

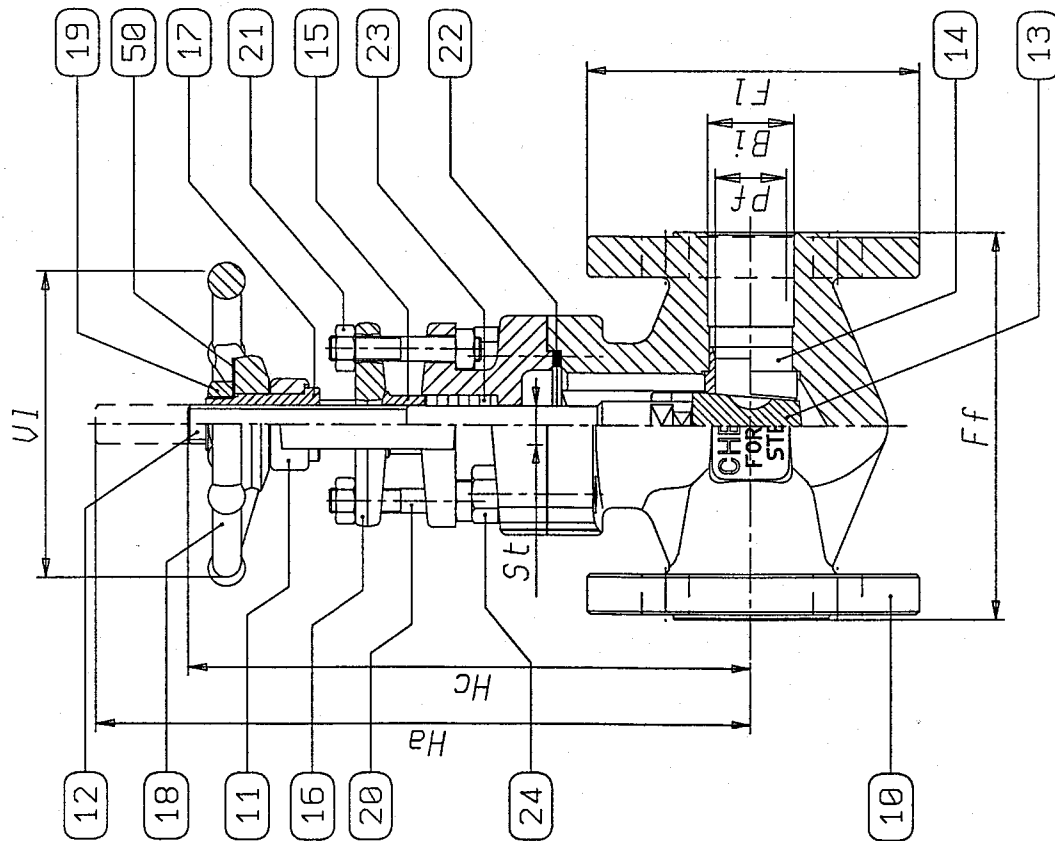
Gate valve - 150 - Full B. - Bolted - RF

F212-7/15

Std. pressure tests (BAR):SHELL 30, SEAT 22, AIR 6

REF	QTY	DESCRIPTION	MATERIAL
10	1	Body	ASTM A105N
11	1	Bonnet	ASTM A105N
12	1	Stem	ASTM A182/F6a
13	1	Wedge	ASTM A182/F6a
14	2	Seats	ASTM A182/F6a
15	1	Packing gland	AISI 316
16	1	Gland flange	ASTM A105N
17	1	Stem nut	AISI 416
18	1	Handwheel	CARBON STEEL
19	1	Handwheel nut	CARBON STEEL
20	2	Gland stud bolts	AISI 410
21	4	Gland nuts	ASTM A194/2H
22	1	Spiral wound gasket	AISI 316+GRAPHITE
23	1	Packing	PREFORMED GRAPHITE
24	4	Body screws	ASTM A193/B7
50	1	Identification plate	ALUMINIUM

Klaus Union P.O. No. : HH-02535
Client : Lurgi Oel Gas Chemie GmbH
Project Title : 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No. : 1.69690-10
Lurgi P.O.-No. : 4567569-000/1.69690/136



Dim.	Bi	Fl	Pf	St	Hc	Ha	Ff	U1	Wt	ITEM NO.
1/2"	mm	17,5	88,9	14	9,5	164	183	108,0	90	3,1 kg
	in	0,69	3,50	0,55	3/8	6,46	7,20	4,25	3,54	6,8 lb
3/4"	mm	22,5	98,6	18	11,1	167	191	117,5	110	4,0 kg
	in	0,89	3,88	0,71	7/16	6,57	7,52	4,63	4,33	8,8 lb
1"	mm	27,5	108,0	23	12,7	187	216	127,0	120	5,7 kg
	in	1,08	4,25	0,91	1/2	7,36	8,50	5,00	4,72	12,5 lb
1.1/2"	mm	42,0	127,0	36	15,9	230	273	165,1	140	12,6 kg
	in	1,65	5,00	1,42	5/8	9,05	10,75	6,50	5,51	27,7 lb
2"	mm	54,0	152,4	48	19,0	258	314	177,8	225	15,8 kg
	in	2,13	6,00	1,89	3/4	10,16	12,36	7,00	8,86	34,8 lb

DIMENSIONS

BS 5352

1/2" F212/15

3/4" F213/15

1" F214/15

1.1/2" F216/15

2" F217/15

NOTES

API 598

max. up to +427 C

Rating to ASME B1634

MSS SP-25

PREPARED BY

CA

APP. R. DATE

05/02/96

REV.

3

APPROVED BY

COMPLETION DATE

17/03/05

REV. CUSTOMER CODE

S353

KLAUS
UNION

Gate valve - 800 - Full B. - Bolted - SU

F210-7/SU

Klaus Union P.O. No. : HH-02535

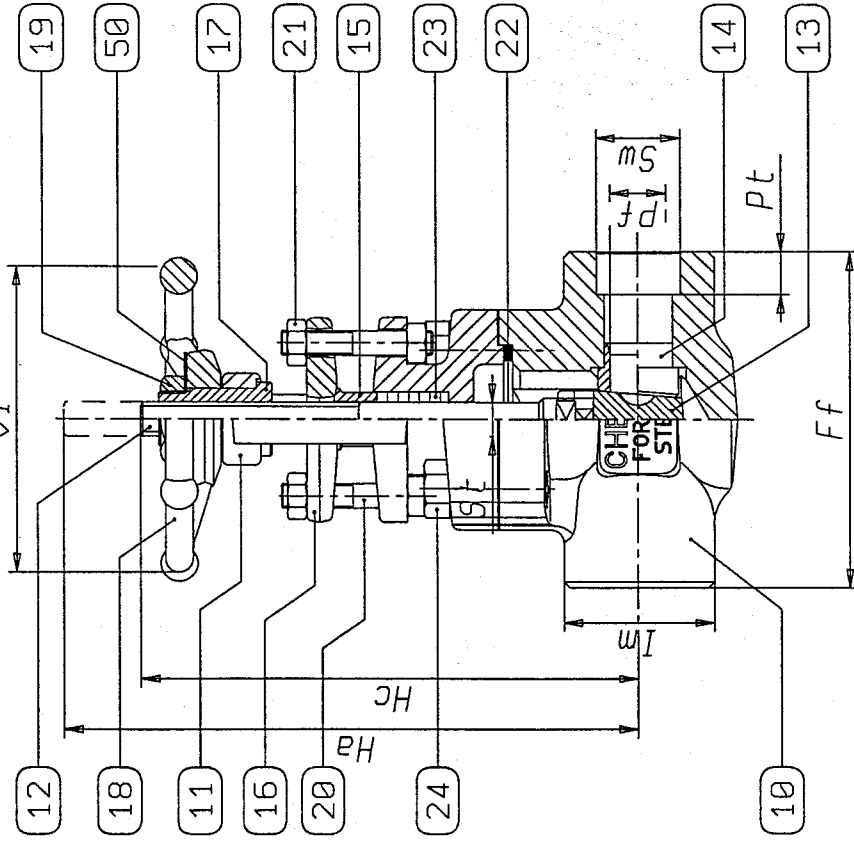
Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS Megamethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4567569-000/1.69690/136

U1



DIMENSIONS

1/4" F210/SU

3/8" F211/SU

1/2" F212/SU

3/4" F213/SU

1" F214/SU

1.1/2" F215/SU

2" F217/SU

APPLIC. STANDARD

API 602-BS 5352

ASME B16.11

API 598

BS 6755 (Pt.1)

NOTES

10. max 0.22% C

11. max 0.22% C

max. up to +427 C

Rating to ASME B1634

MSS SP-25

Std. pressure tests (BAR):SHELL 211, SEAT 155, AIR 6

REF QTY DESCRIPTION

10 1 Body MATERIAL

11 1 Bonnet ASTM A105N

12 1 Stem ASTM A105N

13 1 Wedge ASTM A182/F6a

14 2 Seats ASTM A182/F6a

15 1 Packing gland AISI 316

16 1 Gland flange ASTM A105N

17 1 Stem nut AISI 416

18 1 Handwheel CARBON STEEL

19 1 Handwheel nut CARBON STEEL

20 2 Gland stud bolt AISI 410

21 4 Gland nut ASTM A194/2H

22 1 Spiral wound gasket AISI 316+GRAPHITE

23 1 Packing PREFORMED GRAPHITE

24 4 Body stud ASTM A193/B7

50 1 Identification plate ALUMINIUM

Dim.	Sw	Pt	Im	Pf	St	Hc	Ha	Ff	U1	Wt	ITEM NO.
1/4"	mm	14.1	10	33	8.5	9.5	130	143	80	90	1.7 kg
3/8"	in	0.56	0.39	1.30	0.33	3/8	5.12	5.63	3.15	3.54	3.7 lb
3/8"	mm	17.5	10	33	10	9.5	130	143	80	90	1.7 kg
1/2"	in	0.69	0.39	1.30	0.39	3/8	5.12	5.63	3.15	3.54	3.7 lb
1/2"	mm	21.7	10	38	14	9.5	137	156	90	90	2.1 kg
3/4"	in	0.85	0.39	1.50	0.55	3/8	5.39	6.14	3.54	3.54	4.6 lb
3/4"	mm	27.1	13	49	18	11.1	162	186	110	100	3.4 kg
1"	in	1.07	0.51	1.93	0.71	7/16	6.30	7.32	4.33	3.94	7.5 lb
1"	mm	33.7	14	64	24	12.7	285	337	127	120	5.3 kg
1.1/4"	in	1.33	0.55	2.52	0.94	1/2	8.07	9.33	5.00	4.72	11.7 lb
1.1/4"	mm	42.6	14	64	29	14.3	286	341	127	140	7.1 kg
1.1/2"	in	1.68	0.55	2.52	1.14	9/16	8.11	9.49	5.00	5.51	15.6 lb
1.1/2"	mm	48.6	14	78	36.5	15.9	230	273	130	140	9.3 kg
2"	in	1.91	0.55	3.07	1.44	5/8	9.05	10.75	5.12	5.51	28.5 lb
2"	mm	61.1	16	80	48	19.0	282	339	210	200	14.2 kg
2"	in	2.41	0.63	3.15	1.89	3/4	11.10	13.35	8.27	7.07	31.2 lb

