



شرکت ملی گاز ایران

مدیریت پژوهش و فناوری

امور تدوین استانداردها

IGS

Iranian Gas Standards

مشخصات فنی خرید

شیرهای توپکی کلاس ۶۰۰

Ball Valves Class Rating :600 part(3)

ADDENDUM : The following paragraph in all three parts of IGS-M-TP-010 (1375),has been replaced by attached table."**Valve external surface shall be painted according to manufacturing standard**"

ABOVE GROUND BALL VALVE		
Primer coat		Epoxy polyamide ,in accordance with SSPC 22 ,with a min. thickness of(DFT) of 70µm .
Intermediate coat		Epoxy polyamide ,in accordance with SSPC 22 , with a min. thickness of 140µm.
Top coat		Two-component aliphatic polyurethane , in accordance With MIL-C-83286 B ,or equivalent ,with min. thickness (DFT) of 70µm. Colour : white (RAL 9016)
BURIED BALL VALVE		
First option		
Two component liquid epoxy coating in Accordance with EN 10289	Valves <24 in.	1.Service temperature : -20° C to +60° C. 2.Thickness : class B (min. DFT 800µm). 3.Cutback at the ends : (100±10)mm.
	Valves ≥24 in.	1.Service temperature : -20° C to +80° C. 2.Thickness : class C (min. DFT 1500µm). 3.Cutback at the ends : (150±20)mm.
Second option		
Two component polyurathane coating in Accordance with EN 10290	Valves <24 in.	1.Service temperature : -20° C to +60° C. 2.Thickness : class A(min. DFT 800µm). 3.Cutback at the ends : (100±10)mm.
	Valves ≥24 in.	1.Service temperature : -20° C to +80° C. 2.Thickness : class B (min. DFT 1500µm). 3.Cutback at the ends : (150±20)mm.

Normative references

- 1.SSPC –paint 22 ,1982 : Epoxy polyamide paints (Primer ,Intermediate , Top coat).
(Editorial changes Sept2000)**
- 2.MIL-C-83286 B : Urethane , Aliphatic isocyanate Coating.**
- 3.BS EN 10289 , 2002 : Steel tubes and fittings for offshore and offshore pipelines-
External liquid applied epoxy and epoxy modified coatings.**
- 4.BS EN 10290 , 2002 : Steel tubes and fittings for offshore and offshore pipelines-
External liquid applied polyurethane and polyurethane
modified coatings.**

SPECIFICATION FOR BALL VALVES,

FLANGED TYPE, CLASS 600,

SIZE : 2 - 4 IN

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPE - LINE, CARBON STEEL , FLANGED ENDS, R.F.,C.S.F., CLASS 600 , WRENCH OPERATED, BALL SHALL BE TRUNNION MOUNTED , ANTI STA- TIC DESIGN IN CASE OF SOFT SEATS, DOUBLE BLOCK AND BLEED FAC- ILITY IN OPEN AND CLOSE POSITION, METAL TO METAL SEATS OR SOFT SEATS, WITH SEALANT INJECTION SYSTEM.

FIRE SAFE TO API RP6 F 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- SILEY REPLACEABLE UNDER PRESSURE.

VALVE SHALL BE FURNISHED WITH A VALVE POSITION INDICATOR SHOWING OPEN POSITION IN THE DIRECTION OF FLOW AND CLOSE PO- SITION 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 .

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 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 , DUCTILE IRON TO ASTM A 395.

BALL SHALL BE HARD CHROMIUM OR ELECTROLESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25µM ACC. TO ASTM B 650 AND ASTM B656 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 UNTS: SHALL BE ACC.TO ASTM A193 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 MANUFACTURING STANDARD .(RELEVANT TECHNICAL DETAILS SHALL BE PROVIDED BY MANUFACTURER).

