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NOTE:						
1	Sep/12/14	7th issue	Y.M / E.S	M.Y	M.Y	-
0	Jun/17/14	6th issue	Y.M / E.S	M.Y	M.Y	-
E	Apr/15/14	5th issue	Y.M / E.S	M.Y	M.Y	-
D	Feb/21/14	4th issue	Y.M / E.S	M.Y	M.Y	-
C	Feb/07/14	3rd issue	Y.M	N.A	N.A	-
B	Aug/22/13	2nd issue	Y.M / E.S	M.Y	M.Y	-
A	Apr/09/13	1st issue	Y.M	M.Y	M.Y	-
REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED	APPROVED
OWNER			OWNER'S CONSULTANT			
 VIETNAM OIL AND GAS GROUP (PVN)			 FICHTNER GmbH & Co. KG  PVPOWER PCC			
EPC CONTRACTOR			EPC CONSTRUCTOR'S CONSULTANT			
 PETROVIETNAM CONSTRUCTION JOINT STOCK CORPORATION (PVC)			 WORLEYPARSONS			
POWER ISLAND PACKAGE SUPPLIER						
 SOJITZ CORPORATION			 DAELIM INDUSTRIAL CO., LTD.			
PROJECT TITLE						
THAI BINH 2 THERMAL POWER PLANT 2 x 600MW						
DRAWING / DOCUMENT TITLE						
COLD REHEAT AND EXTRACTION NRV DRAWINGS						
Vendor's Logo: 			FUNCTION	NAME	SIGN	DATE
			DRWN	Y.Miida	Y.M	Apr/09/13
			CHKD	M.Yasuda	M.Y	Apr/09/13
			APPD	M.Yasuda	M.Y	Apr/09/13
DOCUMENT NO:TB2-SDC.VPM210171-00100-M-M1B-DRD-0003			No of page: 13		Scale	Rev.1

Daelim's Ref. No : TB2-DIC-VD-T-3002

*** Legend**

<u>Purpose:</u>	<u>Approval Status:</u>
AP - For Approval	A - Approved
RE - For Reference	B - Approved with Comments
FF - For Final / FC - For Construction	C - Returned for Correction
F - Final / AB - As Built	D - Rejected
IN - For Information	N - Reference Only

No.	Document No.	Rev.	Title	Purpose	Approval Status	
					In	Out
1	TB2-SDC.VPM210171-00100-M-M1B-DRD-0003	0	COLD REHEAT AND EXTRACTION NRV DRAWINGS	FC		A
2	TB2-SDC.VPM210171-00MA-M-M1B-DID-0001	0	HANGER ARRANGEMENT OF HP MSV-CV AND CRV	FC		A

No.	Owner/PMC's Comments	Contractor's Response
1	TB2-SDC.VPM210171-00100-M-M1B-DRD-0003, COLD REHEAT AND EXTRACTION NRV DRAWINGS	
	No further comments.	
2	TB2-SDC.VPM210171-00MA-M-M1B-DID-0001, HANGER ARRANGEMENT OF HP MSV-CV AND CRV	
	No further comments.	

Legends:

AP = For Approval
R = For Reference
FC = For Construction
AB = As Built

A = Approved
B = Approved with Comments
C = Returned for Correction
D = Rejected

I = Accepted for Reference
R = Return for correction
IB=Accepted with comments for reference

名称 TITLE

COLD REHEAT AND EXTRACTION NRV DRAWINGS

客先名 CUSTOMER : SOJITZ CORPORATION
系統機器 EQ/SYS. : VALVE
製番 JOB : M210171 CG, M210172 CG
プラント PROJECT : THAI BINH2 THERMAL POWER PLANT 2 X 600MW STG

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Toshiba Corporation

社内配付先 DISTRIBUTION (KA-PU)			発行部課名 ISSUED BY	承認 APPROVED BY
			タービン機器部 配管設計担当 TURBINE PLANT EQUIPMENT DEPT. PIPING SYSTEM DESIGN GROUP	M. Yasuda Sep.12.2014
				調査 REVIEWED BY
				M. Yasuda Sep.12.2014
		DDKW22203		担当 PREPARED BY
		(P-SETSU)		E. Saito Y. Miida Sep.12.2014 Sep.12.2014

