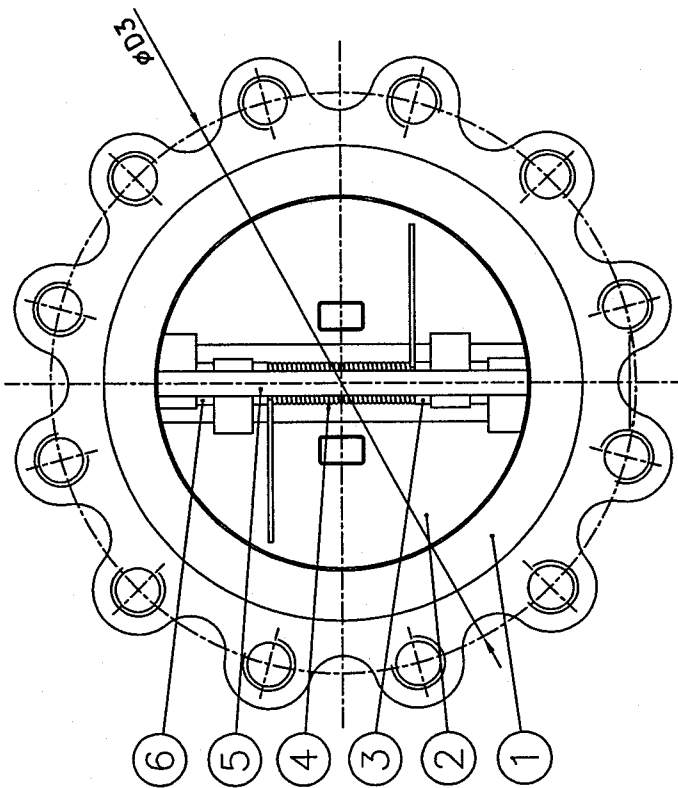
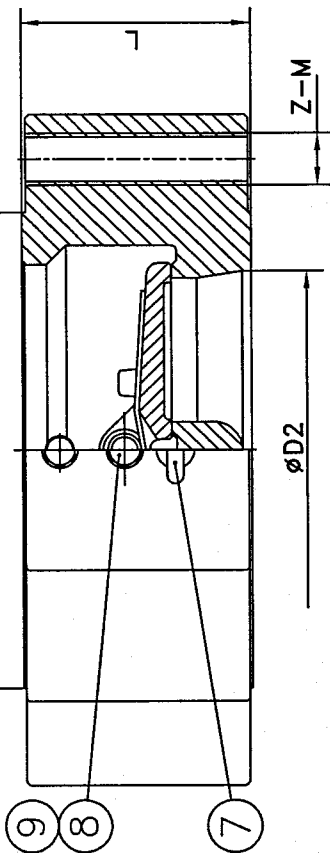


Klaus Union P.O.-N°.: HH-02539
 Clients: Lurgi Oel Gas Chemle GmbH
 Project Title: 2nd ZAGROS MegaMethanol Plant,Iran
 Lurgi Contact-N°.: 1.69690-10
 Lurgi P.O.-N°.: 4567967-000/1.169690/139



ITEM	Tag	N°	SIZE	L	D1	D2	D3	Z-M	Weight	Quantity
10	RK366	6"	98	216	152	241.5	8-M20	22	3	3

Main Parameters Spwifications

1. Flange dimensions: ANSI B16.5
2. Face to Face dimensions: API 594
3. Manufacture: API 594
4. Installations: Horizontal & Vertical
5. Pressure/Temp: ANSI B16.34
6. Pressure test: API 598
7. Temperature: Up to +427°C <1>

ITEM	NAME	MATERIALS	SPECIFICATIONS	NOTES
9	GASKET	STAINLESS STEEL	ASTM A182 F6	
8	BOLT	STAINLESS STEEL	ASTM A182 F6	
7	BOLT	Carbon Steel		
6	ADJUSTING RING	STAINLESS STEEL	ASTM A182 F6	
5	SHAPE	STAINLESS STEEL	ASTM A182 F6	
4	SPRING	STAINLESS STEEL	Inconel 750	
3	SPRING PLATE	STAINLESS STEEL	ASTM A182 F6	
2	DISC	CAST STEEL	ASTM A351 CF8	
1	BODY	CAST STEEL	ASTM A216 WCB +ER304	

<1>



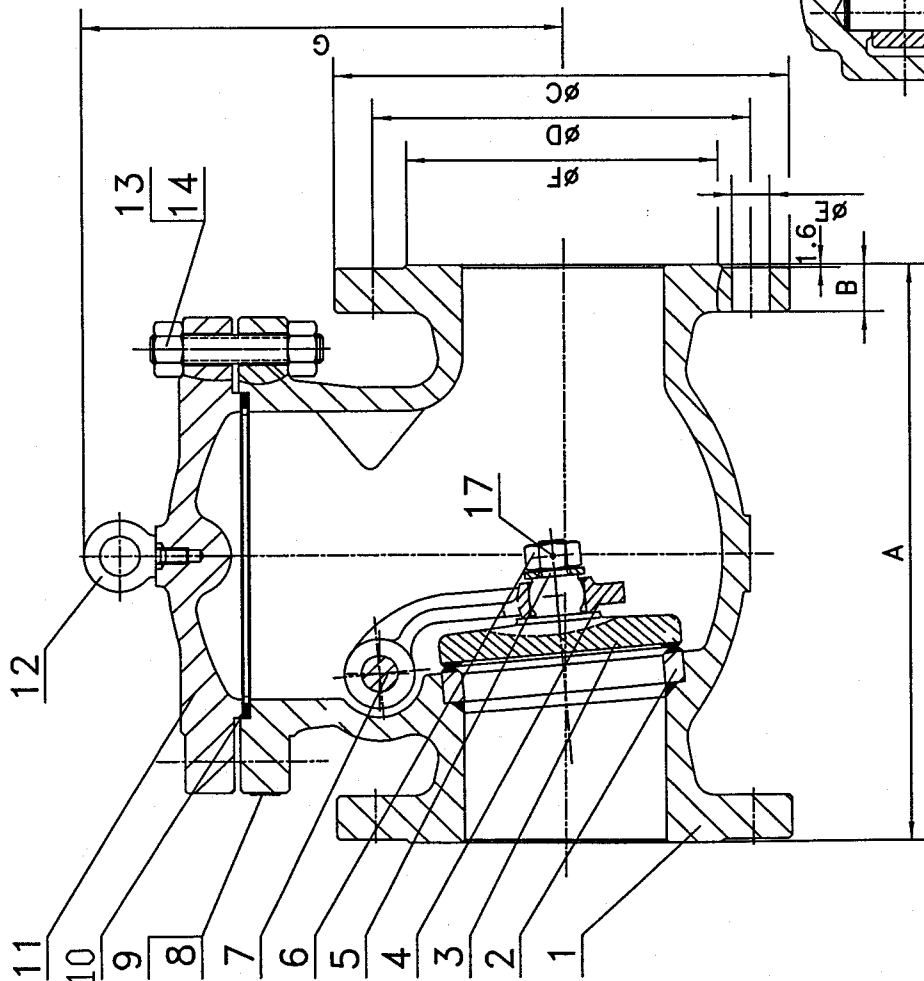
KLAUS UNION
BOCHUM

ITEM	NAME	DATE	NAME	REVISION
1	PROJECT: HH-02539	04.11.16	DATE	REV:
2	L.I. REF: 0186-001842	04.11.16	TRACED	C-0186-001842-01
3	ITEM: 10		CHECKED	1
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Klaus Union P.O.-N°.: HH-02539
Clients: Lurgi Oel Gas Chemie GmbH
Project Title: 2nd ZAGROS MegaMethanol Plant,Iran
Lurgi Contact-N°: 1.69690-10
Lurgi P.O.-N°.: 4567967-000/1.169690/139

Main Parameters Specifications

1.Design and manufacturing: BS1868 and manufacturers standards.
2.Face to face: ANSI B16.10
3.End flange dimensions: ANSI B16.5
4.Installations: Horizontal & Vertical
5.Pressure Temp: ANSI B16.34
6.Pressure Test: API 598
7.Temperature: up to +427°C <1>



ITEM	TagN°	SIZE	A	B	C	D	No. of HOLES	E	F	G	Weight(kg)	QUANTITY
20	RK360	6"	356	26	279	241.5	8	22	216	277	74	4
30	RK360	8"	495	29	343	298.5	8	22	270	339	108	3

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
17	PIN	STAINLESS STEEL	ASTM A276-410	
16	PLUG	STAINLESS STEEL	ASTM A276-410	
15	GASKET	STAINLESS STEEL	ASTM A276-304	
14	BOLT	STEEL	ASTM A193-B7	
13	NUT	STEEL	ASTM A194-2H	
12	EYEBOLT	CARBON STEEL	ASTM A29-1035	
11	BONNET	CAST STEEL	ASTM A216 WCB	
10	GASKET	304 WOUND GRAFOIL		
9	NAME PLATE	STAINLESS STEEL	18-8 Cr.-Ni.	
8	RIVET	STAINLESS STEEL	18-8 Cr.-Ni.	
7	PIN	STAINLESS STEEL	ASTM A276-410	
6	NUT	STAINLESS STEEL	ASTM A276-410	
5	GASKET/WASHER	STAINLESS STEEL	ASTM A276-410	
4	HINGE	CAST STEEL	ASTM A216 WCB	
3	DISC	CARBON STEEL	ASTM A105+F6	
2	BODY RING	CARBON STEEL	ASTM A105+F6	
1	BODY	CAST STEEL	ASTM A216 WCB	

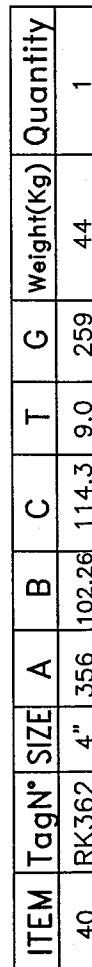


**KLAUS
UNION**
BOCHUM

DATE	NAME	DATE	NAME
04.11.16		04.11.16	
TRACED		CHECKED	
02-12-04			
REV.	DATE	DRAWN	CHECKED
<1>	02-12-04		
SWING CHECK VALVE	CLASS 150-RF	DRAWING No :	REV:
		C-0186-001842-02	1

Client: Lurgi Oel Gas Chemie GmbH
2nd ZAGROS MegaMethanol Plant,Iran
Project Title: 1.69690-10
Lurgi Contact-N°: 4567967-000/1.169690/139
Lurgi P.O.-N°:

1.VALVE ACCORDING:	API 6D & BS1868
--END TO END ACCORDING:	ANSI B16.10
--BW ENDS ACCORDING:	ANSI B16.25 <1>
--INSTALLATIONS:	HORIZONTAL & VERTICAL
--PRESSURE/TEMP:	ANSI B16.34
--PRESSURE TEST:	API 598
--TEMPERATURE:	UP TO +427°C <1>



ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
17	PIN	STAINLESS STEEL	ASTM A276-410	
16	LPUG	STAINLESS STEEL	ASTM A276-410	
15	GASKET	STAINLESS STEEL	ASTM A276-304	
14	BOLT	STEEL	ASTM A193-B7	
13	NUT	STEEL	ASTM A194-2H	
12	EYEBOLT	CARBON STEEL	ASTM A29-1035	
11	BONNET	CAST STEEL	ASTM A216 WCB	
10	GASKET	304 WOUND GRAFOIL		
9	NAME PLATE	STAINLESS STEEL	18-8 Cr.-Ni.	
8	RIVET	STAINLESS STEEL	18-8 Cr.-Ni.	
7	PIN	STAINLESS STEEL	ASTM A276-410	
6	NUT	STAINLESS STEEL	ASTM A276-410	
5	GASKET/WASHER	STAINLESS STEEL	ASTM A276-410	
4	HINGE	CAST STEEL	ASTM A216 WCB	
3	DISC	CARBON STEEL	ASTM A105+F6	
2	BODY RING	CARBON STEEL	ASTM A105+F6	
1	BODY	CAST STEEL	ASTM A216 WCB <1>	MAX. 0.22% C

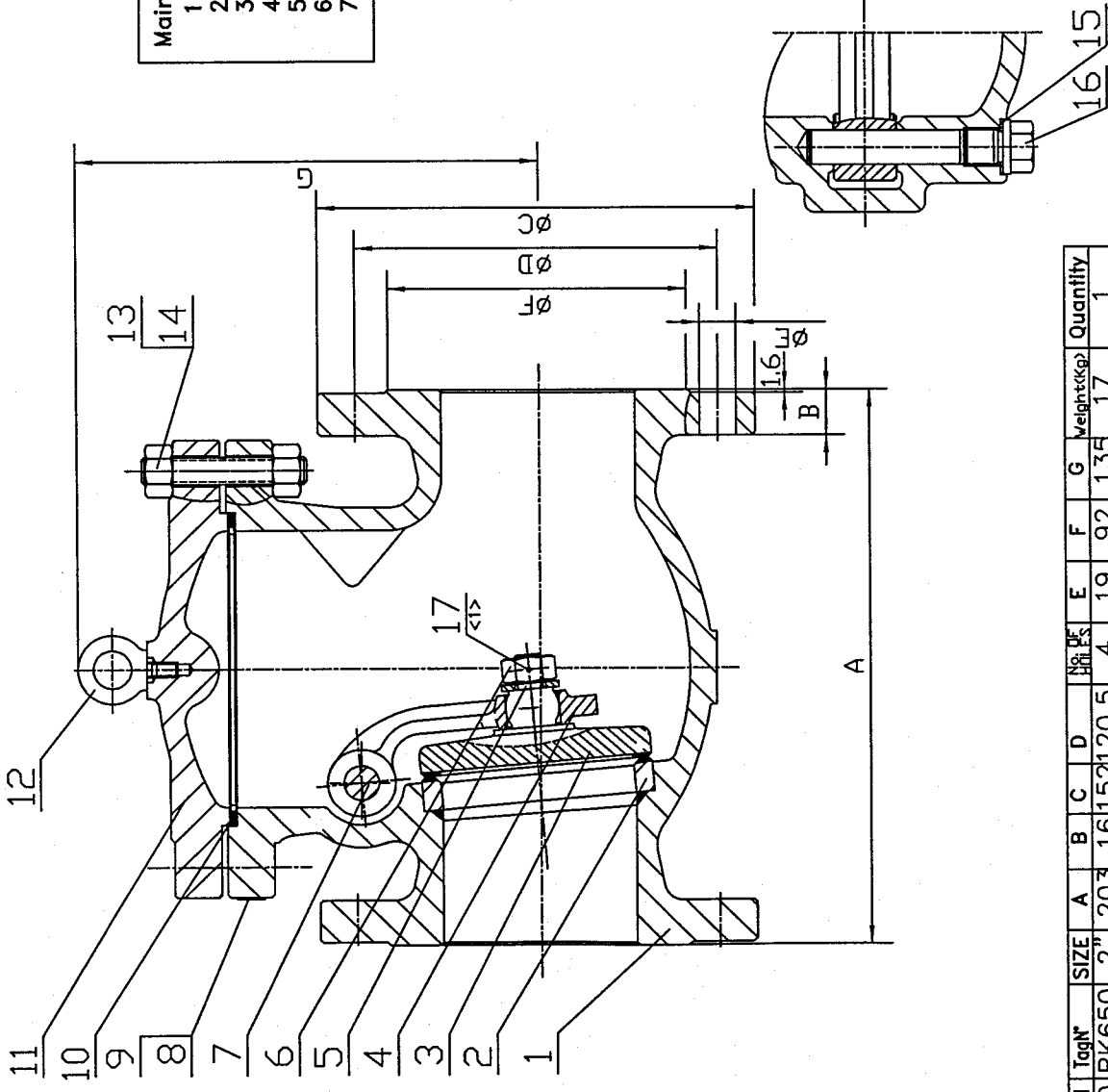
KLAUS UNION

BOCHUM

[illegible]

Klaus Union P.O.-N°.: HH-02539
Clients: Lurgi Oel Gas Chemie GmbH
Project Title: 2nd ZAGROS MegaMethanol Plant,Iran
Lurgi Contact-N°: 1.69690-10
Lurgi P.O.-N°.: 4567967-000/1.169690/139

Main Parameters Specifications
1.Design and manufacturing: BS1868 and manufacturers standards.
2.Face to face: ANSI B16.10
3.End flange dimensions: ANSI B16.5
4.Installations: Horizontal & Vertical
5.Pressure Temp: ANSI B16.34
6.Pressure Test: API 598
7.Temperature: up to +427°C

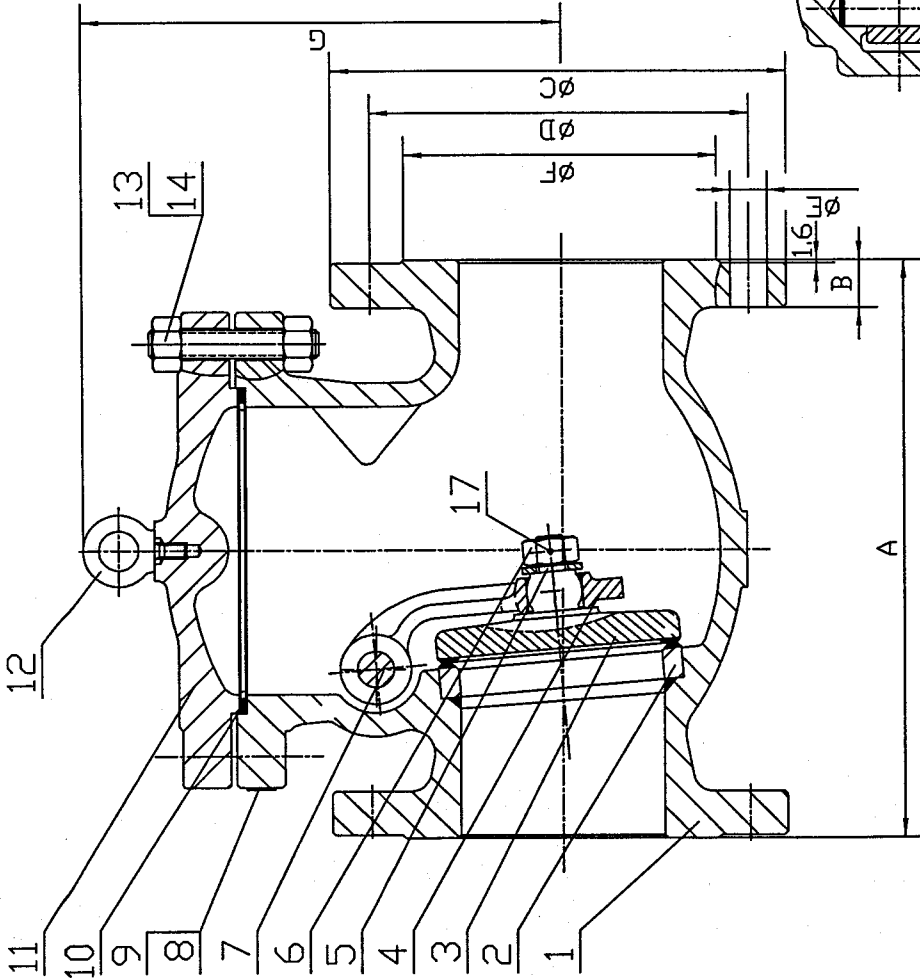


ITEM	TagN°	SIZE	A	B	C	D	E	F	G	Weight(kg)	Quantity
50	RK650	2"	203	161	52	120	5	4	19	92	135
											17
											1

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
17	PIN	STAINLESS STEEL	ASTM A276-F321	
16	PLUG	STAINLESS STEEL	ASTM A276-F321	
15	GASKET	STAINLESS STEEL	ASTM A276-F321	
14	BOLT	STEEL	ASTM A193-B8 CL2	
13	NUT	STEEL	ASTM A194-8	
12	EYEBOLT	STAINLESS STEEL	ASTM A276-F321	
11	BONNET	STAINLESS STEEL	ASTM A351 CF8C	
10	GASKET	321 WOUND GRAFOIL		
9	NAME PLATE	STAINLESS STEEL	18-8 Cr.-Ni.	
8	RIVET	STAINLESS STEEL	18-8 Cr.-Ni.	
7	PIN	STAINLESS STEEL	ASTM A276-F321	
6	NUT	STAINLESS STEEL	ASTM A276-F321	
5	GASKET/WASHER	STAINLESS STEEL	ASTM A276-F321	
4	HINGE	STAINLESS STEEL	ASTM A351 CF8C	
3	DISC	STAINLESS STEEL	ASTM A182 F321	
2	BODY RING	STAINLESS STEEL	ASTM A182 F321	
1	BODY	STAINLESS STEEL	ASTM A351 CF8C	



CLIENT:	KLAUS UNION	DATE	NAME	SWING CHECK VALVE
PROJECT:	HH-02539	TRACED	04.11.16	CLASS 150-RF
L.I. REF:	0186-001842	CHECKED	04.11.16	DRAWING No : C-0186-001842-04
ITEM:	50	REV.	DATE	REV:
				1



