






ISSUED FOR AS-BUILT

1	24-Jan-22	Issued for As-Built	T.M	H.T	H.T
0	1-Feb-19	Issued for Use	T.M	H.T	H.T
REV	DATE	DESCRIPTION	BY	CHKD	APPD
OWNER  PT.Bhumi Jati Power					
PROJECT TITLE TANJUNG JATI B EXPANSION (JAWA-4) COAL FIRED STEAM POWER PLANT 2 x 1,000MW					
OWNER'S ENGINEER  POYRY					
EPC CONTRACTORS  Sumitomo Corporation  PT. Wasa Mitra Engineering  AvantPower Japan Ltd.					
PROJECT DOCUMENT NO. TJB56-L1-OFF-C-LAC-M-DRD-2706					REV 1
APPD	H.Tao	H.T	TITLE SECTION DRAWING FOR TBFP AND BOOSTER PUMP MECHANICAL SEAL		
CHKD	H.Tao	H.T			
BY	T.Miyazaki	T.M			
EPC LOT SUB-CONTRACTOR 東芝エネルギーシステムズ株式会社 TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION			EPC LOT SUB-CONTRACTOR DOCUMENT NO. R170411901-120		REV 2

TITLE SECTION DRAWING FOR TBFP AND BOOSTER
PUMP MECHANICAL SEAL

DOC. No. R170411901-120

REV. 2

CUSTOMER Toshiba Energy Systems & Solutions Corporation

COMPLETE IN
WITH COVER 5 SHEETS

FINAL USER PT. Bhumi Jati Power

PROJECT TANJUNG JATI B EXPANSION (JAWA-4) COAL
FIRED STEAM POWER PLANT 2 X 1,000MW

SERVICE Turbine Driven Boiler Feedwater Pump

JOB No. —

EBARA SER. No. R170411901/902

ITEM No. —

MODEL/EQUIP. 16X16X18-5stg.HDB,
400X300KST71 SET 2+2

P.O. No. —

-

TO SET

ISSUED BY PUMP ENGINEERING
DEPARTMENT

5				
4				
3				
2	Issued for Use	2018/9/28	N.Anzai	N.Matsushita
1	Revised	2018/6/28	N.Anzai	N.Matsushita

