

NAC-NUTEK®

TL / TM TRUNNION BALL VALVES



*API-6D forged steel trunnion mounted ball valves
for use in **Severe Service applications***

TL: Elastomerless TBV, TM: Metal-seated TBV



NAC-NUTEK® MODEL TL / TM
Forged End-Entry Trunnion Ball Valve

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Sizes, Pressures and End Connections

- **SIZE:** FP: 2” through 12” (50mm through 300mm), RP: 3” through 16” (80mm through 400mm)
- **PRESSURE:** ASME Classes: 150 through 1500* (PN 20 through 420*) *[*Limited sizes]*
- **CONNECTION:** Raised Face, RTJ or Smooth Face flanged and butt-weld* *[*Schedule to be confirmed]*

Advantages

- **TL:** Seal 100% Compatibility with Aggressive Media including Acid Gas, Inhibitor Chemicals and Diluents
- **TM:** Metal-seated for Hot Service and Abrasive Media
- **GENERAL:** Low Torque Values, Minimum Maintenance, ISO Mounting for Actuation, Internal Corrosion Control

Compliance to Standards and Specifications

- Quality Management System [API Q1 / ISO-9001]
- ASME.B16.34 / B16.25 / B16.11 / B16.10 / B16.5 / B1.20.1
- API-6D / CSA Z245.15 / ISO-6208
- API-607 / API-6FA (Fire-Safe)
- ASME Section VIII, Division 2: Boiler and Pressure Vessel Code
- ISO-5211, API-608, MSS SP-101
- NACE MR 0175 & MR 0103
- MSS SP-25 / CSA marking
- Canadian Registration Number (CRN)

Standard Features

BODY CONSTRUCTION

Forged steel, three-piece bolted body construction

ISO mounting pad for actuation

BODY SEALS

Chemically inert polymers / solid-core gaskets

STEM

Blowout-proof stem with redundant seals and sealant injection

SEATS

Insert materials available are Teflon™, LF PEEK

Grease Injection standard: 6" 150 and above

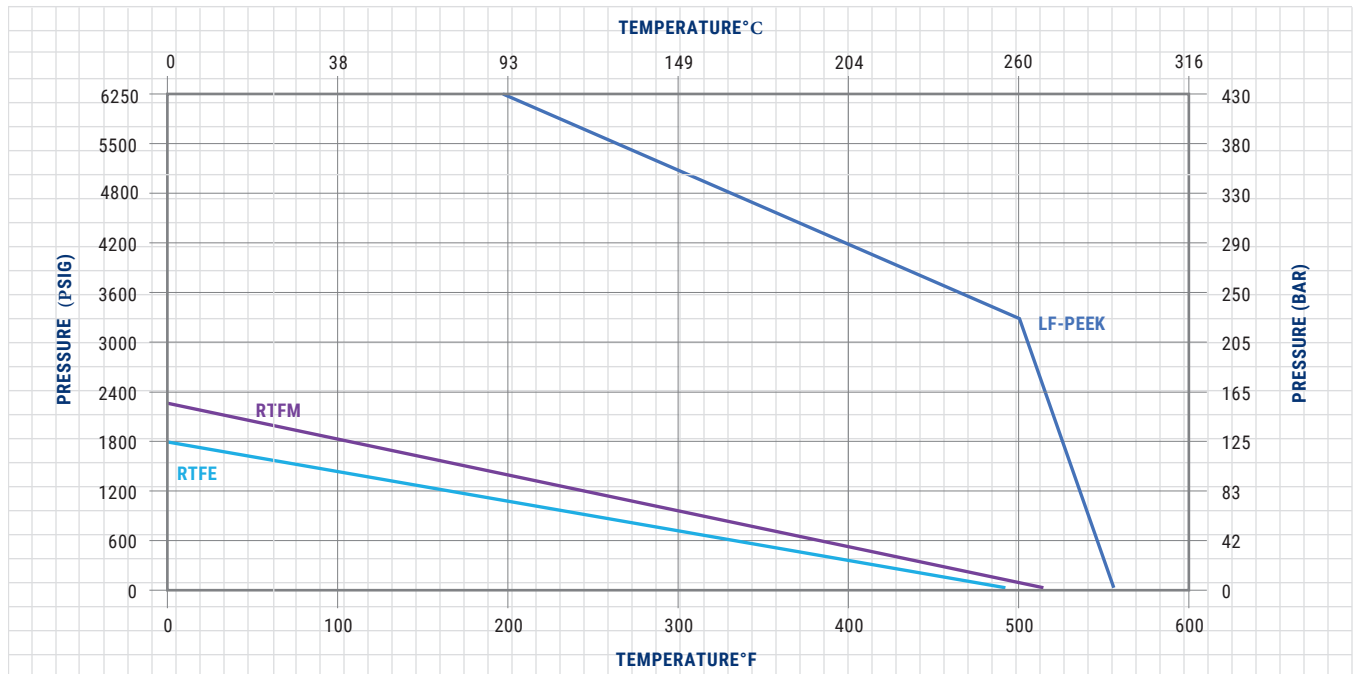
FIRE-SAFE, FUGITIVE EMISSION CERTIFIED All

valves have mechanical anti-static devices as standard

CONFIGURATION per API-6D

All valves DB&B, with internal pressure relief

Pressure/Temperature Ratings (Seats and Seals)



*Consult ASME B16.34 for Body and Adaptor Pressure / Temperature Ratings

How to Order:

How to develop typical figure numbers without options:

EG - 2" Full Port Raised Face Class 600 TL for Sour-Low-Temp service c/w SS trim, RTFE seat insert, DB&B and Lever

