

# SECTION D – ASME FLANGED BALL VALVES

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# SECTION D – ASME FLANGED BALL VALVES

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**CERTIFIED**  
**LEADFREE**  
OPTIONS AVAILABLE

Throughout this catalog, products that have a Lead Free\* option will be identified with this logo.  
\* LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380.  
ANSI 3rd party approved and listed.  
\*\*Any imported products are identified as "Apollo International".



# ASME FLANGED BALL VALVES

## Features and Benefits

**87A, 87A-F, 87B, 88A, 88A-F, 88B, 88L, & 88L-F Series**



### STANDARDS COMPLIANCE:

*Except where specifically noted all valves within this family of products complies with the requirements of this listed standard.*

<b>ASME B16.5</b>	"Pipe Flanges and Flanged Fittings"
<b>ASME B16.10</b>	"Face to Face Dimensions of Valves"
<b>ASME B16.34</b>	"Valves - Flanged, Threaded, and Welding End"
<b>ASME B16.33</b>	"Manual Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig"
<b>ASME B16.38</b>	"Large Metallic Valves for Gas Distribution (Manually Operated NPS 2.5" to 12", 125 psig)"
<b>ASME B31.1</b>	"Power Piping"
<b>ASME B31.3</b>	"Chemical Plant and Petroleum Refinery Piping"
<b>ASME B31.8</b>	"Gas Transmission and Distribution Piping Systems"
<b>API 607</b>	"Fire Test - Soft Seated Quarter Turn Valves" (-24 Option Required). See specific tech sheet for 5th or 6th edition.
<b>API 608</b>	"Ball Valves - Flanged, Threaded, and Welding End"
<b>MSS SP-25</b>	"Standard Marking System for Valves"
<b>MSS SP-61</b>	"Pressure Testing of Steel Valves"
<b>MSS SP-72</b>	"Ball Valves with Flanged or Buttweld Ends"
<b>UL 125</b>	"Valves for Anhydrous Ammonia and LP-Gas (Other than Safety Relief)"
<b>NSF/ANSI 61</b>	Section 8, Annex G (1/2" to 4" 87A Series)
<b>NSF-372</b>	Drinking Water System Components - Lead Content (1/2" to 4" 87A Series)

### STANDARD FEATURES:

*Except where specifically noted all valves within this family of products include all listed features as standard.*

- Two Position Locking Device (Valves 6" Full Port, 8" Standard Port and smaller)
- Chevron Style Adjustable Stem Seals
- ISO 5211 Mounting Pad Bolt Pattern
- Slot Vented Ball for Thermal Expansion
- Rated up to 150 psig Saturated Steam
  - ASME Class 150, 300, & 600 Valves
- Rated up to 250 psig Saturated Steam
  - ASME Class 300 Valves Require the -65 Option
  - ASME Class 600 Valves Require the -24-80 Options or -38 Option
- Anti-static Grounded Ball and Stem
- Blow-out Proof Stem Design
- Cast Boss for Bleed / Drain Port
- Vacuum Service to 29 inches of Hg
- NACE MR0175 (2000) Compliance on all 87A/87B/88A/88B/88L Valves with SS Ball & Stem
- NACE MR0103 (2003) Compliance on all 87A/87B/88A/88B/88L Valves with SS Ball & Stem

### PRODUCT APPROVALS:

<b>CSA*</b>	(Reference: ASME B16.33 & B16.38) ASME Class 150 & 300 only
<b>UL*</b>	(Reference: Control Number 195H) ASME Class 150 & 300 only
<b>UL (YSDT)</b>	LP-Gas Shut-Off Valves
<b>UL (MHKZ)</b>	Manual Valves
<b>UL (YRBX)</b>	Flammable Liquid Shut-Off Valves
<b>UL (YRPV)</b>	Gas Shut-Off Valves
<b>UL (YQNZ)</b>	Compressed Gas Shut-Off Valves
<b>UL (YQAR)</b>	Anhydrous Ammonia Shut-Off Valves

\* Requires "UL" suffix for markings.



# ASME FLANGED BALL VALVES

87A, 87B, 88A, 88B, & 88L Series



## VARIATIONS AVAILABLE:

REFERENCE DATA:				ALLOY SERIES FLANGED BALL VALVES				
SIZE	PORT	ANSI CLASS	DIMENSIONAL DATA PAGE	STAINLESS STEEL	ALLOY 20	* HASTELLOY	* NICKEL	* NI-CU
1.5" & 2"	Standard	150	D-1	87A-10X	87A-40X	87H-1HX	87N-1NX	87M-13X
2.5" & 3"	Standard	150	D-2	87A-10X	87A-40X	87H-1HX	87N-1NX	N/A
4", 6" & 8"	Standard	150	D-3	87A-10X	87A-40X	87H-1HX	87N-1NX	N/A
10"	Standard	150	D-4	87A-10X	87A-40X	87H-1HX	87N-1NX	N/A
1/2", 3/4" & 1"	Full	150	D-5	87A-20X	87A-50X	87H-2HX	87N-2NX	87M-23X
1.5", 2" & 2.5"	Full	150	D-6	87A-20X	87A-50X	87H-2HX	87N-2NX	87M-23X
3", 4", & 6"	Full	150	D-7	87A-20X	87A-50X	87H-2HX	87N-2NX	N/A
8", 10" & 12"	Full	150	D-8	87A-20X	87A-50X	87H-2HX	87N-2NX	N/A
1.5" & 2"	Standard	300	D-9	87A-70X	87A-80X	87H-7HX	87N-7NX	N/A
2.5" & 3"	Standard	300	D-10	87A-70X	87A-80X	87H-7HX	87N-7NX	N/A
4", 6" & 8"	Standard	300	D-11	87A-70X	87A-80X	87H-7HX	87N-7NX	N/A
10"	Standard	300	D-12	87A-70X	87A-80X	87H-7HX	87N-7NX	N/A
1/2", 3/4" & 1"	Full	300	D-13	87A-90X	87A-60X	87H-9HX	87N-9NX	87M-93X
1.5", 2" & 2.5"	Full	300	D-14	87A-90X	87A-60X	87H-9HX	87N-9NX	87M-93X
3", 4", & 6"	Full	300	D-15	87A-90X	87A-60X	87H-9HX	87N-9NX	N/A
8", 10" & 12"	Full	300	D-16	87A-90X	87A-60X	87H-9HX	87N-9NX	N/A

\* Minimum Quantities May Apply

## ALLOY MATERIAL OF CONSTRUCTION FOR PRESSURE CONTAINING / RETAINING COMPONENTS:

ALLOY	STAINLESS STEEL	ALLOY 20	HASTELLOY*	NICKEL*	NI-CU ALLOY*
Valve Series	87A-100/200,	87A-400/500,	87H-1H0/2H0,	87N-1N0/2N0,	87M-130/230,
	87A-700/900	87A-600/800	87H-7H0/9H0	87N-7N0/9N0	87M-730/930
Body	A351-CF8M	A351-CN7M	A494-CW12MW	A494-CZ100	A494-M35-1
Retainer	A351-CF8M or	A351-CN7M or	A494-CW12MW	A494-CZ100 or	A494-M35-1 or
	A276-316	B473-N08020	or B574-C276	B160-200	B164-K400
Ball	A351-CF8M or	A351-CN7M or	A494-CW12MW	A494-CZ100 or	A494-M35-1 or
	A276-316	B473-N08020	or B574-C276	B160-200	B164-K400
Stem	A276-316	B473-N08020	B574-C276	B160-200	B164-K400
Fasteners	A193-B8M,	A193-B8M,	A193-B8M,	A193-B8M,	A193-B8M,
	A194-Gr8	A194-Gr8	A194-Gr8	A194-Gr8	A194-Gr8

\* Minimum Quantities May Apply



# 87A-100 SERIES

## Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A276 Type 316
3 Ball	ASTM A276 Type 316
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	302 or 304 SS
10 Stem Nut	316 SS
11 Lever	302 or 304 SS with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	18-8 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Lockwasher	302 or 304 SS
18 Grounding Spring	SS

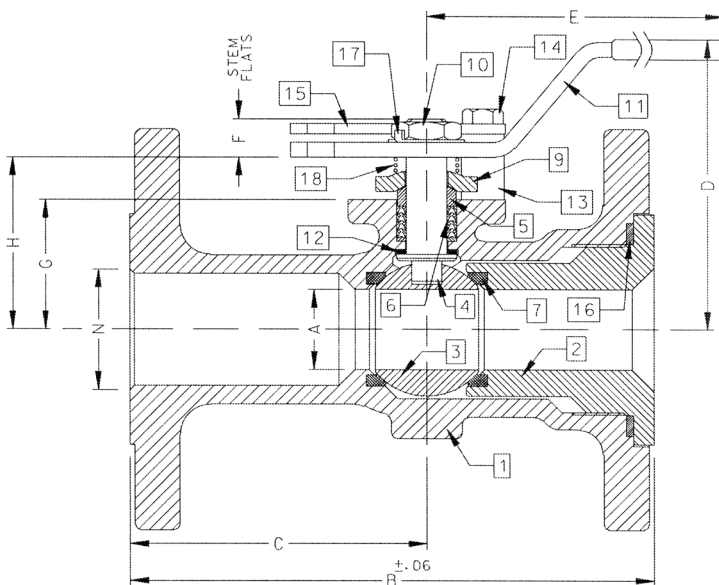
### VARIATIONS AVAILABLE:

87H - Hastelloy  
 87M - Monel (1.5" to 2" only)  
 87N - Nickel  
 87S - 304L SS

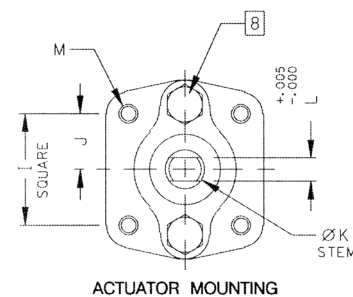
### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2



ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-107-01	1.5"	1.25	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	9
87A-108-01	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	18

# 87A-100 SERIES

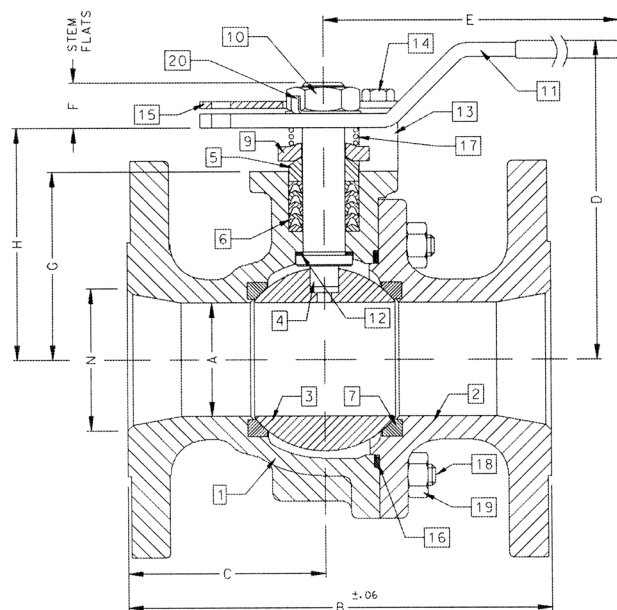
## Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Nut	18-8 SS
11	Lever	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-109-01	2.5"	2.00	7.50	3.50	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27
87A-100-01	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	34

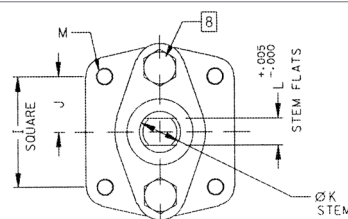
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded 87A/88A Series (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

# 87A-100 SERIES

## Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS
21	Pipe Handle	Galvanized Steel (not Shown)

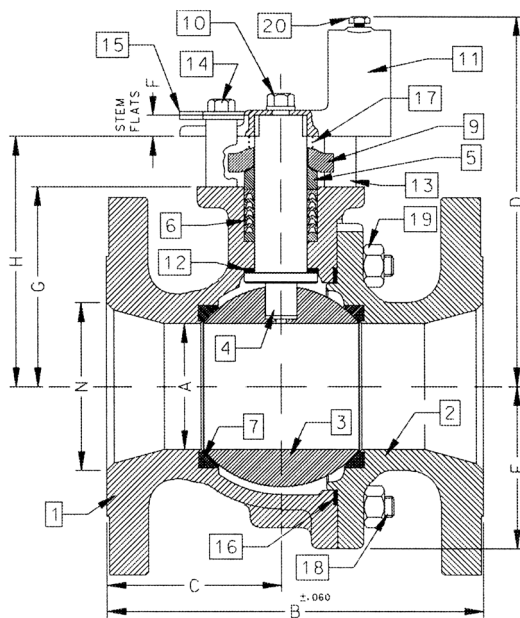
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

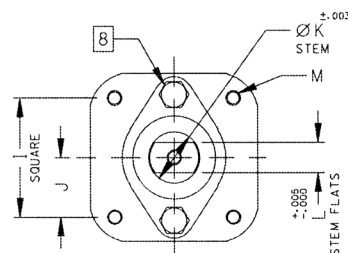
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-10A-01	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	73
87A-10C-01	6"	4.00	10.50	4.69	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	117
87A-10E-01	8"	6.00	18.00	9.00	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	310



ACTUATOR MOUNTING



# 87A-100 SERIES

## Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8

### VARIATIONS AVAILABLE:

87H - Hastelloy

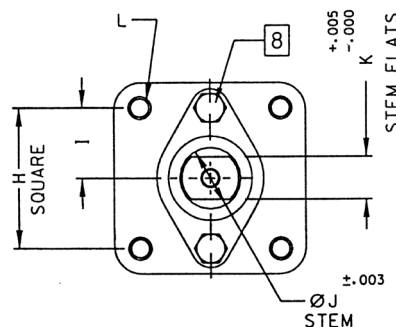
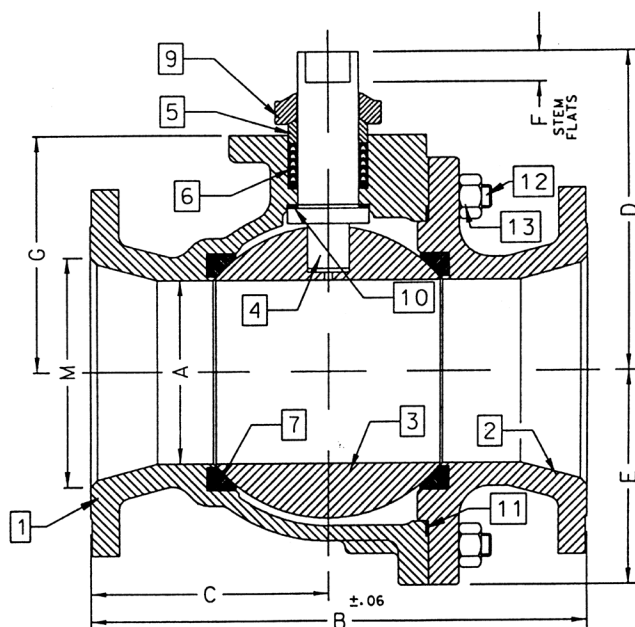
87N - Nickel

87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded 87A/88A Series (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-10G-01	10"	8.00	21.00	10.37	12.83	9.18	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00	526

# 87A-200 SERIES

## Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

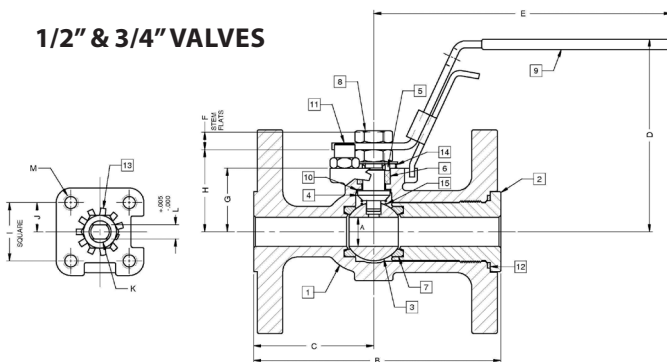
87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

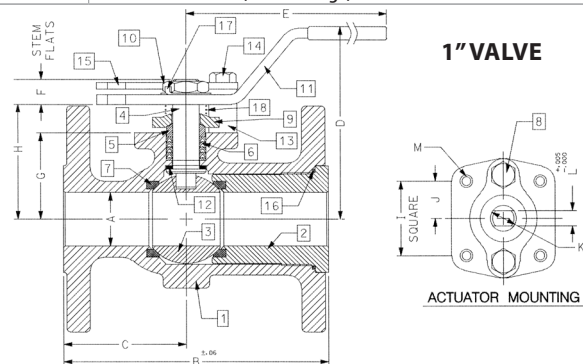
(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)

### 1/2" & 3/4" VALVES



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

### 1" VALVE



PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-203-01	1/2"	0.50	4.25	2.06	3.31	5.11	0.30	1.09	1.41	1.00	0.500	0.375	0.245	10-24	5
87A-204-01	3/4"	0.75	4.62	2.18	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	6
87A-205-01	1"	1.00	5.00	2.32	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7





# 87A-200 SERIES

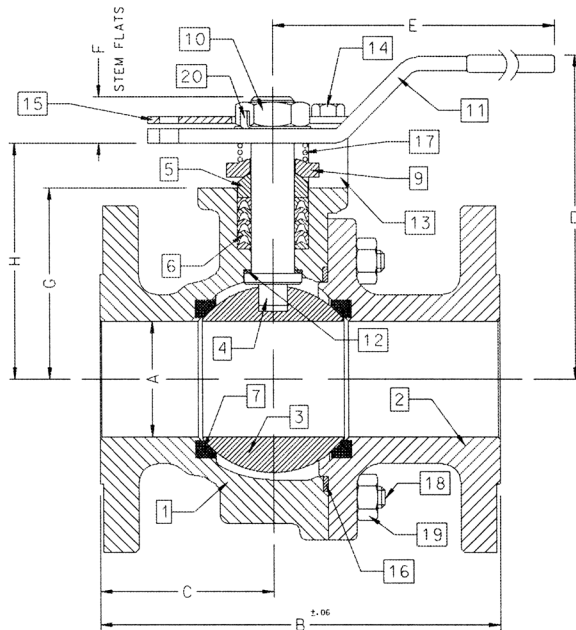
## Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A351 CF8M
3 Ball	ASTM A276 Type 316 or A351 CF8M
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-207-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
87A-208-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
87A-209-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30

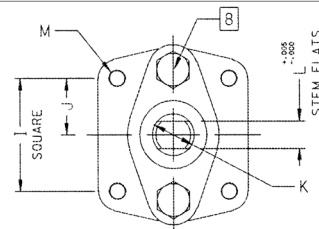
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (up to 2.5")
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-MG-	Gear Operator with Standard Handwheel
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

# 87A-200 SERIES

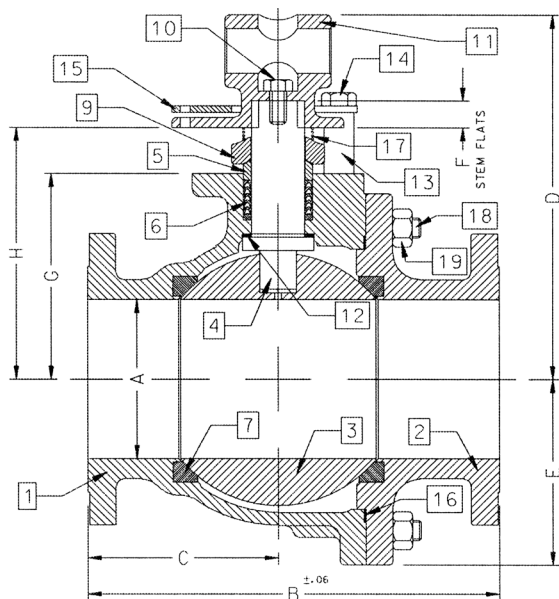
## Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A351 CF8M
3 Ball	ASTM A276 Type 316 or A351 CF8M
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Pipe Handle	Galvanized Steel (not shown)



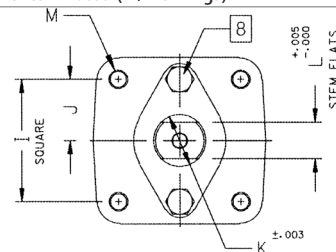
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-200-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
87A-20A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
87A-20C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248



# 87A-200 SERIES

## Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8

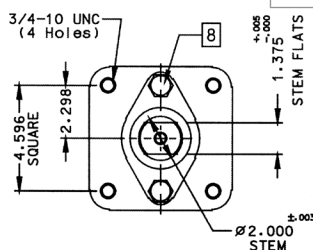
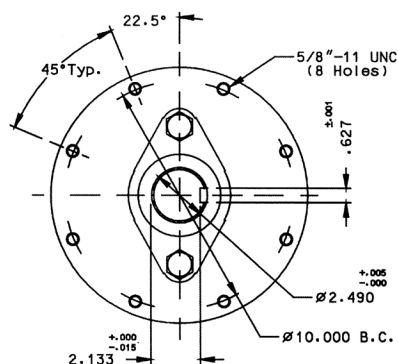
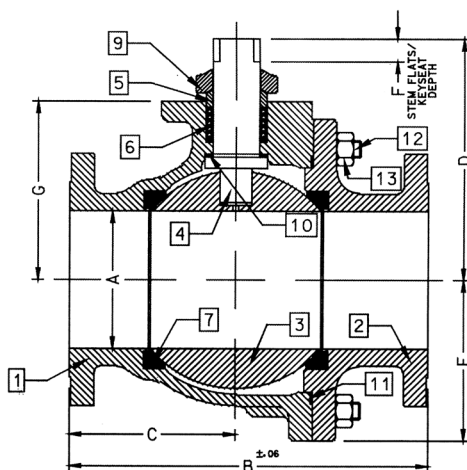
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



**ACTUATOR MOUNTING: 10" & 12"**

**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
87A-20E-01	8"	8.00	18.00	8.88	12.83	9.18	1.00	10.22
87A-20G-01	10"	10.00	21.00	10.26	18.57	11.33	2.31	12.80
87A-20H-01	12"	12.00	24.00	12.09	20.31	13.40	2.31	14.92



# 87A-700 SERIES

## Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 & 304 SS
10	Stem Nut	316 SS
11	Lever	302 & 304 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

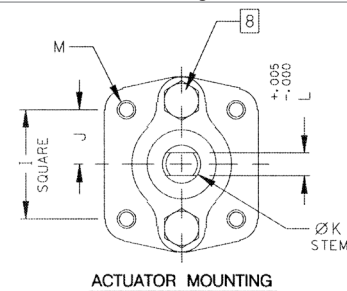
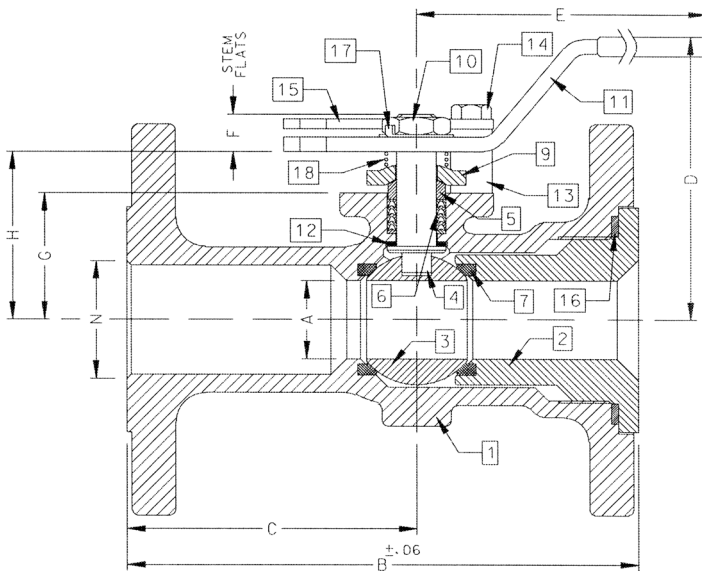
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14 -	Side Vented Ball (See Page J-2)
-15-	Wheel Handle, Steel
-21 -	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35 -	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-707-01A	1.5"	1.25	7.50	4.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	15.7
87A-708-01	2"	1.50	8.50	5.19	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	24.0



# 87A-700 SERIES

## Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A351 CF8M
3 Ball	ASTM A276 Type 316 or A351 CF8M
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	18-8 SS
11 Lever	316 with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS

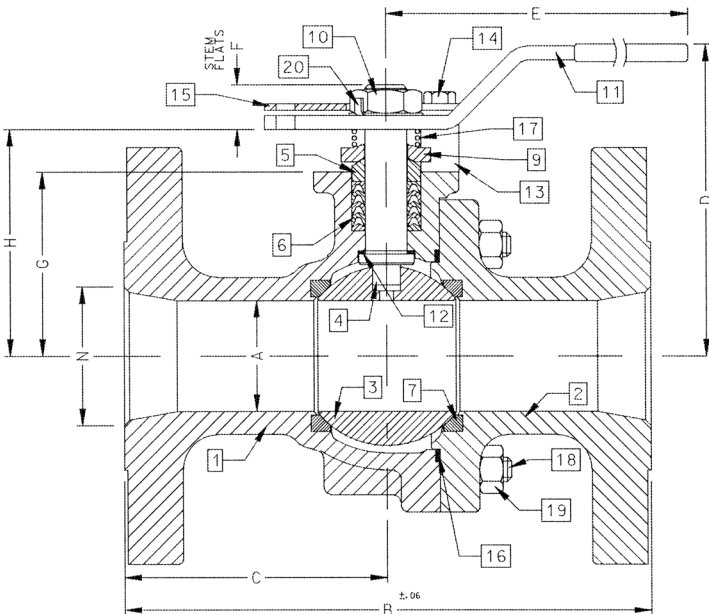
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

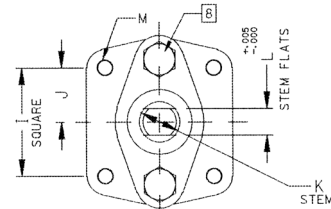
### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (2.5" only)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6



ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-709-01	2.5"	2.00	9.50	4.75	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39
87A-700-01	3"	2.50	11.12	5.56	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	55

# 87A-700 SERIES

## Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Adapter Screw	18-8 SS
21	Pipe Handle	Galvanized Steel (not shown)

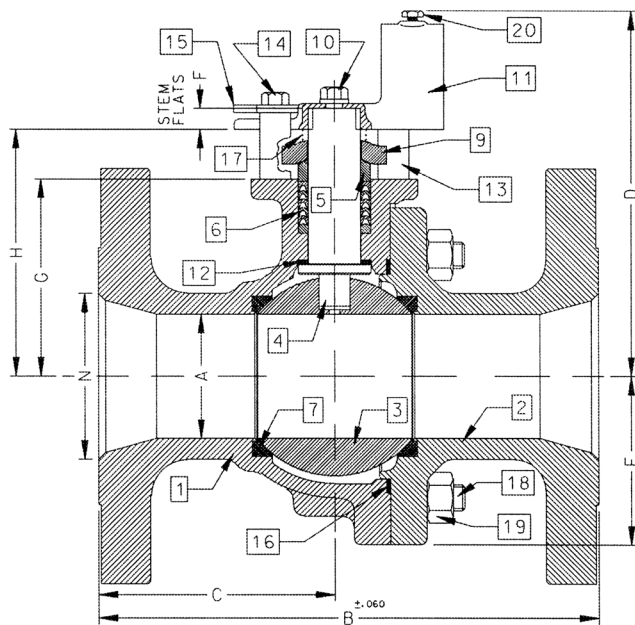
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

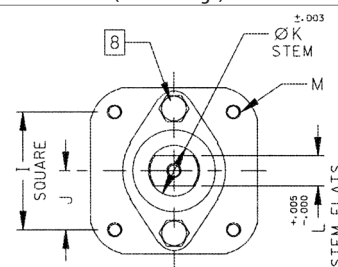
### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6



ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-70A-01	4"	3.00	12.00	5.68	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95
87A-70C-01	6"	4.00	15.88	7.38	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187
87A-70E-01	8"	6.00	19.75	9.00	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	400