PREPARED BY CA

APP.R. DATE 15/03/02

REV. 4

COMPLETION DATE 17/03/05

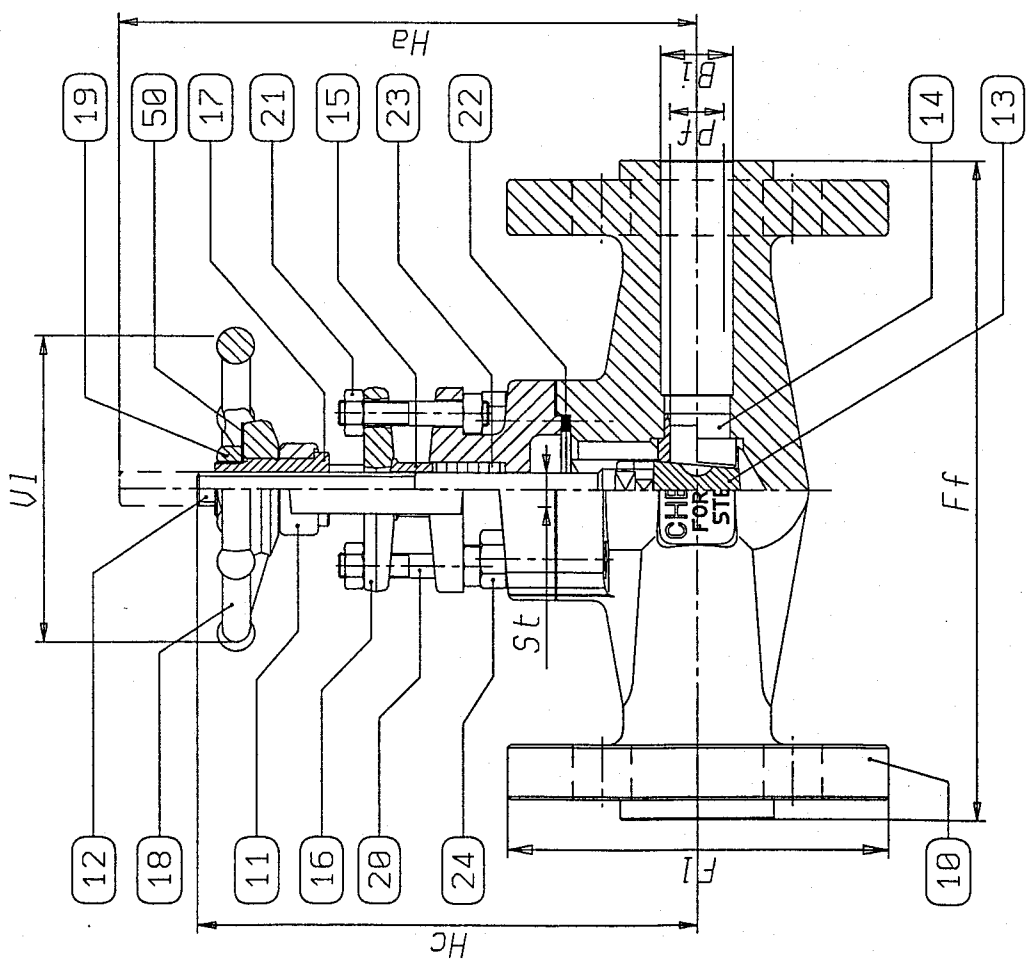
REV. CUSTOMER CODE

S350

Std. pressure tests (BAR):SHELL 156, SEAT 114, AIR 6		
REF QTY	DESCRIPTION	MATERIAL
10	1 Body	ASTM A105N
11	1 Bonnet	ASTM A105N
12	1 Stem	ASTM A182/F6a
13	1 Wedge	ASTM A182/F6a Stellite
14	2 Seats	ASTM A182/F6a Stellite
15	1 Packing gland	AISI 316
16	1 Gland flange	ASTM A105N
17	1 Stem nut	AISI 416
18	1 Handwheel	CARBON STEEL
19	1 Handwheel nut	CARBON STEEL
20	2 Gland stud bolt	AISI 410
21	4 Gland nut	ASTM A194/2H
22	1 Spiral wound gasket	AISI 316+GRAPHITE
23	1 Packing	PREFORMED GRAPHITE
24	4 Body stud	ASTM A193/B7
50	1 Identification plate	ALUMINIUM

The diagram is a cross-sectional view of a valve assembly. It shows the internal components including the stem, bonnet, packing gland, and handwheel. The components are numbered as follows: 12 (Stem), 18 (Packing gland), 11 (Gland flange), 16 (Stem nut), 20 (Handwheel), 24 (Gland stud bolt), 22 (Gland nut), 23 (Spiral wound gasket), 19 (Packing), 17 (Body stud), 15 (Bonnet), 14 (Wedge), 13 (Seats), 12 (Stem), 11 (Bonnet), 10 (Body). The diagram also shows the external components: 50 (Identification plate), 24 (Body stud), 23 (Packing), 22 (Spiral wound gasket), 21 (Gland nut), 20 (Gland stud bolt), 19 (Handwheel nut), 18 (Handwheel), 17 (Stem nut), 16 (Gland flange), 15 (Packing gland), 14 (Seats), 13 (Wedge), 12 (Stem), 11 (Bonnet), 10 (Body). The diagram includes dimension lines for Hc and Ha. A section line A-A is shown on the right.

Klaus Union P.O. No. : HH-02535
Client : Lurgi Oel Gas Chemie GmbH
Project Title : 2nd ZAGROS MegaMethanol Plant, Iran
Lurgi Contract-No. : 1.69690-10
Lurgi P.O.-No. : 4567569-000/1.69690/136



Dim.	Bi	Fl	Pf	St	Hc	Ha	Ff	U1	Ut	ITEM NO.
1/2"	mm	95,3	10	9,5	130	145	165,1	90	4,2	kg
	in	0,53	3/8	3/8	5,12	5,71	6,50	3,54	9,2	lb
3/4"	mm	117,3	14	9,5	137	156	190,5	90	5,8	kg
	in	0,73	0,55	3/8	5,39	6,14	7,50	3,54	12,8	lb
1"	mm	124,0	18	11,1	162	186	215,9	110	7,4	kg
	in	0,94	0,71	7/16	6,38	7,32	8,50	4,33	16,3	lb
1.1/2"	mm	155,4	31	15,9	219	255	241,3	140	14,3	kg
	in	1,59	1,22	5/8	8,62	10,04	9,50	5,51	31,5	lb
2"	mm	165,1	36,5	15,9	230	273	292,1	140	18,8	kg
	in	1,93	1,44	5/8	9,06	10,75	11,50	5,51	41,4	lb

APPLIC. STANDARD

API 602-BS 5352

1/2" R252/60

ASME B16.5

3/4" R253/60

ASME B16.10

1" R254/60

API 598

1.1/2" R256/60

BS 6755 (Pt.1)

2" R257/60

NOTES

max. up to +427 C

Rating to ASME B1634

MSS SP-25

PREPARED BY

CA

APP.R. DATE

05/02/96

REV.

3

APPROVED BY

COMPLETION DATE

17/03/05

REV. CUSTOMER CODE

1

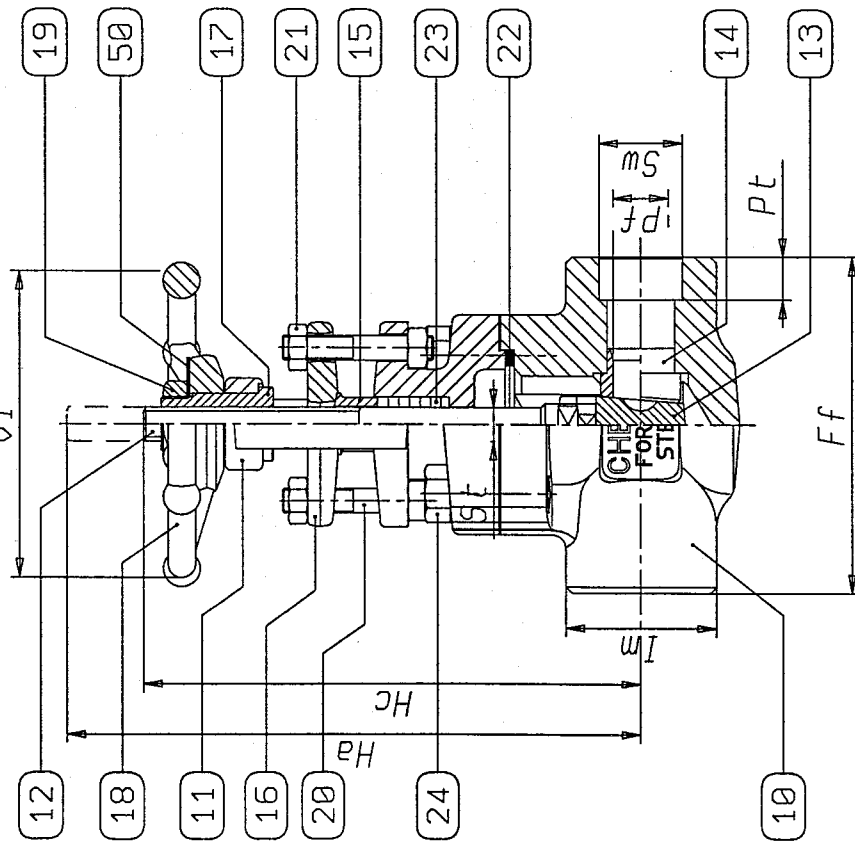
S354

KLAUS UNION

Gate valve - 800 - Full B. - Bolted - SW

F210-7/SW

Klaus Union P.O. No. : HH-02535
 Client : Lurgi Oel Gas Chemie GmbH
 Project Title : 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No. : 1.69690-10
 Lurgi P.O.-No. : 4567569-000/1.69690/136



Std. pressure tests (BAR): SHELL 211, SEAT 155, AIR 6

REF	QTY	DESCRIPTION	MATERIAL
10	1	Body	ASTM A105N
11	1	Bonnet	ASTM A105N
12	1	Stem	ASTM A182/F6a
13	1	Wedge	ASTM A182/F6a Stellite
14	2	Seats	ASTM A182/F6a Stellite
15	1	Packing gland	AISI 316
16	1	Gland flange	ASTM A105N
17	1	Stem nut	AISI 416
18	1	Handwheel	CARBON STEEL
19	1	Handwheel nut	CARBON STEEL
20	2	Gland stud bolt	AISI 410
21	4	Gland nut	ASTM A194/2H
22	1	Spiral wound gasket	AISI 316+GRAPHITE
23	1	Packing	PREFORMED GRAPHITE
24	4	Body stud	ASTM A193/B7
50	1	Identification plate	ALUMINIUM

