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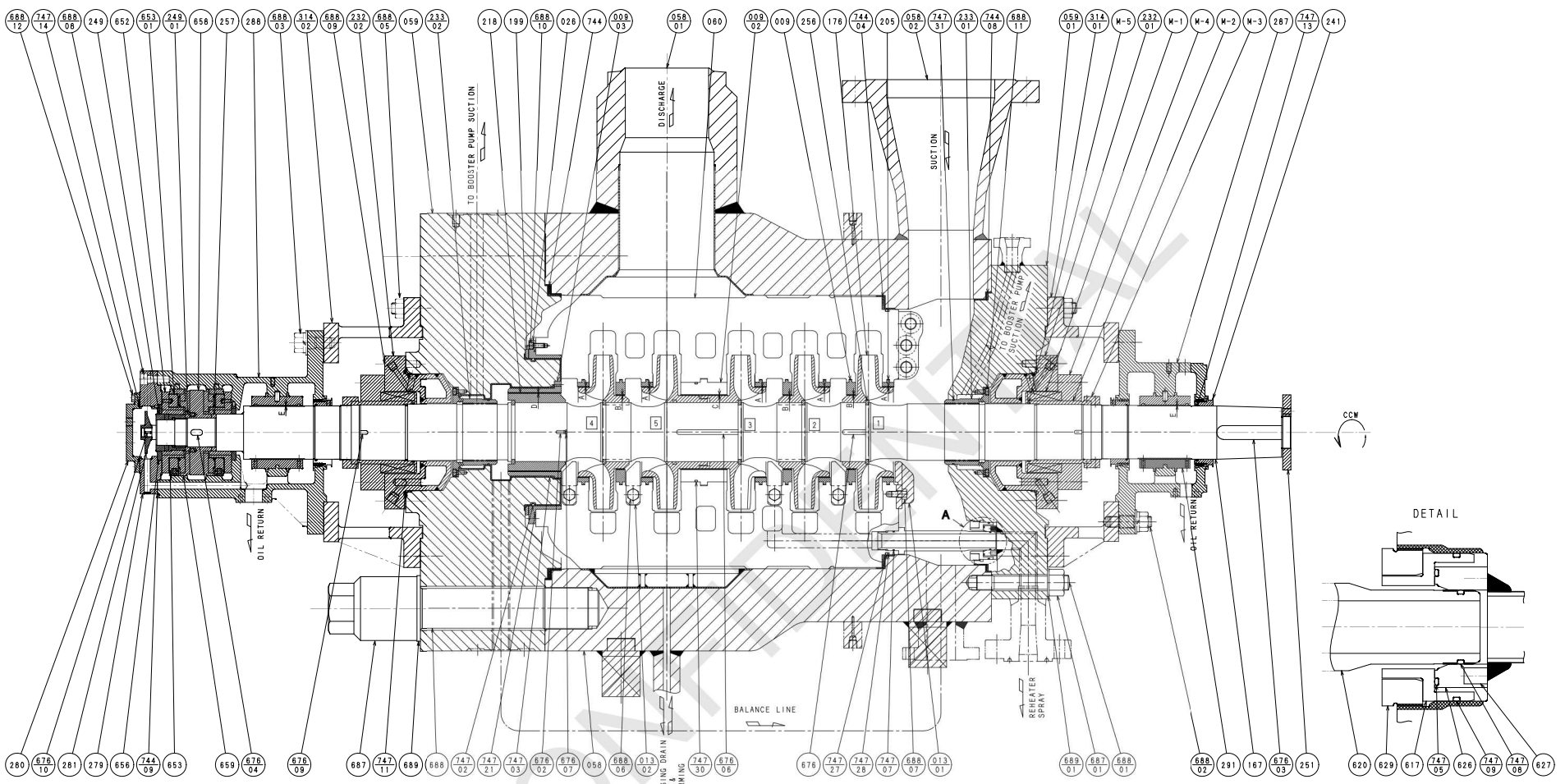

