



شرکت ملی گاز ایران

National Iranian Gas Co.

مدیریت پژوهش و فناوری

Research and Technology Management

امور تدوین استانداردها

Standardization Division

IGS

Iranian Gas Standards

مشخصات فنی خرید

شیرهای توپکی کلاس ۳۰۰

Ball Valves Class Rating :300 part(2)

SPCIFICATION FOR BALL VALVES,

FLANGED ENDS, CLASS 300,

SIZE : 2-6 IN.

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE
CARBON STEEL, FLANGED ENDS, R.F., C.S.F. , CLASS 300, WRENCH OPER-
ATED .

ANTI STATIC DESIGN, DOUBLE BLOCK AND BLEED FACILITY IN OPEN
AND CLOSE POSITION, WITH SEALANT INJECTION SYSTEM.

FIRE SAFE TO API RP 6F OR API 607 OR B.S. 5146.

STEM SHALL BE OF THE ANTI BLOW OUT TYPE WITH AT LEAST TWO
OR MORE STEM SEAL IN THE DESIGN, TOP SEAL SHALL BE EASILY REPL-
ACEABLE UNDER PRESSURE.

VALVE SHALL BE FURNISHED WITH A VALVE POSITION INDICATOR,
SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND CLOSE POSI-
TION PERPENDICULAR TO DIRECTION OF FLOW, THE SHUT AND OPEN
TERMS(IN ENGLISH) SHALL BE PERMANTLY INDICATED IN A VISIBLE LOCATION

DESIGN, DIMENSIONS, TESTING AND MARKING ALL ACC. TO API 6D
LATEST EDITION .

- 3/ IN CASE OF REDUCED BORE ,PORT AREA SHALL BE SPECIFIED BY MANUFACTURER.
- 4/ WRENCH SHALL BE QUOTED SEPARATELY.

تاریخ تائید : در کمیته تخصصی لوله ، اتصالات و شیرآلات مورخ
تاریخ تصویب : در کمیته عالی استاندارد مورخ

RADIOGRAPHY: ALL VALVES ENDS IN 5 PERCENT OF EACH INDIVIDUAL ORDER SHALL BE 100 PERCENT RADIOGRAPHED FOR A LENGTH AT LEAST TWICE OF THE THICKNESS OF THE VALVE BODY.

ACCEPTANCE SHALL BE LEVEL 1,2,3 ACC.TO ASTM E446.

FULL BORE:

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
2	8 1/2	215.9
3	11 1/8	282.5
4	12	304.8
6	18	457.2

REDUCED BORE:

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
2	8 1/2	215.9
3	11 1/8	282.5
4	12	304.8
6	18	457.2

NOTES:

- 1/ MAX. REQUIRE OPENING TORQUE SHALL BE 32 KG-M UNDER MAX. CLASS RATING PRESSURE.
- 2/ FOR BURRIED TYPE ,STEM EXTENSION SHALL BE SPECIFIED BY END USER.

MATERIAL :

- BODY, COVER AND BONNET: CAST CARBON STEEL AT LEAST TO ASTM A216 GRADE WCB/WCC OR TO B.S. 1504-161 GRADE 430/480 ,OR FORGED CARBON STEEL AT LEAST TO ASTM A105 OR B.S. 1503 GRADE 221/550 , OR CARBON STEEL PLATE AT LEAST TO ASTM A 516 GR.70.
- BALL : CAST CARBON STEEL AT LEAST TO ASTM A216 GRADE WCB/WCC. OR TO B.S.1504 -161 GRADE 430/480 ,OR FORGED CARBON STEEL TO ASTM A 105 OR B.S. 1503 GRADE 221/550 .
BALL SHALL BE HARD CHROMIUM OR ELECTROLESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25 μ M ACC. TO ASTM B 650 AND B 656 RESPECTIVELY.
- STEM : SHALL BE FORGED CARBON STEEL AT LEAST TO ASTM A105 OR B.S. 1503 GRADE 221/550 ,OR BAR ALLOY STEEL AT LEAST TO AISI 4140 WITH HARD CHROMIUM OR ELECTROLESS NICKEL PLATING .
- NON- METALLIC PARTS: O-RING AND SOFT SEATS SHALL BE MADE OF SUITABLE ELASTOMER FLURO- CARBON MATERIAL (TYPE AND RELEVANT STANDARD SHALL BE SPECIFIED BY MANUFACTURER).
VALVE EXTERNAL SURFACE SHALL BE PAINTED ACC .TO MANUFACTURING STANDARD.
(TECHNICAL DETAILS SHALL BE PROVIDED BY MANUFACTURER).

