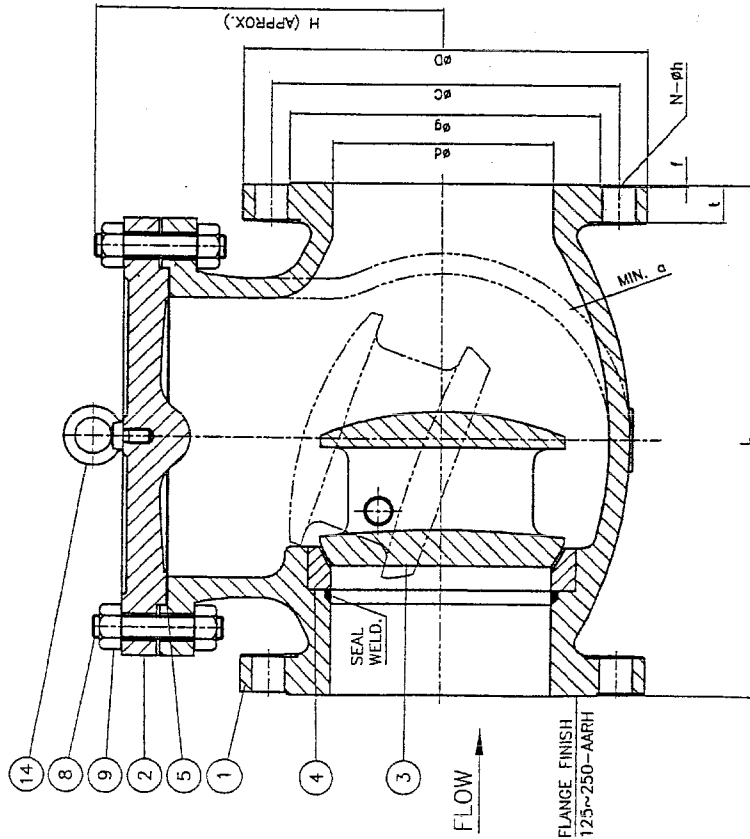
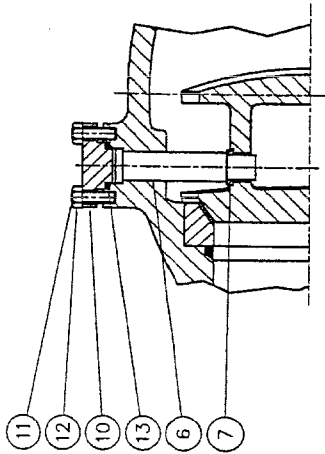


Project Title : MegaMethanol Plant Zagros Petrochemical
Company, Site Bandar Assaluyeh, Iran
Lurgi Contract-No.: 1.69666-10-GEM
Lurgi P.O. Letter-No.: 4558641-000/1.69666/136



SIZE	d	L	FLANGE						MIN. α	H	ITEM Δ	WEIGHT Δ (kg)
			D	C	g	t	f	N	h			
2	50.8	292.1	165	127.0	91.9	25.4	6.4	8	19.1	11.2	170	32
3	76.2	355.6	210	168.2	127.0	31.8	6.4	8	22.4	12.7	190	
4	101.6	431.8	273	215.9	157.2	38.1	6.4	8	25.4	16.0	230	
10	247.7	787.4	508	431.8	323.9	63.5	6.4	16	35.1	28.7	470	

