



Chapter 4-1

Forced Draft Fan

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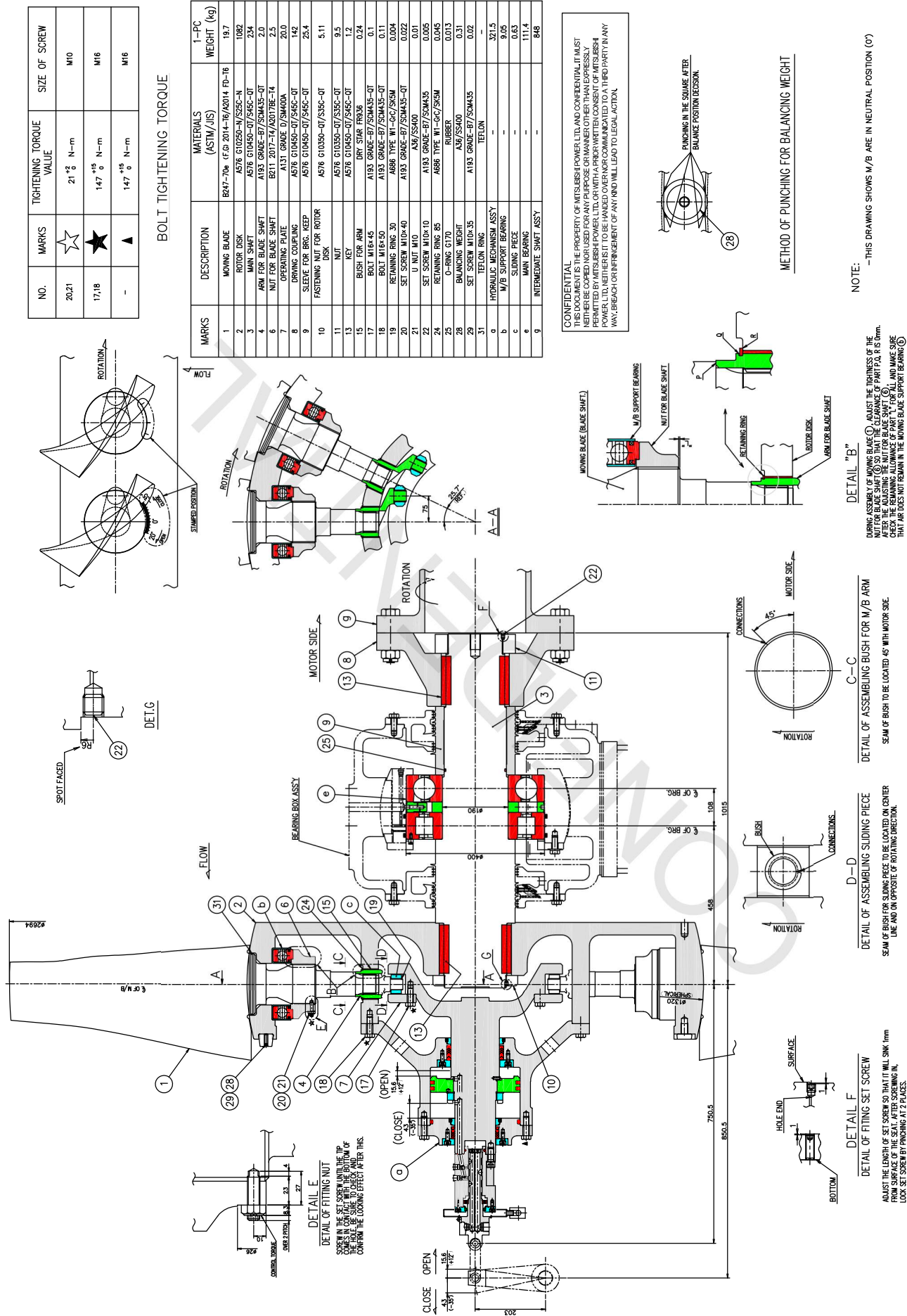
4-1 Forced Draft Fan

