

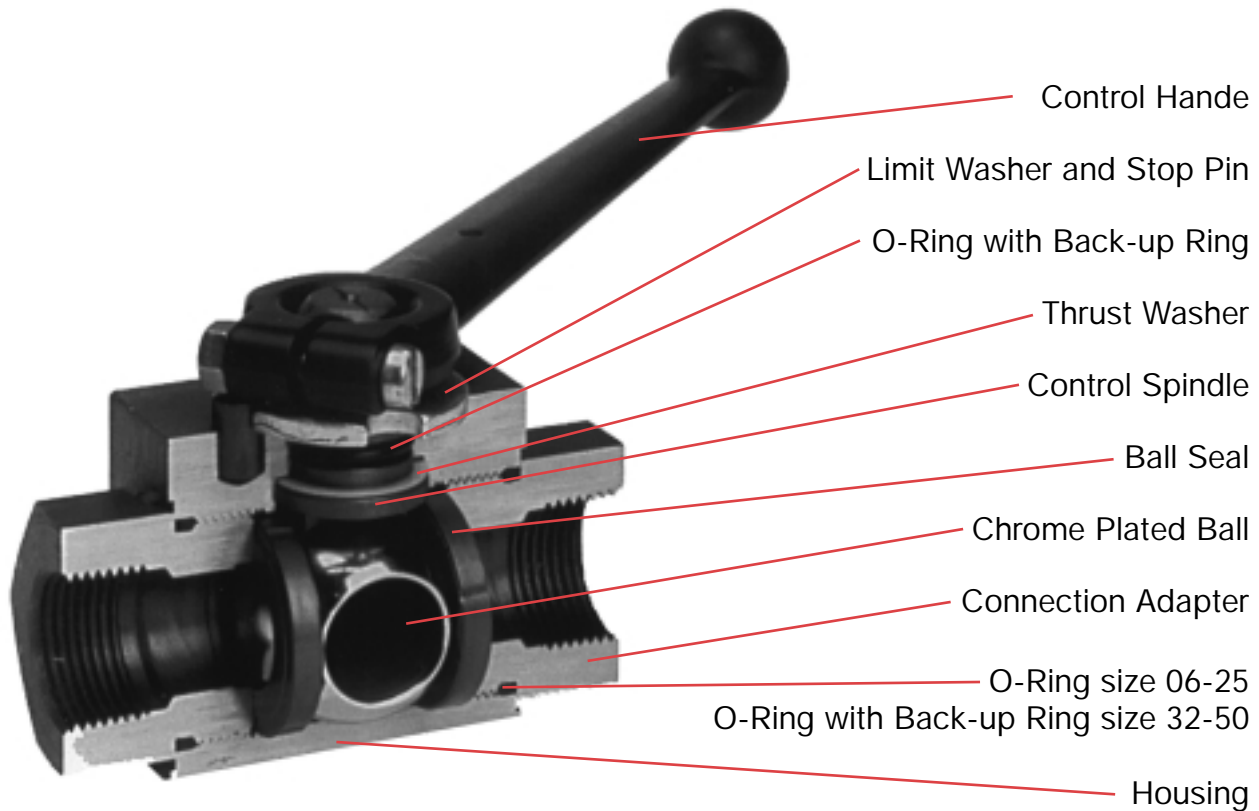
HYDAC INTERNATIONAL

**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

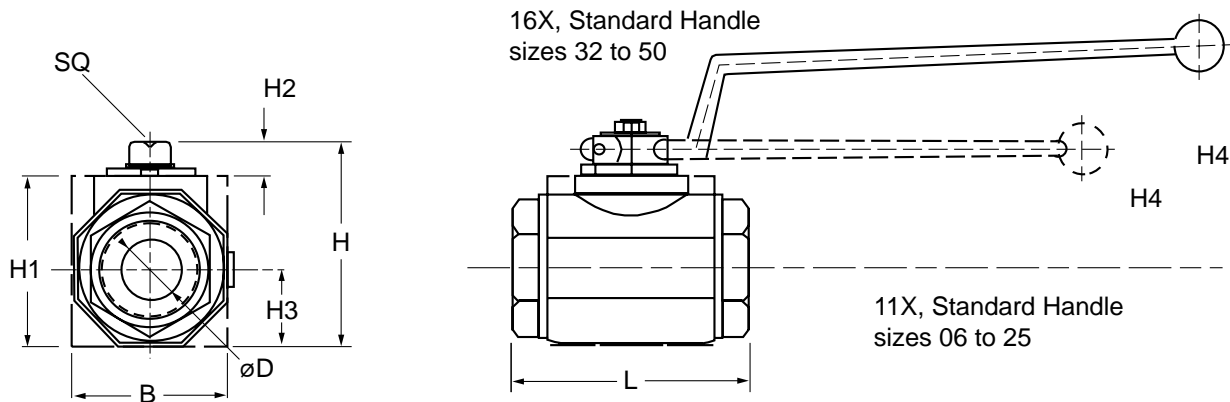
- -4° F to 482° F Depending on Seal Materials Selected

MODEL CODE

KHB - 16NPT - 1 1 1 4 - 11X - L				
Housing Type				
KHB – Block Housing, Carbon Steel - Sizes 06 - 25				
KHM – Forged Housing, Carbon Steel - Sizes 32 - 50, Stainless Steel Sizes 06 - 50				
Nominal Sizes				
Nom	SAE		NPT	
Size	Tube Size	Thread Size	Pipe Size	Pipe OD
06	-4	7/16-20 UNF	1/4"	.540"
10	-6	9/16-18 UNF	3/8"	.675"
16	-8	3/4-16 UNF	1/2"	.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 (<i>standard</i>)				
3 – Stainless Steel				
Locking Device Option				
L – Locking Device				
LS – Locking Device with 5 amp Limit Switch Sizes 20-50				
<i>Not available with PTFE Spindle Seals</i>				
Handle Codes				
09x – Without Handle				
11x – Straight Aluminum, Sizes 06-25				
16x – Offset Steel, Sizes 32-50				
O-Ring Material				
2 – NBR (Buna)				
3 – PTFE Spindle Seals and FPM (viton) O-Rings (1500 psi max)				
4 – FPM (viton) -Standard				
Ball Seal Material				
1 – Polyacetal (<i>standard</i>)				
2 – NBR (Buna N) (1500 psi max)				
3 – PTFE (1500 psi max)				
Spindle and Ball Material				
1 – Carbon Steel (<i>standard</i>)				
3 – Stainless Steel				

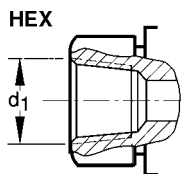
NOTE: Not all combinations available

DIMENSIONS & PRESSURE RATINGS



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

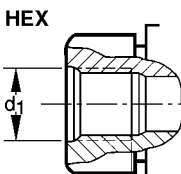
NPT PORT



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		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)		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)		0.75 (13.5)	2.56 (65)	3.27 (83)	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		2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)		1.12 (16)	3.35 (85)	4.45 (113)		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)		1.48 (18)	4.74 (120.5)	4.33 (110)		6.84 (3.1)
KHM-40NPT	5000	1-1/2" NPT		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		4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)		2.07 (52.5)	5.28 (134)	5.51 (140)		14.55 (6.6)

