

HC-D16 Series | Directional Control Valve | Sectional Valves | 3/4" BSP -G12
 Nominal Flow Rate 150Lpm | Pressure Rate 350Bar 5000Psi | Max Pressure on T 20Bar

HC-D16

Sectional valve

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GENERAL SPECIFICATIONS

Universal products and solutions

HC-D16 control valve belongs to the wide range of Hydrocontrol S.p.A. modular sectional valves and is capable of working with a maximum flow of 150 litres/min. at an operating pressure of 350 bar.

Numerous integrated valve features in addition to countless configuration options make HC-D16 highly flexible and easily adaptable to the widest applications range.

Sections are equipped with auxiliary valves and a wide variety of interchangeable spools.

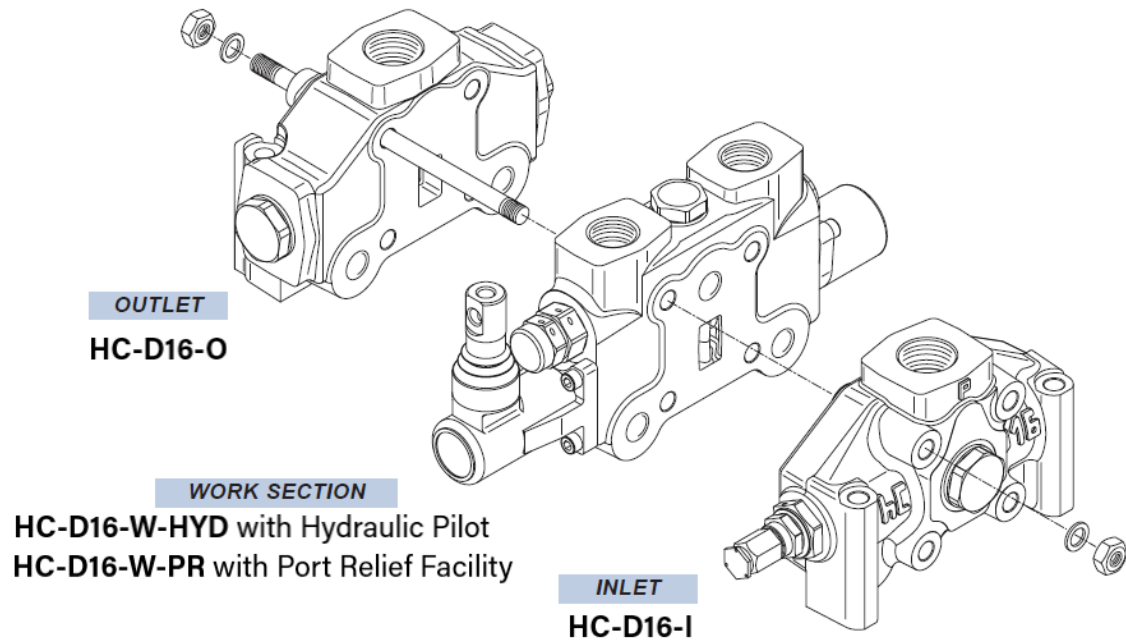
Standard working conditions

- FLOW RATE..... 40 GPM
- PRESSURE RATE 5000 PSI
- MAX PRESSURE ON (T) 290 PSI
- OPERATING TEMPERATURE..... -25°C / +80°C
- KINEMATIC VISCOSITY from 10 to 460 mm²/s
- CONTAMINATION LEVEL..... 19/16 ISO 4406
- FILTRATION LEVEL β 10 > 75