# 87A-700 SERIES

## Stainless Steel ASME Class 300 Flanged Standard Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8

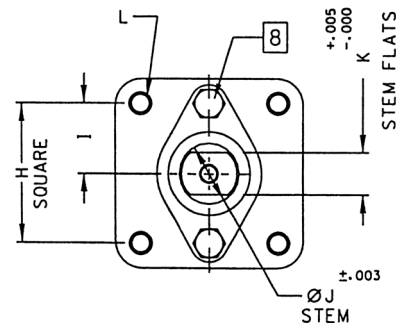
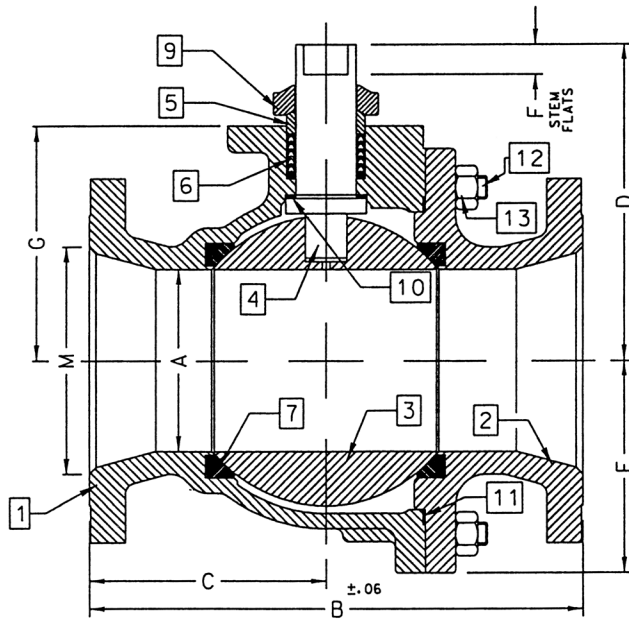
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration (Less Gear Operator)
-14-	Side Vented Ball (See Page J2)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded 87A/88A Series (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
87A-70G-01	10"	8.00	22.38	10.69	12.83	9.56	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00



# 87A-900 SERIES

## Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

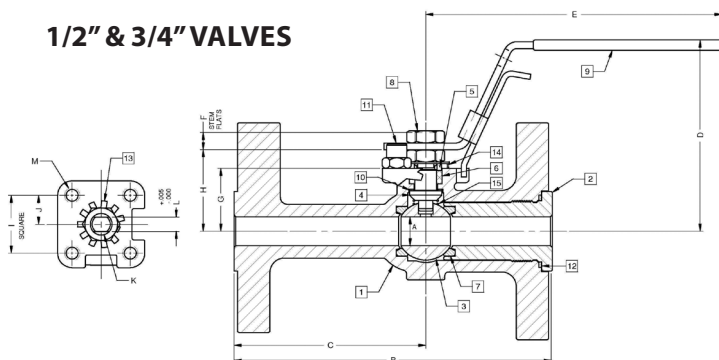
87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

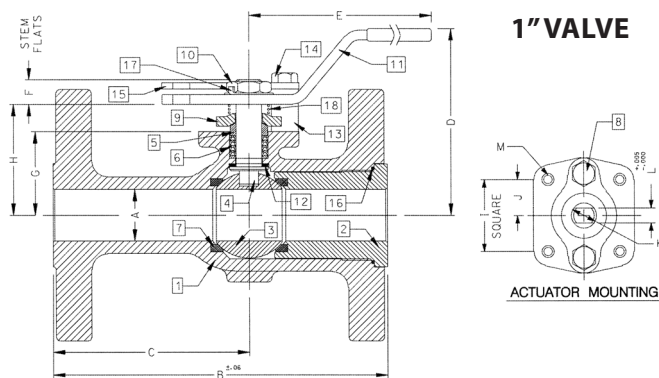
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)

### 1/2" & 3/4" VALVES



### 1" VALVE



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-903-01	1/2"	0.50	5.50	3.31	3.31	5.11	0.30	1.09	1.38	1.000	0.500	0.375	0.245	10-24	6
87A-904-01	3/4"	0.75	6.00	3.56	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	9
87A-905-01	1"	1.00	6.50	3.82	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	11



# 87A-900 SERIES

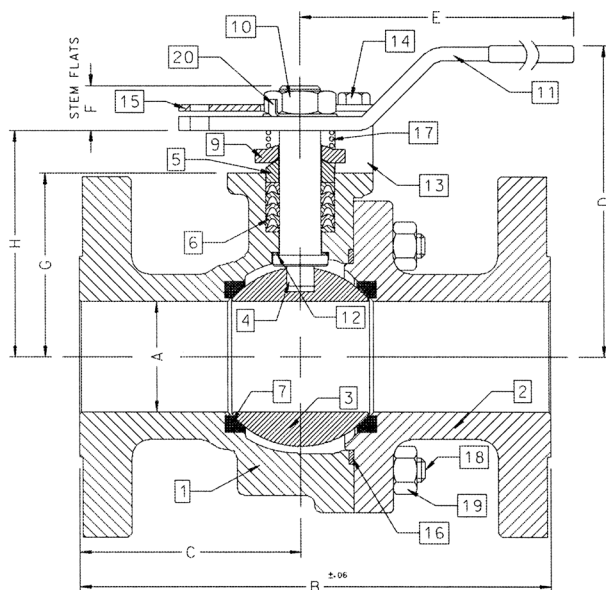
## Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A351 CF8M
3 Ball	ASTM A276 Type 316 or A351 CF8M
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	18-8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-907-01	1.5"	1.50	7.50	3.50	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	21
87A-908-01	2"	2.00	8.50	4.00	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37
87A-909-01	2.5"	2.50	9.50	4.44	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	57

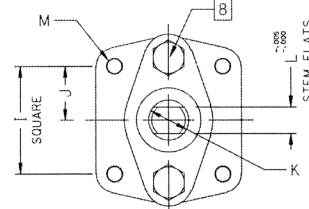
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

# 87A-900 SERIES

## Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A351 CF8M
3 Ball	ASTM A276 Type 316 or A351 CF8M
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Pipe Handle	Galvanized Steel (not shown)

### VARIATIONS AVAILABLE:

87H - Hastelloy

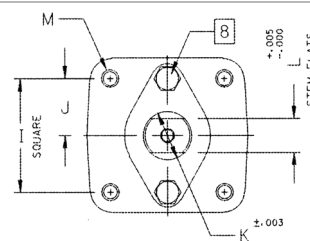
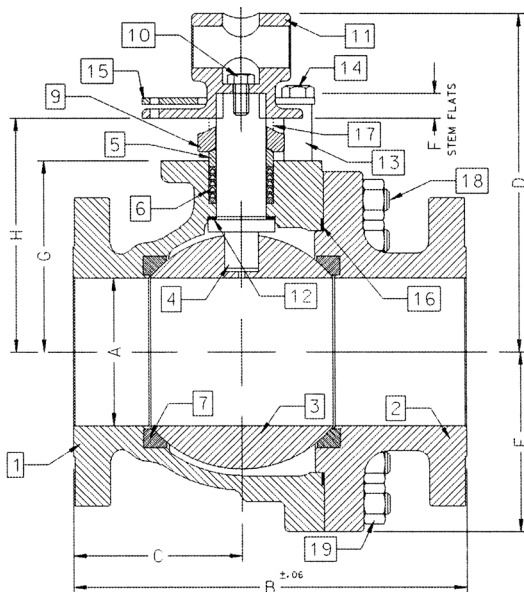
87N - Nickel

87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-900-01	3"	3.00	11.12	5.24	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78
87A-90A-01	4"	4.00	12.00	5.44	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133
87A-90C-01	6"	6.00	15.88	6.82	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	329



# 87A-900 SERIES

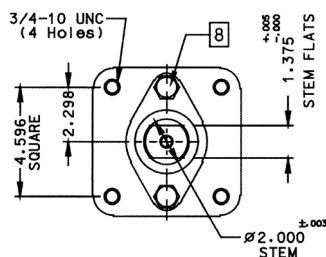
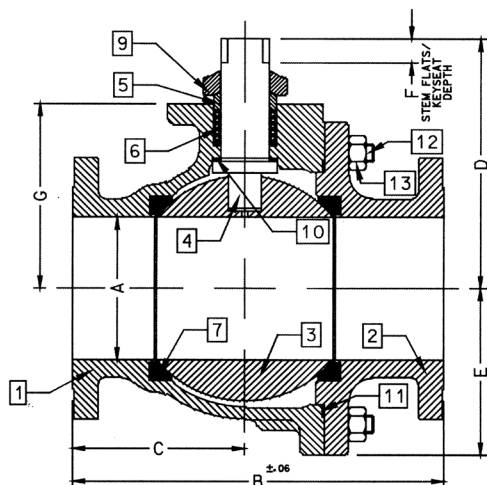
## Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351 CF8M
2 Retainer	ASTM A351 CF8M
3 Ball	ASTM A276 Type 316 or A351 CF8M
4 Stem	ASTM A276 Type 316
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B8M
13 Body Joint Nut	ASTM A194 Grade 8



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 6

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
87A-90E-01	8"	8.00	19.75	9.38	12.83	9.56	1.00	10.22
87A-90G-01	10"	10.00	22.38	10.95	18.57	11.33	2.31	12.80
87A-90H-01	12"	12.00	25.50	12.84	20.31	13.40	2.31	14.92

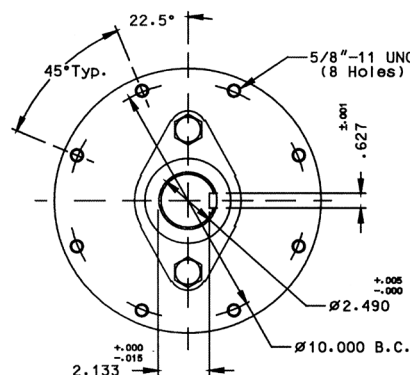
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



**ACTUATOR MOUNTING: 10" & 12"**



# 87B-100 SERIES

## Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Nut	18-8 SS
11	Lever	316 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Lockwasher	302 or 304 SS

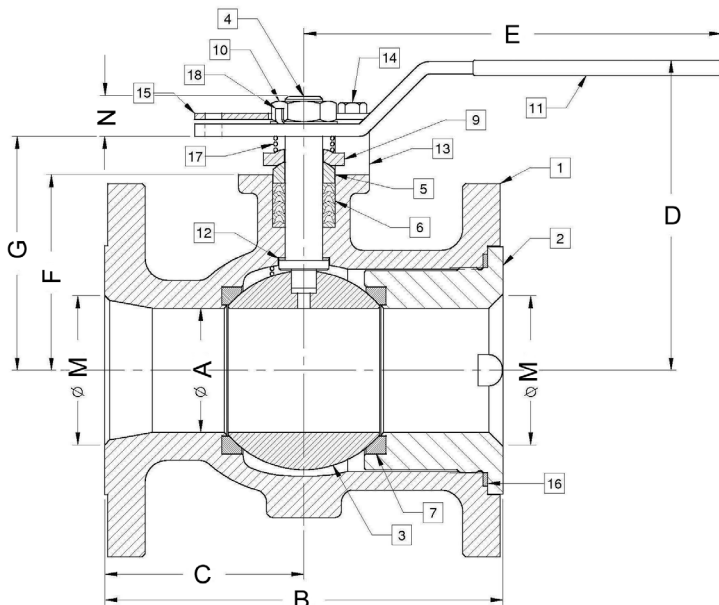
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

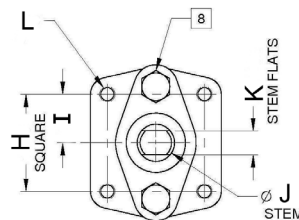
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87B-100-01	3"	2.50	8.00	4.00	6.23	8.40	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	0.77	43



ACTUATOR MOUNTING

# 87B-100 SERIES

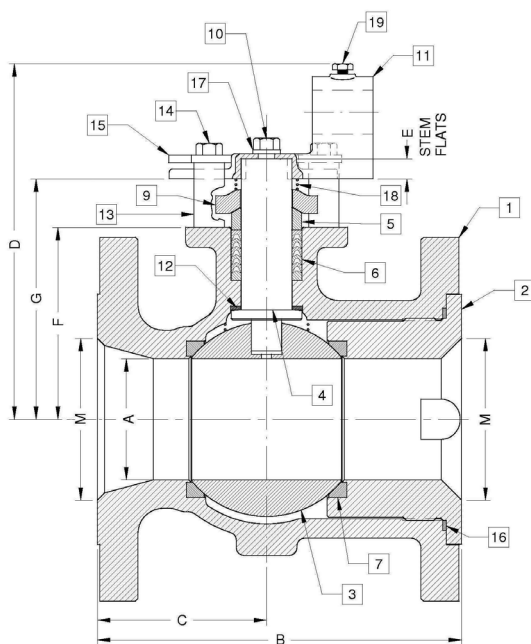
## Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 4" - 10" Short Pattern

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS
19	Adapter Screw	18-8 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87B-10A-01	4"	3.00	9.00	4.18	8.80	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	72
87B-10C-01	6"	4.00	10.50	5.25	9.99	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	110
87B-10E-01	8"	6.00	11.50	5.75	13.61	1.00	7.63	9.36	4.596	2.298	2.000	1.375	3/4-10	8.00	210
87B-10G-01	10"	8.00	13.00	6.50	N/A	1.00	9.50	11.23	4.596	2.298	2.000	1.375	3/4-10	10.0	350

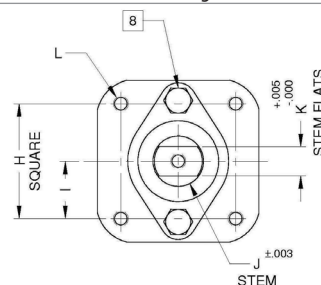
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



# 87J-100 SERIES

## Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.

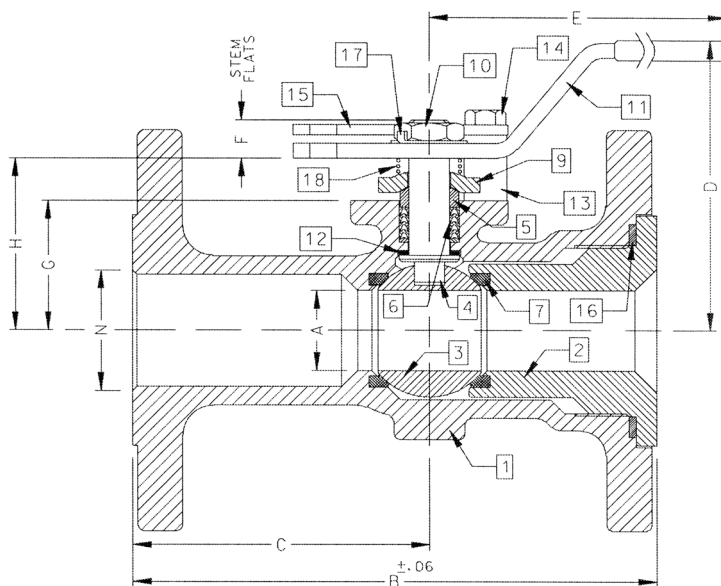


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A276/A479 Alloy 2205
3	Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	ASTM A194 Grade 8
11	Lever	302 or 304 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS, ASTM A313

### VARIATIONS AVAILABLE:

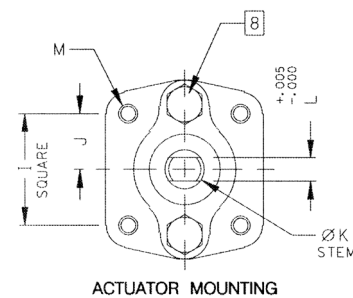
87H - Hastelloy  
 87M - Monel (1.5" to 2" only)  
 87N - Nickel  
 87S - 304L SS



### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87J-107-01	1.5"	1.25	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	9
87J-108-01	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	18



# 87J-100 SERIES

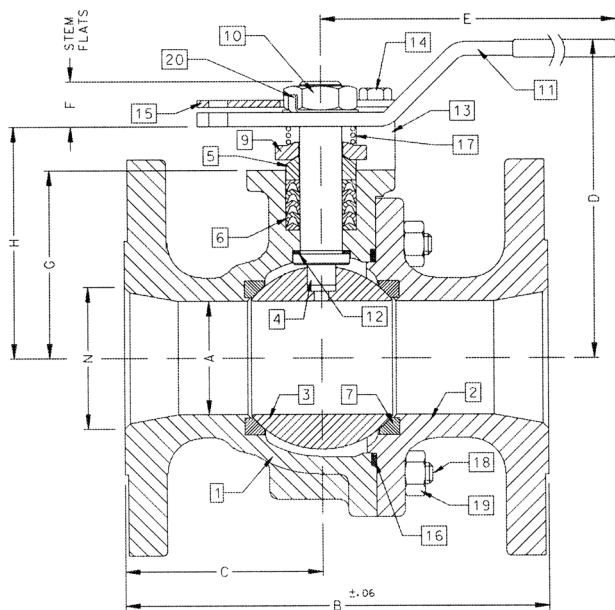
## Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	ASTM A194 Grade 8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS, ASTM A313
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS



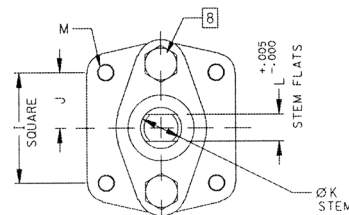
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded 87A/88A Series (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87J-109-01	2.5"	2.00	7.50	3.50	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27
87J-100-01	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	34

# 87J-100 SERIES

## Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS, ASTM 313
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS
21 Pipe Handle	Galvanized Steel (not Shown)

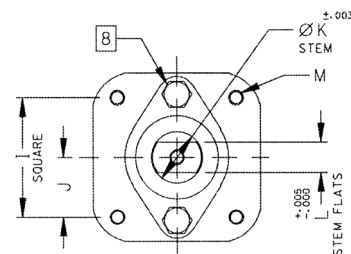
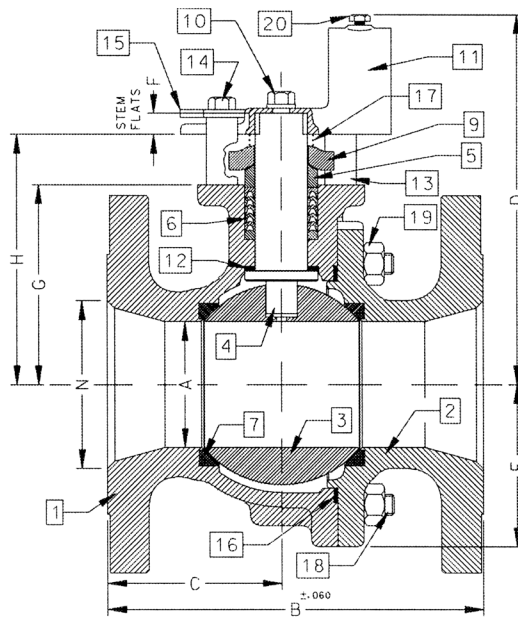
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87J-10A-01	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	73
87J-10C-01	6"	4.00	10.50	4.69	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	117
87J-10E-01	8"	6.00	18.00	9.00	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	310





# 87J-100 SERIES

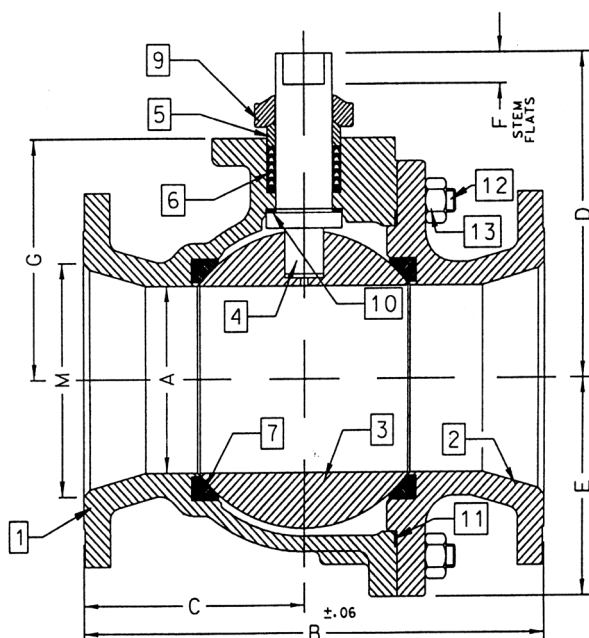
## Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A995 4A
3	Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8



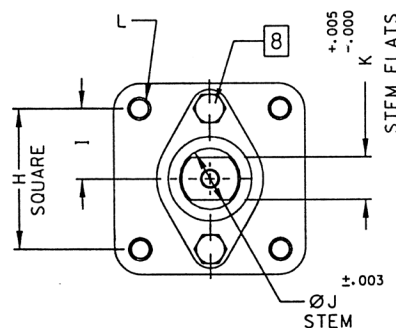
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded 87A/88A Series (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-10G-01	10"	8.00	21.00	10.37	12.83	9.18	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00	526

# 87J-200 SERIES

## Duplex Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A276/A479 Alloy 2205
3	Ball	ASTM A276/A479 Alloy 2205
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A276/A479 Alloy 2205
3	Ball	ASTM A276/A479 Alloy 2205
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

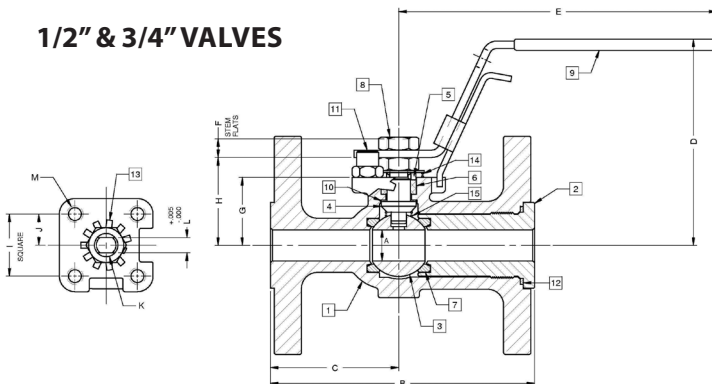
87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

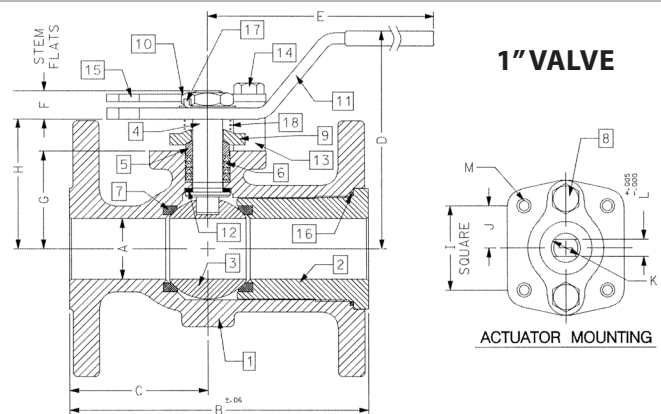
(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D

### 1/2" & 3/4" VALVES



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

### 1" VALVE



PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-203-01	1/2"	0.50	4.25	2.06	3.31	5.11	0.30	1.09	1.41	1.00	0.500	0.375	0.245	10-24	5
87J-204-01	3/4"	0.75	4.62	2.18	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	6
87J-205-01	1"	1.00	5.00	2.32	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7



# 87J-200 SERIES

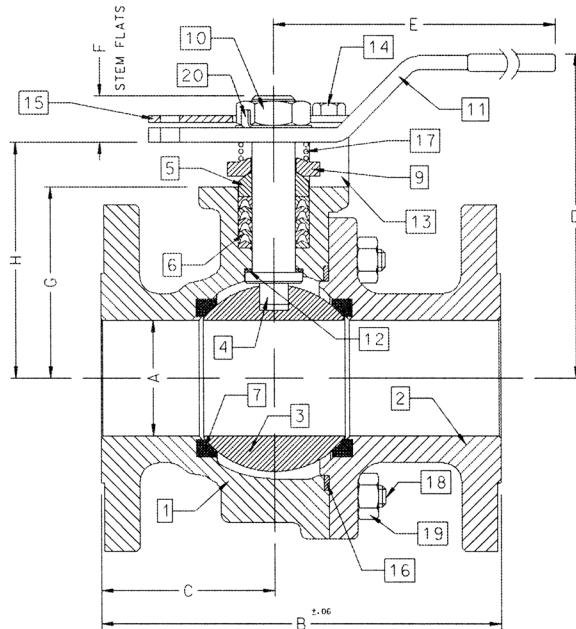
## Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A995 4A
3	Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Lever	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-207-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
87J-208-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
87J-209-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30

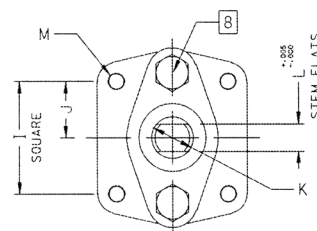
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-MG-	Gear Operator with Standard Handwheel
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING



# 87J-200 SERIES

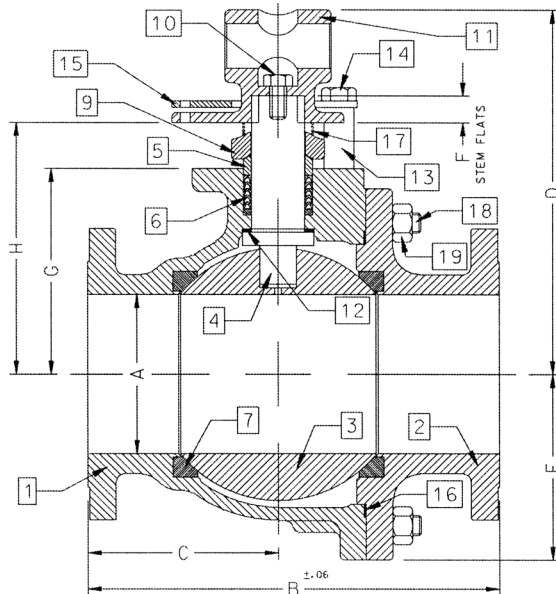
## Duplex Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Pipe Handle	Galvanized Steel (not shown)



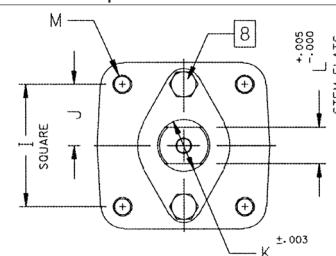
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-200-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
87J-20A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
87J-20C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248



# 87J-200 SERIES

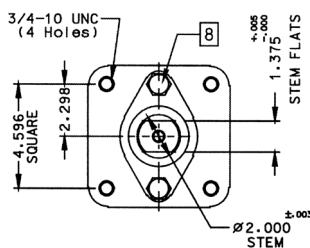
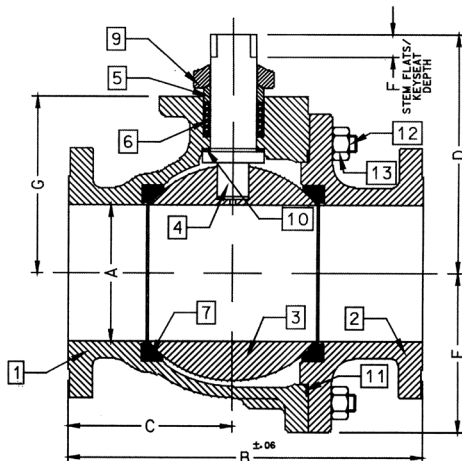
## Duplex Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B8M
13 Body Joint Nut	ASTM A194 Grade 8



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
87J-20E-01	8"	8.00	18.00	8.88	12.83	9.18	1.00	10.22
87J-20G-01	10"	10.00	21.00	10.26	18.57	11.33	2.31	12.80
87J-20H-01	12"	12.00	24.00	12.09	20.31	13.40	2.31	14.92

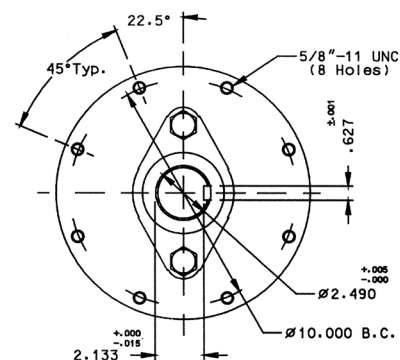
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



**ACTUATOR MOUNTING: 10" & 12"**

# 87J-700 SERIES

## Duplex Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A995 4A
3	Ball	ASTM A276/A479 Alloy 2205
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 & 304 SS
10	Stem Nut	ASTM A194 Grade 8
11	Lever	302 & 304 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS, ASTM A313

