Overview

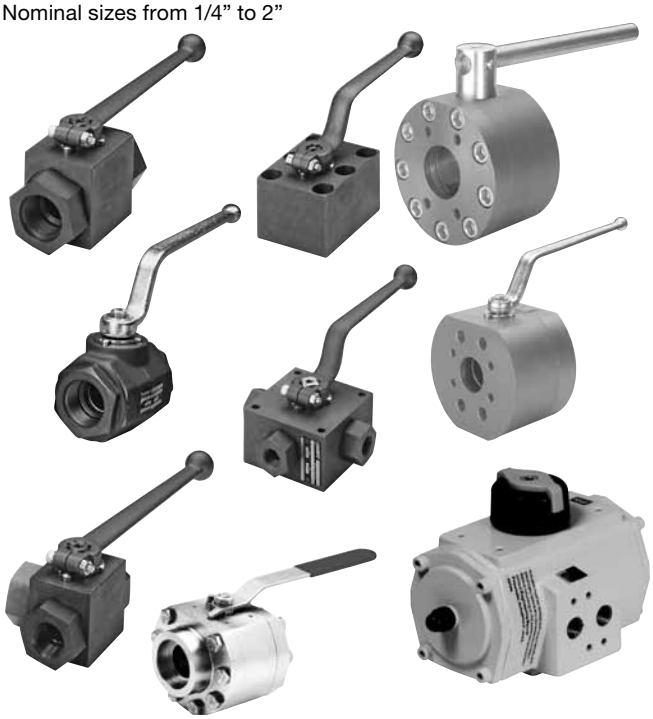
Standard Solutions

HYDAC manufactures a complete line of valves. Our standard product offerig includes:

High Pressure Ball Valves

(see pages 3 - 28)

Nominal sizes from 1/4” to 2”



Flow Control Valves

(see pages 41 - 55)

Needle Valves, Flow Control Valves, Check Valves

(Inline, Manifold Mount, Cartridge)

Process / Automated Valves

(see pages 29 - 40)

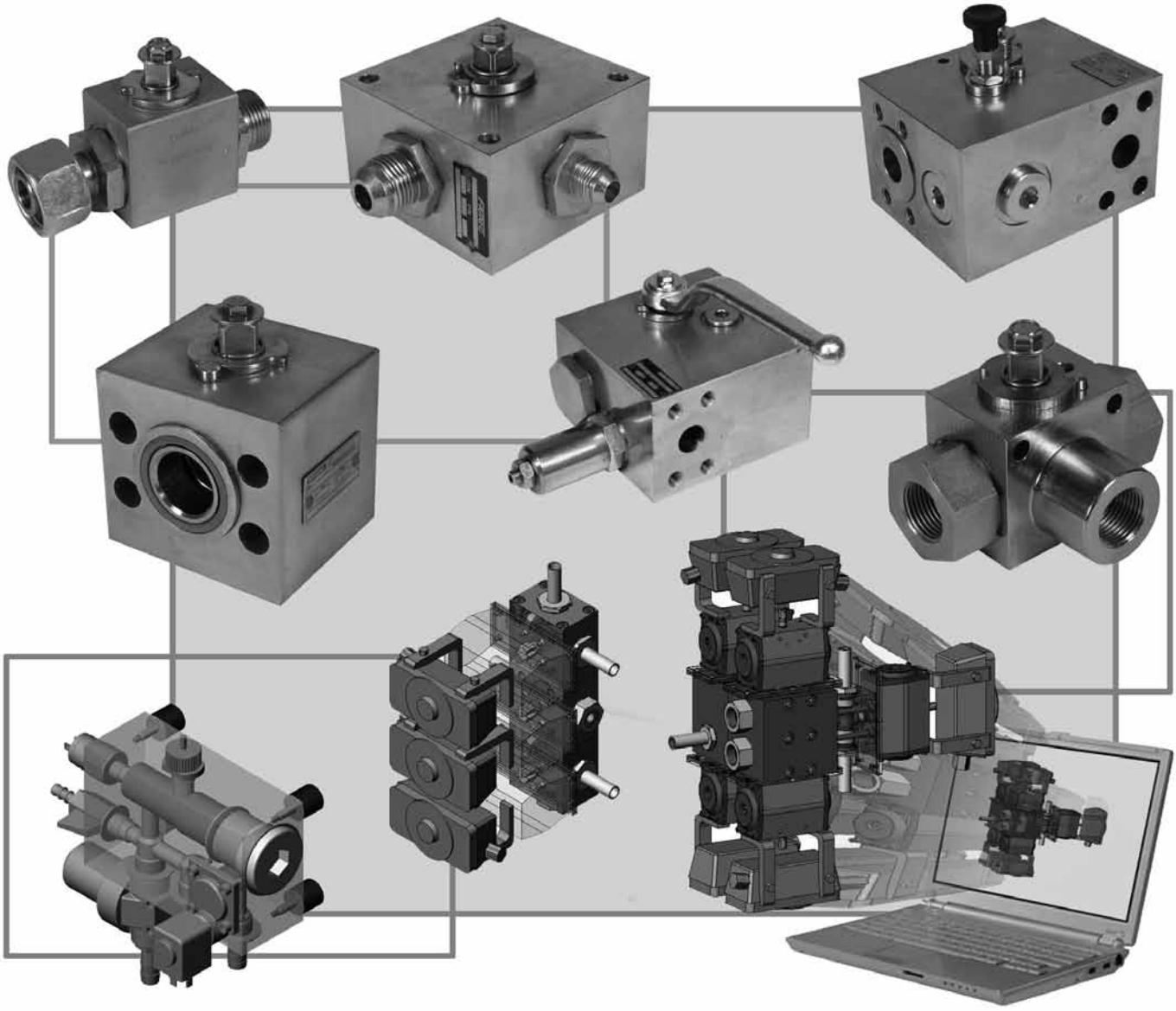
Cartridge Valves

(see pages 56 - 70)

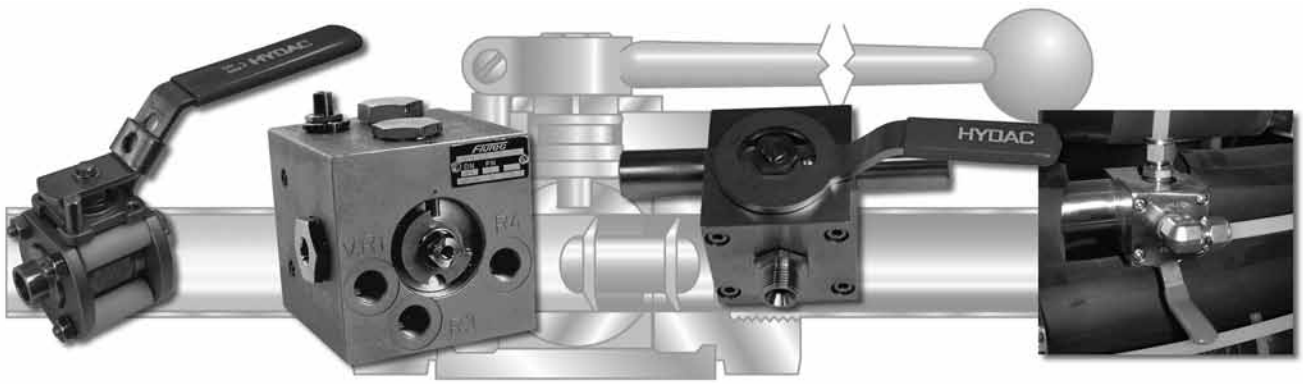
Hose Break Valves, Shuttle Valves, Automatic Air Vent Valves, 2-way Solenoid Cartridge Valves, 3-way Solenoid Cartridge Valves, Pressure Relief Valves

Custom Solutions

HYDAC is also a market leader in providing custom valve solutions. Our engineers work with yours to develop unique solutions that save time and money by simplifying inventory and installation. From simple modifications of standard product to complete custom manifolds, we will provide you a successful solution for your application. For more information on custom solutions, please contact product management at **1-877-GO HYDAC**.



HYDAC Accessories GmbH has done significant work in the Automotive Paint Industry.
Many custom and product developments are in the works. Contact HYDAC for additional information



Overview

2-way Ball Valves

KHB Series *(see pages 5 - 11)*
Block Bodies
Sizes 1/4" - 1"

2-way Ball Valves

KHM Series *(see pages 5 -12)*
Forged Bodies
Sizes 1 1/4" - 2"

2-way Manifold Mounted Ball Valves

KHP Series *(see page 15)*
Sizes 3/8" - 2"

3-way Diverter Ball Valves

KHB3K Series *(see page 13)*
Sizes 1/4" - 1"

Multiway Ball Valves

KH3 & KH4 Series *(see page 17)*
Sizes 1/4" - 3/4"

Direct Mount SAE Flange

KHF3/6 Series *(see page 25)*
Sizes 1/2" - 2"

Direct Mount SAE Flange

KHF3 Series *(see page 26)*
Sizes 2 1/2" - 4"

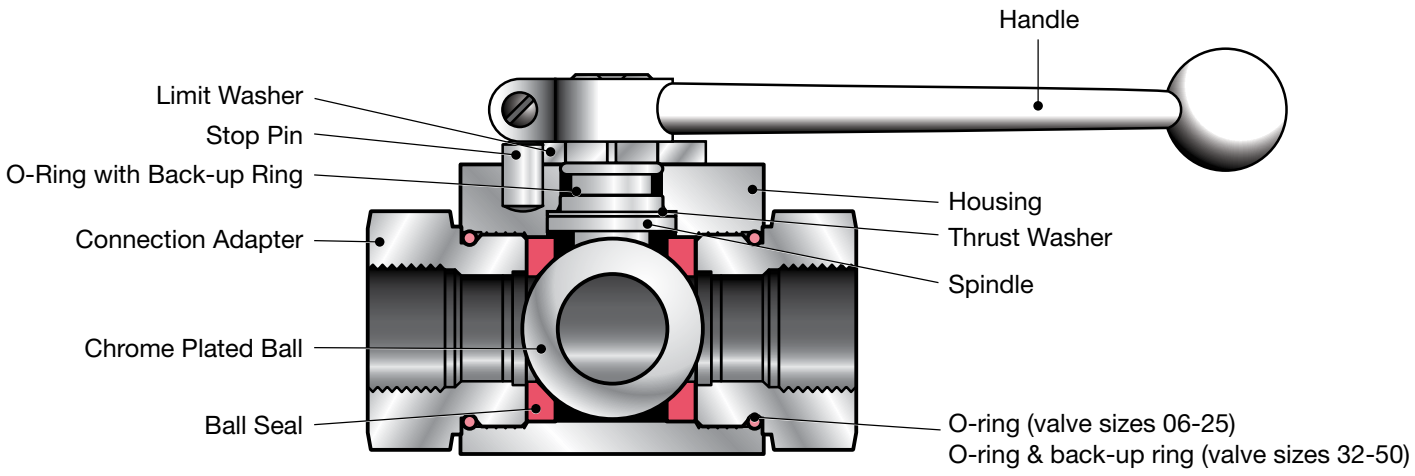
Ball Valve Actuators

For KHB & KHM Series *(see page 19)*
Pneumatic Operation

3 Piece Ball Valves

KHM3H Series *(see page 27)*
Designed in accordance with ANSI B16.34 and BS5351
Sizes 1/2" - 4"

Standard Ball Valve Design Features & Options
KHB, KHM, KHP, KHB3K Series



Description

The HYDAC family of dependable high pressure ball valves provides full, unrestricted flow and positive shut-off of fluids and gases under extreme service conditions. Models are available to accommodate system pressures up to 7,250 PSI. Since a variety of materials are available, HYDAC valves can be used with various fluids and gases including petroleum based oils and some water glycols.

Valve Design

The design of HYDAC ball valves is based on the “floating ball” principle which allows the ball to turn freely between the ball seals. A positive seal is attained by fluid pressure acting on the upstream surface of the ball and producing a constant uniform contact between the downstream ball seal and the ball. The ball is operated by a sealed spindle with a projecting square end to which the control handle or optional actuator is attached. *Ball valves are intended to be used as on/off flow control devices and are not to be used to throttle fluid flow. The valves should always be either fully open or closed.*

Product Features

- Full passage for unrestricted flow of medium
- Floating ball provides positive seal
- Direction of flow indicated by milled slot in control spindle
- Valve positioning controlled by a stop pin and limit washer
- Fluoroelastomer O-rings *(standard)*
- Phosphate coated carbon steel valve body *(standard)*

Available Options

HYDAC can furnish ball valves with special options including:

- Locking devices
- Stainless steel valve bodies
- Pneumatic or electrical actuators
- Limit switch
- Off-set or straight control handles
- Custom solutions - Contact HYDAC

KHB & KHM Series

2-way Ball Valves with SAE & NPT Connections

KHB Series
Block Housing

KHM Series
Forged Housing

Specifications

- 1/4" - 2" Full Port Design
- NPT or SAE O-Ring connections
- Polyacetal Ball Seals *(standard)*
- FPM (Fluoroelastomer) O-Rings *(standard)*
- Carbon Steel Housing
- Block Housing - Sizes 06 - 25
- Forged Housing - Sizes 32 - 50
- Operating Pressure to 7250 psi Depending on Valve Size and Seal Materials Selected
- Temp Range: 14˚F to 176˚F with Standard materials (1114) up to max. pressure rating. Extended Temperature range -40˚F to 392˚F on request with special materials and reduced pressure rating (see page 24).

Model Code

KHB - 16 NPT - 1 1 1 4 - 11X - L

Housing Type

KHB	=	Block Housing, Carbon Steel - Sizes 06 - 25
KHM	=	Forged Housing, Carbon Steel - Sizes 32 - 50
KHM	=	Forged Housing, Stainless Steel - Sizes 06 - 50 *(see page 12 for details)*

Nominal Sizes

Nom Size	SAE Tube Size	SAE Thread Size	NPT Pipe Size	NPT Pipe øD
06	-4	7/16-20 UNF	1/4"	0.540"
10	-6	9/16-18 UNF	3/8"	0.675"
16	-8	3/4-16 UNF	1/2"	0.840"
20	-12	1-1/16-12 UN	3/4"	1.050"
25	-16	1-5/16-12 UN	1"	1.315"
32	-20	1-5/8-12 UN	1-1/4"	1.660"
40	-24	1-7/8-12 UN	1-1/2"	1.900"
50	-32	2-1/2-12 UN	2"	2.375"

Connection Type

NPT	=	ANSI/ASME 1.20.1 Taper Pipe Thread
SAE	=	SAEJ1926 Ports with ISO 725 Threads and O-Ring Sealing

Body Material

1	=	Carbon Steel *(phosphate coated)*
3	=	Stainless Steel *(see page 12 for ordering details)*

Spindle and Ball Material

1	=	Carbon Steel *(ball is chrome plated, spindle is zinc plated)*
3	=	Stainless Steel

Ball Seal Material

1	=	Polyacetal *(standard)*
3	=	PTFE *(1500 psi max)*
8	=	PEEK

O-Ring Material

2	=	NBR *(Buna)*
3	=	PTFE Spindle Seals and FPM *(fluoroelastomer)* O-Rings *(1500 psi max)*
4	=	FPM *(fluoroelastomer) (standard)*
5	=	EPR

Handle Codes

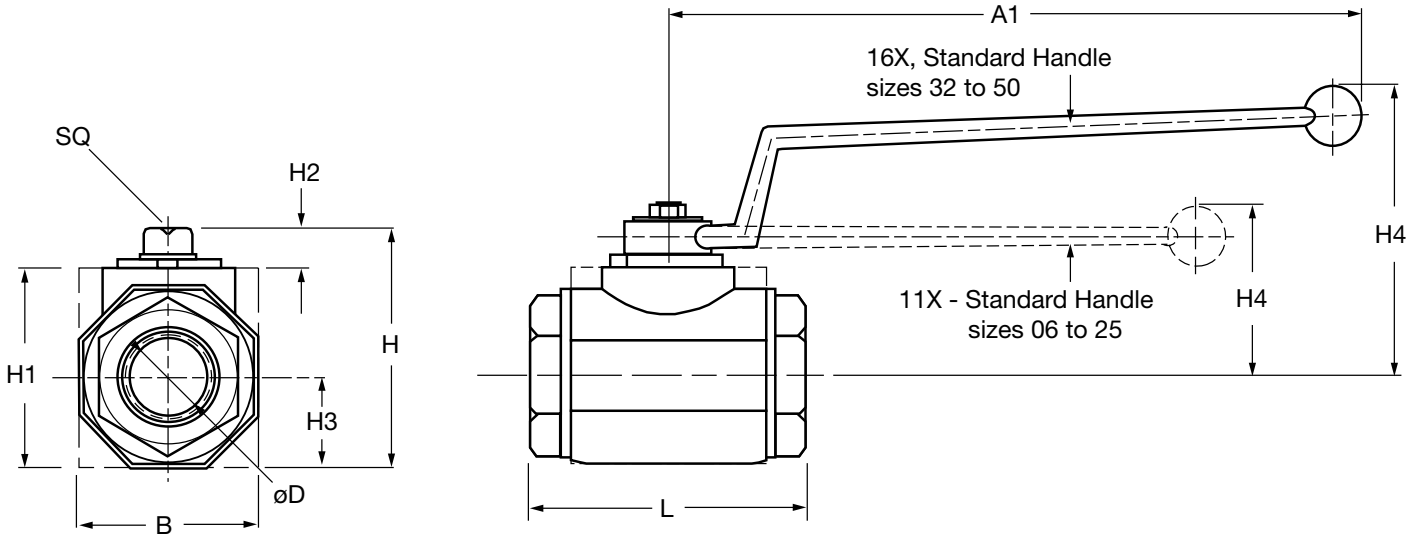
09x	=	Without Handle *(see page 24 to order handle separately)*
11x	=	Straight Aluminum, Sizes 06-25
16x	=	Offset Steel, Sizes 32-50

Locking Device Option

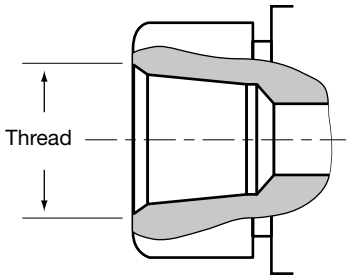
L	=	Locking Device *(see page 21 to order locking device separately)*
LS	=	Locking Device with 5 amp Limit Switch, Available for sizes 20-50 *(Not available with PTFE Spindle Seals)*

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

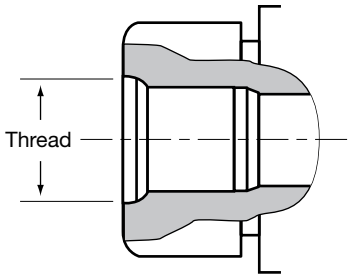
Dimensions



NPT Port
Internal Thread



SAE Port
Straight Thread
O-Ring Boss



Model	Thread	max. psi*	A1	B	øD	H	H1	H2	H3	H4	L	SQ	Weight
KHB-06SAE	7/16-20UNF (SAE 4)	7250	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (13)	1.65 (42)	2.72 (69)	0.35 (9)	0.66 (0.3)
KHB-06NPT	1/4” NPT												
KHB-10SAE	9/16-18UNF (SAE 6)	7250	5.91 (150)	1.26 (32)	0.39 (10)	2.09 (53)	1.57 (40)	0.33 (8.5)	0.67 (17)	1.69 (43)	2.83 (72)	0.35 (9)	1.10 (0.5)
KHB-10NPT	3/8” NPT												
KHB-16SAE	3/4-16UNF (SAE 8)	5800	6.88 (175)	1.50 (38)	0.63 (16)	2.48 (63)	1.77 (45)	0.43 (11)	0.75 (19)	2.01 (51)	3.27 (83)	0.47 (12)	1.65 (0.75)
KHB-16NPT	1/2” NPT												
KHB-20SAE	1-1/16-12UN (SAE 12)	5000	7.88 (200)	1.89 (48)	0.79 (20)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	2.28 (58)	3.74 (95)	0.55 (14)	2.87 (1.3)
KHB-20NPT	3/4” NPT												
KHB-25SAE	1-5/16-12UN (SAE 16)	5000	7.88 (200)	2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	2.40 (61)	4.45 (113)	0.55 (14)	4.41 (2.0)
KHB-25NPT	1” NPT												
KHM-32SAE	1-5/8-12UN (SAE 20)	5000	12.00 (305)	2.95 (75)	1.18 (30)	4.06 (103)	3.35 (85)	0.47 (12)	1.48 (37.5)	5.94 (151)	4.33 (110)	0.67 (17)	6.84 (3.1)
KHM-32NPT	1-1/4” NPT												
KHM-40SAE	1-7/8-12UN (SAE 24)	5000	12.00 (305)	3.35 (85)	1.50 (38)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	6.18 (157)	5.12 (130)	0.67 (17)	9.70 (4.4)
KHM-40NPT	1-1/2” NPT												
KHM-50SAE	2-1/2-12UN (SAE 32)	5000	12.00 (305)	4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)	0.47 (12)	2.07 (52.5)	6.46 (164)	5.51 (140)	0.67 (17)	14.55 (6.6)
KHM-50NPT	2” NPT												

KHB & KHM Series

2-way Ball Valves with Split Flange Connections

KHB Series
Block Housing

KHM Series
Forged Housing

Specifications

- 1/2" - 2" Full Port Design
- SAE Code 61 and 62 Split Flange Connections
- Carbon Steel Housing
- Block Housing - Sizes 16 - 25
- Forged Housing - Sizes 32 - 50
- Polyacetal Ball Seals *(standard)*
- FPM *(Fluoroelastomer)* O-Rings *(standard)*
- Operating Pressure to 5800 psi Depending on
- Valve Size and Seal Materials Selected
- Temp Range: 14˚F to 176˚F with Standard materials (1114) up to max. pressure rating. Extended Temperature range -40˚F to 392˚F on request with special materials and reduced pressure rating *(see page 24)*.

Model Code

KHB - 20 F3 - 1 1 1 4 X - 12X - L

Housing Type
- KHB = Block Housing, Carbon Steel - Sizes 16-25
- KHM = Forged Housing, Carbon Steel - Sizes 32-50
- KHM = Forged Housing, Stainless Steel - Sizes 06 - 50 *(see page 12 for details)*

Nominal Sizes

Valve Size	Nominal Flange Size	Flange Dash Size
16	1/2"	-8
20	3/4"	-12
25	1"	-16
32	1-1/4"	-20
40	1-1/2"	-24
50	2"	-32

Connection Type

SAE J518 Four bolt split flange type:
- F3 = Standard Pressure Series, Code 61
- F6 = High Pressure Series, Code 62

Body Material
- 1 = Carbon Steel *(phosphate coated)*
- 3 = Stainless Steel *(see page 12 for ordering details)*

Spindle and Ball Material
- 1 = Carbon Steel *(ball is chrome plated, spindle is zinc plated)*
- 3 = Stainless Steel

Ball Seal Material
- 1 = Polyacetal *(standard)*
- 3 = PTFE *(1500 psi max)*
- 8 = PEEK

O-Ring Material
- 2 = NBR *(Buna N)*
- 3 = PTFE Spindle Seals and FPM *(fluoroelastomer)* O-Rings *(1500 psi max)*
- 4 = FPM *(fluoroelastomer) (standard)*
- 5 = EPR

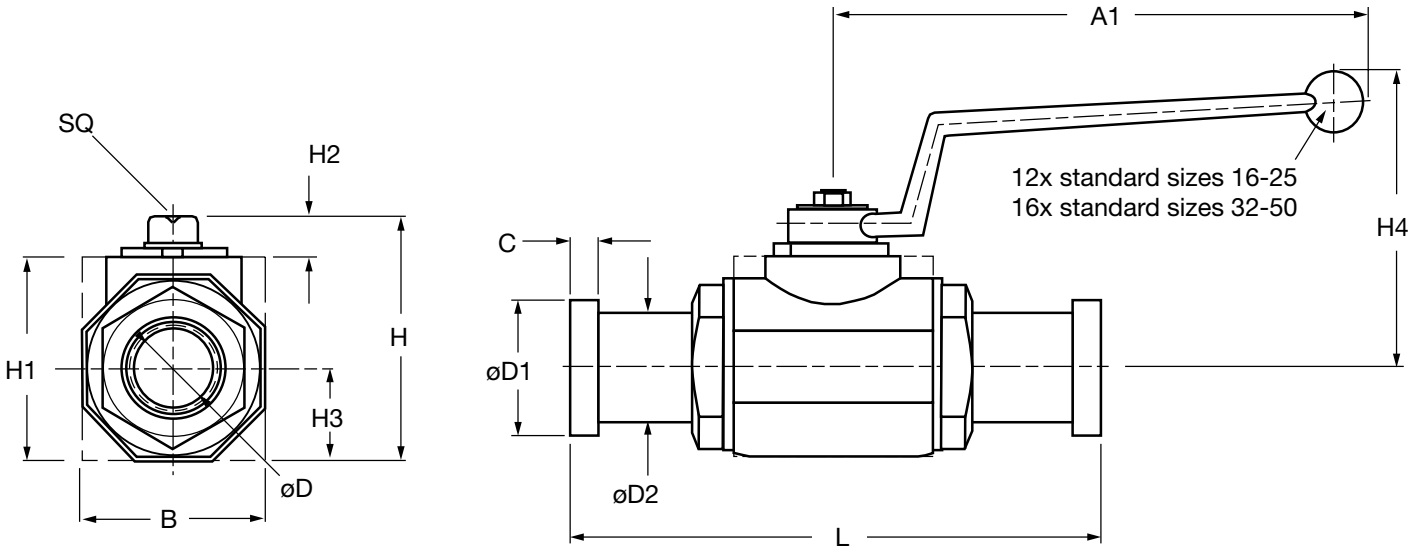
Split Flange Material
- X = Without Split Flanges *(order split flanges separately see page 151)*

Handle Codes
- 09X = Without Handle, Sizes 16-50
- 12X = Offset Aluminum, Sizes 16-25
- 16X = Offset Steel, Sizes 32-50

Locking Device Option
- L = Locking Device *(see page 21 to order locking device separately)*
- LS = Locking Device with 5 amp Limit Switch, Available for Sizes 20-50 *(Not available with PTFE Spindle Seals)*

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Dimensions



For dimensional information on flanges, see page 151

SAE Code 61 [...F3]

Model	max. psi*	Size	A1	B	C	øD	øD1	øD2	H	H1	H2	H3	H4	L	SQ	Weight
KHB-16 F3	5000	1/2”	6.42 (163)	1.50 (38)	0.27 (6.8)	0.51 (13)	1.19 (30.2)	0.94 (24)	2.44 (62)	1.77 (45)	0.43 (11)	0.75 (19)	3.27 (83)	5.94 (151)	0.47 (12)	2.4 (1.1)
KHB-20 F3	5000	3/4”	7.20 (183)	1.89 (48)	0.27 (6.8)	0.75 (19)	1.50 (38.1)	1.24 (31.5)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	3.62 (92)	6.69 (170)	0.55 (14)	4.0 (1.8)
KHB-25 F3	5000	1”	7.20 (183)	2.24 (57)	0.31 (8)	0.98 (25)	1.75 (44.45)	1.50 (38)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	3.74 (95)	6.95 (176.5)	0.55 (14)	5.1 (2.3)
KHM-32 F3	4000	1-1/4”	12.01 (305)	2.95 (75)	0.31 (8)	1.18 (30)	2.00 (50.8)	1.69 (43)	4.06 (103)	3.35 (85)	0.47 (12)	1.48 (37.5)	5.94 (151)	7.54 (191.4)	0.67 (17)	9.0 (4.1)
KHM-40 F3	3000	1-1/2”	12.01 (305)	3.35 (85)	0.31 (8)	1.50 (38)	2.38 (60.35)	1.97 (50)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	6.18 (157)	9.09 (231)	0.67 (17)	13.1 (5.9)
KHM-50 F3	3000	2”	12.01 (305)	4.13 (105)	0.38 (9.6)	1.89 (48)	2.81 (71.4)	2.44 (62)	5.18 (131.5)	4.43 (112.5)	0.47 (12)	2.07 (52.5)	6.46 (164)	9.21 (234)	0.67 (17)	19.2 (8.7)

SAE Code 62 [...F6]

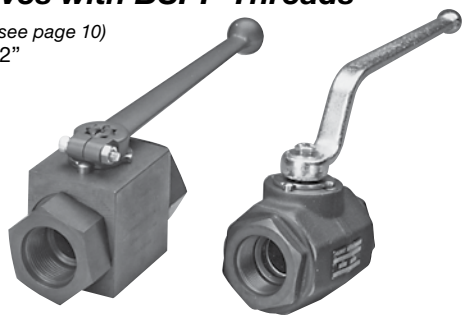
Model	max. psi*	Size	A1	B	C	øD	øD1	øD2	H	H1	H2	H3	H4	L	SQ	Weight
KHB-16 F6	5800	1/2”	6.41 (163)	1.50 (38)	0.31 (7.8)	0.51 (13)	1.25 (31.8)	0.94 (24)	2.44 (62)	1.77 (45)	0.43 (11)	0.75 (19)	3.27 (83)	5.94 (151)	0.47 (12)	2.4 (1.1)
KHB-20 F6	5000	3/4”	7.20 (183)	1.89 (48)	0.35 (8.8)	0.75 (19)	1.63 (41.3)	1.26 (32)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	3.62 (92)	6.69 (170)	0.55 (14)	4.0 (1.8)
KHB-25 F6	5000	1”	7.20 (183)	2.24 (57)	0.37 (9.5)	0.98 (25)	1.87 (47.6)	1.50 (38)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	3.72 (95)	7.81 (198.5)	0.55 (14)	5.4 (2.4)
KHM-32 F6	5000	1-1/4”	12.01 (305)	2.95 (75)	0.41 (10.3)	1.18 (30)	2.13 (54)	1.73 (44)	4.06 (103)	3.35 (85)	0.47 (12)	1.48 (37.5)	5.94 (151)	8.80 (223.4)	0.67 (17)	10.6 (4.8)
KHM-40 F6	5000	1-1/2”	12.01 (305)	3.35 (85)	0.50 (12.6)	1.50 (38)	2.50 (63.5)	2.01 (51)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	6.18 (157)	11.06 (281)	0.67 (17)	15.4 (7.0)
KHM-50 F6	5000	2”	12.01 (305)	4.13 (105)	0.50 (12.6)	1.89 (48)	3.13 (79.4)	2.64 (67)	5.18 (131.5)	4.43 (112.5)	0.47 (12)	2.07 (52.5)	6.46 (164)	12.40 (315)	0.67 (17)	22.5 (10.2)

New Programs / Specialty Ball Valves

HYDAC has received feedback from customers stating that they prefer charts with model codes and part numbers rather than model code trees. As we release new programs, especially within the KHB and KHM product offering, we will include separate pages with tables including model codes and part numbers provided in tables.

2-way Ball Valves with BSPP Threads

KHB & KHM Series *(see page 10)*
Sizes from G1/4" to G2"

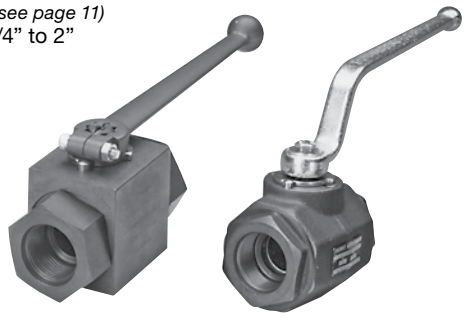


2-way Stainless Steel Ball Valves

KHM Series *(see page 12)*
Nominal Sizes from 1/4" to 2"

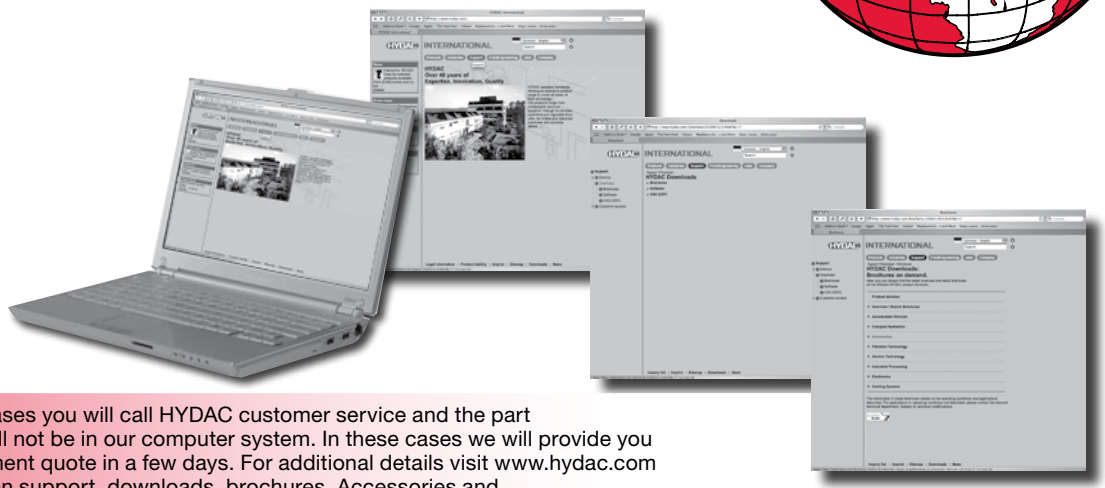
2-way Ball Valves with Steel Ball Seals

KHB & KHM Series *(see page 11)*
Nominal Sizes from 1/4" to 2"



Global Replacement Business

HYDAC Accessories GmbH is located in Germany and produces Ball Valves for the Global Market. Some of the product that they produce is not listed in this catalog.



In some cases you will call HYDAC customer service and the part number will not be in our computer system. In these cases we will provide you a replacement quote in a few days. For additional details visit www.hydac.com and click on support, downloads, brochures, Accessories and check out the literature.

