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ANSI FLANGED BALL VALVES

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Apollo® 87A-100 Series

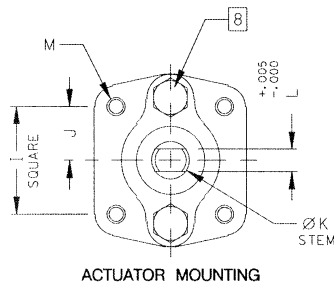
Stainless Steel ANSI Class 150 Flanged Std. Port Ball Valve - 1-1/2" through 2"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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



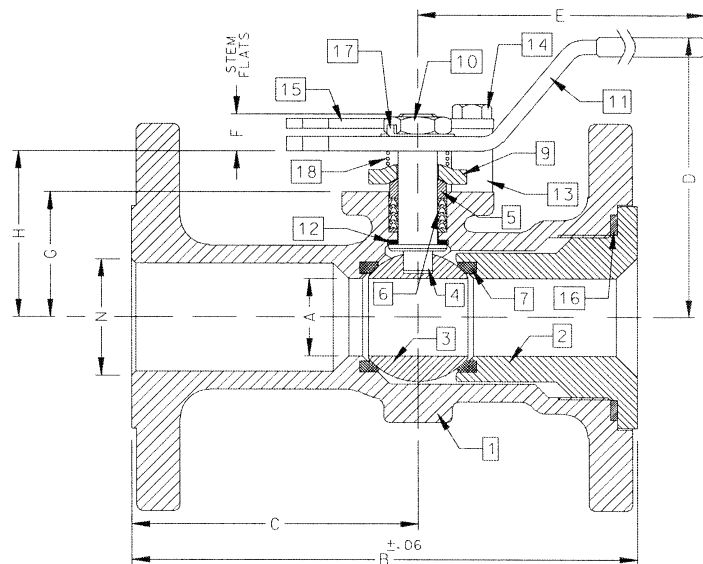
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Boss for Bleed / Drain Port
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-107-01	1-1/2"	1.00	6.50	3.69	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	1.50	9.0
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	18.0

Apollo® 87A-100 Series

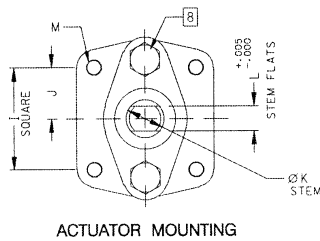
Stainless Steel ANSI Class 150 Flanged Std. Port Ball Valve - 2-1/2" through 3"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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 A194 Grade B8M
19. Body Joint Nut	ASTM A194 Grade 8
20. Lockwasher	302 or 304 SS



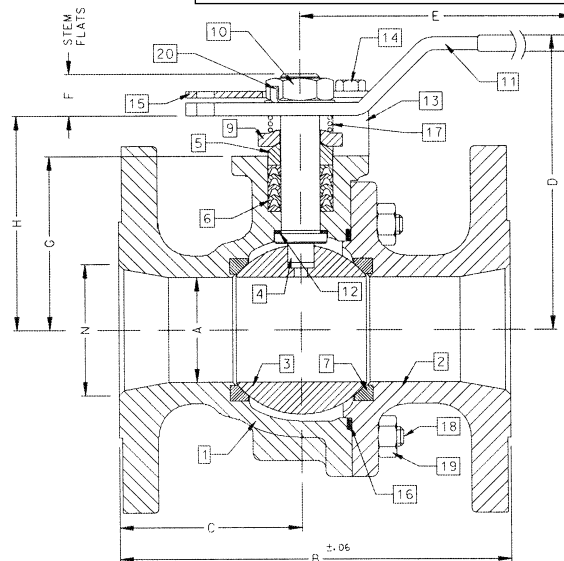
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-109-01	2-1/2"	2.00	7.50	3.50	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27.0
87A-100-01	3"	2.50	8.00	3.51	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	34.0

Apollo® 87A-100 Series

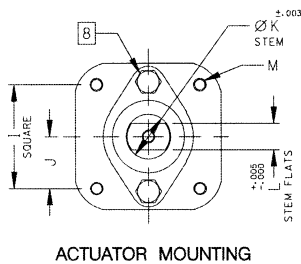
Stainless Steel ANSI Class 150 Flanged Std. Port Ball Valve - 4" through 8"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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 A194 Grade B8M
19. Body Joint Nut	ASTM A194 Grade 8
20. Lockwasher	302 or 304 SS
21. Pipe Handle	Galvanized Steel (not Shown)



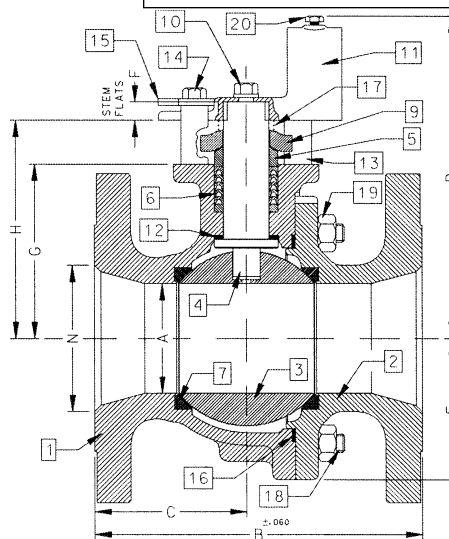
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (4" & 6" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**



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	73.0
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	117.0
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	310.0

Apollo® 87A-200 Series

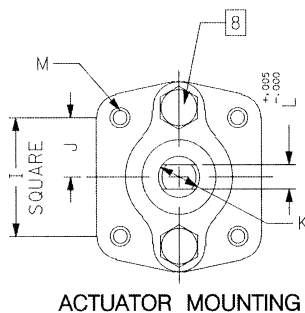
Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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



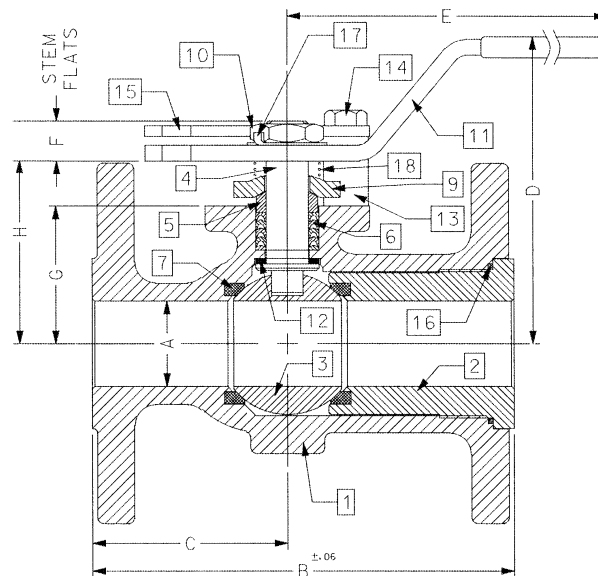
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Boss for Bleed / Drain Port
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
 Refer to Page N-9, Graph No. 2**



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	3.28	5.14	.30	1.09	1.38	1.002	.501	.376	.250	1/4-20	5.0
87A-204-01	3/4"	0.75	4.62	2.18	3.89	5.56	.39	1.65	1.96	1.392	.696	.500	.287	1/4-20	6.0
87A-205-01	1"	1.00	5.00	2.32	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7.0

Apollo® 87A-200 Series

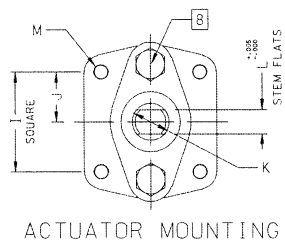
Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve - 1-1/2" through 2-1/2"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Butt welding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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



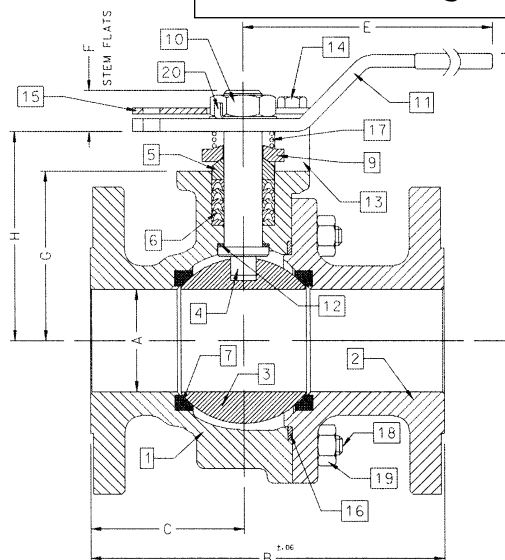
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-207-01	1-1/2"	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	14.0
87A-208-01	2"	2.00	7.00	3.04	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25.0
87A-209-01	2-1/2"	2.50	7.50	3.34	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	30.0

Apollo® 87A-200 Series

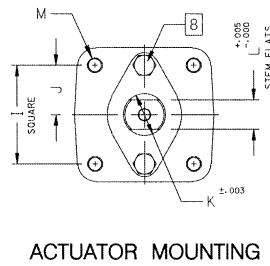
Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve - 3" through 6"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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)



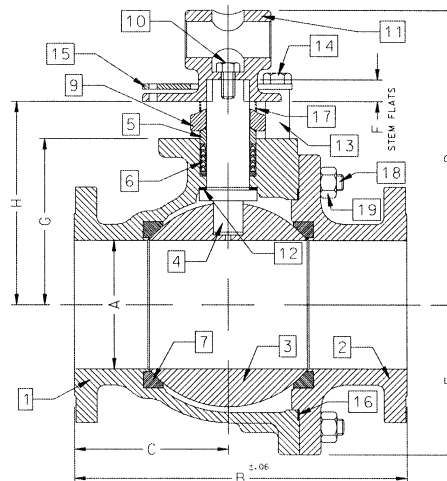
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTEF Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (3" & 4" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**



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	60.0
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	91.0
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	248.0

Apollo® 87A-700 Series

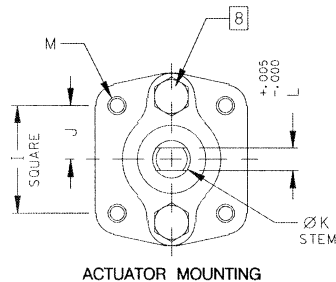
Stainless Steel ANSI Class 300 Flanged Std. Port Ball Valve - 1-1/2" through 2"

STANDARDS COMPLIANCE

ASME B16.5 -	"Pipe Flanges and Flanged Fittings"
ASME B16.10 -	"Face to Face Dimensions of Valves"
ASME B16.34 -	"Valves - Flanged, Threaded, and Welding End"
API 607 -	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608 -	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25 -	"Standard Marking System for Valves"
MSS SP-61 -	"Pressure Testing of Steel Valves"
MSS SP-72 -	"Ball Valves with Flanged or Butt welding Ends"
ASME B31.1, -	Pressure Piping Standards
B31.3, & B31.8	

MATERIALS OF CONSTRUCTION

Description	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



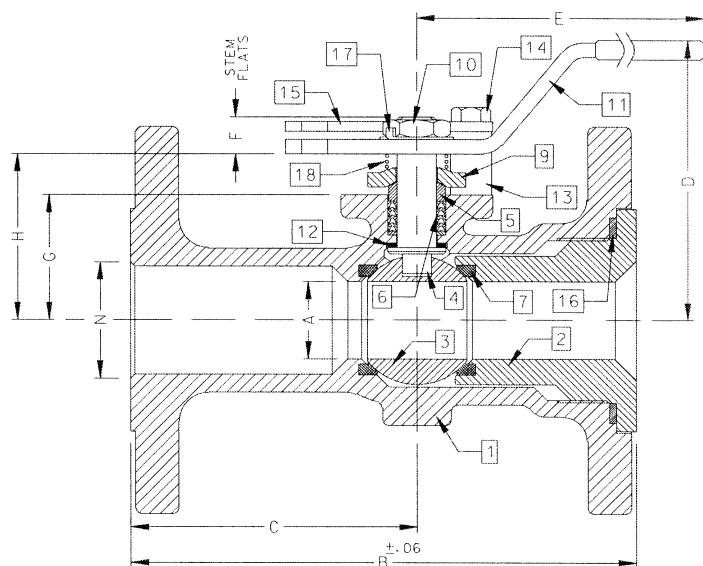
STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Boss for Bleed / Drain Port
Four Point ISO 5211 Mounting Pad Bolt Circle
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14 -	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21 -	UHMWPE Seats
-24 -	Fire Safe (Graphite Packing and Seal)
-35 -	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-707-01	1-1/2"	1.00	7.50	4.69	3.62	6.03	0.47	1.62	2.15	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

Apollo® 87A-700 Series

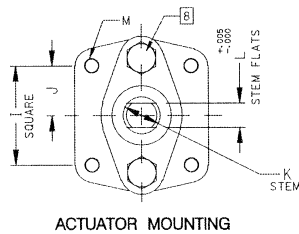
Stainless Steel ANSI Class 300 Flanged Std. Port Ball Valve - 2-1/2" through 3"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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



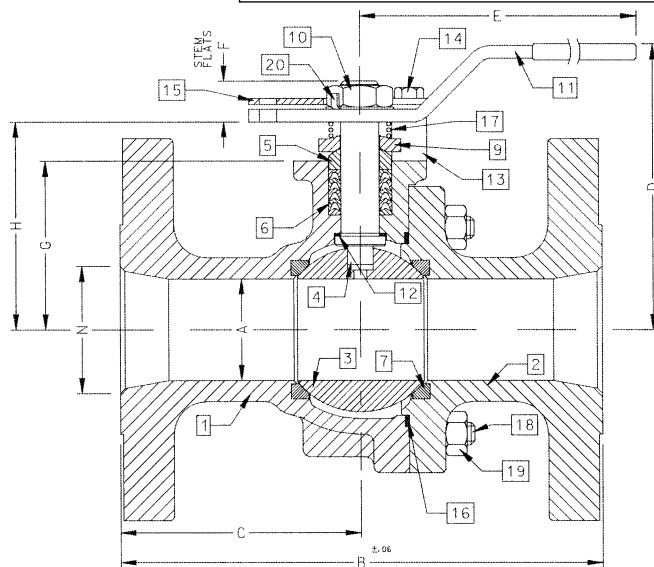
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-709-01	2-1/2"	2.00	9.50	4.75	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39.0
87A-700-01	3"	2.50	11.12	5.56	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	55.0

Apollo® 87A-700 Series

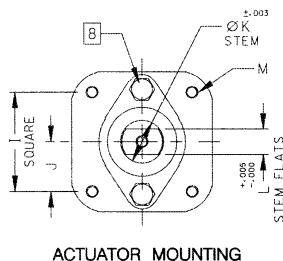
Stainless Steel ANSI Class 300 Flanged Std. Port Ball Valve - 4" through 8"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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)



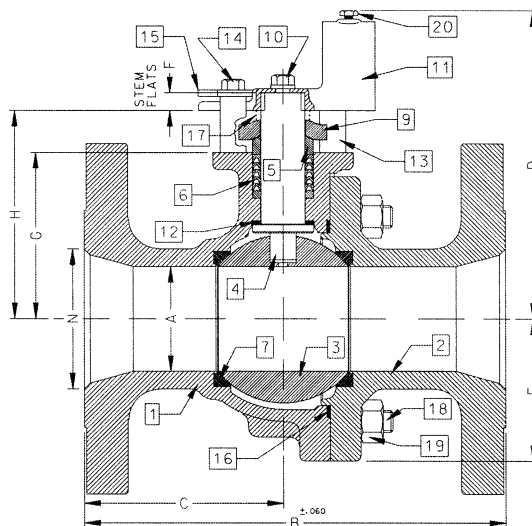
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (4" & 6" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**



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	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95.0
87A-70C-01	6"	4.00	15.88	7.38	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187.0
87A-70E-01	8"	6.00	19.75	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	400.0

Apollo® 87A-900 Series

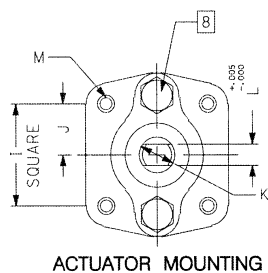
Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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



ACTUATOR MOUNTING

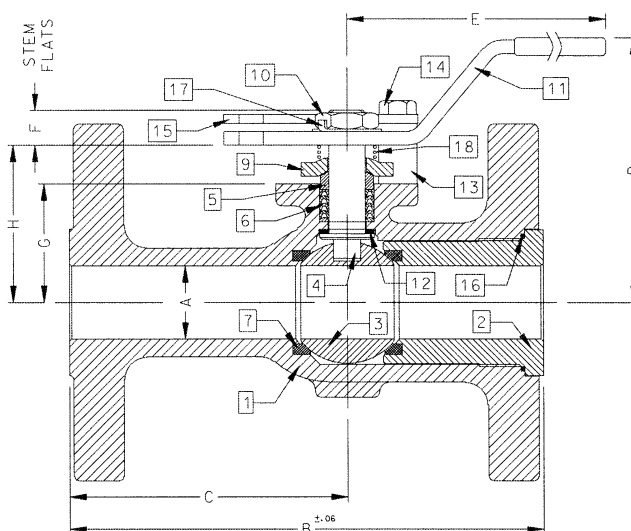
STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Boss for Bleed / Drain Port
Four Point ISO 5211 Mounting Pad Bolt Circle
Full Bore Design for Maximum Flow Efficiency
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-903-01	1/2"														6.0
87A-904-01	3/4"														9.0
87A-905-01	1"	1.00	6.50	3.82	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	11.0

Apollo® 87A-900 Series

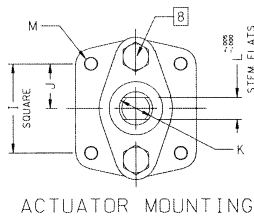
Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve - 1-1/2" through 2-1/2"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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



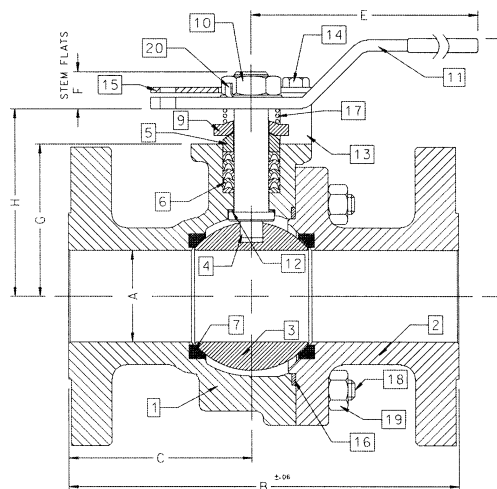
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-907-01	1-1/2"	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	21.0
87A-908-01	2"	2.00	8.50	4.00	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37.0
87A-909-01	2-1/2"	2.50	9.50	4.44	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	57.0

Apollo® 87A-900 Series

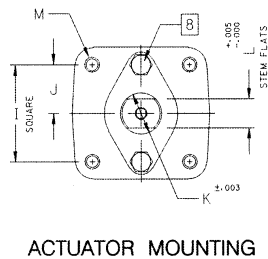
Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve - 3" through 6"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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)



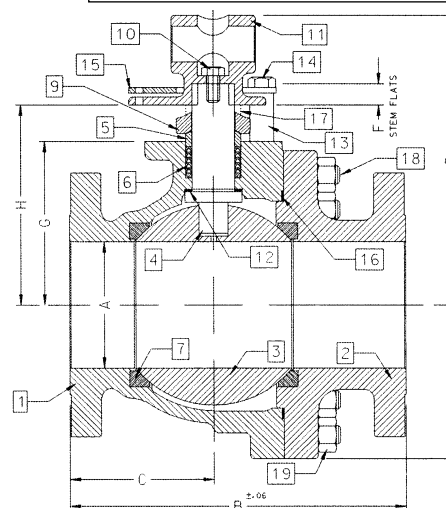
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing (3" Only)
-49-	Assembled Dry
-57-	Oxygen Cleaned (SS Valves Only)
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet (3" 7 4" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**



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	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78.0
87A-90A-01	4"	4.00	12.00	5.44	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133.0
87A-90C-01	6"	6.00	15.88	6.82	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	329.0

Apollo® 88A-100 Series

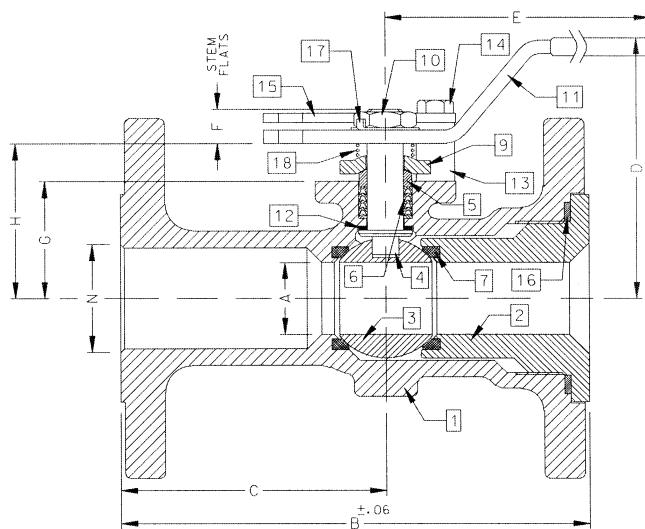
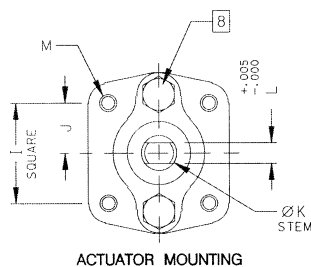
Carbon Steel ANSI Class 150 Flanged Std. Port Ball Valve - 1-1/2" through 2"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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. 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