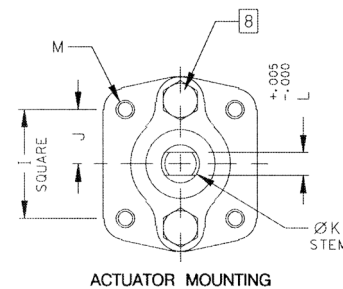
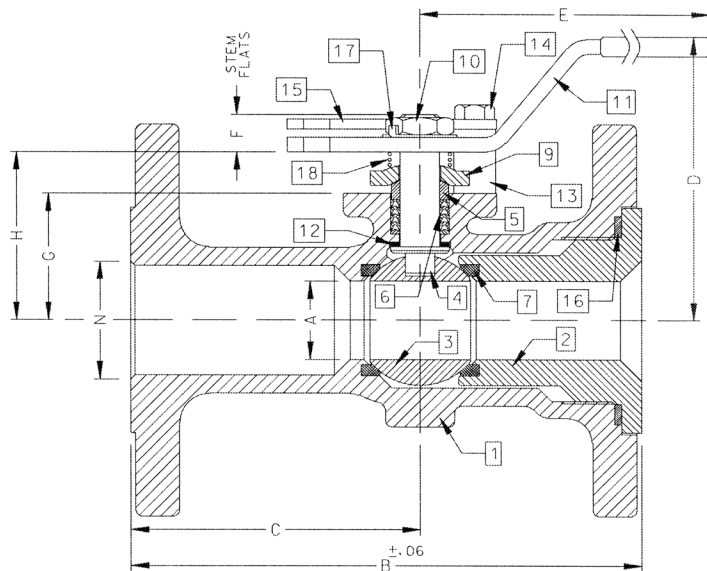
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14 -	Side Vented Ball (See Page J-2)
-15-	Wheel Handle, Steel
-21 -	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35 -	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87J-707-01A	1.5"	1.25	7.50	4.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	15.7
87J-708-01	2"	1.50	8.50	5.19	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	24.0



# 87J-700 SERIES

## Duplex Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	ASTM A194 Grade 8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS, ASTM A313
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS

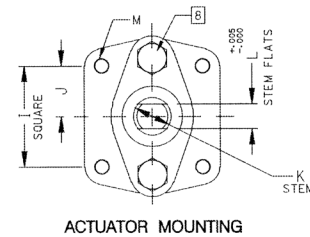
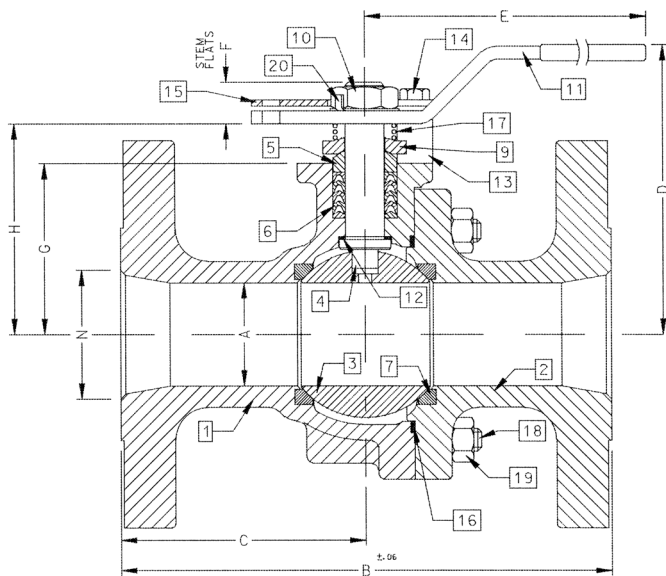
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87J-709-01	2.5"	2.00	9.50	4.75	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39
87J-700-01	3"	2.50	11.12	5.56	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	55

# 87J-700 SERIES

## Duplex Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A995 4A
3	Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS, ASTM 313
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Adapter Screw	302 or 304 SS
21	Pipe Handle	Galvanized Steel (not Shown)

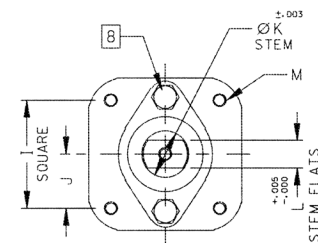
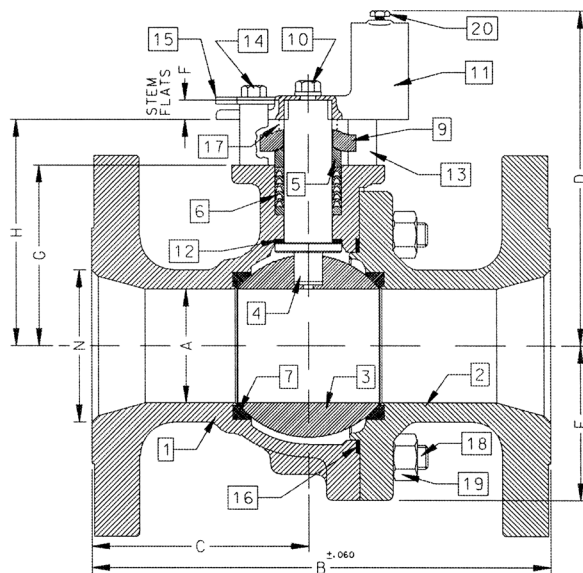
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87J-70A-01	4"	3.00	12.00	5.68	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95
87J-70C-01	6"	4.00	15.88	7.38	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187
87J-70E-01	8"	6.00	19.75	9.00	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	400





# 87J-700 SERIES

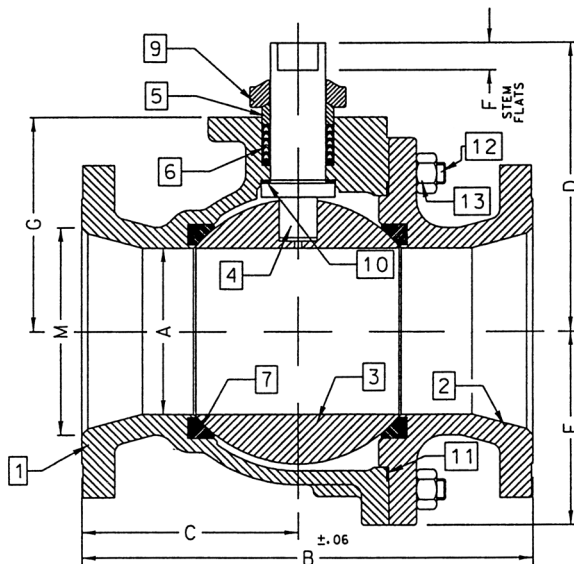
## Duplex Stainless Steel ASME Class 300 Flanged Standard Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A995 4A
3	Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8



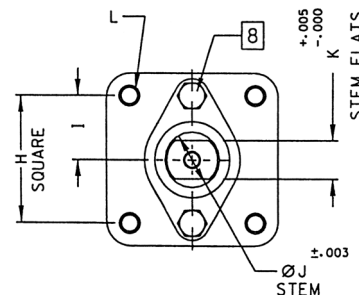
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration (Less Gear Operator)
-14-	Side Vented Ball (See Page J2)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded 87A/88A Series (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
87J-70G-01	10"	8.00	22.38	10.69	12.83	9.56	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00

# 87J-900 SERIES

## Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A276/A479 Alloy 2205
3	Ball	ASTM A276/A479 Alloy 2205
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A276/A479 Alloy 2205
3	Ball	ASTM A276/A479 Alloy 2205
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS, ASTM A313

### VARIATIONS AVAILABLE:

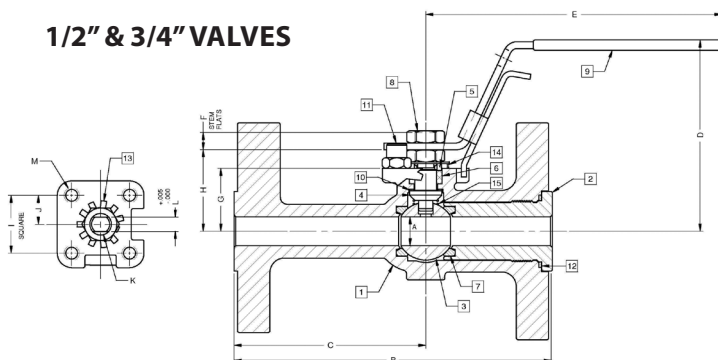
87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

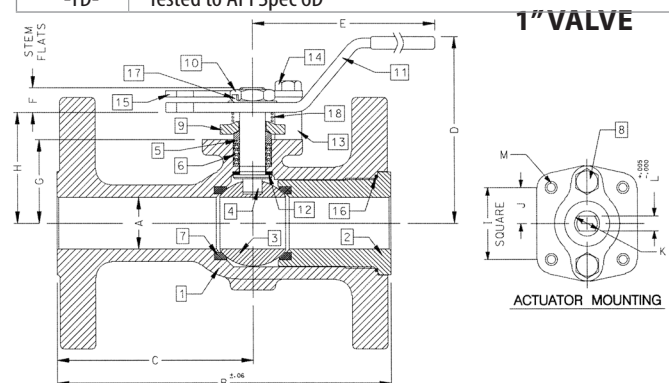
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D

### 1/2" & 3/4" VALVES



### 1" VALVE



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-903-01	1/2"	0.50	5.50	3.31	3.31	5.11	0.30	1.09	1.38	1.000	0.500	0.375	0.245	10-24	6
87J-904-01	3/4"	0.75	6.00	3.56	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	9
87J-905-01	1"	1.00	6.50	3.82	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	11



# 87J-900 SERIES

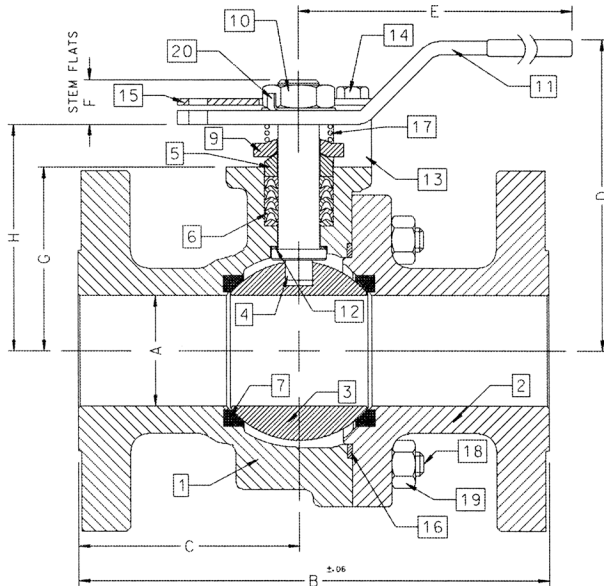
## Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276/A479 Alloy 2205
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	18-8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS, ASTM A313
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS



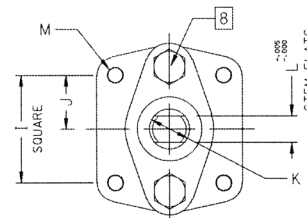
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-907-01	1.5"	1.50	7.50	3.50	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	21
87J-908-01	2"	2.00	8.50	4.00	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37
87J-909-01	2.5"	2.50	9.50	4.44	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	57



# 87J-900 SERIES

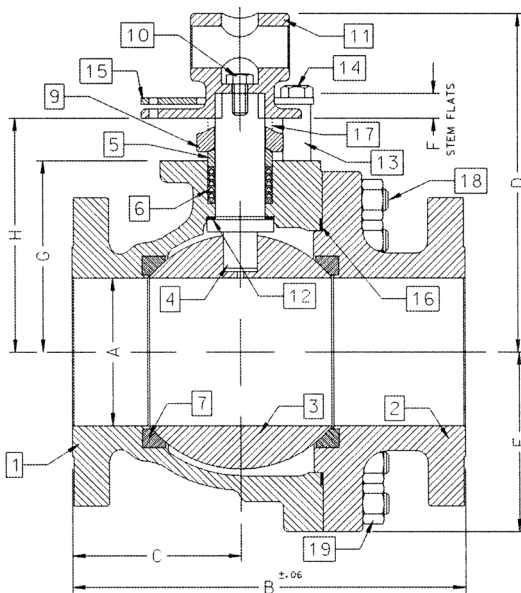
## Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 4A
2	Retainer	ASTM A995 4A
3	Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4	Stem	ASTM A276/A479 Alloy 2205
5	Packing Gland	ASTM A276/A479 Alloy 2205
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS, ASTM A313
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Pipe Handle	Galvanized Steel (not shown)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87J-900-01	3"	3.00	11.12	5.24	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78
87J-90A-01	4"	4.00	12.00	5.44	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133
87J-90C-01	6"	6.00	15.88	6.82	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	329

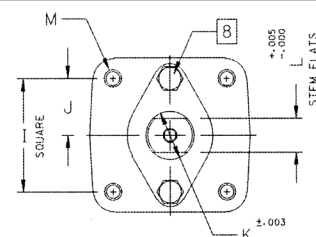
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



### ACTUATOR MOUNTING



# 87J-900 SERIES

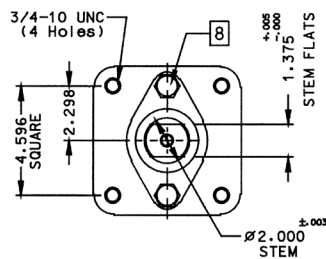
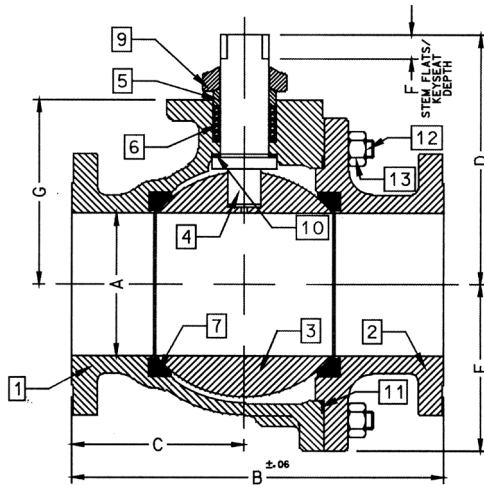
## Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 4A
2 Retainer	ASTM A995 4A
3 Ball	ASTM A276/A479 Alloy 2205 or A995 4A
4 Stem	ASTM A276/A479 Alloy 2205
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B8M
13 Body Joint Nut	ASTM A194 Grade 8



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
87J-90E-01	8"	8.00	19.75	9.38	12.83	9.56	1.00	10.22
87J-90G-01	10"	10.00	22.38	10.95	18.57	11.33	2.31	12.80
87J-90H-01	12"	12.00	25.50	12.84	20.31	13.40	2.31	14.92

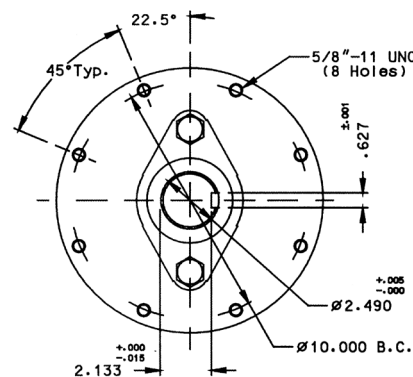
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



**ACTUATOR MOUNTING: 10" & 12"**

# 87K-100 SERIES

## Super Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A276/A479 Alloy 2507
3	Ball	ASTM A276/A479 Alloy 2507
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

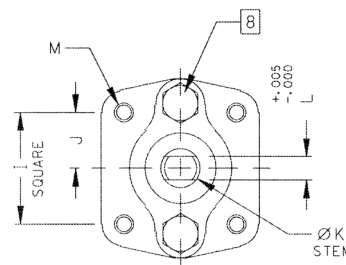
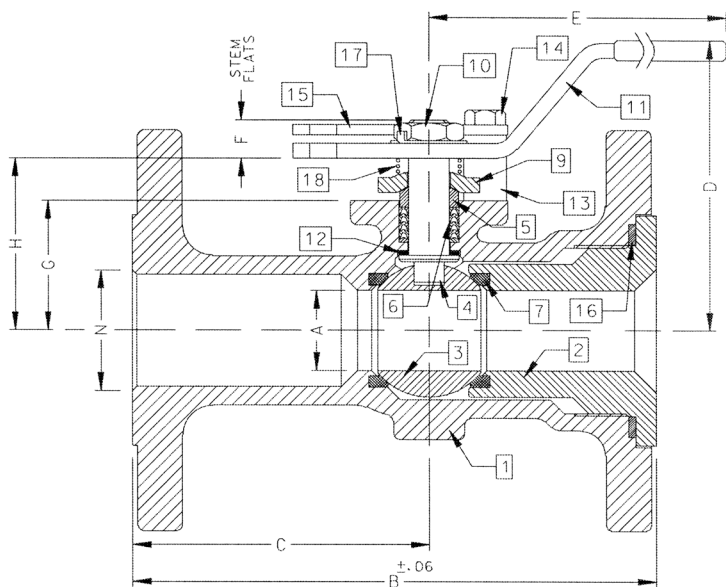
### VARIATIONS AVAILABLE:

87H - Hastelloy  
 87M - Monel (1.5" to 2" only)  
 87N - Nickel  
 87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87K-107-01	1.5"	1.25	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	9
87K-108-01	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	18



# 87K-100 SERIES

## Super Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4 Stem	ASTM A276/A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	18-8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS

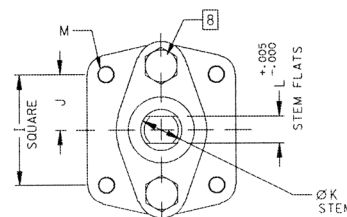
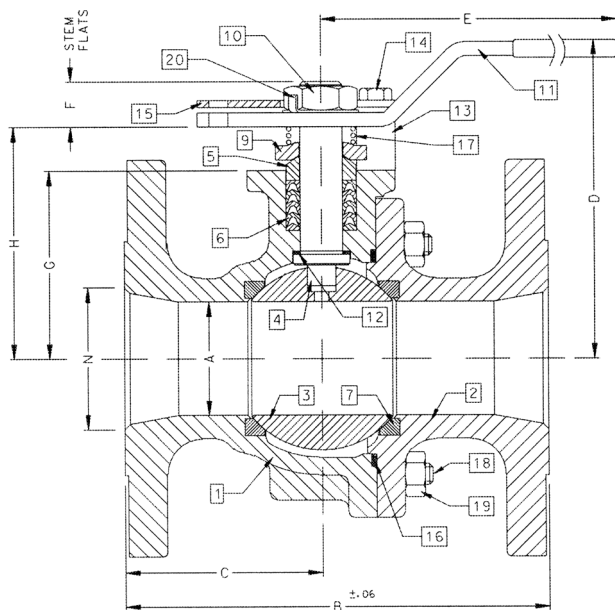
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded 87A/88A Series (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87K-109-01	2.5"	2.00	7.50	3.50	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27
87K-100-01	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	34

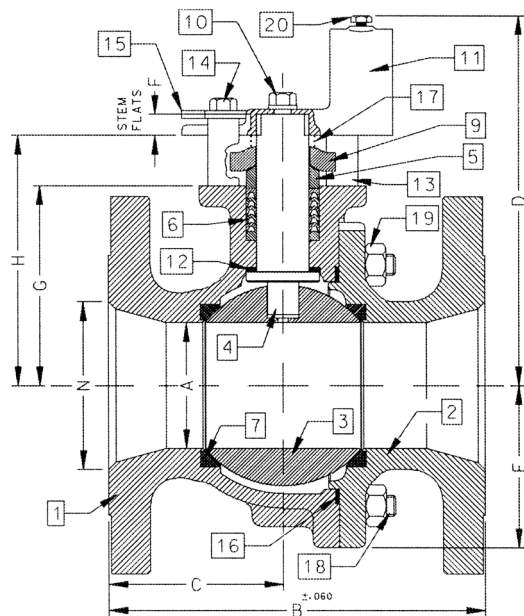
## Super Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



## STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A995 6A
3	Ball	ASTM A995 6A or A276/A479 Alloy 2507
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS
21	Pipe Handle	Galvanized Steel (not Shown)



**FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40**

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87K-10A-01	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	73
87K-10C-01	6"	4.00	10.50	4.69	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	117
87K-10E-01	8"	6.00	18.00	9.00	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	310

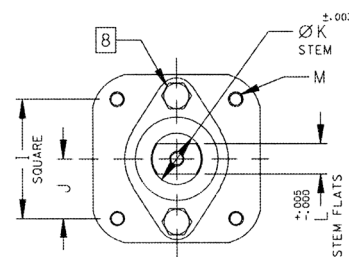
**VARIATIONS AVAILABLE** (For more information in Section J)

87. Minimum quantity apply

87.1. specifying an option, replace the "01" standard suffix with the suffix of the option.

87.2. specifying multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



## ACTUATOR MOUNTING



# 87K-100 SERIES

## Super Duplex Stainless Steel ASME Class 150 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A995 6A
3	Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4	Stem	ASTM A276 A995 6A
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8

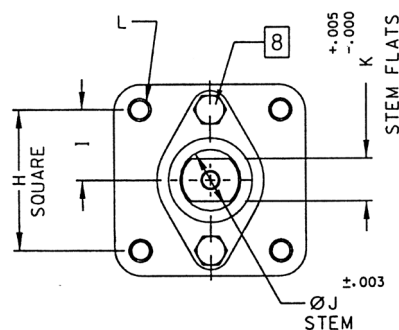
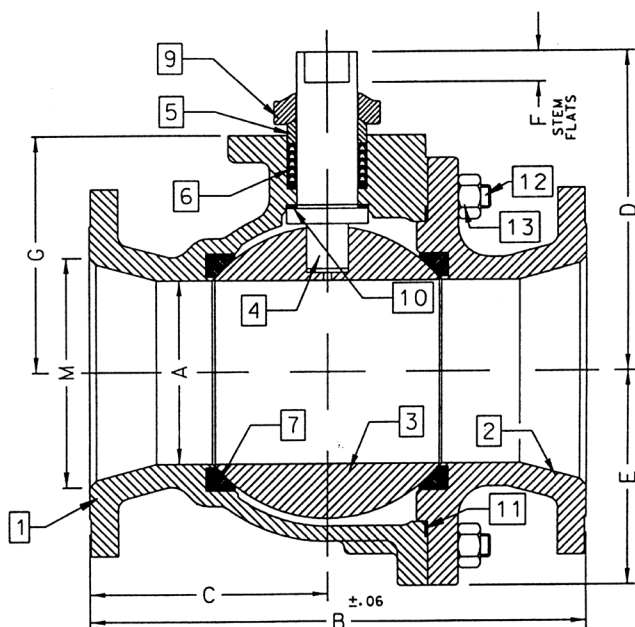
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded 87A/88A Series (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-10G-01	10"	8.00	21.00	10.37	12.83	9.18	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00	526

# 87K-200 SERIES

## Super Duplex Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A276/A479 Alloy 2507
3	Ball	ASTM A276/A479 Alloy 2507
4	Stem	ASTM A276/ A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A276 /A479 Alloy 2507
3	Ball	ASTM A276 /A479 Alloy 2507
4	Stem	ASTM A276 /A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS, ASTM A313

### VARIATIONS AVAILABLE:

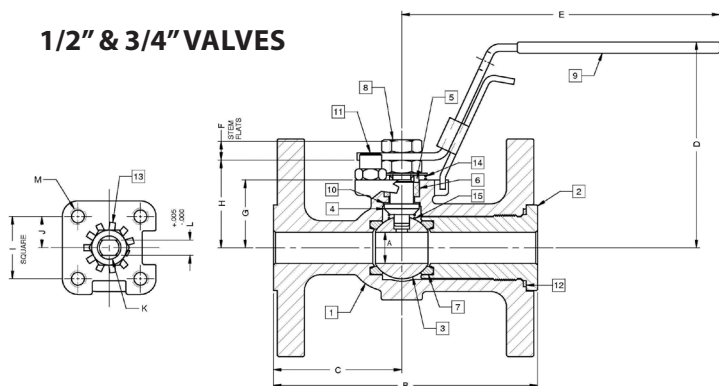
87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D

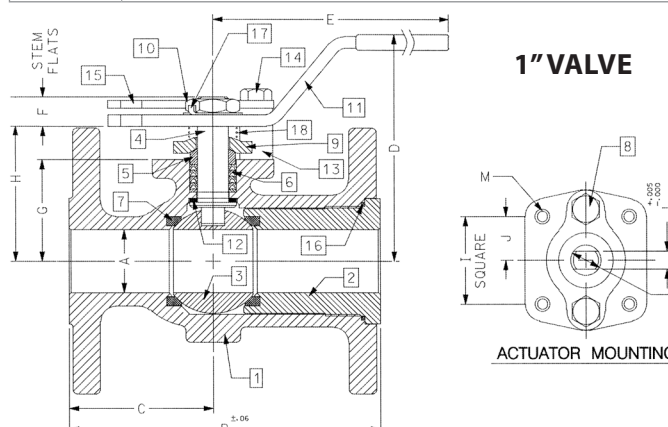
### 1/2" & 3/4" VALVES



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-203-01	1/2"	0.50	4.25	2.06	3.31	5.11	0.30	1.09	1.41	1.00	0.500	0.375	0.245	10-24	5
87K-204-01	3/4"	0.75	4.62	2.18	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	6
87K-205-01	1"	1.00	5.00	2.32	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7

### 1" VALVE



# 87K-200 SERIES

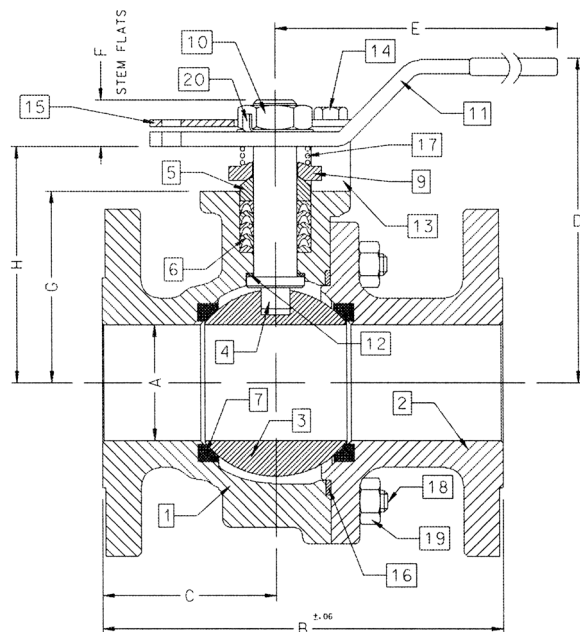
## Super Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4 Stem	ASTM A276/ A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-207-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
87K-208-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
87K-209-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30

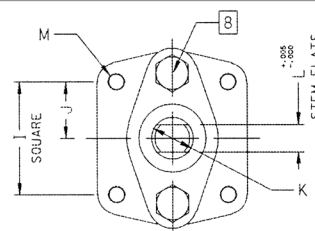
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

# 87K-200 SERIES

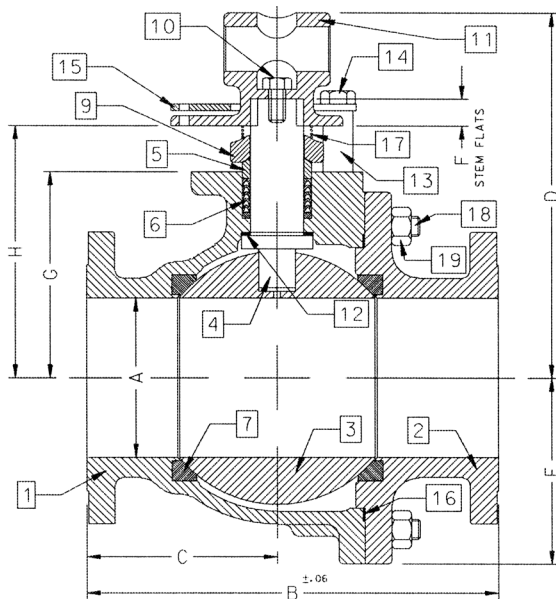
## Super Duplex Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4 Stem	ASTM A276/A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Pipe Handle	Galvanized Steel (not shown)



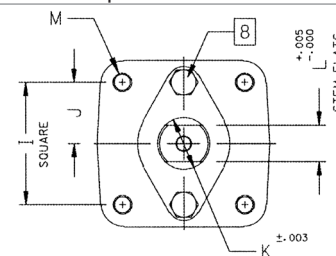
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-200-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
87K-20A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
87K-20C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248





# 87K-200 SERIES

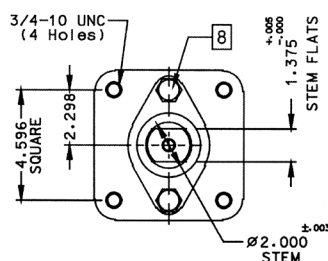
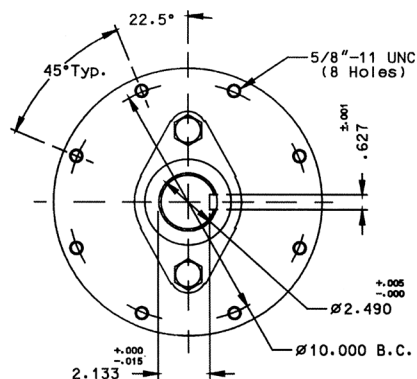
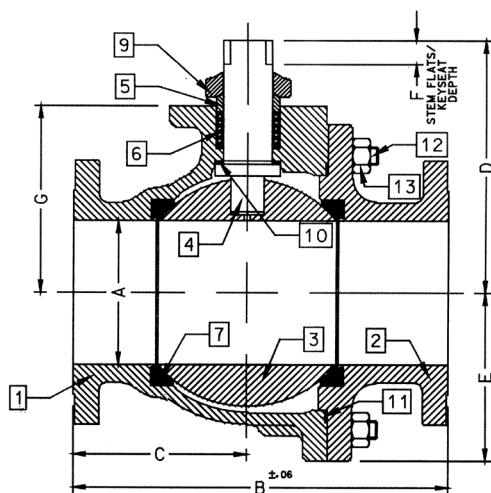
## Super Duplex Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy or A995 6A
4 Stem	ASTM A276/A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B8M
13 Body Joint Nut	ASTM A194 Grade 8