SAE PORT



SAE
Straight
Thread
O-Ring
Boss

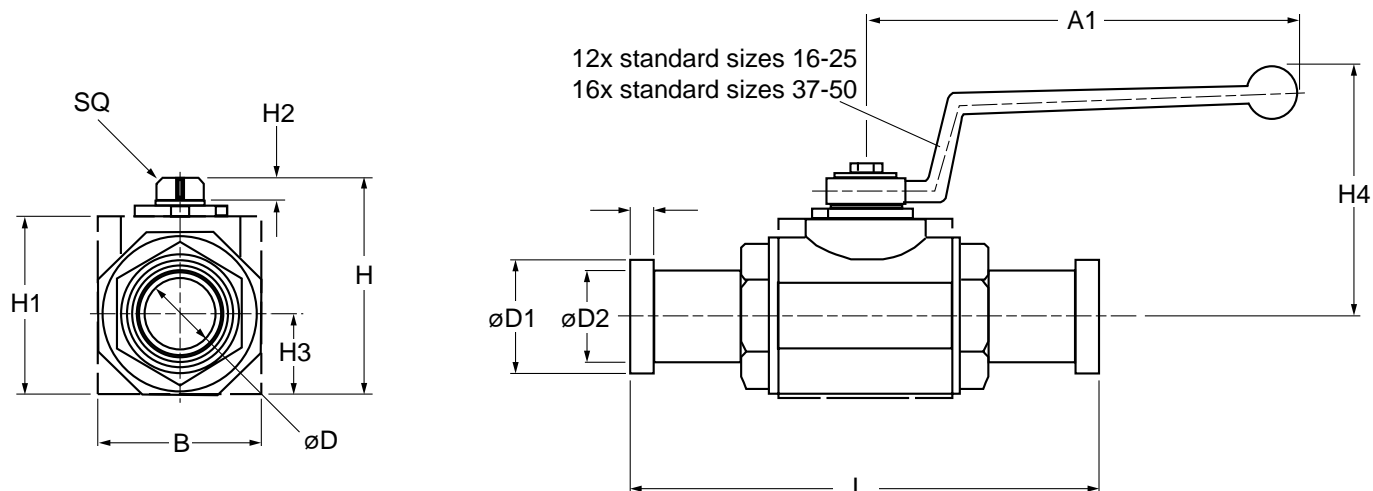
MODEL CODE	*MAX PSI	d1 THREAD SAE	A1 in. (mm)	B in. (mm)	øD in. (mm)	H in. (mm)	H1 in. (mm)	H2 in. (mm)	H3 in. (mm)	H4 in. (mm)	L in. (mm)	SQ in. (mm)	WT. lbs. (kg.)
KHB-06SAE	7250	7/16-20UNF SAE 4	5.91 (150)	0.98 (25)	0.24 (6)	1.89 (48)	1.38 (35)	0.28 (7)	0.51 (13)	1.97 (50)	2.72 (69)	0.35 (9)	.66 (.3)
KHB-10SAE	7250	9/16-18UNF SAE 6		1.26 (32)	0.39 (10)	2.09 (53)	1.57 (40)	.33 (8.5)	0.67 (17)	2.17 (55)	2.83 (72)		1.10 (.5)
KHB-16SAE	5800	3/4-16UNF SAE 8	6.89 (175)	1.50 (38)	0.63 (16)	2.48 (63)	1.77 (45)		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		2.24 (57)	0.98 (25)	3.23 (82)	2.52 (64)		1.12 (28.5)	3.35 (85)	4.45 (113)		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)		1.48 (37.5)	4.74 (120.5)	4.33 (110)		6.84 (3.1)
KHM-40SAE	5000	1-7/8-12UN SAE 24		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		4.13 (105)	1.89 (48)	5.18 (131.5)	4.43 (112.5)		2.07 (52.5)	5.28 (134)	5.51 (140)		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.

DIMENSIONS & PRESSURE RATINGS



Sizes 16-25 Off Set Aluminum Handle (standard)

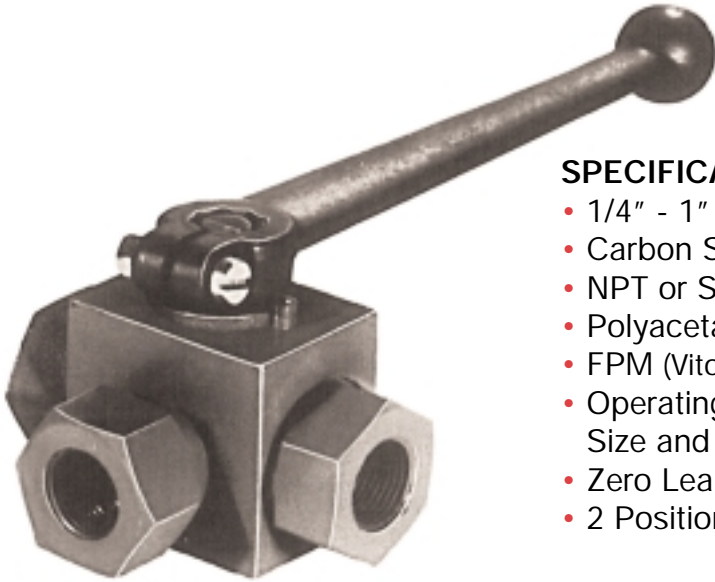
Sizes 32-50 Off Set Steel Handle (standard)

