

## **Rail Grinding Vehicle No.1 (RR 16 M-2)**

Rail Grinding Vehicle No.1 (RGV1) has been designed to perform profile grinding of running rails, turnouts and crossings of the mainline and depot tracks in SMRT networks coupled with Locomotive. RGV1 is formed up by one power wagon and two grinding wagons. Power wagon consist of control cabin, generator and measuring trolley. While grinding wagon consist of grinding units and dust aspiration system. The vehicle was bought in year 1987.

Below are the specifications for RGV1.

### **General Specification**

Maximum length	19.86m
Maximum width	2.7m
Maximum height	3.45m
Total weight empty	51T
Total weight empty	56.5T
Maximum travelling speed	80Km/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
Grinding stones	Ø250 / Ø260 / Ø130mm
Measuring & recording device	1700/4

Description	Grinding Wagon				Grinding Wagon			Generator	Control Post
	Rectification units				Reprofiling units	Rectification units			
Grinding Units	8 x 15 KW				4 x 11 KW	4 x 15 KW			-
Number & power of grinding units	8 x 15 KW				4 x 11 KW	4 x 15 KW			-
Ø grinding stones(mm)/ revol 3600rpm	Ø250	Ø130	Ø250	Ø130	Ø260	Ø250	Ø130		-
Pivoting of grinding units	+15/-30	±15°	+15/-30	±15°	-15°/-70°	-15°/-70°	±15°		-
Total weight	15.5T				15.5T				25.5T
Max axle load	10.5T				15.5T			15.5T	15T
Coupling	Scharfenberg type 35							Scharfenberg type 35	
Aspiration power	7800m³/h				7800m³/h				-
Tanks fuel	-				-				720L
Tanks water	-				-				1200L
Engine	-				-				Deutz BA6M 816W 356Kw 1800rpm
Generator	-				-				Leroy Somer LSA 47 L7 4KVA 440V 60Hz

**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	2182418	INSERT:THREADED,HELICOIL,M12 X 1.75P X 1	605	EA		
2	2692805	TAPE:TWO-PLY HEAT TREATED FIBERGLASS TAP	1	RL		
3	123908	FILTER:OIL FILTER FOR CAT 3406 PC/TA	3	EA	P554005	DONALDSO
4	2516406	PROBE:70 DEGREES,SINGLE CRYSTAL,4MHZ	7	ST	SS70-4HP	GB INSPECT
5	2496505	SCREW:M24 X 200MM LG,STEEL,FOR TIMBER SL	3102	EA		
6	3330208	CONNECTOR:3 WAY,30A,CERAMIC,HIGH TEMPERA	1	EA	240-473	FARNELL
7	3329004	FILTER ELEMENT,OUTLET:FOR AIR DRYER DM02	3	EA	ED 025U	AFE
8	3328706	FILTER ELEMENT,INLET:FOR AIR DRYER DM020	3	EA	ED 025H	AIRFILTER
9	2745719	FILTER,HYDRAULIC OIL:FOR RGV	3	EA	98.138.009.900.0	SPENO
10	3469007	BELT,V:SET OF 3 BELTS,FOR RADIATOR FAN	1	ST	6N6656	CAT
11	4007118	VALVE,PNEUMATIC:G3/8",0.9 TO 10 BAR	4	EA	V62C 5D7A-X5090	NORGREN
12	3444707	REPAIR KIT:FOR TWO RATIO RELAY VALVE	3	ST	-	WBL
13	4002602	WASHER,LOCK:50MM DIA	1	EA	MB 10	SKF
14	3440909	REPAIR KIT:CONSISTS OF 33 ITEMS,FOR BRAK	2	ST	D76544/002MRTS	WBL
15	3480118	LIGHTING FIXTURE,LADDER LIGHTING	2	EA	98.876.001.004.0	SPENO
16	4002586	O-RING:49/1,5/51	192	EA	A+P ORM 0490-15	SPENO
17	4002603	NUT,LOCK:M50 X 1.5	3	EA	KM 10	SKF
18	4002593	BEARING,GLYCODUR:	2	EA	GLY.PG.40 4440 F	SKF
19	3329901	BELLOWS,LEATHER:SPECIAL UNIT	22	EA	18.59.1023.000.0	SPENO
20	3329805	BELLOWS,LEATHER:SPECIAL UNIT	22	EA	18.59.1019.000.0	SPENO
21	4000192	COMPRESSOR UNIT,AIR CON:FOR RGV1	1	EA	MT 32 JF 4B VE	MANUEROP
22	3493402	VALVE,THERMOSTATIC EXPANSION:FOR AIR CON	1	EA	TI 3/4 HW100	ALCO
23	3444504	REPAIR KIT:FOR STRAINER CHECK VALVE/CHOK	3	ST	-	WBL
24	3440802	REPAIR KIT:CONSISTS OF 30 ITEMS,FOR BRAK	4	ST	58296	SAB