**ACTUATOR MOUNTING: 10" & 12"**

**ACTUATOR MOUNTING: 8"**

**FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 40**

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
87K-20E-01	8"	8.00	18.00	8.88	12.83	9.18	1.00	10.22
87K-20G-01	10"	10.00	21.00	10.26	18.57	11.33	2.31	12.80
87K-20H-01	12"	12.00	24.00	12.09	20.31	13.40	2.31	14.92

### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



# 87K-700 SERIES

## Super Duplex Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A276/A479 Alloy 2507
3	Ball	ASTM A276/A479 Alloy 2507
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 & 304 SS
10	Stem Nut	316 SS
11	Lever	302 & 304 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

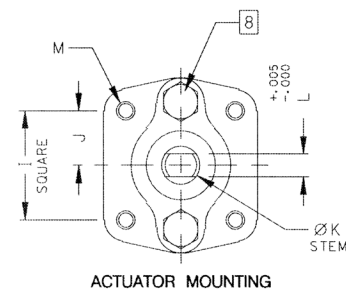
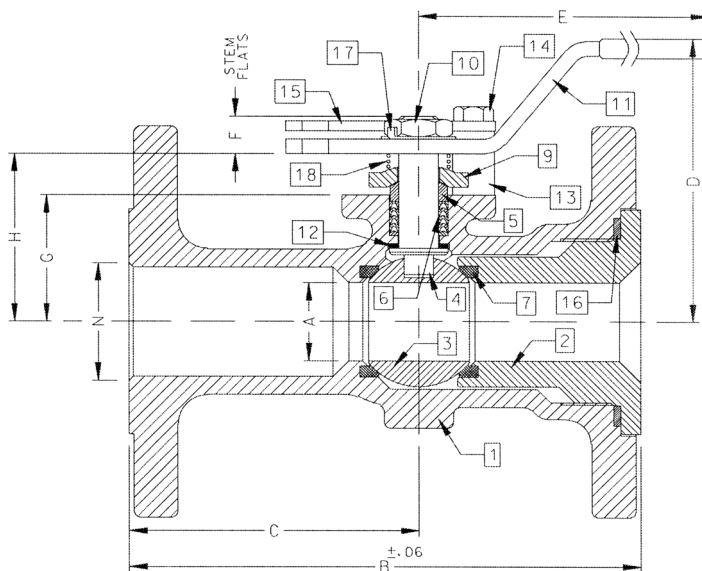
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14 -	Side Vented Ball (See Page J-2)
-15-	Wheel Handle, Steel
-21 -	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35 -	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87K-707-01A	1.5"	1.25	7.50	4.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	15.7
87K-708-01	2"	1.50	8.50	5.19	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	24.0

# 87K-700 SERIES

## Super Duplex Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A995 6A
3	Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Nut	18-8 SS
11	Lever	316 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS

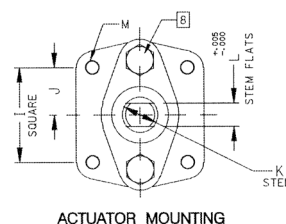
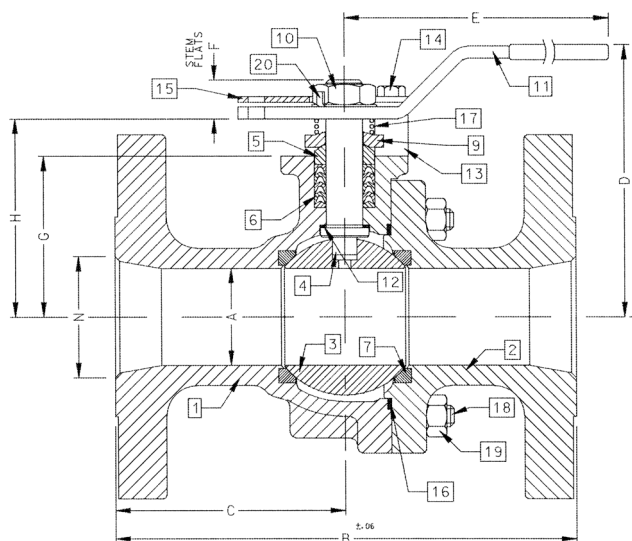
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87K-709-01	2.5"	2.00	9.50	4.75	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39
87K-700-01	3"	2.50	11.12	5.56	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	55

# 87K-700 SERIES

## Super Duplex Stainless Steel ASME Class 300 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A276/A479 Alloy 2507
3	Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Adapter Screw	18-8 SS
21	Pipe Handle	Galvanized Steel (not shown)

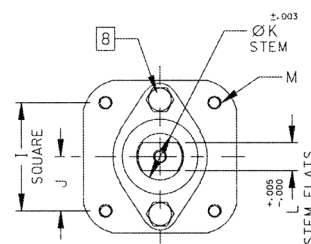
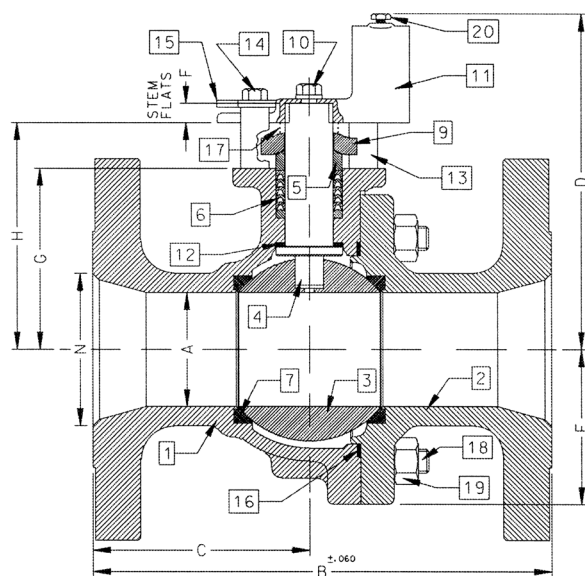
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87K-70A-01	4"	3.00	12.00	5.68	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95
87K-70C-01	6"	4.00	15.88	7.38	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187
87K-70E-01	8"	6.00	19.75	9.00	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	400



# 87K-700 SERIES

## Super Duplex Stainless Steel ASME Class 300 Flanged Standard Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A995 6A
3	Ball	ASTM A276/A479 Alloy 2507
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B8M
13	Body Joint Nut	ASTM A194 Grade 8

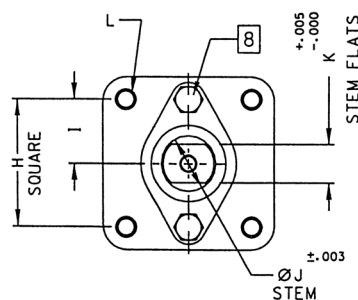
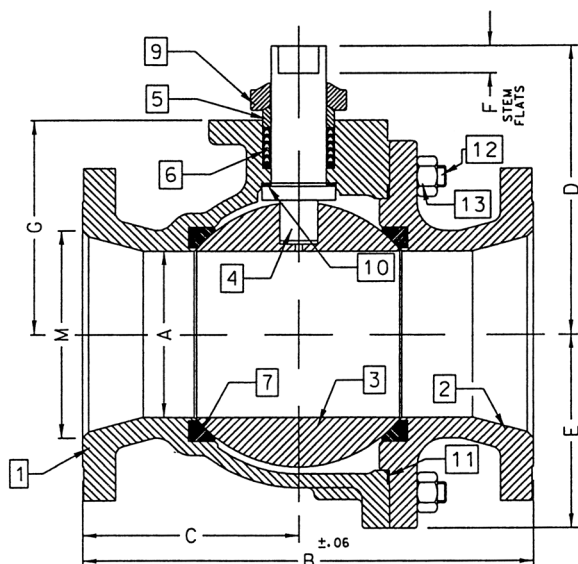
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration (Less Gear Operator)
-14-	Side Vented Ball (See Page J2)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded 87A/88A Series (Gear, Actuator)
-80-	Multi-Seal (Super TFE) 87A/88A Series
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
87K-70G-01	10"	8.00	22.38	10.69	12.83	9.56	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00

# 87K-900 SERIES

## Super Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A995 6A
2	Retainer	ASTM A276/A479 Alloy 2507
3	Ball	ASTM A276/A479 Alloy 2507
4	Stem	ASTM A276/A479 Alloy 2507
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

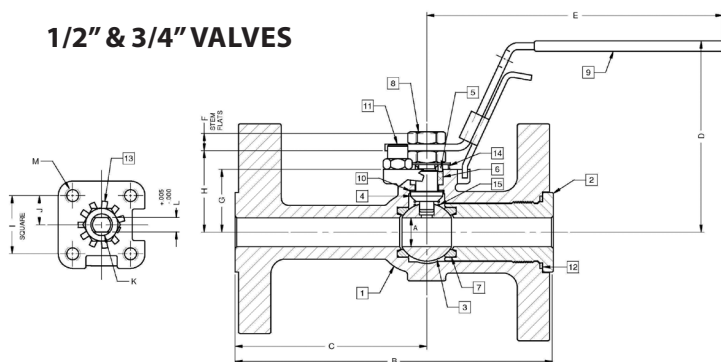
87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

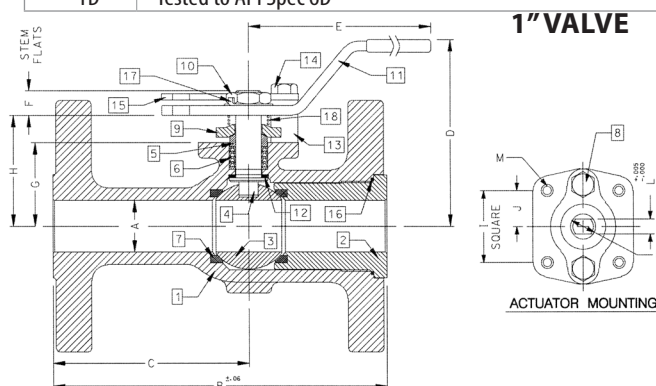
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D

### 1/2" & 3/4" VALVES



### 1" VALVE



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-903-01	1/2"	0.50	5.50	3.31	3.31	5.11	0.30	1.09	1.38	1.000	0.500	0.375	0.245	10-24	6
87K-904-01	3/4"	0.75	6.00	3.56	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	9
87K-905-01	1"	1.00	6.50	3.82	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	11





# 87K-900 SERIES

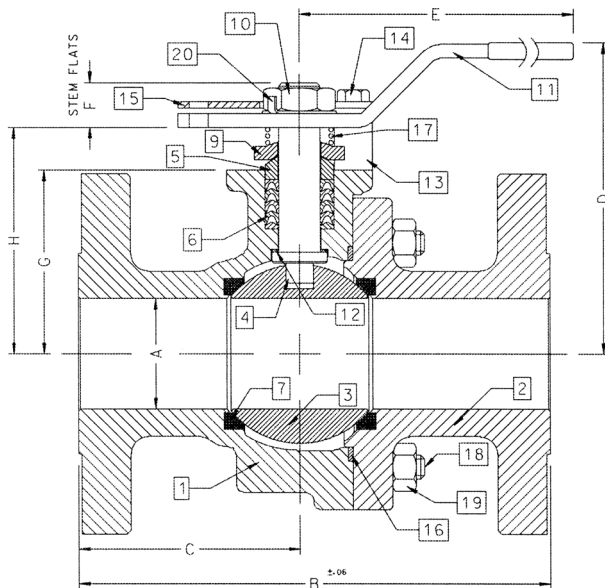
## Super Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4 Stem	ASTM A276/A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Nut	18-8 SS
11 Lever	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Lockwasher	302 or 304 SS



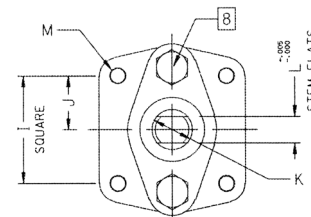
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87M - Monel  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-907-01	1.5"	1.50	7.50	3.50	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	21
87K-908-01	2"	2.00	8.50	4.00	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37
87K-909-01	2.5"	2.50	9.50	4.44	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	57

# 87K-900 SERIES

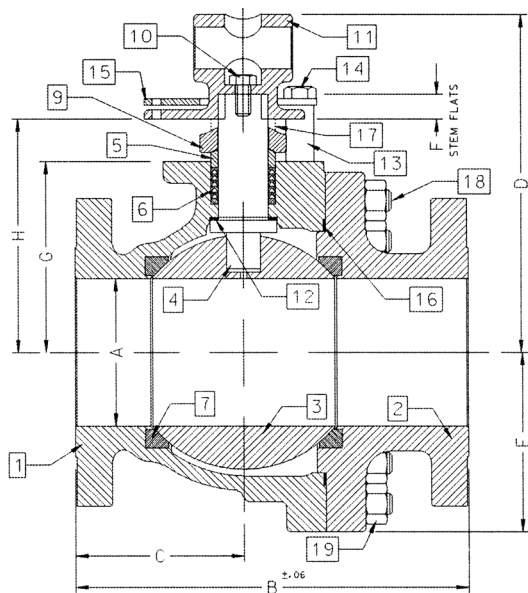
## Super Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4 Stem	ASTM A276/A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A276 Type 316
14 Stop Screw	316 SS
15 Lock Plate	302 or 304 SS
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B8M
19 Body Joint Nut	ASTM A194 Grade 8
20 Pipe Handle	Galvanized Steel (not shown)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87K-900-01	3"	3.00	11.12	5.24	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78
87K-90A-01	4"	4.00	12.00	5.44	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133
87K-90C-01	6"	6.00	15.88	6.82	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	329

### VARIATIONS AVAILABLE:

87H - Hastelloy

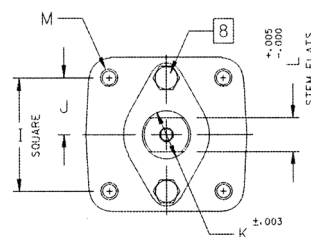
87N - Nickel

87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



### ACTUATOR MOUNTING

# 87K-900 SERIES

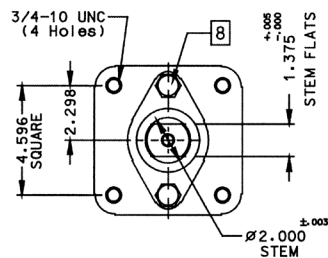
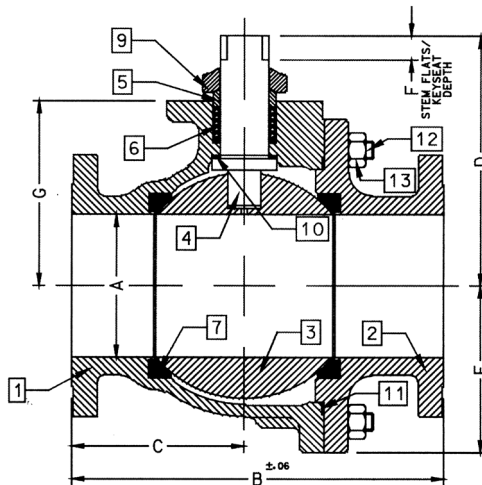
## Super Duplex Stainless Steel ASME Class 300 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A995 6A
2 Retainer	ASTM A995 6A
3 Ball	ASTM A276/A479 Alloy 2507 or A995 6A
4 Stem	ASTM A276/A479 Alloy 2507
5 Packing Gland	ASTM A276 Type 316
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B8 Class 1
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B8M
13 Body Joint Nut	ASTM A194 Grade 8



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-28, GRAPH NO. 41

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
87K-90E-01	8"	8.00	19.75	9.38	12.83	9.56	1.00	10.22
87K-90G-01	10"	10.00	22.38	10.95	18.57	11.33	2.31	12.80
87K-90H-01	12"	12.00	25.50	12.84	20.31	13.40	2.31	14.92

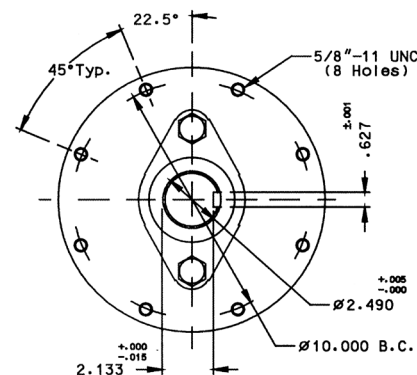
### VARIATIONS AVAILABLE:

87H - Hastelloy  
87N - Nickel  
87S - 304L SS

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (fire safe "by design")
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



**ACTUATOR MOUNTING: 10" & 12"**

# 88A-100 SERIES

## Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A108 Type 1215
3	Ball	ASTM A108, Carbon Steel, Chrome Plated or ASTM A276, Type 316 Stainless Steel
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

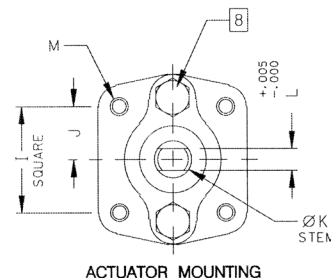
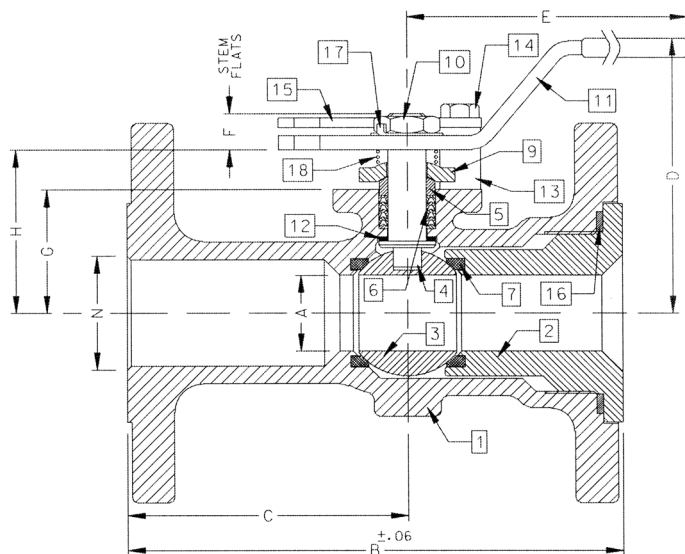
### VARIATIONS AVAILABLE:

88A-140 Series (316 SS Ball & Stem)  
88A-130 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 5th edition, ISO 10497-5:2004)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-107-01A	1.5"	1.25	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	9
88A-108-01	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	18



# 88A-100 SERIES

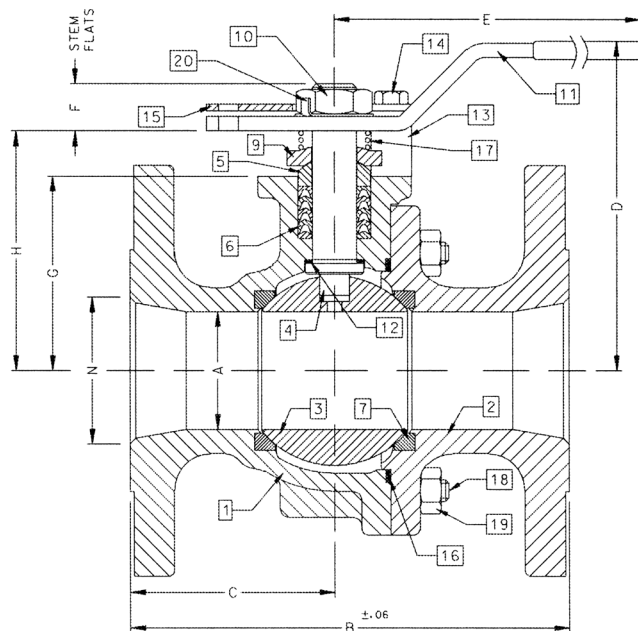
## Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216 WCB
2 Retainer	ASTM A216 WCB
3 Ball	ASTM A108 Type 1215 or ASTM A216 WCB Chrome Plated
4 Stem	ASTM A108 Type 1215
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	302 or 304 SS
10 Stem Nut	ASTM A194 Grade 8
11 Lever	ASTM A366 Steel with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A108 Type 1215
14 Stop Screw	SAE J429 Grade 2
15 Lock Plate	ASTM A366 Steel
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B7
19 Body Joint Nut	ASTM A194 Grade 2H
20 Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-109-01	2.5"	2.00	7.50	3.50	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27
88A-100-01	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	34

### VARIATIONS AVAILABLE:

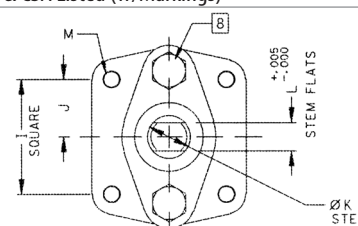
88A-140 Series (316 SS Ball & Stem)

88A-130 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTEFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING



# 88A-100 SERIES

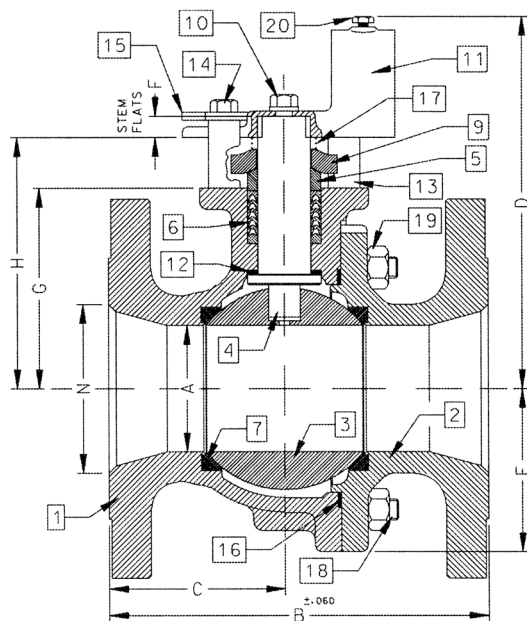
## Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or ASTM A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Adaptor Screw	316 SS
11	Handle Adapter	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Adapter Screw	18-8 SS
21	Pipe Handle	Galvanized Steel (not shown)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-10A-01	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	73
88A-10C-01	6"	4.00	10.50	4.69	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	117
88A-10E-01	8"	6.00	18.00	9.00	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	310

### VARIATIONS AVAILABLE:

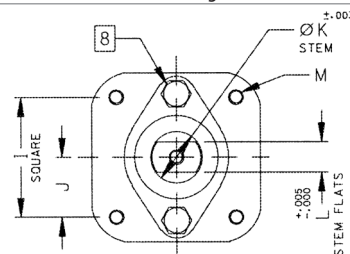
88A-140 Series (316 SS Ball & Stem)

88A-130 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Fire Safe - graphite packing & seals (API 607, 5th edition, ISO 10497-5:2004) 4" & 6" (API 607, 6th edition, ISO 10497:2010) 8"
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTEFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

# 88A-100 SERIES

## Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B7
13	Body Joint Nut	ASTM A194 Grade 2H

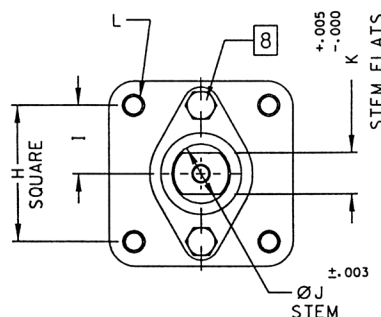
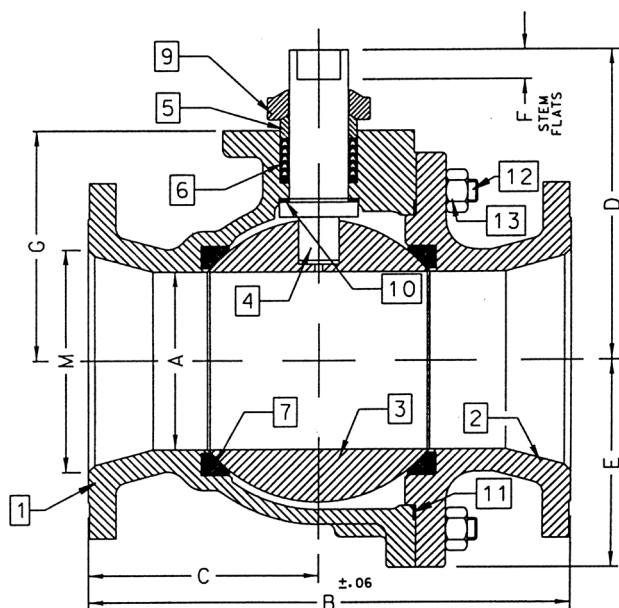
### VARIATIONS AVAILABLE:

88A-130 Series (Ni-Cu Ball & Stem)  
88A-140 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 5th edition, ISO 10497-5:2004)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
88A-10G-01	10"	8.00	21.00	10.37	12.83	9.18	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00

# 88A-200 SERIES

## Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A108 Type 1215
3	Ball	ASTM A108 Type 1215
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lock Washer	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A108 Type 1215
3	Ball	ASTM A108 Type 1215 Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

88A-240 Series (316 SS Ball & Stem)

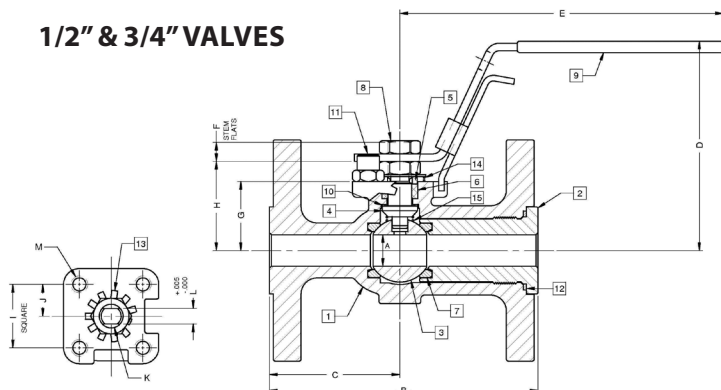
88A-230 Series (Ni-Cu Ball & Stem)

**OPTIONS AVAILABLE:** (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

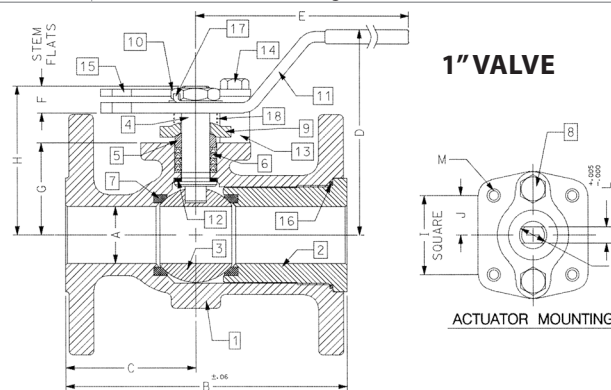
(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 5th edition, ISO 10497-5:2004)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)

### 1/2" & 3/4" VALVES



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

### 1" VALVE



PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-203-01	1/2"	0.50	4.25	2.06	3.31	5.11	0.30	1.09	1.41	1.002	0.501	0.375	0.245	10-24	5
88A-204-01	3/4"	0.75	4.62	2.18	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	6
88A-205-01	1"	1.00	5.00	2.32	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7



# 88A-200 SERIES

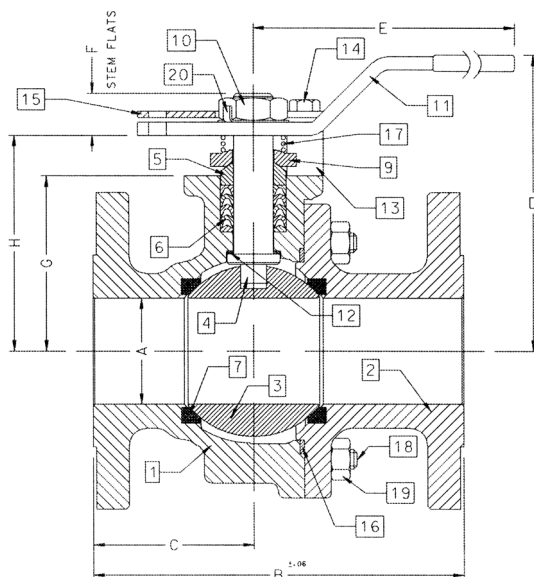
## Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216 WCB
2 Retainer	ASTM A216 WCB
3 Ball	ASTM A108 Type 1215 or ASTM A216 WCB Chrome Plated
4 Stem	ASTM A108 Type 1215
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	302 & 304 SS
10 Stem Nut	ASTM A194 Grade 8I
11 Lever	ASTM A366 Steel with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A108 Type 1215
14 Stop Screw	SAE J429 Grade 2
15 Lock Plate	ASTM A366 Steel
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B7
19 Body Joint Nut	ASTM A194 Grade 2H
20 Lockwasher	302 or 304 SS