SPECIFICATION FOR BALL VALVES,

WELDING ENDS, CLASS 300 ,

SIZE:2 - 6 IN

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPE-
LINE, CARBON STEEL , BUTT WELDING ENDS, CLASS 300 , WRENCH OP-
ERATED.

BODY SHALL BE ALL WELDED TYPE, ANTI STATIC DESIGN.
STEM SHALL BE OF THE ANTI BLOW OUT TYPE WITH AT LEAST TWO
OR MORE STEM SEALS IN THE DESIGN , TOP SEAL SHALL BE EASILY
REPLACEABLE UNDER PRESSURE.

ALL VALVES SHALL BE FURNISHED WITH A VALVE POSITION IND-
ICATOR, SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND
CLOSE POSITION PERPENDICULAR TO DIRECTION OF FLOW, THE SHUT
AND OPEN TERMS(IN ENGLISH) SHALL BE PERMANENTLY INDICATED
IN A VISIBLE LOCATION.

DESIGN , DIMENSIONS, TESTING AND MARKING ALL ACCORDING TO
API 6D LATEST EDITION .

SPECIFICATION FOR BALL VALVES,

WELDING ENDS , CLASS 300 ,

SIZE : 8 -12 IN .

BALL VALVE , FOR GAS DISTRIBUTION AND TRANSMISSION PIPE-
LINE , CARBON STEEL , BUTT WELDING ENDS , CLASS 300 , BALL SHALL
BE TRUNNION MOUNTED , GEAR OPERATED , BODY SHALL BE ALL WEL-
DED TYPE , ANTI STATIC DESIGN , DOUBLE BLOCK AND BLEED FACI-
LITY .

FIRE SAFE ACC. TO API RP 6F OR API 607 OR B.S. 5146 .

STEM SHALL BE OF THE ANTI BLOW OUT TYPE WITH AT LEAST
TWO OR MORE STEM SEALS IN THE DESIGN , TOP SEAL SHALL BE EA-
SILY REPLACEABLE UNDER PRESSURE AND TO BE FITTED WITH THE FA-
CILITY FOR INJECTION OF SEALANT .

ALL VALVES SHALL BE FURNISHED WITH A VALVE POSITION INDI-
CATOR , SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND
CLOSE POSITION PERPENDICULAR TO DIRECTION OF FLOW .

THE SHUT AND OPEN TERMS (IN ENGLISH) SHALL BE EMBOSSED
IN A VISIBLE LOCATION .

DESIGN , DIMENSIONS , TESTING AND MARKING ALL ACC. TO API
6D LATEST EDITION .

MATERIALS :

BODY, COVER AND BONNET: CAST CARBON STEEL AT LEAST TO ASTM A 216 GRADE WCB/WCC OR TO B.S. 1504 GRADE 430 / 480 ,OR FORGED CARBON STEEL AT LEAST TO ASTM A105 OR TO B.S. 1503 GRADE 221/550, OR CARBON STEEL PLATE AT LEAST TO ASTM A 516 GR.70.

BALL : CAST CARBON STEEL AT LEAST TO ASTM A216 GRADE WCB/WCC OR TO B.S. 1504-161 GRADE 430 / 480 ,OR FORGED CARBON STEEL TO ASTM A105 OR B.S. 1503 GRADE 221/ 550 .

BALL SHALL BE HARD CHROMIUM OR ELECTRO-LESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN .PLATING THICKNESS OF 25 μ M ACC. TO ASTM B 650 AND ASTM B 656 RESPECTIVELY.

STEM : SHALL BE FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR TO B.S. 1503 GRADE 221/550 OR BAR ALLOY STEEL AT LEAST TO AISI 4140 WITH HARD CHROMIUM OR ELECTROLESS NICKEL PLATING .

NON-METALLIC PARTS: O-RINGS AND SOFT SEATS SHALL BE MADE OF SUITABLE ELASTOMER FLURO - CARBON MATERIAL (TYPE AND RELEVANT STANDARD SHALL BE SPECIFIED BY MANUFACTURER).

VALVE EXTERNAL SURFACE SHALL BE PAINTED ACC. TO MANUFACTURING STANDARD .(TECHNICAL DETAILS SHALL BE PROVIDED BY MANUFACTURER).

RADIOGRAPHY: ALL VALVES ENDS IN 5 PERCENT OF EACH INDIVIDUAL ORDER SHALL BE 100 PERCENT RADIOGRAPHED FOR A LENGTH AT LEAST TWICE OF THE THICKNESS OF THE VALVE BODY .