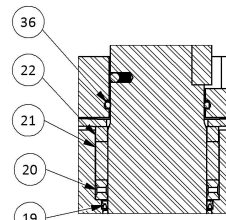
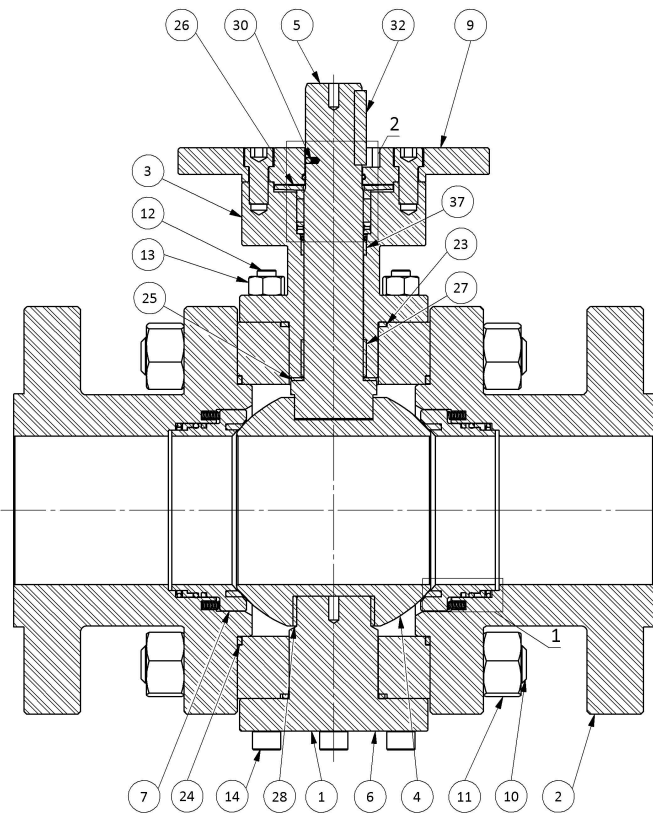
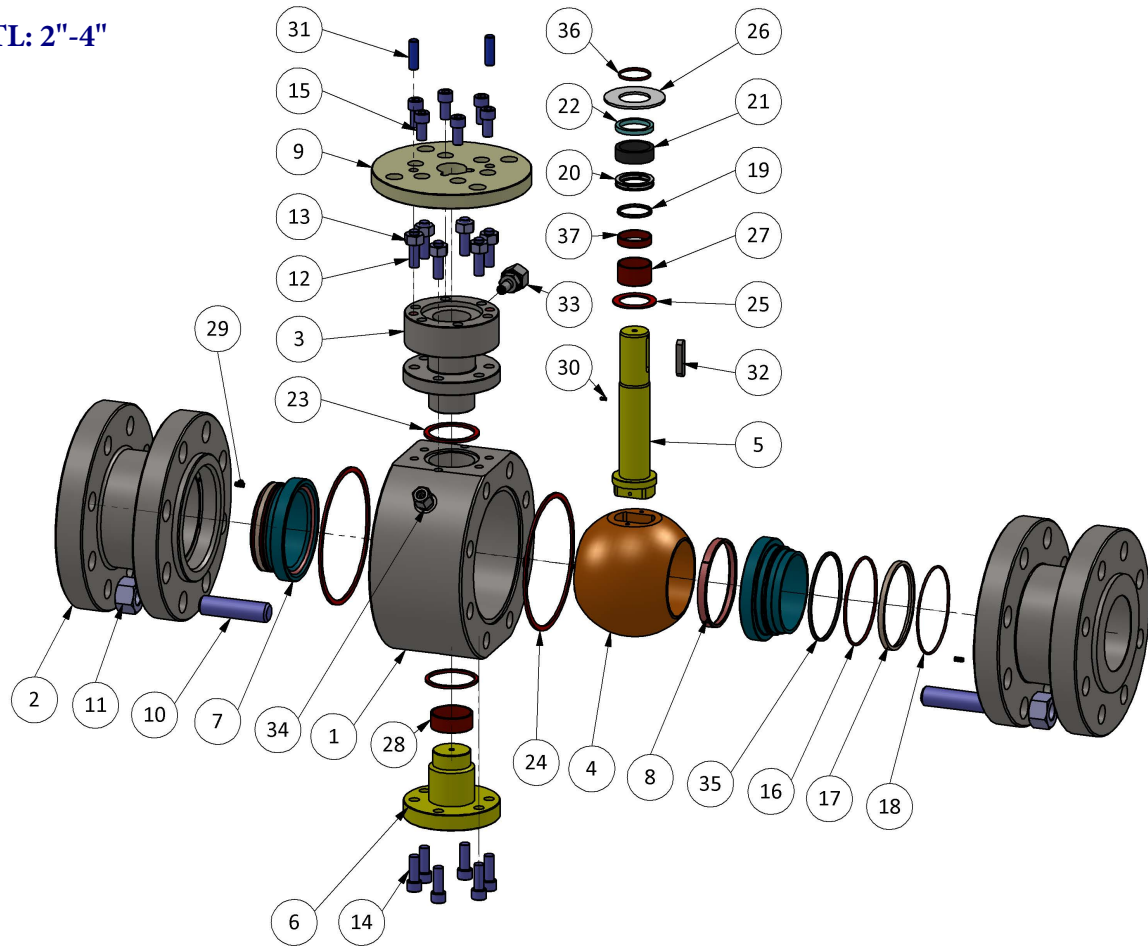
FIGURE NUMBER MATRIX - TRUNNIONS

SERIES (XX)	BORE (X)	SIZE (XX)	CONNECTION (X)	CLASS (XX)	SERVICE (X)	TRIM (XX)	SEAT (X)	ISOLATION (X)	OPERATOR (X)
TL	F	02	R	06	L	02	R	1	L
TL TRUNNION "Elastomerless"	F FULL R REDUCED	02 2" 03 3" 04 4" 06 6" 08 8" 10 10" 12 2" 16 16"	R RAISED FACE J RTJ B BUTT-WELD (80) A SMOOTH FACE C BUTT-WELD (40)	01 150 03 300 06 600 08 800 09 900 15 1500	S STD L SLT* N SOUR A FULL SS M SLURRY** B BURIED O OXYGEN C CRYOGENIC** H HYDROGEN	01 CS/ENP 02 SS*	R RTFE L LF PEEK P PEEK D DEVLON	1 DB&B:SR	L LEVER G GEAR-OP B BARE-STEM

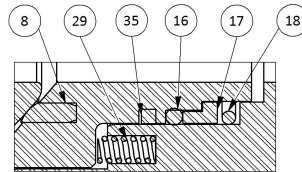
Notes:
 * Standard configuration
 ** Available in different series

Additional features are available. **Contact NAM**

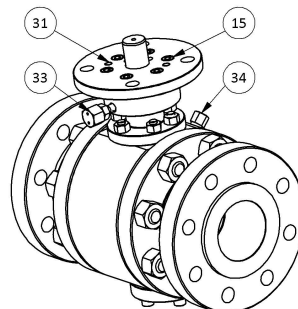
TL: 2"-4"