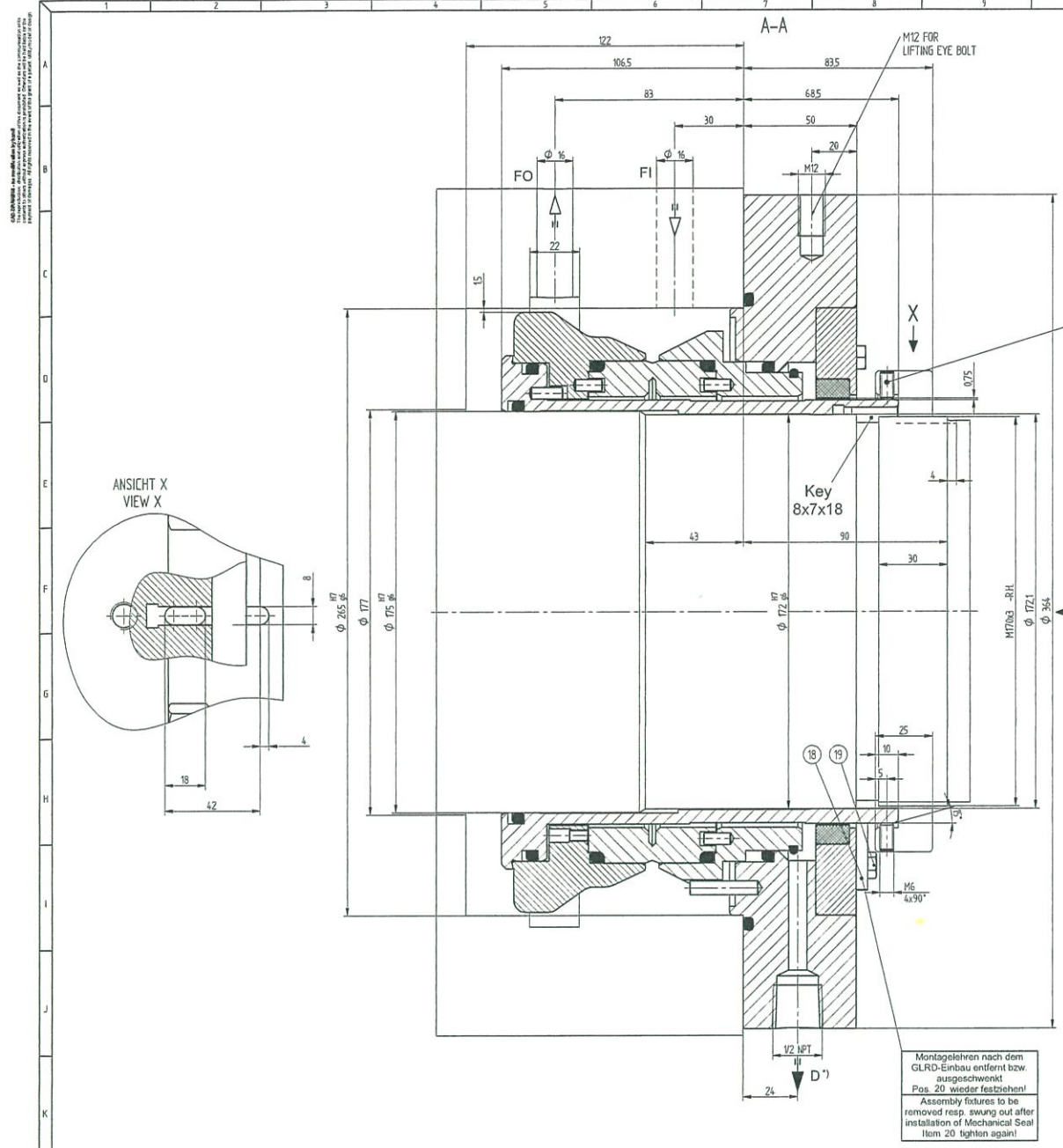
APPROVED BY N.Anzai 11-Mar-18

CHECKED BY

REV. PAGE DATE APP'D BY PREPARED BY N.Matsushita 11-Mar-18

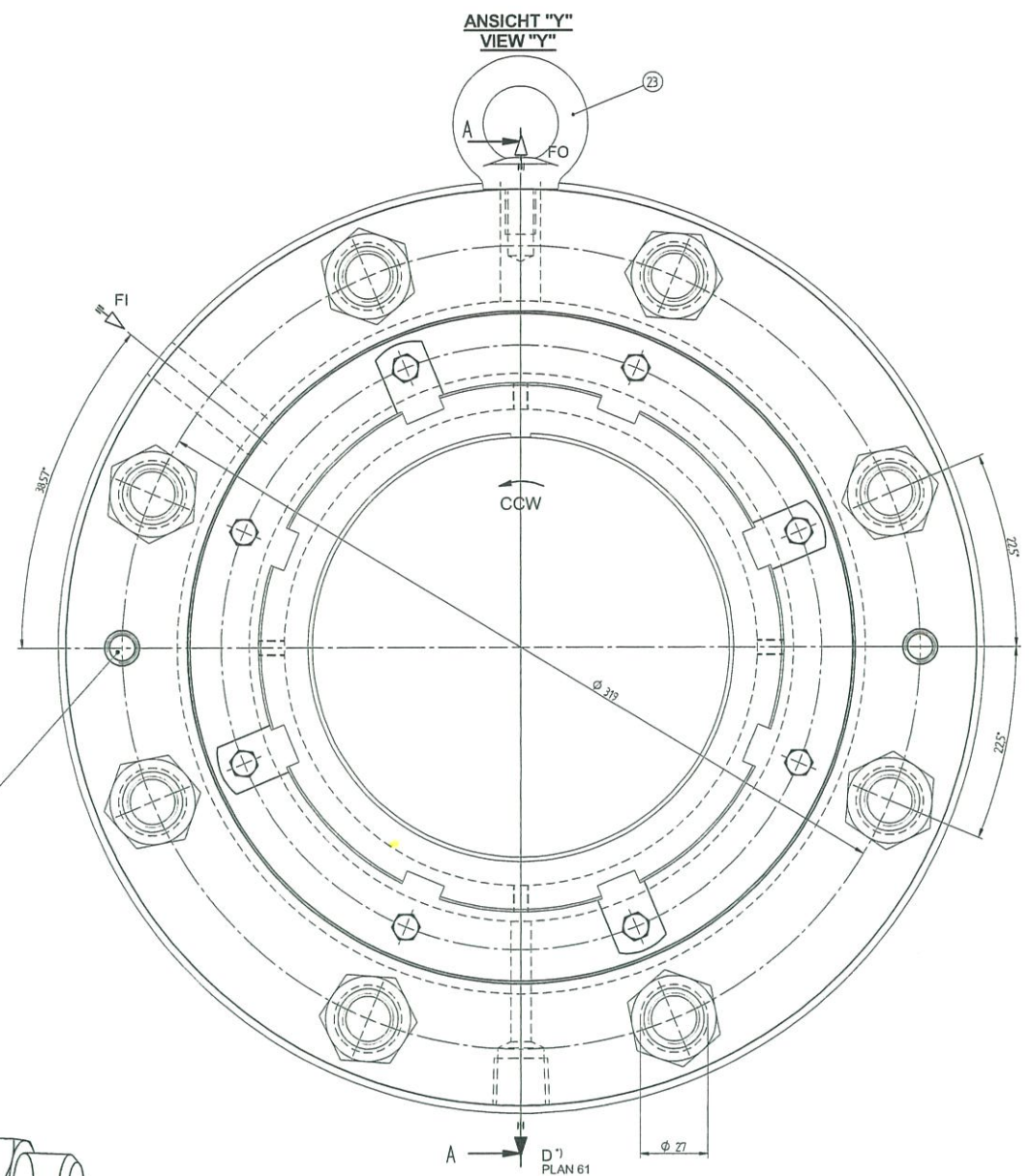


EBARA CORPORATION

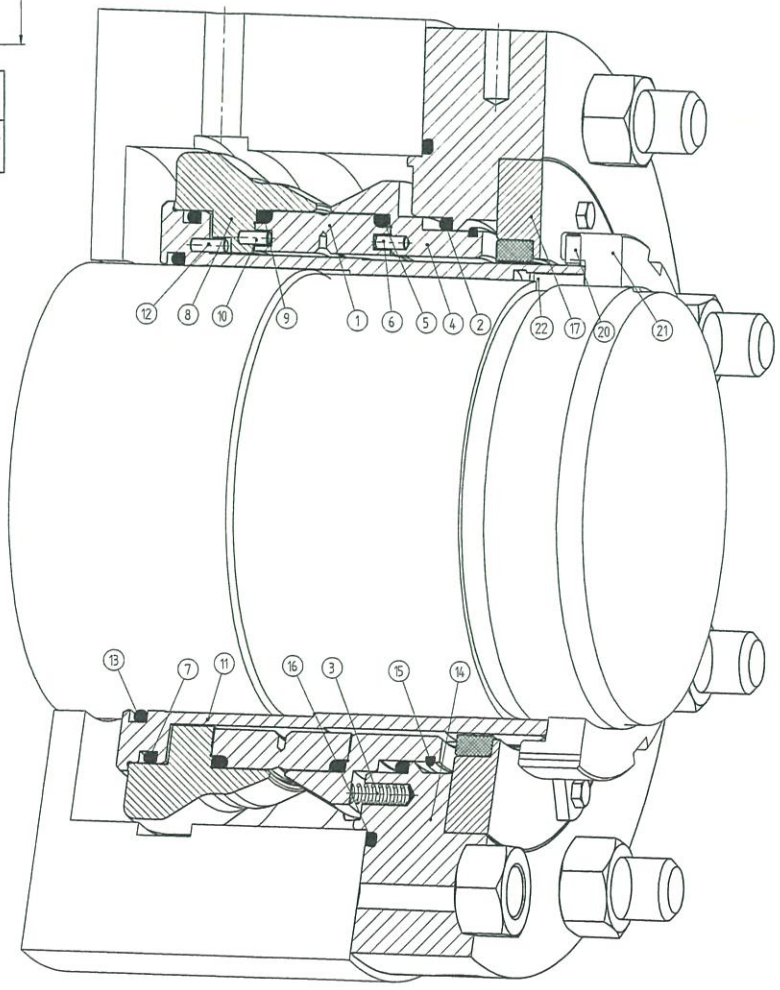


Gewindestifte gleichmässig in mehreren Schritten ueber Kreuz anziehen.
Mit Loctite Nr. 243 gesichert.
Anzugmoment: 7 Nm
Tighten set screws equally, crosswise, in several steps.
Secured with Loctite No. 243.
Tightening torque: 7 Nm

Montageleihen nach dem GLRD-Embau entfernt bzw. ausgeschwenkt.
Pos. 20 wieder festziehen!
Assembly fixtures to be removed resp. swung out after installation of Mechanical Seal.
Item 20 tighten again!