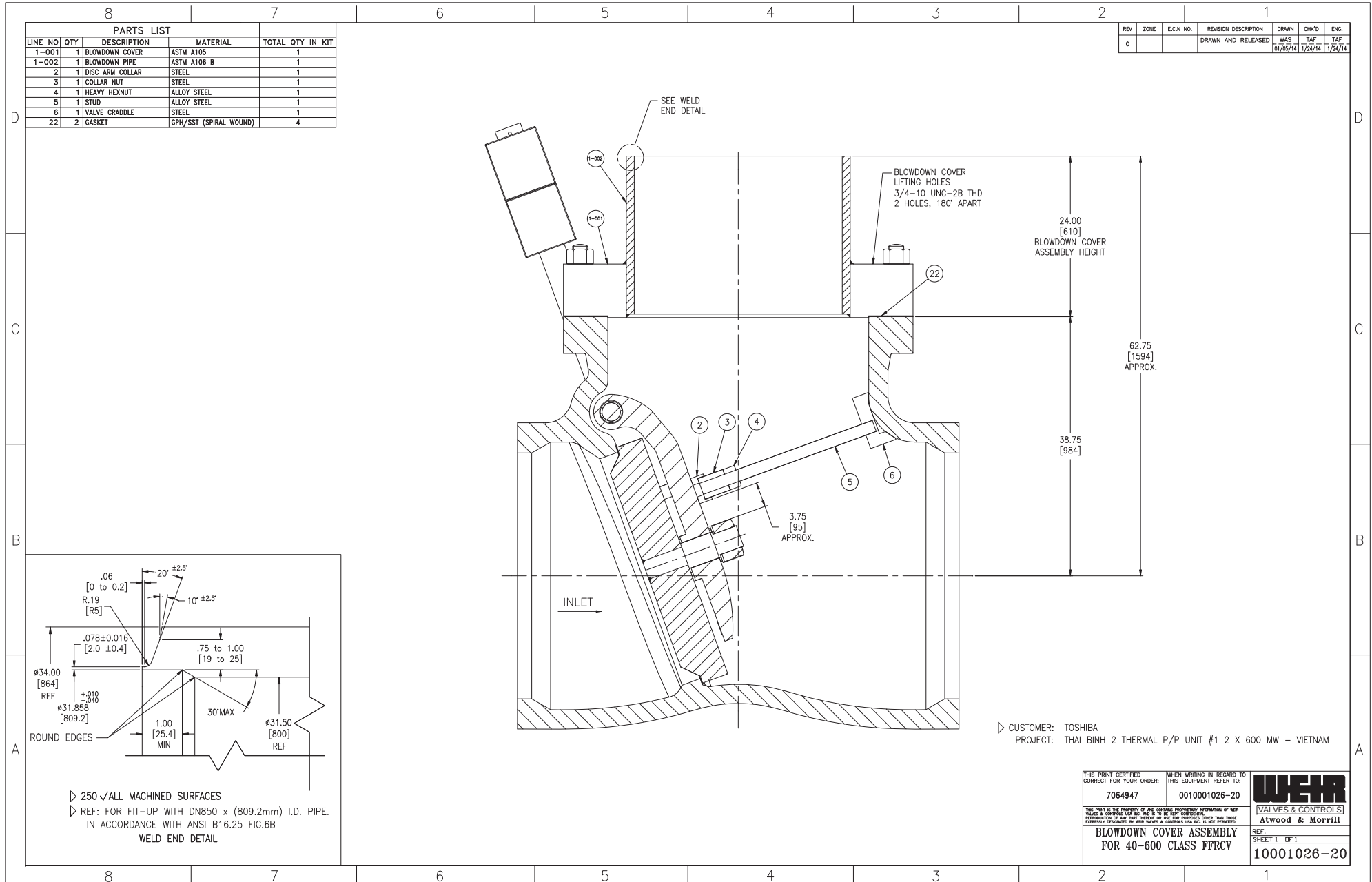
THAI BINH2 THERMAL POWER PROJECT: SERVICE CONDITION FOR EXTRACTION NRV & COLD REHEAT NRV

REF. No.	VALVE No.	NAME PLATE INSCRIPTION	OPERATION	TYPE	DESIGN		NOM. SIZE DN	PRESS CLASS	MATERIAL OF BODY	OPERATION			PRESS. LOSS [100%] bar
					PRESS. barg	TEMP. °C				FLOW KG/H	PRESSURE bar.a	ENTHALPY KJ/KG	
1	*1LBC11AA701	COLD REHEAT NRV	AIR	FORCED CLOSED NRV	50.2	362	1000	600	A216MWCB	1,681,357	38.95	3,037.8	0.070
2	*1LBQ10AA701	HP 8 HEATER EXTRACTION NRV	AIR	FORCED CLOSED NRV	86	440	250	600 SPL	A217MWCB	159,203	70.68	3,195.0	0.090
3	*1LBQ20AA701	HP 7 HEATER EXTRACTION NRV	AIR	FORCED CLOSED NRV	50.2	362	250	600	A216MWCB	150,111	38.95	3,037.8	0.127
4	*1LBQ30AA701	HP 6 HEATER EXTRACTION NRV	AIR	FORCED CLOSED NRV	20	450	300	300	A217MWCB	56,120	17.26	3,322.3	0.038
5	*1LBD10AA701	DEARATOR HEATER EXTRACTION NRV-1	AIR	FORCED CLOSED NRV	12	375	650	300	A216MWCB	176,337	10.25	3,174.3	0.022
6	*1LBD10AA702	DEARATOR HEATER EXTRACTION NRV-2	AIR	FORCED CLOSED NRV	12	375	500	300	A216MWCB	110,193	10.25	3,171.4	0.026
7	*1LBR10AA701	DEARATOR HEATER EXTRACTION NRV (TO BFP-T)	AIR	FORCED CLOSED NRV	12	375	450	300	A216MWCB	69,990	10.25	3,171.4	0.019
8	*1LBS10AA701	LP-4 HEATER EXTRACTION NRV	AIR	FORCED CLOSED NRV	4	240	700	150	A216MWCB	77,087	3.25	2,916.0	0.009
9	*1LBS20AA701	LP-3 HEATER EXTRACTION NRV	AIR	FORCED CLOSED NRV	4	150	800	150	A216MWCB	46,667	1.157	2,723.3	0.006