ACCEPTANCE SHALL BE LEVELS 1,2,3 ACC TO ASTM E 446.

FULL BORE :

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
8	19 3/8	492.1
10	23 3/8	593.7
12	25 1/2	647.7

REDUCED BORE:

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
8	19 3/8	492.1
10	23 3/8	593.7
12	25 1/2	647.7

NOTES :

- 1/ FOR BURRIED TYPE , STEM EXTENSION SHALL BE SPECIFIED BY END USER.

2/ IN CASE OF REDUCED BORE ,PORT AREA SHALL BE SPECIFIED
BY MANUFACTURER.

تاریخ تایید : در کمیته تخصصی لوله ، اتصالات و شیرآلات مورخ :
تاریخ تصویب : در کمیته عالی استاندارد مورخ

SPECIFICATION FOR BALL VALVES,

FLANGED ENDS, CLASS 300,

SIZE : 8- 12 IN.

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE CARBON STEEL, FLANGED ENDS, R.F., C.S.F., CLASS 300, BALL SHALL BE TRUNNION MOUNTED , ANTI STATIC DESIGN, DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION, WITH SEALANT INJECTION SYSTEM.

FIRE SAFE TO API RP 6F OR API 607 OR B.S. 5146 .

STEM SHALL BE OF THE ANTI BLOW OUT TYPE WITH AT LEAST TWO OR MORE STEM SEAL IN THE DESIGN, TOP SEAL SHALL BE EASILY REPLACEABLE UNDER PRESSURE.

VALVE SHALL BE FURNISHED WITH A VALVE POSITION INDICATOR, SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND CLOSE POSITION PERPENDICULAR TO DIRECTION OF FLOW, THE SHUT AND OPEN TERMS (IN ENGLISH) SHALL BE EMBOSSED IN A VISIBLE LOCATION .

DESIGN, DIMENSIONS, TESTING AND MARKING ALL ACC .TO API 6D LATEST EDITION.

MATERIALS:

- BODY ,COVER AND BONNET: CAST CARBON STEEL AT LEAST TO ASTM A 216 GRADE WCB/WCC OR TO B.S. 1504 GRADE 430/480 OR FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR TO B.S. 1503 GRADE 221/550,OR CARBON STEEL PLATE AT LEAST TO ASTM A516 GR.70 .
- BALL : CAST CARBON STEEL AT LEAST TO ASTM A 216 GRADE WCB/WCC OR TO B.S. 1504-161 GRADE 430/480 ,OR FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR B.S. 1503 GRADE 221/550 , BALL SHALL BE HARD CHROMIUM OR ELECTROLESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25 μ M. ACC. TO ASTM B 650 AND ASTM B 656 RESPECTIVELY .
- STEM : SHALL BE FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR TO B.S. 1503 GRADE 221/ 550,OR BAR ALLOY STEEL AT LEAST TO AISI 4140 WITH HARD CHROMIUM OR ELECTROLESS NICKEL PLATING .
- BOLTS AND NUTS : SHALL BE ACC. TO ASTM A193 B7/ 194 2H .
- NON-METALLIC PARTS: SHALL BE MADE OF SUITABLE ELASTOMER FLURO-CARBON MATERIAL (TYPE AND RELEVANT STANDARD SHALL BE SPECIFIED BY MANUFACTURER).

VALVE EXTERNAL SURFACE SHALL BE PAINTED ACC.TO MANUFACTURING STANDARD (RELEVANT DETAILS SHALL BE PROVIDED BY MANUFACTURER).

FULL BORE:

<u>SIZE</u> (IN)	<u>FACE TO FACE</u> (IN)	<u>FACE TO FACE</u> (MM)	<u>BODY CONSTRUCTION</u>
8	19 $\frac{3}{8}$	492.1	SPLIT BODY
8	"	"	FULLY WELDED
10	23 $\frac{3}{8}$	593.7	SPLIT BODY
10	"	"	FULLY WELDED
12	25 $\frac{1}{2}$	647.7	SPLIT BODY
12	"	"	FULLY WELDED

REDUCED BORE:

<u>SIZE</u> (IN)	<u>FACE TO FACE</u> (IN)	<u>FACE TO FACE</u> (MM)	<u>BODY CONSTRUCTION</u>
8	19 $\frac{3}{8}$	492.1	SPLIT BODY
8	"	"	FULLY WELDED
10	23 $\frac{3}{8}$	593.7	SPLIT BODY
10	"	"	FULLY WELDED
12	25 $\frac{1}{2}$	647.7	SPLIT BODY
12	"	"	FULLY WELDED

NOTES:

- 1/ IN CASE OF REDUCED BORE, PORT AREA SHALL BE SPECIFIED BY MANUFACTURER.

