



भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल
Bharat Heavy Electricals Limited Bhopal

“उत्कृष्टता की ओर अग्रसर”

“Marching Towards Business Excellence”



FEEDERS MAINTENANCE DIVISION
TGM MAINT. DEPARTMENT

SCOPE OF WORK

Tender Enquiry No.:- FDX/TGM/19-20/PM/03

Date:- 01.08.2019

Due Date:- 12.08.2019

Time:- 2:00 PM

Sub.:- Preventive Maintenance/Breakdown Work of CNC, Critical, Important 55 No. M/cs.
and Furnace of TGM Division for One Year in 1st/ IInd Shift.

Mechanical

1. Check oil level in Hydraulic & Lubrication tanks in frequency (once in a week/machine), in case of low level, top up oil.
2. Clean air filters/ oil filters by kerosene, compressed air.
3. Clean Telescopic covers, provide on column guide ways, table guide ways and bed guide ways.
4. Check for oil leakages on machine, arrest oil leakages if any.
5. Clean coolant tank surface, coolant filter etc.
6. To inspect parts of the disassembled units. To make out the defect list.
7. Clean machine Guide ways of Ram & spindle by marking cloth and apply low viscosity oil by oil can.
8. Clean air filter pad, provided on oil chilling AC units and panel AC with compressed air.
9. Clean cable trenches and remove oil/coolant from cable trenches of machines.
10. Remove rain water/seepage water from machine pits.
11. Check electrical control panel and tighten loose connection/wiring if any in electrical control panel. Clean contactors with contact cleaners.
12. Check the electrical motor surface temperature and check for abnormal sound from motor if any.
13. Maintenance of all chip conveyors.
14. Repair and maintenance of drag chain, telescopic covers, magnetic dust collector.
15. Preventive of all attachments & repair.

16. Dismantling of rotary Table, Headstock Assemble, Pendant or any other sub-assemble if need be.
17. To replace all worn out bushes and damaged bearings.
18. To replace worn out gears and worn/worn wheels.
19. To restore / replace worn out lead screw and nuts of longitudinal and transverse feeds.
20. To replace worn out fasteners and clean the remaining ones.
21. To replace / restore and scrape regulating wedges and clamping plates.
22. To restore accuracy of lead screws by machining threads (machining by BHEL)
23. To check and clean unworn –out parts left out in the mechanism of the machine.
24. To repair coolant pumps and pipe fittings.
25. To repair oil pumps and lubricating/hydraulic systems. To replace oil.
26. Check & rectify complete gear box of the machine.
27. To replace damaged pipes and fittings.
28. To scrape guide surface of slides, carriages, traverses, slide blocks a etc. (if the wear exceeds the permissible limits.)
29. To scrap guide /surface guards and fencing (provided for proper safety) and also the arrangements for protecting the machine parts form metal chips and abrasive dust (covers on belt drive, casings, shields, screens).
30. To assemble the repaired units, check proper inter-operation of the units and all the mechanisms of the machine.
31. To run the machine on no-load at all speeds and feeds. To check for noise and heating.
32. To check for accuracy of repaired unit.

Electrical

33. To disassemble the motor completely and to rectify the winding damages or replace with new motor (winding and New motor in BHEL scope).
34. To clean units and parts of the electric motor and to change the defective insulating bushes.
35. To wash and grease the ball /roller bearings and change the damaged ones.
36. To wash the bush bearings and if necessary, metalize the same.
37. To weld and machine the end covers, if necessary.
38. To Change the ventilation fan and the flanges.
39. To repair brush mechanisms and commutator.
40. To assemble and check the motor on no-load and also on load after repair.

2. DESCRIPTION OF WORK LIST OF 55 MACHINES OF TGM DIVISION REQUIRE REGULAR PREVENTIVE MAINTENANCE WORK IN A YEAR I.E 4 TIMES FOR EVERY MACHINE IN 12 MONTHS DURATION AS PER SCHEDULE GIVEN BELOW.