Drive end



Static pressure test with at	Water
Statische Druckprobe mit bei	34 bar (g)

Remarks: Dynamic design pressure: 40bar, Static design pressure: 50bar, 43kg, flow rate 30l/min

Material code	Dynamic sealing pressure rating
Werkstoffschlüssel	Dynamischer Auslegungsdruck
Allowable temperature min - max	Static sealing pressure rating
Zulässige Temperatur	Statischer Auslegungsdruck

Medium: BOILER FEED WATER		Pumping temperature min max	132.8 174.8	C
Suction pressure min max	21.54 34 bar (a)	Density min max	892.54 932.84	kg/m ³
Discharge pressure min max	108.74 324.56 bar (a)	Viscosity min max	-	cP
Enddruck min max	391.67	Sp heat fluid min max	-	kJ/kg K
Seal chamber pressure min max	13.6 21.54 bar (a)	Wär Kap. Medium min max	-	-
Break an der Dichtung min max	21.54	Vapor pressure min max	-	bar (a)
Max. static sealing pressure (MSSP)	50 bar (g)	Dampfdruck min max	-	-
MAWP - pump min max	460 bar (g)	Speed min max	3201 5924	rpm
MAWP - Pumpe		Drehzahl min max	5950	

Reference Drawings & Documents
1. TJB56-L1-OFF-C-LAC-M-DRD-2700 SECTION DRAWING FOR TURBINE DRIVEN BOILER FEEDWATER PUMP

FI: Flushing inlet
FO: Flushing outlet
D: Drainage

Benennung	Pos.	Benennung	EagleBurgmann-Werkstoff	ASTM-Werkstoff	Stück/Bemerkung
Seal face	1	Gegengleit-Satz	BUXA30-01+BUKA225	Carbon silicon impregnated-silicon carbide/polycrystalline diamond coated	1
O-Ring	2	Runddichtung	E	(ASTM D1418) EPDM	1
Spring	3	Feder	1.4571	ASTM A276/A479 TYPE 316Ti	10
Seal housing	4	Gehäuseträger	1.4571	ASTM A276/A479 TYPE 316Ti	1
O-Ring	5	Runddichtung	E	(ASTM D1418) EPDM	1
Pin	6	Stift	PEEK 30GF	PEEK	4
O-Ring	7	Runddichtung	E	(ASTM D1418) EPDM	1
Seal housing	8	Gegengleitsträger	1.4571	ASTM A276/A479 TYPE 316Ti	1
O-Ring	9	Runddichtung	E	(ASTM D1418) EPDM	1
Pin	10	Stift	PEEK 30GF	PEEK	3
Shaft sleeve	11	Wellenhülse	1.4571	ASTM A276/A479 TYPE 316Ti	1
Pin	12	Stift	1.4401/1.4571	ASTM A276/A479 TYPE 316Ti	3
O-Ring	13	Runddichtung	E	(ASTM D1418) EPDM	1
Housing	14	Gehäuse	1.4571+2.4068	ALLOY N61718 ASTM A276/A479 TYPE 316Ti + ASTM B557	1
O-Ring	15	Runddichtung	E	(ASTM D1418) EPDM	1
O-Ring	16	Runddichtung	E	(ASTM D1418) EPDM	1
Cover	17	Deckel	1.4571+BUKO1	ASTM A276/A479 TYPE 316Ti + Carbon graph. res. impreg.	1
Assembly fixture	18	Montagelehre	1.4571	ASTM A276/A479 TYPE 316Ti	4
Hexagon bolt	19	Sechskantschraube	A4-70	ASTM A193 Gr. B8M	8
Set screw	20	Gewindestift	SUS316	ASTM A276 TYPE 316	4
Key	21	Stiftschlüssel	SUS316	ASTM A276 TYPE 316	1
Lifting Eye Bolt	22	Preßbolzen	420/2		1

ISO 2768-mS
ISO 1101
ISO 1102
ISO 1104
ISO 1105
ISO 1106
ISO 1107
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ISO 1109
ISO 1110
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ISO 1199
ISO 1200