No.	PART NAME	MATERIAL ASTM or AISI	MATERIAL JIS CODE	UNIT	REMARKS
232-02	STUFFING BOX-DISCH. END	ASTM A48 CL40 CLASS A	-	1	
232-01	STUFFING BOX-SUCT. END	ASTM A48 CL40 CLASS A	-	1	
218	BALANCE SLEEVE	(AISI 420)	SUS420J1	1	
205	CASE WEAR RING-SERIES	(AISI 420)	SUS420J2	5	
199	LOCATING RING-VOLUTE	(AISI 420)	SUS420J1	1	
176	IMPELLER	ASTM A487 CL4 CLASS A	-	5	
167	SHAFT	A276 TY.410L MOD	-	1	
060	VOLUTE-IN HALVES	ASTM A48 CL40 CLASS A	-	1	
059-01	SUCTION COVER	ASTM A105	-	1	
059	BARREL COVER-DISCH. END	ASTM A105	-	1	
058-02	SUCTION NOZZLE	A216M WCB	SCPH2	1	
058-01	DISCHARGE NOZZLE	ASTM A105	-	1	
058	OUTER BARREL	ASTM A105	-	1	
026	BUSHING-VOLUTE	(AISI 420)	SUS420J2	1	
013-02	SPLITTER SERIES	(AISI 420)	SUS420J2	8	
013-01	SPLITTER 1st STG.	ASTM A487 CL4 CLASS A	-	2	
009-03	STAGE PIECE-BALANCE SLEEVE	(AISI 420)	SUS420J2	1	
009-02	STAGE PIECE-CENTER-SPLIT	(AISI 420)	SUS420J2	1	
009	STAGE PIECE-SERIES	(AISI 420)	SUS420J2	3	
M-5	O-RING SLEEVE-MECH. SEAL	-	-	2	
M-4	COVER-MECH. SEAL	-	-	2	
M-3	SLEEVE NUT-MECH. SEAL	-	-	2	
M-2	SHAFT SLEEVE-MECH. SEAL	-	-	2	
M-1	MECHANICAL SEAL	-	-	2	

No.	PART NAME	MATERIAL ASTM or AISI	MATERIAL JIS CODE	UNIT	REMARKS
653-01	ROCKER PLATE (6 PER SET)	(AISI 1020)	S20C	12	
653	LEVELING PLATE (6 PER SET)	(AISI 1020)	S20C	12	
652	HOUSING RING-THRUST	(ASTM A48 CL40)	FC300	2	
629	SEALING NUT-INTERSTAGE	(AISI 420)	SUS420J2	16	
627	COIL SPRING	(AISI 316)	SUS316	16	
626	SEALING SLEEVE-INTERSTAGE	(AISI 420)	SUS420J2	2	
620	TAKE OFF TUBE-INTERSTAGE	(AISI 420)	SUS420J2	2	
617	SLEEVE RETAINER-INTERSTAGE	(AISI 420)	SUS420J2	2	
314-02	BEARING BRACKET-DISCH. END	-	SC480	1	
314-01	BEARING BRACKET-SUCT. END	-	SC480	1	
291	SLEEVE BEARING IN HALVES	(AISI 1025/823 No.3)	S25C/WJ2	2	BGFN-160
288	HOUSING-THRUST BEARING	ASTM A48 CL.45	FC300	1	
287	HOUSING-RADIAL BEARING	ASTM A48 CL.45	FC300	1	
281	DETECTION PLATE	(AISI 1035)	S35C	1	
280	END COVER	A216M WCB	SCPH2	1	
279	BEARING COVER-THRUST BEARING	A216M WCB	SCPH2	1	
257	LOCATING RING-SHAFT	(ASTM A283 Gr.D)	SS400	1	
258	SPLIT RING	(AISI 420)	SUS420J1	5	
251	LOCK NUT-COUPLING	(AISI 1035)	S35C	1	
249-01	LOCKING SLEEVE	(AISI 1035)	S35C	1	
249	NUT-SHAFT END	(AISI 1035)	S35C	1	
241	DEFLECTOR	(ASTM B148 C95800)	CAC802	2	
233-02	INNER BUSHING DISCH. END	(AISI 420)	SUS420J2	1	
233-01	INNER BUSHING SUCT. END	(AISI 420)	SUS420J2	1	

