	25	Nos	PART OF COMPRESSOR					
1044	Mining & Construction	ENGINE	278432515035	GASKET/625 8901/	25	Nos PART OF COMPRESSOR						
1045	Mining & Construction	ENGINE	443915660112	CYLINDER HEAD	25	Nos	WEIGHT; 3.10 Kgs , MATERIAL; CSN-42.4331.01 (ALLUMINIUM CASTING ALLOYS), DIMENSION; BLADE DIA. Ø370.09 mm, IMPELLER INNER DIA . Ø210 mm, IMPELLER OUTER DIA. Ø240.					
1046	Mining & Construction	ENGINE	130010680064	GUIDE WHEEL	25	Nos	ASSEMBLY 3 COMPONENTS; 1. BLADE WHEEL JACKET 2. BLADE WHEEL HUB C/W BLADES 3. GASKET , TOTAL WEIGHT; 9.4 Kgs MATERIAL; FOR BLADE WHEEL JACKET CSN- 42 433.10 [ALUMINIUM CASTING ALLOYS], FOR BLADE WHEEL HUB- SAME MATERIAL AND FOR GASKET- HEAT RESISTANT NEOPRINE RUBBER					
1047	Mining & Construction	ENGINE	442070720454	BLADE WHEEL ASSY.	25	Nos	ASSEMBLY 3 COMPONENTS; 1. AIR DUCT 2. HOLDER 3. STAY, WEIGHT; N/A , DIMENSION; DIAMETER Ø430 ±0.5, MATERIAL; IS:513-86, Gr.DD FOR ALL COMPONENTS					
1048	Mining & Construction	ENGINE	442070600124	AIR DUCT	25	Nos	WEIGHT; N/A, DIMENSION; TOTAL DIA. Ø225 , 6 THRU HOLES PITCH CIRCLE DIA. Ø220 mm AND 3 THREDED HOLES PITCH DIA. Ø230, MATERIALS; CSN-42 2420, CSN 1241.00					
1049	Mining & Construction	ENGINE	130028961804	FAN HOUSING BRACKET	25	Nos	Ø100 X 340 SHEET METALFABRICATED TUBE					

	LIST OF ITEMS FOR INDIGENISATION										
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks		
1050	Mining & Construction	ENGINE	442070332574	INTAKE MANIFOLD FRONT (LH)	25	Nos	K36 TURBO CHARGER				
1051	Mining & Construction	ENGINE	486512130518	TURBO BLOWER LH-K-36-006	25		ASSEMBLY COMPONENTS: 1. DUCTILE SHEET (MATERIAL; CSN 425 365), Z. 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, THIKNESS; 1.85 ± 0.15				
1052	Mining & Construction	ENGINE	442054280054	GASKET 2 MM (TURBINE)	25	Nos	PART OF MOTORPAL FIP FOR 12 CYLINDER ENGINE.				
1053	Mining & Construction	ENGINE	278432605113	GASSKET (CROSS- 43)	25	Nos					
1054	Mining & Construction	ENGINE	107560205063	PIN 5X63	25	Nos	DIMENSION-TOTAL LENGTH; 199 mm, BEND RADIUS; 80 mm,				
1055	Mining & Construction	ENGINE	443975801269	LIFTER	25	Nos	WEIGHT; 0.11 kgs , MATERIALS; GrCR3, IS:S13				
1056	Mining & Construction	ENGINE	443971022604	ADJUSTING NUT	25	Nos					
1057	Mining & Construction	ENGINE	130035210484	REAR SHEET RH	25	Nos	DIMENSION- SPRING WIRE DIA; Ø1.8 mm, NO. OF ACTIVE TURNS; 9, TOTAL NO. OF TURNS; 11 mm, TOTAL LENGTH; 31.7 mm, WEIGHT; 0.08 Kgs, MATERIAL; Gr-DM, IS:4454 (PT- 1)				
1058	Mining & Construction	ENGINE	130050512154	SPRING	25	Nos	MATERIAL: CSN 41 1109.0, CSN426510 WEIGHT: 0.018KG OD: ø9h11 MM LENGTH: 7 MM	25.5 J			
1059	Mining & Construction	ENGINE	130050780284	SPACER INSERT	25		MATERIAL: CSN 426312 32 WEIGHT: 0.65KG DIAMETER: ø190±0.3 MM THICKNESS: 1.6 MM	<b>(1)</b>			

	LIST OF ITEMS FOR INDIGENISATION											
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks			
1060	Mining & Construction	ENGINE	443930131570	VENTILATOR FAN	25	Nos	MATERIAL: CSN 41 331.21, CSN 42 6312.22 WEIGHT: 0.010KG ID: ø57 MM THICKNESS: 1 MM					
1061	Mining & Construction	ENGINE	130050953684	SPACER WASHER	25	Nos	PART OF ALTERNATOR	<b>@</b>				
1062	Mining & Construction	ENGINE	443936014910	SUPPORTING RING	25	Nos	PART OF ALTERNATOR					
1063	Mining & Construction	ENGINE	443930131710	REAR COVER	25	Nos	PART OF ALTERNATOR	22				
1064	Mining & Construction	ENGINE	443930132100	TERMINAL BOARD	25	Nos	MATERIAL: F33, GRADE A WIDTH: 8 MM THICKNESS: 1 MM	Fan				
1065	Mining & Construction	ENGINE	443936214310	PINION LUBRICATING FELT	25	Nos	PART OF ALTERNATOR					
1066	Mining & Construction	ENGINE	443938329100	SWITCH COIL	25	Nos	Ø530 X 320 ALUMINIUM CASTING	0 D				
1067	Mining & Construction	ENGINE	130016100224	CLUTCH HOUSING	25	Nos	Ø34 X 25 COPPER BEARING					
1068	Mining & Construction	ENGINE	111427150343	BUSH PS 2530 KU	25	Nos	ASSEMBLY: 3 PARTS WEIGHT: 6.5KG WIDTH:159.5+0.1 MM	60.				
1069	Mining & Construction	ENGINE	442071080484	CLUTCH SHAFT	25	Nos	PART OF NON-EURO OIL COOLER					
1070	Mining & Construction	ENGINE	130070220344	TUBE	25	Nos	ASSEMBLY: 2 PARTS WEIGHT: 0.22KG WIDTH:10-1 MM	35				