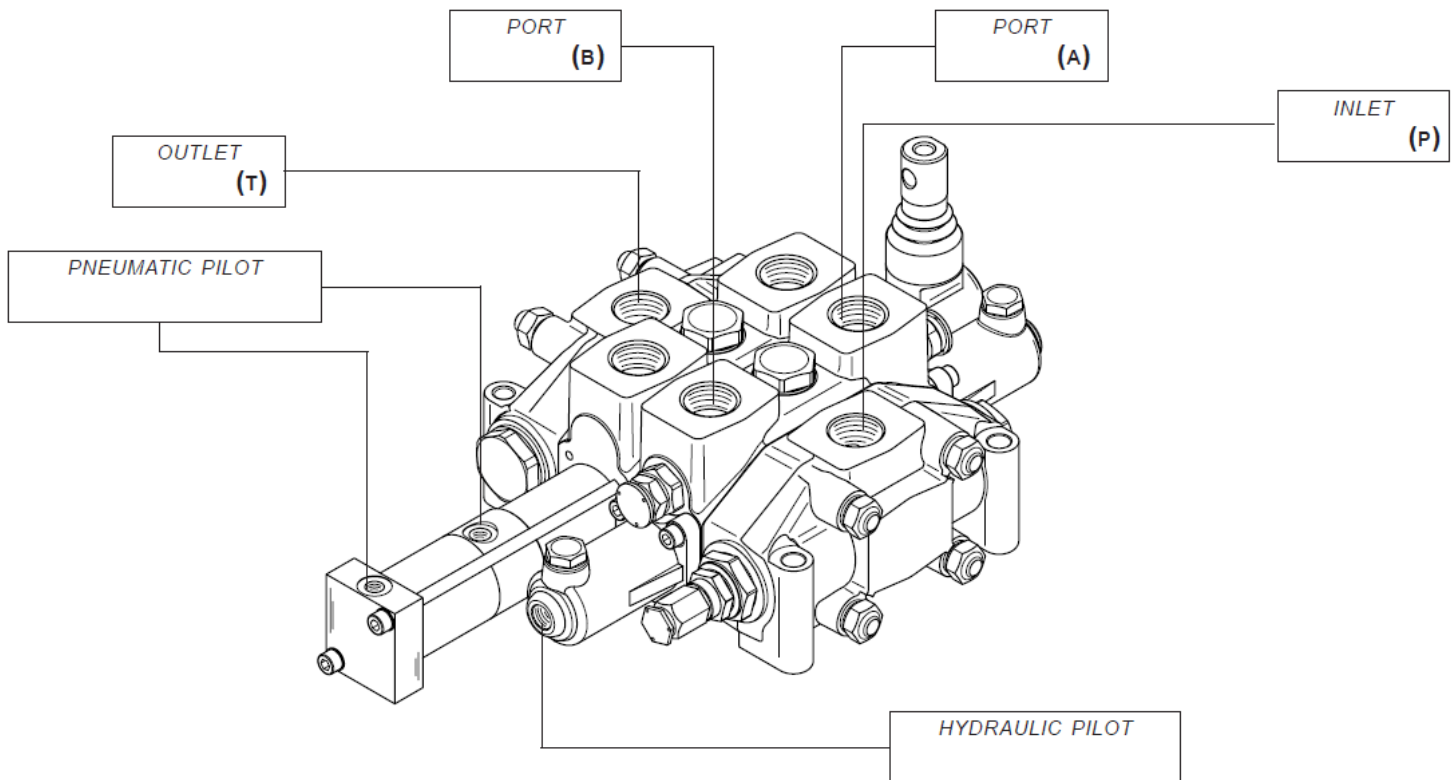
Technical specifications

- WORKING SECTION NUMBER..... 1 - 12
- SPOOL STROKE..... 0,28 + 0,28 in
- SPOOLS PITCH..... 1,8 in

HC-D16 Series Sectional Valve Layout

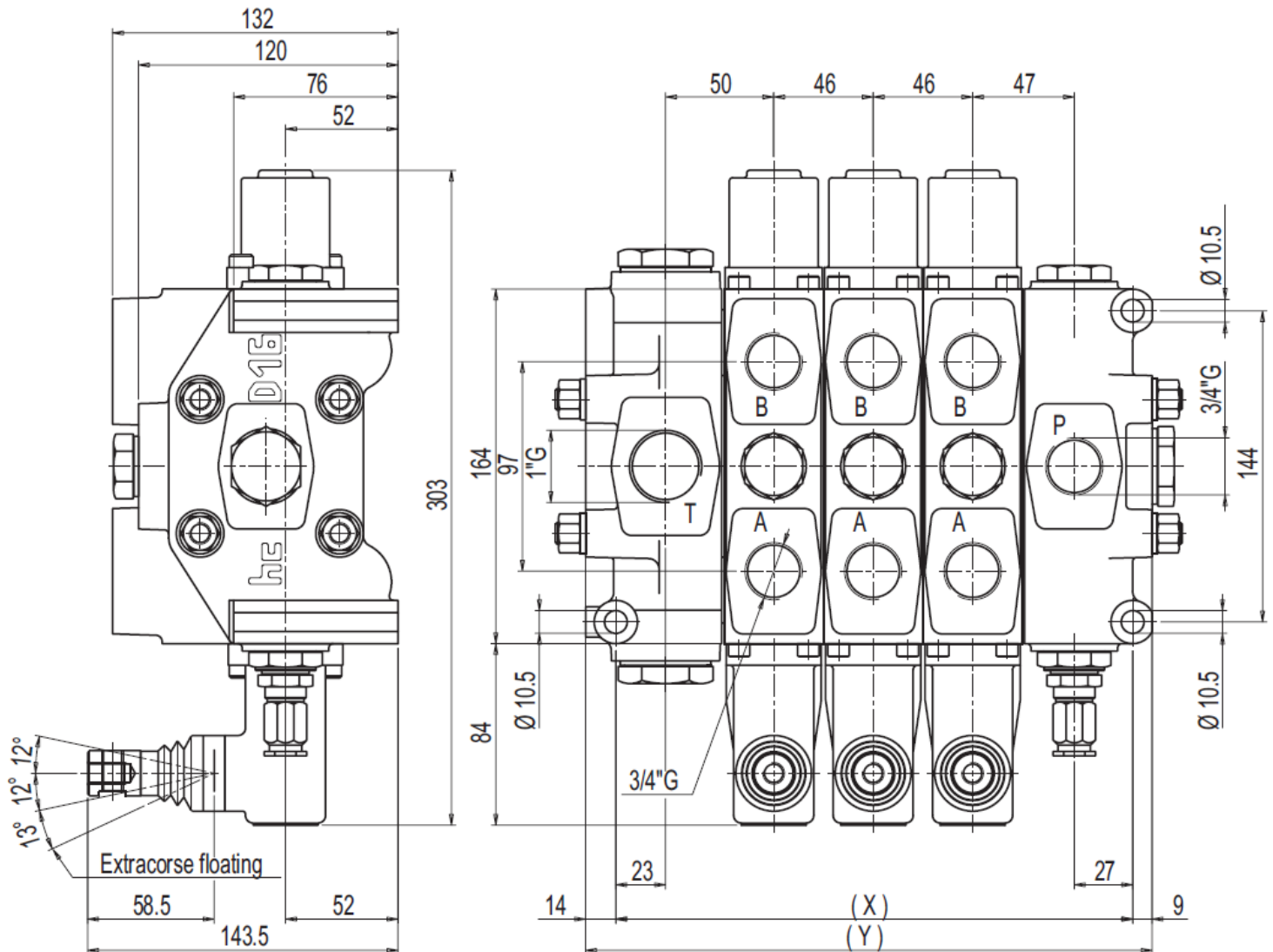


DIMENSIONS - Standard Thread



PORTS	BSP Thread ISO-228	PORTS - BSP Thread
Inlet - (P)	-G12 3/4"	Hydraulic Pilot -G04 1/4" Pneumatic Pilot -G04 1/4"
Ports - (A-B)	-G12 3/4"	
Outlet - (T)	-G16 1"	
Carry-over (HPCO)	-G16 1"	

DIMENSIONAL DRAWING



VARIABLE DIMENSIONS

/1 = 1x HC-D16-I (Inlet Section) + 1x HC-D16-W-PR or HC-D16-W-HYD (Work Section) + 1x HC-D16-O (Outlet Section)
 /2 = 1x HC-D16-I + 2x HC-D16-W-PR or HC-D16-W-HYD + 1x HC-D16-O
 /3 = 1x HC-D16-I + 3x HC-D16-W-PR or HC-D16-W-HYD + 1x HC-D16-O etc.

Type	/1	/2	/3	/4	/5	/6	/7	/8	/9	/10	/11	/12
X (mm)	147	193	239	285	331	377	423	469	515	561	607	653
X (in)	5,8	7,1	8,9	10,7	12,5	14,3	16,1	17,9	19,7	21,5	23,3	25,1
Y (mm)	170	216	262	308	354	400	446	492	538	584	630	676
Y (in)	6,7	8,5	10,3	12,1	13,9	15,7	17,5	19,3	21,1	22,9	24,7	26,5