### VARIATIONS AVAILABLE:

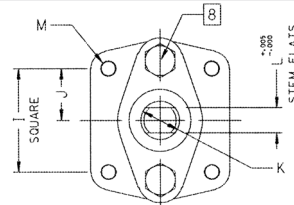
88A-240 Series (316 SS Ball & Stem)

88A-230 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Fire Safe - graphite packing & seals (API 607, 5th edition, ISO 10497-5:2004) 1.5" & 2" (API 607, 6th edition, ISO 10497:2010) 2.5"
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-207-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
88A-208-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
88A-209-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30



# 88A-200 SERIES

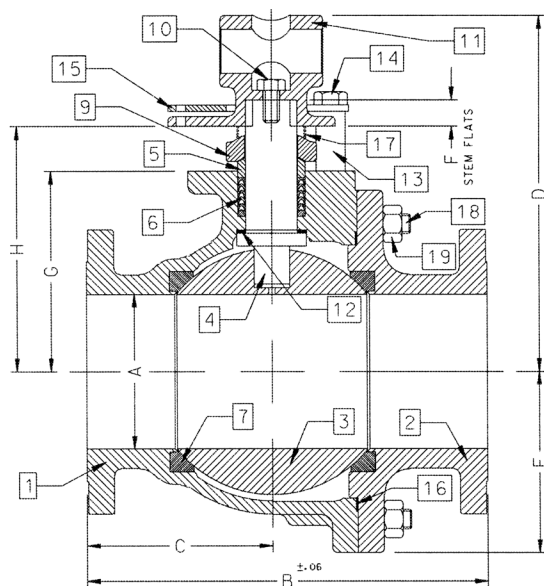
## Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216 WCB
2 Retainer	ASTM A216 WCB
3 Ball	ASTM A108 Type 1215 or A216 WCB Chrome Plated
4 Stem	ASTM A108 Type 1215
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	316 SS
10 Adapter Screw	316 SS
11 Handle Adapter	ASTM A366 Steel with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A108 Type 1215
14 Stop Screw	SAE J429 Grade 2
15 Lock Plate	ASTM A366 Steel
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B7
19 Body Joint Nut	ASTM A194 Grade 2H
20 Pipe Handle	Galvanized Steel (not shown)



### VARIATIONS AVAILABLE:

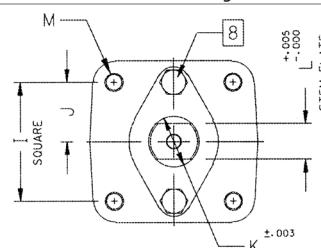
88A-240 Series (316 SS Ball & Stem)

88A-230 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-200-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
88A-20A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
88A-20C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248





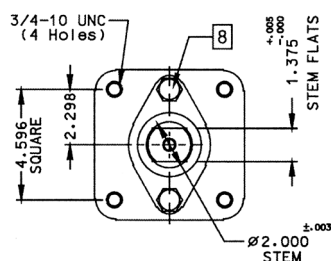
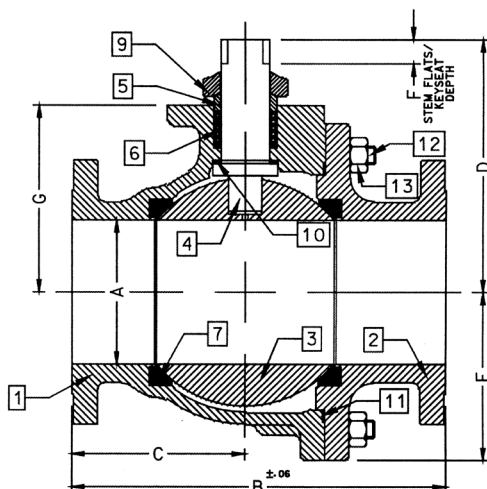
## Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



## STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B7
13	Body Joint Nut	ASTM A194 Grade 2H



**ACTUATOR MOUNTING: 8"**

**FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1**

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
88A-20E-01	8"	8.00	18.00	8.88	12.83	9.18	1.00	10.22
88A-20G-01	10"	10.00	21.00	10.26	18.57	11.33	2.31	12.80
88A-20H-01	12"	12.00	24.00	12.09	20.31	13.40	2.31	14.92

**VARIATIONS AVAILABLE:**

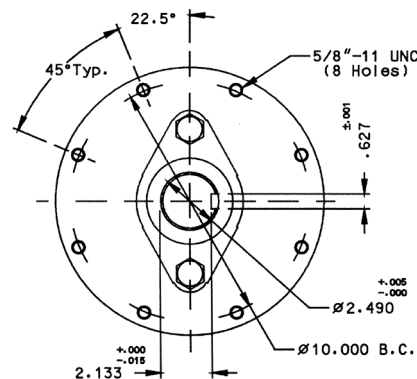
### 88A-230 Series (Ni-Cu Ball & Stem)

### 88A-240 Series (316 SS Ball & Stem)

**OPTIONS AVAILABLE:** (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned for Industrial Gas - CS Valves
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



**ACTUATOR MOUNTING: 10" & 12"**

# 88A-700 SERIES

## Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A108 Type 1215
3	Ball	ASTM A108, Carbon Steel, Chrome Plated or ASTM A276, Type 316 Stainless Steel
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 & 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

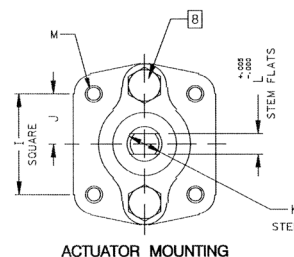
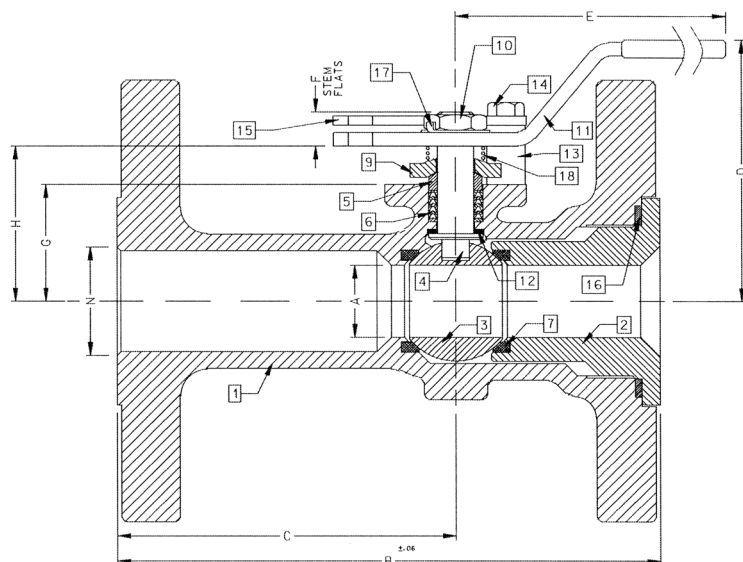
88A-740 Series (316 SS Ball & Stem)

88A-730 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 5th edition, ISO 10497-5:2004)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-707-01	1.5"	1.25	7.50	4.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	16
88A-708-01	2"	1.50	8.50	5.19	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	24



# 88A-700 SERIES

## Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	ASTM A194 Grade 8
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Lockwasher	302 or 304 SS

### VARIATIONS AVAILABLE:

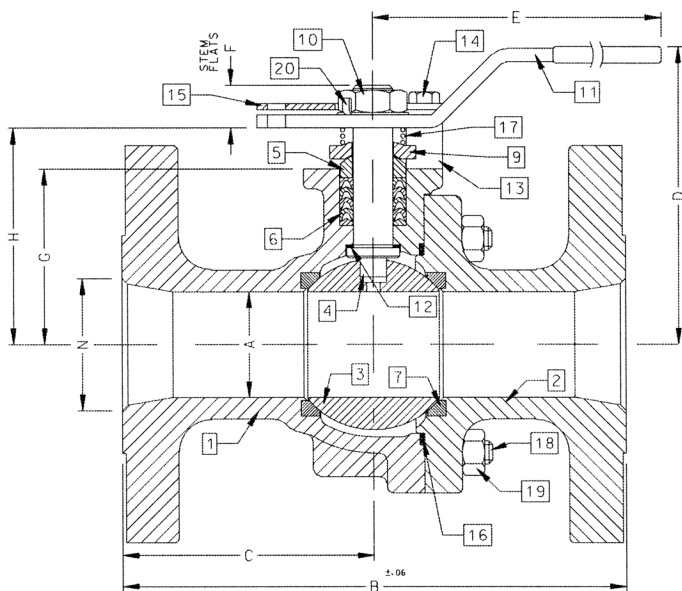
88A-740 Series (316 SS Ball & Stem)

88A-730 Series (Ni-Cu Ball & Stem)

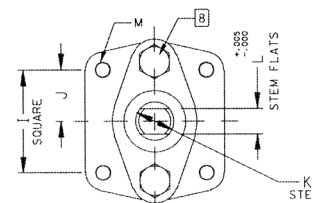
### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5



ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-709-01	2.5"	2.00	9.50	4.75	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39
88A-700-01	3"	2.50	11.12	5.56	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	55

# 88A-700 SERIES

## Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Adapter Screw	316 SS
11	Handle Adapter	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Adapter Screw	316 SS
21	Pipe Handle	Galvanized Steel (not shown)

### VARIATIONS AVAILABLE:

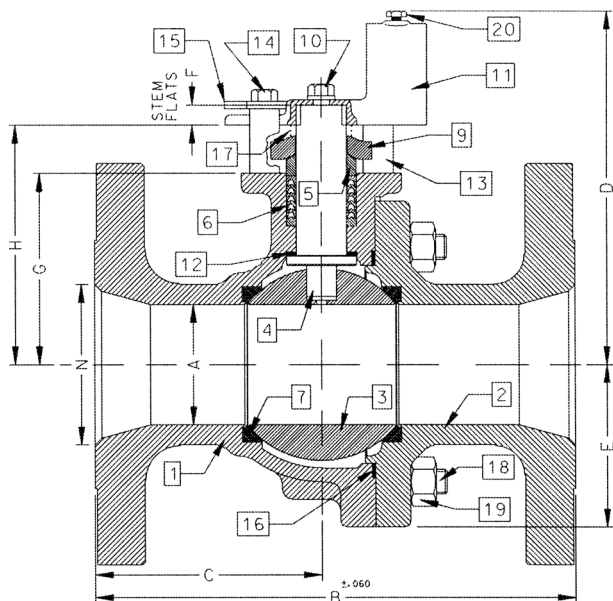
88A-740 Series (316 SS Ball & Stem)

88A-730 Series (Ni-Cu Ball & Stem)

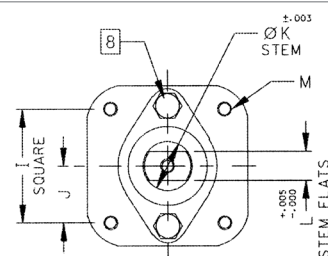
### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Fire Safe - graphite packing & seals (API 607, 5th edition, ISO 10497-5:2004) 4" & 6" (API 607, 6th edition, ISO 10497:2010) 8"
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5



ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-70A-01	4"	3.00	12.00	5.68	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95
88A-70C-01	6"	4.00	15.88	7.38	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187
88A-70E-01	8"	6.00	19.75	9.00	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	400





# 88A-700 SERIES

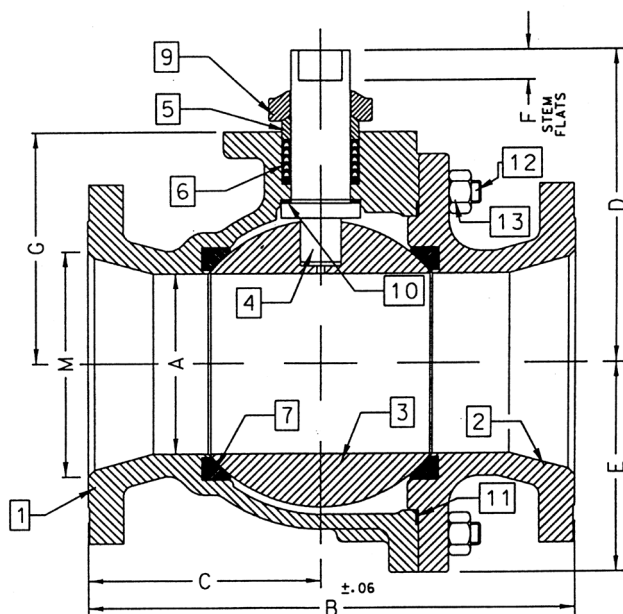
## Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B7
13	Body Joint Nut	ASTM A194 Grade 2H



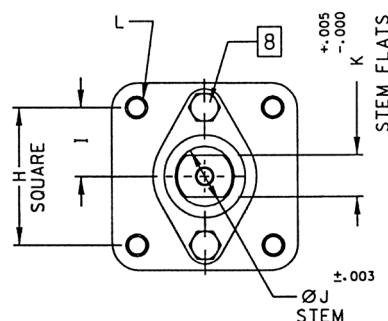
### VARIATIONS AVAILABLE:

88A-730 Series (Ni-Cu Ball & Stem)  
88A-740 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 5th edition, ISO 10497-5:2004) Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-26-	PTFE Seats and Seals
-35-	No Lubrication. Assembled Dry.
-49-	MPTFE Seats and Graphite Packing (Fire Safe)
-65-	Cleaned For Industrial Gases
-67-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
88A-70G-01	10"	8.00	22.38	10.69	12.83	9.56	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00



# 88A-900 SERIES

## Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A108 Type 1215
3	Ball	ASTM A108 Type 1215
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lock Washer	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A108 Type 1215
3	Ball	ASTM A108 Type 1215 Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

88A-940 Series (316 SS Ball & Stem)

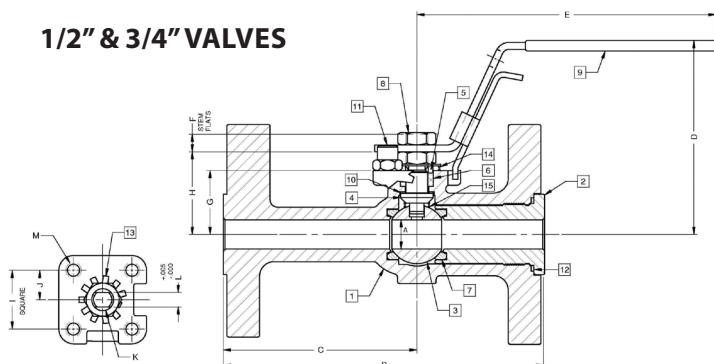
88A-930 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

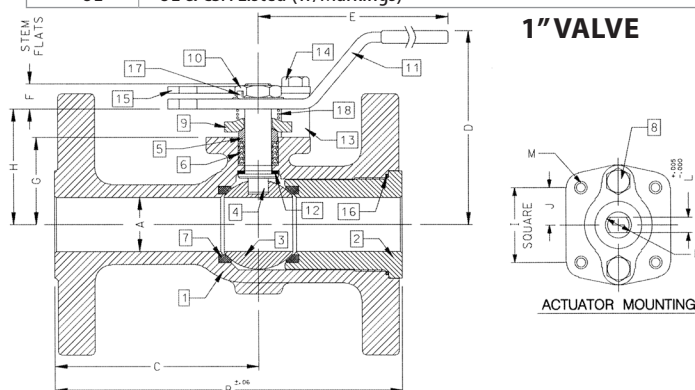
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 5th edition, ISO 10497-5:2004)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)

### 1/2" & 3/4" VALVES



### 1" VALVE



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-903-01	1/2"	0.50	5.50	3.31	3.31	5.11	0.30	1.09	1.38	1.000	0.500	0.375	0.245	10-24	7.0
88A-904-01	3/4"	0.75	6.00	3.56	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	9.0
88A-905-01	1"	1.00	6.50	3.82	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	10.5



# 88A-900 SERIES

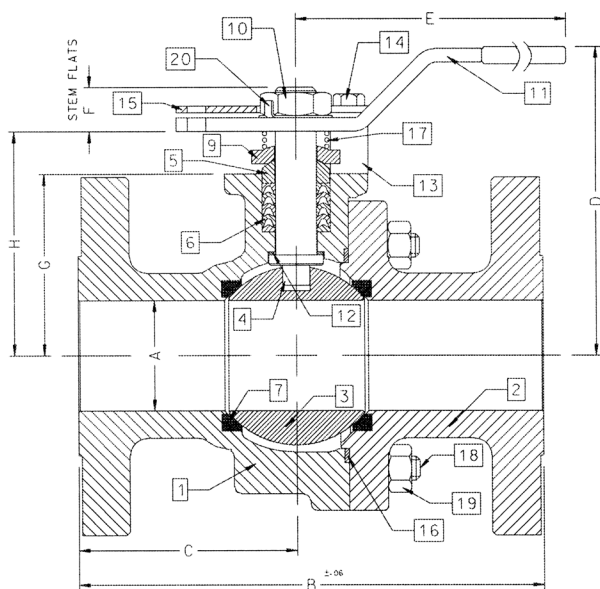
## Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or ASTM A216 WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 & 304 SS
10	Stem Nut	ASTM A194 Grade 8I
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-907-01	1.5"	1.50	7.50	3.50	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	21
88A-908-01	2"	2.00	8.50	4.00	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37
88A-909-01	2.5"	2.50	9.50	4.44	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	57

### VARIATIONS AVAILABLE:

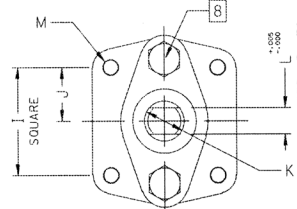
88A-940 Series (316 SS Ball & Stem)

88A-930 Series (Ni-Cu Ball & Stem)

**OPTIONS AVAILABLE:** (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Fire Safe - graphite packing & seals (API 607, 5th edition, ISO 10497-5:2004) 1.5" & 2" (API 607, 6th edition, ISO 10497:2010) 2.5"
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

# 88A-900 SERIES

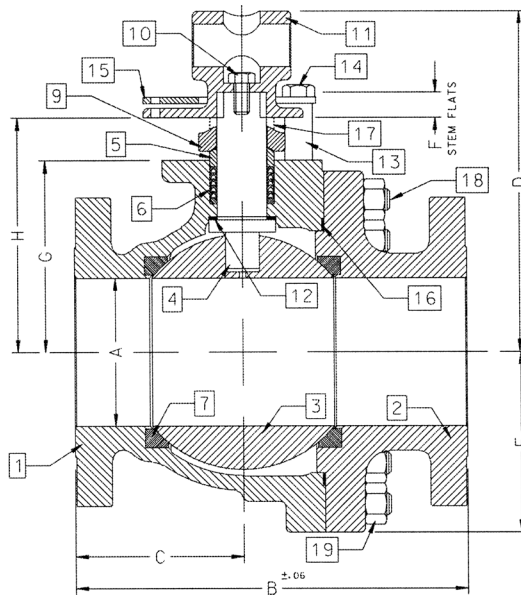
## Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216 WCB
2 Retainer	ASTM A216 WCB
3 Ball	ASTM A108 Type 1215 or ASTM A216 WCB Chrome Plated
4 Stem	ASTM A108 Type 1215
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	316 SS
10 Adapter Screw	316 SS
11 Handle Adapter	ASTM A366 Steel with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A108 Type 1215
14 Stop Screw	SAE J429 Grade 2
15 Lock Plate	ASTM A366 Steel
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Body Joint Stud	ASTM A193 Grade B7
19 Body Joint Nut	ASTM A194 Grade 2H
20 Pipe Handle	Galvanized Steel (not shown)



### VARIATIONS AVAILABLE:

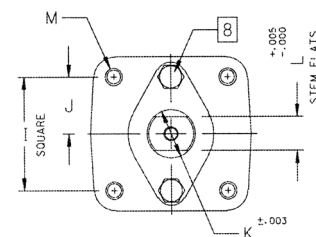
88A-940 Series (316 SS Ball & Stem)

88A-930 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-900-01	3"	3.00	11.12	5.24	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78
88A-90A-01	4"	4.00	12.00	5.44	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133
88A-90C-01	6"	6.00	15.88	6.82	13.73	7.30	1.00	7.75	9.48	4.596	2.296	2.000	1.375	3/4-10	329



# 88A-900 SERIES

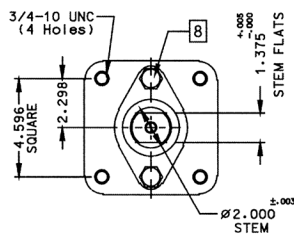
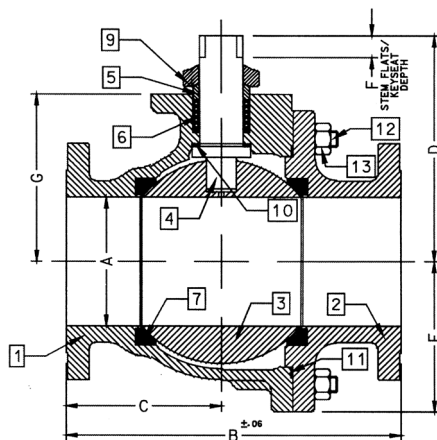
## Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 8" through 12"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216 WCB
2	Retainer	ASTM A216 WCB
3	Ball	ASTM A108 Type 1215 or A216 WCB
4	Stem	ASTM A108 Type 1215
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B7
13	Body Joint Nut	ASTM A194 Grade 2H



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-11, GRAPH NO. 5

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
88A-90E-01	8"	8.00	19.75	9.38	12.83	9.56	1.00	10.22
88A-90G-01	10"	10.00	22.38	10.95	18.57	11.33	2.31	12.80
88A-90H-01	12"	12.00	25.50	12.84	20.31	13.40	2.31	14.92

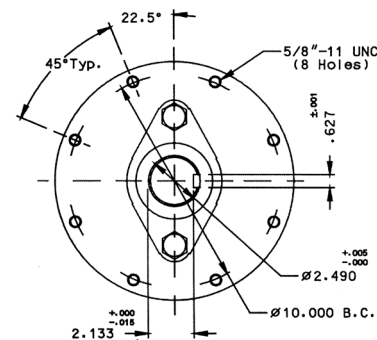
### VARIATIONS AVAILABLE:

88A-930 Series (Ni-Cu Ball & Stem)  
88A-940 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned for Industrial Gas
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



**ACTUATOR MOUNTING: 10" & 12"**



# 88B-100 SERIES

## Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216-WCB
2 Retainer	ASTM A108 Type 1215
3 Ball	ASTM A108 Type 1215 Chrome Plated
4 Stem	ASTM A108 Type 1215 Chrome Plated
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	316 SS
10 Stem Nut	18-8 SS
11 Lever	316 SS with Vinyl Grip
12 Stem Bearing	RPTFE
13 Stop	ASTM A108 Type 1215
14 Stop Screw	SAE J429 Grade 2
15 Lock Plate	ASTM A366 Steel
16 Body Seal	RPTFE
17 Grounding Spring	SS
18 Lockwasher	302 or 304 SS

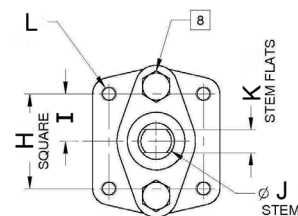
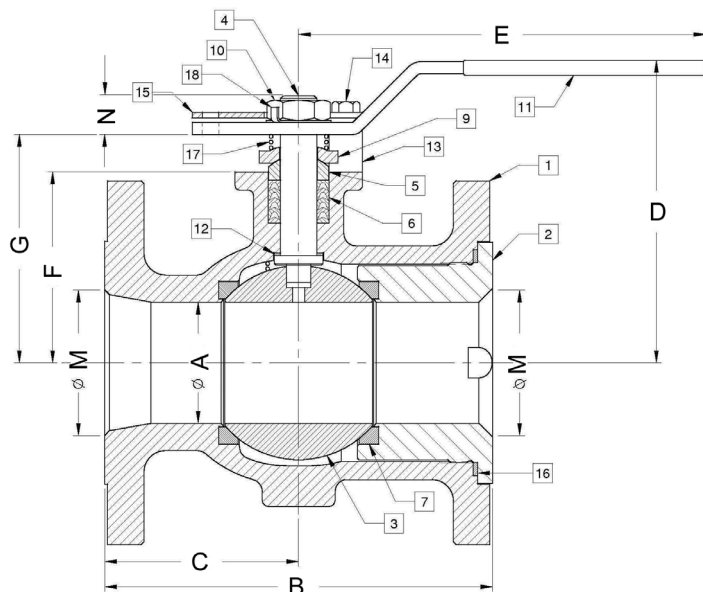
### VARIATIONS AVAILABLE:

88B-130 Series (Ni-Cu Ball & Stem)  
88B-140 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned for Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88B-100-01	3"	2.50	8.00	4.00	6.23	8.40	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	0.77	43





# 88B-100 SERIES

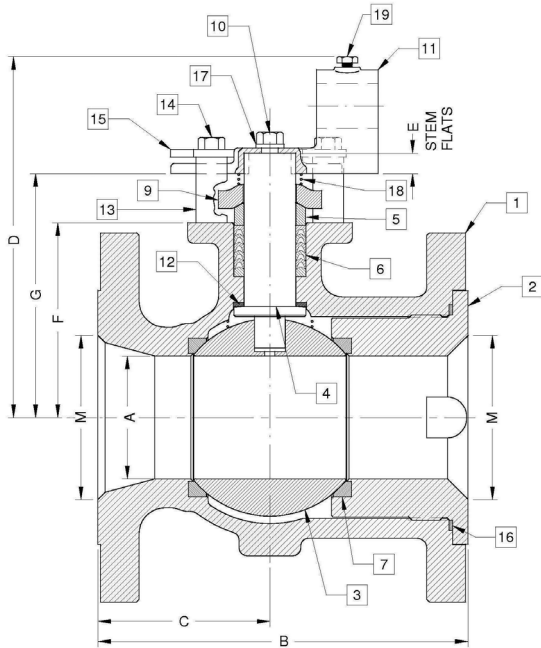
## Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 4"-10" Short Pattern

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216-WCB
2 Retainer	ASTM A108 Type 1215
3 Ball	ASTM A108 Type 1215 (Chrome Plate)
4 Stem	ASTM A108 Type 1215 (Chrome Plate)
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	316 SS
10 Adapter Screw	18-8 SS
11 Handle Adapter	316 SS
12 Stem Bearing	RPTFE
13 Stop	ASTM A108 Type 1215
14 Stop Screw	SAE J429 Grade 2
15 Lock Plate	ASTM A366 Stainless Steel
16 Body Seal	RPTFE
17 Lockwasher	302 or 304 SS
18 Grounding Spring	SS
19 Adapter Screw	18-8 SS
20 Pipe Handle	Galvanized Steel (not shown)



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 1

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88B-10A-01	4"	3.00	9.00	4.18	8.80	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	72
88B-10C-01	6"	4.00	10.50	5.25	9.99	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	110
88B-10E-01	8"	6.00	11.50	5.75	13.61	1.00	7.63	9.36	4.596	2.298	2.000	1.375	3/4-10	8.00	210
88B-10G-01	10"	8.00	13.00	6.50	N/A	1.00	9.50	11.23	4.596	2.298	2.000	1.375	3/4-10	10.0	350

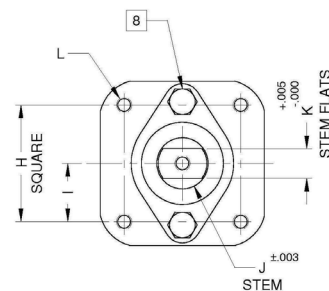
### VARIATIONS AVAILABLE:

88B-130 Series (Ni-Cu Ball & Stem)  
88B-140 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned for Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)



# 88L-140 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

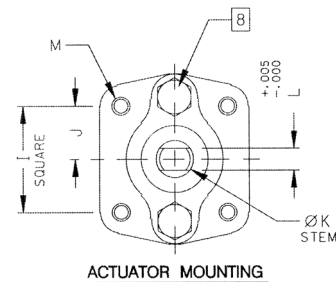
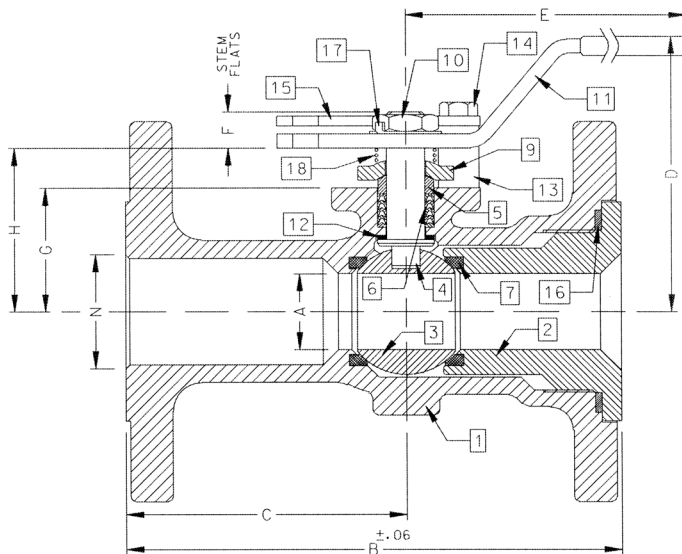
### VARIATIONS AVAILABLE:

88L-130 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88L-147-01A	1.5"	1.25	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	9
88L-148-01	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	18

# 88L-140 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 2.5" through 3"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).