Dim.	Sw	Pt	Im	Pf	St	Hc	Ha	Ff	U1	Wt	ITEM NO.
1/4"	mm	14.1	10	33	8.5	9.5	130	143	80	90	1.7
	in	0.56	0.39	1.30	0.33	3/8	5.12	5.63	3.15	3.54	3.7
3/8"	mm	17.5	10	33	10	9.5	143	153	80	90	1.7
	in	0.69	0.39	1.30	0.39	3/8	5.12	5.63	3.15	3.54	3.7
1/2"	mm	21.7	10	38	14	9.5	137	156	90	90	2.1
	in	0.85	0.39	1.50	0.55	3/8	5.39	6.14	3.54	3.54	4.6
3/4"	mm	27.1	13	49	18	11.1	162	186	110	100	3.4
	in	1.07	0.51	1.93	0.71	7/16	6.30	7.32	4.33	3.94	7.5
1"	mm	33.7	14	64	24	12.7	205	237	127	120	5.3
	in	1.33	0.55	2.52	0.94	1/2	8.07	9.33	5.00	4.22	11.7
1.1/4"	mm	42.6	14	64	29	14.3	206	241	127	140	7.1
	in	1.68	0.55	2.52	1.14	9/16	8.11	9.49	5.00	5.51	15.6
1.1/2"	mm	48.6	14	78	36.5	15.9	230	273	130	140	9.3
	in	1.91	0.55	3.07	1.44	5/8	9.06	10.75	5.12	5.51	20.5
2"	mm	61.1	16	80	48	19.0	282	339	210	200	14.2
	in	2.41	0.63	3.15	1.89	3/4	11.10	13.35	8.27	7.87	31.2

DIMENSIONS

1/4" F210/SW
3/8" F211/SW
1/2" F212/SW
3/4" F213/SW
1" F214/SW
1.1/4" F215/SW
1.1/2" F216/SW
2" F217/SW

APPLIC. STANDARD

API 602-BS 5352
ASME B16.11
API 598
BS 6755 (Pt.1)

NOTES

10. max. 0.22% C
 11. max. 0.22% C
 max. up to +427 C
 Rating to ASME B16.34
 MSS SP-25

PREPARED BY

CA

APP.R. DATE

15/03/02

REV.

4

APPROVED BY

COMPLETION DATE

17/03/05

REV. CUSTOMER CODE

S306

KLAUS
UNION

Gate valve - 1500c - Full B. - Bolted - SW

BX652-7/SW

Std. pressure tests (BAR): SHELL 388, SEAT 285, AIR 6

REF QTY DESCRIPTION

MATERIAL

10	1	Body	ASTM A105N
11	1	Bonnet	ASTM A105N
12	1	Stem	ASTM A182/F6a
13	1	Wedge	ASTM A182/F6a Stellite
14	2	Seats	ASTM A182/F6a Stellite
15	1	Packing gland	AISI 316
16	1	Gland flange	ASTM A105N
17	1	Stem nut	AISI 416
18	1	Handwheel	CARBON STEEL
19	1	Handwheel nut	CARBON STEEL
20	2	Gland stud	AISI 410
21	4	Gland nut	ASTM A194/2H
22	1	Spiral wound gasket	AISI 316+GRAPHITE
23	1	Packing	PREFORMED GRAPHITE
24	4	Body screw	ASTM A193/B7
50	1	Identification plate	ALUMINIUM

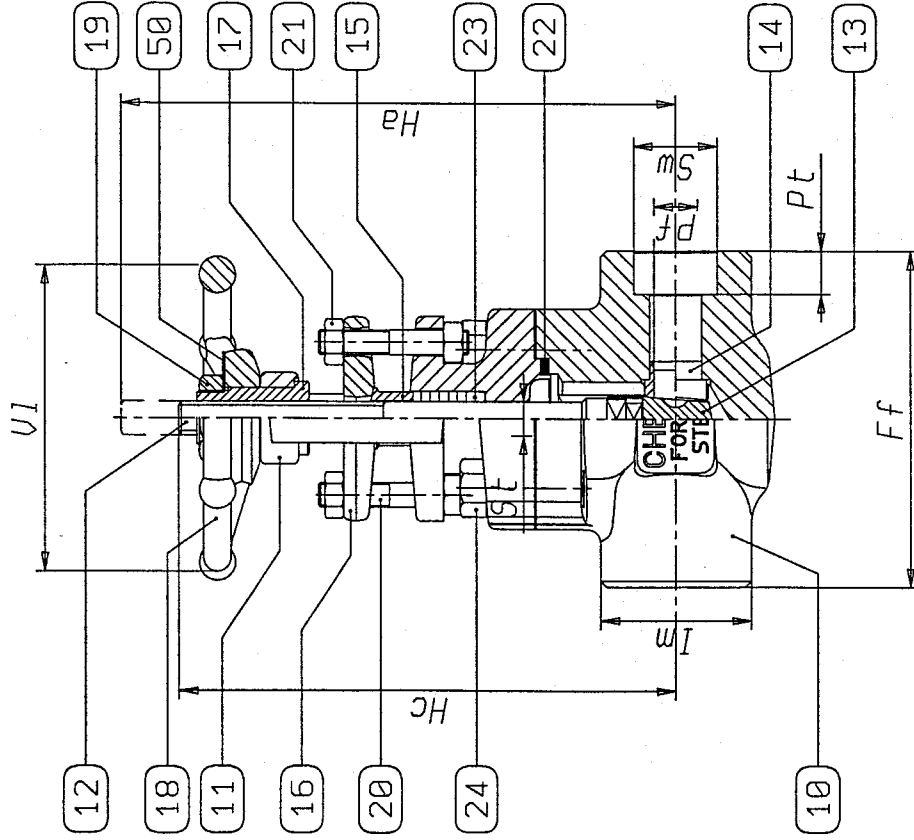
Klaus Union P.O. No. : HH-02535

Client : Lurgi Del Gas Chemie GmbH

Project Title : 2nd ZAGROS MegaMethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4567569-000/1.69690/136



API 602

API 598

DIMENSIONS

APPLIC. STANDARD

BS 5352

ASME B16.34

ASME B16.11

ASME B31.1

BS 6755 (Pt.1)

NOTES

10. max. 0.22% C

11. max. 0.22% C

Rating to ASME B1634

max. to up +427 C

MSS SP-25

PREPARED BY

APP. R. DATE

REV.

APPROVED BY

COMPLETION DATE

REV. CUSTOMER CODE

S306

APPROVED BY

REV.

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REV.

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KLAUS
UNION

DESCRIPTION

Gate valve - 1500c - Full B. - Bolted - SW

DRAWING

BX652-7/SW

Std. pressure tests (BAR):SHELL 388, SEAT 285, AIR 6	
REF	QTYDESCRIPTION
10	1 Body
11	1 Bonnet
12	1 Stem
13	1 Wedge
14	2 Seats
15	1 Packing gland
16	1 Gland flange
17	1 Stem nut
18	1 Handwheel
19	1 Handwheel nut
20	2 Gland stud
21	4 Gland nut
22	1 Spiral wound gasket
23	1 Packing
24	4 Body screw
50	1 Identification plate
MATERIAL	
	ASTM A105N (ASME SA105*)
	ASTM A105N (ASME SA105*)
	ASTM A182/F6a
	ASTM A182/F6a Stellite
	ASTM A182/F6a Stellite
	AISI 316
	ASTM A105N
	AISI 416
	CARBON STEEL
	CARBON STEEL
	AISI 410
	ASTM A194/2H
	AISI 316+GRAPHITE
	PREFORMED GRAPHITE
	ASTM A193/B7 (ASME SA193/B7*)
	ALUMINIUM

Klaus Union P.O. No. : HH-02535

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS MegaMethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4567569-000/1.69690/136

Dim.	Sw	Pt	Im	Pf	St	Hc	Ha	Ff	U1	U2	ITEM NO.
1/2"	mm	21,7	10	49	12,0	12,7	163	181	118	120	160
		0,85	0,39	1,93	0,45	1/2	6,42	7,13	4,33	4,22	360
3/4"	mm	27,1	13	57	15,0	15,9	204	223	127	140	170
		1,07	0,51	2,24	0,59	5/8	8,03	8,70	5,00	5,51	170
1"	mm	33,7	14	57	20,0	15,9	200	225	127	140	170
		1,33	0,55	2,24	0,77	5/8	7,07	8,06	5,00	5,51	170
1.1/2"	mm	48,5	14	78	32,0	19,0	229	266	130	225	180
		1,91	0,55	3,07	1,26	3/4	9,02	10,47	5,12	8,06	180
2"	mm	61,1	16	82	40,0	22,2	275	318	150	225	180
		2,41	0,63	3,23	1,57	7/8	10,83	12,52	5,91	8,06	35,2

PREPARED BY

CA

APP.R. DATE

05/02/96

REV.

4

APPROVED BY

COMPLETION DATE

17/03/05

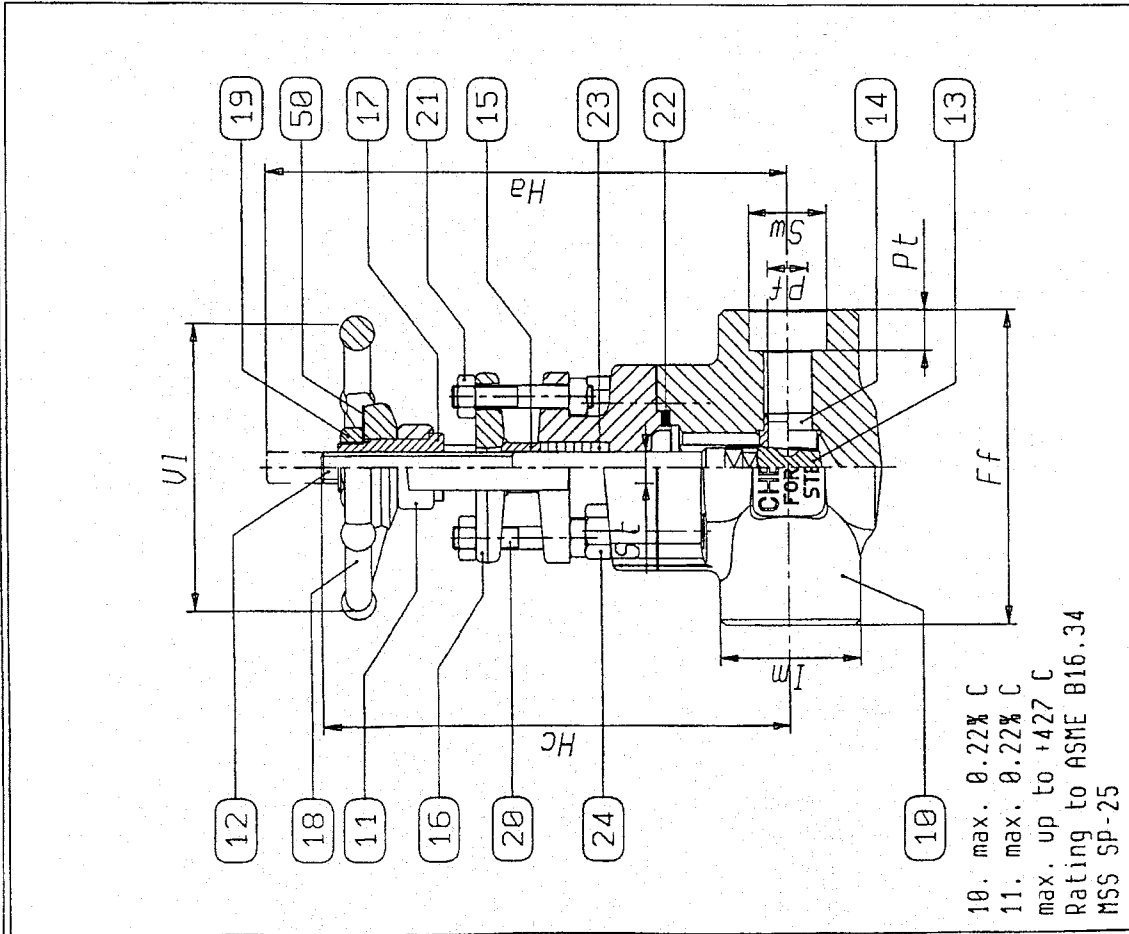
REV.