No.	PART NAME	MATERIAL ASTM or AISI	MATERIAL JIS CODE	UNIT	REMARKS
688-11	STUD-INNER BUSHING	(AISI 420)	SUS420J1	16	M10X16L
688-10	STUD-BUSHING-VOLUTE	(AISI 420)	SUS420J1	8	M18X30L
688-09	STUD-STUFFING BOX	(AISI 4137)	SCM435	16	M24X50L
688-08	STUD-BEARING COVER	(ASTM A193 Gr.B7)	SS400	8	M20X45L
688-01	STUD-SPLITTER, 1st STG.	(AISI 420)	SUS420J1	4	M18X30L
688-06	STUD-SPLITTER	(AISI 420)	SUS420J1	8	M20X40L
688-05	STUD-BEARING BRACKET	(AISI 4135M)	SCM435	24	M30X125L
688-03	STUD-BEARING HOUSING UPPER	(AISI 4135M)	SCM435	8	M30X120L
688-02	STUD-BEARING HOUSING LOWER	(AISI 4135M)	SCM435	12	M30X120L
688-01	STUD-SUCT. COVER TO BARREL	(AISI 4135M)	SCM435	20	1.5/8"X230L
688	STUD-DISCH. COVER TO BARREL	(AISI 4135M)	SCM435	14	5.1/4"X700L
687-01	NUT-SUCT. COVER TO BARREL	(AISI 1045)	S45C	20	1.5/8"+4ZT
687	NUT-DISCH. COVER TO BARREL	(AISI 1045)	S45C	14	5.1/4"X280T
676-10	KEY-DETECTION PLATE	(AISI 1050)	S50C	1	
676-09	KEY-MECHANICAL SEAL	(AISI 420)	SUS420J2	2	
676-07	ROCK KEY-SHAFT SLEEVE	(AISI 316)	SUS316	2	
676-06	KEY-CENTER STG.	(AISI 420)	SUS420J2	2	
676-04	KEY-THRUST DISC	(AISI 1045)	S45C	1	
676-03	KEY-COUPLING(TURBINE)	-	SNC631	1	
676-02	KEY-BALANCE SLEEVE	(AISI 420)	SUS420J2	1	
676	KEY-IMPELLER SERIES	(AISI 420)	SUS420J2	5	
668	THRUST RING(MOVABLE)	(AISI 316)	SUS316	1	
658	THRUST DISC	(AISI 4135H)	SCM435	1	
656	SEAL RING	(ASTM B584 C83600)	CAC802	1	

No.	PART NAME	MATERIAL ASTM or AISI	MATERIAL JIS CODE	UNIT	REMARKS
747-31	"O"RING-INNER BUSHING	-	EPDM NOTE2)	2	
747-30	"O"RING-CENTER-SPLIT	-	EPDM NOTE2)	1	
747-28	BACK UP RING VOLUTE	-	TEFLON	1	
747-27	"O"RING-VOLUTE	-	EPDM NOTE2)	1	
747-21	"O"RING-VOLUTE TO BUSHING	-	EPDM NOTE2)	1	
747-14	"O"RING-END COVER	-	NBR	1	
747-13	"O"RING-DEFLECTOR	-	NBR	3	
747-11	"O"RING-STUFFING BOX	-	EPDM NOTE2)	2	
747-09	"O"RING-SLEEVE RETAINER INTERSTAGE	-	EPDM NOTE2)	1	
747-08	"O"RING-SEAL BY THE INTERSTAGE SLEEVE	-	EPDM NOTE2)	1	
747-07	"O"RING-TAKE OFF TUBE INTERSTAGE	-	EPDM NOTE2)	1	
747-05	"O"RING-SEALING SLEEVE INTERSTAGE	-	EPDM NOTE2)	1	
747-03	"O"RING-BALANCE STAGE PEACE	-	EPDM NOTE2)	1	
747-02	"O"RING-DISCH.COVER TO VOLUTE	-	EPDM NOTE2)	1	
744-09	GASKET-BEARING COVER	-	V#6500	1	
744-08	GASKET-SUCT.COVER TO BARREL	(AISI 304&GRAPHITE)	SUS304 GRAPHITE	1	
744-04	GASKET-VOLUTE TO BARREL	(AISI 304&GRAPHITE)	SUS304 GRAPHITE	1	
744	GASKET-DISCH.COVER TO BARREL	(AISI 304&GRAPHITE)	SUS304 GRAPHITE	1	
691	GASKET-SUCT.COVER TO BARREL	(ASTM A283 Gr.D)	SS400	20	t=1.5
689	WASHER-DISCH.COVER TO BARREL	(ASTM A283 Gr.D)	SS400	14	t=10
688-01	STUD-END COVER	(ASTM A193 Gr.B7)	SCM435	1	M16X65L