UNIT : mm

NOTE

1. SHELL WALL THICKNESS : API 600
2. FACE TO FACE DIMENSIONS : ASME B16.10
3. END FLANGE DIMENSIONS : ASME B16.5

Δ 4. BS 1888

Δ Ident-No.: RK 322

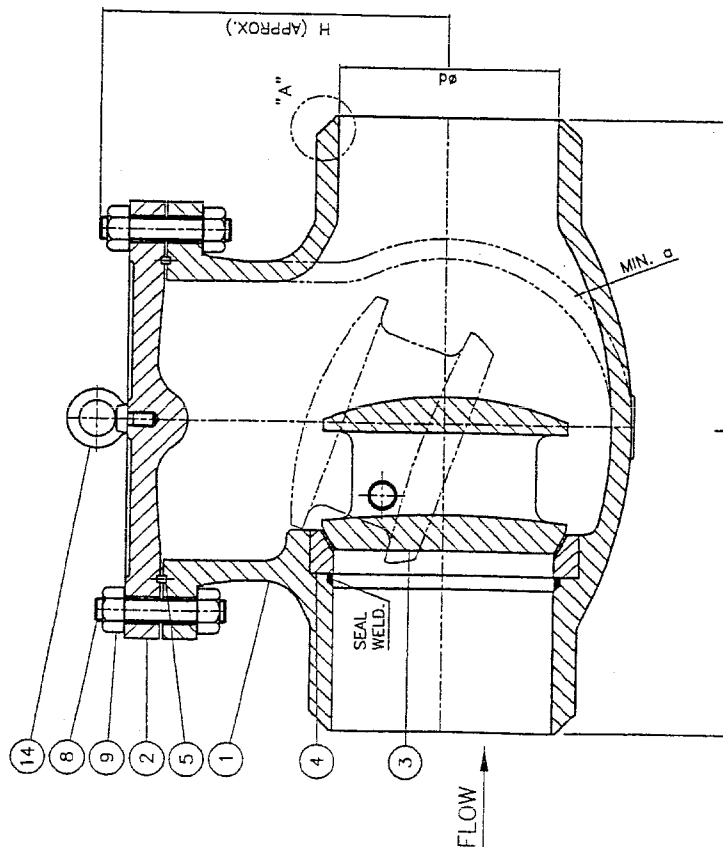
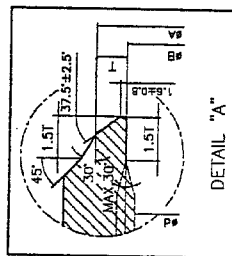
MATERIAL ACCORDING TO ASTM			
NO.	PART NAME	MATERIAL	QTY
1	BODY	A216-WCB	1
2	BONNET	A216-WCB	1
3	DISC	A216-WCB+STL	1
4	BODY SEAT RING (S20C)	A576-1020+STL	1
5	GASKET	SPIRAL WOUND/GRAPHITE+304+SOFT STEEL	
6	HINGE PIN	A479-410	2
7	BUSHING	A479-304	2
8	BONNET BOLT	A193-B7	
9	BONNET NUT	A194-2H	
10	COVER	A576-1020	2
11	COVER BOLT	A193-B7	
12	COVER NUT	A194-2H	
13	COVER GASKET	SPIRAL WOUND/GRAPHITE+304	
14	EYE BOLT	A307-B	1
15			

REV.	DATE	DESCRIPTION
2004/01/12		REVISED FOR QJST. COMMENT
2004/01/08		REVISED FOR QJST. COMMENT
2004/01/08		REVISED FOR QJST. COMMENT

CAST STEEL TILTING-CHECK VALVES			
STYLE	RF.	BC	
SIZE	SEE TABLE	CLASS	600
APP'D BY		HYDRAULIC TEST	SHELL: 2225 PSIG
REVIEW'D BY		AIR TEST	SEAT : 1630 PSIG
DWG'D BY		DATE	2003.11.13
DRAWING NO.	0300883-01	FILE NO.	

KLAUS UNION, BOCHUM

A technical cross-section drawing of a mechanical assembly. The drawing shows a central shaft (6) passing through a housing. On the left, there is a flange or coupling (11) secured with a nut (12) and a washer (10). A pin (13) is used to secure the assembly. On the right, a component (7) is shown, which appears to be a bearing or a seal, mounted on the shaft. A screw (3) is used to secure a cover or a plate (4) over the assembly. The drawing uses standard engineering conventions, with hatching to indicate different materials and dashed lines to show hidden internal features.



MATERIAL ACCORDING TO ASTM			
NO.	PART NAME	MATERIAL	QTY
1	BODY	A217-WC6	1
2	BONNET	A217-WC6	1
3	DISC	A217-WC6+STL	1
4	BODY SEAT RING	A182-F11+STL	1
5	GASKET	OCTAGONAL RING/5Cr-0.5Mo	1
6	HINGE PIN	A479-410	2
7	BUSHING	A479-304	2
8	BONNET BOLT	A193-B7	
9	BONNET NUT	A194-2H	
10	COVER	A240-304	2
11	COVER BOLT	A193-B7	
12	COVER NUT	A194-2H	
13	COVER GASKET	SPRAL WOUND /GRAPHITE+304	
14	EYE BOLT	A307-B	1
15			

SIZE	d	L	BUTT WELDING END				MIN.	H	ITEM	WEIGHT △ (kg)
			A	B	T	SOH NO.				
4	98.3	457.2	114.3	97	8.56	21.3	300			
6	146.1	609.6	168.3	146.5	10.97	26.2	380			
8	190.5	736.6	219.1	193.5	12.70	31.8	450			
10	238.0	836.2	273.0	242.82	15.09	36.6	510	140		723
16	355.6	1130.3	406.4	363.5	21.44	52.3	950			