	LIST OF ITEMS FOR INDIGENISATION										
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks		
1071	Mining & Construction	ENGINE	442070210984	INTAKE PIPE ADOPTER	25	Nos	MATERIAL: NITRILE RUBBER COLOUR: BLACK ID: ø22 MM LENGTH: 265±2 MM				
1072	Mining & Construction	ENGINE	442053111114	HOSE 22/30-265	25	Nos	PART NO NOT AVAILABLE IN PARTS BOOK	Z			
1073	Mining & Construction	ENGINE	443933980170	OUTER PLATE	25	Nos					
1074	Mining & Construction	ENGINE	442013830054	Clutch plate of fan drive	516	Nos	Flex plate used in Fan Drive Shaft				
1075	Mining & Construction	ENGINE	323141377000	Thrust Bearing 6037-04/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine				
1076	Mining & Construction	ENGINE	323141371000	Thrust Bearing 6037-02/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine				
1077	Mining & Construction	ENGINE	323141373000	Thrust Bearing 6038-02/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine				
1078	Mining & Construction	ENGINE	323141375000	Thrust Bearing 6038-04/00	86	Nos	Axial Thrust Bearing for Crankshaft Assembly pertaining to Beml-Tatra Engine				
1079	Mining & Construction	ENGINE	442070060974	Part of Crank shaft	344	Nos	Part of Crankshaft. Hollow type casting. Fillet Rolling at journal corners to achive required hardness.				
1080	Mining & Construction	ENGINE	273110420000	Gasket 10x14/11 BTA-SK-2415 (Valve stem seal)	1376	Nos	Bonded Rubber seal used in cylinder head valve stem area of Beml-Tatra Engines				
1081	Mining & Construction	ENGINE	443900112000	Thermostatic	86	Nos	Thermostst used for oil supply regulation in Cooler Body sub assembly in Beml-Tatra Engine				
1082	Mining & Construction	ENGINE	443614029000	Compressor 4192	86	Nos	Diesel cooled air compressor				
1083	Mining & Construction	ENGINE	442053111904	Hose	516	Nos	Diesel Spill Hose	6			
1084	Mining & Construction	ENGINE	442053111944	Hose - 450 mm	86	Nos	Starter Motor Air vent hose				

	LIST OF ITEMS FOR INDIGENISATION										
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks		
1085	Mining & Construction	HYDRAULIC & POWERLINE	125HM91483	OIL SEAL (Ø35 x Ø55 x 11)	286	Nos	This Oil Seal is used in the Hydraulic Pump Assemblies between the Drive Shaft and its Housing (Bracket) to prevent the leakage of hydraulic Oil from the Bearing Clearances between Rotating Drive Gear shaft and Housing. Structure: Metallic Backed Rubber O.D with Double lipped design				
1086	Mining & Construction	HYDRAULIC & POWERLINE	985HM91032	OIL SEAL (Ø39 x Ø62 x 11)	275	Nos	Seal Material: AR4 (Acrylic Rubber) or NBR, Spring: Plano Wire, Metal Casing: Cold Rolled or Hot Rolled Steel Sheet Conditions: Peripheral velocity: 0°4m/s Allowable Eccentricity while in setting oil temperature: Max. 100 deg. C Pressure: 1 bar (max)				
1087	Mining & Construction	HYDRAULIC & POWERLINE	985HMB9051	PLANE BEARING	550	Nos	Plain Bearing / Journal Bearings used for rotational motion in Hydraulic Pump Application driving Gear Shaft. Bushing provide outstanding dry bearing properties of Polytetrafluoroethylene (PTFE) and combines them with strength, stability and good wear resistance, excellent heat conductivity and low thermal expansion.  Bushings consists of three bonded layers: The Bushes are loaded with PTFE based sliding layer, sintered tin bronze layer and Cold Rolled Carbon steel backing strip support. The PTFE impregnated sliding layer provides low co-efficient of friction, the bronze layer guarantees the coupling of self lubricating mixture and good loss of heat produced during operation. Material:  Back Metal: JIS SPCD (Cold Rolled Carbon steel Strip/sheet Backing)(IJS G3141)  Tensile Strength: 270 N/mm2 Min.(27.5 Kg/mm2 Min.) Elongation 9: 40 Min.)  Bushing: Teflon Impregnated Bronze. Thickness-0.3 max Working Temperature: 200 to +280 dag C, Maximum Sliding Speed: 10 m/sec, Maximum Sliding Speed: 10 m/sec,  Maximum PU Value: 10 N/sq.mm x m/sec  Co-efficient of Friction: 0.01 to 0.05				
1088	Mining & Construction	HYDRAULIC & POWERLINE	181HC11175	BUSHING	25	Nos	Bushings are used in hydraulic cylinder rod or Suspension piston rod application. Bushing provide outstanding dry bearing properties of Polytetrafluoroethylene (PTFE) and combines them with strength, stability and good wear resistance, excellent heat conductivity and low thermal expansion.  Bushings consists of three bonded layers: The Bushes are loaded with PTFE based sliding layer, sintered tin bronze layer and Cold Rolled Carbon steel backing strip support. The PTFE impregnated sliding layer provides low co-efficient of friction,				
1089	Mining & Construction	HYDRAULIC & POWERLINE	175HC91491	BUSHING	174	Nos	the bronze layer guarantees the coupling of self lubricating mixture and good loss of heat produced during operation. Material:  Back Metal: JIS SPCD (Cold Rolled Carbon steel Strip/sheet Backing)(JIS G3141) The back metal shall be subjected to a flash tin-plating  Tensile Strength: 270 N/mm2 Min.(27.5 Kg/mm2 Min.) Elongation 8: 40 Min.)  Bushing: Teflon Impregnated Bronze. Thickness-0.3 max				