Klaus Union P.O.-N°.: HH-02539
 Clients: Lurgi Oel Gas Chemle GmbH
 Project Title: 2nd ZAGROS MegaMethanol Plant,Iran
 Lurgi Contact-N°: 1.69690-10
 Lurgi P.O.-N°.: 4567967-000/1.169690/139

Main Parameters Specifications

- 1.Design and manufacturing: BS1868 and manufacturers standards.
- 2.Face to face: ANSI B16.10
- 3.End flange dimensions: ANSI B16.5
- 4.Installations: Horizontal & Vertical
- 5.Pressure Temp: ANSI B16.34
- 6.Pressure Test: API 598
- 7.Temperature: up to +427°C

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
<1> 17	PIN	STAINLESS STEEL	ASTM A276-F321	
16	PLUG	STAINLESS STEEL	ASTM A276-F321	
15	GASKET	STAINLESS STEEL	ASTM A276-F321	
14	BOLT	STEEL	ASTM A193-B8 CL2	
13	NUT	STEEL	ASTM A194-8	
<1> 12	EYEBOLT	STAINLESS STEEL	ASTM A276-F321	
11	BONNET	STAINLESS STEEL	ASTM A351 CF8C	
10	GASKET	321 WOUND GRAFOIL		
9	NAME PLATE	STAINLESS STEEL	18-8 Cr.-Ni.	
8	RIVET	STAINLESS STEEL	18-8 Cr.-Ni.	
7	PIN	STAINLESS STEEL	ASTM A276-F321	
6	NUT	STAINLESS STEEL	ASTM A276-F321	
<1> 5	GASKET/WASHER	STAINLESS STEEL	ASTM A276-F321	
4	HINGE	STAINLESS STEEL	ASTM A351 CF8C	
3	DISC	STAINLESS STEEL	ASTM A182 F321	
2	BODY RING	STAINLESS STEEL	ASTM A182 F321	
1	BODY	STAINLESS STEEL	ASTM A351 CF8C	

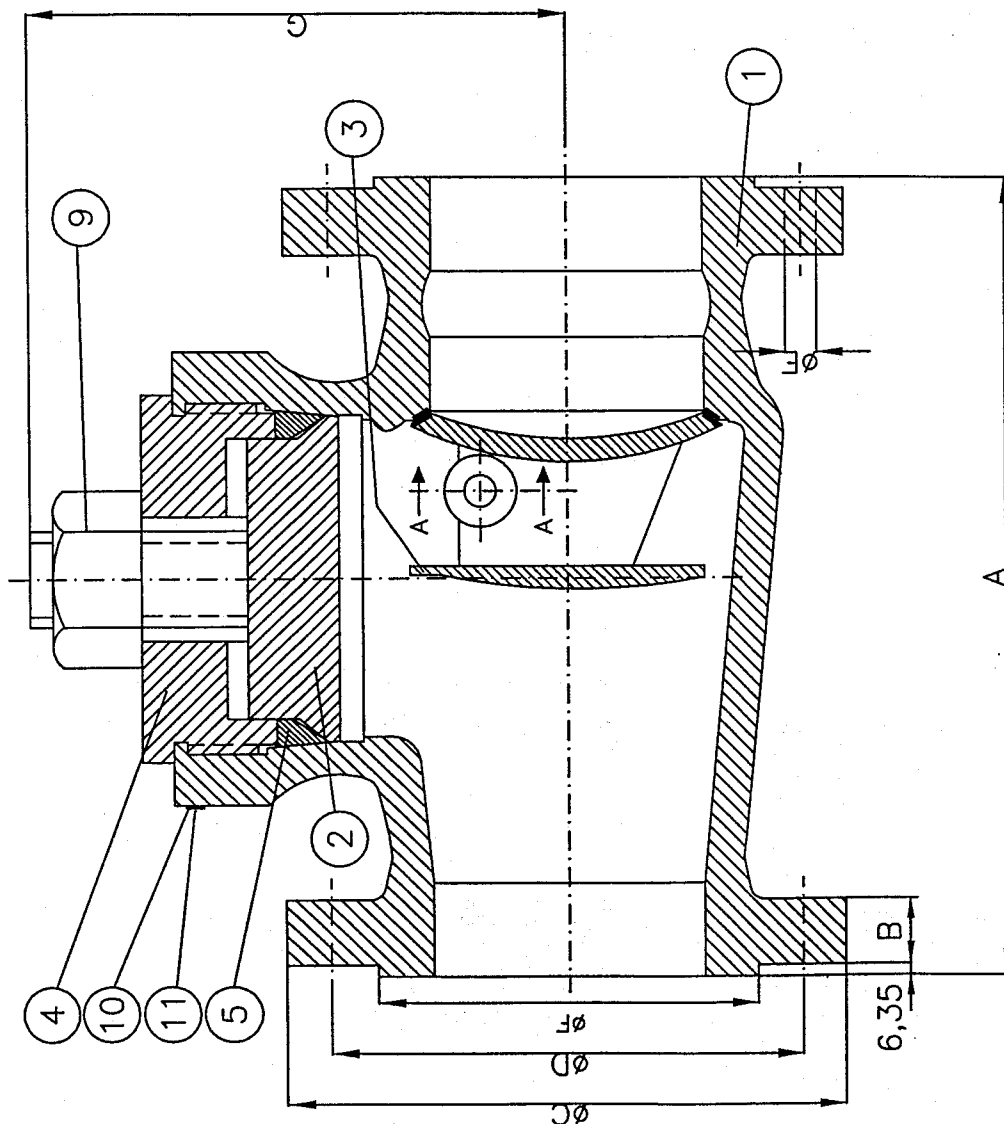


CLIENT: KLAUS UNION
 PROJECT: HH-02539
 L.I. REF: 0186-001842
 ITEM: 60 70

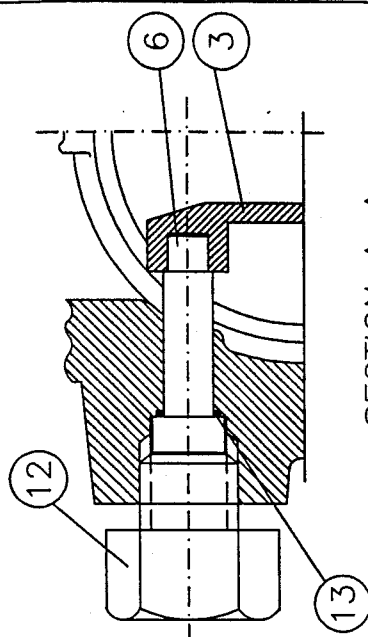
DATE	NAME	SCALE	DRAWING No :	REV:
TRACED 04.11.16		---	C-0186-001842-05	1
CHECKED 04.11.16				
REV.	DATE	DRAWN	CHECKED	
<1> 02-12-04				

ITEM	TagN°	SIZE	A	B	C	D	No. OF PIECES	E	F	G	Weight(Kg)	Quantity
60	RK650	2"	267	23	165	127	8	19	92	158	21	1
70	RK650	4"	358	32	254	200	8	22	157	259	61	2

Parameters Specifications	
1. Design & Manufacturing	:ASME B16.34 and Manufacturer standard
2. Face to face	:ANSI B16.10
3. End flange dimensions	:ANSI B16.5
4. Installations	:Horizontal & Vertical
5. Pressure/Temp	:ANSI B16.34
6. Pressure Test	:API 598
7. Temperature	:up to +427 °C



SECTION A-A



13	GASKET	SPIRAL WOUND	AISI 304/GRAPHITE	
12	PLUG	CARBON STEEL	ASTM A 105/ST 52	
11	STUD BOLT	STAINLESS STEEL	18-8 Cr-Ni	
10	NEMEPLATE	STAINLESS STEEL	18-8 Cr-Ni	
9	BONNET NUT	STEEL	ASTM A 194-2H	
6	PIN	STAINLESS STEEL	ASTM A 479 410	
5	SEAL RING	GRAPHITE		
4	BONNET RETAINING DISC	CARBON STEEL	ASTM A 105	
3	DISC	CAST STEEL	ASTM A 216 WCB	+ STEELJIE6
2	BONNET	CARBON STEEL	ASTM A 105/ST 52	
1	BODY	CAST STEEL	ASTM A 216 WCB	+ STEELJIE6
ITEM	NAME	MATERIAL	SPECIFICATION	NOTE

PROJECT:	SECOND ZAGROS METHANOL PLANT
REF:	HH-02539
L.I. REF:	0186-001842
ITEM:	100



KLAUS UNION

BOCHUM

[illegible]

ITEM	TAG	SIZE	A	B	C	D	N° OF HOLES	E	F	G	Q'TY	WEIGHT
100	RK-322	4"	431.8	38.1	273	215.9	8	25.5	157.2	210	2	110

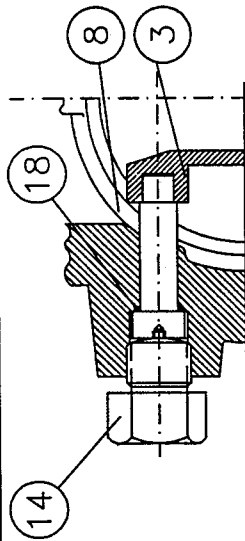
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<1> <1>

Klaus Union P.O.-No.: HH-02539
Client: Lurgi Oel Gas Chemie GmbH
PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No.: 1.69690-10
Lurgi p.o.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

1. Design & Manufacturing :ASME B16.34 and Manufacturer standard
2. Face to face :ANSI B16.10
3. End flange dimensions :ANSI B16.5
4. Installations :Horizontal & Vertical
5. Pressure/Temp :ANSI B16.34
6. Pressure Test :API 598
7. Temperature :up to +427 °C



SECTION A-A

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
18	GASKET	SPIRAL WOUND	ASTM A 105/ST 52	
17	PLUG	CARBON STEEL	18-8 Cr-Ni	
16	STUD BOLT	STAINLESS STEEL	18-8 Cr-Ni	
15	NAMEPLATE	STAINLESS STEEL	ASTM A 105/ST 52	
14	PLUG	CARBON STEEL	ASTM A 193 B7	
11	BONNET BOLT	STEEL	ASTM A 194-2H	
10	BONNET NUT	STEEL	ASTM A 479 410	
8	PIN	STAINLESS STEEL	ASTM A 105/ST 52	
7	RETAINING RING	CARBON STEEL	ASTM A 182 F304	
6	WASHER	STAINLESS STEEL	ASTM A 105/ST 52	
5	SEAL RING	GRAPHITE	ASTM A 105/ST 52	
4	BONNET RETAINING DISC	CARBON STEEL	ASTM A 216 WCB	
3	DISC	CAST STEEL	ASTM A 105/ST 52	
2	BONNET	CARBON STEEL	ASTM A 216 WCB	
1	BODY	CAST STEEL	ASTM A 216 WCB	