**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Boss for Bleed / Drain Port
Four Point ISO 5211 Mounting Pad Bolt Circle
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-107-01	1-1/2"	1.00	6.50	3.69	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	1.50	9.0
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	18.0

Apollo® 88A-100 Series

Carbon Steel ANSI Class 150 Flanged Std. Port Ball Valve - 2-1/2" through 3"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	Material
1. Body	ASTM A216 WCB
2. Retainer	ASTM A216 WCB
3. Ball	ASTM A216 WCB 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	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

STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

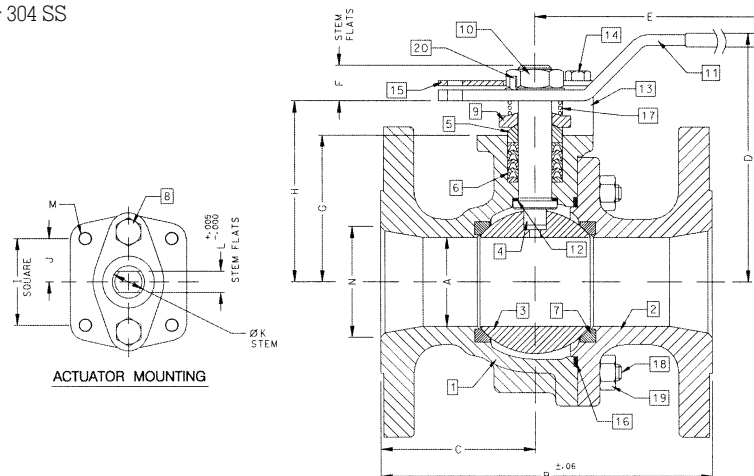
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-109-01	2-1/2"	2.00	7.50	3.50	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	27.0
88A-100-01	3"	2.50	8.00	3.51	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	34.0

Apollo® 88A-100 Series

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

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	Material
1. Body	ASTM A216 WCB
2. Retainer	ASTM A216 WCB
3. Ball	ASTM A216 WCB 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. 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)

STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

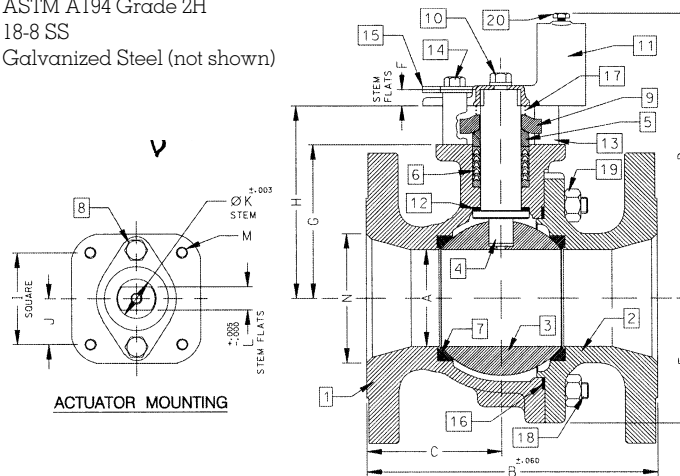
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-49-	Assembled Dry
-57-	Oxygen Cleaned (SS Valves Only)
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (4" & 6" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**



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	73.0
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	117.0
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	310.0

Apollo® 88A-200 Series

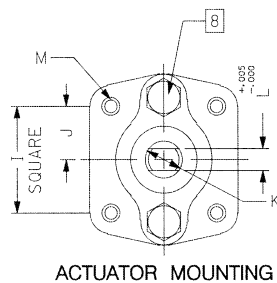
Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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. 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



STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Bosses for Bleed / Drain Ports
Four Point ISO 5211 Mounting Pad Bolt Circle
Full Bore Design for Maximum Flow Efficiency
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

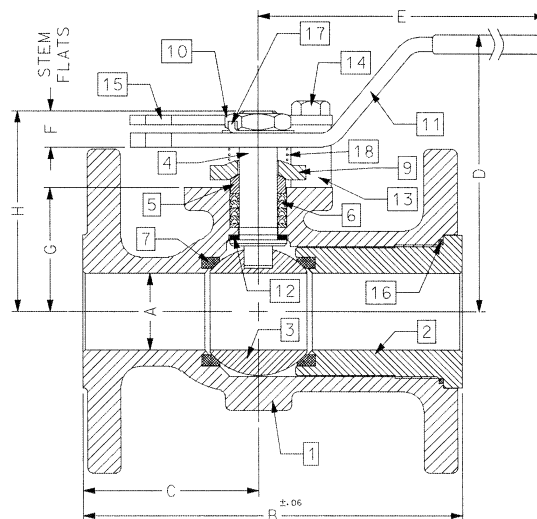
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**



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	3.28	5.14	.30	1.09	1.38	1.002	.501	.376	.250	1/4-20	5.0
88A-204-01	3/4"	0.75	4.62	2.18	3.89	5.56	.39	1.65	1.96	1.392	.696	.500	.287	1/4-20	6.0
88A-205-01	1"	1.00	5.00	2.32	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7.0

Apollo® 88A-200 Series

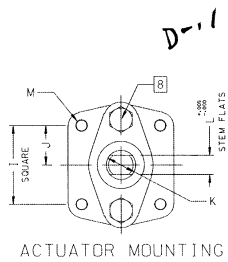
Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve - 1-1/2" through 2-1/2"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Butt welding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	Material
1. Body	ASTM A216 WCB
2. Retainer	ASTM A216 WCB
3. Ball	ASTM A216 WCB 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	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



STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

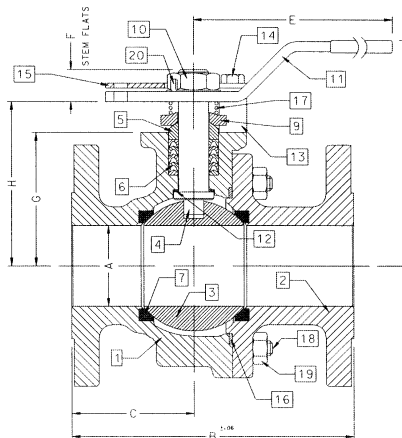
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (4" & 6" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-207-01	1-1/2"	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	14.0
88A-208-01	2"	2.00	7.00	3.04	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25.0
88A-209-01	2-1/2"	2.50	7.50	3.34	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	30.0

Apollo® 88A-200 Series

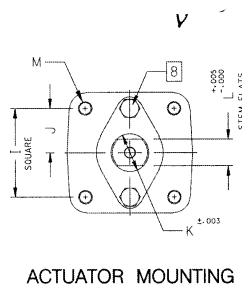
Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve - 3" through 6"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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. 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)



STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

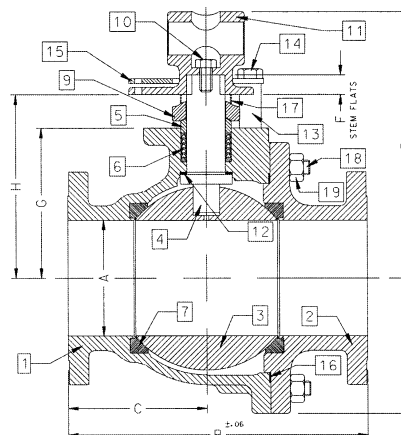
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**



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	60.0
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	91.0
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	248.0

Apollo® 88A-700 Series

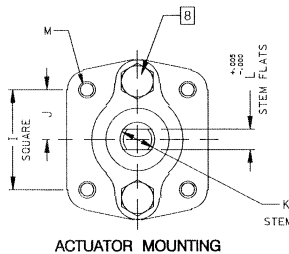
Carbon Steel ANSI Class 300 Flanged Std. Port Ball Valve - 1-1/2" through 2"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Butt welding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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. 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



STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

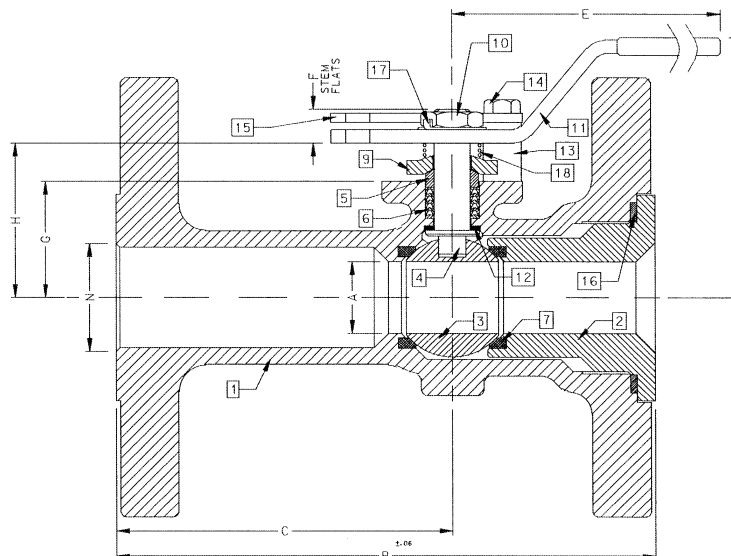
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-707-01	1-1/2"	1.00	7.50	4.69	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	1.50	16.0
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	24.0

Apollo® 88A-700 Series

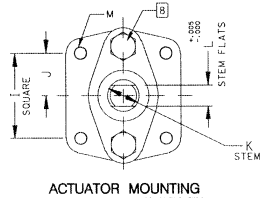
Carbon Steel ANSI Class 300 Flanged Std. Port Ball Valve - 2-1/2" through 3"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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	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



STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

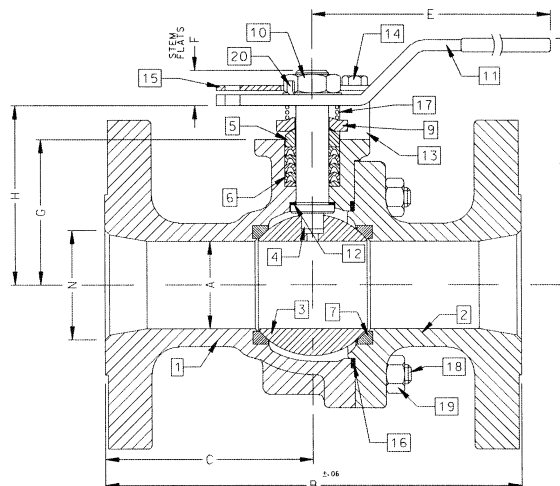
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
88A-709-01	2-1/2"	2.00	9.50	4.75	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	2.50	39.0
88A-700-01	3"	2.50	11.12	5.56	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	55.0

Apollo® 88A-700 Series

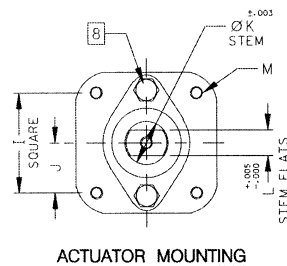
Carbon Steel ANSI Class 300 Flanged Std. Port Ball Valve - 4" through 8"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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. 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)



STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

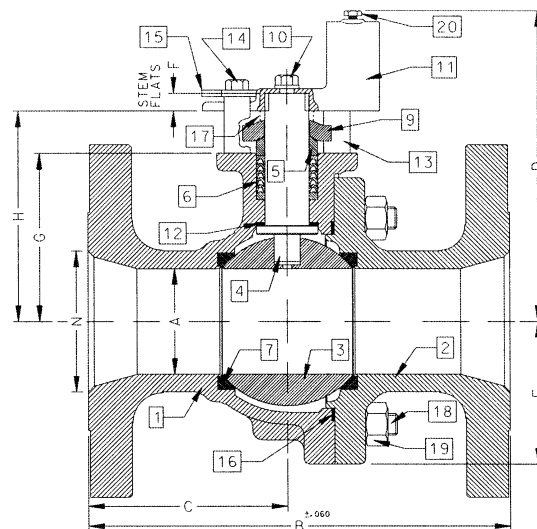
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-67-	Cleaned For Industrial Gases
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet (4" & 6" Valves Only)
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**



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	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	4.00	95.0
88A-70C-01	6"	4.00	15.88	7.38	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	6.00	187.0
88A-70E-01	8"	6.00	19.75	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	400.0

Apollo® 88A-900 Series

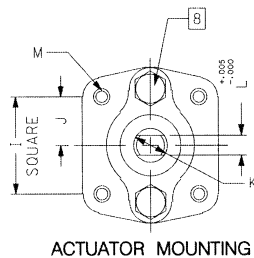
Carbon Steel ANSI Class 300 Flanged Full Port Ball Valve - 1/2" through 1"

STANDARDS COMPLIANCE

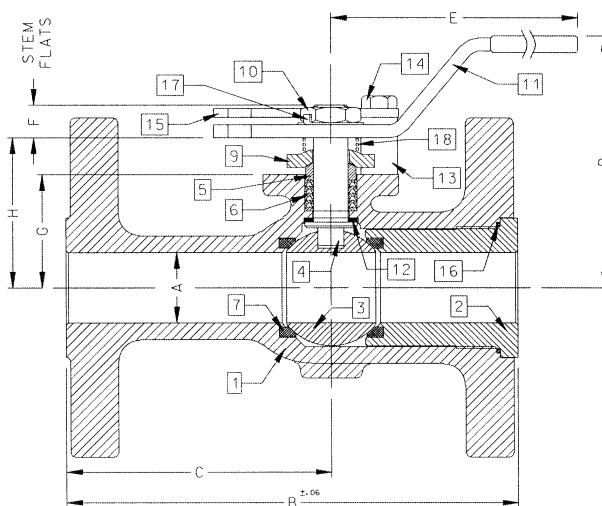
ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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. 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



ACTUATOR MOUNTING



STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Bosses for Bleed / Drain Ports
Four Point ISO 5211 Mounting Pad Bolt Circle
Full Bore Design for Maximum Flow Efficiency
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-10-	SS Lever and Nut
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-903-01	1/2"														7.0
88A-904-01	3/4"														9.0
88A-905-01	1"	1.00	6.50	3.82	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	10.5

Apollo® 88A-900 Series

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

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	Material
1. Body	ASTM A216 WCB
2. Retainer	ASTM A216 WCB
3. Ball	ASTM A216 WCB 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	302 & 304 SS
10. Stem Nut	ASTM A194 Grade 8l
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

STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

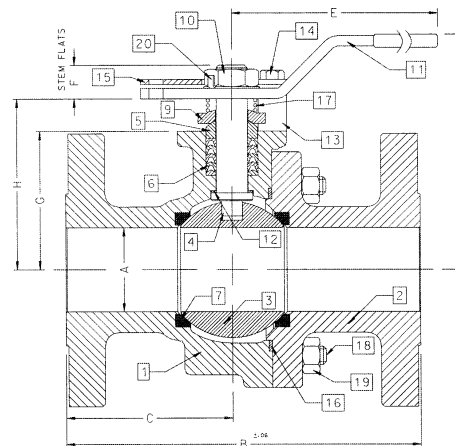
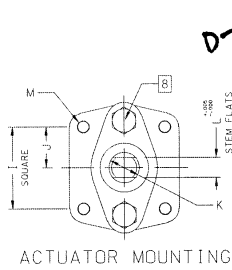
VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
88A-907-01	1-1/2"	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	21.0
88A-908-01	2"	2.00	8.50	4.00	5.61	8.40	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	37.0
88A-909-01	2-1/2"	2.50	9.50	4.44	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	57.0

Apollo® 88A-900 Series

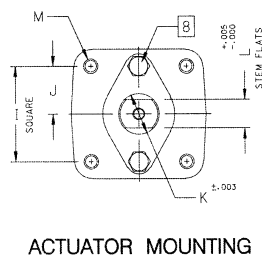
Carbon Steel ANSI Class 300 Flanged Full Port Ball Valve - 3" through 6"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	Material
1. Body	ASTM A216 WCB
2. Retainer	ASTM A216 WCB
3. Ball	ASTM A216 WCB 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. 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)



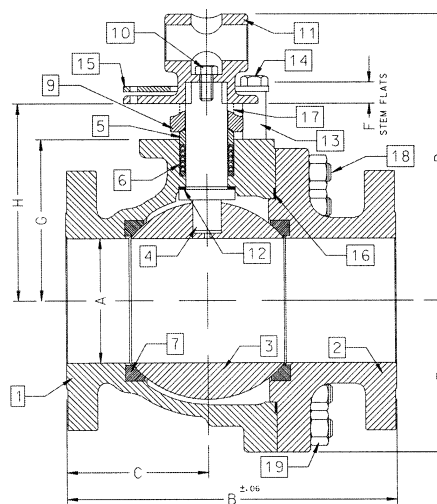
STANDARD FEATURES

Two Position Locking Device
 Antistatic Grounded Stem
 CHV Style Adjustable Stem Seals
 Blow-out Proof Stem Design
 Cast Bosses for Bleed / Drain Ports
 Four Point ISO 5211 Mounting Pad Bolt Circle
 Full Bore Design for Maximum Flow Efficiency
 Slot Vented Ball for Thermal Expansion
 Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-59-	SS External Trim
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-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
-74-	316 SS Spiral Wound Gaskets w/Graphite Filler
-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

**For Pressure/Temperature Ratings,
 Refer to Page N-11, Graph No. 5**



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	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	78.0
88A-90A-01	4"	4.00	12.00	5.44	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	133.0
88A-90C-01	6"	6.00	15.88	6.82	13.73	7.00	1.00	7.75	9.48	4.596	2.296	2.000	1.375	3/4-10	329.0

Apollo® 87-100 Series

Stainless Steel ANSI Class 150 Flanged Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

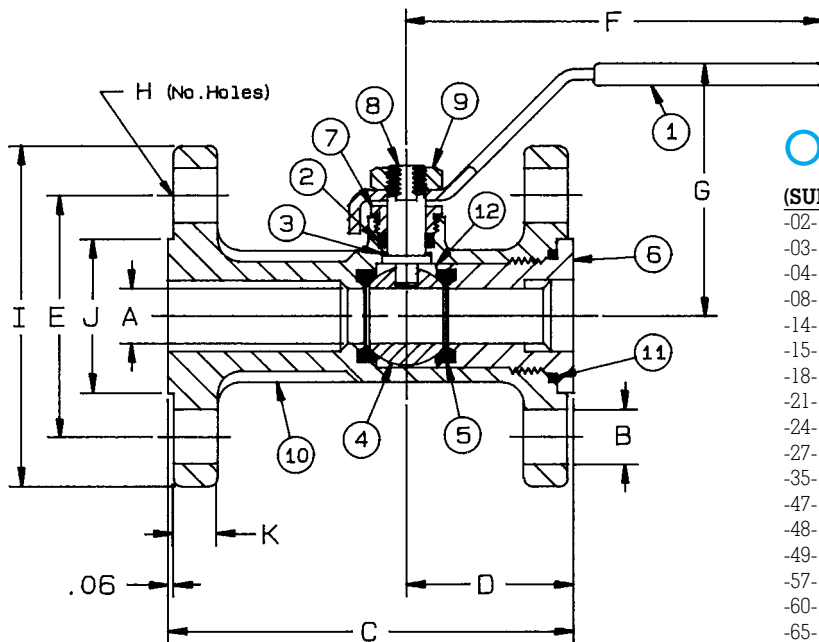
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (1/2" to 1")

- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Actuator mounting provisions
- (-24) Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	7. Packing gland	A276-316
2. Stem packing	RPTFE (1/2" to 1")	8. Stem	A276-316
3. Stem bearing	RPTFE	9. Lever nut	304 SS
4. Ball	A276-316	10. Body	A351-CF8M
5. Seat (2)	RPTFE	11. Body seal	PTFE
6. Retainer	A276-316 or A351-CF8M		



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1/2" to 1"
-03-	1-1/4" Stem Extension	1/2" to 1"
-04-	2-1/4" Stem Extension	1/2" to 1"
-08-	90° Reversed Stem	1/2" to 1"
-14-	Vented Ball (see page J-2)	1/2" to 1"
-15-	Round Handle	1/2" to 1"
-18-	Plain Yellow Grip	1/2" to 1"
-21-	UHMWPE Seats (Non-PTFE)	1/2" to 1"
-24-	Graphite Stem Packing	1/2" to 1"
-27-	Latch Lock Lever	1/2" to 1"
-35-	PTFE Trim	1/2" to 1"
-47-	SS Oval Latch-Lock Handle	1/2" to 1"
-48-	SS Oval Handle	1/2" to 1"
-49-	Assembled Dry	1/2" to 1"
-57-	Cleaned For Gaseous Oxygen	1/2" to 1"
-60-	Static Grounded Ball & Stem	1/2" to 1"
-65-	Multifill Seats & Graphite Packing	1/2" to 1"

Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

SS ANSI CLASS 150
FLANGED BALL VALVE (1/2" to 1")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-103-01	1/2"	.50	.62	4.25	1.87	2.37	4.37	2.56	4	3.50	1.38	.43	3.2
87-104-01	3/4"	.62	.62	4.62	1.91	2.75	4.87	2.93	4	3.88	1.69	.50	4.6
87-105-01	1"	.87	.62	5.00	1.94	3.12	4.87	3.12	4	4.25	2.00	.50	6.1

Apollo® 87-100 Series

Stainless Steel ANSI Class 150 Flanged Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

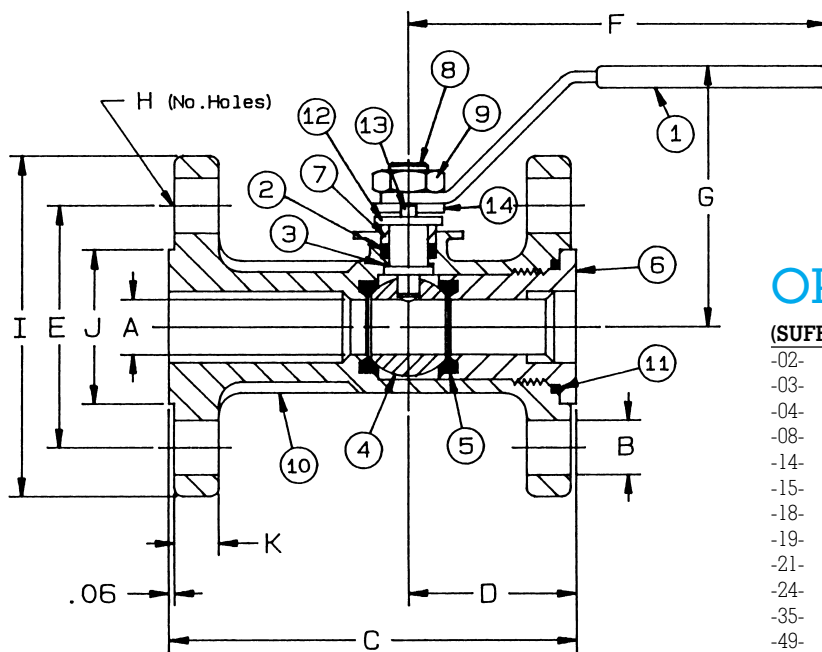
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (1-1/2" to 2-1/2")

- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Actuator mounting provisions
- (-24) Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	8. Stem	A276-316
2. Stem packing	PTFE (1-1/2" to 2-1/2")	9. Lever nut	304 SS
3. Stem bearing	RPTFE	10. Body	A351-CF8M
4. Ball	A276-316	11. Body seal	PTFE
5. Seat (2)	RPTFE	12. Gland plate	304 SS
6. Retainer	A276-316 or A351-CF8M	13. Gland plate screw	ASTM A193 Gr. B8
7. Packing gland	A276-316	14. Stop	304 SS



Contact factory for actuator mounting dimensions.

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1-1/2" to 2-1/2"
-03-	1-1/4" Stem Extension	1-1/2" to 2-1/2"
-04-	2-1/4" Stem Extension	1-1/2" to 2-1/2"
-08-	90° Reversed Stem	1-1/2" to 2-1/2"
-14-	Vented Ball (see page J-2)	1-1/2" to 2-1/2"
-15-	Round Handle	1-1/2" to 2-1/2"
-18-	Plain Yellow Grip	1-1/2" to 2-1/2"
-19-	Lock Plate	1-1/2" to 2-1/2"
-21-	UHMWPE Seats (Non-PTFE)	1-1/2" to 2-1/2"
-24-	Graphite Stem Packing	1-1/2" to 2-1/2"
-35-	PTFE Trim	1-1/2" to 2-1/2"
-49-	Assembled Dry	1-1/2" to 2-1/2"
-57-	Cleaned For Gaseous Oxygen	1-1/2" to 2-1/2"
-60-	Static Grounded Ball & Stem	1-1/2" to 2-1/2"
-65-	Multifill Seats & Graphite Packing	1-1/2" to 2-1/2"
-69-	Purge Ports	2-1/2"
-MG-	Gear Operator & Hand Wheel	1-1/2" to 2-1/2"

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

SS ANSI CLASS 150
FLANGED BALL VALVE (1-1/2" to 2-1/2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-107-01	1-1/2"	1.25	.62	6.50	2.25	3.87	8.00	3.81	4	5.00	2.87	.62	12.0
87-108-01	2"	1.50	.75	7.00	2.54	4.75	8.00	4.12	4	6.00	3.62	.62	17.3
87-109-01	2-1/2"	2.00	.75	7.50	2.63	5.50	8.00	4.84	4	7.00	4.12	.81	28.0

Apollo® 87-100 Series

Stainless Steel ANSI Class 150 Flanged Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (3" to 10")

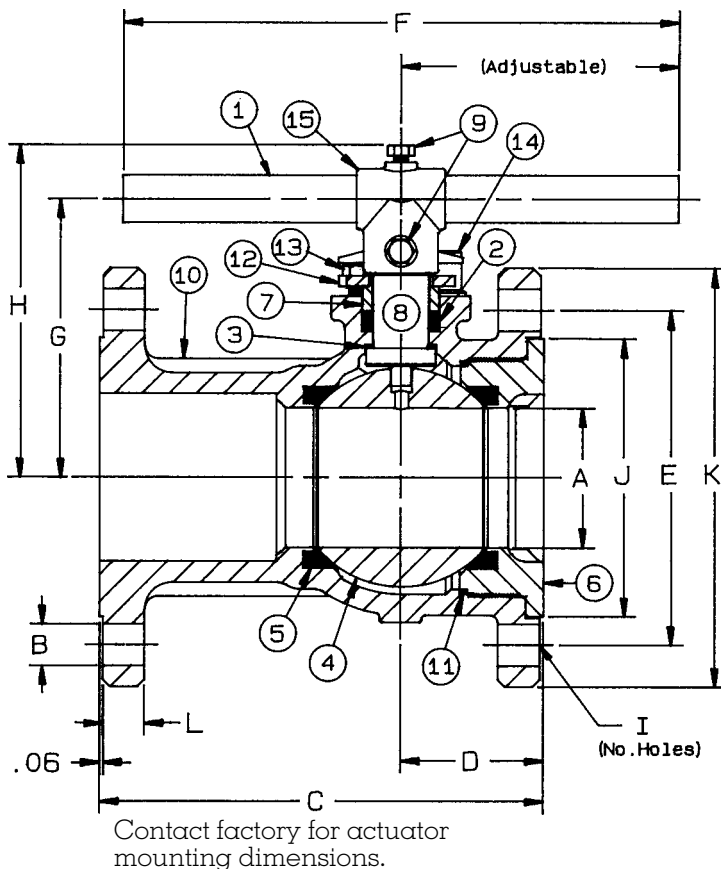
- Graphite stem packing
- Adjustable packing gland
- RPTFE seats and seals
- Actuator mounting provisions
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off

STANDARD MATERIAL LIST

1. Handle	Galvanized pipe	9. Hex cap screw	18-8 SS
2. Stem packing	Graphite	10. Body	A351-CF8M
3. Stem bearing	RPTFE	11. Body seal	RPTFE
4. Ball*	A351-CF8M	12. Gland plate	304 SS
5. Seat (2)	RPTFE	13. Gland plate screw	18-8 SS
6. Retainer	A351-CF8M	14. Stop	A276-316
7. Packing gland	A276-316	15. Handle adapter	A351-CF8M
8. Stem	A276-316		

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 10"
-19-	Lock Plate	3" to 10"
-21-	UHMWPE Seats (Non-PTFE)	3" to 10"
-35-	PTFE Trim	3" to 10"
-49-	Assembled Dry	3" to 10"
-57-	Cleaned For Gaseous Oxygen	3" to 10"
-60-	Static Grounded Ball & Stem	3" to 10"
-65-	Multifill Seats & Graphite Packing	3" to 10"
-68-	4" Stem Extension	3" to 6"
-69-	Purge Ports	3" to 10"
-MG-	Gear Operator & Hand Wheel	3" to 10"



**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

* Hollow balls are standard on 8" and 10" valves

SS ANSI CLASS 150 FLANGED BALL VALVE (3" to 10")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
87-100-01	3"	2.50	.75	8.00	2.56	6.00	18.00	5.12	6.38	4	5.00	7.50	.75	35.8
87-10A-01	4"	3.25	.75	9.00	3.22	7.50	18.00	6.22	7.38	8	6.18	9.00	.93	55.0
87-10C-01	6"	4.50	.87	10.50	4.12	9.50	18.00	7.09	8.25	8	8.50	11.00	1.00	104.0
87-10E-01	8"	6.00	.87	11.50	5.75	11.75	18.00	9.31	10.43	8	10.62	13.50	1.18	185.0
87-10G-01	10"	7.50	1.00	13.00	6.50	14.25	30.00	10.50	11.87	12	12.75	16.00	1.31	280.0

Apollo® 87-200 Series

Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (1")

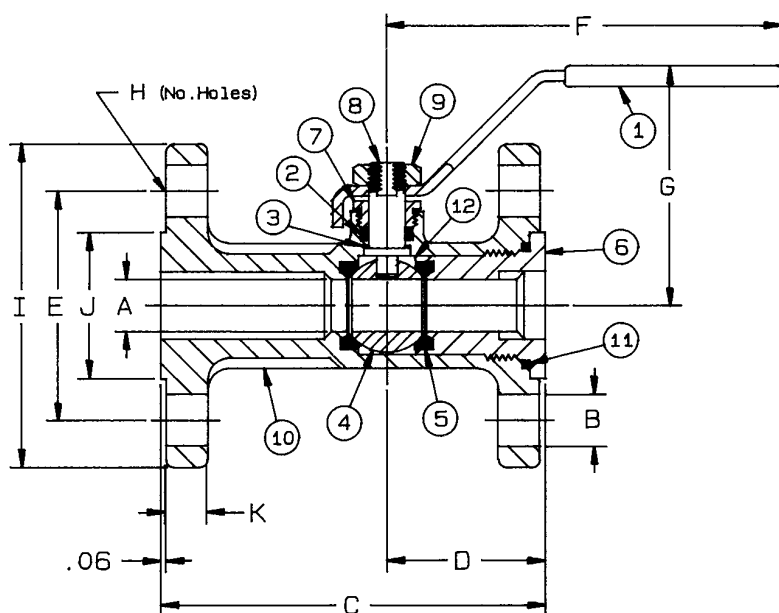
- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Meets NACE MR-01-75
- Positive shut-off
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Unibody design
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	7. Packing gland	A276-316
2. Stem packing	RPTFE	8. Stem	A276-316
3. Stem bearing	RPTFE	9. Lever nut	18-8 SS
4. Ball	A276-316	10. Body	A351-CF8M
5. Seat (2)	RPTFE	11. Body seal	RPTFE
6. Retainer	A276-316		

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1"
-03-	1-1/4" Stem Extension	1"
-04-	2-1/4" Stem Extension	1"
-08-	90° Reversed Stem	1"
-14-	Vented Ball (see page J-2)	1"
-15-	Round Handle	1"
-18-	Plain Yellow Grip	1"
-24-	Graphite Stem Packing	1"
-27-	Latch Lock Lever	1"
-35-	PTFE Trim	1"
-39-	SS Hi-Rise Locking Wheel Handle	1"
-49-	Assembled Dry	1"
-57-	Cleaned For Gaseous Oxygen	1"
-60-	Static Grounded Ball & Stem	1"
-65-	Multifill Seats & Graphite Packing	1"



**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

Contact factory for actuator
mounting dimensions.

SS ANSI CLASS 150 FULL PORT
FLANGED BALL VALVE (1")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-205-01	1"	1.00	.62	5.00	1.94	3.12	8.00	3.62	4	4.25	2.00	.50	7.40

Apollo® 87-200 Series

Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (1-1/2" to 2-1/2")

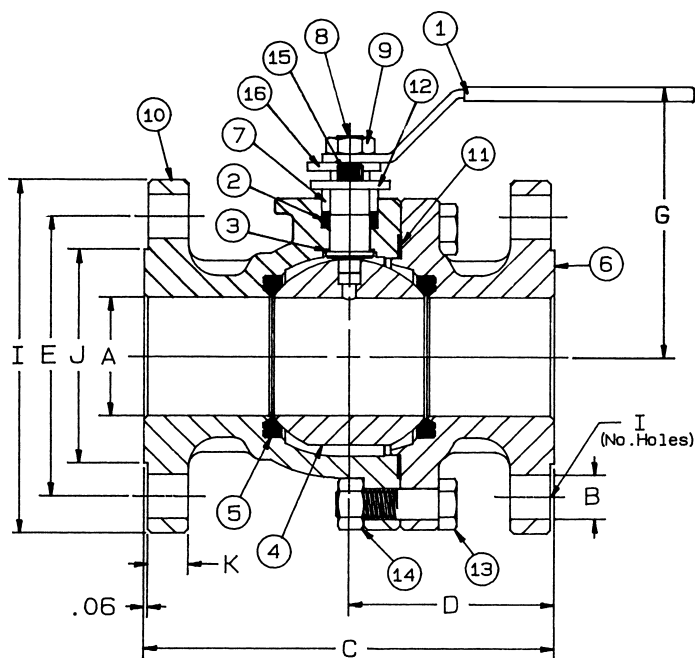
- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Meets NACE MR-01-75
- Positive shut-off
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Bolted body design
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	9. Lever nut	18-8 SS
2. Stem packing	PTFE	10. Body	A351-CF8M
3. Stem bearing	RPTFE	11. Body seal	Graphite
4. Ball	A276-316	12. Gland plate	304 SS
5. Seat (2)	RPTFE	13. Body bolt	A193-Grade B8
6. Retainer	A351-CF8M	14. Body nut	A193-Grade 8
7. Packing gland	A276-316	15. Gland screws	A193-Grade B8, 304
8. Stem	A276-316	16. Stop	304 SS

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1-1/2" to 2-1/2"
-03-	1-1/4" Stem Extension	1-1/2" to 2-1/2"
-04-	2-1/4" Stem Extension	1-1/2" to 2-1/2"
-08-	90° Reversed Stem	1-1/2" to 2-1/2"
-14-	Vented Ball (see page J-2)	1-1/2" to 2-1/2"
-15-	Round Handle	1-1/2" to 2-1/2"
-18-	Plain Yellow Grip	1-1/2" to 2-1/2"
-19-	Lock Plate	1-1/2" to 2-1/2"
-24-	Graphite Stem Packing	1-1/2" to 2-1/2"
-35-	PTFE Trim	1-1/2" to 2-1/2"
-49-	Assembled Dry	1-1/2" to 2-1/2"
-57-	Cleaned For Gaseous Oxygen	1-1/2" to 2-1/2"
-60-	Static Grounded Ball & Stem	1-1/2" to 2-1/2"
-65-	Multifill Seats & Graphite Packing	1-1/2" to 2-1/2"
-69-	Purge Ports	2" to 2-1/2"
-MG-	Gear Operator & Hand Wheel	1-1/2" to 2-1/2"



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

SS ANSI CLASS 150 FULL PORT FLANGED BALL VALVE (1-1/2" to 2-1/2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-207-01	1-1/2"	1.50	.62	6.50	3.25	3.87	8.00	4.31	4	5.00	2.87	.68	18.2
87-208-01	2"	2.00	.75	7.00	3.50	4.75	8.00	4.75	4	6.00	3.62	.68	26.4
87-209-01	2-1/2"	2.50	.75	7.50	3.75	5.50	8.00	5.12	4	7.00	4.12	.81	37.0

Apollo® 87-200 Series

Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (3" to 6")

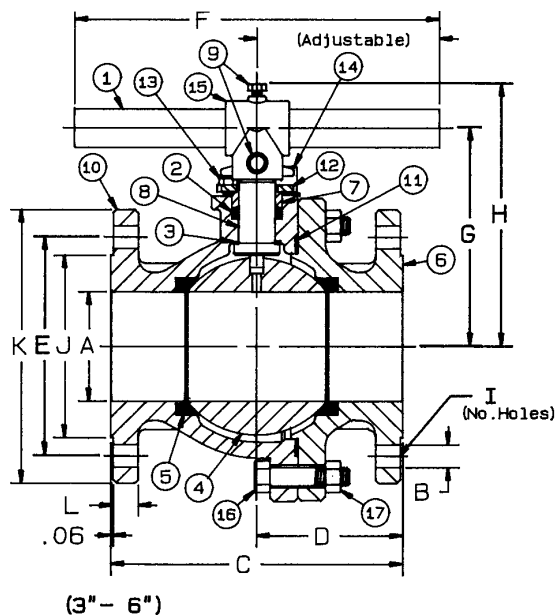
- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Bolted body design
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Handle	Galvanized pipe	10. Body	A351-CF8M
2. Stem packing	Graphite	11. Body seal	Graphite
3. Stem bearing	RPTFE	12. Gland plate	304 SS
4. Ball	A351-CF8M	13. Screw	18-8 SS
5. Seat (2)	RPTFE	14. Stop	A276-316
6. Retainer	A351-CF8M	15. Handle adapter	A351-CF8M
7. Packing gland	A276-316	16. Body bolt	A193 Grade B8
8. Stem	A276-316	17. Body nut	A194 Grade 8
9. Screw	18-8 SS		

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 6"
-19-	Lock Plate	3" to 6"
-35-	PTFE Trim	3" to 6"
-49-	Assembled Dry	3" to 6"
-57-	Cleaned For Gaseous Oxygen	3" to 6"
-60-	Static Grounded Ball & Stem	3" to 6"
-65-	Multifill Seats & Graphite Packing	3" to 6"
-68-	4" Stem Extension	3" to 4"
-69-	Purge Ports	3" to 6"
-MG-	Gear Operator & Hand Wheel	3" to 6"



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

SS ANSI CLASS 150 FULL PORT
FLANGED BALL VALVE (3" to 6")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
87-200-01	3"	3.00	.75	8.00	4.00	6.00	18.00	6.00	7.25	4	5.00	7.50	.75	58.3
87-20A-01	4"	4.00	.75	9.00	5.25	7.50	18.00	7.62	8.87	8	6.18	9.00	.93	98.0
87-20C-01	6"	6.00	.87	15.50	7.75	9.50	18.00	8.62	9.87	8	8.50	11.00	1.00	212.0

Apollo® 87-200 Series

Stainless Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

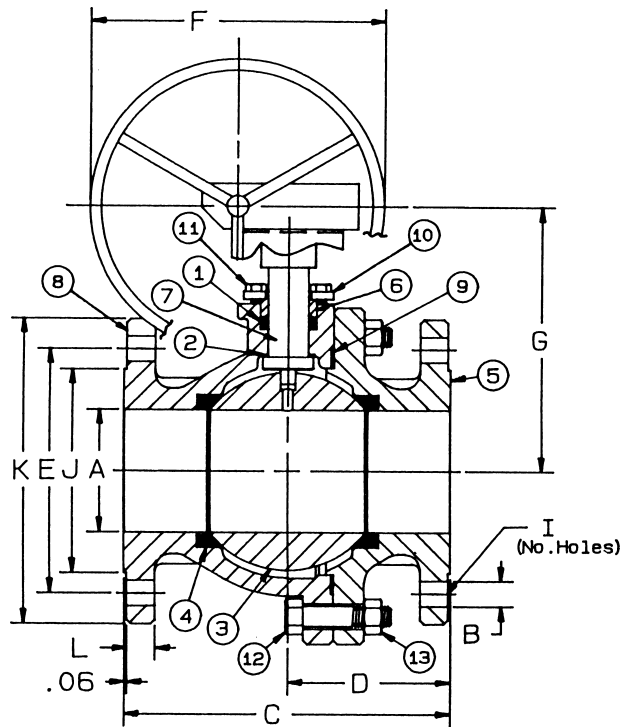
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (8" to 12")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Bolted body design
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off
- Actuator mounting provisions

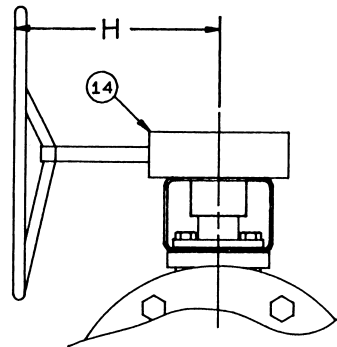
STANDARD MATERIAL LIST

1. Stem packing	Graphite	8. Body	A351-CF8M
2. Stem bearing	RPTFE	9. Body seal	Graphite
3. Ball*	A351-CF8M	10. Gland plate	304 SS
4. Seat (2)	RPTFE	11. Screw	18-8 SS
5. Retainer	A351-CF8M	12. Body bolt	A193 Grade B8
6. Packing gland	A276-316	13. Body nut	A194 Grade 8
7. Stem	A276-316	14. Gear operator	Standard



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	8" to 12"
-35-	PTFE Trim	8" to 12"
-49-	Assembled Dry	8" to 12"
-57-	Cleaned For Gaseous Oxygen	8" to 12"
-60-	Static Grounded Ball & Stem	8" to 12"
-65-	Multifill Seats & Graphite Packing	8" to 12"
-69-	Purge Ports	8" to 12"



Contact factory for actuator mounting dimensions.