DETAIL 2



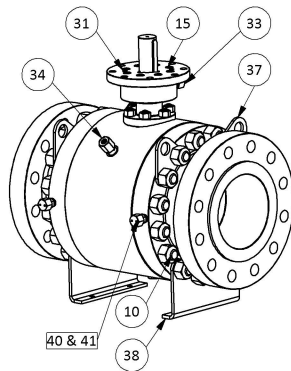
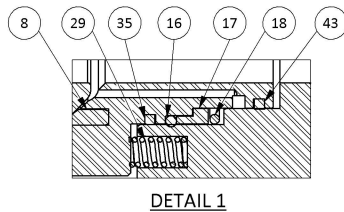
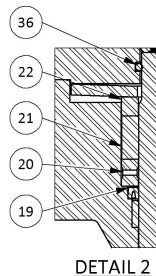
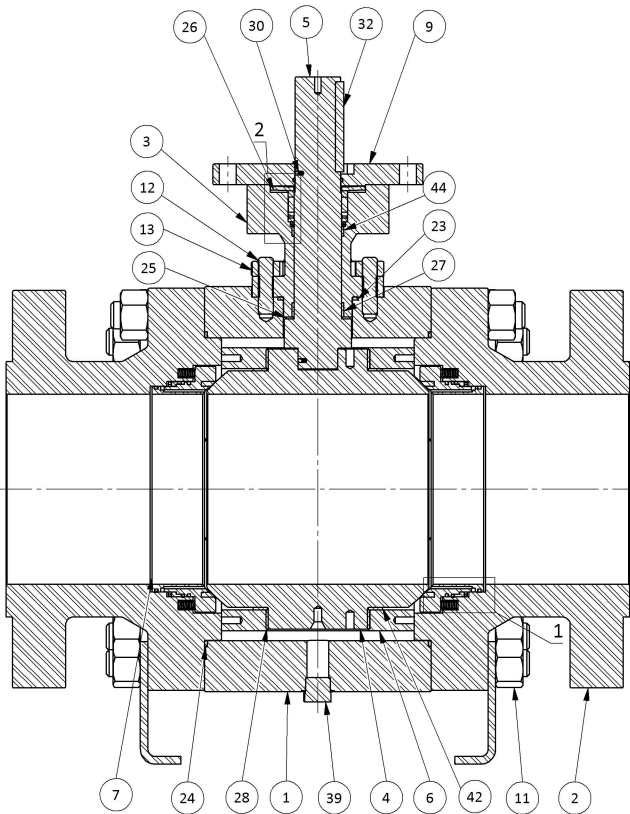
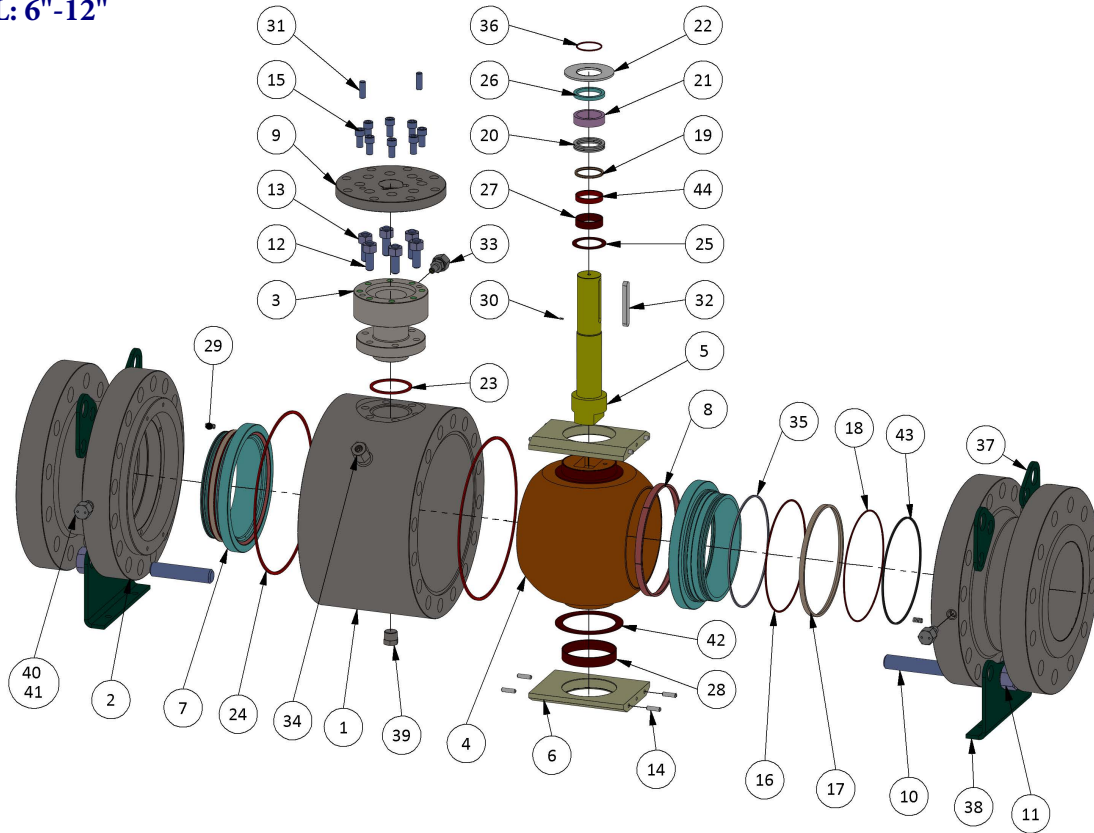
DETAIL 1



ITEM	PART	MATERIAL
1	Body	ASTM A350 LF2
2	Cap	ASTM A350 LF2
3	Bonnet	ASTM A350 LF2
4	Ball	ASTM A182 F6A
5	Stem	ASTM A276 TYPE A410
6	Trunnion	ASTM A240 TYPE 410
7	Seat ring	ASTM A240 TYPE 410
8	Seat Insert	LF PEEK
9	Gland Plate	ASTM A350 LF2
10	Body Studs	ASTM A320 L7M
11	Body Heavy Hex Nuts	ASTM A194 7M
12	Bonnet Studs	ASTM A320 L7M
13	Bonnet Heavy Hex Nuts	ASTM A194 7M
14	Trunnion Socket Head Cap Screw	ASTM A320 L7M
15	Gland Plate Socket Head Cap Screw	ASTM A320 L7M
16	Seat O-Ring	TEFLON
17	Seat Follower	ASTM A479 316
18	Seat Wave Spring	INCONEL X750
19	Stem Lip Seal	PTFE/ELGILOY
20	Lantern Ring	AISI 4140 +ENP
21	Stem Packing	ROBCO GRAPHITE/TFE 1%
22	Packing Follower	STAINLESS STEEL
23	Gland/Trunnion Fire-safe Seal	SOLID CORE GASKET
24	Body/Cap Fire-safe Seal	SOLID CORE GASKET
25	Stem Thrust Washer	LF PEEK
26	Belleville Washer	STAINLESS STEEL
27	Stem DU Bearing	304SS + PTFE
28	Trunnion DU Bearing	304SS + PTFE
29	Seat Spring	INCONEL X750
30	Anti-static Spring / Ball	ASTM A276 Gr.316
31	Parallel Pin	AISI 1045
32	Key	AISI 1045
33	Stem Injection Fitting	ASTM A479 316
34	Bleed / Vent	ASTM A479 316
35	Seat Fire-safe Seal	GRAPHITE BRAIDED ROPE
36	Weather Seal	EPDM
37	Gland DU Bearing	304SS + PTFE

2" - 4" ASSEMBLY
MODEL TL

TL: 6"-12"