PROJECT:	SECOND ZAGROS METHANOL PLANT	DATE	NAME	CHECK VALVE - CLASS 600 RF
REF:	HH-02539	TRACED	21-10-04	PRESSURE SEAL-TILTING DISC
L.I. REF:	0186-001842	CHECKED	21-10-04	DRAWING No : 0186-001842-03
ITEM:	110	SCALE	----	REV: 2
REV.	DATE	DRAWN	CHECKED	



KLAUS
UNION

BOCHUM

ITEM	TAG	SIZE	A	B	C	D	N° OF HOLES	E	F	G	Q'TY	WEIGHT
110	RK-322	6"	558,8	47,7	355,6	292,1	12	28,5	215,9	246	5	140

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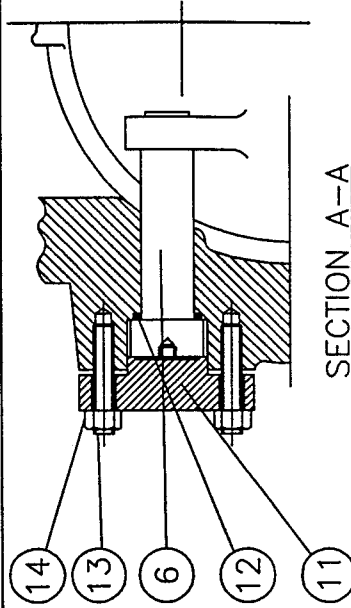
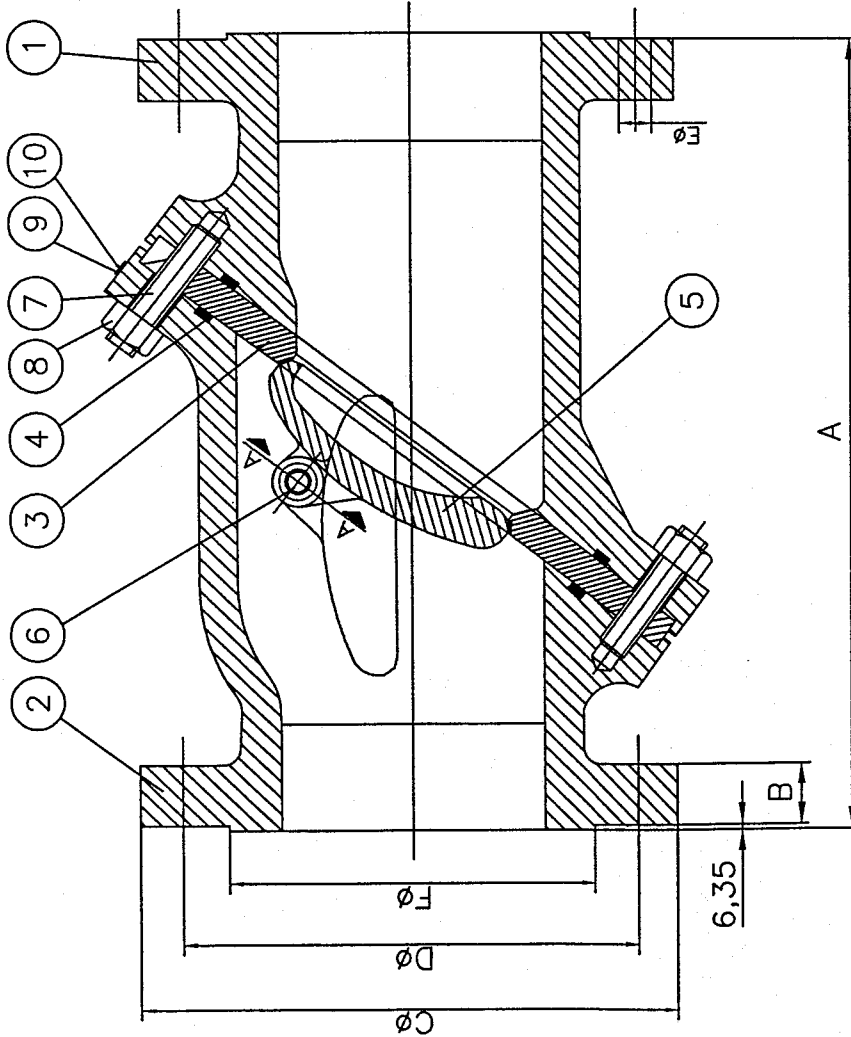
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Klaus Union P.O.-No.: HH-02539
Client: Lurgi Oel Gas Chemie GmbH
PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No.: 1.69690-10
Lurgi P.O.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

- Design & Manufacturing :ASME B16.34 and Manufacturer standard
- Face to face :ANSI B16.10
- End flange dimensions :ANSI B16.5
- Installations :Horizontal & Vertical
- Pressure/Temp :ANSI B16.34
- Pressure Test :API 598
- Temperature :up to +427 °C



SECTION A-A

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
14	FLANGE NUT	STEEL	ASTM A 194-2H	
13	FLANGE BOLT	STEEL	ASTM A 193-B7	
12	FLANGE GASKET	SPIRAL WOUND	ASI-304/GRAPHITE	
11	FLANGE	CARBON STEEL	ASTM A 105	
10	PIN	STAINLESS STEEL	18-8 Cr-Ni	
9	NEMEPLATE	STAINLESS STEEL	18-8 Cr-Ni	
8	BODY NUT	STEEL	ASTM A 194-2H	
7	BODY BOLT	STEEL	ASTM A 193-B7	
6	DISC PIN	STAINLESS STEEL	ASTM A 479-410	
5	DISC	CAST STEEL	ASTM A 216 WCB	+STELLITE6
4	BODY RING GASKET	SPIRAL WOUND	ASI-304/GRAPHITE	
3	BODY RING	CARBON STEEL	ASTM A 105	+STELLITE6
2	LEFT BODY	CAST STEEL	ASTM A 216 WCB	
1	RIGHT BODY	CAST STEEL	ASTM A 216 WCB	

PROJECT: SECOND ZAGROS METHANOL PLANT
REF: HH-02539
L.I. REF: 0186-001842
ITEM: 120



**KLAUS
UNION**

BOCHUM

DATE	NAME	CHECK VALVE - TILTING DISC
21-10-04		CLASS-600 RF
21-10-04		REV: 1
11-11-04		DRAWING No : 0186-001842-04
11-11-04		SCALE : ---

ITEM	TAG	SIZE	A	B	C	D	N° OF HOLES	E	F	Q'TY	WEIGHT
120	RK-322	8"	660,4	55,6	419,1	349,2	12	32	269,7	1	124

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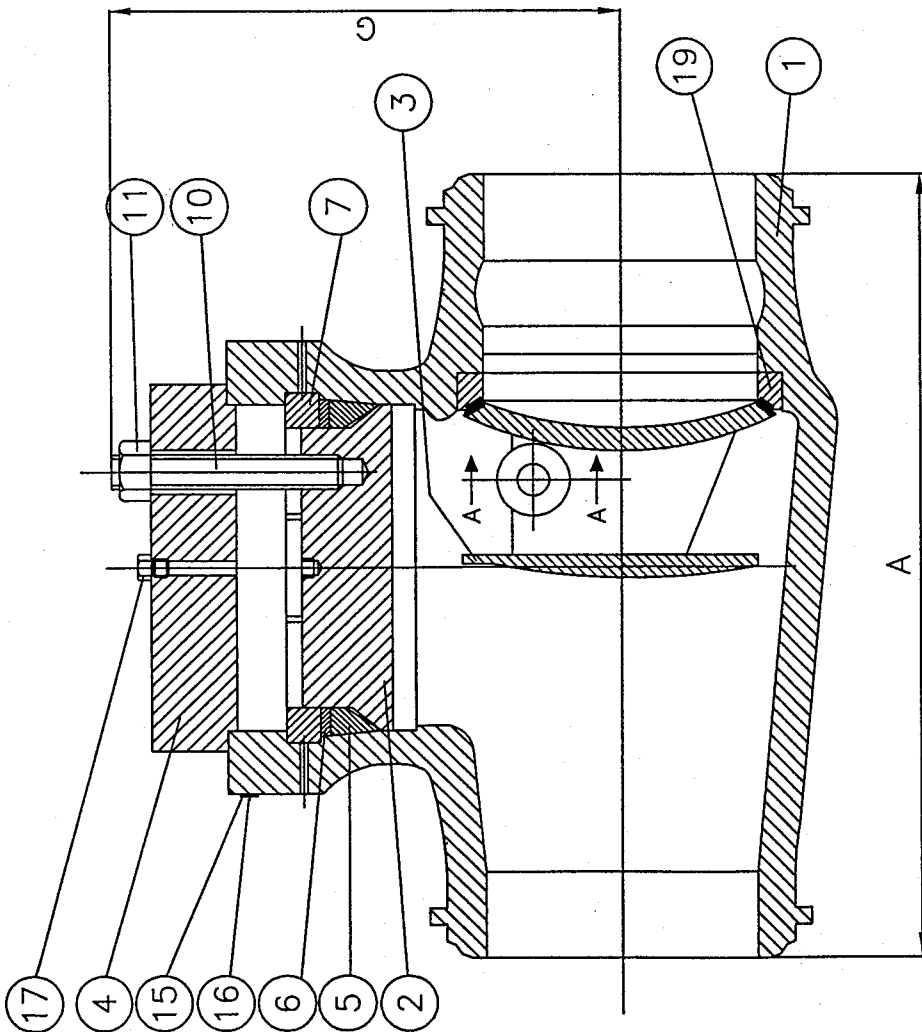
Klaus Union P.O.-No.: HH-02539
Client: Lurgi Oel Gas Chemie GmbH
PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No.: 1.69690-10
Lurgi P.O.-No.: 4567967-000/1.69690/136