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 (31.5)	2.44 (62)	1.77 (45)	0.43 (11)	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)	1.24 (31.5)	2.95 (75)	2.24 (57)	0.43 (11)	0.96 (24.5)	3.60 (91.5)	6.69 (170)	0.55 (14)	3.9 (1.8)
KHB-25 F3	5000	1"	6.81 (173)	2.24 (57)	0.27 (6.8)	0.98 (25)	1.75 (44.45)	1.50 (38)	3.23 (82)	2.52 (64)	0.43 (11)	1.12 (28.5)	3.72 (94.5)	6.95 (176.5)	0.55 (14)	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)	0.47 (12)	1.48 (37.5)	4.74 (121)	7.54 (191.4)	0.67 (17)	9.0 (4.1)
KHM-40 F3	3000	1-1/2"	12 (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)	4.98 (127)	9.09 (231)	0.67 (17)	13.1 (5.9)
KHM-50 F3	3000	2"	12 (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)	5.28 (134)	9.21 (234)	0.67 (17)	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 (8.8)	0.63 (16)	1.63 (41.3)	1.26 (32)	2.44 (62)	1.77 (45)	0.43 (11)	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)	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)	3.60 (91.5)	6.69 (170)	0.55 (14)	4.0 (1.8)
KHB-25 F6	5000	1"	6.81 (173)	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 (94.5)	7.81 (198.5)	0.55 (14)	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)	0.47 (12)	1.48 (37.5)	4.74 (121)	8.80 (223.4)	0.67 (17)	10.6 (4.8)
KHM-40 F6	5000	1-1/2"	12 (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)	4.98 (127)	11.06 (281)	0.67 (17)	15.4 (7.0)
KHM-50 F6	5000	2"	12 (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)	5.28 (134)	12.40 (315)	0.67 (17)	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

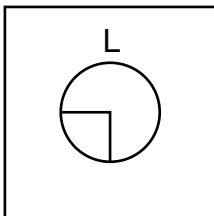
- -4°F to +482°F Depending on Seal Materials Selected

Model Code

Housing Type ————— KHB3K - 16NPT - L - 1 1 1 4 - 11X - L					Locking Device Option L - Includes Locking Device LS - Locking Device with 5 amp Limit Switch (<i>Available for sizes 20 and 25</i>) <i>Not available with PTFE Spindle Seals</i>
Nominal Sizes —————					
Nom Size	SAE Tube	SAE Thread	NPT Pipe Size	NPT Pipe OD	Handle Codes 09x - Without Handle 11x - Straight Aluminum, Sizes 06-25
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 —————					O-Ring Material 2 - NBR (Buna N) 3 - PTFE Spindle Seals and FPM (Viton) O-Rings (1500 psi max) 4 - FPM (Viton) - Standard
NPT - ANSI/ASME 1.20.1 Taper Pipe Thread SAE - SAEJ1926 Ports with ISO 725 Threads and O-Ring Sealing					
Ball Drilling —————					Ball Seal Material 1 - Polyacetal (<i>standard</i>) 2 - NBR (<i>Buna N</i>) (1500 psi max) 3 - PTFE (1500 psi max)
L - (<i>standard</i>)					
Body Material —————					
1 - Carbon Steel					
Spindle and Ball Material —————					
1- Carbon Steel (<i>standard</i>) 3- Stainless Steel					

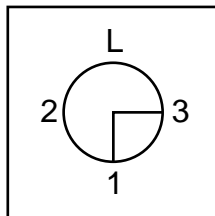
NOTE: Not all combinations available

BALL DRILLING

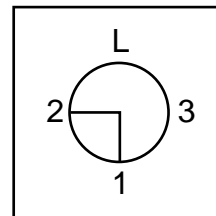


CIRCUIT DIAGRAMS

Position 1:

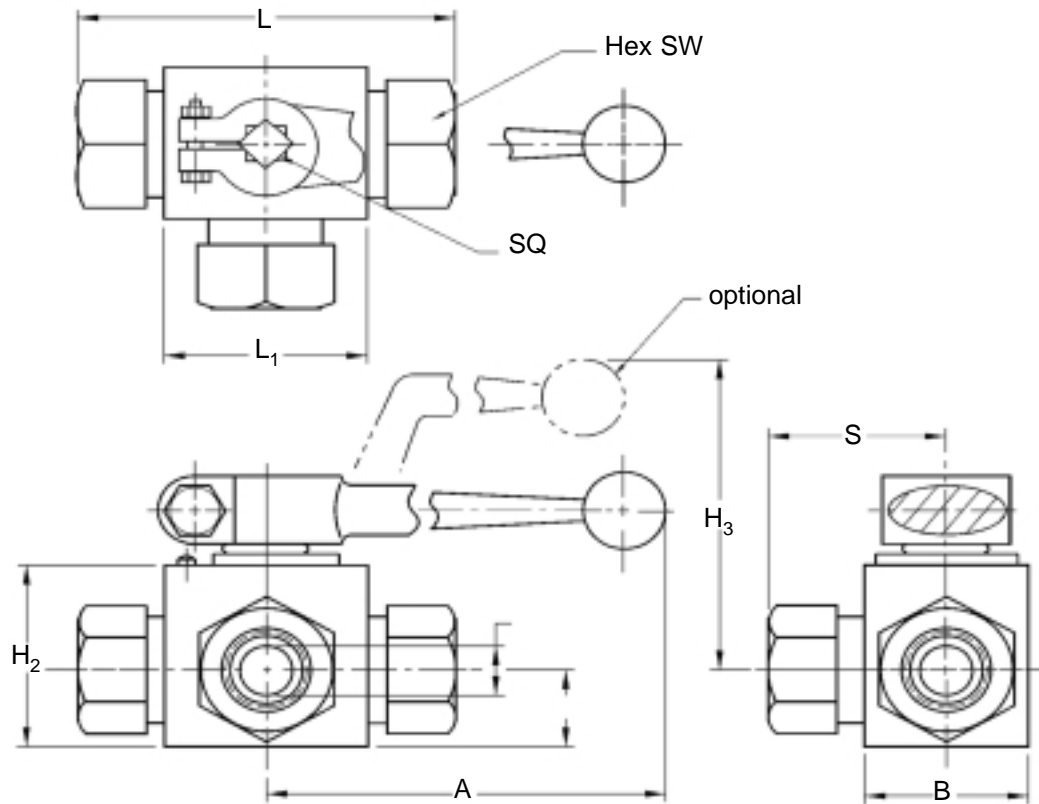


Position 2:

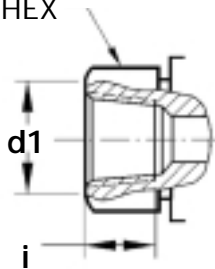


NOTE: Pressurize through connection 1 only, otherwise leakage will occur through ball seals.

DIMENSIONS & PRESSURE RATINGS



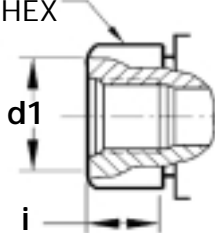
NPT PORT HEX



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	5.90 (150)	1.26 (32)	.39 (10)	.67 (17)	1.57 (40)	2.87 (73)	.41 (10.4)	2.83 (72)	1.65 (42)	3/8 (9)	1-1/16 (27)	1.42 (36)	1.32 (.6)
KHB3K-16NPT	4600	1/2" NPT	6.89 (175)	1.50 (38)	.63 (16)	.75 (19)	1.77 (45)	3.35 (85)	.53 (13.5)	3.27 (83)	1.85 (47)	1/2 (12)	1-5/16 (32)	1.64 (41.5)	1.76 (.8)
KHB3K-20NPT	4500	3/4" NPT	7.87 (200)	1.89 (48)	.79 (20)	.96 (24.5)	2.24 (57)	3.74 (95)	.56 (13.9)	3.74 (95)	2.36 (60)	9/16 (14)	1-5/8 (41)	1.87 (47.5)	3.31 (1.5)
KHB3K-25NPT	3600	1" NPT	2.28 (58)	.98 (25)	.98 (25)	1.12 (28.5)	2.52 (64)	3.86 (98)	.66 (16.8)	4.45 (113)	2.56 (65)	14 (14)	2 (50)	2.22 (56.5)	4.85 (2.2)