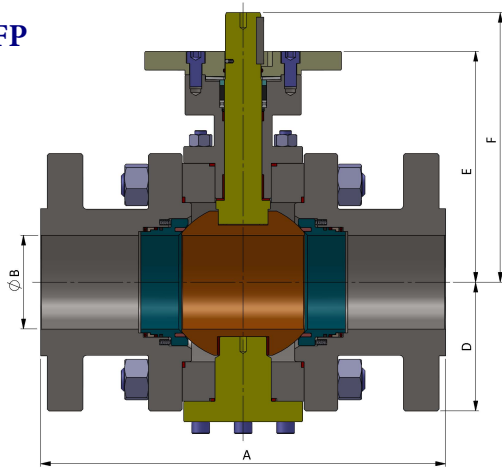


6" - 12" ASSEMBLY
MODEL TL

ITEM	PART	MATERIAL
1	Body	ASTM A350 LF2
2	Cap	ASTM A350 LF2
3	Bonnet	ASTM A350 LF2
4	Ball	ASTM A182 F6A
5	Stem	ASTM A276 TYPE A410
6	Bearing Plate	ASTM A350 LF2
7	Seat ring	ASTM A276 TYPE A410
8	Seat Insert	LF PEEK
9	Gland Plate	ASTM A350 LF2
10	Body Studs	ASTM A320 L7M
11	Body Heavy Hex Nuts	ASTM A194 7M
12	Bonnet Studs	ASTM A320 L7M
13	Bonnet Heavy Hex Nuts	ASTM A194 7M
14	Bearing Plate Dowel Pin (not shown)	AISI 4130
15	Gland Plate Socket Head Cap Screw	ASTM A479 316
16	Seat O-Ring	TEFLON
17	Seat Follower	ASTM A479 316
18	Seat Wave Spring	INCONEL X750
19	Stem Lip Seal	PTFE/ELGILOY
20	Lantern Ring	AISI 4140 +ENP
21	Stem Packing	ROBCO GRAPHITE/TFE 1%
22	Packing Follower	STAINLESS STEEL
23	Bonnet Fire-safe Seal	SOLID CORE GASKET
24	Body/Cap Fire-safe Seal	SOLID CORE GASKET
25	Stem Thrust Washer	LF PEEK
26	Belleville Washer	STAINLESS STEEL
27	Stem DU Bearing	304SS + PTFE
28	Ball DU Bearing	304SS + PTFE
29	Seat Spring	INCONEL X750
30	Anti-static Spring/ Ball	ASTM A276 Gr.316
31	Parallel Pin	AISI 1045
32	Key	AISI 1045
33	Stem Injection Fitting	ASTM A479 316
34	Bleed / Vent	ASTM A479 316
35	Seat Fire-safe Seal	GRAPHITE BRAIDED ROPE
36	Weather Seal	EPDM
37	Lifting Lug	ASTM A36, YS-36KSI
38	Leg	ASTM A36, YS-36KSI
39	Drain	ASTM A479 316
40	Seat Injection Fitting	ASTM A479 316
41	Buried check	ASTM A350 LF2
42	Ball Thrust Washer	AISI 304 + PTFE
43	Rope	GRAPHITE BRAIDED ROPE
44	Gland DU Bearing	304SS + PTFE

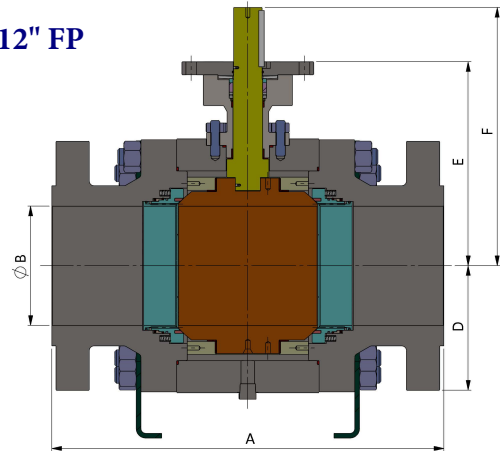
MODEL TL DIMENSIONS

TL: 2"-4" FP



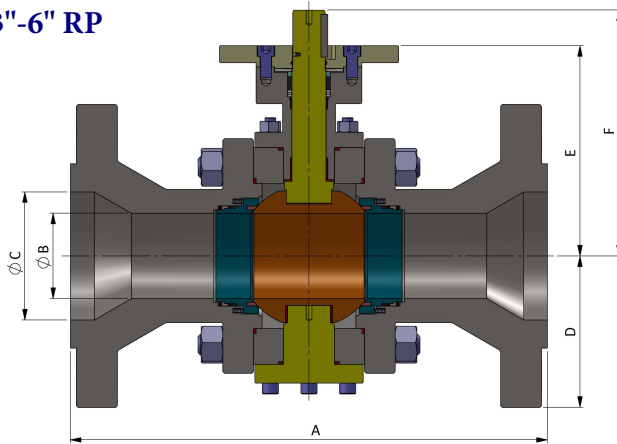
Size	Class	A	B	D	E	F
2	600	292	49	82.5	187	220
	900	368	49	107.5	205	248
	1500	368	49	107.5	235	277
3	600	356	74	105	222	262
	900	381	74	120	236	276
	1500	470	74	132.5	278	318
4	600	432	100	137.5	247	288
	900	457	100	145	255	296

TL: 6"-12" FP



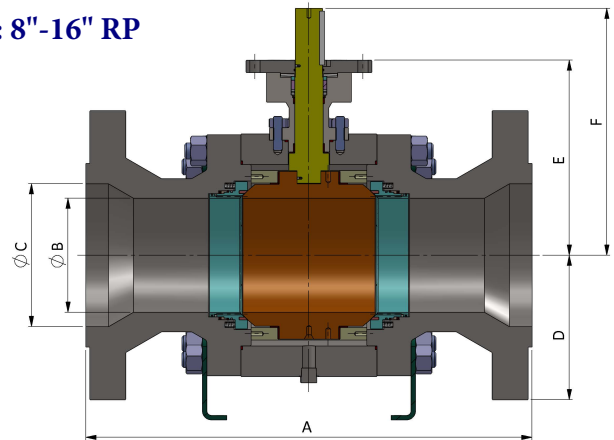
Size	Class	A	B	D	E	F
6	150	394	150	140	284	350
	300	403	150	160	284	350
	600	559	150	177.5	284	350
	900	610	150	190	333	419
8	150	457	201	172.5	329	406
	300	502	201	190	329	406
	600	660	201	210	344	436
	900	737	201	235	406	504
10	150	533	252	202.5	361	438
	300	568	252	222.5	368	445
	600	787	252	255	420	511
	900	838	252	272.5	458	558
12	150	610	303	242.5	390	482
	300	648	303	260	402	494
	600	838	303	280	462	552
	900	965	303	305	508	618

TL: 3"-6" RP



Size	Class	A	B	C	D	E	F
3 x 2	600	356	49	74	105	187	220
	900	381	49	74	120	205	248
	1500	470	49	74	132.5	235	277
4 x 3	600	432	74	100	137.5	222	262
	900	457	74	100	145	236	276
	1500	546	74	100	155	278	318
6 x 4	600	559	100	150	177.5	247	288
	900	610	100	150	190	255	296

TL: 8"-16" RP



Size	Class	A	B	C	D	E	F
8 x 6	150	457	150	201	172.5	284	350
	300	502	150	201	190	284	350
	600	660	150	201	210	284	350
	900	737	150	201	235	333	419
10 x 8	150	533	201	252	202.5	329	406
	300	568	201	252	222.5	329	406
	600	787	201	252	255	344	436
	900	838	201	252	272.5	406	504
12 x 10	150	610	252	303	242.5	361	438
	300	648	252	303	260	368	445
	600	838	252	303	280	420	511
	900	965	252	303	305	458	558
16 x 12	150	762	303	385	297.5	390	482
	300	838	303	385	325	402	494
	600	991	303	385	342.5	462	552
	900	1130	303	373	352.5	508	618

MODEL TM

Standard Features

BODY CONSTRUCTION:

Forged steel, three-piece bolted body construction.