“*” MARKS ON KKS NUMBER DENOTE UNIT NUMBER, 1 FOR UNIT1, 2 FOR UNIT2.

OPERATION CONDITION IS 100% RO CASE (3GMG04084 REV4). REFER TO HEAT BALANCE DIAGRAM (TB2-SDC. VPM210171-00100-M-M1B-PFD-000/LST-GMG-GES-00113).

Reference Drawing: P&I DIAGRAM OF MAIN, REHEAT AND EXTRACTION STEAM SYSTEM (TB2-SDC. VPM210171-00100-M-M1B-PID-0002/0GMH00264)



A

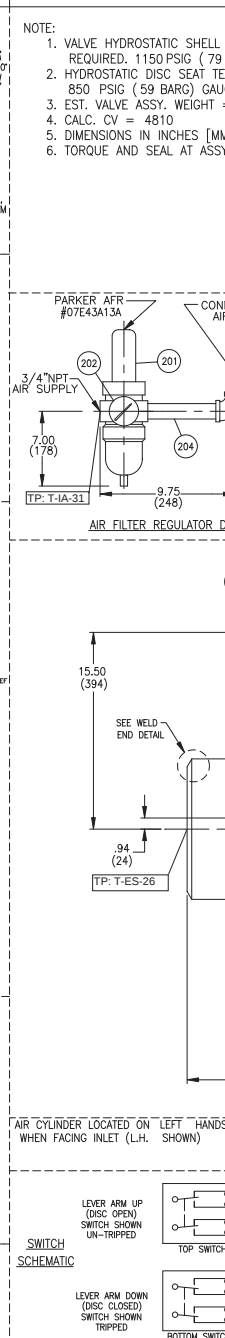
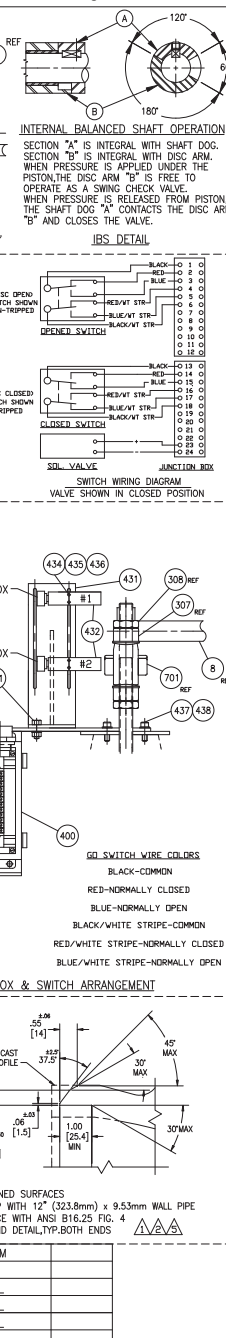
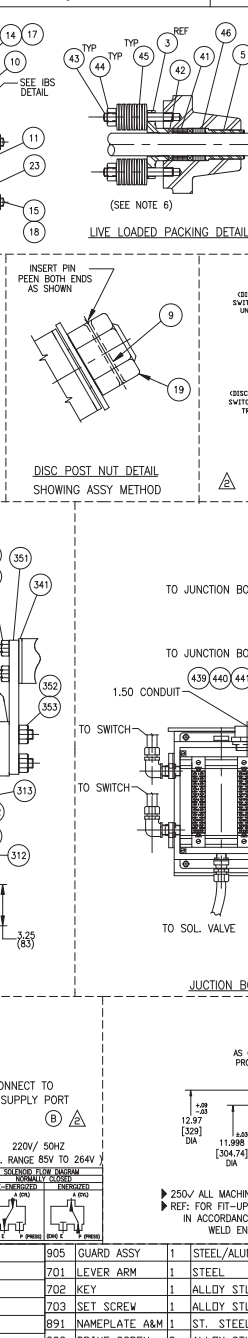
SHAFT DETAIL

