Issue 5-eA

PRODUCT CATALOGUE

HOLMBURY

Couplings and Valves in Carbon and Stainless Steel

www.holmbury.com Tel: 01732 378912

WELCOME TO THE HOLMBURY CATALOGUE

ISSUE 5-eA

In this issue of the Holmbury catalogue we bring you two new products.

HCP Series Male Couplings will connect, by hand, with pressures up 350 bar locked in the male half, without releasing any fluid to the environment. Three sizes are available, the HCP 10, 12 and 19 (3/8" to 1"). They are compliant with ISO 16028 and will therefore connect with female couplings that also comply with this standard. Typical applications include mobile plant and attachments where exposure to the sun causes pressure to develop in the hydraulic hose lines due to thermal expansion of trapped fluid.
Further details see page 8.

PTC Series couplings are interchangeable with Faster VVS series couplings.
Typical applications include hand held and machine mounted hydraulic hammers and attachments on construction plant, agricultural equipment and municipal machines.
Further details see page 14.

TIPS FOR NAVIGATING THIS PDF

- This catalogue contains many hyperlinks to enable readers to quickly jump to the products of interest.
- When the mouse is moved over a hyperlink the cursor changes to a hand with pointing finger.
- To display both pages of a two page spread in Adobe Reader, go to View, Page Display and select Two-up.
- The product index is located on pages 4 & 5.
- To return to the index just click on "*Back to INDEX*" on the bottom bar of each page.
- Where products have optional extras, such as dust caps, plugs or parking stations, click on the picture or page number to jump to the appropriate page.
- To cycle back through previously viewed pages, hold the Alt key down and press the left arrow key.
- Jump straight to the Holmbury web site or start your email programme with the hyperlinks at the bottom of each right hand pages.

INTRODUCTION TO HOLMBURY

Holmbury Limited is a leading manufacturer of hydraulic components, primarily quick action couplings, screw-to-connect couplings and valves. In addition to its UK Headquarters it has offices and warehousing in the USA and distribution outlets worldwide.

Holmbury was founded in 1982 when it designed and produced the first working flat face couplings. These couplings became extremely popular with many of the world's major construction industry OEMs thanks to their robust construction and longevity. The company prospered and to facilitate the expansion of its operations, in 1999 it moved to a larger facility, located in Tonbridge, Kent. In 2005, Holmbury expanded its operations to North America by forming a divisional headquarters in Mentor, Ohio. Today, Holmbury's product mix includes: flat face, conventional and screw couplings, ball valves and check valves, all of which are sold throughout the world.

Holmbury UK Headquarters, Tonbridge, Kent.

Since 1982, global customers in construction equipment, trucking, material handling, industrial and injection moulding industries have relied on Holmbury as a centralised, accountable source for the widest array of couplings, coupling adapters, plate connectors, valves and accessories.

THE HOLMBURY CUSTOMER ADVANTAGE

Design and Engineering: Holmbury's products are designed by engineers with years of experience, insight and know-how. Holmbury also maintains strict control of each manufacturing function, optimizing quality at each step along the process. It crafts all its products to meet the most demanding customer specifications.

Precision Manufacturing: Holmbury leverages the advantages of global manufacturing expertise to benefit customers through its timely, precise and cost-efficient manufacturing capabilities.

Quality Certifications: All Holmbury products are subject to rigorous laboratory and field testing, and each product is certified in conformity to strict certification standards. Holmbury is an ISO 9001 2008-certified company.

Delivery: Holmbury is dedicated to supplying quality products on time. It does so by utilising fully integrated automated systems that co-ordinate and track production and evaluate performance.

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Tel: 01732 378912 Fax: 01732 357666

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DEMOLITION & HEAVY EXCAVATORS

HAND HELD & MACHINE MOUNTED BREAKERS (up to 200 l/min)

NON SPILL, CONSTRUCTION & GENERAL PURPOSE

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ALPHABETICAL INDEX

HQ SERIES 1/4" – 1¼"

FULLY COMPLIANT WITH ISO 16028:1999/AMD.1:2006(E)

H Series 1½" – 2"

H Series sizes are not covered by the International Standard

APPLICATIONS

HQ Series couplings are designed for use in excavator hammer circuits and other applications involving high pressure pulses. Construction plant, mobile equipment, general industrial, nuclear, mining and agricultural.

H Series couplings are suitable for similar applications to those listed above provided the duty cycle is less demanding and the environment less aggressive.

Both HQ and H Series couplings are suitable for applications involving dusty or dirty environments and where oil loss on disconnection cannot be tolerated.

ADVANTAGES

- ★ Flat mating faces are easily wiped clean to prevent the ingress of contaminants.
- ★ Improved flow path minimises the pressure drop.
- ★ Non-spill design avoids fluid loss during connection and disconnection.
- ★ No air intrusion during connection.
- ★ Locking sleeve prevents accidental disconnection.
- ★ Zinc nickel surface treatment eliminates chrome 6 and exceeds 200 hour salt spray tests to white rust.

STANDARDS

HQ Series conform to ISO 16028 (2006) in all respects, i.e. dimensions and performance.

MATERIALS

Carbon steel body, treated to increase hardness and corrosion resistance, nitrile seals. H Series couplings are Trivalent plated.

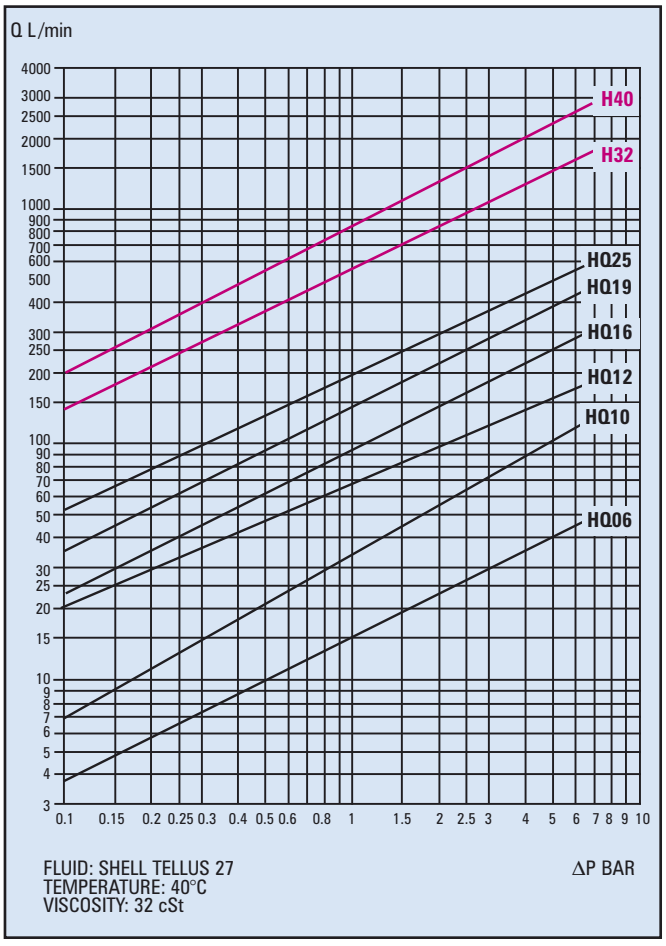
CONNECTION / DISCONNECTION UNDER PRESSURE

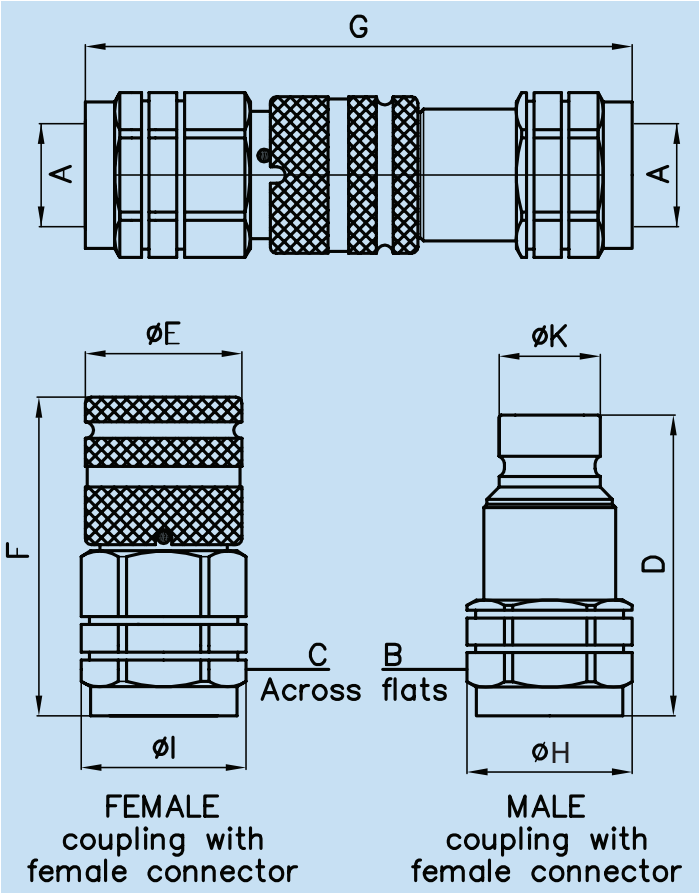
Connection with residual pressure in the line will be difficult or impossible. For applications where connection under pressure is required, Holmbury HCP male couplings, or screw couplings from either the HSC, HS or RS ranges are recommended.
Disconnection of any quick disconnect / quick release coupling whilst under full system pressure can be very dangerous and should not be attempted.

OPERATING TEMPERATURES

See table on page 7.

PRESSURE DROP CHARACTERISTICS





PRESSURE RATING (bar)

Size / Pressure	HQ06	HQ10	HQ12	HQ16	HQ19	HQ25	H32	H40
Maximum working pressure coupled	400	375	350	350	350	315	250	250
Burst pressure coupled	2000	1500	1500	1500	1450	1000	1000	1000
Burst pressure male	1850	1200	1200	1200	1200	1000	1000	1000
Burst pressure female	1220	1200	1050	1050	1050	1000	1000	1000

ORDER CODES

HQ 19 – M –12 G

HQ = HQ Series
H = H Series

Coupling Size: 06, 10, 12, 16, 19, 25, 32, 40

M = Male coupling
F = Female coupling

Thread size based on dash system
(Coupling body size shown in red for information only)

Thread size	Body size
04 = 1/4"	(06)
06 = 3/8"	(10)
08 = 1/2"	(10 or 12)
12 = 3/4"	(12, 16 or 19)
16 = 1"	(19)
20 = 1¼"	(25)
24 = 1½"	(32)
32 = 2"	(40)

Thread form
G = BSP P
R = BSP T
N = NPT F
S = SAE
J = JIC
M = Metric
FS = ORFS
ML = Low pressure DIN 2353
MS = High pressure DIN 2353

M = Male thread
Blank = Female thread (no code required)

Blank = Nitrile Seals (no code required)

Any other necessary information

Example: HQ19-M-12G
HQ19 male, 3/4" BSP P female thread, nitrile seals, no special requirements.

DIMENSIONS (mm except where stated)

Size	Nominal Diameter	A*	B	C	D	ØE	F	G*	ØH	ØI	ØK	Weight (kg)
HQ06	6	1/4"	22	27	54	28	54	97	24	29	16.2	0.29
HQ10	10	3/8"	27	30	60	32	69	113.5	29	32	19.8	0.42
HQ10	10	1/2"	27	30	63	32	75	121.5	29	32	19.8	0.43
HQ12	12	1/2"	36	36	71	38	83.5	138	40	40	24.5	0.8
HQ12	12	3/4"	36	36	71	38	83.5	138	40	40	24.5	0.73
HQ16	16	3/4"	36	41	73	42	84	140	38.5	45	26.95	0.96
HQ19	19	3/4"	46	46	84	45.5	98.5	161	50	50	30	1.4
HQ19	19	1"	46	46	84	45.5	99	162	50	50	30	1.35
HQ25	25	1¼"	55	55	90	55	106	174	60	60	36.1	2.03
H32	32	1½"	70	70	120	79	119	210	72	72	57	4.6
H40	40	2"	80	80	173	103	147.5	210	105	105	73	9.2

* Dimensions for BSP and NPT threads. Other threads available, see Order Codes opposite

SEAL OPERATING TEMPERATURES

Seal material code	Seal material	Maximum temperature	Minimum Temperature
None*	Nitrile	100°C	-20°C
V	Viton	200°C	-15°C

* No seal code required for Nitrile because it is standard.

DUST CAPS
SEE PAGE 78

HCP SERIES

MALE COUPLINGS 'FOR CONNECTION UNDER STATIC PRESSURE CONDITIONS'

INTRODUCTION

Holmbury HCP Series Male Couplings will connect, by hand, with pressures up to 350 bar locked in the male half, without releasing any fluid to the environment. The hose line to the female will need to be at zero pressure to allow the HCP Male to operate correctly.

CONNECTION

Conforms to ISO 16028 connection sizes. They will connect with Holmbury HQ Series females.

Examples:
HCP 10 connects with HQ10 couplings.
HCP 12 connects with HQ12 couplings.
HCP 19 connects with HQ19 couplings.

ISO 16028

HCP Series Male Couplings are compliant with ISO 16028 and will therefore connect with female couplings that also comply with this standard.

APPLICATIONS

Mobile plant and attachments where exposure to the sun causes pressure to develop due to thermal expansion of trapped fluid.

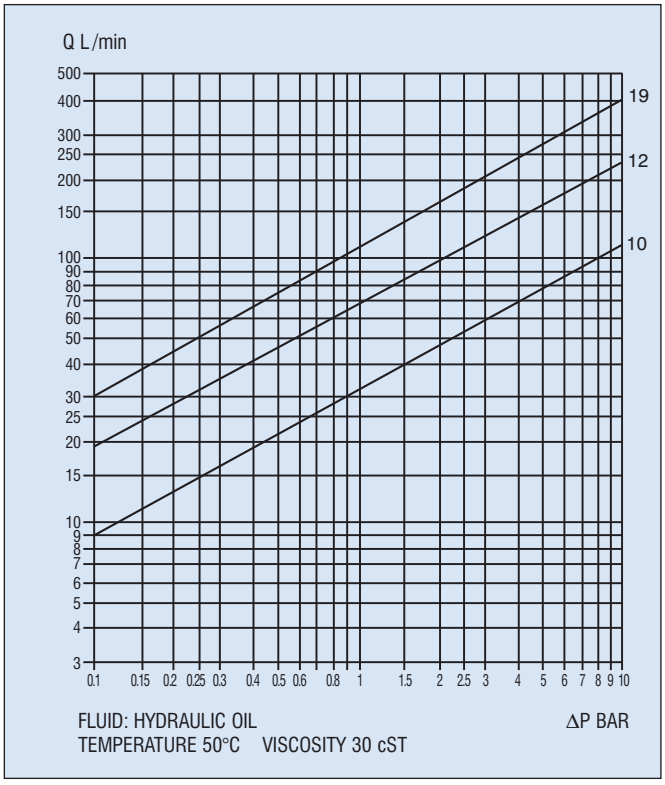
ADVANTAGES

- ★ Connects under high pressure, by hand.
- ★ Flat faces can easily be wiped clean before connection to prevent the ingress of contaminants into the circuit.
- ★ No air intrusion during connection.
- ★ Clean disconnection - non-spill design.
- ★ Locking sleeve helps prevent accidental disconnection.
- ★ Coupling can rotate whilst connected.
- ★ Bi-directional flow

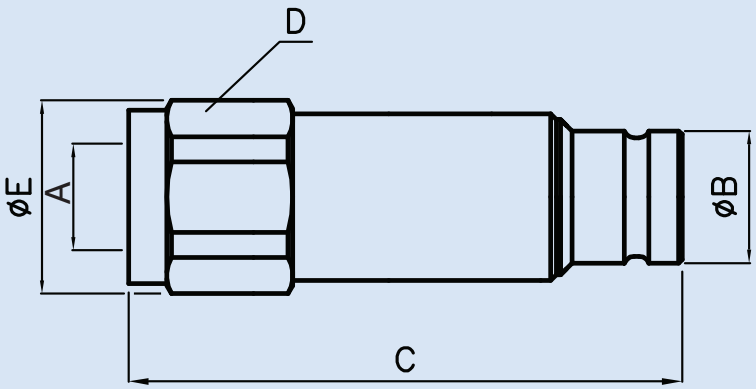
SPECIFICATION

- ★ Operating temperature range: -20°C to +100°C.
- ★ Fluid loss during disconnection: 0 to 0.02ml.
- ★ Maximum pressure for connection by hand: 350 bar in male, zero pressure in female.

PRESSURE DROP CHARACTERISTICS



HCP SERIES MALE COUPLINGS



DIMENSIONS

Type and size	Nominal diameter of hose	A	ØB	ØC	D
HCP 10	10	3/8"	19.8	87	30
HCP 10	10	1/2"	19.8	90	30
HCP 12	12	1/2"	24.5	98	41
HCP 12	12	3/4"	24.5	104	41
HCP 19	19	3/4"	30	114	46
HCP 19	19	1"	30	114	46

PRESSURE RATINGS

Type and size	Maximum working pressure coupled to HQ Series female	Burst pressure coupled to HQ Series female	Burst pressure HCP Male
HCP 10	350	1500	1500
HCP 12	350	1500	1400
HCP 19	350	1450	1450

MATERIALS

Zinc nickel plated steel, PTFE and nitrile seals.

OPERATION

To connect: wipe the mating surfaces clean, align the couplings and push together. Twist the outer sleeve on the female and the coupling is locked.
To disconnect: ensure the hose line is at zero pressure, twist the sleeve to align its notch with the locking ball. Pull back the sleeve and the coupling springs apart.

ORDER CODES

HCP 10 – M – 08 G

HCP = Series type

Body Size
10, 12 or 19

M = Male coupling

Thread size based on dash system
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"

Thread form
G = BSP P
N = NPT F
S = SAE

Blank = female thread
M = Male thread

Blank = PTFE and nitrile seals

Any other necessary information

Example: HCP 19-M-16G
HCP Series male coupling, body size 19, 1" BSP female thread, PTFE and nitrile seals

HP SERIES

HIGH PRESSURE FLAT FACE COUPLINGS

INTRODUCTION

HP Series couplings have been designed for use in systems working at pressures up to 720 bar. There are two basic sizes, the HP06 and HP10.
One of the most important benefits of these couplings is 'no fluid spillage on disconnection'.
The high pressure ratings of these couplings make them ideal for use with high pressure hydraulic tools, particularly when zero fluid loss is important.

APPLICATIONS

High pressure plant and equipment operating with mineral oil. Rail industries, torque wrenches and many other industrial high pressure tools.

UNIQUE SAFETY FEATURE

HP Series couplings incorporate a unique safety feature to prevent accidental disconnection - a spring loaded locking sleeve. When the coupling halves are connected, the locking sleeve automatically rotates through 90°. To disconnect the coupling the locking sleeve is turned back 90° so the locking ball is aligned with the release notch. The sleeve is then pulled back and the coupling will disconnect.

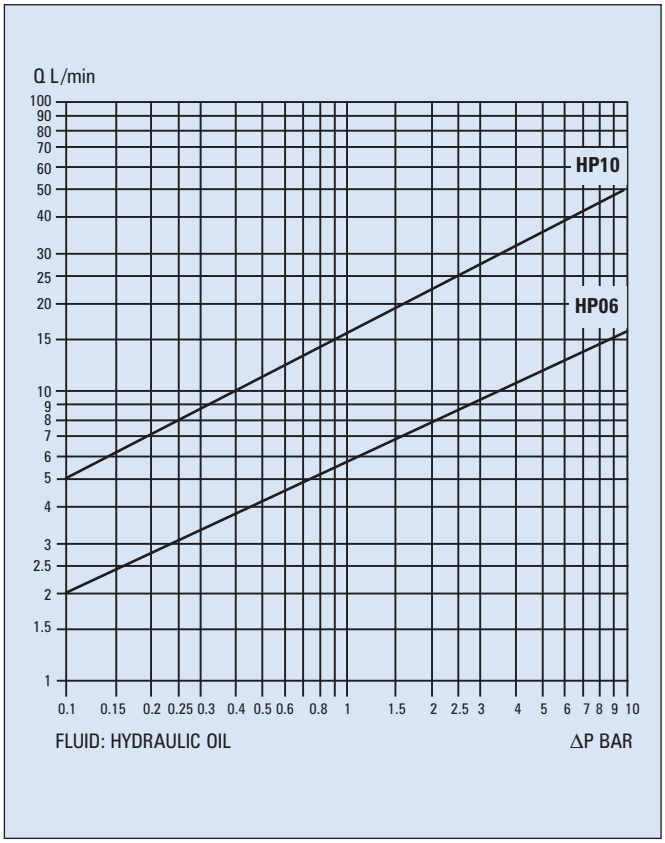
ADVANTAGES

- ★ Flat faces can easily be wiped clean before connection to prevent the ingress of contaminants into the circuit.
- ★ Clean disconnection - non-spill design.
- ★ No air intrusion during connection.
- ★ Locking sleeve prevents accidental disconnection.
- ★ Bi-directional flow

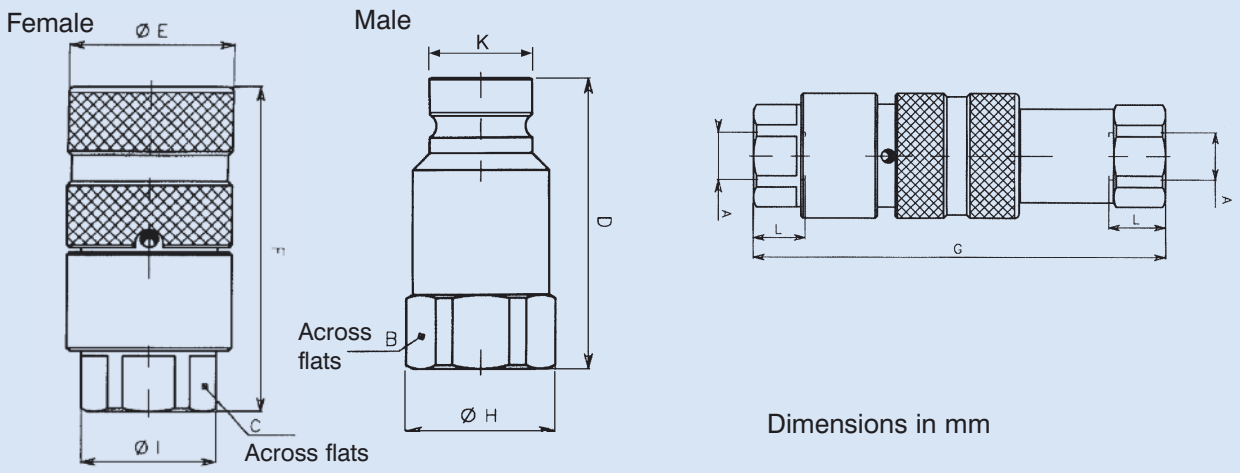
MATERIALS

Zinc plated carbon steel body with a 302 stainless steel spring. Nitrile rubber and Teflon seals. *Other seal materials available on request.*

PRESSURE DROP CHARACTERISTICS



HP SERIES, HIGH PRESSURE, FLAT FACE COUPLINGS



DIMENSIONS

Size	Nominal Diameter	A	B	C	D	E	F	G	H	I	K	L	Connection force (N)	Weight (kg)
HP06	5	1/4"	22	22	48	29	58	95	24	24	16.6	12.5	150	0.3
HP10	9	3/8"	27	30	61	34	70	114	30	32	19.5	14.5	155	0.46

ORDER CODES

HP 06 – M – 04 – N

HP = HP Series

Coupling Size
06 or 10

M = Male coupling
F = Female coupling

Thread size based on dash system
04 = 1/4"
06 = 3/8"

Thread form
N = NPT

Blank = Female thread (no code required)

Blank = Nitrile seals (no code required)

Any other necessary information

PRESSURE RATINGS

Size	Maximum working pressure (bar)	Burst pressure coupled (bar)	Burst pressure male (bar)	Burst pressure female (bar)
HP06	720	1800	2000	1800
HP10	720	1500	2000	1500

Example: HP06-M-04-N
HP series, size 06, male coupling, 1/4" NPT female thread, nitrile seals

HFT SERIES

SCREW COUPLINGS FOR HIGH PRESSURE PULSE APPLICATIONS CONNECT AND DISCONNECT UNDER PRESSURE

INTRODUCTION

Holmbury HFT Series, Screw Couplings have been developed as improved replacements for Holmbury VEP Series couplings. They are ideal for systems subjected to high pressure pulses since they are immune to Brinelling.

ADVANTAGES

- ★ Lower price than VEP couplings.
- ★ Higher flow and lower pressure drop than VEP couplings.
- ★ Zinc nickel surface finish rated for 280 hours to white rust in salt spray tests.
- ★ Dimensionally interchangeable with Holmbury VEP Series screw couplings.
- ★ Screw thread connection eliminates Brinelling.
- ★ Sleeve on female can be pushed back for access to the mating face.
- ★ Flat mating faces of both the male and female are easily wiped clean to prevent the ingress of contaminants.
- ★ Non-spill design avoids fluid loss during connection and disconnection.
- ★ Connect with up 350 bar residual pressure in the line.

APPLICATIONS

Hand held and excavator mounted breakers, shears, augers, trenchers and all systems subject to high pressure pulses. Any system where connection needs to be made with up to 350 bar residual pressure. All systems where the security of a screw connector is needed. Plant and equipment where non-spill disconnection is essential.

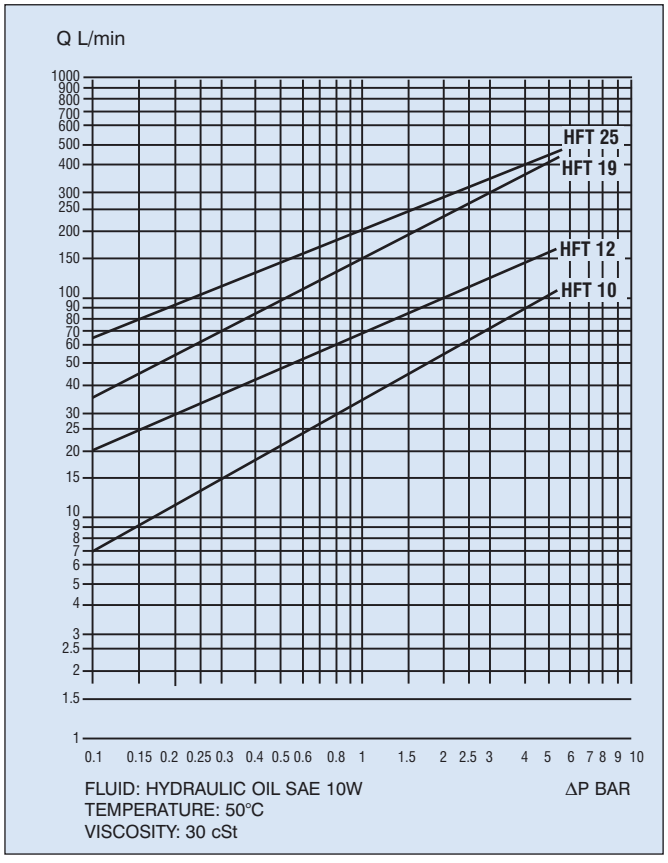
MATERIALS

Carbon steel body with zinc nickel finish. Nitrile seals.

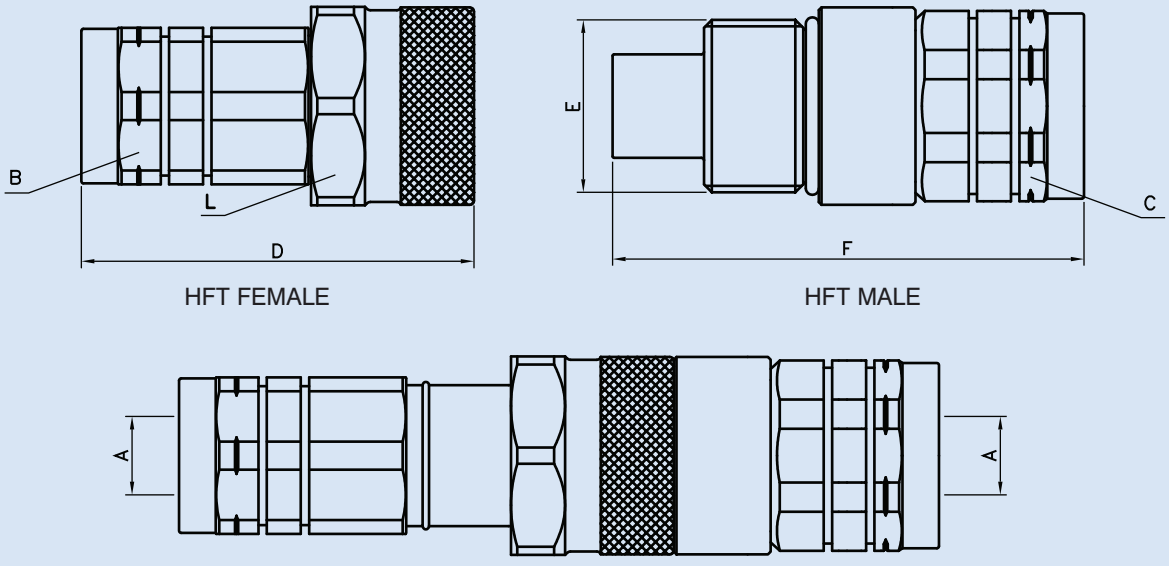
PRESSURE RATINGS

Size	Body Size	Max working pressure	Burst pressure male	Burst pressure female	Burst pressure coupled
HFT10	10	550	1400	1000	1800
HFT12	12	550	1350	1000	1700
HFT19	19	550	1350	1000	1400
HFT25	25	500	1300	1000	1300

PRESSURE DROP CHARACTERISTICS



HFT SERIES, SCREW COUPLINGS



Size	A*	B	C	D	E	F	L
HFT 10-06	3/8"	30	27	70	M33 x 2	82	38
HFT 10-08	1/2"	30	27	75	M33 x 2	82	38
HFT 12-08	1/2"	36	36	85	M40 x 3	95	46
HFT 12-12	3/4"	36	36	85	M40 x 3	95	46
HFT 19-12	3/4"	46	46	101	M50 x 3	101	55
HFT 19-16	1"	46	46	101	M50 x 3	101	55

* Dimensions for BSP and NPT threads. SAE threads available, see Order Codes below

ORDER CODES

HFT 12 – F – 08 G

HFT = Series type

Body Size
10, 12 or 19

M = Male coupling
F = Female coupling

Thread size based on dash system
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"

Thread form
G = BSP P
N = NPT F
S = SAE

Blank = female thread

Blank = Nitrile seals

Any other necessary information

Example: HFT 12-F-08G
HFT Series female coupling, body size 12, 1/2" BSP female thread, nitrile seals

PTC SERIES

HIGH PRESSURE SCREW TO CONNECT COUPLINGS

INTRODUCTION

PTC Series couplings have been designed for heavy duty applications involving very high pressures and severe pressure pulse conditions.

APPLICATIONS

Holmbury PTC Series couplings are for use with hydraulic mineral oil. They are interchangeable with Faster VVS couplings.
Main uses are with hand held and machine mounted hydraulic hammers, also used on attachments for construction, agricultural and municipal machines.

ADVANTAGES

- ★ Screw connection mechanism avoids use of locking balls and so eliminates the risk of Brinelling (a potential problem with quick connect couplings in high pressure pulse applications)
- ★ Robust construction for heavy duty applications
- ★ Can be connected with low residual pressure in each hydraulic hose line

MATERIALS

Carbon steel body, Trivalent plated, nitrile seals.