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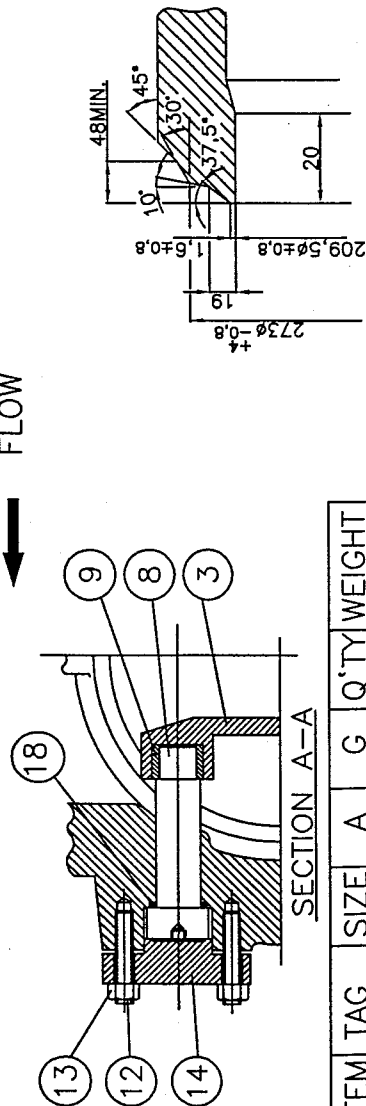
Main Parameters Specifications

1. Design & Manufacturing
 2. Face to face
 3. Buttwelding ends
 4. Installations
 5. Pressure/Temp
 6. Pressure Test
 7. Additional test
 8. Temperature
- :ASME B16.34 and Manufacturer standard
:ANSI B16.10 (LONG PATTERN)
:ANSI B16.25
:Horizontal & Vertical
:ANSI B16.34
:API 598
:ASME B16.34 Para 8.
:up to +427 °C

<1>



FLOW



ITEM	TAG	SIZE	A	G	Q'TY	WEIGHT
130	RK-321	10"	990,6	360	1	450

<1>

<1>

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
19	BODY RING	STEEL	ASTM A 105/ST 52	+STELLITE6
18	GASKET	SPIRAL WOUND	ASTM A 105/ST 52	
17	PLUG	CARBON STEEL	ASTM A 105/ST 52	
16	STUD BOLT	STAINLESS STEEL	ASTM A18-8 Cr-Ni	
15	NAMEPLATE	STAINLESS STEEL	ASTM A18-8 Cr-Ni	
14	CAP	CARBON STEEL	ASTM A 105/ST 52	
13	NUT	STEEL	ASTM A 194 2H	
12	BOLT	STEEL	ASTM A 193 B7	
11	BONNET NUT	STEEL	ASTM A 193 B7	
10	BONNET BOLT	STEEL	ASTM A 193 B7	
9	BUSHING	STAINLESS STEEL	ASTM A 479 410	
8	DISC PIN	STAINLESS STEEL	ASTM A 479 410	
7	RETAINING DISC	CARBON STEEL	ASTM A 105	
6	WASHER	STAINLESS STEEL	ASTM A182 F304	
5	SEAL RING	GRAPHITE		
4	BONNET RETAINING DISC	CARBON STEEL	ASTM A 105	
3	DISC	CAST STEEL	ASTM A 216 WCB	+STELLITE6
2	BONNET	CARBON STEEL	ASTM A 105	
1	BODY	CAST STEEL	ASTM A 216 WCB	< 0,22%C



**KLAUS
UNION**

BOCHUM

PROJECT: 2ND ZAGROS MEGAMETHANOL PLANT

REF: HH-02539

L.I. REF: 0186-001842

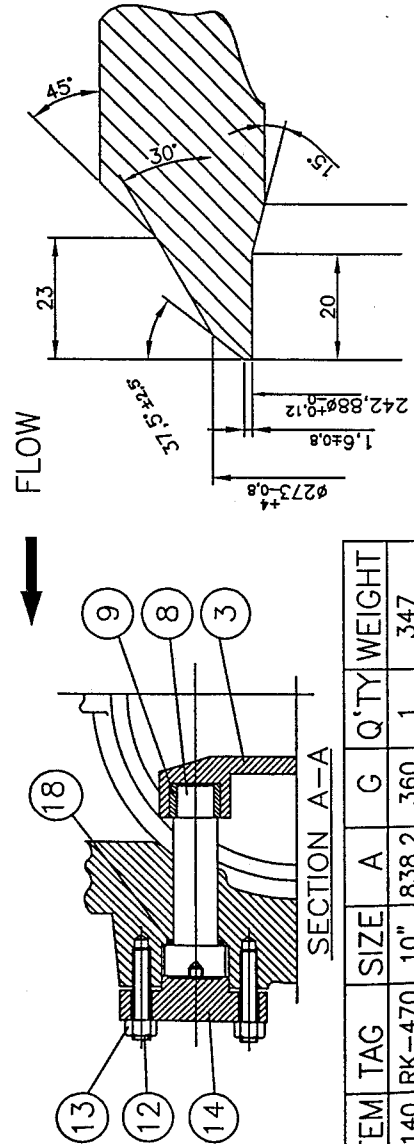
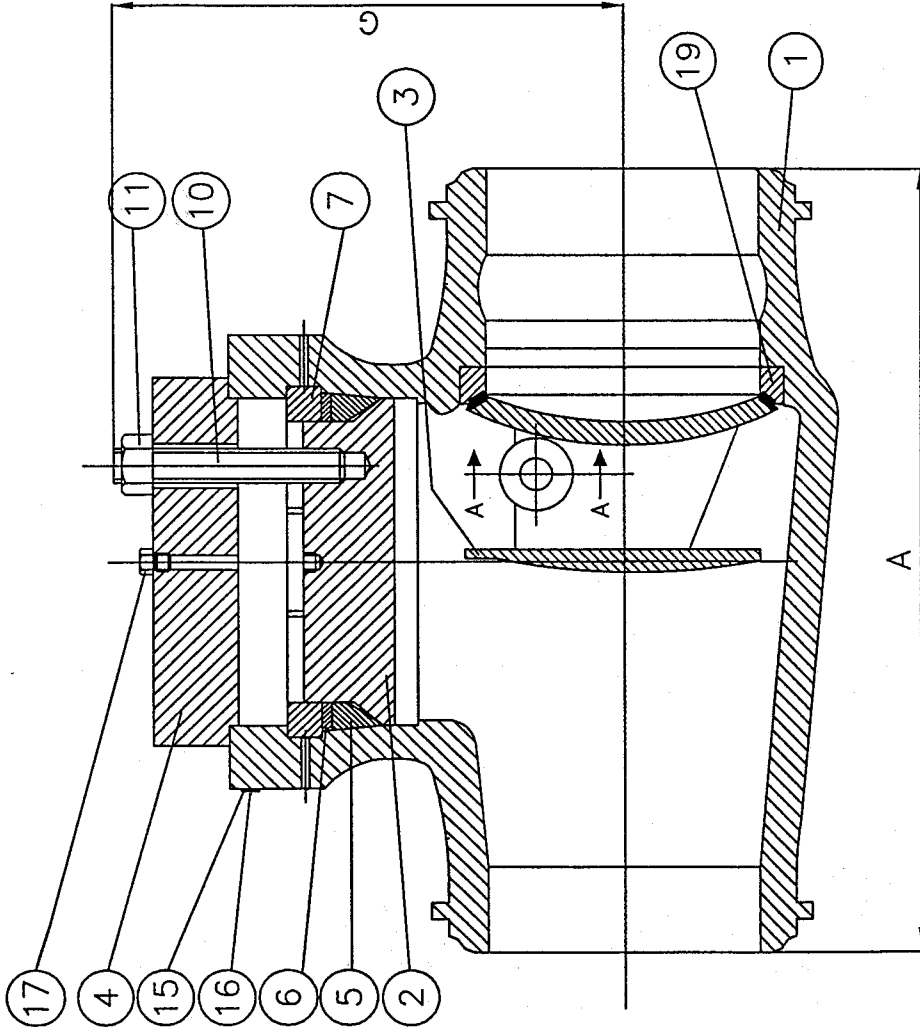
ITEM: 130

DATE	NAME	CHECK VALVE - CLASS 1500 BW
21-10-04		PRESSURE SEAL-TILTING DISC
21-10-04		
11-11-04		
DATE	SCALE	DRAWING No : REV:
11-11-04	---	0186-001842-05 1

Klaus Union P.O.-No.: HH-02539
Client: Lurgi Oel Gas Chemie GmbH
PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No.: 1.69690-10
Lurgi P.O.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

1. Design & Manufacturing :ASME B16.34 and Manufacturer standard
2. Face to face :ANSI B16.10 (LONG PATTERN)
3. Buttwelding ends :ANSI B16.25
4. Installations :Horizontal & Vertical
5. Pressure/Temp :ANSI B16.34
6. Pressure Test :API 598
7. Additional test :ASME B16.34 Para. 8 <2>
8. Temperature :up to +538 °C <2>



ITEM	TAG	SIZE	A	G	Q'TY	WEIGHT
140	RK-470	10"	838,2	360	1	347

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
19	BODY RING	STEEL	ASTM A 182 F11 CLP	+STELLITE6
18	GASKET	SPIRAL WOUND	ASTM A 182 F11 CLP	+STELLITE6
17	PLUG	CARBON STEEL	ASTM A 105/ST 52	
16	STUD BOLT	STAINLESS STEEL	ASTM A18-8 Cr-Ni	
15	NAMEPLATE	STAINLESS STEEL	ASTM A18-8 Cr-Ni	
14	CAP	CARBON STEEL	ASTM A 182 F304H/C	
13	NUT	STEEL	ASTM A 194 2H	
12	BOLT	STEEL	ASTM A 193 B7	
11	BONNET NUT	STEEL	ASTM A194 2H	
10	BONNET BOLT	STEEL	ASTM A193 B7	
9	BUSHING	STAINLESS STEEL	ASTM A 479 410	
8	PIN	STAINLESS STEEL	ASTM A 479 410	
7	RETAINING DISC	STAINLESS STEEL	ASTM A 182 F304	
6	WASHER	STAINLESS STEEL	ASTM A 182 F304	
5	SEAL RING	STAINLESS STEEL	ASTM A 182 F304H/C	
4	BONNET RETAINING DISC	CARBON STEEL	ASTM A 105/ST 52	
3	DISC	CAST STEEL	ASTM A 217 WC6	+STELLITE6
2	BONNET	CAST STEEL	ASTM A 217 WC6	
1	BODY	CAST STEEL	ASTM A 217 WC6	



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PROJECT: SECOND ZAGROS METHANOL PLANT