Annexure- I
Page 3/3

S.N.	MACHINE NO.	DESCRIPTION	SECTION	SCHEDULE WEEK NO.			
				I PREV.	II PREV.	III PREV.	IV PREV.
1.	14/B/2074	TEMPERING FURNACE	HEAT TREATMENT	43	4	17	30
2.	14/A/2057	BORE GRINDING MACHINE	GEAR SHOP	43	4	17	30
3.	14/A/84	JIG BORING MACHINE	JIG BORING	43	4	17	30
4.	14/B/109	FURNACE	HEAT TREATMENT	43	4	17	30
5.	14/A/2068	SURFACE GRI. MACHINE	GRINDING	44	5	18	31
6.	14/A/2081	VER. MACHINING CENT. M/C.	MACHINE SHOP	44	5	18	31
7.	14/A/521 A	VERTICAL BORING MACHINE	GEAR SHOP	44	5	18	31
8.	14/A/521 B	VERTICAL BORING MACHINE	GEAR SHOP	44	5	18	31
9.	14/A/2045	VERTICAL BORING MACHINE	ECC SECTION	45	6	19	32
10.	14/A/2085	CNC MACHINING CENTER M/C.	GEAR SHOP	45	6	19	32
11.	14/A/118	LATHE MACHINE	MACHINE SHOP	45	6	19	32
12.	14/A/79	VERTICAL BORING M/C.	GEAR SHOP	45	6	19	32
13.	14/A/2047	GEAR HOBBIING MACHINE	GEAR SHOP	46	7	20	33
14.	14/A/2052	GEAR HOBBIING MACHINE	GEAR SHOP	46	7	20	33
15.	14/A/532	GEAR HOBBIING MACHINE	GEAR SHOP	46	7	20	33
16.	14/A/508	LATHE MACHINE	GEAR SHOP	46	7	20	33
17.	14/A/71	SLOTTER MACHINE	ECC SECTION	47	8	21	34
18.	14/A/518	BORE GRINDING MACHINE	GEAR SHOP	47	8	21	34
19.	14/A/144	CYLINDRICAL GRINDING M/C.	GRINDING	47	8	21	34
20.	14/A/2063	CNC HOB SHARPENING MACHINE	GEAR SHOP	47	8	21	34
21.	14/A/519	CNC LATHE MACHINE	GEAR SHOP	48	9	22	35
22.	14/A/83	JIG BORING MACHINE	JIG BORING	48	9	22	35
23.	14/A/86	JIG BORING MACHINE	JIG BORING	48	9	22	35
24.	14/A/517	BORE GRINGDING	GEAR SHOP	48	9	22	35
25.	14/A/2005	CYLINDRICAL GRINDING M/C.	GRINDING	49	10	23	36
26.	14/A/2079	BORE GRINDING MACHINE	GEAR SHOP	49	10	23	36
27.	14/A/80	VERTICAL BORING MACHINE	MACHINE SHOP	49	10	23	36
28.	14/A/2050	CYLINDRICAL GRINDING M/C.	GRINDING SHOP	49	10	23	36
29.	14/A/2054	VERTICAL BORING MACHINE	MACHINE SHOP	50	11	24	37
30.	14/A/2022	HORIZONTAL MILLING MACHINE	BAABATING	50	11	24	37
31.	14/A/2003	VERTICAL BORING MACHINE	ECC	50	11	24	37
32.	14/A/46	MASTER MILLING MACHINE	MASTER MILLING	50	11	24	37
33.	14/B/2116 A	CARBURIZING FURNACE	HEAT TREATMENT	51	12	25	38
34.	14/B/2116 B	HARDENING FURNACE	HEAT TREATMENT	51	12	25	38
35.	14/B/2116 C	TEMPERING FURNACE	HEAT TREATMENT	51	12	25	38
36.	14/A/2062	BORE GRINDING MACHINE	GEAR SHOP	51	12	25	38
37.	14/A/509	LATHE MACHINE	GEAR SHOP	52	13	26	39
38.	14/A/510	LATHE MACHINE	GEAR SHOP	52	13	26	39
39.	14/A/2073	CNC GEAR TEETH GRI. MACHINE	GEAR SHOP	52	13	26	39
40.	14/B/2005	FURNACE	HEAT TREATMENT	52	13	26	39
41.	14/A/2083	CNC GEAR HOBBIING MACHINE	GEAR SHOP	01	14	27	40
42.	14/A/82	JIG BORING MACHINE	JIG BORING	01	14	27	40
43.	14/B/2035	FURNACE	HEAT TREATMENT	01	14	27	40
44.	14/B/138	FURNACE	HEAT TREATMENT	01	14	27	40
45.	14/B/140	TEMPERING FURNACE	HEAT TREATMENT	01	14	27	40
46.	14/B/2089	S R FURNACE	HEAT TREATMENT	02	15	28	41
47.	14/B/2104	FURNACE	HEAT TREATMENT	02	15	28	41
48.	14/B/2113	SHOT BLASTING MACHINE	HEAT TREATMENT	02	15	28	41
49.	14/B/2100	SHOT BLASTING MACHINE	HEAT TREATMENT	02	15	28	41
50.	14/B/2078	SHOT PEENING MACHINE	HEAT TREATMENT	03	16	29	41
51.	14/A/2048	RADIAL DRILLING MACHINE	HEAVY TOOL	03	16	29	42
52.	14/A/2058	RADIAL DRILLING MACHINE	HEAVY TOOL	03	16	29	42
53.	14/A/2060	RADIAL DRILLING MACHINE	GEAR SHOP	03	16	29	42
54.	14/A/2087	CNC JIG BORING MACHINE	JIG BORING	03	16	29	42
55.	14/A/90	RADIAL DRILL MACHINE	HEAVY TOOLS	04	17	30	42