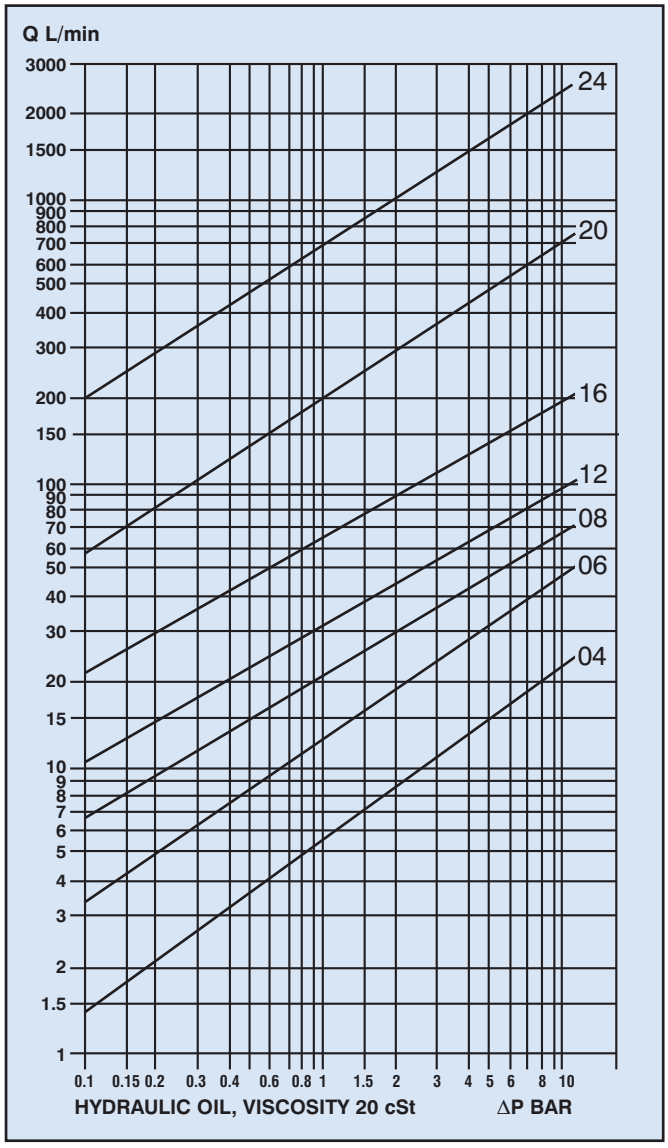
STAINLESS STEEL OPTION

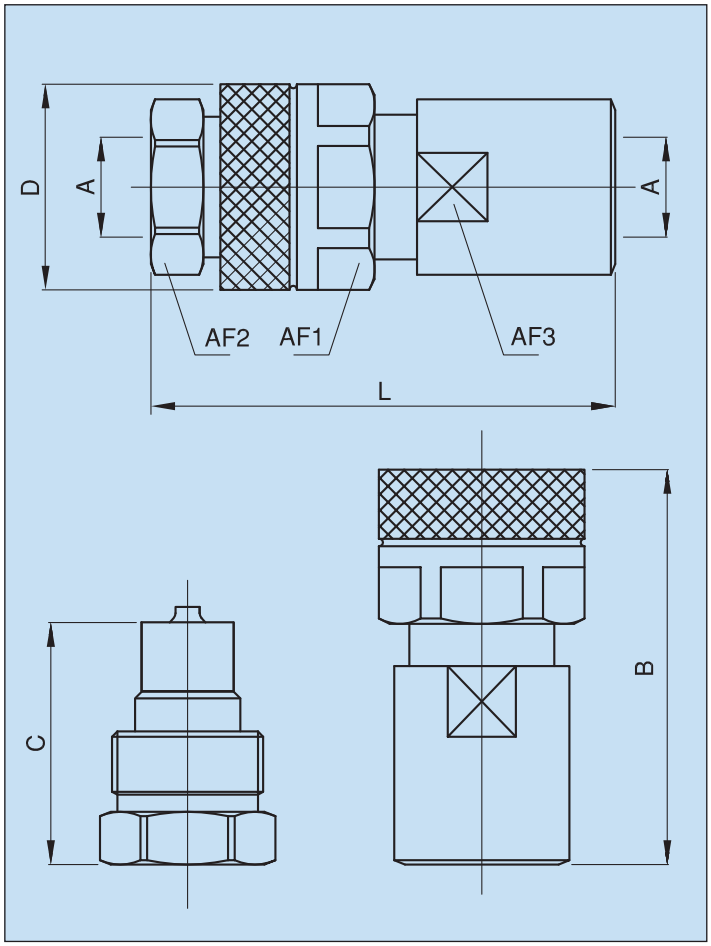
The PTC Series is available in AISI 316 stainless steel and is designated the PTS Series. For further details refer to page 68.

PRESSURE RATING (bar)

Thread Size	Body Size	Working pressure	Burst pressure male	Burst pressure female	Burst pressure coupled
1/4"	04	800	2400	2400	2500
3/8"	06	750	2400	2300	2300
1/2"	08	725	2250	2150	2250
3/4"	12	700	2000	2000	2000
1"	16	525	1500	1900	1900
1¼"	20	450	1450	1750	1750
1½"	24	400	1200	1500	1500

PRESSURE DROP CHARACTERISTICS





DIMENSIONS (mm except where stated)

Coupling Size	Nominal Diameter	A*	B	C	D	L	AF1	AF2	AF3
04	4	1/4"	66	45	30	84	27	25	22
06	6	3/8"	75	51	40	89.5	36	30	32
08	8	1/2"	86.5	57	45	102	41	34	34
12	12	3/4"	105	68	55	121	50	36	46
16	16	1"	120	73	60	136	50	45	45
20	20	1¼"	153	86	80	167	75	65	65
24	24	1½"	170	95	98	188	90	80	75

* Dimensions for BSP and NPT threads.

ORDER CODES

PTC 16 – F – 16 G

PTC = Series

Coupling Size
04, 06, 08, 12, 16, 20, 24

M = Male coupling
F = Female coupling

Thread size based on dash system
(Coupling body size shown in red for information only and should not be included in this section of the code)

Thread size	Body size
04 = 1/4"	(04)
06 = 3/8"	(06)
08 = 1/2"	(08)
12 = 3/4"	(12)
16 = 1"	(16)
20 = 1¼"	(20)
24 = 1½"	(24)

Thread form
G = BSP P (standard)
N = NPT (available on request)
S = SAE (available on request)

Blank = Female thread (no code required)
M = Male thread

Blank = Nitrile seals (no code required)
Other seal materials available on request.

Any other necessary information

Example: PTC16-F-16G
PTC size 16 female coupling, 1" BSP P female thread, nitrile seals, no special requirements.

SEAL OPERATING TEMPERATURES

Seal material code	Seal material	Maximum temperature	Minimum Temperature
V	Viton	180°C	-15°C
NE	Neoprene	90°C	-40°C
	Nitrile*	100°C	-20°C
S	Fluorosilicone	150°C	-50°C
K	Kalrez	300°C	-25°C

* Nitrile is standard. Other seal materials available on request.

HSC SERIES

SCREW COUPLINGS FOR HIGH PRESSURE PULSE APPLICATIONS. CONNECT & DISCONNECT UNDER PRESSURE

INTRODUCTION

Holmbury HSC Series of heavy duty, high-pressure, screw couplings are designed to withstand the most severe pressure pulse applications, where other couplings suffer rapid failure.

APPLICATIONS

Excavator hammer attachments, shears, rock crushers, test rigs and other intense pressure pulse application.

ADVANTAGES

- ★ Screw thread connection eliminates Brinelling
- ★ Connects and disconnects under pressure
- ★ Seals readily accessible for easy replacement
- ★ Supplied with Caps and Plugs to protect the thread and help prevent the ingress of contaminants
- ★ When connected, all internal parts are held rigid, preventing fatigue of the poppet, spring or coupling itself. The poppet is guided to prevent it shifting off centre. The poppet and spring are retained by a heavy duty collet that can withstand severe forces.

ORDER CODES

HSC – 19 – M – 12 G V

Type
HSC Series

Body Size
10 = 3/8"
12 = 1/2"
19 = 3/4"
25 = 1"
32 = 1¼"
40 = 1½"
50 = 2"

M = Male Coupling
F = Female Coupling

Thread size
based on dash system
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"
20 = 1¼"
24 = 1½"
32 = 2"

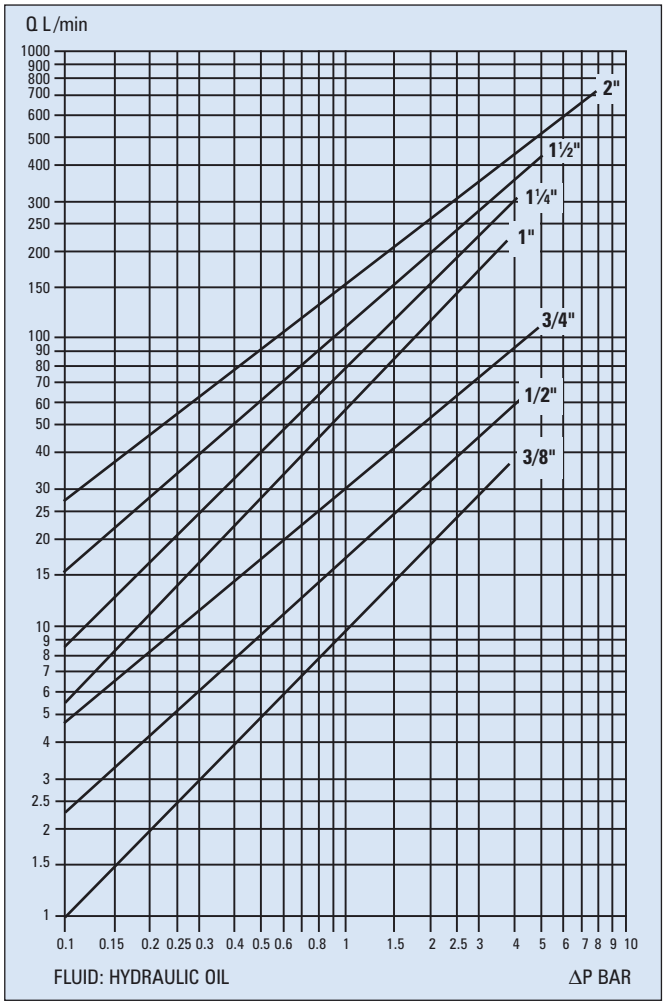
Thread form
G = BSP P

Blank = Female thread
M = Male thread

V = Viton seals

Example: HSC -19-M-12G V
HSC Series, 3/4" body size, male coupling, 3/4" thread, BSP P thread form, female thread, viton seals.

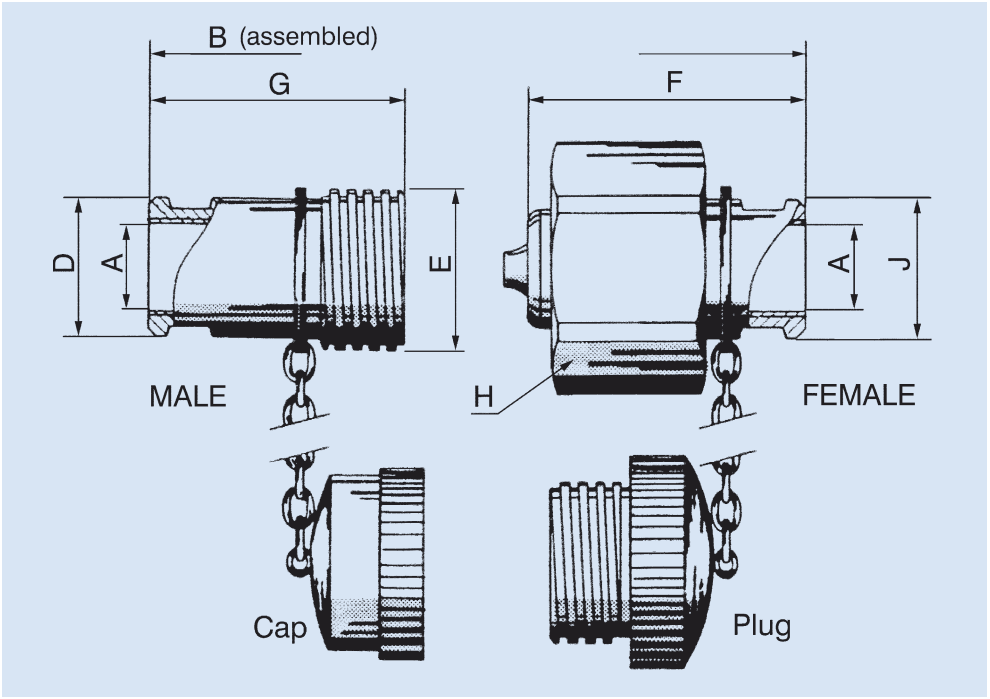
PRESSURE DROP CHARACTERISTICS



MATERIALS

Trivalent plated carbon steel body with Viton seals and PTFE backing rings.

HSC SERIES, SCREW COUPLINGS

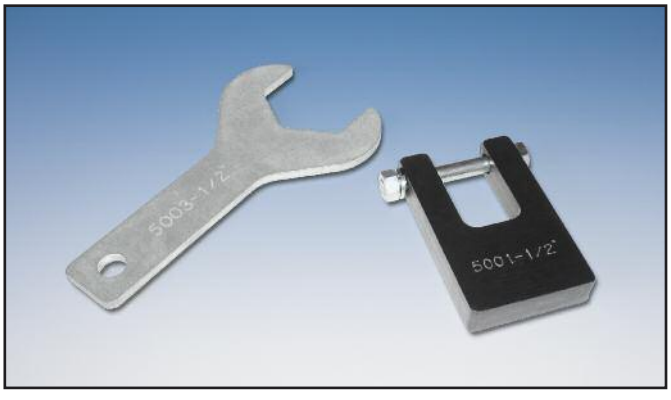


TECHNICAL DATA

Size	A	B	D	ØE	F	G	H	J	Weight Male kg	Weight Female kg	Flow area mm²	Max Flow litres/min	Max Working pressure bar
HSC 10	3/8"	110	30	35.57	55	77	45	27	0.37	0.35	45	26	500
HSC 12	1/2"	135	35	39.64	70	95	50	30	0.53	0.53	95	52	450
HSC 19	3/4"	142	40	44.80	73	99	55	35	0.67	0.72	150	85	400
HSC 25	1"	156	46	57.52	82	106	70	52	1.23	1.25	250	150	350
HSC 32	1¼"	171	60	65.55	88	118	80	55	1.92	1.70	370	230	320
HSC 40	1½"	172	68	74.61	90	121	87	62	2.26	2.20	500	340	300
HSC 50	2"	240	90	108.05	120	165	130	85	7.30	6.30	980	630	250

Dimensions in mm except where stated otherwise.
Do not exceed maximum flow rating as this will invalidate the warranty and may cause seal damage.

ACCESSORIES



WRENCH
To prevent the locking nut on the female half from loosening under severe vibrating conditions, it is essential that it's lightly tightened. The special short handle wrench shown here is ideal for this purpose.
WELDABLE BRACKET
The bracket is welded into position on the equipment and the coupling slotted into the jaws of the bracket. Both the male and female halves have machined flats (as can be seen in the photograph above) for this purpose. The coupling is retained in the bracket with the clamping nut and bolt.

PS SERIES

EXTRA HEAVY DUTY

SCREW COUPLINGS FOR LARGE EXCAVATORS OVER 20 TONNES

INTRODUCTION

Holmbury PS Series extra heavy duty screw couplings have been developed to withstand extreme conditions of vibration and high pressure pulses. At an independent test laboratory they have exceeded 3,000,000 impulse cycles whilst being subjected to heavy vibration in the horizontal and vertical planes.

APPLICATIONS

Demolition excavators and large excavators over 20 tonnes, where they can be used as replacements for valves when changing attachments or arm extenders.

ADVANTAGES

- ★ Excavator attachment changeover time for the hydraulic lines is just a few minutes, which is much faster than changing over a valved or solid piped system
- ★ When a PS25 coupling is disconnected, the oil loss is just 27 ml, this is a small fraction of the loss when compared with valved or solid piped systems
- ★ Can be used on 'physically demanding' applications that had previously ruled out the use of couplings
- ★ Very high flow rating, e.g. 576 L/min at 5 bar pressure drop, without damaging the seals
- ★ The internal seals are shielded to minimise wear. Design of the shielded seal arrangement is patented
- ★ Can be connected and disconnected with up to 50 bar residual pressure in either one or both of the hydraulic lines

ORDER CODES

PS – 25 – M – 20 S

Type
PS Series

Body Code
25 = 1¼"

M = Male Coupling
F = Female Coupling

Male coupling thread size
20 = 1¼" SAE (1⅝" UNF)

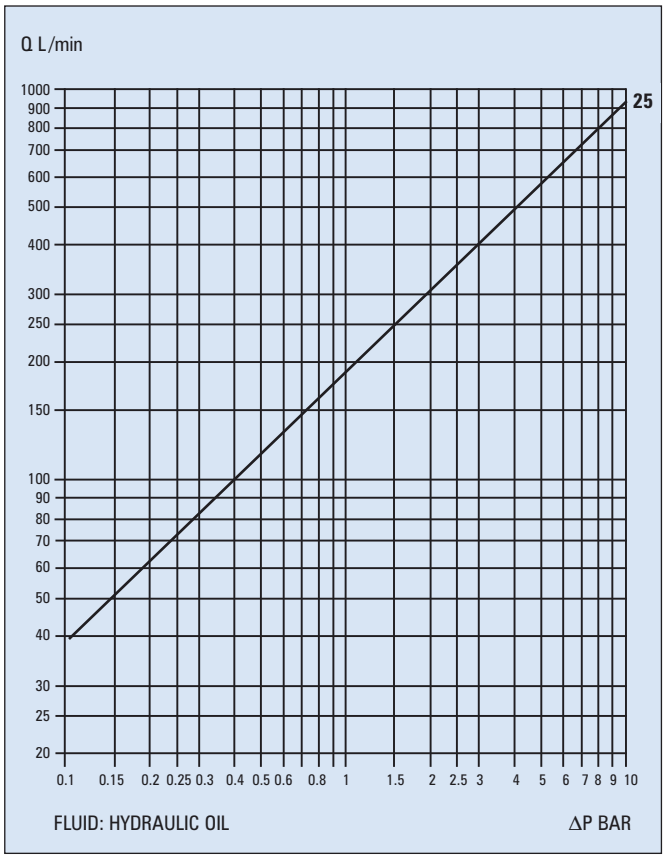
Female coupling
3K = SAE 3000 flange

Thread form
S = SAE

Blank = Female thread
M = Male thread

Blank = Viton & HNBR seals

PRESSURE DROP CHARACTERISTICS

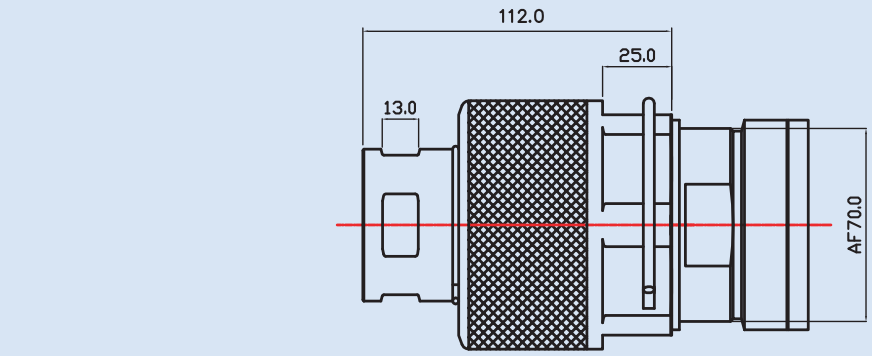


MATERIALS

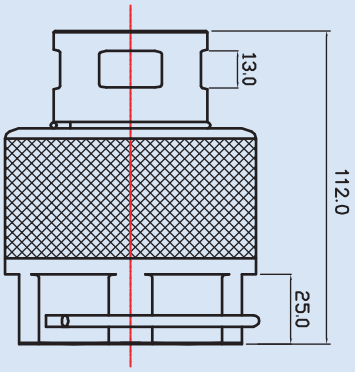
Zinc nickel plated carbon steel body with Viton and HNBR seals.

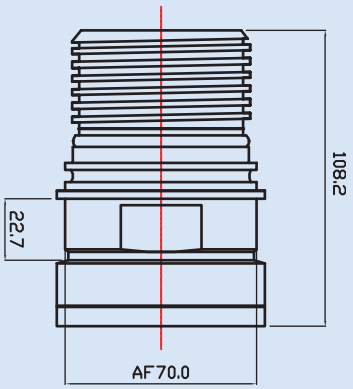
Example: PS-25-M-3KS
PS Series, 1¼" body, male coupling with SAE 3000 flange connector, SAE thread form, female thread, Viton & HNBRseals.

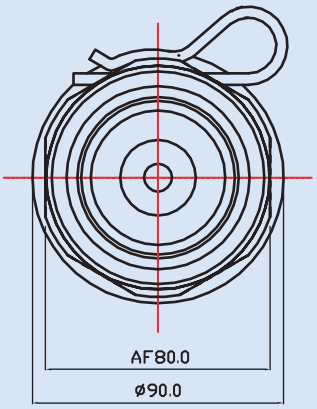
PS SERIES, EXTRA HEAVY DUTY SCREW COUPLINGS

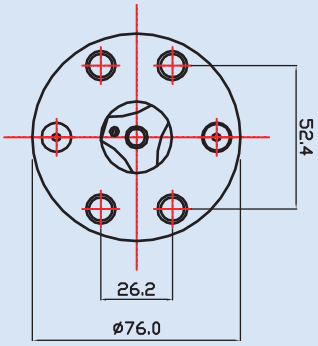


PS 25 connected









PS 25 Male

PS 25 Female

DUST CAPS
SEE PAGE 79

PRESSURE RATING (bar)

Pressure \ Size	PS 25
Maximum working pressure coupled	380
Burst pressure coupled	1520
	50

HS SERIES

SCREW TO CONNECT POPPET COUPLINGS

INTRODUCTION

Voswinkel HS Series couplings are designed for use in high pressure pulse applications. This typically includes construction plant, demolition equipment and agricultural machinery.

ADVANTAGES

- ★ Screw connection mechanism avoids use of locking balls and so eliminates the risk of Brinelling (the problem of locking ball indentation in the nose of the probe).
- ★ Can be connected with up to 50 bar pressure in each hydraulic hose line.
- ★ Self locking connection mechanism prevents accidental disconnection caused by vibration.
- ★ Modular construction allows numerous thread / connection options as standard.

MATERIALS

Hardened carbon steel body, Trivalent plated, nitrile seals.

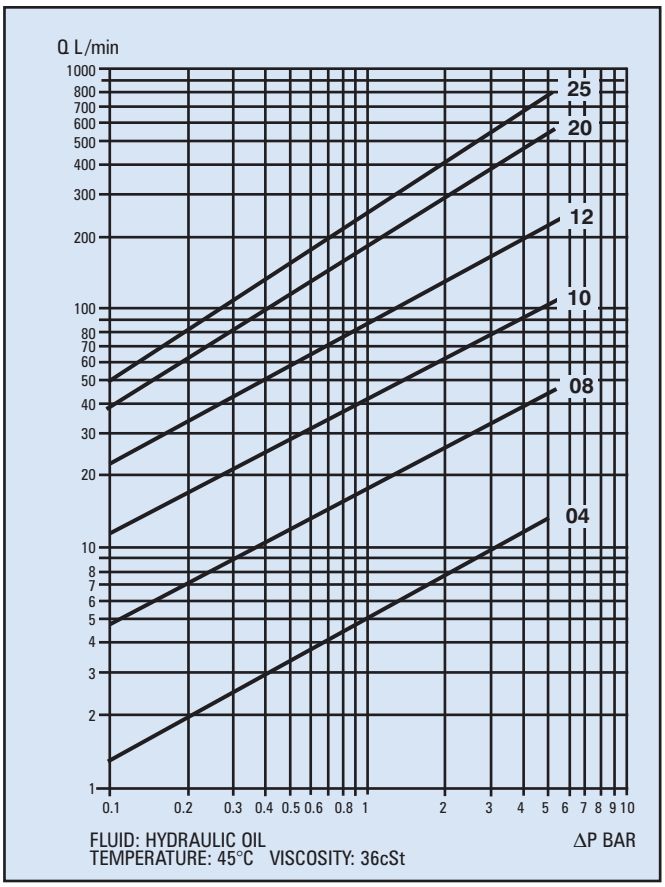
CONNECTION / DISCONNECTION UNDER PRESSURE

Connection with up to 50 bar residual pressure in the line is possible. Disconnection of any hydraulic coupling whilst under full system pressure can be very dangerous and should not be attempted.

PRESSURE RATINGS (bar)

	HS 04	HS 08	HS10	HS12	HS 20	HS25
Max working pressure	450	450	450	400	300	300
Burst pressure coupled	1800	1600	1600	1500	1180	1800
Burst pressure female	1400	1750	1750	1600	1500	1600
Burst pressure male	1400	1550	1550	1200	1100	1200

PRESSURE DROP CHARACTERISTICS



ORDER CODES*

HS 08 – 1 – IG F 06

HS = Series type

Body Size
04 = 1/4" 12 = 3/4"
08 = 3/8" 20 = 1"
10 = 1/2" 25 = 1¼"

Gender
1 = Female coupling
2 = Male coupling

Thread Size
04 = 1/4" 16 = 1"
06 = 3/8" 20 = 1¼"
08 = 1/2" 24 = 1½"
12 = 3/4"

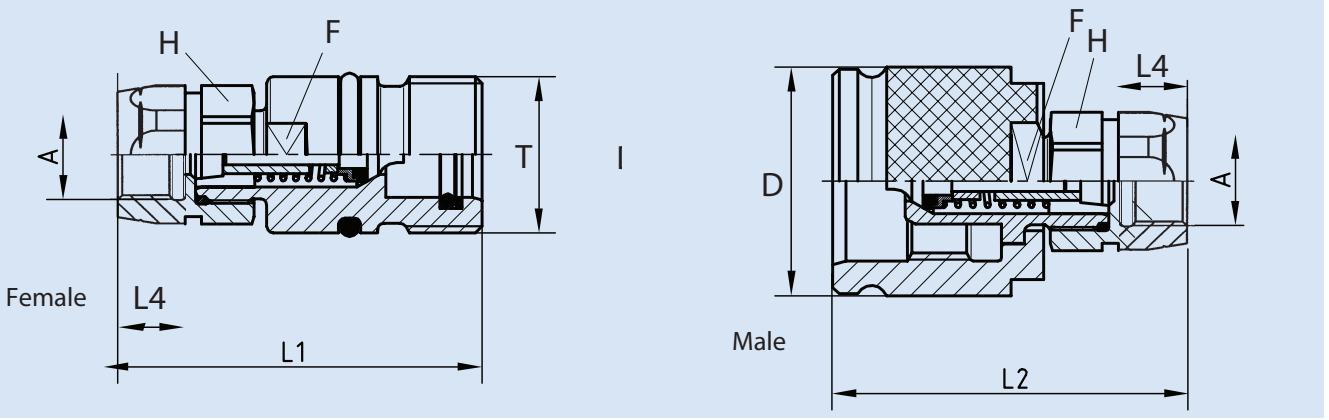
Thread Gender
F = Female **Blank** = Male

Thread form
IG = BSP P **IN** = NPT F **M** = Metric

* Similar but not identical to the Holmbury order code system

Example: HS 08-1- IN F 06
HS Series, 3/8" body, female coupling with BSP P female thread size 3/8" with nitrile seals, carbon steel body.

HS SERIES SCREW TO CONNECT POPPET COUPLINGS



FEMALE DIMENSIONS

Type & Size	A - port size NPT F thread	T	F Flat	H Hex	L4 Thread Length	L1	Weight kg
HSO4	1/4"	M24X2	22	19	13	59	0.12
HS08	3/8"	M28X2	24	22	13	64	0.16
HS10	1/2"	M36X2	30	30	15	68	0.285
HS12	3/4"	M42X2	36	36	19	85	0.526
HS20	1"	M48X2	41	41	19	99	0.706
HS25	1¼"	M70X3	85	80	55	29	1.63
HS25	1½"	M70X3	85	80	55	31	1.715

MALE DIMENSIONS

Type & Size	A port size NPT F thread	D	F Flat	H Hex	L4 Thread Length	L2	Weight kg
HSO4	1/4"	35	30	19	13	58	0.182
HS08	3/8"	34	30	22	13	61	0.17
HS10	1/2"	42	36	30	15	66	0.27
HS12	3/4"	48	41	36	19	76	0.49
HS20	1"	55	50	41	19	82	0.58
HS25	1¼"	85	80	55	29	131	2.329
HS25	1½"	85	80	55	31	133	2.26

Also available in Metric Male Tube (DIN 3861) and Code 62 Flange Connections.

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RS SERIES

SCREW TO CONNECT ZERO LEAKAGE COUPLINGS

INTRODUCTION

Voswinkel RS Series couplings are designed for use in high pressure pulse applications. This typically includes construction plant, demolition equipment and agricultural machinery.

ADVANTAGES

- ★ Connect without ingress of air and disconnection without loss of fluid.
- ★ Screw connection mechanism avoids use of locking balls and so eliminates the risk of Brinelling (the problem of locking ball indentation in the nose of the probe).
- ★ Can be connected by hand with up to 20 bar pressure in each hydraulic hose line and up to 50 bar with hand tools.

MATERIALS

Hardened carbon steel body, zinc nickel plated, nitrile seals.

CONNECTION

The couplings are connected by screwing the Female (fixed half) and Male (swivel half) couplings together until the limit stop is reached.

CONNECTION / DISCONNECTION UNDER PRESSURE

Connection and disconnection by hand, with up to 20 bar residual pressure in the line is possible. Disconnection of any hydraulic coupling whilst under full system pressure can be very dangerous and should not be attempted.

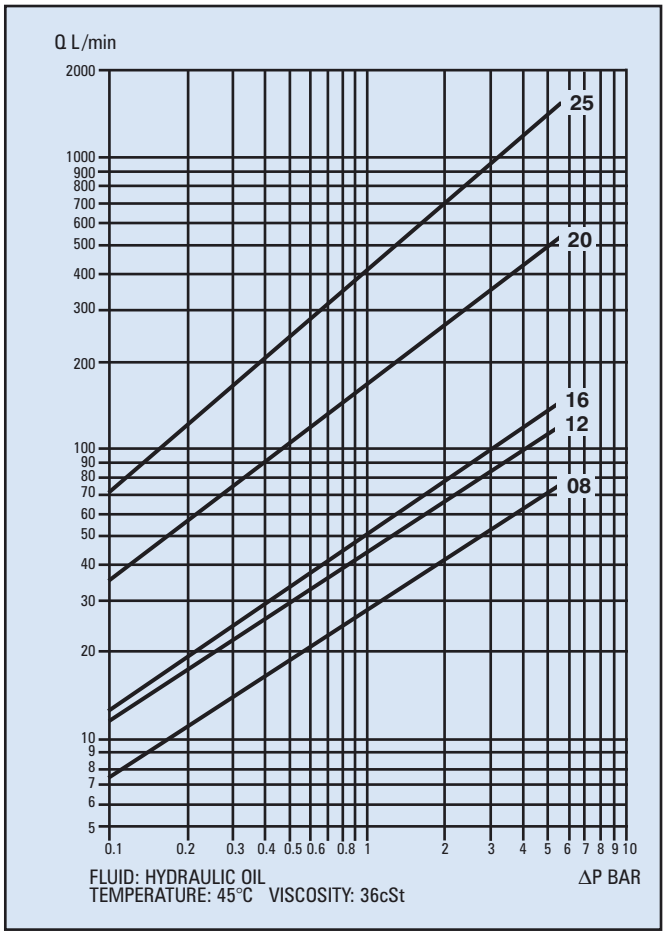
SEAL OPERATING TEMPERATURES

Nitile seals maximum working temperature 100°C, minimum working temperature -20°C

PRESSURE RATINGS (bar)

	RS08	RS12	RS16	RS20	RS25
Max working pressure	420	300	320	300	420
Burst pressure coupled	2250	2150	1150	1200	1150
Burst pressure female	500	700	1280	700	900
Burst pressure male	1150	1000	1280	1250	1100

PRESSURE DROP CHARACTERISTICS



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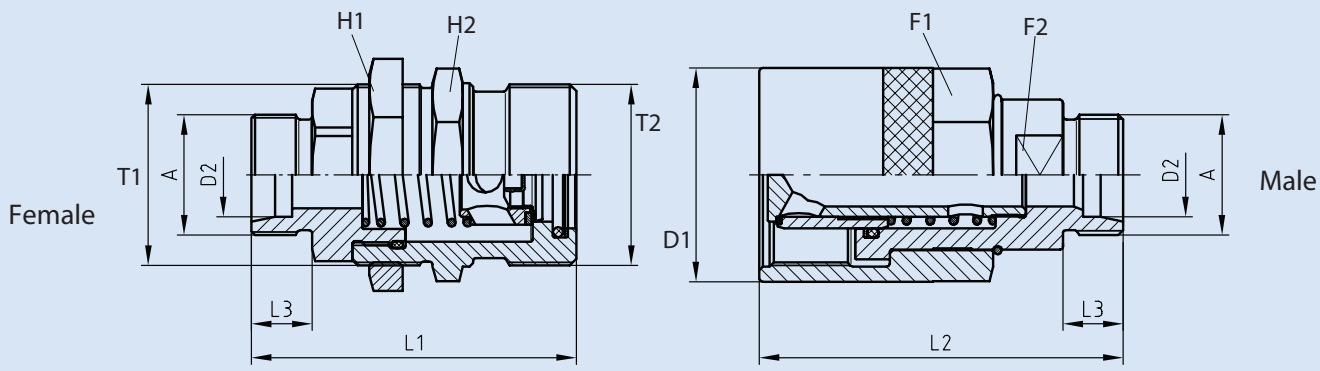
RS SERIES SCREW TO CONNECT COUPLINGS



FEMALE DIMENSIONS

Type	T1	T2	H1	H2	Port A	D2	L1	L3	Part No.	Weight (kg)
RS08	M30X1	M32X3	36	36	M14X1.5	8L	54	10	RK08-1-L0814	0.210
					M16X1.5	10L	54	11	RK08-1-L1016	0.210
					M18X1.5	12L	54	11	RK08-1-L1218	0.210
					M22X1.5	15L	54	12	RK08-1-L1522	0.210
					M18X1.5	10S	54	12	RK08-1-S1018	0.215
					M20X1.5	12S	54	12	RK08-1-S1220	0.221
					M22X1.5	14S	54	14	RK08-1-S1422	0.215
RS12	M36X1	M36X3	41	41	M22X1.5	15L	61	12	RK12-1-L1522	0.300
					M24X1.5	16S	63	14	RK12-1-S1624	0.312
RS16	M45X1.5	M48X3	50	55	M22X1.5	15L	75	12	RK16-1-L1522	0.640
					M26X1.5	18L	75	12	RK16-1-L1826	0.642
					M24X1.5	16S	77	14	RK16-1-S1624	0.643
					M30X2	20S	79	16	RK16-1-S2030	0.646
RS20	M45X1.5	M54X4	60	55	M26X1.5	18L	90	12	RK20-1-L1826	0.915
					M30X2	22L	95	14	RK20-1-L2230	0.923
					M36X2	28L	95	14	RK20-1-L2836	0.933
					M30X2	20S	94	16	RK20-1-S2030	0.953
					M36X2	25S	96	18	RK20-1-S2536	0.968
					M42X2	30S	98	20	RK20-1-S3042	0.988
RS25	N/A	M79X4	55	85	M45X2	35L	116	16	RK25-1-L3545	2.795
					M52X2	38S	123	22	RK25-1-S3852	2.830

MALE DIMENSIONS

Type	D1	F1	F2	Port A	D2	L2	L3	Part No.	Weight (kg)
RS08	39	32	22	M14X1.5	8L	62	10	RK08-2-L0814	0.305
				M16X1.5	10L	63	11	RK08-2-L1016	0.305
				M18X1.5	12L	63	11	RK08-2-L1218	0.305
				M22X1.5	15L	63	12	RK08-2-L1522	0.305
				M18X1.5	10S	64	12	RK08-2-S1018	0.315
				M20X1.5	12S	64	12	RK08-2-S1220	0.315
				M22X1.5	14S	66	14	RK08-2-S1422	0.315
RS12	54	46	24	M22X1.5	15L	70	12	RK12-2-L1522	0.535
				M24X1.5	16S	72	14	RK12-2-S1624	0.537
RS16	59	60	N/A	M22X1.5	15L	75	12	RK16-2-L1522	0.940
				M26X1.5	18L	75	12	RK16-2-L1826	0.943
				M24X1.5	16S	77	14	RK16-2-S1624	0.945
				M30X2	20S	79	16	RK16-2-S2030	0.949
RS20	64	55	41	M26X1.5	18L	103	12	RK20-2-L1826	1.343
				M30X2	22L	105	14	RK20-2-L2230	1.351
				M36X2	28L	105	14	RK20-2-L2836	1.361
				M30X2	20S	107	16	RK20-2-S2030	1.381
				M36X2	25S	109	18	RK20-2-S2536	1.396
				M42X2	30S	111	20	RK20-2-S3042	1.416
RS25	90	N/A	55	M45X2	35L	129	16	RK25-2-L3545	3.350
				M52X2	38S	136	22	RK25-2-S3852	3.385

Note: RS available in metric tube connection. Nut and Ferrule not included. Sizes listed are for reference only and are subject to change.