EagleBurgmann.
MECHANICAL SEAL
GLEITRINGDICHTUNG
DF-SAPIZ/188-E1-A2

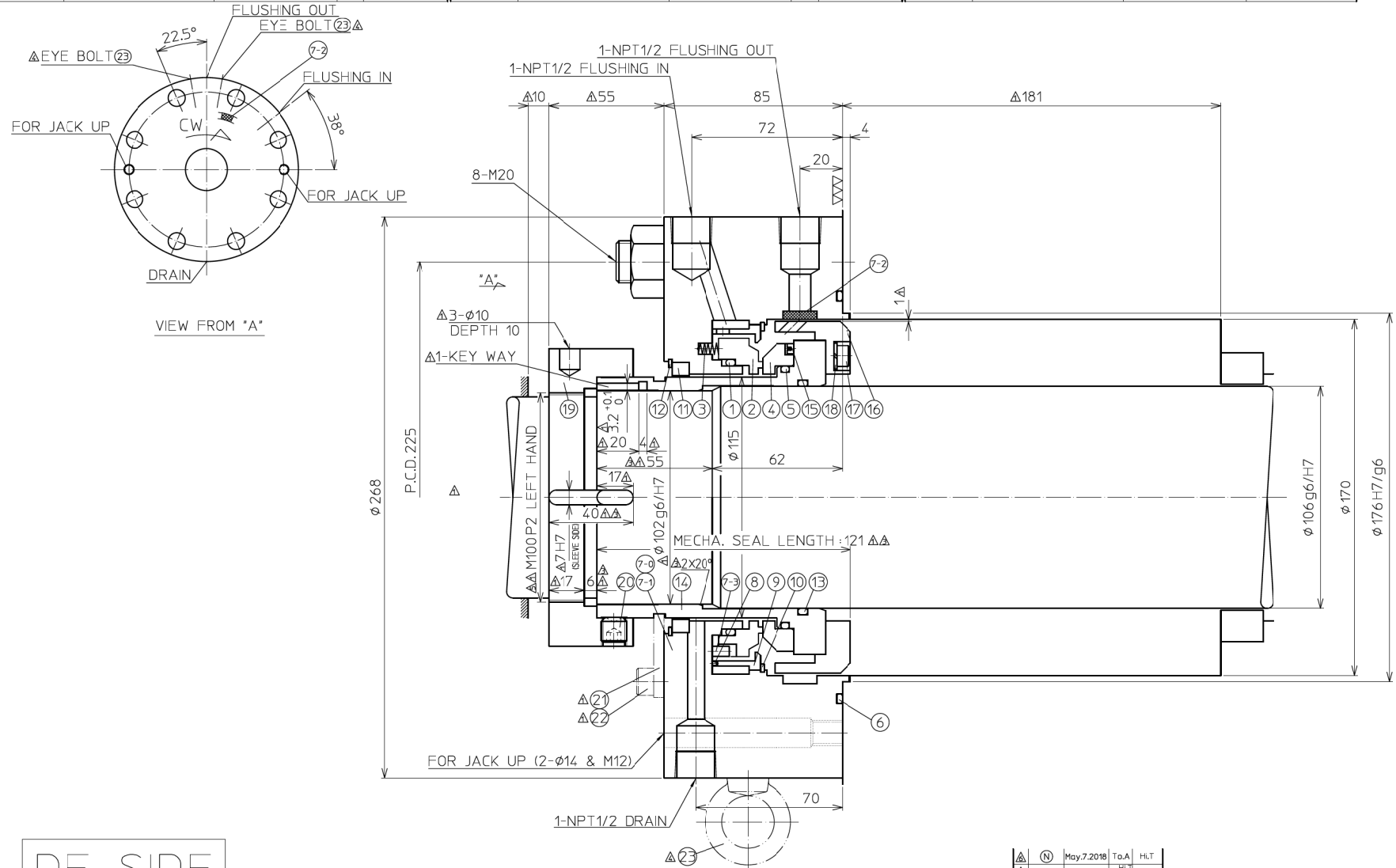
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AUTO ENTRY

No.	PART NAME	MATERIAL	QTY	CODE	No.	PART NAME	MATERIAL	QTY	CODE	No.	PART NAME	MATERIAL	QTY	CODE
1	O RING	FKM	1		7-3	KNOCK PIN	SUS316	4		16	COLLAR	SUS316	1	
2	SEAL RING	CARBON	1		8	KNOCK PIN	SUS316	1		17	HEX.SOCKET BOLT	SUS316L	5	
3	COIL SPRING	HAS-C	16		9	CASE	SUS316	1		18	SPRING WASHER	SUS316	5	
4	MATING RING	S.CARBIDE	1		10	SNAP RING	SUS316	1		19	SLEEVE COLLAR	SUS304	1	
5	O RING	FKM	1		11	BUSH	CARBON	1		20	SET SCREW	SCM435	8	
6	O RING	FKM	1	φ190.09xφ197.15xφ3.53	12	SNAP RING	SUS316	1		Δ21	SET PLATE	SCS13 or SUS304	2	
7-0	SEAL COVER ASY		1		13	O RING	FKM	1	φ107.54xφ114.6xφ3.53	Δ22	HEX.SOCKET BOLT	SUS304	2	
7-1	SEAL COVER	SUS316	1		14	SLEEVE	SUS316	1		Δ23	EYE BOLT	S20C	2	
7-2	BLANK PIECE	SUS316	1		15	DRIVE PIN	SUS316	5						