1

CUSTOMER CODE

S330

KLAUS UNION



NOTES	
* CERTIFICATE OF CONFORMITY TO ASME STANDARD WILL BE FORWARDED	
AP1 602	
AP1 598	
APPLIC. STANDARD	
BS 5352	BS 6755 (pt.1)
ASME B16.34	
ASME B16.11	
ASME B31.1	
BS 6755 (pt.1)	
DIMENSIONS	
1/2" BX652/SU	
3/4" BX653/SU	
1" BX654/SU	
1.1/2" BX656/SU	
2" BX657/SU	

10. max. 0.22% C

11. max. 0.22% C

max. up to +427 C

Rating to ASME B16.34

MSS SP-25

DESCRIPTION

Gate valve "Long Pattern" - 1500 - Full B. - Bolted - BW80

DRAWING

652-7/150-L8

Std. pressure tests (BAR):SHELL 388, SEAT 285, AIR 6	
REF QTY	DESCRIPTION MATERIAL
10 1	Body ASIM A182/F11 Cl.2
11 1	Bonnet ASIM A182/F11 Cl.2
12 1	Stem ASIM A182/F6a
13 1	Wedge ASIM A182/F6a Stellite
14 2	Seat ASIM A182/F6a Stellite
15 1	Packing gland AISI 316
16 1	Gland flange ASTM A182/F316
17 1	Stem nut AISI 416
18 1	Handwheel CARBON STEEL
19 1	Handwheel nut CARBON STEEL
20 2	Gland stud bolt AISI 410
21 4	Gland nut ASTM A194/2H
22a 1	RJ gasket AISI 304
23 1	Packing PREFORMED GRAPHITE
25a 6	Body stud bolt ASTM A193/B16
25b 12	Body nut ASTM A194/Gc.4
40 1	Stem nut washer STAINLESS STEEL
50 1	Identification plate ALUMINIUM

Klaus Union P.O. No. : HH-02535

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS Megalathanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4567559-000/1.69690/136

Dim.	Bi	Be	Pf	St	Hc	Ha	Ff	U1	U2	ITEM NO.
1/2"	mm 13.5	23	11.5	12.7	194	212	215.9	120	5.9	kg
	in 0.53	0.91	0.45	1/2	7.64	8.35	8.50	4.72	13.0	lb
3/4"	mm 18.5	28	15.0	15.9	237	256	278.6	175	8.4	kg
	in 0.73	1.10	0.59	5/8	9.33	10.08	9.00	6.89	18.5	lb
1"	mm 24.8	35	19.5	15.9	248	272	254.0	175	9.8	kg
	in 0.94	1.38	0.77	5/8	9.76	10.71	10.00	6.89	21.6	lb
1.1/2"	mm 38.0	50	32.0	22.2	374	411	364.8	250	26.8	kg
	in 1.50	1.97	1.26	7/8	14.72	16.18	12.00	9.04	59.0	lb
2"	mm 49.0	62	40.0	22.2	378	427	368.3	300	35.4	kg
	in 1.93	2.44	1.57	7/8	14.88	16.61	14.50	11.81	77.9	lb

PREPARED BY

CA

APP. R. DATE

29/02/96

REV.

3

APPROVED BY

COMPLETION DATE

17/03/05

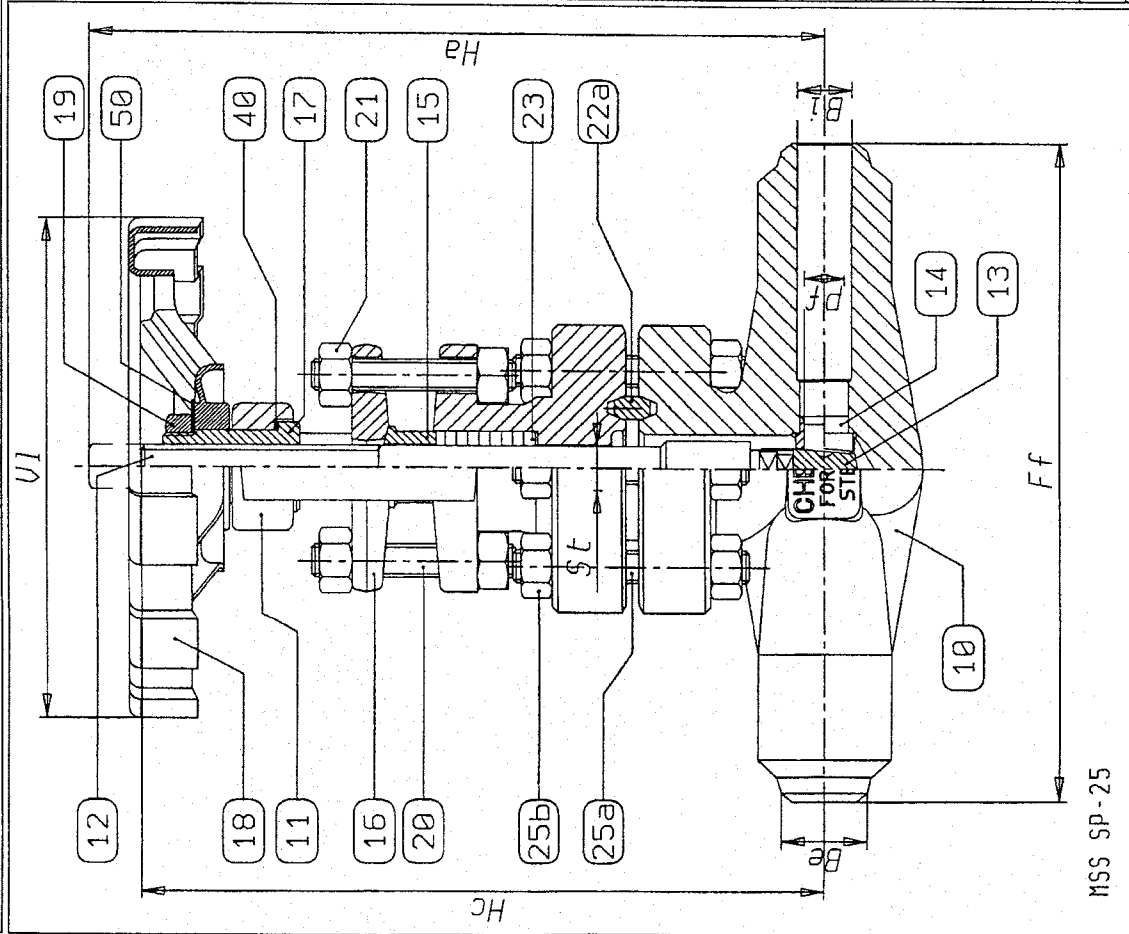
REV.

1

CUSTOMER CODE

S420

KLAUS UNION



DIMENSIONS	
1/2"	652/150-L8
3/4"	653/150-L8
1"	654/150-L8
1.1/2"	656/150-L8
2"	657/150-L8
APPLIC. STANDARD	
BS 5352	
ASME B16.5	
ASME B16.10	
BS 6755 (Pt.1)	
API 602	
NOTES	
1.1/2"-2":Ref. 25a(Qty B) - Ref. 25b(Qty 16)	
max. up to +538 C	
Rating to ASME B16.34	
ASME B16.25	
API 598	

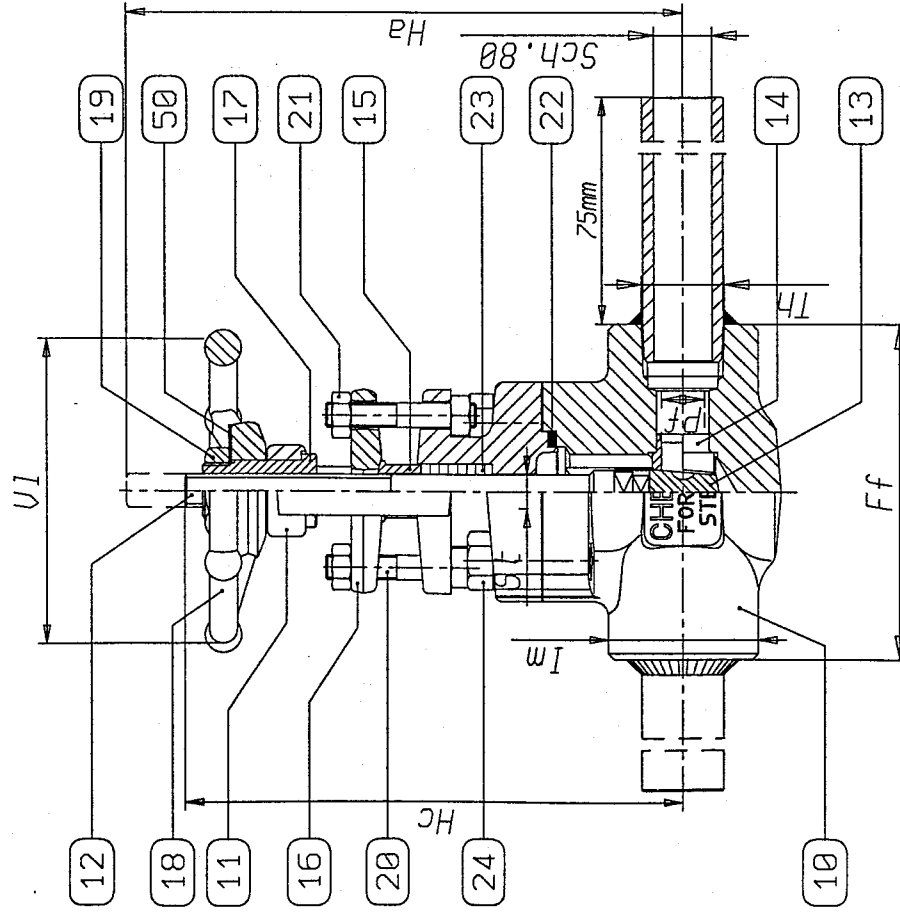
MSS SP-25

DESCRIPTION

Gate valve - 1500c - Full B. - Bolted - NPT+2n80

DRAWING

BX652-7/TH-2N8



Std. pressure tests (BAR):SHELL 388, SEAT 285, AIR 6

REF	QTY	DESCRIPTION	MATERIAL
10	1	Body	ASTM A182/F11 Cl.2
2	2	Extensions	ASTM A335/P11
11	1	Bonnet	ASTM A182/F11 Cl.2
12	1	Stem	ASTM A182/F6a
13	1	Wedge	ASTM A182/F6a Stellite
14	2	Seats	ASTM A182/F6a Stellite
15	1	Packing gland	AISI 316
16	1	Gland flange	ASTM A182/F316
17	1	Stem nut	AISI 416
18	1	Handwheel	CARBON STEEL
19	1	Handwheel nut	CARBON STEEL
20	2	Gland stud bolts	AISI 410
21	4	Gland nuts	ASTM A194/2H
22	1	Spiral wound gasket	AISI 316+GRAPHITE
23	1	Packing	PREFORMED GRAPHITE
24	4	Body screws	ASTM A193/B16
50	1	Identification plate	ALUMINIUM