WEIGHTS

Type -	/1	/2	/3	/4	/5	/6	/7	/8	/9	/10	/11	/12
Kg	19,1	24,1	29,2	34,4	39,5	44,5	49,6	54,7	59,8	64	70	75,1

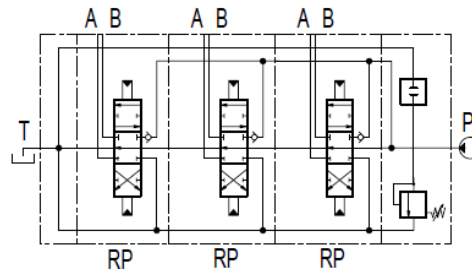
HYDRAULIC SPECIFICATIONS

Parallel circuit

When the spool is operated it intercepts the switch gallery by diverting the flow of oil to service port A or B. If two or more spools are actuated at the same time, the oil will power the service port that has the lower load by selecting the path with the least resistance; by throttling the spools, the flow of oil can be divided between two or more service ports.

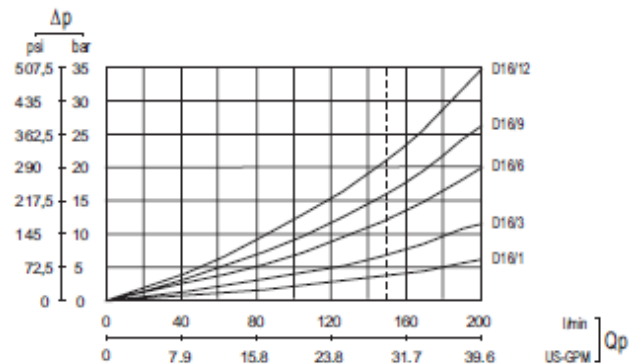
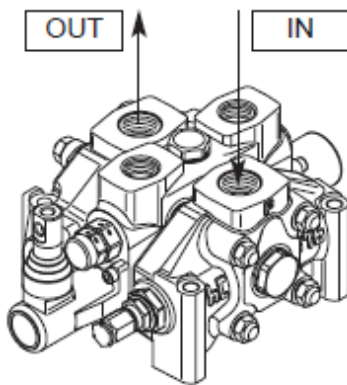
Parallel-Tandem circuit

When the spool is operated it intercepts the switch gallery by diverting the flow of oil to service port A or B. The tandem circuit is powered by the switch gallery thus permitting the use of just one work section at a time. The section downstream from the tandem section that has been actuated does not operate, the upstream section has priority.