PWC SERIES

FREE FLOW, VALVELESS PRESSURE WASHER COUPLINGS

INTRODUCTION

Holmbury PWC Series, Free Flow, Valveless Couplings do not have shut-off valves in either the male or female halves. Consequently, the couplings can handle high flow rates and create a negligible pressure drop. However, when disconnected, any residual fluid in the line will be free to escape. For this reason, the couplings should only be used for the transmission of non-hazardous substances such as water.

APPLICATIONS

High pressure water jetting and steam applications, mainly in the cleaning industry.

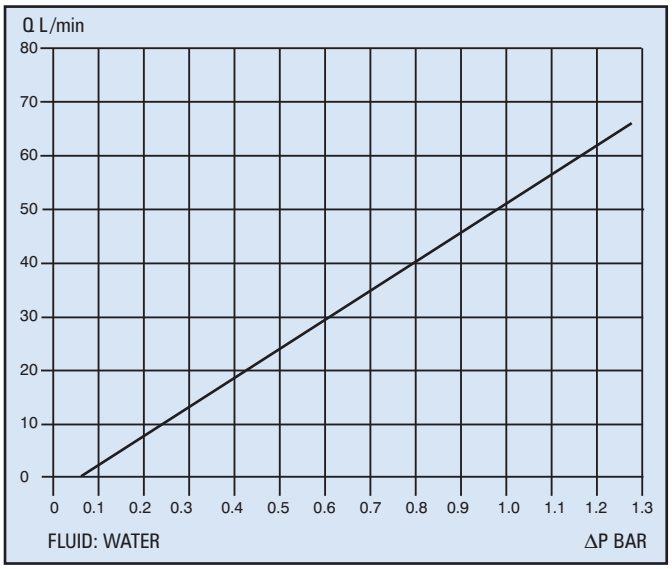
MATERIALS

Zinc plated carbon steel body with dual Viton seals for extra safety. These couplings are also available in Stainless Steel (PWS Series).

TECHNICAL DETAILS

Maximum working pressure coupled	350 bar
Rated flow	45 l/min
Working temperature range with Viton seals	-15°C to +180°C

PRESSURE DROP CHARACTERISTICS



ORDER CODES

PWC 06 – F – 06 G

PWC Series

Coupling Size

M = Male coupling
F = Female coupling

Thread size (dash system)
06 = 3/8"

Thread Form
G = BSP P

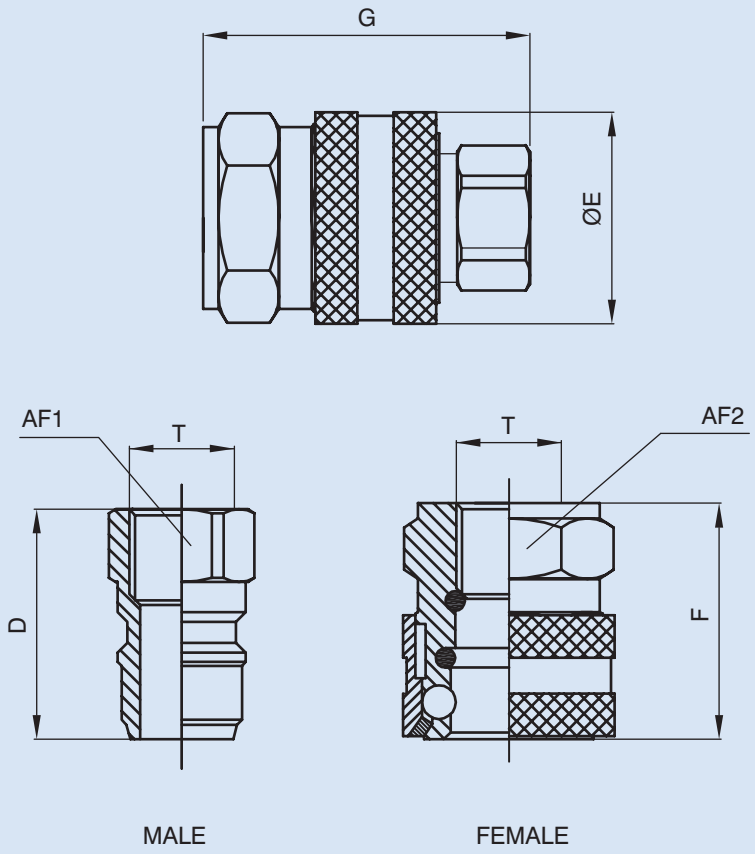
Any other information

Blank = Viton Seals

Blank = Female thread (no code required)
M = Male thread

Example: PWC06-F-06G
PWC Series carbon steel, pressure washer, female coupling, body size 06, with 3/8" BSP female thread

PWC SERIES, FREE FLOW, VALVELESS, CARBON STEEL PRESSURE WASHER COUPLINGS



DIMENSIONS (mm except where stated)

Coupling	Thread	D	ØE	F	G	AF1	AF2
PWC 06 06 G	3/8" BSP	38	35	39	54	22	30

TB SERIES

TRAILER BRAKE COUPLINGS TO ISO 5676

INTRODUCTION
Holmbury Trailer Brake Couplings are manufactured to ISO 5676. They are used to connect the hydraulic braking system of tractors to their trailers. The male coupling is normally panel mounted on the tractor and is available with metric and BSP threads.

APPLICATIONS
Agricultural tractors and trailers.

MATERIALS
Trivalent plated carbon steel body material with nitrile seals.

TECHNICAL DETAILS
Maximum working pressure for all sizes of couplings is 220 bar. Working temperature range with nitrile seals is -20°C to +100°C

PARKING STATIONS
To help avoid accidental damage and provide a storage location, Parking Stations are supplied as standard with each female coupling

PARKING STATIONS – PAGE 80

ORDER CODES

TB 12 – M – 08 G M

TB = Trailer Brake

Coupling Size 12

M = Male coupling
F = Female coupling

Thread size (dash system)
- 06 = 3/8"
- 08 = 1/2"

Thread size (metric)
M18 = M18 x 1.5
M20 = M20 x 1.5

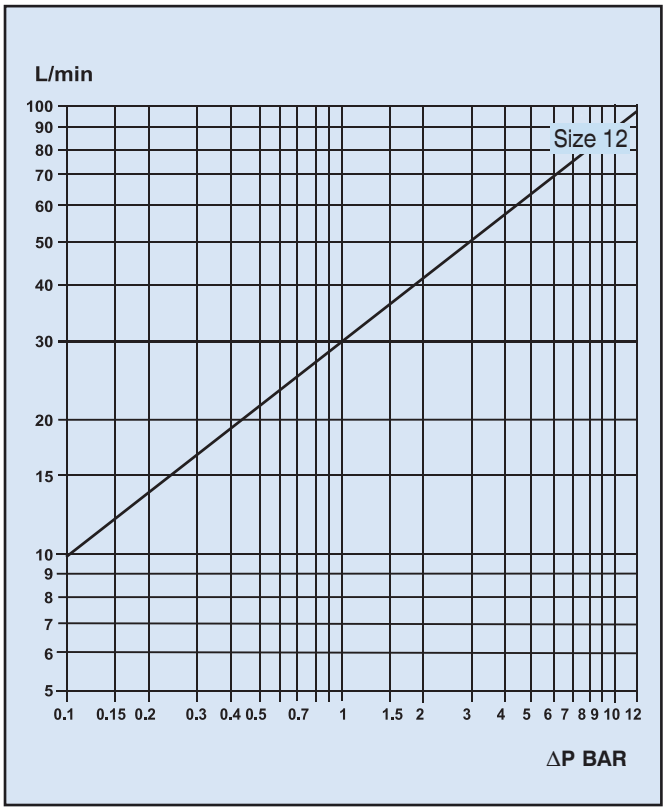
Blank = Nitrile Seals

Blank = Female thread (no code required)

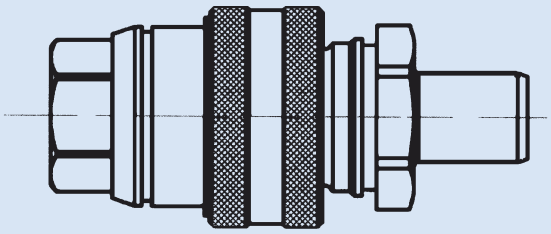
M = Male thread

Thread Form
G = BSP P
M = Metric

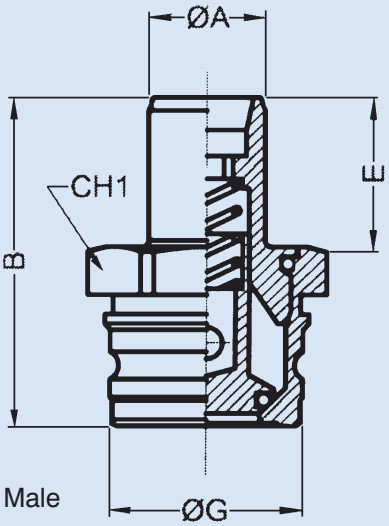
PRESSURE DROP CHARACTERISTICS

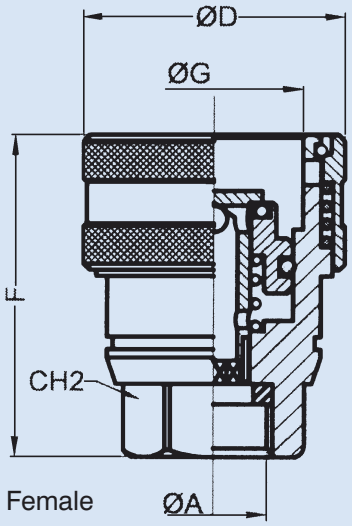


TB SERIES, TRAILER BRAKE COUPLINGS TO ISO 5676



Female and Male Coupled





Male

Order Code	ØA	B	CH1	ØG	E
TB12-M-M18 x1.5M	18 x 1.5	51	32	29.8	23
TB12-M-M20 x 1.5M	20 x 1.5	51	32	29.8	23
TB12-M-08GM	1/2" BSP	43	32	29.8	15
TB12-M-08G	1/2" BSP F	59	32	29.8	31

Other threads available on request. Locknuts are not included

Female

Order Code	ØA	B	CH2	ØD	F
TB12-F-M18 x 1.5	18 x 1.5	30	27	45	55
TB12-F-M20 x 1.5	20 x 1.5	30	27	45	55
TB12-F-08G	1/2" BSP	30	27	45	55
TB12-F-06G	3/8" BSP	30	27	45	55

Other threads available on request. Locknuts are not included

PSB & PSP SERIES

HIGH PRESSURE SCREWED COUPLINGS

INTRODUCTION

Holmbury High Pressure Screwed Couplings can be connected and disconnected even with a low residual hydraulic pressure in the line. The screw connection mechanism eliminates Brinelling (indentation of the locking balls into the retaining groove) and thus makes the couplings suitable for high pressures and pressure pulse applications. Two sizes are offered, 1/4" and 3/8" NPT, with either ball or poppet valve seals.

FEATURES

- ★ Compatible with all high pressure pump and cylinder manufacturers (Enerpac, SPX, Larzep and Hi-force)
- ★ Connection and disconnection can be performed even with low residual hydraulic pressure in the line.
- ★ Screw thread retaining mechanism eliminates Brinelling.
- ★ Size 10 (3/8") couplings also available with poppet valve seals for lower pressure applications.

APPLICATIONS

General industrial equipment

MATERIALS

Zinc plated carbon steel body material with nitrile seals and PTFE backing ring.

TECHNICAL DETAILS

Maximum working pressure for both sizes of couplings: PSB = 700 bar. PSP = 1000 bar. Working temperature range with nitrile seals is -20°C to +100°C

ORDER CODES

PSB 06 – F – 04 N M

PSB = ball seal
PSP = poppet seal

Coupling Size (06 & 10)

M = Male coupling
F = Female coupling

Thread size (dash system)
04 = 1/4"
06 = 3/8"

Thread Form
N = NPT F

Any other information

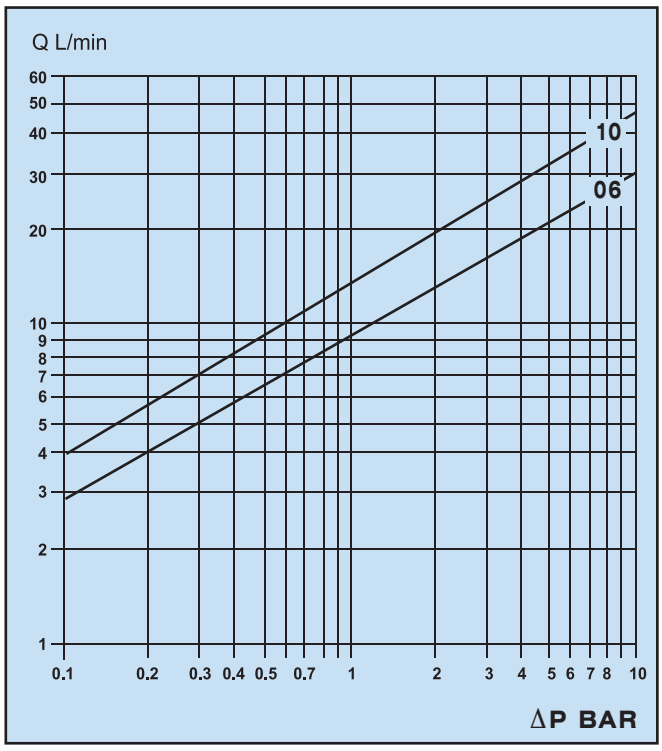
Blank = Nitrile Seals

Blank = Female thread (no code required)
M = Male thread

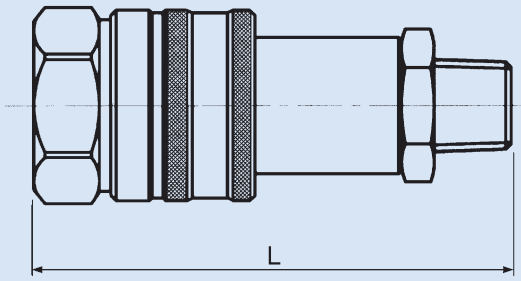
Example: PSB06-F-04NM
PSB Series, ball seal, size 06 female coupling, 1/4" NPT F, male thread, nitrile seals, no special requirements.

Ball valve couplings shown, poppet valve couplings are also available

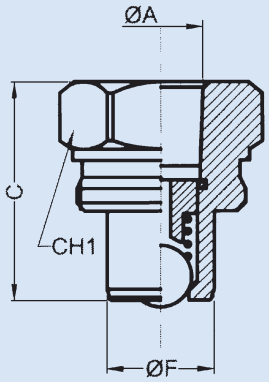
PRESSURE DROP CHARACTERISTICS



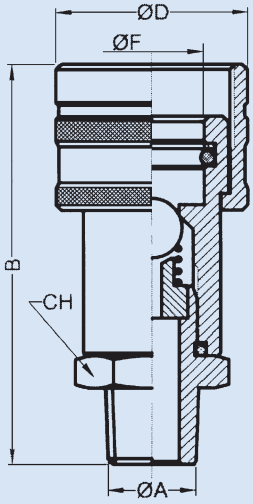
DUST CAPS – PAGE 78



Female and Male Coupled



Male



Female

Male

Male coupling with ball seal	Male coupling with poppet seal	ØA	C	CH1	L	ØF
PSB06-M-04N	PSP06-M-04N	1/4" NPT	39	27	81	15.8
PSB10-M-06N	PSP10-M-06N	3/8" NPT	39	32	87	18.9

Female

Female coupling with ball seal	Female coupling with poppet seal	ØA	ØD	B	CH	L	ØF
PSB06-F-04NM	PSP06-F-04NM	1/4" NPT	30	60	19	81	16
PSB10-F-06NM	PSP10-F-06NM	3/8" NPT	35	73.5	24	87	19

SP SERIES

HIGH PRESSURE POPPET TYPE SCREW COUPLINGS

INTRODUCTION

Holmbury High Pressure Poppet Type Screwed Couplings are designed to withstand high pressures and pressure pulses. High pressure pulses create forces that act to separate the male and female couplings.
With couplings that use ball-in-groove retaining mechanisms, the separating forces are concentrated onto a relatively small area - point contact of the balls - which can cause Brinelling (indentation of the balls into the groove). Brinelling will lead to leakage and eventually seizure of the coupling. Screwed couplings have a screw thread retaining mechanism that distributes the separating forces over a large surface area, thus eliminating brinelling.

FEATURES

★ Screw thread retaining mechanism to eliminate brinelling

★ Connection and disconnection can be performed even with a low residual hydraulic pressure in the line

APPLICATIONS

Mobile plant, agricultural implements and general industrial equipment.

MATERIALS

Trivalent plated carbon steel body material with nitrile seals and PTFE backing ring.

TECHNICAL DETAILS

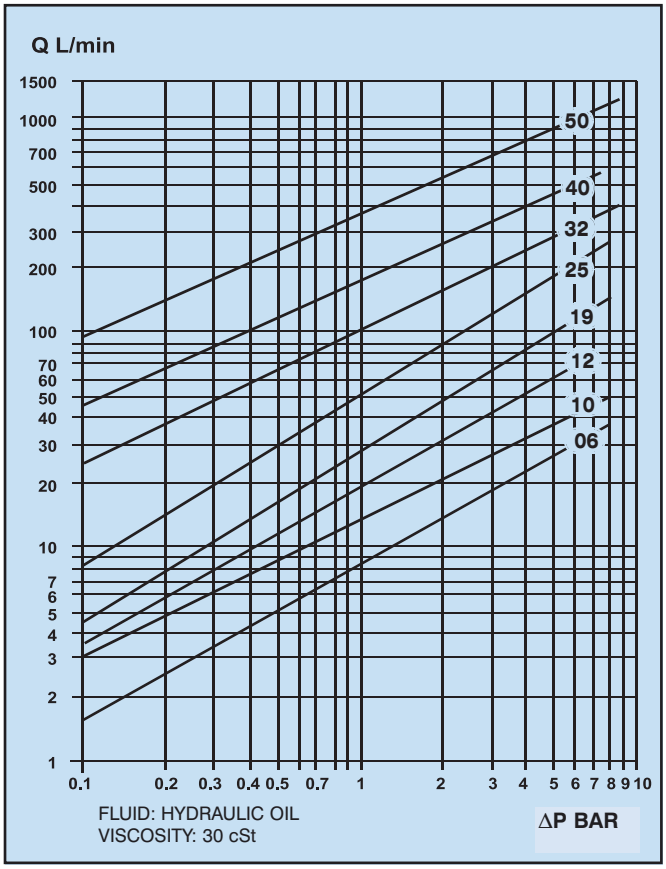
Working temperature range with nitrile seals is -20°C to +100°C
Couplings are also available with Viton seals for an operating temperature range of -15°C to +180°C.

MAXIMUM WORKING PRESSURE (BAR)

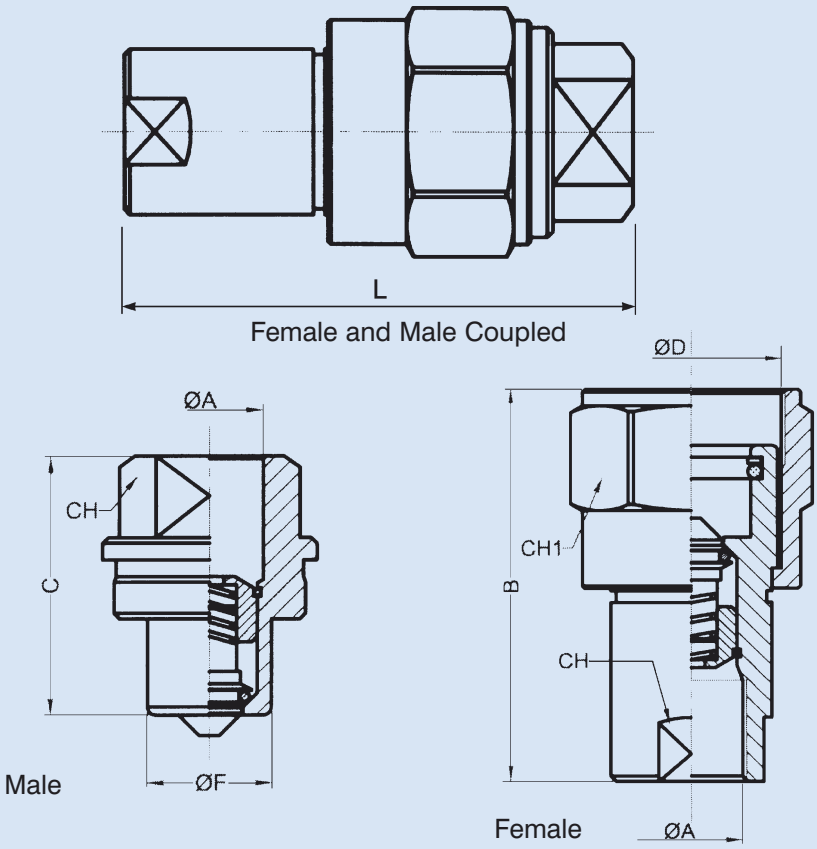
Size	06	10	12	19	25	32	40	50
Male	950	750	750	650	450	450	300	300
Female	950	750	750	650	450	450	300	300

DUST CAPS
SEE PAGE 78

PRESSURE DROP CHARACTERISTICS



SP SERIES, HIGH PRESSURE, POPPET TYPE, SCREW COUPLINGS



Size	ØA	B	C	CH	CH1	ØD	ØF	L
SP 06	1/4" BSP	57	34	19	32	27 x 1.5	14.9	68
SP 10	3/8" BSP	71.5	41	22	34	30 x 1.5	18.9	86
SP 12	1/2" BSP	74.5	47	27	41	35 x 1.5	22	94
SP 19	3/4" BSP	90.5	57	35	50	45 x 1.5	29	114
SP 25	1" BSP	103.5	64	41	65	54 x 1.5	36	128
SP 32	1¼" BSP	130.5	75	58	80	70 x 2.0	49.8	150
SP 40	1½" BSP	141	81	61	85	78 x 2.0	55	162
SP 50	2" BSP	205	129	71	105	92 x 3.0	69	236

ORDER CODES

SP 50 – M – 32 G

SP Series

Coupling Size

M = Male coupling
F = Female coupling

Thread size (dash system)
04 = 1/4" 16 = 1"
06 = 3/8" 20 = 1¼"
08 = 1/2" 24 = 1½"
12 = 3/4" 32 = 2"

Thread Form
G = BSP P
N = NPT F

Blank = Female thread (no code required)
M = Male thread

Blank = Nitrile Seals

Any other information

Example: SP50-M-32G
SP Series, size 50 male coupling, 2" BSP female thread, nitrile seals, no special requirements.

TC SERIES

TIPPER COUPLINGS

INTRODUCTION

Holmbury Tipper Couplings use a screw thread connection. The female coupling has a wing nut sleeve which enables operators to connect the couplings by hand, even when there is low residual pressure in the line.

APPLICATIONS

Tipper Couplings are designed for use on mobile plant such as commercial vehicle trailers, agricultural equipment and construction plant.

MATERIALS

Trivalent plated carbon steel body material with nitrile seals and PTFE backing ring.

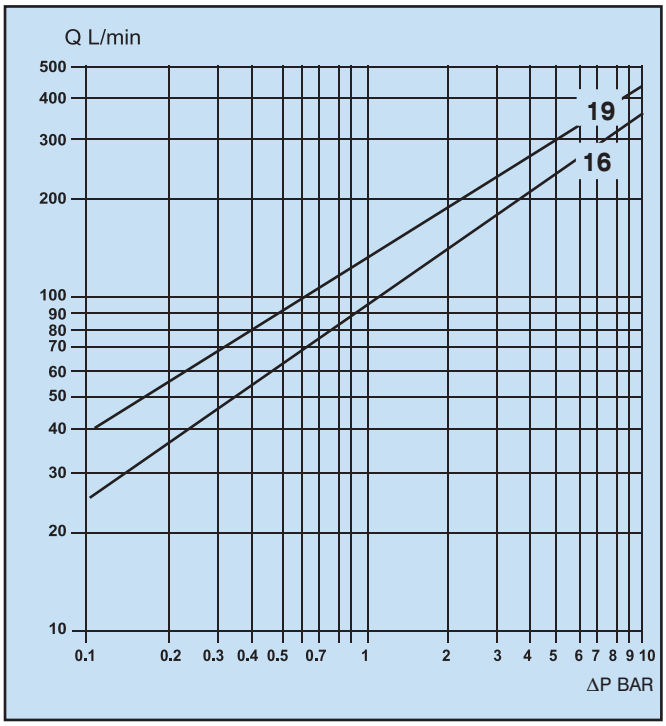
TECHNICAL DETAILS

Maximum working pressure for both sizes is 250 bar. Working temperature range with nitrile seals is -20°C to +100°C

ACCESSORIES

PARKING STATIONS
Parking stations help avoid accidental damage and provide a storage location.
PLUGS
Available for female couplings to prevent the ingress of dirt and avoid damage.
CAPS
Available for male couplings to prevent the ingress of dirt and avoid damage.

PRESSURE DROP CHARACTERISTICS



ORDER CODES

TC 16 – F – 12 G

TC Series

Coupling Size (16 & 19)

M = Male coupling
F = Female coupling

Thread size (dash system)
12 = 3/4"
16 = 1"

Thread Form
G = BSP P

Any other information

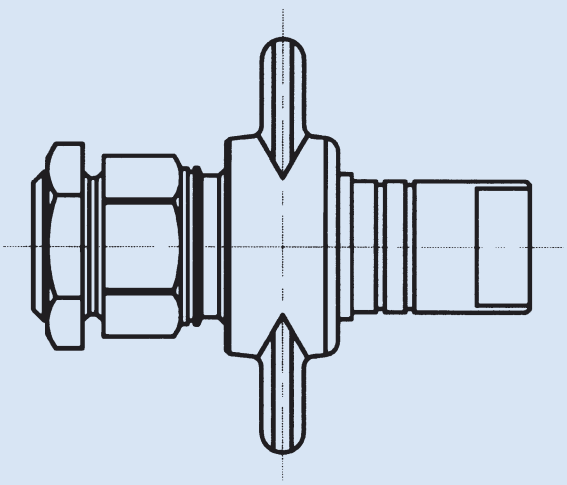
Blank = Nitrile Seals

Blank = Female thread (no code required)
M = Male thread

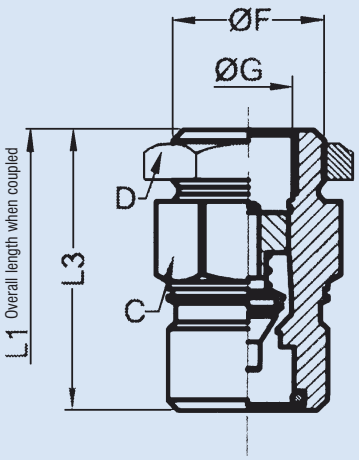
DUST CAPS – PAGE 79
PARKING STATIONS – PAGE 80

Example: TC16-F-12G
TC Series tipper coupling, size 16 female coupling, 3/4" BSP female thread, nitrile seals, no special requirements.

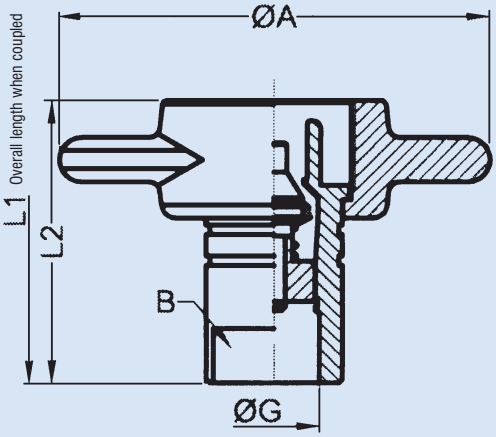
TC SERIES, TIPPER COUPLINGS



Male and Female Coupled



Male



Female

Male coupling

Size	ØG	C	D	L1	L3	ØF
TC 16 F 12	3/4" BSP	46	50	128.2	75.7	1¼"
TC 19 F 16	1" BSP	55	60	144.6	82.8	1⅜"

Female coupling

Size	ØG	B	L1	L2	ØA
TC 16 M 12	3/4" BSP	33	128.2	74.5	115
TC 19 M 16	1" BSP	40	144.6	82.8	115

F SERIES

HIGH FLOW CONNECT-UNDER-PRESSURE SAFETY COUPLINGS

INTRODUCTION

Holmbury High Flow Safety Couplings offer three important benefits, high flow with low pressure drop characteristics, connection under pressure and a safety locking mechanism to prevent accidental disconnection. Four sizes are offered, 3/8", 1/2", 3/4" and 1", all with BSP thread.

FEATURES

- ★ Pressure eliminator to allow connection even when there is residual pressure in the hose lines
- ★ Low pressure drop characteristics
- ★ Safety locking ring to avoid accidental disconnection
- ★ Female coupling has double 'O' ring seals

APPLICATIONS

Mobile plant and general industrial equipment

MATERIALS

Trivalent plated carbon steel body material with nitrile seals

TECHNICAL DETAILS

Maximum working pressure for all sizes is 280 bar.
Working temperature range with nitrile seals is -20°C to +100°C

ORDER CODES

F 19 – M – 12 G

F = F Series

Coupling Size

M = Male coupling
F = Female coupling

Thread size (dash system)
06 = 3/8" 12 = 3/4"
08 = 1/2" 16 = 1"

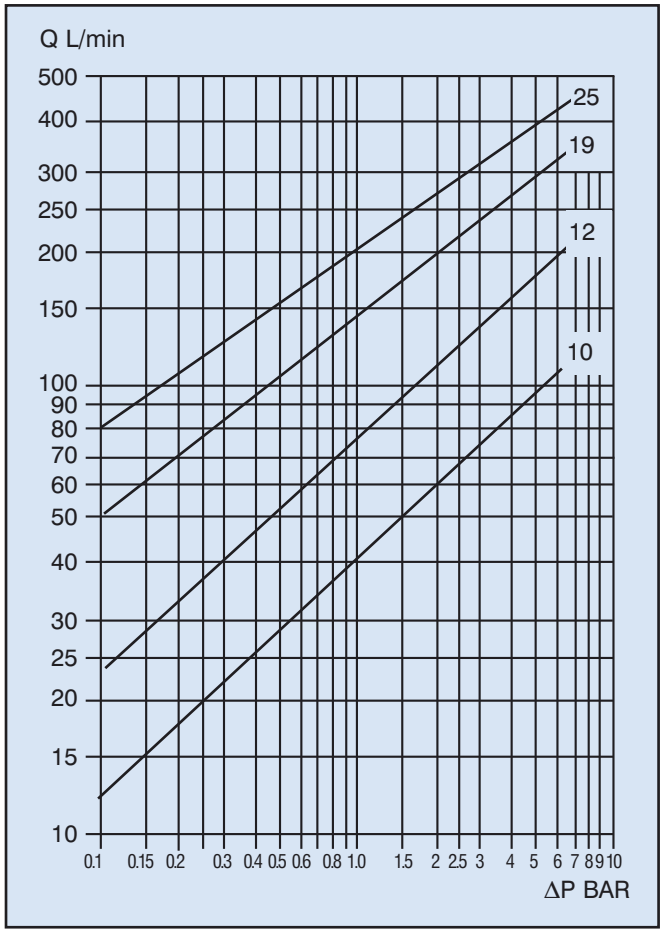
Thread form
G = BSP P

M = Male thread
Blank = Female thread (no code required)

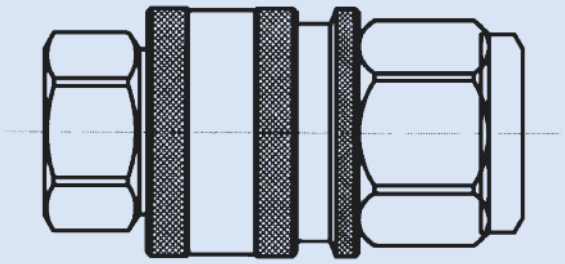
Blank = Nitrile Seals (no code required)

Any other necessary information

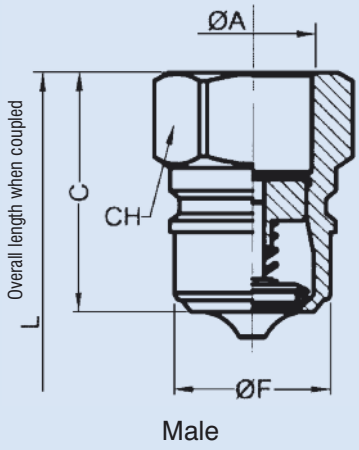
PRESSURE DROP CHARACTERISTICS



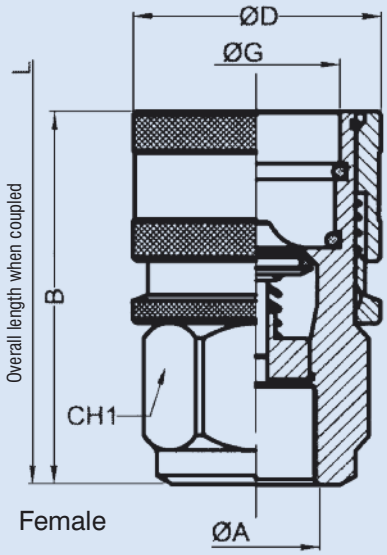
F SERIES, HIGH FLOW, CONNECT-UNDER-PRESSURE, SAFETY COUPLINGS



Female and Male Coupled



Male



Female

Male coupling

Size	ØA	C	CH	L	ØF
F 10 M 06 G	3/8" BSP	40.5	22	81	19.9
F 12 M 08 G	1/2" BSP	41.5	27	83	24.7
F 19 M 12 G	3/4" BSP	56	36	112	32.65
F 25 M 16 G	1" BSP	63	46	126	40.8

Female coupling

Size	ØA	ØD	B	CH1	L	ØG
F 10 F 06 G	3/8" BSP	35	64	30	81	21.6
F 12 F 08 G	1/2" BSP	40	66.5	36	83	26.8
F 19 F 12 G	3/4" BSP	52	85	42	112	34.75
F 25 F 16 G	1" BSP	65	99	55	126	43.5

IA SERIES

ISO. A PULL BREAK HYDRAULIC COUPLINGS

¼" - 2" Poppet Valve Types to ISO 7241 Series A

INTRODUCTION

Holmbury IA Series, ISO.A couplings are the ideal choice where a tough, durable product of superior quality is required. They are perfectly suited to industrial and agricultural applications. A poppet valve is used to minimise the pressure drop characteristics and provide a positive sealing arrangement.

