

Government of India
(Ministry of Railways)
Research, Designs & Standards Organisation
Manak Nagar, Lucknow-226 011

No. EL/3.2.30

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TECHNICAL CIRCULAR No. ELRS/TC/0081 (Rev.'0')

***POH KIT CONTAINING VARIOUS COMPONENTS TO BE
CHANGED DURING POH OF NO 32 TAP CHANGER***

1.0 Background

1.1 In view of the Tap Changer failures (**due to failure of it's various components**) reported by user railways in the recent past, the preventive measures finalised by RDSO such as utilization of special tools, guidelines for maintenance schedules to be followed during AOH / IOH, list of spares required for rehabilitation of tap changer after 18 years or more service period were advised to railways from time to time. In this connection tender specification for rehabilitation of tap changer was also issued by Railway Board during the year 2000.

1.2 Presently shops are carrying out POH of NO32 tap changer on the basis of guidelines given in the Maintenance Manual of M/s. BT. In order to standerdize uniform Maintenance Practices and Improved Reliability, the list of components required to be replaced during POH has been finalised for adoption by railways.

2.0 POH Kit for NO32 Tap Changer

2.1 Components list from individual Loco Workshops viz; Kharagpur, Perambur, Lucknow, Kancharapara and Bhusawal being replaced during POH of NO32 tap changer were collected by RDSO.

2.2 In consultation with M/s. BT, recommendations furnished by Railways, detailed study has been carried out component wise in respect to the past failures of the same and a list has been prepared comprising components required to be replaced during POH. Complete list has been splitted into two parts visualizing POH kit- A consisting items to be replaced during POH and may be procured in kit form from OEM i.e. M/s BT/ Vododra, and POH kit -B comprising items also required replacement during POH and may be procured from OEM / approved sources by RDSO on competitive basis.

3.0 ACTION TO BE TAKEN BY SHOPS

3.1 POH kit - A and B for NO32 tap changer are enclosed in Annexure "A" and B" respectively.

3.2 M/s BT has already been agreed upon to supply the spare parts of tap changer type NO32 to Railways for carrying out POH, in kit form.

3.4 Railways are advised to procure the tap changer spares in Kit form for carrying out POH.

4.0 Distribution

As per Mailing List.

Encl. : As above

(G.S. Bhawaria)
for director general(Electrical)

Sr. No.	Part No	Drawing No.	Description	Qty /TC	Remark
A SELECT					
1	OR (GR)	AM-501104-P1	Contact Segment Outer	16	
2	S1480	AG-405327-R1	Coupling Shaft Complete	1	
3	S1481	AG-405327-R2	Coupling Shaft Complete	1	
4	S1217	AG-544329-P1	Conical Nut	33	
5	S1215	AM-501105-P1	Contact Segment Inner	17	
6	S1218	AM-200095-R2	Insulating Ring (Inner)	1	
7	S1219	AM-200095-R1	Insulating Ring (Outer)	1	
8	S1515	AG-546151-R1	Contact Roller Complete	2	
9	S1202	AG-207812-P3	Gasket	2	
10	S1212	AG-544327-P1	Gasket	66	
11	S1213	AG-544333-P1	Washer	66	
12	S1514	AG-546150-P1	Bearing	4	
13	S1107	AG-207812-P4	Gasket	3	
14	S1516	AG-416382-P1	Roller Housing (Black)	2	
15	S1303	AG-207812-P2	Gasket	1	
16	S1102	AG-207812-P1	Gasket	1	
17	S1211	AG-544325-P1	Packing Ring	33	
18	S1221	AG-546084-P1	Special Bolt	11	
19	S1470.4	AG-545598-P1	Actuating Plug	2	
20	S1435	AG-546487-P1	Coupling Pin	2	
21	S1517	AG-405322-P1	Compression Spring	8	
22	S1220	MT-430190-P116	Belleville spring washer 6.4/14	22	
23	S1444	AG-207812-P5	Gasket	1	
24	S1450	AG-544234-P2	Packing washer	10	
25	S1518	AM-500801-P1	Insulating Tube	2	
26	S1306.2,S1306.5	AM-502840-P1	Packing (Oil Level Indicator)	2	
27	S1434, S1440	SWT-435381-P1	Oil Seal	2	
28	S1512	AG-546189-P1	Insulating pipe	2	
29	S1532	HATM-405170-P6	Washer (Contact Roller)	8	
30	S2104.1, S2110.1, S2210.1	MT-430189-P471	Roll Pin 8/45	3	
31	S2104.2, S2110.2, S2210.2	MT-430189-P371	Roll Pin 5/45	3	
32	S1519	SWT-435200-P1	Fibre Glass Cord.(0.6m)	1	
33	S1320.1	AG-544325-P4	Packing Ring (Safety Valve)	2	
34	S1320.2.3	AG-546174-P1	Compression Spring	2	
35	S1601.1	AG-432122-P7	Packing Ring	1	

