

HYDAC INTERNATIONAL

HIGH PRESSURE BALL VALVES

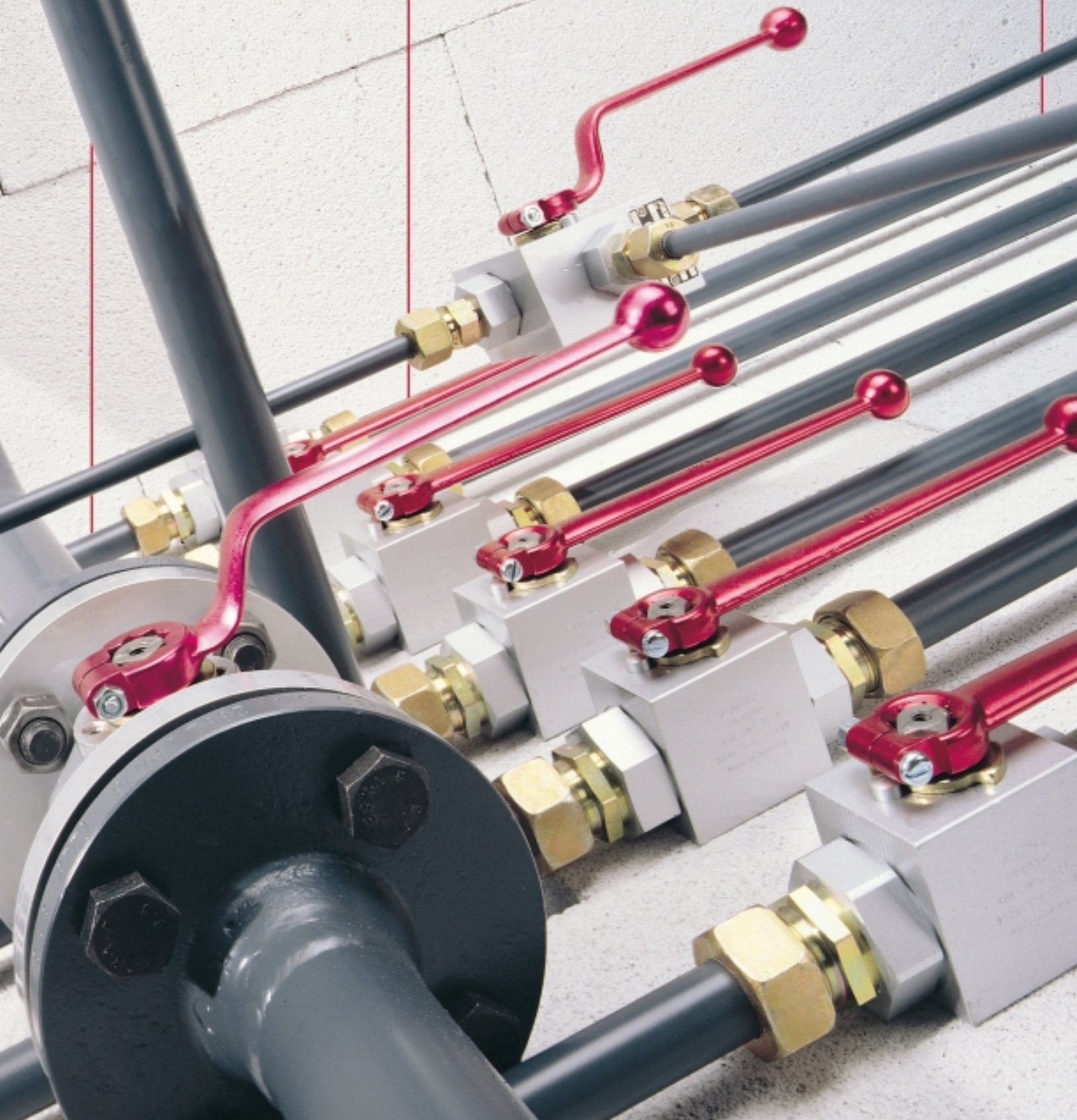
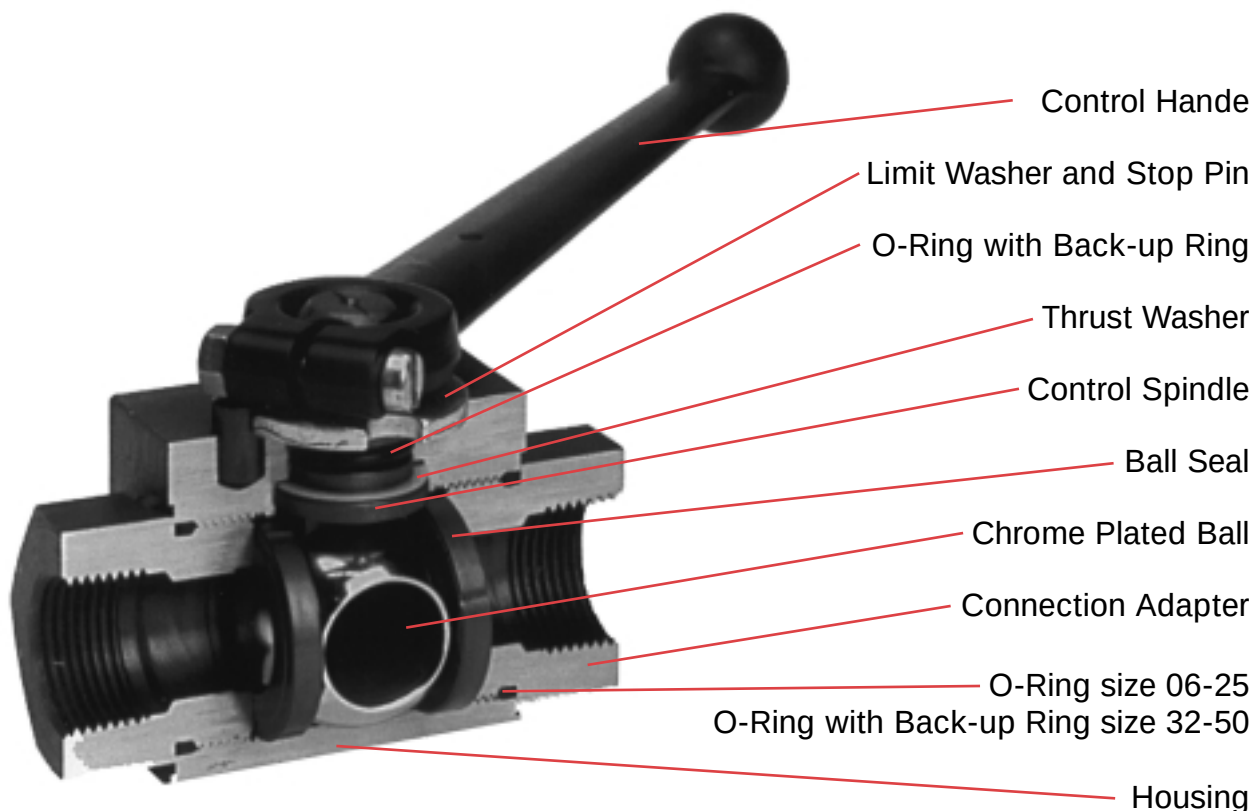


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DESIGN, FEATURES AND OPTIONS



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 water glycols. For high water based fluids 95/5, 98/2 and gases please contact HYDAC.
- Design modifications and special materials are available for corrosive fluids such as phosphate ester, acids and caustics.
- HYDAC ball valves are designed and manufactured by our ISO 9001 certified FLUTEC division.

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.
- Phosphate coated valve body. (*standard*)
- Individually tested for leakage free performance.