Klaus Union P.O. No. : HH-02535
 Client : Lurgi Oel Gas Chemie GmbH
 Project Title : 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No. : 1.69690-10
 Lurgi P.O.-No. : 4567569-000/1.69690/136

Dim.	Th	Im	Pf	St	Hc	Ha	Ff	Ul	Wt	ITEM NO.
1/2"	mm	1/2-14 49	12	12,7	163	181	110	120	3,8	210
	in	NPT 1,93	0,45	1/2	6,42	7,13	4,33	4,72	8,4	lb
3/4"	mm	3/4-14 57	15	15,9	204	223	127	140	5,7	220
	in	NPT 2,24	0,59	5/8	8,03	8,78	5,00	5,51	12,7	lb
1"	mm	1-11 57	20	15,9	280	225	127	140	5,7	kg
	in	NPT 2,24	0,77	5/8	7,07	8,06	5,00	5,51	12,7	lb
1.1/2"	mm	1-11 78	32	19,0	235	272	130	225	10,9	kg
	in	NPT 3,07	1,26	3/4	9,25	10,71	5,12	8,86	24,0	lb
2"	mm	2-11 82	40	22,2	283	326	150	225	16,0	kg
	in	NPT 3,23	1,57	7/8	11,14	12,83	5,91	8,06	35,2	lb

APPLIC. STANDARD	NOTES
BS 5352-API 602	PUHT performed on welding of
ASME B16.34	Body/Nipples
ASME B1.20.1	max. up to 1538 C
BS 6755 (Pt.1)	Rating to ASME B16.34
ANT 500	MCC en 205

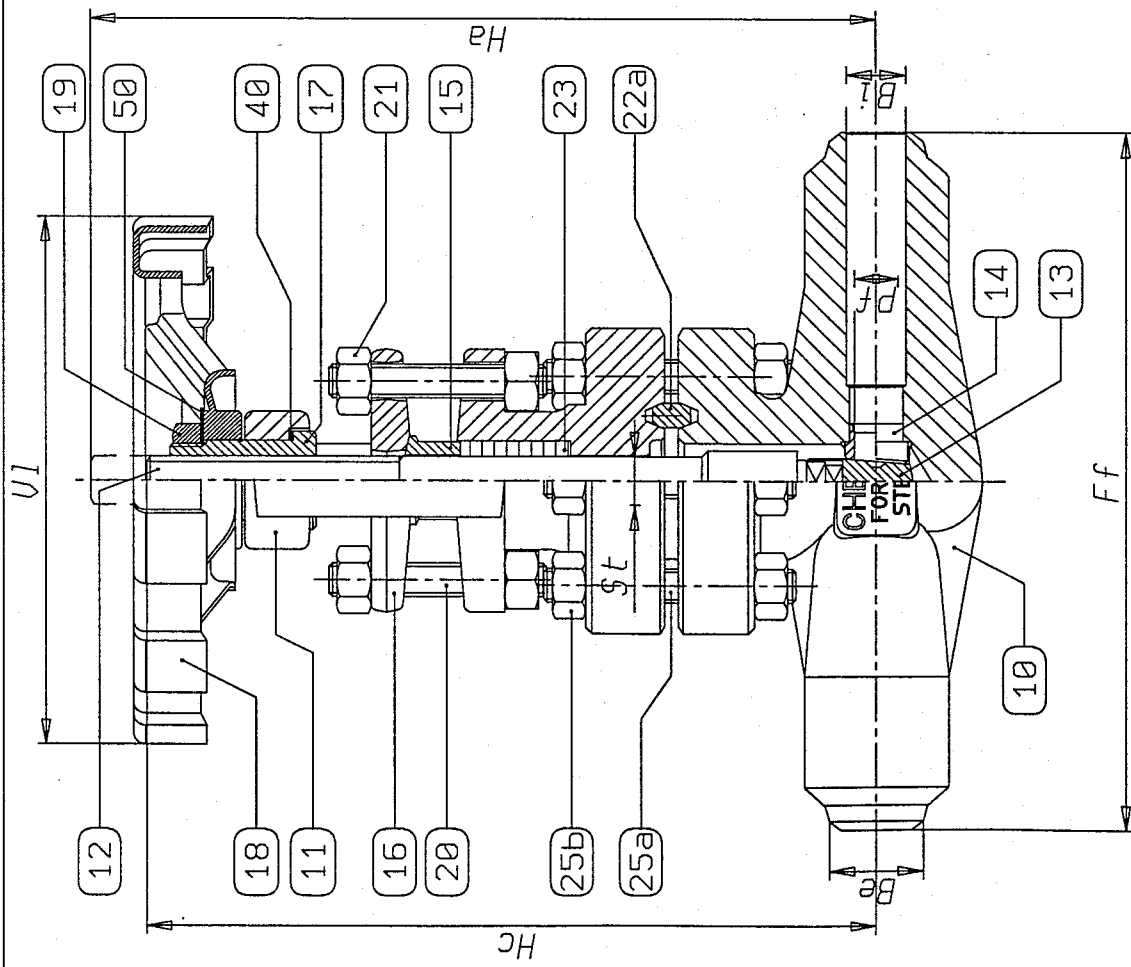
COMPLETION DATE	REV.	CUSTOMER CODE
17/03/05	1	5422

PREPARED BY: CA APP.R. DATE: 05/02/96 REV. APPROVED BY:



Gate valve "Long Pattern" - 1500 - Full B. - Bolted - BU160

652-7/150-L6



Std. pressure tests (BAR): SHELL 388, SEAT 285, AIR 6

REF QTY	DESCRIPTION	MATERIAL
10	1 Body	ASTM A182/F22 Cl.3
11	1 Bonnet	ASTM A182/F22 Cl.3
12	1 Stem	ASTM A182/F6a
13	1 Wedge	ASTM A182/F6a Stellite
14	2 Seat	ASTM A182/F6a Stellite
15	1 Packing gland	AISI 316
16	1 Gland flange	ASTM A182/F316
17	1 Stem nut	AISI 416
18	1 Handwheel	CARBON STEEL
19	1 Handwheel nut	CARBON STEEL
20	2 Gland stud bolt	AISI 410
21	4 Gland nut	ASTM A194/2H
22a	1 RJ gasket	AISI 304
23	1 Packing	PREFORMED GRAPHITE
25a	6 Body stud bolt	ASTM A193/B16
25b	12 Body nut	ASTM A194/Gr.4
40	1 Stem nut washer	STAINLESS STEEL 316
50	1 Identification plate	ALUMINIUM

Klaus Union P.O. No. : HH-02535

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS MegaMethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4567569-000/1.69690/136

Dim.	Bi	Be	Pf	St	Hc	Ha	Ff	U1	U2	ITEM NO.
1/2"	mm	23	11.5	12.7	194	212	215.9	120	5.9	kg
3/4"	in	0.49	0.91	0.45	7.64	8.35	8.50	4.72	13.0	lb
1"	mm	16.5	28	15.0	237	256	228.6	175	8.4	kg
1 1/2"	in	0.65	1.10	0.59	9.33	10.08	9.00	6.89	18.5	lb
2"	mm	21.5	35	19.5	248	272	254.0	175	9.8	kg
2 1/2"	in	0.85	1.38	0.77	9.76	10.71	10.00	6.89	21.6	lb
3"	mm	34.5	50	32.0	374	411	384.8	250	26.8	kg
3 1/2"	in	1.36	1.97	1.26	14.72	16.18	12.00	9.84	59.0	lb
4"	mm	43.0	62	40.0	378	422	368.3	300	35.4	kg
4 1/2"	in	1.69	2.44	1.57	14.88	16.61	14.50	11.81	77.9	lb

NOTES
1. 1/2"-2": Ref. 25a (Qty 8) - Ref. 25b (Qty 16)

APPLIC. STANDARD	APPLIC. STANDARD
BS 5352-API 602	BS 5352-API 602
ASME B16.5	ASME B16.5
ASME B16.10	ASME B16.10
BS 6755 (Pt.1)	BS 6755 (Pt.1)
API 598	API 598

max. up to +538 C
Rating to ASME B16.34
MSS SP-25
ASME B16.25

APPROVED BY

REV. 3

DATE 29/02/96

APP. R.

DATE

REV. 1

DATE

REV. 1

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REV. 1

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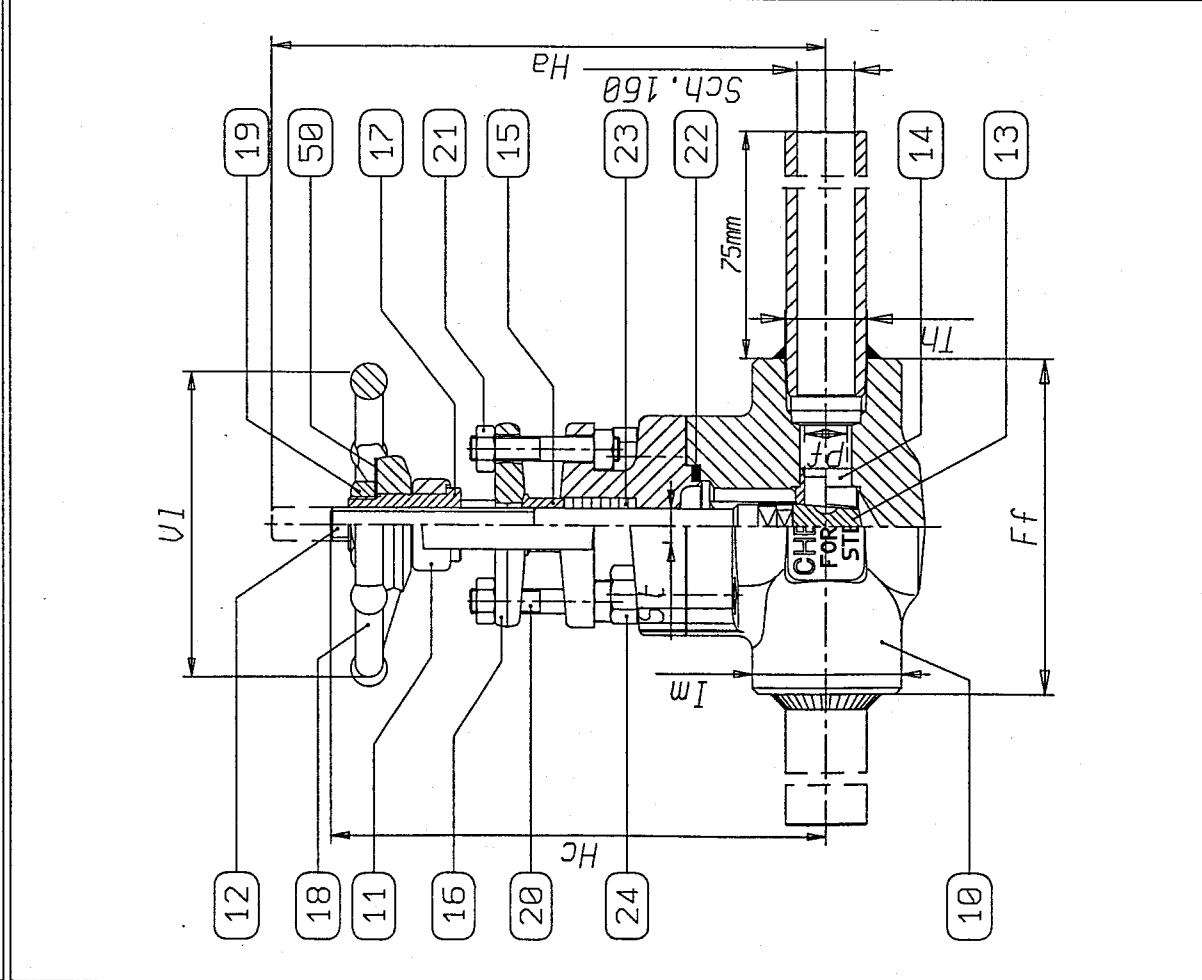
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DESCRIPTION

