

Rail Grinding Vehicle No.2 (LRR 16 M12)

Rail Grinding Vehicle No.2 (RGV2) has been designed to perform profile grinding of running rails, turnouts and crossings of the mainline and depot tracks in SMRT networks with self-propel mode. RGV2 is formed up by one power wagon and two grinding wagons. The power wagon consists of engine, generator and measuring trolley. While grinding wagons consist of cabins, grinding units and dust aspiration systems. The vehicle was bought in year 1996.

Below are the specifications for RGV2.

General Specification

Maximum length	24.560m
Maximum width	2.6m
Maximum height	3.575m
Total weight empty	55T
Total weight empty	60T
Maximum travelling speed	64Km/h
Grinding Speed	4-6 Km/h
Minimum radius when travelling	190m
Minimum radius when grinding	190m
Diameter of wheels	840mm
Brakes	Shoe-brake
Fuel tank capacity	8 h
Measuring & recording device	1700 / 4 / 10

Description	Driving & Control Post Grinding Wagon		Locomotor		Driving & Control Post Grinding Wagon	
	Reprofiling units	Rectifying units	Measuring trolley		Rectifying units	
Grinding Units	4 x 11 KW	4 x 15 KW	-		8 x 15KW	
Number & power of grinding units	Ø260	Ø180	-		Ø180	
Ø grinding stones(mm)/ revol. 3600rpm	-15°/-70°(±2.5°)	+15°/-20°(±0.5°)	-		+15°/-20°(±0.5°)	
Pivoting of grinding units	18T		24T		18T	
Total weight	14T		16T	16T	14T	
Max axle load	Scharfenberg type 35		-		Scharfenberg type 35	
Coupling	7800m³/h		-		7800m³/h	
Aspiration power	Carrying axle		Motor axle	Motor axle	Carrying axle	
Bogies	-		1000L		-	
Fuel tanks	1900L		-		1900L	
Water tanks	-		Caterpillar 3406 TA 350KW		-	
Diesel engine	-		AVK DSG 52 M1-4 355 kVA (F) 440V 60Hz		-	
Generator	-		-		-	

Photo 1



Photo 2



Photo 3



Photo 4



List of spare parts from central store

S/No.	Material No.	Description	SOH (04 Aug15)	UM	Mfr no	Mfr / Brand
1	3462702	SCREW,COUNTERSUNK CAP:M10 X 20,SOCKET FL	60	EA	DIN 7991	SCHAKU
2	3207306	ENCODER:30VDC,FOR RAIL GRINDING UNIT	1	EA	98.796.002.204.1	SPENO
3	3206119	VALVE,SAFETY:3/8",6 LT/M,FOR RAIL GRINDI	1	EA	98.140.011.041.0	SPENO
4	3503404	REPAIR KIT:FOR DRIVER'S STRAIGHT AIR BRA	4	ST	C74386/16-S	WBL
5	3502401	REPAIR KIT:FOR DOUBLE CHECK VALVE	2	ST	-	WBL
6	3502102	REPAIR KIT:FOR EMERGENCY APPLICATION VAL	3	ST	B81980/004-S	WBS
7	4011097	INDICATOR,PNEUMATIC VISUAL:FOR RGV2	4	EA	5VS-402-800	NORGREN
8	3525101	NUT:LOCKNUT,M17 x 1P FOR RGU GRINDING TR	16	EA	KM 3	SKF
9	3503201	REPAIR KIT:FOR AIR PRESSURE TU-FLO 700	2	ST	289998	BENDIX
10	3502508	VALVE,SAFETY:1",10 BAR,FOR RGV BRAKE SYS	1	EA	98.443.106.001.0	SPENO
11	3489905	VALVE,MAGNET:24VDC,FOR RGV	8	EA	BB1889/005	WBL
12	3463019	PLATE,WEARING:DIA 20MM,FOR AUTOMATIC COU	5	EA	40-3556.06.1	SCHAKU
13	3462905	CONNECTION,MR PIPE:FOR AUTOMATIC COUPLER	5	EA	40-3556.04(2)	SCHAKU
14	3462809	CONNECTION,BRAKE PIPE:FOR AUTOMATIC COUP	5	EA	40-3556.03(02)	SCHAKU
15	3462606	HANDLE:FOR AUTOMATIC COUPLER	5	EA	40-23000.01:08(4)	SCHAKU
16	3524707	CANCELLED ITEM:REFER TO SAR/2012-008	4	EA	GE 17 ES	SKF
17	4008750	FOAM CONCENTRATE:5 US GAL/19 L PER PAIL	500	PAI	FXP	CHEMGUARD
18	3339704	ALTERNATOR:FOR RGV2	2	EA	OR 2698	CAT
19	4000019	VALVE,PNEUMATIC:SS 5/2 WAY,24VDC	1	EA	572.740.022.0	REXROTH
20	4002622	FUEL INJECTOR:	6	EA	7W7037	CAT
21	3207103	TRANSDUCER:0 TO 400 BAR,FOR RAIL GRINDIN	1	EA	98.707.004.002.0	SPENO
22	3502807	REGULATOR,PRESSURE:FOR RGV BRAKE SYSTEM	2	EA	R24-401-RNXG	NORGREN
23	3337119	REGULATOR,PRESSURE:41 LT/MIN,200 BAR	1	EA	36.3114.03	HM
24	3207402	RELAY:FOR RAIL GRINDING UNIT	1	EA	98.806.001.103.0	SPENO
25	3207218	CARD,AMPLIFIER:TRACTION CONTROL	1	EA	98.723.001.001.1	SPENO

