MITSUBISHI HITACHI POWER SYSTEMS

Chapter 4-2

Primary Air Fan

Contact Address

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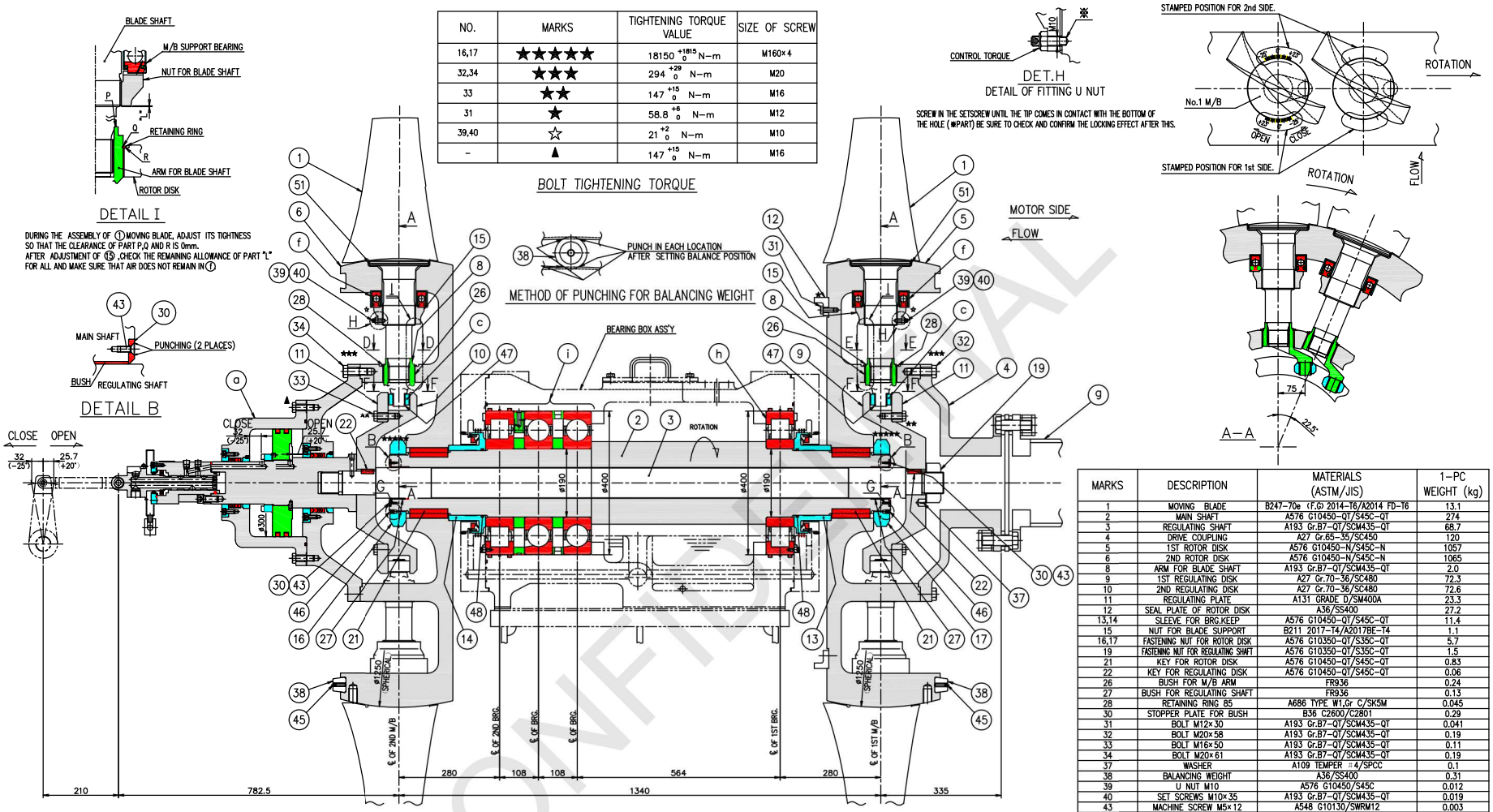
4-2 Primary Air Fan