FULL BORE:

<u>SIZE</u> (IN)	<u>FACE TO FACE</u>		<u>BODY CONSTRUCTION</u>
	(IN)	(MM)	
2	11 $\frac{1}{2}$	292.1	SPLIT BODY
2	11 $\frac{1}{2}$	292.1	FULLY WELDED
3	14	355.6	SPLIT BODY
3	14	355.6	FULLY WELDED
4	17	431.8	SPLIT BODY
4	17	431.8	FULLY WELDED

REDUCED BORE:

<u>SIZE</u> (IN)	<u>FACE TO FACE</u>		<u>BODY CONSTRUCTION</u>
	(IN)	(MM)	
2	11 $\frac{1}{2}$	292.1	SPLIT BODY
2	11 $\frac{1}{2}$	292.1	FULLY WELDED
3	14	355.6	SPLIT BODY
3	14	355.6	FULLY WELDED
4	17	431.8	SPLIT BODY
4	17	431.8	FULLY WELDED

NOTES :

- 1/ IF APPLICABLE , STEM EXTENSION SHALL BE SPECIFIED BY END USER.
- 2/ MAX.REQUIRE OPENING TORQUE SHALL BE 32 KG-M, UNDER MAX. CLASS RATING.
- 3/ WRENCH SHALL BE QUOTED SEPARATELY.
- 4/ 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,

WELDING ENDS, CLASS 600 ,

SIZE : 2 - 4 IN ,

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE, CARBON STEEL , BUTT WELDING ENDS, CLASS 600 , WRENCH OPERATED , BODY SHALL BE ALL WELDED TYPE, BALL SHALL BE TRUNNION MOUNTED, ANTI STATIC DESIGN IN CASE OF SOFT SEATS.

DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION, METAL TO METAL SEATS OR SOFT SEATS WITH SEALANT INJECTION SYSTEM , 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 FITTED WITH THE FACILITY FOR INJECTION OF SEALANT .

ALL VALVES 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 PERMANENTLY INDICATED IN A VISIBLE LOCATION .

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

60/

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)
2	11 ½	292.1
3	14	255.6
4	17	431.8

REDUCED BORE :

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
2	11 ½	292.1
3	14	255.6
4	17	431.8

NOTES :

- 1/ MATERIAL AND THICKNESS OF MATCHING PIPE SHALL BE SPECIFIED BY END USER.
- 2/ IF APPLICABLE STEM EXTENSION SHALL BE SPECIFIED BY END USER.

113/

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 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 ,OR DUCTILE IRON ACC. TO ASTM A 395 .

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 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) .

47/

- در صورت لزوم
- 3/ MAX .REQUIRE OPENING TORQUE SHALL BE 32 KG - M UNDER
MAX. CLASS RATING PRESSURE.
- 4/ IN CASE OF REDUCED BORE, PORT AREA SHALL BE SPECIFIED
BY MANUFACTURER.
- 5/ WRENCH SHALL BE QUOTED SEPARATELY .

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

SPECIFICATION FOR BALL VALVES,

WELDING ENDS, CLASS 600,

SIZE: 6-12 IN

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE, CARBON STEEL ,BUTT WELDING ENDS, CLASS 600,GEAR OPERATED TYPE WITH VERTICAL HANDWHEEL , BODY SHALL BE ALL WELDED TYPE,BALL SHALL BE TRUNNION MOUNTED, ANTI STATIC DESIGN IN CASE OF SOFT SEATS.

DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION. METAL TO METAL SEATS OR SOFT SEATS, WITH SEALANT INJECTION SYSTEM ,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 FACILITY FOR INJECTION OF SEALANT.

ALL VALVES SHALL BE FURNISHED WITH A VALVE 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 TO ASTM A 105 OR B.S. 1503 GRADE 221/550, OR DUCTILE IRON TO ASTM A 395.

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.