COMPARISONS

In comparison to ISO.B couplings, ISO.A are:
1. Smaller.
2. Easier to connect and release.

FEATURES

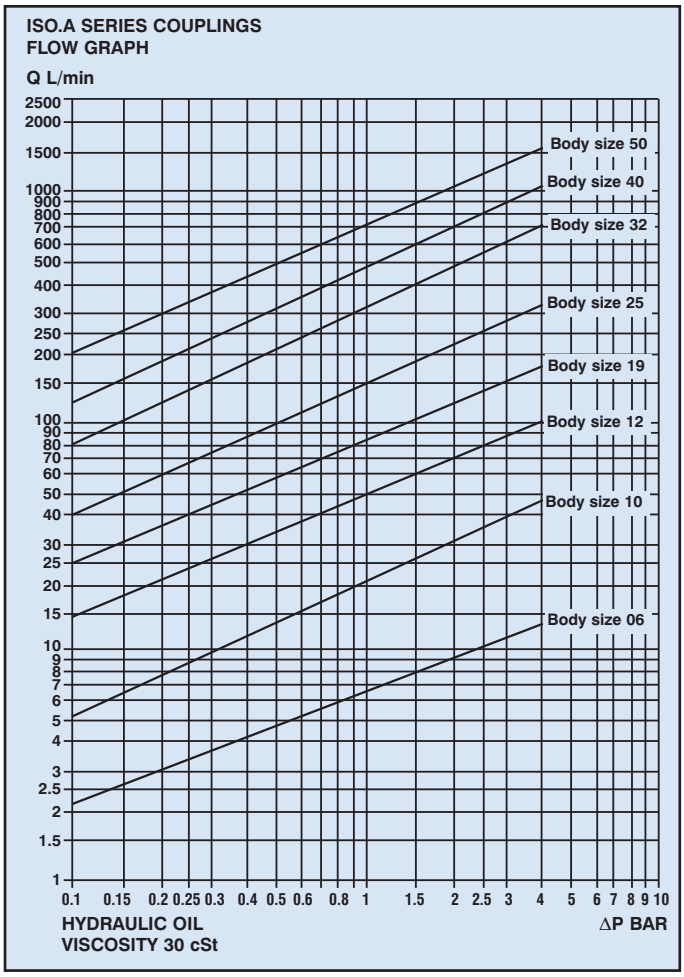
- ★ Positive, quick connection ensured by the snap together locking ball system.
- ★ When connected the male and female halves can rotate, even under pressure, thus avoiding any torsional stress in the flexible hoses.
- ★ Designed to withstand high pressure peaks and pulses.
- ★ Poppet valves have balanced springs and calibrated oil flow passages to minimise the pressure drop.
- ★ Poppet valve seals have shockproof protective edges.

MATERIALS

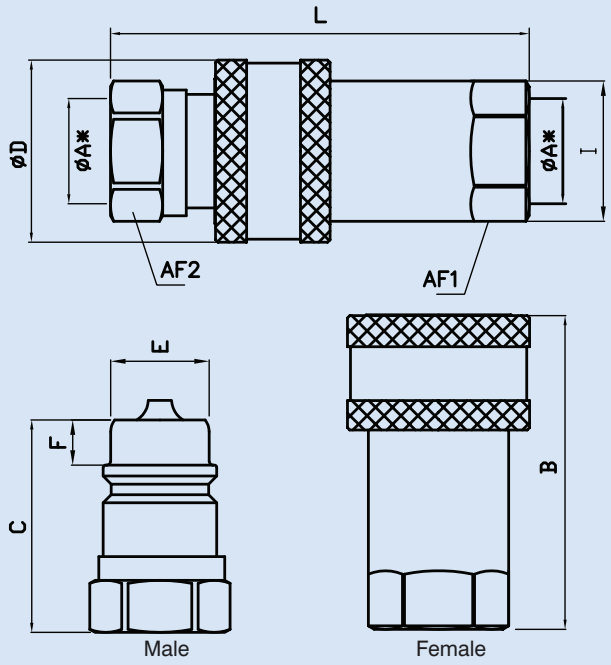
Trivalent plated, heat treated carbon steel. Nitrile 'O' ring seals are fitted as standard. VITON seals are available on request.

DUST CAPS – PAGE 79
PARKING STATIONS – PAGE 80

PRESSURE DROP CHARACTERISTICS



IA SERIES, ISO.A PULL BREAK HYDRAULIC COUPLINGS



Body Size	Nominal Diameter	Max Working Pressure (bar)	ØA*	AF1	AF2	B	C	ØD	E	F	L	I	Weight (kg)
IA06	6.3	350	1/4"	19	19	47	32	26	11.7	5.6	64.5	22	0.13
IA10	10	300	3/8"	22	22	56	38	31	17.2	8.9	76.5	24	0.20
IA12	12.5	250	1/2"	27	27	63	44.5	38	20.5	9.3	86	30	0.34
IA19	20	250	3/4"	38	36	82	55	48	29	16	111	44	0.71
IA25	25	230	1"	45	41	97	63	54	34.3	19.8	127	52	1.10
IA32	31.5	230	1¼"	55	50	117	75	65	45	25	151	56	1.90
IA40	40	190	1½"	60	60	135	85	80	55	30.7	171	65.5	3.10
IA50	50	130	2"	75	75	160	100	100	65	35.1	201	83.5	5.50

A*=inch size BSP or NPT. Other dimensions in mm.

ORDER CODES

IA 19 – M – 12 G

IA = ISO A Series

Body Size
06 = 1/4"
10 = 3/8"
12 = 1/2"
19 = 3/4"
25 = 1"
32 = 1¼"
40 = 1½"
50 = 2"

M = Male Coupling
F = Female Coupling

Blank = Nitrile seals

Blank = Female thread
M = Male thread

Thread form
G = BSP P (standard)
N = NPT (available on request)
S = SAE (available on request)

Thread size based on dash system

04 = 1/4"	**16 = 1"**
06 = 3/8"	**20 = 1¼"**
08 = 1/2"	**24 = 1½"**
12 = 3/4"	**32 = 2"**

Example: IA19-M-12 G
ISO A, 3/4" body size, male coupling, 3/4" thread, BSP P thread form, female thread, nitrile seals.

IAPC SERIES

½" ISO.A "Connect-under-pressure"

PULL BREAK AND PUSH PULL HYDRAULIC COUPLINGS

INTRODUCTION

Holmbury IAPC Series ISO.A couplings incorporate pressure relief mechanisms that enable them to be connected by hand, even when there are residual pressures in the hose lines.
When male and female IAPC couplings are used, they can be connected when there is residual pressures of up to 250 bar in either of the hose lines.
If an IAPC coupling is to be connected with a standard ISO.A coupling, then the hose with the IAPC coupling can have up to 250 bar residual pressure whilst the hose with the standard coupling must be at zero pressure.

PULL BREAK FEMALE COUPLINGS

Used for connecting flexible hose lines. To connect, pull back the locking sleeve, insert the male, release the sleeve. To disconnect, pull back the locking sleeve and withdraw the male.

PUSH PULL FEMALE COUPLINGS

The coupling is panel mounted using the circlip grooves in the locking sleeve. The male is connected by being pushed in and disconnected by being pulled out. This release mechanism protects the coupling and hose from damage in the event of an accidental separating force being applied to the connection (e.g. a trailer becoming detached from the towing vehicle).

TECHNICAL DETAILS

Maximum working pressure 250 bar.
Fluid loss connecting with residual pressure 1.5 ml.
Connection force without residual pressure 90 N.
Connection force with residual pressure from:

$$CF = 90 + (0.55 \times RP)$$

CF = connection force (N)
RP = residual pressure (bar)

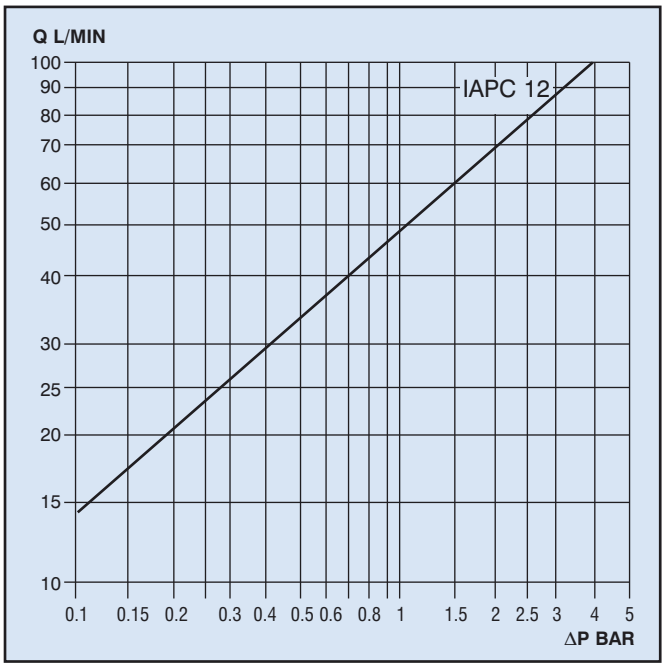
EXAMPLE
To connect a PC coupling with 220 bar residual pressure, CF = 90 + (0.55 x 220) = 211 N

ORDER CODES

IAPC 12 – M – 08 G

- IAPC: ISO A connect under pressure
- 12: **Coupling size** 12 = 1/2"
- M: **M** = Pull break male; **F** = Pull break female; **P** = Push Pull female
- 08: **Thread size based on dash system** 08 = ½"
- G: **Thread form** G = BSP P
- **Blank** = Female thread; **M** = Male thread
- **Blank** = Nitrile seals
- Any other necessary information

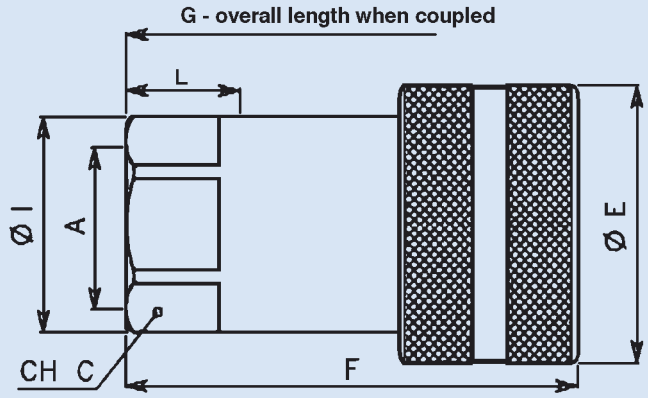
PRESSURE DROP CHARACTERISTICS



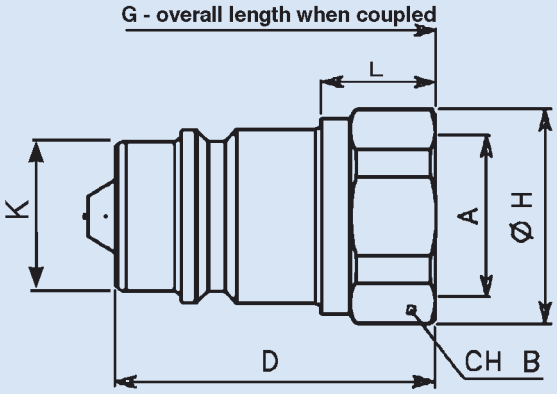
MATERIALS

Trivalent plated carbon steel body with nitrile seals and PTFE backing ring.

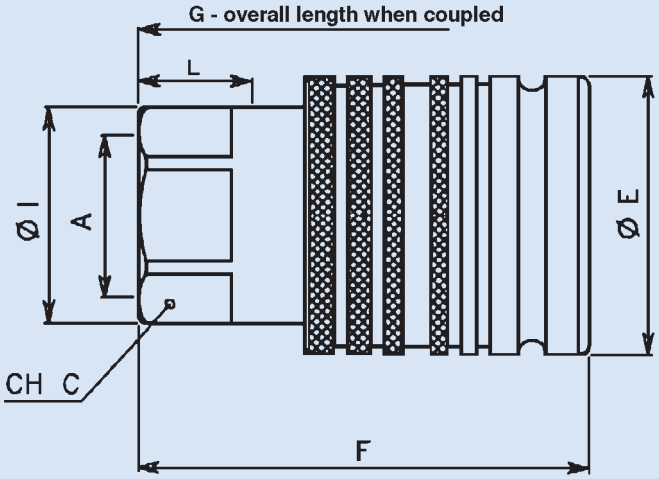
IAPC SERIES, ½" ISO.A "Connect-under-pressure"
PULL BREAK AND PUSH PULL HYDRAULIC COUPLINGS



IAPC SERIES PULL BREAK FEMALE COUPLING



IAPC SERIES MALE COUPLING



IAPC SERIES PUSH PULL FEMALE COUPLING

ACCESSORIES

Plastic caps and plugs for males and Pull Break females
Page 79

Flip top plastic caps for Push Pull females
Page 78

Parking stations for males
Page 80

For further details see the Holmbury catalogue or web site

MALE COUPLING DIMENSIONS

Type	Thread	A	B	D	G	H	K	L*	Weight (kg)
IAPC12-M-08G	1/2"	1/2"	27	44.5	85.7	29	20.5	16	0.085

* L = Thread depth

PULL BREAK FEMALE DIMENSIONS

Type	Thread	A	C	E	F	G	I	K	L*	Weight (kg)
IAPC12-F-08G	1/2"	1/2"	27	38	63.3	85.7	30	20.5	16	0.245

* L = Thread depth

PUSH PULL FEMALE DIMENSIONS

Type	Thread	A	C	E	F	G	I	K	L*	Weight (kg)
IAPC12-F-08G-PP	1/2"	1/2"	27	38	63.3	85.7	30	20.5	16	0.245

* L = Thread depth

IB SERIES

ISO.B PULL BREAK HYDRAULIC COUPLINGS

1/4" - 1" Poppet Valve Types to ISO 7241 Series B

INTRODUCTION

Holmbury IB Series, ISO.B couplings are designed to be tough, durable and of superior quality to competing ISO 7241 products. They are ideally suited to heavy industrial applications which would typically include:

- Food processing and manufacture
- Shipbuilding
- Offshore
- Machine tool/automation
- Oil refineries
- Steel mills
- Chemicals and pharmaceuticals

FEATURES

★ Positive, quick connection ensured by the snap together locking ball system.

★ When connected the male and female halves can rotate, even under pressure, thus avoiding any torsional stress in the flexible hoses.

★ Designed to withstand high pressure peaks and pulses.

★ Poppet valves have balanced springs and calibrated oil flow passages to minimise the pressure drop.

★ Poppet valve seals have shockproof protective edges.

CONSTRUCTION

Heat treated, carbon steel, Trivalent plated . Nitrile 'O' ring seals with Teflon backing rings.

OPTIONS - alternative seal materials available on request: Ethylene-Propylene or Neoprene

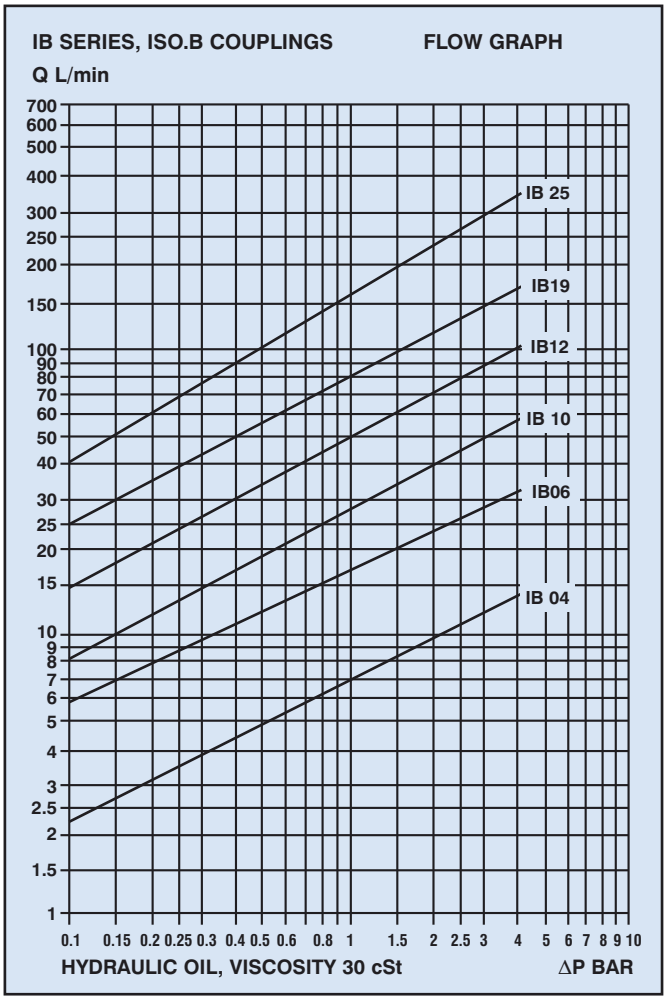
IB TESTS

Life - 1,000,000 cycles from 0 - 250 bar at a frequency of 1Hz.

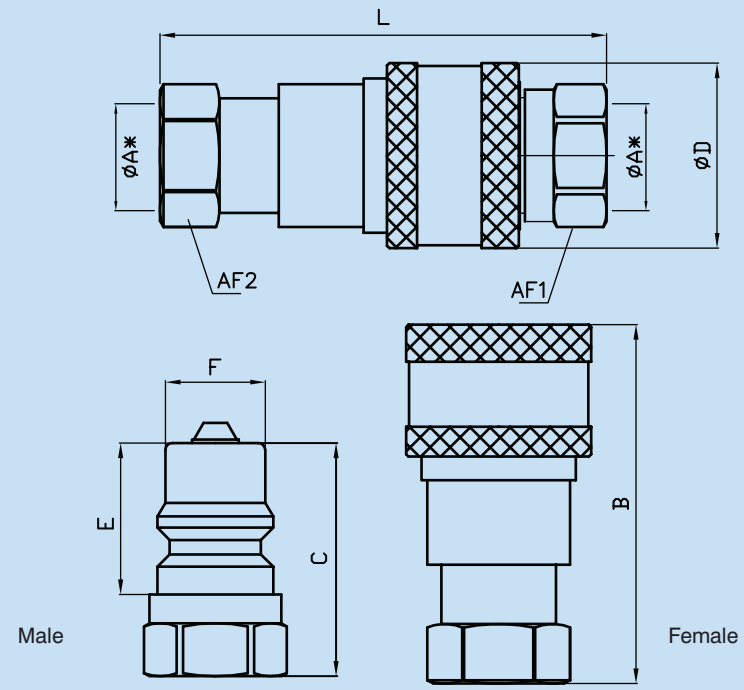
DUST CAPS

Available on request, call for details

PRESSURE DROP CHARACTERISTICS



IB SERIES COUPLINGS TO ISO.B SPECIFICATION



Type and body size	ND	Maximum operating pressure (bar)	ØA*	AF1	AF2	B	C	ØD	E	F	L	Weight (kg)
IB04	5.0	300	1/8"	14	17	48	29	24	19	10.9	59	0.10
IB06	6.3	300	1/4"	19	19	58	36	28.5	22.8	14.1	72	0.16
IB10	10	250	3/8"	24	24	65	40	35	25	19.0	81	0.28
IB12	12.5	250	1/2"	28.5	28.5	74	46.5	44.5	28	23.5	93.5	0.49
IB19	20	230	3/4"	36	36	92	56	54	36	31.4	113	0.88
IB25	25	230	1"	41	41	103	63	63.5	45	37.7	127	1.30

A*=inch size BSP or NPT.

Dimensions in mm

ORDER CODES

IB 25 – F – 16 G

IB = ISO. B coupling

Body size:
06 = 1/4" **19** = 3/4"
10 = 3/8" **25** = 1"
12 = 1/2"

M = Male coupling
F= Female coupling

Thread size based on dash system
04 = 1/4" **12** = 3/4"
06 = 3/8" **16** = 1"
08 = 1/2"

Thread form
G = BSP P **N** = NPT F

Blank = Female thread

Blank = Nitrile seals

Any other necessary information

Example: IB25-F-16G
IB Series, ISO B coupling, body size 25 with 1" BSP P female thread, nitrile seals, no special requirements.

DIN COUPLINGS
to ISO 5675

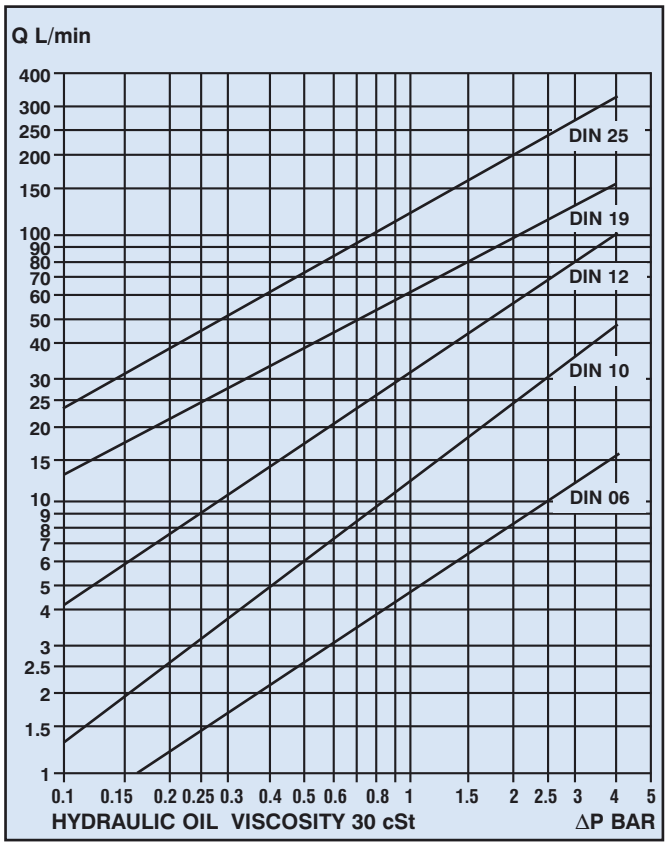
DINB – Ball valve couplings
DINV – Poppet valve couplings

INTRODUCTION
Holmbury DIN couplings are manufactured according to ISO 5675. Size DIN12 also meets the ISO 7241-A requirements. They are offered with a choice of either ball or poppet valve mechanisms for automatic flow shut-off when disconnected.
The ball valve option is primarily intended for applications where compatibility with existing equipment is essential. For new applications we recommend poppet valve couplings as the more durable option.

CONSTRUCTION
Trivalent plated carbon steel with highly stressed components carbonitrided.
Nitrile seals with Teflon PTFE backing ring.

TECHNICAL DATA
BSP thread is standard, other threads available on request.
Working temperature range, nitrile seals: –20°C to +100°C.

PRESSURE DROP CHARACTERISTICS



DUST CAPS
SEE PAGE 79

DINB ball valve couplings

DINV poppet valve couplings

ORDER CODES

DINV 25 – F – 16 G

DIN Coupling Type
DINB = ball valve
DINV = poppet valve

Body size:
04 = 1/8" **12** = 1/2"
06 = 1/4" **19** = 3/4"
10 = 3/8" **25** = 1"

M = Male coupling
F = Female coupling

Thread size based on dash system
02 = 1/8" **08** = 1/2"
04 = 1/4" **12** = 3/4"
06 = 3/8" **16** = 1"

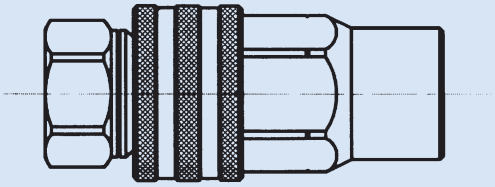
Thread form
G = BSP P

Blank = Female thread

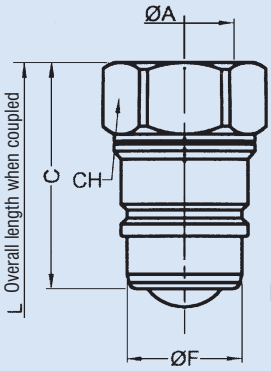
Blank = Nitrile seal

Any other information

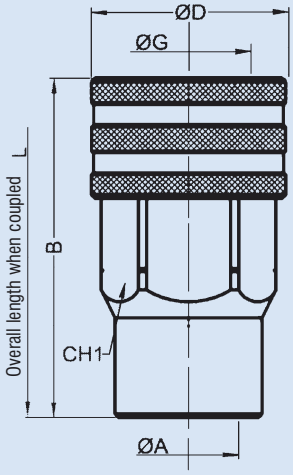
DINB ball valve couplings



COUPLED



MALE

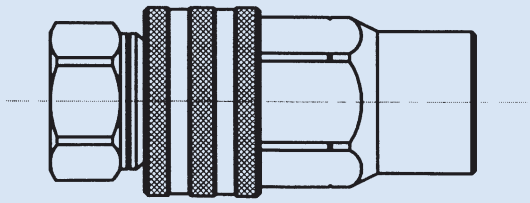


FEMALE

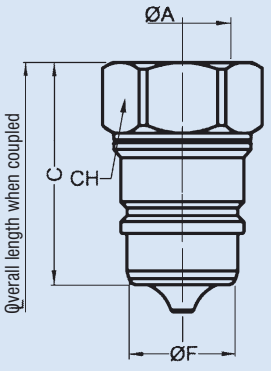
All dimensions in mm except where shown

Size	Max Working pressure (bar)	ØA	B	C	CH	CH1	ØD	ØF	ØG	L
06	350	1/4"	53.5	36	19	22	27	14.15	16.9	73
10	300	3/8"	61	40.5	24	27	34	18.95	21.6	82
12	280	1/2"	63.5	46	27	30	38	20.5	23.8	88
19	250	3/4"	85	56	36	38	48	27.95	31.1	113
25	230	1"	96.5	63	41	45	55	31.3	34.6	127

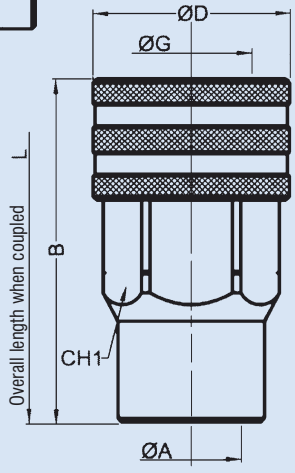
DINV poppet valve couplings



COUPLED



MALE



FEMALE

All dimensions in mm except where shown

Size	Max Working pressure (bar)	ØA	B	C	CH	CH1	ØD	ØF	ØG	L
06	350	1/4"	53.5	36	19	22	27	14.15	16.9	73
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12	280	1/2"	63.5	46	27	30	38	20.5	23.8	88
19	250	3/4"	85	56	36	38	48	27.95	31.1	113
25	230	1"	96.5	63	41	45	55	31.3	34.6	127

P SERIES

PUSH PULL FEMALE COUPLINGS TO ISO.A SPECIFICATION

INTRODUCTION

Holmbury Push Pull Female Couplings are intended for any application where the hydraulic hose could be subjected accidentally to excessive force. The design is such that when pulled, the coupling will separate automatically in order to minimise the risk of hose line rupture or coupling damage.

MALE COUPLINGS

P Series females are used with male couplings that conform to ISO 7241-1 Part A. See the Holmbury IA Series for details of these male couplings.

APPLICATIONS

The female has to be panel mounted using the sleeve; circlip grooves are provided. This allows the coupling to separate when the hose is exposed to excessive force. Typical applications include mobile plant, trailers and agricultural equipment.

MATERIALS

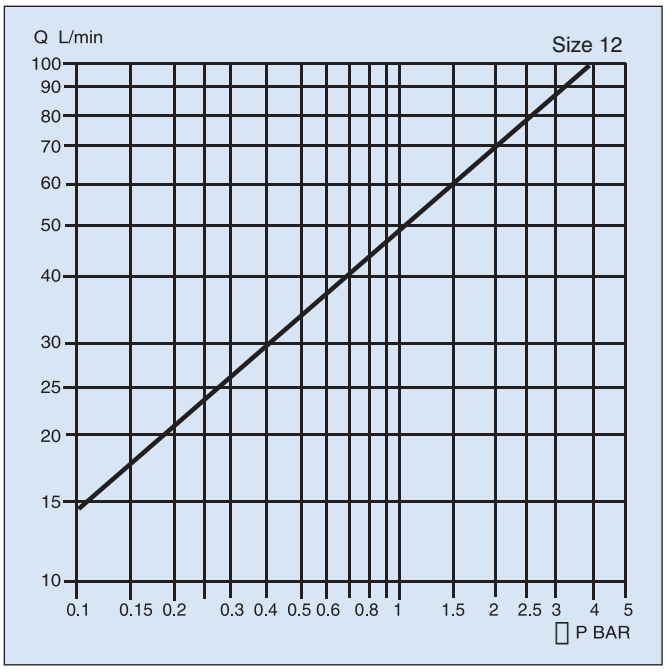
Trivalent plated carbon steel body material with nitrile seals and PTFE backing ring.

TECHNICAL DETAILS

Maximum working pressure 250 bar. Working temperature range with nitrile seals is -20°C to +100°C

DUST CAPS – PAGES 78 & 79

PRESSURE DROP CHARACTERISTICS



ORDER CODES

P 12 – F – 08 G M

P = ISO A, Push Pull

Coupling Size 12

F = Female coupling

Thread size (dash system)
- 06 = 3/8"
- 08 = 1/2"
- 10 = 5/8"
- 12 = 3/4"
- 14 = 7/8"

Thread size (metric)
18 = 18 mm 22 = 22 mm

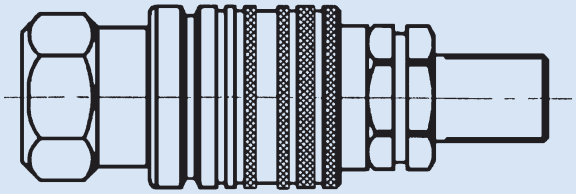
Thread Form
G = BSP P S = SAE
M = Metric

Blank = Female thread (no code required)
M = Male thread

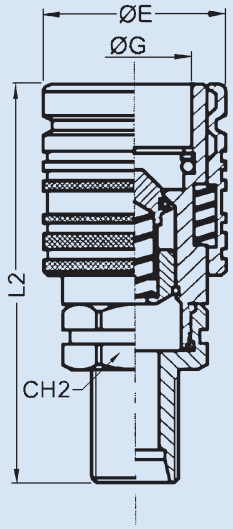
Blank = Nitrile Seals

Any other information

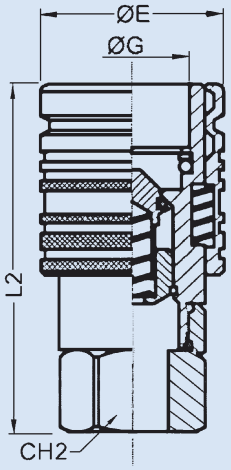
P SERIES, PUSH PULL FEMALE COUPLINGS TO ISO.A SPECIFICATION



P Series Female coupled with Holmbury IA Series Male



P Series Female
with male thread



P Series Female
with female thread

Female coupling with male thread

Order code	Thread Size	ØE	ØG	CH2	L2
P12-F-06GM	3/8" BSP	38	23.9	27	
P12-F-08GM	1/2" BSP	38	23.9	27	
P12-F-10GM	5/8" BSP	38	23.9	27	
P12-F-18MM+NUT	18 x 1.5	38	23.9	27	84
P12-F-22MM+NUT	22 x 1.5	38	23.9	27	84
P12-F-22MMS	22 x 1.5 short	38	23.9	27	72

Other threads available on request

Female coupling with female thread

Order code	Thread Size	ØE	ØG	CH2	L2
P12-F-08G	1/2" BSP	38	23.9	27	63.5
P12-F-18M	18 x 1.5	38	23.9	30	73
P12-F-12S	3/4" SAE	-	-	-	-
P12-F-22M	22 x 1.5	38	23.9	30	73
P12-F-14UF	7/8"-14 UNF	38	23.9	30	74
P12-F-12UF	3/4"-16 UNF	38	23.9	30	74
P12-F-12UFL	3/4"-16 UNF L	38	23.9	27	83.2

Other threads available on request

MACH CONNECTORS

SIZES 2, 4 & 7

INTRODUCTION

Holmbury is now marketing the well proven range of Mach connectors with a choice of ISO A poppet couplings or flat face couplings.

