

Apollo Numbering System

Please use all digits when ordering.

00-000-00

MATERIAL OR STYLE

Apollo 2-Piece & Unibody Valves	
70	Bronze
71	Bronze with Pads
72	Carbon Steel, Hi Pressure
73	Carbon Steel
73A	A105 Carbon Steel
74	Nickel
75	Pad-Locking Bronze
76	CF8M Stainless Steel
76F	CF8M Stainless Steel, Full Port
77	Bronze Full Port
77C	Bronze Full Port Economy
78	Special Valves and Kits
79	Refrigerant Valves
7A	Chlorine Carbon Steel
7K	Bronze Full Port Drain
80	Bronze, UL Listed
81	Bronze, UL Listed Plain Ball
82	Bronze 3-Piece Full Port
89	Cast Carbon Steel w/ Pads
9A	Bronze, Heavy Patt., Unibody
90	Bronze, Unibody UL Listed
91	Bronze, Unibody
92	Cast Carbon Steel Unibody
93	Carbon Steel Unibody
95	Bronze & Stop Drain
96	CF8M Stainless Steel Unibody
399	Alloy-20 NPT
Apollo 3-Piece Valves	
83A	CS 3-Piece 1500 lb Full Port
83B	CS 3-Piece ASME Class 600 Full Port
86A	SS 3-Piece 1500 lb Full Port
86B	SS 3-Piece ASME Class 600 Full Port
86C	Alloy-20 3-Piece, ASME Class 600 Full Port
83R	CS 3-Piece, Full Port (2" & 3" only)
86R	CS 3-Piece, Full Port (2" & 3" only)
Apollo Flanged Valves	
87A	CF8M SS Flanged
87A	Alloy 20 Flanged
87B	CF8M SS Flanged Unibody
88A	Carbon Steel Flanged
88B	Carbon Steel Flanged Unibody

TYPE

Apollo 2-Piece & Unibody Valves	
1	NPT Female or Std Connection
2	Solder/Socket Weld
3	Union End x NPT (70-3) Double UNION END (73-3, 76-3)
4	Union End x Solder Socket Weld Double Union End (76-4)
5	Spring Return Handle
6	3-Way NPT
7	Full Port Refrigeration Valves
8	Male X Female NPT
9	3-WAY Solder / O-Ring Boss (70-9) SAE Straight Threads (72, 77)

Apollo 3 Piece Valves	
1	NPT Female
2	Solder/Socket Weld
3	Schedule 5 Butt Weld
4	Schedule 10 Butt Weld
5	Schedule 40 Butt Weld
6	Schedule 80 Butt Weld

Apollo Flanged Valves	
1	Class 150 Standard Port
2	Class 150 Full Port
3	(AAR Valves)
4	Class 150 Standard Port Alloy 20 (87A)
5	Class 150 Full Port Alloy 20 (87A)
6	Class 300 Full Port Alloy 20 (87A)
7	Class 300 Standard Port
8	Class 300 Standard Port Alloy 20 (87A)
9	Class 300 Full Port

VARIATIONS

0	Standard Configuration
3	Ni-Cu Ball & Stem
4	SS Ball & Stem
8	SS Stem
9*	Pinned Retainer
A	Alloy 20
H	Hastelloy® C Ball & Stem
N	Nickel

* Bronze Valves only

Apollo Numbering System

NOTE: Not all options and combinations available on all sizes and series.
Review the specific Technical Sheet to determine availability.

Modifying Suffixes

- The "01" suffix represents the standard configuration detailed in the Technical Literature.
- If an option is desired, replace the "01" suffix with the suffix of the option.
- If multiple options are desired, replace the "01" suffix with the desired suffixes in the order shown below.
Example: 87A-10A-1424MG

SIZE

1	1/4"
2	3/8"
3	1/2"
4	3/4"
5	1"
6	1.25"
7	1.5"
8	2"
9	2.5"
0	3"
A	4"
C	6"
E	8"
G	10"
H	12"