* Hollow balls are standard.

SS ANSI CLASS 150 FULL PORT
FLANGED BALL VALVE (8" to 12")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
87-20E-01	8"	8.00	.87	18.00	9.00	11.75	18.00	13.59	11.12	8	10.62	13.50	1.18	385.5
87-20G-01	10"	10.00	1.00	21.00	10.50	14.25	24.00	15.57	17.37	12	12.75	16.00	1.31	607.0
87-20H-01	12"	12.00	1.00	24.00	12.00	17.00	24.00	17.07	17.37	12	15.00	19.00	1.43	885.5

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

Apollo® 87-700 Series

Stainless Steel ANSI Class 300 Flanged Ball Valve

ANSI Class 300 Flanged Ends, 720 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

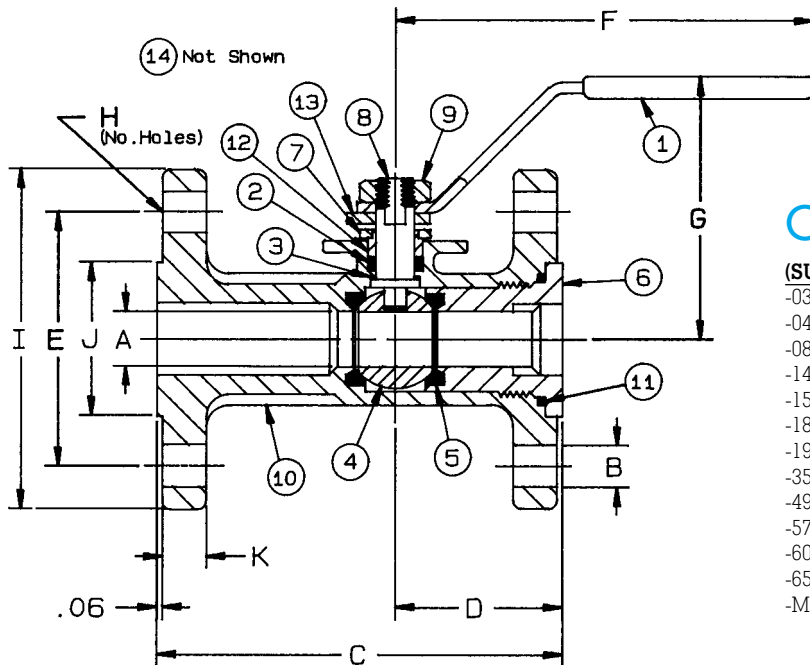
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (2")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	8. Stem	A276-316
2. Stem packing	Graphite	9. Lever nut	304 SS
3. Stem bearing	RPTFE	10. Body	A351-CF8M
4. Ball	A276-316	11. Body seal	PTFE
5. Seat (2)	RPTFE	12. Packing gland	A276-316
6. Retainer	A276-316	13. Stop	304 SS
7. Gland plate	304 SS	14. Screw (2)	A193-Grade B8



Contact factory for actuator mounting dimensions.

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-03-	1-1/4" Stem Extension	2"
-04-	2-1/4" Stem Extension	2"
-08-	90° Reversed Stem	2"
-14-	Vented Ball (see page J-2)	2"
-15-	Round Handle	2"
-18-	Plain Yellow Grip	2"
-19-	Lock Plate	2"
-35-	PTFE Trim	2"
-49-	Assembled Dry	2"
-57-	Cleaned For Gaseous Oxygen	2"
-60-	Static Grounded Ball & Stem	2"
-65-	Multifill Seats & Graphite Packing	2"
-MG-	Gear Operator & Hand Wheel	2"

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**

SS ANSI CLASS 300
FLANGED BALL VALVE (2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-708-01	2"	1.50	.75	8.50	3.50	5.00	10.00	4.35	8	6.50	3.62	.88	27.0

Apollo® 87-700 Series

Stainless Steel ANSI Class 300 Flanged Ball Valve

ANSI Class 300 Flanged Ends, 720 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (3" to 10")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off
- Actuator mounting provisions

STANDARD MATERIAL LIST

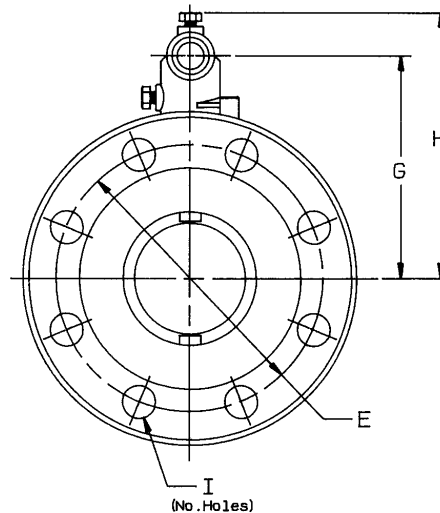
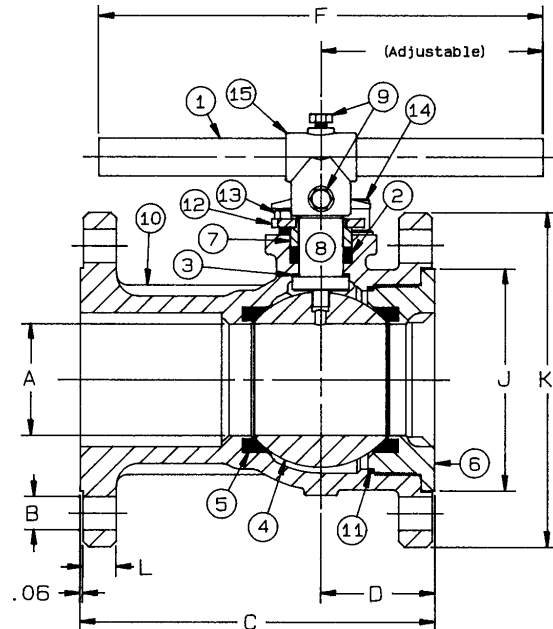
1. Handle	Galvanized pipe	9. Screw (2)	18-8 SS
2. Stem packing	Graphite	10. Body	A351-CF8M
3. Stem bearing	RPTFE	11. Body seal	RPTFE
4. Ball*	A351-CF8M	12. Gland plate	304 SS
5. Seat (2)	RPTFE	13. Screw (2)	18-8 SS
6. Retainer	A351-CF8M	14. Stop	A276-316
7. Packing gland	A276-316	15. Handle adapter	A351-CF8M
8. Stem	A276-316		

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 10"
-19-	Lock Plate	3" to 10"
-35-	PTFE Trim	3" to 6"
-49-	Assembled Dry	3" to 10"
-57-	Cleaned For Gaseous Oxygen	3" to 10"
-60-	Static Grounded Ball & Stem	3" to 10"
-65-	Multifill Seats & Graphite Packing	3" to 10"
-68-	4" Stem Extension	3" to 4"
-69-	Purge Ports	3" to 10"
-MG-	Gear Operator & Hand Wheel	3" to 10"

Contact factory for actuator mounting dimensions.

* Hollow balls are standard on 8" and 10" valves



**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**

SS ANSI CLASS 300
FLANGED BALL VALVE (3" to 10")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
87-700-01	3"	2.50	.87	11.12	3.00	6.62	18.00	5.50	6.75	8	5.00	8.25	1.12	56.0
87-70A-01	4"	3.25	.87	12.00	3.43	7.87	18.00	7.00	8.25	8	6.18	10.00	1.25	89.0
87-70C-01	6"	4.50	.87	15.87	6.62	10.62	18.00	7.87	9.12	12	8.50	12.50	1.43	179.0
87-70E-01	8"	6.00	1.00	16.50	5.75	13.00	18.00	10.25	11.50	12	10.62	15.00	1.75	265.0
87-70G-01	10"	7.50	1.25	18.00	6.50	15.25	18.00	11.50	12.75	16	12.75	17.50	1.88	401.0

Apollo® 87-808 Series

Stainless Steel 2" ANSI Class 600 Flanged Ball Valve

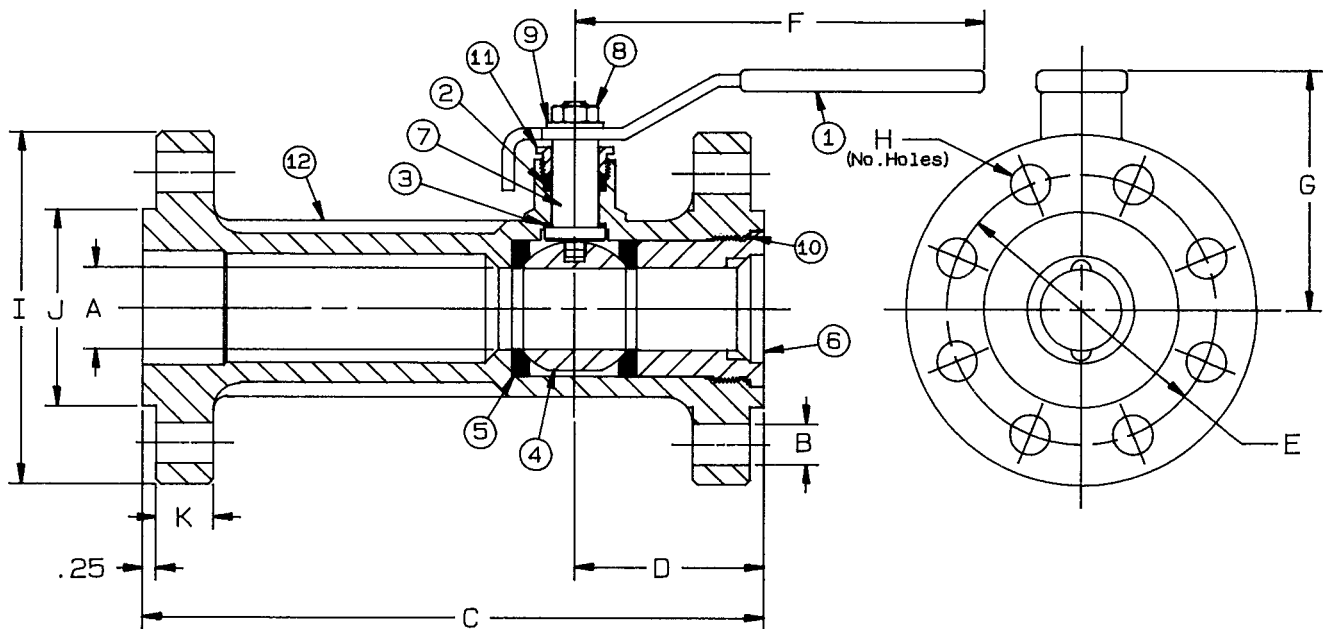
ANSI Class 600 Flanged Ends, 1440 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
On-Off Service.
Federal Specification: WW-V-35C

FEATURES

- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 3rd Edition, when (-24) ordered
- Unibody design
- Positive shut-off
- Corrosion resistant
- Blow-out-proof stem design
- Meets NACE MR-01-75

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	7. Stem	A276-316
2. Stem packing	RPTFE	8. Lever nut	18-8 SS
3. Stem bearing	RPTFE	9. Lever washer	304 SS
4. Ball	A276-316	10. Body seal	PTFE
5. Seat (2)	RPTFE	11. Gland screw	A276-316
6. Retainer	A276-316	12. Body	A351-CF8M



**For Pressure/Temperature Ratings,
Refer to Page N-13, Graph No. 10**

SS 2" ANSI CLASS 600
FLANGED BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-808-01	2"	1.50	.75	11.50	3.50	5.00	9.75	4.37	8	6.50	3.62	1.06	29.0

Apollo® 88-808 Series

Carbon Steel 2" ANSI Class 600 Flanged Ball Valve

ANSI Class 600 Flanged Ends, 1480 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
On-Off Service.
Federal Specification: WW-V-35C

FEATURES

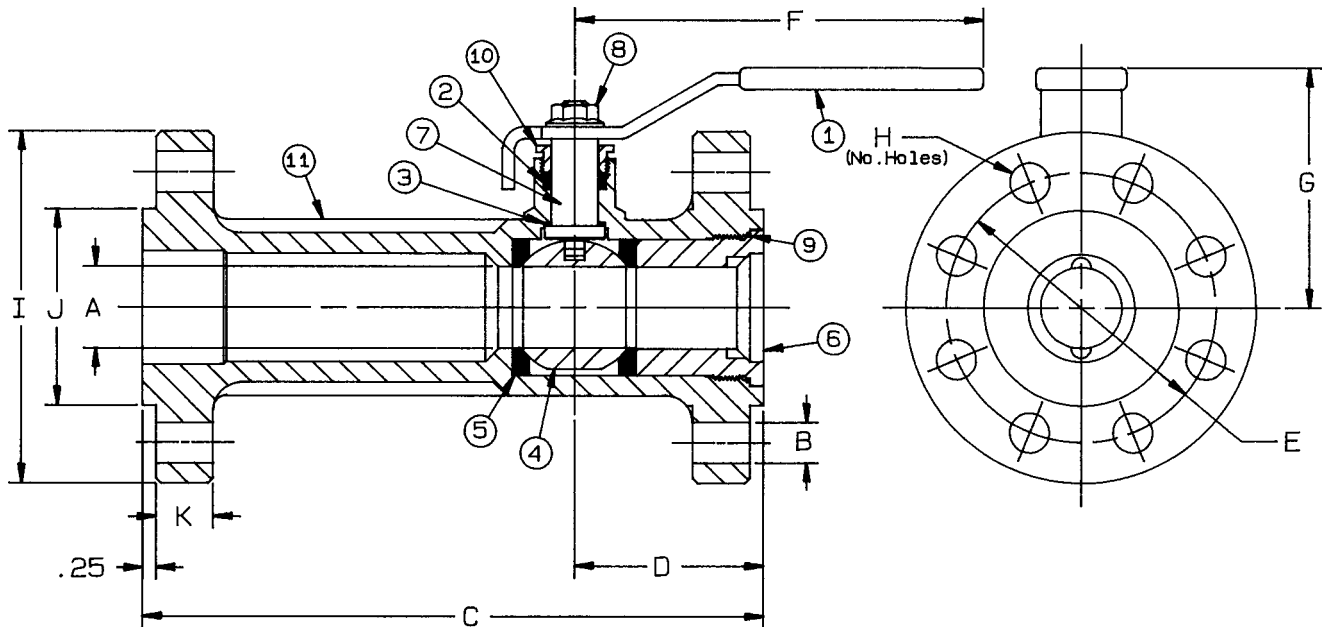
- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 3rd Edition, when (-24) ordered
- Positive shut-off
- Unibody design
- Nitride corrosion protection
- Blow-out-proof stem design
- Corrosion resistant

STANDARD MATERIAL LIST

1. Lever and grip	Steel, zinc plated w/vinyl	7. Stem	A108-12L14, chrome plated
2. Stem packing	RPTFE	8. Lever nut	Steel, zinc plated
3. Stem bearing	RPTFE	9. Body seal	PTFE
4. Ball	A108-CS, chrome plated	10. Gland screw	A108-CS
5. Seat (2)	RPTFE	11. Body	A216-WCB
6. Retainer	A108-CS		

VARIATIONS AVAILABLE:

88-848-01 Series (316 SS Ball & Stem)



**For Pressure/Temperature Ratings,
Refer to Page N-13, Graph No. 9**

CARBON STEEL 2" ANSI CLASS 600
FLANGED BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-808-01	2"	1.50	.75	11.50	3.50	5.00	9.75	4.37	8	6.50	3.62	1.06	29.0

Apollo® 87-900 Series

Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 720 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

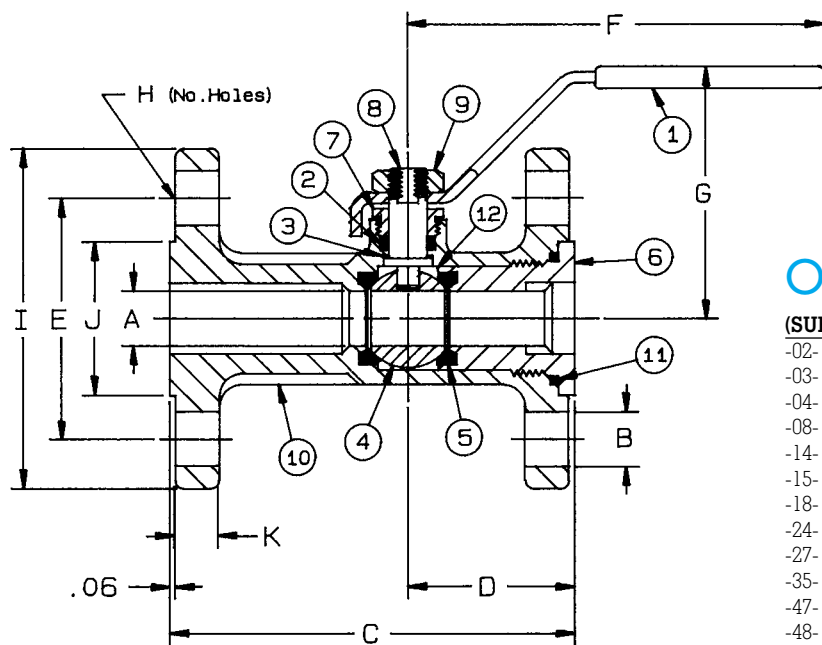
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (1/2" to 1-1/2")

- Investment cast body
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Meets NACE MR-01-75
- Positive shut-off
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Unibody design
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	7. Packing gland	A276-316
2. Stem packing	PTFE	8. Stem	A276-316
3. Stem bearing	RPTFE	9. Lever nut	18-8 SS
4. Ball	A276-316	10. Body	A351-CF8M
5. Seat (2)	RPTFE	11. Body seal	RPTFE
6. Retainer	A351-CF8M		



Contact factory for actuator mounting dimensions.

