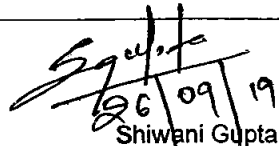


 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION (PART-II) FOR MECHANICAL WORKSHOP ITEMS	SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15	
		Rev. No	00
	4X180 MW MANGDECHCHU HEP	Rev Date	26/09/2019

PARTICULAR TECHNICAL SPECIFICATIONS

 Mohd. Mushtaque Dy. Engineer	 Shiwani Gupta Dy. Manager
PREPARED BY	CHECKED & APPROVED BY

 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION (PART-II) FOR MECHANICAL WORKSHOP ITEMS	SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15	
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Annexure III

Details of Equipment

Bidder must quote the material code number, material description & quantity offered in their quotation /bid, as specified below. Bidder's alternate description can also be given in separate column.

Completeness of Equipment

Each of the equipment listed shall be complete with applicable accessories like power supply main leads, screened guard leads, screened line test leads, earth leads, connectors and clips, leather carrying case, fasteners/washers/nuts/anchoring bolts/etc required for erection and commissioning and any other accessories required for completing the equipment.

Sl No	Our Description	Customer approved make	Part No
1	Universal laboratory workbench (1 No.) Body workbench: » Dimensions: H 900 x W 2000 x D 875 mm » 40 mm thick multiplex beech wood worktop, surface additionally protected by linseed oil varnish, with Sheet steel, corrosion resistant and scratch-proof powder-coated, GEDORE blue. Body cabinet: » Dimensions: H 890 x W 1810 x D 170 mm. with (1) hydraulic hand pump with max pressure 700bar(Code - 8022710) (2) 100mm width bench vice (code - 6500800) (3) service water connection (4) service air connection (5) electric 240V AC outlet	Gedore, Country of origin/manufactured in Germany	6618210
2	Workbenches (2 Nos.) Body workbench: » Dimensions: H 900 x W 2000 x D 875 mm » 40 mm thick multiplex beech wood worktop, surface additionally protected by linseed oil varnish » Large storage space with shutter » Heel protection for your safety » Sheet steel, corrosion resistant and scratch-proof powder-coated, GEDORE blue Drawers workbench: » Separate central locking of drawers and shutter with cylinder locks » 5 wide drawers (W 480 x D 550 mm), extendable up to 505 mm, removable » Ball-bearing guide rails » Can be individually equipped with lengthwise and crosswise dividers (can be ordered individually) » Load capacity per drawer 40 kg » Sheet steel, corrosion resistant and scratch-proof powder-coated, GEDORE blue » Total load capacity (workbench) 2000 kg	Gedore, Country of origin/manufactured in Germany	6618050

 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION: (PART-II) FOR MECHANICAL WORKSHOP ITEMS		SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15	
			Rev. No	00
	4X180 MW MANGDECHCHU HEP		Rev Date	26/09/2019