DISC DETAIL

AIR CYLINDER DETAIL

SOLENOID VALVE DETAIL

201	AIR FIL. REG.	1	METALBOWL	
202	PRESSURE GAUGE	1	PLASTIC	
203	PIPE ELBOW	1	STEEL	
204	PIPE NIPPLE	1	STEEL	
205	PIPE NIPPLE	1	STEEL	



NOTE:

1. VALVE HYDROSTATIC SHELL REQUIRED. 1150 PSIG (79 BAR) REQUIRED. 1150 PSIG (79 BAR) REQUIRED.
2. HYDROSTATIC DISC SEAT TESTED TO 850 PSIG (59 BARG) GAUGE.
3. EST. VALVE ASSEMBLY WEIGHT = 48.10
4. CALC. CV = 48.10
5. DIMENSIONS IN INCHES (MM)
6. TORQUE AND SEAL AT ASSY

15.50 (394)

SEE WELD END DETAIL

.94 (24)

TP: T-ES-26

AIR CYLINDER LOCATED ON LEFT HAND SIDE WHEN FACING INLET (L.H. SHOWN)

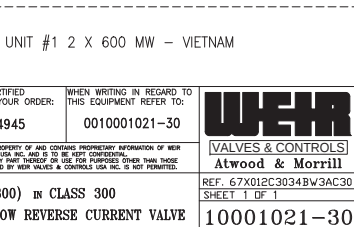
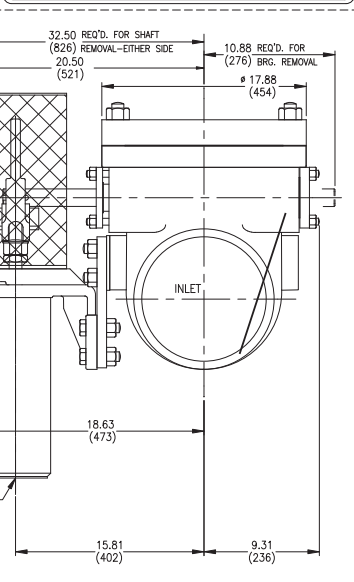
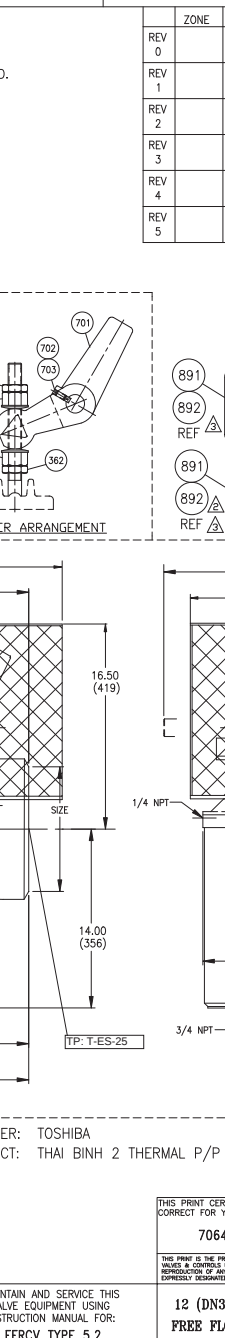
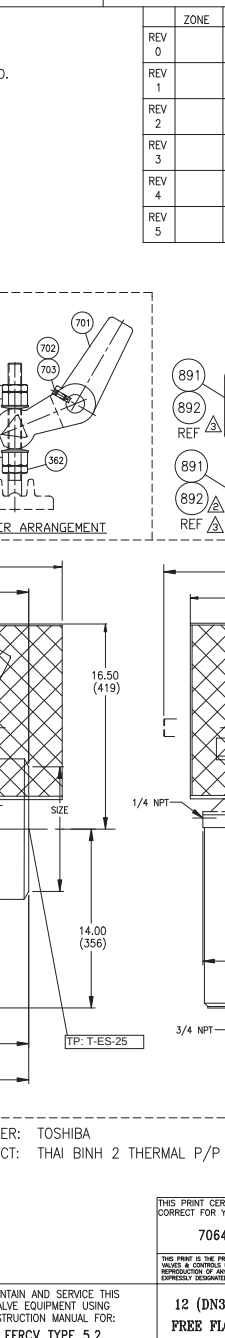
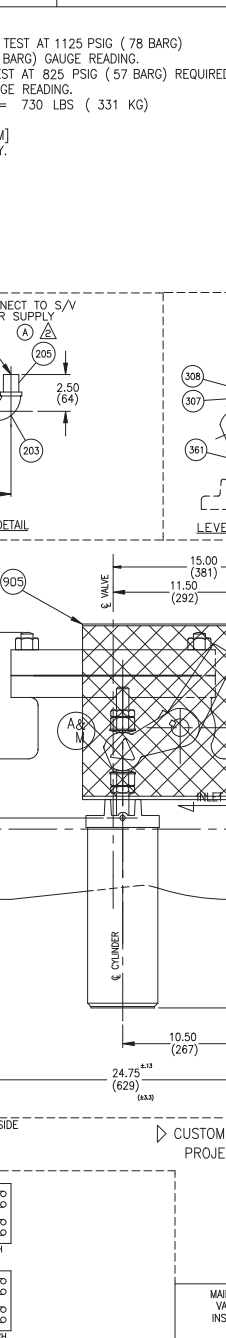
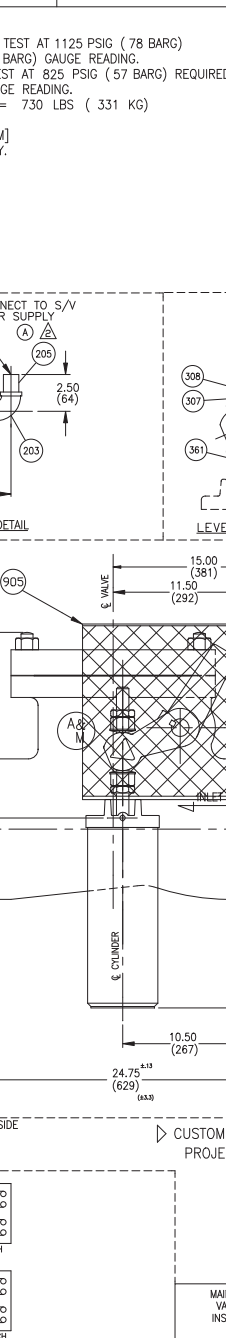
SWITCH SCHEMATIC