			LIST O	F ITI	EMS FOR INDIGENISATION	
						R

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph Remarks
1090	Mining & Construction	HYDRAULIC & POWERLINE	821HC91162	PACKING ROD	10	Nos	Size: Ø80 x Ø95 x 12 (9+3) Material: Base Seal Material: Lubrithane U-1029 Light Blue. Shore hardness: 95 Shore A. Backup Ring Material: PTFE with 40% Bronze Shore Hardness: 65 Shore D. Operating Pressure Range: 0~400 bar (5 800 psi). Max Speed: 1 m/s.(3.2 ft/s). Temperature Range: -30°C to +110°C	
1091	Mining & Construction	HYDRAULIC & POWERLINE	992SU91174	PISTON T SEAL (Bore Ø13.250" x Ø12.790"	16	Nos	The Unique Design Piston T-Seal provides a compact double acting seal for use in a new design for heavy duty applications where a more bulky type of seal had been required. This proven seal combines a tough, resilient, T-Shaped sealing ring.	
1092	Mining & Construction	HYDRAULIC & POWERLINE	992SU91352	PISTON T SEAL (Bore Ø13.780" x Ø13.290"	16	Nos	with precisely dimensioned, pressure-actuated non-extrusion Rings for High Pressure Applications.  Material:  Base Seal Material:  Nitrile Rubber (NBR)  Shore hardness: 75 Shore A.  Anti-extrusion Ring Material:	
1093	Mining & Construction	HYDRAULIC & POWERLINE	PB6327	PISTON T-SEAL (Bore Ø6.001" x Ø5.524" x	411	Nos	Vurgin TFE,  Operating Pressure Range: 0~415 bar (6000 psi).  Max Speed: 1 m/s.(3.2 ft/s).  Temperature Range: -30°C to +120°C	
1094	Mining & Construction	HYDRAULIC & POWERLINE	985HM61079	SEAL RING (To be made as per dwg. Dimer	550	Nos	Seal Rings are fitted on the Static side of Thrust Plate/Side Plate on the Hydraulic Pump Assy to arrest the leakage of oil from High pressure delivery side to the Low pressure suction side. Material: Flourine Rubber FKM 1E, Working Temperature: -20 to +160 deg.C, Working Pressure: 140 Bar (min)	2333
1095	Mining & Construction	HYDRAULIC & POWERLINE	9925U91077	UPPER BEARING	16	Nos	Application: Assembled with Piston in Front suspension for reducing the wear between Piston & Housing structure. Dimensions: 0.0-\phi350mm, Thik-2.5mm, Length-152.4mm Material: ASTM B 584 (5A£308/UNS C86300) Chemical Composition: Cu-60°-66, Sn-0.20, Pb-0.20, Zn-22°-28, Ni-1, Fe:2°-4, Al: 0.5°-1.5, Mn:1°-1.5 Mechanical Requirements: Tensile Strength: 821 MPa Yield Strength Min : 462MPa Elongation: 18%	9925091099

## LIST OF ITEMS FOR INDIGENISATION

							ENIST ON INDIGENISATION		
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1096	Mining & Construction	HYDRAULIC & POWERLINE	992SU91085	LOWER BEARING	32	Nos	Application: Placed in between the Gland and Rod structure in Front suspension for reducing the wear . Dimensions: O.D-\$304.7mm, Thk-2.5mm, Length-152.4mm Material: ASTM 8 584 (SAE430B/UNS C86300) Chemical Composition: Ou-60°-66, Sn-0.20, Pb-0.20, Zn-22°-28, NIL-J, Fe: 2"-4", Al: 0.5"-1.5, Mn:1"-1.5 Mechanical Requirements: Tensile Strength: 821 MPa Yield Strength Min: 462MPa Elongation: 18%	992 SU 91085 LOWER BEHRING	
1097	Mining & Construction	HYDRAULIC & POWERLINE	VC2624	PIN ROLL	274	Nos	Application: To lock the castle nut. General: Pins Spring Type C Heavy Duty (Spirol) conform to SAE J 496 for dimensions and specifications for coiled spring pins series A Material: High Carbon Steel Black Oil Finish	VC 2624 pin ROLL	
1098	Mining & Construction	HYDRAULIC & POWERLINE	171HM93112	PLANE BEARING	116	Nos	Application: Used in Hydraulic pump assembly to support drive and driven gear Material: Lead Bronze Alloy conforming to JIS H 1251 (KLBC 6B). Equivalent Material: JISLBCG, SAE794, SAE799 Chemical Composition: Sn-3.0"-40, Pb-21.0"25.0, 2n-0.75Max, Ni-0.5Max, 5b-0.35Max, Fe-0.25Max, Cu-Remaining Mechanical properties: Hardness with Back Plate Hy (5kg) - 35"60 Tensile strength - 11.1 kg/mm² Shearing Strength - 10.0 kg/mm² Plate Inside with Pb-Sn Thickness: 0.01"0.03 (Pb 90% Sn 10%)	171 HM 93112 PLAIN BEARING	
1099	Mining & Construction	HYDRAULIC & POWERLINE	640000466700	LOWER BEARINGFRONT	116	Nos	Application: Placed in between the Lower bearing retainer and Rod structure in Front suspension for reducing the wear . Material: Phenolic resin (PM-1)	CA DODO CA SE PODO LEVEL É RILAMINI TEM	
1100	Mining & Construction	HYDRAULIC & POWERLINE	640000466902	UPPER BEARING FRONT	116	Nos	Application: Assembled with Upper bearing retainer in Front suspension for reducing the wear between retainer & Housing structure. Material: Turcite 225 Tubing with 8.575"OD & 8.025"ID	SARGO SAL WAY Upit Aspen Fort	
1101	Mining & Construction	HYDRAULIC & POWERLINE	PC0455	O RING	56	Nos	This O Ring is used in the Suspension Cylinder Application for Gland Sealing for sealing against External leakage between Gland and Tube.  Material: NBR Material with Hardness 70 Shore A.	PC 04.55	
1102	Mining & Construction	HYDRAULIC & POWERLINE	640000479102	U CUP ROD SEAL	116	Nos	Rod Seals (Double Lip type) used in the Suspension Cylinder Application for sealing against external leakage during reciprocal movement of Piston Rod. Material: Polyurythane or Lubrethane or Urethane, - Operating Pressure: up to 6,000 psi -Dual Lip Design -Intermittent Pressure to 125% (7,500 psi) Material: Wear Resistant polyurethane Operating Temp Range: -40" to +120"C	64000479102 - U cup 58AL	