تاریخ تائید: در کمیته تخصصی لوله، اتصالات و شیر آلات مورخ

کمیته عالی استاندارد مورخ

تاریخ تصویب: در

SPECIFICATION FOR BALL VALVES,

WELDING ENDS , CLASS 300,

SIZE : 16 - 24 IN

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPE -
LINE , CARBON STEEL , BUTT WELDING ENDS, CLASS 300 , BALL SHALL
BE TRUNNION MOUNTED (GEAR OPERATED) , BODY SHALL BE ALL WEL-
DED TYPE , ANTI STATIC DESIGN, DOUBLE BLOCK AND FACILITY.

FIRE SAFE ACC. TO API RP 6F OR API 607 OR B . S . 5146.

STEM SHALL BE OF THE ANTI BLOW OUT TYPE WITH AT LEAST
TWO OR MORE STEM SEALS IN THE DESIGN, TOP SEAL SHALL BE EASILY
REPLACEABLE UNDER PRESSURE AND TO BE FITTED WITH THE FACI-
LITY FOR INJECTION OF SEALANT.

ALL VALVES SHALL BE FURNISHED WITH A VALVE POSITION INDI-
CATOR , SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND CLOSE
POSITION PERPENDICULAR TO DIRECTION OF FLOW .

THE SHUT AND OPEN TERMS(IN ENGLISH) SHALL BE EMBOSSED IN A
VISIBLE LOCATION.

DESIGN , DIMENSIONS, TESTING AND MARKING ALL ACC. TO API 6D
LATEST EDITION.

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MATERIALS:

BODY, COVER AND BONNET: CAST CARBON STEEL AT LEAST TO ASTM A 216 GRADE WCB/WCC OR TO B.S. 1504 GRADE 430/480 OR FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR B.S. 1503 GRADE 221/550 ,OR CARBON STEEL PLATE AT LEAST TO ASTM A 516 GR.70.

BALL : CAST CARBON STEEL AT LEAST TO ASTM A 216 GRADE WCB/WCC OR TO B.S. 1504-161 GRADE 430 / 480 ,OR FORGED CARBON STEEL TO ASTM A 105 OR B.S. 1503 GRADE 221/550 .

BALL SHALL BE HARD CHROMIUM PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25 UM ACC .TO ASTM B 656 RESPECTIVELY.

STEM : SHALL BE FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR TO B.S. 1503 GRADE 221 / 550 , OR BAR ALLOY STEEL AT LEAST TO AISI 4140 WITH HARD CHROMIUM OR ELECTROLESS NICKEL PLATING .

NON-METALLIC PARTS: O-RINGS AND SOFT SEATS SHALL BE MADE OF SUITABLE ELASTOMER FLURO-CARBON MATERIAL .(TYPE AND RELEVANT STANDARD SHALL BE SPECIFIED BY MANUFACTURER).

VALVE EXTERNAL SURFACE SHALL BE PAINTED ACC. TO MANUFACTURING STANDARD (TECHNICAL DETAILS SHALL BE PROVIDED BY MANUFACTURER).

RADIOGRAPHY : ALL VALVES ENDS IN 5 PERCENT OF EACH INDIVIDUAL ORDER SHALL BE 100 PERCENT RADIOGRAPHED FOR A LENGTH AT LEAST TWICE OF THE THICKNESS OF THE VALVE BODY . ACCEPTANCE SHALL BE LEVELS 1,2,3 , ACC .TO ASTM E 446.

FULL BORE :

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
16	33	838.2
20	39	990.6
22	43	1092.2
24	45	1143

REDUCED BORE

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
16	33	838.2
20	39	990.6
22	43	1092.2
24	45	1143

NOTES :

- 1/ OTHER METHODS OF OPERATION AND RELEVANT TECHNICAL SPEC . SHALL BE SPECIFIED BY END USER.
- 2/ STEM EXTENSION , IF NECESSARY SHALL BE SPECIFIED BY END USER.

3/ IN CASE OF REDUCED BORE, PORT AREA SHALL BE SPECIFIED
BY MANUFACTURER.

تاریخ تأیید : در کمیته تخصصی لوله ، اتصالات و شیرآلات مورخ
تاریخ تصویب : در کمیته عالی استاندارد مورخ

SPECIFICATION FOR BALL VALVES,

FLANGED ENDS, CLASS 300 .