Gate valve - 1500c - Full B. - Bolted - NPT+2n160

DRAWING

BX652-7/TH-2N6



Std. pressure tests (BAR):SHELL 388, SEAT 285, AIR 6	
REF QTY	DESCRIPTION
10	1 Body
11	2 Extensions
12	1 Bonnet
13	1 Stem
14	1 Wedge
15	2 Seats
16	1 Packing gland
17	1 Gland flange
18	1 Stem nut
19	1 Handwheel
20	1 Handwheel nut
21	2 Gland stud bolts
22	4 Gland nuts
23	1 Spiral wound gasket
24	1 Packing
25	4 Body screws
50	1 Identification plate
MATERIAL	
ASTM A182/F22 C1.3	
ASTM A335/P22	
ASTM A182/F22 C1.3	
ASTM A182/F6a	
ASTM A182/F6a Steellited	
ASTM A182/F6a Steellited	
AISI 316	
ASTM A182/F316	
AISI 416	
CARBON STEEL	
CARBON STEEL	
AISI 410	
ASTM A194/2H	
AISI 316+GRAPHITE	
PREFORMED GRAPHITE	
ASTM A193/B16	
ALUMINIUM	

Klaus Union P.O. No. : HH-02535

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS MegaMethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4567569-000/1.69690/136

Dim.	Th	Im	Pf	St	Hc	Ha	Ff	VI	Ut	ITEM NO.
1/2"	mm	1/2-14 49	12	12,7	163	181	110	128	3,8	248
	in	NPT	0,45	1/2	6,42	7,13	4,33	4,72	8,4	
3/4"	mm	3/4-14 57	15	15,9	204	223	127	140	5,7	258
	in	NPT	0,59	5/8	8,03	8,78	5,00	5,51	12,7	
1"	mm	1-11 57	20	15,9	280	225	127	140	5,7	268
	in	NPT	0,77	5/8	7,87	8,86	5,00	5,51	12,7	
1 1/2"	mm	1-11 78	32	19,0	235	272	130	225	10,9	278
	in	NPT	1,26	3/4	9,25	10,71	5,12	8,86	24,0	
2"	mm	2-11 82	40	22,2	283	326	150	275	16,0	288
	in	NPT	1,57	7/8	11,14	12,83	5,91	8,86	35,2	

NOTES

PWHT performed on welding of

Body/Nipples

max. up to +538 C

Rating to ASME B16.34

MSS QD-25

APPLIC. STANDARD

BS 5352-API 602

ASME B16.34

ASME B1.20.1

BS 6755 (Pt.1)

ADI 508

DIMENSIONS

1/2" BX652/TH-2N6

3/4" BX653/TH-2N6

1" BX654/TH-2N6

1 1/4" BX655/TH-2N6

1 1/2" BX656/TH-2N6

APPROVED BY

REV.

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DATE

05/02/96

PREPARED BY

CA

COMPLETION DATE

17/03/05

REV.

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CUSTOMER CODE

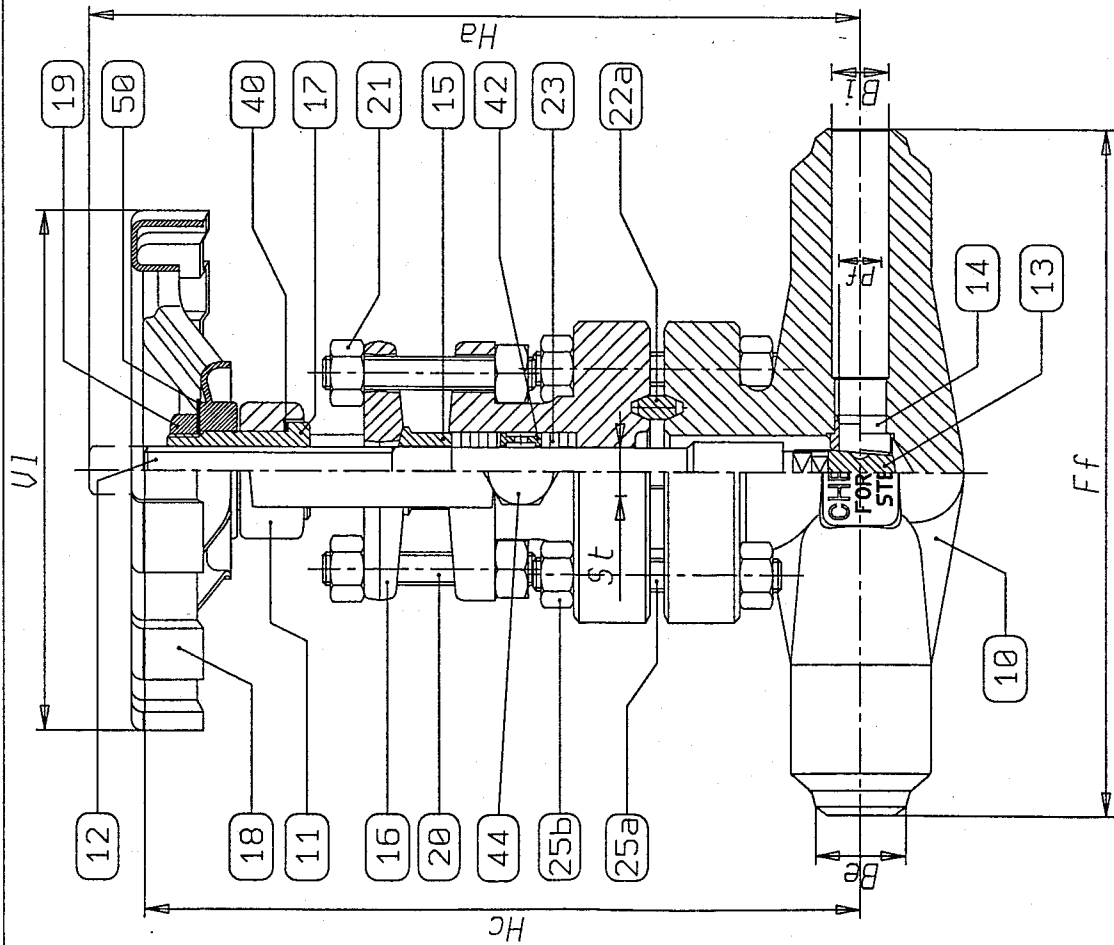
S480

DESCRIPTION

"Lantern" Gate valve - 1500 - Full B. - Bolted - Long. Pattern BU80

DRAWING

L652-7/150-L8



MSS SP-25

NOTES	APPL. I.C. STANDARD	BS 5352
1.1/2"-2": Ref. 25a (Qty 8) - Ref. 25b (Qty 16)	ASME B16.10	
Add. test acc. to ASME B16.34 P. max. up to +538 C	ASME B16.25	
Rating to ASME B16.34	BS 6755 (Pt.1)	
ADT 500		

REF	QTY	DESCRIPTION	MATERIAL
10	1	Body	ASTM A182/F22 Cl.3
11	1	Bonnet	ASTM A182/F22 Cl.3
12	1	Stem	ASTM A182/F6a
13	1	Wedge	ASTM A182/F6a Stellite
14	2	Seats	ASTM A182/F6a Stellite
15	1	Packing gland	AISI 316
16	1	Gland flange	ASTM A182/F316
17	1	Stem nut	AISI 416
18	1	Handwheel	CARBON STEEL
19	1	Handwheel nut	CARBON STEEL
20	2	Gland stud	AISI 410
21	4	Gland nut	ASTM A194/2H
22a	1	Ring joint	ASTM A182/F5
23	1	Packing	PREFORMED GRAPHITE
25a	6	Body stud	ASTM A193/B16
25b	12	Body nut	ASTM A194/Gr.4
40	1	Stem nut washer	STAINLESS STEEL
42	1	Lantern ring	ASTM A182/F6a
44	1	Plug	STAINLESS STEEL
50	1	Identification plate	ALUMINIUM

Klaus Union P.O. No. : HH-02535
 Client : Lurgi Oel Gas Chemie GmbH
 Project Title : 2nd ZAGROS MegaMethanol Plant, Iran
 Lurgi Contract-No. : 1.69690-10
 Lurgi P.O.-No. : 4567569-000/1.69690/136