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1/2" to 1-1/2"
-03-	1-1/4" Stem Extension	1/2" to 1-1/2"
-04-	2-1/4" Stem Extension	1/2" to 1-1/2"
-08-	90° Reversed Stem	1/2" to 1-1/2"
-14-	Vented Ball (see page J-2)	1/2" to 1-1/2"
-15-	Round Handle	1/2" to 1-1/2"
-18-	Plain Yellow Grip	1/2" to 1-1/2"
-24-	Graphite Stem Packing	1/2" to 1-1/2"
-27-	Latch Lock Lever	1/2" to 1-1/2"
-35-	PTFE Trim	1/2" to 1-1/2"
-47-	SS Oval Latch-Lock Handle	1/2" to 1"
-48-	SS Oval Handle	1/2" to 1"
-49-	Assembled Dry	1/2" to 1-1/2"
-57-	Cleaned For Gaseous Oxygen	1/2" to 1-1/2"
-60-	Static Grounded Ball & Stem	1/2" to 1-1/2"
-65-	Multifill Seats & Graphite Packing	1/2" to 1-1/2"

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**

SS ANSI CLASS 300 FULL PORT
FLANGED BALL VALVE (1/2" to 1-1/2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-903-01	1/2"	.62	.62	5.50	1.98	2.62	4.78	2.93	4	3.75	1.37	.56	6.0
87-904-01	3/4"	.81	.75	6.00	2.35	3.25	4.78	3.10	4	4.62	1.68	.61	9.0
87-905-01	1"	1.00	.75	6.50	2.45	3.50	7.93	3.62	4	4.88	2.00	.68	12.0
87-907-01	1-1/2"	1.50	.88	7.50	3.25	4.50	8.00	4.60	4	6.12	2.87	.82	23.0

Apollo® 87-900 Series

Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 720 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (2")

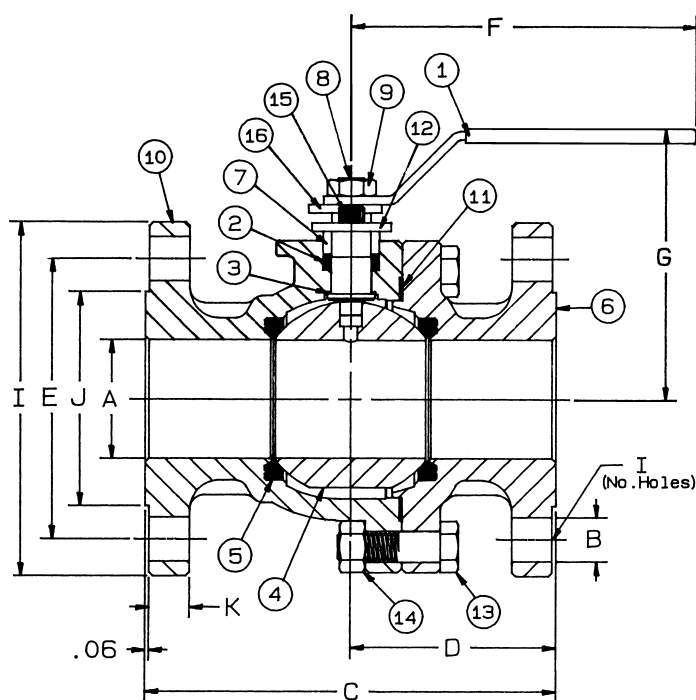
- Investment cast body
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Meets NACE MR-01-75
- Positive shut-off
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Bolted body design
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	304 SS w/vinyl	9. Lever nut	18-8 SS
2. Stem packing	PTFE	10. Body	A351-CF8M
3. Stem bearing	RPTFE	11. Body seal	Graphite
4. Ball	A276-316	12. Gland plate	304 SS
5. Seat (2)	RPTFE	13. Body bolt	A193-Grade B8
6. Retainer	A351-CF8M	14. Body nut	A193-Grade 8
7. Packing gland	A276-316	15. Gland screws	A193-Grade B8, 304
8. Stem	A276-316	16. Stop	304 SS

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	2"
-03-	1-1/4" Stem Extension	2"
-04-	2-1/4" Stem Extension	2"
-08-	90° Reversed Stem	2"
-14-	Vented Ball (see page J-2)	2"
-15-	Round Handle	2"
-18-	Plain Yellow Grip	2"
-19-	Lock Plate	2"
-24-	Graphite Stem Packing	2"
-35-	PTFE Trim	2"
-49-	Assembled Dry	2"
-57-	Cleaned For Gaseous Oxygen	2"
-60-	Static Grounded Ball & Stem	2"
-65-	Multifill Seats & Graphite Packing	2"
-69-	Purge Ports	2"
-MG-	Gear Operator & Hand Wheel	2"



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**

SS ANSI CLASS 300 FULL PORT FLANGED BALL VALVE (2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
87-908-01	2"	2.00	.75	8.50	3.50	5.00	8.00	5.60	8	6.50	3.62	.82	32.0

Apollo® 87-900 Series

Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 720 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

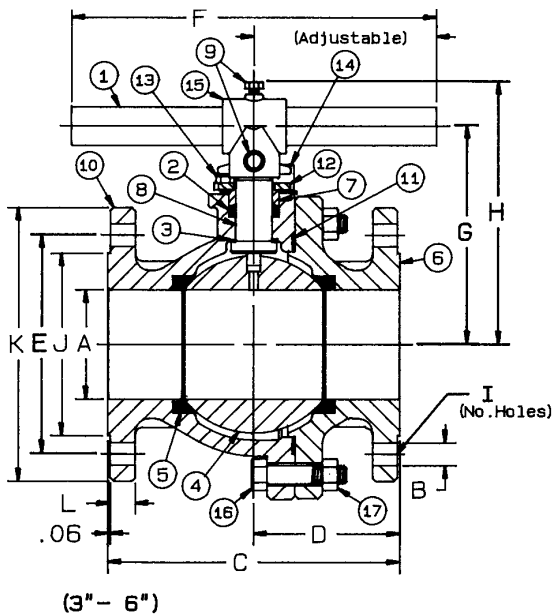
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (3" to 6")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Bolted body design
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Handle	Galvanized pipe	10. Body	A351-CF8M
2. Stem packing	Graphite	11. Body seal	Graphite
3. Stem bearing	RPTFE	12. Gland plate	304 SS
4. Ball	A351-CF8M	13. Screw	18-8 SS
5. Seat (2)	RPTFE	14. Stop	A276-316
6. Retainer	A351-CF8M	15. Handle adapter	A351-CF8M
7. Packing gland	A276-316	16. Body bolt	A193 Grade B8
8. Stem	A276-316	17. Body nut	A193 Grade 8
9. Screw	18-8 SS		



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 6"
-19-	Lock Plate	3" to 6"
-35-	PTFE Trim	3" to 6"
-49-	Assembled Dry	3" to 6"
-57-	Cleaned For Gaseous Oxygen	3" to 6"
-60-	Static Grounded Ball & Stem	3" to 6"
-65-	Multifill Seats & Graphite Packing	3" to 6"
-68-	4" Stem Extension	3" to 4"
-69-	Purge Ports	3" to 6"
-MG-	Gear Operator & Hand Wheel	3" to 6"

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**

Contact factory for actuator
mounting dimensions.

SS ANSI CLASS 300
FLANGED BALL VALVE (3" to 6")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
87-900-01	3"	3.00	.87	11.12	5.12	6.62	18.00	6.15	7.33	8	5.00	8.25	1.06	76.0
87-90A-01	4"	4.00	.87	12.00	6.25	7.87	18.00	7.56	8.81	8	6.18	10.00	1.18	140.0
87-90C-01	6"	6.00	.87	15.87	8.37	10.62	18.00	10.15	11.33	8	8.50	12.50	1.43	280.0

Apollo® 87-900 Series

Stainless Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 720 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 3.

FEATURES (8")

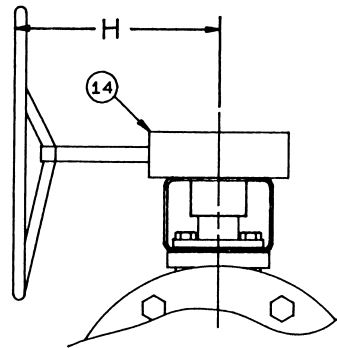
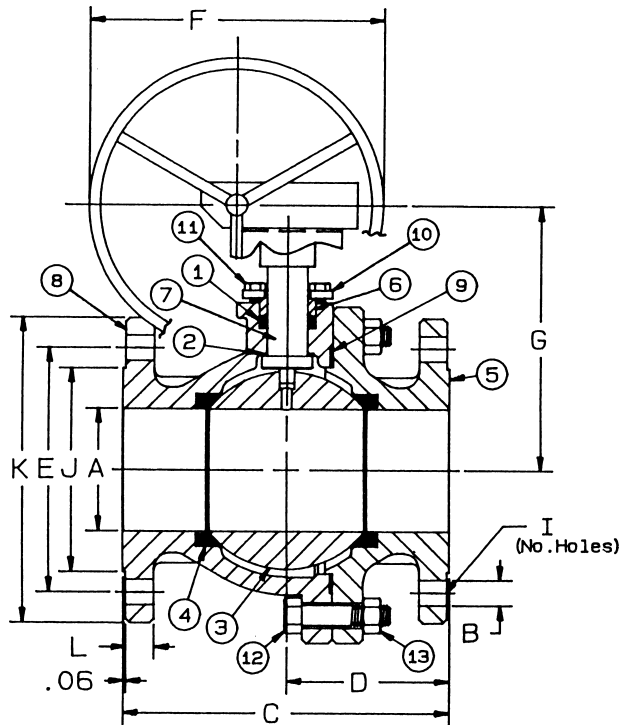
- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75
- Bolted body design
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Positive shut-off
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Stem packing	Graphite	8. Body	A351-CF8M
2. Stem bearing	RPTFE	9. Body seal	Graphite
3. Ball	A351-CF8M	10. Gland plate	304 SS
4. Seat (2)	RPTFE	11. Screw (2)	18-8 SS
5. Retainer	A351-CF8M	12. Body bolt	A193 Grade B8
6. Packing gland	A276-316	13. Body nut	A193 Grade 8
7. Stem	A276-316	14. Gear operator	Standard

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	8"
-35-	PTFE Trim	8"
-49-	Assembled Dry	8"
-57-	Cleaned For Gaseous Oxygen	8"
-60-	Static Grounded Ball & Stem	8"
-65-	Multifill Seats & Graphite Packing	8"
-69-	Purge Ports	8"



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 6**

SS ANSI CLASS 300 FULL PORT
FLANGED BALL VALVE (8")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
87-90E-01	8"	8.00	1.00	16.50	8.25	13.00	18.00	14.48	11.12	12	10.62	15.00	1.68	485.0

Apollo® 88-100 Series

Carbon Steel ANSI Class 150 Flanged Ball Valve

ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (1/2" to 1")

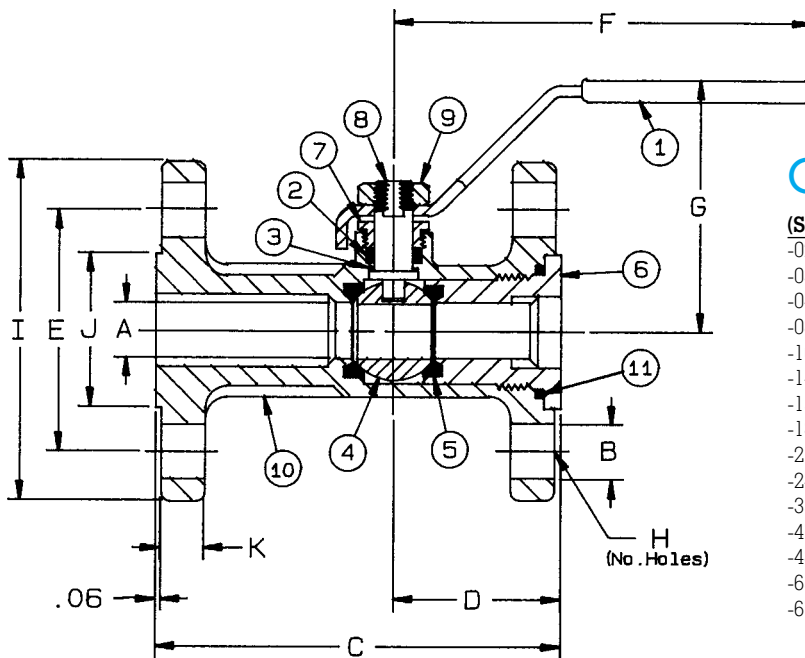
- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- (-24) Certified to API standard 607, 4th Edition
- Positive shut-off
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Nitride corrosion protection
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	Steel, zinc plated w/vinyl	7. Packing gland	A108-CS
2. Stem packing	RPTFE	8. Stem	A108-CS
3. Stem bearing	RPTFE	9. Lever nut	Steel, zinc plated
4. Ball	A108-CS chrome plated	10. Body	A216-WCB
5. Seat (2)	RPTFE	11. Body seal	PTFE
6. Retainer	A108-CS		

VARIATIONS AVAILABLE:

88-140 Series (316 SS Ball & Stem)



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1/2" to 1"
-03-	1-1/4" Stem Extension	1/2" to 1"
-04-	2-1/4" Stem Extension	1/2" to 1"
-08-	90° Reversed Stem	1/2" to 1"
-10-	SS Lever & Nut	1/2" to 1"
-14-	Vented Ball (see page J-2)	1/2" to 1"
-15-	Round Handle	1/2" to 1"
-18-	Plain Yellow Grip	1/2" to 1"
-21-	UHMWPE Seats (Non-PTFE)	1/2" to 1"
-24-	Graphite Stem Packing	1/2" to 1"
-35-	PTFE Trim	1/2" to 1"
-47-	SS Oval Latch-Lock Handle	1/2" to 1"
-48-	SS Oval Handle	1/2" to 1"
-65-	Multifill Seats & Graphite Packing	1/2" to 1"
-67-	Cleaned For Industrial Gases	1/2" to 1"

Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150 FLANGED BALL VALVE (1/2" to 1")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-103-01	1/2"	.50	.62	4.25	1.87	2.37	4.37	2.56	4	3.50	1.38	.43	3.2
88-104-01	3/4"	.62	.62	4.62	1.91	2.75	4.87	2.93	4	3.88	1.69	.50	4.5
88-105-01	1"	.87	.62	5.00	1.94	3.12	4.87	3.12	4	4.25	2.00	.50	6.1

Apollo® 88-100 Series

Carbon Steel ANSI Class 150 Flanged Ball Valve

ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

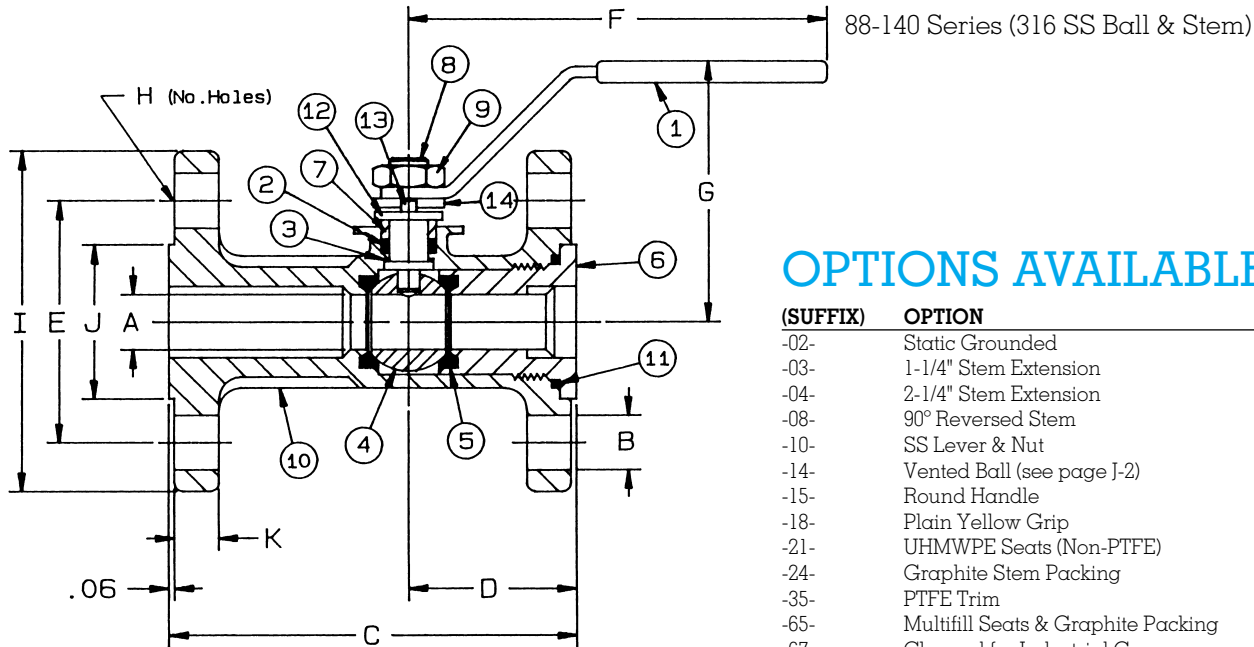
FEATURES (1-1/2" to 2-1/2")

- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- (-24) Certified to API standard 607, 4th Edition
- Positive shut-off
- Unibody construction
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Nitride corrosion protection
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	Steel, zinc plated w/vinyl	8. Stem	A108-CS
2. Stem packing	PTFE	9. Lever nut	Steel, zinc plated
3. Stem bearing	RPTFE	10. Body	A216-WCB
4. Ball	A108-CS, chrome plated	11. Body seal	PTFE
5. Seat (2)	RPTFE	12. Gland plate	CS, zinc plated
6. Retainer	A108-CS	13. Gland plate screw	ASTM A193 Gr. B7, zinc plated
7. Packing gland	A108-CS	14. Stop	CS, zinc plated

VARIATIONS AVAILABLE:



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1-1/2" to 2-1/2"
-03-	1-1/4" Stem Extension	1-1/2" to 2-1/2"
-04-	2-1/4" Stem Extension	1-1/2" to 2-1/2"
-08-	90° Reversed Stem	1-1/2" to 2-1/2"
-10-	SS Lever & Nut	1-1/2" to 2-1/2"
-14-	Vented Ball (see page J-2)	1-1/2" to 2-1/2"
-15-	Round Handle	1-1/2" to 2-1/2"
-18-	Plain Yellow Grip	1-1/2" to 2-1/2"
-21-	UHMWPE Seats (Non-PTFE)	1-1/2" to 2-1/2"
-24-	Graphite Stem Packing	1-1/2" to 2-1/2"
-35-	PTFE Trim	1-1/2" to 2-1/2"
-65-	Multifill Seats & Graphite Packing	1-1/2" to 2-1/2"
-67-	Cleaned for Industrial Gases	1-1/2" to 2-1/2"
-69-	Purge Ports	2-1/2"
-MG-	Gear Operator & Hand Wheel	1-1/2" to 2-1/2"

Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150
FLANGED BALL VALVE (1-1/2" to 2-1/2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-107-01	1-1/2"	1.25	.62	6.50	2.25	3.87	8.00	3.81	4	5.00	2.87	.62	12.0
88-108-01	2"	1.50	.75	7.00	2.54	4.75	8.00	4.12	4	6.00	3.62	.62	17.3
88-109-01	2-1/2"	2.00	.75	7.50	2.63	5.50	8.00	4.84	4	7.00	4.12	.81	28.0

Apollo® 88-100 Series

Carbon Steel ANSI Class 150 Flanged Ball Valve

ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (3" to 10")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats and seals
- Actuator mounting provisions
- Certified to API standard 607, 4th Edition
- Positive shut-off
- Unibody construction
- Corrosion resistant
- Meets NACE MR-01-75 with SS trim
- Blow-out-proof stem design
- Field repairable
- Nitride corrosion protection

STANDARD MATERIAL LIST

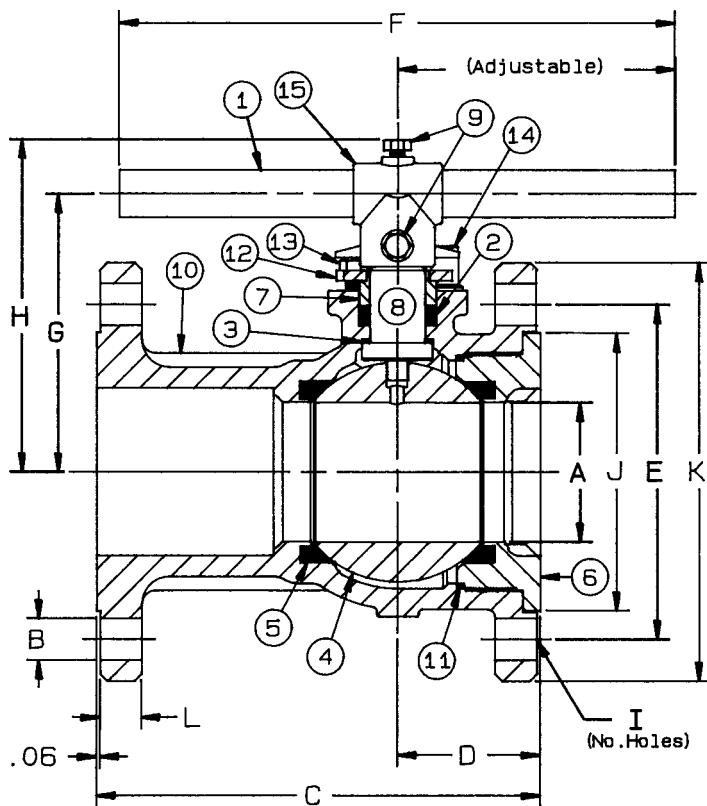
1. Handle	Galvanized pipe	9. Hex cap screw	Steel, grade 8
2. Stem packing	Graphite	10. Body	A216-WCB
3. Stem bearing	RPTFE	11. Body seal	RPTFE
4. Ball*	A216-WCB chrome plated	12. Gland plate	304 SS
5. Seat (2)	RPTFE	13. Gland plate screw	Steel, grade 8
6. Retainer	A216-WCB	14. Stop	A276-316
7. Packing gland	A108-CS	15. Handle adapter	A351-CF8M
8. Stem	A108-CS		

VARIATIONS AVAILABLE:

88-140 Series (316 SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 10"
-19-	Lock Plate	3" to 10"
-21-	UHMWPE Seats (Non-PTFE)	3" to 10"
-35-	PTFE Trim	3" to 10"
-65-	Multifill Seats & Graphite Packing	3" to 10"
-67-	Cleaned for Industrial Gases	3" to 10"
-68-	4" Stem Extension	3" to 6"
-69-	Purge Ports	3" to 10"
-MG-	Gear Operator & Hand Wheel	3" to 10"



Contact factory for actuator mounting dimensions.