LEVER ARM UP (DISC OPEN)
SWITCH SHOWN UN-TRIPPED

LEVER ARM DOWN (DISC CLOSED)
SWITCH SHOWN TRIPPED

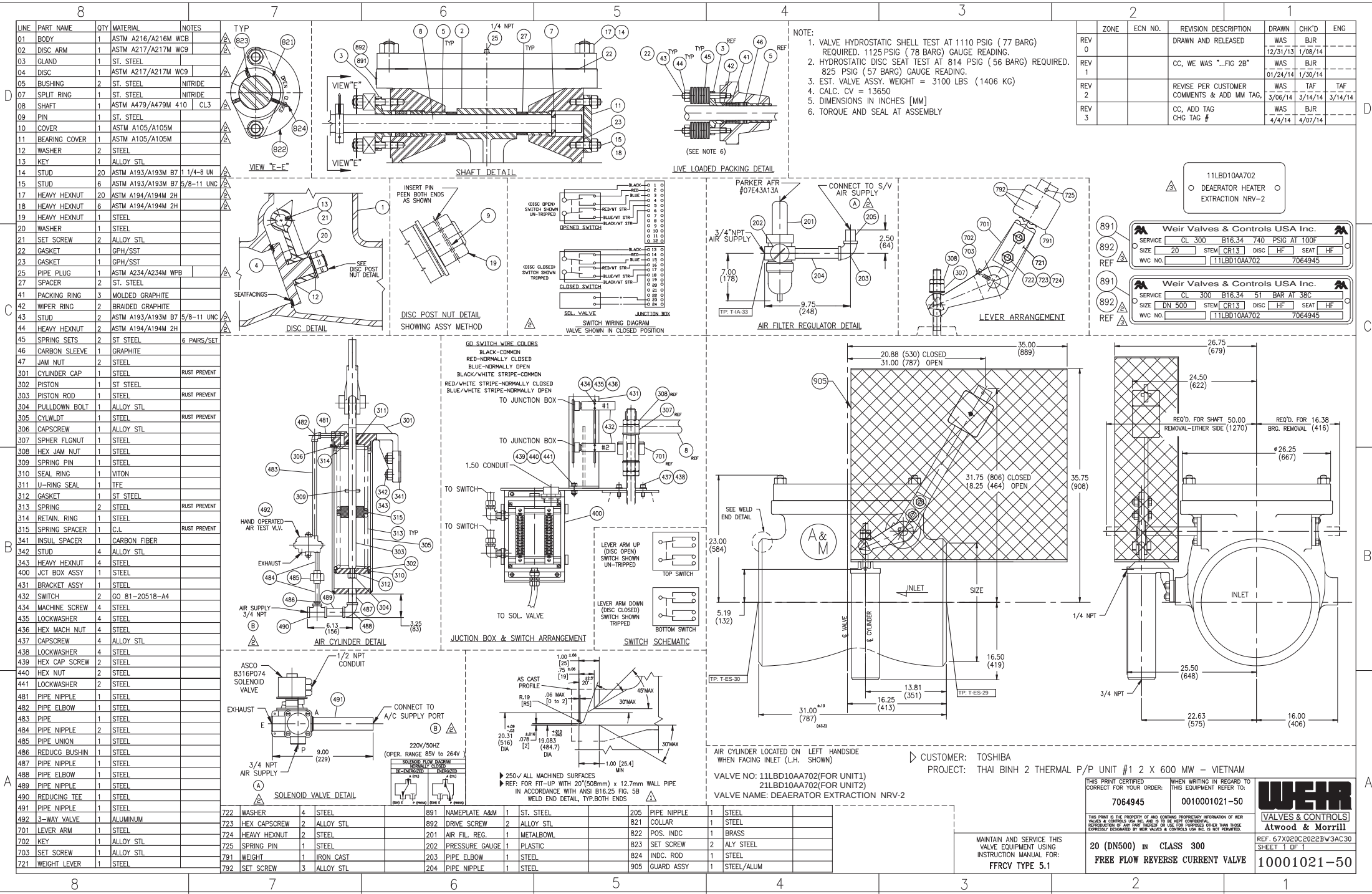
TOP SWITCH

BOTTOM SWITCH



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	7

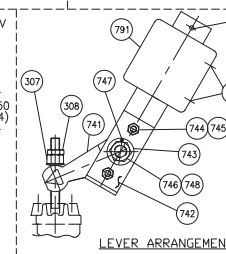
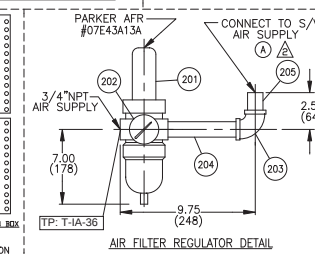
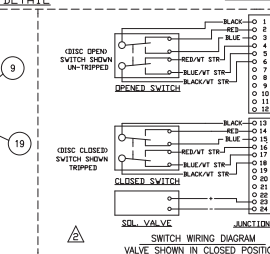
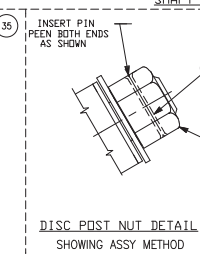
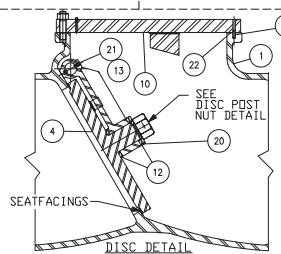
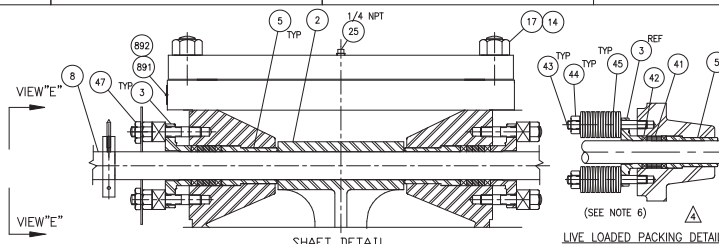


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7064945	001001021-70	VALVES & CONTROLS
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28 (DN700) IN CLASS 150 FREE FLOW REVERSE CURRENT VALVE		REF. 67X028B202BW3AC30 SHEET 1 OF 1
		10001021-70