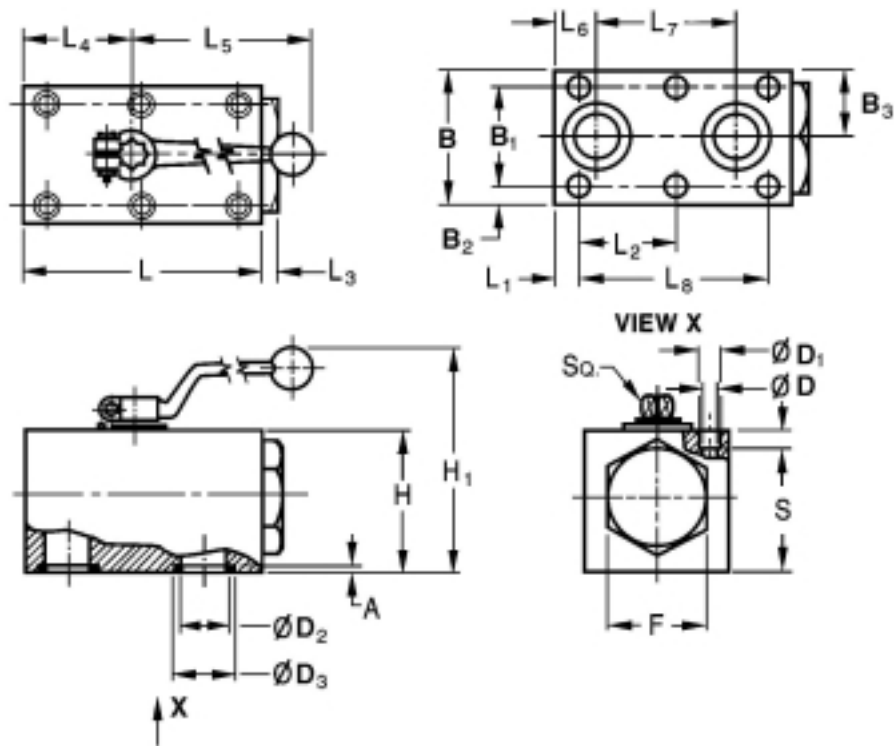
SAE PORT HEX



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	5.90 (150)	1.26 (32)	.39 (10)	.67 (17)	1.57 (40)	2.87 (73)	.51 (13)	2.83 (72)	1.65 (42)	3/8 (9)	1-1/16 (27)	1.42 (36)	1.32 (.6)
KHB3K-16SAE	4600	3/4-16 UNF	6.89 (175)	1.50 (38)	.63 (16)	.75 (19)	1.77 (45)	3.35 (85)	.59 (15)	3.27 (83)	1.85 (47)	1/2 (12)	1-5/16 (32)	1.64 (41.5)	1.76 (.8)
KHB3K-20SAE	4500	1-1/16-12 UN	7.87 (200)	1.89 (48)	.79 (20)	.96 (24.5)	2.24 (57)	3.74 (95)	.79 (20)	3.74 (95)	2.36 (60)	9/16 (14)	1-5/8 (41)	1.87 (47.5)	3.31 (1.5)
KHB3K-25SAE	3600	1-5/16-12 UN	2.28 (58)	.98 (25)	.98 (28.5)	1.12 (64)	2.52 (98)	3.86 (20)	.79 (113)	4.45 (65)	2.56 (65)	14 (50)	2 (56.5)	2.22 (2.2)	4.85

*Dependent upon valve size and seal material selected.