NOTE

1. SHELL WALL THICKNESS : API 600
2. END TO END DIMENSIONS : ASME B16.10
3. BUTT WELD, END DIMENSIONS : ASME B16.25

4. BS 1868

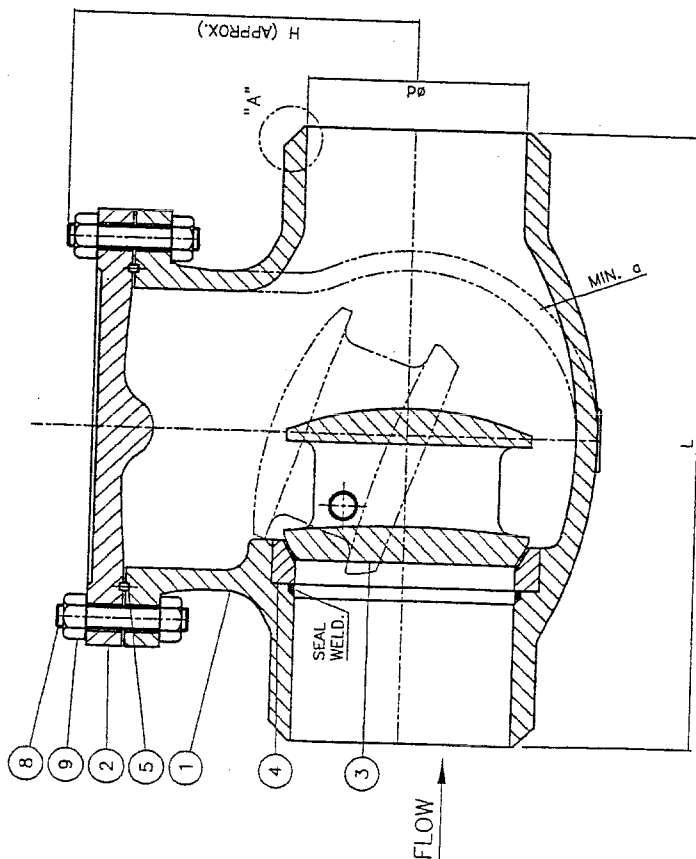
△ Ident-No.: RK 470

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SIZE	d	L	BUTT WELDING END			MIN.	H	ITEM	WEIGHT (kg)	UNIT : mm
			A	B	T					
2	47.5	368.3	80.3	42.82	8.74	160		1	65	
3	69.9	469.9	88.9	46.64	11.13			2	108	
6	136.4	704.9	168.3	132.0	18.26	23.9	290	160		
8	177.8	831.9	219.1	173.0	23.01	47.8	515			
10	222.3	990.6	273.0	216.0	28.58	57.2	635			
16	330.2	1384.3	406.4	325.5	40.49	79.5	950			

Ident-No.: RK 656

1. SHELL WALL THICKNESS : API 600
2. END TO END DIMENSIONS : ASME B16.10
3. BUTT WELD. END DIMENSIONS : ASME B16.25
4. BS 1868

3	2004 01.12	REVISED FOR CUST. COMMENT	DESCRIPTION	DOWD REV'D REV'D APP'D
2	2004 01.08	REVISED FOR CUST. COMMENT		
1				
STAINLESS STEEL TILTING-CHECK VALVES				
STYLE		BW, BC		
SIZE	SEE TABLE	CLASS	1500	
APP'D BY	3-2	HYDRAULIC	SHELL 5400 PSIG	
REVIEWED BY	2/2	TEST	SEAT : 3960 PSIG	
REVIEWED BY		AIR TEST	-	
DOWD'D BY	2	DATE	2003.11.14	
DRAWING NO.	0300883-02		FILE NO.	
KLASUS UNION, BOCHUM				

REPORT NO.: 20040112 - 001 (1/1)

DATE : Jan. 12. 2004

LURGI P.O.-No.: 4558641-000/1.69666/136

ARTICLE : TDCV BC RF CL600 WCB/13CR(FS)

MFG. NO. : HH - 02160

INSPECTION CERTIFICATE

(CHEMICAL, PHYSICAL & HYDROSTATIC)

Identification No.: RK 322

SIZE: NPS 2 Q'ty: 1 Pcs.