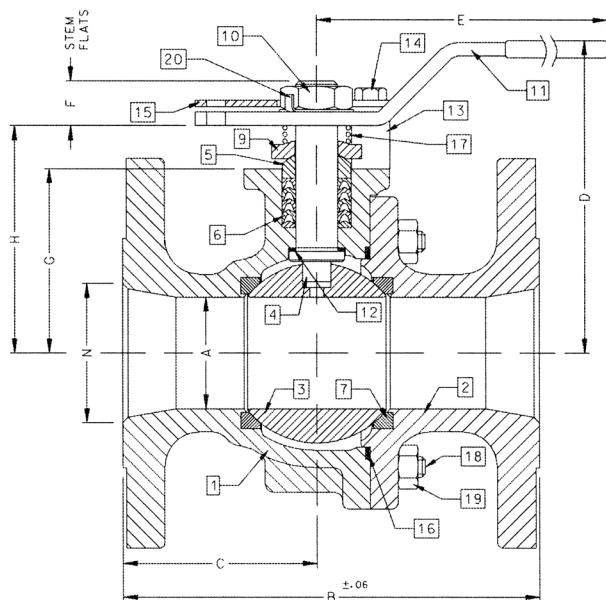


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	ASTM A194 Grade 8
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Lockwasher	302 or 304 SS

### VARIATIONS AVAILABLE:

88L-140 Series (316 SS Ball & Stem)



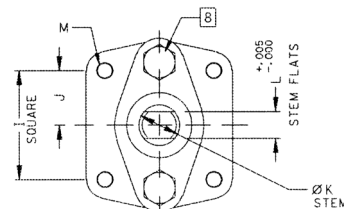
FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88L-149-01	2.5"	2.00	7.50	3.50	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27
88L-140-01	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	34

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING

# 88L-140 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).

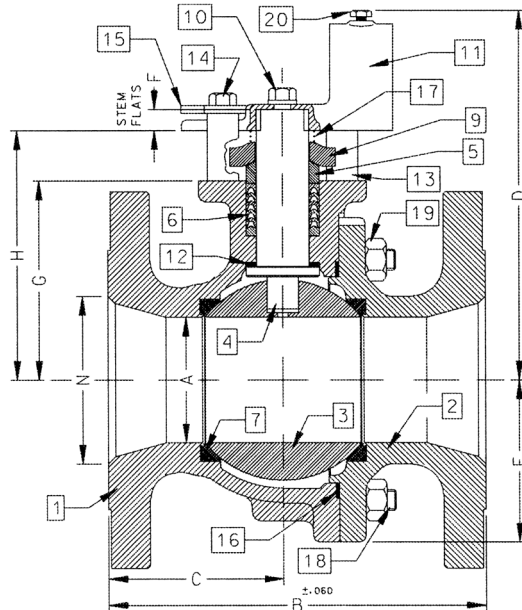


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Adaptor Screw	316 SS
11	Handle Adapter	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Adapter Screw	18-8 SS
21	Pipe Handle	Galvanized Steel (not shown)

### VARIATIONS AVAILABLE:

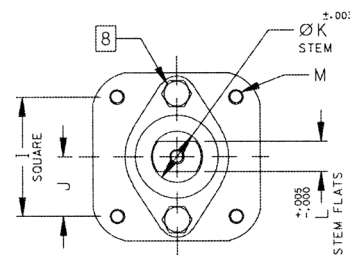
88L-140 Series (316 SS Ball & Stem)



### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88L-14A-01	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	73
88L-14C-01	6"	4.00	10.50	4.69	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	117
88L-14E-01	8"	6.00	18.00	9.00	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	310





# 88L-140 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B7
13	Body Joint Nut	ASTM A194 Grade 2H

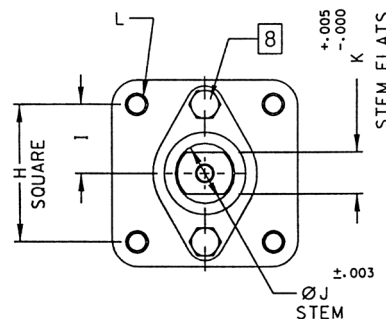
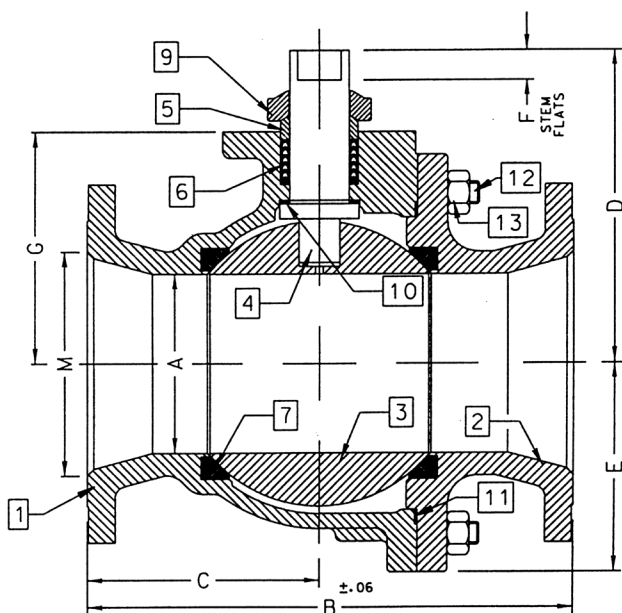
### VARIATIONS AVAILABLE:

88L-130 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
88L-14G-01	10"	8.00	21.00	10.37	12.83	9.18	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00



# 88L-240 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lock Washer	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

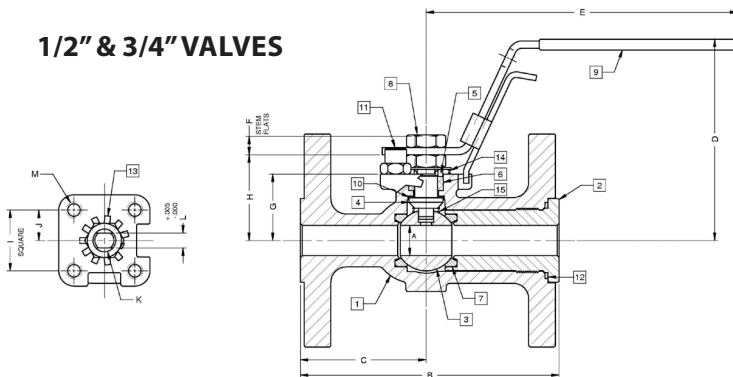
88L-230 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed

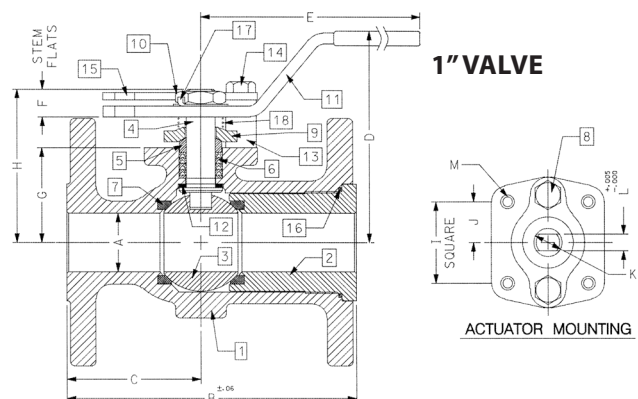
### 1/2" & 3/4" VALVES



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88L-243-01	1/2"	0.50	4.25	2.06	3.31	5.11	0.30	1.09	1.41	1.002	0.501	0.375	0.245	10-24	5
88L-244-01	3/4"	0.75	4.62	2.18	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	6
88L-245-01	1"	1.00	5.00	2.32	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7

### 1" VALVE



# 88L-240 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).

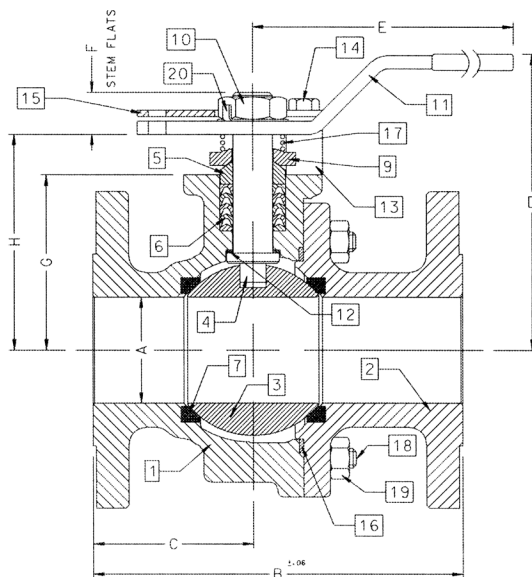


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 & 304 SS
10	Stem Nut	ASTM A194 Grade 8I
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Lockwasher	302 or 304 SS

### VARIATIONS AVAILABLE:

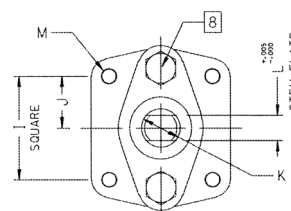
88L-230 Series (Ni-Cu Ball & Stem)



### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (up to 2")
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88L-247-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
88L-248-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
88L-249-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30

# 88L-240 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).

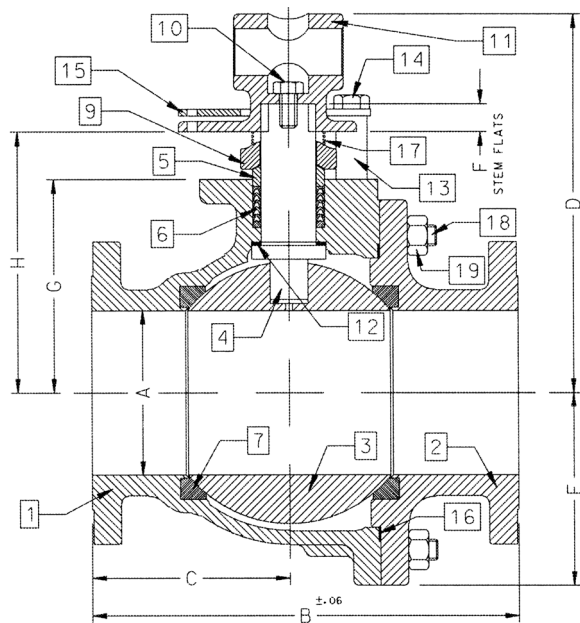


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Adapter Screw	316 SS
11	Handle Adapter	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Pipe Handle	Galvanized Steel (not shown)

### VARIATIONS AVAILABLE:

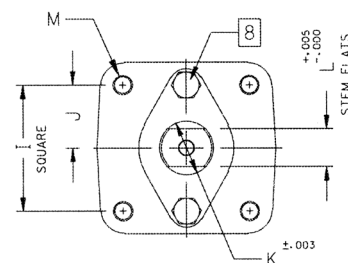
88L-230 Series (Ni-Cu Ball & Stem)



### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88L-240-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
88L-24A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
88L-24C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248



# 88L-240 SERIES

## Low Temperature Carbon Steel ASME Class 150 Flanged Full Port Ball Valve - 8" through 12"

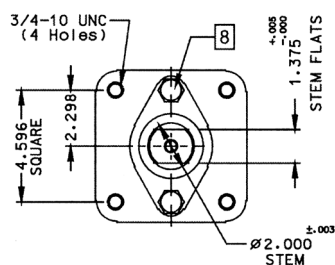
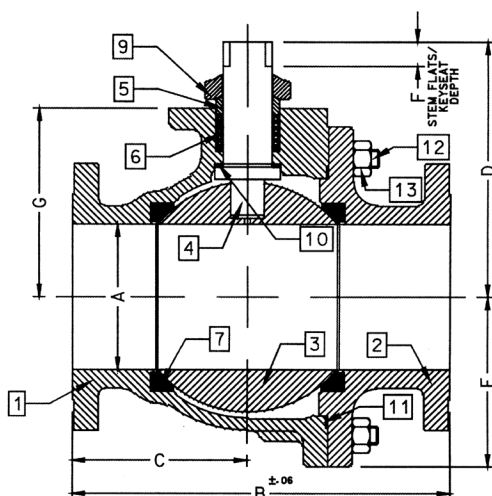
For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Stem Bearing	RPTFE
11	Body Seal	RPTFE
12	Body Joint Stud	ASTM A193 Grade B7
13	Body Joint Nut	ASTM A194 Grade 2H



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 31

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
88L-24E-01	8"	8.00	18.00	8.88	12.83	9.18	1.00	10.22
88L-24G-01	10"	10.00	21.00	10.26	18.57	11.33	2.31	12.80
88L-24H-01	12"	12.00	24.00	12.09	20.31	13.40	2.31	14.92

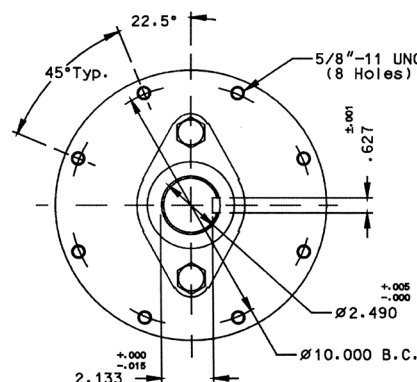
### VARIATIONS AVAILABLE:

88L-230 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned for Industrial Gas
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



**ACTUATOR MOUNTING: 10" & 12"**



# 88L-740 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 & 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

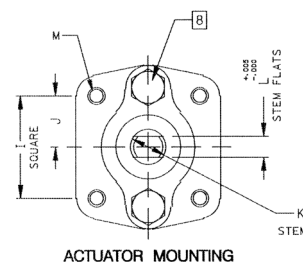
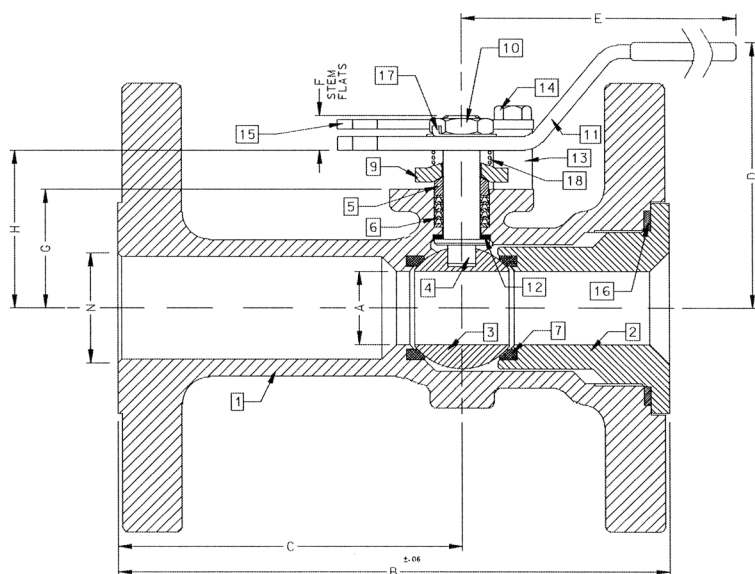
### VARIATIONS AVAILABLE:

88L-730 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88L-747-01	1.5"	1.25	7.50	4.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	16
88L-748-01	2"	1.50	8.50	5.19	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	24





# 88L-740 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 2.5" through 3"

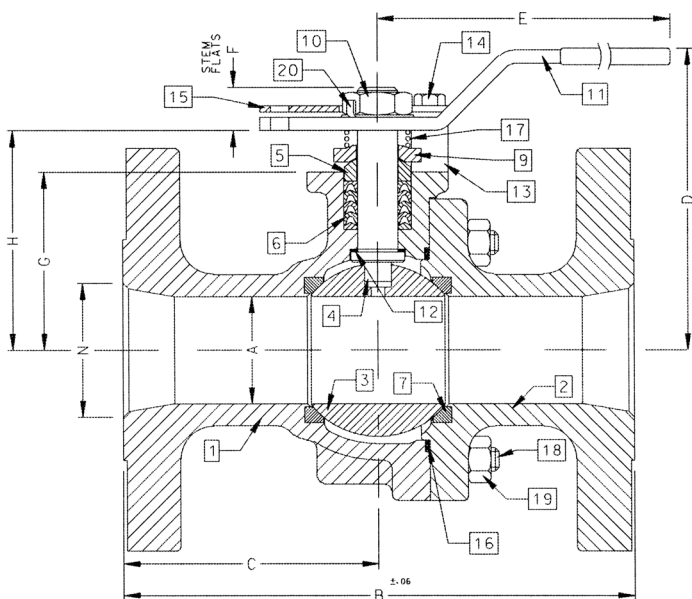
For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	ASTM A194 Grade 8
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Lockwasher	302 or 304 SS



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88L-749-01	2.5"	2.00	9.50	4.75	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39
88L-740-01	3"	2.50	11.12	5.56	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	55

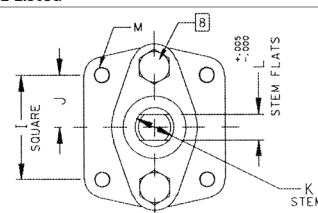
### VARIATIONS AVAILABLE:

88L-730 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING

# 88L-740 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Adapter Screw	316 SS
11	Handle Adapter	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Adapter Screw	316 SS
21	Pipe Handle	Galvanized Steel (not shown)

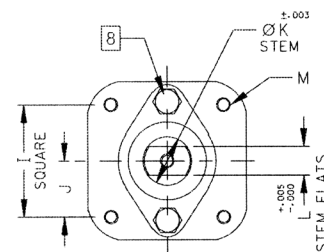
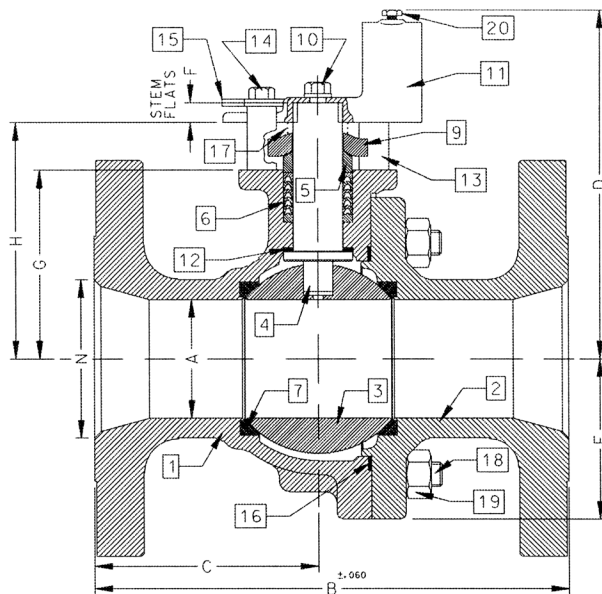
### VARIATIONS AVAILABLE:

88L-730 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88L-74A-01	4"	3.00	12.00	5.68	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95
88L-74C-01	6"	4.00	15.88	7.38	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187
88L-74E-01	8"	6.00	19.75	9.00	13.73	7.30	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	400



# 88L-740 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Std. Port Ball Valve - 10"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A352-LCC
2 Retainer	ASTM A352-LCC
3 Ball	ASTM A276-316 or A351-CF8M
4 Stem	ASTM A276-316
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B7
13 Body Joint Nut	ASTM A194 Grade 2H

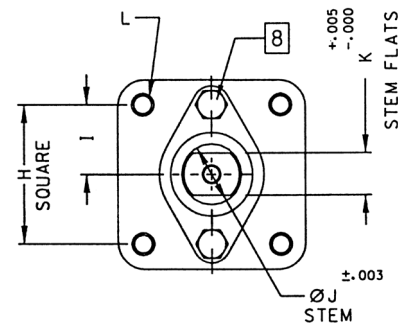
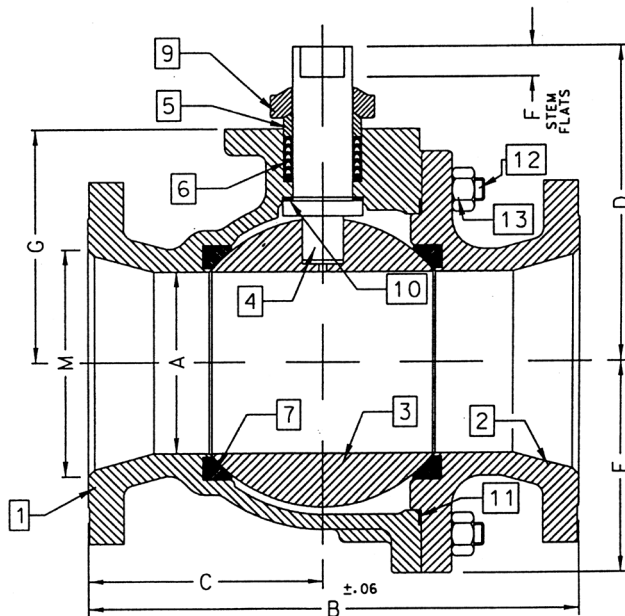
### VARIATIONS AVAILABLE:

88L-730 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
88L-74G-01	10"	8.00	22.38	10.69	12.83	9.56	1.00	10.22	4.596	2.298	2.000	1.375	3/4-10	10.00

# 88L-940 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lock Washer	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS

### VARIATIONS AVAILABLE:

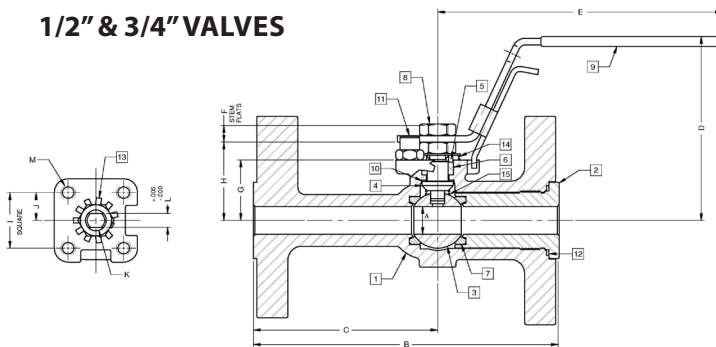
88L-930 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

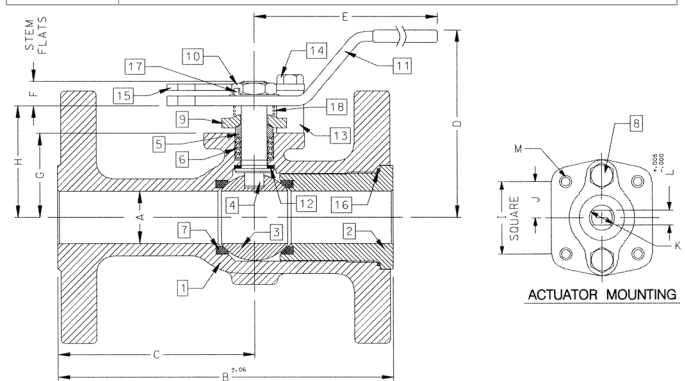
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-10-	SS Lever and Nut
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuated)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed

### 1/2" & 3/4" VALVES



### 1" VALVE



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88L-943-01	1/2"	0.50	5.50	3.31	3.31	5.11	0.30	1.09	1.38	1.000	0.500	0.375	0.245	10-24	7.0
88L-944-01	3/4"	0.75	6.00	3.56	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	9.0
88L-945-01	1"	1.00	6.50	3.82	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	10.5





# 88L-940 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).

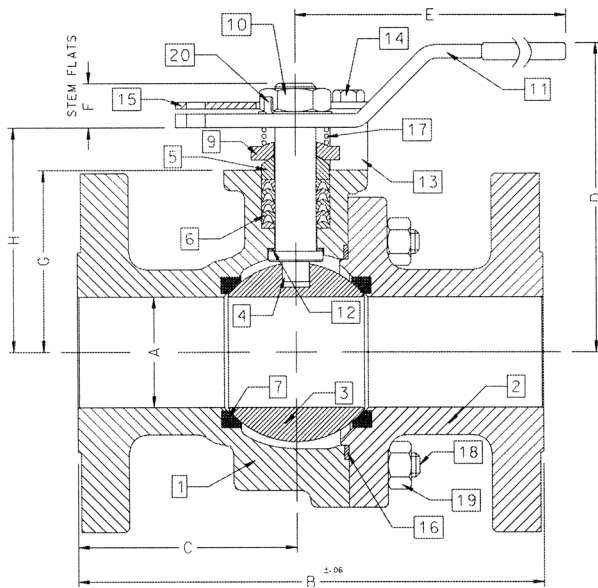


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	302 & 304 SS
10	Stem Nut	ASTM A194 Grade 8I
11	Lever	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Lockwasher	302 or 304 SS

### VARIATIONS AVAILABLE:

88L-930 Series (Ni-Cu Ball & Stem)



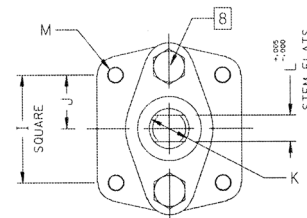
FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88L-947-01	1.5"	1.50	7.50	3.50	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	21
88L-948-01	2"	2.00	8.50	4.00	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37
88L-949-01	2.5"	2.50	9.50	4.44	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	57

### OPTIONS AVAILABLE: (M(More information in Section J))

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (up to 2")
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTEF Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



ACTUATOR MOUNTING



# 88L-940 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).

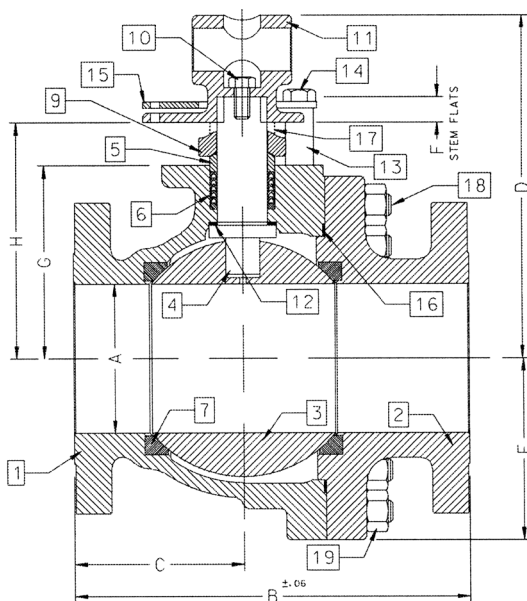


### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Packing Gland	ASTM A108 Type 1215
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B7
9	Gland Plate	316 SS
10	Adapter Screw	316 SS
11	Handle Adapter	ASTM A366 Steel with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A108 Type 1215
14	Stop Screw	SAE J429 Grade 2
15	Lock Plate	ASTM A366 Steel
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B7
19	Body Joint Nut	ASTM A194 Grade 2H
20	Pipe Handle	Galvanized Steel (not shown)

### VARIATIONS AVAILABLE:

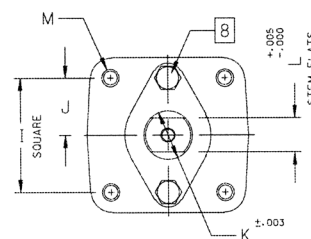
88L-930 Series (Ni-Cu Ball & Stem)



### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-59-	SS External Trim
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



### ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88L-940-01	3"	3.00	11.12	5.24	8.80	4.06	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78
88L-94A-01	4"	4.00	12.00	5.44	9.99	5.25	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133
88L-94C-01	6"	6.00	15.88	6.82	13.73	7.30	1.00	7.75	9.48	4.596	2.296	2.000	1.375	3/4-10	329



# 88L-940 SERIES

## Low Temperature Carbon Steel ASME Class 300 Flanged Full Port Ball Valve - 8" through 12"

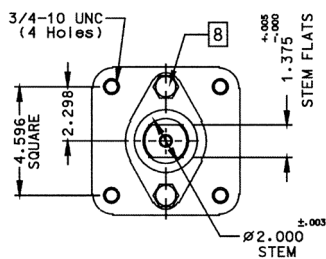
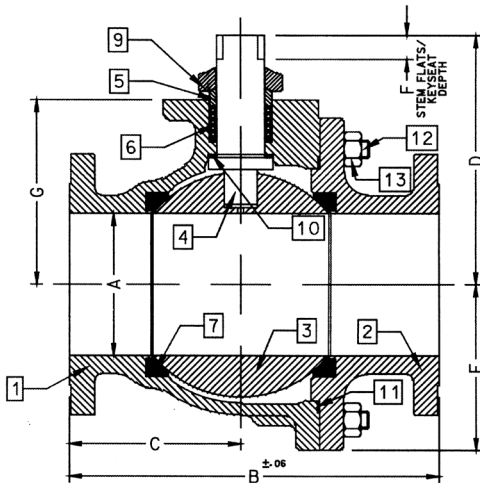
For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A352-LCC
2 Retainer	ASTM A352-LCC
3 Ball	ASTM A351-CF8M
4 Stem	ASTM A276-316
5 Packing Gland	ASTM A108 Type 1215
6 Stem Seals	PTFE
7 Seats	RPTFE
8 Gland Screws	ASTM A193 B7
9 Gland Plate	316 SS
10 Stem Bearing	RPTFE
11 Body Seal	RPTFE
12 Body Joint Stud	ASTM A193 Grade B7
13 Body Joint Nut	ASTM A194 Grade 2H



**ACTUATOR MOUNTING: 8"**

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-23, GRAPH NO. 32

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G
88L-94E-01	8"	8.00	19.75	9.38	12.83	9.56	1.00	10.22
88L-94G-01	10"	10.00	22.38	10.95	18.57	11.33	2.31	12.80
88L-94H-01	12"	12.00	25.50	12.84	20.31	13.40	2.31	14.92

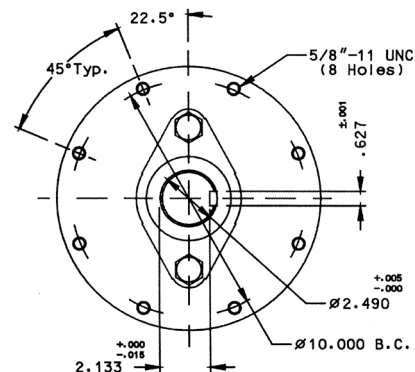
### VARIATIONS AVAILABLE:

88L-930 Series (Ni-Cu Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-67-	Cleaned for Industrial Gas
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (8" Only)
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL Listed



**ACTUATOR MOUNTING: 10" & 12"**

# 87A-400 SERIES

## Alloy 20 ASME Class 150 Flanged Standard Port Ball Valve - 1.5" through 2"

For **STANDARDS COMPLIANCE** refer to page D-3.