AVAILABLE OPTIONS

HYDAC can furnish ball valves with special options including:

- Locking Devices
- Pneumatic or Electrical/Actuators
- Limit Switch
- Off-Set or Straight Control Handles
- Contact HYDAC for Special Requirements

TWO-WAY VALVES WITH NPT AND SAE CONNECTIONS



KHB- BLOCK HOUSING
Carbon Steel Sizes 06-25



KHM-FORGED HOUSING
Carbon Steel sizes 32-50
Stainless Steel sizes 06-50

SPECIFICATIONS:

- 1/4" - 2" Full Port Design
- NPT or SAE O-Ring connections
- Polyacetal Ball Seals (*standard*)
- FPM (*Viton*) 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
- Zero Leakage Shut-Off

TEMPERATURE RANGE

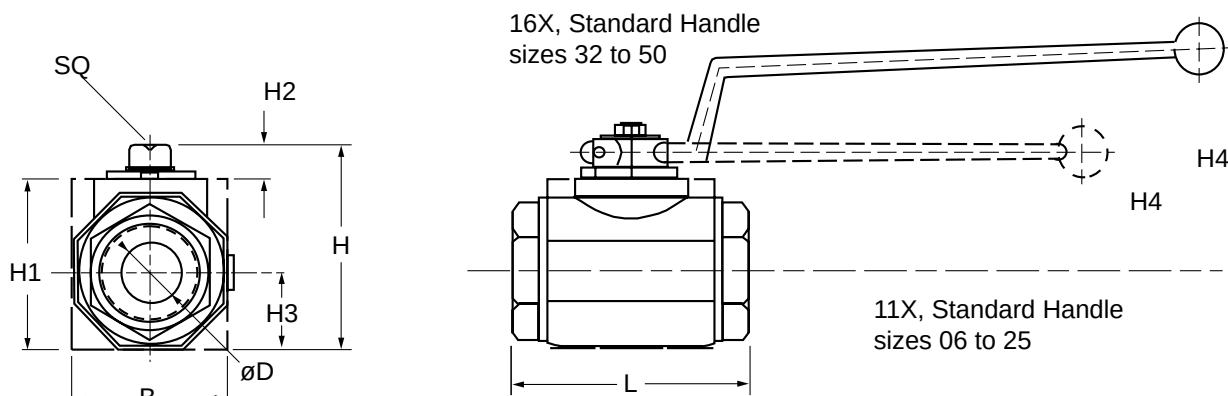
- -4° F to 482° F Depending on Seal Materials Selected

MODEL CODE

Housing Type					Locking Device Option				
KHB – Block Housing, Carbon Steel - Sizes 06 - 25					L – Locking Device				
KHM – Forged Housing, Carbon Steel - Sizes 32 - 50, Stainless Steel Sizes 06 - 50					LS – Locking Device with 5 amp Limit Switch Sizes 20-50				
Nominal Sizes					Handle Codes				
Nom	SAE		NPT		O-Ring Material				
Size	Tube Size	Thread Size	Pipe Size	Pipe OD	2 – NBR (Buna)				
06	-4	7/16-20 UNF	1/4"	.540"	3 – PTFE Spindle Seals and FPM (viton) O-Rings (1500 psi max)				
10	-6	9/16-18 UNF	3/8"	.675"	4 – FPM (viton) -Standard				
16	-8	3/4-16 UNF	1/2"	.840"	Ball Seal Material				
20	-12	1-1/16-12 UN	3/4"	1.050"	1 – Polyacetal (<i>standard</i>)				
25	-16	1-5/16-12 UN	1"	1.315"	2 – NBR (Buna N) (1500 psi max)				
32	-20	1-5/8-12 UN	1-1/4"	1.660"	3 – PTFE (1500 psi max)				
40	-24	1-7/8-12 UN	1-1/2"	1.900"	Spindle and Ball Material				
50	-32	2-1/2-12 UN	2"	2.375"	1 – Carbon Steel (<i>standard</i>)				
Connection Type					3 – Stainless Steel				
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 (<i>standard</i>)									
3 – Stainless Steel									

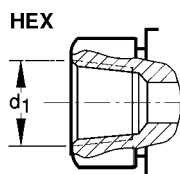
NOTE: Not all combinations available

DIMENSIONS & PRESSURE RATINGS



Sizes 06-25 Straight Aluminum Handle Standard Sizes 32-50 Offset Steel Handle Standard

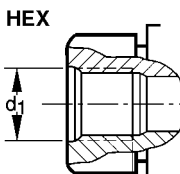
NPT PORT



NPT
Internal
Thread

MODEL CODE	*MAX PSI	d1 THREAD NPT	A1 in. (mm)	B in. (mm)	ØD in. (mm)	H in. (mm)	H1 in. (mm)	H2 in. (mm)	H3 in. (mm)	H4 in. (mm)	L in. (mm)	SQ in. (mm)	WT. lbs. (kg.)
KHB-06NPT	7250	1/4" NPT	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (10.2)	1.97 (50)	2.72 (69)	0.35 (9)	.66 (0.3)
KHB-10NPT	7250	3/8" NPT	5.91 (150)	1.26 (32)	0.39 (10)	2.09 (53)	1.57 (40)	.33 (8.5)	0.67 (10.4)	2.17 (55)	2.83 (72)	0.35 (9)	1.10 (0.5)
KHB-16NPT	5800	1/2" NPT	6.88 (175)	1.50 (38)	0.63 (16)	2.48 (63)	1.77 (45)	0.43 (14)	0.75 (13.5)	2.56 (65)	3.27 (83)	0.47 (12)	1.65 (0.75)
KHB-20NPT	5000	3/4" NPT	7.88 (200)	1.89 (48)	0.79 (20)	2.95 (75)	2.24 (57)	0.43 (14)	0.96 (14)	3.03 (77)	3.74 (95)	0.55 (14)	2.87 (1.3)
KHB-25NPT	5000	1" NPT	7.88 (200)	2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)	0.43 (14)	1.12 (16)	3.35 (85)	4.45 (113)	0.55 (14)	4.41 (2.0)
KHM-32NPT	5000	1-1/4" NPT	12.00 (305)	2.95 (75)	1.18 (30)	4.06 (103)	3.35 (85)	0.47 (12)	1.48 (18)	4.74 (120.5)	4.33 (110)	0.67 (17)	6.84 (3.1)
KHM-40NPT	5000	1-1/2" NPT	12.00 (305)	3.35 (85)	1.50 (38)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	4.98 (126.5)	5.12 (130)	0.67 (17)	9.70 (4.4)
KHM-50NPT	5000	2" NPT	12.00 (305)	4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)	0.47 (12)	2.07 (52.5)	5.28 (134)	5.51 (140)	0.67 (17)	14.55 (6.6)