ISO mounting pad for actuation

Fire-Safe, Anti-Static

STEM:

Blowout Proof stem with redundant seals

TRIM:

Chromium Carbide over Stainless Steel ball and seats

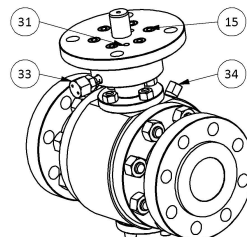
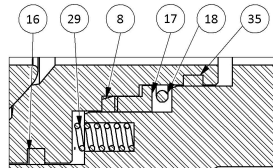
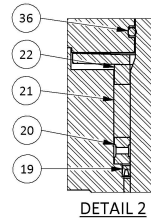
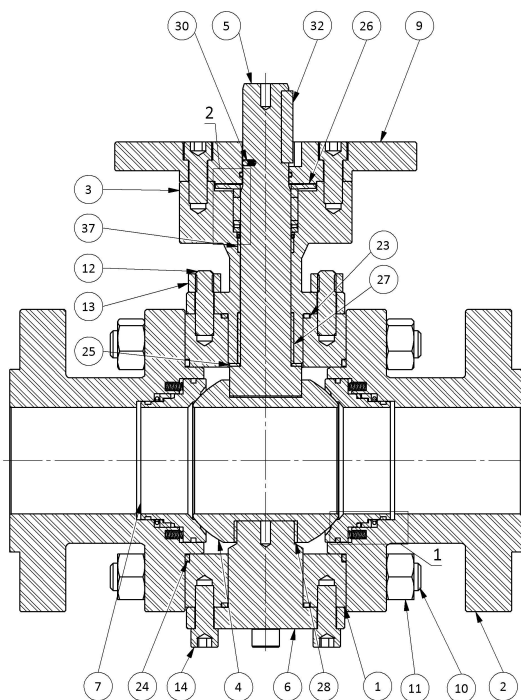
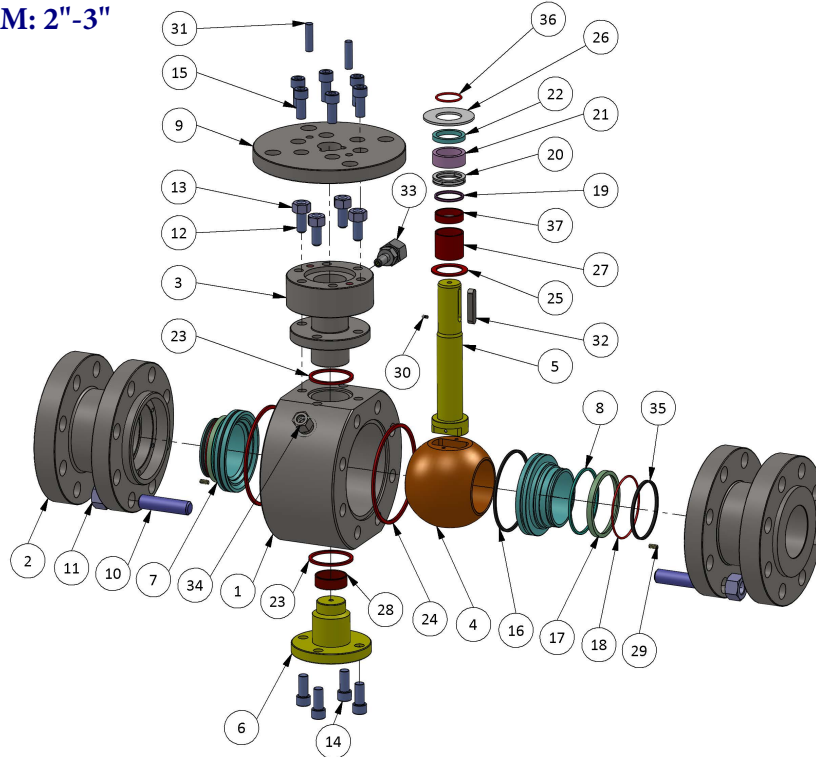
SEALS:

High-temp or slurry rated seals / Solid-core gaskets

CONFIGURATION per API-6D:

All valves DB&B, with internal pressure relief

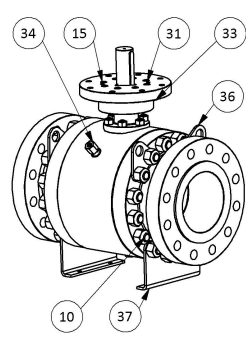
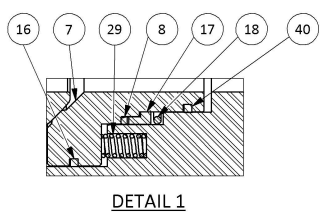
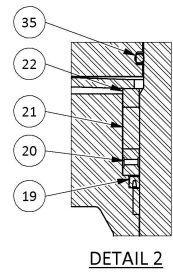
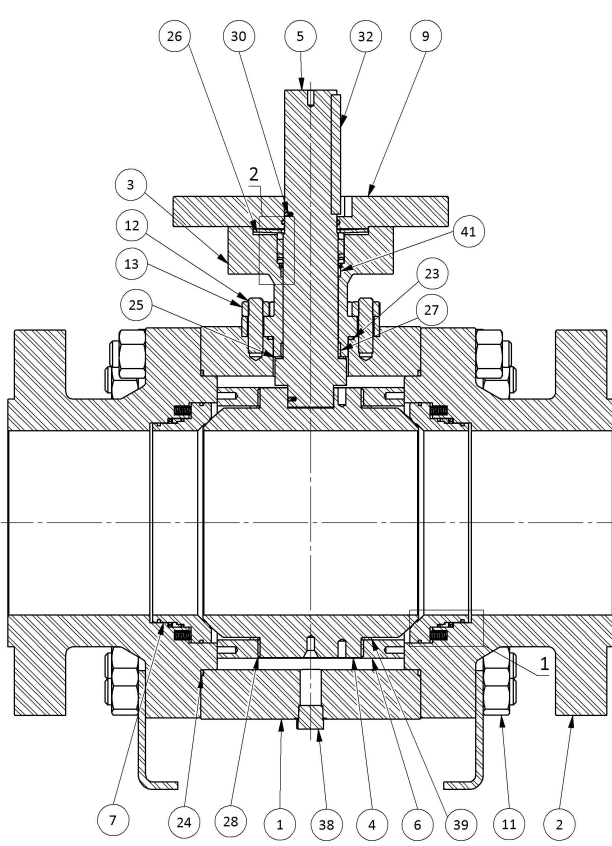
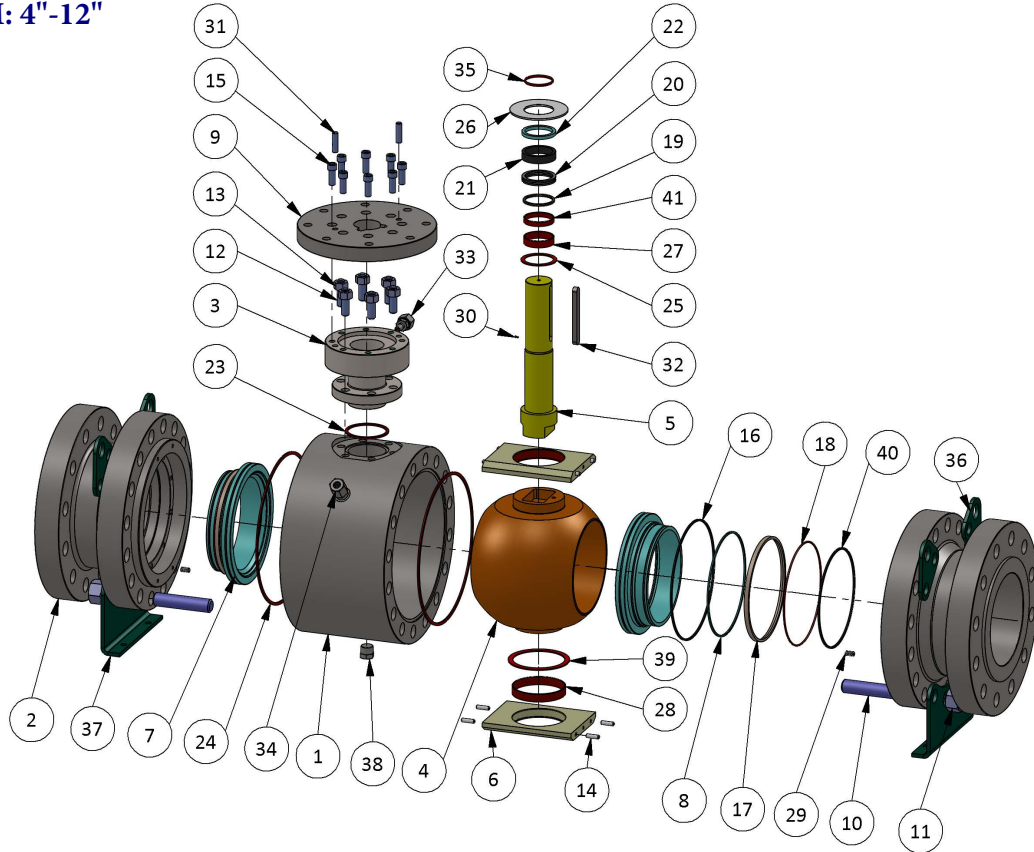
TM: 2"-3"



2" - 3" ASSEMBLY
MODEL TM

ITEM	PART	MATERIAL
1	Body	ASTM A350 LF2
2	Cap	ASTM A350 LF2
3	Bonnet	ASTM A350 LF2
4	Ball	410 SS w/CHROMIUM CARBIDE OVERLAY
5	Stem	A564 17-4PH H1150D
6	Trunnion	A564 17-4PH H1150D
7	Seat ring	410 SS w/CHROMIUM CARBIDE OVERLAY
8	Delta Seal	NOVATEC PREMIUM II
9	Gland Plate	ASTM A350 LF2
10	Body Studs	ASTM A320 L7M
11	Body Heavy Hex Nuts	ASTM A194 7M
12	Bonnet Studs	ASTM A320 L7M
13	Bonnet Heavy Hex Nuts	ASTM A194 7M
14	Trunnion Socket Head Cap Screw	ASTM A320 L7M
15	Gland Plate Socket Head Cap Screw	ASTM A320 L7M
16	Seat Rope	GRAPHITE BRAIDED ROPE
17	Seat Follower	304 SS
18	Seat Wave Spring	INCONEL X750
19	Stem Lip Seal	PTFE/ELGILOY
20	Lantern Ring	AISI 4140 +ENP
21	Stem Packing	ROBCO GRAPHITE/TFE 1%
22	Packing Follower	STAINLESS STEEL
23	Bonnet/Trunnion Seal	SOLID CORE GASKET
24	Body/Cap Seal	SOLID CORE GASKET
25	Stem Thrust Washer	316 SS w/IPC SYS 7 CTG.
26	Belleville Washer	STAINLESS STEEL
27	Stem Bearing	316 SS w/IPC SYS 7 CTG.
28	Trunnion Bearing	316 SS w/IPC SYS 7 CTG.
29	Seat Spring	INCONEL X750
30	Anti-static Spring / Ball	ASTM A276 Gr.316
31	Parallel Pin	AISI 1045
32	Key	AISI 1045
33	Stem Injection Fitting	ASTM A479 316
34	Bleed / Vent	ASTM A479 316
35	Seat Rope	GRAPHITE BRAIDED ROPE
36	Weather Seal	EPDM
37	Gland Bearing	316 SS w/IPC SYS 7 CTG.

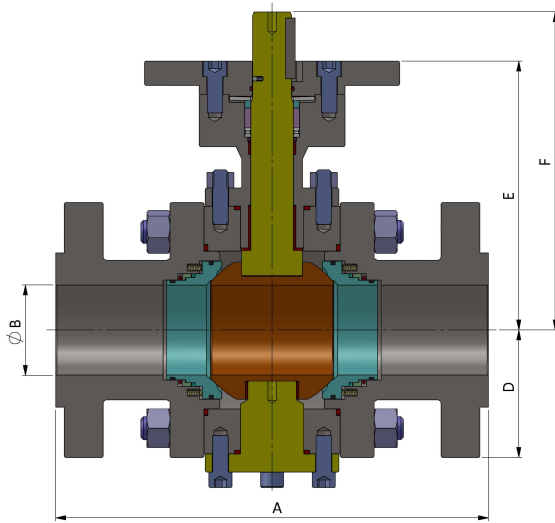
TM: 4"-12"