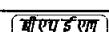
3	Machine tool Cabinets (2 Nos.) » Dimensions: H 1045 x W 785 x D 510 mm » Working platform with PP top with front flattening, anti-roll safety edge and small additional trays » With handle for easy pushing, pulling and turning » Side walls with Euro perforation 10 x 38 mm to fix hooks and tools » Sides rounded off – a minimum of abutting edges » Welded sheet steel construction, torsionally rigid, to take high loadings » Sheet steel, corrosion resistant and scratch-proof powder-coated Drawers: » Individual blocking only one drawer can be open at a time, single-hand operation » Central locking with cylinder lock » 7 wide drawers (W 640 x D 400 mm) fully extendable » Ball-bearing guide rails » Load capacity per drawer 20 kg » Sheet steel, corrosion resistant and scratch-proof powder-coated	Gedore, Country of origin/manufactured in Germany	2977311
4	heavy duty alloy steel ring headed spanner size M6 to M64 mounted on wrench board or tool box (1 Set)	Gedore, Country of origin/manufactured in Germany	
4.1	10 X 11mm double ended ring spanner (1 No.)		6015940
4.2	12 X 13mm double ended ring spanner (1 No.)		6016590
4.3	14 X 15mm double ended ring spanner (1 No.)		6016910
4.4	16 X 17mm double ended ring spanner (1 No.)		6017210
4.5	18 X 19mm double ended ring spanner (1 No.)		6017560
4.6	20 X 22mm double ended ring spanner (1 No.)		6017800
4.7	21 X 23mm double ended ring spanner (1 No.)		6018020
4.8	24 X 26mm double ended ring spanner (1 No.)		6018370
4.9	25 X 28mm double ended ring spanner (1 No.)		6018610
4.1	27 X 29mm double ended ring spanner (1 No.)		6018880
4.11	30 X 32mm double ended ring spanner (1 No.)		6019260
4.12	34 X 36mm double ended ring spanner (1 No.)		6026040
4.13	38 X 42mm double ended ring spanner (1 No.)		6019690
4.14	41 X 46mm double ended ring spanner (1 No.)		6019770
4.15	46 X 50mm double ended ring spanner (1 No.)		6019850
4.16	55 X 60mm double ended ring spanner (1 No.)		6019930
4.17	65mm ring slogging spanner (1 No.)		1416332
4.18	70mm ring slogging spanner (1 No.)		1416405
4.19	75mm ring slogging spanner (1 No.)		1416456
4.20	80mm ring slogging spanner (1 No.)		1416480
4.21	85mm ring slogging spanner (1 No.)		1416537
4.22	90mm ring slogging spanner (1 No.)		1416553
4.23	95mm ring slogging spanner (1 No.)		1416588
4.24	Tool box (1 No.)		6610580
5	heavy duty alloy steel open headed spanner size M6 to M64 mounted on wrench board or tool box (1 Set)	Gedore, Country of origin/manufactured in Germany	
5.1	10 X 11mm double open ended spanner (1 No.)		6064720
5.2	12 X 13mm double open ended spanner (1 No.)		6065370
5.3	14 X 15mm double open ended spanner (1 No.)		6065880
5.4	16 X 17mm double open ended spanner (1 No.)		6066260
5.5	18 X 19mm double open ended spanner (1 No.)		6066500
5.6	20 X 22mm double open ended spanner (1 No.)		6066850
5.7	21 X 23mm double open ended spanner (1 No.)		6067070

 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION (PART-II) FOR MECHANICAL WORKSHOP ITEMS	SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15	
	4X180 MW MANGDECHCHU HEP	Rev. No	00
		Rev Date	26/09/2019

5.8	24 X 26mm double open ended spanner (1 No.)		6067310
5.9	25 X 28mm double open ended spanner (1 No.)		6067740
5.1	27 X 29mm double open ended spanner (1 No.)		6067820
5.11	30 X 32mm double open ended spanner (1 No.)		6068120
5.12	34 X 36mm double open ended spanner (1 No.)		6069600
5.13	38 X 42mm double open ended spanner (1 No.)		6068550
5.14	41 X 46mm double open ended spanner (1 No.)		6068630
5.15	46 X 50mm double open ended spanner (1 No.)		6068710
5.16	55 X 60mm double open ended spanner (1 No.)		2312107
5.17	65mm open ended slogging spanner (1 No.)		6401070
5.18	70mm open ended slogging spanner (1 No.)		6401150
5.19	75mm open ended slogging spanner (1 No.)		6401230
5.20	80mm open ended slogging spanner (1 No.)		6401310
5.21	85mm open ended slogging spanner (1 No.)		6401580
5.22	90mm open ended slogging spanner (1 No.)		6401660
5.23	95mm open ended slogging spanner (1 No.)		6401740
5.24	Tool box (1 No.)		6610580
6	heavy duty alloy steel socket wrench (12 sides) of appropriate drive of the sizes M6 to M64 mounted on wrench board or tool box (1 Set)	Gedore, Country of origin/manufactured in Germany	
6.1	1/4" Square Drive bi-hexagon socket, size 10mm (1 No.)		6226050
6.2	1/4" Square Drive bi-hexagon socket, size 11mm (1 No.)		6226130
6.3	1/4" Square Drive bi-hexagon socket, size 12mm (1 No.)		6226480
6.4	1/4" Square Drive bi-hexagon socket, size 13mm (1 No.)		6226640
6.5	1/4" Square Drive bi-hexagon socket, size 14mm (1 No.)		6226720
6.6	1/2" Square Drive bi-hexagon socket, size 15mm (1 No.)		6133710
6.7	1/2" Square Drive bi-hexagon socket, size 16mm (1 No.)		6133980
6.8	1/2" Square Drive bi-hexagon socket, size 17mm (1 No.)		6134010
6.9	1/2" Square Drive bi-hexagon socket, size 18mm (1 No.)		6134280
6.10	1/2" Square Drive bi-hexagon socket, size 19mm (1 No.)		6134360
6.11	1/2" Square Drive bi-hexagon socket, size 20mm (1 No.)		6134440
6.12	1/2" Square Drive bi-hexagon socket, size 21mm (1 No.)		6134520
6.13	1/2" Square Drive bi-hexagon socket, size 23mm (1 No.)		6134790
6.14	1/2" Square Drive bi-hexagon socket, size 24mm (1 No.)		6134870
6.15	1/2" Square Drive bi-hexagon socket, size 25mm (1 No.)		6134950
6.16	1/2" Square Drive bi-hexagon socket, size 26mm (1 No.)		6135090
6.17	1/2" Square Drive bi-hexagon socket, size 27mm (1 No.)		6135170
6.18	1/2" Square Drive bi-hexagon socket, size 28mm (1 No.)		6135250
6.19	1/2" Square Drive bi-hexagon socket, size 29mm (1 No.)		6135330
6.20	1/2" Square Drive bi-hexagon socket, size 30mm (1 No.)		6135410
6.21	1/2" Square Drive bi-hexagon socket, size 32mm (1 No.)		6135760
6.22	1/2" Square Drive bi-hexagon socket, size 33mm (1 No.)		6135840
6.23	1/2" Square Drive bi-hexagon socket, size 34mm (1 No.)		2545314
6.24	1/2" Square Drive bi-hexagon socket, size 36mm (1 No.)		2194686
6.25	3/4" Square Drive bi-hexagon socket, size 38mm (1 No.)		6272910
6.26	3/4" Square Drive bi-hexagon socket, size 41mm (1 No.)		6273050
6.27	3/4" Square Drive bi-hexagon socket, size 46mm (1 No.)		6273130
6.28	3/4" Square Drive bi-hexagon socket, size 50mm (1 No.)		6273210
6.29	3/4" Square Drive bi-hexagon socket, size 55mm (1 No.)		6273480
6.30	3/4" Square Drive bi-hexagon socket, size 60mm (1 No.)		6273560