*see X-ray for casting
practice - U-T*

FULL BORE

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
6	22	558.8
8	26	660.4
10	31	787.4
12	33	838.2

REDUCED BORE

<u>SIZE</u> (IN)	<u>END TO END</u> (IN)	<u>END</u> (MM)
6	22	558.8
8	26	660.4
10	31	787.4
12	33	838.2

NOTES :

- 1/ MATERIAL AND THICKNESS OF MACHING PIPE SHALL BE SPECIFIED BY END USER.
- 2/ IF APPLICABLE, STEM EXTENSION SHALL BE SPECIFIED BY END USER.
- 3/ IN CASE OF REDUCED BORE ,PORT AREA SHALL BE SPECIFIED BY MANUFACTURER.

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

SPECIFICATION FOR BALL VALVES,

FLANGED TYPE ,CLASS 600,

SIZE: 6 - 12 IN.

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE, CARBON STEEL , FLANGED ENDS,R.F.,C.S.F., CLASS 600 ,GEAR OPERATED TYPE WITH VERTICAL HAND WHEEL.

BALL SHALL BE TRUNNION MOUNTED, ANTI STATIC DESIGN IN CASE OF SOFT SEATS,DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION,METAL TO METAL SEATS OR SOFT SEATS, WITH SEALANT INJECTION SYSTEM.

FIRE SAFE TO API RP 6F OR API 607 ,OR B.S. 5146 . *at or m n* *Remove also* *API 607 - n A s 675*

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 REPL-
ACEABLE UNDER PRESSURE. *Remove* *API 607*

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 A216 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, OR DUCTILE IRON TO ASTM A 395 . 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 B656 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 TECHNICAL DETAILS SHALL BE PROVIDED BY MANUFACTURER).

FULL BORE :

<u>SIZE</u> (IN)	<u>FACE TO FACE</u>		<u>BODY CONSTRUCTION</u>
	(IN)	(MM)	
6	22	558.8	SPLIT BODY
6	22	558.8	FULLY WELDED
8	26	660.4	SPLIT BODY
8	26	660.4	FULLY WELDED
10	31	787.4	SPLIT BODY
10	31	787.4	FULLY WELDED
12	35	889.0	SPLIT BODY
12	35	889.0	FULLY WELDED

REDUCED BORE :

<u>SIZE</u> (IN)	<u>FACE TO FACE</u>		<u>BODY CONSTRUCTION</u>
	(IN)	(MM)	
6	22	558.8	SPLIT BODY
6	22	558.8	FULLY WELDED
8	26	660.4	SPLIT BODY
8	26	660.4	FULLY WELDED
10	31	787.4	SPLIT BODY
10	31	787.4	FULLY WELDED
12	35	889.0	SPLIT BODY
12	35	889.0	FULLY WELDED

NOTES:

- 1/ IF APPLICABLE ,STEM EXTENSION SHALL BE SPECIFIED BY END USER .
- 2/ IN CASE OF REDUCED BORE, PORT AREA SHALL BE SPECIFIED BY MANUFACTURER.

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

SPECIFICATION FOR BALL VALVES,

FLANGED TYPE, CLASS 600,

SIZE: 16 - 48 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 IN CASE OF SOFT SEATS, DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION, METAL TO METAL SEATS OR SOFT SEATS, 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 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 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, OR DUCTILE IRON TO ASTM A 395.

BALL SHALL BE HARD CHROMIUM OR ELECTROLESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25µM 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 FLUOROCARBON MATERIAL.(TYPE AND RELEVANT STANDARD SHALL BE SPECIFIED BY MANUFACTURER).

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

<u>FULL BORE</u>			<u>METHOD OF OPERATION</u>	<u>BODY CONSTRUCTION</u>
<u>SIZE</u> (IN)	<u>FACE TO FACE</u> (IN) (MM)			
16	39	990.6	ACTUATED/GEAR	SPLIT BODY
16	39	990.6	" "	FULLY WELDED
20	47	1193.8	ACTUATED	SPLIT BODY
20	47	1193.8	"	FULLY WELDED
22	51	1295.4	"	SPLIT BODY
22	51	1295.4	"	FULLY WELDED
24	55	1397	"	SPLIT BODY
24	55	1397	"	FULLY WELDED
30	65	1651	"	SPLIT BODY
30	65	1651	"	FULLY WELDED
36	82	2082.8	"	SPLIT BODY
36	82	2082.8	"	FULLY WELDED
42	—	—	"	SPLIT BODY
42	—	—	"	FULLY WELDED
48	—	—	"	SPLIT BODY
48	—	—	"	FULLY WELDED