KHB & KHM Series

2-way Ball Valves with BSPP Threads

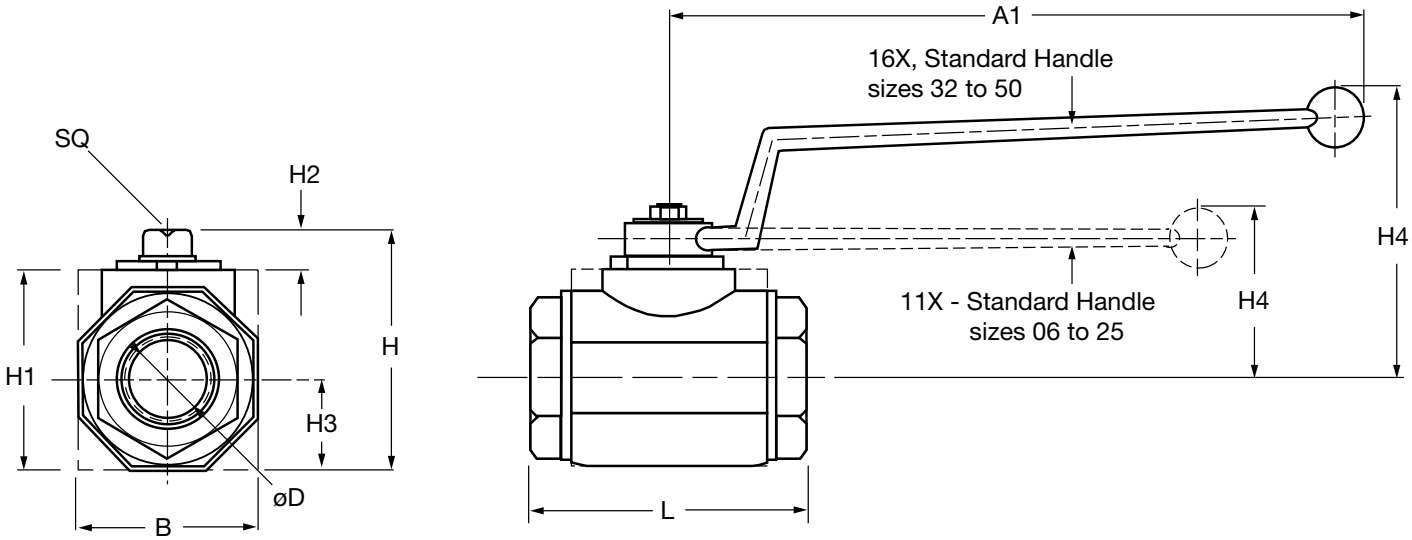
KHB Series
Block Housing

KHM Series
Forged Housing

Specifications

- 1/8" - 2" Full Port Design
- Whitworth Internal Thread to ISO 228
- Carbon Steel Housing
- 1/8" - 1" Zinc Plated *(represented by "- G" at end of model code)*
- 1 1/4" - 2" Phosphate Coated
- Chrome Plated Steel Ball, Zinc Plated Steel Spindle
- Polyacetal Ball Seals and NBR (Buna-N) O-Rings
- Temperature Range: 14˚ to 176˚F at full pressure

Dimensions



Model Code Part Number	*MAX PSI	Thread	A1	B	øD	H	H1	H2	H3	H4	L	SQ	Weight
KHB-G1/8-1112-11X-G 02079550	7250	G1/8"	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (13)	1.65 (42)	2.72 (69)	0.35 (9)	0.66 (0.3)
KHB-G1/4-1112-11X-G 02079551	7250	G1/4"	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (13)	1.65 (42)	2.72 (69)	0.35 (9)	0.66 (0.3)
KHB-G3/8-1112-11X-G 02079552	7250	G3/8"	5.91 (150)	1.26 (32)	0.39 (10)	2.09 (53)	1.57 (40)	0.33 (8.5)	0.67 (17)	1.69 (43)	2.83 (72)	0.35 (9)	1.10 (0.5)
KHB-G1/2-1112-11X-G 02079553	5800	G1/2"	6.88 (175)	1.50 (38)	0.63 (16)	2.48 (63)	1.77 (45)	0.43 (11)	0.75 (19)	2.01 (51)	3.27 (83)	47 (12)	1.65 (0.75)
KHB-G3/4-1112-11X-G 02079554	5000	G3/4"	7.88 (200)	1.89 (48)	0.79 (20)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	2.28 (58)	3.74 (95)	0.55 (14)	2.87 (1.3)
KHB-G1-1112-11X-G 02079555	5000	G1"	7.88 (200)	2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	2.40 (61)	4.45 (113)	0.55 (14)	4.41 (2.0)
KHM-G11/4-1112-16X 02079556	5000	G1-1/4"	12.00 (305)	2.95 (75)	1.18 (30)	4.06 (103)	3.35 (85)	0.47 (12)	1.48 (37.5)	5.94 (151)	4.33 (110)	0.67 (17)	6.84 (3.1)
KHM-G11/2-1112-16X 02079557	5000	G1-1/2"	12.00 (305)	3.35 (85)	1.50 (38)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	6.18 (157)	5.12 (130)	0.67 (17)	9.70 (4.4)
KHM-G2-1112-16X 02079558	5000	G2"	12.00 (305)	4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)	0.47 (12)	2.07 (52.5)	6.46 (164)	5.51 (140)	0.67 (17)	14.55 (6.6)

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)
*Dependent upon valve and seal materials selected.

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

KHB & KHM Series

2-way Ball Valves with Steel Ball Seals For Abrasive Media

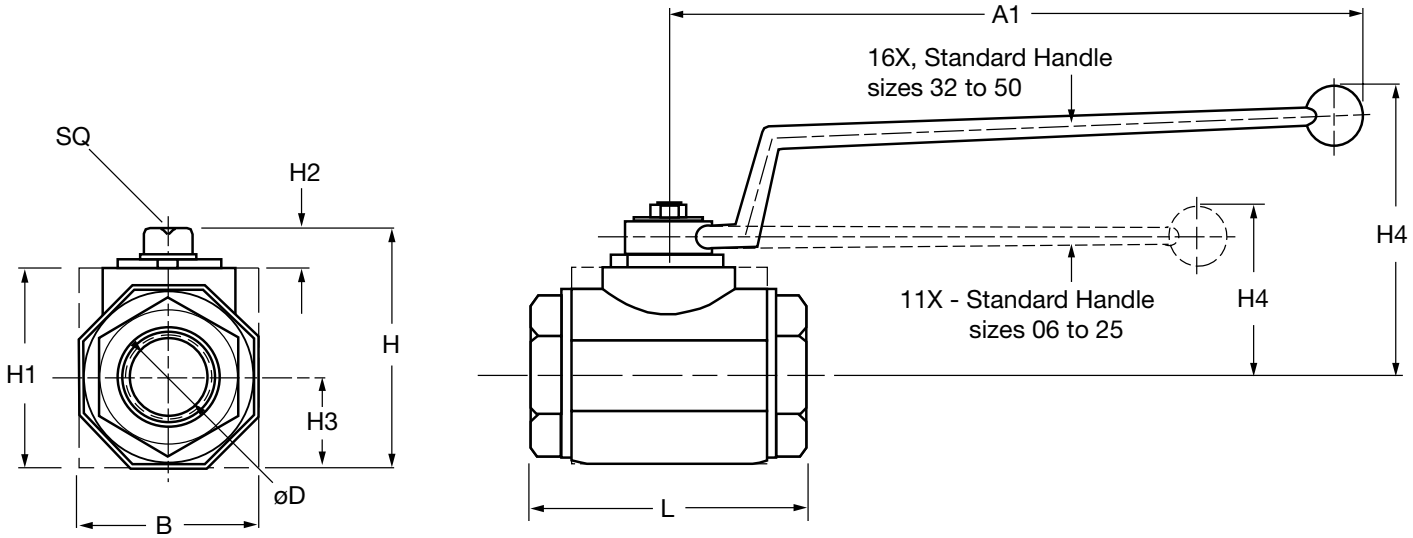
KHB Series
Block Housing

KHM Series
Forged Housing

Specifications

- 1/4" - 2" Full Port Design
- NPT Threads
- Carbon Steel Zinc Plated Housing and Spindle
- Chrome Plated Steel Ball
- Steel Ball Seals and Viton O-Rings
- Temperature Range: 14˚ to 176˚F at full pressure
- Silicon Free *(SF in Model Code)*

Dimensions

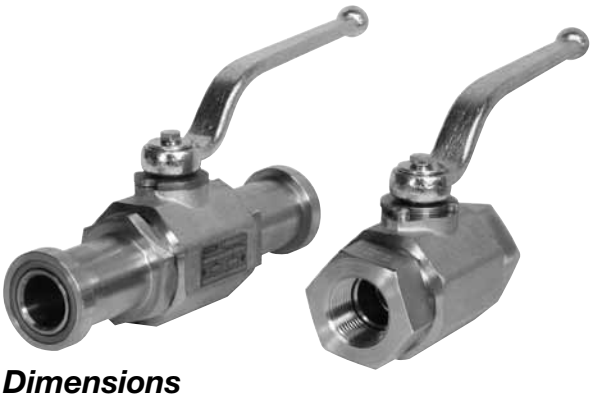


Part Number Model Code	*MAX PSI	NPT Thread	A1	B	øD	H	H1	H2	H3	H4	L	SQ	WGT
KHB-06NPT-111114-11X-G-SF 03203692	7250	1/4"	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (13)	1.65 (42)	2.72 (69)	0.35 (9)	0.66 (0.3)
KHB-10NPT-111114-11X-G-SF 03203716	7250	3/8"	5.91 (150)	1.26 (32)	0.39 (10)	2.09 (53)	1.57 (40)	0.33 (8.5)	0.67 (17)	1.69 (43)	2.83 (72)	0.35 (9)	1.10 (0.5)
KHB-16NPT-111114-11X-G-SF 03203717	5800	1/2"	6.88 (175)	1.50 (38)	0.63 (16)	2.48 (63)	1.77 (45)	0.43 (11)	0.75 (19)	2.01 (51)	3.27 (83)	47 (12)	1.65 (0.75)
KHB-20NPT-111114-11X-G-SF 03203718	5000	3/4"	7.88 (200)	1.89 (48)	0.79 (20)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	2.28 (58)	3.74 (95)	0.55 (14)	2.87 (1.3)
KHB-25NPT-111114-11X-G-SF 03203719	5000	1"	7.88 (200)	2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	2.40 (61)	4.45 (113)	0.55 (14)	4.41 (2.0)
KHM-32NPT-111114-16X-G-SF 03203720	5000	1 1/4"	12.00 (305)	2.95 (75)	1.18 (30)	4.06 (103)	3.35 (85)	0.47 (12)	1.48 (37.5)	5.94 (151)	4.33 (110)	0.67 (17)	6.84 (3.1)
KHM-40NPT-111114-16X-G-SF 03203721	5000	1 1/2"	12.00 (305)	3.35 (85)	1.50 (38)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	6.18 (157)	5.12 (130)	0.67 (17)	9.70 (4.4)
KHM-50NPT-111114-16X-G-SF 03203722	5000	2"	12.00 (305)	4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)	0.47 (12)	2.07 (52.5)	6.46 (164)	5.51 (140)	0.67 (17)	14.55 (6.6)

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)
*Dependent upon valve and seal materials selected.

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

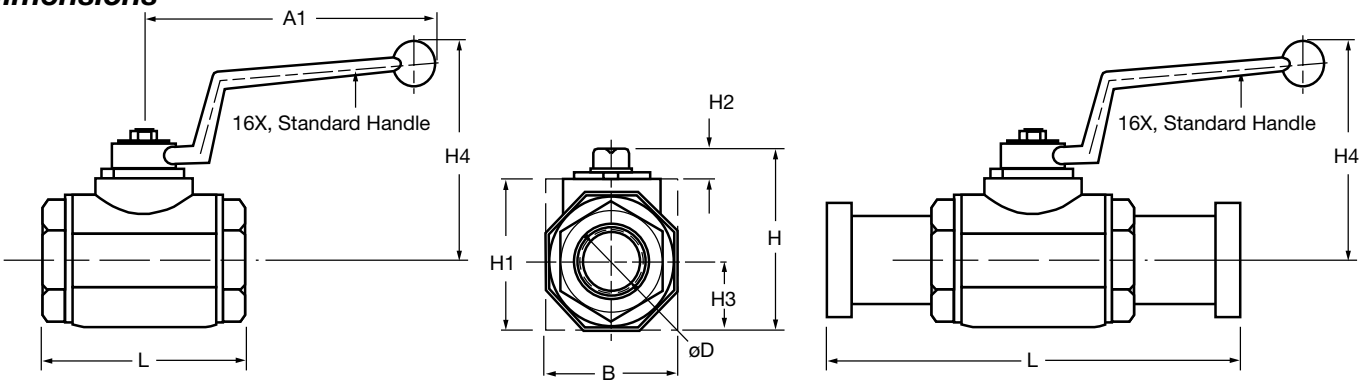
KHM Series
2-way Stainless Steel Ball Valves



Specifications:

- 1/4" to 2" Full Port Design
- Connection types available:
  NPT: Tapered Pipe Threads, ANSI/ASME B.1.20.1
  SAE: SAE J1926/1 Straight Thread O-ring Boss Port
  F3: SAE J518 (Code 61), split flange halves not included.
  F6: SAE J518 (Code 62), split flange halves not included.
- Materials:
  Housing, Ball and Spindle made of 1.4571 SS (~316 SS)
  Polyacetal (POM + MoS2) Ball Seals
  Flurocarbon (FPM) O-rings
- Offset Zinc-plated Steel Handles
- Temperature Range: -4° to 176°F at full pressure

Dimensions



Nom. Size	Connection Size/Type	Model Code	Part Number	Press Rating	Dimensions in millimeters								
					A1	B	øD	H	H1	H2	H3	H4	L
DN 06	1/4" NPT	KHM-06NPT-3314-16X	02078586	7250	101	28	6	49	37	8	14	54	69
(1/4")	SAE-4	KHM-06SAE-3314-16X	02078587	7250	101	28	6	49	37	8	14	54	69
DN 10	3/8" NPT	KHM-10NPT-3314-16X	02078588	7250	101	36	10	53	41	8	18	54	72
(3/8")	SAE-6	KHM-10SAE-3314-16X	02077119	7250	101	36	10	53	41	8	18	54	72
DN 16	1/2" NPT	KHM-16NPT-3314-16X	02078589	5800	175	46	16	66	49	8	23	91	83
	SAE-8	KHM-16SAE-3314-16X	02066415	5800	175	46	16	66	49	11	23	91	83
(1/2")	1/2" code 61	KHM-16F3-3314X-16X	02077118	5000	175	46	16	66	49	11	23	91	150.8
	1/2" code 62	KHM-16F6-3314X-16X	02078590	5800	175	46	16	66	49	11	23	91	150.8
DN 20	3/4" NPT	KHM-20NPT-3314-16X	02066406	5000	175	56	20	78	60	12	28	98	95
	SAE-12	KHM-20SAE-3314-16X	02078591	5000	175	56	20	78	60	12	28	98	95
(3/4")	3/4" code 61	KHM-20F3-3314X-16X	02078592	5000	175	56	20	78	60	12	28	98	169.8
	3/4" code 62	KHM-20F6-3314X-16X	02068045	5000	175	56	20	78	60	12	28	98	169.8
DN 25	1" NPT	KHM-25NPT-3314-16X	02078593	5000	175	65	25	83	66	12	30	101	113
	SAE-16	KHM-25SAE-3314-16X	02078594	5000	175	65	25	83	66	12	30	101	113
(1")	1" code 61	KHM-25F3-3314X-16X	02070901	5000	175	65	25	83	66	12	30	101	176.5
	1" code 62	KHM-25F6-3314X-16X	02073032	5000	175	65	25	83	66	12	30	101	198.5
DN 32	1-1/4" NPT	KHM-32NPT-3314-16X	02062809	5000	306	78	30	104	86	12	39	151	110
	SAE-20	KHM-32SAE-3314-16X	02078359	5000	306	78	30	104	86	12	39	151	110
(1-1/4")	1-1/4" code 61	KHM-32F3-3314X-16X	02077117	4000	306	78	30	104	86	12	39	151	191.4
	1-1/4" code 62	KHM-32F6-3314X-16X	02078595	5000	306	78	30	104	86	12	39	151	223.4
DN 40	1-1/2" NPT	KHM-40NPT-3314-16X	02062807	5000	306	91	38	117	99	12	46	157	130
	SAE-24	KHM-40SAE-3314-16X	02070209	5000	306	91	38	117	99	12	46	157	130
(1-1/2")	1-1/2" code 61	KHM-40F3-3314X-16X	02069236	3000	306	91	38	117	99	12	46	157	231
	1-1/2" code 62	KHM-40F6-3314X-16X	02073038	5000	306	91	38	117	99	12	46	157	281
DN 50	2" NPT	KHM-50NPT-3314-16X	02065778	5000	306	109	48	133	115	12	55	164	140
	SAE-32	KHM-50SAE-3314-16X	02078596	5000	306	109	48	133	115	12	55	164	140
(2")	2" code 61	KHM-50F3-3314X-16X	02078597	3000	306	109	48	133	115	12	55	164	234
	2" code 62	KHM-50F6-3314X-16X	02072531	5000	306	109	48	133	115	12	55	164	315

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in mm.
For information on stainless steel code 61 & 62 flanges, see page 151.

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

KHB3K Series
3-way Diverter Ball Valves

Specifications

- 1/4" - 1" Full Port Design
- 2 Position
- Carbon Steel Housing
- NPT or SAE O-Ring Connections
- Polyacetal Ball Seals *(standard)*
- FPM *(Fluoroelastomer)* O-Rings *(standard)*
- Operating Pressure to 7250 psi Depending on Valve Size and Seal Materials Selected
- Temp Range: 14˚ to 176˚F with Standard materials (1114) up to max. pressure rating. Extended Temperature range -40˚ to 392˚F on request with special materials and reduced pressure rating *(see page 24)*.

Model Code

KHB3K - 16 NPT - L - 1 1 1 4 - 11X - L

Housing Type
KHB3K = Three-Way Diverter Ball Valve

Nominal Sizes

Nom Size	SAE Tube	Thread	NPT Pipe Size	Pipe OD
06	-4	7/16-20 UNF	1/4"	0.540"
10	-6	9/16-18 UNF	3/8"	0.675"
16	-8	3/4-16 UNF	1/2"	0.840"
20	-12	1-1/16-12 UN	3/4"	1.050"
25	-16	1-5/16-12 UN	1"	1.315"
32	-20	1-5/8-12 UN	1-1/4"	1.660"
40	-24	1-7/8-12 UN	1-1/2"	1.900"
50	-32	2-1/2-12 UN	2"	2.375"

Connection Type
NPT = ANSI/ASME 1.20.1 Taper Pipe Thread
SAE = SAEJ1926 Ports with ISO 725 Threads and O-Ring Sealing

Ball Drilling
L = standard

Body Material
1 = Carbon Steel *(phosphate coated)*

Spindle and Ball Material
1 = Carbon Steel *(ball is chrome plated, spindle is zinc-plated)*
3 = Stainless Steel

Ball Seal Material
1 = Polyacetal *(standard)*
3 = PTFE *(1500 psi max)*

O-Ring Material
2 = NBR *(Buna N)*
3 = PTFE Spindle Seals and FPM *(Fluoroelastomer)* O-Rings *(1500 psi max)*
4 = FPM *(Fluoroelastomer) (standard)*

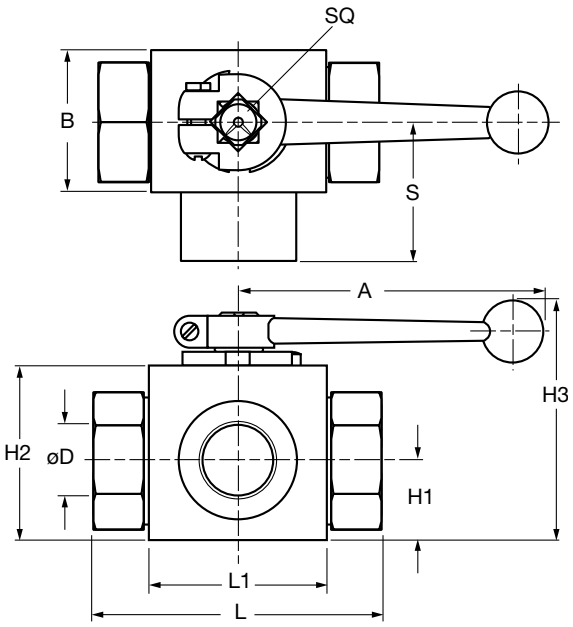
Handle Codes
09x = Without Handle
11x = Straight Aluminum, Sizes 06-25
16x = Offset Steel Handle, Sizes 32-50

Locking Device Option
L = Locking Device *(see page 21 to order locking device separately)*
LS = Locking Device with 5 amp Limit Switch, Available for Sizes 20-50 *(Not available with PTFE Spindle Seals)*

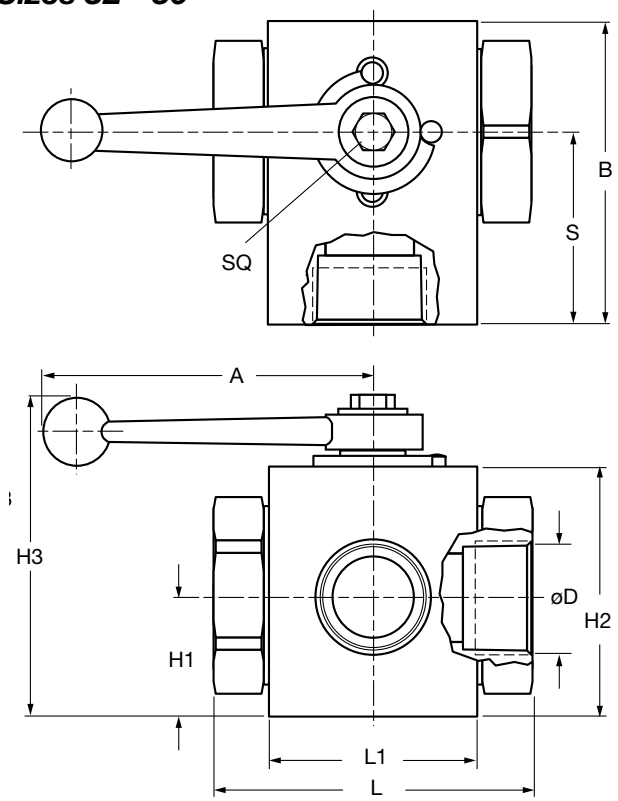
Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Dimensions

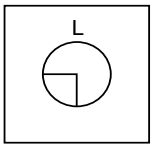
Sizes 06 - 25



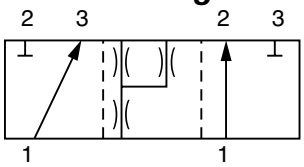
Sizes 32 - 50



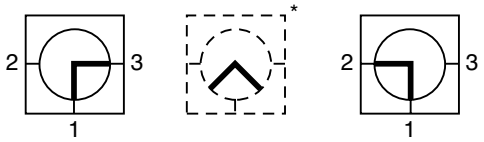
Ball Drilling



Function Diagrams



Notes: Pressure port 1 should always be the highest pressure port



At intermediate position flow will not be completely shut off.
Notes: Valve is not designed to be used as a flow control valve. Valve should not be left in an intermediate position to avoid seal damage.

Model	Port Threads	Max. psi*	A	B	øD	H1	H2	H3	L	L1	SQ	S	Weight
KHB3K-06SAE...	7/16"-20 UNF	7250	5.90 (150)	1.02 (26)	0.24 (6)	0.51 (13)	1.26 (32)	1.65 (42)	2.72 (69)	1.46 (37)	0.35 (9)	1.36 (34.5)	0.88 (0.4)
KHB3K-06NPT...	1/4" NPT												
KHB3K-10SAE...	9/16"-18 UNF	7250	5.90 (150)	1.26 (32)	0.39 (10)	0.67 (17)	1.57 (40)	1.69 (47)	2.83 (72)	1.65 (42)	0.35 (9)	1.42 (36)	1.32 (0.6)
KHB3K-10NPT...	3/8" NPT												
KHB3K-16SAE...	3/4"-16 UNF	5800	6.89 (175)	1.50 (38)	0.63 (16)	0.75 (19)	1.77 (45)	2.01 (51)	3.27 (83)	1.85 (47)	0.47 (12)	1.64 (41.5)	1.76 (0.8)
KHB3K-16NPT...	1/2" NPT												
KHB3K-20SAE...	1-1/16"-12 UN	4500	7.87 (200)	1.93 (49)	0.79 (20)	1.08 (27.5)	2.36 (60)	2.28 (58)	3.74 (95)	2.36 (60)	0.55 (14)	1.87 (47.5)	3.31 (1.5)
KHB3K-20NPT...	3/4" NPT												
KHB3K-25SAE...	1-5/16"-12 UN	4500	7.87 (200)	2.28 (58)	0.98 (25)	1.16 (29.5)	2.56 (65)	2.40 (61)	4.45 (113)	2.56 (65)	0.55 (14)	2.22 (56.5)	4.85 (2.2)
KHB3K-25NPT...	1" NPT												
KHB3K-32SAE...	1-5/8"-12 UNF	5000	9.00 (228)	4.35 (110.5)	1.18 (30)	1.70 (43.3)	3.54 (90.0)	5.47 (139)	4.53 (115)	2.99 (76)	0.67 (17)	2.76 (70)	7.7 (3.5)
KHB3K-32NPT...	1-1/4" NPT												
KHB3K-40SAE...	1-7/8"-12 UN	5000	9.00 (228)	4.69 (119)	1.38 (35)	1.71 (43.5)	3.79 (96.2)	5.71 (145)	5.31 (135)	3.35 (85)	0.67 (17)	2.95 (75)	11 (5)
KHB3K-40NPT...	1-1/2" NPT												
KHB3K-50SAE...	2-1/2"-12 UN	5000	9.00 (228)	5.73 (145.5)	1.73 (44)	2.35 (59.8)	4.72 (120)	6.02 (153)	5.91 (150)	4.72 (120)	0.67 (17)	3.35 (85)	16.5 (7.5)
KHB3K-50NPT...	2" NPT												

KHP Series
2-way Manifold Mounted Ball Valves

Specifications

- Sizes 3/8” - 2”
- Carbon Steel Housing
- Polyacetal Ball Seals *(standard)*
- FPM (Fluoroelastomer) O-Rings *(standard)*
- Operating Pressure to 5000 psi Depending on
- Seal Materials Selected
- Temp Range: 14˚ to 176˚F with Standard materials (1114) up to max. pressure rating. Extended Temperature range -40˚ to 392˚F on request with special materials and reduced pressure rating *(see page 24)*.

Model Code

KHP - 20 - 1 1 1 4 - 12X - L

Housing Type
KHP = Block Housing for Manifold mounting

Nominal Sizes

Valve Size	Nominal Size
10	3/8”
16	1/2”
20	3/4”
25	1”
32	1-1/4”
40	1-1/2”
50	2”

Body Material
1 = Carbon Steel *(phosphate coated)*

Spindle and Ball Material
1 = Carbon Steel *(ball is chrome plated, spindle is zinc-plated)*
3 = Stainless Steel

Ball Seal Material
1 = Polyacetal *(standard)*
3 = PTFE *(1500 psi max)*

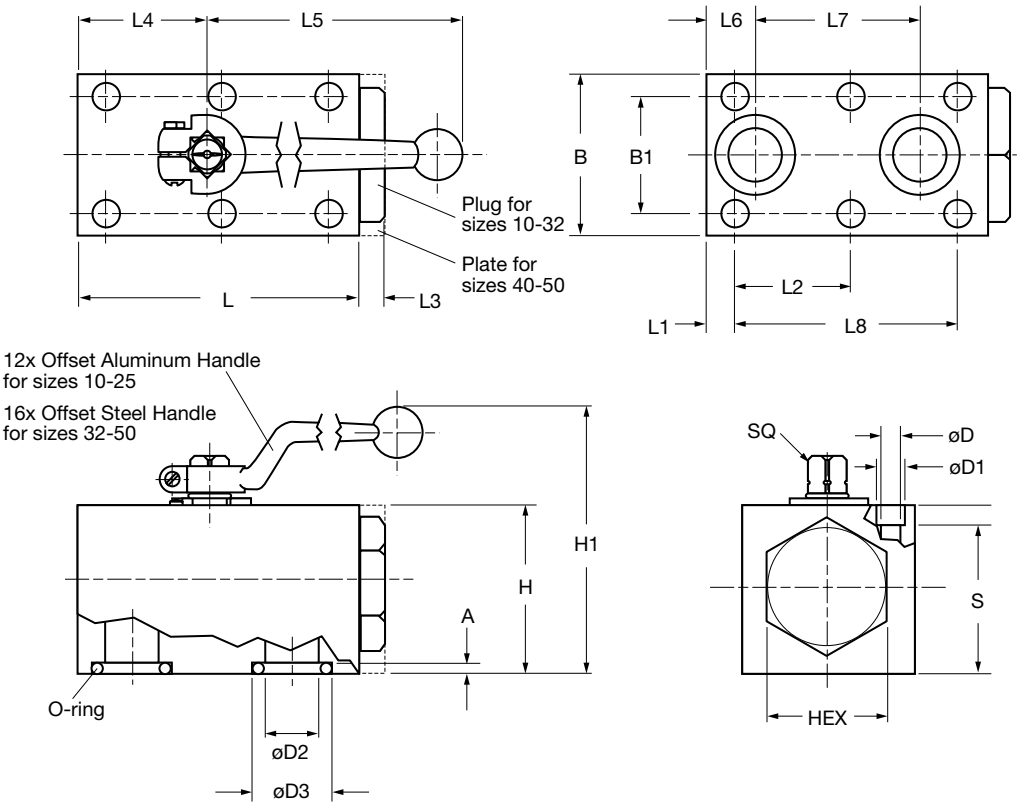
O-Ring Material
2 = NBR *(Buna N)*
3 = PTFE Spindle Seals and FPM *(fluoroelastomer)* O-Rings *(1500 psi max)*
4 = FPM *(fluoroelastomer) (standard)*
5 = EPR

Handle Codes
09x = Without Handle
12x = Offset Aluminum sizes 10 - 25
16x = Offset Steel sizes 32 - 50

Locking Device Option
L = Locking Device *(see page 21 to order locking device separately)*
LS = Locking Device with 5 amp Limit Switch *(Sizes 20, 25 only) (Not available with PTFE Spindle Seals)*

Model Codes containing selections listed in RED are non-standard items – Minimum quantities may apply – Contact HYDAC for information and availability
Not all combinations are available

Dimensions

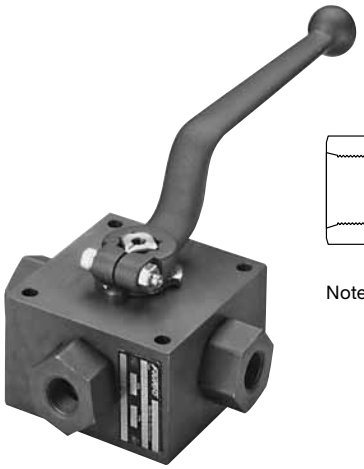


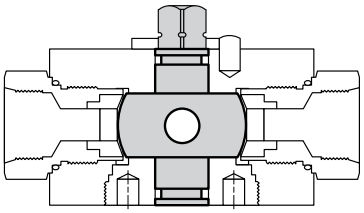
Model	Max. psi[1]	A	B	B1	ø D	ø D1	ø D2	ø D3	HEX	H	H1	O-ring	Weight
KHP-10	5000	0.08 (2)	2.17 (55)	1.575 (40)	0.35 (9)	0.55 (14)	0.374 (9.5)	0.591 (15)	1 3/16 (30)	1.77 (45)	3.58 (91)	10x2.6	2.6 (1.2)
KHP-16	5000	0.08 (2)	2.36 (60)	1.772 (45)	0.35 (9)	0.55 (14)	0.630 (16)	0.984 (25)	1 7/16 (36)	2.17 (55)	4.45 (113)	20.3x2.6	4.6 (2.1)
KHP-20	5000	0.12 (3)	2.76 (70)	2.008 (51)	0.41 (10.5)	0.65 (16.5)	0.787 (20)	1.181 (30)	1 5/8 (41)	2.76 (70)	5.16 (131)	23.4x3.5	8.2 (3.7)
KHP-25	5000	0.12 (3)	3.15 (80)	2.362 (60)	0.41 (10.5)	0.65 (17)	0.925 (23.5)	1.378 (35)	2 (50)	3.15 (80)	5.55 (141)	28.2x3.5	12.3 (5.6)
KHP-32	5000	0.12 (3)	3.94 (100)	3.071 (78)	0.51 (13)	0.75 (19)	1.260 (32)	1.551 (39.4)	2 9/16 (65)	3.94 (100)	8.07 (205)	32.9x3.5	23.4 (10.6)
KHP-40	5000	0.12 (3)	5.12 (130)	3.740 (95)	0.69 (17.5)	1.02 (26)	1.496 (38)	1.906 (48.4)	–	3.94 (100)	8.07 (205)	42x3.5	38.6 (17.5)
KHP-50	5000	0.12 (3)	5.91 (150)	4.409 (112)	0.87 (22)	1.30 (33)	1.89 (48)	2.181 (55.4)	–	4.33 (110)	8.46 (215)	49x3.5	43.7 (19.8)

Model	L	L1	L2	L3	L4	L5	L6	L7	L8	S	SQ	Bolt Size[2]	Torque[2]
KHP-10	2.76 (70)	0.295 (7.5)	1.083 (27.5)	0.39 (10)	1.14 (29)	5.51 (140)	0.394 (10)	1.732 (44)	2.165 (55)	1.42 (36)	0.35 (9)	5/16" - 18 UNC x 2"	26 ft/lb
KHP-16	3.94 (100)	0.335 (8.5)	1.634 (41.5)	0.39 (10)	1.73 (44)	6.42 (163)	0.669 (17)	2.284 (58)	3.268 (83)	1.81 (46)	0.47 (12)	5/16" - 18 UNC x 2 1/4"	26 ft/lb
KHP-20	4.61 (117)	0.394 (10)	1.909 (48.5)	0.39 (10)	2.01 (51)	7.20 (183)	0.787 (20)	2.717 (69)	3.819 (97)	2.34 (59.5)	0.55 (14)	3/8" - 16 UNC x 3"	45 ft/lb
KHP-25	5.32 (135)	0.394 (10)	2.264 (57.5)	0.39 (10)	2.44 (62)	7.20 (183)	0.945 (24)	3.189 (81)	4.528 (115)	2.72 (69)	0.55 (14)	3/8" - 16 UNC x 3 1/4"	45 ft/lb
KHP-32	6.50 (165)	0.472 (12)	2.677 (68)	0.43 (11)	2.95 (75)	12.00 (305)	1.142 (29)	3.780 (96)	5.354 (136)	3.31 (84)	0.67 (17)	7/16" - 14 UNC x 4"	75 ft/lb
KHP-40	7.09 (180)	1.122 (28.5)	2.205 (56)	0.98 (25)	3.33 (84.6)	12.00 (305)	1.122 (28.5)	4.409 (112)	4.409 (112)	3.25 (82.5)	0.67 (17)	5/8" - 11 UNC x 4 1/4"	220 ft/lb
KHP-50	8.66 (220)	1.496 (38)	2.677 (68)	0.98 (25)	4.17 (106)	12.00 (305)	1.496 (38)	5.354 (136)	5.354 (136)	3.48 (88.5)	0.67 (17)	3/4" - 10 UNC x 4 1/2"	400 ft/lb

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches/(mm) and lbs./(kg.)
1) Dependent upon valve and seal materials selected.
2) Bolt size and torque provided as reference only. Manifold designs must take all factors (materials, pressure, etc.) into consideration. Consult HYDAC Engineering for more information

KH3 & KH4 Series
Multiway Ball Valves





Note: Valves use a trunion design, rather than the "floating ball" design used on all other ball valves.

Specifications

- Sizes 1/4" to 3/4"
- 2 Positions, 90˚ Switching Standard
- Carbon Steel Housing
- L and T Ball Drilling - KH3
- L, T and X Ball Drilling - KH4
- NPT or SAE O-Ring Connections
- Polyacetal Ball Seals *(standard)*
- Fluoroelastomer O-Rings *(standard)*
- Operating Pressure to 7250 PSI Depending on
- Valve Size and Seal Materials Selected
- Temp Range: 14˚ to 176˚F with Standard materials (1114) up to max. pressure rating. Extended Temperature range -40˚ to 392˚F on request with special materials and reduced pressure rating *(see page 24)*.