					LIST (	OF IT	EMS FOR INDIGENISATION		
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1103	Mining & Construction	HYDRAULIC & POWERLINE	640000478800	WIPER SEAL	116	Nos	Also called as Dust SealsBase are used for protecting the Rod seals and internal components from entry of dust or foreign materials.	640000499201 WIPER SEAL	
1104	Mining & Construction	HYDRAULIC & POWERLINE	640000479201	WIPER SEAL	116	Nos	Lubrithane U-1003 E Red. Shore hardness: 95 Durometer. Operating Pressure Range: 0"400 bar (5 800 psi). Max Speed: 1 m/s,(3.2 ft/s). Temperature Range: -30"C to +100"C		
1105	Mining & Construction	HYDRAULIC & POWERLINE	992SU91141	DAMPER	16	Nos	Dampers are used in Suspensions as mechanical stopper and to observe the impact of the moving barrel structure.  Material: Polyurthane with Hardness 90 Shore A	5617.5 10.5   E	
1106	Mining & Construction	HYDRAULIC & POWERLINE	116HC91205	PACKING ROD	142	Nos	i) a) Seal Material : Iron Rubber (U801) or Polyurethane Shore 90A, b) Retaining Ring Material : Steel ii) Operating Temperature :- 25 to +110 deg C iii) Operating Velocity : Upto 1 m/sec	116 HC 91205 PACKING ROD	
1107	Mining & Construction	HYDRAULIC & POWERLINE	TY1503	SEAL	14	Nos	Material: Aluminium Bronze ASTM B-148 Alloy No. 954 (Gr.C) Tensile Strength: 75,000 PSI. Yield Strength: 30,000 PSI. Elongation: 12%, Hardness: 150 HB,	TY1503 SEAL	
1108	Mining & Construction	HYDRAULIC & POWERLINE	PB6628	SNAP RING	30	Nos	Material : SAE1065 Oil Dipped, Hardness : 43~48 HRc	PB 6628 SNAPRING	
1109	Mining & Construction	HYDRAULIC & POWERLINE	175HM61223	SEALING RING	116	Nos	Seal Rings are fitted on the Static side of Thrust Plate/Side Plate on the Hydraulic Pump Assy to arrest the leakage of oil from High pressure delivery side to the Low pressure suction side. Material: Flourine Rubber FKM-1E, Working Temperature: -20 to +160 deg.C, Working Pressure: 140 Bar (min)		
1110	Rail & Metro	BANGALORE COMPLEX	94221155	DIGITAL VIDEO RECORDER	48	NO	DIGITAL VIDEO RECORDER, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT		SI No. 1110 to 1131 " PUBLIC ADDRESS & PUBLIC INFORMATION SYSTEM" to be indigenised from same source.

## LIST OF ITEMS FOR INDIGENISATION

					LIST	/F 111	EIVIS FOR INDIGENISATION	
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph Remarks
1111	Rail & Metro	BANGALORE COMPLEX	94221156	SALOON CAMERA	576	NO	CCTV CAMERA SALOON, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT	
1112	Rail & Metro	BANGALORE COMPLEX	94221157	EXTERIOR CAMERA, DM CAR_LEFT	48	NO	EXTERIOR CAMERA, DM CAR_LEFT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT	
1113	Rail & Metro	BANGALORE COMPLEX	94221158	EXTERIOR CAMERA, DM CAR_RIGHT	48	NO	EXTERIOR CAMERA, DM CAR_RIGHT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT	
1114	Rail & Metro	BANGALORE COMPLEX	94221159	EXTERIOR CAMERA, M CAR_LEFT	48	NO	EXTERIOR CAMERA, M CAR _LEFT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT	
1115	Rail & Metro	BANGALORE COMPLEX	94221160	EXTERIOR CAMERA, M CAR_RIGHT	48	NO	EXTERIOR CAMERA, M CAR_RIGHT, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT	
1116	Rail & Metro	BANGALORE COMPLEX	94221161	сстунмі	48	NO	CCTV HMI, CCTV SYSTEM FOR KMRCL-RS(3R) PROJECT	
1117	Rail & Metro	BANGALORE COMPLEX	94221140	CCU WITH TCMS & RADIO INTERFACE	48	NO	CENTRAL CONTROL UNIT, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT	
1118	Rail & Metro	BANGALORE COMPLEX	94221141	MAIN COMMUNICATION CONTROL PANEL	48	NO	MAIN COMMUNICATION CONTROL PANEL, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT	
1119	Rail & Metro	BANGALORE COMPLEX	94221142	DIGITAL VIDEO ANNOUCMENT UNIT	48	NO	DIGITAL VIDEO ANNOUNCEMENT UNIT, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT	