The Mach reference number, 2, 4 and 7, refers to the number of hydraulic hoses that are connected simultaneously. Mach 4 and 7 connectors can also incorporate a 6 contact electrical connector rated at 25V - 60V and up to 10A.

Female couplings are housed in the Box.
Male couplings are mounted in the Plug.

APPLICATIONS

Tractors, combined harvesters, front loaders, snow ploughs, mini excavators, cranes and general industrial machinery.

ADVANTAGES

- ★ Fast, easy connection of multiple hoses.
- ★ Connection is possible even when the circuit has residual pressure. Please refer to our Sales Department for further details.
- ★ Prevents operators making incorrect hose connections.
- ★ Compact design and sturdy construction.
- ★ Female couplings are protected from dust and damage within a strong box equipped with a self-closing cover.

OPERATION

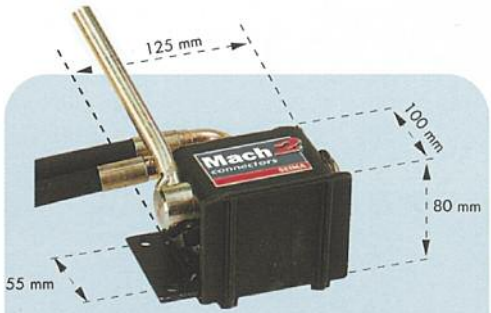
This sequence shows the connection of a Mach 2 connector. The same principle applies to all sizes.

ENGAGE

LOCK

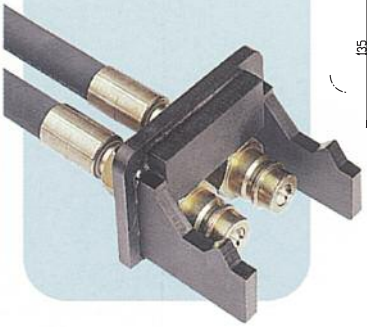
CONNECTED

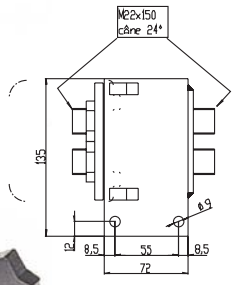
Mach 2 Dimensions

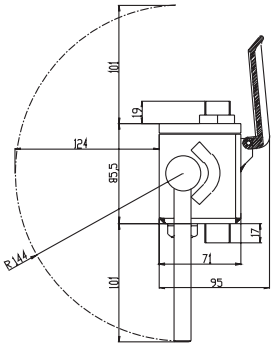


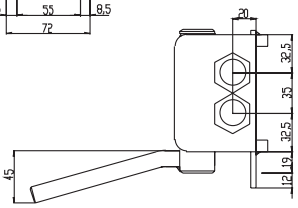
The **Box** contains the locking lever and two female couplings.

The **Plug** contains the two male couplings.

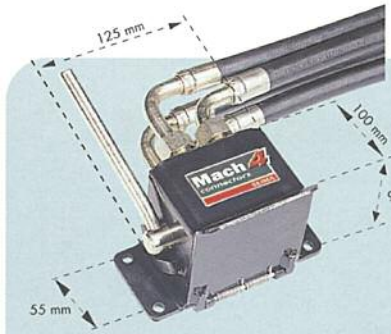






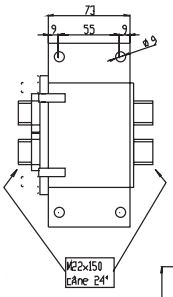


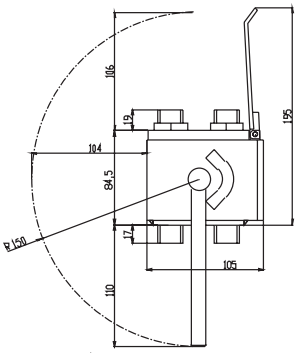
Mach 4 Dimensions

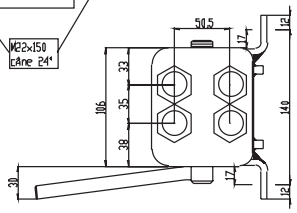


The **Box** contains the locking lever and four female couplings.

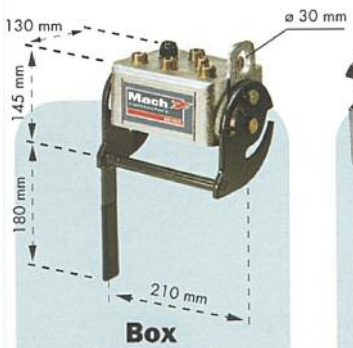
The **Plug** contains the four male couplings.





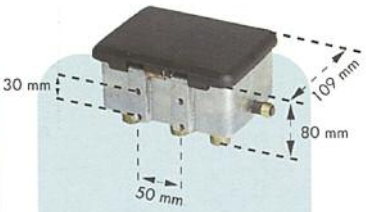


Mach 7 Dimensions

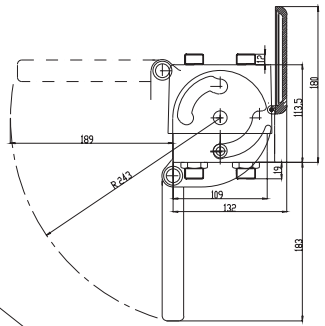


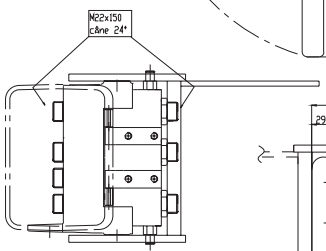
Box
Upper part
hold the female couplings and the locking system.

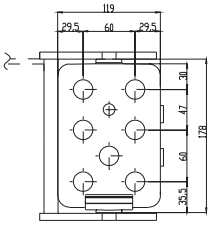
Plug
Lower part
hold the male couplings protected by an automatically closing tap.



Fixing the Plug :
use 4 screws M8 x 1,25 mm







MK24 SERIES

COUPLING CONNECTOR

INTRODUCTION

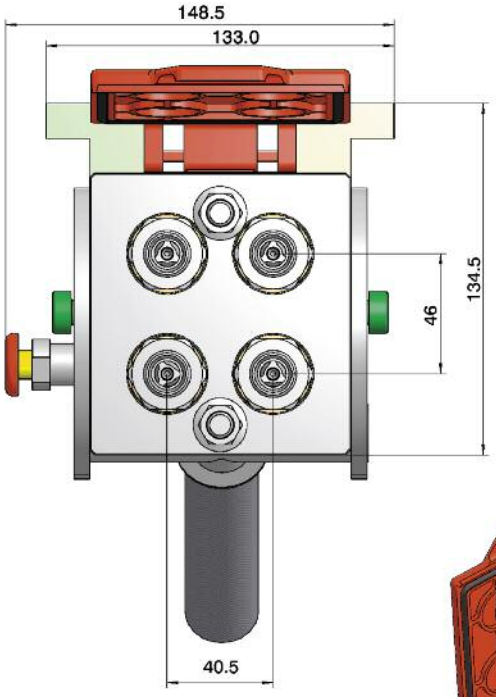
Voswinkel Types MK 24 and 74 multi coupling connectors are designed to connect up to four, size 10, flat face couplings simultaneously. Connection is made manually, as shown here, or by electrical actuation.

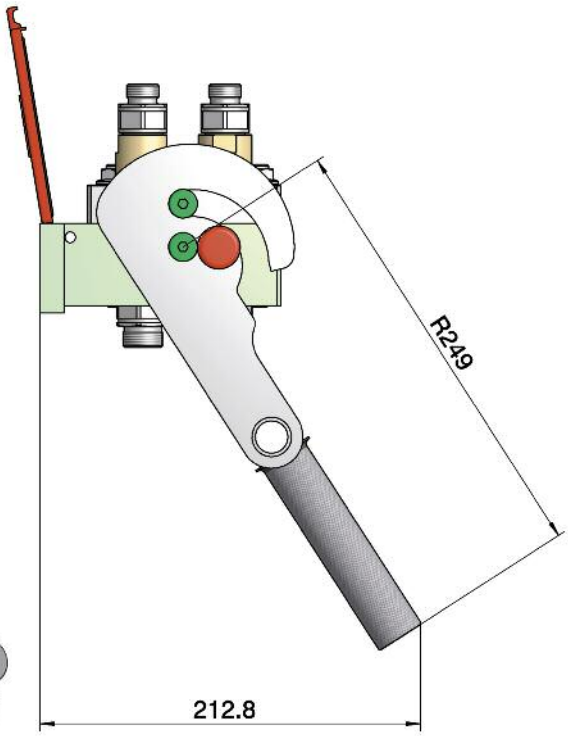
APPLICATIONS

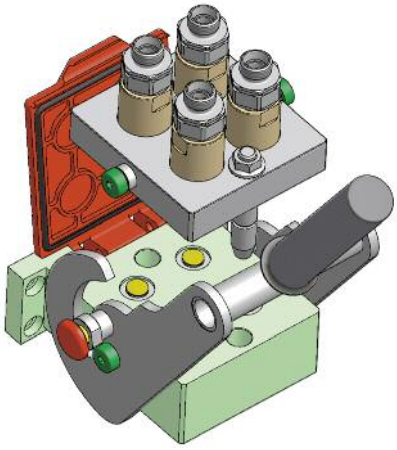
Agricultural, municipal and commercial vehicles and construction plant. All types of industrial equipment where multiple hose connections need to be made simultaneously.

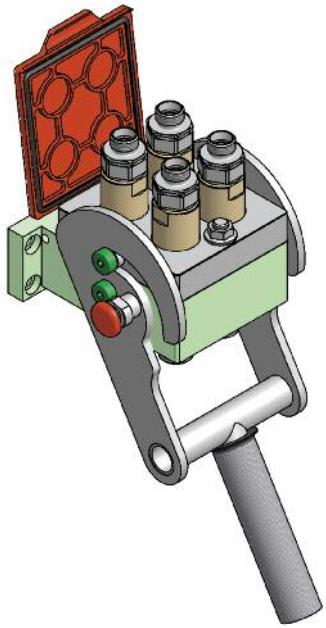
ADVANTAGES

- ★ Rapid connection and disconnection of hose lines.
- ★ Clean connections easily attained by using dust covers and wiping the easily accessible flat face couplings prior to connection.
- ★ Couplings do not require locking balls, so Brinelling in high pressure pulse applications is eliminated.
- ★ Prevents incorrect connection of hoses.







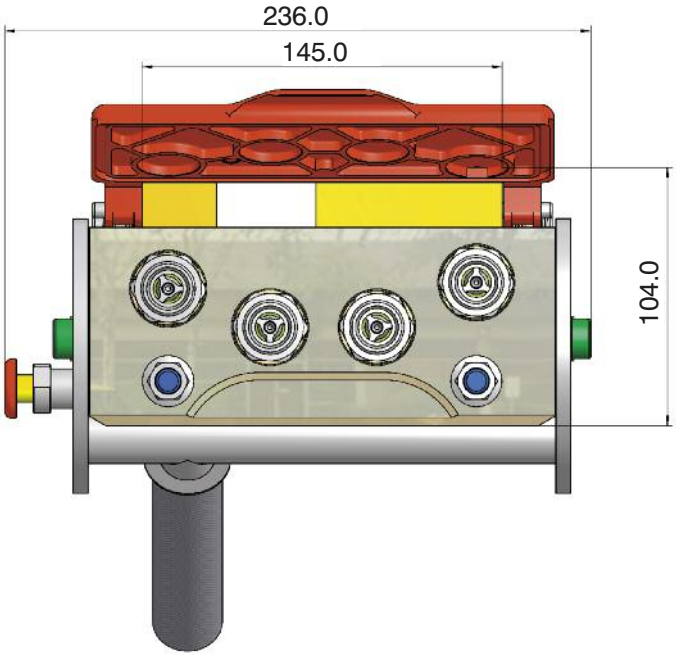


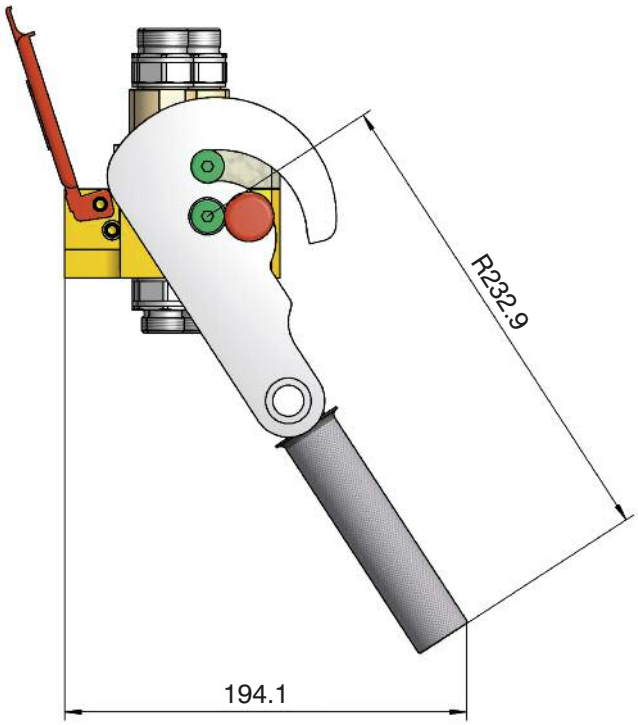
VOSWINKEL
High-Technology · Made in Germany

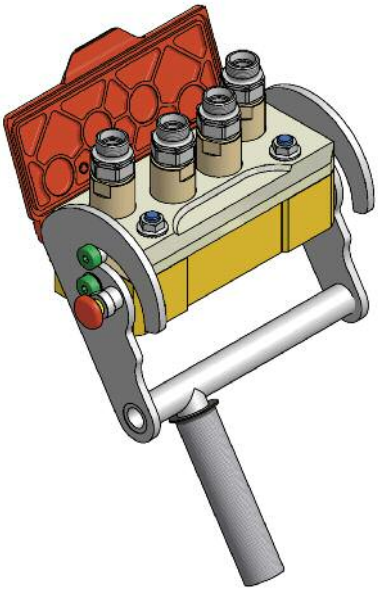
Connector Type	Thread	Tube	Fixed half	Mobile half	Multi coupling complete
	Port A	Ø D2	Part number	Part number	Part number
Male stud type W bore (24°) DIN 3861	M16 x 1.5	10L	MK24-1-L1016	MK24-2-L1016	MK24-8-L1016
	M18 x 1.5	12L	MK24-1-L1218	MK24-2-L1218	MK24-8-L1218
	M22 x 1.5	15L	MK24-1-L1522	MK24-2-L1522	MK24-8-L1522
	M26 x 1.5	18L	MK24-1-L1826	MK24-2-L1826	MK24-8-L1826
Female thread DIN3852	G 3/8"		MK24-1-IGF06	MK24-2-IGF06	MK24-8-IGF06
	G 1/2"		MK24-1-IGF08	MK24-2-IGF08	MK24-8-IGF08

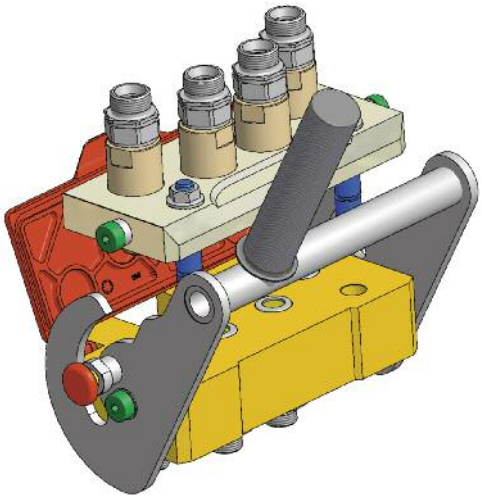
MK74 SERIES

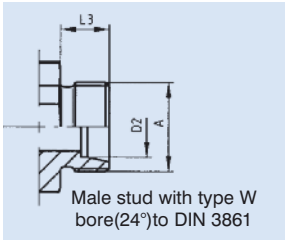
MULTI COUPLING CONNECTOR



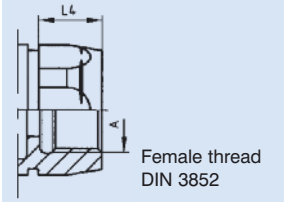








Male stud with type W bore(24°)to DIN 3861



Female thread DIN 3852

Connector Type	Thread	Tube	Fixed half	Mobile half	Multi coupling complete
	Port A	Ø D2	Part number	Part number	Part number
Male stud type W bore (24°) DIN 3861	M16 x 1.5	10L	MK74-1-L1016	MK74-2-L1016	MK74-8-L1016
	M18 x 1.5	12L	MK74-1-L1218	MK74-2-L1218	MK74-8-L1218
	M22 x 1.5	15L	MK74-1-L1522	MK74-2-L1522	MK74-8-L1522
	M26 x 1.5	18L	MK74-1-L1826	MK74-2-L1826	MK74-8-L1826
Female thread DIN3852	G 3/8"		MK74-1-IGF06	MK74-2-IGF06	MK74-8-IGF06
	G 1/2"		MK74-1-IGF08	MK74-2-IGF08	MK74-8-IGF08

PATTERN CHANGER

SPOOL VALVE

INTRODUCTION

Holmbury's new Pattern Changer Spool Valve is designed to switch joystick functionality on equipment such as excavators. When operators move from one machine to another, they can set-up the joystick controls to function in with which they are familiar. This reduces re-training time, helps avoid accidents due to unfamiliar controls and avoids the need to switch hoses.

The Pattern Changer is hand operated and has 4 inlet ports and 4 outlet ports. It provides 8-way, 2 position control of pilot signals.

FEATURES

- ★ Drastically reduces re-training time when operators switch between machines made by different manufacturers. Simply change to the functionality with which they are familiar.
- ★ Compact
- ★ Simple, reliable design - no electronics
- ★ Quick and easy to install
- ★ Detent retain the selected handle position

OPERATION

Turn the handle 90° to change the joystick pattern. Detents lock the handle in position.

MATERIALS

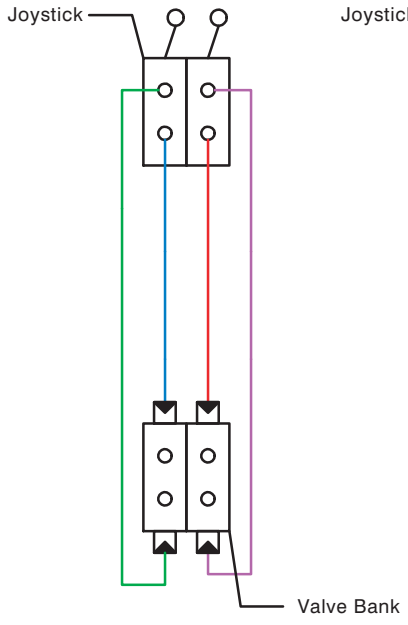
Zinc plated steel with nitrile seals.

PRESSURE RATING

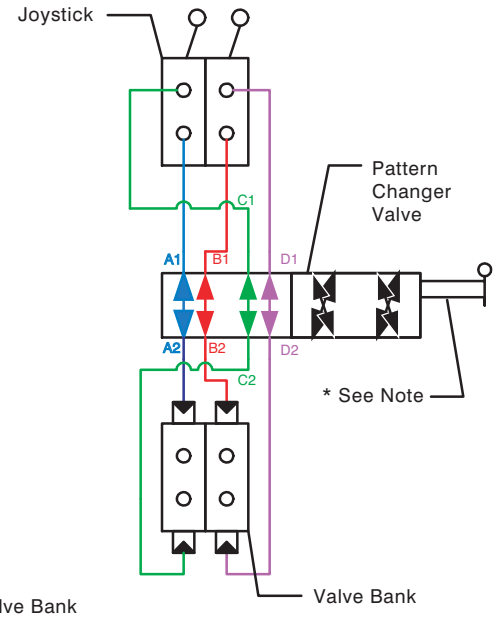
207 bar

SCHEMATIC

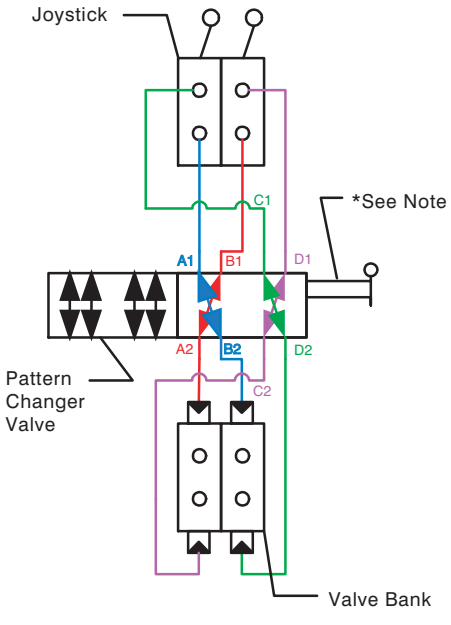
Normal Operation Before Valve Installation



Normal Operation After Valve Installation

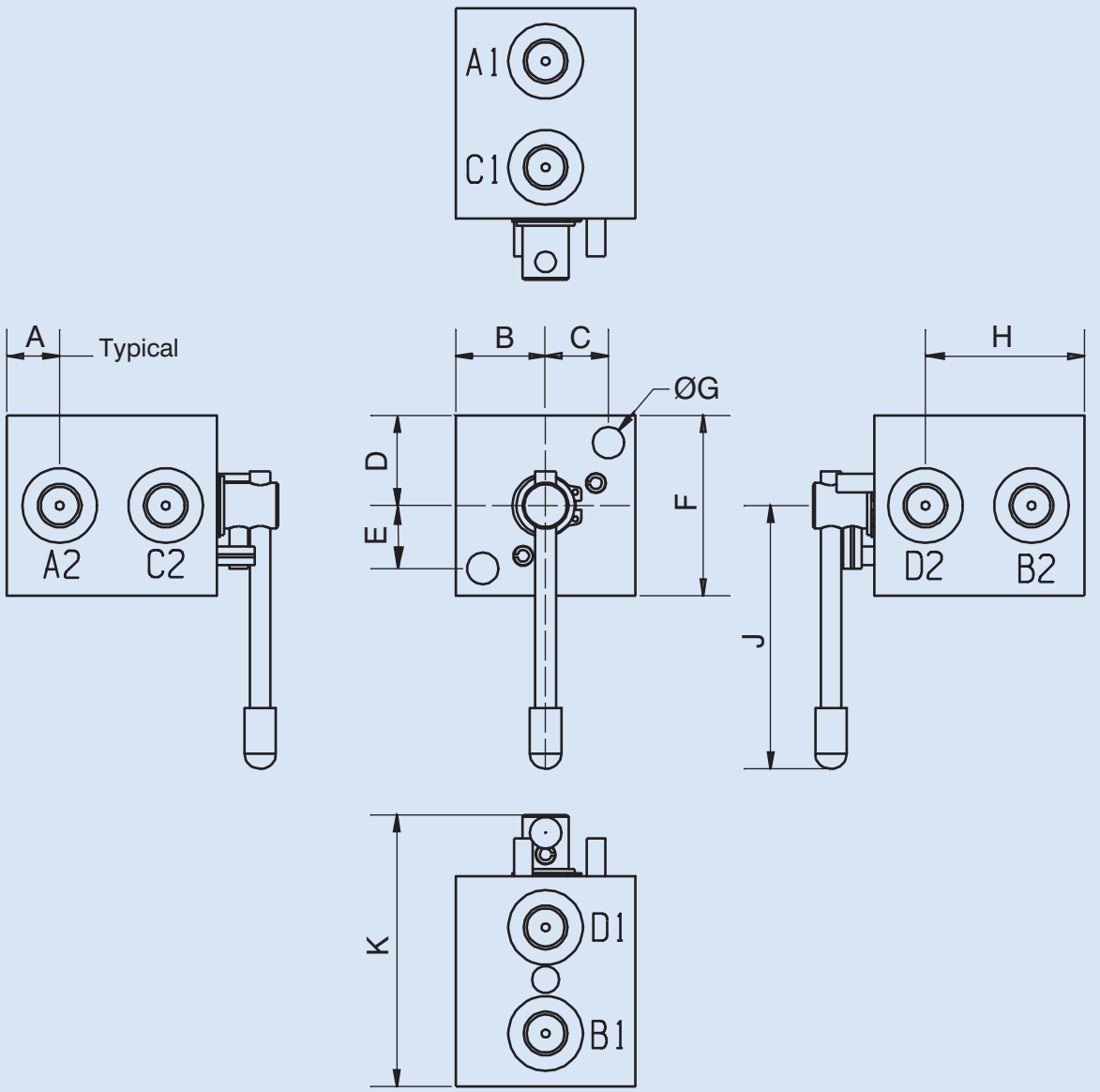


Alternative Operation With Valve Shifted



* Rotate valve handle 90 degrees to change joystick pattern

PATTERN CHANGER, SPOOL VALVE



Type and size	PORTS	A	B	C	D	E	F	G	H	J
OCUKAC2318	7/16"-20	14.9	25.4	17.78	25.4	17.78	50.8	8.89	44.96	74.42

ORDER CODE

	OCUKAC2318
Pattern changer spool valve	

BVC-2 SERIES

2 WAY HIGH PRESSURE BALL VALVES

INTRODUCTION

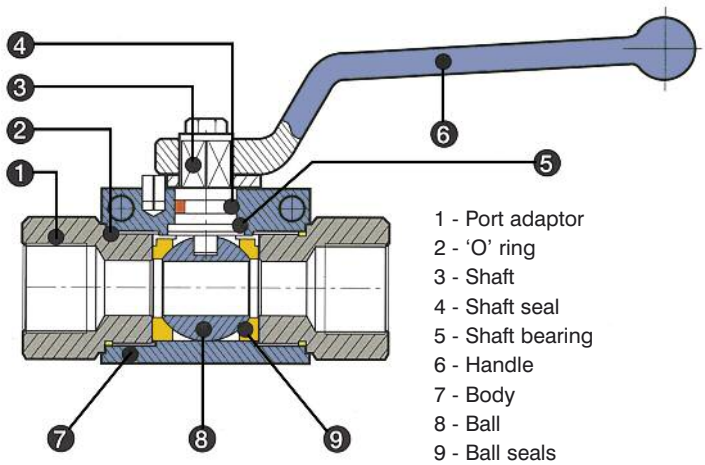
Holmbury BVC2 ball valves are designed to suit a wide range of applications including mobile plant and industrial equipment.
These valves should not be used as flow control valves and should therefore always be fully open or fully closed.

FEATURES

- ★ Full bore valves provide an unrestricted flow path for negligible pressure drop.
- ★ Floating ball on pre-compressed seals minimises wear and provides an excellent seal at positive and negative pressures.
- ★ Operating temperatures from -20˚C to +100˚C.
- ★ Open to close in 1/4 turn (90˚).
- ★ Cranked handles are incorporated to provide good clearance for the operators hands.

MATERIALS

- Body and port adaptors are Trivalent plated steel (38SMn PB 10).
- Handle - steel forging, Trivalent plated.
- Ball - carbon steel.
- Ball seals - DELRIN (polyacetalic resin)
- Shaft seal - nitrile



1 - Port adaptor
2 - 'O' ring
3 - Shaft
4 - Shaft seal
5 - Shaft bearing
6 - Handle
7 - Body
8 - Ball
9 - Ball seals

ORDER CODES

BVC–2 – 06 – 04 G –1 –1

Ball valve
2 way

Body Size:

06	25
10	32
12	40
19	50

Thread Size (dash system)

04 = 1/4"	16 = 1"
06 = 3/8"	20 = 1¼"
08 = 1/2"	24 = 1½"
12 = 3/4"	32 = 2"

Thread Form:
G = BSP P, N = NPT, S = SAE

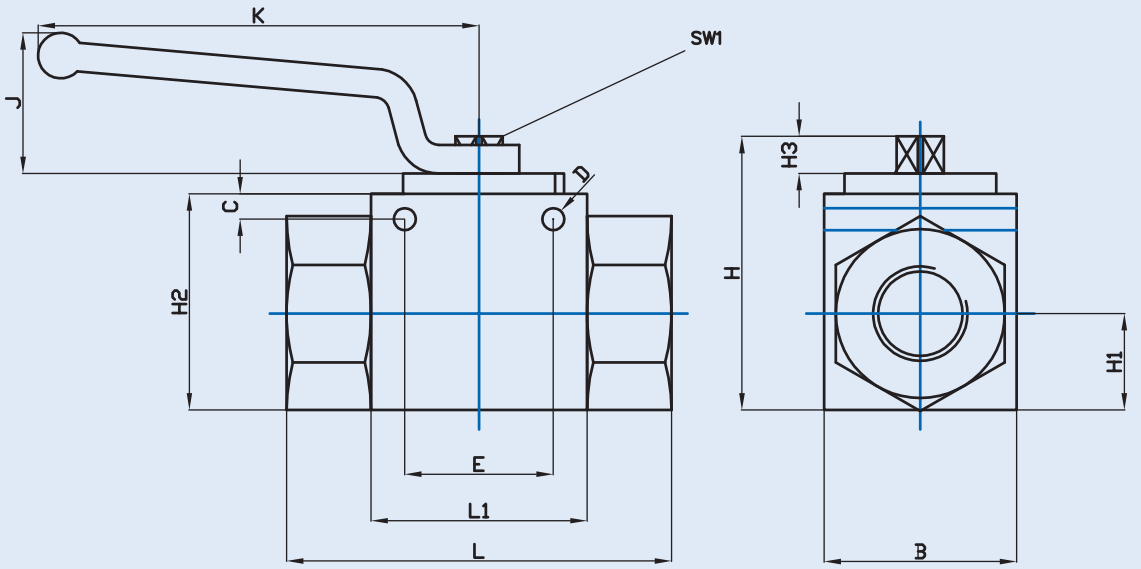
Ball Seals
1 = DELRIN, 2 = PTFE

Shaft seals
1 = Nitrile, 2 = Viton

Any other necessary information

Example: BVC-2-06-04G-1-1
Ball valve, 2 way, body size 06, 1/4" BSP port thread, DELRIN ball seals and Nitrile shaft seals.

2 WAY BALL VALVES



Code	ND	Max W.P Bar	L	L1	B	H	H1	H2	H3	E	D	C	SW1	K	J
BVC-2-06-04G-1-1	6	500	69	37	28	44.5	13	32	8	26	5	4.5	9	107	40
BVC-2-10-06G-1-1	10	500	72	42	35	52.5	17	40	8	32	5	4.5	9	107	40
BVC-2-12-08G-1-1	12	500	83	48	35	52.5	17	40	8	37.5	4.8	4.5	9	107	40
BVC-2-19-12G-1-1	20	500	95	60	48	75	24	57	12	45	6.5	4.5	14	168	61
BVC-2-25-16G-1-1	25	500	113	65	57	82	28.5	64	12	55	6	4.5	14	168	61
BVC-2-32-20G-1-1	32	350	110	84	75	104.5	37.5	84	14	55	6	4.5	17	221	75
BVC-2-40-24G-1-1	40	350	130	91	85	115.5	42.5	95	14	Not applicable*			17	221	75
BVC-2-50-32G-1-1	50	350	140	100	105	133	52.5	112.5	14	Not applicable*			17	221	75

Dimensions in mm

*Mounting holes not provided

All dimensions shown are for guidance only, if critical contact Holmbury Technical Department

BVC-3 SERIES

3 WAY HIGH PRESSURE BALL VALVES

INTRODUCTION

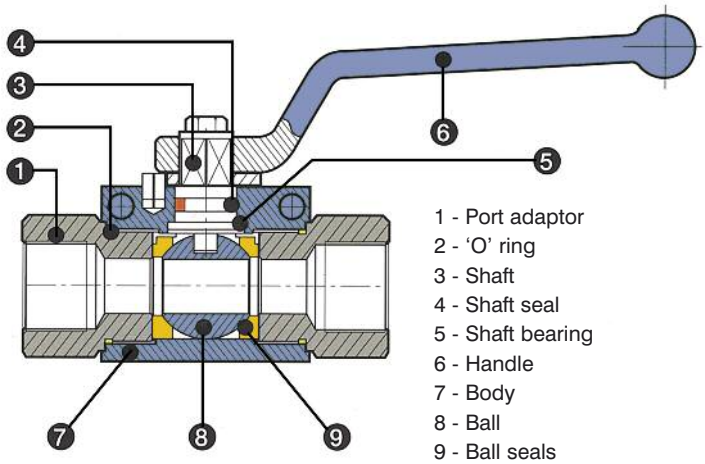
Holmbury BVC-3 ball valves are designed to suit a wide range of applications including mobile plant and industrial equipment.
These valves should not be used as flow control valves and should therefore always be fully open or fully closed.