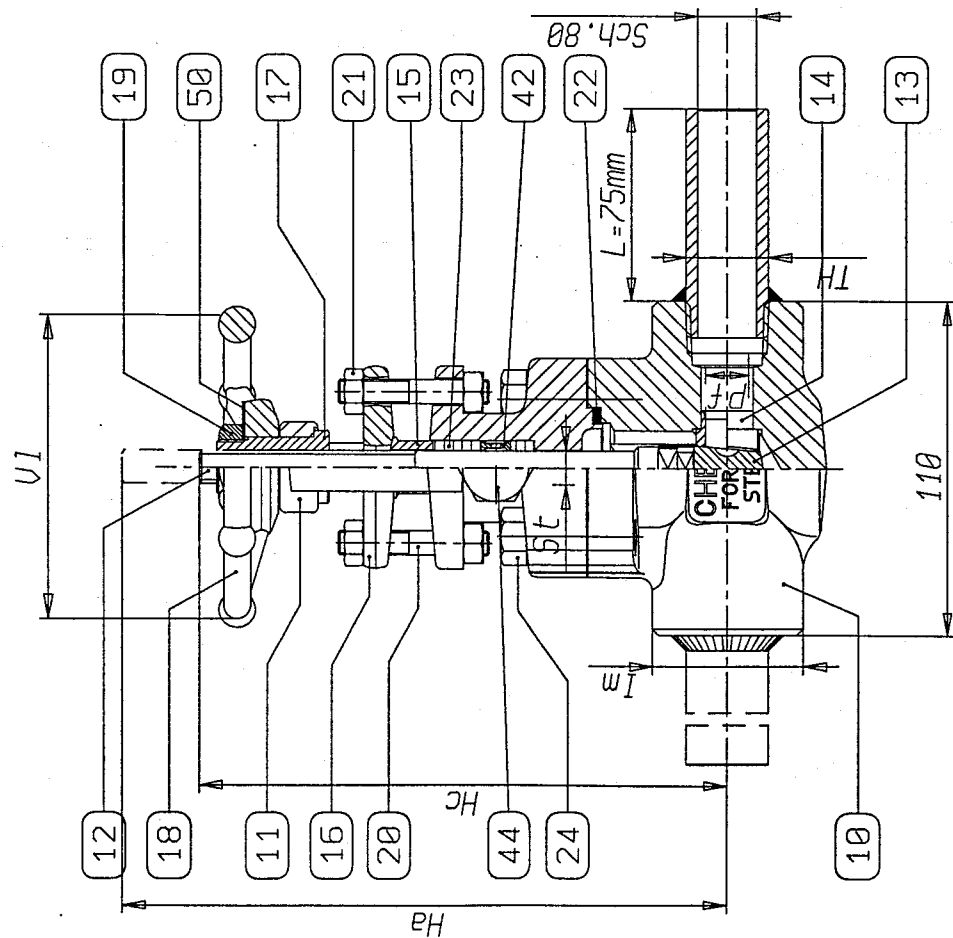
Dim.	Bi	Be	Pf	St	Hc	Ha	Ff	Uf	ITEM NO.
1/2"	mm	13.5	23	11.5	12.7	194	212	215.9	120
	in	0.53	0.91	0.45	1/2	7.64	8.35	8.50	4.72
3/4"	mm	18.5	28	15.0	15.9	237	256	228.6	175
	in	0.73	1.10	0.59	5/8	9.33	10.08	9.00	6.89
1"	mm	24.0	35	19.5	15.9	248	272	254.0	175
	in	0.94	1.38	0.77	5/8	9.76	10.71	10.00	6.89
1.1/2"	mm	38.0	58	32.0	22.2	374	411	384.8	250
	in	1.50	1.97	1.26	7/8	14.72	16.18	12.00	9.84
2"	mm	49.0	62	40.0	22.2	378	422	368.3	300
	in	1.93	2.44	1.57	7/8	14.88	16.61	14.50	11.81

PREPARED BY	APP. R.	DATE	REV.	APPROVED BY
CA		29/02/96	3	
COMPLETION DATE	REV.	CUSTOMER CODE		
17/03/05	1			



100

LBX652-7/TH-2N8



1

DIMENSIONS	APPLIC. STANDARD
	BS 5352
	ASME B1.20.1
3/4" LBX53/TH-2N8	BS 6755(Pt.1)
	API 602
	API 598

NOTES
PWHT performed on welding of
Body/Nipples
max. up to +538 C
Rating to ASME B16.34
MSS SP-25

PREPARED BY	APP.R. DATE	REV.	APPROVED BY
CA	05/02/96	1	

COMPLETION DATE	REV.	CUSTOMER CODE
17/03/05	1	S490



KLAUS UNION

Gate valve - 800 - Full B. - Bolted - SW

F210-7/SU

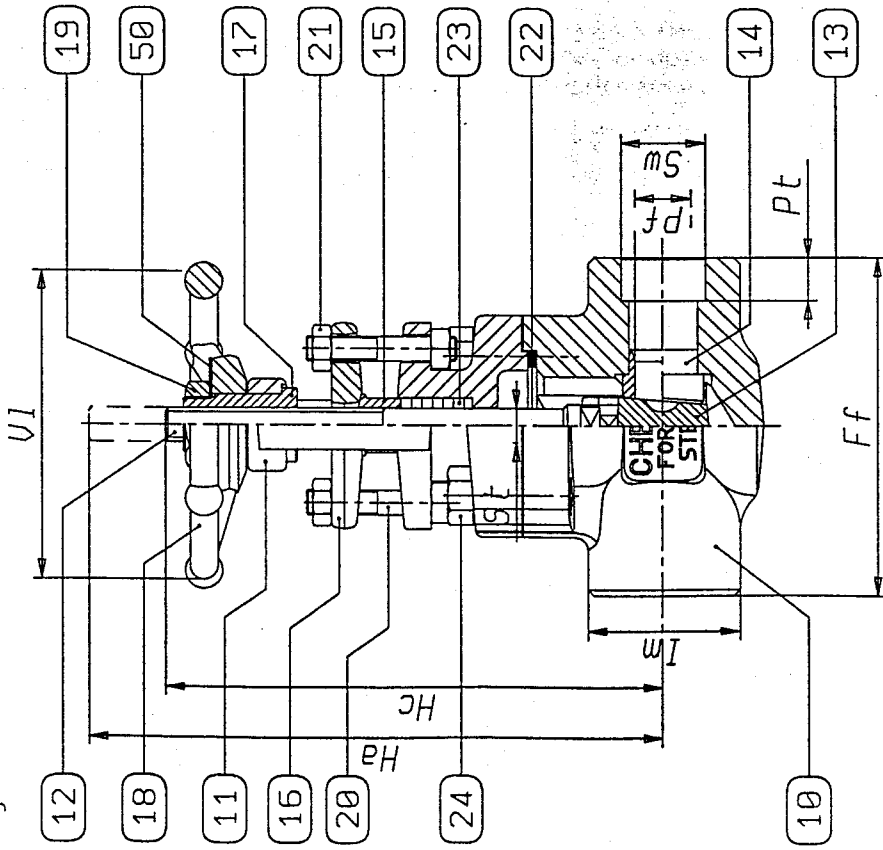
Klaus Union P.O. No. : HH-02535-01

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS MegaMethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4569247-000/1.69690/136



Std. pressure tests (BAR):SHELL 211, SEAT 155, AIR 6

REF QTY DESCRIPTION MATERIAL

10	1	Body	ASTM A105N
11	1	Bonnet	ASTM A105N
12	1	Stem	ASTM A182/F6a
13	1	Wedge	ASTM A182/F6a Stellite
14	2	Seats	ASTM A182/F6a Stellite
15	1	Packing gland	AISI 316
16	1	Gland flange	ASTM A105N
17	1	Stem nut	AISI 416
18	1	Handwheel	CARBON STEEL
19	1	Handwheel nut	CARBON STEEL
20	2	Gland stud bolt	AISI 410
21	4	Gland nut	ASTM A194/2H
22	1	Spiral wound gasket	AISI 316+GRAPHITE
23	1	Packing	PREFORMED GRAPHITE
24	4	Body stud	ASTM A193/B7
50	1	Identification plate	ALUMINIUM

Dim.	Sw	Pt	Im	Pf	St	Hc	Ha	Ff	U1	U2	ITEM NO.
1/4"	mm	14.1	33	8.5	9.5	130	143	80	90	1.7	kg
	in	0.56	0.39	1.30	0.33	3/8	5.12	5.63	3.15	3.54	lb
3/8"	mm	17.5	33	10	9.5	130	143	80	90	1.7	kg
	in	0.69	0.39	1.30	0.39	3/8	5.12	5.63	3.15	3.54	lb
1/2"	mm	21.7	38	14	9.5	137	156	90	90	2.1	kg
	in	0.85	0.39	1.50	0.55	3/8	5.39	6.14	3.54	4.6	lb
3/4"	mm	27.1	49	18	11.1	162	186	110	100	3.4	kg
	in	1.07	0.51	1.93	0.71	7/16	6.30	7.32	4.33	7.5	lb
1"	mm	33.7	64	24	12.7	205	237	127	120	5.3	kg
	in	1.33	0.55	2.52	0.94	1/2	8.07	9.33	5.00	11.7	lb
1.1/4"	mm	42.6	64	29	14.3	206	241	127	140	7.1	kg
	in	1.68	0.55	2.52	1.14	9/16	8.11	9.49	5.00	15.6	lb
1.1/2"	mm	48.6	78	36.5	15.9	230	273	130	140	9.3	kg
	in	1.91	0.55	3.07	1.44	5/8	9.06	10.75	5.12	28.5	lb
2"	mm	61.1	80	48	19.0	282	339	210	200	14.2	kg
	in	2.41	0.63	3.15	1.89	3/4	11.10	13.35	8.27	31.2	lb

NOTES

10. max. 0.22% C
 11. max. 0.22% C
 max. up to +427 C
 Rating to ASME B16.34
 MSS SP-25

APPLIC. STANDARD

API 602-BS 5352
 ASME B16.11
 API 598
 BS 6755 (Pt.1)

DIMENSIONS

1/4" F210/SU
 3/8" F211/SU
 1/2" F212/SU
 3/4" F213/SU
 1" F214/SU
 1.1/4" F215/SU
 1.1/2" F216/SU
 2" F217/SU

APPROVED BY

REV.

DATE

15/03/02

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S306

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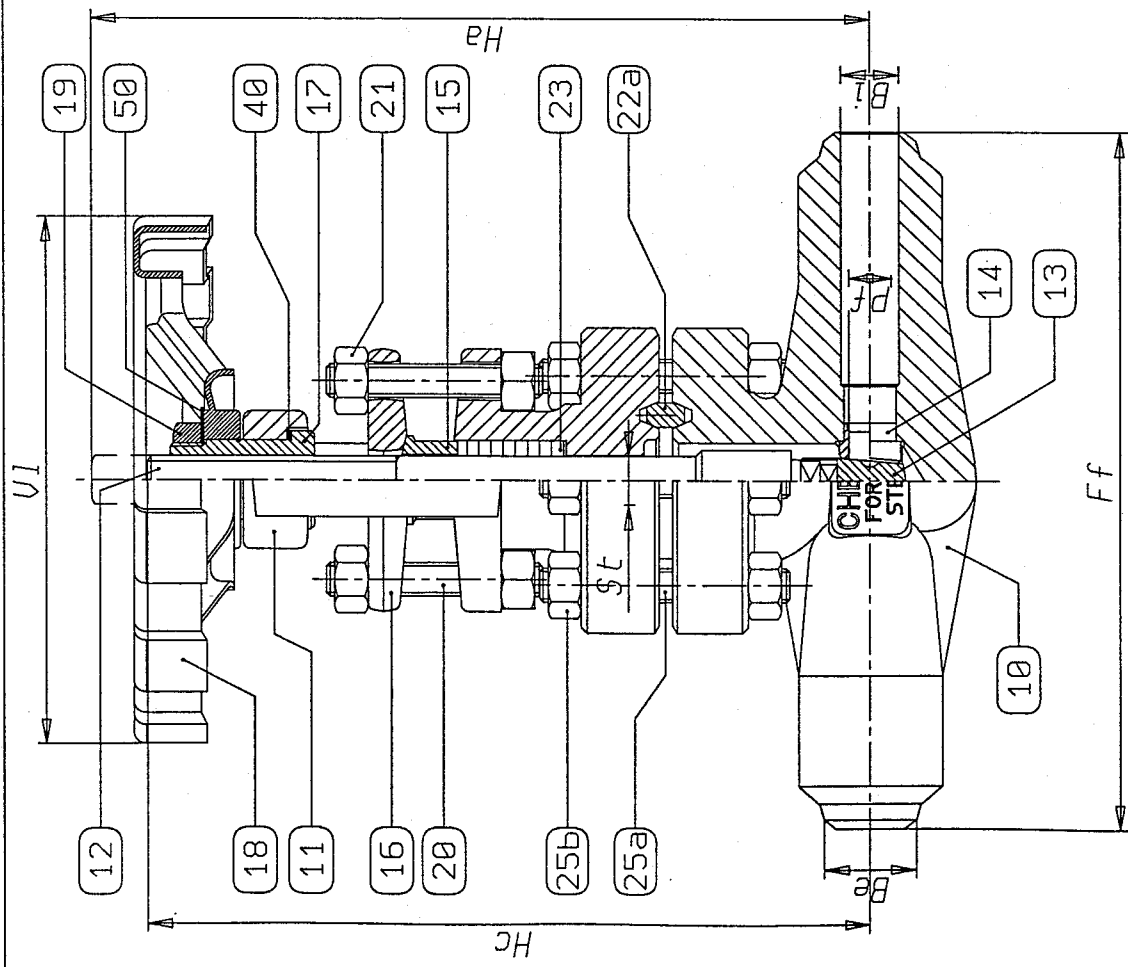
S306