* Hollow balls are standard on 8" and 10" valves

CARBON STEEL ANSI CLASS 150 FLANGED BALL VALVE (3" to 10")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
88-100-01	3"	2.50	.75	8.00	2.56	6.00	18.00	5.12	6.38	4	5.00	7.50	.75	35.1
88-10A-01	4"	3.25	.75	9.00	3.22	7.50	18.00	6.22	7.38	8	6.18	9.00	.93	54.5
88-10C-01	6"	4.50	.87	10.50	4.12	9.50	18.00	7.09	8.25	8	8.50	11.00	1.00	104.0
88-10E-01	8"	6.00	.87	11.50	5.75	11.75	18.00	9.31	10.43	8	10.62	13.50	1.18	185.0
88-10G-01	10"	7.50	1.00	13.00	6.50	14.25	30.00	10.50	11.87	12	12.75	16.00	1.31	280.0

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

Apollo® 88-200 Series

Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (1")

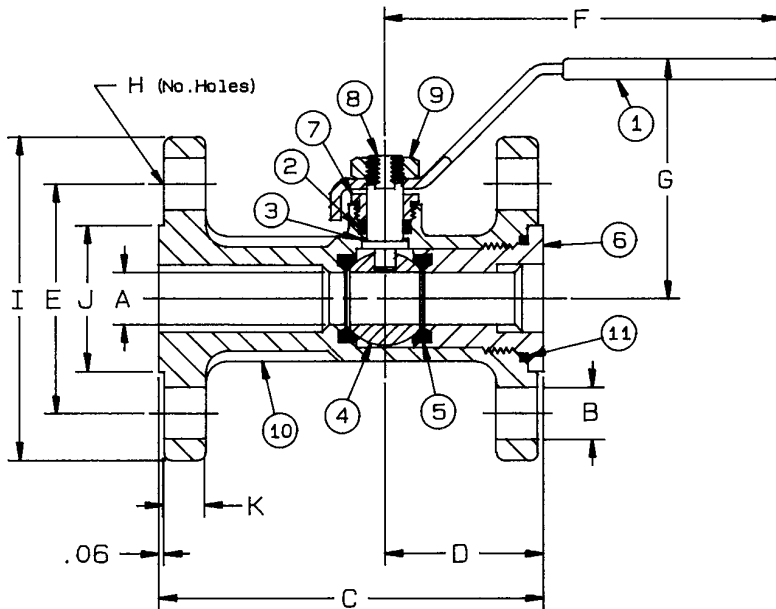
- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition when (-24) ordered
- Blow-out-proof stem design
- Positive shut-off
- Corrosion resistant
- Field repairable
- Unibody construction
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever & grip	304 SS	7. Packing gland	A108-CS
2. Stem packing	RPTFE	8. Stem	A108-CS
3. Stem bearing	RPTFE	9. Lever nut	18-8 SS
4. Ball	A108-CS	10. Body	A216-WCB
5. Seat (2)	RPTFE	11. Body seal	RPTFE
6. Retainer	A108-CS		

VARIATIONS AVAILABLE:

88-240 series (SS Ball & Stem)



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1"
-03-	1-1/4" Stem Extension	1"
-04-	2-1/4" Stem Extension	1"
-08-	90° Reversed Stem	1"
-14-	Vented Ball (see page J-2)	1"
-15-	Round Handle	1"
-18-	Plain Yellow Grip	1"
-24-	Graphite Stem Packing	1"
-27-	Latch Lock Lever	1"
-35-	PTFE Trim	1"
-39-	SS Hi-Rise Locking Wheel Handle	1"
-49-	Assembled Dry	1"
-60-	Static Grounded Ball & Stem	1"
-65-	Multifill Seats & Graphite Packing	1"
-67-	Cleaned for Industrial Gases	1"

Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 300 FULL PORT FLANGED BALL VALVE (1")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-205-01	1"	1.00	.62	5.00	1.94	3.12	8.00	3.62	4	4.25	2.00	.50	7.4

Apollo® 88-200 Series

Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (1-1/2" to 2-1/2")

- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Blow-out-proof stem design
- Positive shut-off
- Corrosion resistant
- Field repairable
- Bolted body design
- Actuator mounting provisions
- Nitride corrosion protection
- Meets NACE MR-01-75 with SS trim

STANDARD MATERIAL LIST

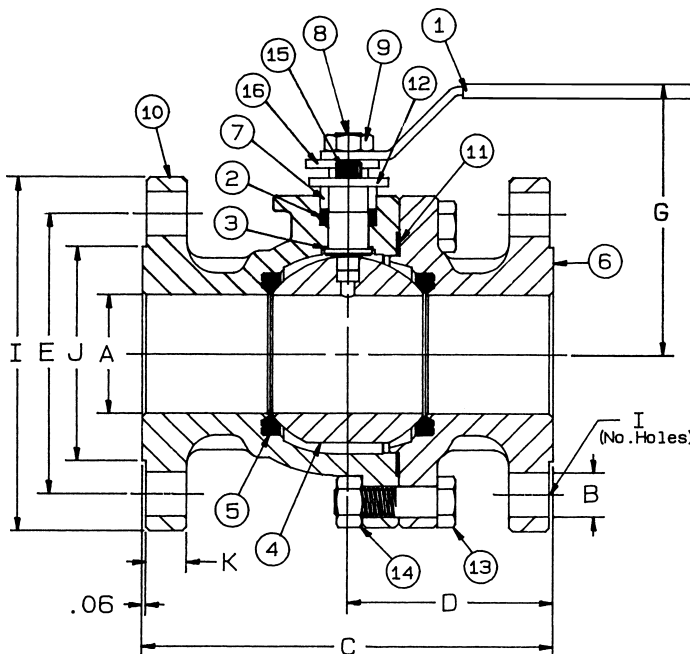
1. Lever and grip	Steel, zinc plated w/vinyl	9. Lever nut	Steel, grade 8 zinc plated
2. Stem packing	PTFE	10. Body	A216-WCB
3. Stem bearing	RPTFE	11. Body seal	Graphite
4. Ball	A108-CS chrome plated	12. Gland plate	CS, zinc plated
5. Seat (2)	RPTFE	13. Body bolt	A193-Grade B7
6. Retainer	A216-WCB	14. Body nut	A194-Grade 2H
7. Packing gland	A108 CS	15. Gland screws	A193-Grade B7 zinc plated
8. Stem	A108-CS	16. Stop	CS, zinc plated

VARIATIONS AVAILABLE:

88-240 series (SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1-1/2" to 2-1/2"
-03-	1-1/4" Stem Extension	1-1/2" to 2-1/2"
-04-	2-1/4" Stem Extension	1-1/2" to 2-1/2"
-08-	90° Reversed Stem	1-1/2" to 2-1/2"
-10-	SS Lever & Nut	1-1/2" to 2-1/2"
-14-	Vented Ball (see page J-2)	1-1/2" to 2-1/2"
-15-	Round Handle	1-1/2" to 2-1/2"
-18-	Plain Yellow Grip	1-1/2" to 2-1/2"
-19-	Lock Plate	1-1/2" to 2-1/2"
-24-	Graphite Stem Packing	1-1/2" to 2-1/2"
-35-	PTFE Trim	1-1/2" to 2-1/2"
-60-	Static Grounded Ball & Stem	1-1/2" to 2-1/2"
-65-	Multifill Seats & Graphite Packing	1-1/2" to 2-1/2"
-67-	Cleaned For Industrial Gases	1-1/2" to 2-1/2"
-69-	Purge Ports	2" to 2-1/2"
-MG-	Gear Operator & Hand Wheel	1-1/2" to 2-1/2"



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150 FULL PORT FLANGED BALL VALVE (1-1/2" to 2-1/2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-207-01	1-1/2"	1.50	.62	6.50	3.25	3.87	8.00	4.31	4	5.00	2.87	.68	18.2
88-208-01	2"	2.00	.75	7.00	3.50	4.75	8.00	4.75	4	6.00	3.62	.68	26.4
88-209-01	2-1/2"	2.50	.75	7.50	3.75	5.50	8.00	5.12	4	7.00	4.12	.81	37.0

Apollo® 88-200 Series

Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (3" to 6")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75 with SS trim
- Positive shut-off
- Bolted body design
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Actuator mounting provisions
- Nitride corrosion protection

STANDARD MATERIAL LIST

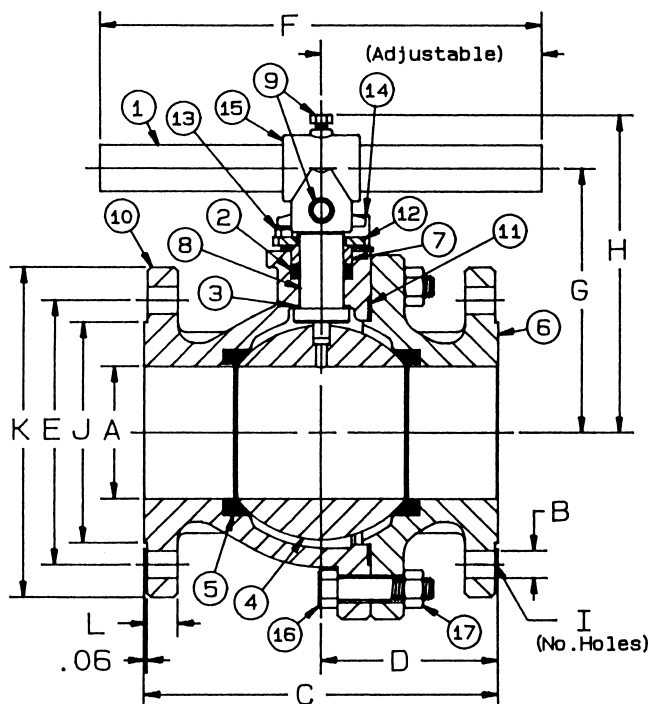
1. Handle	Galvanized pipe	10. Body	A216-WCB
2. Stem packing	Graphite	11. Body seal	Graphite
3. Stem bearing	RPTFE	12. Gland plate	304 SS
4. Ball	A216-WCB, chrome plated	13. Screw	Steel, grade 8 zinc plated
5. Seat (2)	RPTFE	14. Stop	A276-316
6. Retainer	A216-WCB	15. Handle adapter	A351-CF8M
7. Packing gland	A108-CS	16. Body bolt	A194-Grade B7
8. Stem	A108-CS	17. Body nut	A194-Grade 2H
9. Screw	Steel, grade 8 zinc plated		

VARIATIONS AVAILABLE:

88-240 Series (SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 6"
-19-	Lock Plate	3" to 6"
-35-	PTFE Trim	3" to 6"
-60-	Static Grounded Ball & Stem	3" to 6"
-65-	Multifill Seats & Graphite Packing	3" to 6"
-67-	Cleaned for Industrial Gases	3" to 6"
-68-	4" Stem Extension	3" to 4"
-69-	Purge Ports	3" to 6"
-MG-	Gear Operator & Hand Wheel	3" to 6"



**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150 FULL PORT
FLANGED BALL VALVE (3" to 6")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
88-200-01	3"	3.00	.75	8.00	4.00	6.00	18.00	6.00	7.25	4	5.00	7.50	.75	58.3
88-20A-01	4"	4.00	.75	9.00	5.25	7.50	18.00	7.62	8.87	8	6.18	9.00	.93	98.0
88-20C-01	6"	6.00	.87	15.50	7.75	9.50	18.00	8.62	9.87	8	8.50	11.00	1.00	212.0

Contact factory for actuator
mounting dimensions.

Apollo® 88-200 Series

Carbon Steel ANSI Class 150 Flanged Full Port Ball Valve

ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (8" to 12")

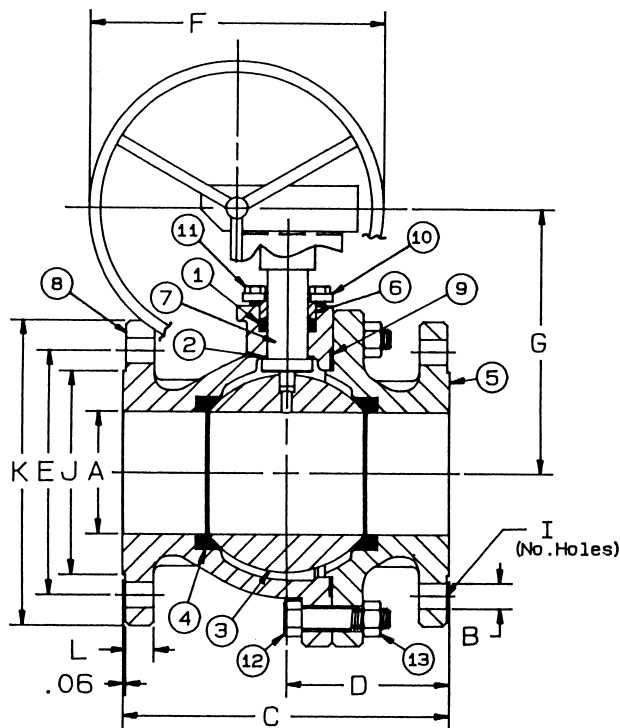
- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Meets NACE MR-01-75 with SS trim
- Positive shut-off
- Bolted body design
- Corrosion resistant
- Blow-out-proof stem design
- Field repairable
- Actuator mounting provisions
- Nitride corrosion protection

STANDARD MATERIAL LIST

1. Stem packing	Graphite	8. Body	A216-WCB
2. Stem bearing	RPTFE	9. Body seal	Graphite
3. Ball	A216-WCB, chrome plated	10. Gland plate	304 SS
4. Seat (2)	RPTFE	11. Screw	Steel, grade 8 zinc plated
5. Retainer	A216-WCB	12. Body bolt	A193-Grade B7
6. Packing gland	A108-CS	13. Body nut	A193-Grade 2H
7. Stem	A108-CS	14. Gear operator	Standard

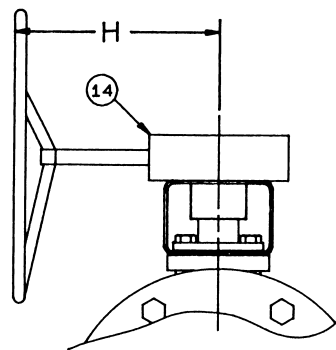
VARIATIONS AVAILABLE:

88-240 Series (SS Ball & Stem)



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	8" to 12"
-35-	PTFE Trim	8" to 12"
-60-	Static Grounded Ball & Stem	8" to 12"
-65-	Multifill Seats & Graphite Packing	8" to 12"
-67-	Cleaned for Industrial Gases	8" to 12"
-69-	Purge Ports	8" to 12"



**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150 FULL PORT
FLANGED BALL VALVE (8" to 12")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
88-20E-01	8"	8.00	.87	18.00	9.00	11.75	18.00	13.59	11.12	8	10.62	13.50	1.18	395.0
88-20G-01	10"	10.00	1.00	21.00	10.50	14.25	24.00	15.57	17.37	12	12.75	16.00	1.31	607.0
88-20H-01	12"	12.00	1.00	24.00	12.00	17.00	24.00	17.07	17.37	12	15.00	19.00	1.43	885.0

Contact factory for actuator
mounting dimensions.

Apollo® 88-700 Series

Carbon Steel ANSI Class 300 Flanged Ball Valve

ANSI Class 300 Flanged Ends, 740 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (2")

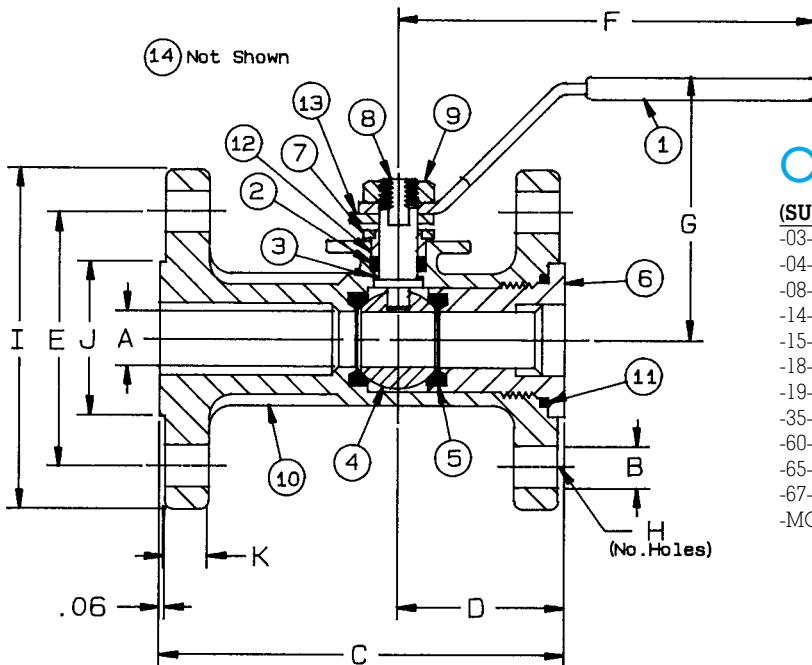
- Graphite stem packing
- Adjustable packing gland
- RPTFE seats and seals
- Actuator mounting provisions
- Positive shut-off
- Unibody construction
- Corrosion resistant
- Certified to API standard 607, 4th Edition
- Blow-out-proof stem design
- Field repairable
- Nitride corrosion protection

STANDARD MATERIAL LIST

1. Lever & grip	Steel, zinc coated w/vinyl	8. Stem	A108-CS, chrome plated
2. Stem packing	Graphite	9. Lever nut	Steel, grade 8 zinc plated
3. Stem bearing	RPTFE	10. Body	A216-WCB
4. Ball	A108-CS, chrome plated	11. Body seal	PTFE
5. Seat (2)	RPTFE	12. Packing gland	A108-CS
6. Retainer	A108-CS	13. Stop	Steel, zinc plated
7. Gland plate	Steel, zinc plated	14. Screw (2)	A193-Grade B7

VARIATIONS AVAILABLE:

88-740 Series (316 SS Ball & Stem)



Contact factory for actuator mounting dimensions.

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-03-	1-1/4" Stem Extension	2"
-04-	2-1/4" Stem Extension	2"
-08-	90° Reversed Stem	2"
-14-	Vented Ball (see page J-2)	2"
-15-	Round Handle	2"
-18-	Plain Yellow Grip	2"
-19-	Lock Plate	2"
-35-	PTFE Trim	2"
-60-	Static Grounded Ball & Stem	2"
-65-	Multifill Seats & Graphite Packing	2"
-67-	Cleaned for Industrial Gases	2"
-MG-	Gear Operator & Hand Wheel	2"

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

CARBON STEEL ANSI CLASS 300 FLANGED BALL VALVE (2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-708-01	2"	1.50	.75	8.50	3.50	5.00	10.00	4.35	8	6.50	3.62	.88	27.0

Apollo® 88-700 Series

Carbon Steel ANSI Class 300 Flanged Ball Valve

ANSI Class 300 Flanged Ends, 740 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (3" to 10")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats and seals
- Actuator mounting provisions
- Certified to API standard 607, 4th Edition
- Positive shut-off
- Unibody construction
- Corrosion resistant
- Meets NACE MR-01-75 with SS trim
- Blow-out-proof stem design
- Field repairable
- Nitride corrosion protection

STANDARD MATERIAL LIST

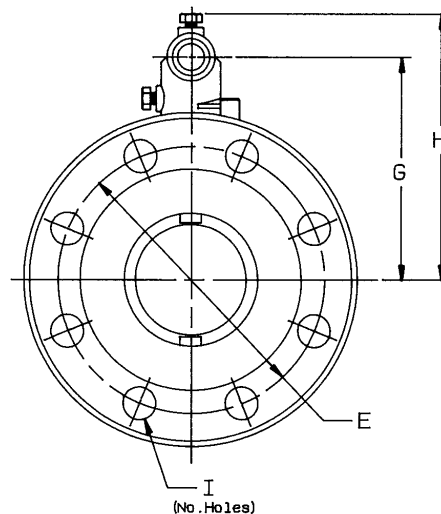
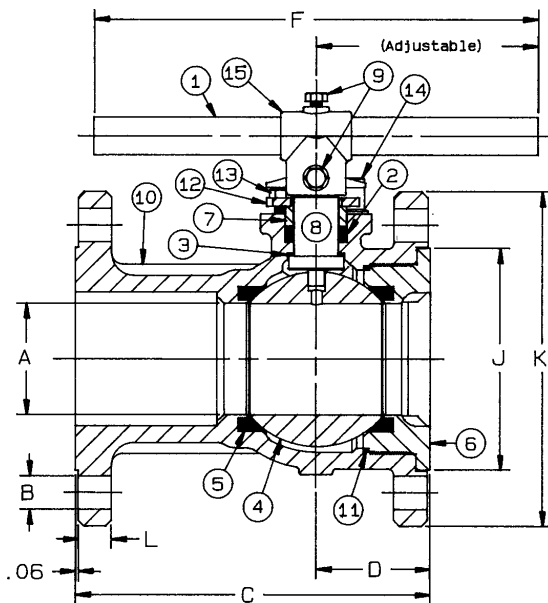
1. Handle	Galvanized pipe	9. Screw (2)	Steel, grade 8 zinc plated
2. Stem packing	Graphite	10. Body	A216-WCB
3. Stem bearing	RPTFE	11. Body seal	RPTFE
4. Ball	A216-WCB, chrome plated	12. Gland plate	304 SS
5. Seat (2)	RPTFE	13. Screw (2)	Steel, grade 8 zinc plated
6. Retainer	A216-WCB	14. Stop	A276-316
7. Packing gland	A108-CS	15. Handle adapter	A351-CF8M
8. Stem	A108-CS		

VARIATIONS AVAILABLE:

88-740 Series (316 SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 10"
-19-	Lock Plate	3" to 10"
-35-	PTFE Trim	3" to 6"
-60-	Static Grounded Ball & Stem	3" to 10"
-65-	Multifill Seats & Graphite Packing	3" to 10"
-67-	Cleaned for Industrial Gases	3" to 10"
-68-	4" Stem Extension	3" to 4"
-69-	Purge Ports	3" to 10"
-MG-	Gear Operator & Hand Wheel	3" to 10"



CARBON STEEL ANSI CLASS 300
FLANGED BALL VALVE (3" to 10")

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
88-700-01	3"	2.50	.87	11.12	3.00	6.62	18.00	5.50	6.75	8	5.00	8.25	1.12	56.0
88-70A-01	4"	3.25	.87	12.00	3.43	7.87	18.00	7.00	8.25	8	6.18	10.00	1.25	89.0
88-70C-01	6"	4.50	.87	15.87	6.62	10.62	18.00	7.87	9.12	12	8.50	12.50	1.43	179.0
88-70E-01	8"	6.00	1.00	16.50	5.75	13.00	18.00	10.25	11.50	12	10.62	15.00	1.75	265.0
88-70G-01	10"	7.50	1.25	18.00	6.50	15.25	18.00	11.50	12.75	16	12.75	17.50	1.88	401.0

Contact factory for actuator
mounting dimensions.