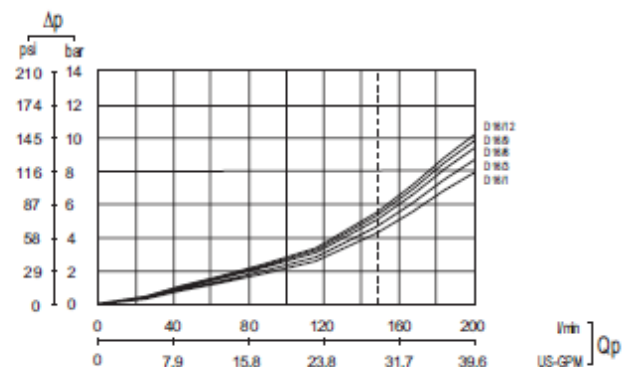
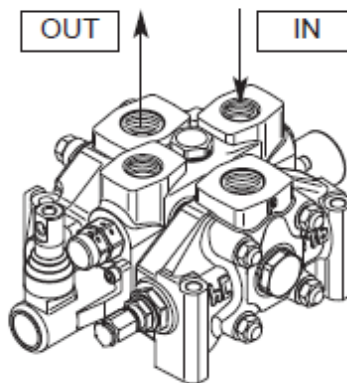


TYPICAL CURVES - Pressure Setting Options

Pressure drop (P - T)

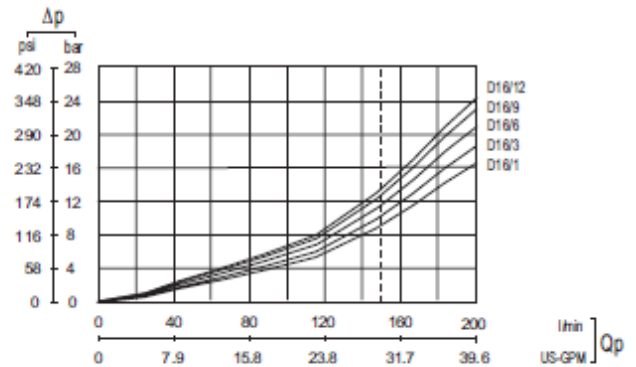
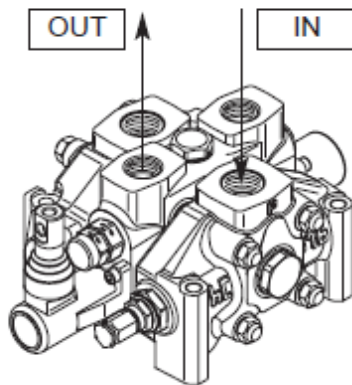


Pressure drop (A/B - T)



TYPICAL CURVES - Pressure Setting Options

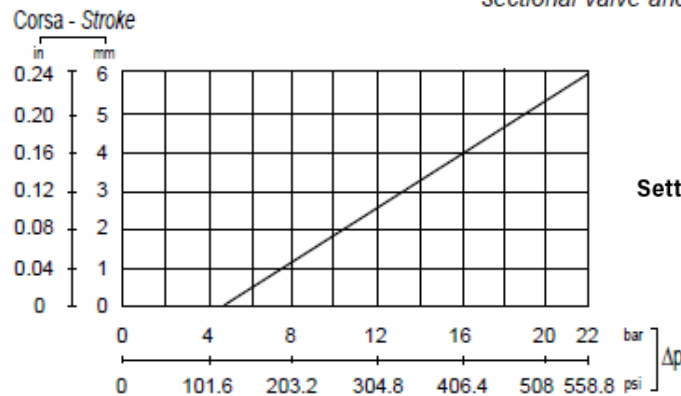
Pressure drop (P - A/B)



TYPICAL CURVES - Direct Relief Valve Curve

Hydraulic pilot control curve

NOTE: indicated values have been tested with standard sectional valve and W001A spools.