 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION (PART-II) FOR MECHANICAL WORKSHOP ITEMS	SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15
		Rev. No 00
	4X180 MW MANGDECHCHU HEP	Rev Date 26/09/2019

6.31	1" Square Drive bi-hexagon socket, size 65mm (1 No.)		6175550
6.32	1" Square Drive bi-hexagon socket, size 70mm (1 No.)		6175630
6.33	1" Square Drive bi-hexagon socket, size 75mm (1 No.)		6175710
6.34	1" Square Drive bi-hexagon socket, size 80mm (1 No.)		6175980
6.35	1-1/2" Square Drive hexagon impact socket, size 85mm (1 No.)		6329020
6.36	1-1/2" Square Drive hexagon impact socket, size 90mm (1 No.)		6329100
6.37	1-1/2" Square Drive hexagon impact socket, size 95mm (1 No.)		6329290
6.38	Tool box (1 No.)		6610580
7	heavy duty alloy steel ring headed spanner size M24 to M64 mounted on wrench board or tool box (1 Set)	Gedore, Country of origin/manufactured in Germany	
7.1	34 X 36mm double ended ring spanner (1 No.)		6026040
7.2	38 X 42mm double ended ring spanner (1 No.)		6019690
7.3	41 X 46mm double ended ring spanner (1 No.)		6019770
7.4	46 X 50mm double ended ring spanner (1 No.)		6019850
7.5	55 X 60mm double ended ring spanner (1 No.)		6019930
7.6	65mm ring slogging spanner (1 No.)		1416332
7.7	70mm ring slogging spanner (1 No.)		1416405
7.8	75mm ring slogging spanner (1 No.)		1416456
7.9	80mm ring slogging spanner (1 No.)		1416480
7.10	85mm ring slogging spanner (1 No.)		1416537
7.11	90mm ring slogging spanner (1 No.)		1416553
7.12	95mm ring slogging spanner (1 No.)		1416588
7.13	Tool box (1 No.)		6610580
8	heavy duty alloy steel open headed spanner size M24 to M64 mounted on wrench board or tool box (1 Set)	Gedore, Country of origin/manufactured in Germany	
8.1	34 X 36mm double open ended spanner (1 No.)		6069600
8.2	38 X 42mm double open ended spanner (1 No.)		6068550
8.3	41 X 46mm double open ended spanner (1 No.)		6068630
8.4	46 X 50mm double open ended spanner (1 No.)		6068710
8.5	55 X 60mm double open ended spanner (1 No.)		2312107
8.6	65mm open ended slogging spanner (1 No.)		6401070
8.7	70mm open ended slogging spanner (1 No.)		6401150
8.8	75mm open ended slogging spanner (1 No.)		6401230
8.9	80mm open ended slogging spanner (1 No.)		6401310
8.10	85mm open ended slogging spanner (1 No.)		6401580
8.11	90mm open ended slogging spanner (1 No.)		6401660
8.12	95mm open ended slogging spanner (1 No.)		6401740
8.13	Tool box (1 No.)		6610580
9	Double acting wrench handles (1 Set)	Gedore, Country of origin/manufactured in Germany	
9.1	Reversible ratchet 1/4" (1 No.)		6180470
9.2	Reversible ratchet 1/2" (1 No.)		1436686
9.3	Reversible ratchet 3/4" (1 No.)		6277980
9.4	Reversible ratchet 1" (1 No.)		6180550
9.5	Impact Converter 1"(female) to 1-1/2"(male) (1 No.)		6657890
10	Heavy duty steel sockets (1 Set) Bi-hexagon socket, square drive 1/4", 1/2", 3/4", 1", 1-1/2"	Gedore, Country of origin/manufactured in Germany	