Model Code

KH3 - 12 NPT - L - 1 1 1 4 - 12X - L

Housing Type
- KH3 = Three-Way
- KH4 = Four-Way

Nominal Sizes

Nom Size	SAE Tube	Thread	NPT Pipe Size	Pipe OD
06	-4	7/16-20 UNF	1/4"	0.540"
10	-6	9/16-18 UNF	3/8"	0.675"
12	-8	3/4-16 UNF	1/2"	0.840"
20	-12	1-1/16-12 UN	3/4"	1.050"

Connection Type
- NPT
- SAE

Ball Drilling
- L = standard for KH3
- T = *(optional)*
- X = standard for KH4

Body Material
- 1 = Carbon Steel *(phosphate coated)*

Spindle and Ball Material
- 1 = Carbon Steel *(ball is chrome plated, spindle is zinc-plated)*
- 3 = Stainless Steel

Ball Seal Material
- 1 = Polyacetal *(standard)*
- 3 = PTFE *(1500 psi max)*

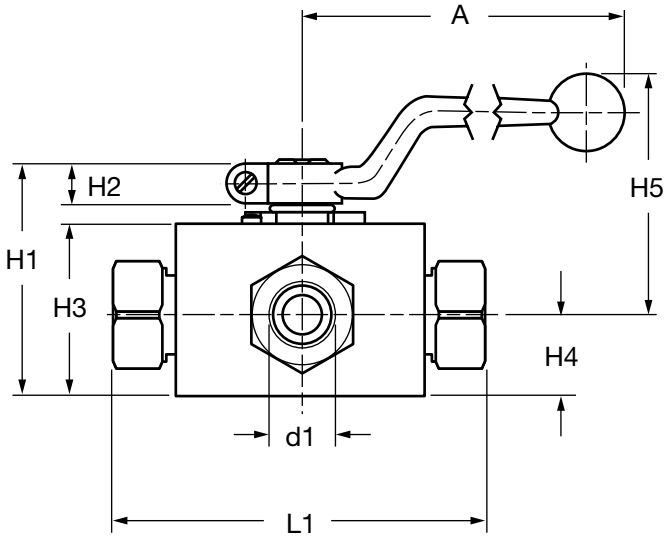
O-Ring Material
- 2 = NBR *(Buna N)*
- 4 = FPM *(Fluoroelastomer) (standard)*

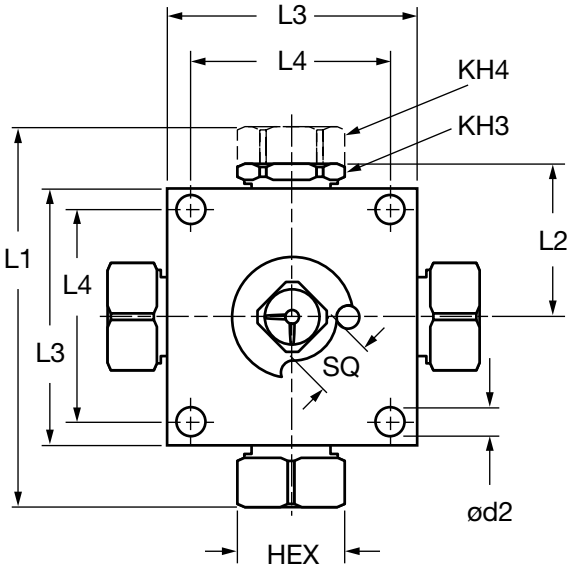
Handle Codes
- 09x = Without Handle
- 12x = Offset Aluminum *(standard)*

Locking Device Option
- L = Locking Device *(see page 21 to order locking device separately)*

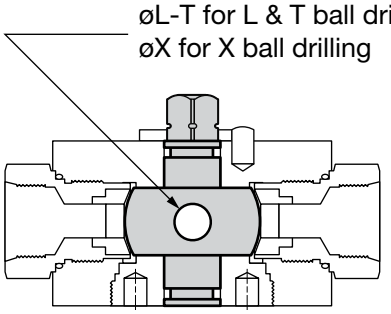
Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Dimensions

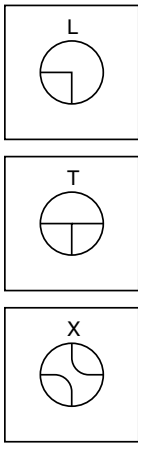




Handle Not Shown

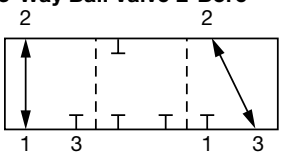


Ball Drilling



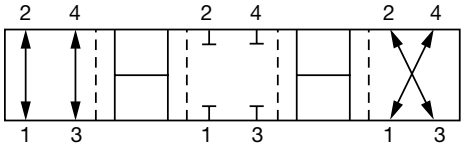
Function Diagrams

3-Way Ball Valve L-Bore

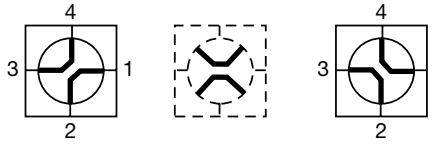


90° Switch

4-Way Ball Valve X-Bore



90° Switch



Notes: These are positive overlap valves. At approximately 45° rotation, flow will be blocked to all ports.
For "T" function diagram, contact HYDAC.

Model	d1	Max. psi*	A	L1	L2	L3	L4	H1	H2	H3	H4	H5	ød2	SQ	HEX	øL-T	øX	Wt.
KH...06SAE KH...06NPT	7/16"-20 UNF 1/4" NPT	7250	6.42 (163)	3.94 (100)	1.67 (42.5)	2.76 (70)	2.17 (55)	2.28 (58)	0.51 (13)	1.57 (40)	0.87 (22)	2.48 (63)	0.26 (6.5)	0.47 (12)	0.95 (24)	0.20 (5)	0.18 (4.5)	3.5 (1.6)
KH...10SAE KH...10NPT	9/16"-18 UNF 3/8" NPT	7250	7.20 (183)	4.53 (115)	1.81 (46)	3.15 (80)	2.56 (65)	2.72 (69)	0.55 (14)	1.97 (50)	1.06 (27)	2.95 (75)	0.26 (6.5)	0.55 (14)	1.18 (30)	0.35 (9)	0.24 (6)	5.3 (2.4)
KH...12SAE KH...12NPT	3/4"-16 UNF 1/2" NPT	5800	7.20 (183)	5.32 (135)	2.20 (56)	3.94 (100)	3.15 (80)	3.11 (79)	0.55 (14)	2.36 (60)	1.22 (31)	3.46 (88)	0.35 (9)	0.55 (14)	1.42 (36)	0.47 (12)	0.39 (10)	9.5 (4.3)
KH...20SAE KH...20NPT	1 1/16"-12 UN 3/4" NPT	4500	8.94 (227)	5.67 (144)	2.26 (57.5)	3.94 (100)	3.35 (85)	3.68 (93.5)	0.61 (15.5)	2.87 (73)	1.42 (36)	3.82 (97)	0.35 (9)	0.67 (17)	1.81 (46)	0.71 (18)	0.55 (14)	13.2 (6.0)

Ball Valve Actuators
Pneumatic Operation

Model Code

KHB-25SAE-1114 - A 5 1 A A

Ball Valve
Available for both KHB & KHM Series
(See pages 5 - 17 for details on ball valve model codes)
Note: OMIT the Handle code rather than entering the code for no handle.

Actuator Type
A = Pneumatic - single (ESA) or double acting (EDA)

Size*
1 = 12 *(recommended for valves KHB-06... & KHB-10)*
2 = 25 *(recommended for valves KHB-16... & KHB-20)*
3 = 40
4 = 65
5 = 100 *(recommended for valves KHB-25... & KHM-32)*
6 = 200
7 = 350 *(recommended for valves KHM-40... & KHM-50)*

Operation
1 = All Double acting *(air to A to open, air to B to close)*
2 = #2 Spring Set *(balances with 40 psi)*
3 = #3 Spring Set *(balances with 60 psi)*
4 = #4 Spring Set *(balances with 80 psi)*
5 = #5 Spring Set *(balances with 100 psi)*
6 = #6 Spring Set *(balances with 120 psi)*

Single acting, spring return *(air to A to open, spring to close)*

Limit Switches
A = none
B = Standard Limit Switch Module *(2 SPDT)*

Additional Options
A = none
B = Control Valve: 120V AC
C = Control Valve: 24V DC

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply - Contact HYDAC for information and availability Not all combinations are available

Description

The HYDAC dependable rack and pinion pneumatic actuators are compact and efficient components with a trouble-free, high-cycle service life.

The double piston design allows significantly reduced cylinder diameter and overall size as compared to single piston design.

Each piston has a gear rack that applies an equal force at two points directly across the diameter of a common pinion gear.

This feature, combined with the patented suspension system, creates a symmetrically balanced, center-mount actuator with a short, powerful stroke, rapid response, and fully concentric operating loads for optimum life expectancy and performance in control valve applications.

Product Features

- Reliable rack and pinion design.
- High output torque and compactness
- Integrated air manifold and internal porting
- A solenoid valve can be mounted directly onto actuator body thus external piping is simplified
- Double-acting and single-acting (spring return) models are available
- Self-lubricating bands reduce friction and smooth piston travel, and increase efficiency
- Limit switch available

Ordering

Pneumatic Actuators (double acting) & Mounting Kits

Valve Size	Actuator Model Code	Actuator Part Number	Mounting Kit Part Number
KHB-06 (1/4")	EDA-12	02700204	02061508
KHB-10 (3/8")	EDA-12	02700204	02061508
KHB-16 (1/2")	EDA-25	02700205	02061509
KHB-20 (3/4")	EDA-25	02700205	02061510
KHB-25 (1")	EDA-100	02700206	02061511
KHM-32 (1 1/4")	EDA-100	02700206	02061512
KHM-40 (1 1/2")	EDA-350	02700207	02061513
KHM-50 (2")	EDA-350	02700207	02061513

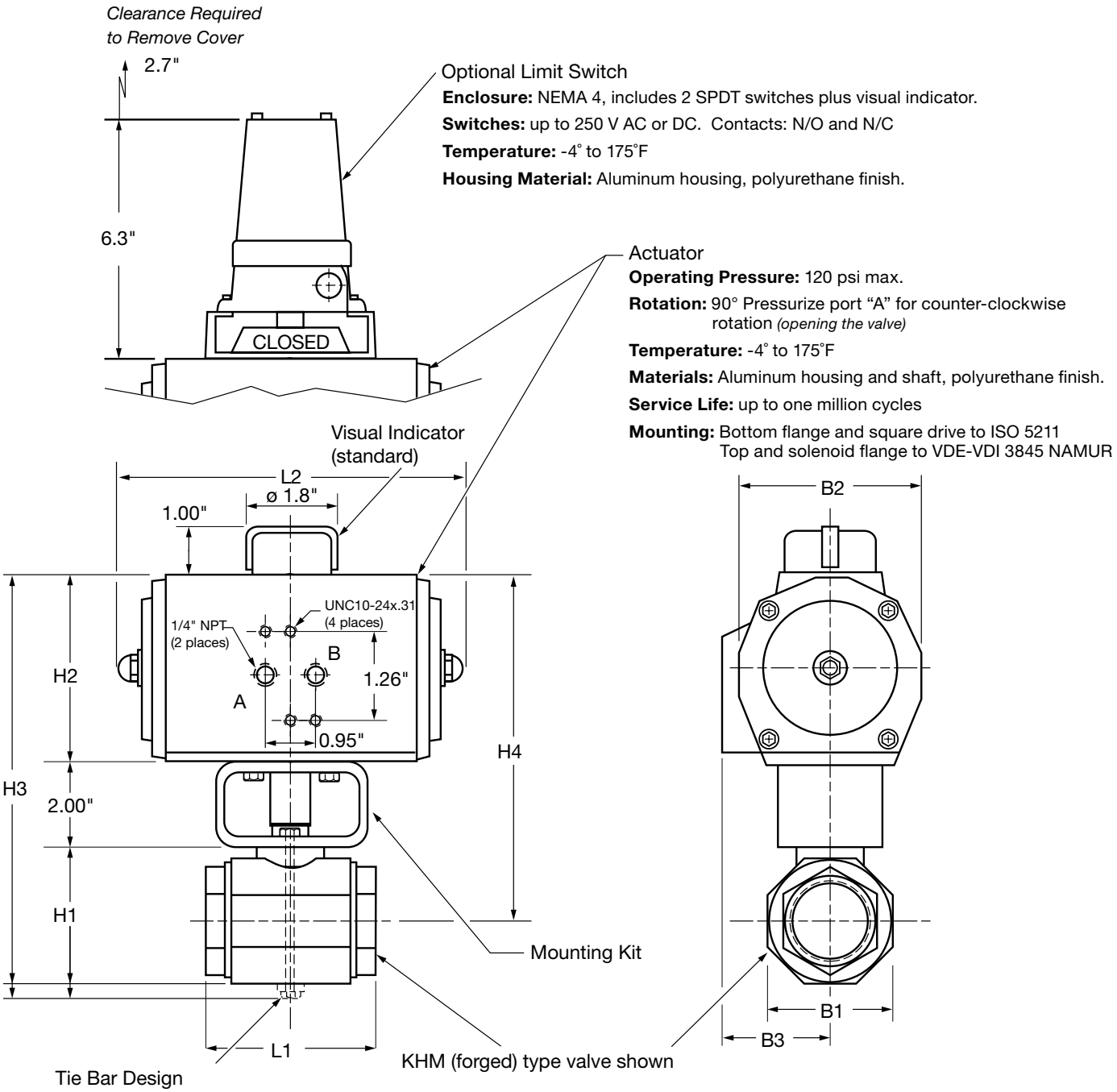
Optional Accessories (model code / part number)

Limit Switch Box *(2 SPDT switches)*		
ACTUATOR LIMIT SWITCH HDN/2		02700282
Limit Switch Mounting Kit *(for EDA-12)*		
ACTUATOR LIMIT SWITCH MTG KIT MKN-12		02700283
Limit Switch Mounting Kit *(for EDA-25 thru EDA-350)*		
ACTUATOR LIMIT SWITCH MTG KIT MKN-25/350		02700284
Solenoid Control Valve[1] (120 VAC)	3-Way *(for ESA)*	02082888
	4-Way *(for EDA)*	02082890
Solenoid Control Valve[1] (24 VDC)	3-Way *(for ESA)*	02082887
	4-Way *(for EDA)*	02082889

*Recommendations for actuator size are based on a typical application: Double acting actuator, 3000 psi max. pressure, mineral based hydraulic fluid, 80-100 psi shop air, and a moderate duty cycle. Applications with Spring Return actuators, higher system pressures, low lubricity fluids, or infrequent cycling (< once/hr.) may require a larger size actuator. Please consult HYDAC Engineering Department for assistance sizing actuators for these applications.

1) See pages 39 - 40 for information on solenoid valves.

Dimensions



Ball Valve / Actuator Size	H1	H2	H3	H4	L1	L2	B1	B2	B3	Operating Time (sec)	Air Cons. (in3/1atm)	Weight (lbs.)
KHB-06 / EDA-12	2.2	2.4	6.6	5.3	2.8	4.1	1.0	2.4	1.9	0.4	4	3.5
KHB-10 / EDA-12	2.2	2.4	6.6	5.3	2.9	4.1	1.3	2.4	1.9	0.4	4	4
KHB-16 / EDA-25	2.5	3.2	7.7	6.2	3.3	6.3	1.5	2.9	1.8	0.5	7	6.5
KHB-20 / EDA-25	3.2	3.2	8.4	6.5	3.8	6.3	1.9	2.9	1.8	0.5	7	8
KHB-25 / EDA-100	3.5	4.7	10.2	8.1	4.5	8.7	2.3	4.3	2.5	1.2	30	14
KHM-32 / EDA-100	3.4	4.7	10.1	8.6	4.4	8.7	3.0	4.3	2.5	1.2	30	16
KHM-40 / EDA-350	3.8	7.1	12.9	11.2	5.2	12.0	3.4	6.8	3.7	3.6	120	37
KHM-50 / EDA-350	4.5	7.1	13.6	11.5	5.6	12.0	4.2	6.8	3.7	3.6	120	42

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs.
*Dependent upon valve and seal materials selected.

Ball Valve Locking Devices

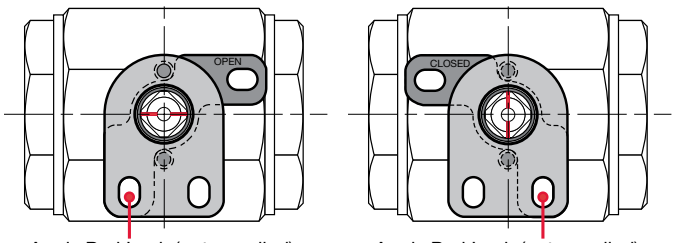
Description

In situations where the opening or closing of a ball valve can cause severe damage or personal injury, HYDAC recommends the installation of a locking device. Locking devices are available for our entire range of high pressure ball valves. Two different styles are available to accommodate the different valve body styles. All HYDAC high pressure ball valves can be ordered with a locking device. Locking devices can also be ordered separately using the chart below.

Material note: All lock plates and lock bars are made of Zinc plated Steel.

Operation

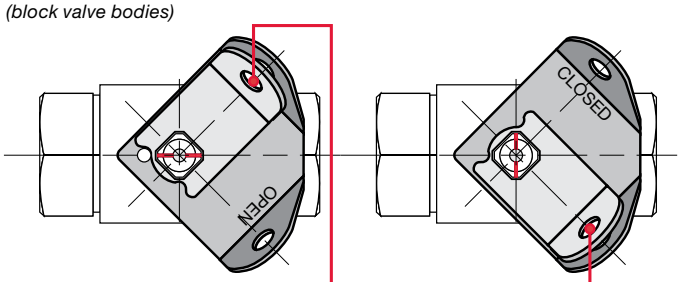
KHM...
(forged valve bodies)



Apply Pad Lock (not supplied) here to lock in OPEN Postition

Apply Pad Lock (not supplied) here to lock in CLOSED Postition

KHB..., KHP..., KH3..., KH4..., KHB3K...
(block valve bodies)



Apply Pad Lock (not supplied) here to lock in OPEN Postition

Apply Pad Lock (not supplied) here to lock in CLOSED Postition

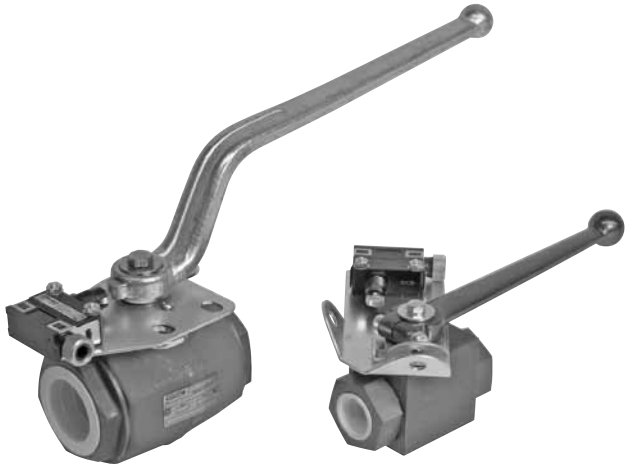
Installation

Ordering

To order a ball valve with a locking device, simply add "-L" to the end of the model code. See the model code page for that particular valve to create a complete code. To order a locking device separately, use the chart below.

Size	KHB	KHM	KHP	KH3 & KH4	KHB3K
6	02061169	02061169	N/A	02061172	02061175
10	02061169	02061169	02061169	02061173	02061175
12	N/A	N/A	N/A	02061173	N/A
16	02061170	02061170	02061170	N/A	02061176
20	02061171	02061171	02061171	02061174	02061177
25	02061171	02061171	02061171	N/A	02061177
32	N/A	02055711	02063434	N/A	N/A
40	N/A	02055711	02063434	N/A	N/A
50	N/A	02055711	02063434	N/A	N/A

Ball Valve Locking Devices with Limit Switches



Description:

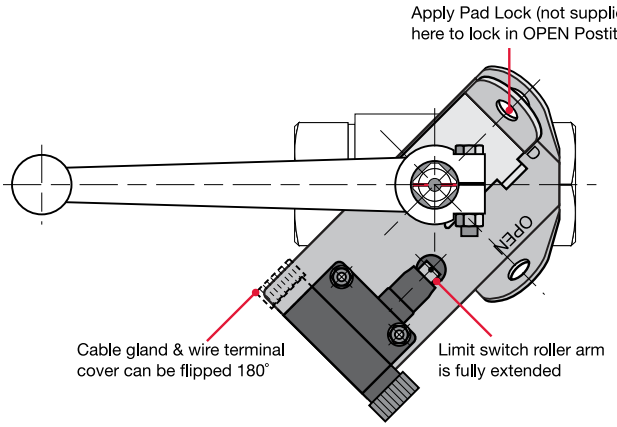
When remote indication of the valve position is required, a limit switch can be added to the valve assembly.

- A reliable single pole, double throw (SPDT) switch to indicate either open or closed position of a two-way valve
- Hermetically sealed
- Can be wired as Normally Open (N/O), or Normally Closed (N/C)
- Available for HYDAC valve sizes 20 through 50
- Mounting brackets serve as locking devices

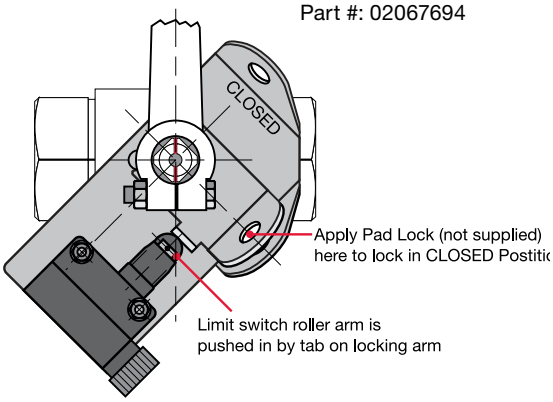
Ordering:
To Order a valve with Limit Switch, Add "-LS" to end of Valve Model Code, i.e.: KHM-32NPT-1114-16X-LS

Operation

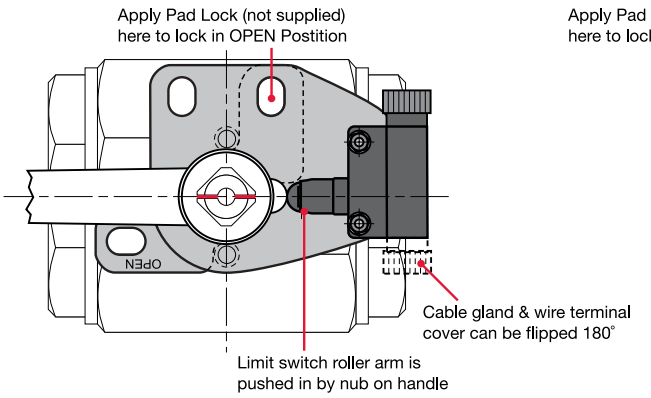
KHB..., KHP..., KH3..., KH4..., KHB3K... *(block valve bodies, sizes 20 & 25)*



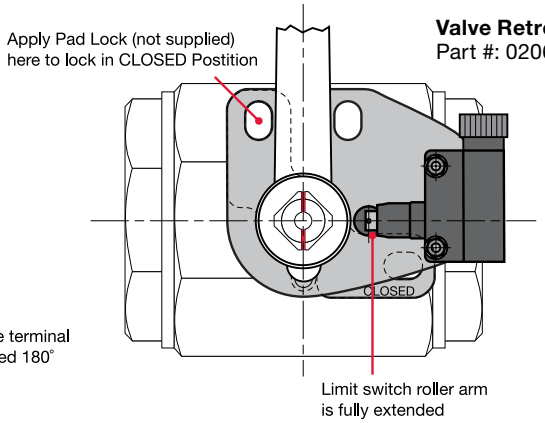
Valve Retrofit kit
Part #: 02067694



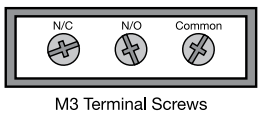
KHM... *(forged valve bodies, sizes 32 through 50)*



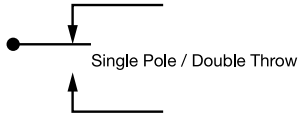
Valve Retrofit kit
Part #: 02063537



Wiring Details



M3 Terminal Screws

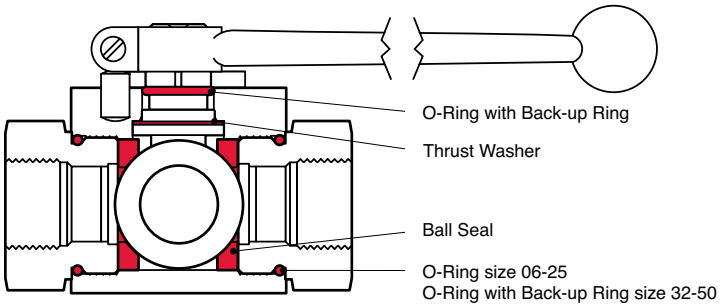


Electrical Specifications

- NEMA 3, 4, 13 and IEC IP 67
- 5A- up to 250 VAC, 30 VDC
- Temperature range: 14 to 158˚F
- UL listed

Replacement Switch
Part #: 02700009

Seal Kits



Model Code	Part Number
SEAL KIT KHB-06NPT/SAE-XX14	02061479
SEAL KIT KHB-10NPT/SAE-XX14	02061467
SEAL KIT KHB-16F3/F6-XX14	02061469
SEAL KIT KHB-16NPT/SAE-XX14	02061468
SEAL KIT KHB-20F3/F6-XX14	02061471
SEAL KIT KHB-20NPT/SAE-XX14	02061470
SEAL KIT KHB-25F3/F6-XX14	02061473
SEAL KIT KHB-25NPT/SAE-XX14	02061472
SEAL KIT KHM-32F3/F6-XX14	02061481
SEAL KIT KHM-32NPT/SAE-XX14	02061480
SEAL KIT KHM-40F3/F6-XX14	02061483
SEAL KIT KHM-40NPT/SAE-XX14	02061482
SEAL KIT KHM-50F3/F6-XX14	02061485
SEAL KIT KHM-50NPT/SAE-XX14	02061484
SEAL KIT KHP-06-XX14	00554029
SEAL KIT KHP-10-XX14	02061486
SEAL KIT KHP-16-XX14	02061487
SEAL KIT KHP-20-XX14	02061507
SEAL KIT KHP-25-XX14	02061488
SEAL KIT KHP-32-XX14	02061489
SEAL KIT KHP-40-XX14	02061505
SEAL KIT KHP-50-XX14	02061506

Complete maintenance instructions are available on our web site:

www.HYDACusa.com

Model Code

SEAL KIT KHB - 06 NPT/SAE - XX14

Seal Kit

Valve Body Type
- KHB = Block Housing
- KHM = Forged Housing
- KH3/4 = 3-Way & 4-Way Valves
- KHP = Manifold Mount

Valve Size
06, 10, 16, 20, 25, 32, 40,50

Connection Type
- *(omit)* = Manifold Mount *(KHP)*
- NPT/SAE = NPT or SAE
- F3/F6 = F3 or F6 Split Flange

Materials

Body Material
- X = Body material does not affect seal kits

Spindle and Ball Material
- X = Spindle and ball material does not affect seal kits

Ball Seal Material
- 1 = Polyacetal *(standard)*
- 3 = PTFE
- 8 = PEEK

O-Ring Material
- 2 = NBR *(Buna N)*
- 3 = PTFE Spindle Seals and FPM *(Fluoroelastomer)* O-Rings
- 4 = FPM *(Fluoroelastomer) (standard)*
- 5 = EPDM

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Handles

DN Sizes	Description Designation	Model Code	Spindle Square Size	Model Code	Part Number
06, 10	Straight Aluminum	11X	SW09	HANDLE STR AL SW09	00270099
06, 10	Offset Aluminum	12X	SW09	HANDLE OFS AL SW09	00271423
06, 10	Offset Steel	16X	SW09	HANDLE KIT OFS STL SW09	02064265*
16	Straight Aluminum	11X	SW12	HANDLE STR AL SW12	00270100
16	Offset Aluminum	12X	SW12	HANDLE OFS AL SW12	00270381
16	Offset Steel	16X	SW12	HANDLE KIT OFS STL SW12	02064266*
20, 25	Straight Aluminum	11X	SW14	HANDLE STR AL SW14	00270101
20, 25	Offset Aluminum	12X	SW14	HANDLE OFS AL SW14	00270382
20, 25	Offset Steel	16X	SW14	HANDLE KIT OFS STL SW14	02064267*
32, 40, 50	Offset Steel	16X	SW17	HANDLE KIT OFS STL SW17 16X	02064268*
32, 40, 50	Offset Aluminum	12X	SW17	HANDLE OFS AL SW17	00270383
32, 40, 50	Straight Aluminum	11X	SW17	HANDLE STR AL SW17	00270311

* These handles require the additional mounting hardware which is included

Engineering Data

Housing

Block Type (KHB)	Carbon Steel *(standard)* 14˚F Min temp
Forged Type (KHM)	Forged Steel *(standard)* 14˚F Min temp
	Stainless Steel *(optional)* -40˚F Min temp
Coatings	Standard Models Phosphate Coated *(Others available on Request)*
Ball	Chrome Plated Steel *(standard)*
	Stainless Steel *(optional)*
Spindle	Zinc Plated Steel *(standard)*
	Stainless Steel *(optional)*

Handles *(see above)*

11X	Straight Aluminum, Red Anodized
12X	Offset Aluminum, Red Anodized
16X	Offset Steel, Galvanized

Ball Seal

Polyacetal (POM) Standard for Hydraulic Oils, Water Glycol

Maximum Pressure:	to 7250 psi (500 bar)
Temperature Range:	-22° to 212°F (-30° to 100°C)

PTFE For Corrosive Media

Maximum Pressure:	to 1500 psi (100 bar)
Temperature Range:	-328° to 212°F (-200° to 100°C)

Temperature to 392°F (200°C) at reduced Pressure
(see chart at right for pressure-temperature profile)

NBR For Gaseous Media

Maximum Pressure:	to 1500 psi (100 bar)
Temperature Range:	-13° to 212°F (-25° to 100°C)

(see chart at right for pressure-temperature profile)

PEEK High Temperature Seal

Maximum Pressure:	to 7250 psi (500 bar)
Temperature Range:	-238° to 212°F (-150° to 100°C)

Better high temperature profile than PTFE
Temperature to 482°F (250°C) at reduced Pressure
(see chart at right for pressure-temperature profile)

Spindle Seal & O-rings

Fluorocarbon (FPM) Standard for hydraulic oils and many acids

Maximum Pressure:	to 7250 psi (500 bar)
Temperature Range:	-4° to 392°F (-20° to 200°C)

NBR Seal for hydraulic oils, lubricants, greases

Maximum Pressure:	to 7250 psi (500 bar)
Temperature Range:	-13° to 212°F (-25° to 100°C)

PTFE for corrosive media and bases

Maximum Pressure:	to 1500 psi (100 bar)
Temperature Range:	-328° to 212°F (-200° to 100°C)

Temperature to 392°F (200°C) at reduced pressure

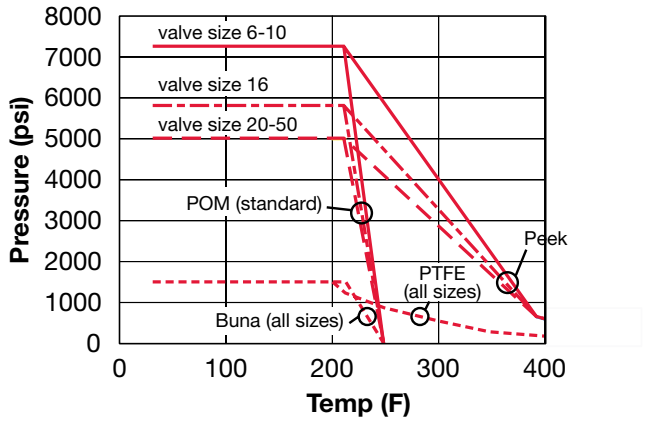
EPR Ethylene Propylene Rubber for some phosphate esters

Maximum Pressure:	to 7250 psi (500 bar)
Temperature Range:	-58° to 300°F (-50° to 150°C)

Special Seals — Other materials are available for special applications.

Consult HYDAC for your specific application.

Press-Temp curve for different Ball Seal materials



KHF3/6 Series
Direct Mount SAE Flange 1/2” to 2”

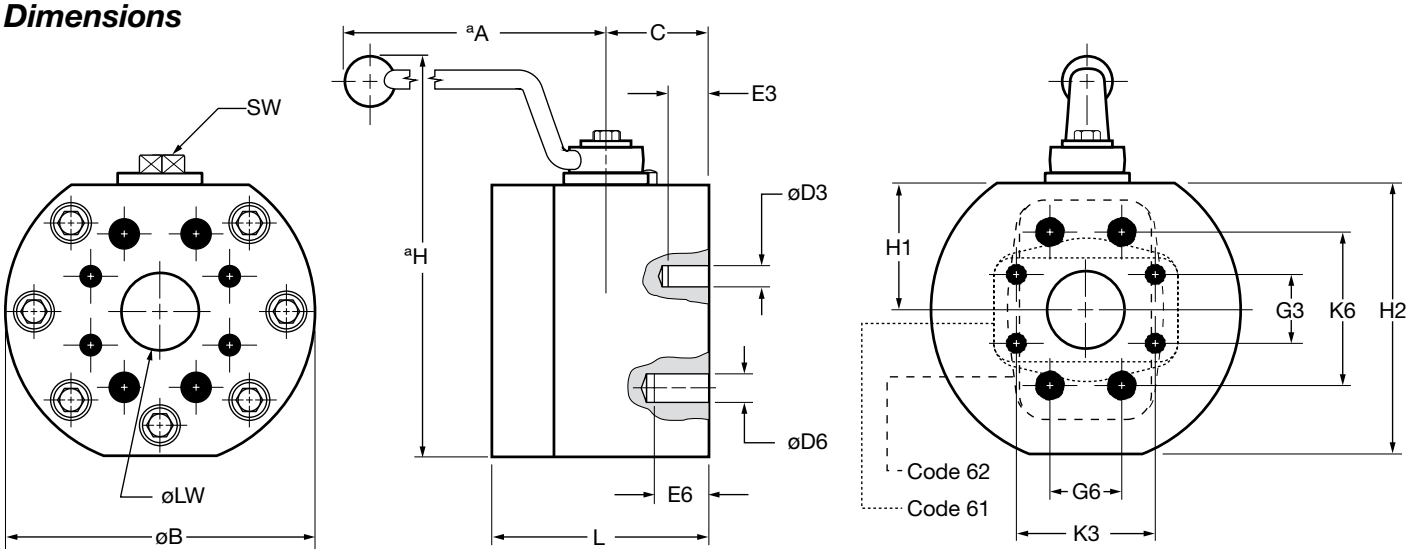
Features

- Compact, space saving design
- Full passage for unrestricted flow of medium
- Floating ball provides positive seal
- Valve positioning controlled by a stop pin and limit washer
- Phosphate coated valve body

Specifications

- Connection: Dual bolt pattern fits Code 61 and 62 SAE flanges
- Operating Pressure: to 6000 psi
- Ball Seal Material: Polyacetal
- O-ring Material: Fluoroelastomer (FPM)
- O-ring Material: Fluoroelastomer (FPM)
- Housing Material: Carbon Steel
- Temperature Range: 14˚ to 176˚F

Dimensions



Size	Model Code	Code 61					Code 62				
		K3	G3	øD3	E3	MAWP (psi)*	K6	G6	øD6	E6	MAWP (psi)*
1/2”	KHF3/6-16-1114-16X-UNC	1.50	0.69	5/16”-18UNC	0.63	5000	1.59	0.72	5/16”-18UNC	0.63	6000
3/4”	KHF3/6-20-1114-16X-UNC	1.87	0.88	3/8”-16UNC	0.71	5000	2.00	0.94	3/8”-16UNC	0.71	6000
1”	KHF3/6-25-1114-16X-UNC	2.06	1.03	3/8”-16UNC	0.71	5000	2.25	1.09	7/16”-14UNC	0.83	6000
1 1/4”	KHF3/6-32-1114-36X-UNC	2.31	1.19	7/16”-14UNC	0.71	4000	2.62	1.25	1/2”-13UNC	0.83	6000
1 1/2”	KHF3/6-40-1114-36X-UNC	2.75	1.41	1/2”-13UNC	1.02	3000	3.12	1.44	5/8”-11UNC	1.02	6000
2”	KHF3/6-50-1114-36X-UNC	3.06	1.69	1/2”-13UNC	1.02	3000	3.87	1.75	3/4”-10UNC	1.18	6000

Size	Model Code	øB	H1	H2	øLW	L	H	C	SW (mm)	A	Weight
1/2”	KHF3/6-16-1114-16X-UNC	3.11	1.34	2.81	0.51	2.95	5.08	1.28	12	7.00	5.5
3/4”	KHF3/6-20-1114-16X-UNC	3.90	1.73	3.54	0.75	3.15	5.79	1.35	14	7.00	8.6
1”	KHF3/6-25-1114-16X-UNC	4.69	1.85	4.02	0.98	3.46	6.30	1.50	14	7.00	13.2
1 1/4”	KHF3/6-32-1114-36X-UNC	5.47	2.32	4.88	1.18	3.94	8.31	1.73	17	12.0	25.6
1 1/2”	KHF3/6-40-1114-36X-UNC	6.30	2.56	5.51	1.50	4.33	8.94	2.01	17	12.0	36.2
2”	KHF3/6-50-1114-36X-UNC	7.05	2.86	6.17	1.89	4.57	9.61	2.13	17	12.0	54.9

* Pressure rating listed is valve pressure only. Pressure ratings for available flanges may be less.
Consult flange manufacturer and ISO 6162 for flange pressure rating.
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs.