MATERIAL (JIS)	MATERIAL (ASTM Eq.)
SUS316	ASTM A276-316
SUS316L	ASTM A276-316L
SUS304	ASTM A276-304
HAS-C	ASTM B574-85
SCM435	AISI 4137
SCS13	ASIM A743-CF8
S20C	AISI 1020



OLD TYPE :
OLD CODE :
COLUMN FOR PURCHASER OF PUMPS
△Ref. Drawings & Documents
TJB56-L1-OFF-C-LAC-M-DRD-2701
SECTION DRAWING FOR TBFP
BOOSTER PUMP

COLUMN FOR PUMP MANUFACTURER
PUMP MANUFACTURER
EBARA CORPORATION

APPROVED BY :
CHECKED BY :
DOCUMENT NO. : R170411902/R170411908-120
JOB NO. :
MFG NO. : R170411902/R170411908
PUMP TYPE : 400X300KST

FOR MESSRS.
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION
/P.T. BHUMI JATI POWER

PROJECT NAME
TANJUNG JATI B EXPANSION (JAWA-4)
COAL FIRED STEAM POWER PLANT 2 X 1000MW
EQUIPMENT NAME
TBFP BOOSTER PUMP
ITEM No.
50LAC11 AP010KP01/50LAC12 AP010KP01
/60LAC11 AP010KP01/60LAC12 AP010KP01

MECHANICAL SEAL

DE SIDE

NDE SIDE DRAWING No.:LL-0481000 00001

NOTE :
Δ1.Remove the SET PLATE(P/N21) and HEX.SOCKET BOLT(P/N22) before running the pump. keep the SET PLATE(P/N21) and HEX.SOCKET BOLT(P/N22) for next service.
2.All dimension in mm.
3.Weight : app 32kg.

OPERATING CONDITIONS		SPECIAL REQUIREMENT		ORIGINAL PRODUCT CODE	DATE	DRAWN	CHECKED	APPROVED
SEALING FLUID	BOILER FEED WATER 000523	ITEM	FLOW V/HR	LL-0481018	Dec.07.2017	T.Yamada	H.Tanaka	M.Kito
SP.GR.	MAX.932.84 kg/m ³ NOR.892.54	(WITH COOLER) SELF FLUSHING	PRESS. barA	CUSTOMER CODE				
SUCT. PRESS.	MAX.11.15 NOR.11.13 barA PRESS. MIN.5.95	TARGET	TEMP. °C	100089				
DISCH. PRESS.	MAX.27.44 NOR.23.22 barA MIN.5.88	QUENCHING	MAX.60	USER CODE				
ABRASIVE	VAP. PRESS.	JACKET		108565				
TEMP. MAX.174.8 NOR.174.8 °C MIN.132.5	SUCT. PRESS. MAX.11.15 NOR.11.13 barA PRESS. MIN.5.95	ACCESSORIES		LL9UC 1115VAVVC	Apr.3.2018	T.o.A	H.L.T	
SHAFT MAX.708 NOR.1700 RPM SPEED MIN.919	Dynamic design press. .41 barA	COOLER DRAWING No. :PA-0014954 00002			Mar.7.2018	T.o.A	H.L.T	
ROTATION FROM DRIVE END	Static design press. .61 barA				Feb.8.2018	T.o.A	H.L.T	
API PLAN	THROTTLE BUSHING CLEARANCES	QUANTITY	ASSY		Jan.8.2018	T.o.A	H.L.T	
API CODE	23+61	4 sets	PARTS 4 sets(P/N 5.13)					
	1.2~1.4 mm ON DIA.							

REVISIONS	DATE	BY	APPROVED
Δ1	May.7.2018	T.o.A	H.L.T
Δ	M18944 Apr.16.2018	H.L.T	MK
Δ	Apr.3.2018	T.o.A	H.L.T
Δ	Mar.7.2018	T.o.A	H.L.T
Δ	Feb.8.2018	T.o.A	H.L.T
Δ	Jan.8.2018	T.o.A	H.L.T