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	2.17 (55)	1.575 (40)	.295	1.083 (27.5)	.35	.55	.374 (9.5)	.591 (15)	1 3/16 (30)	1.77 (45)
KHP - 16	.63 (16)	5000	(2)	2.36 (60)	1.772 (45)	(7.5)	1.181 (30)	(9)	(14)	.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)	.41 (10.5)	.65 (16.5)	.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)		.65 (17)	.925 (23.5)	1.378 (35)	1.378 (35)	2 (50)
KHP - 32	1.18 (30)	5000		3.94 (100)	3.071 (78)	.433 (11)	1.969 (50)	.51 (13)	.75 (19)	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)	.69 (17.5)	1.02 (26)	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)		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)	8.39 (213)	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)	.669 (17)	43.7 (19.8)	

*Dependent upon seal material selected.

KH3, KH4 MULTIWAY BALL VALVES



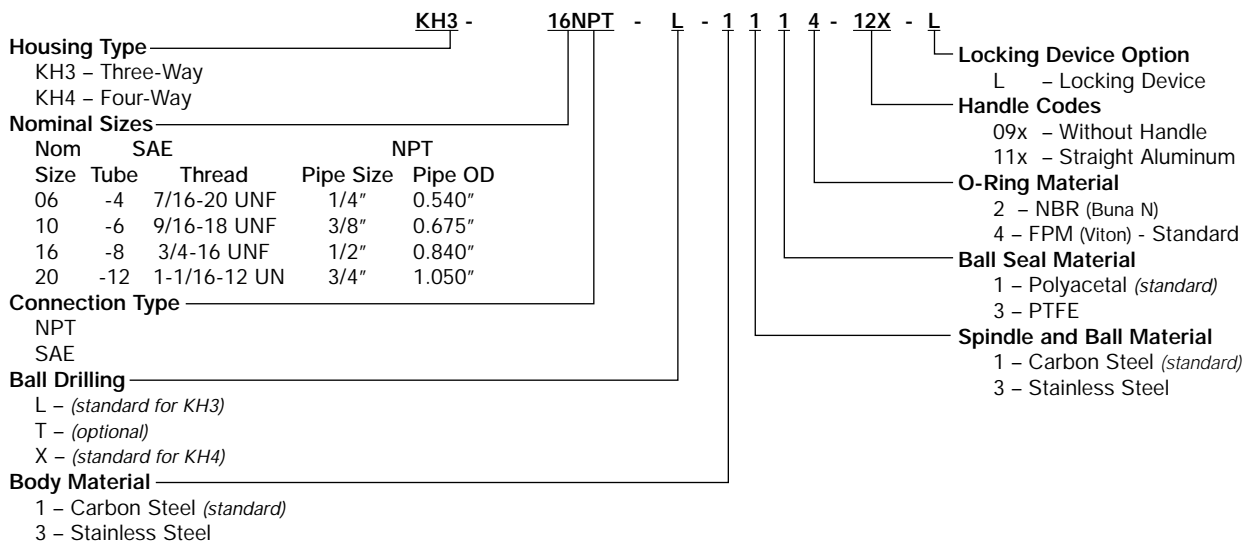
KH3, KH4 MULTIWAY BALL VALVES SPECIFICATIONS:

- 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

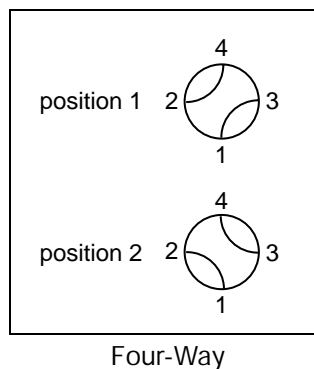
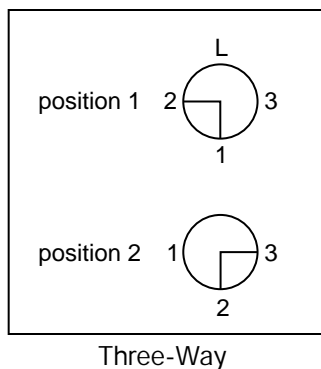
- -4°F to 482°F Depending on Seal Materials Selected