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1120	Rail & Metro	BANGALORE COMPLEX	94221143	AUXILIARY COMMUNICATION CONTROL	48	NO	AUXILIARY COMMUNICATION CONTROL PANEL, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1121	Rail & Metro	BANGALORE COMPLEX	94221144	GOOSE NECK MICROPHONE + PTT BUTTON	48	NO	GOOSENECK MICROPHONE + PTT BUTTON, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT	- AO	
1122	Rail & Metro	BANGALORE COMPLEX	94221145	CAB LOUDSPEAKER	48	NO	CAB LOUDSPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1123	Rail & Metro	BANGALORE COMPLEX	94221146	AUDIO AMPLIFIER UNIT (AAU)	144	NO	AUDIO AMPLIFIER UNIT (AAU), PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1124	Rail & Metro	BANGALORE COMPLEX	94221147	INTERIOR LOUDSPEAKERS	1152	NO	INTERIOR LOUDSPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1125	Rail & Metro	BANGALORE COMPLEX	94221148	EXTERNAL LOUD SPEAKER	576	NO	EXTERNAL LOUD SPEAKER, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1126	Rail & Metro	BANGALORE COMPLEX	94221149	PASSENGER EMERGENCY ALARM UNIT	576	NO	PASSENGER EMERGENCY ALARM UNIT, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1127	Rail & Metro	BANGALORE COMPLEX	94221150	PAD PUSH BUTTON	576	NO	PAD PUSH BUTTON, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT	Transport of the Control of the Cont	

					LIST C	OF IT	EMS FOR INDIGENISATION		
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1128	Rail & Metro	BANGALORE COMPLEX	94221151	TFT DISPLAY	864	NO	TFT DISPLAY, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1129	Rail & Metro	BANGALORE COMPLEX	94221152	FRONTAL DESTINATION INDICATOR (FDI/TNI)	48	NO	FRONTAL DESTINATION INDICATOR/TRAIN NUMBER INDICATOR, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1130	Rail & Metro	BANGALORE COMPLEX	94221153	28 PORT ETHERNET SWITCH	96	NO	SWITCH 28 PORTS, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1131	Rail & Metro	BANGALORE COMPLEX	94221154	16 PORT ETHERNET SWITCH	48	NO	SWITCH 16 PORTS, PAPIS SYSTEM FOR KMRCL-RS(3R) PROJECT		
1132	Rail & Metro	BANGALORE COMPLEX	94221086	VIDEO DISPLAY UNIT	48	NO	TMS DISPLAY UNIT TO DRG. NO. 94221086 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.		SI No. 1132 to 1230 " PROPULSION SYSTEM ITEMS" to be indigeized from same source.
1133	Rail & Metro	BANGALORE COMPLEX	94221087	ANTENNA	48	NO	WIFI ANTENNA TO DRG. NO. 94221087 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.		
1134	Rail & Metro	BANGALORE COMPLEX	94221088	SPEAKER	48	NO	SPEAKER TO MELCO PART NO. MS-A2031 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
1135	Rail & Metro	BANGALORE COMPLEX	94221066	VVVF INVERETER BOX	96	NO	VVVF INVERTER TO MELCO PART NO. MAP-194-75VD307 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE		

	Remarks											
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph				
1136	Rail & Metro	BANGALORE COMPLEX	94221067	TRACTION MOTOR	384	NO	TRACTION MOTOR TO MELCO PART NO. MB-5117-A AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE					
1137	Rail & Metro	BANGALORE COMPLEX	94221068	SIV BOX / APS	96	NO	AUXILIARY POWER SUPPLY TO MELCO PART NO. NC-EBT165C AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE <(-&-)- CONNECTORS.					
1138	Rail & Metro	BANGALORE COMPLEX	94221069	POWER EXTENSION BOX	48	NO	POWER EXTENSION BOX TO DRG. NO. 94221069 AND CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.					
1139	Rail & Metro	BANGALORE COMPLEX	94221070	SHORE SUPPLY BOX	96	NO	SHORE SUPPLY BOX TO DRG. NO. 94221070 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.					
1140	Rail & Metro	BANGALORE COMPLEX	94221071	BATTERY CONTROL PARTS	96	NO	BATTERY CONTROL PARTS TO DRG. NO. 94221071 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.					
1141	Rail & Metro	BANGALORE COMPLEX	94221072	FILTER INDUCTOR	96	NO	FILTER INDUCTOR TO DRG. NO. 94221072 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS					
1142	Rail & Metro	BANGALORE COMPLEX	94221073	BRAKE RESISTOR	96	NO	BRAKE RESISTOR TO DRG. NO. 94221073 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.					
1143	Rail & Metro	BANGALORE COMPLEX	94221074	MASTER CONTROLLER	48	NO	MASTER CONTROLLER TO DRG. NO. 94221074 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.					
1144	Rail & Metro	BANGALORE COMPLEX	94221075	PWM GENERATOR	48	NO	PWM GENERATOR TO DRG. NO. 94221075 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.					
1145	Rail & Metro	BANGALORE COMPLEX	94221076	HSCB BOX	96	NO	HSCB BOX TO DRG. NO. 94221076 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.	HSCB EDSUM				

									Pomarks
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1146	Rail & Metro	BANGALORE COMPLEX	94221077	MS BOX	96	NO	MS BOX TO DRG. NO. 94221077 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.		
1147	Rail & Metro	BANGALORE COMPLEX	94221078	MS2 BOX	96	NO	MS2 BOX TO DRG. NO. 94221078 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.	1402	
1148	Rail & Metro	BANGALORE COMPLEX	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.	SAFETYACYBOX	
1149	Rail & Metro	BANGALORE COMPLEX	94221080	LIGHTNING ARRESTER	96	NO	LIGHTNING ARRESTER TO DRG. NO. 94221080 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.		
1150	Rail & Metro	BANGALORE COMPLEX	94221081	TMS CONTROL CENTRAL UNIT	48	NO	CONTROL CENTRAL UNIT TO DRG. NO. 94221081 AND CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.		
1151	Rail & Metro	BANGALORE COMPLEX	94221202	CONNECTOR (PLUG)	336		CONNECTOR(PLUG) TO MELCO PART NO. VGE1D28-21SN AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
1152	Rail & Metro	BANGALORE COMPLEX	94221205	SOCKET CONTACT	23088	NO	SOCKET CONTACT TO MELCO PART NO. RCS16M-23D28 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
1153	Rail & Metro	BANGALORE COMPLEX	94221206	CONNECTOR	384	NO	CONNECTOR TO MELCO PART NO. MYSN105T(6348200175) AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		
1154	Rail & Metro	BANGALORE COMPLEX	94221207	СТ	96	NO	CT TO MELCO PART NO. HTV50-5/SP2 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.	5170	
1155	Rail & Metro	BANGALORE COMPLEX	94221208	POWER SUPPLY	96	NO	POWER SUPPLY TO MELCO PART NO. NJD-8048 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.		