OPTIONS

-01-	Standard Configuration
-02-	Grounded Stem
-03-	Obsolete (1.25" Stem Extension)
-04-	2.25" Stem Extension
-05-	Plain Ball (No Chrome)
-07-	Tee Handle
-08-	90 Degree Reverse Stem
-10-	SS Lever & Nut
-11-	Therma-Seal
-12-	Stamped "157 SWP" & Bagged
-13-	Stamped "157 SWP"
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel (Round)
-16-	Chain Lever - Vertical
-17-	Rough Chrome Plated
-18-	Plain Yellow Grip
-19-	Lock Plate
-20-	Slot Vented Ball (Bi-Directional)
-21-	UHMWPE Trim (Non-PTFE)
-22-	Viton Union Seals
-23-	Tank Flange (2" 3-pc Only)
-24-	Graphite Packing
-26-	Chevron Packing, Vented, Assd Dry, Monel Trim (7A)
-27-	SS Latch Lock Lever & Nut
-29-	Graphite Packing & Seals
-30-	Cam-Lock & Grounded
-31-	7B Series w/ Boss not Drilled/Tapped
-32-	SS Tee Handle & Nut
-33-	76-300 Series w/ Pad Drilled/Tapped
-34-	Nylatron Seats (96 Series)
-35-	Virgin TFE Trim (PTFE)
-36-	SS Hi-Rise Round Handle, SS Nut
-38-	Peek Seats & Bearing (Graphite Pkg and Seals)
-39-	SS Hi-Rise Locking Wheel Handle, SS Nut
-40-	CYL-LOC & Grounded
-41-	Auto Drain
-42-	Non-Vented Ball - No Hole in Slot (CS & SS)
-43-	CYL-LOC, Grnd B&S, 680 Loctite or 3 Tack Welds
-44-	Seal Weld 76-100 & 89-100
-45-	Less Lever & Nut (Bare Stem)
-46-	Latch-Lock Lever - Lock in Closed Position Only
-47-	SS Oval Latch-Lock Handle & Nut
-48-	SS Oval Handle (No Latch) & Nut
-49-	Assembled Dry
-50-	2.25" Locking Stem Extension
-51-	One Tack Weld
-52-	Two Tack Welds
-53-	Three Tack Welds
-54-	Four Tack Welds
-56-	Multifill Seats (MPTFE)
-57-	Oxygen Cleaned
-58-	Chain Lever - Horizontal
-59-	SS External Trim - 3-Piece and Flanged

-60-	Grounded Ball & Stem
-62-	Body Center Section
-63-	NPT X Solder/Socket Weld
-64-	250 psi SWP (Steam Working Pressure)
-65-	Multi Fill Seats & Graphite Packing
-66-	FNPT X Butt Weld
-67-	Cleaned for Industrial Gas - Carbon Steel Valves
-69-	Purge Ports (Drilled/Tapped at Bottom & Approx. 45 Degree from Top)
-70-	4" Extended Bonnet
-72-	RTFE Packing
-73-	TFE Packing - Spiral Wound Body Seals - TFE Fillers - Flanged BV
-75-	MPTFE Seats, PTFE Packing, RPTFE Gaskets
-76-	Live Loaded 87A/88A Series (Lever)
-77-	Live Loaded 87A/88A Series (Gear & Actuated)
-78-	Delrin Seats
-79-	Nylon Seats/Graphite Packing 72 Series
-80-	Dyneon TFM 1600 Seats, PTFE Chev. Pkg, RTFE Seal, PEEK Bearing
-81-	Graphite Packing with Braided End Rings (Flanged Valves)
-82-	Flat Face Flanges
-83-	SS Tee Handle & Nut (SS Version of -07) 77B Series
-84-	Reverse SS Lever & Nut (77B Series)
-85-	Short SS Tee Handle & Nut (Silicone brz retainer) (1/2" 77B Series)
-86-	Reverse Locking SS lever (77B Series) (Lckg version of -84)
-87-	Safety Latch (87A/88A Series)
-88-	Panel Mount - 60A Series
-89-	PFA Seats
-90-	Double Packed Extended Bonnet (Flange Valves)
-9P-	Double Packed Extended Bonnet with Port
-93-	Obsolete (-03 & Balancing Stop)
-94-	-04 & Balancing Stop
-97-	Grnd, Wheel Handle, Pinned or Tack Welded
-99-	For 7B Series - 99A Less Lever, w/ Site Tap - 99B Less Lever, No side Tap
-AR	Actuator Ready (MPTFE Seats, Live Loaded, Less Lever)
-BC-	Ball Check
-CH-	Cleaned for Chlorine - Vented Ball
-DP-	Dye Penetrate
-HC-	3/4" Hose Threaded Retainer w/ Brass Cap & Chain
-MG-	Gear Operated, Standard Hand Wheel
-MH-	Gear Operated, Standard Hand Wheel & Lockout Device
-MJ-	Gear Operated, Oversize Hand Wheel
-MK-	Gear Operated, Oversize Hand Wheel & Lockout Device
-MP-	Material Positive (PMI Testing)
-P01-	British Parallel Threads
-SR-	Spring Return Handle for 83A/B and 86A/B Series
-SV-	Safety Vent - 77-100/7K-100 Series (Auto Drain)
-SW-	Limit Switch Mounted
-T01-	British Taper Threads
-TH-	Tested, Hydrostatic
-TC-	Tested, Hydrostatic w/ Certification
-TD-	Tested, API-6D
-TR-	Tested Hydrostatic w/ Certification, and MTR
-TS-	Tested, Special, Customer Specified
-TW-	Tested, Hydrostatic w/ Witness & Certification