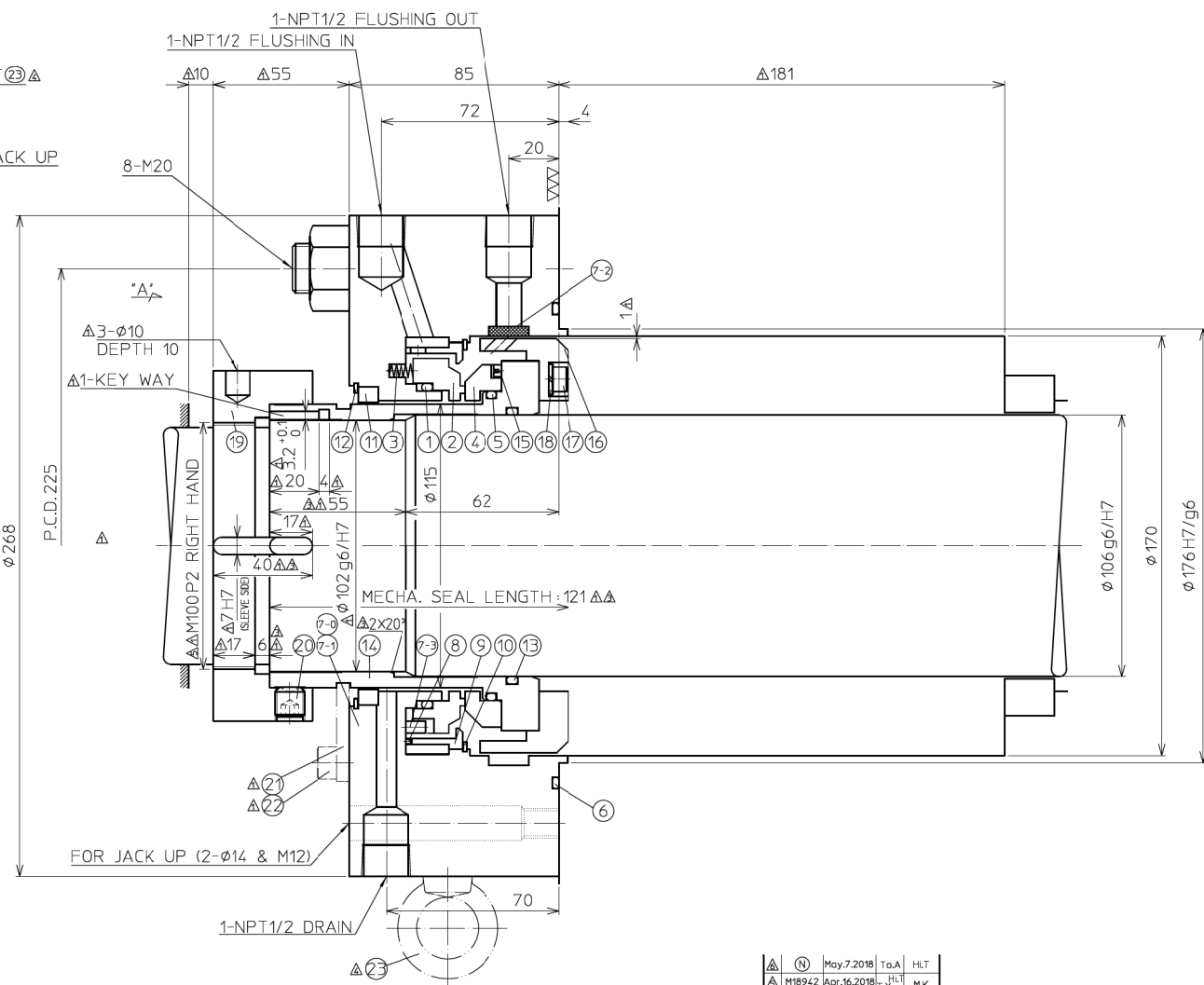
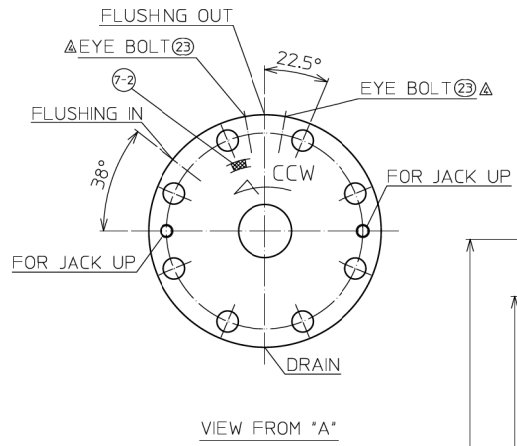
EagleBurgmann. EagleBurgmann Japan Co., Ltd.
1-1-15, Shiba-Danjo, Tokyo 105-0002, JAPAN

CAD-DRAWING - no modification by hand
If necessary, a change form
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AUTO ENTRY