26	3206709	SEAL,ELASTIC:FOR RAIL GRINDING UNIT	1	EA	98.357.002.018.0	SPENO
27	3206602	SEAL,ELASTIC:FOR RAIL GRINDING UNIT	1	EA	98.357.002.015.0	SPENO
28	3206418	CONNECTION:FOR RAIL GRINDING UNIT	4	EA	98.310.021.001.0	SPENO
29	3206207	VALVE,SAFETY:1/2",25 LT/M,FOR RAIL GRIND	2	EA	98.140.011.061.0	SPENO
30	3206004	FEELER:SW/LW,FOR RAIL GRINDING UNIT	1	ST	18.37.0002.110.0	SPENO
31	3198307	SCREW:ALLEN,M8 x 16MM LG,FLAT HEAD,S STE	185	EA	BN 616, M8 X 16	BOSSARD
32	3350401	WASHER:DOUBLE TAB PLAIN TABWASHER,M20,S	946	EA	124324	KOPPERNA
33	3176108	PUSHBUTTON:RED LEN,FOR RAIL GRINDING UNI	5	EA	98.877.001.005.0	SPENO
34	3176001	PUSHBUTTON:GREEN LEN,FOR RAIL GRINDING U	5	EA	98.877.001.003.0	SPENO
35	3350006	WASHER:M8,DOUBLE TAB PLAIN TABWASHER	850	EA	124312	KOPPERNA
36	3155809	RINGSPANN,BRAKE:FOR RGV3	3	EA	98.139.010.001.0	SPENO
37	2787919	GRINDSTONE:180MM x 105MM x 90MM,FOR RGU	375	EA	TN 389272	TYROLIT
38	4005080	FIXTURE,LIGHTING,LADDER LIGHTING:24V,60W	3	EA	-	PALAZZOLI
39	3175607	LAMP,INCANDESCENT:30V,2W,BA9S	9	EA	98.875.002.005.1	SPENO
40	3174604	FUSE:250mA,250V,GLASS,FOR RAIL GRINDING	30	EA	533-488	FARNELL
41	4005798	SCREW:HEXAGON SOCKET HEAD CAP,BLACK,M5	500	EA	DIN 912	BOSSARD
42	3198518	SCREW:ALLEN,M5 x 10MM LG,FLAT HEAD,S STE	280	EA		
43	3198403	SCREW:ALLEN,M16 x 25MM LG,FLAT HEAD,H.T.	340	EA		
44	3161301	ELBOW:CONNECTION ELBOW FOR RAIL GRINDING	3	EA	98.152.112.013.0	SPENO
45	3476119	MOTOR,WIPER:FOR RGV2	2	EA	0 390 242 300	BOSCH
46	3169506	CONVERTER:FOR RAIL GRINDING UNIT	1	EA	98.707.001.002.0	SPENO
47	567808	AXLE,CARRYING:FOR RGV	1	EA	-	SPENO
48	3335404	IMPULSE CONTROL:24VDC,FOR RGV	1	EA	ES112AY	DEUTA
49	3168001	VALVE,ELECTRO:FOR RAIL GRINDING UNIT	1	EA	98.463.004.001.0	SPENO
50	3169602	REPEATER,INCLINATION:FOR RAIL GRINDING U	2	EA	98.707.001.005.0	SPENO
51	3335519	VOLTAGE,REGULATOR:440V,60HZ,FOR RGV	1	EA	98.702.001.900.0	SPENO
52	3335009	RACK:MAIN RACK UNIT,FOR RAIL GRINDING VE	1	EA	98.745.010.011.0	SPENO
53	3334903	CABLE:INPUT/OUTPUT,FOR RAIL GRINDING VEH	2	EA	98.745.010.009.0	SPENO
54	3334719	MODULE:FOR CALCULATION PROCESSING,FOR RG	1	EA	98.742.003.160.2	SPENO
55	3334604	MODULE:FOR CONNECTING OF MEASUREMENT	1	EA	98.742.003.150.2	SPENO