SAE PORT



SAE
Straight
Thread
O-Ring
Boss

MODEL CODE	*MAX PSI	d1 THREAD SAE	A1 in. (mm)	B in. (mm)	ØD in. (mm)	H in. (mm)	H1 in. (mm)	H2 in. (mm)	H3 in. (mm)	H4 in. (mm)	L in. (mm)	SQ in. (mm)	WT. lbs. (kg.)
KHB-06SAE	7250	7/16-20UNF SAE 4	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (13)	1.97 (50)	2.72 (69)	0.35 (9)	.66 (.3)
KHB-10SAE	7250	9/16-18UNF SAE 6	5.91 (150)	1.26 (32)	0.39 (10)	2.09 (53)	1.57 (40)	.33 (8.5)	0.67 (17)	2.17 (55)	2.83 (72)	0.35 (9)	1.10 (.5)
KHB-16SAE	5800	3/4-16UNF SAE 8	6.88 (175)	1.50 (38)	0.63 (16)	2.48 (63)	1.77 (45)	0.43 (11)	0.75 (19)	2.56 (65)	3.27 (83)	0.47 (12)	1.65 (.75)
KHB-20SAE	5000	1-1/16-12UN SAE 12	7.87 (200)	1.89 (48)	0.79 (20)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	3.03 (77)	3.74 (95)	0.55 (14)	2.87 (1.3)
KHB-25SAE	5000	1-5/16-12UN SAE 16	7.87 (200)	2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	3.35 (85)	4.45 (113)	0.55 (14)	4.41 (2.0)
KHM-32SAE	5000	1-5/8-12UN SAE 20	12.00 (305)	2.95 (75)	1.18 (30)	4.06 (103)	3.35 (85)	.47 (12)	1.48 (37.5)	4.74 (120.5)	4.33 (110)	0.67 (17)	6.84 (3.1)
KHM-40SAE	5000	1-7/8-12UN SAE 24	12.00 (305)	3.35 (85)	1.50 (38)	4.49 (114)	3.78 (96)	.47 (12)	1.67 (42.5)	4.98 (126.5)	5.12 (130)	0.67 (17)	9.70 (4.4)
KHM-50SAE	5000	2-1/2-12UN SAE 32	12.00 (305)	4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)	.47 (12)	2.07 (52.5)	5.28 (134)	5.51 (140)	0.67 (17)	14.55 (6.6)

For stainless steel ball valve dimensions, contact HYDAC

*Dependent upon valve and seal materials selected.

Dimensions are for general information only. Please verify all critical dimensions by requesting a certified print.

TWO-WAY VALVES WITH SAE SPLIT FLANGE CONNECTIONS



KHB- BLOCK HOUSING
Carbon Steel Sizes 16-25



KHM-FORGED HOUSING
Carbon Steel sizes 32-50
Stainless Steel sizes 16-50

SPECIFICATIONS:

- 3/4" - 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 (Viton) O-Rings (*standard*)
- Operating Pressure to 5800 psi Depending on Valve Size and Seal Materials Selected
- Zero Leakage Shut-Off

TEMPERATURE RANGE

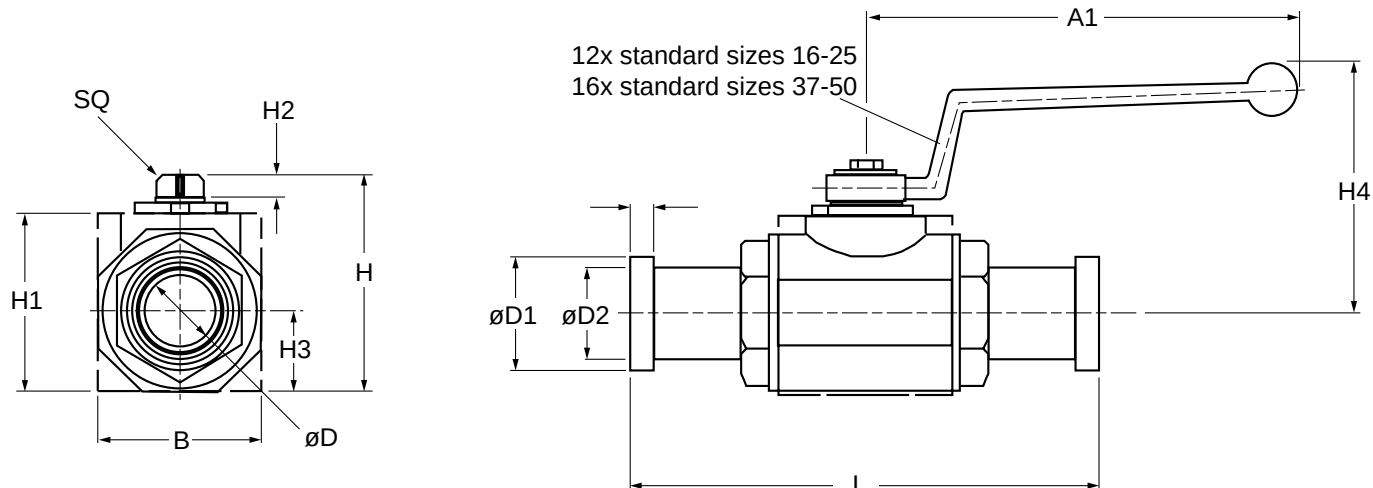
- -4°F to +482°F Depending on Seal Materials Selected

MODEL CODE

Housing Type			KHB	-	20F3	-	1	1	1	4	X	-	12X	-	L	Locking Device Option
KHB – Block Housing, Carbon Steel - Sizes 16-25																L – Locking Device
KHM – Forged Housing, Carbon Steel - Sizes 32-50																LS – Locking Device with 5 amp
Stainless Steel Sizes 16-50																Limit Switch Available for
																Sizes 20-50
																Not available with PTFE Spindle Seals
Nominal Sizes																Handle Codes
Valve Size	Nominal Flange Size	Flange Dash Size														09X – Without Handle, Sizes 16-50
16	1/2"	-12														12X – Offset Aluminum, Sizes 16-25
20	3/4"	-12														16X – Offset Steel, Sizes 32-50
25	1"	-16														
32	1-1/4"	-20														Split Flange Material
40	1-1/2"	-24														X – Without Split Flanges
50	2"	-32														(order split flanges separately)
Connection Type																O-Ring Material
SAE J518 Four bolt split flange type:																2 – NBR (Buna N)
F3 – Standard Pressure Series, Code 61																3 – PTFE Spindle Seals and
F6 – High Pressure Series, Code 62																FPM (viton) O-Rings (1500 psi max)
Body Material																4 – FPM (viton) (<i>standard</i>)
1 – Carbon Steel (<i>standard</i>)																5 – EPDM
3 – Stainless Steel																Ball Seal Material
Spindle and Ball Material																1 – Polyacetal (<i>standard</i>)
1 – Carbon Steel (<i>standard</i>)																2 – NBR (Buna N) (1500 psi max)
3 – Stainless Steel																3 – PTFE (1500 psi max)

NOTE: Not all combinations available

DIMENSIONS & PRESSURE RATINGS



Sizes 16-25 Off Set Aluminum Handle (standard)

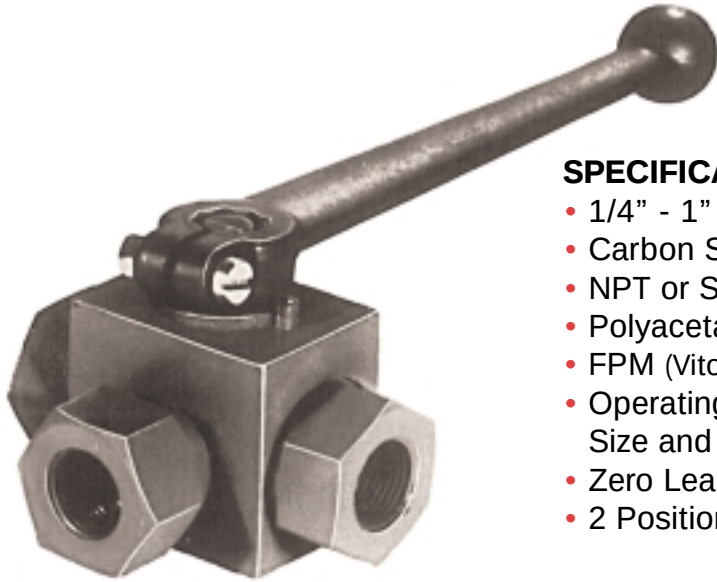
Sizes 32-50 Off Set Steel Handle (standard)