25	3440706	REPAIR KIT:CONSISTS OF 21 ITEMS,FOR BRAK	2	ST	58295	SAB
26	3444619	REPAIR KIT:FOR AUTO DRAIN VALVE	12	ST	-	WBL
27	3496005	BEARING:CYLINDRICAL ROLLER BEARING,120MM	7	EA	NU 224 ECP/C3	SKF
28	1961719	LAMPHOLDER,FOR INTRALUX 6000	18	EA		
29	3480003	LIGHTING ASSEMBLY,CABIN LIGHTS:24VDC,8W	3	EA	2JA 004 531-011	HELLA
30	3444408	REPAIR KIT:FOR PNEUPHONIC	5	ST	-	WBL
31	3444301	REPAIR KIT:FOR MAGNET VALVE	3	ST	-	WBL
32	4000123	PUSHBUTTON:BLUE	2	EA	QXT-BLUE	SCHLEGEL
33	4000122	LAMP,PILOT:GREEN	3	EA	QXL5-GREEN	SCHLEGEL
34	4000121	LAMP,PILOT:WHITE	2	EA	QXL5-WHITE	SCHLEGEL
35	4000120	LAMP,PILOT:BLUE	2	EA	QXL5-BLUE	SCHLEGEL
36	4000195	PUSHBUTTON:YELLOW	2	EA	QXH-YELLOW	SCHLEGEL
37	4000113	KEY,SELECTOR	1	EA	QXBS	SCHLEGEL
38	3505418	BEARING,SMOOTH GYLCODUR FOR RGV	8	EA	GLY.PG 161820 A	SPENO
39	3505303	SPRING:COMPRESSION FOR REPROFILING TROLL	8	EA	BAUMANN NO 113	SPENO
40	3516109	MAINTENANCE KIT:FOR SAB BLOCK BRAKE UNIT	4	ST	-	WABCO
41	2531403	FILTER,AIR:FOR RGV'S ENGINE SYSTEM	17	EA	C33920/3	MANN
42	3516504	VALVE,TWIN NON-RETURN:FOR RGV1	6	EA	Z2FS6-2-4X/2QV	REXROTH
43	3505709	SCRAPER,45/55 x 10 FOR REPROFILING TROLL	24	EA	A + F RS 45557 GACO	SKF
44	2184501	SOLEPLATE FOR POINT MACHINE(MILD STEEL)	2	ST		
45	3475706	FIXTURE,LIGHTING ASSEMBLY C/W NEON TUBE	2	EA	2JA004531-011	HELLA
46	3444918	BELLOW FOR TRANSDUCER	8	EA	SIMRIT V6-724	SPENO
47	3444803	VALVE,PRESSURE:1/2"	1	EA	TA 12	SPENO
48	3329418	FILTER ELEMENT:CIRCULATING PUMP	16	EA	RFBNHC.660F10B2	HYDAC
49	3505602	BEARING:YOKE TYPE TRACK ROLLER,52MM DIA	8	EA	NATR 25 PP	INA
50	3445419	FILTER:FOR PNEUMATIC SYSTEM	3	EA	12 PSI A51 1/2	SPENO
51	2892006	FILTER ELEMENT:375 X 185 X 20MM,FOR RGV2	180	EA		
52	2891919	FILTER ELEMENT:255 X 255 X 20MM,FOR RGV2	180	EA		
53	2824919	FILTER ELEMENT:430 X 280 X 20MM,FOR RGV2	200	EA		