		SEN				
56	3334508	MODULE:CONTROL AF,FOR RAIL GRINDING VEHI	1	EA	98.742.003.140.2	SPENO
57	3334401	MODULE:FEEDING,FOR POWER SUPPLY,FOR RGV	1	EA	98.742.003.130.0	SPENO
58	3334305	MODULE:FILTER,FOR RAIL GRINDING VEHICLE	1	EA	98.742.003.110.2	SPENO
59	3334209	MODULE:FOR POWER SUPPLY,FOR RGV	1	EA	98.742.003.100.2	SPENO
60	3334102	MODULE:REEDING,FOR RAIL GRINDING VEHICLE	1	EA	98.742.002.140.0	SPENO
61	3334006	MODULE:POWER SUPPLY,FOR RAIL GRINDING VE	1	EA	98.742.002.120.2	SPENO
62	3333919	MODULE:OUTPUT CALIBRATION,FOR RGV	1	EA	98.742.001.170.2	SPENO
63	3333804	MODULE:LOW PASS FILTER,FOR RGV	1	EA	98.742.001.160.2	SPENO
64	3333708	MODULE:TRANSDUCER CONNECTION	1	EA	98.742.001.150.2	SPENO
65	3333601	MODULE:PILOTE,FOR RAIL GRINDING VEHICLE	1	EA		
66	3333505	MODULE:FOR THE POWER SUPPLY,0/+6V,0/-6V	1	EA	98.742.001.120.2	SPENO
67	3333409	MODULE:ALIMENTATION,FOR THE POWER SUPPLY	1	EA		
68	3333302	MODULE:ALIMENTATION,15/+24V,FOR POWER SU	1	EA	98.742.001.100.2	SPENO
69	3176503	PIPE,POLYAMIDE:FOR RAIL GRINDING UNIT	10	M	99.759.010.080.0	SPENO
70	3176407	PIPE,POLYAMIDE:FOR RAIL GRINDING UNIT	10	M	99.759.010.060.0	SPENO
71	3176319	PIPE,POLYAMIDE:FOR RAIL GRINDING UNIT	10	M	99.759.010.040.0	SPENO
72	3176204	PIPE,POLYAMIDE:FOR RAIL GRINDING UNIT	10	M	99.759.010.028.0	SPENO
73	3175519	LAMP,INCANDESCENT:30V,50mA,2W	49	EA	98.875.002.001.01	SPENO
74	3175308	CONNECTOR:FOR RAIL GRINDING UNIT	1	EA	98.843.200.002.1	SPENO
75	3175201	PLUG,INTAKE:FOR RAIL GRINDING UNIT	2	EA	98.843.001.021.0	SPENO
76	3175105	PLUG:FOR RAIL GRINDING UNIT	2	EA	98.841.001.021.0	SPENO
77	3175009	CONNECTOR:FOR RAIL GRINDING UNIT	4	EA	98.836.051.101.0	SPENO
78	3174903	CONNECTOR:FOR RAIL GRINDING UNIT	4	EA	98.836.048.101.0	SPENO
79	3174807	CONNECTOR:FOR RAIL GRINDING UNIT	4	EA	98.836.047.101.0	SPENO
80	3170419	METER,FREQUENCY:FOR RAIL GRINDING UNIT	1	EA	98.762.002.001.0	SPENO
81	3169805	CONVERTER:0 - 1K OHM,0 - 10VDC	1	EA	98.707.001.015.0	SPENO
82	3169709	POWER SUPPLY:FOR RAIL GRINDING UNIT	1	EA	98.707.001.007.0	SPENO
83	3169207	MANOMETER:0 - 12 BAR,FOR RAIL GRINDING U	1	EA	98.465.002.004.0	SPENO
84	3169119	MANOMETER:0 - 12 BAR,FOR RAIL GRINDING U	1	EA	98.465.002.002.0	SPENO