MODEL CODE	*MAX PSI	SIZE	A1 in. (mm)	B in. (mm)	C in. (mm)	ØD in. (mm)	ØD1 in. (mm)	ØD2 in. (mm)	H in. (mm)	H1 in. (mm)	H2 in. (mm)	H3 in. (mm)	H4 in. (mm)	L in. (mm)	SQ in. (mm)	WT lbs. (kg)
KHB-16 F3	5000	1/2"	6.14 (156)	1.50 (38)	0.27 (6.8)	0.63 (16)	1.50 (38.1)	1.24	2.44 (62)	1.77 (45)		0.75 (19)	3.19 (81)	6.69 (170)	0.47 (12)	2.8 (1.3)
KHB-20 F3	5000	3/4"	6.81 (173)	1.89 (48)	0.27 (6.8)	0.75 (19)	1.50 (38.1)	(31.5)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	3.60 (91.5)		0.55 (14)	3.9 (1.8)
KHB-25 F3	5000	1"		2.24 (57)		0.98 (25)	1.75 (44.45)	1.50 (38)	3.23 (82)	2.52 (64)		1.12 (28.5)	3.72 (94.5)	6.95 (176.5)		5.1 (2.3)
KHM-32 F3	4000	1-1/4"	12 (305)	2.95 (75)	0.31 (8)	1.18 (30)	2.00 (50.8)	1.69 (43)	4.06 (103)	3.35 (85)		1.48 (37.5)	4.74 (121)	7.54 (191.4)		9.0 (4.1)
KHM-40 F3	3000	1-1/2"		3.35 (85)		1.50 (38)	2.38 (60.35)	1.97 (50)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	4.98 (127)	9.09 (231)	0.67 (17)	13.1 (5.9)
KHM-50 F3	3000	2"		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)		2.07 (52.5)	5.28 (134)	9.21 (234)		19.2 (8.7)

MODEL CODE	*MAX PSI	SIZE	A1 in. (mm)	B in. (mm)	C in. (mm)	ØD in. (mm)	ØD1 in. (mm)	ØD2 in. (mm)	H in. (mm)	H1 in. (mm)	H2 in. (mm)	H3 in. (mm)	H4 in. (mm)	L in. (mm)	SQ in. (mm)	WT lbs. (kg)
KHB-16 F6	5800	3/4"	6.14 (156)	1.50 (38)	0.35	0.63 (16)	1.63	1.26	2.44 (62)	1.77 (45)		0.75 (19)	3.19 (81)	6.69 (170)	0.47 (12)	2.6 (1.2)
KHB-20 F6	5000	3/4"	6.81 (173)	1.89 (48)	(8.8)	0.75 (19)	(41.3)	(32)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	3.60 (91.5)		0.55 (14)	4.0 (1.8)
KHB-25 F6	5000	1"		2.24 (57)	0.37 (9.5)	0.98 (25)	1.87 (47.6)	1.50 (38)	3.23 (82)	2.52 (57.2)		1.12 (28.5)	3.72 (94.5)	7.81 (198.5)		5.4 (2.4)
KHM-32 F6	5000	1-1/4"	12 (305)	2.95 (75)	0.41 (10.3)	1.18 (30)	2.13 (54)	1.73 (44)	4.06 (103)	3.35 (85)		1.48 (37.5)	4.74 (121)	8.80 (223.4)		10.6 (4.8)
KHM-40 F6	5000	1-1/2"		3.35 (85)	0.50	1.50 (38)	2.50 (63.5)	2.01 (51)	4.49 (114)	3.78 (96)	0.47 (12)	1.67 (42.5)	4.98 (127)	11.06 (281)	0.67 (17)	15.4 (7.0)
KHM-50 F6	5000	2"		4.13 (105)	(12.6)	1.89 (48)	3.13 (79.4)	2.64 (67)	5.18 (131.5)	4.43 (112.5)		2.07 (52.5)	5.28 (134)	12.40 (315)		22.5 (10.2)

*Dependent Upon Seal Material Selected

THREE-WAY DIVERTER BALL VALVES



SPECIFICATIONS:

- 1/4" - 1" Full Port Design
- Carbon Steel Housing
- NPT or SAE O-Ring Connections
- Polyacetal Ball Seals (*standard*)
- FPM (Viton) O-Rings (*standard*)
- Operating Pressure to 7250 psi Depending on Valve Size and Seal Materials Selected
- Zero Leakage Shut-Off
- 2 Position

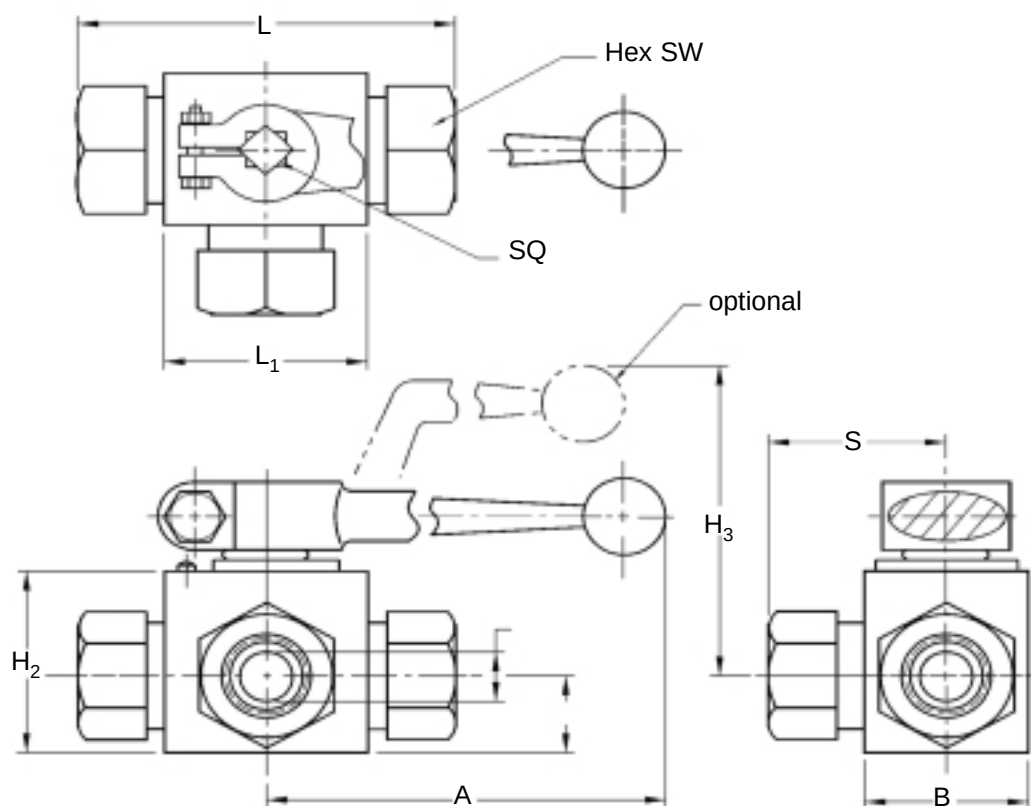
TEMPERATURE RANGE

- -4°F to +482°F Depending on Seal Materials Selected

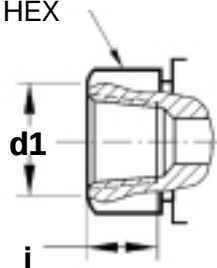
Model Code

Housing Type					KHB3K -					16NPT -					L -					1 1 1 1 4 -					11X -					L																			
KHB3K – Three-Way Diverter Ball Valve																																																	
Nominal Sizes																																																	
Nom		SAE						NPT																																									
Size	Tube	Thread				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"																																									
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																																																	
Spindle and Ball Material																																																	
1– Carbon Steel (standard)																																																	
3– Stainless Steel																																																	