4-1.1 Fan Specification and Construction Details

4-1.1.1 Specification

TABLE 4-1.1.1 FORCED DRAFT FAN

Subject		Specifications
Equipment number		Unit 5: 50HLB01AN101, 50HLB11AN101 Unit 6: 60HLB01AN101, 60HLB11AN101
Quantity		Two (2) per Unit
Fan	Manufacturer	MHPS
	Model	ML-H1-R132/270
	Type	Axial Fan, Variable Blade Control
Coupling	Manufacturer	MHPS
	Type	Rigid coupling (with intermediate shaft)
Bearing	Manufacturer	JTEKT Corporation
	Type	Anti-Friction bearing (MHPS special type)
Major material	Casing	Rolled Steel for General Structure
	Rotor	Forged Steel
	Moving Blade	Forged Aluminum
	Main Shaft	Forged Steel
	Bearing (Box/Body)	Cast Iron / Bearing Steel & Carburizing Steel
	Coupling	General Carbon Steel
Rotating Speed (Synchronous)		1000min ⁻¹
Blade		14
Performance Characteristics		
Direction of Rotation		Clockwise (Viewed from motor side)
Capacity (each fan)		20,600 m ³ /min
Suction press.		-4.9 mbar(g)
Discharge press.		44.1 mbar(g)
Fluid		Air
Fluid temperature at inlet		35°C
Fluid density (design)		1.128 kg/m ³



NO.	MARKS	TIGHTENING TORQUE VALUE	SIZE OF SCREW
20,21	☆	21 ± 2 N-m	M10
17,18	★	147 ± 15 N-m	M16
-	▲	147 ± 15 N-m	M16

BOLT TIGHTENING TORQUE

MARKS	DESCRIPTION	MATERIALS (ASTM/JIS)	1-PC WEIGHT (kg)
1	MOVING BLADE	B047-70a F 0.2 2014-T6/A2014 FD-16	19.7
2	ROTOR DISK	A576 G10250-11/S25C-N	1082
3	MAIN SHAFT	A576 G10450-07/S45C-OT	234
4	ARM FOR BLADE SHAFT	A193 GRADE-B7/SDM435-OT	2.0
6	NUT FOR BLADE SHAFT	B211 2017-14/A2017B6-14	2.5
7	OPERATING PLATE	A131 GRADE-D7/SH400A	20.0
8	DRAWING COUPLING	A576 G10450-07/S45C-OT	142
9	SLIDE FOR BRG. KEEP	A576 G10450-07/S45C-OT	25.4
10	FASTENING NUT FOR ROTOR	A576 G10300-07/S30C-OT	5.11
11	NUT	A576 G10350-07/S35C-OT	9.5
12	KEY	A576 G10450-07/S45C-OT	1.2
13	BUSH FOR ARM	DRY STAR FR936	0.24
15	BOLT M16x45	A193 GRADE-B7/SDM435-OT	0.1
17	BOLT M16x50	A193 GRADE-B7/SDM435-OT	0.11
18	RETAINING RING 30	AS86 TYPE W1-GC/S5M	0.004
19	RETAINING RING 40	A193 GRADE-B7/SDM435-OT	0.022
20	SET SCREW M10x40	A36/SS400	0.01
21	U NUT M10	A36/SS400	0.005
22	SET SCREW M10x10	A193 GRADE-B7/SDM435	0.005
24	RETAINING RING 85	AS86 TYPE W1-GC/S5M	0.045
25	O-RING C170	RUBBER	0.013
28	BALANCING WEIGHT	A36/SS400	0.31
29	SET SCREW M10x35	A193 GRADE-B7/SDM435	0.02
31	TEFLON RING	TEFLON	-
a	HYDRAULIC MECHANISM ASSY	-	321.5
b	M/B SUPPORT BEARING	-	9.05
c	SLIDING PIECE	-	0.63
e	MAIN BEARING	-	111.4
g	INTERMEDIATE SHEET ASSY	-	848

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FIGURE 4-1.1.5 ROTOR ASSEMBLY

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