WARRANTY INFORMATION

Terms & Conditions

TERMS & CONDITIONS OF SALE

- Payment: 2% 10th prox. Net 30 days.
- All prices F.O.B. shipping point with freight allowed on shipments of 750 pounds and/or \$5,000 net minimum to all shipping points within the United States excluding Alaska and Hawaii. No freight allowed on Air Freight or Parcel Post shipments. Claims for shortages must be made within 10 days of receipt of material. Our responsibility ends when a delivery receipt is furnished us by the carrier.
- No invoice rendered For Less than \$50.00.
- No freight will be allowed on Air Freight, Air Express, Parcel Post or U.P.S. shipments.
- All Conbraco products may be combined to make sufficient weight for full freight allowance.
- Phone order quoted prices are subject to correction. Prices and designs are subject to change without notice.
- Orders for material of special design or specification are made to customer's order and are not subject to cancellation or return.
- All goods returned to us will not be accepted unless a full explanation has been made and our written authorized permission obtained in advance. All goods returned - if accepted - will be credited at invoice price, less 30% for service and rehandling charges, plus shipping expenses.
- We reserve the right to adjust orders to box quantities.



WARRANTY AND LIMITATIONS OF LIABILITY

Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of FIVE years from the date of delivery to you, our initial purchaser. This warranty applies to Apollo brand product with "Made in the USA" markings only.

Should any failure to conform to this warranty appear within FIVE years after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco's recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco's own expense.

APOLLO INTERNATIONAL PRODUCTS: Conbraco Industries, Inc. warrants its International products, to its initial purchaser only, that its international products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of TWO years from the date of delivery to you, our initial purchaser.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESSED OR IMPLIED, EXCEPT THE WARRANTY OF TITLE AND AGAINST PATENT INFRINGEMENT. Correction of non-conformities, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of Conbraco to our initial purchaser, with respect to the goods, whether based on contract, negligence, strict tort or otherwise. It is the intention of Conbraco Industries, Inc. that no warranty of any kind, whether expressed or implied shall pass through our initial purchaser to any other person or corporation.

LIMITATION OF LIABILITY: Conbraco Industries, inc. SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, DAMAGES OR TO LOSS OF OTHER PROPERTY OR EQUIPMENT, LOSS OF PROFITS OR REVENUE, COST OF CAPITAL, COST OF PURCHASED OR REPLACEMENT GOODS, OR CLAIMS OF CUSTOMERS OF OUR INITIAL PURCHASER. THE REMEDIES OF OUR INITIAL PURCHASER, AND ALL OTHERS, SET FORTH HEREIN, ARE EXCLUSIVE, AND THE LIABILITY OF CONBRACO WITH RESPECT TO SAME SHALL NOT, EXCEPT AS EXPRESSLY PROVIDED HEREIN, EXCEED THE PRICE OF THE GOODS UPON WHICH SUCH LIABILITY IS BASED.

* It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.