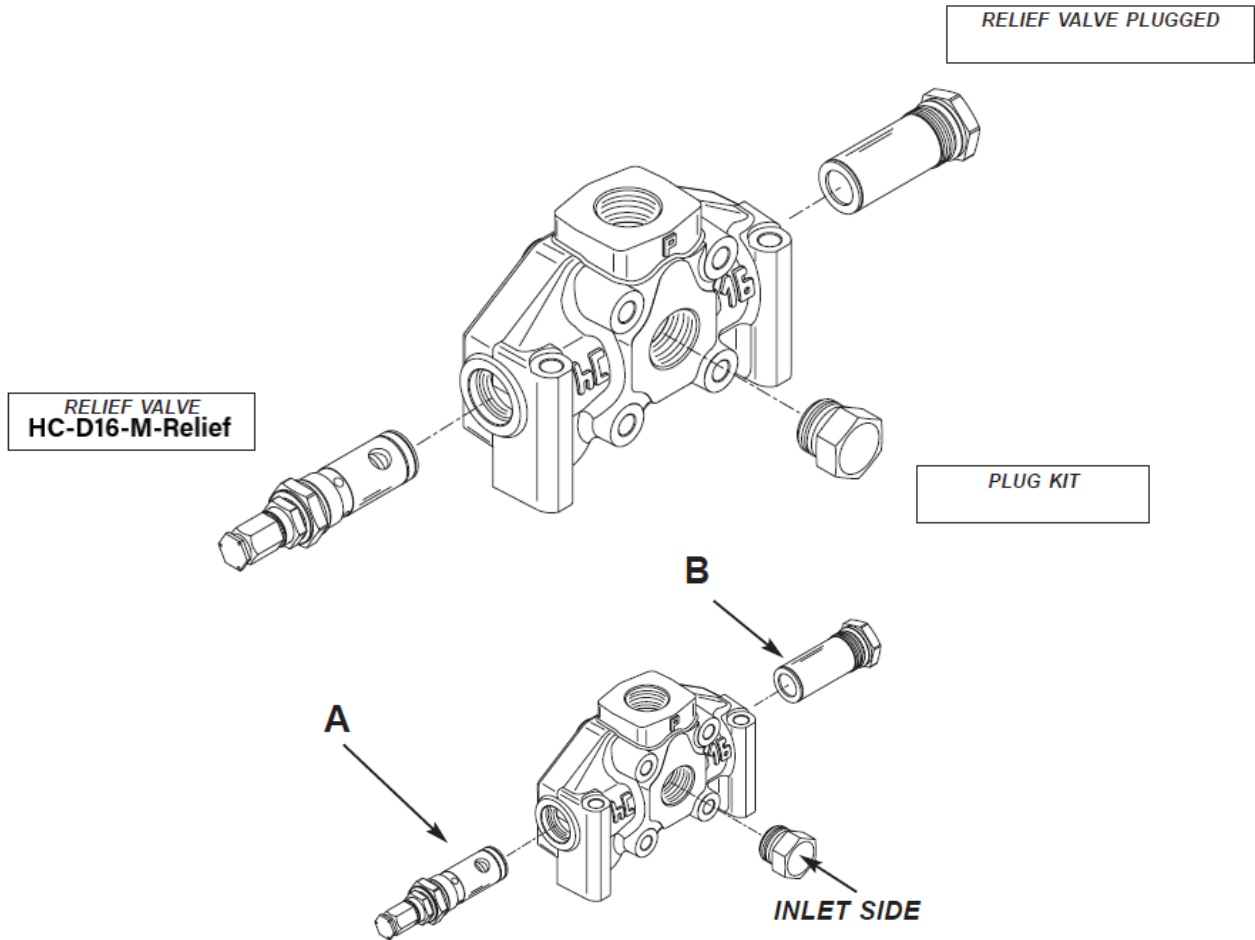
Setting Range (B) - 41Bar to 180Bar

NOTE: the graphic shows the spool stroke as a function of the pressure operating.

HC-D16-W-HYD - Work Section with Hydraulic Pilot Actuators or if you are ordering just a Hydraulic Pilot Actuator replacement kit HC-D16-HYD-PIL, 2x are needed for setup!

HC-D16-I | Inlet Section 3/4" BSP with Main Relief | 350Bar 150Lpm - Layout

All our HC-D16 valves are Left | Left Inlet Section | Inlet on P port | Outlet on T Port



HC-D16-I | Inlet Section 3/4" BSP with Main Relief | 350Bar 150Lpm - Layout

Inlet side

HYDRAULIC DIAGRAM	LAYOUT	DESCRIPTION + CODE
		<p>LEFT INLET SECTION</p> <p>Fluidco Code: HC-D16-I</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">IL</div>