DESCRIPTION

Gate valve "Long Pattern" - 1500 - Full B. - Bolted - BW160

DRAWING

652-7/150-L6



Std. pressure tests (BAR):SHELL 388, SEAT 285, AIR 6

REF QTY	DESCRIPTION	MATERIAL
10	1 Body	ASTM A182/F22 Cl.3
11	1 Bonnet	ASTM A182/F22 Cl.3
12	1 Stem	ASTM A182/F6a
13	1 Wedge	ASTM A182/F6a Stellite
14	2 Seat	ASTM A182/F6a Stellite
15	1 Packing gland	AISI 316
16	1 Gland flange	ASTM A182/F316
17	1 Stem nut	AISI 416
18	1 Handwheel	CARBON STEEL
19	1 Handwheel nut	CARBON STEEL
20	2 Gland stud bolt	AISI 410
21	4 Gland nut	ASTM A194/2H
22a	1 RJ gasket	AISI 304
23	1 Packing	PREFORMED GRAPHITE
25a	6 Body stud bolt	ASTM A193/B16
25b	12 Body nut	ASTM A194/Gr.4
40	1 Stem nut washer	STAINLESS STEEL 316
50	1 Identification plate	ALUMINIUM

Klaus Union P.O. No. : HH-02535-01

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS Megalcohol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4569247-000/1.69690/136

Dim.	Bi	Be	Pf	St	Hc	Ha	Ff	VI	Wt	ITEM NO.
1/2"	mm	12,5	23	11,5	12,7	194	212	215,9	128	5,9 kg
	in	0,49	0,91	0,45	1/2	7,64	8,35	8,58	4,22	13,0 lb
3/4"	mm	16,5	28	15,0	15,9	237	256	228,6	175	8,4 kg
	in	0,65	1,10	0,59	5/8	9,33	10,08	9,00	6,89	18,5 lb
1"	mm	21,5	35	19,5	15,9	248	272	254,0	175	9,8 kg
	in	0,85	1,38	0,77	5/8	9,76	10,71	10,00	6,89	21,6 lb
1.1/2"	mm	34,5	50	32,0	22,2	374	411	384,8	250	26,8 kg
	in	1,36	1,97	1,26	7/8	14,72	16,18	12,00	9,84	59,8 lb
2"	mm	43,0	62	40,8	22,2	378	422	368,3	300	35,4 kg
	in	1,69	2,44	1,57	7/8	14,88	16,61	14,50	11,81	77,9 lb

DIMENSIONS

APPLIC. STANDARD

BS 5352-API 602

ASME B16.5

ASME B16.10

BS 6755 (Pt.1)

API 598

NOTES

1.1/2"-2":Ref.25a(Qty 8) - Ref.25b(Qty 16)

max. up to +538 C

Rating to ASME B16.34

MSS SP-25

ASME B16.25

PREPARED BY

CA

APP. R. DATE

29/02/96

REV.

3

APPROVED BY

COMPLETION DATE

17/03/05

REV. CUSTOMER CODE

S481

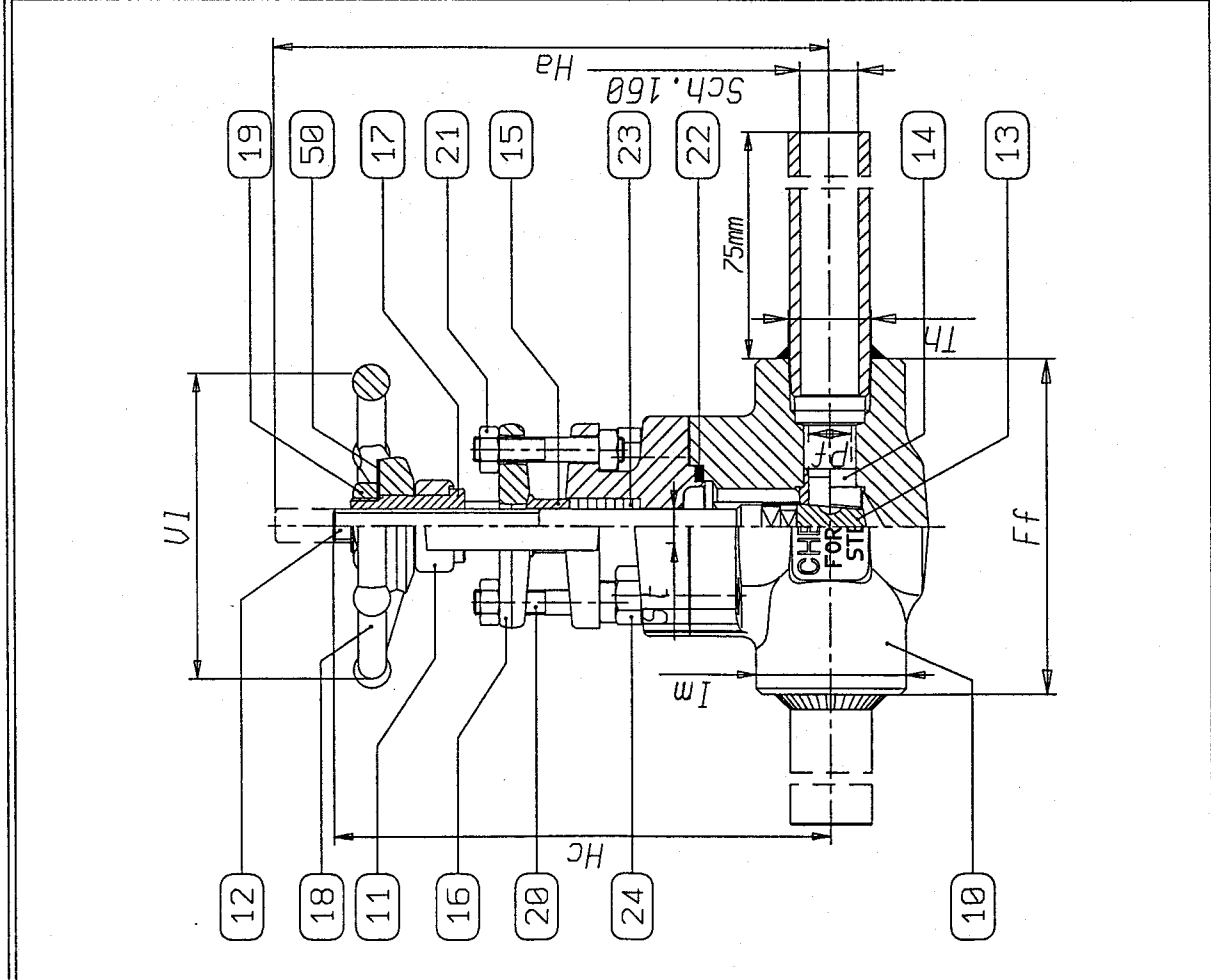
KLAUS
UNION

DESCRIPTION

Gate valve - 1500c - Full B. - Bolted - NPT+2n160

DRAWING

BX652-7/TH-2N6



REF	QTY	DESCRIPTION	MATERIAL
10	1	Body	ASTM A182/F22 Cl.3
11	2	Extensions	ASTM A335/P22
12	1	Bonnet	ASTM A182/F22 Cl.3
13	1	Stem	ASTM A182/F6a
14	1	Wedge	ASTM A182/F6a Steellited
15	2	Seats	ASTM A182/F6a Steellited
16	1	Packing gland	AISI 316
17	1	Gland flange	ASTM A182/F316
18	1	Stem nut	AISI 416
19	1	Handwheel	CARBON STEEL
20	1	Handwheel nut	CARBON STEEL
21	2	Gland stud bolts	AISI 410
22	4	Gland nuts	ASTM A194/2H
23	1	Spiral wound gasket	AISI 316+GRAPHITE
24	1	Packing	PREFORMED GRAPHITE
25	4	Body screws	ASTM A193/B16
50	1	Identification plate	ALUMINIUM

Klaus Union P.O. No. : HH-02535-01

Client : Lurgi Oel Gas Chemie GmbH

Project Title : 2nd ZAGROS MegaMethanol Plant, Iran

Lurgi Contract-No. : 1.69690-10

Lurgi P.O.-No. : 4569247-000/1.69690/136

Dim.	Th	Im	Pf	St	Hc	Ha	Ff	Ul	Ut	ITEM NO.
1/2"	mm	1/2-14 49	12	12,7	163	181	110	128	3,8	kg
	in	NPT	0,45	1/2	6,42	7,13	4,33	4,72	8,4	lb
3/4"	mm	3/4-14 57	15	15,9	204	223	127	140	5,7	kg
	in	NPT	0,59	5/8	8,03	8,78	5,00	5,51	12,7	lb
1"	mm	1-11 57	20	20,3	254	273	152	165	6,8	kg
	in	NPT	0,77	3/4	9,25	10,71	5,12	5,62	12,7	lb
1.1/2"	mm	1-11 78	32	31,8	396	425	229	254	10,9	kg
	in	NPT	1,26	1 1/4	10,25	11,71	5,12	5,62	24,0	lb
2"	mm	2-11 82	40	41,3	508	537	278	303	15,0	kg
	in	NPT	1,57	1 3/4	11,14	12,83	5,91	6,86	35,2	lb

APPLIC. STANDARD	NOTES
BS 5352-API 602	PWHT performed on welding of
ASME B16.34	Body/Nipples
ASME B1.20.1	max. up to +538 C
BS 6755 (Pt.1)	Rating to ASME B16.34
API 598	MSS SP-25

PREPARED BY	APP. R. DATE	REV.	APPROVED BY
CA	05/02/96	1	
COMPLETION DATE	REV.	CUSTOMER CODE	
17/03/05	1	S480	