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

KHF3 Series
Direct Mount SAE Flange 2 1/2" to 4"

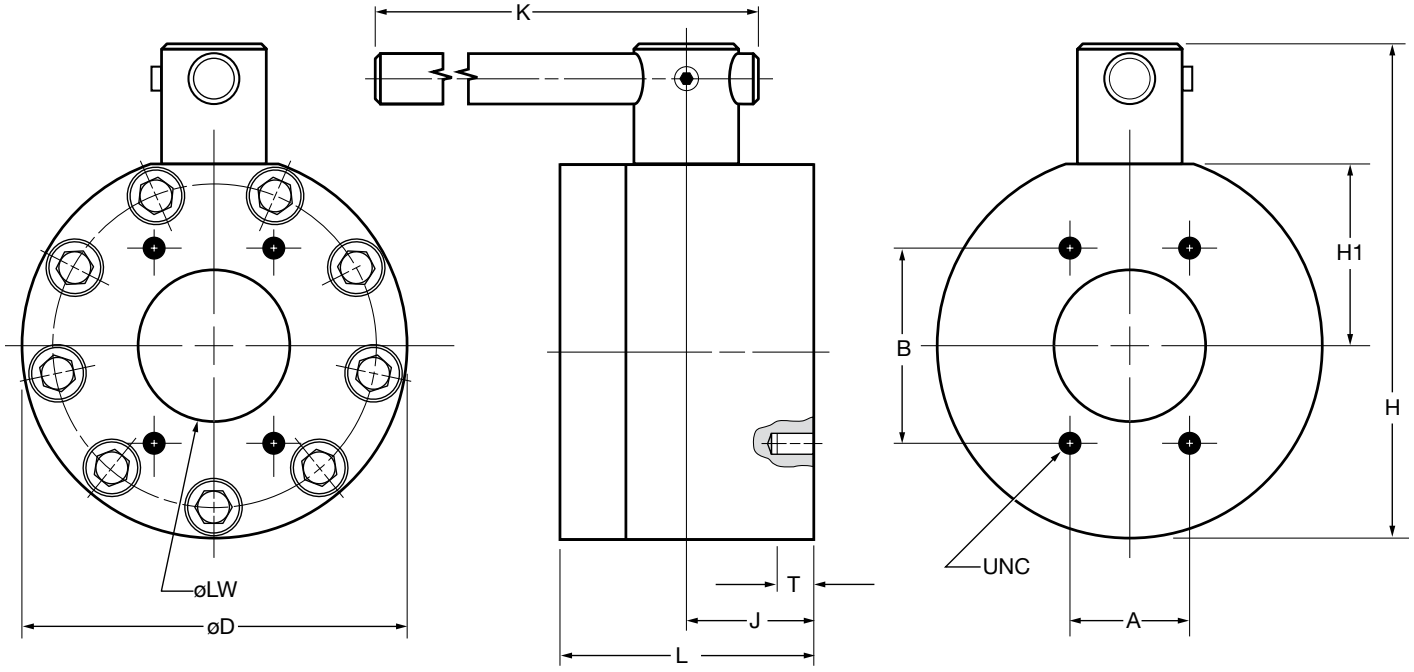
Features

- Compact, space saving design
- Full passage for unrestricted flow of medium
- Floating ball provides positive seal
- Phosphate coated valve body
- Individually tested for leakage free performance

Specifications

- Connection: Bolt pattern fits code 61 SAE flanges
- Operating Pressure: to 2500 psi
- Ball Seal Material: Polyacetal
- O-ring Material: Fluoroelastomer (FPM)
- Housing Material: Carbon Steel
- Temperature Range: 14˚ to 176˚F

Dimensions



Size	Model Code	øLW	L	J	H1	H	øD	A	B	UNC	T	K	MAWP (psi)*	Weight
2 1/2"	KHF3-065-1114-05X-UNC	2.48	5.90	2.95	3.70	10.8	7.80	2.00	3.50	1/2"-13UNC	0.75	36	2500	73
3"	KHF3-080-1114-05X-UNC	2.99	5.51	2.76	4.09	11.4	8.27	2.44	4.19	5/8"-11UNC	0.95	36	2000	88
4"	KHF3-100-1114-05X-UNC	3.94	6.69	3.35	4.80	13.1	10.16	3.06	5.13	5/8"-11UNC	0.95	36	500	132

* Pressure rating listed is valve pressure only. Pressure ratings for available flanges may be less.
Consult flange manufacturer and ISO 6162 for flange pressure rating.
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs.

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

KHM3H Series
3 Piece Ball Valve

Specifications

- 1/2" - 4" Standard Port
- 1/2" - 2" Class 2500 ANSI *(up to 6000 psi)*
  3" - 4" Class 1500 ANSI *(up to 3800 psi)*
- Blow-out proof stem
- Handle operated or actuated
- Applications - Offshore, Oil & Gas, Chemical, Petrochemical, Refining, Energy
- Media - Liquid or Gas
- Material - Stainless Steel
- End Connections - Socket weld and threaded.
  Other options available *(consult factory)*

Model Code

KHM3H - SP - 1 SW - 3 3 1 2

Series Type
KHM3H = High Pressure 3 Piece Ball Valve

Port
SP = Standard Port

Connection Size *(inches)*
1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 3, 4

Connection Type
SW = Socket Weld
NPT = Tapered Pipe Threads

Body Material
3 = Stainless Steel

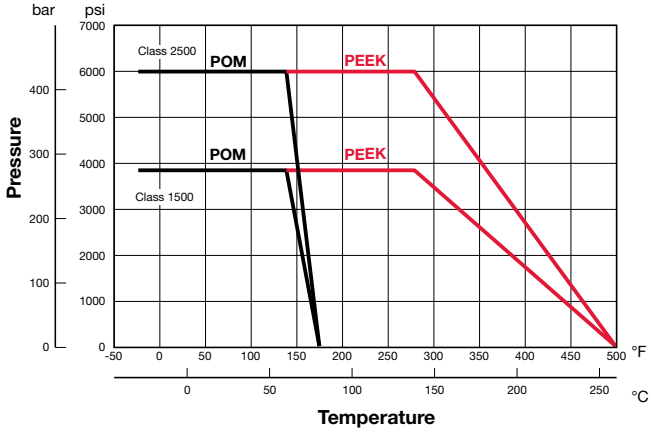
Spindle & Ball Material
3 = Stainless Steel

Ball Seal Material
1 = POM *(polyacetal) (standard)*
8 = PEEK for higher temperature applications *(see chart below)*

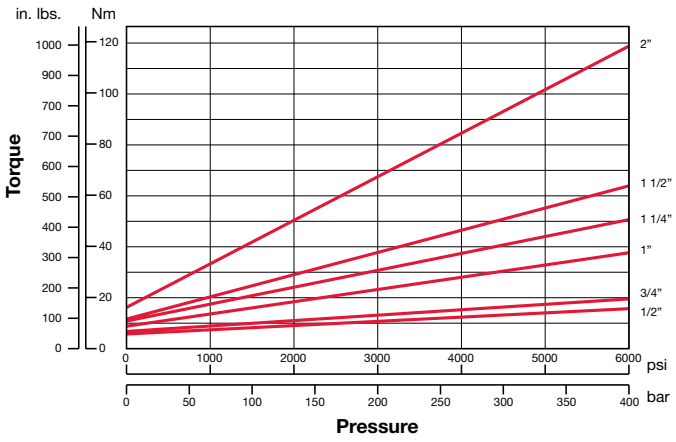
Body Seal Material
2 = NBR *(used with POM ball seal) (standard)*
8 = Graphite *(used with PEEK ball seal)* for higher temperature applications

Model Codes containing selections listed in RED are non-standard items – Minimum quantities may apply – Contact HYDAC for information and availability
Not all combinations are available

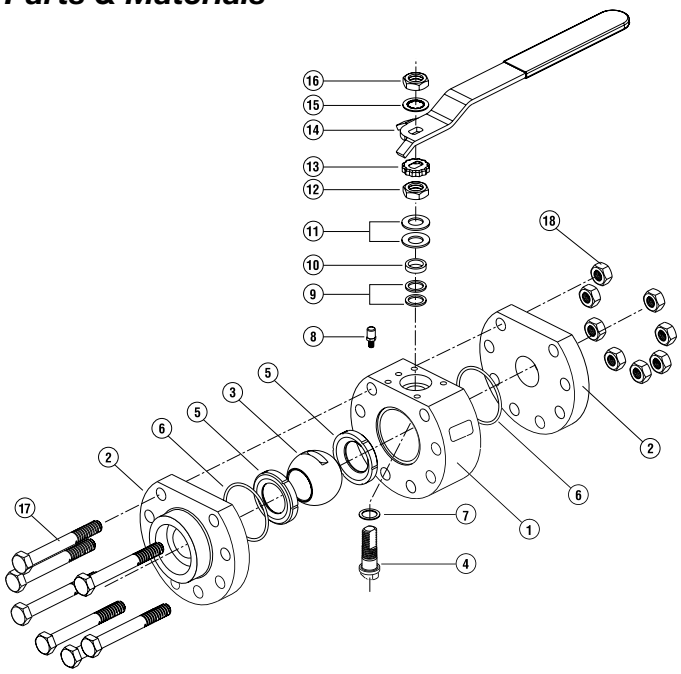
Pressure/Temperature Graph



Torque/Pressure Graph



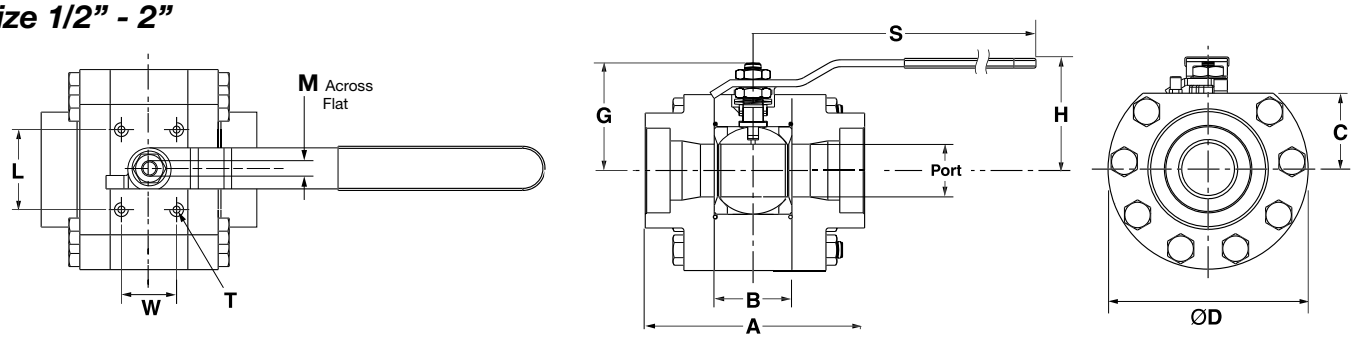
Parts & Materials



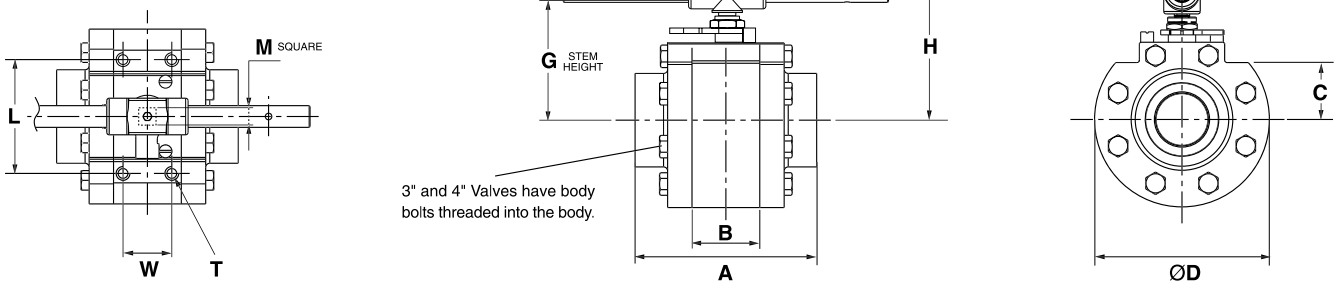
Item	Description	Material
1	Body	Stainless Steel 316
2	End Connector	Stainless Steel 316
3	Ball	Stainless Steel 316 (17-4PH 1/2”-3/4”)
4	Stem	Stainless Steel 17-4PH
5*	Ball Seal	POM / PEEK
6*	Body Seal	NBR / Graphite
7*	Stem Thrust Seal	PA (Nylon) / PEEK
8	Stop Pin	Stainless Steel
9*	Gland Packing	PTFE - 25% Carbon Filled/Graphite
10	Gland	Stainless Steel
11	Disc Spring	Stainless Steel
12	Gland Nut	Stainless Steel
13	Tab Washer	Stainless Steel
14	Handle	Stainless Steel
15	Serrated Washer	Stainless Steel
16	Handle Nut	Stainless Steel
17	Body Bolts	Stainless Steel
18	Body Nuts	Stainless Steel

Dimensions

Size 1/2” - 2”



Size 3” - 4”



Size	Port	A	B	C	G	øD	H	M	N	S	T	W	L	Wgt
1/2”	0.44	3.07	0.81	1.06	1.50	2.76	1.81	0.22	3/8” UNF	7.05	M5	-	1.34	3.5
3/4”	0.56	3.35	0.97	1.18	1.59	3.15	1.89	0.22	3/8” UNF	7.05	M5	0.59	1.34	5.3
1”	0.81	4.25	1.25	1.50	2.22	3.86	2.40	0.30	7/16” UNF	7.56	M5	0.94	1.65	10
1 1/4”	1.00	4.76	1.63	1.69	2.40	4.13	2.60	0.30	7/16” UNF	7.56	M5	0.94	1.65	12
1 1/2”	1.25	5.16	1.91	1.97	2.91	5.12	3.15	0.34	9/16” UNF	11.30	M6	1.42	1.57	21
2”	1.50	5.59	2.22	2.17	3.06	5.71	3.31	0.34	9/16” UNF	11.30	M6	1.57	2.28	29
3”	2.50	8.82	3.28	2.76	5.71	8.46	7.28	0.74	1” UNS	15.75	M12	2.36	5.51	86
4”	3.25	10.55	4.28	3.54	6.34	9.84	7.91	0.74	1” UNS	24.02	M12	2.76	5.91	141

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs.

Overview

Introduction

Traditionally the HYDAC product offering existed of high pressure manual valves. As we grow and are exposed to new industries we are adding to our product offering.

Description

HYDAC Automated Valves are pneumatically operated. Actuators allow valves to be operated automatically by a control system or manually from a remote location. Valve automation brings significant advantages to a plant in the areas of process quality, efficiency, safety, and productivity. Electric or hydraulically actuated valves available on special request.

Low Pressure Ball Valves

KHNVN Series *(see page 30)*
Nominal Sizes from 1/4" to 2"

Automated 2 Piece Ball Valves

KHL Series *(see page 35)*
Nominal Sizes from 1/4" to 2"

Inline Isolation Valve + Actuator

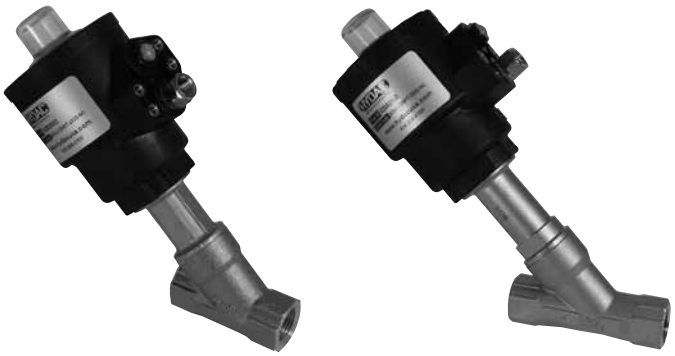
HVA Series *(see page 31)*
Nominal Sizes from 3/8" to 2"

Automated 3 Piece Ball Valves

KHM3L Series *(see page 37)*
Nominal Sizes from 1/4" to 2"

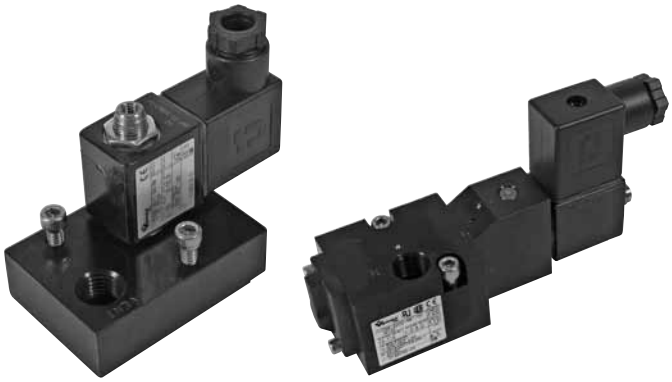
Angle Seat Valves

ASV Series *(see page 33)*
Nominal Sizes from 3/8" to 2"



Solenoid Valves

Namur 3-way & 4-way *(see page 39)*



KHNVN Series
Low Pressure Stainless Steel

Description
The KHNVN Series manual ball valves are full port, 316 stainless steel, NPT threaded manual ball valves. They are equipped with a manual handle with a locking device.

Features
- Full port ball drilling for unrestricted flow
- Investment cast 2-piece SS body
- Blow-out proof stem
- Compact assembly
- Locking device

Materials of Construction
Body & End Cap
- ASTM A351 Cast SS Grade CF8M

Stem Seals
- PTFE

Seats:
- PTFE

Ball & Stem:
- 316 SS

Stem Nut & Washer:
- 304 SS

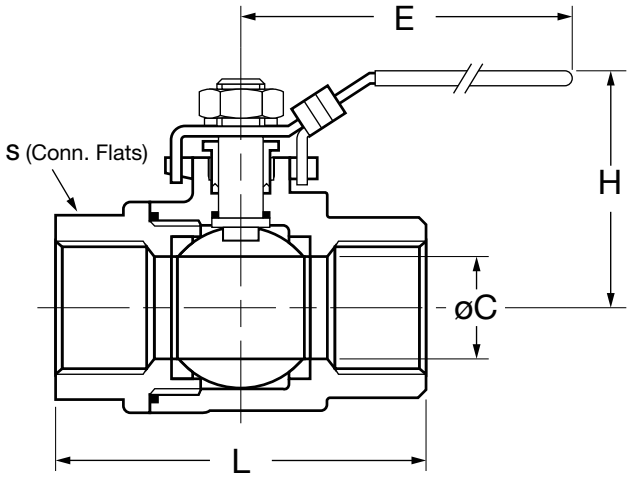
Handle & Locking Device:
- 304 SS

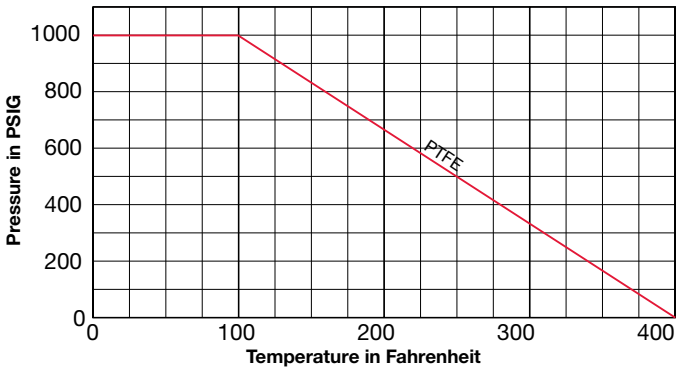
Handle Sleeve:
- Vinyl

Specifications
Max. Temperature:
- 400°F

Max. Pressure:
- 1000 psig (up to 100˚F)
- 2000 psig available *(Contact HYDAC for details)*

End Connections
- NPT Threaded *(female)*

Dimensions


Pressure vs. Temperature Curve


Size	Model Code	DN	øC	E	H	L	S	Weight (lbs.)
1/4”	KHNVN-1/4 NPT-3333	02089401	0.45	3.90	2.03	1.91	0.83	0.54
3/8”	KHNVN-3/8 NPT-3333	02089402	0.49	3.90	2.03	1.91	0.83	0.51
1/2”	KHNVN-1/2 NPT-3333	02089403	0.59	4.13	2.09	2.20	1.06	0.74
3/4”	KHNVN-3/4 NPT-3333	02089404	0.79	4.13	2.20	2.56	1.28	0.98
1”	KHNVN-1 NPT-3333	02089405	0.98	4.76	2.60	2.95	1.57	1.51
1 1/4”	KHNVN-1-1/4 NPT-3333	02089406	1.26	5.39	2.91	3.43	1.89	2.38
1 1/2”	KHNVN-1-1/2 NPT-3333	02089407	1.50	6.30	3.27	3.86	2.13	3.75
2”	KHNVN-2 NPT-3333	02089408	1.97	7.48	3.62	4.92	2.68	6.39

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

HVA Series
Inline Isolation Valve + Actuator

Specifications

- Temperature range: -4° to 302°F (-20° to 83°C)
- Maximum pressure: 225 psi
- Vacuum rating: 740mm Hg (97% vacuum)
- Seats & Seals: VITON = High compatibility with majority of fluids, not advised for steam.
- Air pressure required: 40 to 125 psi for double acting, 60 to 125 psi for spring return
- Body and Internals: Electroless Nickel Plated Brass

Description

- The HVA Series combines a pneumatic actuator and isolation valve into one body, which acts as a automated on/off valve.

Features and Benefits

- Compact assembly / Saves space
- High CV / Less restriction *(low pressure drop)*
- Integrated actuators / Less parts to order and no mounting kits
- Integral NAMUR solenoid mounting pad

Models Available

- NC: spring return, normally closed
- NO: spring return, normally open
- DA: double acting

Model Code

HVA - 3/8 NPT - NO - 24VDC

Series
HVA = Valve + Actuator

Port Size *(NPT)*
3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

Function
NO = Spring return, Normally open, Air to close
NC = Spring return, Normally closed, Air to open
DA = Double acting

Solenoid Valve Options
(omit) = No solenoid valve included
24VDC = 24 VDC solenoid valve included
120VAC = 120 VAC solenoid valve included

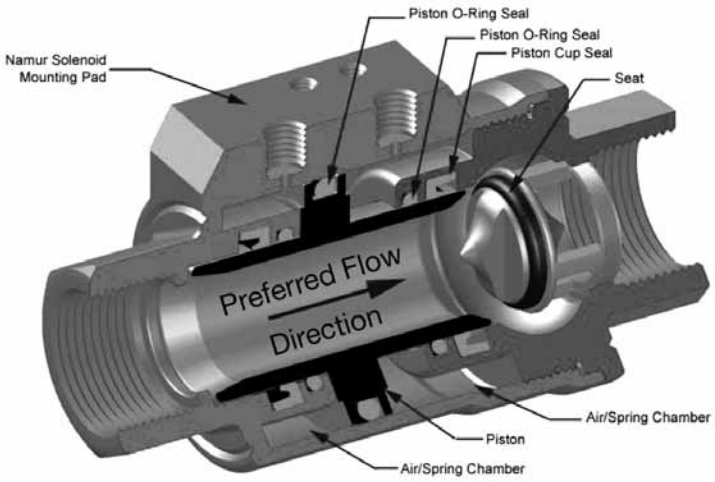
Note: see page 39 - 40 for information on solenoid valves

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

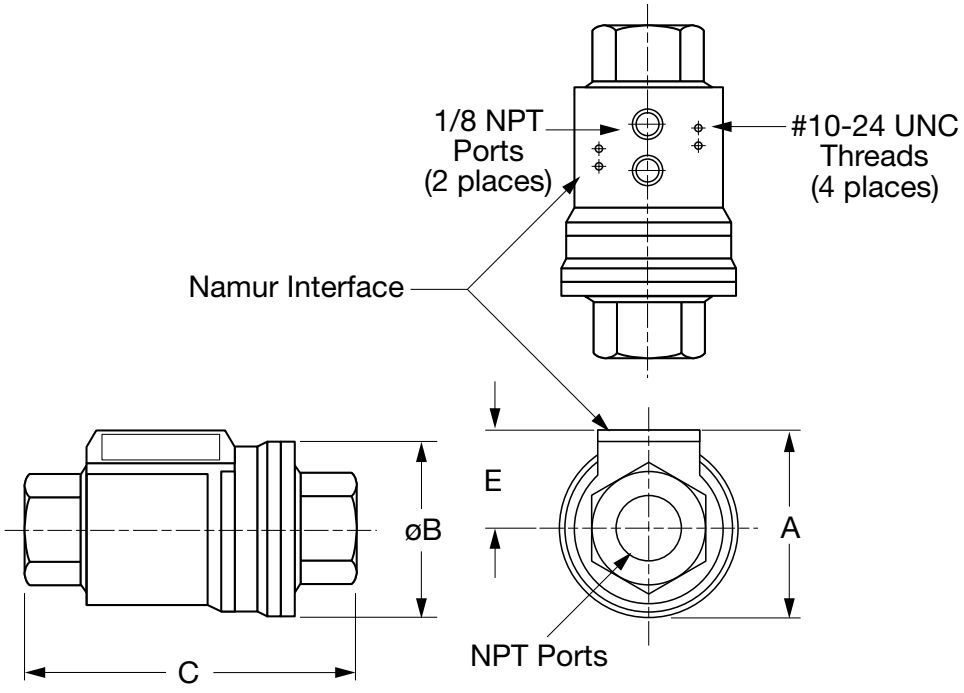
Stroke Time *(based on 80 psi actuating pressure)*

Size	Spring Return		Double Acting	
	Spring	Air	Opening Air	Closing Air
3/8"	20 mS	10 mS	10 mS	10 mS
1/2"	20 mS	10 mS	10 mS	10 mS
3/4"	30 mS	20 mS	20 mS	20 mS
1"	40 mS	20 mS	20 mS	20 mS
1 1/4"	70 mS	40 mS	30 mS	30 mS
1 1/2"	110 mS	60 mS	60 mS	60 mS
2"	130 mS	70 mS	70 mS	70 mS

Cutaway View



Dimensions



NPT Port Size	Cv	A	B	C	E	Wt	Air Consumption
3/8"	8	2.11	1.81	3.60	1.21	1.90	0.73 cu. inches
1/2"	10	2.33	2.00	4.21	1.31	2.30	1.05 cu. inches
3/4"	13	2.76	2.10	4.92	1.51	3.70	1.90 cu. inches
1"	17	3.00	2.72	5.31	1.63	4.15	2.45 cu. inches
1 1/4"	28	3.59	3.39	6.02	1.90	7.50	4.58 cu. inches
1 1/2"	57	4.00	3.78	6.73	2.12	8.15	6.70 cu. inches
2"	81	4.50	4.29	7.51	2.35	12.75	9.50 cu. inches

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs

ASV Series
Angle Seat Valve

ASV...2333
Bronze

ASV...3333
Stainless Steel

Specifications

Ambient Temperature Range
- 14° to 140°F (-10° to 60°C)

Fluid Temperature Range
- -14° to 358°F (-25° to 181°C)

Pressure/Viscosity Ratings
- From 0 to 230 psi
- Steam to 150 psi, Max 358°F
- Max Viscosity 600CST
- Required Air Pressure - 80 to 110 psi

ASV...2333
- Bronze Body & SS Plug
- PTFE seats & seals

ASV...3333
- 316 SS Body & Plug
- PTFE seats & seals

Leakage rate
- ANSI Class VI Shut off

Description

The Angle Seat Valve is a 2-way pneumatically actuated plug valve, which provides for automatic isolation of liquids, gases, steam and some aggressive fluids. Available with stainless steel or bronze bodies with plastic actuator housings.

Features and Benefits

- Self aligning stem seal reduces potential leak points
- High cycle life, provides long service life
- Compact assembly / Saves space
- Internal flow path designed to minimize pressure drop
- NAMUR Solenoid mounting pad

Easy Installation

The Angle Seat Valve can be mounted in any position. The actuator rotates 360° allowing for the selective positioning of the pneumatic inlet port.

Models Available

- Spring Return N.C. Bi-directional Flow
- Double Acting Bi-directional Flow

Stroke Time

Valve Size	Actuator Function	Closed to Open (mS)	Open to Closed (mS)
3/8”	NC	15	25
3/8”	DA	5	5
1/2”	NC	15	25
1/2”	DA	5	5
3/4”	NC	15	25
3/4”	DA	5	5
1”	NC	60	100
1”	DA	10	10
1 1/4”	NC	60	100
1 1/4”	DA	10	10
1 1/2”	NC	150	225
1 1/2”	DA	15	15
2”	NC	150	225
2”	DA	15	15

Model Code

ASV - 1 NPT - 3333 - DA - 24DC

Series
ASV = Angle Seat Valve

Port Size *(NPT)*
3/8”, 1/2”, 3/4”, 1”, 1 1/4”, 1 1/2”, 2”

Materials
2333 = Bronze body & SS plug, PTFE seats & seals
3333 = 316SS body & plug, PTFE seats & seals

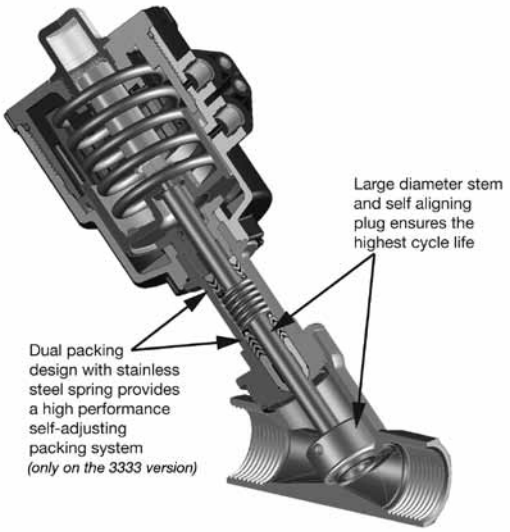
Function
NC = Spring return, normally closed
DA = Double acting

Solenoid Valve Options
(omit) = No solenoid valve included
24VDC = 24 VDC solenoid valve included
120VAC = 120 VAC solenoid valve included

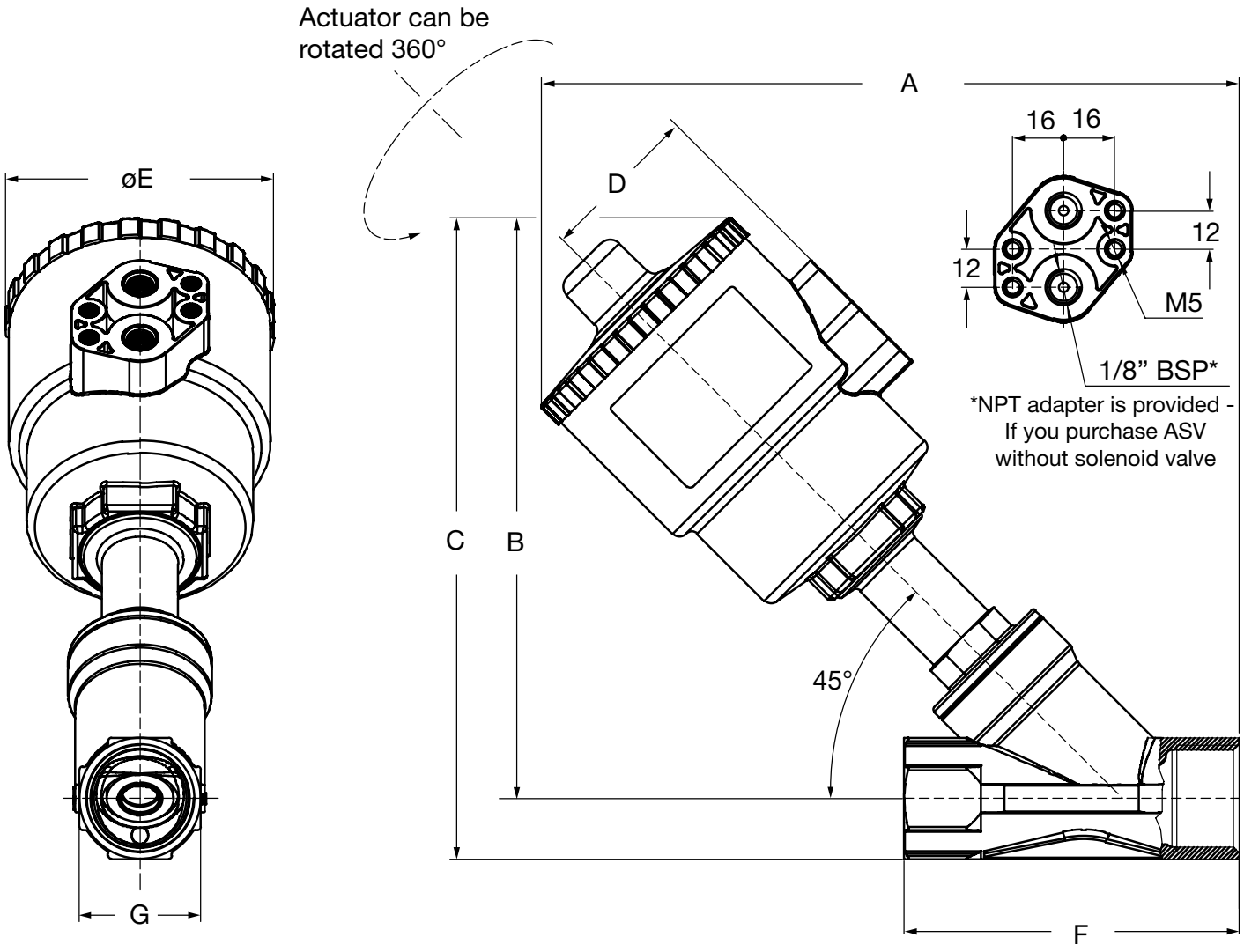
Note: see page 39 - 40 for information on solenoid valves

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

Cutaway View



Dimensions



Type	NPT Port Size	CV	ASV...3333 (316 SS)							ASV...2333 (Bronze)							Wgt
			A	B	C	D	ø E	F	G	A	B	C	D	ø E	F	G	
NC/DA	3/8"	6	7.48	6.14	6.65	1.73	2.76	3.35	0.98	6.42	5.51	6.02	1.73	2.76	2.56	1.06	2.2
NC/DA	1/2"	7	7.48	6.14	6.65	1.73	2.76	3.35	0.98	6.42	5.51	6.02	1.73	2.76	2.56	1.06	2.2
DA	3/4"	12	7.68	6.30	6.93	1.73	2.76	3.74	1.22	6.81	5.79	6.42	1.73	2.76	2.95	1.08	2.6
NC	3/4"	12	7.68	6.30	6.93	1.73	2.76	3.74	1.22	6.81	5.79	6.42	1.73	2.76	2.95	1.08	2.6
DA	1"	23	8.62	7.17	7.95	1.99	3.32	4.13	1.50	8.11	6.93	7.72	1.99	3.32	3.54	1.61	3.5
NC	1"	23	8.62	7.17	7.95	1.99	3.32	4.13	1.50	8.11	6.93	7.72	1.99	3.32	3.54	1.61	3.7
DA	1 1/4"	33	8.90	7.32	8.23	1.99	3.32	4.72	1.85	8.46	7.09	8.07	1.99	3.32	4.33	1.97	4.2
NC	1 1/4"	33	10.47	8.90	9.80	2.61	4.58	4.72	1.85	10.04	8.66	9.65	2.61	4.58	4.33	1.97	6.6
DA	1 1/2"	54	10.67	9.06	10.16	2.61	4.58	5.12	2.13	10.63	9.25	10.39	2.61	4.58	4.72	2.28	7.9
NC	1 1/2"	54	12.09	10.47	11.57	3.05	5.54	5.12	2.13	12.05	10.67	11.81	3.05	5.54	4.72	2.28	8.8
DA	2"	78	11.22	9.45	10.79	2.61	4.58	5.91	2.60	11.02	9.45	10.83	2.61	4.58	5.91	2.76	9.5
NC	2"	78	12.64	10.87	12.20	3.05	5.54	5.91	2.60	12.44	10.87	12.24	3.05	5.54	5.91	2.76	11.7.

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs

KHL Series
Automated 2 Piece Ball Valve

Specifications

- Ball Valve 316SS body, ball and stem
- Blow out proof stem
- RPTFE Seats
- PTFE seals
- Viton stem O-ring
- NPT threaded end connection

Temperature Range

- -30° to 400°F max

Pressure Rating

- 1/4" to 1" 2000 psi (-30° to 100°F)
- 1 1/4" to 2" 1500 psi (-30° to 100°F)
- 0 psi @ 400°F

Description

The KHL is a full port, 316 stainless steel, NPT threaded end automated ball valve.

It can be equipped with a manual handle or with direct mount pneumatic actuators.