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph
1156	Rail & Metro	BANGALORE COMPLEX	94221209	CONNECTOR	144	NO	CONNECTOR TO MELCO PART NO. QE4501A-50S AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.	
1157	Rail & Metro	BANGALORE COMPLEX	94221210	CONNECTOR	144	NO	CONNECTOR TO MELCO PART NO. QE4401-50P AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.	
1158	Rail & Metro	BANGALORE COMPLEX	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.	
1159	Rail & Metro	BANGALORE COMPLEX	94221213	CANNON PLUG	48	NO	CANNON PLUG TO MELCO PART NO. QE4501A-30S-F0 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1160	Rail & Metro	BANGALORE COMPLEX	94221216	CONNECTOR	96	NO	CONNECTOR TO MELCO PART NO SG102955R00002 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.	
1161	Rail & Metro	BANGALORE COMPLEX	94221218	SOCKET CONTACT	2304	NO	SOCKET CONTACT TO MELCO PART NO. SC201153 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.	
1162	Rail & Metro	BANGALORE COMPLEX	94221219	CONNECTOR	1728	NO	CONNECTOR TO MELCO PART NO. H60A353001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1163	Rail & Metro	BANGALORE COMPLEX	94221220	MALE CONTACT	6912	NO	MALE CONTACT TO MELCO PART NO. H9N6901001 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.	
1164	Rail & Metro	BANGALORE COMPLEX	94221222	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H39B293G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1165	Rail & Metro	BANGALORE COMPLEX	94221223	SOCKET CONTACT	132864	NO	SOCKET CONTACT TO MELCO PART NO. H39B210001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	3
1166	Rail & Metro	BANGALORE COMPLEX	94221226	CONNECTOR ASSY	576	NO	CONNECTOR ASSY TO MELCO PART NO. H39B293G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	1
1167	Rail & Metro	BANGALORE COMPLEX	94221227	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	150
1168	Rail & Metro	BANGALORE COMPLEX	94221228	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1169	Rail & Metro	BANGALORE COMPLEX	94221229	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1170	Rail & Metro	BANGALORE COMPLEX	94221231	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1171	Rail & Metro	BANGALORE COMPLEX	94221232	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1172	Rail & Metro	BANGALORE COMPLEX	94221233	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6219G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1173	Rail & Metro	BANGALORE COMPLEX	94221236	CONNECTOR ASSY	288	NO	CONNECTOR ASSY TO MELCO PART NO. H39B293G07 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1174	Rail & Metro	BANGALORE COMPLEX	94221237	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H39B294G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1175	Rail & Metro	BANGALORE COMPLEX	94221239	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1176	Rail & Metro	BANGALORE COMPLEX	94221240	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1177	Rail & Metro	BANGALORE COMPLEX	94221241	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221603 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1178	Rail & Metro	BANGALORE COMPLEX	94221242	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	



Remarks



	LIST OF TENSTON INDIGENISATION											
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM		Photograph	Remarks			
1179	Rail & Metro	BANGALORE COMPLEX	94221243	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1180	Rail & Metro	BANGALORE COMPLEX	94221244	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6221G06 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1181	Rail & Metro	BANGALORE COMPLEX	94221245	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6220G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1182	Rail & Metro	BANGALORE COMPLEX	94221246	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1183	Rail & Metro	BANGALORE COMPLEX	94221247	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1184	Rail & Metro	BANGALORE COMPLEX	94221248	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1185	Rail & Metro	BANGALORE COMPLEX	94221249	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1186	Rail & Metro	BANGALORE COMPLEX	94221250	CONNECTOR ASSY	144	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6222G05 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1187	Rail & Metro	BANGALORE COMPLEX	94221254	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1188	Rail & Metro	BANGALORE COMPLEX	94221255	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223602 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6223G03 AND					
1189	Rail & Metro	BANGALORE COMPLEX	94221256	CONNECTOR ASSY	240	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6223G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6223G04 AND					
1190	Rail & Metro	BANGALORE COMPLEX	94221257	CONNECTOR ASSY	240	NO	CONFECTOR ASSY TO MELCO PART NO. H7M6223G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6223G05 AND					
1191	Rail & Metro	BANGALORE COMPLEX	94221258	CONNECTOR ASSY	48	NO	CONFECTOR ASSY TO MELCO PART NO. H7M6223GUS AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6223G06 AND					
1192	Rail & Metro	BANGALORE COMPLEX	94221259	CONNECTOR ASSY	48	NO	CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION. CONNECTOR ASSY TO MELCO PART NO. H7M6220G02 AND					
1193	Rail & Metro	BANGALORE COMPLEX	94221260	CONNECTOR ASSY	144	NO	CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1194	Rail & Metro	BANGALORE COMPLEX	94221261	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6240G02 AND					
1195	Rail & Metro	BANGALORE COMPLEX	94221262	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6240G03 AND					
1196	Rail & Metro	BANGALORE COMPLEX	94221263	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240GUS AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6240G04 AND					
1197	Rail & Metro	BANGALORE COMPLEX	94221264	CONNECTOR ASSY	48	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6240G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.  CONNECTOR ASSY TO MELCO PART NO. H7M6240G05 AND					
1198	Rail & Metro	BANGALORE COMPLEX	94221265	CONNECTOR ASSY	48	NO	CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION. SOCKET CONTACT TO MELCO PART NO. H39B210G01 AND					
1199	Rail & Metro	BANGALORE COMPLEX	94221266	SOCKET CONTACT	1536	NO	CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION. CONNECTOR ASSY TO MELCO PART NO. H39B294003 AND					
1200	Rail & Metro	BANGALORE COMPLEX	94221267	CONNECTOR ASSY	192	NO	CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					
1201	Rail & Metro	BANGALORE COMPLEX	94221268	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G01 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.					