LINE	PART NAME	QTY	MATERIAL	NOTES
01	BODY	1	ASTM A216/A216M WCB	
02	DISC ARM	1	ASTM A217/A217M WC9	
03	GLAND	2	ST. STEEL	
04	DISC	1	ASTM A217/A217M WC9	
05	BUSHING	2	ST. STEEL	NITRIDE
08	SHAFT	1	ASTM A479/A479M 410	CL3
09	PIN	1	ST. STEEL	
10	COVER WLDT	1	ASTM A105/A105M	
12	WASHER	2	STEEL	
13	KEY	4	ALLOY STL	
14	STUD	24	ASTM A193/A193M B7 1/8-8 UN	
17	HEAVY HEXNUT	24	ASTM A194/A194M 2H	
19	HEAVY HEXNUT	1	STEEL	
20	WASHER	1	STEEL	
21	SET SCREW	2	ALLOY STL	
22	GASKET	1	GPH/SST	
25	PIPE PLUG	1	ASTM A234/A234M WPB	
35	DOWEL PIN	1	ST. STEEL	
41	PACKING RING	6	MOLDED GRAPHITE	
42	WIPER RING	4	BRAIDED GRAPHITE	
43	STUD	4	ASTM A193/A193M B7 5/8-11 UN	
44	HEAVY HEXNUT	4	ASTM A194/A194M 2H	
45	SPRING SETS	4	ST. STEEL	6 PAIRS/SET
47	JAM NUT	2	STEEL	
301	CYLINDER CAP	2	STEEL	RUST PREVENT
302	PISTON	1	ST. STEEL	
303	PISTON ROD	1	STEEL	RUST PREVENT
304	PULLDOWN BOLT	1	ALLOY STL	
305	CYLWLDT	1	STEEL	RUST PREVENT
306	CAPSCREW	1	ALLOY STL	
307	SPHER FLGNUT	1	STEEL	
308	HEX JAM NUT	1	STEEL	
309	SPRING PIN	1	STEEL	
310	SEAL RING	1	WITON	
311	U-RING SEAL	1	TFE	
312	GASKET	1	ST. STEEL	
313	SPRING	2	STEEL	RUST PREVENT
314	RETAIN. RING	1	STEEL	