54	2737209	BEARING:DEEP GROOVE BALL BEARING,35MM BO	2	EA	6307-Z/C 3	SKF
55	2737719	CIRCLIP:INTERNAL CIRCLIP FOR RGV ENGINE	2	EA	110 7855	DEUTZ
56	2801709	GASKET:FOR RGV	6	EA	215 9580	DEUTZ
57	2801602	FILTER ELEMENT:FOR RGV	2	EA	PL 35	PSI
58	2801506	FILTER ELEMENT:FOR RGV	3	EA	PL 411	PSI
59	2744708	FILTER ELEMENT,HYDRAULIC OIL:FOR RGV	2	EA	0060 RO10 BN-HC	HYDAC
60	4003981	SLEEVE,EARTHING:3/4 INCH	10	EA	6503 75 6	SCHLEMMER
61	4003980	SLEEVE,EARTHING:3/8 INCH	10	EA	6503 38 1	SCHLEMMER
62	4003979	CONNECTOR:PG 13.5	9	EA	2607 13 1	SCHLEMMER
63	4003978	CONNECTOR:PG 21	10	EA	2607 21 2	SCHLEMMER
64	4003977	CONDUIT,METAL:	50	M	0301 31 0	SCHLEMMER
65	4003976	CONDUIT,METAL:	51	M	0301 28 0	SCHLEMMER
66	3496101	LABYRINTH:TYPE M2-32C,FOR CARRYING AXLE	7	EA	17.20.1030.000.0	SPENO
67	3445304	GUIDE,SKIP:FOR LEFT SIDE	6	EA	11.80.119.900	SPENO
68	3445208	GUIDE,SKIP:FOR RIGHT SIDE	6	EA	11.80.120.900	SPENO
69	593707	GRINDSTONE:260MM DIA,FOR RGV	205	EA	TN 367748	TYROLIT
70	593504	GRINDSTONE:250MM DIA,TYPE 23, FOR RGV	199	EA	TN 380527	TYROLIT
71	600305	REDUCER:3/8 BSP X 1/8 BSP,M & F (STEEL)	13	EA	RI 3/8 - 1/8	ERMETO
72	603901	ELBOW:10MM COMPRESSION (MILD STEEL) BULK	1	EA	WSV 10-L	ERMETO
73	603805	COUPLING:MALE STUD UNION COUPLING	2	EA	EVGE10L	SPENO
74	603602	TEE:10 X 10 X 1/4 BSPP (COMPRESSION) STE	3	EA	VB10L	SPENO
75	603418	ELBOW:6MM COMPRESSION (MILD STEEL) BULKH	9	EA	WSV 6-L	ERMETO
76	603303	TEE:6 X 6 X 6 (COMPRESSION/PLAIN) STEEL	10	EA	VB6L	SPENO
77	603207	ELBOW:6MM X 6MM(COMPRESSION X HOSE)MILD	9	EA	EVL6L	SPENO
78	603119	TEE,TUBE:6MM COMPRESSION(STEEL)FEMALE)	3	EA	T6L	SPENO
79	603004	TEE:6 X 6 X 6 (COMPRESSION) STEEL	2	EA	T 6-L	EO
80	599906	REDUCER:REDUCING STAND PIPE (STEEL)	2	EA	KOR 18/10-L	ERMETO