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph Remarks
1202	Rail & Metro	BANGALORE COMPLEX	94221269	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G02 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1203	Rail & Metro	BANGALORE COMPLEX	94221270	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G03 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1204	Rail & Metro	BANGALORE COMPLEX	94221271	CONNECTOR ASSY	96	NO	CONNECTOR ASSY TO MELCO PART NO. H7M6224G04 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1205	Rail & Metro	BANGALORE COMPLEX	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.	
1206	Rail & Metro	BANGALORE COMPLEX	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.	2 100
1207	Rail & Metro	BANGALORE COMPLEX	94221082	CN(DM)1	48	NO	COMMUNICATION NODE1 (CN1:OMC) TO DRG. NO. 94221082 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.	
1208	Rail & Metro	BANGALORE COMPLEX	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.	
1209	Rail & Metro	BANGALORE COMPLEX	94221083	CN(T/M)1	96	NO	COMMUNICATION NODE1 (CN1-TC/MC) TO DRG. NO. 94221083 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.	
1210	Rail & Metro	BANGALORE COMPLEX	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.	TE SERVER ARREST E TO
1211	Rail & Metro	BANGALORE COMPLEX	94221084	RIO(DM)1	48	NO	REMOTE IO UNIT (RIO:DMC) TO DRG. NO. 94221084 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.	
1212	Rail & Metro	BANGALORE COMPLEX	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.	
1213	Rail & Metro	BANGALORE COMPLEX	94221085	RIO(T/M)1	96	NO	REMOTE IO UNIT (RIO:TC/MC) TO DRG. NO. 94221085 AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION AND WITH REQUISITE MOUNTING HARDWARE & CONNECTORS.	
1214	Rail & Metro	BANGALORE COMPLEX	94221203	CONNECTOR(PLUG)	192	NO	CONNECTOR(PLUG) TO MELCO PART NO. VGE1D28-21SW AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.	
1215	Rail & Metro	BANGALORE COMPLEX	94221204	CONNECTOR(PLUG)	96	NO	CONNECTOR(PLUG) TO MELCO PART NO. VGE1D28-21SX AND CONFORMING TO PTS DOC. NO. GR/TD/3407 LATEST REVISION.	
1216	Rail & Metro	BANGALORE COMPLEX	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.	
1217	Rail & Metro	BANGALORE COMPLEX	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.	
1218	Rail & Metro	BANGALORE COMPLEX	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.	
1219	Rail & Metro	BANGALORE COMPLEX	94221217	SOCKET CONTACT	384	NO	SOCKET CONTACT TO MELCO PART NO. SC201186 AND CONFORMING TO PTS DOC.NO.GR/TD/3407 LATEST REVISION.	
1220	Rail & Metro	BANGALORE COMPLEX	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.	
1221	Rail & Metro	BANGALORE COMPLEX	94221224	NAME PLATE	288	NO	NAME PLATE TO MELCO PART NO. H39B247001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.	
1222	Rail & Metro	BANGALORE COMPLEX	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.	
1223	Rail & Metro	BANGALORE COMPLEX	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.	

Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1224	Rail & Metro	BANGALORE COMPLEX	94221234	NAME PLATE	240	NO	NAME PLATE TO MELCO PART NO. H60A376001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
1225	Rail & Metro	BANGALORE COMPLEX	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.		
1226	Rail & Metro	BANGALORE COMPLEX	94221238	PIN CONTACT	864	NO	PIN CONTACT TO MELCO PART NO. H39B210002 AND CONFORMING TO PTS DOC. NO.GR/TD/3407 LATEST REVISION.		
1227	Rail & Metro	BANGALORE COMPLEX	94221251	COVER	1152	NO	COVER TO MELCO PART NO. H9L7941001 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
1228	Rail & Metro	BANGALORE COMPLEX	94221252	NAME PLATE	48	NO	NAME PLATE TO MELCO PART NO. H60A376002 AND CONFORMING TO PTS DOC.NO. GR/TD/3407 LATEST REVISION.		
1229	Rail & Metro	BANGALORE COMPLEX	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.		
1230	Rail & Metro	BANGALORE COMPLEX	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.		
1231	Rail & Metro	BANGALORE COMPLEX	R605812000	CLEANING AGENT, HY-SC # 2200	2880	L	CLEANING AGENT, HY-SC # 2200 OF M/s. HANYANG CHEMICAL, KOREA		SI No. 1231 to 1235 " CLEANING AGENTS" to be indigenized from same source
1232	Rail & Metro	BANGALORE COMPLEX	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.		
1233	Rail & Metro	BANGALORE COMPLEX	R605803000	CLEANING AGENT - SEACLEAN - Z	720	L	R605803000,CLEANING AGENT SEACLEAN - Z		1
1234	Rail & Metro	BANGALORE COMPLEX	R605802000	CLEANING AGENT - SOLVENT - YUSOL TF	720	L	R605802000,CLEANING AGENT SOLVENT YUSOL TF		
1235	Rail & Metro	BANGALORE COMPLEX	R607909000	MOL - 500S Gray (tube)- Spot sealer	216	NO	R607909000,MOL 500S Gray tube Spot sealer of make DONG-A Hitech		