REF: HH-02539

L.I. REF: 0186-001842

ITEM: 140

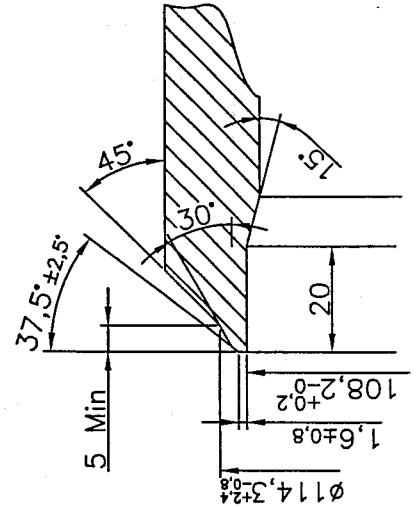
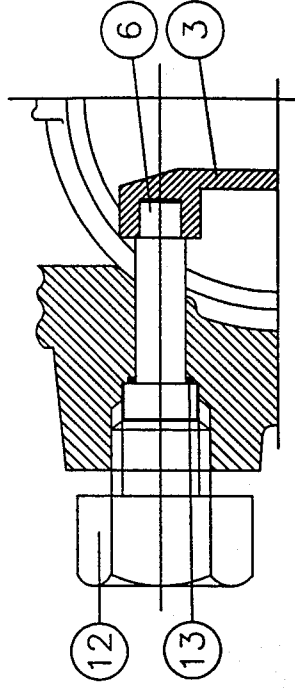
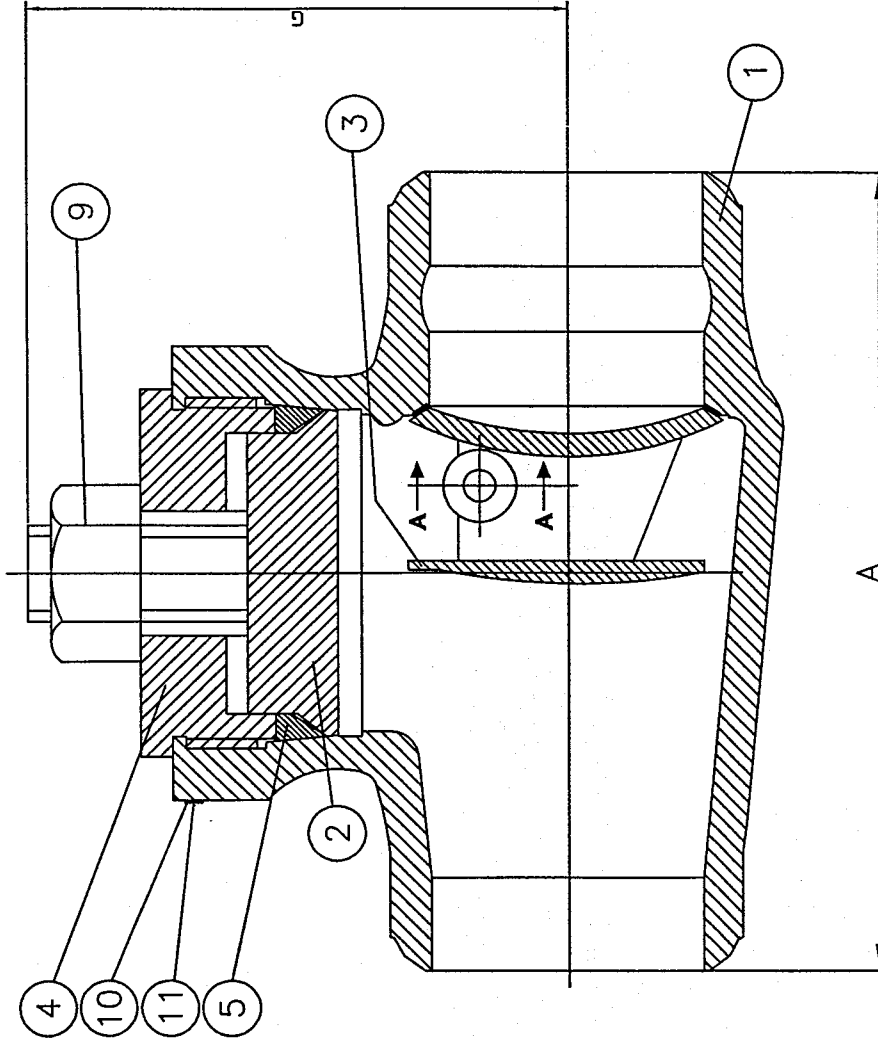
DATE	NAME	CHECK VALVE - CLASS 900 BW
21-10-04		PRESSURE SEAL-TILTING DISC
21-10-04		
17-11-04		
11-11-04		
REV.	DATE	DRAWING No : 0186-001842-06
		REV: 2

SCH-80

Klaus Union P.O.-No.: HH-02539
 Client: Lurgi Oel Gas Chemie GmbH
 PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No.: 1.69690-10
 Lurgi P.O.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

- Design & Manufacturing
 - Face to face
 - Buttweldign ends
 - Installations
 - Pressure/Temp
 - Pressure Test
 - Service
 - Temperature
- :ASME B16.34 and Manufacturer standard
 :ANSI B16.10 (LONG PATTERN)
 :ANSI B16.25
 :Horizontal & Vertical
 :ANSI B16.34
 :API 598
 :OXIGEN
 :up to +427 °C



ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
13	GASKET	SPIRAL WOUND	INCONEL 625/GRAPHITE	
12	PLUG	CARBON STEEL	ASTM B 446 N06625	
11	STUD BOLT	STAINLESS STEEL	18-8 Cr-Ni	
10	NEMEPLATE	STAINLESS STEEL	18-8 Cr-Ni	
9	BONNET NUT	STAINLESS STEEL	ASTM A 194-Gr.8	
6	PIN	INCONEL 625	ASTM B 446 N06625	
5	SEAL RING	GRAPHITE		
4	BONNET RETAINIG DISC	INCONEL 625	ASTM B 446 N06625	
3	DISC	INCONEL 625	ASTM A 494 Gr. CW-6MC + STELLITE6	
2	BONNET	INCONEL 625	ASTM B 446 N06625	
1	BODY	INCONEL 625	ASTM A 494 Gr. CW-6MC + STELLITE6	

PROJECT: SECOND ZAGROS METHANOL PLANT

REF: HH-02539

L.I. REF: 0186-001842

ITEM: 150



ITEM TAG	SIZE	A	G	Q'TY	WEIGHT
150 RK-550	4"	431,8	210	2	36

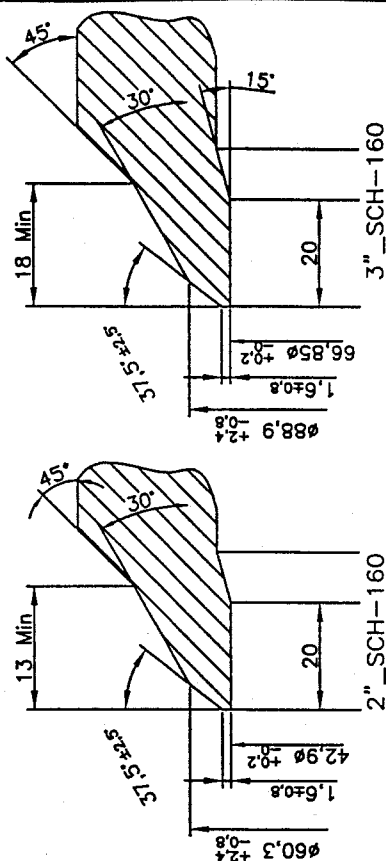
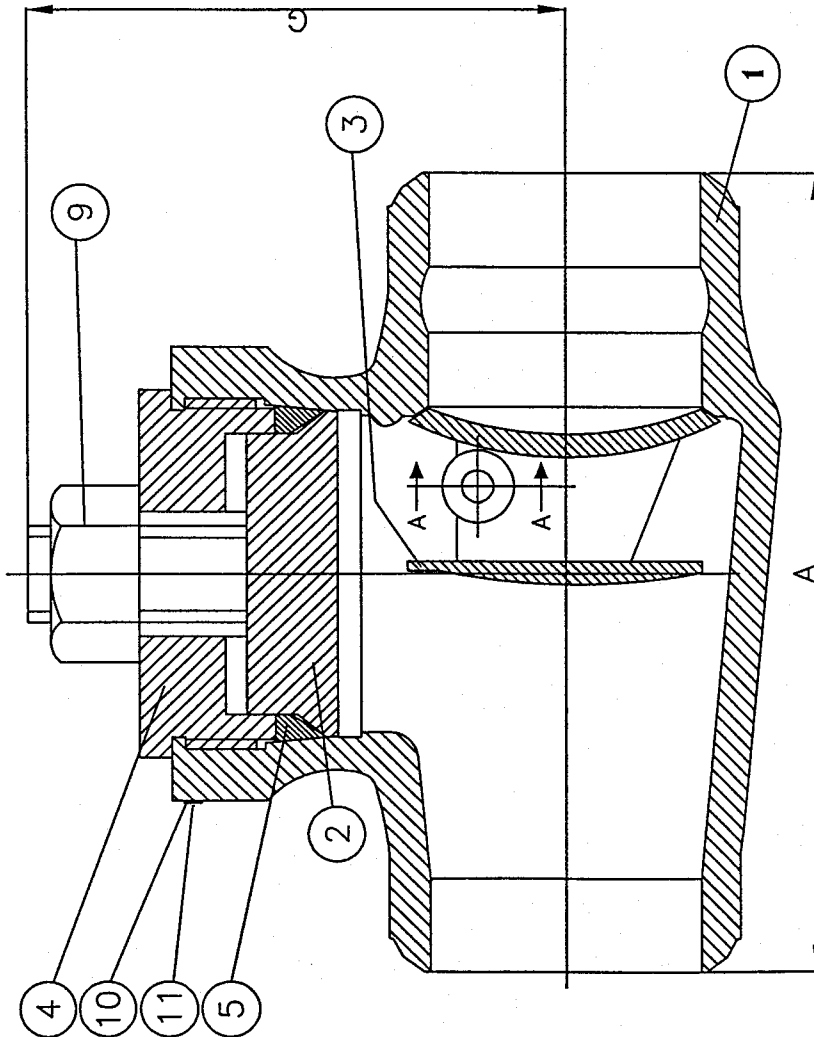
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21-10-04		PRESSURE SEAL-TILTING DISC
SCALE		REV:
11-11-04		DRAWING No : 0186-001842-07
DATE		REV: 1

SCH-10S

Klaus Union P.O.-No.: HH-02539
 Client: Lurgi Oel Gas Chemie GmbH
 PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No.: 1.69690-10
 Lurgi p.o.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