Model Code

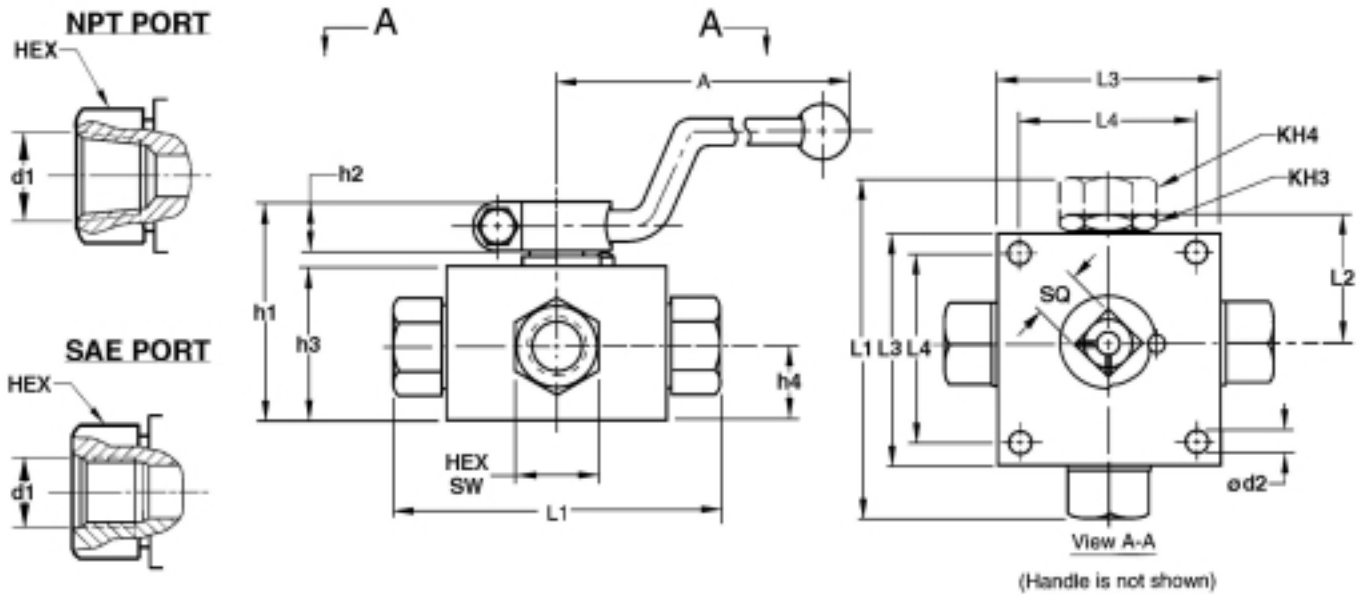


NOTE: Not all combinations available

BALL DRILLING



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)	.26 (6.5)	.55 (14)	1.18 (30)	5.3 (2.4)
KH...12NPT	5,800	1/2"	6.81 (173)	5.32 (135)	2.20 (56)	3.94 (100)	3.150 (80)	3.11 (79)	.55 (14)	2.36 (60)	1.22 (31)	.35 (9)	.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)	3.94 (100)	3.347 (85)	3.68 (93.5)	.61 (15.5)	2.87 (73)	1.42 (36)	.35 (9)	.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)	.26 (6.5)	.55 (14)	1.18 (30)	5.3 (2.4)
KH...12SAE	5,800	3/4-16UNF	6.81 (173)	5.32 (135)	2.20 (56)	3.94 (100)	3.150 (80)	3.11 (79)	.55 (14)	2.36 (60)	1.22 (31)	.35 (9)	.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)	3.94 (100)	3.347 (85)	3.68 (93.5)	.61 (15.5)	2.87 (73)	1.42 (36)	.35 (9)	.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.		

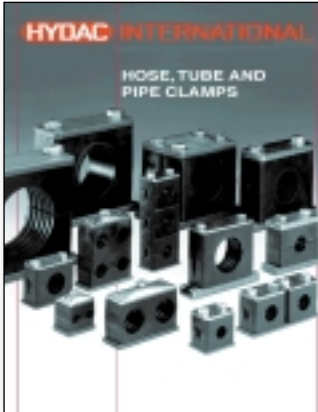
Other Products from HYDAC's Clamps, Valves, and Accessories Line



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



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