Features and Benefits

- Compact direct mount assembly / Saves space since there is no bracket
- High CV / Less restriction (low pressure drop)
- No stem packing to adjust / Reduces maintenance

Models Available

- Spring Return Actuator, normally closed
- Double Acting Actuator

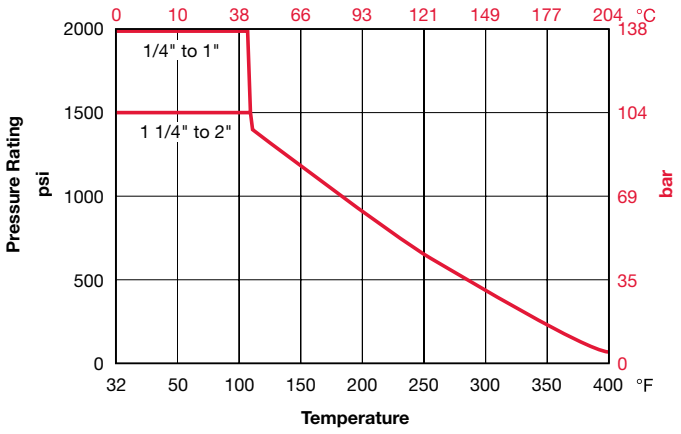
Actuators

- Compact direct mount
- Anodized aluminum actuator
- NAMUR solenoid mounting adapter
- ISO 5211 mounting standard
- Visual position indicators
- High duty cycle
- Permanent lubrication
- Pneumatic double acting and spring return
- Min. 80 psi, Max. 120 psi air supply required
- Pneumatic solenoid valves sold separately

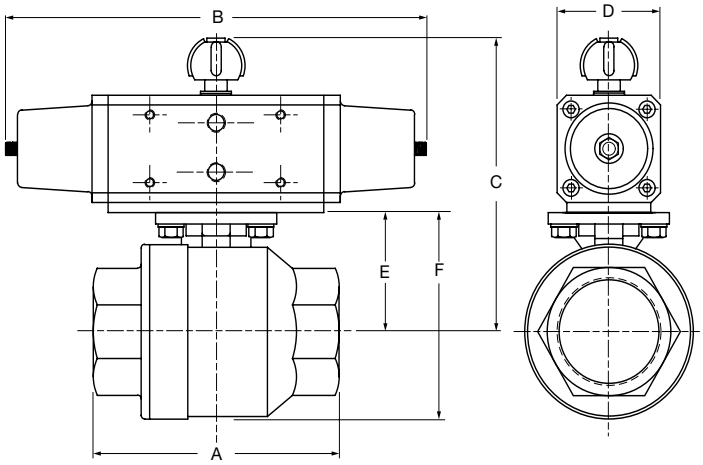
Note: see page 39 - 40 for information on solenoid valves

Contact HYDAC for more information on electric actuators.

Pressure Vs. Temperature Chart

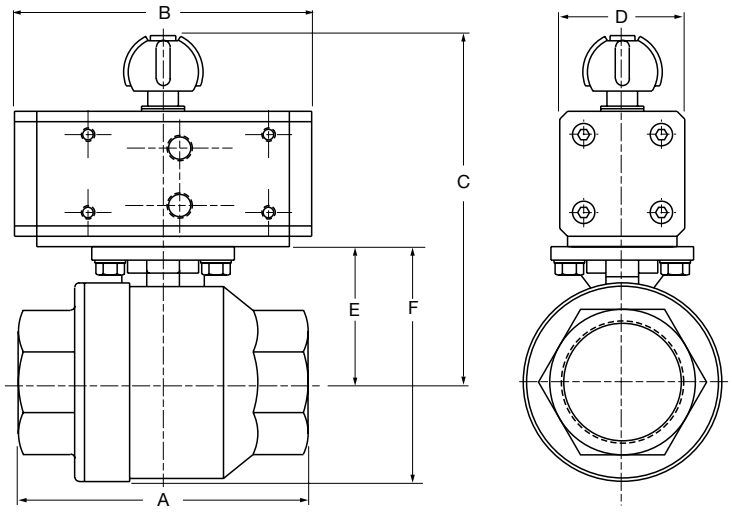


Dimensions with normally closed spring return pneumatic actuator *(NPT threaded end connection, 2 pc. body)*



CV	Size NPT	A	B	C	D	E	F	Wgt.	Model Code Part No.
13	1/4”	2.56	8.62	4.85	2.15	1.65	2.28	3.9	KHL-1/4NPT-3333-NC 02083087
13	3/8”	2.56	8.62	4.85	2.15	1.65	2.34	3.9	KHL-3/8NPT-3333-NC 02083090
23	1/2”	2.95	8.62	4.85	2.15	1.65	2.35	3.9	KHL-1/2NPT-3333-NC 02083093
70	3/4”	3.15	9.36	5.36	2.54	1.77	2.71	5.7	KHL-3/4NPT-3333-NC 02083096
116	1”	3.54	11.47	5.99	2.81	2.05	3.05	7.5	KHL-1NPT-3333-NC 02083099
151	1 1/4”	4.33	11.47	6.22	2.81	2.28	3.63	8.6	KHL-1 1/4NPT-3333-NC 02083102
197	1 1/2”	4.72	12.48	7.32	3.12	2.68	4.33	13.0	KHL-1 1/2NPT-3333-NC 02083105
325	2”	5.51	13.92	8.10	3.51	3.07	4.85	18.5	KHL-2NPT-3333-NC 02083108

Dimensions with double acting pneumatic actuator *(NPT threaded end connection, 2 pc. body)*



CV	Size NPT	A	B	C	D	E	F	Wgt.	Model Code Part No.
13	1/4”	2.56	5.07	4.85	2.15	1.65	2.28	3.2	KHL-1/4NPT-3333-DA 02083088
13	3/8”	2.56	5.07	4.85	2.15	1.65	2.34	3.2	KHL-3/8NPT-3333-DA 02083091
23	1/2”	2.95	5.07	4.85	2.15	1.65	2.35	3.3	KHL-1/2NPT-3333-DA 02083094
70	3/4”	3.15	5.07	4.97	2.15	1.77	2.71	3.5	KHL-3/4NPT-3333-DA 02083097
116	1”	3.54	5.62	5.48	2.34	2.05	3.05	5.0	KHL-1NPT-3333-DA 02083100
151	1 1/4”	4.33	5.62	5.71	2.34	2.28	3.63	6.1	KHL-1 1/4NPT-3333-DA 02083103
197	1 1/2”	4.72	6.59	6.62	2.81	2.68	4.33	9.4	KHL-1 1/2NPT-3333-DA 02083106
325	2”	5.51	6.59	7.01	2.81	3.07	4.92	12.4	KHL-2NPT-3333-DA 02083109

Note: Actuators are sized for 300 psi ΔP

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches and lbs

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

KHM3L Series
Automated 3 Piece Ball Valve

Specifications

- Ball Valve 316SS body, ball and stem
- Blow out proof stem
- RPTFE seats
- PTFE seals
- Viton stem o-ring

Temperature Range

- -30° to 400°F max

Pressure Rating

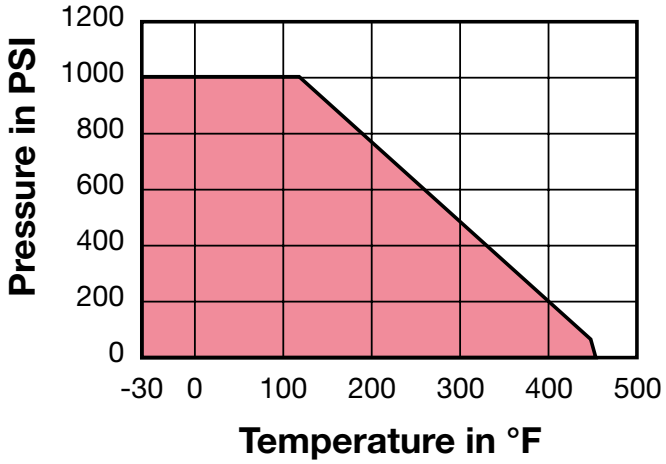
- 1000 psi @ -30° to 100°F
- 0 psi @ 400°F

Description

The KHM3L is a full port, 316 stainless steel, 3 piece ball valve. It is available with NPT threads or socket weld connectors.

It can be equipped with a manual handle or with direct mount pneumatic actuators.

Pressure Vs. Temperature Chart



Features and Benefits

- Compact direct mount assembly / Saves space since there is no bracket
- High CV / Less restriction *(low pressure drop)*
- No stem packing to adjust / Reduces maintenance
- 3 piece design allows inline maintenance for socket weld connections

Models Available

- Spring Return Actuator, normally closed
- Double Acting Actuator
- Manual Handle *(contact HYDAC)*

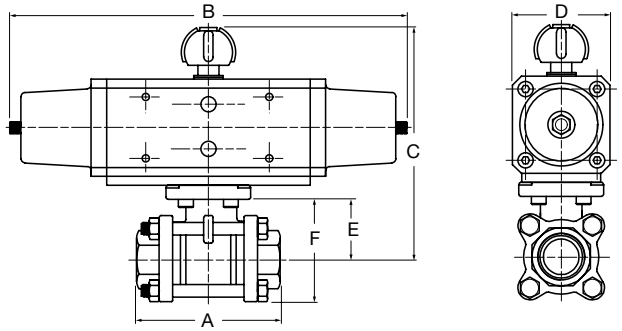
Actuators

- Compact direct mount
- Anodized aluminum actuator
- NAMUR solenoid mounting adapter
- ISO 5211 mounting standard
- Visual position indicators
- High duty cycle
- Permanent lubrication
- Pneumatic double acting and spring return
- Min. 80 psi, Max. 120 psi air supply required
- Pneumatic solenoid valves sold separately

Note: see page 39 - 40 for information on solenoid valves

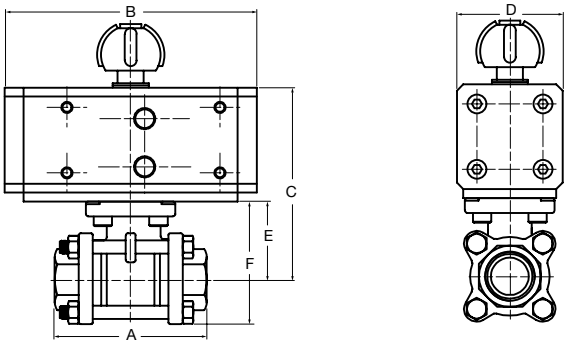
Contact HYDAC for more information on electric actuators.

Dimensions with normally closed spring return pneumatic actuator



CV	Size	A	B	C	D	E	F	Wt	Threaded Model Code Part No.	Socket Weld Model Code Part No.
13	1/4”	2.56	8.62	4.85	2.15	1.65	2.60	4.3	KHM3L-1/4NPT-3333-NC 02083039	KHM3L-1/4SW-3333-NC 02083042
13	3/8”	2.56	8.62	4.85	2.15	1.65	2.60	4.3	KHM3L-3/8NPT-3333-NC 02083045	KHM3L-3/8SW-3333-NC 02083048
23	1/2”	2.95	8.62	4.85	2.15	1.65	2.60	4.3	KHM3L-1/2NPT-3333-NC 02083051	KHM3L-1/2SW-3333-NC 02083054
70	3/4”	3.15	9.36	5.36	2.54	1.77	2.75	6.2	KHM3L-3/4NPT-3333-NC 02083057	KHM3L-3/4SW-3333-NC 02083060
116	1”	3.54	11.47	5.99	2.81	2.05	3.32	8.4	KHM3L-1NPT-3333-NC 02083063	KHM3L-1SW-3333-NC 02083066
151	1 1/4”	4.33	11.47	6.22	2.81	2.28	3.68	9.4	KHM3L-1 1/4NPT-3333-NC 02083069	KHM3L-1 1/4SW-3333-NC 02083072
197	1 1/2”	4.72	12.48	7.32	3.12	2.68	4.30	14.3	KHM3L-1 1/2NPT-3333-NC 02083075	KHM3L-1 1/2SW-3333-NC 02083078
325	2”	5.51	13.92	8.10	3.51	3.07	4.85	20.1	KHM3L-2NPT-3333-NC 02083081	KHM3L-2SW-3333-NC 02083084

Dimensions with double acting pneumatic actuator



CV	Size	A	B	C	D	E	F	Wt	Threaded Model Code Part No.	Socket Weld Model Code Part No.
13	1/4”	2.56	5.07	4.85	2.15	1.65	2.60	3.5	KHM3L-1/4NPT-3333-DA 02083040	KHM3L-1/4SW-3333-DA 02083043
13	3/8”	2.56	5.07	4.85	2.15	1.65	2.60	3.5	KHM3L-3/8NPT-3333-DA 02083046	KHM3L-3/8SW-3333-DA 02083049
23	1/2”	2.95	5.07	4.85	2.15	1.65	2.60	3.6	KHM3L-1/2NPT-3333-DA 02083052	KHM3L-1/2SW-3333-DA 02083055
70	3/4”	3.15	5.07	4.97	2.15	1.77	2.75	3.9	KHM3L-3/4NPT-3333-DA 02083058	KHM3L-3/4SW-3333-DA 02083061
116	1”	3.54	5.62	5.48	2.34	2.05	3.32	5.9	KHM3L-1NPT-3333-DA 02083064	KHM3L-1SW-3333-DA 02083067
151	1 1/4”	4.33	5.62	5.71	2.34	2.28	3.68	7.2	KHM3L-1 1/4NPT-3333-DA 02083070	KHM3L-1 1/4SW-3333-DA 02083073
197	1 1/2”	4.72	6.59	6.62	2.81	2.68	4.30	10.1	KHM3L-1 1/2NPT-3333-DA 02083076	KHM3L-1 1/2SW-3333-DA 02083079
325	2”	5.51	6.59	7.01	2.81	3.07	4.85	13.5	KHM3L-2NPT-3333-DA 02083082	KHM3L-2SW-3333-DA 02083085

Note: Actuators are sized for 300 psi ΔP
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches and lbs
Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability

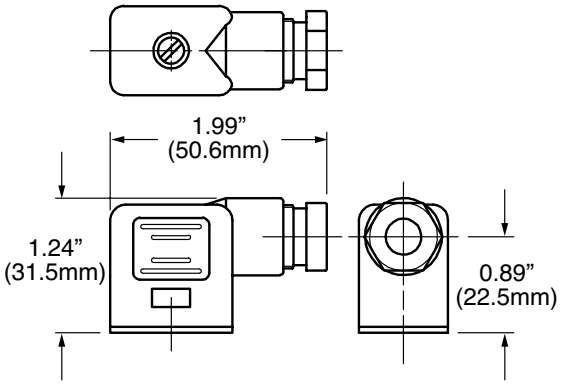
Solenoid Valves

Namur 3-way and 4-way

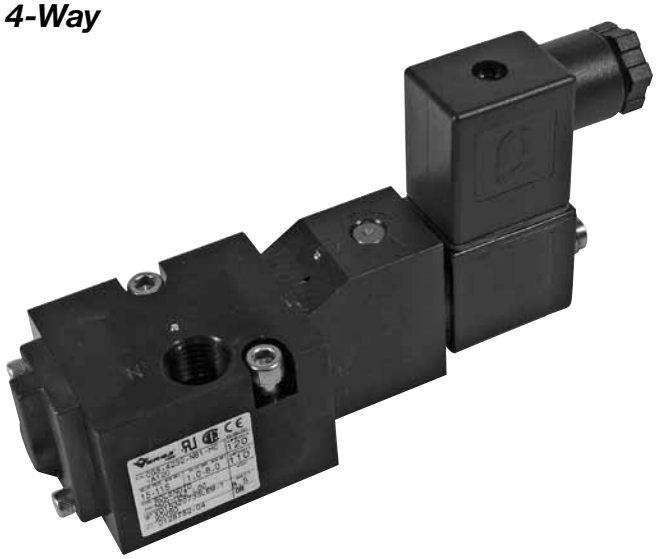
3-Way

Connector

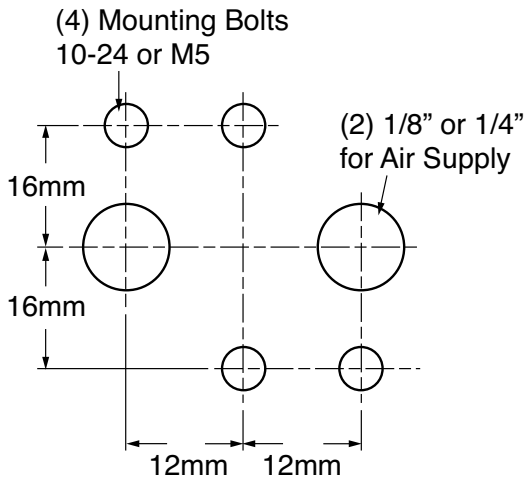
Water tight, NEMA 4/4X, mini-DIN, Cord Grip PG9 connection



4-Way



Namur Pattern

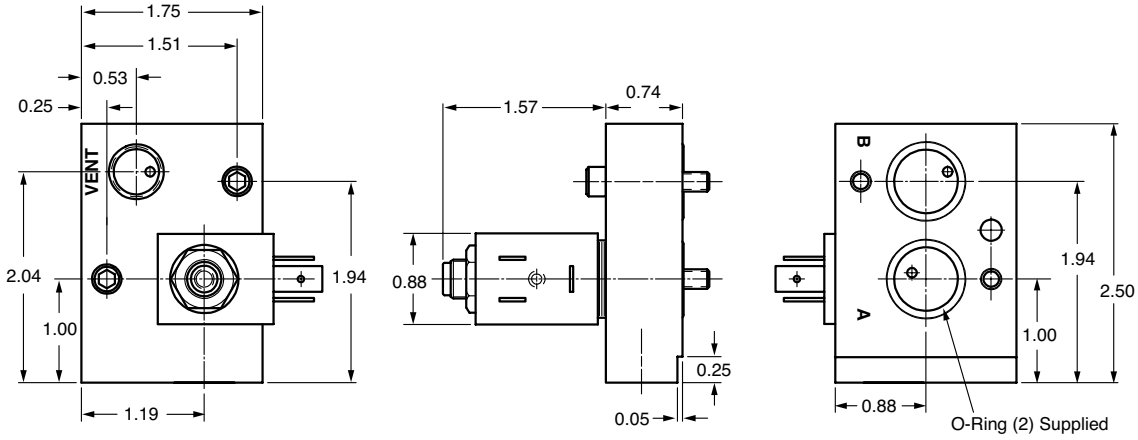


Model Code	Use With	Connectors	Nominal Coil Power	Part Number
Solenoid Valve Namur, 3-way, 24 VDC, Mini DIN	NO / NC valves with Spring Return	Mini-DIN Cord Grip PG9	AC = 8.5 watts DC = 10.5 watts	02082887
Solenoid Valve Namur, 3-way, 120 VDC, Mini DIN	NO / NC valves with Spring Return			02082888
Solenoid Valve Namur, 4-way, 24 VDC, Mini DIN	Double Acting valves			02082889
Solenoid Valve Namur, 4-way, 120 VDC, Mini DIN	Double Acting valves			02082890

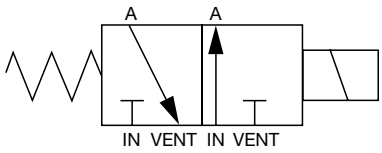
Dimensions

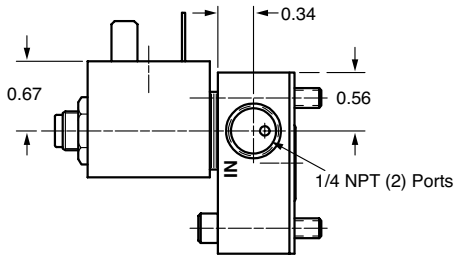
3-way Solenoid Valve used with N.O. or N.C. Valves

2 Sets of bolts provided: #10-24 and M5



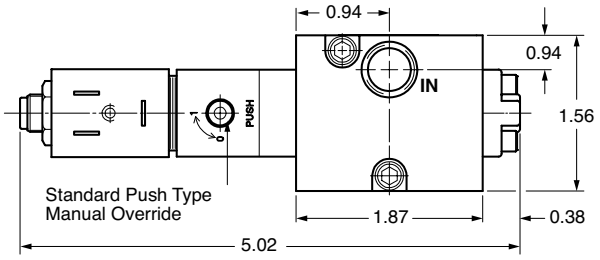
Hydraulic Symbol

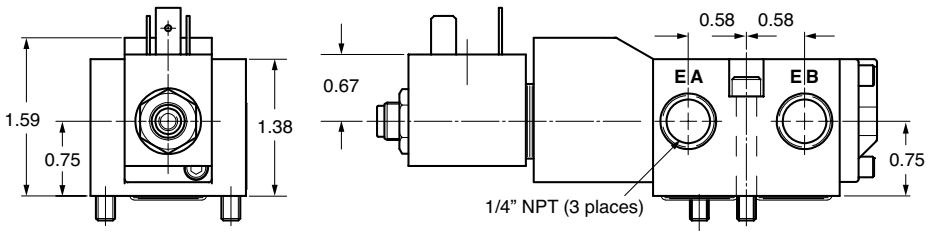




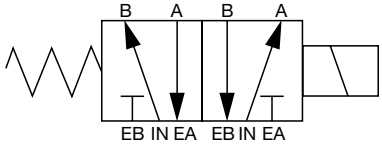
4-way Solenoid Valve used with Double Acting Valves

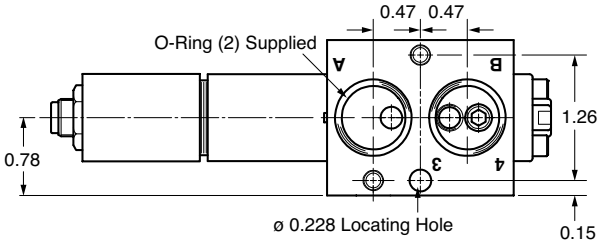
2 Sets of bolts provided: #10-24 and M5





Hydraulic Symbol

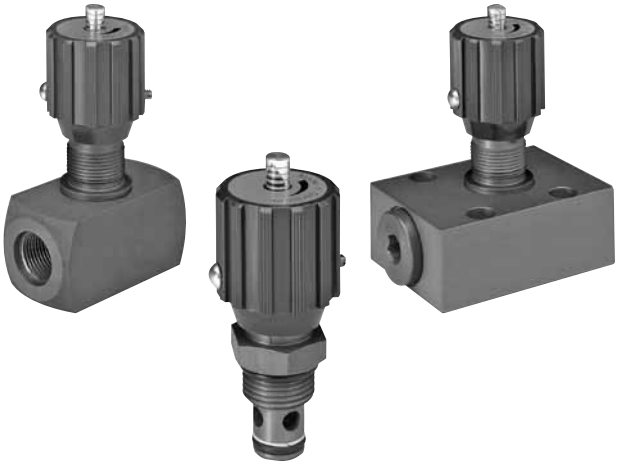




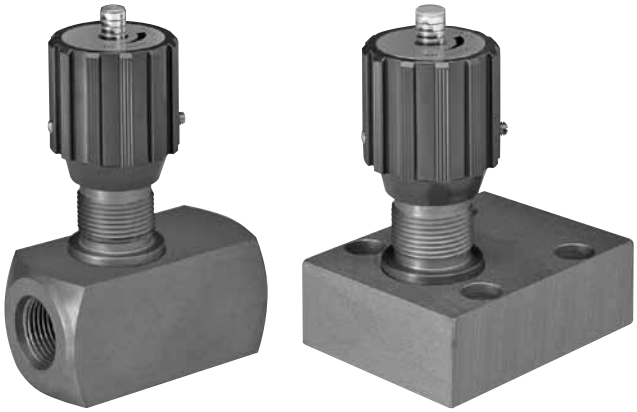
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches

Overview

Needle Valves
DV, DVE & DVP Series *(see page 43)*

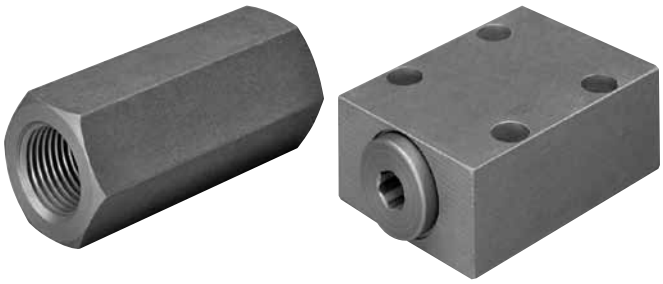


Flow Control Valves
DRV & DRVP Series *(see page 47)*



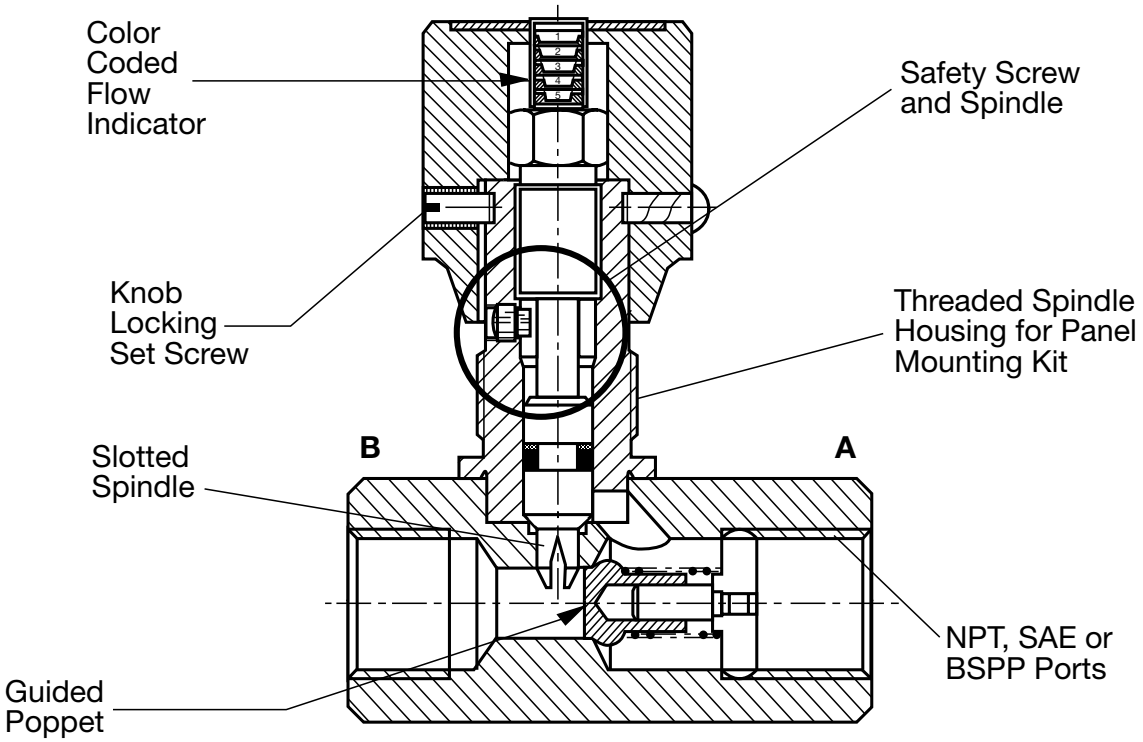
Pressure Compensated Flow Control Valves
SRVR Series *(see page 51)*

Check Valves
RV & RVP Series *(see page 53)*



Stainless Steel Flow Control Valves
DV, DRV & RV Series *(see page 55)*

Flow Control Valve Design Features and Options



Introduction

Our complete line of flow control valves are designed and manufactured by our ISO 9001 certified FLUTEC Division.

Description

- The HYDAC family of flow control valves permit safe, simple and repeatable control of hydraulic fluids at operating pressures to 5000 psi.
- The standard slotted control spindle allows for a wide range of infinitely variable flow adjustments with excellent flow characteristics.
- Precise adjustment of flow is achieved by a micrometer style adjustment knob featuring a color coded flow indicator for accurate, easy-to read visual flow reference.
- Design modifications and special materials are available for corrosive fluids such as phosphate ester, acids and caustics.

Valve Design

HYDAC flow control valves can be adjusted easily and precisely by means of the control knob. Increasing the number of turns from the fully closed position provides a steady increase of the flow rate. The colored scale permits accurate repetition of settings and the colored triangle on the rising spindle provides a visual indication of the increasing cross section of the flow area. A set screw on the side locks the knob at the desired setting.

HYDAC flow control valves include a unique safety spindle design feature. As the valve spindle is turned counter-clockwise, the spindle shoulder will engage the safety screw limiting the travel of the spindle. The hardened, high-strength steel safety screw is sealed in position to discourage tampering.

Product Features

- Phosphate coated steel valve body
- FPM *(Fluoroelastomer)* seals
- Slotted control spindle for precise and linear flow adjustments
- Exclusive safety spindle design
- Color coded spindle for accurate flow control
- Guided poppets for smoother, chatter free operation

Available Options

- Panel mounting kit
- 25 and 65 PSI cracking pressure springs *(7 psi standard)*
- Zinc Plated Body. Consult HYDAC for price and delivery

DV, DVE, & DVP Series
Needle Valves

DV Series
Inline Mounting

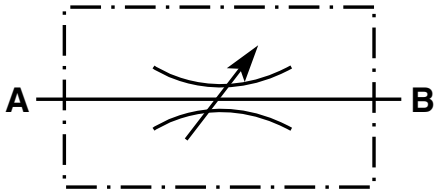
DVP Series
Manifold Mounting

DVE Series
Cartridge Valve

Specifications

- 5000 psi operating Pressure
- 8 Sizes, 1/8" - 1-1/2"
- SAE O-Ring, NPT or BSPP Threaded Connections; Manifold Mounting; and Cartridge Type
- Flows to 80 gpm
- Carbon steel housing
- FPM *(Fluoroelastomer)* O-Rings *(standard)*
- Color coded spindle for accurate flow control
- Provision for panel mounting
- Unique safety spindle design
- Temperature Range: -4° to 212°F at full pressure

Hydraulic Symbol



Model Code

DV - 06 - 01 .X / 5 - S - M

Needle Valve
DV = Inline Mounting
DVP = Manifold Mounting
DVE = Cartridge Valve

Nominal Sizes

DV & DVP Nom. Size		SAE *(DV only)* Tube Size	Thread Size	NPTF *(DV Only)* Pipe Size	Pipe OD	BSPP *(DV Only)* Thread Size
06	=			1/8"	0.405"	G1/8
08	=	-4	7/16-20 UNF	1/4"	0.540"	G1/4
10	=	-6	9/16-18 UNF	3/8"	0.675"	G3/8
12	=	-8	3/4-16 UNF	1/2"	0.840"	G1/2
16	=	-12	1-1/16-12 UN	3/4"	1.050"	G3/4
20	=	-16	1-5/16-12 UN	1"	1.315"	G1
25	=	-20	1-5/8-12 UN	1-1/4"	1.660"	G1 1/4
30	=	-24	1-7/8-12 UN	1-1/2"	1.900	G1 1/2

DVE

Nom Size		SAE Cavity	BSPP Cavity
08	=	3/4-16 UNF	G1/2
10	=	7/8-14 UNF	G1/2
12	=	1-1/16-12 UN	G3/4
16	=	1-5/16-12 UN	G1

Housing Material
01 = Carbon Steel

Modification Number

Port Configuration
(omit) = DVP Only
5 = NPTF - ANSI B1.20.3
12 = SAE - SAEJ1926 Ports with ISO 725 Threads and O-Ring Sealing
0 = BSPP to DIN 3852, Part 2-X

Supplementary Details
S = Panel Mounting Kit *(not available in sizes 20, 25, 30)*

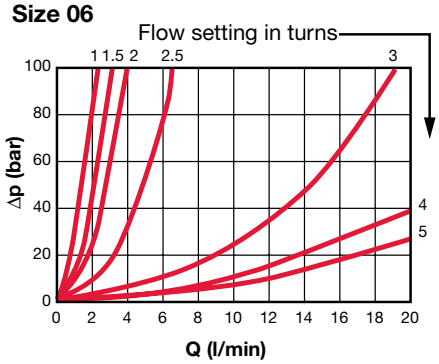
Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Pressure Drop Curves

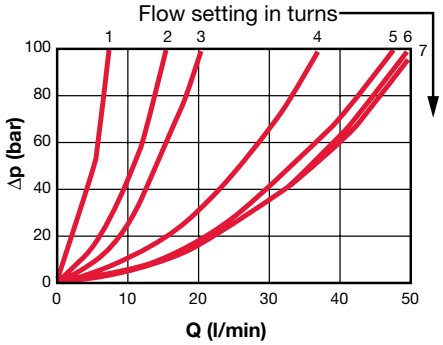
DV, DVP, DRV, DRVP Series

Flow Direction: A to B / Throttled Flow

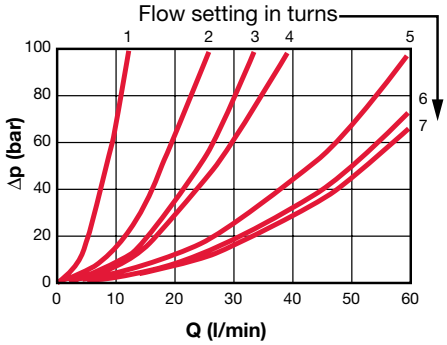
Size 06



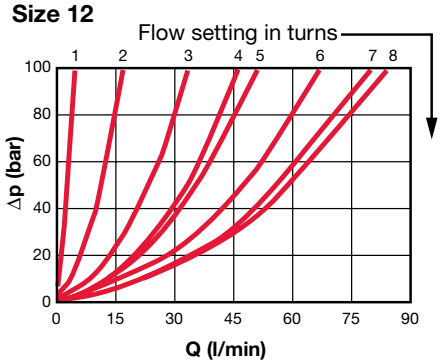
Size 08



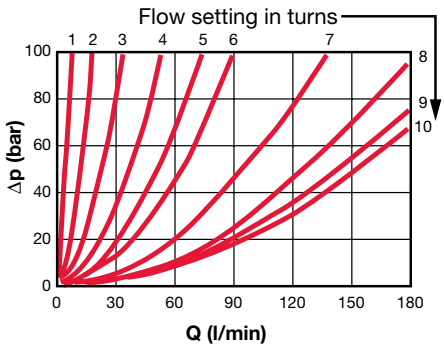
Size 10



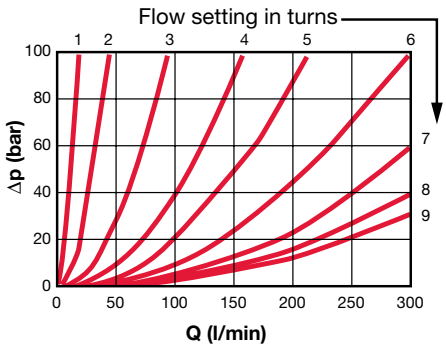
Size 12



Size 16



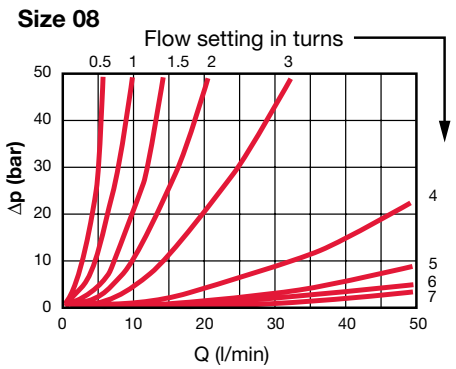
Size 20, 25, 30



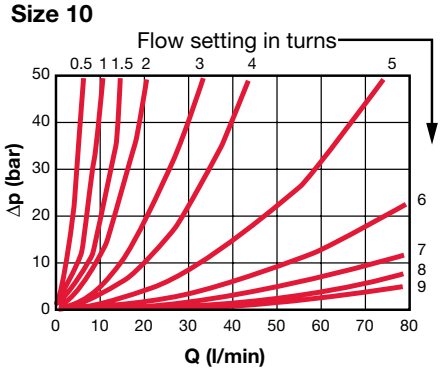
DVE Cartridge Flow Control Valves

Flow Direction: A to B / Throttled Flow

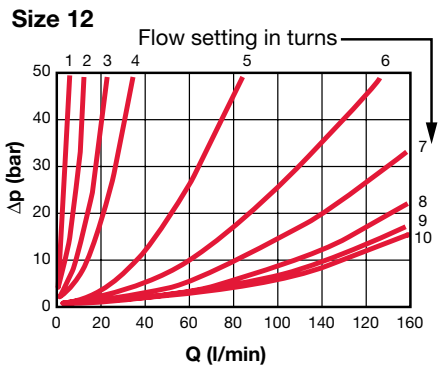
Size 08



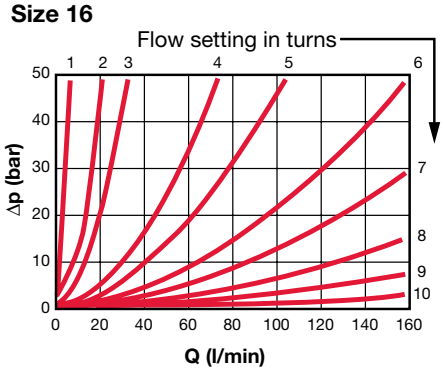
Size 10



Size 12



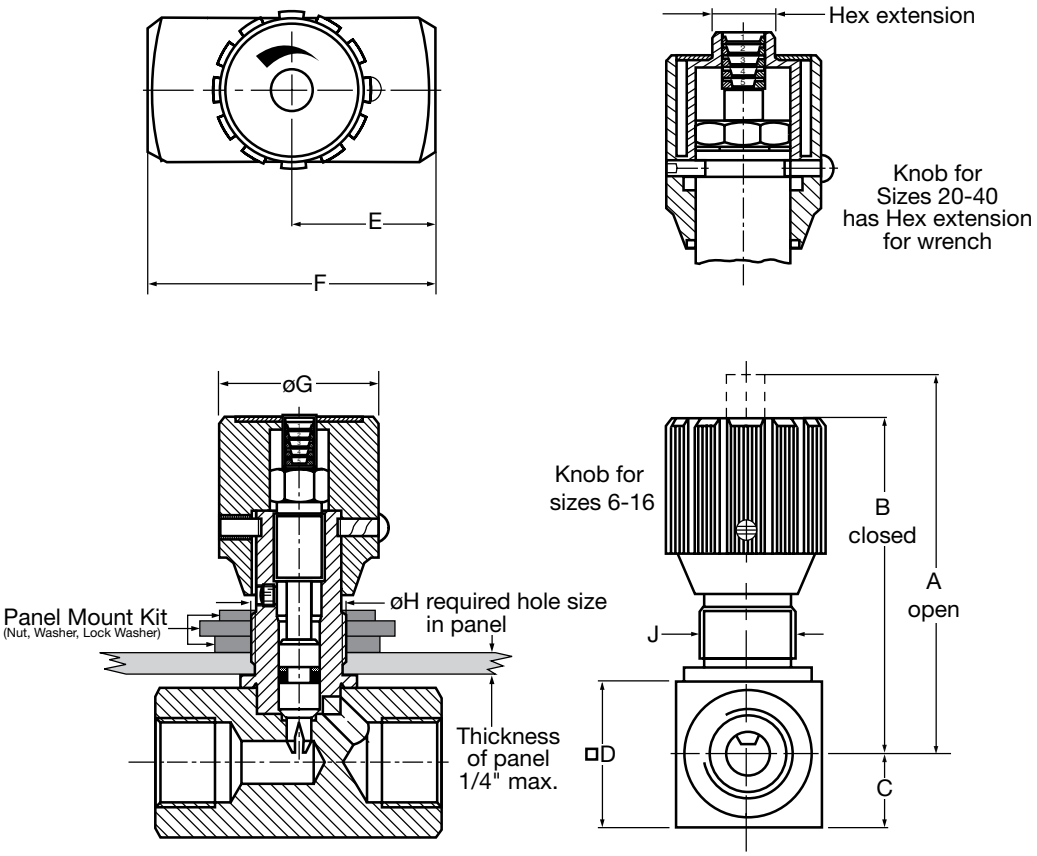
Size 16



Pressure Drop curves were established by using mineral oil with kinematic viscosity 165 SUS at 112°F / 50°C