36	S3309	AG-549697-P1	Gasket(Oil Flow Indicator)	2	
37	S1438	SWT-435084-P1	Spring Ring	2	
38	S1437	AG-416635-P1	Coupling Tube	1	
39	S1421	AG-544325-P5	Packing Ring	1	
40	S1476	AG-544325-P2	Packing Ring	1	
41	S1320.4	MT-430405-P2264	Split cotter Pin	2	
42	S1436	MT-430189-P216	Roll Pin 3X25	1	
43	S1471	MT-430440-P2706	Slotted head grub screw M5X6	1	
44	S3613	SWT-335070-P7	Rubber Gasket (Big)	2	
45	S3614	SWT-335070-P8	Rubber Gasket (Small)	2	
46	S3612	SWT-435543-R1	Cork Grain (1Pct-30 grms)	1	
47	S3902	SWT-335139-P1	Air Pressure Regulator	1	
BOIL					
FILTERS					
1	S3312 / S3313	AM-400010-R1	Oil pipe complete (for Oil Flow indicator)	2	
2	S3290.11	SWT-435498-R1	Pipe Complete	1	
3	S3290.7	SWT-435488-P1	Piston	1	
4	S3280	SWT-435158-R1	Screw Plug Complete	1	
5	S3251	SWT-435430-P5	O Ring	6	
6	S3422, S3406	MT-430152-P23	Cu Gasket	10	
7	S3290.1	SWT-435490-R1	Locking Bolt Complete	1	
8	S3235, S3233	SWT-435167-P1	Cup Seal	2	
9	S3270.3	SWT-435167-P2	Cup Seal	2	
10	S3433,S3435 , S3428	MT-430152-P34	Cu Gasket	7	
11	S3290.2	SWT-435484-P1	Cup Seal	1	
12	S3213	SWT-435148-P1	Valve Spring	1	
13	S31.1	3EYC-400031-P1	Filter Element	1	
14	S3224, S3252	SWT-435430-P2	O Ring	2	
15	S3216	SWT-435149-P1	Valve Spring	1	
16	S3225, S3222	SWT-435430-P4	O ring	2	
17	S3242	MT-430152-P3	Cu Gasket	4	
18	S3221	SWT-435430-P3	O Ring	1	
19	S3254	SWT-435430-P1	Gasket	1	
20	S3261	SWT-435150-P1	Spring	1	
21	S3290.12	MT-430152-P19	Cu Gasket	2	
22	S3268	3EYC-400029-P1	Gasket	1	
23	S3290.14	MT-430152-P18	Cu Gasket	2	
24	S3290.17	SWT-435491-P3	Cu Gasket	1	
25	S3290.10	MT-430152-P13	Cu Gasket	1	
CAIR					
1	A2212	AG-417258-R1	Notching complete	1	
2	A6103a	AM-300792-R2	Intermediate Gear Complete (R.H)	1	Being a Critical item, needs procurement from OEM