HC-D16-I | Inlet Section | Left Inlet Section | Upper Inlet | 3/4" BSP -G12

A

G05

Upper inlet

3/4" BSP | -G12

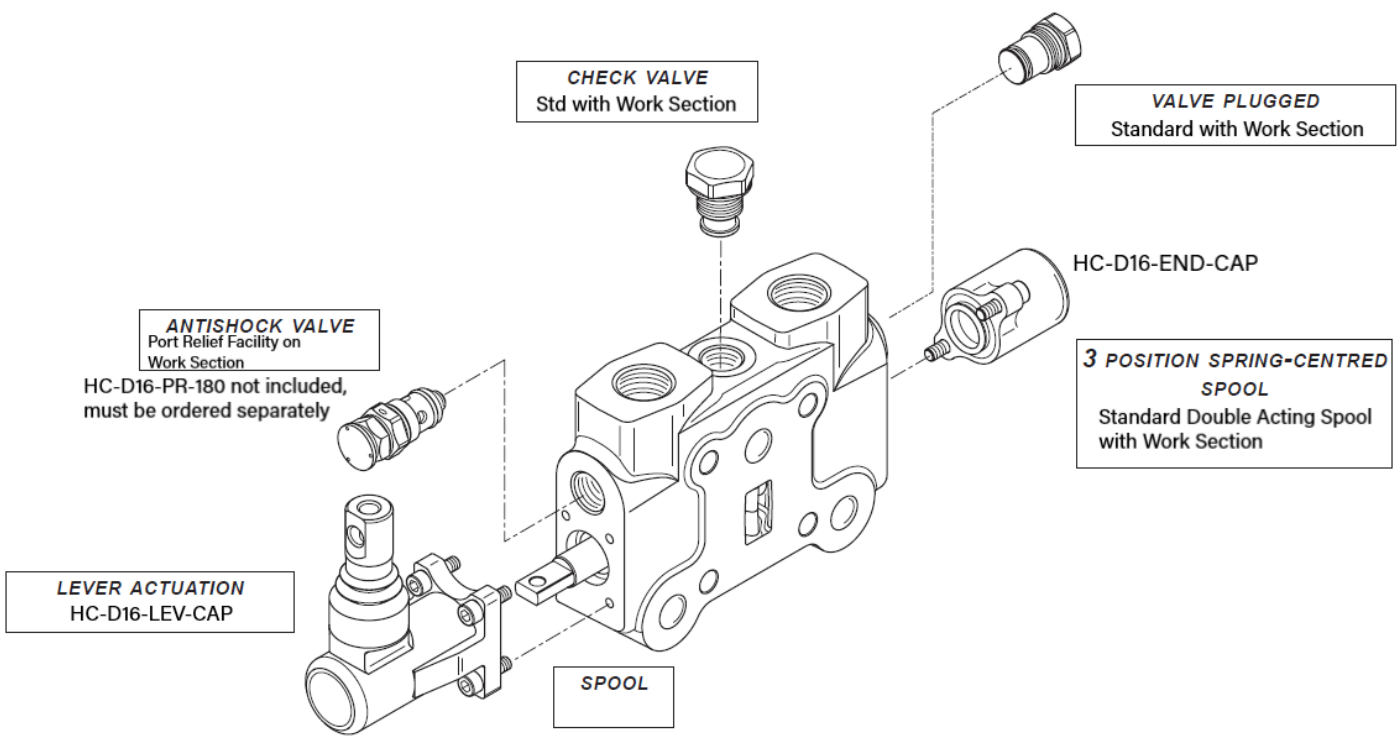
INLET ARRANGEMENT - Valve Identification

TYPE	DESIGN	DIAGRAM	DESCRIPTION
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2			<i>Pilot operated pressure relief valve</i>
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HC-D16-M-Relief - Main Relief Cartridge 180Bar

HC-D16-W-PR | Work Section 3/4" BSP with Port Relief Facility (Port Relief code: HC-D16-PR-180) | Layout



Parallel circuit section **RP** **Service Ports A & B - 3/4" BSP | -G12** **G05**

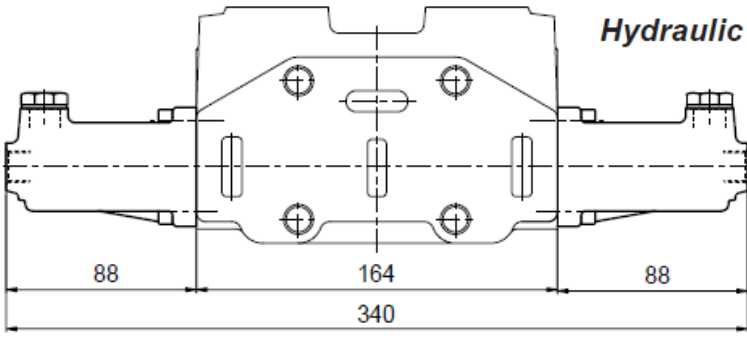
Spools identification

HYDRAULIC SCHEMA	CIRCUIT DESCRIPTION	CODE
	3 Positions Double-Acting	W001

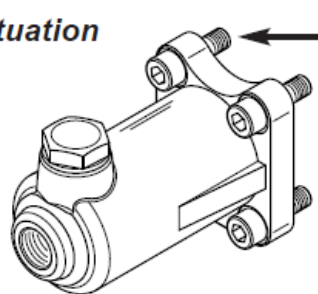
The above Spool is standard with HC-D16-W-PR Work Section

HC-D16-W-HYD | Work Section with Hydraulic Pilot Actuators | 3/4" BSP -G12 - No Port Relief Facility.

HC-D16-W-HYD - DIMENSIONS



CLAMPING TORQUE



H006

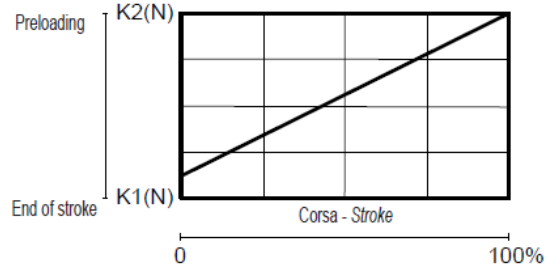
The HC-D16-W-HYD comes with 2x HC-D16-HYD-PIL Hydraulic Pilot Actuators & HC-D16-HYDSPOOL a Double Acting Spool for Hydraulic Pilot Actuators setup.
If you are ordering just the HC-D16-HYD-PIL Hydraulic Pilot Actuator kit, 2x are needed for setup!