1. Design & Manufacturing :ASME B16.34 and Manufacturer standard
2. Face to face :ANSI B16.10
3. Buttwelding ends :ANSI B16.25
4. Installations :Horizontal & Vertical
5. Pressure/Temp :ANSI B16.34
6. Pressure Test :API 598
7. Additional test :ASME B16.34 Para.8
8. Temperature :up to +427 °C



ITEM	NAME	MATERIAL	SPECIFICATION NOTE
013	GASKET	SPIRAL WOUND	ASTM A 182 F321
012	PLUG	STAINLESS STEEL	ASTM A 182 F321
011	STUD BOLT	STAINLESS STEEL	ASTM A 182 F321
010	NAMEPLATE	STAINLESS STEEL	ASTM A 182 F321
009	BONNET NUT	STAINLESS STEEL	ASTM A 182 F321
008	PIN	STAINLESS STEEL	ASTM A 182 F321
007	SEAL RING	GRAPHITE	ASTM A 182 F321
006	BONNET RETAINING DISC	STAINLESS STEEL	ASTM A 182 F321
005	DISC	STAINLESS STEEL	ASTM A 182 F321
004	BONNET	STAINLESS STEEL	ASTM A 182 F321
003	BODY	STAINLESS STEEL	ASTM A 182 F321

PROJECT: SECOND ZAGROS METHANOL PLANT

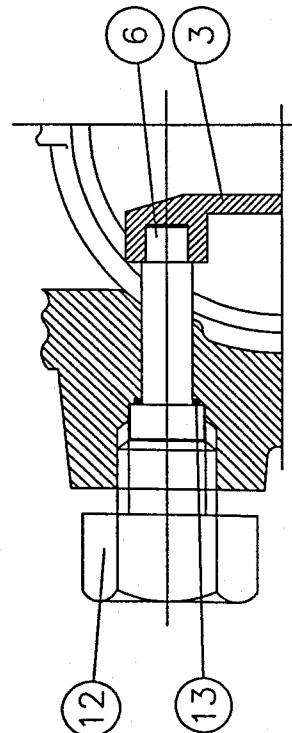
REF: HH-02539
 L.I. REF: 0186-001842
 ITEM: 190, 210



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REV.	DATE	DRAWN	CHECKED	SCALE	DRAWING No :	REV:
<1>	11-11-04			---	0186-001842-10	1



SECTION A-A

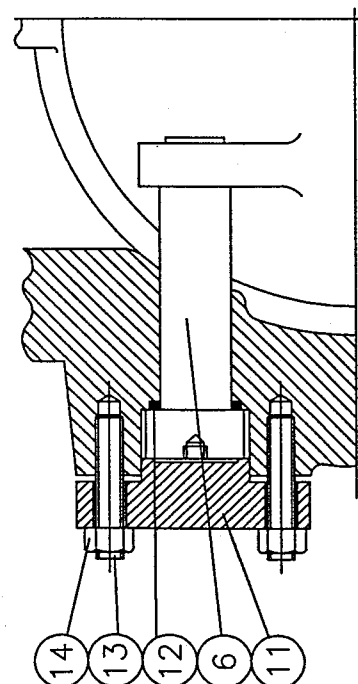
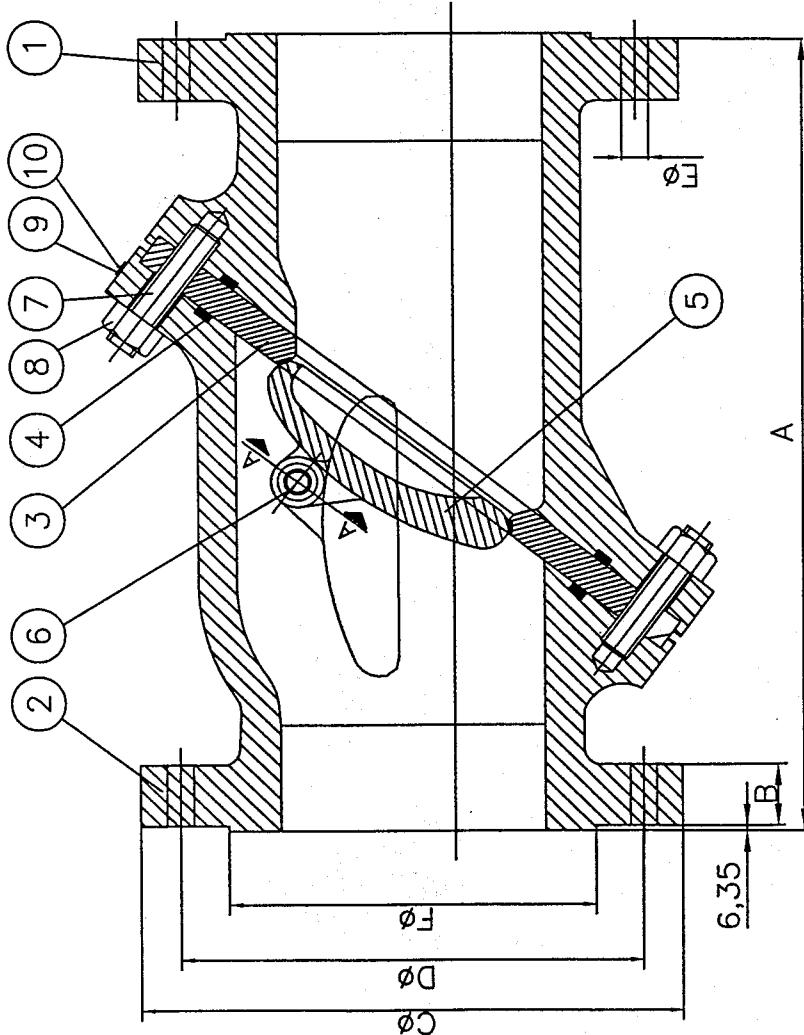
ITEM TAG	SIZE	A	G	Q'TY	WEIGHT
190 RK-656	2"	368,3	150	2	12
210 RK-656	3"	469,9	158	1	22

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Klaus Union P.O.-No.: HH-02539
Client: Lurgi Oel Gas Chemie GmbH
PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No.: 1.69690-10
Lurgi P.O.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

1. Design & Manufacturing :ASME B16.34 and Manufacturer standard
2. Face to face :ANSI B16.10
3. Buttwelding ends :ANSI B16.25
4. Installations :Horizontal & Vertical
5. Pressure/Temp :ANSI B16.34
6. Pressure Test :API 598
7. Temperature :up to +427 °C



SECTION A-A

ITEM	TAG	SIZE	A	B	C	D	N° OF HOLES	E	F	Q'TY	WEIGHT
180	RK-655	10"	787,4	63,5	508	431,8	16	35	323,8	2	565

ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
14	FLANGE NUT	STAINLESS STEEL	ASTM A 194-Gr.8	
13	FLANGE BOLT	STAINLESS STEEL	ASTM A 193-B8 Cl.2	
12	FLANGE GASKET	STAINLESS STEEL	AISI 321/GRAPHITE	
11	FLANGE	STAINLESS STEEL	ASTM A 182 F321	
10	PIN	STAINLESS STEEL	18-8 Cr-Ni	
9	NEMEPLATE	STAINLESS STEEL	18-8 Cr-Ni	
8	BODY NUT	STAINLESS STEEL	ASTM A 194-Gr.8	
7	BODY BOLT	STAINLESS STEEL	ASTM A 193 B8 Cl.2	
6	DISC PIN	STAINLESS STEEL	ASTM A 182 F321	
5	DISC	STAINLESS STEEL	ASTM A 351 CF8C	
4	BODY RING GASKET	SPIRAL WOUND	AISI-321/GRAPHITE	
3	BODY RING	STAINLESS STEEL	ASTM A 182 F321	
2	LEFT BODY	STAINLESS STEEL	ASTM A 351 CF8C	
1	RIGHT BODY	STAINLESS STEEL	ASTM A 351 CF8C	

PROJECT: 2ND ZAGROS MEGAMETHANOL PLANT
REF: HH-02539
L.I. REF: 0186-0018442
ITEM: 180



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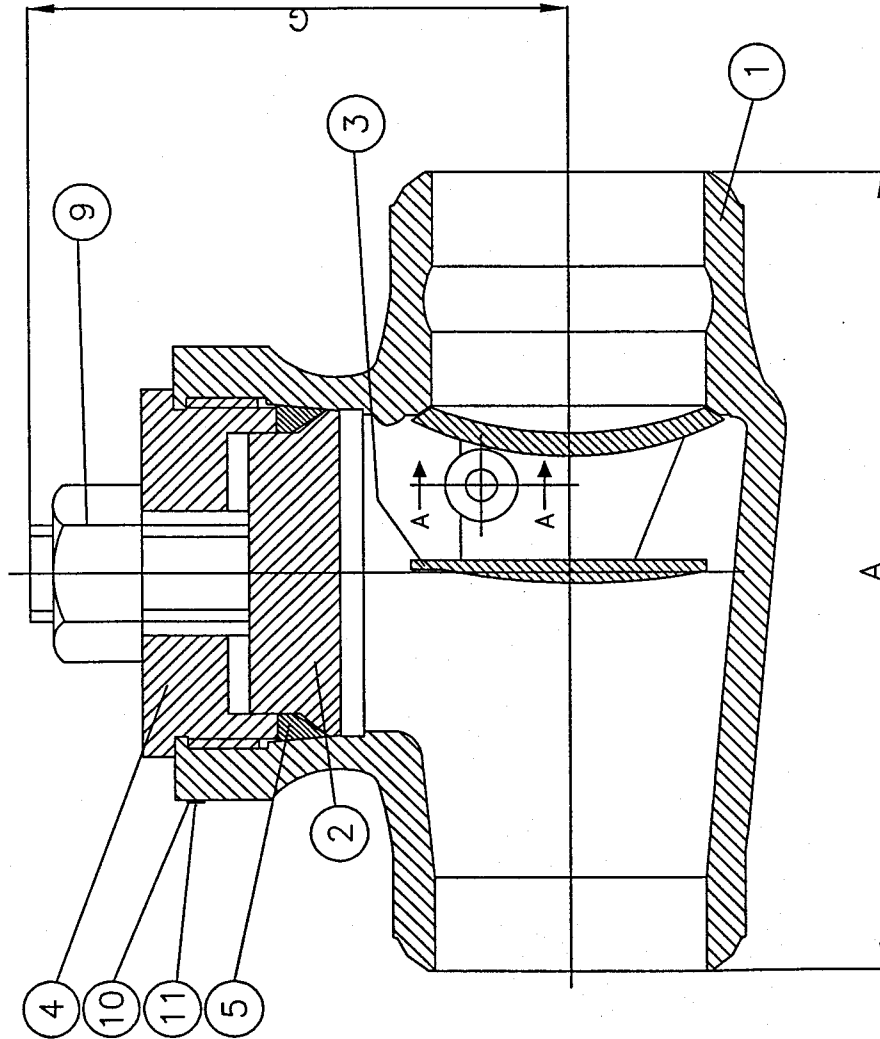
DATE	NAME	CHECK VALVE - TILTING DISC
22-10-04		CLASS-600 RF
22-10-04		
11-11-04		
REV.	DATE	DRAWING No : 0186-001842-11
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Klaus Union P.O.-No.: HH-02539
 Client: Lurgi Oel Gas Chemie GmbH
 PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No.: 1.69690-10
 Lurgi P.O.-No.: 4567967-000/1.69690/136