REDUCED BORE:			METHOD OF OPERATION	BODY CONSTRUCTION
SIZE (IN)	FACE TO FACE (IN)	FACE TO FACE (MM)		
16	39	990.6	ACTUATED/GEAR	SPLIT BODY
16	39	990.6	" " "	FULLY WELDED
20	47	1193.8	ACTUATED	SPLIT BODY
20	47	1193.8	"	FULLY WELDED
22	51	1295.4	"	SPLIT BODY
22	51	1295.4	"	FULLY WELDED
24	55	1397	"	SPLIT BODY
24	55	1397	"	FULLY WELDED
30	65	1651	"	SPLIT BODY
30	65	1651	"	FULLY WELDED
36	82	2082.8	"	SPLIT BODY
36	82	2082.8	"	FULLY WELDED
42	—	—	"	SPLIT BODY
42	—	—	"	FULLY WELDED
48	—	—	"	SPLIT BODY
48	—	—	"	FULLY WELDED

NOTES:

- 1/ STEM EXTENSION FOR ALL VALVES AND ACTUATOR TECHNICAL SPECIFICATION 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 شیر آلات مورخ
تاریخ تصویب: در کمیته عالی استاندارد مورخ

SPECIFICATION FOR BALL VALVES,

WELDING ENDS, CLASS 600

SIZE: 16 - 48 IN .

BALL VALVE, FOR GAS DISTRIBUTION AND TRANSMISSION PIPELINE, CARBON STEEL, BUTT WELDING ENDS, CLASS 600, BODY SHALL BE ALL WELDED TYPE, BALL SHALL BE TRUNNION MOUNTED, ANTI STATIC DESIGN IN CASE OF SOFT SEATS.

DOUBLE BLOCK AND BLEED FACILITY IN OPEN AND CLOSE POSITION METAL TO METAL SEATS OR SOFT SEATS, WITH SEALANT INJECTION SYSTEM, 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 FACILITY FOR INJECTION OF SEALANT .

ALL VALVES 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 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, OR DUCTILE IRON TO ASTM A 395.

BALL SHALL BE HARD CHROMIUM OR ELECTRO-LESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25 UM 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.

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 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, OR DUCTILE IRON TO ASTM A 395.

BALL SHALL BE HARD CHROMIUM OR ELECTRO-LESS NICKEL PLATED WITH FINAL MIRROR FINISH PREPARATION AND MIN. PLATING THICKNESS OF 25 UM 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).

FULL BORE

<u>SIZE</u> (IN)	<u>END</u> (IN)	<u>TO</u>	<u>END</u> (MM)	<u>METHOD OF OPERATION</u>
16	39		990.6	ACTUATED/GEAR
20	47		1193.8	ACTUATED
22	51		1295.4	"
24	55		1397	"
30	65		1651	"
36	82		2082.8	"
42	—		—	"
48	—		—	"

FULL BORE

<u>SIZE</u> (IN)	<u>END</u> (IN)	<u>TO</u>	<u>END</u> (MM)	<u>METHOD OF OPERATION</u>
16	39		990.6	ACTUATED /GEAR
20	47		1193.8	ACTUATED
22	51		1295.4	"
24	55		1397	"
30	65		1651	"
36	82		2082.8	"
42	—		—	"
48	—		—	"

NOTES:

- 1 / STEM EXTENSION FOR ALL VALVES AND ACTUATOR TECHNICAL SPECIFICATION SHALL BE SPECIFIED BY END USER.
- 2 / MATERIAL AND THICKNESS OF MATCHING PIPE SHALL BE SPECIFIED BY END USER.
- 3 / IN CASE OF REDUCED BORE, PORT AREA SHALL BE SPECIFIED BY MANUFACTURER.