Dimensions

DV Series Inline Needle Valve



Model Code	Port Size		A	B	C	D	E	F	øG	øH	J[1)]	Hex	Weight
	NPTF	SAE											
DV-06	1/8”	5/16-24UNF	2.16 (55)	1.97 (50)	0.31 (8)	0.63 (16)	0.75 (19)	1.50 (38)	0.94 (24)	0.51 (13)	Pg 7 thread	-	0.26 (0.12)
DV-08	1/4”	7/16-20UNF	2.83 (72)	2.56 (65)	0.49 (12.5)	0.98 (25)	0.94 (24)	1.89 (48)	1.14 (29)	0.75 (19)	Pg 11 thread	-	0.55 (0.25)
DV-10	3/8”	9/16-18UNF	2.91 (74)	2.64 (67)	0.59 (15)	1.18 (30)	1.14 (29)	2.28 (58)	1.14 (29)	0.75 (19)	Pg 11 thread	-	0.88 (0.40)
DV-12	1/2”	3/4-16UNF	3.62 (92)	3.23 (82)	0.69 (17.5)	1.38 (35)	1.34 (34)	2.68 (68)	1.50 (38)	0.91 (23)	Pg 16 thread	-	1.5 (0.70)
DV-16	3/4”	1-1/16-12UN	4.17 (105)	3.78 (96)	0.89 (22.5)	1.77 (45)	1.53 (39)	3.07 (78)	1.50 (38)	0.91 (23)	Pg 16 thread	-	2.6 (1.2)
DV-20	1”	1-5/16-12UN	5.71 (145)	5.04 (128)	0.98 (25)	1.97 (50)	2.13 (54)	4.25 (108)	1.93 (49)	1.50 (38)	Pg 29 thread	3/4 (19)	4.6 (2.1)
DV-25	1-1/4”	1-5/8-12UN	5.91 (150)	5.24 (133)	1.18 (30)	2.36 (60)	2.13 (54)	4.25 (108)	1.93 (49)	1.50 (38)	Pg 29 thread	3/4 (19)	6.2 (2.8)
DV-30	1-1/2”	1-7/8-12UN	6.10 (155)	5.43 (138)	1.38 (35)	2.76 (70)	2.13 (54)	4.25 (108)	1.93 (49)	1.50 (38)	Pg 29 thread	3/4 (19)	7.7 (3.5)

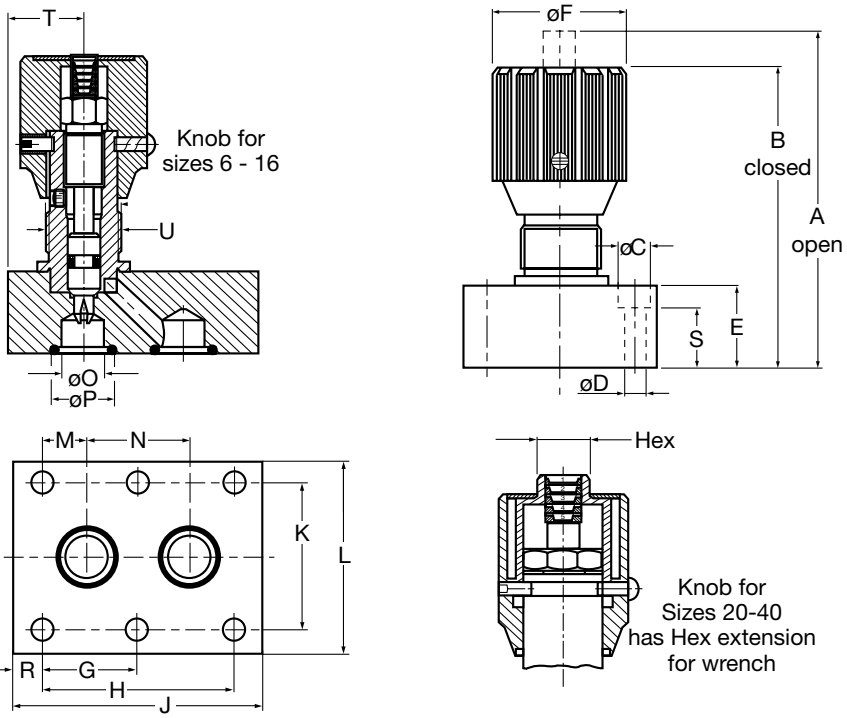
Panel Mount Kits

Size	Model Code	Part Number
6	Kit Panel Mount DV06	00705300
8/10	Kit Panel Mount DV08	00705310
12/16	Kit Panel Mount DV12	00705302

1) Note: Pg style thread per DIN 40430
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)
*Dependent upon valve and seal materials selected.

Dimensions

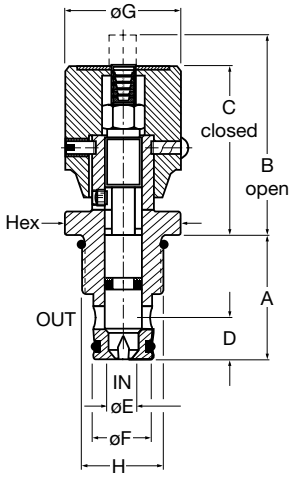
DVP Manifold Mount Needle Valve



Model Code	Nom. Size	A	B	øC	øD	E	øF	G[1]	H	J	K	L	M	N	øO	øP	R	S	T	U[2]	Hex	Wt.
DVP-06	1/8"	2.48 (63)	2.28 (58)	.43 (11)	.26 (6.6)	.63 (16)	.94 (24)	–	.748 (19)	1.38 (35)	1.112 (28.5)	1.63 (41.5)	0.059 (1.5)	.630 (16)	0.197 (5)	0.382 (9.7)	0.315 (8)	0.35 (9)	0.37 (9.5)	Pg 7 thread	–	0.44 (0.2)
DVP-08	1/4"	3.11 (79)	2.83 (72)	.43 (11)	.26 (6.6)	.79 (20)	1.14 (29)	–	1.378 (35)	1.87 (47.5)	1.319 (33.5)	1.81 (46)	0.177 (4.5)	1.004 (25.5)	0.276 (7)	0.500 (12.7)	0.256 (6.5)	0.51 (13)	0.47 (12)	Pg 11 thread	–	0.88 (0.4)
DVP-10	3/8"	3.31 (84)	3.03 (77)	.43 (11)	.26 (6.6)	.98 (25)	1.14 (29)	–	1.319 (33.5)	2.01 (51)	1.496 (38)	2.01 (51)	0.165 (4.2)	1.004 (25.5)	0.394 (10)	0.614 (15.6)	0.335 (8.5)	0.71 (18)	0.55 (14)	Pg 11 thread	–	1.3 (0.6)
DVP-12	1/2"	3.90 (99)	3.50 (89)	.43 (11)	.26 (6.6)	.98 (25)	1.50 (38)	–	1.496 (38)	2.95 (75)	1.752 (44.5)	2.26 (57.5)	0.157 (4.0)	1.181 (30)	0.512 (13)	0.732 (18.6)	0.728 (18.5)	0.71 (18)	0.89 (22.5)	Pg 16 thread	–	2.2 (1.0)
DVP-16	3/4"	4.45 (113)	4.05 (103)	.55 (14)	.35 (9.0)	1.18 (30)	1.50 (38)	1.496 (38)	2.992 (76)	3.68 (93.5)	2.126 (54)	2.76 (70)	0.433 (11)	2.126 (54)	0.669 (17)	0.965 (24.5)	0.335 (8.5)	0.83 (21)	0.77 (19.5)	Pg 16 thread	–	3.7 (1.7)
DVP-20	1"	6.5 (165)	5.83 (148)	.55 (14)	.35 (9.0)	1.77 (45)	198 (49)	1.870 (47.5)	3.740 (95)	4.37 (111)	2.362 (60)	3.01 (76.5)	0.753 (19.1)	2.244 (57)	0.866 (22)	1.201 (30.5)	0.315 (8)	1.42 (36)	1.24 (31.5)	Pg 29 thread	3/4 (19)	8.0 (3.6)
DVP-25	1 1/4"	6.5 (165)	5.83 (148)	.71 (18)	.45 (11.5)	1.77 (45)	1.93 (49)	2.362 (60)	4.744 (120.5)	5.63 (143)	2.992 (76)	3.94 (100)	0.819 (20.8)	3.130 (79.5)	1.122 (28.5)	1.472 (37.4)	0.433 (11)	1.34 (34)	1.81 (46)	Pg 29 thread	3/4 (19)	12.1 (5.5)
DVP-30	1 1/2"	6.69 (170)	6.02 (153)	.79 (20)	.55 (14)	1.97 (50)	193 (49)	2.815 (71.5)	5.630 (143)	6.73 (171)	3.622 (92)	4.53 (115)	0.937 (23.8)	3.740 (95)	1.378 (35)	1.709 (43.4)	.591 (15)	1.46 (37)	1.53 (39)	Pg 29 thread	3/4 (19)	16.6 (7.5)

DVE Cartridge Valve

Size	A	B	C	D	øE	øF	øG	H	Hex	Wt.
DVE-08	1.00 (26)	1.85 (47)	1.57 (40)	0.472 (12)	0.177 (4.5)	0.559 (14.2)	1.14 (29)	3/4-16UNF	1 1/16 (27)	0.33 (0.15)
DVE-10	1.18 (30)	2.52 (64)	2.13 (54)	0.492 (12.5)	0.315 (8)	0.622 (15.8)	1.50 (38)	7/8-14UNF	1 1/16 (27)	0.55 (0.25)
DVE-12	1.57 (40)	2.56 (65)	2.17 (55)	0.531 (13.5)	0.375 (9.5)	0.807 (20.5)	1.50 (38)	1-1/16-12UNF	1 5/16 (32)	1.10 (0.50)
DVE-16	1.71 (43.5)	2.56 (65)	2.17 (55)	0.689 (17.5)	0.433 (11)	1.060 (26.9)	1.50 (38)	1-5/16-12UNF	1 5/8 (41)	1.54 (0.70)



1) Only 4 mounting holes are used on sizes 06, 08, 10, and 12
2) Pg Style Thread per DIN 40430
Note: Contact factory for certified drawing of cartridge valve cavity.
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

DRV & DRVP Series
Flow Control Valves

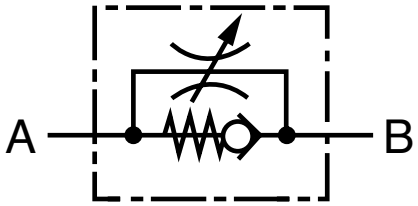
DRV Series
Inline Mounting

DRVP Series
Manifold Mounting

Specifications

- 5000 psi operating pressure
- 8 sizes, 1/8" - 1-1/2"
- NPTF or SAE O-Ring threaded connections, or manifold mounting
- Flows to 80 GPM
- Carbon steel housing
- FPM *(Fluoroelastomer)* O-Rings *(standard)*
- Color coded spindle for accurate flow control
- Provision for panel mounting
- Unique safety spindle design
- Temperature Range: -4° to 212°F at full pressure

Hydraulic Symbol



Model Code

DRV - 06 - 01 . X / 5 - 25 - S-M

Flow Control Valve

DRV	=	Inline Mounting
DRVP	=	Manifold Mounting

Nominal Sizes

Nominal Size *(DRV + DRVP)*		SAE *(DRV only)* Tube Size	SAE *(DRV only)* Thread Size	NPTF *(DRV Only)* Pipe Size	NPTF *(DRV Only)* Pipe OD	BSPP *(DRV Only)* Thread Size
06	=	-2	5/16-24 UNF	1/8"	0.405"	G1/8
08	=	-4	7/16-20 UNF	1/4"	0.540"	G1/4
10	=	-6	9/16-18 UNF	3/8"	0.675"	G3/8
12	=	-8	3/4-16 UNF	1/2"	0.840"	G1/2
16	=	-12	1-1/16-12 UN	3/4"	1.050"	G3/4
20	=	-16	1-5/16-12 UN	1"	1.315"	G1
25	=	-20	1-5/8-12 UN	1-1/4"	1.660"	G1 1/4
30	=	-24	1-7/8-12 UN	1-1/2"	1.900"	G1 1/2

Housing Material

01	=	Carbon Steel

Modification Number

Port Configuration

(omit)	=	DRVP only
0	=	BSPP to DIN 3852, Part 2 -X
5	=	NPTF *(ANSI B1.20.3)*
12	=	SAE - SAEJ1926 Ports with ISO 725 Threads and O-Ring Sealing

Cracking Pressure

(omit)	=	7 PSI standard
25	=	25 PSI optional
65	=	65 PSI optional

Supplementary Details

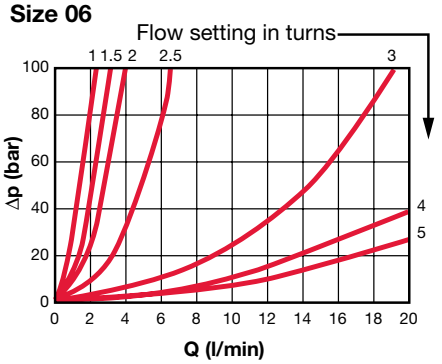
S	=	Panel Mounting Kit *(not available in sizes 20, 25, 30)*

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

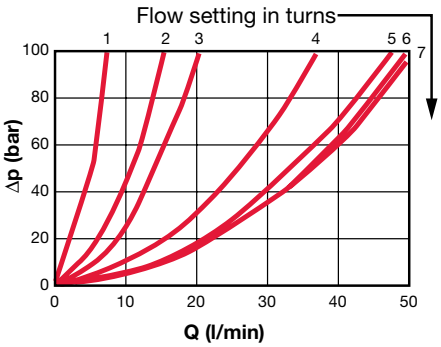
Pressure Drop Curves

Flow Direction: A to B / Throttled Flow

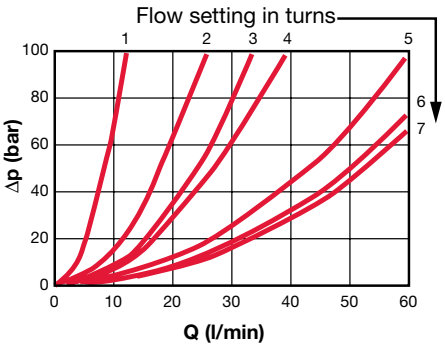
Size 06



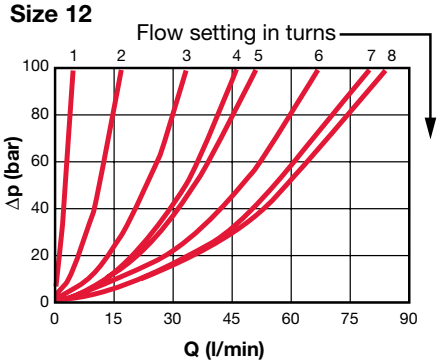
Size 08



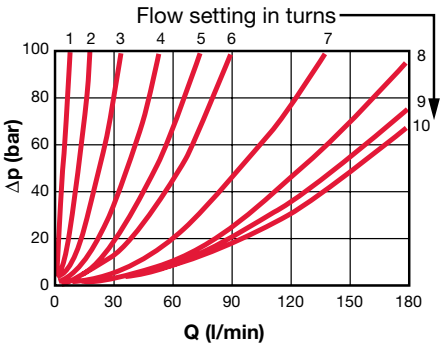
Size 10



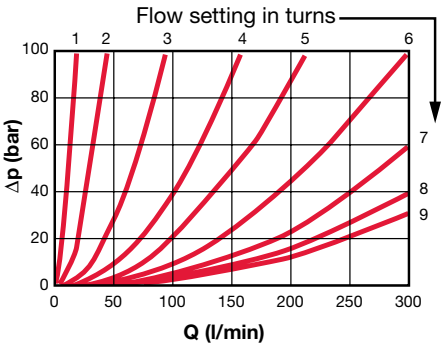
Size 12



Size 16

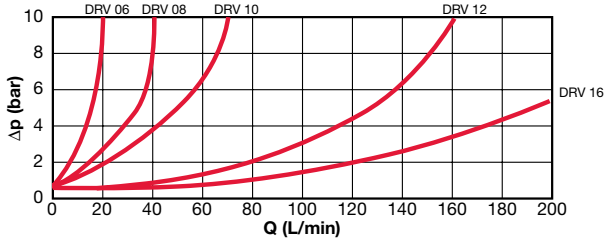


Size 20, 25, 30

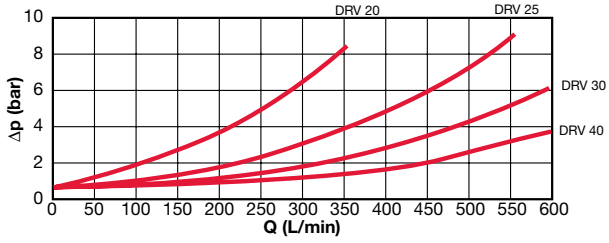


Flow Direction: B to A / Free Flow Through Check Valve

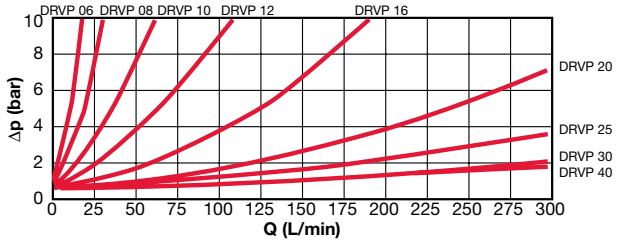
DRV-06-01.X to DRV-16-01.X



DRV-20-01.X to DRV-40-01.X



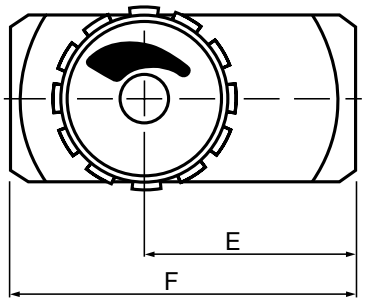
DRVP-06-01.X to DRVP-40-01.X

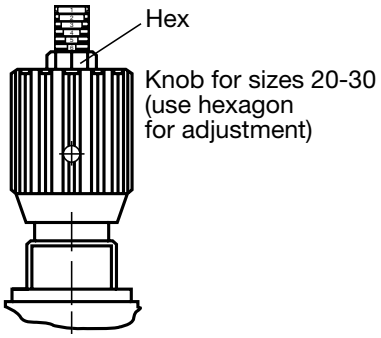


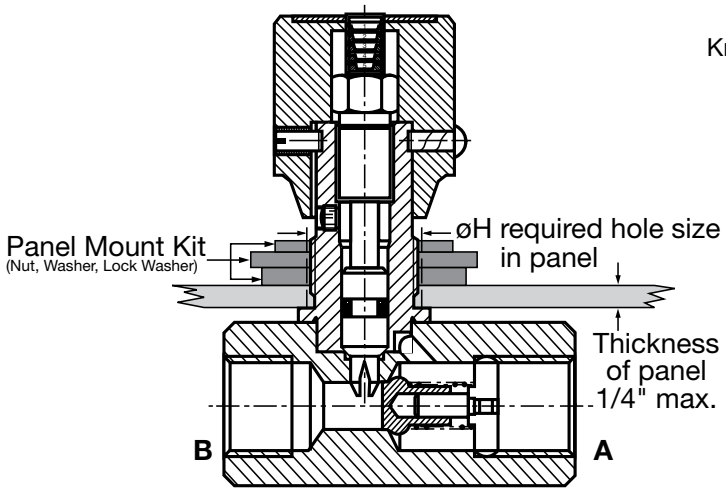
Pressure Drop curves were established by using mineral oil with kinematic viscosity 335 SUS at 86°F / 30°C

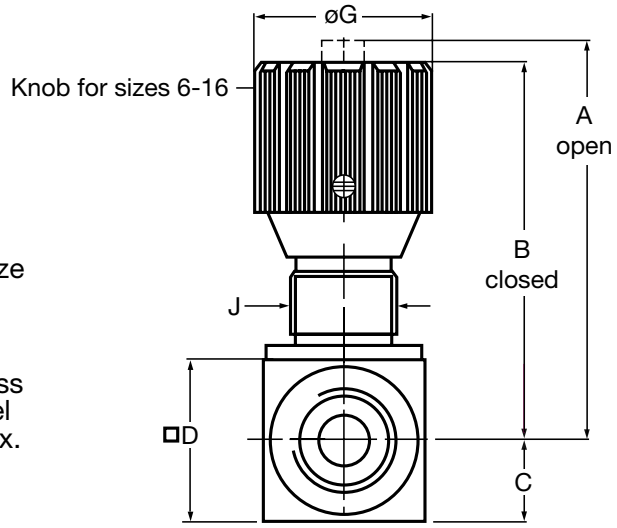
Dimensions

DRV Series









Model Code	Port Size NPTF	Port Size SAE	A	B	C	D	E	F	øG	øH	J[1] thread	Hex	Weight
DRV-06	1/8”	5/16-24UNF (SAE-2)	2.17 (55)	1.97 (50)	0.31 (8)	0.63 (16)	1.02 (26)	1.77 (45)	0.94 (24)	0.51 (13)	Pg 7	–	0.29 (0.13)
DRV-08	1/4”	7/16-20UNF (SAE-4)	2.84 (72)	2.56 (65)	0.49 (12.5)	0.98 (25)	1.32 (33.5)	2.17 (55)	1.14 (29)	0.75 (19)	Pg 11	–	0.66 (0.30)
DRV-10	3/8”	9/16-18UNF (SAE-6)	2.91 (74)	2.64 (67)	0.59 (15)	1.18 (30)	1.61 (41)	2.56 (65)	1.14 (29)	0.75 (19)	Pg 11	–	0.99 (0.45)
DRV-12	1/2”	3/4-16UNF (SAE-8)	3.62 (92)	3.23 (82)	0.69 (17.5)	1.38 (35)	1.73 (44)	2.87 (73)	1.50 (38)	0.91 (23)	Pg 16	–	1.76 (0.80)
DRV-16	3/4”	1 1/16-12UN (SAE-12)	4.17 (106)	3.78 (96)	0.89 (22.5)	1.77 (45)	2.24 (57)	3.46 (88)	1.50 (38)	0.91 (23)	Pg 16	–	2.87 (1.30)
DRV-20	1”	1 5/16-12UN (SAE-16)	5.71 (145)	5.04 (128)	0.98 (25)	1.97 (50)	3.03 (77)	5.00 (127)	1.93 (49)	1.50 (38)	Pg 29	3/4 (19)	5.29 (2.40)
DRV-25	1 1/4”	1 5/8-12UN (SAE-20)	5.91 (150)	5.24 (133)	1.18 (30)	2.36 (60)	3.66 (93)	5.63 (143)	1.93 (49)	1.50 (38)	Pg 29	3/4 (19)	7.72 (3.50)
DRV-30	1 1/2”	1 7/8-12UN (SAE-24)	6.10 (155)	5.43 (138)	1.38 (35)	2.76 (70)	4.25 (108)	5.63 (143)	1.93 (49)	1.50 (38)	Pg 29	3/4 (19)	10.14 (4.60)

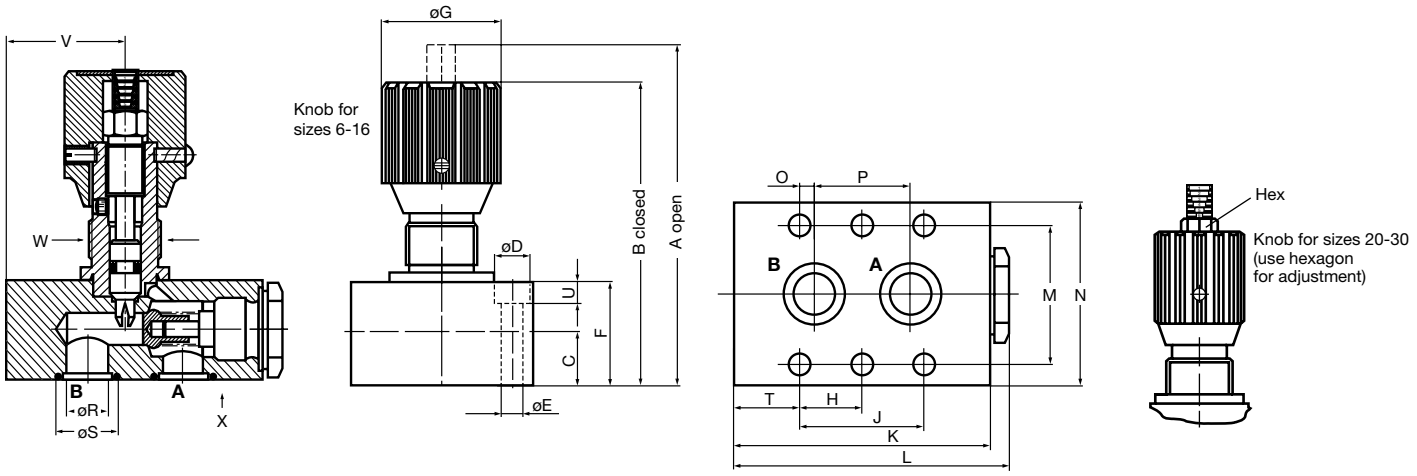
Panel Mount Kits

Size	Model Code	Part Number
6	Kit Panel Mount DV06	00705300
8/10	Kit Panel Mount DV08	00705310
12/16	Kit Panel Mount DV12	00705302

1) Pg style thread per DIN 40430
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

Dimensions

DRVP Series

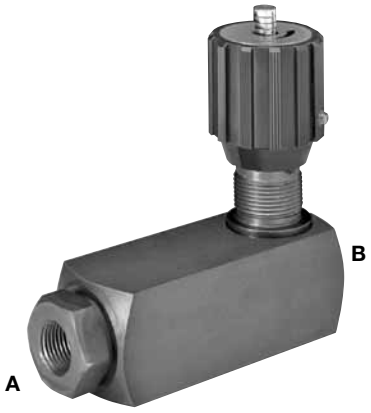


Model Code	Nominal Size	A	B	C	øD	øE	F	øG	H(1	J	K	L
DRVP-06	1/8”	2.48 (63)	2.28 (58)	0.31 (8)	0.43 (11)	0.26 (6.6)	0.63 (16)	0.94 (24)	–	7.48 (19)	1.63 (41.5)	1.81 (46)
DRVP-08	1/4”	3.11 (79)	2.83 (72)	0.39 (10)	0.43 (11)	0.26 (6.6)	0.79 (20)	1.14 (29)	–	1.378 (35)	2.50 (63.5)	2.64 (67)
DRVP-10	3/8”	3.31 (84)	3.03 (77)	0.49 (12.5)	0.43 (11)	0.26 (6.6)	0.98 (25)	1.14 (29)	–	1.319 (33.5)	2.76 (70)	2.91 (74)
DRVP-12	1/2”	4.17 (106)	3.78 (96)	0.63 (16)	0.43 (11)	0.26 (6.6)	1.26 (32)	1.50 (38)	–	1.496 (38)	3.15 (80)	3.33 (84.5)
DRVP-16	3/4”	5.04 (128)	4.65 (118)	0.89 (22.5)	0.55 (14)	0.35 (9)	1.77 (45)	1.50 (38)	1.496 (38)	2.992 (76)	4.09 (104)	4.31 (109.5)
DRVP-20	1”	6.69 (170)	6.02 (153)	0.98 (25)	0.55 (14)	0.35 (9)	1.97 (50)	1.93 (49)	1.870 (47.5)	3.740 (95)	5.00 (127)	5.24 (133)
DRVP-25	1 1/4”	6.89 (175)	6.22 (158)	1.08 (27.5)	0.71 (18)	0.45 (11.5)	2.16 (55)	1.93 (49)	2.362 (60)	4.744 (120.5)	6.50 (165)	6.77 (172)
DRVP-30	1 1/2”	7.68 (195)	7.01 (178)	1.48 (37.5)	0.79 (20)	0.55 (14)	2.95 (75)	1.93 (49)	2.815 (71.5)	5.630 (143)	7.32 (186)	7.72 (196)

Model Code	Nominal Size	M	N	O	P	øR	øS	T	U	V	W(2 thread	Hex	Weight
DRVP-06	1/8”	1.122 (28.5)	1.63 (41.5)	0.63 (1.6)	0.630 (16)	0.20 (5)	0.382 (9.7)	0.252 (6.4)	0.28 (7)	0.53 (13.5)	Pg 7	–	0.57 (0.26)
DRVP-08	1/4”	1.319 (33.5)	1.81 (46)	0.189 (4.8)	1.004 (25.5)	0.28 (7)	0.500 (12.7)	0.559 (14.2)	0.28 (7)	1.22 (31)	Pg 11	–	1.10 (0.50)
DRVP-10	3/8”	1.496 (38)	2.01 (51)	0.157 (4)	1.004 (25.5)	0.39 (10)	0.614 (15.6)	0.709 (18)	0.28 (7)	1.16 (29.5)	Pg 11	–	1.76 (0.80)
DRVP-12	1/2”	1.752 (44.5)	2.26 (57.5)	0.157 (4)	1.181 (30)	0.51 (13)	0.732 (18.6)	0.827 (21)	0.28 (7)	1.44 (36.5)	Pg 16	–	2.42 (1.10)
DRVP-16	3/4”	2.126 (54)	2.76 (70)	0.433 (11)	2.126 (54)	0.67 (17)	0.965 (24.5)	0.551 (14)	0.35 (9)	1.93 (49)	Pg 16	–	5.51 (2.50)
DRVP-20	1”	2.362 (60)	3.01 (76.5)	0.748 (19)	2.244 (57)	0.87 (22)	1.201 (30.5)	0.630 (16)	0.35 (9)	1.93 (49)	Pg 29	3/4 (19)	8.60 (3.90)
DRVP-25	1 1/4”	2.992 (76)	3.94 (100)	0.811 (20.6)	3.130 (79.5)	1.12 (28.5)	1.472 (37.4)	0.591 (15)	0.43 (11)	3.03 (77)	Pg 29	3/4 (19)	14.77 (6.70)
DRVP-30	1 1/2”	3.622 (92)	4.53 (115)	0.937 (23.8)	3.740 (95)	1.38 (35)	1.709 (43.4)	0.591 (15)	0.51 (13)	3.35 (85)	Pg 29	3/4 (19)	24.25 (11.0)

1) Only 4 mounting holes are used on sizes 06, 08, 10, & 12
2) Pg style thread per DIN 40430
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

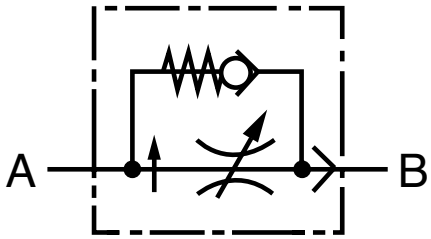
SRVR Series
Pressure Compensated Flow Control Valves



Specifications

- 4 sizes, 1/4" - 3/4"
- Working Pressure:
  Inlet: 102 psi min. / 3045 psi max.
  Outlet: 0 psi min. / 2944 psi max.
- Flows to 24 gpm
- NPTF Connections
- Carbon Steel Housing
- FPM *(Fluoroelastomer)* O-Rings *(standard)*
- Color coded spindle for accurate flow control
- Provision for panel mounting
- Unique safety spindle design
- Temperature Range: -4˚ to 212˚F at full pressure
- Viscosity Range: 13 SUS min. / 1781 SUS max.