FEATURES

- ★ Full bore valves provide an unrestricted flow path for negligible pressure drop.
- ★ Floating ball on pre-compressed seals minimises wear and provides an excellent seal at positive and negative pressures.
- ★ Operating temperatures from -20˚C to +100˚C.
- ★ Open to close in 1/4 turn (90˚).
- ★ Cranked handles are incorporated to provide good clearance for the operators hands.

MATERIALS

- Body and port adaptor are Trivalent plated steel (38SMn PB 10).
- Handle - steel forging, Trivalent plated.
- Ball - carbon steel.
- Ball seals - DELRIN (polyacetalic resin)
- Shaft seal - nitrile



1 - Port adaptor
2 - 'O' ring
3 - Shaft
4 - Shaft seal
5 - Shaft bearing
6 - Handle
7 - Body
8 - Ball
9 - Ball seals

ORDER CODES

BVC–3 – 06 – 04 G –L –1 –1

Ball valve
3 way

Body Size:

06	25
10	32
12	40
19	50

Thread Size (dash system)

04 = 1/4"	16 = 1"
06 = 3/8"	20 = 1¼"
08 = 1/2"	24 = 1½"
12 = 3/4"	32 = 2"

Thread Form:
G = BSP P, N = NPT, S = SAE

Port options:
L = L Ports, T = T Ports

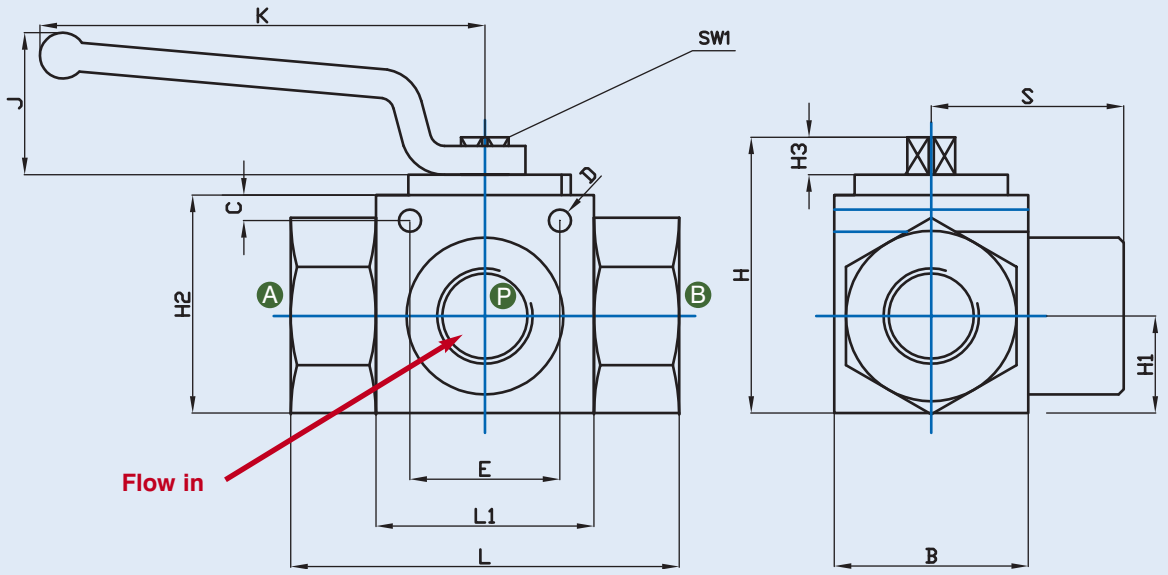
Ball Seals
1 = DELRIN, 2 = PTFE

Shaft seals
1 = Nitrile, 2 = Viton

Any other necessary information

Example: BVC-3-06-04G-L-1-1
Ball valve, 3 way, body size 06, 1/4" BSP port thread, 'L' port flow path, DELRIN ball seals and Nitrile shaft seals.

3 WAY BALL VALVES



Code	ND	Max W.P Bar	L	L1	B	H	H1	H2	H3	E	D	C	SW1	S	K	J
BVC-3-06-04G-L-1-1	6	500	69	37	28	44.5	13	32	8	26	5	4.5	9	35	135	40
BVC-3-10-06G-L-1-1	10	500	72	42	35	52.5	17	40	8	32	5	6.5	9	36	135	40
BVC-3-12-08G-L-1-1	13	500	83	48	35	52.5	17	40	8	37.5	4.8	6.5	9	42	135	40
BVC-3-19-12G-L-1-1	20	500	95	60	48	75	24	57	12	45	6.5	6.5	14	49	181	61
BVC-3-25-16G-L-1-1	25	500	113	65	57	82	28.5	64	12	55	6	6.7	14	56.5	181	61
BVC-3-32-20G-L-1-1	32	350	110	84	75	104.5	37.5	84	14	55	6	6.7	17	55	221	75
BVC-3-40-24G-L-1-1*	40	350	130	91	85	115.5	42.5	95	14	Not applicable			17	65	221	75
BVC-3-50-32G-L-1-1*	50	350	140	100	105	133	52.5	112.5	14	Not applicable			17	70	221	75

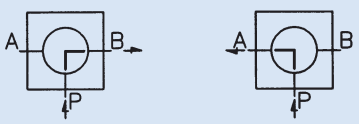
Dimensions in mm

All dimensions shown are for guidance only, if critical contact Holmbury Technical Department

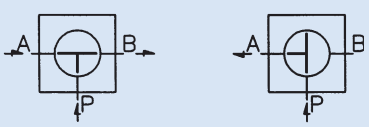
* Mounting holes not provided with valve sizes 40 and 50

PORT OPTIONS

L PORT



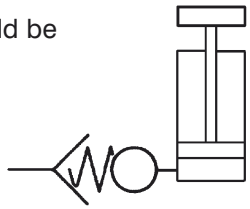
T PORT



NOTE: 'L' ported valves are standard. 'T' ported valves available on request

VPC SERIES
HOSE BURST VALVES

INTRODUCTION
Holmbury Hose Burst Valves are used to prevent the uncontrolled descent of a load in the event of a hose failure. They should be screwed directly into the lifting device (normally a cylinder), or into an in-line manifold that should be mounted as close as possible to the lifting device.



A flow regulator valve, set at least 50% higher than the regulated flow, should be fitted downstream from the hose burst valve at the end of the flexible hose.

OPERATION
The valve disk is held apart from the flow block with a spring fitted over the centre stem of the valve. Apart from a small pressure drop, fluid can flow freely in the direction from Z to Z1. When fluid is flowing in the reverse direction, from Z1 to Z, if the flow rate exceeds the valve setting (see dimension T and adjustment graph), the valve disk will snap shut and close the ports of the flow block.

APPLICATIONS
Lifting equipment and machinery where it is necessary to safeguard against excessive flow rates.

MATERIALS
Trivalent plated carbon steel body.

TECHNICAL DETAILS
Maximum working pressure for all sizes is 350 bar.

ORDER CODES

VPC 19 – 12 G

Hose burst valve

Body Size:
06, 10, 12, 19, 25

Thread Size (dash system)	Body Size
04 = 1/4"	06
06 = 3/8"	10
08 = 1/2"	12
12 = 3/4"	19
16 = 1"	25

Body size is shown for information only and should not be included in this section of the order code

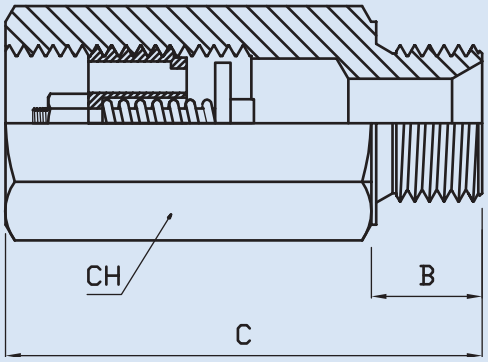
Thread Form (male & female ends)
G = BSP P

Seals
No symbol = Nitrile

Any other necessary information

Example:
VPC19-12G is a hose burst valve with body size 19 and 3/4" BSP parallel thread on both the male and female threaded ends. Nitrile seals will be fitted.

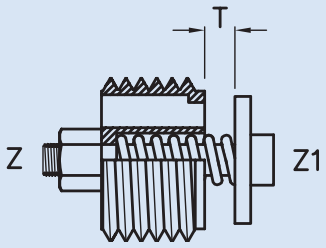
VPC SERIES, HOSE BURST VALVES

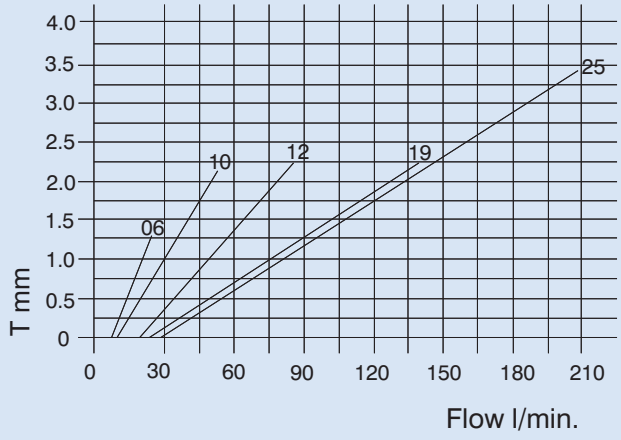


Part Number	Body Size	Nominal Diameter	ØA	C	CH	B	Maximum working pressure (bar)
VPC06-04G	06	04	1/4"	50	19	12	350
VPC10-06G	10	10	3/8"	58	22	12	350
VPC12-08G	12	12	1/2"	70	27	14	350
VPC19-12G	19	19	3/4"	78	32	16	350
VPC25-16G	25	25	1"	92	46	18	350

Other threads and banjo connections available on request

REVERSE FLOW ADJUSTMENT





CV SERIES

CHECK VALVES

INTRODUCTION

One-way valve for in-line use.
Suitable for any type of hydraulic system using liquids that are not highly viscous. The standard types are in Trivalent plated carbon steel and are therefore especially suitable for non-corrosive mineral based oils and liquids.

FEATURES

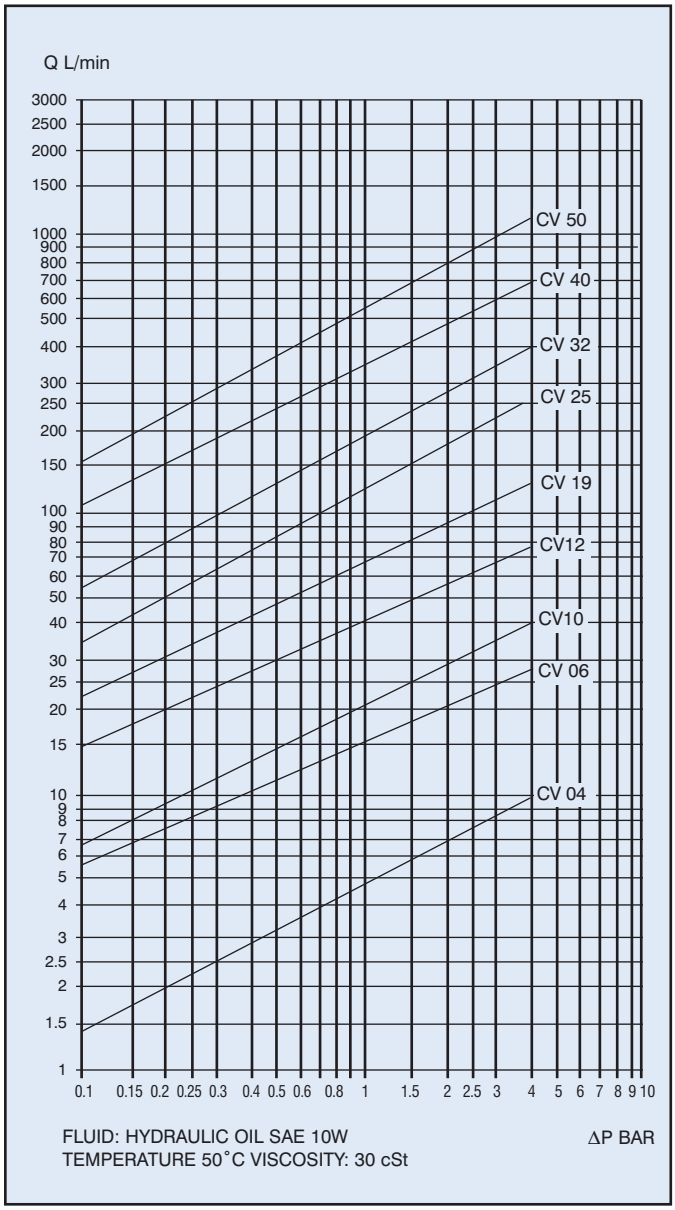
Standard types:

- ★ Good pressure / flow characteristics, see graphs.
- ★ Valve body in Trivalent plated carbon steel.
- ★ Piston in carbon steel.
- ★ Internal spring in silicon steel - stabilized.
- ★ Cracking points 0.35 bar and 4.5 bar are standard, other values on request.

ALTERNATIVE USES

As a pressure sequence valve by changing the internal spring to an appropriate 'cracking point' value. For flow restrictor check valves a central bleed hole can be provided, sized to customer requirements.

PRESSURE DROP CHARACTERISTICS



ORDER CODES

CV 06 – 04 G – 04 G 0.35

CV
Check Valve

Body Size
04 = 1/8" 25 = 1"
06 = 1/4" 32 = 1¼"
10 = 3/8" 40 = 1½"
12 = 1/2" 50 = 2"
19 = 3/4"

Inlet thread size
(dash system)
02 = 1/8" 16 = 1"
04 = 1/4" 20 = 1¼"
06 = 3/8" 24 = 1½"
08 = 1/2" 32 = 2"
12 = 3/4"

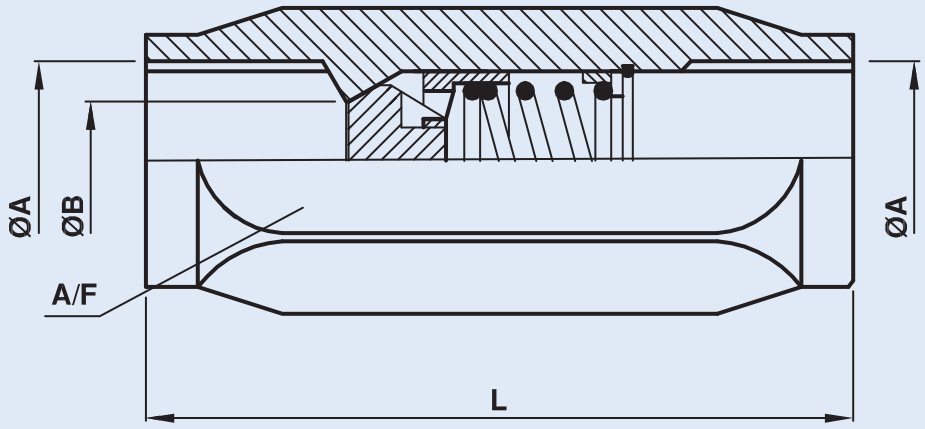
Inlet thread form
G = BSP P
N = NPT
S = SAE

Cracking pressure
0.35 bar
4.5 bar

Outlet thread form
G = BSP P
N = NPT
S = SAE

Outlet thread size
(dash system)
02 = 1/8"
04 = 1/4"
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"
20 = 1¼"
24 = 1½"
32 = 2"

CV SERIES, CHECK VALVES



DIMENSIONS AND PRESSURE RATINGS

Body Size	Code	Maximum working pressure (bar)	ØA*	ØB	AF	L	Weight kg
04	CV04	400	1/4"	7	19	50	0.09
06	CV06	400	3/8"	10	24	60	0.16
12	CV12	350	1/2"	11	27	65	0.28
19	CV19	350	3/4"	17	34	75	0.35
25	CV25	350	1"	21	41	93	0.58
32	CV32	250	1¼"	29	50	110	0.96
40	CV40	250	1½"	34	55	112	1.02
50	CV50	250	2"				

* BSP, NPT and SAE are standard. Other thread forms available on request.
Dimensions in mm *(except A).*
All dimensions shown are for guidance only, if critical contact Holmbury Technical Department

In-line types GGIL

INTRODUCTION

Holmbury presents a new addition to its range, Rotary Couplings. Produced in both in-line and 90° configurations, these items are normally available from stock for rapid despatch.

APPLICATIONS

Holmbury Rotary Couplings are used to protect hydraulic lines that are subjected to torsional forces or rotational motion.

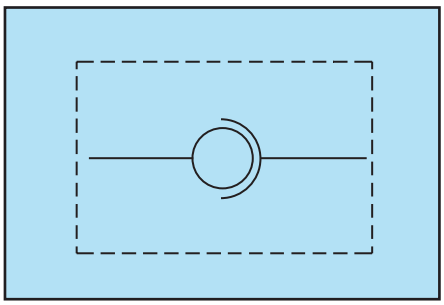
CONSTRUCTION

The spindle is carried on a roller bearing and has a low friction shaft seal that can rotate at maximum pressure with low torque.

MATERIALS

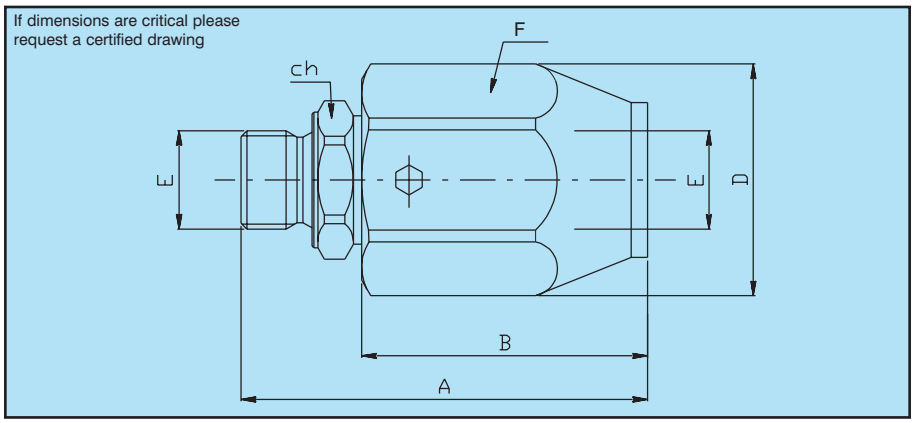
Trivalent plated, hardened steel body. Choice of BSP, NPT or SAE port threads.

OPTIONAL SPECIFICATION AVAILABLE TO ORDER:
Chrome plated body
Metric thread
Viton seals



RATINGS

Size		01	02	03	04	05	06	07	09
Max Flow	l/min	25	45	80	120	150	200	250	300
Max Pressure	bar	400	400	360	310	280	250	210	180
Max Rotary Speed	rev/min	500	400	370	280	230	200	170	140



ORDER CODES

	GGIL	03	B
In-line rotary coupling			
Size - from 01 to 09 see table opposite			
Thread form B = BSP N = NPT S = SAE			

Example: GGIL 03 B
In-line Rotary Coupling, 1/2" BSP ports.

DIMENSIONS

Size	A	B	D	E BSP	E NPT	E SAE (UNF THD)	F	CH	W Weight kg
01	62	42	33	1/4"	1/4"		CH 30	19	0.21
02	65	44	37	3/8"	3/8"	1/2" (3/4-16)	CH 34	24	0.27
03	74	50	40	1/2"	1/2"	5/8" (7/8-14)	CH 36	27	0.33
04	80	50	49	3/4"	3/4"	3/4" (1 1/16-12)	CH 45	34	0.54
05	90	57	60	1"	1"	1" (1 5/16-12)	Ø 60	41	1.03
06	98	63	60	1¼"	1¼"	1¼" (1⅝-12)	Ø 60	50	1.14
07	108	70	70	1½"	1½"	1½" (1⅞-12)	Ø 70	55	1.68
09	115	76	85	2"	2"		Ø 85	65	2.52

90° types GG90

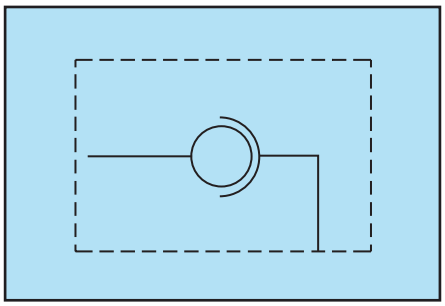
CONSTRUCTION

The spindle is carried on a roller bearing and has a low friction shaft seal that can rotate at maximum pressure with low torque.

MATERIALS

Trivalent plated, hardened steel body. Choice of BSP, NPT or SAE port threads.

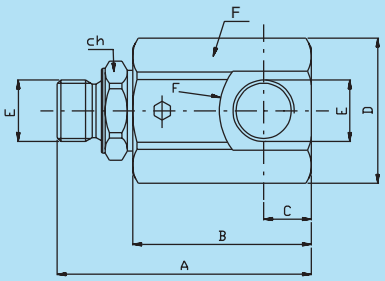
OPTIONAL SPECIFICATION AVAILABLE TO ORDER:
Chrome plated body
Metric thread
Viton seals



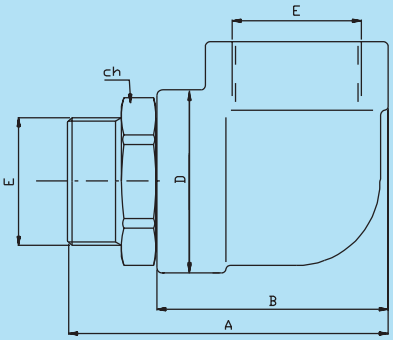
RATINGS

Size		01	02	03	04	05	06	07	09
Max Flow	l/min	25	45	80	120	150	200	250	300
Max Pressure	bar	400	400	360	310	280	250	210	180
Max Rotary Speed	rev/min	500	400	370	280	230	200	170	140

If dimensions are critical please request a certified drawing



Dimensions for sizes 01 - 05



Dimensions for sizes 06, 07 and 09

ORDER CODES

	GG90	06	B
90° rotary coupling			
Size - from 01 to 09 see table opposite			
Thread form B = BSP N = NPT S = SAE			

Example: GG90 06 B
90° Rotary Coupling, 1¼" BSP ports.

DIMENSIONS

Size	A	B	C	D	E BSP	E NPT	E SAE (UNF THD)	F	CH	W Weight kg
01	71	50	11	33	1/4"	1/4		CH 30	19	0.21
02	77	56	15	38	3/8"	3/8	1/2" (3/4-16)	CH 34	24	0.27
03	86	63	17	43	1/2"	1/2	5/8" (7/8-14)	CH 38	27	0.33
04	100	70	20	56	3/4"	3/4	3/4" (1 1/16-12)	CH 50	34	0.54
05	113		23	60	1"	1	1" (1 5/16-12)	Ø 60	41	1.03
06	118	83	32	63	1¼"	1¼"	1¼" (1⅝-12)		50	1.74
07	138	100	38	79	1½"	1½"	1½" (1⅞-12)		55	3.00
09	152	110	43	85	2"	2			65	3.76

HSS SERIES

STAINLESS STEEL FLAT FACE COUPLINGS

INTRODUCTION

HSS Series couplings have been designed for applications involving the transmission of corrosive fluids and/or operation in corrosive environments. Dimensionally, the couplings conform to ISO 16028.

APPLICATIONS

Holmbury HSS Series Stainless Steel Couplings have a high resistance to corrosion and are suitable for use with many fluids which include: acids, gas, and demineralized water. They are the ideal choice for many industries such as marine, food, gas, chemical and pharmaceutical.

ADVANTAGES

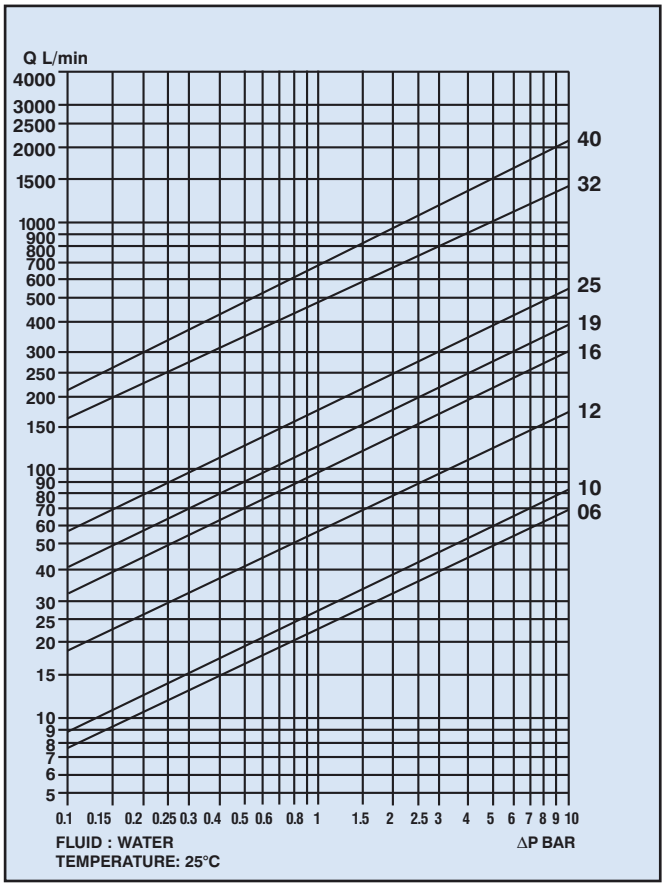
- ★ All metal components are 100% AISI 316 stainless steel.
- ★ Clean disconnection - non-spill design.
- ★ No air intrusion during connection.
- ★ Flat faces can easily be wiped clean before connection to prevent the ingress of contaminants into the circuit.
- ★ Streamlined flow path minimizes pressure drop.
- ★ Locking sleeve prevents accidental disconnection.
- ★ Bi-directional flow
- ★ Dimensionally the couplings conform to ISO 16028

MATERIALS

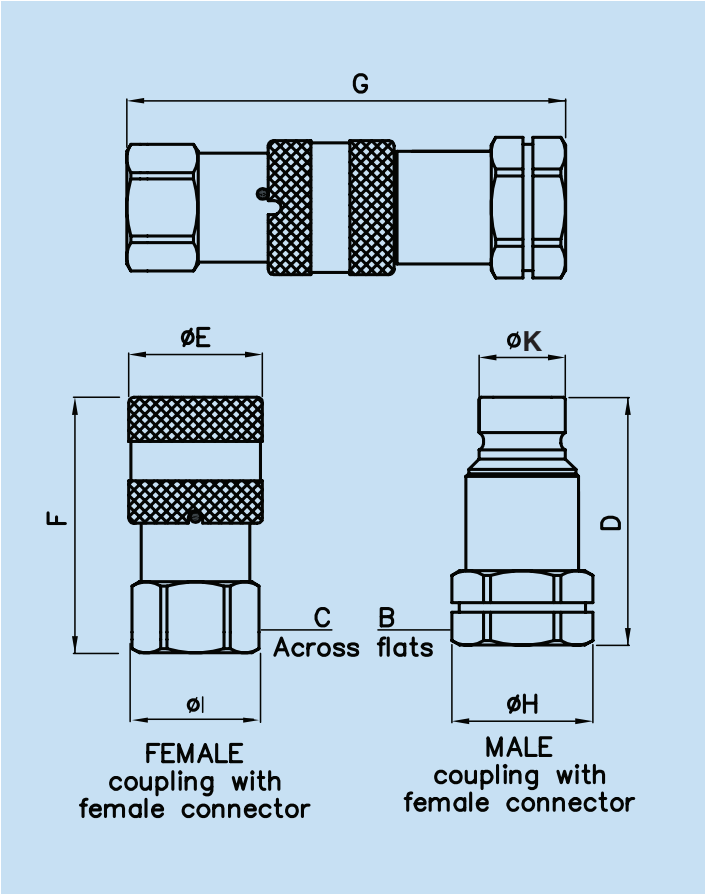
Body and structural components - AISI 316
Spring guide in male coupling - AISI 316
Springs - AISI 316
Locking balls - AISI 316
Seals - Viton

For operation on fluids other than water or standard mineral oil please contact the Holmbury Technical Office.

PRESSURE DROP CHARACTERISTICS



DUST CAPS – PAGE 78



ORDER CODES

HSS 06 – M – 04 G V

HSS = Series

Coupling Size

M = Male coupling
F = Female coupling

Thread size based on dash system
(Coupling body size shown in red for information only and should not be included in this section of the code)

Thread size	Body size	Thread size	Body size
04 = 1/4"	(06)	16 = 1"	(19)
06 = 3/8"	(10)	20 = 1¼"	(25)
08 = 1/2"	(12)	24 = 1½"	(32)
12 = 3/4"	(16)	32 = 2"	(40)

Thread form
G = BSP P (standard)
N = NPT (available on request)
S = SAE (available on request)

Blank = Female thread (no code required)

V = Viton Seals (standard supply)
Other seal materials available on request.

Any other necessary information

Example: HSS06-M-04G V
HSS 06 male, 1/4" BSP P female thread, viton seals, no special requirements.

DIMENSIONS (mm except where stated)

Size	Nominal Diameter	A*	B	C	D	ØE	F	G*	ØH	ØI	ØK	Weight (kg)
06	6	1/4"	22	22	48	28	48	86	24	24	16.2	0.25
10	10	3/8"	24	27	60	32	64.5	109	26	29	19.8	0.37
12	12	1/2"	32	32	68	38	73.5	125	35	35	24.5	0.5
16	16	3/4"	36	36	70.5	42	78	132	39	39	27	0.6
19	19	1"	45	45	82.5	48	92.5	154	48	48	30	1.0
25	25	1¼"	55	55	90	55	105	173	60	60	36	1.5
32	32	1½"	65	65	90	80	105	173	70	70	57	4.0
40	40	2"	75	75	122	100	160	242	85	85	73	7.0

* Dimensions for BSP and NPT threads. Other threads available, see Order Codes opposite

PRESSURE RATING (bar)

Coupling Size	06	10	12	16	19	25	32	40
Maximum Working Pressure Coupled	350	350	350	350	350	250	90	60
Burst Pressure Coupled	1260	1000	1000	1000	1000	800	270	180

SEAL OPERATING TEMPERATURES

Seal material code	Seal material	Maximum temperature	Minimum Temperature
V	Viton *	180°C	-15°C
NE	Neoprene	90°C	-40°C
	Nitrile	100°C	-20°C
S	Fluorosilicone	150°C	-50°C
K	Kalrez	300°C	-25°C

* Viton is standard. Other seal materials available on request.

IAS SERIES

STAINLESS STEEL ISO.A PULL BREAK COUPLINGS

3/8" - 1" Poppet Valve Types to ISO 7241 Series A

INTRODUCTION

Holmbury IAS Series couplings are made in AISI 316, stainless steel. They are designed to be tough, durable and of superior quality to competing ISO 7241 products.

COMPARISONS

In comparison to ISO.B couplings, ISO.A are:
1. Smaller.
2. Easier to connect and release.

APPLICATIONS

IAS Series couplings are ideally suited for use in corrosive environments and/or operation on corrosive fluids. Typical applications include:

- Offshore
- Marine
- Food processing and manufacture
- Machine tool/automation
- Oil refineries
- Chemicals and pharmaceuticals
- Steel mills

FEATURES

★ AISI 316 stainless steel construction, viton seals.

★ Positive, quick connection ensured by the snap together locking ball system.

★ When connected the male and female halves can rotate, even under pressure, thus avoiding any torsional stress in the flexible hoses.

★ Poppet valves have balanced springs and calibrated oil flow passages to minimise the pressure drop.

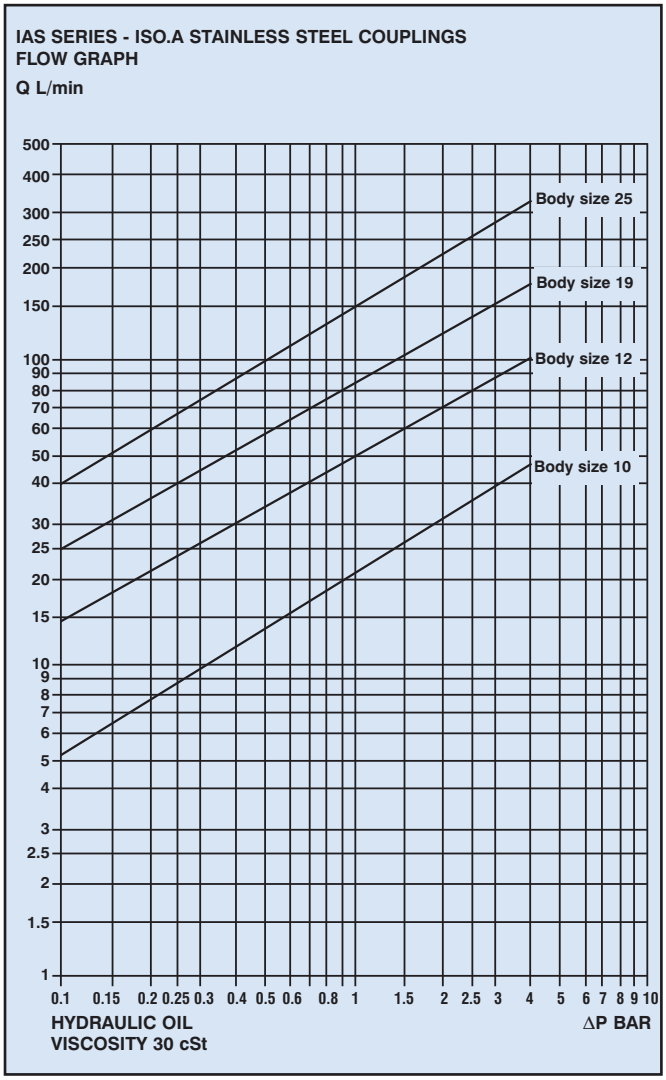
★ Poppet valve seals have shockproof protective edges.