**STANDARD FEATURES** refer to page D-3 and Rated to -50°F (-46°C).



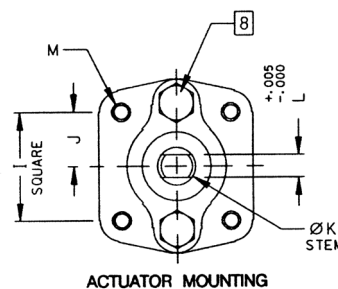
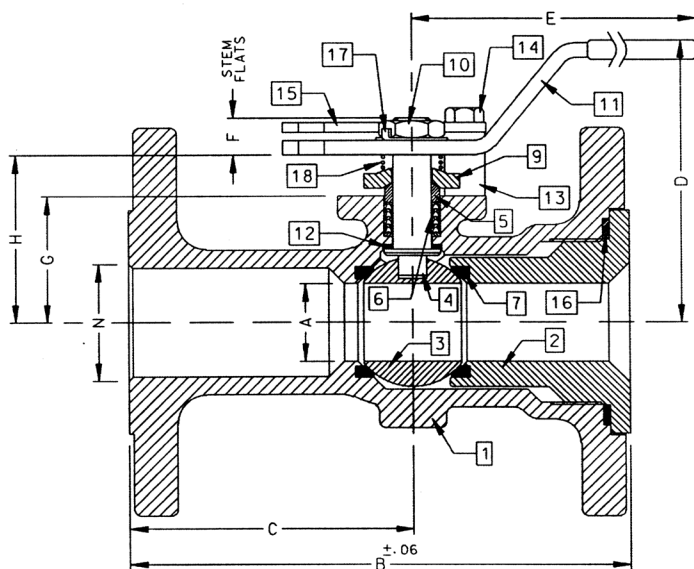
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM B473 (UNS N08020)
3	Ball	ASTM B473 (UNS N08020)
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS
19	Grounding Spring	Inconel (not shown)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTEFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-PM-	Positive Material Identification
-TC-	With Test Certificate
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-16, GRAPH NO. 18

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-407-01A	1.5"	1.00	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.500	0.287	1/4-20	1.50	9
87A-408-01	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	2.00	18



# 87A-400 SERIES

## Alloy 20 ASME Class 150 Flanged Standard Port Ball Valve - 3"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



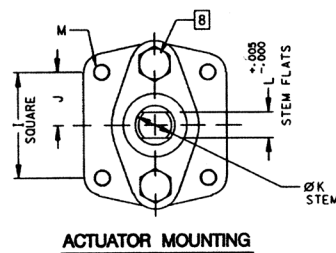
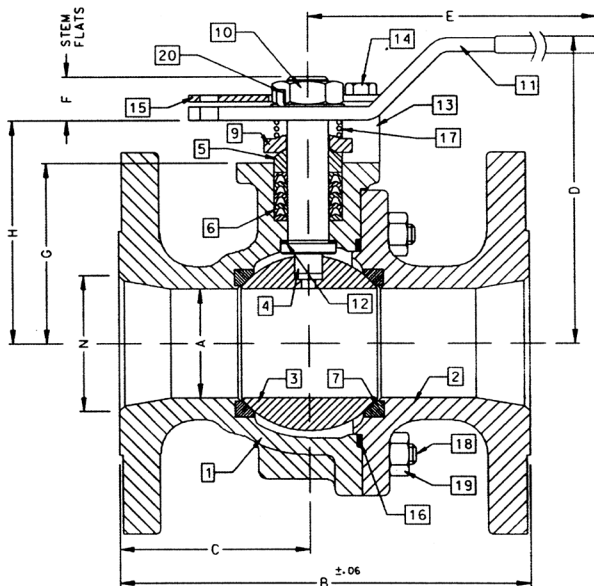
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM A351 CN7M
3	Ball	ASTM B473 (UNS N08020) or CN7M
4	Stem	ASTM B473 (UNS N08020)
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Stem Nut	18-8 SS
11	Lever	316 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS
21	Grounding Spring	Inconel (not shown)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-16, GRAPH NO. 18

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-400-01	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	3.00	34.3



# 87A-400 SERIES

## Alloy 20 ASME Class 150 Flanged Standard Port Ball Valve - 4" through 8"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



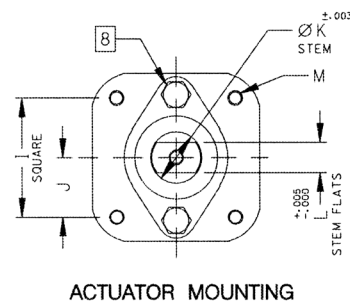
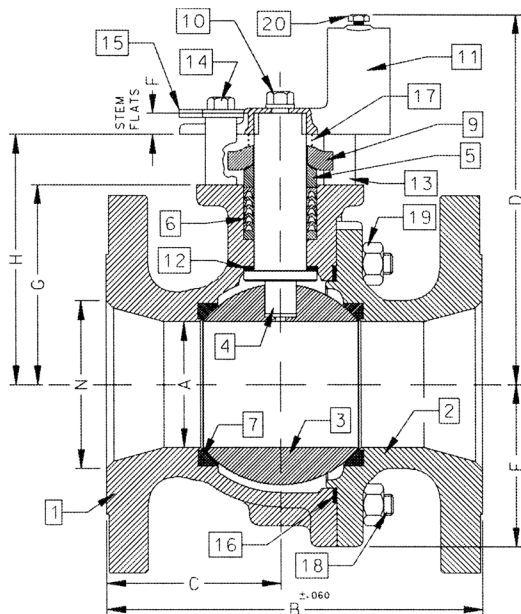
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM A351 CN7M
3	Ball	ASTM B473 (UNS N08020) or CN7M
4	Stem	ASTM B473 (UNS N08020)
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 SS with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Adapter Screw	18-8 SS
21	Pipe Handle	Galvanized Steel (not shown)
22	Grounding Spring	Inconel (not shown)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-16, GRAPH NO. 18

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-40A-01	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	73
87A-40C-01	6"	4.00	10.50	4.69	9.99	5.13	.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	117
87A-40E-01	8"	6.00	18.00	9.00	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	8.00	310





# 87A-500 SERIES

## Alloy 20 ASME Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

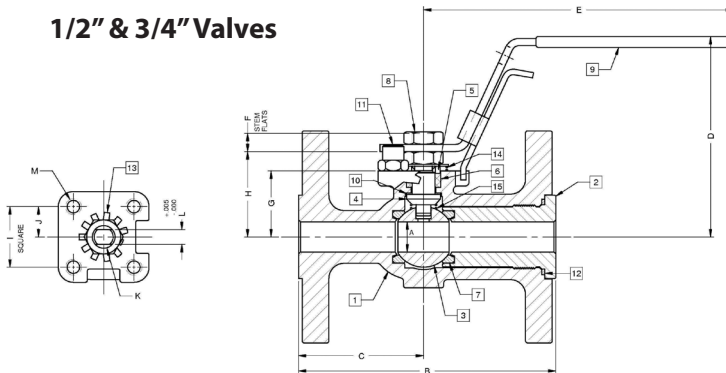
	PART (1/2" & 3/4" VALVES)	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM B473 (UNS N08020)
3	Ball	ASTM B473 (UNS N08020)
4	Stem	ASTM B473 (UNS N08020)
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Stem Nut	300 Series Stainless Steel
9	Lever	300 Series Stainless Steel w/ Vinyl Grip
10	Stem Bearing	RPTFE
11	Stop	300 Series Stainless Steel
12	Body Seal	RPTFE
13	Lockwasher	300 Series Stainless Steel
14	Grounding Spring	ASTM A313 Stainless Steel
15	Grounding Spring	ASTM A313 Stainless Steel
	PART (1" VALVES)	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM B473 (UNS N08020)
3	Ball	ASTM B473 (UNS N08020)
4	Stem	ASTM B473 (UNS N08020)
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	302 or 304 SS
10	Stem Nut	316 SS
11	Lever	302 or 304 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	18-8 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Lockwasher	302 or 304 SS
18	Grounding Spring	SS
19	Grounding Spring	Inconel (not shown)

### OPTIONS AVAILABLE: (More information in Section J)

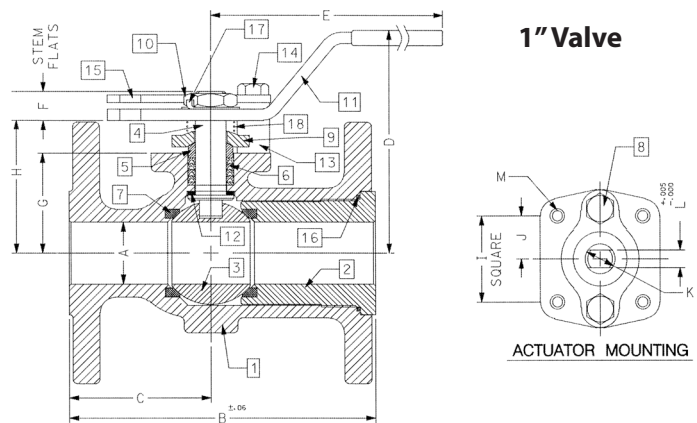
- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	Alloy 20 Spiral Wound Gaskets w/PTFE Filler
-74-	Alloy 20 Spiral Wound Gaskets w/Graphite Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D

### 1/2" & 3/4" Valves



### 1" Valve



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-16, GRAPH NO. 18

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-503-01	1/2"	0.50	4.25	2.06	3.31	5.11	0.30	1.09	1.41	1.000	0.500	0.375	0.245	10-24	5
87A-504-01	3/4"	0.75	4.62	2.18	3.89	5.53	0.36	1.65	1.99	1.392	0.696	0.500	0.287	1/4-20	6
87A-505-01	1"	1.00	5.00	2.32	4.62	6.53	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7

# 87A-500 SERIES

## Alloy 20 ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



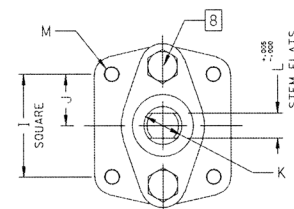
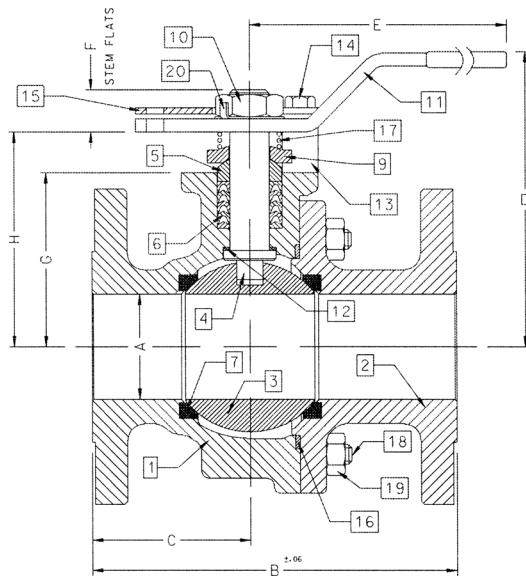
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM A351 CN7M
3	Ball	ASTM B473 (UNS N08020) or A351 CN7M
4	Stem	ASTM B473 (UNS N08020)
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Lever	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS
21	Grounding Spring	Inconel (not shown)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated)
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	Alloy 20 Spiral Wound Gaskets w/PTFE Filler
-74-	Alloy 20 Spiral Wound Gaskets w/Graphite Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

**FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-16, GRAPH NO. 18**

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-507-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
87A-508-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
87A-509-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30



# 87A-500 SERIES

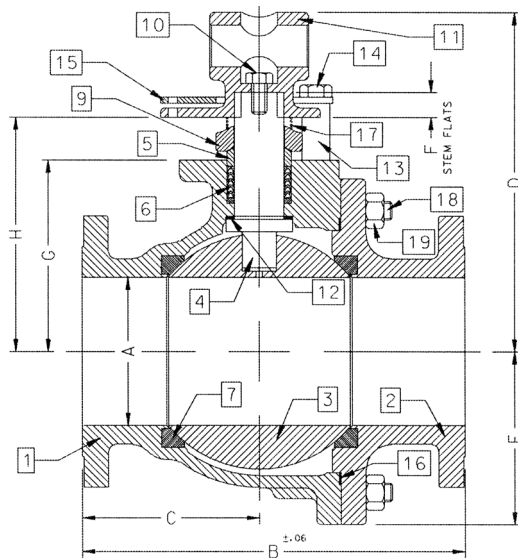
## Alloy 20 ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CN7M
2	Retainer	ASTM A351 CN7M
3	Ball	ASTM B473 (UNS N08020 or A351 CN7M)
4	Stem	ASTM B473 (UNS N08020)
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Pipe Handle	Galvanized Steel (not shown)
21	Grounding Spring	Inconel (not shown)

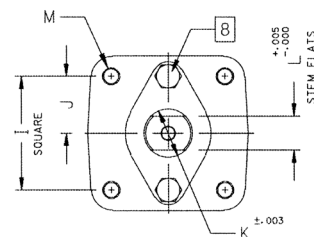


FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-16, GRAPH NO. 18

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	Extended Bonnet
-73-	Alloy 20 Spiral Wound Gaskets w/PTFE Filler
-74-	Alloy 20 Spiral Wound Gaskets w/Graphite Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D



ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-500-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
87A-50A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
87A-50C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248

# 87A-F00 SERIES

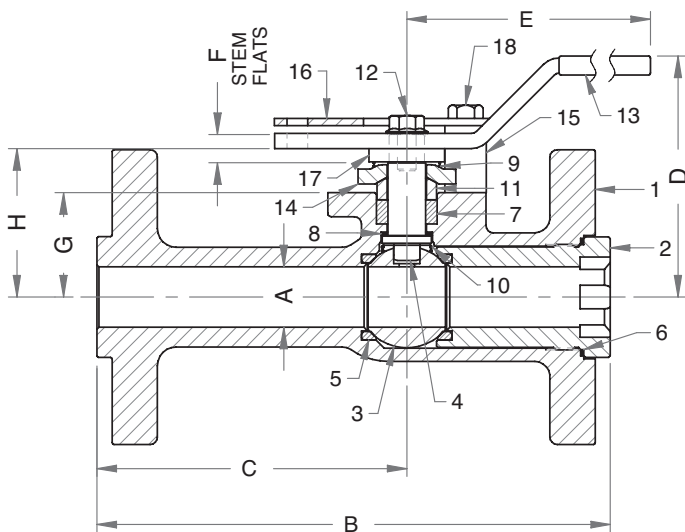
## Stainless Steel ASME Class 600 Flanged Full Port Ball Valve - 1"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

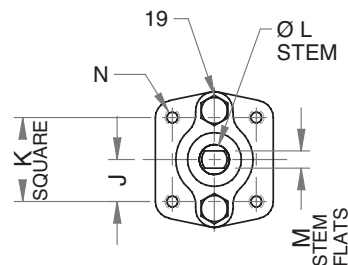
	PART	MATERIAL
1	Body	ASTM A351-CF8M
2	Retainer	ASTM A276 Type 316
3	Ball	ASTM A351-CF8M or ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A276 Type 316
12	Stem Screw	Steel Zinc Plated
13	Lever & Grip	316 Stainless Steel w/Vinyl Grip
14	Gland Plate	316 Stainless Steel
15	Stops	ASTM A276 Type 316
16	Lock Plate	302 or 304 Stainless Steel
17	Spacer	ASTM A276 type 316
18	Stop Screws	316 Stainless Steel
19	Gland Plate Screws	ASTM A193-B8



### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (1" - 2")
-14-	Side vented ball (uni-directional)
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen cleaned
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-MP-	Positive material identification
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-25, GRAPH NO. 34

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
87A-F05-XX	1"	1.00	8.50	5.13	3.99	6.65	0.45	1.730	2.460	0.98	1.95	0.625	0.412	5/16-18	13.0



# 87A-F00 SERIES

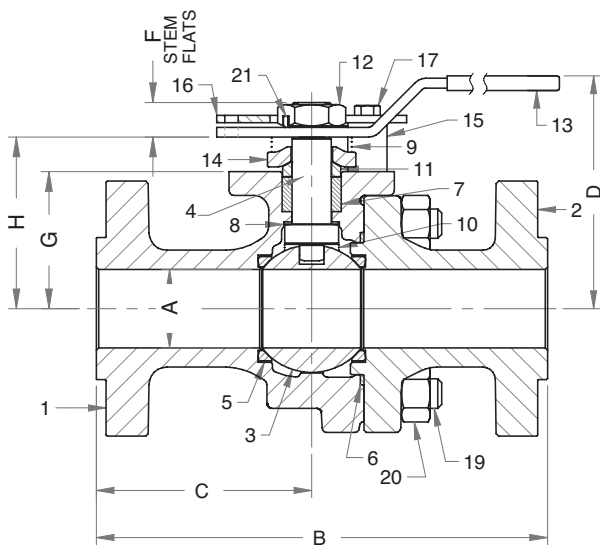
## Stainless Steel ASME Class 600 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

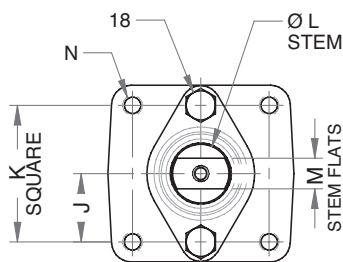
	PART	MATERIAL
1	Body	ASTM A351-CF8M
2	Retainer	ASTM A351-CF8M
3	Ball	ASTM A351-CF8M or ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A276 Type 316
12	Stem Nut	ASTM A194 Grade 8
13	Lever & Grip	316 Stainless Steel w/Vinyl Grip
14	Gland Plate	316 Stainless Steel
15	Stops	ASTM A276 Type 316
16	Lock Plate	302 or 304 Stainless Steel
17	Stop Screws	18-8 Stainless Steel
18	Gland Plate Screws	ASTM A193-B8
19	Body Joint Stud	ASTM A193-B8 Grade B8M
20	Body Joint Nut	ASTM A194-Grade 8
21	Lock Washer	302 or 304 Stainless Steel



### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (1" - 2")
-14-	Side vented ball (uni-directional)
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen cleaned
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-MP-	Positive material identification
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-25, GRAPH NO. 34 & 35

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
87A-F07-XX	1.5"	1.50	9.50	3.62	5.03	8.40	0.74	2.730	3.500	0.98	1.95	0.750	0.477	5/16-18	31.5
87A-F08-XX	2"	2.00	11.50	5.49	6.06	12.06	0.84	3.490	4.370	1.42	2.84	1.000	0.620	3/8-16	53.0
87A-F09-XX	2.5"	2.50	13.00	6.02	6.63	12.06	0.84	4.190	5.070	1.42	2.84	1.000	0.620	3/8-16	65.0



# 87A-F00 SERIES

## Stainless Steel ASME Class 600 Flanged Full Port Ball Valve - 3" through 4"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



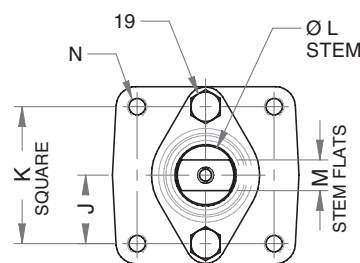
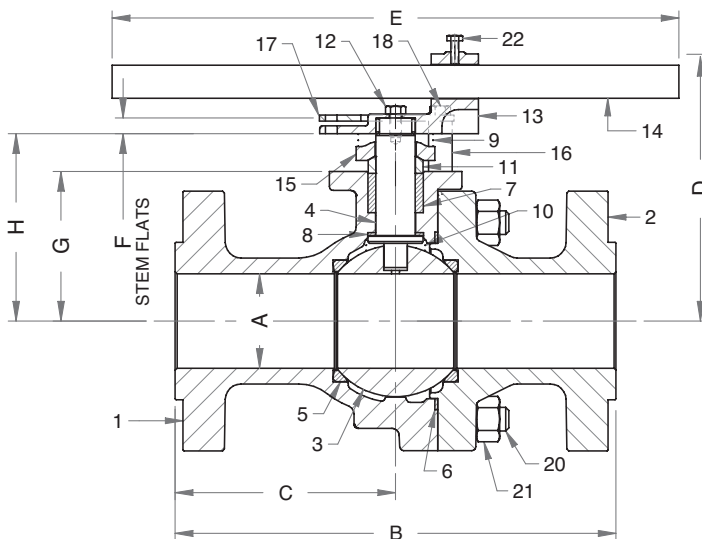
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351-CF8M
2	Retainer	ASTM A351-CF8M
3	Ball	ASTM A351-CF8M or ASTM A276 Type 316
4	Stem	ASTM A276 Type 316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A276 Type 316
12	Stem Screw	304 Stainless Steel
13	Handle Adapter	316 Stainless Steel
14	Pipe Handle	Galvanized Steel
15	Gland Plate	ASTM A351-CF8M
16	Stops	ASTM A276 Type 316
17	Lock Plate	302 or 304 Stainless Steel
18	Stop Screws	18-8 Stainless Steel
19	Gland Plate Screws	ASTM A193-B8
20	Body Joint Stud	ASTM A193-B8M
21	Body Joint Nut	ASTM A194 Grade 8
22	Adapter Screw	18-8 Stainless Steel

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side vented ball (uni-directional)
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen cleaned
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-MP-	Positive material identification
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-25, GRAPH NO. 35

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
87A-F00-XX	3"	3.00	14.00	7.00	8.55	18.00	0.50	4.750	5.946	1.42	2.84	1.250	0.725	3/8-16	101.0
87A-F0A-XX	4"	4.00	17.00	7.19	11.20	34.00	0.75	6.630	8.081	1.74	3.48	1.500	0.780	1/2-13	194.0



# 87A-F00 SERIES

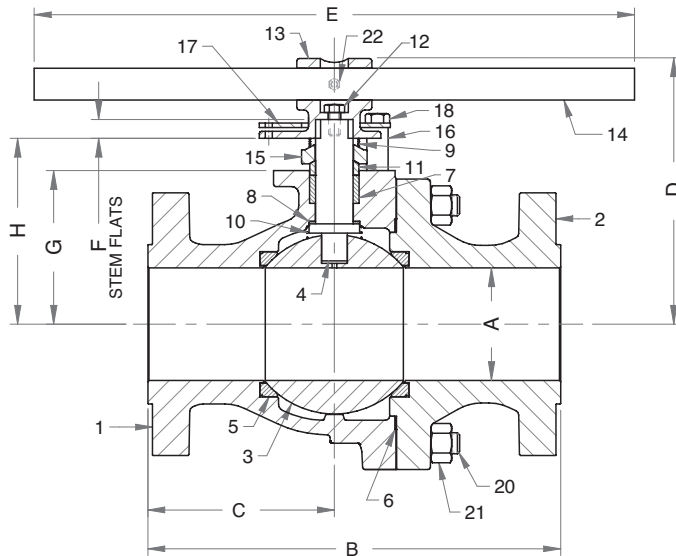
## Stainless Steel ASME Class 600 Flanged Full Port Ball Valve - 6"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

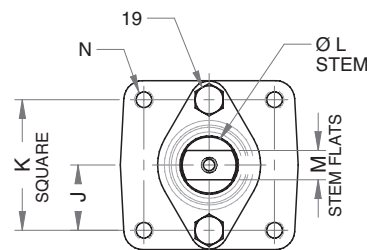
PART	MATERIAL
1 Body	ASTM A351-CF8M
2 Retainer	ASTM A351-CF8M
3 Ball	ASTM A351-CF8M or ASTM A276 Type 316
4 Stem	ASTM A276 Type 316
5 Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6 Body Seal	Defined by Seat Suffix Selected
7 Stem Seals	Defined by Seat Suffix Selected
8 Stem Bearing	Defined by Seat Suffix Selected
9 Grounding Spring	316 Stainless Steel
10 Grounding Spring	316 Stainless Steel
11 Packing Gland	ASTM A276 Type 316
12 Stem Screw	304 Stainless Steel
13 Handle Adapter	316 Stainless Steel
14 Pipe Handle	Galvanized Steel
15 Gland Plate	316 Stainless Steel
16 Stops	ASTM A276 Type 316
17 Lock Plate	302 or 304 Stainless Steel
18 Stop Screws	316 Stainless Steel
19 Gland Plate Screws	ASTM A193-B8
20 Body Joint Stud	ASTM A193-B8M
21 Body Joint Nut	ASTM A194 Grade 8
22 Adapter Screw	18-8 Stainless Steel



### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side vented ball (uni-directional)
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen cleaned
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-MP-	Positive material identification
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-26, GRAPH NO. 36

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
87A-F0C-XX	6"	6.00	22.00	9.94	14.17	45.00	1.00	8.190	9.915	2.298	4.59	2.00	1.375	3/4-10	500.0

# 87A-F00 SERIES

## Stainless Steel ASME Class 600 Flanged Full Port Ball Valve - 8"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



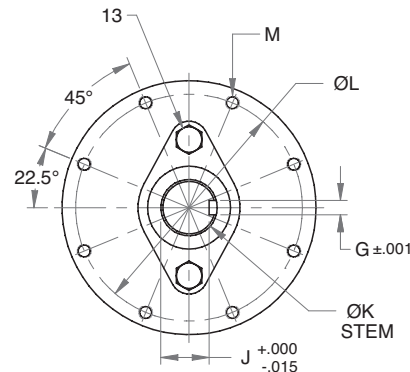
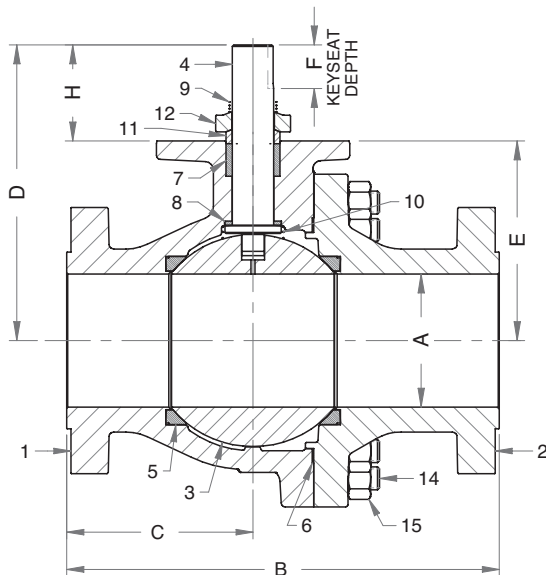
### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A351-CF8M
2 Retainer	ASTM A351-CF8M
3 Ball	ASTM A351-CF8M or ASTM A276 Type 316
4 Stem	ASTM A276 Type 316
5 Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6 Body Seal	Defined by Seat Suffix Selected
7 Stem Seals	Defined by Seat Suffix Selected
8 Stem Bearing	Defined by Seat Suffix Selected
9 Grounding Spring	316 Stainless Steel
10 Grounding Spring	316 Stainless Steel
11 Packing Gland	ASTM A276 Type 316
12 Gland Plate	316 Stainless Steel
13 Gland Plate Screws	ASTM A193-B8
14 Body Joint Stud	ASTM A193 Grade B8M
15 Body Joint Nut	ASTM A194 Grade 8