SPOOL RETURN ACTION - Spring Load Valves | Standard Spring

STANDARD SPRING

A

Preloading
137,3 N
End of stroke
176,6 N



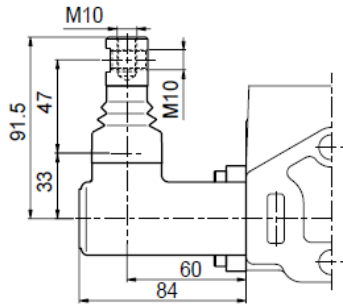
Spool return kit

F001A

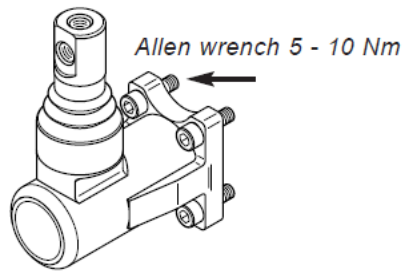
3 positions spring-centred spool
(standard spring)

SPOOL ACTUATION - Identification | Description and Dimensions

HC-D16-LEV-CAP | Lever Cap included on Work Section HC-D16-W-PR | Protected Lever H001



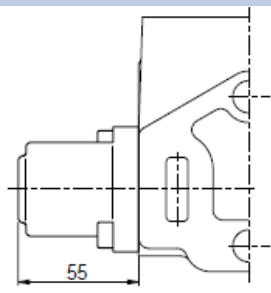
H001



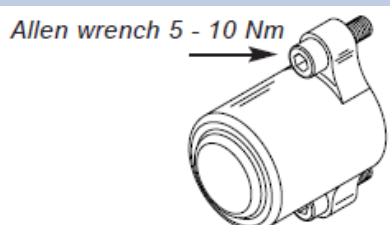
When ordering a replacement HC-D16-LEV-CAP kit, Note there is no Lever incl. HC-LEVER-M10 is sold separately.

SPOOL RETURN ACTION - Identification | Descriptions and Dimensions

HC-D16-END-CAP | Spool End Cap incl on Work Section HC-D16-W-PR | 3Pos Spring Centered Spool



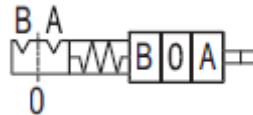
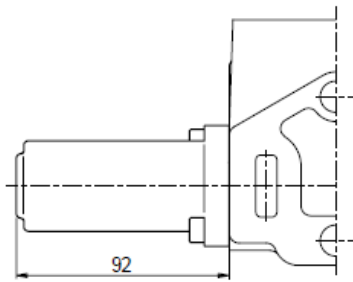
F001A



When ordering a replacement 3Pos Spring Centered Spool End Cap our code is: HC-D16-END-CAP

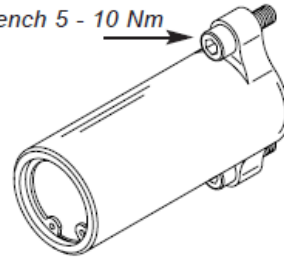
SPOOL RETURN ACTION - Identification | Descriptions and Dimensions

HC-D16-DETENT-3 | 3 Position Spring Centered Spool Detent on A & B | Kit

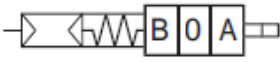
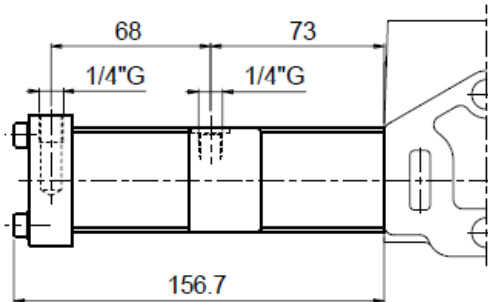


F002A

Allen wrench 5 - 10 Nm

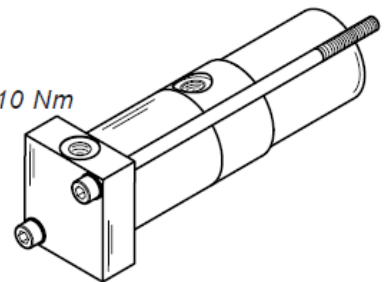


HC-D16-PNU-PIL | Pneumatic Pilot Actuator | 1x Needed | Pneumatic Control ON - OFF | Kit



F020A

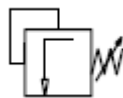
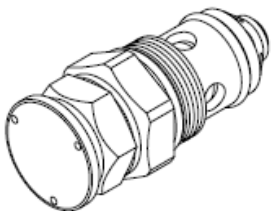
Allen wrench 5 - 10 Nm



HC-D16-HYDSPOOL is the Double Acting Spool needed for the Hydraulic Pilot Actuator setup