MATERIALS

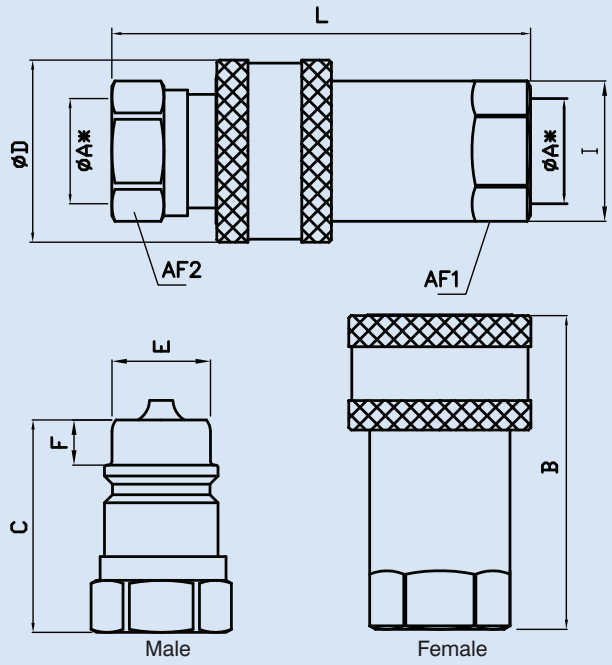
AISI 316 stainless steel, viton seals (for other seal materials please contact the Technical Sales Office)

PARKING STATIONS – PAGE 80
DUST CAP – PAGE 79

PRESSURE DROP CHARACTERISTICS



IAS SERIES - ISO.A STAINLESS STEEL COUPLINGS



Body Size	Nominal Diameter	Max Working Pressure (bar)	ØA*	AF1	AF2	B	C	ØD	E	F	L	I	Weight (kg)
IAS10	10	300	3/8"	22	22	56	38	31	17.2	8.9	76.5	24	0.20
IAS12	12.5	250	1/2"	27	27	63	44.5	38	20.5	9.3	86	30	0.34
IAS19	20	250	3/4"	38	36	82	55	48	29	16	111	44	0.71
IAS25	25	230	1"	45	41	97	63	54	34.3	19.8	127	52	1.10

A*=inch size BSP or NPT. Other dimensions in mm.

ORDER CODES

IAS 19 – M – 12 G V

IAS = IAS Series

Body Size
10 = 3/8"
12 = 1/2"
19 = 3/4"
25 = 1"

M = Male Coupling
F = Female Coupling

Thread size based on dash system
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"

Thread form
G = BSP P
N = NPT

V = Viton seals

Blank = Female thread
M = Male thread

Example: IAS19-M-12 G V
IAS Series, ISO A stainless steel coupling, 3/4" body size, male coupling, 3/4" thread, BSP P thread form, female thread, viton seals.

IBS SERIES

STAINLESS STEEL ISO.B PULL BREAK COUPLINGS

1/4" - 2" Poppet Valve Types to ISO 7241 Series B

INTRODUCTION

Holmbury IBS Series couplings are made in AISI 316, stainless steel. They are designed to be tough, durable and of superior quality to competing ISO 7241 products.

APPLICATIONS

IBS Series couplings are ideally suited for use in corrosive environments and/or operation on corrosive fluids. Typical applications include:

- Offshore
- Marine
- Food processing and manufacture
- Machine tool/automation
- Oil refineries
- Chemicals and pharmaceuticals
- Steel mills

FEATURES

★ AISI 316 stainless steel construction, viton seals.

★ Positive, quick connection ensured by the snap together locking ball system.

★ When connected the male and female halves can rotate, even under pressure, thus avoiding any torsional stress in the flexible hoses.

★ Poppet valves have balanced springs and calibrated oil flow passages to minimise the pressure drop.

★ Poppet valve seals have shockproof protective edges.

CONSTRUCTION

AISI 316 stainless steel, viton seals with Teflon backing rings.

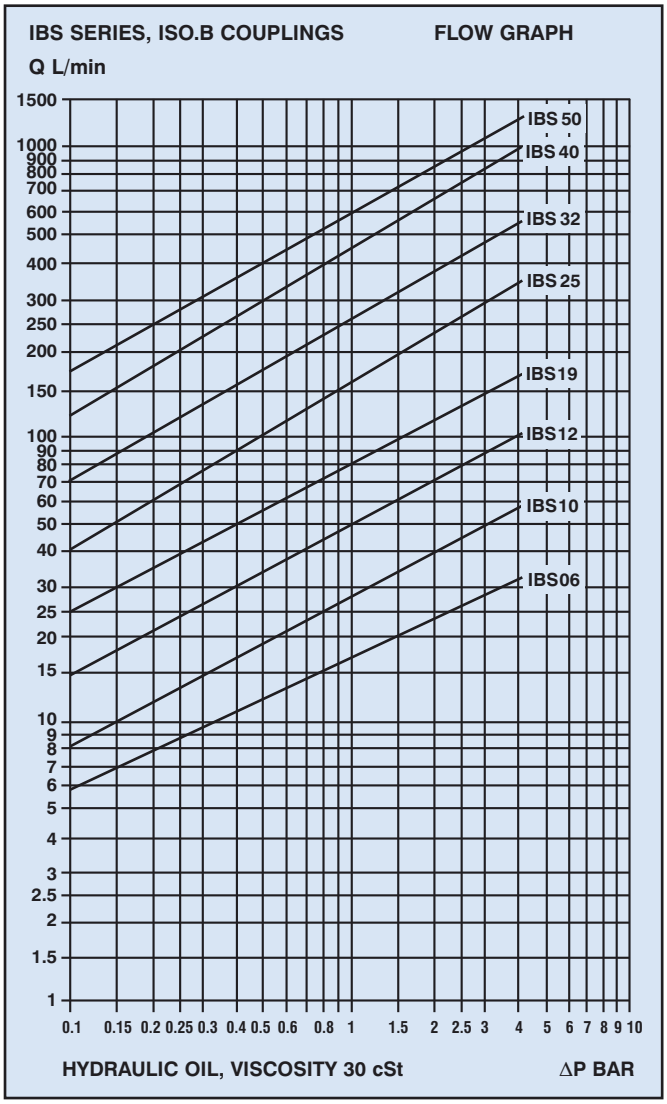
IBS TESTS

Life - 1,000,000 cycles from 0 - 250 bar at a frequency of 1Hz.

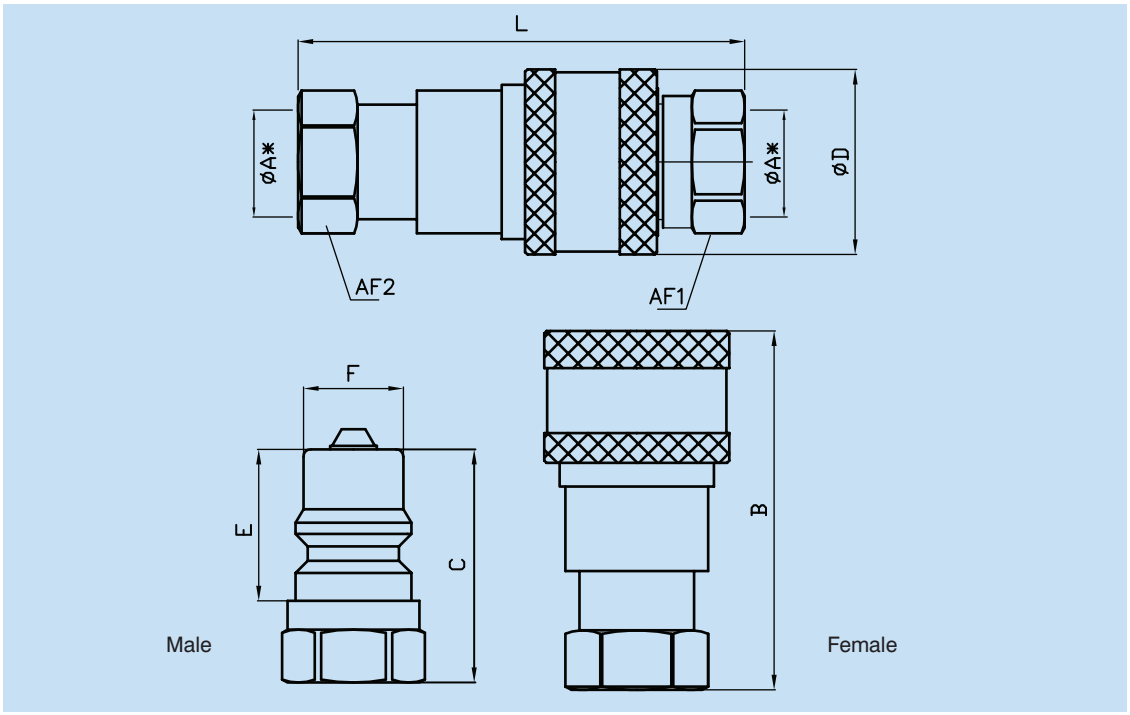
DUST CAPS

Available on request, call for details

PRESSURE DROP CHARACTERISTICS



IBS SERIES STAINLESS STEEL COUPLINGS TO ISO.B SPECIFICATION



TECHNICAL DATA

Type and body size	ND	Maximum operating pressure (bar)	ØA*	AF1	AF2	B	C	ØD	L	Weight (kg)
IBS06	6.3	300	1/4"	19	19	58	22.8	28.5	72	0.17
IBS10	10	250	3/8"	24	24	65	25	35	81	0.29
IBS12	12.5	250	1/2"	28.5	28.5	74	28	44.5	93.5	0.50
IBS19	20	250	3/4"	36	36	92	36	54	113	0.85
IBS25	25	200	1"	41	41	103	45	63.5	127	1.25
IBS32	32	140	1¼"	65	65	126	126	75	198	3.7
IBS40	40	140	1½"	65	65	126	126	75	198	3.7
IBS50	50	90	2"	90	90	124	124	105	222	8.0

A*=inch size BSP or NPT. Dimensions in mm

ORDER CODES

IBS 19 – F – 12 G V

IBS = IBS Series

Body size:
06 = 1/4" **19** = 3/4"
10 = 3/8" **25** = 1"
12 = 1/2"

M = Male coupling
F= Female coupling

Thread size based on dash system
04 = 1/4" **12** = 3/4"
06 = 3/8" **16** = 1"
08 = 1/2"

Thread form
G = BSP P **N** = NPT F

Blank = Female thread

V = Viton seals

Any other necessary information

Example: IBS19-F-16GV
IBs Series, ISO B coupling in stainless steel, body size 19 with 3/4" BSP P female thread, viton seals, no special requirements.

PTS SERIES
HIGH PRESSURE STAINLESS STEEL SCREW TO CONNECT COUPLINGS

INTRODUCTION
PTS Series couplings have been designed for applications involving the transmission of corrosive fluids and/or operation in corrosive environments. They can operate at very high pressures and cope with severe pressure pulse conditions.

APPLICATIONS
Holmbury PTS Series Stainless Steel Couplings have a high resistance to corrosion and are suitable for use with many fluids which include: acids, gas, and demineralized water. They are the ideal choice for many industries such as marine, food, gas, chemical and pharmaceutical.

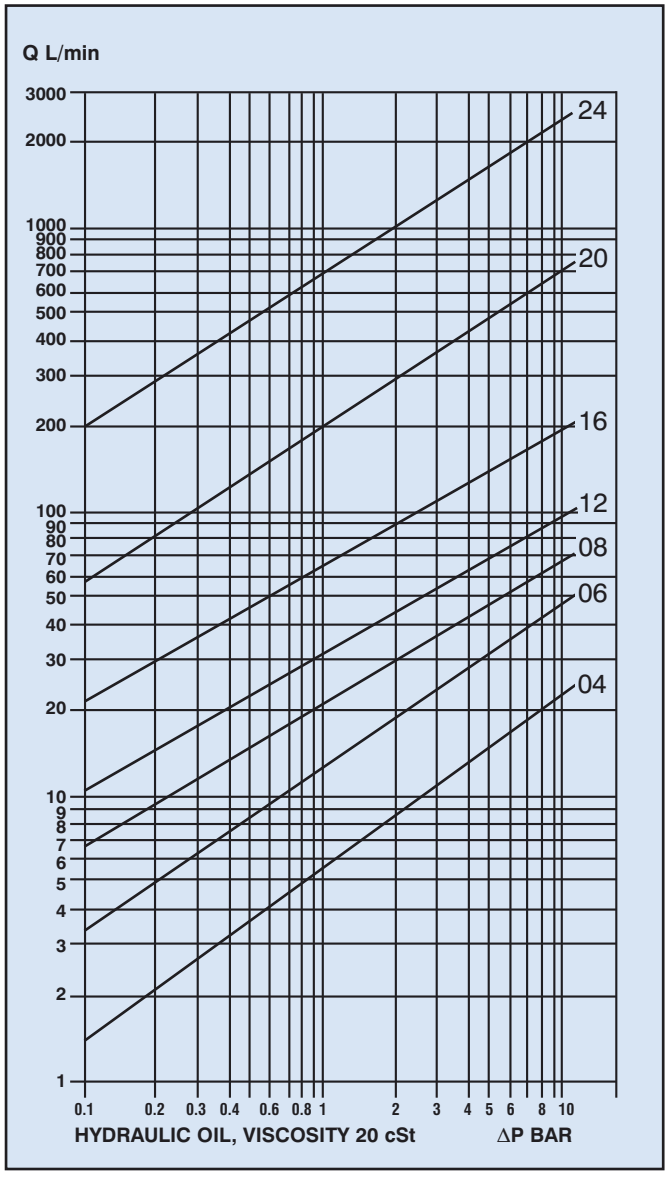
ADVANTAGES
- ★ AISI 316 stainless steel construction, viton seals
- ★ Screw connection mechanism avoids use of locking balls and so eliminates the risk of Brinelling (a potential problem with quick connect couplings in high pressure pulse applications)
- ★ Robust construction
- ★ Can be connected with low residual pressure in each hydraulic hose line

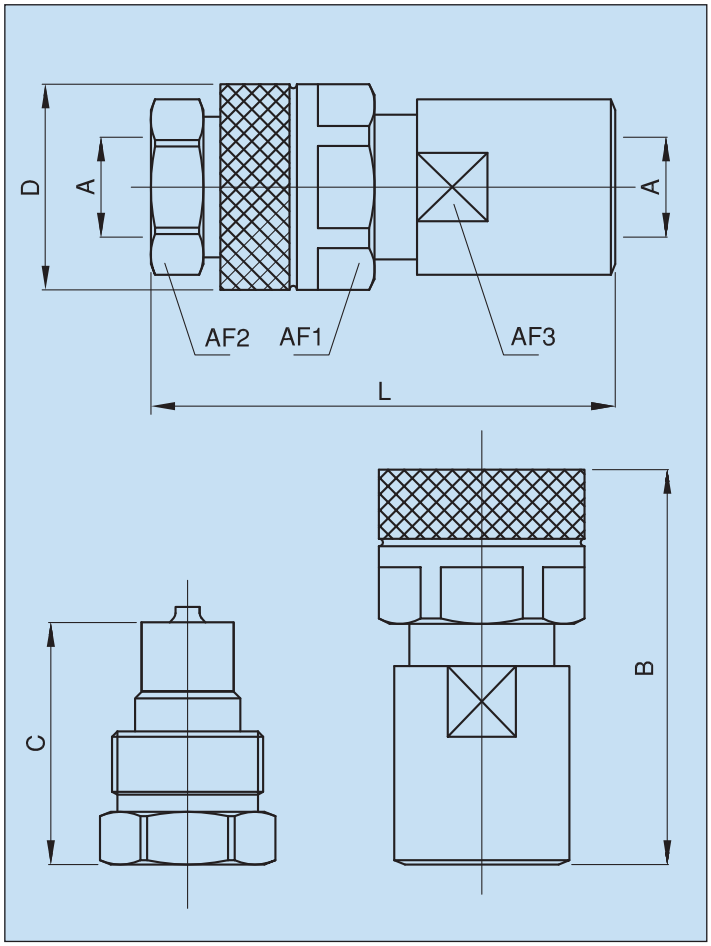
MATERIALS
Body and structural components - AISI 316
Spring guide in male coupling - AISI 316
Springs - AISI 316
Locking balls - AISI 316
Seals - Viton

For operation on fluids other than water or standard mineral oil please contact the Holmbury Technical Office.

CARBON STEEL OPTION
The PTS Series is available in carbon steel, Trivalent plated and with nitrile seals. In this configuration it is designated the PTC Series. For further details refer to page 14.

PRESSURE DROP CHARACTERISTICS





DIMENSIONS (mm except where stated)

Coupling Size	Nominal Diameter	A*	B	C	D	L	AF1	AF2	AF3
04	4	1/4"	66	45	30	84	27	25	22
06	6	3/8"	75	51	40	89.5	36	30	32
08	8	1/2"	86.5	57	45	102	41	34	34
12	12	3/4"	105	68	55	121	50	36	46
16	16	1"	120	73	60	136	50	45	45
20	20	1¼"	153	86	80	167	75	65	65
24	24	1½"	170	95	98	188	90	80	75

* Dimensions for BSP and NPT threads.

PRESSURE RATING (bar)

Coupling Size	04	06	08	12	16	20	24
Maximum Working Pressure Coupled	700	650	600	500	460	380	365
Burst Pressure Coupled	2500	2000	1850	1750	1500	1150	1100

ORDER CODES

PTS 08 – M – 08 G V

PTS = Series

Coupling Size
04, 06, 08, 12, 16, 20, 24

M = Male coupling
F = Female coupling

Thread size based on dash system
(Coupling body size shown in red for information only and should not be included in this section of the code)

Thread size	Body size
04 = 1/4"	(04)
06 = 3/8"	(06)
08 = 1/2"	(08)
12 = 3/4"	(12)
16 = 1"	(16)
20 = 1¼"	(20)
24 = 1½"	(24)

Thread form
G = BSP P (standard)
N = NPT (available on request)
S = SAE (available on request)

Blank = Female thread (no code required)
M = Male thread

V = Viton Seals (standard supply)
Other seal materials available on request.

Any other necessary information

Example: PTS08-M-08G V
PTS size 08 male coupling, 1/2" BSP P female thread, viton seals, no special requirements.

SEAL OPERATING TEMPERATURES

Seal material code	Seal material	Maximum temperature	Minimum Temperature
V	Viton *	180°C	-15°C
NE	Neoprene	90°C	-40°C
	Nitrile	100°C	-20°C
S	Fluorosilicone	150°C	-50°C
K	Kalrez	300°C	-25°C

* Viton is standard. Other seal materials available on request.

PWS SERIES

FREE FLOW, VALVELESS STAINLESS STEEL PRESSURE WASHER COUPLINGS

INTRODUCTION

Holmbury PWS Series, Free Flow, Valveless, Stainless Steel Couplings do not have shut-off valves in either the male or female halves. Consequently, the couplings can handle high flow rates and create a negligible pressure drop. However, when disconnected, any residual fluid in the line will be free to escape. For this reason, the couplings should only be used for the transmission of non-hazardous substances such as water.

APPLICATIONS

High pressure water jetting and steam applications, mainly in the cleaning industry.

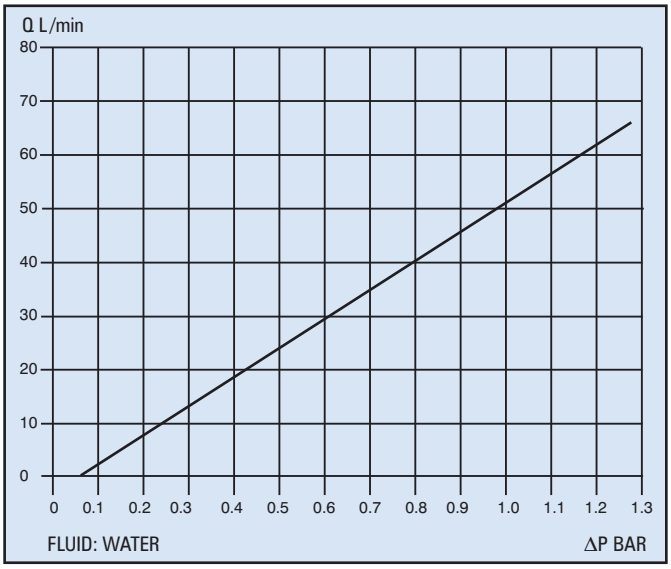
MATERIALS

AISI 316 stainless steel body with dual Viton seals for extra safety. These couplings are also available in carbon steel (PWC Series).

TECHNICAL DETAILS

Maximum working pressure coupled	350 bar
Rated flow	45 l/min
Working temperature range with Viton seals	-15°C to +180°C

PRESSURE DROP CHARACTERISTICS



ORDER CODES

PWS 06 – F – 06 G

PWS Series

Coupling Size

M = Male coupling
F = Female coupling

Thread size (dash system)
06 = 3/8"

Thread Form
G = BSP P

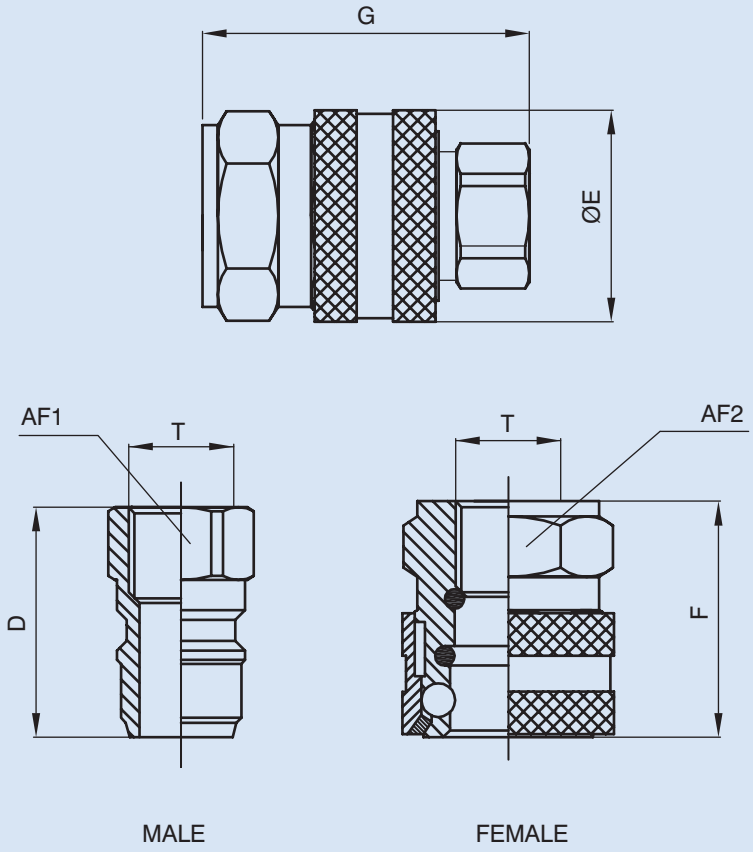
Blank = Female thread (no code required)
M = Male thread

Blank = Viton Seals

Any other information

Example: PWS06-F-06G
PWS Series stainless steel, pressure washer, female coupling, body size 06, with 3/8" BSP female thread

PWS SERIES, FREE FLOW, VALVELESS, STAINLESS STEEL PRESSURE WASHER COUPLINGS



DIMENSIONS (mm except where stated)

Coupling	Thread	D	ØE	F	G	AF1	AF2
PWS 06 06 G	3/8" BSP	38	35	39	54	22	30

BVS-2 SERIES

2 WAY, HIGH PRESSURE, STAINLESS STEEL, BALL VALVES

INTRODUCTION

Holmbury BVS-2 Series, 2 way, stainless steel ball valves are designed for use in corrosive environments and/or operation with corrosive fluids.

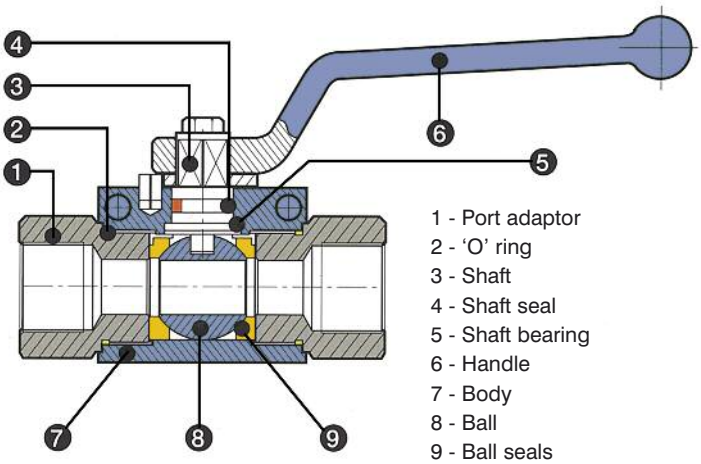
These valves should not be used as flow control valves and should therefore always be fully open or fully closed.

APPLICATIONS

Ideal for use in the chemical, pharmaceutical, off-shore, food, petrochemical and process industries.
A variety of special seals can be provided to comply with the stringent specifications required by these applications.
For further details contact Holmbury Sales Dept.

FEATURES

- ★ AISI 316 stainless steel construction, viton seals.
- ★ Full bore valves provide an unrestricted flow path for negligible pressure drop.
- ★ Floating ball on pre-compressed seals minimises wear and provides an excellent seal at positive and negative pressures.
- ★ Open to close in ¼ turn (90˚).
- ★ Cranked handles provide good clearance for the operators hands.



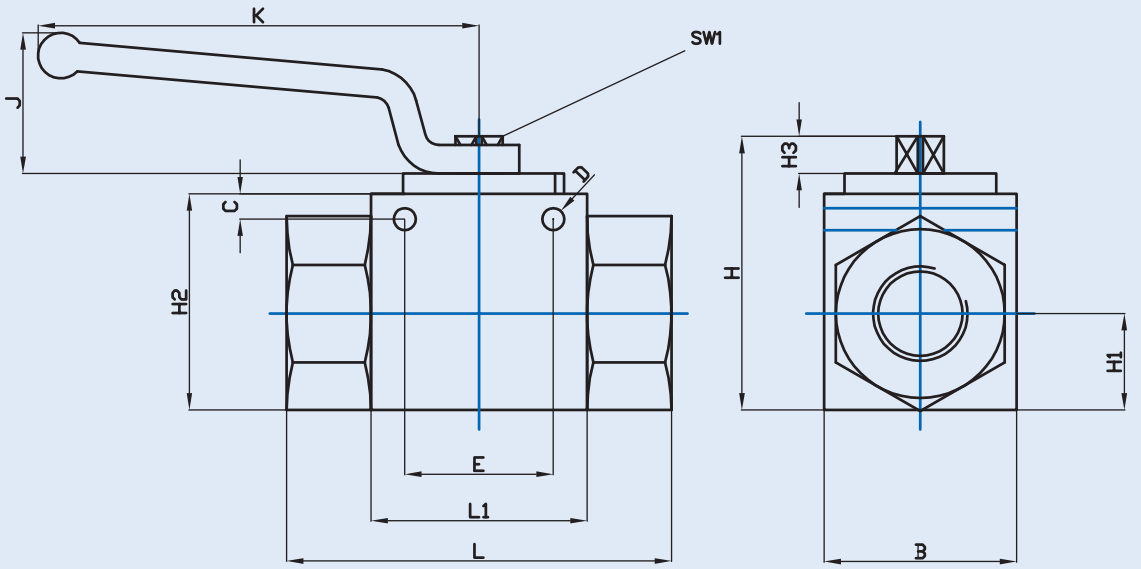
1 - Port adaptor
2 - 'O' ring
3 - Shaft
4 - Shaft seal
5 - Shaft bearing
6 - Handle
7 - Body
8 - Ball
9 - Ball seals

ORDER CODES

	BVS–2	– 06	– 04	G
Ball valve 2 way				
Body Size: 06 25, 10 32, 12 40, 19 50				
Thread Size (dash system) 04 = 1/4" 16 = 1", 06 = 3/8" 20 = 1¼, 08 = 1/2" 24 = 1½", 12 = 3/4" 32 = 2"				
Thread Form: G = BSP P, N = NPT				
Any other necessary information				

Example: BVS-2-06-04G
Stainless steel ball valve, 2 way, body size 06, 1/4" BSP port thread and Viton shaft seals.

BVS-2 SERIES, 2 WAY BALL VALVES



Code	ND	Max W.P Bar	L	L1	B	H	H1	H2	H3	E	D	C	SW1	K	J
BVS-2-06-04G-1-1	6	500	69	37	28	44.5	13	32	8	26	5	4.5	9	107	40
BVS-2-10-06G-1-1	10	500	72	42	35	52.5	17	40	8	32	5	4.5	9	107	40
BVS-2-12-08G-1-1	12	500	83	48	35	52.5	17	40	8	37.5	4.8	4.5	9	107	40
BVS-2-19-12G-1-1	20	315	95	60	48	75	24	57	12	45	6.5	4.5	14	168	61
BVS-2-25-16G-1-1	25	315	113	65	57	82	28.5	64	12	55	6	4.5	14	168	61
BVS-2-32-20G-1-1	32	315	110	84	75	104.5	37.5	84	14	55	6	4.5	17	221	75
BVS-2-40-24G-1-1	40	315	130	91	85	115.5	42.5	95	14	Not applicable*			17	221	75
BVS-2-50-32G-1-1	50	315	140	100	105	133	52.5	112.5	14	Not applicable*			17	221	75

Dimensions in mm *Mounting holes not provided

All dimensions shown are for guidance only, if critical contact Holmbury Technical Department

LARGER VALVES

Valve sizes 40 and 50 with 1½" and 2" threads respectively are available by special request.

BVS-3 SERIES

3 WAY, HIGH PRESSURE, STAINLESS STEEL, BALL VALVES

INTRODUCTION

Holmbury BVS-3 Series, 3 way, stainless steel ball valves are designed for use in corrosive environments and/or operation with corrosive fluids.

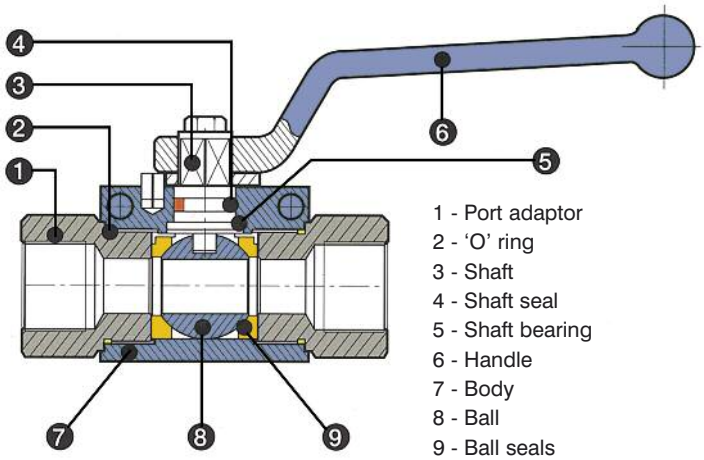
These valves should not be used as flow control valves and should therefore always be fully open or fully closed.

APPLICATIONS

Ideal for use in the chemical, pharmaceutical, off-shore, food, petrochemical and process industries.
A variety of special seals can be provided to comply with the stringent specifications required by these applications.
For further details contact Holmbury Sales Dept.

FEATURES

- ★ AISI 316 stainless steel construction, viton seals.
- ★ **Full bore valves provide an unrestricted flow path for negligible pressure drop.**
- ★ Floating ball on pre-compressed seals minimises wear and provides an excellent seal at positive and negative pressures.
- ★ Open to close in 1/4 turn (90˚).
- ★ Cranked handles provide good clearance for the operators hands.



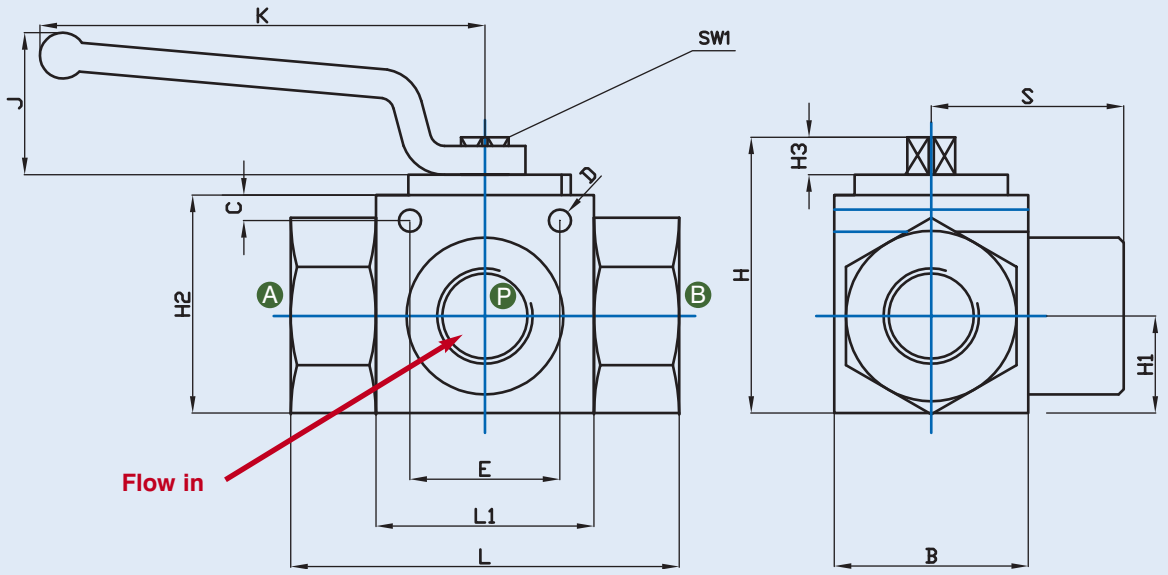
ORDER CODES

	BVS–3	– 06	– 04	G	–L
Ball valve 3 way					
Body Size: 06 10 12 19 25 32 40 50					
Thread Size (dash system) 04 = 1/4" 06 = 3/8" 08 = 1/2" 12 = 3/4" 16 = 1" 20 = 1¼" 24 = 1½" 32 = 2"					
Thread Form: G = BSP P N = NPT					
Port options: L = L Ports T = T Ports					

Any other necessary information

Example: BVS-3-06-04G-L
Ball valve, 3 way, body size 06, 1/4" BSP port thread, 'L' port flow path and Viton shaft seals.