DIMENSIONS & PRESSURE RATINGS



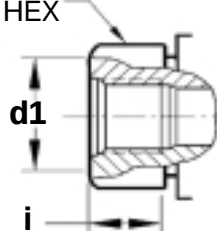
NPT PORT HEX



NPT Internal Thread

MODEL CODE	*MAX PSI	d1 THREAD NPT	A in (mm)	B in (mm)	øD in (mm)	H1 in (mm)	H2 in (mm)	H3 in (mm)	i in (mm)	L in (mm)	L1 in (mm)	SQ	HEX SW	S	WT. lbs (kg)
KHB3K-06NPT	7250	1/4" NPT	5.90 (150)	.98 (25)	.24 (6)	.51 (13)	1.38 (35)	2.87 (73)	.55 (14)	2.72 (69)	1.38 (35)	3/8 (9)	1 (24)	1.36 (34.5)	.88 (.4)
KHB3K-10NPT	5800	3/8" NPT	6.89 (175)	1.26 (32)	.39 (10)	.67 (17)	1.57 (40)	3.35 (85)	.41 (10.4)	2.83 (72)	1.65 (42)	1/2 (12)	1-1/16 (27)	1.42 (36)	1.32 (.6)
KHB3K-16NPT	4600	1/2" NPT	7.87 (200)	1.50 (38)	.63 (16)	.75 (19)	1.77 (45)	3.74 (95)	.53 (13.5)	3.27 (83)	1.85 (47)	9/16 (14)	1-5/16 (41)	1.64 (41.5)	1.76 (.8)
KHB3K-20NPT	4500	3/4" NPT	8.67 (220)	1.89 (48)	.79 (20)	.96 (24.5)	2.24 (57)	4.13 (105)	.56 (13.9)	3.74 (95)	2.36 (60)	1 (14)	1-5/8 (47.5)	1.87 (47.5)	3.31 (1.5)
KHB3K-25NPT	3600	1" NPT	9.50 (241)	2.28 (58)	.98 (25)	1.12 (28.5)	2.52 (64)	4.86 (123)	.66 (16.8)	4.45 (113)	2.56 (65)	1 1/4 (32)	2 (50)	2.22 (56.5)	4.85 (2.2)

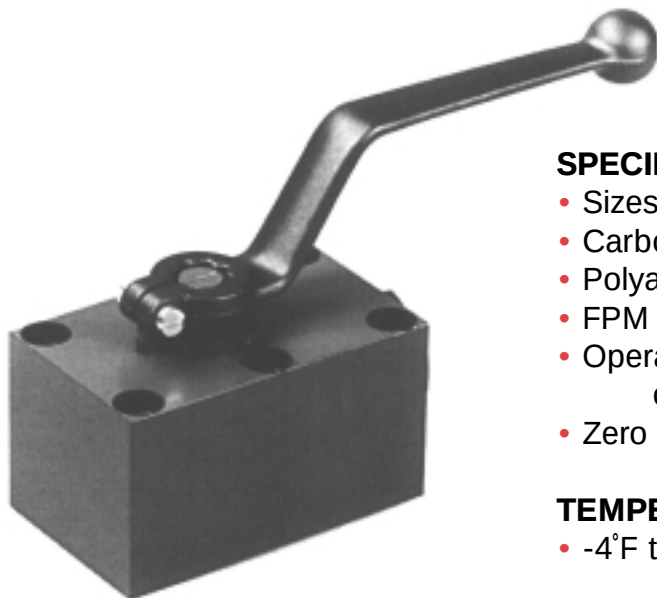
SAE PORT HEX



MODEL CODE	*MAX PSI	d1 THREAD SAE	A in (mm)	B in (mm)	øD in (mm)	H1 in (mm)	H2 in (mm)	H3 in (mm)	i in (mm)	L in (mm)	L1 in (mm)	SQ	HEX SW	S	WT. lbs (kg)
KHB3K-6SAE	7250	7/16-20 UNF	5.90 (150)	.98 (25)	.24 (6)	.51 (12)	1.38 (35)	2.87 (73)	.47 (12)	2.72 (69)	1.38 (35)	3/8 (9)	1 (24)	1.36 (34.5)	.88 (.4)
KHB3K-10SAE	5800	9/16-18 UNF	6.89 (175)	1.26 (32)	.39 (10)	.67 (17)	1.57 (40)	3.35 (85)	.51 (13)	2.83 (72)	1.65 (42)	1/2 (12)	1-1/16 (27)	1.42 (36)	1.32 (.6)
KHB3K-16SAE	4600	3/4-16 UNF	7.87 (200)	1.50 (38)	.63 (16)	.75 (19)	1.77 (45)	3.74 (95)	.59 (15)	3.27 (83)	1.85 (47)	9/16 (14)	1-5/16 (41)	1.64 (41.5)	1.76 (.8)
KHB3K-20SAE	4500	1-1/16-12 UN	8.67 (220)	1.89 (48)	.79 (20)	.96 (24.5)	2.24 (57)	4.13 (105)	.56 (13.9)	3.74 (95)	2.36 (60)	1 (14)	1-5/8 (47.5)	1.87 (47.5)	3.31 (1.5)
KHB3K-25SAE	3600	1-5/16-12 UN	9.50 (241)	2.28 (58)	.98 (25)	1.12 (28.5)	2.52 (64)	4.86 (123)	.79 (20)	4.45 (113)	2.56 (65)	1 1/4 (32)	2 (50)	2.22 (56.5)	4.85 (2.2)

*Dependent upon valve size and seal material selected.

MANIFOLD MOUNTED BALL VALVES



SPECIFICATIONS:

- Sizes 3/8" - 2"
- Carbon Steel Housing
- Polyacetal Ball Seals (Standard)
- FPM (Viton) O-Rings (Standard)
- Operating Pressure to 5000 psi Depending on Seal Materials Selected
- Zero Leakage Shut-Off

TEMPERATURE RANGE

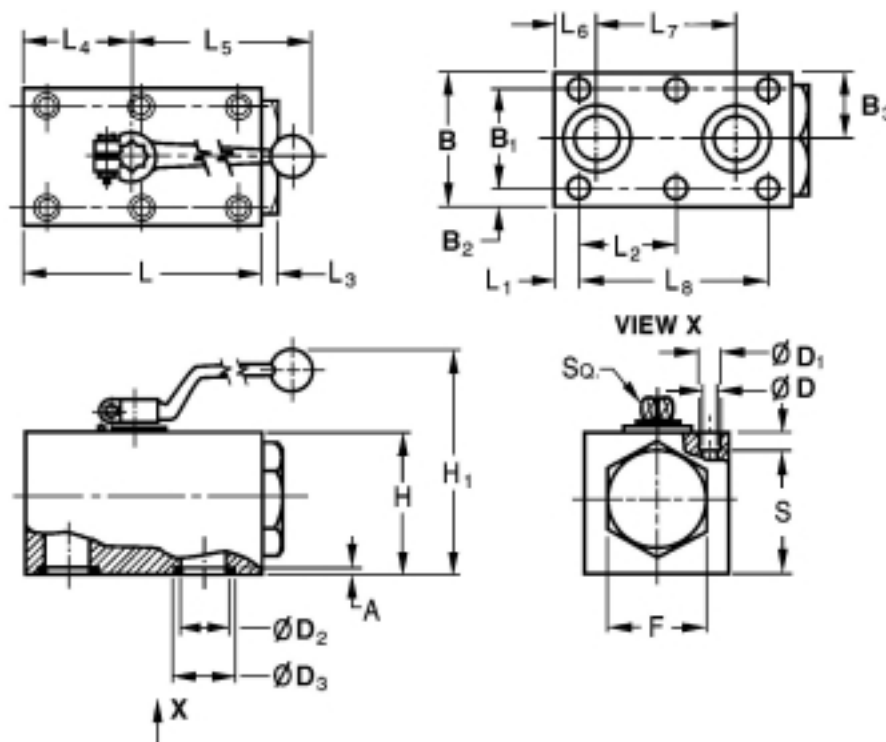
- -4°F to +482°F Depending on Seal Materials Selected