315	SPRING SPACER	1	C.I.	RUST PREVENT
341	INSUL. SPACER	2	CARBON FIBER	
342	STUD	8	ALLOY STL	
343	HEAVY HEXNUT	8	STEEL	
400	JCT BOX ASSY	1	STEEL	
431	BRACKET ASSY	1	STEEL	
432	SWITCH	2	GO 81-20518-A4	
434	MACHINE SCREW	4	STEEL	
435	LOCKWASHER	4	STEEL	
436	HEX MACH NUT	4	STEEL	
437	CAPSCREW	8	ALLOY STL	
438	LOCKWASHER	8	STEEL	
439	HEX CAP SCREW	2	STEEL	
440	HEX NUT	2	STEEL	
441	LOCKWASHER	2	STEEL	
481	PIPE NIPPLE	1	STEEL	
482	PIPE ELBOW	1	STEEL	
483	PIPE	1	STEEL	
484	PIPE NIPPLE	2	STEEL	
485	PIPE UNION	1	STEEL	
486	REDUCG BUSHIN	1	STEEL	
487	PIPE NIPPLE	1	STEEL	
488	PIPE ELBOW	1	STEEL	
489	PIPE NIPPLE	1	STEEL	
490	REDUCING TEE	1	STEEL	
491	PIPE NIPPLE	1	STEEL	
492	3-WAY VALVE	1	ALUMINUM	
741	W/LEVER & FORK	1	STEEL	
742	MOUNT PLATE	1	STEEL	
743	WASHER	1	STEEL	
744	STUD	2	ALY. STEEL	
745	HEAVY HEXNUT	2	STEEL	
746	HEAVY HEXNUT	1	STEEL	



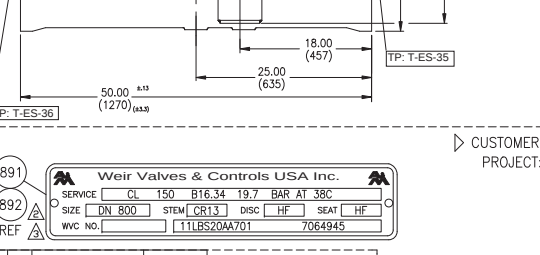
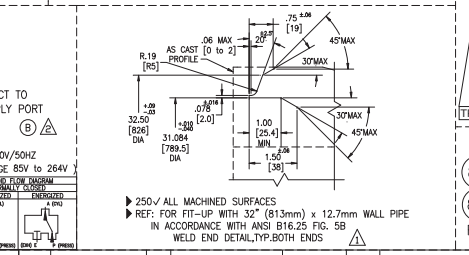
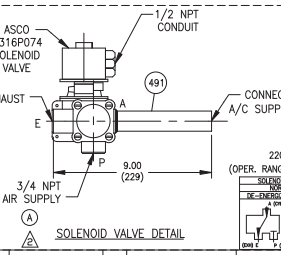
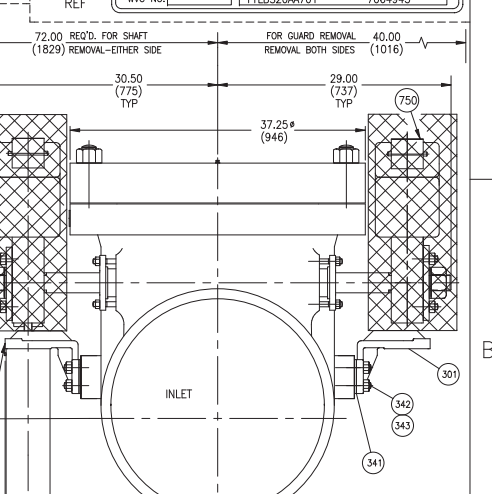
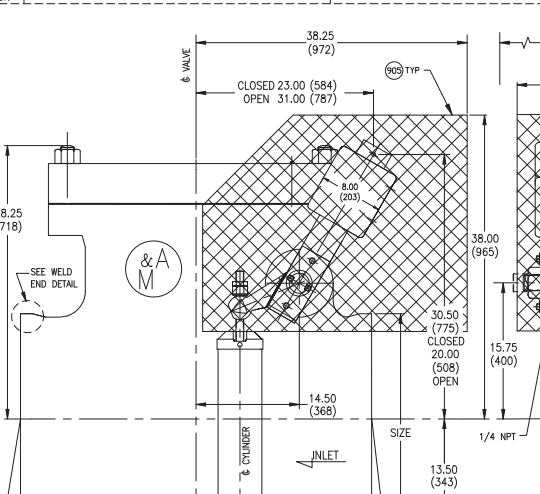
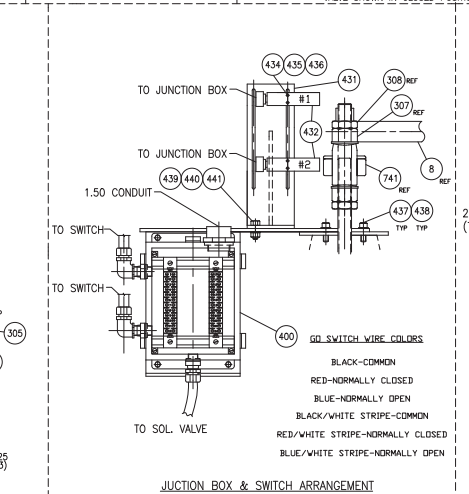
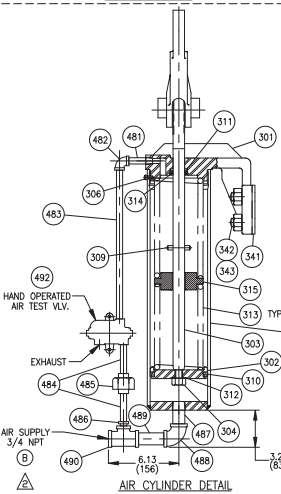
NOTE:

1. VALVE HYDROSTATIC SHELL TEST AT 428 PSIG (30 BARG) REQUIRED. 450 PSIG (31 BARG) GAUGE READING.
2. HYDROSTATIC DISC SEAT TEST AT 314 PSIG (22 BARG) REQUIRED. 325 PSIG (22 BARG) GAUGE READING.
3. EST. VALVE ASSY. WEIGHT = 5200 LBS (2359 KG)
4. CALC. CV = 36200
5. DIMENSIONS IN INCHES [MM]
6. TORQUE AND SEAL AT ASSEMBLY

891
892
REF

Weir Valves & Controls USA Inc.

SERVICE CL 150 B16.34 285 PSIG AT 100F
SIZE 32 STEM CR13 DISC HF SEAT HF
WVC NO. 11LBS20AA701 7064945



891
892
REF

Weir Valves & Controls USA Inc.

SERVICE CL 150 B16.34 19.7 BAR AT 38C
SIZE DN 800 STEM CR13 DISC HF SEAT HF
WVC NO. 11LBS20AA701 7064945

MAINTAIN AND SERVICE THIS VALVE EQUIPMENT USING INSTRUCTION MANUAL FOR FRVC TYPE 5.3

THIS PRINT CERTIFIED CORRECT FOR YOUR ORDER:

WHEN WRITING IN REGARD TO THIS EQUIPMENT REFER TO:

7064945 0010001021-80

WEIR VALVES & CONTROLS Atwood & Morrill

REF. 67X032B2022BW3AC30 SHEET 1 OF 1

10001021-80

変更 REV.	PAGE	変更箇所及び内容 CHANGED PLACE AND CONTENT	承認 APPROVEDBY	調査 REVIEWEDBY	担当 PREPARED BY
a	1-13	初 版 Initial issue	M. Yasuda Apr.9. '13	M. Yasuda Apr.9. '13	Y. Miida Apr.9. '13
b	2 3,5-12 4	Revised design pressure and pressure class. Added weight, valve no, valve name and terminal point. Revised welding detail. Revised welding detail.	M. Yasuda Aug.22.'13	M. Yasuda Aug.22.'13	E. Saito Aug.22.'13 Y. Miida Aug.22.'13
c	2 4-12	Revised design temperature. Added reference drawing. Revised manufacture's drawings	N. Ahiko Feb.7.'14	N. Ahiko Feb.7.'14	Y. Miida Feb.7.'14
d	3	Revised manufacture's drawings	M. Yasuda Feb.21.'14	M. Yasuda Feb.21.'14	E. Saito Feb.21.'14 Y. Miida Feb.21.'14
e	3,5-12	Revised manufacture's drawings	M. Yasuda Apr..15'14	M. Yasuda Apr..15'14	E. Saito Apr..15'14 Y. Miida Apr..15'14
f	7,11, 12	Revised manufacture's drawings	Written in page 1	Written in page 1	Written in page 1