	EIST OF TIEWS FOR INDIGENISATION												
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Regrmnt	UoM	Brief Specifications	Photograph	Remarks				
1238	Defence	Palakkad	442028660474	TORSION BAR LH	25	Nos	TECHNICAL SPECIFICATION: Load bearing Front Axle suspension Item Rolled bar Size:1900xØ80mm Weight :15 kg Approx	14 Po 11					
1239	Defence	Palakkad	442028660464	TORSION BAR RH	25	Nos	TECHNICAL SPECIFICATION: Load bearing Front Axle suspension Item Rolled bar Size:1900xØ80mm Weight :15 kg Approx	of Roll					
1240	Defence	Palakkad	443612280001	CONTROL VALVE	25	Nos	TECHNICAL SPECIFICATION: Regulates and Controls Air supply for brake application. MEDIUM: COMPRESSED AIR BODY: CASTING OPERATING PRESSURE: 8 BAR WORKING TEMPERATURE: -40°to 80°C						
1241	Defence	Palakkad	443612386806	COUPLING HEAD	25	Nos	TECHNICAL SPECIFICATION: Coupling element serves for functioning of Trailer brake with Hose connections Casting with Rubber packing Dimensions: 130x66x90 Operating Medium: AIR						
1242	Defence	Palakkad	443612386806	HEAD COUPLING	25	Nos	TECHNICAL SPECIFICATION: Coupling element serves for functioning of Trailer brake Casting with Rubber packing Dimensions: 130x60x90 Operating Medium: AIR						
1243	Defence	Palakkad	443612015807	AIR PRESSURE GOVERNOR	25	Nos	TECHNICAL SPECIFICATION:  Maintains the operating Air pressure for tyre inflator, safety valve.  Medium: Compressed Air Body: Casting Relief valve Setting Pressure:980±100kpa (10±1KP/cm2) Working Temperture: -40*to60*C Internal threading for connection fitting:M22x1.5mm						

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

	EST OF TEMS FOR INDIGENISATION												
Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks				
1250	Defence	Hydraulic & Powerline	112422200503	ROLLER BEARING	25	Nos	ROLLER BEARING NJ 220 B C3 CSN 02 4670 ROLLER BEARING NTN NJ 220C3/NSK NJ 220C3 d=100 mm, D= 180 mm	A ST					
1251	Defence	Hydraulic & Powerline	112428092003	ROLLER BEARING	25	Nos	ROLLER BEARING NTN NJ2309EC3/NSK NJ2309EC3/SKF NJ2309EC3 d=45 mm, D= 100 mm	NJ NJ					
1252	Defence	Hydraulic & Powerline	112712100100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.30210A CSN 02 4720 TAPPER ROLLER BEARING NTN 4T 30210/ NSK HR 30210J d=50 mm, D= 90 mm						
1253	Defence	Hydraulic & Powerline	112712140100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.30214A CSN 02 4720 TAPERED ROLLER BEARING NTN 32314/ NSK HR 30214J/ SKF 30214 d=70 mm, D= 125 mm						
1254	Defence	Hydraulic & Powerline	112717180100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32218A CSN 02 4720 TAPERED ROLLER BEARING NTN 32218U/ NSK HR 32018J d=90 mm, D= 160 mm						
1255	Defence	Hydraulic & Powerline	112717200100	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32220A CSN 02 4720 TSPERED ROLLER BEARING TIMKEN 32220 d=100 mm, D= 180 mm						
1256	Defence	Hydraulic & Powerline	112718100500	TAPERED ROLLER BRG	25	Nos	TAPERED ROLLER BRG NSK HR32310CJ/SKF 32310B d=50 mm, D= 110 mm						

		LIST O	F ITEM	IS FOR INDIGENISATION

Cumulative SI.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks	
1257	Defence	Hydraulic & Powerline	112718120500	TAPERED ROLLER BRG.	25	Nos	TAPERED ROLLER BRG.32312B CSN 02 4720 TAPERED ROLLER BRG. ZKL 32312B/ FAG 32312B d=60 mm, D= 130 mm			
1258	Defence	Hydraulic & Powerline	112718130100	T.R.BEARING	25	Nos	T.R.BEARING NTN 32313U/ NSK HR 32313J d=65 mm, D= 140 mm			
1259	Defence	Hydraulic & Powerline	112727152000	TAPER ROLLER BEARING	25	Nos	TAPER ROLLER BEARING 33215			
1260	Defence	Hydraulic & Powerline	324163174988	BALL BEARING	25	Nos	BALL BEARING 6317 N/P 64 CSN 02 4640 Ball Bearing NTN 6317NC4/ NSK 6317NC4/ SKF 6317NC4 d=85 mm, D= 180 mm	Type N		
1261	Defence	Hydraulic & Powerline	324414101241	ROLLER BEARING	25	Nos	ROLLER BEARING NU 410 BNC3 CSN 02 4670 d=50 mm, D= 100 mm			
1262	Defence	Hydraulic & Powerline	324417172072	ROLLER BEARING	25		ROLLER BEARING NU 2217 EN C3 CSN 02 4670Z ROLLER BEARING NTN NU2217ENC3/ NSK NU2217 d=85 mm, D= 150 mm			

LIST OF ITEMS FOR INDIGENISATION									
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks
1263	Defence	Hydraulic & Powerline	111 111 010 000	BUSHING	25	Nos	BUSHING 2015 KU 23 X 20 X 15		
1264	Defence	Hydraulic & Powerline	112545041000	BEARING	25	Nos	BEARING INA 60X68X46 F85001		
1265	Defence	Hydraulic & Powerline	112545043000	BEARING	25	Nos	BEARING INA 72X80X46 F87651		
1266	Defence	Hydraulic & Powerline	112545044000	BEARING	25	Nos	BEARING INA 85X93X55 F90754		
1267	Defence	Hydraulic & Powerline	112545052000	BEARING	25	Nos	BEARING INA 55X63X32 F92414		
1268	Defence	Hydraulic & Powerline	112545042000	BEARING	25	Nos	BEARING INAK 65 X 73 X 3		

	LIST OF ITEMS FOR INDIGENISATION										
Cumulative Sl.No	Business Group	Division	Part Number	Description	Approx. Annual Qty. Reqrmnt	UoM	Brief Specifications	Photograph	Remarks		
1269		Hydraulic & Powerline	112545045000	BEARING	25	Nos	BEARING I0K 100X107X21				