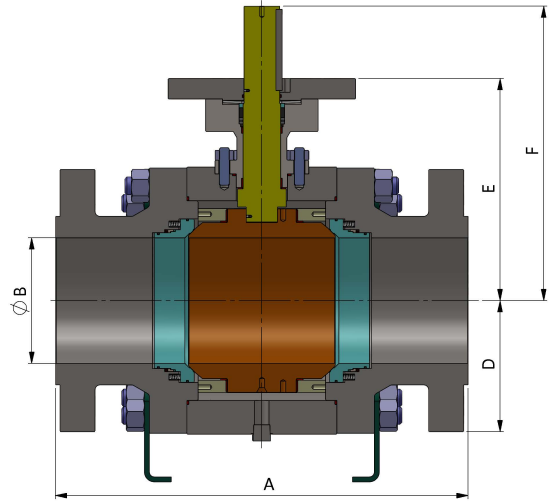
4" - 12" ASSEMBLY
MODEL TM

ITEM	PART	MATERIAL
1	Body	ASTM A350 LF2
2	Cap	ASTM A350 LF2
3	Bonnet	ASTM A350 LF2
4	Ball	410 SS w/CHROMIUM CARBIDE OVERLAY
5	Stem	A564 17-4PH H1150D
6	Bearing Plate	ASTM A350 LF2
7	Seat ring	410 SS w/CHROMIUM CARBIDE OVERLAY
8	Delta Seal	NOVATEC PREMIUM II
9	Gland Plate	ASTM A350 LF2
10	Body Studs	ASTM A320 L7M
11	Body Heavy Hex Nuts	ASTM A194 7M
12	Bonnet Studs	ASTM A320 L7M
13	Bonnet Heavy Hex Nuts	ASTM A194 7M
14	Bearing Plate Dowel Pin (not shown)	AISI 4130
15	Gland Plate Socket Head Cap Screw	ASTM A320 L7M
16	Seat Rope	GRAPHITE BRAIDED ROPE
17	Seat Follower	304 SS
18	Seat Wave Spring	INCONEL X750
19	Stem Lip Seal	PTFE/ELGILOY
20	Lantern Ring	AISI 4140 +ENP
21	Stem Packing	ROBCO GRAPHITE/TFE 1%
22	Packing Follower	STAINLESS STEEL
23	Bonnet Seal	SOLID CORE GASKET
24	Body/Cap Seal	SOLID CORE GASKET
25	Stem Thrust Washer	316 SS w/IPC SYS 7 CTG.
26	Belleville Washer	STAINLESS STEEL
27	Stem Bearing	316 SS w/IPC SYS 7 CTG.
28	Ball Bearing	316 SS w/IPC SYS 7 CTG.
29	Seat Spring	INCONEL X750
30	Anti-static Spring / Ball	ASTM A276 Gr.316
31	Parallel Pin	AISI 1045
32	Key	AISI 1045
33	Stem Injection Fitting	ASTM A479 316
34	Bleed / Vent	ASTM A479 316
35	Weather Seal	EPDM
36	Lifting Lug	ASTM A36, YS-36KSI
37	Leg	ASTM A36, YS-36KSI
38	Drain	ASTM A479 316
39	Ball Thrust Washer	316 SS w/IPC SYS 7 CTG.
40	Rope	GRAPHITE BRAIDED ROPE
41	Gland Bearing	316 SS w/IPC SYS 7 CTG.

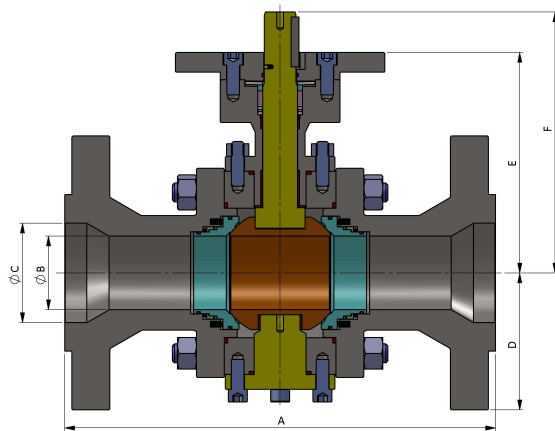
MODEL TM DIMENSIONS



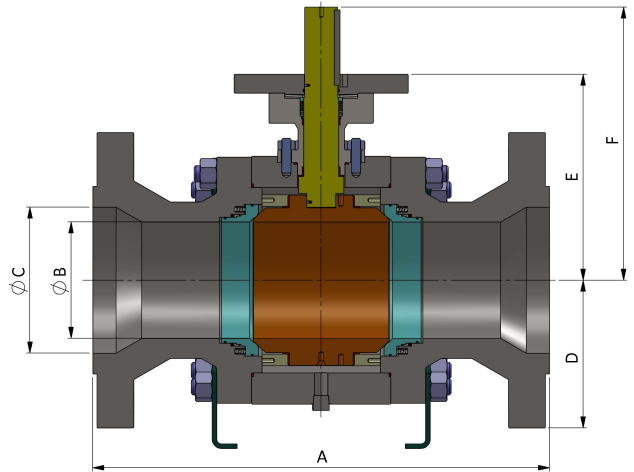
Size	Class	A	B	D	E	F
2	600	292	49	82.5	187	220
	900	368	49	107.5	205	248
3	600	356	74	105	222	262
	900	381	74	120	236	286



4	600	432	100	137.5	245	304
	900	457	100	145	255	329
6	150	394	150	140	298	391
	300	403	150	160	298	391
	600	559	150	177.5	298	391
8	900	610	150	190	340	452
	150	457	201	172.5	330	406
	300	502	201	190	330	419
	600	660	201	210	356	472
10	900	737	201	235	413	504
	150	533	252	202.5	361	431
	300	568	252	222.5	373	478
	600	787	252	255	414	504
12	900	838	252	272.5	458	548
	150	610	303	242.5	394	468
	300	648	303	260	421	492
	600	838	303	280	463	553
	900	965	303	305	515	624

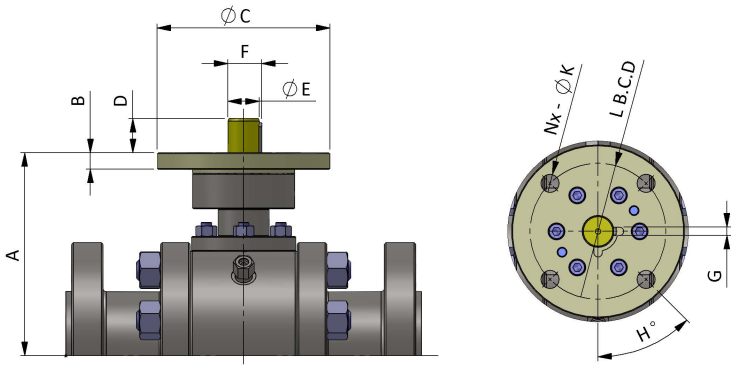


Size	Class	A	B	C	D	E	F
3 x 2	600	356	49	74	105	187	220
	900	381	49	74	120	205	248
	600	432	74	100	137.5	222	262
4 x 3	900	457	74	100	145	236	286