Apollo® 88-900 Series

Carbon Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 740 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (1/2" to 1-1/2")

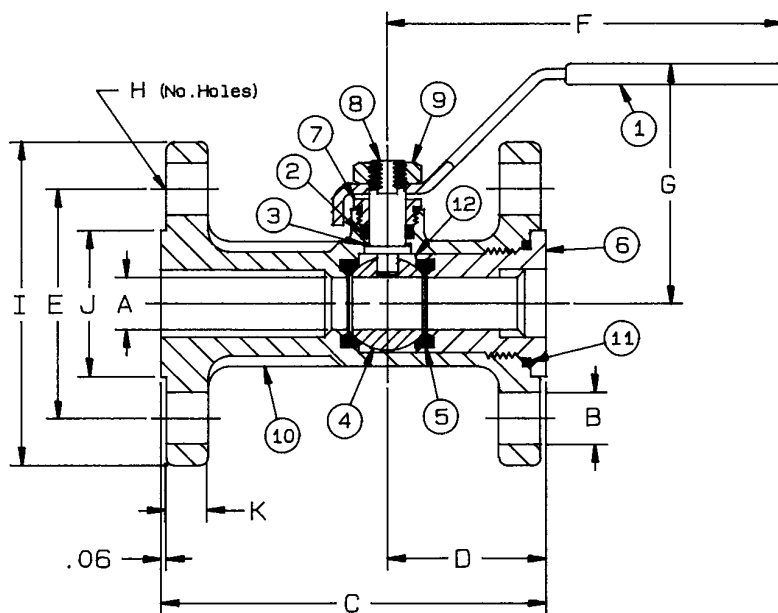
- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Blow-out-proof stem design
- Positive shut-off
- Nitride corrosion protection
- Field repairable
- Unibody design
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever & grip	304 SS w/vinyl	8. Stem	A108-1215
2. Stem packing	PTFE	9. Lever nut	18-8 SS
3. Stem bearing	RPTFE	10. Body	A216-WCB
4. Ball	A108-CS	11. Body seal	RPTFE
5. Seat (2)	RPTFE		
6. Retainer	A108-1215		
7. Packing gland	A108-1215		

VARIATIONS AVAILABLE:

88-940 Series (SS Ball & Stem)



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1/2" to 1-1/2"
-03-	1-1/4" Stem Extension	1/2" to 1-1/2"
-04-	2-1/4" Stem Extension	1/2" to 1-1/2"
-08-	90° Reversed Stem	1/2" to 1-1/2"
-14-	Vented Ball (see page J-2)	1/2" to 1-1/2"
-15-	Round Handle	1/2" to 1-1/2"
-18-	Plain Yellow Grip	1/2" to 1-1/2"
-24-	Graphite Stem Packing	1/2" to 1-1/2"
-27-	Latch Lock Lever	1/2" to 1-1/2"
-35-	PTFE Trim	1/2" to 1-1/2"
-47-	SS Oval Latch-Lock Handle	1/2" to 1-1/2"
-48-	SS Oval Handle	1/2" to 1-1/2"
-49-	Assembled Dry	1/2" to 1-1/2"
-57-	Cleaned for Gaseous Oxygen	1/2" to 1-1/2"
-60-	Static Grounded Ball & Stem	1/2" to 1-1/2"
-65-	Multifill Seats & Graphite Packing	1/2" to 1-1/2"
-67-	Cleaned for Industrial Gases	1/2" to 1-1/2"

Contact factory for actuator mounting dimensions.

CARBON STEEL ANSI CLASS 300 FULL PORT FLANGED BALL VALVE (1/2" to 1-1/2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-903-01	1/2"	.62	.62	5.50	1.98	2.62	4.78	2.93	4	3.75	1.37	.56	6.0
88-904-01	3/4"	.81	.75	6.00	2.35	3.25	4.78	3.10	4	4.62	1.68	.61	9.0
88-905-01	1"	1.00	.75	6.50	2.45	3.50	7.93	3.62	4	4.88	2.00	.68	12.0
88-907-01	1-1/2"	1.50	.88	7.50	3.25	4.50	8.00	4.60	4	6.12	2.87	.82	23.0

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

Apollo® 88-900 Series

Carbon Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 740 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

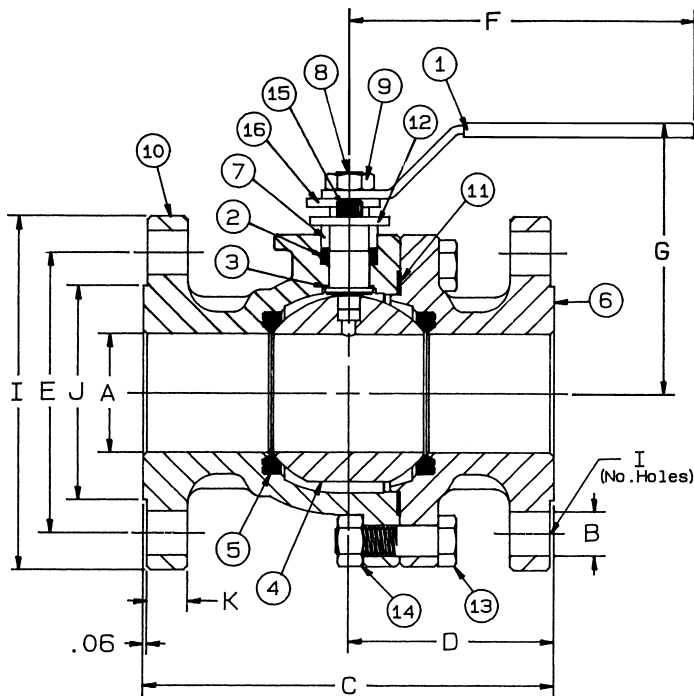
Federal Specification: WW-V-35C, Type: II, Composition: CS Style: 3

FEATURES (2")

- Investment cast body
- Adjustable packing gland
- RPTFE seats and seals
- Certified to API standard 607, 4th Edition, when (-24) ordered
- Positive shut-off
- Bolted body design
- Nitride corrosion protection
- Meets NACE MR-01-75 with SS trim
- Blow-out-proof stem design
- Field repairable
- Actuator mounting provisions

STANDARD MATERIAL LIST

1. Lever and grip	Steel, zinc plated w/vinyl	9. Lever nut	Steel, grade 8 zinc plated
2. Stem packing	PTFE	10. Body	A216-WCB
3. Stem bearing	RPTFE	11. Body seal	Graphite
4. Ball	A108-CS chrome plated	12. Gland plate	Steel, zinc plated
5. Seat (2)	RPTFE	13. Body bolt	A193-Grade B7
6. Retainer	A216-WCB	14. Body nut	A194-Grade 2H
7. Packing gland	A108-1215	15. Gland screws	A193-Grade B7 zinc plated
8. Stem	A108-1215	16. Stop	Steel, zinc plated



Contact factory for actuator mounting dimensions.

VARIATIONS AVAILABLE:

88-940 Series (SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	2"
-03-	1-1/4" Stem Extension	2"
-04-	2-1/4" Stem Extension	2"
-08-	90° Reversed Stem	2"
-10-	SS Lever & Nut	2"
-14-	Vented Ball (see page J-2)	2"
-15-	Round Handle	2"
-18-	Plain Yellow Grip	2"
-19-	Lock Plate	2"
-24-	Graphite Stem Packing	2"
-35-	PTFE Trim	2"
-60-	Static Grounded Ball & Stem	2"
-65-	Multifill Seats & Graphite Packing	2"
-67-	Cleaned for Industrial Gases	2"
-69-	Purge Ports	2"
-MG-	Gear Operator & Hand Wheel	2"

**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

CARBON STEEL ANSI CLASS 300 FULL PORT
FLANGED BALL VALVE (2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	Wt.
88-908-01	2"	2.00	.75	8.50	3.50	5.00	8.00	5.60	8	6.50	3.62	.82	32.0

Apollo® 88-900 Series

Carbon Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 740 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (3" to 6")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Positive shut-off
- Bolted body design
- Nitride corrosion protection
- Meets NACE MR-01-75 with SS trim
- Blow-out-proof stem design
- Field repairable
- Actuator mounting provisions

STANDARD MATERIAL LIST

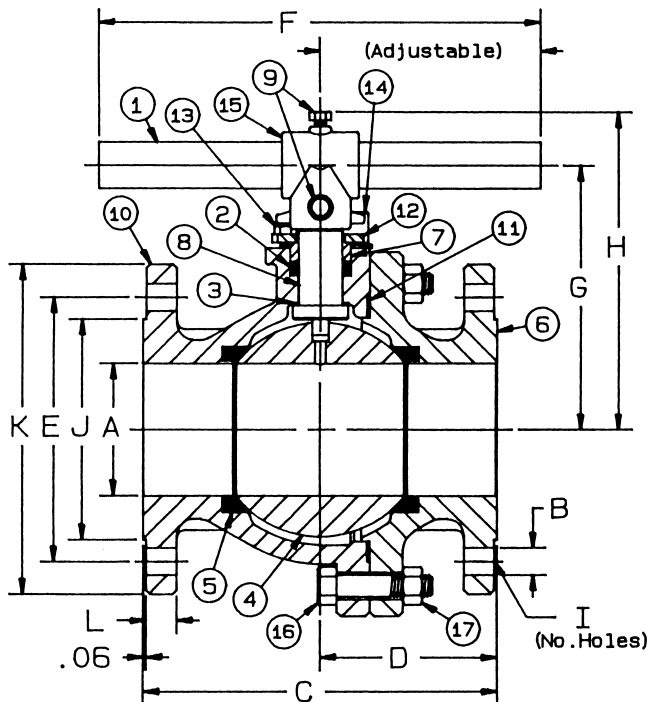
1. Handle	Galvanized pipe	10. Body	A216-WCB
2. Stem packing	Graphite	11. Body seal	Graphite
3. Stem bearing	RPTFE	12. Gland plate	304 SS
4. Ball	A216-WCB, chrome plated	13. Screw	Steel, grade 8 zinc plated
5. Seat (2)	RPTFE	14. Stop	A276-316
6. Retainer	A216-WCB	15. Handle adapter	A351-CF8M
7. Packing gland	A108-1215	16. Body bolt	A193-Grade B7
8. Stem	A108-1215	17. Body nut	A194-Grade 2H
9. Screw	Steel, grade 8 zinc plated		

VARIATIONS AVAILABLE:

88-940 Series (SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	3" to 6"
-19-	Lock Plate	3" to 6"
-35-	PTFE Trim	3" to 6"
-60-	Static Grounded Ball & Stem	3" to 6"
-65-	Multifill Seats & Graphite Packing	3" to 6"
-67-	Cleaned for Industrial Gases	3" to 6"
-68-	4" Stem Extension	3" to 4"
-69-	Purge Ports	3" to 6"
-MG-	Gear Operator & Hand Wheel	3" to 6"



**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

CARBON STEEL ANSI CLASS 300 FULL PORT
FLANGED BALL VALVE (3" to 6")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
88-900-01	3"	3.00	.87	11.12	5.12	6.62	18.00	6.15	7.33	8	5.00	8.25	1.06	76.0
88-90A-01	4"	4.00	.87	12.00	6.25	7.87	18.00	7.56	8.81	8	6.18	10.00	1.18	140.0
88-90C-01	6"	6.00	.87	15.87	8.37	10.62	18.00	10.15	11.33	8	8.50	12.50	1.43	280.0

Contact factory for actuator
mounting dimensions.

Apollo® 88-900 Series

Carbon Steel ANSI Class 300 Flanged Full Port Ball Valve

ANSI Class 300 Flanged Ends, 740 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

FEATURES (8")

- Graphite stem packing
- Adjustable packing gland
- RPTFE seats
- Certified to API standard 607, 4th Edition
- Positive shut-off
- Bolted body design
- Nitride corrosion protection
- Meets NACE MR-01-75 with SS trim
- Blow-out-proof stem design
- Field repairable
- Actuator mounting provisions

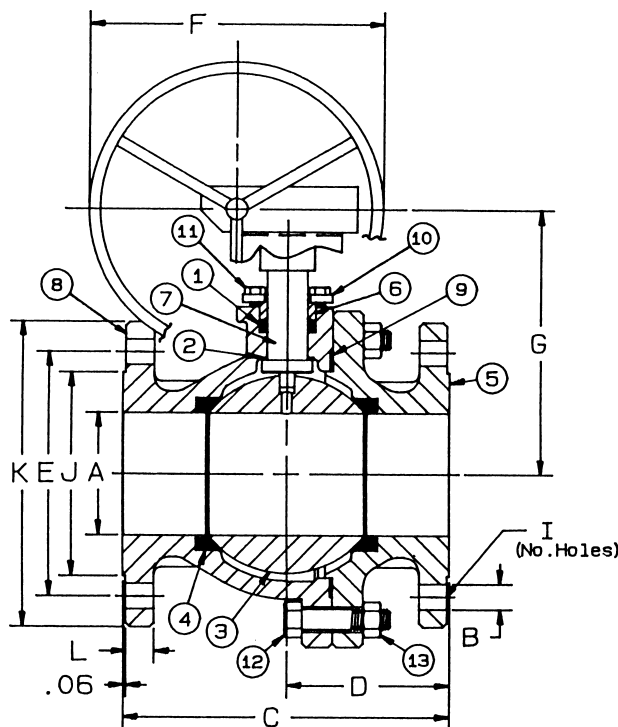
STANDARD MATERIAL LIST

1. Stem packing	Graphite	8. Body	A216-WCB
2. Stem bearing	RPTFE	9. Body seal	Graphite
3. Ball*	A216-WCB, chrome plated	10. Gland plate	304 SS
4. Seat (2)	RPTFE	11. Screw	Steel, grade 8 zinc plated
5. Retainer	A216-WCB	12. Body bolt	A193-Grade B7
6. Packing gland	A108-1215	13. Body nut	A194-Grade 2H
7. Stem	A108-1215	14. Gear operator	Standard

* Hollow ball is standard.

VARIATIONS AVAILABLE:

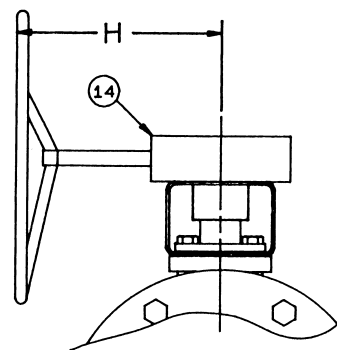
88-940 Series (SS Ball & Stem)



Contact factory for actuator mounting dimensions.

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-14-	Vented Ball (see page J-2)	8"
-35-	PTFE Trim	8"
-60-	Static Grounded Ball & Stem	8"
-65-	Multifill Seats & Graphite Packing	8"
-67-	Cleaned for Industrial Gases	8"
-69-	Purge Ports	8"



**For Pressure/Temperature Ratings,
Refer to Page N-11, Graph No. 5**

CARBON STEEL ANSI CLASS 300 FULL PORT FLANGED BALL VALVE (8")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
88-90E-01	8"	8.00	1.00	16.50	8.25	13.00	18.00	14.48	11.12	12	10.62	15.00	1.68	485.0

Apollo® 452-200 Series

Stainless Steel Class 150 Full Port Flanged Extended Bonnet Ball Valve

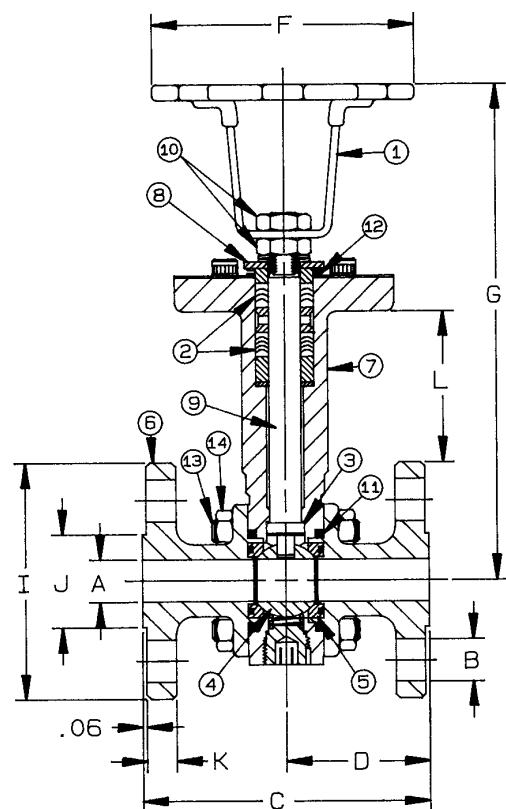
ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C.

FEATURES (1/2" to 2")

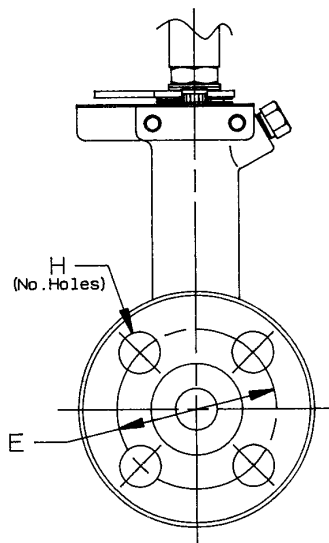
- Investment cast components
- PTFE seats and packing
- Spring-loaded adjustable packing
- Actuator mounting provisions
- External connection for negative pressure scrubbing system (or monitoring)
- Positive shut-off
- Field repairable
- Corrosion resistant
- Blow-out-proof stem design
- Meets NACE MR-01-75
- Extended bonnet for insulation

STANDARD MATERIAL LIST

1. Wheel handle	304 SS w/vinyl	8. Stop	304 SS
2. Chevron packing	PTFE	9. Stem	A276-316
3. Stem bearing	RPTFE	10. Handle nut	304 SS
4. Ball	A276-316	11. Body seal	RPTFE
5. Seat (2)	PTFE	12. Ground spring	SS
6. End cap (2)	A351-CF8M	13. Threaded stud	316 SS, FEP coated
7. Body	A351-CF8M	14. Nut	316 SS, FEP coated



**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**



Contact factory for actuator
mounting dimensions.