81	598807	COUPLING,STRAIGHT:GE15L	2	EA	GE 15L	SPENO
82	598719	COUPLING:STRAIGHT COUPLING,GE12L	2	EA	GE 12L	SPENO
83	598604	ELBOW:12MM X M18 (MILD STEEL) FEMALE	1	EA	VB 12L	SPENO
84	567701	VALVE:BALL VALVE,1"	1	EA	12 VSF SKF 1	SPENO
85	3360319	MOTOR,STARTER:24V,FOR RGV2 & RGV1	2	EA	207-1556	CAT
86	576202	FILTER:AIR FILTER ELEMENT	6	EA	98.454.003.906.0	SPENO
87	1479607	FILTER ELEMENT, AIR:TYPE FLG 12-0310	4	EA	AF4980KM	FLEETGUARD
88	1479519	FILTER ELEMENT, AIR TYPE:HFD 77 00 42	12	EA	42512	WIX
89	576501	VALVE:SAFETY VALVE,1/2 INCH,3 BAR	1	EA	12 VS 1/2.3	SPENO
90	575904	PLATE:LOCKING PLATE	5	EA	ELTECNA 072 01163	SPENO
91	569803	FUSE:	6	EA	3WB5 X 20 250MA	SPENO
92	598305	O-RING:FOR DUST ASPIRATION	7	EA	-	SPENO
93	583904	BUSH:BRASS BUSH	8	EA	12.01.184.000	SPENO
94	579905	VALVE:BLOCKING FOR HYDRAULIC JACK	1	EA	VR 29 RAUTER	SPENO
95	579702	VALVE, CONTROL DIRECTIONAL	1	EA	REXROTH 3 WE 6 A 5X/	SPENO
96	579104	VALVE, PRESSURE RELIEF	1	EA	REX ROTH 2DB6 DP 2- 3	SPENO
97	579008	VALVE,CHECK:	1	EA	Z1S6P1 30V	HYDRO
98	578603	VALVE, CHECK	1	EA	KNORR AE 5102	SPENO
99	578005	VALVE, AIR PRESSURE REGULATING	1	EA	SMC AR 100-02 AP 1/4	SPENO
100	577918	VALVE, TWO-WAY	1	EA	ATLAS COPCO VB13 Q1-	SPENO
101	577301	VALVE, AIR PRESSURE REGULATING	1	EA	SMC AR 425-04A	SPENO
102	577109	VALVE, PUSH-BUTTON	1	EA	UNIVER AI 9400+AI 35	SPENO
103	577002	VALVE, TWO-WAY	1	EA	-	SPENO
104	575605	VALVE:PRESSURE REGULATING VALVE	1	EA	ELTECNA 013 00795	SPENO
105	601009	COUPLING:	2	EA	AFL 3/8 Z	SPENO
106	600903	COUPLING:STEP DOWN GEAR COUPLING	4	EA	18X1, 5 1/8	SPENO



107	599607	COUPLING,STRAIGHT:G16L	2	EA	G16L	SPENO
108	599308	TEE:TUBE,15MM COMPRESSION(STEEL)FEMALE	1	EA	T15L	SPENO
109	595518	PRESSOSTAT	1	EA	20 70 110 000	FRANK
110	594603	PROTECTOR FOR GRINDING STONE 130MM DIA	4	EA	26.50.108.900	SPENO
111	584202	CONNECTION	3	EA	-	SPENO
112	584106	DISC, DRIVING FOR GRINDING STONE DIA 250	1	EA	21.50.101.000	SPENO
113	583402	ROLLER FOR GRINDING TROLLEY	5	EA	32.50.118.000	SPENO
114	582709	ROLLER FOR GRINDING TROLLEY	3	EA	32.50.144.000	SPENO
115	582506	ROLLER FOR MEASURING TROLLEY	3	EA	11.80.130.000	SPENO
116	582418	ROLLER FOR MEASURING TROLLEY	1	EA	11.80.131.000	SPENO

**Note:**

Items removed from RGV1.

- 1) Air compressor was dismantled.
- 2) 10 numbers and 4 numbers of rectification unit and reprofiling unit grinding motors respectively was removed.

Additional spare parts kept by ETB.

- 1) 11 numbers of new rectification unit grinding motors.
- 2) 1 number of new battery chargers.