85	3168909	PUSHBUTTON:PNEUMATIC SWITCH, GREEN COLOUR	1	EA	98.463.010.902.0	SPENO
86	3168618	GASKET, PLASTIC: FOR RAIL GRINDING UNIT	2	EA	98.463.006.020.0	SPENO
87	3168407	REDUCTION CONNECTION FOR 4 X 6 PIPE	2	EA	98.463.004.023.0	SPENO
88	3168319	MODULE, INTERMEDIATE: FOR RAIL GRINDING UN	2	EA	98.463.004.022.0	SPENO
89	3168204	MODULE, EXTERNAL: FOR RAIL GRINDING UNIT	1	EA	98.463.004.021.0	SPENO
90	3168108	MODULE, EXTERNAL: FOR RAIL GRINDING UNIT	1	EA	98.463.004.020.0	SPENO
91	3165302	REPAIR KIT: FOR RAIL GRINDING UNIT	2	EA	98.451.001.989.0	SPENO
92	3165118	MUFFLER FOR RAIL GRINDING UNIT	1	EA	98.451.001.946.0	SPENO
93	3165003	ACCESSORIES FOR CYLINDER OF RGU	1	EA	98.451.001.934.0	SPENO
94	3164705	CYLINDER: PNEUMATIC CYLINDER FOR RGU	1	EA	98.451.001.124.1	SPENO
95	3164609	CYLINDER: PNEUMATIC CYLINDER FOR RGU	1	EA	98.451.001.107.1	SPENO
96	3164406	CYLINDER: PNEUMATIC CYLINDER FOR RGU	1	EA	98.451.001.101.1	SPENO
97	3163702	CONNECTION FOR RAIL GRINDING UNIT	1	EA	98.310.020.001.0	SPENO
98	3163606	CONNECTION, BRASS	1	EA	98.310.018.002.0	SPENO
99	3163518	CONNECTION, BRASS	1	EA	98.310.018.001.0	SPENO
100	3163307	TEE: CONNECTION TEE FOR RAIL GRINDING UNI	2	EA	98.310.009.003.0	SPENO
101	3163219	TEE: CONNECTION TEE FOR RAIL GRINDING UNI	1	EA	98.310.009.001.0	SPENO
102	3163104	TEE: CONNECTION TEE FOR RAIL GRINDING UNI	1	EA	98.310.006.003.0	SPENO
103	3163008	ELBOW: CONNECTION ELBOW FOR RAIL GRINDING	5	EA	98.310.004.004.0	SPENO
104	3162902	ELBOW: CONNECTION ELBOW FOR RAIL GRINDING	2	EA	98.310.004.001.0	SPENO
105	3162718	CONNECTION FOR RAIL GRINDING UNIT	4	EA	98.310.001.006.0	SPENO
106	3162603	CONNECTION FOR RAIL GRINDING UNIT	4	EA	98.310.001.005.0	SPENO
107	3162507	CONNECTION FOR RAIL GRINDING UNIT	1	EA	98.310.001.004.0	SPENO
108	3162419	CONNECTION FOR RAIL GRINDING UNIT	1	EA	98.310.001.003.0	SPENO
109	3162101	TEE: CONNECTION TEE FOR RAIL GRINDING UNI	1	EA	98.163.034.318.1	SPENO
110	3161619	TEE: CONNECTION TEE FOR RAIL GRINDING UNI	2	EA	98.152.116.004.0	SPENO
111	3161504	TEE: CONNECTION TEE FOR RAIL GRINDING UNI	2	EA	98.152.116.001.0	SPENO
112	3160309	CONNECTION FOR RAIL GRINDING UNIT	1	EA	98.152.108.004.0	SPENO
113	3159607	PLUG CAP: FOR RAIL GRINDING UNIT	5	EA	98.151.149.024.0	SPENO