 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION (PART-II) FOR MECHANICAL WORKSHOP ITEMS	SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15	
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	4X180 MW MANGDECHCHU HEP	Rev Date	26/09/2019

10.1	1/4" Square Drive bi-hexagon socket, size 10mm (1 No.)		6226050
10.2	1/4" Square Drive bi-hexagon socket, size 11mm (1 No.)		6226130
10.3	1/4" Square Drive bi-hexagon socket, size 12mm (1 No.)		6226480
10.4	1/4" Square Drive bi-hexagon socket, size 13mm (1 No.)		6226640
10.5	1/4" Square Drive bi-hexagon socket, size 14mm (1 No.)		6226720
10.6	1/2" Square Drive bi-hexagon socket, size 15mm (1 No.)		6133710
10.7	1/2" Square Drive bi-hexagon socket, size 16mm (1 No.)		6133980
10.8	1/2" Square Drive bi-hexagon socket, size 17mm (1 No.)		6134010
10.9	1/2" Square Drive bi-hexagon socket, size 18mm (1 No.)		6134280
10.10	1/2" Square Drive bi-hexagon socket, size 19mm (1 No.)		6134360
10.11	1/2" Square Drive bi-hexagon socket, size 20mm (1 No.)		6134440
10.12	1/2" Square Drive bi-hexagon socket, size 21mm (1 No.)		6134520
10.13	1/2" Square Drive bi-hexagon socket, size 23mm (1 No.)		6134790
10.14	1/2" Square Drive bi-hexagon socket, size 24mm (1 No.)		6134870
10.15	1/2" Square Drive bi-hexagon socket, size 25mm (1 No.)		6134950
10.16	1/2" Square Drive bi-hexagon socket, size 26mm (1 No.)		6135090
10.17	1/2" Square Drive bi-hexagon socket, size 27mm (1 No.)		6135170
10.18	1/2" Square Drive bi-hexagon socket, size 28mm (1 No.)		6135250
10.19	1/2" Square Drive bi-hexagon socket, size 29mm (1 No.)		6135330
10.20	1/2" Square Drive bi-hexagon socket, size 30mm (1 No.)		6135410
10.21	1/2" Square Drive bi-hexagon socket, size 32mm (1 No.)		6135760
10.22	1/2" Square Drive bi-hexagon socket, size 33mm (1 No.)		6135840
10.23	1/2" Square Drive bi-hexagon socket, size 34mm (1 No.)		2545314
10.24	1/2" Square Drive bi-hexagon socket, size 36mm (1 No.)		2194686
10.25	3/4" Square Drive bi-hexagon socket, size 38mm (1 No.)		6272910
10.26	3/4" Square Drive bi-hexagon socket, size 41mm (1 No.)		6273050
10.27	3/4" Square Drive bi-hexagon socket, size 46mm (1 No.)		6273130
10.28	3/4" Square Drive bi-hexagon socket, size 50mm (1 No.)		6273210
10.29	3/4" Square Drive bi-hexagon socket, size 55mm (1 No.)		6273480
10.30	3/4" Square Drive bi-hexagon socket, size 60mm (1 No.)		6273560
10.31	1" Square Drive bi-hexagon socket, size 65mm (1 No.)		6175550
10.32	1" Square Drive bi-hexagon socket, size 70mm (1 No.)		6175630
10.33	1" Square Drive bi-hexagon socket, size 75mm (1 No.)		6175710
10.34	1" Square Drive bi-hexagon socket, size 80mm (1 No.)		6175980
10.35	1-1/2" Square Drive hexagon impact socket, size 85mm (1 No.)		6329020
10.36	1-1/2" Square Drive hexagon impact socket, size 90mm (1 No.)		6329100
10.37	1-1/2" Square Drive hexagon impact socket, size 95mm (1 No.)		6329290
10.38	1-1/2" Square Drive hexagon impact socket, size 100mm (1 No.)		6329370
11	Universal joints and extension sets (1 Set)	Gedore, Country of origin/manufactured in Germany	
11.1	1/4" square drive universal joint (1 No.)		6170910
11.2	1/2" square drive universal joint (1 No.)		6144750
11.3	3/4" square drive universal joint (1 No.)		6279170
11.4	1" square drive universal joint (1 No.)		6180980
11.5	Impact Converter 1"(female) to 1-1/2"(male) (1 No.)		6657890
11.6	1/4" square drive extension, size 97mm (1 No.)		6170400
11.7	1/4" square drive extension, size 148mm (1 No.)		6171210
11.8	1/4" square drive extension, size 305mm (1 No.)		6173340
11.9	1/2" square drive extension, size 125mm (1 No.)		6143860
11.10	1/2" square drive extension, size 180mm (1 No.)		6142890