SS ANSI CLASS 150 FULL PORT FLANGED
EXTENDED BONNET BALL VALVE (1/2" to 2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
452-203-01	1/2"	.62	.62	4.25	2.12	2.37	3.87	7.38	4	3.50	1.38	.43	2.23	6.6
452-204-01	3/4"	.81	.62	4.62	2.31	2.75	3.87	7.48	4	3.88	1.69	.50	2.15	9.6
452-205-01	1"	1.00	.62	5.00	2.50	3.12	3.87	7.59	4	4.25	2.00	.50	2.06	10.1
452-207-01	1-1/2"	1.50	.62	6.50	3.25	3.87	5.62	8.10	4	5.00	2.87	.68	2.00	25.3
452-208-01	2"	2.00	.75	7.00	3.50	4.75	5.62	8.51	4	6.00	3.62	.68	1.92	36.8

Apollo® 452-200 Series

Stainless Steel Class 150 Full Port Flanged Extended Bonnet Ball Valve

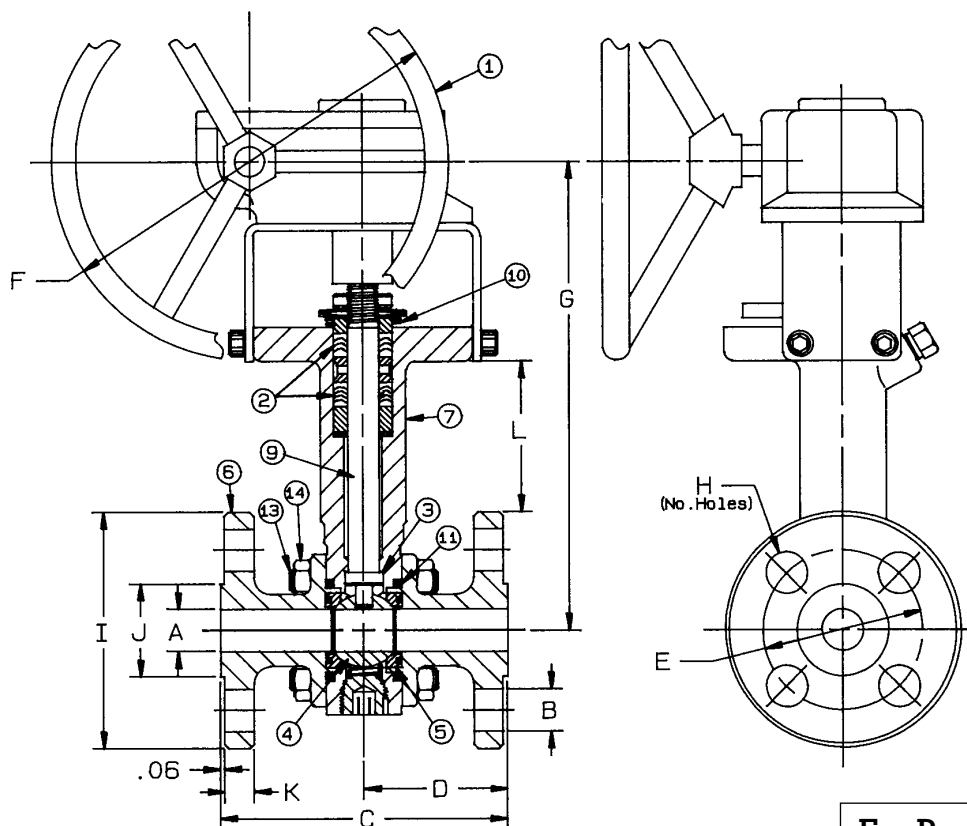
ANSI Class 150 Flanged Ends, 275 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C.

FEATURES (3" to 6")

- Investment cast components
- PTFE seats and packing
- Spring-loaded adjustable packing
- Actuator mounting provisions
- External connection for negative pressure scrubbing system (or monitoring)
- Positive shut-off
- Field repairable
- Corrosion resistant
- Blow-out-proof stem design
- Meets NACE MR-01-75
- Extended bonnet for insulation

STANDARD MATERIAL LIST

1. Gear operator	Standard 3" to 6"	7. Body	A351-CF8M
2. Chevron packing	PTFE	8. Stem	A276-316
3. Stem bearing	RPTFE	9. Body seal	RPTFE
4. Ball	A351-CF8M	10. Ground spring	SS
5. Seat (2)	PTFE	11. Threaded stud	316 SS, FEP coated
6. End cap (2)	A351-CF8M	12. Nut	316 SS, FEP coated



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 2**

SS ANSI CLASS 150 FULL PORT FLANGED
EXTENDED BONNET BALL VALVE (3" to 6")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
452-200-01	3"	3.00	.75	8.00	4.00	6.00	10.00	11.13	4	7.50	5.00	.75	2.12	105.0
452-20A-01	4"	4.00	.75	9.00	4.50	7.50	10.00	11.84	8	9.00	6.18	.87	2.09	160.0
452-20C-01	6"	6.00	.87	15.50	7.75	9.50	12.00	13.80	8	11.00	8.50	1.00	2.46	343.0

Apollo® 453-200 Series

Carbon Steel Class 150 Full Port Flanged Extended Bonnet Ball Valve

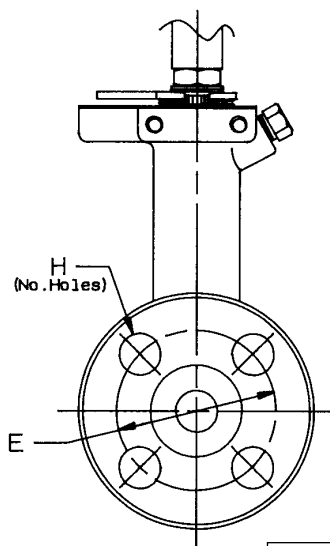
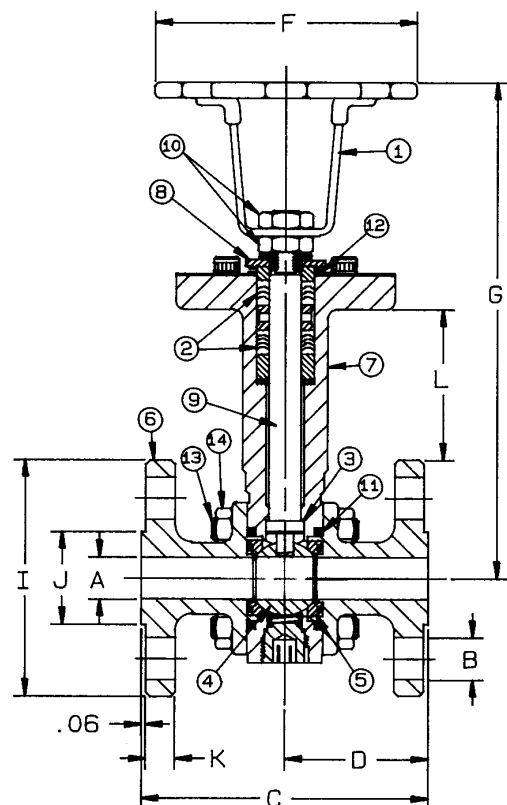
ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C.

FEATURES (1/2" to 2")

- Investment cast components
- PTFE seats and packing
- Spring-loaded adjustable packing
- Nitride corrosion protection
- External connection for negative pressure scrubbing system (or monitoring)
- Positive shut-off
- Field repairable
- Corrosion resistant
- Actuator corrosion protection
- Blow-out-proof stem design
- Meets NACE MR-01-75
- Extended bonnet for insulation

STANDARD MATERIAL LIST

1. Wheel handle	304 SS w/vinyl	8. Stop	304 SS
2. Chevron packing	PTFE	9. Stem	A276-316
3. Stem bearing	RPTFE	10. Handle nut	304 SS
4. Ball	A276-316	11. Body seal	RPTFE
5. Seat (2)	PTFE	12. Ground spring	SS
6. End cap (2)	A216-WCB	13. Threaded stud	316 SS, FEP coated
7. Body	A216-WCB	14. Nut	316 SS, FEP coated



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150 FULL PORT FLANGED
EXTENDED BONNET BALL VALVE (1/2" to 2")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
453-203-01	1/2"	.62	.62	4.25	2.12	2.37	3.87	7.38	4	3.50	1.38	.43	2.23	6.6
453-204-01	3/4"	.81	.62	4.62	2.31	2.75	3.87	7.48	4	3.88	1.69	.50	2.15	9.6
453-205-01	1"	1.00	.62	5.00	2.50	3.12	3.87	7.59	4	4.25	2.00	.50	2.06	10.1
453-207-01	1-1/2"	1.50	.62	6.50	3.25	3.87	5.62	8.10	4	5.00	2.87	.68	2.00	25.3
453-208-01	2"	2.00	.75	7.00	3.50	4.75	5.62	8.51	4	6.00	3.62	.68	1.92	36.8

Apollo® 453-200 Series

Carbon Steel Class 150 Full Port Flanged Extended Bonnet Ball Valve

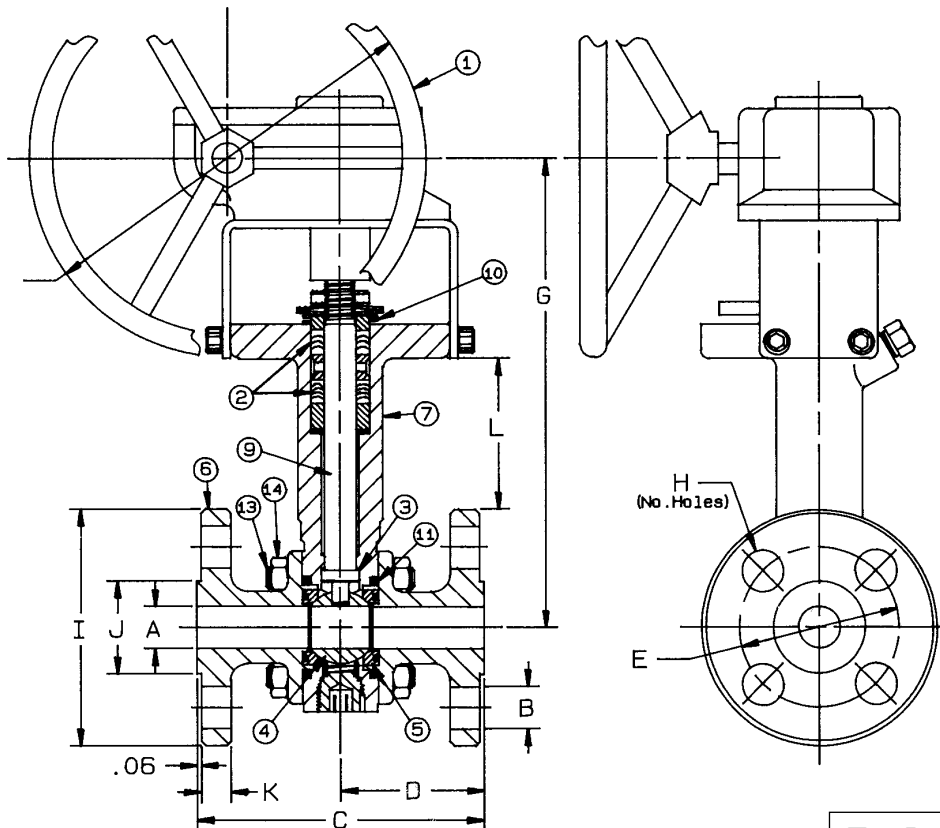
ANSI Class 150 Flanged Ends, 285 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C.

FEATURES (3" to 6")

- Investment cast components
- PTFE seats and packing
- Spring-loaded adjustable packing
- Nitride corrosion protection
- External connection for negative pressure scrubbing system (or monitoring)
- Positive shut-off
- Field repairable
- Corrosion resistant
- Actuator mounting provisions
- Blow-out-proof stem design
- Meets NACE MR-01-75
- Extended bonnet for insulation

STANDARD MATERIAL LIST

1. Gear operator	Standard 3" to 6"	7. Body	A216-WCB
2. Chevron packing	PTFE	8. Stem	A276-316
3. Stem bearing	RPTFE	9. Body seal	RPTFE
4. Ball	A351-CF8M	10. Ground spring	SS
5. Seat (2)	PTFE	11. Threaded stud	316 SS, FEP coated
6. End cap (2)	A216-WCB	12. Nut	316 SS, FEP coated



Contact factory for actuator mounting dimensions.

**For Pressure/Temperature Ratings,
Refer to Page N-9, Graph No. 1**

CARBON STEEL ANSI CLASS 150 FULL PORT FLANGED
EXTENDED BONNET BALL VALVE (3" to 6")

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	Wt.
453-200-01	3"	3.00	.75	8.00	4.00	6.00	10.00	11.13	4	7.50	5.00	.75	2.12	105.0
453-20A-01	4"	4.00	.75	9.00	4.50	7.50	10.00	11.84	8	9.00	6.18	.87	2.09	160.0
453-20C-01	6"	6.00	.87	15.50	7.75	9.50	12.00	13.80	8	11.00	8.50	1.00	2.46	343.0

Apollo® 87A-400 Series

Alloy 20 ANSI Class 150 Flanged Full Port Ball Valve - 1/2" through 1"

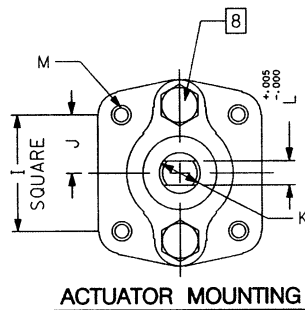
NEW FOR
2000

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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 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



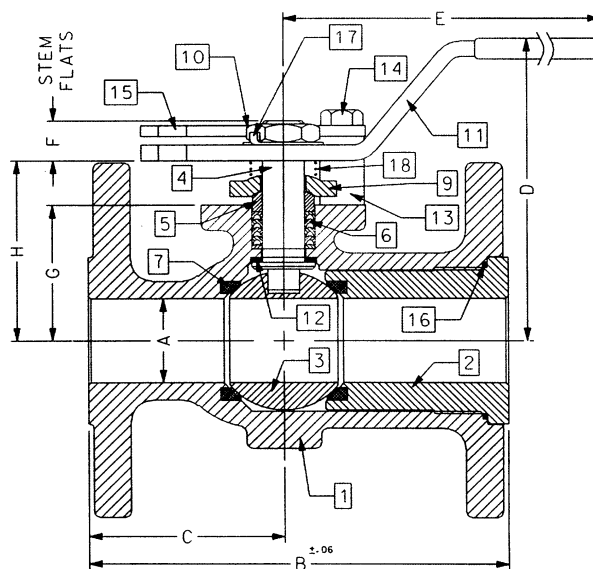
STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Boss for Bleed / Drain Port
Four Point ISO 5211 Mounting Pad Bolt Circle
Full Bore Design for Maximum Flow Efficiency
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-69-	Drilled and Tapped Purge Port with Plug
-70-	4" Extended Bonnet

**For Pressure/Temperature Ratings,
Refer to Page N-17, Graph No. 18**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-403-01	1/2"	0.500	4.25	2.06	3.28	5.14	0.30	1.09	1.38	1.002	0.501	0.376	0.250	1/4-20	5.0
87A-404-01	3/4"	0.750	4.62	2.18	3.89	5.56	0.39	1.65	1.96	1.392	0.696	0.500	0.287	1/4-20	6.0
87A-405-01	1"	1.00	5.00	2.32	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	7.0

NEW FOR
2000

Apollo® 87A-400 Series

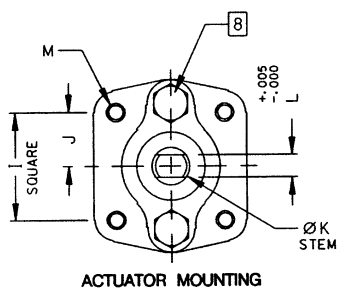
Alloy 20 ANSI Class 150 Flanged Standard Port Ball Valve -
1-1/2" through 2"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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 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



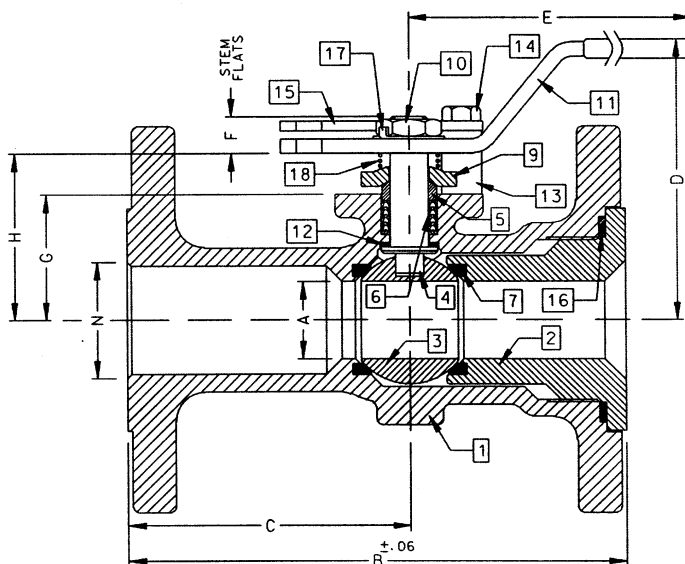
STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Boss for Bleed / Drain Port
Four Point ISO 5211 Mounting Pad Bolt Circle
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-15-	Wheel Handle
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-69-	Drilled and Tapped Purge Port with Plug

**For Pressure/Temperature Ratings,
Refer to Page N-17, Graph No. 18**



NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT.
87A-407-01	1-1/2"	1.00	6.50	3.69	3.62	6.03	0.47	1.62	2.15	1.392	0.696	0.500	0.287	1/4-20	1.50	9.0
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	18.0

Apollo® 87A-400 Series

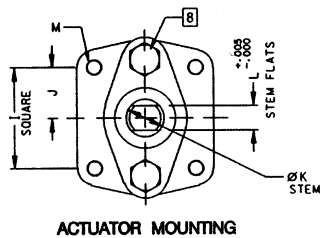
Alloy 20 ANSI Class 150 Flanged Standard Port Ball Valve - 3"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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



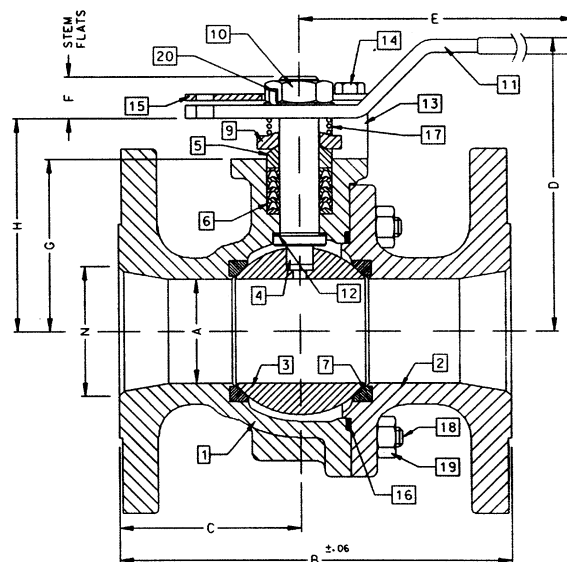
STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Bosses for Bleed / Drain Ports
Four Point ISO 5211 Mounting Pad Bolt Circle
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-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

**For Pressure/Temperature Ratings,
Refer to Page N-17, Graph No. 18**



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	6.23	8.40	0.80	3.93	4.70	1.949	0.974	0.750	0.477	5/16-18	3.00	34.3

NEW FOR
2000

Apollo® 87A-400 Series

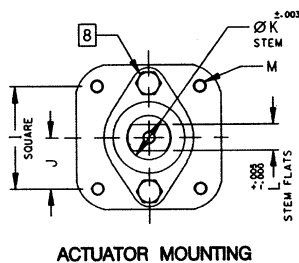
Alloy 20 ANSI Class 150 Flanged Standard Port Ball Valve - 4"

STANDARDS COMPLIANCE

ASME B16.5-	"Pipe Flanges and Flanged Fittings"
ASME B16.10-	"Face to Face Dimensions of Valves"
ASME B16.34-	"Valves - Flanged, Threaded, and Welding End"
API 607-	"Fire Test - Soft Seated Quarter Turn Valves" (-24 option)
API 608-	"Ball Valves - Flanged, Threaded, and Welding End"
MSS SP-25-	"Standard Marking System for Valves"
MSS SP-61-	"Pressure Testing of Steel Valves"
MSS SP-72-	"Ball Valves with Flanged or Buttwelding Ends"
ASME B31.1,- B31.3, & B31.8	Pressure Piping Standards

MATERIALS OF CONSTRUCTION

Description	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)



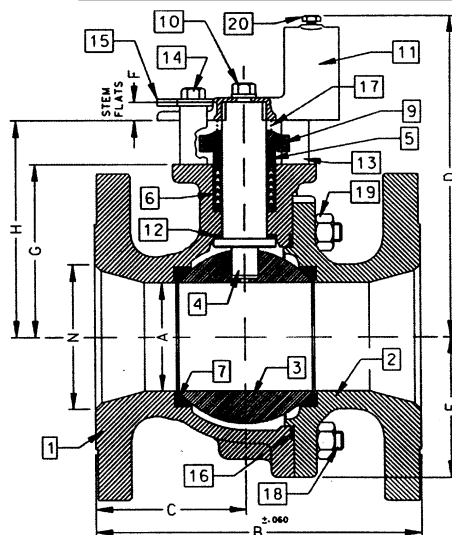
STANDARD FEATURES

Two Position Locking Device
Antistatic Grounded Stem
CHV Style Adjustable Stem Seals
Blow-out Proof Stem Design
Cast Bosses for Bleed / Drain Ports
Four Point ISO 5211 Mounting Pad Bolt Circle
Slot Vented Ball for Thermal Expansion
Vacuum Service to 29 inches Hg

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-01-	Standard (Locking Kit and Grounded Stem)
-14-	Side Vented Ball (See Page J-2)
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball and Stem
-65-	MPTFE Seats and Graphite Packing
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-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

**For Pressure/Temperature Ratings,
Refer to Page N-17, Graph No. 18**



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	73.0