(NOTE)
1) THE DESIGN CLEARANCE

	PARTS NAME	DIAMETER	CLEARANCE	HARDNESS OF WEAR PARTS
A	CASE WEAR RING-SERIES	φ247.65mm	0.432~0.482mm	STATIONARY :HRC 38~43 (HBW353~400) ROTAT(DNARY:HRC 24~30 (HBW247~286)
B	STAGE PIECE-SERIES	φ203.2mm	0.432~0.482mm	
C	STAGE PIECE-CENTER SPLIT	φ203.2mm	0.432~0.482mm	
D	STAGE PIECE-BALANCE SLEEVE	φ217.983mm	0.432~0.482mm	STATIONARY :HRC 38~43 (HBW353~400) ROTAT(DNARY:HRC 28~32 (HBW271~301)
E	SLEEVE BEARING IN HALVES	φ146.229mm	0.166~0.185mm	-

2) EPDM IS SPECIAL COMPOUND.
3) REFERENCE DOCUMENTS AND DRAWING

OWNER'S DOC/DRAWING No.	DOCUMENT/DRAWING NAME
TJB56-L1-OFF-C-LAC-M-DAS-3632	DATA SHEET FOR MOTOR DRIVEN BOILER FEEDWATER PUMP
TJB56-L1-OFF-C-LAC-M-DRD-2604	OUTLINE DRAWING FOR MOTOR DRIVEN BOILER FEEDWATER PUMP AND BOOSTER PUMP
TJB56-L1-OFF-C-LAC-M-PID-2129	PIPING AND INSTRUMENT DIAGRAM FOR MOTOR DRIVEN BOILER FEEDWATER PUMP SYSTEM
TJB56-L1-OFF-C-LAC-M-DRD-2752	SECTION DRAWING FOR MBFP AND BOOSTER PUMP MECHANICAL SEAL
TJB56-L1-OFF-C-LAC-M-DRD-2753	SECTION DRAWING FOR MBFP COUPLING (BFP TO FC)

4) EQUIPMENT KKS CODE
MBFP:50LAC13 AP010KP02
:60LAC13 AP010KP02
5) HEAVY PARTS
MBFP

No.	PARTS NAME	WEIGHT (KG)
058	OUTER BARREL #1	7000
059	BARREL COVER-DISCH. END	3500
059-01	SUCTION COVER	1050
060	VOLUTE-IN-HALVES	1800
167	SHAFT	500
287	HOUSING-RADIAL BEARING	120
288	HOUSING-THRUST BEARING	260

#1 IT IS NOT REMOVED IN OVERHAUL
6) SHAFT LENGTH=APPROX. 3106
SHAFT DIA ON BEARING=φ146.0

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EBARA DOC No.	R1704119O4 / R1704119I0
MODEL	14x14x16-5stg HSB
CUSTOMER	TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION
ART No.	2
DWG No.	PT BHUMI JATI POWER
TITLE	SECTION DRAWING FOR MOTOR DRIVEN BOILER FEEDWATER PUMP
EBARA CORPORATION	PR1704119O4/905 2
DWG No.	R1704119O4-105 2