No.	PART NAME	MATERIAL	QTY	CODE	No.	PART NAME	MATERIAL	QTY	CODE	No.	PART NAME	MATERIAL	QTY	CODE
1	O RING	FKM	1		7-3	KNOCK PIN	SUS316	4		16	COLLAR	SUS316	1	
2	SEAL RING	CARBON	1		8	KNOCK PIN	SUS316	1		17	HEX.SOCKET BOLT	SUS316L	5	
3	COIL SPRING	HAS-C	16		9	CASE	SUS316	1		18	SPRING WASHER	SUS316	5	
4	MATING RING	S.CARBIDE	1		10	SNAP RING	SUS316	1		19	SLEEVE COLLAR	SUS304	1	
5	O RING	FKM	1		11	BUSH	CARBON	1		20	SET SCREW	SCM435	8	
6	O RING	FKM	1	φ190.09xφ197.15xφ353	12	SNAP RING	SUS316	1		Δ21	SET PLATE	SCS13 or SUS304	2	
7-0	SEAL COVER ASY		1		13	O RING	FKM	1	φ107.54xφ114.6xφ353	Δ22	HEX.SOCKET BOLT	SUS304	2	
7-1	SEAL COVER	SUS316	1		14	SLEEVE	SUS316	1		Δ23	EYE BOLT	S20C	2	
7-2	BLANK PIECE	SUS316	1		15	DRIVE PIN	SUS316	5						

MATERIAL (JIS)	MATERIAL (ASTM Eq.)
SUS316	ASTM A276-316
SUS316L	ASTM A276-316L
SUS304	ASTM A276-304
HAS-C	ASTM B574-85
SCM435	AISI 4137
SCS13	ASIM A743-CF8
S20C	AISI 1020



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NDE SIDE

DE SIDE DRAWING No.: LL-0481018 00001

NOTE :

- Remove the SET PLATE(P/N21) and HEX.SOCKET BOLT(P/N22) before running the pump. keep the SET PLATE(P/N21) and HEX.SOCKET BOLT(P/N22) for next service.
- All dimension in mm.
- Weight : app 32kg.

OPERATING CONDITIONS		SPECIAL REQUIREMENT		ORIGINAL PRODUCT CODE	DATE	DRAWN	CHECKED	APPROVED
SEALING FLUID	BOILER FEED WATER 000523	ITEM	FLOW (WITH COOLER) SELF FLUSHING	LL-0481000	Dec.07.2017	T.Yamada	H.Tanaka	M.Kito
SP.GR.	MAX.932.84 kg/m ³	PRESS.	MAX.60 bar	CUSTOMER CODE				
VIS.	MIN.0.5 mm	COOLING		100089				
ABRASIVE		QUENCHING		USER CODE				
TEMP.	MAX.174.8 NOR.174.8 °C	JACKET		108565				
SPEED	MIN.132.5 RPM	ACCESSORIES		LL9UC 1115VAVVC				
SHAFT ROTATION	MAX.708 NOR.1700 RPM	COOLER DRAWING No. PA-0014954 00002						
ROTATION FROM DRIVE END	CW	QUANTITY	ASSY 4 sets					
API PLAN	23+61	THROTTLE BUSHING CLEARANCES	PARTS 4 sets(P/N 5.13)					
API CODE	BSTFN	QUANTITY						

REVISIONS	DATE	BY	APPROVED
Δ (N)	May.7.2018	To.A	H.L.T
Δ (M)	Apr.16.2018	H.L.T	M.K
Δ (N)	Apr.3.2018	To.A	H.L.T
Δ (N)	Mar.7.2018	To.A	H.L.T
Δ (N)	Feb.8.2018	To.A	H.L.T
Δ (N)	Jan.8.2018	To.A	H.L.T

OLD TYPE :
OLD CODE :
COLUMN FOR PURCHASER OF PUMPS
Δ Ref. Drawings & Documents
TJB56-L1-OFF-C-LAC-M-DRD-2701
SECTION DRAWING FOR TBFP
BOOSTER PUMP

COLUMN FOR PUMP MANUFACTURER
PUMP MANUFACTURER
EBARA CORPORATION
APPROVED BY : _____ DATE : _____
CHECKED BY : _____
DOCUMENT NO. : R170411902/R170411908-120 REV. : _____
JOB NO. : _____
MFG NO. : R170411902/R170411908
PUMP TYPE : 400X300KST

FOR MESSRS.
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION
/P.T. BHUMI JATI POWER

PROJECT NAME
TANJUNG JATI B EXPANSION (JAWA-4)
COAL FIRED STEAM POWER PLANT 2 X 1000MW
EQUIPMENT NAME
TBFP BOOSTER PUMP
ITEM No.
50LAC11 AP010KP01/50LAC12 AP010KP01
760LAC11 AP010KP01/60LAC12 AP010KP01

MECHANICAL SEAL
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1-1-15, Shiba-Danone, Tokyo 105-0002, JAPAN

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