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

Ball valve data sheet**General**

Manufacturer :			
Inquiry no:	Item no.	Drawing no.	Quantity
Nominal size:	Class rating :	<input type="checkbox"/> Ambient temperature:-29 ⁰ C to +60 ⁰ C for valve & actuator	Design temp: Design pre.:
Flow media:			
Dimensional & sectional drawing No: (attached)		Ball valve model :	
Original country of raw material and complete valve :			
<input type="checkbox"/> Original technical catalogue of main manufacturer (attached)			
Specifications			
Body construction: <input type="checkbox"/> All welded <input type="checkbox"/> Split body <input type="checkbox"/> Top entry	<input type="checkbox"/> 2 piece body <input type="checkbox"/> 3 piece body	<input type="checkbox"/> Upper stem seal replaceable under full line pressure <input type="checkbox"/> API monogram certificate (attached copy)	<input type="checkbox"/> Stem extension Stem extension from valve centerline(mm):
Ball type <input type="checkbox"/> Trunnion mounted <input type="checkbox"/> Floating <input type="checkbox"/> Pivot mounted	Bore type: <input type="checkbox"/> Full <input type="checkbox"/> Reduced Port area percentage :	<input type="checkbox"/> 2 years spare part list (attached)	End connection: <input type="checkbox"/> Butt welded ends <input type="checkbox"/> Flanged ends <input type="checkbox"/> Screwed ends
<input type="checkbox"/> Anti-static Device	<input type="checkbox"/> Anti – blow Out stem	<input type="checkbox"/> Double block & Bleed in open & Close position	Secondary Sealing : For stem Yes <input type="checkbox"/> No <input type="checkbox"/> For seat Yes <input type="checkbox"/> No <input type="checkbox"/>
<input type="checkbox"/> Fire safe approval test report		Relevant codes & standard:	
Support requirement : <input type="checkbox"/> Ribs <input type="checkbox"/> Legs			

Dimensions

Valve face to face (mm): Flange standard : <input type="checkbox"/> ANSI B 16.5 <input type="checkbox"/> MSS-SP-44	Flange size: Flange class rating : <input type="checkbox"/> Face finishing (raised face)
*Matching pipe size : *Matching pipe grade : *Matching pipe wall thickness: <input type="checkbox"/> Beveled end Acc to ANSI B 31.8	

Material

Body & Cover :	Ends :	Ball:	Stem:	Soft seat material for seat :	Bolt & nut:
				Soft seat material for stem:	

Coating

External coating of body : Type & standard : Thickness :	External coating of ball : Type & standard : Thickness :
--	--

Valve operation

<input type="checkbox"/> Wrench Length(mm): Max force under full deferential pressure :	<input type="checkbox"/> Position indicator Max & min valve stem torque:	Gearbox with hand – wheel <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Gear operated heavy duty acc to IGS-M-PL-09 Hand -well dia (mm):	<input type="checkbox"/> Gas over oil type actuator Max & Min operating pressure : <input type="checkbox"/> Remote control <input type="checkbox"/> Automatic line break system (if applicable) LB setting range (0.3-6 bar): Manufacturer :
Other requirements			
<input type="checkbox"/> Drain connection		<input type="checkbox"/> Vent system	
NDE requirements :		<input type="checkbox"/> Ends radiography (percentage) for casting body	
<input type="checkbox"/> NACE MR 0175/ISO 15156			
<input type="checkbox"/> Third party witness of processes / test			
Deviation from spec :			

* - Shall be filled by end user

- 1- This data sheet should be completed for each item by manufacturer.
- 2- Any deviation shall be clearly specified by manufacture.
- 3- This data sheet shall be signed and stamped by manufacturers, authorized employee.
- 4- Manufacturers shall confirm SPIR form will be sent at the order stage

۵- برای سازندگان داخلی تأییدیه ساخت مطابق استاندارد API 6D توسط بازرس معتبر کفایت می کند .

Manufacturer's sign and seal