Hydraulic Symbol



Model Code

SRVR - 08 - 01 .X / 5 - S

Pressure Compensated Flow Control Valve
SRVR = Flow Control Valve *(with internal check valve)*

Nominal Size

		NPTF Only Pipe Size	NPTF Only Pipe OD
08	=	1/4"	0.540"
10	=	3/8"	0.675"
12	=	1/2"	0.840"
16	=	3/4"	1.050"

Housing Material
01 = Carbon Steel

Modification Number

Port Configuration
0 = BSPP to DIN 3852, Part 2 -X
5 = NPTF (ANSI B1.20.3)

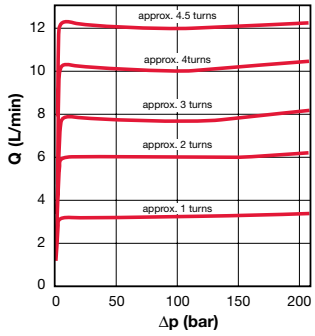
Supplementary Details
S = Panel Mounting Kit

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

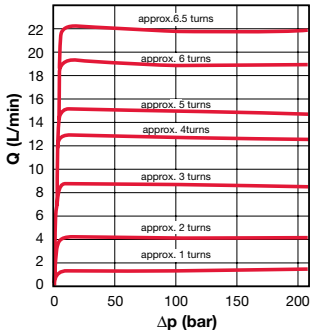
Pressure Drop Curves

Flow Direction: A to B / Throttled Flow

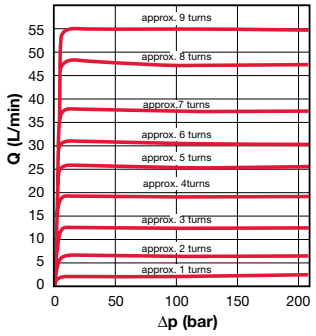
Size 08



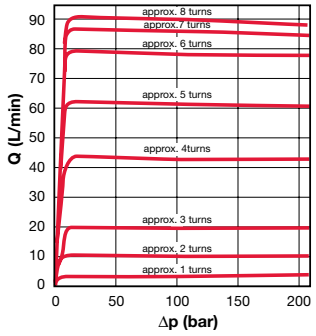
Size 10



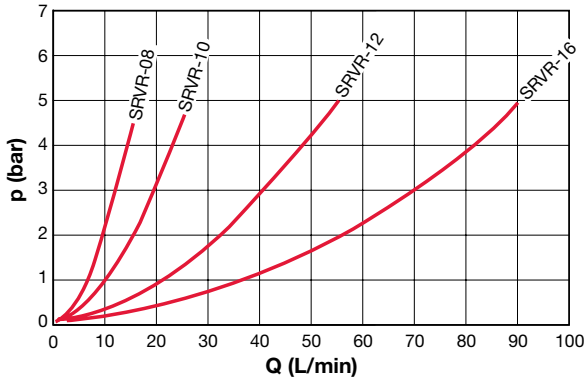
Size 12



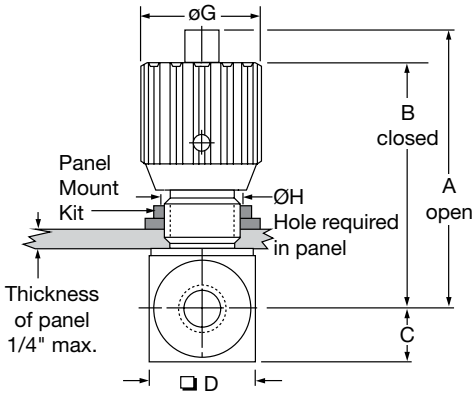
Size 16

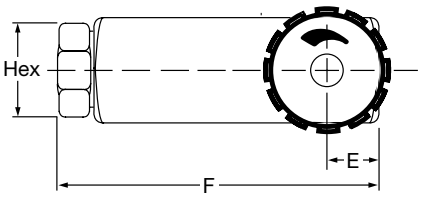


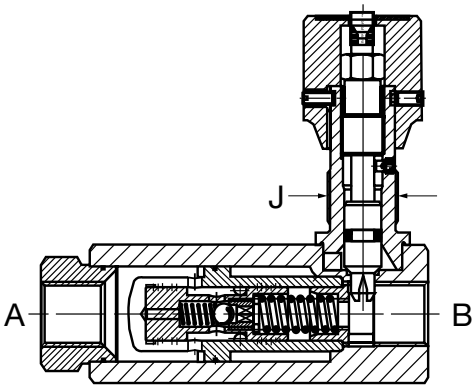
Flow Direction: B to A / Free Flow Through Check Valve



Dimensions







Model Code	Size	A	B	C	D	E	F	Ø G	ØH	J[1] thread	Hex	Weight
SRVR-08	1/4" NPTF	2.91 (74)	2.64 (67)	0.59 (15)	1.18 (30)	0.69 (17.5)	3.62 (92)	1.14 (29)	0.75 (19)	Pg 11	0.94 (24)	1.3 (0.6)
SRVR-10	3/8" NPTF	3.62 (92)	3.23 (82)	0.69 (17.5)	1.38 (35)	0.71 (18)	4.13 (105)	1.50 (38)	0.91 (23)	Pg 16	1.06 (27)	2.0 (0.9)
SRVR-12	1/2" NPTF	4.17 (106)	3.78 (96)	0.89 (22.5)	1.77 (45)	0.83 (21)	4.92 (125)	1.50 (38)	0.91 (23)	Pg 16	1.26 (32)	3.8 (1.7)
SRVR-16	3/4" NPTF	4.27 (108.5)	3.88 (98.5)	0.98 (25)	1.97 (50)	1.02 (26)	5.51 (140)	1.50 (38)	0.91 (23)	Pg 16	1.61 (41)	4.9 (2.2)

Panel Mount Kits

Size	Model Code	Part Number
08	Kit Panel Mount DV08	00705310
10/12/16	Kit Panel Mount DV12	00705302

1) Pg style thread per DIN 40430
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

RV & RVP Series
Check Valves

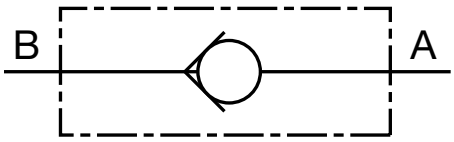
RV Series
Inline Mounting

RVP Series
Manifold Mounting

Specifications

- 5000 psi operating pressure
- 9 Sizes, 1/8" - 2"
- NPT or SAE O-Ring connections and manifold mounting
- Flows to 150 gpm
- Carbon Steel Housing
- FPM *(Fluoroelastomer)* O-Rings *(for RVP series)*
- Metal to metal seal design for poppet
- Hardened and ground steel poppet
- 3 Cracking Pressures: 7 psi *(standard)*, 25 psi and 65 psi *(optional)*
- Temperature Range: -4° to 212°F at full pressure

Hydraulic Symbol



Model Code

RV - 06 - 01 .X / 5 - 25

Check Valve
RV = Inline Mounting
RVP = Manifold Mounting

Nominal Sizes

Nom Size (RV + RVP)		SAE *(RV Only)* Tube Size	Thread Size	NPTF *(RV Only)* Pipe Size	Pipe OD	BSPP *(RV Only)* Thread Size
06	=	-2	5/16-24 UNF	1/8"	0.405"	G1/8
08	=	-4	7/16-20 UNF	1/4"	0.540"	G1/4
10	=	-6	9/16-18 UNF	3/8"	0.675"	G3/8
12	=	-8	3/4-16 UNF	1/2"	0.840"	G1/2
16	=	-12	1-1/16-12 UN	3/4"	1.050'	G3/4
20	=	-16	1-5/16-12 UN	1"	1.315"	G1
25	=	-20	1-5/8-12 UN	1-1/4"	1.660"	G1 1/4
30	=	-24	1-7/8-12 UN	1-1/2"	1.900"	G1 1/2
40	=	-32	2-1/2-12 UN	2"	2.375"	G2

Housing Material
01 = Carbon Steel

Modification Number

Port Configuration
(omit) = RVP only
0 = BSPP to DIN 3852, Part 2-X
5 = NPTF - ANSI/ASME 1.20.3 Taper Pipe Thread
12 = SAE - SAEJ1926 Ports with ISO 725 Threads and O-Ring Sealing

Cracking Pressure
(omit) = 7 psi *(standard)*
25 = 25 psi
65 = 65 psi

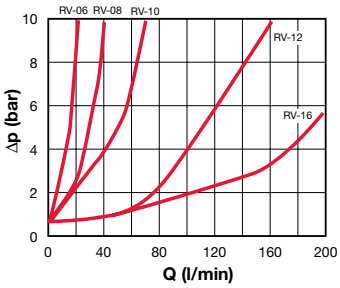
Note: Not recommended for high-cycle applications!

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

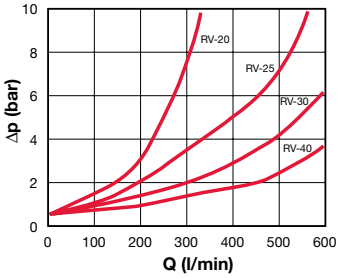
Pressure Drop Curves

Flow Direction: B to A / Free Flow Through Check Valve *(A to B is Completely Blocked)*

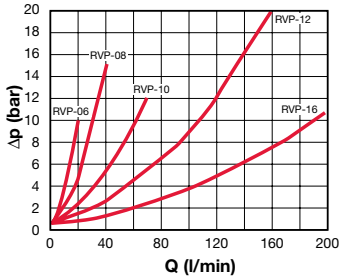
RV-06... to RV-16...



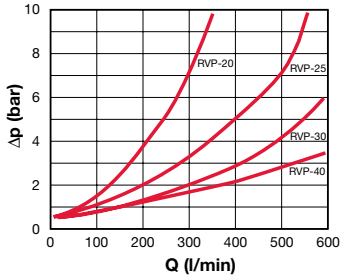
RV-20... to RV-40...



RVP-06... to RVP-16...



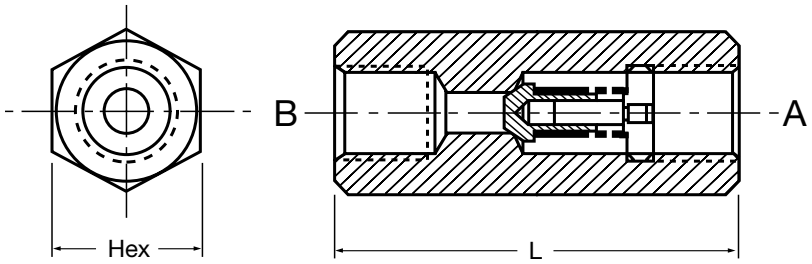
RVP-20... to RVP-40...



Pressure Drop curves were established by using mineral oil with kinematic viscosity 335 SUS at 86°F / 30°C

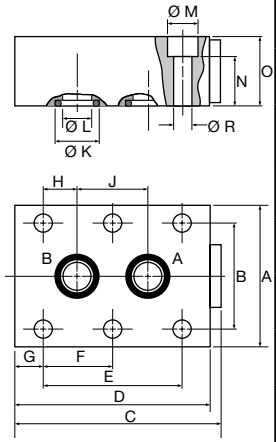
Dimensions

RV Inline Check Valves



Model Code	Port Size NPT	Port Size SAE	Hex	L	Weight
RV-06	1/8”	5/16-24 UNF	11/16 (17)	1.77 (45)	0.22 (0.1)
RV-08	1/4”	7/16-20 UNF	3/4 (19)	2.17 (55)	0.44 (0.2)
RV-10	3/8”	9/16-18 UNF	1 (24)	2.60 (65)	0.44 (0.2)
RV-12	1/2”	3/4-16 UNF	1 1/4 (30)	2.87 (73)	0.66 (0.3)
RV-16	3/4”	1 1/16-12 UN	1 7/16 (36)	3.46 (88)	1.1 (0.5)
RV-20	1”	1 5/16-12 UN	1 13/16 (46)	5.00 (127)	2.4 (1.1)
RV-25	1-1/4”	1 5/8-12 UN	2 3/8 (60)	5.63 (143)	4.0 (1.8)
RV-30	1-1/2”	1 7/8-12 UN	2 9/16 (65)	5.63 (143)	5.7 (2.6)
RV-40	2”	2 1/2-12 UN	3 3/16 (80)	6.50 (165)	9.7 (4.4)

RVP Manifold Mounted Check Valves



Model Code	A	B	C	D	E	F[1]	G	H	J	K	L	M	N	O	R	Wt.
RVP-06	1.63 (41.5)	1.12 (28.5)	1.31 (46)	1.63 (41.5)	0.75 (19)	–	0.25 (6.4)	0.06 (1.6)	0.63 (16)	0.38 (9.7)	0.2 (5)	0.43 (11)	0.35 (9)	0.63 (16)	0.26 (6.6)	0.4 (0.2)
RVP-08	1.81 (46)	1.32 (33.5)	2.64 (67)	2.5 (63.5)	1.38 (35)	–	0.56 (14.2)	0.19 (4.8)	1.00 (25.5)	0.50 (12.7)	0.28 (7)	0.43 (11)	0.51 (13)	0.79 (20)	0.26 (6.6)	0.9 (0.4)
RVP-10	2.01 (51)	1.50 (38)	2.81 (74)	2.76 (70)	1.32 (33.5)	–	0.71 (18)	0.16 (4)	1.00 (25.5)	0.61 (15.6)	0.39 (10)	0.43 (11)	0.71 (18)	0.98 (25)	0.26 (6.6)	1.1 (0.5)
RVP-12	2.26 (57.5)	1.75 (44.5)	3.33 (84.5)	3.15 (80)	1.50 (38)	–	0.83 (21)	0.16 (4)	1.18 (30)	0.73 (18.6)	0.51 (13)	0.43 (11)	0.98 (25)	1.26 (32)	0.26 (6.6)	2.2 (1.0)
RVP-16	2.76 (70)	2.13 (54)	4.31 (109)	4.09 (104)	2.99 (76)	1.50 (38)	0.55 (14)	0.43 (11)	2.13 (54)	0.96 (24.5)	0.67 (17)	0.55 (14)	1.42 (36)	1.77 (45)	0.35 (9)	4.6 (2.1)
RVP-20	3.01 (76.5)	2.36 (60)	5.24 (133)	5.00 (127)	3.74 (95)	1.87 (47.5)	0.63 (16)	0.75 (19)	2.24 (57)	1.20 (30.5)	0.87 (22)	0.55 (14)	1.61 (41)	1.97 (50)	0.35 (9)	7.3 (3.3)
RVP-25	3.94 (100)	2.99 (76)	6.77 (172)	6.50 (165)	4.74 (120.5)	2.36 (60)	0.59 (15)	0.81 (20.6)	3.13 (79.5)	1.47 (37.4)	1.12 (28)	0.71 (18)	1.73 (44)	2.17 (55)	0.45 (11.5)	12.8 (5.8)
RVP-30	4.53 (115)	3.62 (92)	7.72 (196)	7.32 (186)	5.63 (143)	2.81 (71.5)	0.59 (15)	0.94 (23.8)	3.74 (95)	1.71 (43.4)	1.38 (35)	0.79 (20)	2.44 (62)	2.95 (75)	0.55 (14)	22.7 (10.3)
RVP-40	5.51 (140)	4.37 (111)	7.91 (201)	7.56 (192)	5.26 (133.5)	2.64 (67)	0.63 (16)	1.00 (25.5)	3.50 (89)	2.25 (57.2)	1.85 (47)	0.79 (20)	3.43 (87)	3.94 (100)	0.55 (14)	39.5 (17.9)

1) Only 4 mounting holes are used on sizes 06, 08, 10, & 12
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

DV, DRV, & RV Series

Stainless Steel Flow Control Valves - Available with BSPP Ports

DV Series
Inline Mounting
Needle Valves

DRV Series
Inline Mounting
Flow Control Valves

RV Series
Inline Mounting
Check valves

Model Code	Part Number	Dimensions
RV-06-30.X/0	00705859	Same as Standard Product See Page 53
RV-08-30.X/0	00705861	
RV-10-30.X/0	00705863	
RV-12-30.X/0	00705865	
RV-16-30.X/0	00705867	
RV-20-30.X/0	00705869	
RV-25-30.X/0	00705895	
RV-30-30.X/0	00707521	
DV-06-30.X/0	00705134	Same as Standard Product See Page 43
DV-08-30.X/0	00705142	
DV-10-30.X/0	00705150	
DV-12-30.X/0	00705158	
DV-16-30.X/0	00705166	
DV-20-30.X/0	00705174	
DV-25-30.X/0	00707424	
DV-30-30.X/0	00705295	
DRV-06-30.X/0	00705634	Same as Standard Product See Page 47
DRV-08-30.X/0	00705642	
DRV-10-30.X/0	00705650	
DRV-12-30.X/0	00705658	
DRV-16-30.X/0	00705666	
DRV-20-30.X/0	00705674	

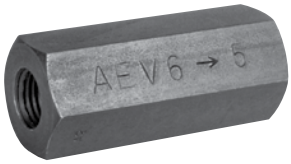
Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Overview

Hose Break Valves
RB Series & RBE Series *(see pages 57 - 60)*

Shuttle Valves
WVE Series (see page 61)

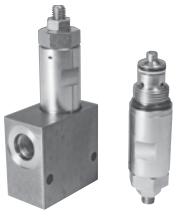
Automatic Air Vent Valves
AEV Series *(see page 62)*



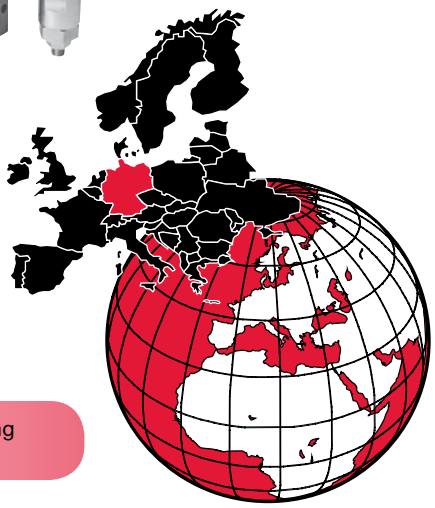
2-Way Solenoid Cartridge Valves
WSM Series *(see pages 63 - 66)*

3-Way Solenoid Cartridge Valves
WSE Series *(see pages 67 - 68)*

Pressure Relief Valves
DB4 Series *(see pages 69 - 70)*



Global Replacement Business



HYDAC Fluidtechnik GmbH is located in Germany and produces Cartridge Valves for the Global Market. The majority of the product that they produce is in the Metric standard. HYDAC Technology Corporation has a division in Chicago, called HHD or the Hydraulic Division, that manufactures Coolers, Power Units, and UNF Cartridge Valves. HYDAC Accessories Bethlehem supports the metric cartridge valve sales in the United States.

For additional information on HYDAC's UNF Cartridge Valve offering please refer to the HYDAC Cartridge Valve Catalog #02080105.

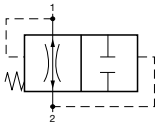
In some cases you will call HYDAC customer service and the part number will not be in our computer system. In these cases we will provide you a replacement quote in a few days. For additional details visit www.hydac.com and click on support, downloads, brochures, Compact Hydraulics and check out the literature.

RB Series
Hose Break Valves

RB...
Housing Valves

RBE...
Cartridge Valves

Hydraulic Symbol



1-2 Free Flow
2-1 Operating Direction; Valve closes if flow exceeds adjusted flow rate.

Description

HYDAC Hose Break Valves eliminate uncontrolled movements of the actuator in case of line rupture. They are commonly applied with dead weight cylinders.

These valves are volume limiting flat seat valves.

At normal flow, the poppet is held open by a spring with enough force to counteract the force on the poppet created by the flow.

When the supply line is ruptured, the flow from 2 to 1 exceeds the specified flow rate, the P across the poppet creates a force greater than the spring force and closes the valve. This closing flow rate is adjustable. The valve opens automatically by pressurizing connection 1.

Depending on the pressure P, the leakage rate through the valve is approximately 0 to 6 in^3 / min. If this is excessive, the valve threads can be sealed and made leak-free.

The valves are installed between actuators and possible line breakage points.

A cartridge-type valve can be installed into an actuator port.

A housing-type valve can be installed close to the actuator or even directly into the actuator itself.

Model Code

RB E - SAE1-1/16-12 - X - 120L/MIN

Hose Break Valve

Housing Type
Refer to "code" column below

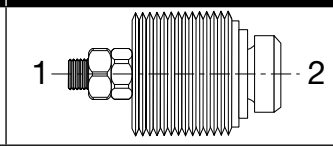
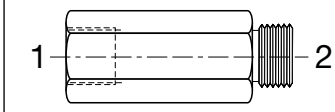
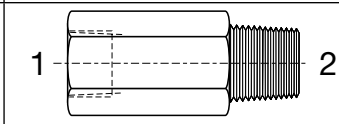
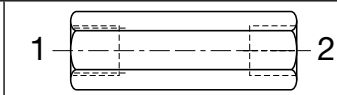
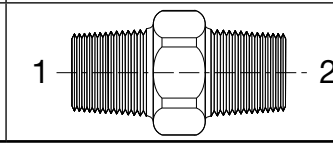
Size of Connection
Refer to "Size of Connection" below

Modification Number
X = Latest Revision

Closing Flow Rate
XXXL/MIN = Standard
Max. closing flow rate listed below in L/min

XXXGPM = Factory Set
Customer specifies closing flow rate in GPM

Type and Size Codes

Code	Housing Type		Connection 1	Connection 2	Size of Connections Dependent on Desired Closing Flow Rate *(see below)*		
E		Cartridge Only	–	–	SAE 9/16-18	SAE 3/4-16	SAE 1 1/16-12
XB		Cartridge Valve in Housings	SAE Straight Thread Port	SAE Straight Thread Stud End	SAE 9/16-18	SAE 3/4-16	SAE 1 1/16-12
XB			NPT Port	NPT Male Connector	NPT 3/8 or NPT 1/2	–	NPT 1
XX			SAE Straight Thread Port	SAE Straight Thread Port	–		SAE 1 1/16-12
CC			NPT Male Connector	NPT Male Connector	–	NPT 3/4	–

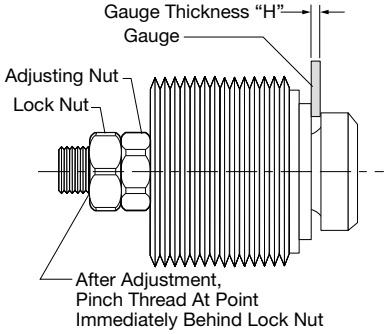
Closing Flow Rate (min - max) *(from 2 to 1)*	**GPM** / **L/min**	1-4 / 4-15	1.6-12 / 6-45	6.5-32 / 25-120
To avoid the activation of hose break valves on flow surges, the closing flow rate should be at least 20% above the normal flow rate.	Valves are shipped with maximum closing flow setting. Closing flow can be adjusted according to curves on next page. If closing flow must be set by factory, please specify when ordering.			

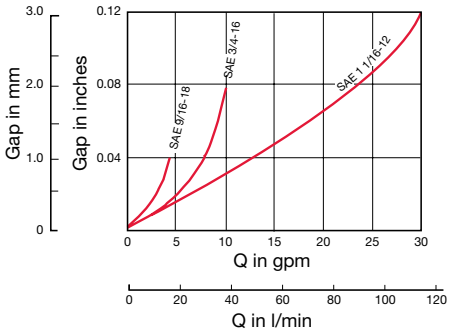
Adjustment Curves for Closing Flow Rate

The closing flow rate is dependent on the dimensions “H”.

After loosening the lock nut, set the GAP to dimension “H” with a thickness gauge.

The lock nut must be tightened after adjustment.



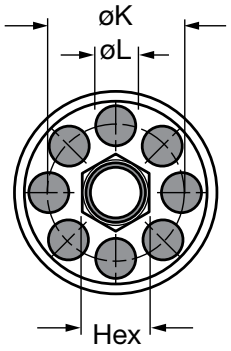


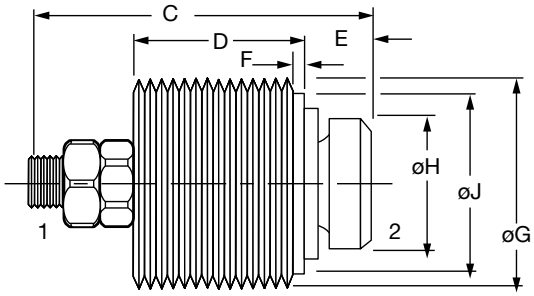
The adjustment curves are valid for cartridge RBE...and for all housing valves RB... in accordance with “Type and Size Codes” charts on previous page. For model RB... the cartridge must be removed from the housing for adjustment.

See special tool for installation and removal on page 60.

Dimensions

Cartridges

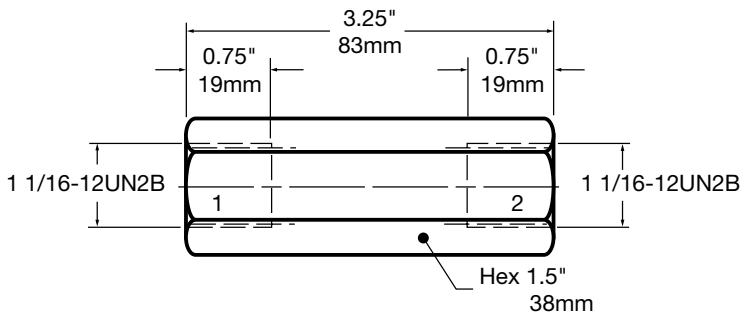




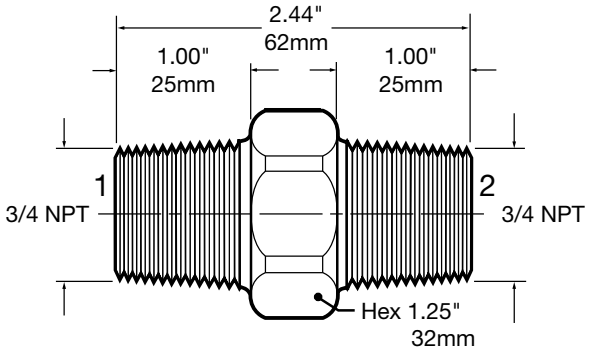
Valve Type	C	D	E	F	øG	øH	øJ	øK	øL	Hex
RBE-SAE 9/16	0.866 (22)	0.453 (11.5)	0.138 (3.5)	0.13 (3)	9/16-18UNF-2B	0.374 (9.5)	0.460 (11.7)	0.315 (8)	0.098 (2.5)	0.197 (5)
RBE-SAE 3/4	1.063 (27)	0.531 (13.5)	0.197 (5)	0.14 (3.5)	3/4-16UNF-2B	0.472 (12)	0.640 (16.3)	0.394 (10)	0.138 (3.5)	0.217 (5.5)
RBE-SAE 1 1/16	1.614 (41)	0.925 (23.5)	0.256 (6.5)	0.17 (4)	1 1/16-12UNF-2B	0.709 (18)	0.930 (23.6)	0.630 (16)	0.256 (6.5)	0.276 (7)

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

RBXX-SAE 1-1/16-12

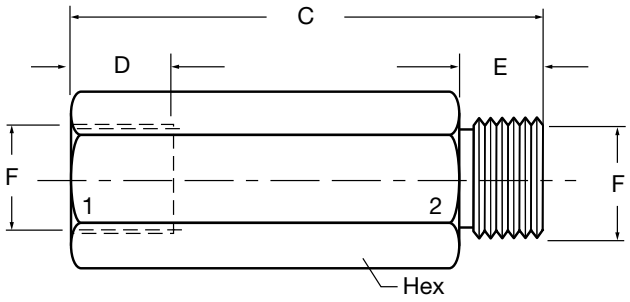


RBCC-NPT 3/4 Housing Valve

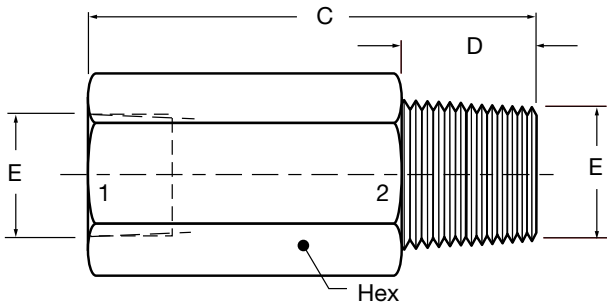


Dimensions

RBXB-... SAE

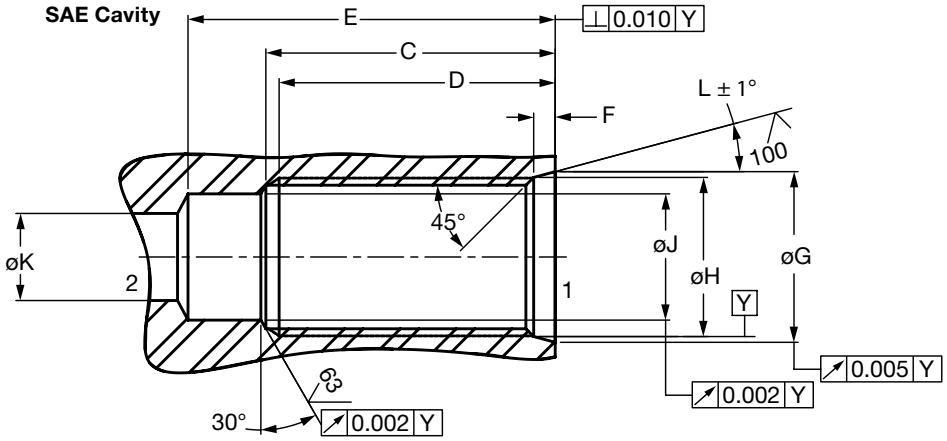


RBXB-... NPT



Housing Type	C	D	E	F	Hex
RBXB-SAE 9/16-18	2.13 (54)	0.50 (13)	0.39 (10)	9/16-18UNF-2B	0.75 (19)
RBXB-SAE 3/4-16	2.38 (60)	0.56 (14)	0.44 (11)	3/4-16UNF-2B	1.00 (25)
RBXB-SAE 1 1/16-12	3.25 (83)	0.75 (19)	0.59 (15)	1 1/16-12UNF-2B	1.50 (38)
RBXB-NPT 3/8	2.09 (53)	0.59 (15)	3/8 NPT		0.88 (22)
RBXB-NPT 1/2	2.75 (70)	0.78 (20)	1/2 NPT		1.00 (25)
RBXB-NPT 1	3.31 (84)	0.98 (25)	1 NPT		1.75 (44)

SAE Cavity



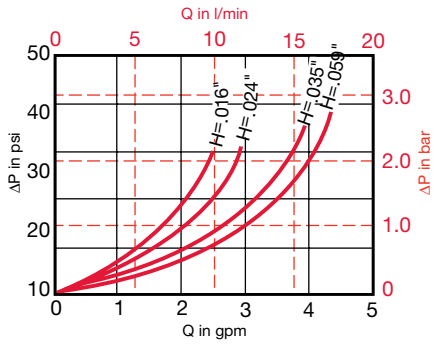
Housing Type	C	D	E	F	øG	øH	øJ	øK Min	L
RBE-SAE 9/16	1.250	1.188	1.56	0.106	0.618	9/16"-18UNF-2B	0.435	0.297	12°
RBE-SAE 3/4	1.375	1.312	1.69	0.106	0.813	3/4"-16UNF-2B	0.600	0.422	15°
RBE-SAE 1 1/16	2.000	1.938	2.44	0.138	1.150	1-1/16"-12UN-2B	0.890	0.609	15°

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches. Port dimensions per SAE J1926/1 unless noted otherwise.

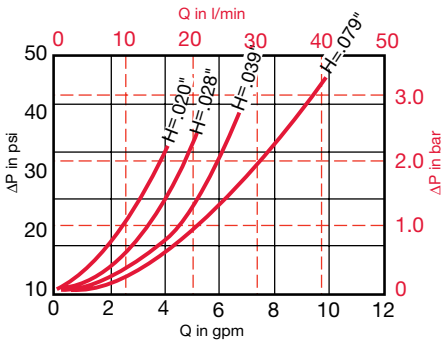
Nominal Flow Curves

Flow rate is dependent on operating setting “H”. See “Adjusting Curves for Closing Flow Rates - Settings”. Curves are valid for Cartridges RBE and Housing RB... in accordance with charts on previous page. Limit Lines indicate the maximum closing flow rates. These rates cannot be exceeded. Curves were established at 150 SUS.

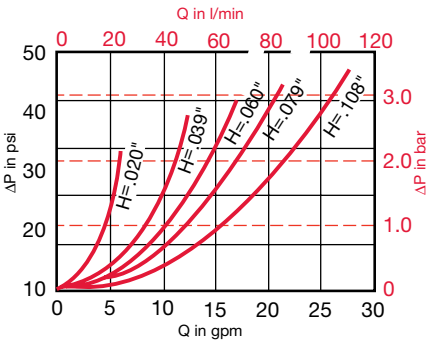
RBE-SAE 9/16 - 18



RBE-SAE 3/4 - 16



RBE-SAE 1-1/16 - 12



Engineering Data

Design		Flat Seat Valve
Mounting Method	RBE	Cartridge
	RB..	Housing Valve for In-line Installation
Connection		Refer to charts on page 37
Mounting Position		Optional
Direction of Flow	1 to 2	Free Flow
	2 to 1	Free Flow; valve automatically closes if flow exceeds preset level
Fluid		General purpose hydraulic oil. Consult HYDAC for other media
Operating Pressure Ratings	P Max:	5000 psi (350 bar)
	P Min:	145 psi / 10 bar
Fluid Temperature Range		-4° to 176°F (-20° to 80°C)

Weights

RBE	lbs.
SAE 9/16-18	0.02
SAE 3/4-16	0.04
SAE 1 1/16-12	0.13
RBXB	**lbs.**
SAE 9/16-18 3/8 NPTF	0.17
SAE 3/4-16 1/2 NPTF	0.24
SAE 1 1/16-12 1 NPTF	0.88
RBXX	**lbs.**
SAE 1 1/16-12	0.92
RBCC	**lbs.**
3/4 NPTF	0.37

Recommendations

Hose break valves, type RBE must only be used to safeguard users in the event of hose breaks. They must not be used as switching valves for repeated closing actions.

If closing actions occur during normal operation, the setting of the hose break valve is not suitable for the operating parameters of the system. The hose break valve must be replaced by a new one with a modified setting.

In order to prevent hose break valves reacting to flow rate fluctuations inherent in the system, e.g. due to switching of directional valves, the actuating flow rate should be at least 20% above the normal maximum system flow rate. If high viscosity fluctuations occur, the valves must be set to a higher actuating flow rate to ensure trouble-free operation at high viscosity. However, the valves must still react at a low viscosity. Since this range depends largely on the system, whose operational flow rate fluctuations can also depend on viscosity, the appropriate setting for the valve is best determined on site.

Sizing Hose Break Valves

In order for a hose break valve to work properly there must be a difference between the normal operating flow rate (from pump) and the emergency flow rate created by a hose or line break. The emergency flow rate must be significantly higher than the normal operating flow. Why?

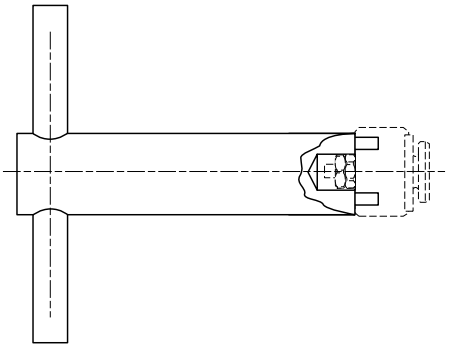
The hose break valve is designed to only be closed in an emergency situation. These valves should not be cycled (opened and closed) with the system. Cycling the valve and/or excessive vibrations will lead to premature failure of the valve components.

How do you determine the emergency flow rate? You must perform a test with the actual system in a hose break simulation. This test should be run with the minimum load on the cylinder/lift to determine the minimum emergency flow rate for the system. To test, break the line open or open a directional valve and allow gravity to pull down the cylinder/lift. The flow rate measured during this test is the emergency flow rate.

The hose break closing flow rate setting is adjustable and should be set to close at a flow rate between the normal flow rate and the emergency flow rate. The closing flow rate should be set at least 20% higher than the normal flow rate, and should be set at least 20% below the emergency flow rate.

How do you set the closing flow rate for the valve? The gap between the poppet and the valve body is adjustable by means of the lock nut and adjustment nut on the end of the poppet. The larger the gap, the higher the closing flow rate for the valve.