Model Code

Housing Type	KHP	-	20	-	1	1	1	4	-	12X	-	L	Locking Device Option
KHP – Block Housing for Manifold mounting													L – Locking Device
Nominal Sizes													LS – Locking device with 5 amp Limit Switch
Valve Size	Nominal Size												(Available for sizes 20 and 25)
10	3/8"												Not available with PTFE Spindle Seals
16	1/2"												Handle Codes
20	3/4"												09x – Without Handle
25	1"												12x – Offset Aluminum sizes 10 - 25
32	1-1/4"												16x – Offset Steel sizes 32 - 50
40	1-1/2"												O-Ring Material
50	2"												2 – NBR (Buna N)
Body Material													3 – PTFE Spindle Seals and FPM (viton) O-Rings (1500 psi max)
1 – Carbon Steel													4 – FPM (viton) (standard)
Spindle and Ball Material													5 – EPDM
1 – Carbon Steel (standard)													Ball Seal Material
3 – Stainless Steel													1 – Polyacetal (standard)
													2 – NBR (Buna N) (1500 psi max)
													3 – PTFE (1500 psi max)

NOTE: Not all combinations available

DIMENSIONS & PRESSURE RATINGS



MODEL CODE	BALL DRILLING	*MAX PSI	A in (mm)	B in (mm)	B1 in (mm)	B2 in (mm)	B3 in (mm)	ØD in (mm)	ØD1 in (mm)	ØD2 in (mm)	ØD3 in (mm)	F in (mm)	H in (mm)
KHP - 10	.39 (10)	5000	.08 (2)	2.17 (55)	1.575 (40)	.295 (7.5)	1.083 (27.5)	.35 (9)	.55 (14)	.374 (9.5)	.591 (15)	1 3/16 (30)	1.77 (45)
KHP - 16	.63 (16)	5000		2.36 (60)	1.772 (45)	.394 (10)	1.181 (30)	.41 (10.5)	.65 (16.5)	.630 (16)	.984 (25)	1 7/16 (36)	2.17 (55)
KHP - 20	.79 (20)	5000	.12 (3)	2.76 (70)	2.008 (51)	.374 (9.5)	1.378 (35)	.51 (13)	.75 (19)	.787 (20)	1.181 (30)	1 5/8 (41)	2.76 (70)
KHP - 25	.98 (25)	5000		3.15 (80)	2.362 (60)	.394 (10)	1.575 (40)	.69 (17.5)	.925 (23.5)	.925 (23.5)	1.378 (35)	2 (50)	3.15 (80)
KHP - 32	1.18 (30)	5000		3.94 (100)	3.071 (78)	.433 (11)	1.969 (50)	.75 (19)	1.260 (32)	1.260 (32)	1.575 (40)	2 9/16 (65)	3.94 (100)
KHP - 40	1.50 (38)	5000		5.12 (130)	3.740 (95)	.690 (17.5)	2.559 (65)	1.02 (26)	1.496 (38)	1.496 (38)	1.890 (48.5)	-	3.94 (100)
KHP - 50	1.89 (48)	5000		5.91 (150)	4.409 (112)	.748 (19)	2.953 (75)	.87 (22)	1.30 (33)	1.89 (48)	2.181 (55.4)	-	4.33 (110)

MODEL CODE	H1 in (mm)	L in (mm)	L1 in (mm)	L2 in (mm)	L3 in (mm)	L4 in (mm)	L5 in (mm)	L6 in (mm)	L7 in (mm)	L8 in (mm)	S in (mm)	SQ in (mm)	WT. lbs. (kg)
KHP-10	3.60 (92)	2.76 (70)	.30 (7.5)	1.083 (27.5)	.39 (10)	1.14 (29)	5.12 (130)	.394 (10)	1.732 (44)	2.16 (55)	1.42 (36)	8.35 (9)	2.6 (1.2)
KHP-16	4.35 (111)	3.86 (98)	.35 (8.5)	1.634 (41.5)		1.75 (44.5)	6.14 (156)	.67 (17)	2.284 (58)	3.268 (83)	1.81 (46)	.47 (12)	4.6 (2.1)
KHP-20	5.10 (130)	4.61 (117)	.394 (10)	1.909 (48.5)		2.01 (51)	6.81 (173)	.787 (20)	2.717 (69)	3.819 (97)	2.34 (59.5)	.55 (14)	8.2 (3.7)
KHP-25	5.71 (145)	5.32 (135)	.394 (10)	2.264 (57.5)		2.44 (62)		.945 (24)	3.189 (81)	4.528 (115)	2.72 (69)	.55 (14)	12.3 (5.6)
KHP-32	6.83 (174)	6.50 (165)	.472 (12)	2.677 (68)	.43 (11)	2.95 (75)	8.39 (213)	1.142 (29)	3.780 (96)	5.354 (136)	3.31 (84)	.67 (17)	23.4 (10.6)
KHP-40		7.09 (180)	1.122 (28.5)	2.205 (56)	.98 (25)	3.33 (84.6)		1.122 (28.5)	4.409 (112)	4.409 (112)	3.25 (82.5)	.669 (17)	38.6 (17.5)
KHP-50	7.24 (184)	8.66 (220)	1.496 (38)	2.677 (68)		4.17 (106)		1.496 (38)	5.354 (136)	5.354 (136)	3.48 (88.5)		43.7 (19.8)

*Dependent upon seal material selected.

KH3, KH4 MULTIWAY BALL VALVES



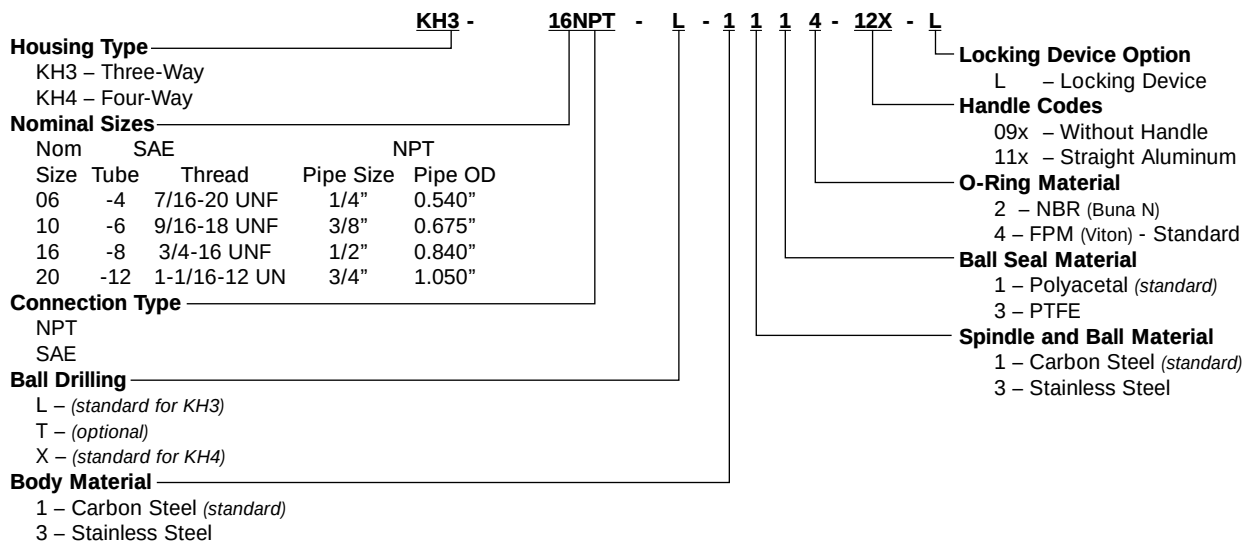
KH3, KH4 MULTIWAY BALL VALVES SPECIFICATIONS:

- Sizes 1/4" to 3/4"
- 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*)
- Viton O-Rings (*standard*)
- Operating Pressure to 7250 PSI Depending on Valve Size and Seal Materials Selected
- Zero Leakage Shut-Off
- 2 Positions

TEMPERATURE RANGE

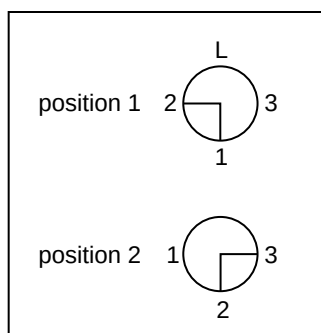
- -4°F to 482°F Depending on Seal Materials Selected

Model Code

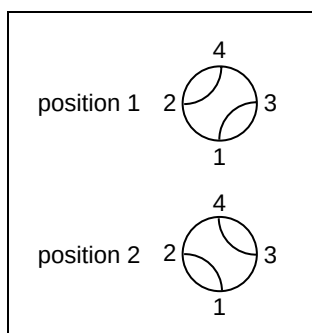


NOTE: Not all combinations available

BALL DRILLING

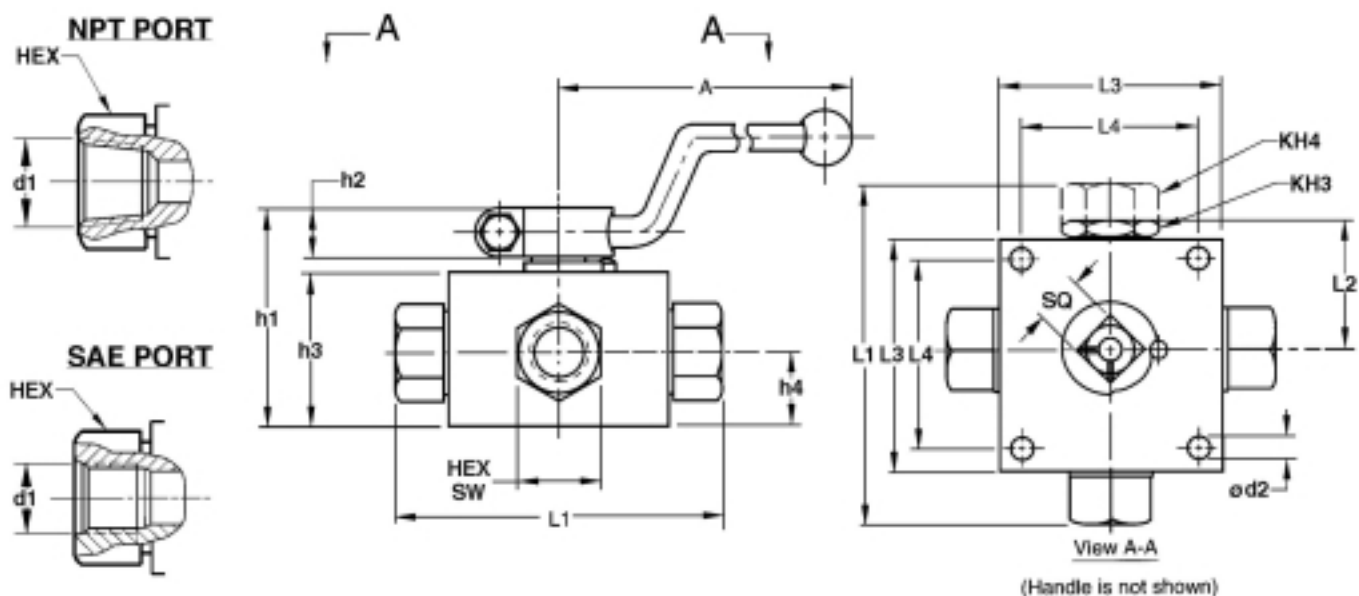


Three-Way



Four-Way

DIMENSIONS & PRESSURE RATINGS



MODEL CODE	*MAX PSI	d1 THREAD NPT	A In (mm)	L1 In (mm)	L2 In (mm)	L3 In (mm)	L4 In (mm)	h1 In (mm)	h2 In (mm)	h3 In (mm)	h4 In (mm)	ød2 In (mm)	SQ	HEX SW	WT. lbs. Kg
KH...06NPT	7,250	1/4"	6.10 (155)	3.94 (100)	1.67 (42.5)	2.76 (70)	2.165 (55)	2.28 (58)	.51 (13)	1.57 (40)	.87 (22)	.26 (6.5)	.47 (12)	.95 (24)	3.5 (1.6)
KH...10NPT	7,250	3/8"	6.81 (173)	4.53 (115)	1.81 (46)	3.15 (80)	2.559 (65)	2.72 (69)	.55 (14)	1.97 (50)	1.06 (27)	.35 (9)	.55 (14)	1.18 (30)	5.3 (2.4)
KH...12NPT	5,800	1/2"		5.32 (135)	2.20 (56)	3.94 (100)	3.150 (80)	3.11 (79)		2.36 (60)	1.22 (31)		.67 (17)	1.42 (36)	9.5 (4.3)
KH...20NPT	4,500	3/4"	8.50 (216)	5.67 (144)	2.26 (57.5)		3.347 (85)	3.68 (93.5)	.61 (15.5)	2.87 (73)	1.42 (36)		.67 (17)	1.81 (46)	13.2 (6.0)

MODEL CODE	*MAX PSI	d1 THREAD SAE	A In (mm)	L1 In (mm)	L2 In (mm)	L3 In (mm)	L4 In (mm)	h1 In (mm)	h2 In (mm)	h3 In (mm)	h4 In (mm)	ød2 In (mm)	SQ	HEX SW	WT. lbs. Kg
KH...06SAE	7,250	7/16-20UNF	6.10 (155)	3.94 (100)	1.67 (42.5)	2.76 (70)	2.165 (55)	2.28 (58)	.57 (13)	1.57 (40)	.87 (22)	.26 (6.5)	.47 (12)	.95 (24)	3.5 (1.6)
KH...10SAE	7,250	9/16-18UNF	6.81 (173)	4.53 (115)	1.81 (46)	3.15 (80)	2.559 (65)	2.72 (69)	.55 (14)	1.97 (50)	1.06 (27)	.35 (9)	.55 (14)	1.18 (30)	5.3 (2.4)
KH...12SAE	5,800	3/4-16UNF		5.32 (135)	2.20 (56)	3.94 (100)	3.150 (80)	3.11 (79)		2.36 (60)	1.22 (31)		.67 (17)	1.42 (36)	9.5 (4.3)
KH...20SAE	4,500	1 1/16-12UN	8.50 (216)	5.67 (144)	2.26 (57.5)		3.347 (85)	3.68 (93.5)	.61 (15.5)	2.87 (73)	1.42 (36)		.67 (17)	1.81 (46)	13.2 (6.0)