 BHEL-EMRP MUMBAI	TECHNICAL SPECIFICATION (PART - I) FOR MECHANICAL WORKSHOP ITEMS	SPECIFICATION NO. EM-MHPA-MGD-MWS-PTS-15	
		Rev. No	00
	4X180 MW MANGDECHCHU HEP	Rev Date	26/09/2019

11.11	1/2" square drive extension, size 305mm (1 No.)		6129950
11.12	3/4" square drive extension, size 200mm (1 No.)		6278440
11.13	3/4" square drive extension, size 400mm (1 No.)		6278520
11.14	1" square drive extension, size 200mm (1 No.)		6180200
11.15	1" square drive extension, size 400mm (1 No.)		6180390
12	Torque wrenches set , size 1/4" , 1/2 " , 3/4",1" , 1 1/2" (1 Set)	Gedore, Country of origin/manufactured in Germany	
12.1	1/4" square drive Torque WRENCH TORCOFIX K range of 1 - 5 N·m / 0.75 - 3.7 lbf·ft (1 No.)		2201429
12.2	1/4" square drive Torque WRENCH TORCOFIX K range of 5 - 25 N·m / 3.7 - 18 lbf·ft (1 No.)		1545132
12.3	1/2" square drive Torque WRENCH TORCOFIX K range of 20-100 N·m / 15 - 75lbf·ft (1 No.)		7601530
12.4	3/4" square drive Torque WRENCH TORCOFIX K range of 80-400 N·m / 60- 300lbf·ft (1 No.)		7674330
12.5	3/4" square drive Torque WRENCH TORCOFIX K range of 150-750 N·m / 110- 550lbf·ft (1 No.)		1521365
12.6	1" square drive Torque wrench DRE MOMETER range 750-2000 N·m (1 No.)		7695250
12.7	1-1/2" square drive Torque wrench DRE MOMETER range 1500-3000 N·m (1 No.)		7717160
13	Torque multiplier (1 Set)	Gedore, Country of origin/manufactured in Germany	
13.1	Torque multiplier , input drive 1/2" and output drive 1" , max output torque 4000 Nm, torque multiplication ratio 1 : 16 (1 No.)		2653087
13.2	Torque multiplier , input drive 3/4" and output drive 1-1/2" , max output torque 13000 Nm, torque multiplication ratio 1 : 39 (1 No.)		2653141
13.3	Torque multiplier , input drive 3/4" and output drive 2-1/2" , max output torque 54000 Nm, torque multiplication ratio 1: 175 (1 No.)		2653168
13.4	Torque multiplier , input drive 3/4" and output drive 1" , max output torque 2800 Nm, torque multiplication ratio 1: 5.5 (1 No.)		2653273

Note: - Items should originate from Gedore, Germany, bidders to submit OEM certification is mandatory.