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side vented ball (uni-directional)
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen cleaned
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-MP-	Positive material identification
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-26, GRAPH NO. 36

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	WT.
87A-F0E-XX	8"	8.00	26.00	11.20	17.77	12.00	2.25*	0.627	5.77	2.133	2.49	10.00	5/8-11	920.0

\* Keyway Length



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REV. 22FEB17

D-99

# 88A-F00 SERIES

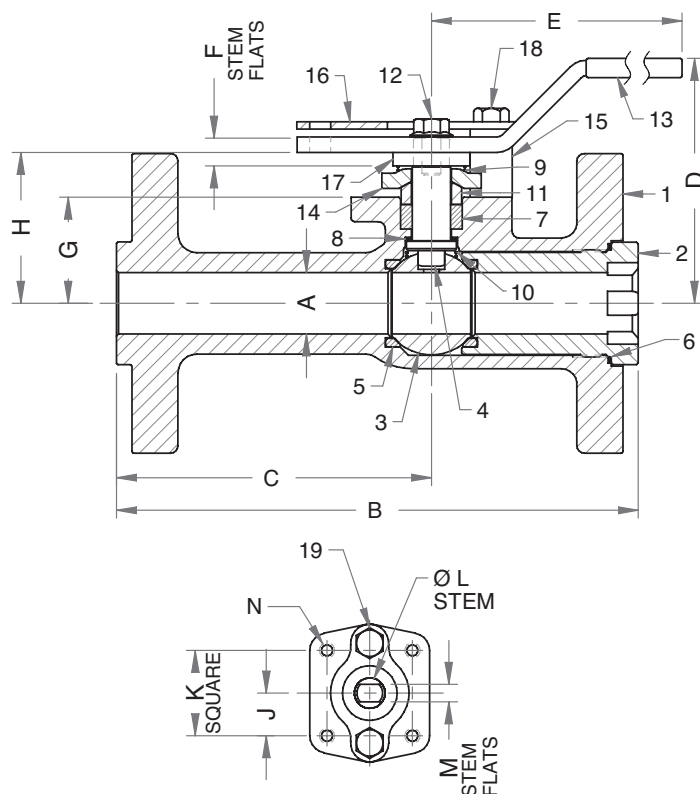
## Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 1"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1	Body
2	Retainer
3	Ball
4	Stem
5	Seats
6	Body Seal
7	Stem Seals
8	Stem Bearing
9	Grounding Spring
10	Grounding Spring
11	Packing Gland
12	Stem Screw
13	Lever & Grip
14	Gland Plate
15	Stops
16	Lock Plate
17	Spacer
18	Stop Screws
19	Gland Plate Screws



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-25, GRAPH NO. 34

### VARIATIONS AVAILABLE:

88A-F40 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials must be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (1" - 2")
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed

# 88A-F00 SERIES

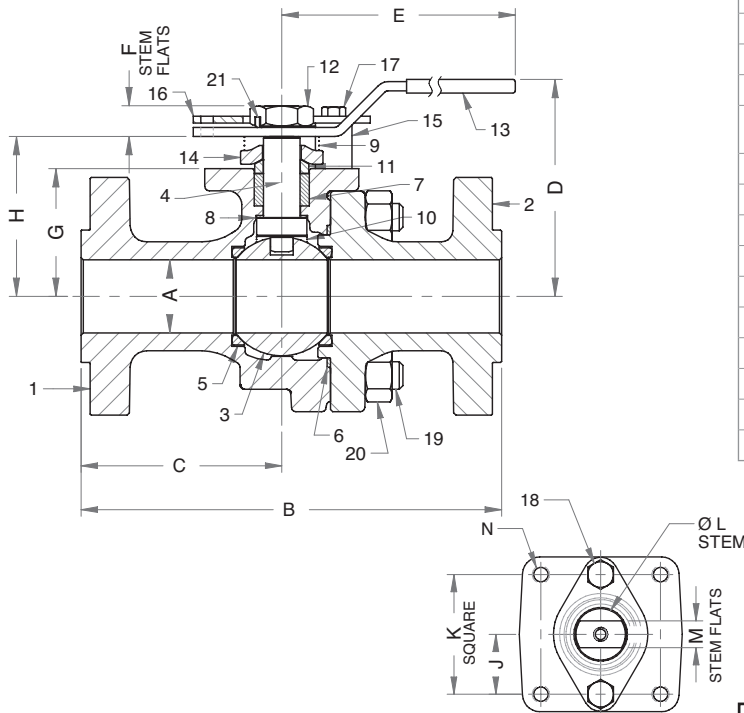
## Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216-WCB
2	Retainer	ASTM A216-WCB
3	Ball	ASTM A108 Type 1215 or A216-WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A108 Type 1215
12	Stem Nut	ASTM A194 Grade 8
13	Lever & Grip	ASTM A366 Steel w/Vinyl Grip
14	Gland Plate	302 & 304 Stainless Steel
15	Stops	ASTM A108 Type 1215
16	Lock Plate	ASTM A366 Steel
17	Stop Screws	SAE J429 Grade 2
18	Gland Plate Screws	ASTM A193-B7
19	Body Joint Stud	ASTM A193-Grade B7
20	Body Joint Nut	ASTM A194-Grade 2H
21	Lock Washer	302 or 304 Stainless Steel



ACTUATOR MOUNTING

### VARIATIONS AVAILABLE:

88A-F40 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials must be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (1" - 2")
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-25, GRAPH NO. 34 & 35

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88A-F07-XX	1.5"	1.50	9.50	3.62	5.03	8.40	0.74	2.730	3.500	0.98	1.95	0.750	0.477	5/16-18	31.5
88A-F08-XX	2"	2.00	11.50	5.49	6.06	12.06	0.84	3.490	4.370	1.42	2.84	1.000	0.620	3/8-16	53.0
88A-F09-XX	2.5"	2.50	13.00	6.02	6.63	12.06	0.84	4.190	5.070	1.42	2.84	1.000	0.620	3/8-16	65.0





# 88A-F00 SERIES

## Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 3" through 4"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216-WCB
2	Retainer	ASTM A216-WCB
3	Ball	ASTM A108 Type 1215 or A216-WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A108 Type 1215
12	Stem Screw	304 Stainless Steel
13	Handle Adapter	ASTM A366 Steel with Vinyl Grip
14	Pipe Handle	Galvanized Steel (not shown)
15	Gland Plate	316 Stainless Steel
16	Stops	ASTM A108 Type 1215
17	Lock Plate	ASTM A366 Steel
18	Stop Screws	SAE J429 Grade 2
19	Gland Plate Screws	ASTM A193-B7
20	Body Joint Stud	ASTM A193- Grade B7
21	Body Joint Nut	ASTM A194- Grade 2H
22	Adapter Screw	18-8 Stainless Steel

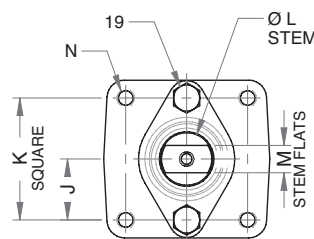
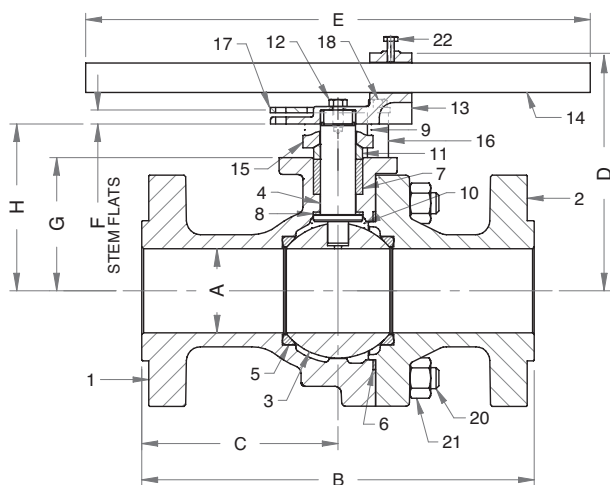
### VARIATIONS AVAILABLE:

88A-F40 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials must be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-25, GRAPH NO. 35

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88A-F00-XX	3"	3.00	14.00	7.00	8.55	18.00	0.50	4.750	5.946	1.42	2.84	1.250	0.725	3/8-16	101.0
88A-F0A-XX	4"	4.00	17.00	7.19	11.20	34.00	0.75	6.630	8.081	1.74	3.48	1.500	0.780	1/2-13	194.0

# 88A-F00 SERIES

## Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 6"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A216-WCB
2 Retainer	ASTM A216-WCB
3 Ball	ASTM A108 Type 1215 or A216-WCB Chrome Plated
4 Stem	ASTM A108 Type 1215
5 Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6 Body Seal	Defined by Seat Suffix Selected
7 Stem Seals	Defined by Seat Suffix Selected
8 Stem Bearing	Defined by Seat Suffix Selected
9 Grounding Spring	316 Stainless Steel
10 Grounding Spring	316 Stainless Steel
11 Packing Gland	ASTM A108 Type 1215
12 Stem Screw	304 Stainless Steel
13 Handle Adapter	316 Stainless Steel
14 Pipe Handle	Galvanized Steel (not shown)
15 Gland Plate	316 Stainless Steel
16 Stops	ASTM A108 Type 1215
17 Lock Plate	ASTM A366 Steel
18 Stop Screws	SAE J429 Grade 2
19 Gland Plate Screws	ASTM A193-B7
20 Body Joint Stud	ASTM A193-Grade B7
21 Body Joint Nut	ASTM A194-Grade 2H
22 Adapter Screw	18-8 Stainless Steel

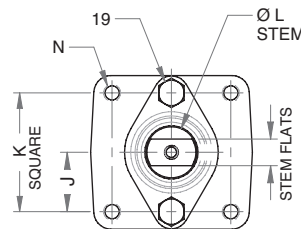
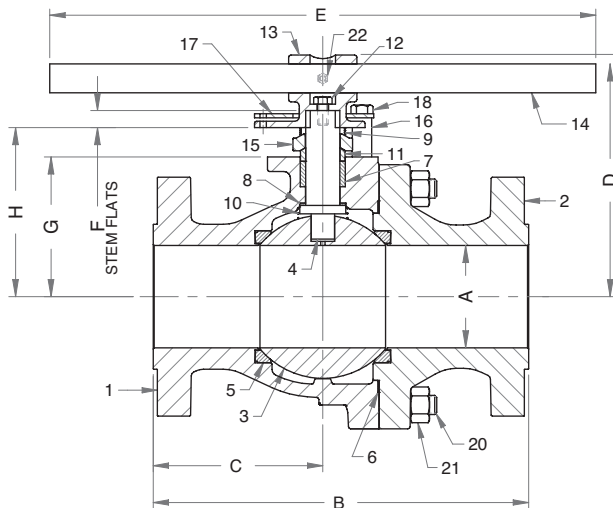
### VARIATIONS AVAILABLE:

88A-F40 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials must be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-26, GRAPH NO. 36

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88A-F0C-XX	6"	6.00	22.00	9.94	14.17	45.00	1.00	8.190	9.915	2.298	3.48	2.000	1.375	3/4-10	500.0



# 88A-F00 SERIES

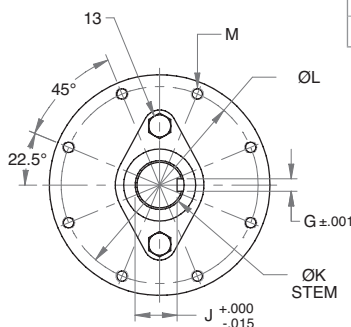
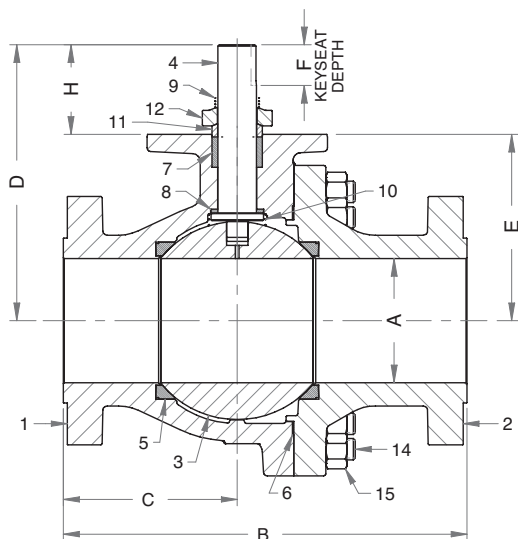
## Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 8"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A216-WCB
2	Retainer	ASTM A216-WCB
3	Ball	ASTM A108 Type 1215 or ASTM A216-WCB Chrome Plated
4	Stem	ASTM A108 Type 1215
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A108 Type 1215
12	Gland Plate	316 Stainless Steel
13	Gland Plate Screws	ASTM A193-B7
14	Body Joint Stud	ASTM A193 Grade B7
15	Body Joint Nut	ASTM A194 Grade 2H



ACTUATOR MOUNTING

### VARIATIONS AVAILABLE:

88A-F40 Series (316 SS Ball & Stem)

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials must be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-26, GRAPH NO. 36

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	WT.
88A-F0E-XX	8"	8.00	26.00	11.20	17.77	12.00	2.25*	0.627	5.77	2.133	2.49	10.00	5/8-11	920.0

\* Keyway Length



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# 88L-F40 SERIES

## Low Temperature Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 1"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



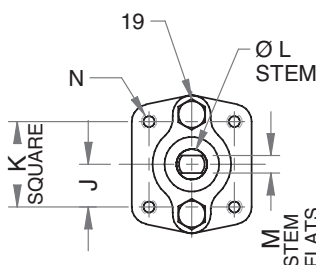
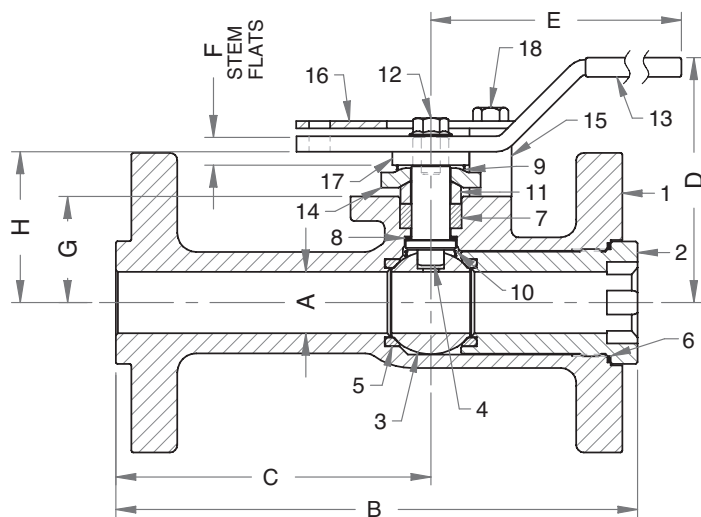
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316
4	Stem	ASTM A276-316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	See Options Available
12	Stem Screw	Steel, Zinc Plated
13	Lever	ASTM A366 Steel with Vinyl Grip
14	Gland Plate	302 or 304 Stainless Steel
15	Stop	ASTM A108 Type 1215
16	Lock Plate	ASTM A366 Steel
17	Spacer	ASTM A276 Type 216
18	Stop Screw	SAE J429 Grade 2 Steel Zinc Plated
19	Gland Plate Screws	ASTM A193 B7

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials must be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (1" - 2")
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-26, GRAPH NO. 37

### ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88L-F45-XX	1"	1.00	8.50	5.13	3.99	6.65	0.45	1.730	2.460	0.98	1.95	0.625	0.412	5/16-18	13.0

# 88L-F40 SERIES

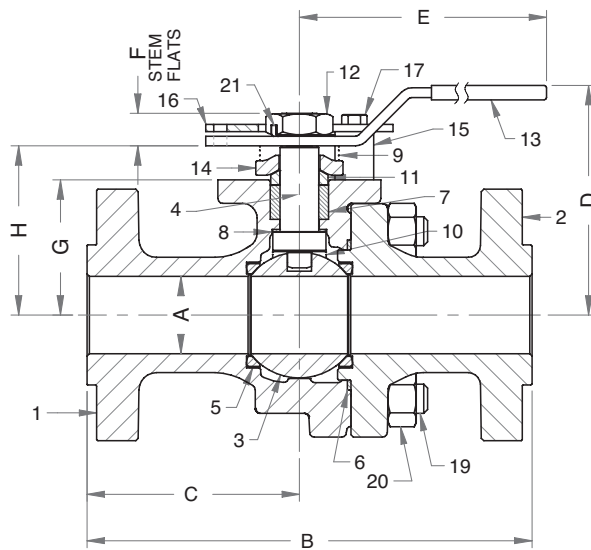
## Low Temperature Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

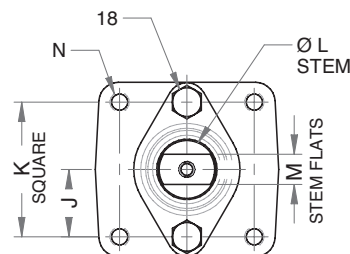
	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A108 Type 1215
12	Stem Nut	ASTM A194 Grade 8
13	Lever	ASTM A366 Steel with Vinyl Grip
14	Gland Plate	302 or 304 Stainless Steel
15	Stop	ASTM A108 Type 1215
16	Lock Plate	ASTM A366 Steel
17	Stop Screw	SAE J429 Grade 2
18	Gland Plate Screws	ASTM A193 B7
19	Body Joint Stud	ASTM A193 Grade B7
20	Body Joint Nut	ASTM A194 Grade 2H
21	Lock Washer	302 or 304 SS



### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-26-27, GRAPH NO. 37 & 38

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88L-F47-XX	1.5"	1.50	9.50	3.62	5.03	8.40	0.74	2.730	3.500	0.98	1.95	0.750	0.477	5/16-18	31.5
88L-F48-XX	2"	2.00	11.50	5.49	6.06	12.06	0.84	3.490	4.370	1.42	2.84	1.000	0.620	3/8-16	53.0
88L-F49-XX	2.5"	2.50	13.00	6.02	6.63	12.06	0.84	4.190	5.070	1.42	2.84	1.000	0.620	3/8-16	65.0



# 88L-F40 SERIES

## Low Temperature Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 3" through 4"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



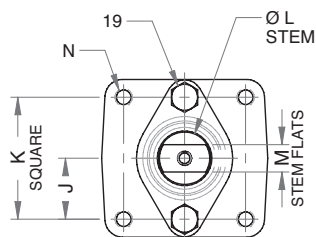
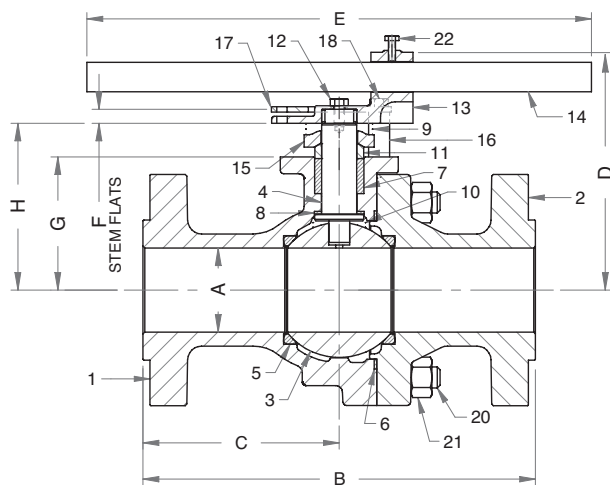
### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276 Type 316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A108 Type 1215
12	Stem Screw	304 Stainless Steel
13	Handle Adapter	ASTM A366 Steel with Vinyl Grip
14	Pipe Handle	Galvanized Steel (not shown)
15	Gland Plate	316 Stainless Steel
16	Stops	ASTM A108 Type 1215
17	Lock Plate	ASTM A366 Steel
18	Stop Screws	SAE J429 Grade 2
19	Gland Plate Screws	ASTM A193-B7
20	Body Joint Stud	ASTM A193 Grade B7
21	Body Joint Nut	ASTM A194 Grade 2H
22	Adapter Screw	18-8 Stainless Steel

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-27, GRAPH NO. 38

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88L-F40-XX	3"	3.00	14.00	7.00	8.55	18.00	0.50	4.750	5.946	1.42	2.84	1.250	0.725	3/8-16	101.0
88L-F4A-XX	4"	4.00	17.00	7.19	11.20	34.00	0.75	6.630	8.081	1.74	3.48	1.500	0.780	1/2-13	194.0

# 88L-F40 SERIES

## Low Temperature Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 6"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



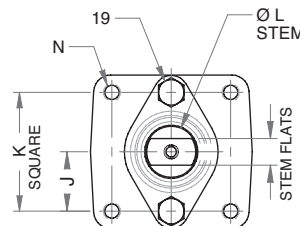
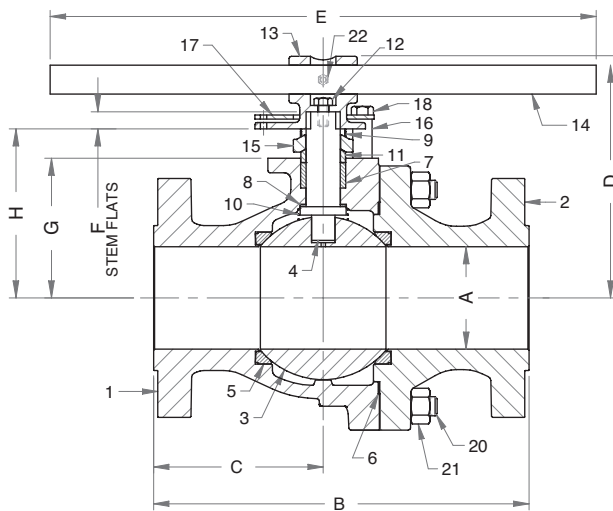
### STANDARD MATERIAL LIST

PART	MATERIAL
1 Body	ASTM A352-LCC
2 Retainer	ASTM A352-LCC
3 Ball	ASTM A276-316 or A351-CF8M
4 Stem	ASTM A276-316
5 Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6 Body Seal	Defined by Seat Suffix Selected
7 Stem Seals	Defined by Seat Suffix Selected
8 Stem Bearing	Defined by Seat Suffix Selected
9 Grounding Spring	316 Stainless Steel
10 Grounding Spring	316 Stainless Steel
11 Packing Gland	ASTM A108 Type 1215
12 Stem Screw	304 Stainless Steel
13 Handle Adapter	ASTM A366 Steel with Vinyl Grip
14 Pipe Handle	Galvanized Steel (not shown)
15 Gland Plate	316 Stainless Steel
16 Stops	ASTM A108 Type 1215
17 Lock Plate	ASTM A366 Steel
18 Stop Screws	SAE J429 Grade 2
19 Gland Plate Screws	ASTM A193-B7
20 Body Joint Stud	ASTM A193-Grade B7
21 Body Joint Nut	ASTM A194-Grade 2H
22 Adapter Screw	18-8 Stainless Steel

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed



ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-27, GRAPH NO. 39

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	WT.
88L-F4C-XX	6"	6.00	22.00	9.94	13.64	45.00	1.00	8.190	9.915	2.298	3.48	2.000	1.375	3/4-10	500.0

# 88L-F40 SERIES

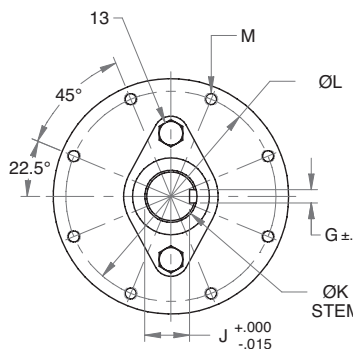
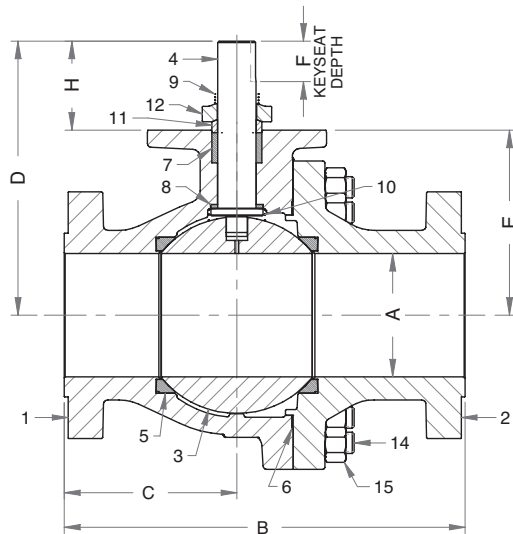
## Low Temperature Carbon Steel ASME Class 600 Flanged Full Port Ball Valve - 8"

For **STANDARD COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.



### STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A352-LCC
2	Retainer	ASTM A352-LCC
3	Ball	ASTM A276-316 or A351-CF8M
4	Stem	ASTM A276-316
5	Seats	Defined by Seat Suffix Selected See "95" or "80" also "38" & "21"
6	Body Seal	Defined by Seat Suffix Selected
7	Stem Seals	Defined by Seat Suffix Selected
8	Stem Bearing	Defined by Seat Suffix Selected
9	Grounding Spring	316 Stainless Steel
10	Grounding Spring	316 Stainless Steel
11	Packing Gland	ASTM A108 Type 1215
12	Gland Plate	316 Stainless Steel
13	Gland Plate Screws	ASTM A193-B7
14	Body Joint Stud	ASTM A193 Grade B7
15	Body Joint Nut	ASTM A194 Grade 2H



ACTUATOR MOUNTING

### OPTIONS AVAILABLE: (More information in Section J)

- Complete the product number by adding a suffix (or multiple suffixes) to the base product number. A suffix for seat & seal materials **must** be selected.
- To specify multiple options, add the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.
- Minimum quantities may apply.

(SUFFIX)	OPTION
-14-	Side Vented Ball (Uni-Directional). Not available with plated CS ball.
-21-	UHMWPE seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-26-	Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
-38-	PEEK seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-45-	Less lever and nut (bare stem)
-49-	No Lubrication. Assembled Dry.
-67-	Cleaned for industrial gas (CS only)
-69-	Drilled & tapped purge port with plugs
-70-	4" extended bonnet
-76-	Live loaded (lever operated)
-77-	Live loaded (gear operator or actuator)
-80-	Multiseal seats, PTFE chevron packing, spiral wound PTFE body seal, PEEK bearing
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-95-	Devlon® seats, graphite packing, spiral wound graphite body seal, PEEK bearing
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KB-	Kolsterised ball
-MG-	Gear operator with standard handwheel
-MH-	Gear operator with standard handwheel & locking device
-MJ-	Gear operator with oversize handwheel
-MK-	Gear operator with oversize handwheel & locking device
-PH-	17-4 PH stem
-TC-	Hydrostatic test with certified report
-TD-	API 6D Test (hydrostatic testing)
-TR-	Hydrostatic test with certified report & MTR
-TW-	Hydrostatic test with certified report & witnessed

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-27, GRAPH NO. 39

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	WT.
88L-F4E-XX	8"	8.00	26.00	11.20	17.77	12.00	2.25*	0.627	5.77	2.133	2.49	10.00	5/8-11	920.0

\* Keyway Length



# SECTION D – ASME FLANGED BALL VALVES

## REVISIONS

PAGE	DATE	DESCRIPTION
D5 thru D54	12APR16	Added suffix "-KF". PCTFE stem bearing.
D55 thru D88	29JUN16	Changed option suffix "-14" to Side Vented Ball (Uni-Directional). Not available with plated CS ball. Changed option suffix "-26" to Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)
	12APR16	Added suffix "-KF". PCTFE stem bearing.
D89 thru D94	12APR16	Added suffix "-KF". PCTFE stem bearing.
D95 thru D99	22FEB17	Clarified the text under Options Available header
D100 thru D109	08MAR17	Removed "-MP" option.
	22FEB17	Clarified the text under Options Available header
	29JUN16	Changed option suffix "-14" to Side Vented Ball (Uni-Directional). Not available with plated CS ball. Changed option suffix "-26" to Chlorine Service. Vented. Special Cleaning. Assembled dry. (for CS, Hastelloy and Ni-Cu valves. Ball must be Hastelloy or Ni-CU)