SIZE: 16 - 24 IN.

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE, CARBON STEEL, FLANGED ENDS, R.F., C.S.F., CLASS 600, BALL SHALL BE TRUNNION MOUNTED, ANTI STATIC DESIGN, DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION, WITH SEALANT INJECTION SYSTEM.

FIRE SAFE TO API RP6F OR API 607 OR B.S. 5146.

STEM SHALL BE OF THE ANTI BLOW OUT TYPE WITH AT LEAST TWO OR MORE STEM SEAL IN THE DESIGN, TOP SEAL SHALL BE EASILY REPLACEABLE UNDER PRESSURE.

VALVE SHALL BE FURNISHED WITH A VALVE POSITION INDICATOR, SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND CLOSE POSITION PERPENDICULAR TO DIRECTION OF FLOW, THE SHUT AND OPEN TERMS (IN ENGLISH) SHALL BE EMBOSSED IN A VISIBLE LOCATION .

DESIGN, DIMENSIONS, TESTING AND MARKING ALL ACC. TO API 6 D LATEST EDITION.

MATERIALS:

BODY, COVER AND BONNET: CAST CARBON STEEL AT LEAST TO ASTM A 216 GRADE WCB/WCC OR TO B.S. 1504 GRADE 430/480 OR FORGED CARBON STEEL AT LEAST TO ASTM A105 OR TO B.S. 1503 GRADE 221/550,

BALL : CAST CARBON STEEL AT LEAST TO ASTM A216 GRADE WCB/WCC OR TO B.S. 1504-161 GRADE 430/480 ,OR FORGED CARBON STEEL TO ASTM A 105 OR. B.S. 1503 GRADE 221/550 BALL SH — ALL BE HARD CHROMIUM OR ELECTROLESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN.PLATING THICKNESS OF 25 μ M ACC. TO ASTM B 650 AND ASTM B 656 RESPECTIVELY.

STEM : SHALL BE FORGED CARBON STEEL AT LEAST TO ASTM A 105 OR TO B.S.1503 GRADE 221/550, OR BAR ALLOY STEEL AT LEAST TO AISI 4140 WITH HARD CHROMIUM OR ELECTROLESS NICKEL PLATING .

BOLTS AND NUTS: SHALL BE ACC.TO ASTM A 193 B7/ 194 2H.

NON- METALLIC PARTS: SHALL BE MADE OF SUITABLE ELASTOMER FLUOROCARBON MATERIAL (TYPE AND RELEVANT STANDARD SHALL BE SPECIFIED BY MANUFACTURER) .

VALVE EXTERNAL SURFACE SHALL BE PAINTED ACC. TO MANUFACTURER STANDARD(RELEVANT TECHNICAL DETAILS SHALL BE PROVIDED BY MANUFACTURER).

FULL BORE:

<u>SIZE</u> (IN)	<u>FACE TO FACE</u> (IN) (MM)		<u>BODY CONSTRUCTION</u>	<u>METHOD OF OPERATION</u>
16	33	838.2	SPLIT BODY	ACTUATED
16	"	"	FULLY WELDED	"
20	39	990.6	SPLIT BODY	"
20	"	"	FULLY WELDED	"
22	43	1092.2	SPLIT BODY	"
22	"	"	FULLY WELDED	"
24	45	1143	SPLIT BODY	"
24	"	"	FULLY WELDED	"

REDUCED BORE:

<u>SIZE</u> (IN)	<u>FACE TO FACE</u> (IN) (MM)		<u>BODY CONSTRUCTION</u>	<u>METHOD OF OPERATION</u>
16	33	838.2	SPLIT BODY	ACTUATED
16	"	"	FULLY WELDED	"
20	39	990.6	SPLIT BODY	"
20	"	"	FULLY WELDED	"
22	43	1092.2	SPLIT BODY	"
22	"	"	FULLY WELDED	"
24	45	1143	SPLIT BODY	"
24	"	"	FULLY WELDED	"

NOTES:

- 1/ OTHER METHOD OF OPERATION AND RELEVANT TECH. SPEC. SHALL BE SPECIFIED BY END USER.
- 2/ IN CASE OF REDUCED BORE, PORT AREA SHALL BE SPECIFIED BY MANUFACTURER.

تاریخ تأیید: در کمیته تخصصی لوله، اتصالات و شیرآلات مورخ
تاریخ تصویب: در کمیته عالی استاندارد مورخ