SIZE: NPS 2

NPS 2 Q'ty:

1 Pcs.

PARTS NAME	Body(BD)	Bonnet(BN)	Disc(DS)	Body Seating	Stem
MATERIAL	A216 WCB	A216 WCB	A216 WCB	A576 Gr1020	-

DIMENSION INSPECTION (ASME B16.10 & APPROVED DRAWING)										(mm)			PRESSURE TEST (API 598)			VISUAL TEST
INSPECTION	Face to Face (End to End)		Flange Diameter	Bolt Circle	Dia. Of Raised Face		Flange Thickness		No. of Bolt Hole	Bolt Hole Diameter	SHELL (PSIG)	SEAT(WATER) (PSIG)	BACK SEAT (PSIG)	VISUAL		
STANDARD	292,1		165,0	127,0	91,9		25,4		8	19,1	2225	1630	N/A	MSS-SP-55		
RESULT	*W.T		W.T	W.T		W.T		8	W.T	W.T	GOOD	GOOD	N/A	GOOD		

[illegible]

REMARKS: IN ACCORDANCE WITH EN 10204 3.1B

HEAT TREATMENT: WCB: NORMALIZING 920° X 2HR (A.C)

HEAT TREATMENT: WCB; NORMALIZING 920° X 2 HR (A.C.)
HEAT TREATMENT: CA15: NORMALIZING 920° X 2 HR (A.C.)

HEAT TREATMENT: WQ; NORMALIZING 620□ X 2HR(A.C.)
HEAT TREATMENT: CA15; NORMALIZING 920□ X 2HR(A.C.) & TEMPERING 620□ X 2HR(A.C.)

Manager, Q.C Department

Witness Inspector

We hereby certify that the above results are true and correct in every detail

KLAUS UNION GMBH UND CO.KG; Blumenfeldstraße 18, D - 44795 BOCHUM

(CHEMICAL, PHYSICAL & HYDROSTATIC)



MFG. NO. : HH - 02160

Identification No.: RK 656

SIZE:	NPS 2	Q'ty:	1 Pcs.
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PARTS NAME	Body(BD)	Bonnet(BN)	Disc(DS)	Body Seating	Stem
MATERIAL	ASTM	A351 CF8C	A351 CF8C	A240 321	-

DIMENSION INSPECTION (ASME B16.10 & APPROVED DRAWING)										PRESSURE TEST (API 598)			VISUAL TEST
INSPECTION	Face to Face (End to End)	A (Outside of dia.)		B (Inside of dia.)	T (Min. Thickness)	a (Angle of beveling)		SHELL (Kgfl/□)	SEAT(AIR) (Kgfl/□)	BACK SEAT (Kgfl/□)			
		STANDARD	368,3								60,3	42,8	8,7
RESULT		*W.T	W.T	W.T	W.T	W.T		GOOD	GOOD	GOOD	MSS-SP-55	GOOD	
*W.T : Within Tolerance													

[illegible]

HEAT TREATMENT; CF8C; SOLUTION 1060 X 2HR(W.C)

Manager, Q.C Department

Witness Inspector

We heretby certify that the above results are true and correct in every detail

KLAUS UNION GMBH UND CO.KG; Blumenfeldstraße 18, D - 44795 BOCHUM

INSPECTION CERTIFICATE

(CHEMICAL, PHYSICAL & HYDROSTATIC)

Identification No.: RK 656

SIZE: NPS 3 Q'ty: 1 Pcs.



PARTS NAME	Body(BD)	Bonnet(BN)	Disc(DS)	Body Seating	Stem
MATERIAL	ASTM A351 CF8C	A351 CF8C	A351 CF8C	A240 321	-

DIMENSION INSPECTION (ASME B16.10 & APPROVED DRAWING)						(mm)			PRESSURE TEST (API 598)			VISUAL TEST
INSPECTION	Face to Face (End to End)	A (Outside of dia.)	B (Inside of dia.)	T (Min. Thickness)	a (Angle of beveling)	SHELL (Kg/f/□)	SEAT(AIR) (Kg/f/□)	BACK SEAT (Kg/f/□)				VISUAL
STANDARD	469.9	88.9	66.6	11.1	37.5							
RESULT	*W.T	W.T	W.T	W.T	W.T		GOOD	GOOD	GOOD			MSS-SP-55
												GOOD

[illegible]

REMARKS :	IN ACCORDANCE WITH EN 10204 3.1B HEAT TREATMENT; CF8C; SOLUTION 1060□ X 2HR(W.C)
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Manager, Q.C. Department

Witness Inspector

i A. Waller 885

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