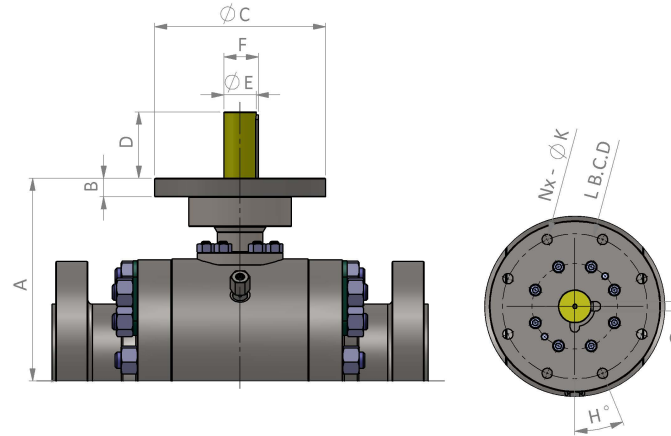


Size	Class	A	B	C	D	E	F
6 x 4	600	394	100	150	140	245	304
	900	403	100	150	160	255	329
8 x 6	150	457	150	201	172.5	298	391
	300	502	150	201	190	298	391
	600	660	150	201	210	298	391
	900	737	150	201	235	340	452
10 x 8	150	533	201	252	202.5	330	406
	300	568	201	252	222.5	330	419
	600	787	201	252	255	356	472
	900	838	201	252	272.5	413	504
12 x 10	150	610	252	303	242.5	361	431
	300	648	252	303	260	373	478
	600	838	252	303	280	414	504
	900	965	252	303	305	458	548
16 x 12	150	762	303	385	297.5	394	468
	300	838	303	385	325	421	492
	600	991	303	385	342.5	463	553
	900	1130	303	373	352.5	515	624

MODEL TL (Elastomerless)
TOPWORKS - Actuation



MODEL TM (Metal-Seated)
TOPWORKS - Actuation



Size	Class	A	B	C	D	E	F	G	H	Nx - K	L B.C.D
2	600	187	20	175	33	25	28	8	45	4x - 18	140
	900	205	20	175	43	27	30	8	45	4x - 18	140
	1500	235	20	175	42	27	30	8	45	4x - 18	140
3	600	222	20	210	41	32	35	10	45	4x - 22	165
	900	236	20	210	41	32	35	10	45	4x - 22	165
	1500	278	20	210	40	32	35	10	45	4x - 22	165
4	600	247	20	210	42	38	41	10	45	4x - 22	165
	900	255	20	210	41	38	41	10	45	4x - 22	165
6	150/300	284	22	222	66	48	51.5	14	22.5	8x - 17	190.5
	600	284	22	222	66	48	51.5	14	22.5	8x - 17	190.5
	900	333	22	222	86	48	51.5	14	22.5	8x - 17	190.5
8	150/300	330	22	222	76	48	51.5	14	22.5	8x - 17	190.5
	600	344	22	222	91.5	48	51.5	14	45	8x - 17	190.5
	900	406	30	300	97.1	63	74	18	22.5	8x - 18	254
10	150	361	29	300	76.4	53	57	16	45	8x - 18	254
	300	368	29	300	76.4	53	57	16	45	8x - 18	254
	600	420	37	300	90	63	74	18	22.5	8x - 18	254
	900	458	38	350	100	75	84	20	22.5	8x - 22	298
12	150	390	26	300	92	57	61	16	22.5	8x - 18	254
	300	402	26	300	92	57	61	16	22.5	8x - 18	254
	600	462	38	350	90	75	84	20	22.5	8x - 22	298
	900	508	39	350	110	75	84	20	22.5	8x - 22	298

Size	Class	A	B	C	D	E	F	G	H	Nx - K	L B.C.D
2	600	187	20	175	33	25	28	8	45	4x - 18	140
	900	205	20	210	43	27	30	8	45	4x - 22	165
	1500	236	20	210	51	34.5	37.5	10	45	4x - 22	165
3	600	222	20	210	41	32	35	10	45	4x - 22	165
	900	236	20	210	51	34.5	37.5	10	45	4x - 22	165
	1500	278	20	210	40	32	35	10	45	4x - 22	165
4	600	247	20	210	42	38	41	10	45	4x - 22	165
	900	255	20	210	41	38	41	10	45	4x - 22	165
	1500	298	23.5	222	94	48	52.5	14	22.5	8x - 18	190.5
6	600	222	20	210	41	32	35	10	45	4x - 22	165
	900	236	20	210	51	34.5	37.5	10	45	4x - 22	165
	1500	278	20	210	40	32	35	10	45	4x - 22	165
8	600	247	20	210	42	38	41	10	45	4x - 22	165
	900	255	20	210	41	38	41	10	45	4x - 22	165
	1500	298	23.5	300	94	48	52.5	14	22.5	8x - 18	254
10	600	222	20	210	41	32	35	10	45	4x - 22	165
	900	236	20	210	51	34.5	37.5	10	45	4x - 22	165
	1500	278	20	210	40	32	35	10	45	4x - 22	165
12	600	247	20	210	42	38	41	10	45	4x - 22	165
	900	255	20	210	41	38	41	10	45	4x - 22	165
	1500	298	23.5	300	94	48	52.5	14	22.5	8x - 18	254

How to Order: How to develop typical figure numbers without options:

EG - 12" Full Port Raised Face Class 600 TM for Sour-Low-Temp service - Bare-Stem for actuation

FIGURE NUMBER MATRIX - TRUNNIONS																		
SERIES (XX)	BORE (X)		SIZE (XX)		CONNECTION (X)		CLASS (XX)		SERVICE (X)		TRIM (XX)	SEAT (X)	ISOLATION (X)	OPERATOR (X)				
TM	F		12		R		06		M		01	C	1	B				
TM TRUNNION	F	FULL	02	2"	R	RAISED FACE	01	150	T	STEAM	01	SS/ChrC*	C	Chr-C*	1	DB&B:SR	L	LEVER
			03	3"	J	RTJ	03	300	K**	HIGH TEMP			W	W-C			G	GEAR-OP
			04	4"	C	BUTT-WELD (40)	06	600	N	SOUR			S	Stellite			B	BARE-STEM
			06	6"	A	SMOOTH FACE	08	800	A	FULL SS								
			08	8"	D	BUTT-WELD (20)	09	900	M***	SLT-SLURRY								
			10	10"	E	BUTT-WELD (10)	15	1500	B	BURIED								
			12	12"														
			16	16"														

Note:
 * Standard Configuration
 ** 400C
 *** 204C
 Additional Sizes / Features Available. Contact NAM



The NAC-NUTEK® valve brand was established in 2017 to address the specific requirements of the oil and gas and process control industries. Every aspect of the brand and its products is supported by a team of valve and actuation experts with literally centuries of combined experience in providing global operators with rugged, field proven products manufactured to the highest levels of quality and performance.



North American Marketing [NAM] and its team have a long and rich history in the energy industry. Founded by William Robbins and Jim Wright, the majority of the team at NAM were part of Nutron Industries which was established by Mr. Robbins in 1989. Up until its sale in 2002 to Cooper Cameron, now a division of Schlumberger, Nutron Industries was an industry leader placing more than a million valves into applications throughout the world. In 2017, Mr. Robbins and Mr. Wright, formerly Senior Vice President of Cooper Cameron and President of its valve and distributed products division, decided to re-enter the valve industry focusing on improved design to create superior valves. The first brand of valves, NAC-NUTEK® is designed specifically for the oil and gas and process control industries, with added focus on severe service applications.

HSE POLICY STATEMENT

At NAC-NUTEK® we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.



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