114	3159519	PLUG CAP:FOR RAIL GRINDING UNIT	5	EA	98.151.149.022.0	SPENO
115	3159308	COUPLING:BANJO	2	EA	SWVE 15-PLR	PARKER
116	3159009	ELBOW:MALE STUD ELBOW COUPLING,EO 10L	3	EA	98.151.118.012.0	SPENO
117	3158903	COUPLING:STRAIGHT MALE STUD COUPLING,EO	3	EA	98.151.108.021.0	SPENO
118	3158807	COUPLING:STRAIGHT MALE STUD COUPLING,EO	5	EA	98.151.108.016.0	SPENO
119	3156609	PLATE FOR RAIL GRINDING UNIT	3	EA	98.141.900.201.0	SPENO
120	3156318	VALVE:ELECTRO-VALVE FOR RAIL GRINDING UN	2	EA	98.141.000.002.0	SPENO
121	3156107	VALVE:RETAINING VALVE FOR RAIL GRINDING	2	EA	98.140.003.403.0	SPENO
122	3155702	SEAL KIT FOR HYDRAULIC CYLINDER,DIA 55/2	4	EA	98.139.009.914.0	SPENO
123	4003581	IMPULSE GENERATOR	1	EA	EF67/250-16AC	SPENO
124	3173708	RELAY:24V,8 PIN,FOR RAIL GRINDING UNIT	5	EA	98.806.001.001.0	SPENO
125	3171905	CONTACT BLOCK:FOR RGV3	51	EA	98.790.002.005.0	SPENO
126	3171606	PUSHBUTTON:RED,FOR RGV3	56	EA	98.790.001.053.0	SPENO
127	3171518	PUSHBUTTON:GREEN,FOR RGV3	43	EA	98.790.001.052.0	SPENO
128	3171403	KNOB SELECTOR:FOR RAIL GRINDING UNIT	28	EA	98.790.001.004.0	SPENO
129	3173804	RELAY:24V,11 PIN,FOR RAIL GRINDING UNIT	10	EA	MKS3PI-5 24VDC	OMRON
130	3165206	REPAIR KIT: FOR RGV3	5	EA	98.451.001.979.0	SPENO
131	3198702	PCB:ELECTRONIC CARD,TYPE VT3000 S36 1111	1	EA	243127/60	REXROTH
132	3211719	MOTOR,HYDRAULIC:FIX DISPLACEMENT	1	EA	9446469 503.20.01.17	HYDROMAT
133	3155008	CYLINDER,PNEUMATIC:FOR RGU	1	EA	18.59.0008.010.0	SPENO
134	3154902	CYLINDER,PNEUMATIC:DIA 140,FOR RGU LRR 1	1	EA	18.59.0007.010.0	SPENO
135	3154419	PLATE FOR GRINDING STONE	4	EA	18.31.1069.010.0	SPENO
136	3164318	VALVE:SAFETY VALVE FOR RAIL GRINDING UNI	1	EA	98.442.006.020.0	SPENO
137	4002407	TRANSMITTER,FREQUENCY:0-3767 HZ,0-20mA	1	EA	RTL 500 0 3767 HZ	RAYLEIGH

Note:

Items removed from RGV2.

1) Both air compressors was dismantled.

Additional spare parts kept by ETB.

- 1) 1 re-con generator.
- 2) 1 number of new hydraulic pumps.
- 3) 15 numbers of new shock absorbers.
- 4) 2 numbers of new low pressure water pump.
- 5) 1 number of trolley lifting hydraulic cylinders.
- 6) 1 number of new high pressure water pumps.