Installation Tools



Cartridge Size	Part Number
9/16-18	00161421
3/4-16	00160561
1-1/16-12	00164180

Model Codes containing selections listed in RED are non-standard items –
Minimum quantities will apply –
Contact HYDAC for information and availability
Not all combinations are available

WVE Series
Shuttle Valves

Description

The HYDAC WVE series are shuttle valves with two inlets and one outlet. The inlet with the higher pressure is automatically connected to the outlet. The other inlet is closed. This complies with DIN-ISO 1219. The shuttle valves are cartridge type valves for installation into manifolds and control blocks. The shuttle valves are ball-seat type valves without leakage

Technical Data

Design
- Seat Valve

Mounting Method
- Cartridge

Nominal Size
- (SAE-5) 1/2”-20 UNF

Weight
- (SAE-5) 1/2”-20 UNF...12g

Mounting Position
- Optional

Material
- Carbon Steel

Direction of Flow
- Optional

Operating Pressure Range
- P max. 5000 psi = 350 bar

Temperature Range
- -4° to 104°F (-20° to 80°C)

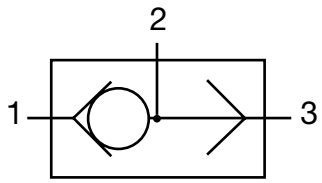
Cross-Over Effect on Shut-off
- negligible

Flow Rate
- Max flow rate 5 gpm (20 lpm) ΔP approx 175 psi (12 bar) at 5 gpm, 168 SSU, 104°F oil

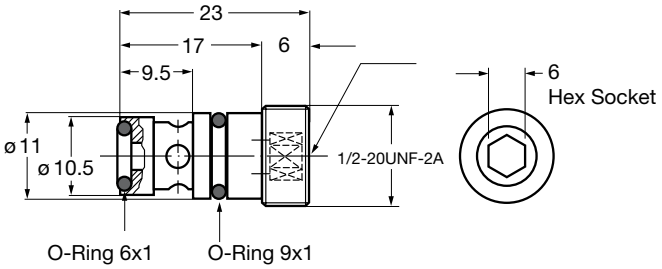
Model Code
WVE-1/2-20UNF-0

Part Number
00710128

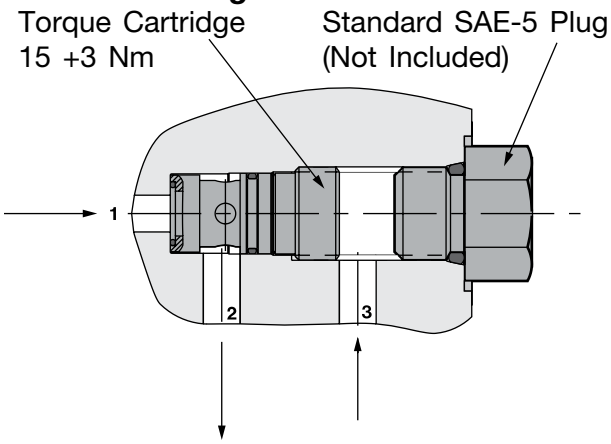
Hydraulic Symbol



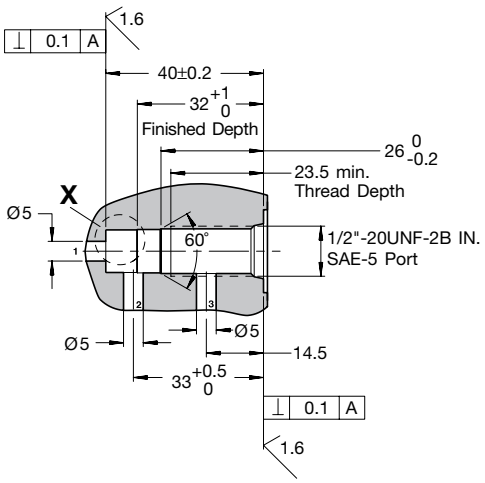
Dimensions

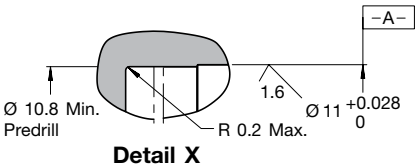


Installation Diagram



Cavity Diagram





Detail X

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in mm

AEV Series
Automatic Air Vent Valves

Description

The HYDAC Air Vent Valve eliminates air bubbles which accumulate in hydraulic systems immediately after start-up or after long periods of shut-down of the system.

The Air Vent Valve remains open until the valve reaches a 45 psi differential pressure.

Pressure must be maintained above 45 psi to keep valve closed.

This type of operation of the HYDAC Air Vent Valve allows for easy start-up of hydraulic systems.

Due to the compact design the Air Vent Valve requires minimum space.

Model Code

AEV - 6 / 5

Part Number

00230223

Technical Data

Operating Pressure Range

- P min 43 psi (3 bar)
- P max 8700 psi (600 bar)

Material

- Carbon Steel

Operating Flow Range

- Q min 0.25 gpm (1 l/min)
- Q max 15 gpm (57 l/min)

to achieve higher flow rates, parallel connection is possible

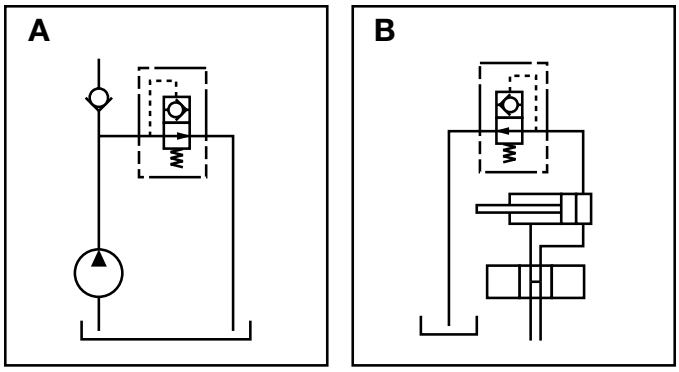
Mounting

The inlet port is connected to the pressure line and the outlet port should be connected back into the non-pressurized reservoir.

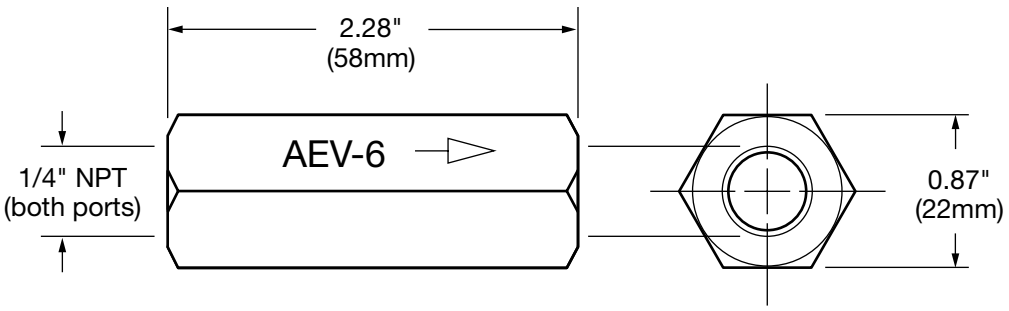
For ventilation of pumps the valve should be mounted adjacent to the pump outlet. For system ventilation the valve should be mounted at the system's highest point.

Mounting Positions

Optional - see figures A and B.
The return line must be connected to reservoir below the minimum oil level.



Dimensions



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

WSM Series
2-Way Solenoid Cartridge Valves

Features

- Long life and low noise level due to oil-immersed solenoid armature.
- Electro-magnetic actuation in all standard international DC and AC voltages and many electrical connection types available.
- Minimal wear and long life due to hardened and polished control elements.
- In the closed position the flow paths are shut off by means of a cone seat.
- Solenoid coils can be rotated through 360˚ and replaced without opening the hydraulic system.
- Surfaces are zinc-plated.
- Built-in seals protect solenoid coils from water penetration.
- Compact construction enables space-saving installation in connection housings and control blocks.

Specifications

Operating Pressure
max. 350 bar *(see pages 65-66 for limits)*

Flow rate
max. 40 l/min *(see pages 65-66 for limits)*

Internal leakage
leakfree

Fluid Temperature Range
-4° to 248°F (-20° to 120°C)

Ambient Temperature Range
-4° to 140°F (-20° to 60°C)

Type of Voltage
DC solenoid,
AC voltage is rectified using a bridge rectifier built into the coil

Nominal Current Draw (at 20˚C)
1.5 A at 12 V DC
0.8 A at 24 V DC
0.2 A at 115 V AC

Voltage Tolerance
-15% to 15%

Switch-on Time
100% *(continuous)*

Switching Time
see pages 65-66

Operating Fluid
hydraulic oil to DIN 51524 Part 1 and 2

Viscosity Range
10 mm2/s to 420 mm2/s is recommended

Filtration
max. permissible contamination level of the operating fluid to ISO 4406 Class 21/19/16

Mounting position
optional

Materials

Valve Body:	high tensile steel
Closing Elements:	hardened and polished steel
Seals:	NBR *(standard)* FKM *(optional)* back-up ring in PTFE

Cavity
06020

Weight

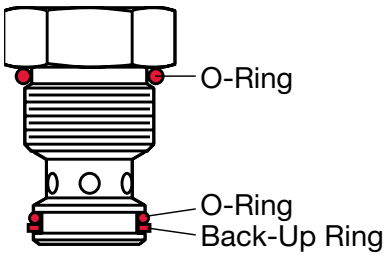
Valve Complete:	0.37 kg
Coil Only:	0.19 kg
Valve w/out Coil:	0.18 kg

Seal Kits

Includes
2 O-rings
1 Back-up Ring

NBR: Part #03119017

FPM: Part #02083918



Model Code

WSM 06020 Y - 01 __ - C - N - 24DG - Z4

Series
WSM = Directional 2-Way Solenoid Cartridge Valve

Cavity Designation

Function Code
Y, Z, YR, ZR, W, V *(see next pages for details)*

Modification Number
Latest Version Always Supplied

Manual Override
(omit) = No manual override
M = Manual overide

Configuration
C = Cartridge Only
SS6 = Steel inline block, Zinc Plated, SAE-6 Ports, 06020 Cavity *(see page 70 for more information)*

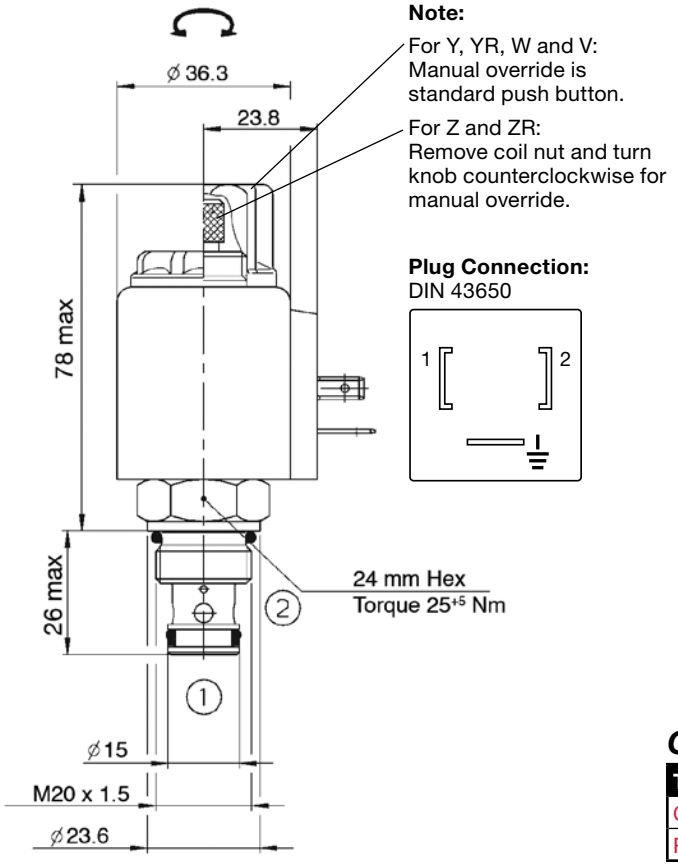
Seal Material
N = NBR
V = FPM *(Special Order Only)*

Coil Rating *(Male DIN 43650)*
12DG = 12V DC *(03000489 Replacement Coil Part Number)*
24DG = 24V DC *(03000249 Replacement Coil Part Number)*
115AG = 115V AC *(03003156 Replacement Coil Part Number)*
230AG = 230V AC *(03002594 Replacement Coil Part Number)*

DIN 43560 Electrical Connector
(omit) = Standard EN 175301-803 *(Male DIN 43650)* Z4 Plug not included
Z4 = With plug *(Female DIN 43650)* Special Order Only - Part Number 00394287 to order separately

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

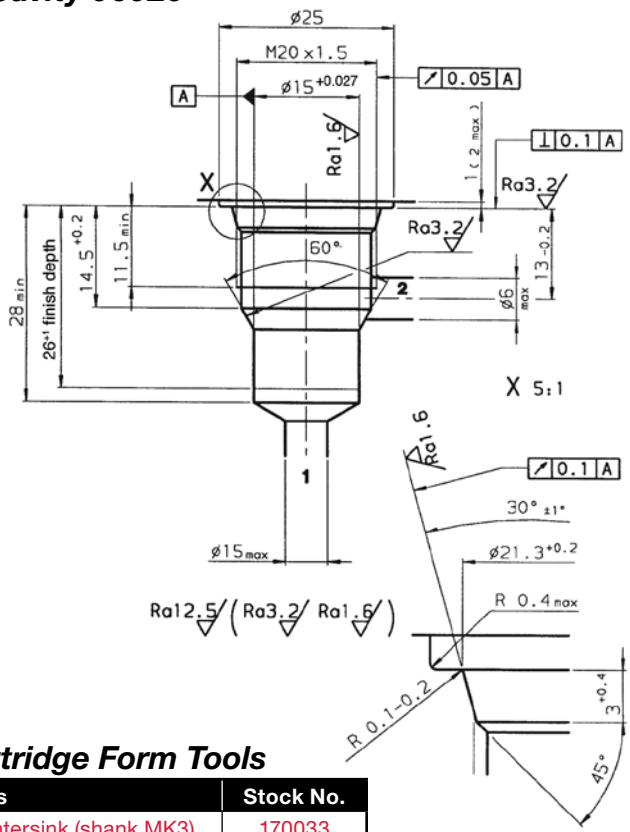
Dimensions



Note:
For Y, YR, W and V: Manual override is standard push button.
For Z and ZR: Remove coil nut and turn knob counterclockwise for manual override.

Plug Connection:
DIN 43650

Cavity 06020



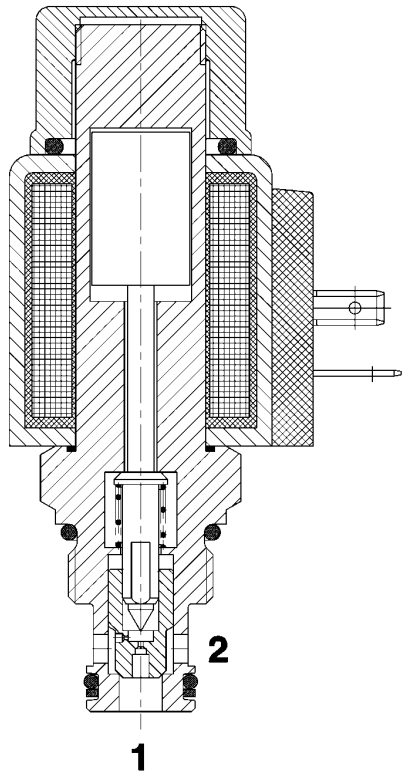
Cartridge Form Tools

Tools	Stock No.
Countersink (shank MK3)	170033
Reamer (shank MK2)	1000768

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in mm

WSM06020Y-01

Normally open, Uni-Directional

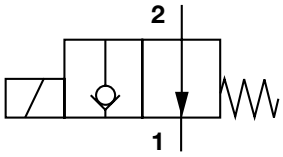


When the solenoid coil is not energized there is free flow through the valve from port 2 to port 1. Flow from port 1 to port 2 is severely restricted in this mode. When the solenoid coil is energized the valve is closed from port 2 to port 1. In the reverse direction there is free flow through the valve when the pressure force on the spool exceeds the solenoid force *(approx. 9 to 20 bar)*.

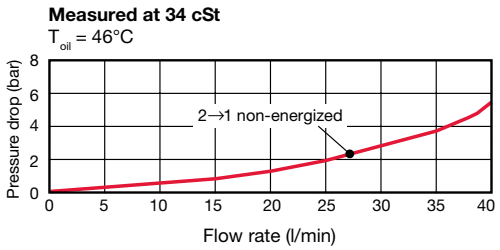
Switch Time

On: approx 50ms Up to 40 l/min
Off: approx 35ms Up to 350 bar

Hydraulic Symbol

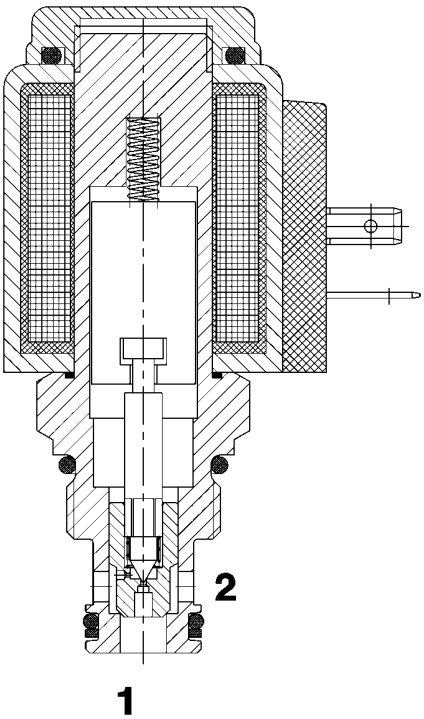


Pressure Drop



WSM06020Z-01

Normally closed, Uni-Directional

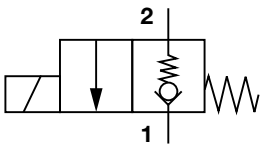


When the solenoid coil is not energized the valve is closed from port 2 to port 1. In the reverse direction there is free flow through the valve. The valve spool opens at a differential pressure of approx. 1.5 bar *(check function)*. When the solenoid coil is energized, there is free flow through the valve from port 2 to port 1. Flow from port 1 to port 2 is severely restricted in this mode.

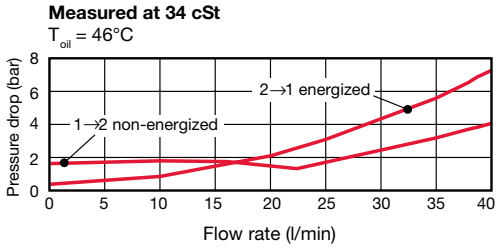
Switch Time

On: approx 35ms Up to 40 l/min
Off: approx 50ms Up to 350 bar

Hydraulic Symbol



Pressure Drop



NOTE: The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

WSM06020YR-01

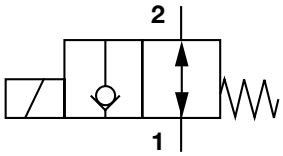
Normally open, with reverse flow

When the solenoid coil is not energized there is free flow through the valve in both directions. When the solenoid coil is energized the valve is closed from port 2 to port1. In the reverse direction there is free flow through the valve when the pressure force on the spool exceeds the solenoid force *(approx. 9 to 20 bar)*.

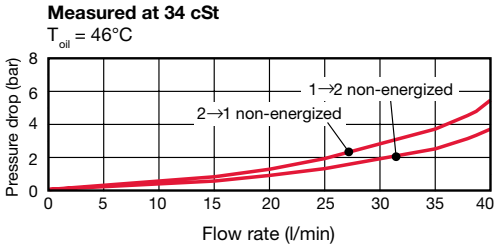
Switch Time

On: approx 50ms Up to 40 l/min
Off: approx 35ms Up to 350 bar

Hydraulic Symbol



Pressure Drop



WSM06020V-01

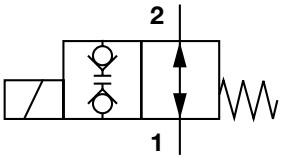
Normally open, Bi-directional

When the solenoid coil is not energized there is free flow through the valve in both directions. When the solenoid coil is energized the valve is closed in both directions.

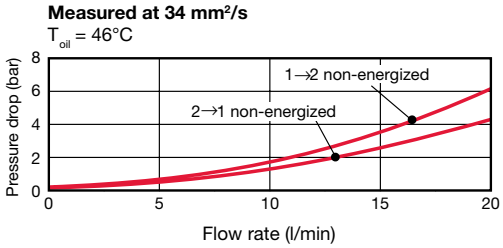
Switch Time

On: approx 40ms Up to 20 l/min
Off: approx 60ms Up to 350 bar

Hydraulic Symbol



Pressure Drop



WSM06020ZR-01

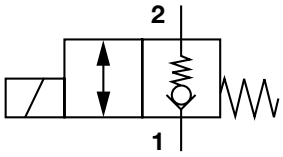
Normally closed, with reverse flow

When the solenoid coil is not energized the valve is closed from port 2 to port 1. In the reverse direction there is free flow through the valve. The valve spool opens at a differential pressure of approx. 1.5 bar (check function). When the solenoid coil is energized there is free flow through the valve in both directions.

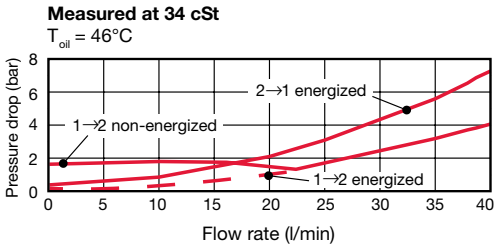
Switch Time

On: approx 35ms Up to 40 l/min
Off: approx 50ms Up to 350 bar

Hydraulic Symbol



Pressure Drop



WSM06020W-01

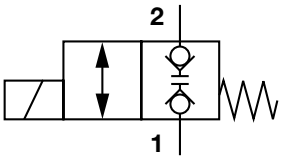
Normally closed, Bi-directional

When the solenoid coil is not energized the valve is closed in both directions. When the solenoid coil is energized there is free flow through the valve in both directions.

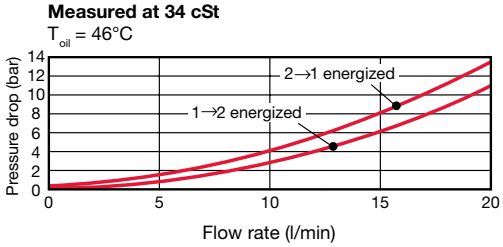
Switch Time

On: approx 35ms Up to 19 l/min
Off: approx 50ms Up to 350 bar

Hydraulic Symbol



Pressure Drop

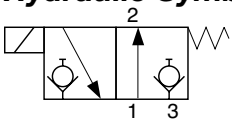


WSE3 Series
3-Way Solenoid Cartridge Valves

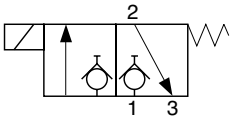
Features

- Leakfree poppet design
- No dynamic seals
- Excellent heat dissipation
- Low operating noise level
- Fully encapsulated coil
- DIN 43650 connector standard
- Fluoroelastomer seals standard

Hydraulic Symbols



Normally Open 1-2
(Configuration D)



Normally Closed 1-2
(Configuration C)

Connections
1 = Pressure Line
2 = Actuator
3 = Tank Line

Specifications

Maximum Operating Pressure
7,000 psi (500 bar)
P1 ≥ P2 ≥ P3

Nominal Flow
3 gpm (12 l/min) *(flow only in direction of arrows shown)*

Fluid Temperature Range
-4° to 176°F (-20° to 80°C)

Ambient Temperature Range
-4° to 104°F (-20° to 40°C)

Recommended Media
General Purpose Hydraulic Fluid

Viscosity Range
59 SUS to 1,760 SUS

Filtration Required
20 Micron Absolute Rating

Internal Leakage
Leakfree

Duty Cycle
Continuous at 110% Rated Voltage

Solenoid Current *(nominal)*
24 VDC, 1.04 Amps
110 VAC, 0.26 Amps

Solenoid Coil Power *(nominal)*
26 Watts

Voltage Tolerance
+10%, -5%

Materials
Valve Body: High Strength Carbon Steel
Valve Poppet: Hardened and Polished Alloy Steel
Line Body: Carbon Steel

Switch Time
On: approx. 40ms
Off: approx. 45ms

Model Code

WSE 3 E 0 C . X / G12 - Z4 - 1/4 NPT

Directional Control Valve
WSE

Size
3 = 3 gpm (12 l/min)

Type of Connection
E = Cartridge Valve Only
R = Valve with Line Body

Type

Configuration
C = Normally Closed Port 1-2
D = Normally Open Port 1-2

Modification Number *(latest version always supplied)*

Solenoid
G12 = 12 VDC *(Replacement Coil Kit - P/N 00715001 - Coil Kit G12-Z4)*
G24 = 24 VDC *(Replacement Coil Kit - P/N 00715003 - Coil Kit G24-Z4)*
W110 = 110 VAC *(Replacement Coil Kit - P/N 00715033 - Coil Kit W110-ZW4)*
W230 = 230 VAC *(Replacement Coil Kit - P/N 00715037 - Coil Kit W230-ZW4)*

Electrical Connections
Z4 = DIN 43650 Connector *(standard)*

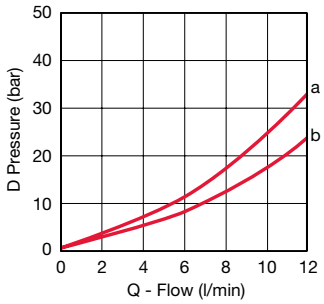
Line Body
(omit) = None *(if E was chosen in Type of Connection above)*
SAE-4 = SAE 4 *(if R was chosen in Type of Connection above)*

Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

Pressure Drop vs. Flow

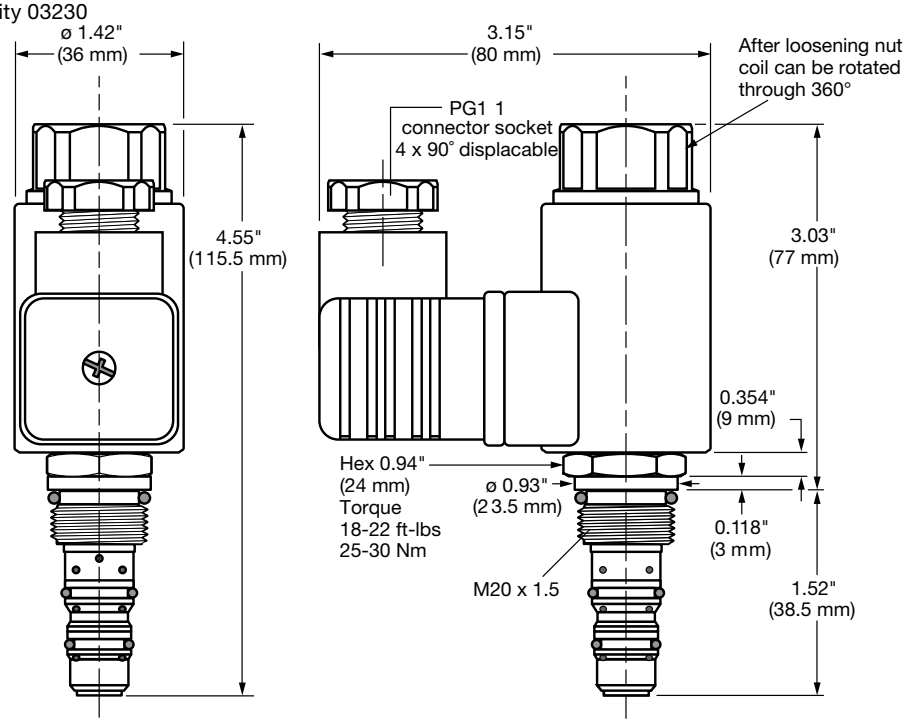
Configuration	Flow Direction	Curve
C energized	1 to 2	a
– de-energized	2 to 3	a
D de-energized	1 to 2	b
– energized	2 to 3	b

Dp/Q curves
Measured at v = 34 mm²/s
WSE 3 E

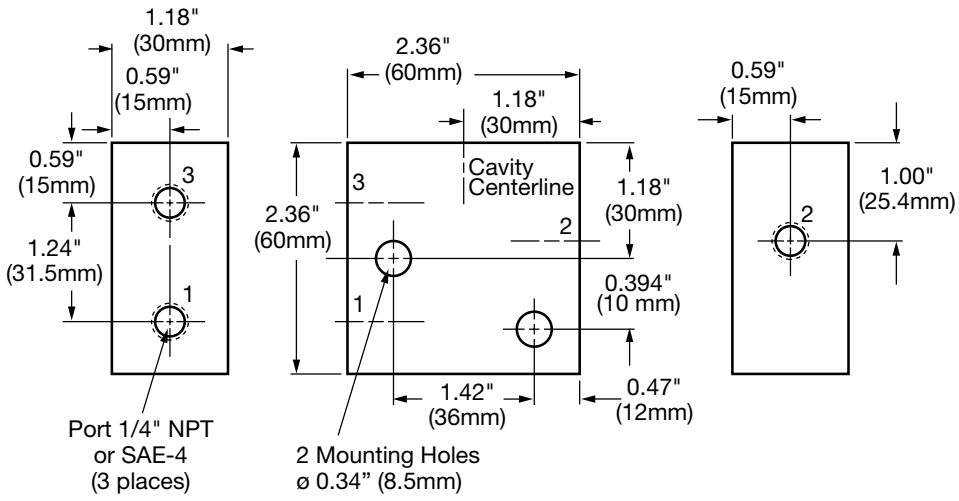


Dimensions

Ref: Install in HYDAC Cavity 03230



Line Body



Block with SAE-4 Ports: 02580401
(Blocks are not normally stocked items)
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

DB4 Series
Pressure Relief Valves

Specifications

Operating Pressure Range
Inlet (Port 1): to 9,000 psi (630 bar)
Outlet (Port 2): to 5,000 psi (350 bar)

Nominal Flow
8 gpm (30 l/min)

Operating Temperature Range
-4° to 176°F (-20° to 80°C)

Recommended Media
General Purpose Hydraulic Fluid

Viscosity Range
35 SUS to 3700 SUS

Filtration Rating
20 Micron Absolute

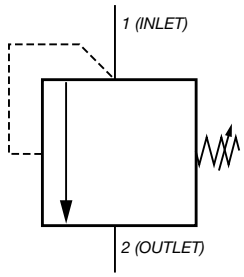
Materials
Valve Body: High Strength Carbon Steel
Valve Poppet: Hardened and Polished Alloy Steel
Line Body: Carbon Steel

Cavity
06020 Cavity *(see page 64 for more information)*

Features

- Direct acting Poppet design
- Low noise level
- Fast response
- Low Hysteresis
- Long service life
- Fluoroelastomer seal standard

Hydraulic Symbol



Model Code

DB4 E - 01 X - 100 V

Pressure Relief Valve
DB4 = Pressure Relief Valve

Type of Connection
E = Relief Valve cartridge only
R = Relief Valve with line body

Type Number
01 = *(standard)*

Modification Number *(latest version always supplied)*

Pressure Range
100 = up to 1500 psi (100 bar)
200 = up to 3000 psi (200 bar)
350 = up to 5000 psi (350 bar)
630 = up to 9000 psi (630 bar)

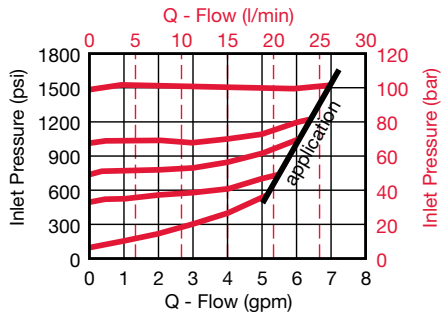
Type of Adjustments
V = Adjustable with tool (standard)
S = Scaled Knob, Adjustable by Hand
F = Set by Factory *(supply set pressure in bar)*

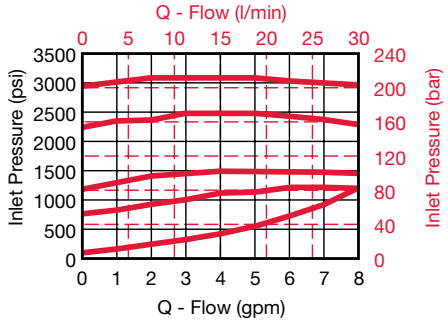
Line Body Port Size
(omit) = None *(if E was chosen in Type of Connection above)*
3/8NPT = 3/8" NPT
SAE-6 = SAE 6 *(if R was chosen in Type of Connection above)*

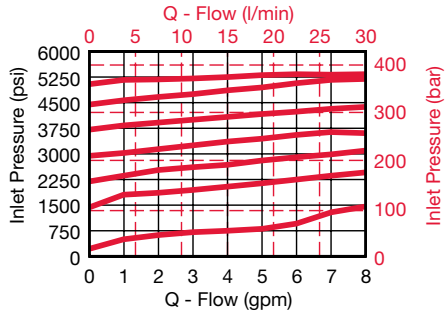
Model Codes containing selections listed in RED are non-standard items – Minimum quantities will apply – Contact HYDAC for information and availability
Not all combinations are available

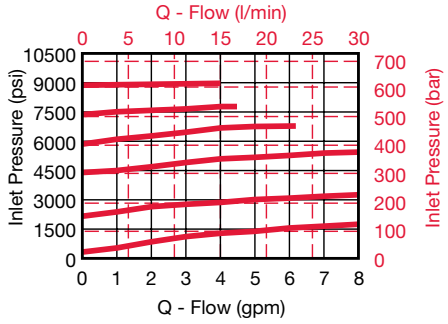
Adjustment Curves for Nominal Flow Rates

Viscosity = 170 SUS @ 120˚F



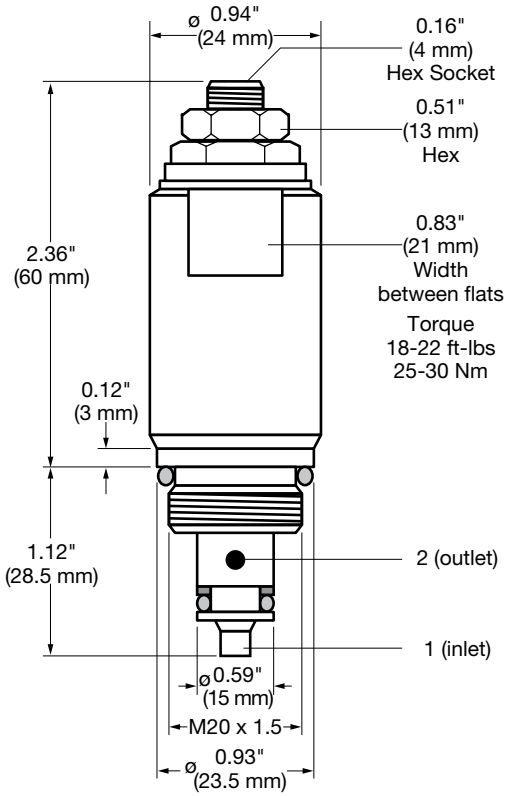




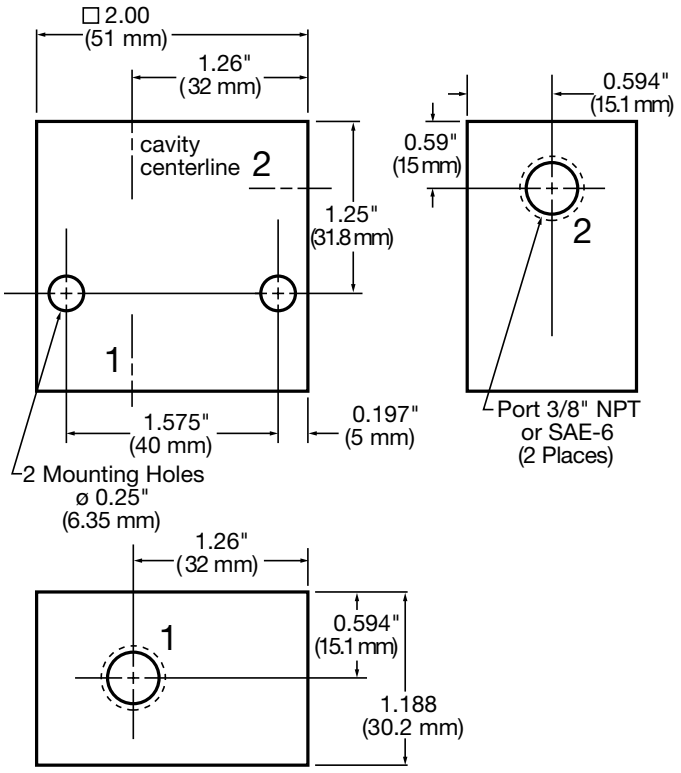


Dimensions

Relief Valve



Valve Line Body, 06020 Cavity



Block with 3/8" NPT Ports: 02056007

Block with SAE-6 Ports: 02580404

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)