Main Parameters Specifications

1. Design & Manufacturing
2. Face to face
3. Buttwelding ends
4. Installations
5. Pressure/Temp
6. Pressure Test
7. Additional test
8. Temperature

:ASME B16.34 and Manufacturer standard
 :ANSI B16.10 (LONG PATTERN)
 :ANSI B16.25
 :Horizontal & Vertical
 :ANSI B16.34
 :API 598
 :ASME B16.34 Para. 8
 :up to +427 °C



SECTION A-A

ITEM	NAME	MATERIAL	SPECIFICATION NOTE
013	GASKET	SPIRAL WOUND	ASIS 321/GRAPHITE
012	PLUG	STAINLESS STEEL	ASIS 321
011	STUD BOLT	STAINLESS STEEL	18-8 Cr-Ni
010	NAMEPLATE	STAINLESS STEEL	18-8 Cr-Ni
009	BONNET NUT	STAINLESS STEEL	ASTM A 194 GR8
006	PIN	STAINLESS STEEL	ASTM A182 F321
005	SEAL RING	GRAPHITE	
004	BONNET RETAINING DISC	STAINLESS STEEL	ASTM A182 F321
003	DISC	STAINLESS STEEL	ASTM A 351 CF8C
002	BONNET	STAINLESS STEEL	ASTM A182 F321
001	BODY	STAINLESS STEEL	ASTM A 351 CF8C

ITEM	NAME	MATERIAL	SPECIFICATION NOTE
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PROJECT: SECOND ZAGROS METHANOL PLANT
 REF: HH-02539
 L.I. REF: 0186-001842
 ITEM: 180

DATE: 11-11-04
 DATE: 22-10-04
 DATE: 22-10-04

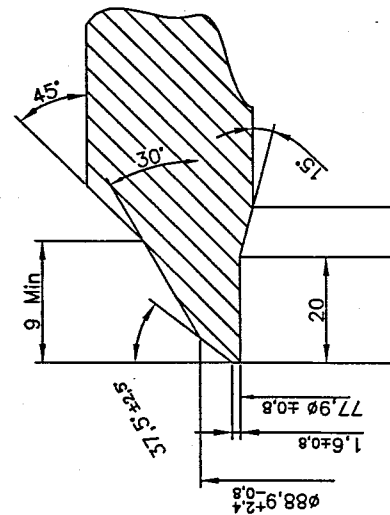
TRACED: 22-10-04
 CHECKED: 22-10-04

REV: 1
 REV: 1
 REV: 1

DRAWING No: 0186-001842-12
 SCALE: ---

CHECK VALVE - CLASS 900 BW
 PRESSURE SEAL-TILTING DISC

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SCH-STD

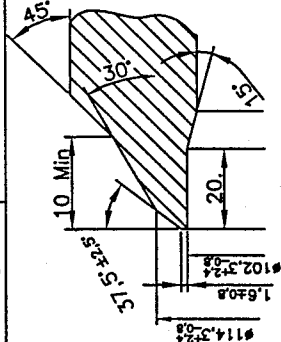
ITEM TAG	SIZE	A	G	Q'TY	WEIGHT
200 RK-656	3"	381	158	3	46

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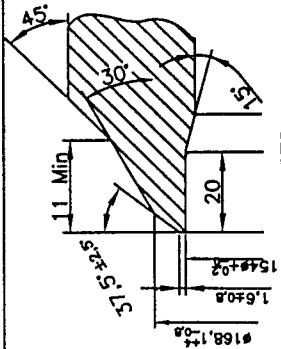
Klaus Union P.O.-No.: HH-02539
 Client: Lurgi Oel Gas Chemie GmbH
 PROJECT TITLE: 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No.: 1.69690-10
 Lurgi P.O.-No.: 4567967-000/1.69690/136

- Main Parameters Specifications
1. Design & Manufacturing
 2. Face to face
 3. Buttwelding ends
 4. Installations
 5. Pressure/Temp
 6. Pressure Test
 7. Additional test
 8. Temperature

:ASME B16.34 and Manufacturer standard
 :ANSI B16.10 (LONG PATTERN)
 :ANSI B16.25
 :Horizontal & Vertical
 :API B16.34
 :API 598
 :ASME B16.34 Para. 8
 :up to +427 °C



SCH-STD



SCH-STD

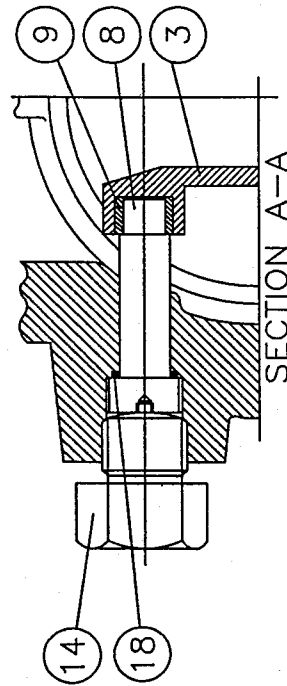
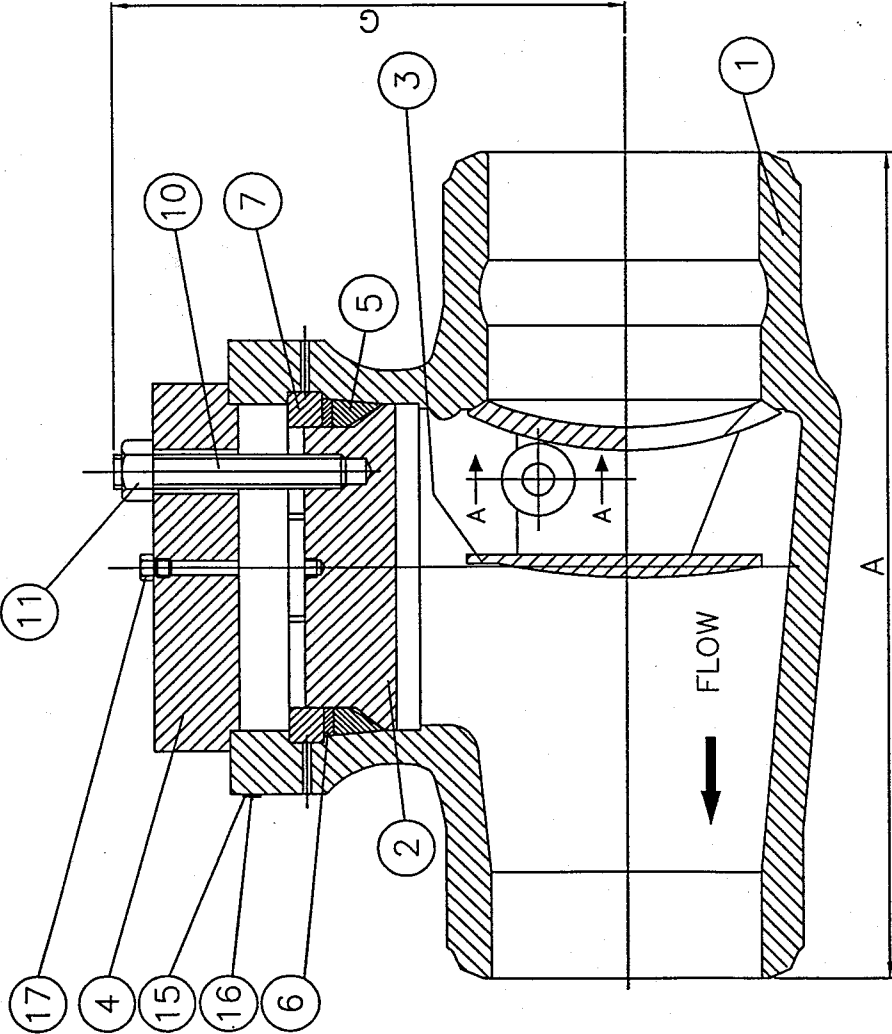
ITEM	NAME	MATERIAL	SPECIFICATION	NOTE
18	GASKET	SPIRAL WOUND	AISI 304/GRAPHITE	
17	PLUG	CARBON STEEL	ASTM A 105/ST 52	
16	STUD BOLT	STAINLESS STEEL	18-8 Cr-Ni	
15	NAMEPLATE	STAINLESS STEEL	18-8 Cr-Ni	
14	PLUG	STAINLESS STEEL	AISI 321	
11	BONNET BOLT	STAINLESS STEEL	ASTM A 193 BB Cl.2	
10	BONNET NUT	STAINLESS STEEL	ASTM A 194-Gr.8	
9	BUSHING	STAINLESS STEEL	ASTM A 182 F321	
8	PIN	STAINLESS STEEL	AISI 321	
7	RETAINING RING	STAINLESS STEEL	ASTM A 182 F321	
6	WASHER	STAINLESS STEEL	ASTM A 182 F321	
5	SEAL RING	GRAPHITE		
4	BONNET RETAINING DISC	CARBON STEEL	ASTM A 105/ST 52	
3	DISC	STAINLESS STEEL	ASTM A 351 CF8C	
2	BONNET	STAINLESS STEEL	ASTM A 182 F321	
1	BODY	STAINLESS STEEL	ASTM A 351 CF8C	

PROJECT: SECOND ZAGROS METHANOL PLANT		DATE	NAME	CHECK VALVE - CLASS 900 BW
REF1	HH-02539	22-10-04		PRESSURE SEAL-TILTING DISC
L.I. REF:	0186-001842	22-10-04		
ITEM:	220, 230			
REV.	DATE	DRAWN	CHECKED	REV:
<1>	11-11-04			DRAWING No : 0186-001842-13
				REV: 1



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ITEM TAG	SIZE	A	G	Q'TY	WEIGHT
220 RK-656	4"	457.2	210	1	43
230 RK-656	6"	609.6	247	1	141

<1> <1> <1>