BVS-3 SERIES, 3 WAY BALL VALVES



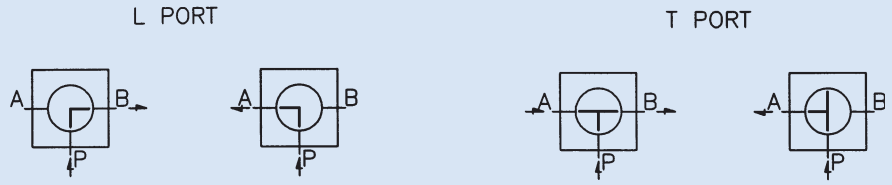
Code	ND	Max W.P Bar	L	L1	B	H	H1	H2	H3	E	D	C	SW1	S	K	J
BVS-3-06-04G-L	6	315	69	37	28	44.5	13	32	8	26	5	4.5	9	35	135	40
BVS-3-10-06G-L	10	315	72	42	35	52.5	17	40	8	32	5	6.5	9	36	135	40
BVS-3-12-08G-L	13	315	83	48	35	52.5	17	40	8	37.5	4.8	6.5	9	42	135	40
BVS-3-19-12G-L	20	315	95	60	48	75	24	57	12	45	6.5	6.5	14	49	181	61
BVS-3-25-16G-L	25	315	113	65	57	82	28.5	64	12	55	6	6.7	14	56.5	181	61
BVS-3-32-20G-L	32	315	110	84	75	104.5	37.5	84	14	55	6	6.7	17	55	221	75
BVS-3-40-24G-L*	40	315	130	91	85	115.5	42.5	95	14	Not applicable			17	65	221	75
BVS-3-50-32G-L*	50	315	140	100	105	133	52.5	112.5	14	Not applicable			17	70	221	75

Dimensions in mm

All dimensions shown are for guidance only, if critical contact Holmbury Technical Department

* Mounting holes not provided with valve sizes 40 and 50

PORT OPTIONS



NOTE: 'L' ported valves are standard. 'T' ported valves available on request

CVS SERIES

STAINLESS STEEL CHECK VALVES

INTRODUCTION

CVS Series stainless steel check valves are designed for in-line use and are suitable for any type of hydraulic system using liquids that are not highly viscous. They are suitable for use with mineral oil, acids, gas and demineralized water.

FEATURES

★ AISI 316 stainless steel construction, viton seals.

★ Good pressure / flow characteristics, see graphs.

★ Cracking points 0.35 bar and 4.5 bar are standard, other values on request.

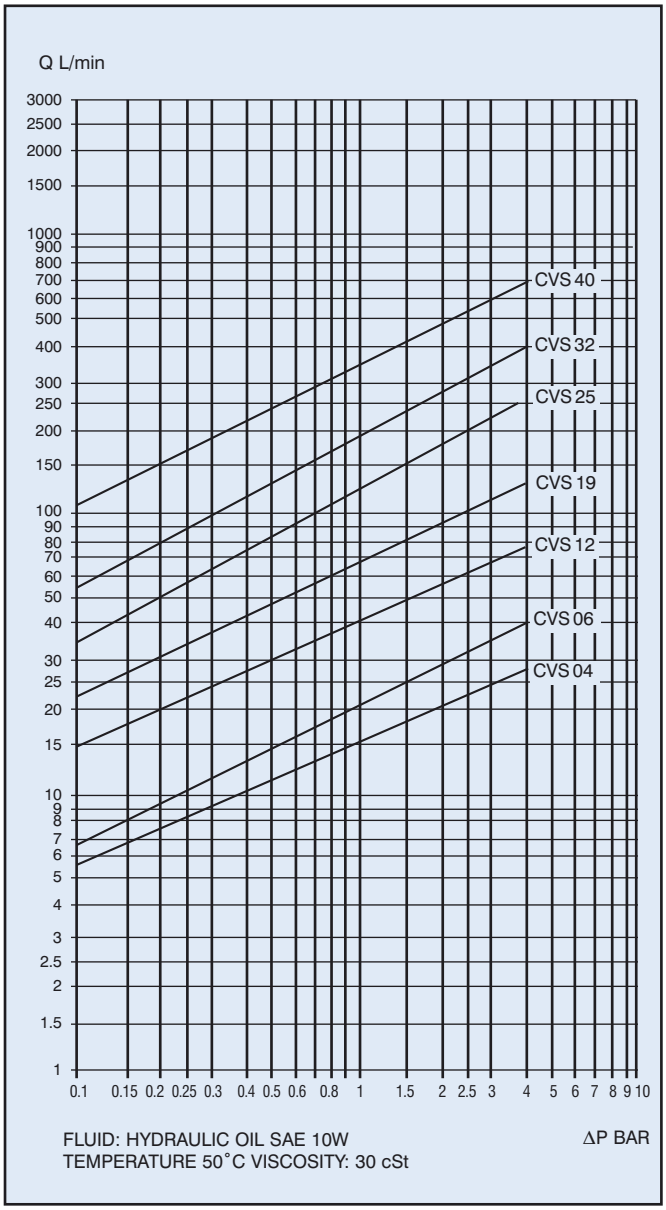
APPLICATIONS

Ideal for industries such as marine, food, gas, chemical, and pharmaceutical.

(1) One-way valve for unidirectional flow, in-line mounting.

(2) A pressure sequencing valve with appropriate cracking points.

PRESSURE DROP CHARACTERISTICS



ORDER CODES

CVS 12 – 08 G – 08 G 0.35

CVS stainless steel check valve

Body Size
04 = 1/4"
06 = 3/8"
12 = 1/2"
19 = 3/4"
25 = 1"
32 = 1¼"
40 = 1½"

Thread size (dash system)
04 = 1/4"
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"
20 = 1¼"
24 = 1½"

Cracking pressure
0.35 bar
4.5 bar

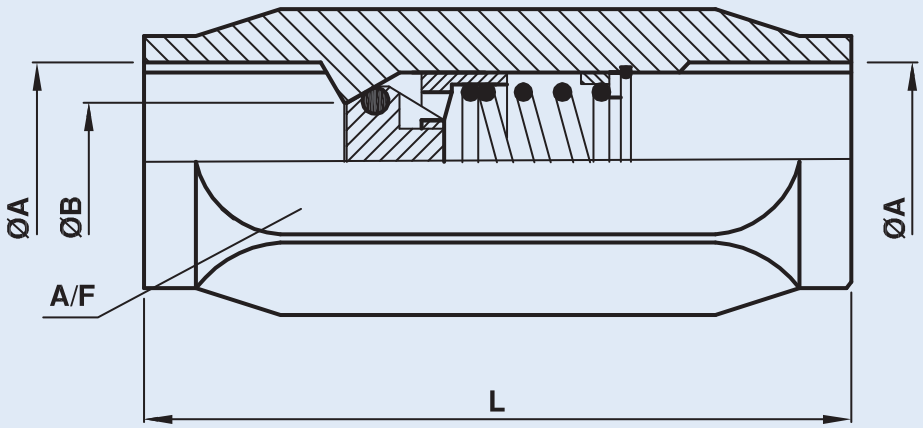
Outlet thread form
G = BSP P
N = NPT

Inlet thread size (dash system)
04 = 1/4"
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"
20 = 1¼"
24 = 1½"

Inlet thread form
G = BSP P
N = NPT

Outlet thread size (dash system)
04 = 1/4"
06 = 3/8"
08 = 1/2"
12 = 3/4"
16 = 1"
20 = 1¼"
24 = 1½"

CVS SERIES, CHECK VALVES



DIMENSIONS AND PRESSURE RATINGS

Body Size	Code	Maximum working pressure (bar)	ØA*	ØB	AF	L	Weight kg
04	CVS04	350	1/4"	7	19	50	0.09
06	CVS06	350	3/8"	10	24	60	0.16
12	CVS12	350	1/2"	11	27	65	0.28
19	CVS19	300	3/4"	17	34	75	0.35
25	CVS25	250	1"	21	41	93	0.58
32	CVS32	250	1¼"	29	50	110	0.96
40	CVS40	250	1½"	34	55	112	1.02

* Dimensions for BSP and NPT threads only. Dimensions in mm

All dimensions shown are for guidance only, if critical contact Holmbury Technical Department

DUST CAPS & PLUGS

FLIP TOP PLASTIC CAPS for HQ and HSS SERIES FEMALE COUPLINGS

HQ Series	HSS Series	Order Code
10	10	HQ10-F-FLIP TOP
12	12	HQ12-F-FLIP TOP
16	16	HQ16-F-FLIP TOP
19	19	HQ19-F-FLIP TOP

Material: Nylon 6 **Temperature Range:** –30°C to +100°C

PLASTIC CAPS and PLUGS for HQ and HSS SERIES COUPLINGS

H and HQ Series	HSS	Order Code CAP for male	Order Code PLUG for female
6 (1/4")	6 (1/4")	HQ06-M-CAP	HQ06-F-PLUG
10 (3/8")	10 (3/8")	HQ10-M-06-CAP	HQ10-F-06-PLUG
10 (1/2")	—	HQ10-M-08-CAP	HQ10-F-08-PLUG
12 (1/2")	12 (1/2")	HQ12-M-08-CAP	HQ12-F-08-PLUG
12 (3/4")	—	HQ12-M-12-CAP	HQ12-F-12-PLUG
16 (3/4")	16 (3/4")	HQ16-M-12-CAP	HQ16-F-12-PLUG
19 (1")	19 (1")	HQ19-M-16-CAP	HQ19-F-16-PLUG
25(1¼")	25(1¼")	HQ25-M-20-CAP	HQ25-F-20-PLUG

Material: PVC **Colour:** Red only **Temperature Range:** –30°C to +100°C

STEEL CAPS and PLUGS for PSB & PSP SERIES COUPLINGS

Coupling	Order Number CAP for male	Order Number PLUG for female
PSB 06 & PSP 06	PSB 06 M CAP	PSB 06 F PLUG
PSB 10 & PSP 10	PSB 10 M CAP	PSB 10 F PLUG

STEEL CAPS and PLUGS for SP SERIES COUPLINGS

Coupling	Order Number CAP for male	Order Number PLUG for female
SP 06	M SP 06 CAP	F SP 06 PLUG
SP 10	M SP 10 CAP	F SP 10 PLUG
SP 12	M SP 12 CAP	F SP 12 PLUG
SP 19	M SP 19 CAP	F SP 19 PLUG
SP 25	M SP 25 CAP	F SP 25 PLUG
SP 32	M SP 32 CAP	F SP 32 PLUG
SP 40	M SP 40 CAP	F SP 40 PLUG
SP 50	M SP 50 CAP	F SP 50 PLUG

DUST CAPS & PLUGS

PLASTIC CAPS and PLUGS for ISO.A COUPLINGS

Coupling	Order Number CAP for male	Order Number PLUG for female
IA06 (ISO.A 1/4")	IA06-M-04-CAP	IA06-F-04-PLUG
IA10 (ISO.A 3/8")	IA10-M-06-CAP	IA10-F-06-PLUG
IA12 (ISO.A 1/2")	IA12-M-08-CAP	IA12-F-08-PLUG
IA19 (ISO.A 3/4")	IA19-M-12-CAP	IA19-F-12-PLUG
IA25 (ISO.A 1")	IA25-M-16-CAP	IA25-F-16-PLUG

Material: PVC **Colour:** Red only **Temperature Range:** –30°C to +100°C

PLASTIC CAPS and PLUGS for DIN SERIES COUPLINGS

Coupling	Order Number CAP for male	Order Number PLUG for female
DIN 06 (DINB or DINV)	DIN06-M-04-CAP	DIN06-F-04-PLUG
DIN 10 (DINB or DINV)	DIN10-M-06-CAP	DIN10-F-06-PLUG
DIN 12 (DINB or DINV)	DIN12-M-08-CAP	DIN12-F-08-PLUG
DIN 19 (DINB or DINV)	DIN19-M-12-CAP	DIN19-F-12-PLUG
DIN 25 (DINB or DINV)	DIN25-M-16-CAP	DIN25-F-16-PLUG

Material: PVC **Colour:** Red only **Temperature Range:** –30°C to +100°C

STEEL CAPS and PLUGS for TC SERIES TIPPER COUPLINGS

Coupling	Order Number CAP for male	Order Number PLUG for female
TC 16 (3/4")	TC 16 M CAP	TC 16 F PLUG
TC 19 (1")	TC 19 M CAP	TC 19 F PLUG

ALUMINIUM ALLOY CAPS and PLUGS for PS SERIES COUPLINGS

Coupling	Order Number CAP for male	Order Number PLUG for female
PS 25	PS25-0-SI0001 CAP	PS25-1-SI001 PLUG

PARKING STATIONS

PARKING STATION for FEMALE TB SERIES, TRAILER BRAKE COUPLINGS

Coupling	Order Number Parking station for female
TB 12 F	TB12-F-PARKING STATION

Note: Female TB couplings are supplied with Parking Stations as standard. Additional Parking Stations can be ordered separately

PARKING STATIONS for MALE TC SERIES, TIPPER COUPLINGS

Coupling	Order Number Parking station for male
TC16-M-12	TC16-M-PARKING STATION
TC19-M-16	TC19-M-PARKING STATION

PARKING STATIONS for MALE ISO.A COUPLINGS (CARBON STEEL PARKING STATION)

Coupling	Order Number Parking station for male
IA12 M (1/2")	IA12-M-PARKING STATION

SEAL KITS for FEMALE ISO. A COUPLINGS

Coupling	Order Number Parking station for female
IA 06 F (ISO. A 1/4")	IA06-F-SEAL KIT
IA 10 F (ISO. A 3/8")	IA10-F-SEAL KIT
IA12 F (ISO. A 1/2")	IA12-F-SEAL KIT
IA 19 F (ISO. A 3/4")	IA19-F-SEAL KIT
IA 25 F (ISO. A 1")	IA25-F-SEAL KIT
IA 32 F (ISO. A 1¼")	IA32-F-SEAL KIT
IA 40 F (ISO. A 1½")	IA40-F-SEAL KIT
IA 50 F (ISO. A 2")	IA50-F-SEAL KIT

Certificate of Registration

This is to certify that the Quality Management System of

Holmbury Ltd
Tower House, Vale Rise, Tonbridge, Kent, TN9 1TB

applicable to

The design, development, assembly and distribution of hydraulic components

has been assessed and registered by NQA against the provisions of

BS EN ISO 9001 : 2008

This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA.

Certification Director

UKAS QUALITY MANAGEMENT 015

Certificate No:	15401
Date:	18 October 2002
Reissued:	19 June 2012
Valid Until:	15 May 2015
EAC Code:	

CARE AND OPERATION OF HOLMBURY COUPLINGS

CAUTION - It is important that users of the Quick Disconnect Couplings read the following Safety Guidelines, as improper use of the Holmbury products can lead to severe injury and damage to equipment.

Holmbury couplings have established an excellent track record since their introduction in 1982. If used correctly they will give long, trouble-free service.
Where problems have been experienced with Holmbury couplings and returned for examination, the most common causes were found to be dirt, neglect and abuse.
These guidelines are intended to help you maximize the operating life of your Holmbury couplings.

GOOD PRACTICE

- ✔ Always wipe the two mating faces clean before connecting.
- ✔ It is recommended by Holmbury Ltd. that caps and plugs be used when the couplings are disconnected.
- ✔ Always align the external locking ball (if used) with the notch in the locking sleeve and then pull the locking sleeve back fully to disconnect.
- ✔ If a coupling sticks, first check that pressure has been released. Ensure the locking ball and notch in the locking sleeve are aligned, pull back the sleeve and gently tap apart with a rubber mallet or hide faced hammer. Sticking is normally caused by dirt in the coupling or physical damage due to abuse.
- ✔ Connect and disconnect new couplings two or three times to work the PTFE seals. Sometimes a new coupling will stick if the seal has not been worked.
- ✔ When fitting couplings, only apply the spanner or grips to the hexagon and nowhere else.
- ✔ Avoid damage to the coupling faces. Burrs and scratches cause damage to the seals and cause leaks. They can also impede connection and disconnection of the couplings.
- ✔ Periodically lubricate the internal locking balls on the female half of the coupling with silicone grease.
- ✔ All hydraulic systems should be protected with a good quality filter, minimum 25μ filtration is recommended. The filter should be changed at regular intervals, in accordance with the manufacturers instructions. Adequate filtration ensures the oil remains free of contaminates that can damage the internal seals of the coupling.

BAD PRACTICE

- ✘ Never attempt to reconnect using a damaged half coupling as this will destroy the seals in the mating half and necessitate replacement of both halves.
- ✘ Do not leave the coupling where it may be run over by a vehicle or otherwise crushed - this will distort the sleeve and prevent connection and disconnection.
- ✘ Never try to turn the sleeve when the coupling is disconnected since this will cause the locking ball to jam under the locking sleeve and damage the coupling.
- ✘ Never try to strip the coupling down, there are no user serviceable parts. If the coupling is damaged it should be replaced with a new one. See coupling guides for a reference.
- ✘ Never hit the centre poppet of the coupling to try and release locked in pressure. This can cause irreparable damage to the coupling and serious injury.
- ✘ When fitting couplings, never clamp on the sleeve of the female or nose of the male - this will cause distortion and/or damage.
- ✘ Never subject the couplings to external forces, especially side load. This can reduce the life of the coupling or cause failure.
- ✘ Never allow the torsional forces transmitted from hoses to unscrew/screw together couplings. Utilise rotary couplings - see Holmbury GGIL.
- ✘ Never use a coupling as a plug.
- ✘ Do not connect and disconnect with pressure in the line unless the coupling type is specifically designed to do so.
- ✘ Connecting a Holmbury coupling half with another manufacturers coupling half could damage internal seals and invalidate warranty. Check with Holmbury before mismatching couplings.

IMPORTANT NOTE - Since Holmbury has no control over the use and application of its products it cannot accept liability for any injury, loss or damage arising directly or indirectly from the use of its products or from the use of information taken from its brochure which is intended to serve as a guide only.
Customers should, through appropriate tests, satisfy themselves that the products are suitable for their intended use.

GENERAL TERMS & CONDITIONS OF SALE

1. DEFINITIONS: In these Conditions “Holmbury” shall mean Holmbury Limited. , "the Customer" shall mean the person or persons or firm or company to whom any quotation is addressed or with whom any contract is made and "the Goods" shall mean the goods or any part thereof, agreed to be sold as described on the face hereof, and any repaired, replaced or spare part. "the Delivery Date" shall mean the date notified to the Customer by Holmbury under Clause 4 (b) hereof.

2. CONTRACT: (a) All quotations given and all contracts made by Holmbury are subject to these terms, conditions and exceptions contained herein, and all conditions and exceptions referred to by the Customer or contained in any order, acceptance of estimate or quotation, or otherwise brought to Holmbury’s notice are hereby excluded.

(b) Quotations issued by Holmbury are not offers capable of acceptance so as to make a binding contract. All orders placed with Holmbury require its acceptance before any contract arises. Any delivery period shall run from the date of such acceptance.

(c) No servant or agent of Holmbury has any authority to make any representation, or to give any warranty relating to the Goods or to agree to any variation of, or addition to these conditions, unless such representation, warranty, variation or addition is expressed in writing and signed on behalf of Holmbury by a Director and is incorporated or referred to in Holmbury’s quotation or acceptance of order.

(d) These conditions, together with any special terms and conditions specified on the quotation or acceptance of order issued by Holmbury and any drawings plans or other documents referred to therein, shall on acceptance by Holmbury of the Customer’s order constitute the entire agreement between Holmbury and the Customer to the exclusion of any antecedent or contemporaneous written or oral understandings, agreements or representations in respect of the supply of the Goods.

3. PRICES AND PAYMENT: (a) All prices quoted in the contract are f.o.b. the port of shipment selected by Holmbury or ex Holmbury’s warehouse or otherwise as may be specified in Holmbury’s quotation or acceptance of order and are those prevailing at the time of the contract, but the prices ruling at the date of delivery shall apply and shall be paid by the Customer.

(b) Holmbury may add to the prices quoted in the contract a sum sufficient to compensate Holmbury for any increase in the cost to Holmbury of producing the Goods occurring after the date of the quotation (including, but not limited to increases in the costs of labour, raw materials, bought in parts, transport and overheads) and to preserve Holmbury’s profit margin.

(c) If work is suspended or slowed down because of the Customer’s instructions, lack of instructions or failure to supply specifications or parts, additional charges may be made.

(d) Unless the prices quoted in the contract are expressly shown to include Value Added Tax, all prices are subject to the addition of such Tax (where applicable).

(e) Unless otherwise agreed in writing with the Customer or stated on the face hereof the price of the Goods shall be paid to Holmbury in full in cash not later than the tenth day of the month following the date of Holmbury’s invoice in respect of the Goods. Interest shall be due and payable to Holmbury for late payment at the rate of 6% per annum from the due date of payment of Holmbury’s invoice (as well as before any judgement) until payment is actually received by Holmbury.

(f) All amounts due to Holmbury in respect of the supply of the Goods shall be paid at the offices of Holmbury at Tower House, Vale Rise, Tonbridge, Kent TN9 1TB

(g) If where the price payable in respect of the Goods is due otherwise than in advance of or on delivery of the Goods, in the reasonable opinion of Holmbury the credit rating of the Customer becomes unsatisfactory prior to delivery, or if the Customer fails to perform or observe any obligations on his part to be performed or observed under this or any other contract made with Holmbury, Holmbury shall be entitled at its discretion to delay delivery of the Goods until payment is rendered by the Customer or until such obligations are duly performed or observed or by notice in writing to the Customer unilaterally to cancel the contract for the supply of Goods.

4. DELIVERY AND RISKS: (a) Delivery is to take place f.o.b. the port of shipment selected by Holmbury or ex Holmbury’s warehouse as may be specified in Holmbury’s quotation or acceptance of order, unless otherwise specified by Holmbury, and the risks of damage to or destruction of the Goods shall thereupon pass to the Customer. Where delivery is delayed due to any act of the Customer for whatever reason, such risk shall pass on the date on which delivery would have taken place for such act.

(b) Any delivery date or delivery period, whether stated in the contract or otherwise notified to the Customer is an estimate only and Holmbury shall not be liable for any loss or damage whatsoever caused by the failure to make delivery on such date or within such period.

5. PROPERTY: (a) Although risk in Goods shall pass to the Customer, as provided in Clause 4 above, property in the Goods shall not then pass to the Customer but shall remain in Holmbury until the Customer has paid to Holmbury all sums owing or due to Holmbury on any account whatsoever and has duly performed or observed all obligations of whatsoever kind on his part to be performed or observed under this or any other contract made with Holmbury provided that always that the Customer shall indemnify Holmbury against all claims, demands, damages, penalties, costs, expenses or liabilities arising out of or in connection with Holmbury’s continued ownership of the Goods.

(b) Whilst the Goods remain the property of Holmbury, Holmbury may retake possession of them at any time without notice to the Customer and for this purpose Holmbury may be its servants or agents enter upon any land or premises where it believes the Goods may be.

(c) The Customer may sell the Goods and deliver them to the purchaser thereof provide that the Customer does so in the ordinary course of its business. Notwithstanding any agreement or provision for the granting of credit by Holmbury to the Customer, the Customer shall account to Holmbury for the proceeds of such sale, and pending such accounting shall hold such proceeds of sale as fiduciary for Holmbury. If Holmbury so requires, the Customer will assign any debt due from such purchaser to Holmbury.

(d) The provision of Clause 5(a), (b) and (c) above shall continue to apply to the Goods notwithstanding any admixture with other Goods or other use or transformation of the Goods by any process of manufacture.

6. STORAGE: Holmbury shall be entitled to store the Goods, either at their own premises or elsewhere at the Customer’s expense in the following circumstances:

(a) if the Goods are delivered f.o.b or ex Holmbury’s warehouse, where the Customer fails to take delivery on the due date: or

(b) if the Goods are delivered by the Customer to a specified place:

(i) where Holmbury is ready to despatch the Goods, but needs delivery instructions and such instructions have not been provided by the Customer; or

(ii) where Holmbury is ready to despatch the Goods and the Customer is or will be unable to accept delivery when tendered.

7. ALTERATIONS AND IMPROVEMENTS: (a) Holmbury or its sub-contractors may carry out without notice to the Customer alterations or improvements in design, materials, or methods of manufacture from time to time, and may substitute other reasonably similar parts for any proprietary or special part ordered by the Customer, which Holmbury or its sub-contractors considers to be unprocurable, or unprocurable in sufficient quantities or unprocurable in sufficient time or procurable with difficulty or at an excessive cost.

(b) Further Holmbury may supersede, materially alter or abandon the design or type of the Goods contracted for, and may substitute another design or type. If the contract is therefore terminated, the deposit, if any, shall be returned to the Customer, but no other claim for loss or damage may be made.

(c) If, in the opinion of Holmbury, there is no design or type which could reasonably be substituted under sub-clause (b) of this clause Holmbury’s obligation to complete performance or the contract shall be suspended until such time as a substitute therefore can be found and becomes available.

8. LIABILITY FOR DEFECTS: (a) If any defect is discovered in the Goods within twelve months of their delivery or the date up to which delivery could have been made to the customer, and is shown to be due solely to defective materials or workmanship or to the failure of the Goods to perform in accordance with any plans or specifications referred to in Holmbury’s quotation or acceptance of order (subject to customarily accepted tolerance) then Holmbury will at its own option, either repair or replace the defective part or parts of the Goods (or will allow the Customer credit for the price paid in respect of the Goods), and Holmbury will make no charge for any such repair or replacement. These conditions shall apply to repaired or replaced parts.

(b) The undertaking given in sub-clause (a) of this clause is subject to the provisions of Clause 9 and 10 below and to the following conditions:

(i) That the Customer shall return the defective part or parts of the Goods to Holmbury’s works (or to such other place as Holmbury may specify,) as soon as after discovery of the defect as is reasonably practicable, and in any event not later than 28 days after discovery of the defect;

(ii) that the cost of transporting the defective part or parts of the Goods to and from Holmbury’s works shall be paid by the Customer;

(iii) that the Customer shall give written notice to Holmbury specifying the nature of the defects in the part or parts of the Goods so returned;

(iv) that the Goods had been used and maintained properly and carefully and in accordance with any instruction issued by Holmbury.

(c) The undertaking contained in sub-clause (a) does not apply to goods or any part of goods not manufactured by Holmbury. In the case of such goods, Holmbury will use its best endeavours to pass on to the Customer the benefit of any guarantee, condition, warranty or servicing arrangement received by Holmbury from the manufacturer of such goods, but Holmbury shall be under no liability whatsoever, for any defect in such goods.

(d) In the case of a part or parts being replaced under the provisions of this clause, the original of such part or parts shall become the property of Holmbury without payment.

(e) Save as above provided, Holmbury shall be under no liability by reason of the manufacture, sale or delivery of any goods which do not comply with or have not been made to comply with, the specification or description applicable to this contract, and the Customer accepts Holmbury’s obligation above in lieu of any remedy or right he might otherwise have in respect of such delivery, notwithstanding that failure to provide goods which comply with the contract, or which have been made so to comply, be due to negligence on the part of Holmbury, its servants, agent, sub-contractors or others.

9. EXCLUSIONS: (a) subject to clause 8 hereof, all conditions and warranties in respect of the Goods relating to quality, fitness for purpose, merchantability or otherwise, whether implied by statue or by common law or otherwise, are hereby excluded.

(b) Without prejudice to the generality of the foregoing, any warranty or condition as to performance or suitability for any particular purpose of the Goods, and in particular any warrant or condition that the specification design or other details of the Goods will meet any particular requirement of any national or local authority or regulations or bye-laws affecting the same, except as agreed in writing with the customer, in respect of any such requirements regulations or bye-laws notified to Holmbury by the Customer on or before the making of the contract is hereby excluded.

10. PRODUCT LIABILITY AND CONSEQUENTIAL LOSS: (a) The Customers will, on or before delivery of the Goods as herein provided, if so requested by Holmbury, enter into a written undertaking to take such steps as may be specified to the Customer by Holmbury, and set out in such undertaking relating to the safe and proper use of the Goods, without risk to health. The Customer shall indemnify Holmbury in respect of any liability, monetary penalty, or fine in respect of, or in connection with, the Goods incurred by Holmbury under the Health and Safety at Work Act 1974 or any statutory modification or re-enactment thereof or any regulations orders or directions made thereunder.

(b) In no circumstances, whatsoever shall Holmbury be liable in contract or tort or otherwise for any consequential or indirect damage or loss, howsoever caused.

11. DAMAGES: In the event, Holmbury’s liability to the customer in respect of the consequences of any breach or non-performance of this contract, however caused or arising, shall be limited to the price of the goods.

12. DRAWINGS, DESCRIPTION, ETC: All drawings, photographs, illustrations, specifications, performance data, dimensions, weights and all the like, whether contained in the contract or made by way of representation, have been provided by Holmbury in the belief that they are as accurate as reasonably possible, but they do not constitute a description of the Goods, shall not be taken to be representations made by Holmbury, and are not warranted to be accurate.

13. TERMINATION OF THE CONTRACT: (a) Without prejudice to any other rights which Holmbury may have, Holmbury shall be entitled, on giving written notice to the Customer, to determine any contract forthwith demand immediate payment of any amount due or accruing due to Holmbury thereunder, and to retain any deposits if any of the following circumstances occur;

(i) The Customer, not being a body corporate, becomes bankrupt or compounds or makes any arrangements with his creditors or commits any act of bankruptcy;

(ii) The Customer, being a body corporate goes into liquidation whether compulsory or voluntary (save for the purpose of reconstruction or amalgamation) or has a receiver appointed, of its undertaking or assets or any part thereof.

(b) On termination of the contract by Holmbury under sub-clause (a) of this clause, Holmbury shall have a general lien over all materials and property belonging to the Customer, which are in the possession of Holmbury for any sum due under, or in connection with, this contract or any other contract. Holmbury shall be entitled to sell such materials or property and to re-sell the Goods.

14. FORCE MAJEURE: In the event of any delay affecting the performance of this contract by reason of any cause arising from, or attributable to acts, events, the non-occurrence of events, omissions or other accidents or matters beyond the reasonable control of Holmbury, including but not limited to the following matters, whether affecting Holmbury’s own operation or those of any supplier, sub-contractor or transport contractor;-

(i) strikes, lockouts or any other labour disputes (regardless of the reasonableness of the demands of labour or management’s or shortage of labour);

(ii) civil commotion, riots, invasion, war or warlike state (whether war be declared or not) or the breaking off of diplomatic relations or sabotage;

(iii) fire, explosion, storm, flood, earthquake, fog, subsidence, epidemics.

(iv) voluntary or mandatory compliance with any directions or order of any person having or appearing to have authority of the Government, whether local or national, for defence or other statutory or national purposes;

(v) inability, difficulty or delay in obtaining, or shortages of suitable raw materials, equipment, fuel, power, components or transportation.

Holmbury shall be under no liability for loss or injury suffered by the Customer thereby; and the contract shall be suspended during such delay, upon the cessation of the cause of the delay, the contract shall again become operative, provided that, if as a result of such delay, a modification of the terms of the contract or cancellation thereof is requested by one party, and it is reasonable that such modification or cancellation should be made, the contract shall be so modified or cancelled, and the in the case of cancellation a proper proportion of the price shall be paid for any expenditure incurred by Holmbury or any benefit conferred upon the Customer.

15. INDUSTRIAL PROPERTY: The Customer shall indemnify Holmbury from all claims, demands, damage, penalties, costs, expenses or liability in respect of the infringement of any letters patent, registered design, design copyright, copyright or other industrial property right or breach of confidence (not being a breach by Holmbury), resulting from or arising in the performance of this contract or of any contract in accordance with the terms of this contract. Holmbury does not warrant that the supply or use of the Goods in the United Kingdom or elsewhere is not an infringement of the rights of third parties in industrial property.

16. MISCELLANEOUS: If any of these conditions, or any part of one of these Conditions is rendered void by any legislation to which it is subject, it shall be void to the extent and no further. If any of these Conditions or any part of one of these Conditions is rendered unenforceable by any legislation to which it is subject, it shall be enforceable to the extent that it is not a fair or reasonable one to be included but no further.

17. LEGAL CONSTRUCTION: Unless otherwise agreed in writing, this contract shall in all respects be construed and governed by the Law of England, and the Customer submits to the jurisdiction of the Courts of England.

CONNECT WITH QUALITY

HOLMBURY LIMITED

Tower House, Vale Rise, Tonbridge, Kent TN9 1TB

Tel: 01732 378912

Fax: 01732 357666

E-mail: sales@holmbury.com

Web site: www.holmbury.com

HOLMBURY INC

6948 Spinach Drive, Mentor, Ohio 44060

Call Toll Free: 1-866-HOLMBURY(1-866-465-6287)

Fax: 440-578-1073

E-mail: couplings@holmburyUSA.com

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Certificate No. 15401

Issue 5-eA, August 2013.

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