4-2.1 Fan Specification and Construction Details

4-2.1.1 Specification

TABLE 4-2.1.1 PRIMARY AIR FAN

Subject		Specifications
Equipment number		Unit5:50HFE01AN101,50HFE11AN101 Unit6:60HFE01AN101,60HFE11AN101
Quantity		Two (2) per unit
Fan	Manufacturer	MHPS
	Model	ML-H2-R125/204
	Type	Indoor type Axial Fan with Blade Pitch Control
Coupling	Manufacturer	KTR
	Type	Flexible Coupling
Bearing	Manufacturer	JTEKT Corporation
	Type	Anti-Friction bearing (MHPS special type)
Major Material	Casing	General carbon steel
	Moving Blade	Forged aluminum
	Rotor	Forged steel
	Main Shaft	Forged steel
	Bearing (Box/Body)	Cast iron/bearing steal & carburizing steel
	Coupling	General carbon steel
Synchronous speed		1,500min^{-1}
Blades/stage		16/2
Design performance characteristics		
Direction of Rotation		Clockwise (Viewed from motor side)
Capacity (each fan)		11,400 m^3/min
Suction Press		-4.9 mbar (g)
Discharge Press		162.8 mbar (g)
Fluid		Air
Fluid temperature at inlet (design)		35°C
Fluid density (design)		1.128 kg/m^3



NO.	MARKS	TIGHTENING TORQUE VALUE	SIZE OF SCREW
16,17	★★★★★	18150 $^{+1815}_{0}$ N–m	M160×4
32,34	★★★	294 $^{+29}_{0}$ N–m	M20
33	★★	147 $^{+15}_{0}$ N–m	M16
31	★	58.8 $^{+6}_{0}$ N–m	M12
39,40	☆	21 $^{+2}_{0}$ N–m	M10
–	▲	147 $^{+15}_{0}$ N–m	M16

MARKS	DESCRIPTION	MATERIALS (ASTM/JIS)	1–PC WEIGHT (kg)
1	MOVING BLADE	B247–70e (F,G) 2014–T6/A2014 FD–T6	13.1
2	MAIN SHAFT	A576 G10450–QT/S45C–QT	274
3	REGULATING SHAFT	A193 Gr.B7–QT/SCM435–QT	68.7
4	DRIVE COUPLING	A27 Gr.65–35/SC450	120
5	1ST ROTOR DISK	A576 G10450–N/S45C–N	1057
6	2ND ROTOR DISK	A576 G10450–N/S45C–N	1065
8	ARM FOR BLADE SHAFT	A193 Gr.B7–QT/SCM435–QT	2.0
9	1ST REGULATING DISK	A27 Gr.70–36/SC480	72.3
10	2ND REGULATING DISK	A27 Gr.70–36/SC480	72.6
11	REGULATING PLATE	A131 GRADE D/SM400A	23.3
12	SEAL PLATE OF ROTOR DISK	A36/SS400	27.2
13,14	SLEEVE FOR BRG.KEEP	A576 G10450–QT/S45C–QT	11.4
15	NUT FOR BLADE SUPPORT	B211 2017–T4/A2017BE–T4	1.1
16,17	FASTENING NUT FOR ROTOR DISK	A576 G10350–QT/S35C–QT	5.7
19	FASTENING NUT FOR REGULATING SHAFT	A576 G10350–QT/S35C–QT	1.5
21	KEY FOR ROTOR DISK	A576 G10450–QT/S45C–QT	0.83
22	KEY FOR REGULATING DISK	A576 G10450–QT/S45C–QT	0.06
26	BUSH FOR M/B ARM	FR936	0.24
27	BUSH FOR REGULATING SHAFT	FR936	0.13
28	RETAINING RING 85	A686 TYPE W1,Gr C/SK5M	0.045
30	STOPPER PLATE FOR BUSH	B36 C2600/C2801	0.29
31	BOLT M12×30	A193 Gr.B7–QT/SCM435–QT	0.041
32	BOLT M20×58	A193 Gr.B7–QT/SCM435–QT	0.19
33	BOLT M16×50	A193 Gr.B7–QT/SCM435–QT	0.11
34	BOLT M20×61	A193 Gr.B7–QT/SCM435–QT	0.19
37	WASHER	A109 TEMPER ＝4/SPCC	0.1
38	BALANCING WEIGHT	A36/SS400	0.31
39	U NUT M10	A576 G10450/S45C	0.012
40	SET SCREWS M10×35	A193 Gr.B7–QT/SCM435–QT	0.019
43	MACHINE SCREW M5×12	A548 G10130/SWRM12	0.003
45	SET SCREWS M10×35	A193 Gr.B7/SCM435	0.02
46	SET SCREWS M10×10	A193 Gr.B7/SCM435	0.005
47	RETAINING RING 30	A686 TYPE W1,Gr C/SK5M	0.004
48	O–RING G180	RUBBER	0.014
51	TEFLON RING	TEFLON	0.02
a	HYDRAULIC MECHANISM ASS'Y	–	301
c	SLIDING PIECE	–	0.63
f	M/B SUPPORT BEARING	–	3.81
g	F.F. COUPLING	–	–
h	1ST BEARING	–	48.9
i	2ND BEARING	–	165.9

NOTE:
–THIS DRAWING SHOWS M/B IN NEUTRAL POSITION (0°)

FIGURE 4-2.1.5 ROTOR ASSEMBLY