AUXILIARY VALVES - Identification | Hydraulic Schema | Setting Range

HC-D16-PR-180 | Port Relief Valve | Antishock Valve | ARV | Setting Range B

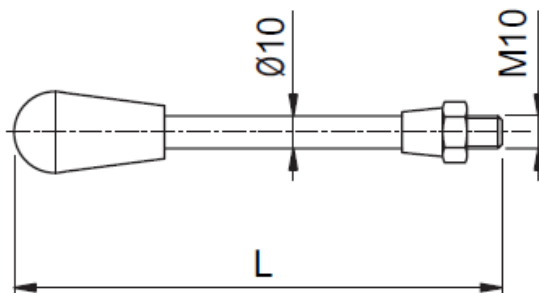


01 PA

Setting Range - B

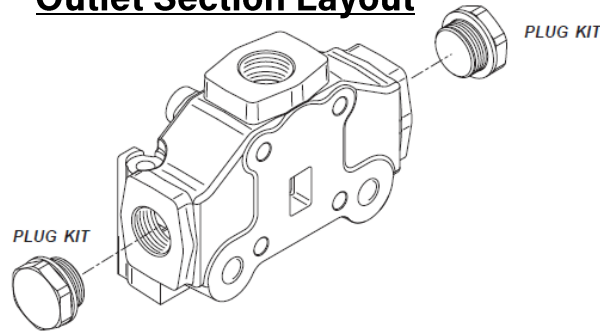
151Bar - 230Bar at Full Flow
121Bar - 200Bar at Min. Flow

HC-LEVER-M10 \ Length between 200 & 250mm



OUTLET SECTION - HC-D16-O Fluidco Code | 1" BSP -G16 | Outlet Section with Single Return (T) Left Side Inlet (P)

Outlet Section Layout



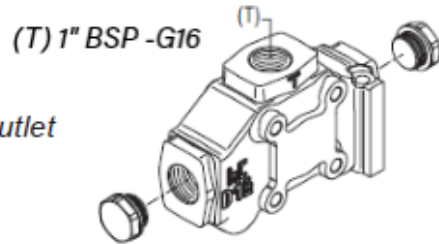
HYDRAULIC DIAGRAM	LAYOUT	DESCRIPTION + CODE
		<p>OUTLET SECTION WITH SINGLE RETURN (T) LEFT-SIDE INLET (P)</p>
		<div style="border: 1px solid black; padding: 5px; display: inline-block;">TK</div>

Outlet position and available thread type

A

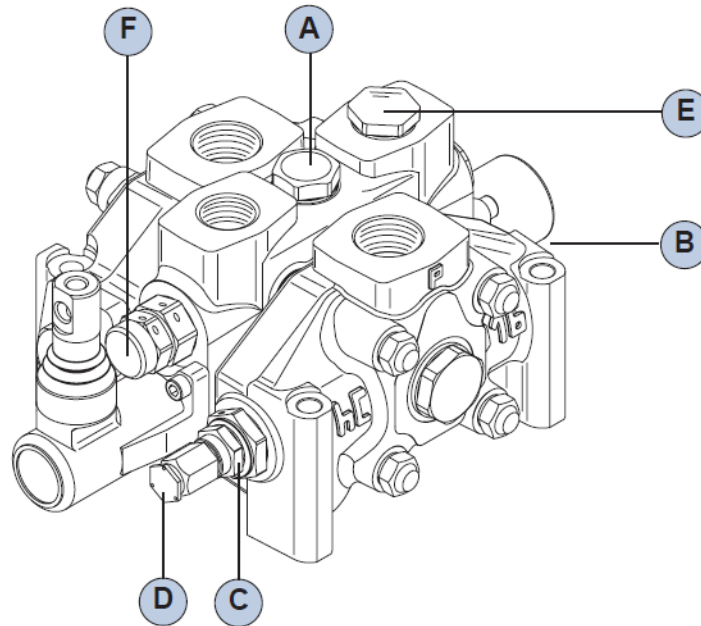
G06

Upper outlet



HPCO = High Pressure Carry Over Outlet Option

D16 HPCO (High Pressure Carry Over) Outlet Section Option - 2x HC-D16-PB-PLUGS Needed
Assembly instructions below

INSTALLATION AND MAINTENANCE -

General clamping torque

POSITION	DESCRIPTION	CLAMPING TORQUE (Nm)
A	load check valve plug	80
B	plug to replace pressure relief valve	80
C	pressure relief valve body	80
D	pressure relief valve cap	20
E	fittings in service ports A-B-P-T	G05 = 120 - G06 = 120 G05 = 3/4" BSP G06 = 1" BSP
F	clamping torque auxiliary valve	see table (X)

Table X Below

ANTISHOCK VALVE PLUG

25 Nm

ANTISHOCK VALVE BODY

80 Nm

PLUG REPLACES VALVE

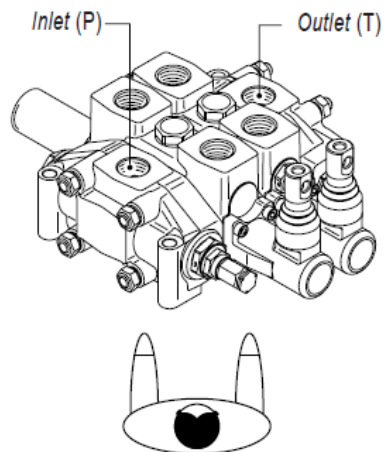
80 Nm

INSTALLATION AND MAINTENANCE -**Assembly instructions**

Since our directional control valve casings have symmetrical galleries, they can be converted from right-side inlet (IR) to left-side inlet (IL) simply by turning the spool and relative controls through 180°.

This operation is not possible when using spool types: 012 - 013.

Recommended curve for our standard directional control valves **A01**



Directional control valve with left inlet (IL)