3	A4150.45	AM-300449-R1	Diode assembly complete	1
4	A3209	AG-544415-R1	Push Rod With Seal	4
5	A4150.38	SWT-435385-R1	Coil Complete	2
6	A2303	SWT-435461-P1	Sealing Ring	4
7	A5514, A6331, A6434	AM-400660-R1	Aux Cam Switch	35
8	A6423.8a	SWT-335030-P4	Cam Disc 83-84	1
9	A5506.11	SWT-435104-P1	Cam Disc 61-62	1
10	A2313	AG-545649-P2	Bearing Liner	8
11	A4515	AM-501809-P1	Packing washer	25
12	A4540.4	AM-501612-P1	Guide Pin	1
13	A2215	3EYC-400037-R1	Spring With Eyes	2
14	A4430.3	HAGT-444612-R1	Piston Complete	2
15	A2217	3EYC-400040-P1	Pin	1
16	A3111, A4120, A4430.19	AG-544441-P1	Gasket	10
17	A1926.2	SWT-435063-P1	Coller Ring	6
18	A5317.8	AG-549222-R1	Plunger Nut Complete	4
19	A3114	AM-400425-R2	Air Piping complete	1
20	A4150.31	AG-549804-R1	Adjusting Screw complete	2
21	A3208	AG-544461-P1	Washer	4
22	A4150.43	SWT-435398-P1	Plunger	2
23	A4150.36	AG-549177-P1	Armature	2
24	A3206	AG-544411-P1	Valve Nipple	4
25	A3204	AG-544356-P1	Compression Spring	4
26	A4430.4	AM-404742-P1	Packing Ring	2
27	A1213	SWT-435144-P2	Packing Ring	4
28	A3203	A-508472-P1	Packing	4
29	A6327, A5509, A6426	MT-430704-P10	Bellville Spring Washer	6
30	A5403.3	AG-546491-P1	Pin	1
31	A5317.7	AM-500020-P1	Compression Spring	4
32	A3108	AG-544441-P2	Gasket	4
33	A2216	3EYC-400041-R1	Strap with pin complete	1
34	A6120, A6406, A5411	AG-548990-P3	Key	3
35	A1916	AM-500224-P1	Key	2
36	A1934	AM-400817-P1	Gasket Ring	1
37	A1929.1, S4212,S4217	MT-430189-P471	Roll Pin (8/45)	3
38	A1929.2 , S4216,S4218	MT-430189-P371	Roll Pin (5/45)	3

39	A2117	SWT-435237-P1	Shim	3	
40	A4430.2	AG-413762-P25	Damping Gasket	2	
41	A4430.10	AG-430510-P1	Compression Spring	2	
42	A2110	AM-502322-P1	Shim	2	
43	A6419	MT-430110-P2034	Locking Sheet	4	
44	A6602.5	SWT-435056-P1	Rubber Cord	1	
45	A4519	MT-430189-P367	Roll Pin 5 x 28	2	
46	A6102	AG-546709-P1	Key	1	
47	A6602.6	SWT-435056-P2	Rubber Cord	1	
48	A4540.7	AM-401107-P1	Compression Spring	1	
49	A6206	AG-548990-P2	Key	1	
50	A4150.33	SWT-439002-P2016	Locking sheet	2	
51	A4150.41	SWT-439002-P2021	Locking sheet	2	
52	A1951	AG-546709-P2	Key	1	
53	A4150.4, A4150.18	SWT-439002-P2023	Locking sheet	2	
54	A 4150-30	AG-430129 -R1	Valve complete (A 42) MG 4/5 A	2	
D CIRCUIT					
1	S2515	HAGT-443522-P1	Needle bearing support roller	6	
2	S2537	HAGT-443612-R1	Spring retainer complete	6	
3	S2508	HAGT-443524-P1	Bellville spring washer	36	
4	S2517	AM-502593-P1	Bush	12	
5	S2529	AG-540123-P1	Contact	6	
6	S2536	AG-540918-P1	Compression spring	6	
7	S2160	AG-313290-R1	wire Wound Resistance	1	
8	S2538	HAGT-443530-P1	Pin	6	
9	S2502	AM-502669-P1	Insulating Bush	6	
10	S2151/ S2144 /S2146	AG-547421-P2	Contact Bolt	4	
11	S2152/ S2147	AG-547420-P1	Contact Nut	13	
12	S2505	AM-502615-P1	Insulating washer	12	
13	S2516	HAGT-443523-P1	Washer	12	
14	S2158	AG-547421-P1	Contact Bolt	2	
15	S2511	MT-430405-P2211	Split pin	12	

Sr. No.	Part No	Drawing No.	Description	Qty /TC	Remark
A	AIR				

1	A 6313	AG 430172-P1	Spur Gear	1	
2	A6401	AM-500436-R1	Pinion Complete	1	
3	A6110.1 / A6411	AG-330676-P1	Spur Gear	2	
B MANUAL					
1	S 42	SWT-135037-R1	MOM Complete	1	
C RGR					
1	S 4416.2	B-406533-P2	Samica Glass Tube	3	
2	S 4415	KB-473201-P2	Mica Washer 21/50/2	141	