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ASME FLANGED BALL VALVES

Features and Benefits

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



STANDARDS COMPLIANCE:

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

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"
ASME B16.33	"Manual Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig"
ASME B16.38	"Large Metallic Valves for Gas Distribution (Manually Operated NPS 2.5" to 12", 125 psig)"
ASME B31.1	"Power Piping"
ASME B31.3	"Chemical Plant and Petroleum Refinery Piping"
ASME B31.8	"Gas Transmission and Distribution Piping Systems"
API 607, 5th edition	"Fire Test - Soft Seated Quarter Turn Valves" (-24 Option Required)
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 Buttweld Ends"
UL 125	"Valves for Anhydrous Ammonia and LP-Gas (Other than Safety Relief)"
NSF/ANSI 61 (2010)	Section 8, Annex F & G
NSF-372	Drinking Water System Components - Lead Content

STANDARD FEATURES:

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

- Two Position Locking Device (Valves 6" FP, 8" SP and smaller)
- CHV Style Adjustable Stem Seals
- Four Point ISO 5211 Mounting Pad Bolt Pattern
- Slot Vented Ball for Thermal Expansion
- Rated 150 psig Saturated Steam
- Anti-static Grounded Ball and Stem
- Blow-out Proof Stem Design
- Cast Boss for Bleed / Drain Port
- Vacuum Service to 29 inches of Hg
- NACE MR0175 (2000) Compliance on all 87A/87B and 88A/88B Valves
- NACE MR0103 (2003) Compliance on all 87A/87B and 88A/88B Valves

PRODUCT APPROVALS:

CSA (Reference: ASME B16.33 & B16.38)

UL (Reference: Control Number 195H)

- UL (YSDT) LP-Gas Shut-Off Valves
- UL (MHKZ) Manual Valves
- UL (YRBX) Flammable Liquid Shut-Off Valves
- UL (YRPV) Gas Shut-Off Valves
- UL (YQNZ) Compressed Gas Shut-Off Valves
- UL (YQAR) Anhydrous Ammonia Shut-Off Valves

87A-200 SERIES

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

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



STANDARD MATERIAL LIST

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

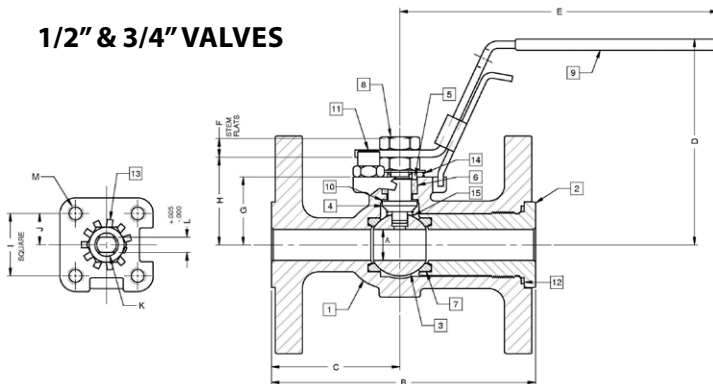
VARIATIONS AVAILABLE:

87H - Hastelloy
87M - Monel
87N - Nickel

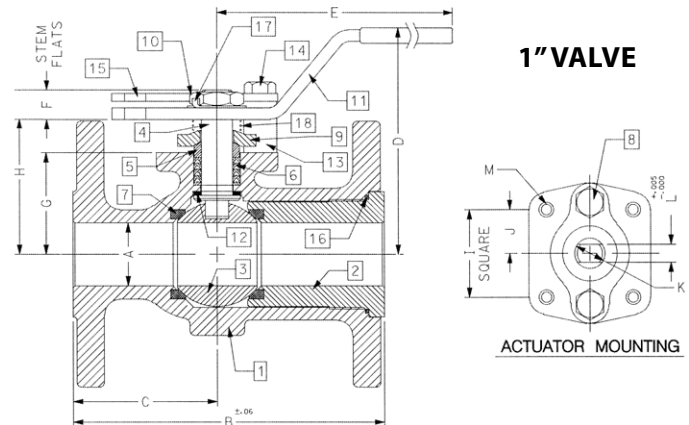
OPTIONS AVAILABLE: (More information in Section J)

(SUFFIX)	OPTION
-01	Standard Configuration
-14-	Side Vented Ball (Uni-Directional)
-15-	Wheel Handle, Steel
-21-	UHMWPE Seats
-24-	Fire Safe (Graphite Packing and Seal)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Port with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-90-	4" Extended Bonnet with Double Packing
-9P-	4" Extended Bonnet with Double Packing & Port
-PM-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)

1/2" & 3/4" VALVES



1" VALVE



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

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