*Dependent upon valve and seal materials selected

BALL VALVE OPTIONS

Handle Kit Options *(including handle and mounting hardware)*

Valve Type/Size	Spindle Square Size	Description	Part Number
KHB-6, 10		Handle Straight AL ¹⁾	00270099
KH3K-6, 10	SW-9	Handle Offset AL	00271423
		Handle Offset STL	02064265
		Handle Offset AL ¹⁾	00271423
KHP-10	SW-9	Handle Offset STL	02064265
		Handle Straight AL ¹⁾	00270100
KHB-16	SW-12	Handle Offset AL	00270381
KHB3K-16		Handle Offset STL	02064266
KH3-6, KH4-6		Handle Offset AL ¹⁾	00270381
KHP-16	SW-12	Handle Offset STL	02064266
KHB-16F3			
KHB-16F6			
KHB-20, 25		Handle Straight AL ¹⁾	00270101
KHB3K-20	SW-14	Handle Offset AL	00270382
		Handle Offset STL	02064267
KHP-20, 25		Handle Offset AL ¹⁾	00270382
KHB-20, 25F3		Handle Offset STL	02064267
KH3-10, 12	SW-14		
KH4-10, 12			
KHB-20, 25F6			
KHP-32, 40, 50	SW-17	Handle Offset STL ¹⁾	02064268
KH3-20, KH4-20	SW-17	Handle Offset AL ¹⁾	00270383
KHM-32, 40, 50	SW-17	Handle Offset STL ¹⁾	02064268

¹⁾ Indicates Handle Supplied with Standard Valve Assembly.



Ball Valve with Pneumatic Actuator

HYDAC's dependable rack and pinion pneumatic actuators are compact and feature simple components suitable for high-cycle applications. The double piston design allows for significantly reduced overall size of the actuator.

Each piston has a gear rack that applies an equal force at two points directly across the diameter of a common pinion gear. This creates a symmetrically balanced actuator with a short, powerful stroke, rapid response, and fully concentric operating loads for optimum life expectancy and performance in control valve applications.

Actuators can be mounted at the factory or ordered as separate items. For more information, refer to **HYDAC** brochures:

- Ball Valve Pneumatic/Hydraulic Actuator
- Ball Valve with Electric Actuator

Note: HYDAC actuators are designed to open and close the valve. The actuators are not designed for valve throttling.



Ball Valve with Locking Device

The Locking Device is available for all sizes and configurations of the HYDAC Ball Valve Series: KHB, KHM, KHP, KHB3K, KH3, KH4, KHB..F3, KHM..F3, KHB..F6, and KHM..F6.

To order valve with Locking Device, add -L to end of valve model code, i.e: KHB-25NPT- 1114-11X-L.



Ball Valve with Limit Switch and Locking Device

A reliable single pole, double throw limit switch on the 2-Way Ball Valve will indicate the open or closed position on the valve. The switch is hermetically sealed.

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

ENGINEERING DATA

Housing	Block Type (KHB)	Carbon Steel (<i>standard</i>)	
	Forged Type (KHM)	Forged Steel (<i>standard</i>) Stainless Steel (<i>optional</i>)	
	Coatings	Standard Models Phosphate Coated: Other Coatings Available Upon Request	
Ball	Steel,		
	Chrome Plated (<i>standard</i>)		
	Stainless Steel (<i>optional</i>)		
Control Spindle	Steel (<i>standard</i>)		
	Stainless Steel (<i>optional</i>)		
Control Handle	Aluminum, Red Anodized, – Straight – Offset Design	See Page 14 For List of Standard Handles and Handle Options	
	Steel, Galvanized – Offset		
Ball Seal	Polyacetal (<i>standard</i>) for Hydraulic Oils, Water Glycol	Maximum Pressure:	7250 PSI
		Temperature Range:	-4°F / -20°C 212°F / 100°C
	PTFE For Corrosive Media	Maximum Pressure:	1500 PSI
		Temperature Range:	-4°F / -20°C 212°F / 100°C
		Temperature to 482°F at reduced Pressure	
		Pressure Rating of the PTFE Ball Seals Varies Depending Upon Temperature. Contact HYDAC for Your Specific Application.	
	NBR For Gaseous Media	Maximum Pressure:	1500 PSI
		Temperature Range:	-4°F / -20°C 212°F / 100°C
Control Spindle Seal	Fluorocarbon (FPM) Standard for hydraulic oils and many acids	Maximum Pressure:	7250 PSI
		Temperature Range:	-4°F / -20°C 392°F / 200°C
	NBR Seal for hydraulic oils, lubricants, greases	Maximum Pressure:	7250 PSI
		Temperature Range:	-4°F / -20°C 212°F / 100°C
	PTFE for corrosive media and bases.	Maximum Pressure:	1500 PSI
		Temperature Range:	-4°F / -20°C 212°F / 100°C
	Temperature to 482°F at reduced Pressure		
Special Seals	Other seals are available for both ball and control spindle. Consult HYDAC for your specific application.		

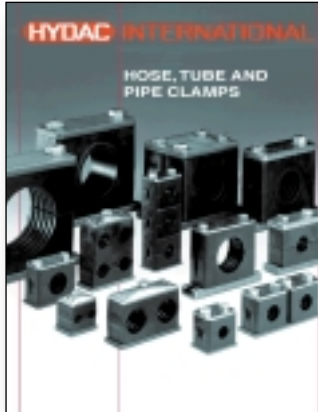
Other Products from HYDAC's Clamps, Valves, and Accessories Line



Flow, Needle, and Check Valves

When it comes to flow control valves, **HYDAC** once again provides a complete line of high quality solutions. Flow, Needle, and check valves are designed to be safe, precise, and easy to use. The valves are constructed of high quality materials to be compatible with the type of fluid being used. These valves come with pressure ratings of up to 5,000 psi. Both inline and manifold designs are available. **HYDAC** would be glad to help you determine which flow control valve(s) would be appropriate for your application. For more information on these products, or help selecting the right valve, contact **HYDAC** at **610-266-0100**.

Request catalog # 02068165



Hose, Tube, and Pipe Clamps

HYDAC clamps and mounting systems are available in a wide range of sizes and materials to fit practically any application. These clamps are designed to absorb shock, dampen vibration, and reduce noise. Rubber inserts are used for applications with high cyclic pressures. Weld plates are available as phosphate coated steel, or stainless steel. Custom arrangements are also available. A single custom arrangement can replace many single clamps resulting in a simplified installation, and a more compact solution that fits your application perfectly. For more information on **HYDAC** Hose, Tube, and Pipe Clamps please contact **HYDAC** at **610-266-0100**.

Request catalog # 02068188



TestPoints Series 1620

HYDAC offers a complete line of TestPoints Series 1620. TestPoints are compact, self sealing couplings that provide access to hydraulic and pneumatic systems for pressure measurements to 9000 psi. Mating adaptors or hose connections can be connected without loss of fluid while the system is operating. They are available in 1620 (M16x2.0) connection threads with variety of screw-in port configurations. For complete information on **HYDAC** TestPoints Series 1620, contact **HYDAC** at **610-266-0100** and request a catalog.

Request catalog #02070729



Multi Station Gauge Isolators

HYDAC Multi-Station Gauge Isolators allow for multiple pressure readings to be taken by a single gauge. They are offered with or without a built-in gauge. Available in 6 to 9 stations, these gauge isolators have operating pressure ranges of 4500 psi at measuring points. For help in selecting the proper gauge isolator for your application call **HYDAC** at **610-266-0100**.

Request catalog # 02068186



HYDAC TECHNOLOGY CORPORATION
2260 City Line Road • Bethlehem, PA 18017
Phone (610) 266-0100 • Fax (610) 264-3540
www.hydacusa.com • powerup@hydacusa.com