



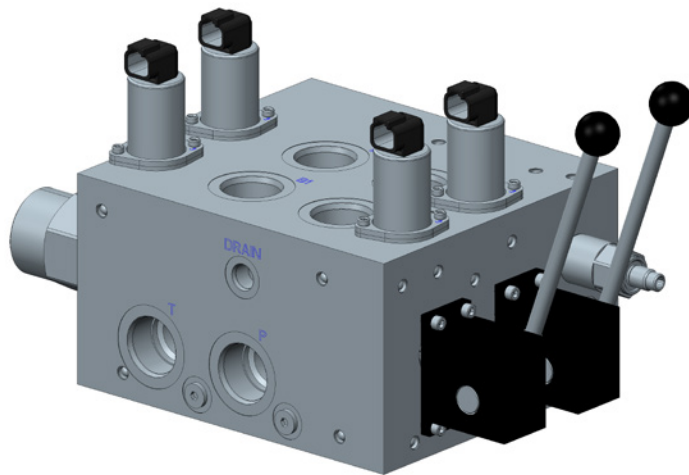
Piloted Proportional Directional Control With Manual Operator

Background

Historically cartridge valve technology has always been a good fit for the low to middle range of flow and pressure applications. The strengths of cartridge valves, when compared to other technology choices, are flexibility of design (mix and match sizes/components), compact footprint, possibility for distributed control, and ease of maintenance. With the development of HydraForce HyPerformance™ high-pressure cartridges that perform in systems with working pressure up to 350 bar (5075 psi), and with expansion to 42 size and larger cavities, HydraForce is being called upon to provide control for a much broader range of mobile, and even industrial applications.

Application

Cartridge valves are a good choice for pilot-operated or electric over hydraulic control technology, with limited options for manual override operation. Applications that require a control lever were previously only possible with more expensive hydraulic piloted joysticks and levers. Now you can have the benefits of a cartridge valve solution with direct manual operation as well. And with a cartridge valve system, you have the ability to tailor the hydraulics to any machine control function. For example, a truck-mounted crane may need a 12-size control for winch operation, a 16-size for boom extension, and a 42-size for swing and elevation. This machine might also need 10-size outrigger valves. With a stack valve solution you can add additional functions, but all are sized to the largest flow demand. This adds cost and can make the smaller functions difficult to control precisely.



The New HPE Manual Operator

Newly released in 2016 HydraForce now offers a manual operator for HPE 12, 16, and 42 size, 3-position 4-way proportional directional control valves. This compact operator is available with a 120 or 170 mm (5 or 7 inch) handle. The maximum operating force is 133 N (30 lbf). And, the handle is non-reactive so it does not impact control hysteresis and eliminates spool drag. The lever disengages when the valve is being piloted.

This opens a window for applications that exclusively required a stack valve in the past.

- Truck-mounted cranes
- Concrete pumps
- Refuse trucks
- Trenchers
- Winches

For detailed information and specifications, visit www.hydraforce.com or contact your local HydraForce representative at www.hydraforce.com/distrib/world.htm

HYDRAFORCE, INC.

500 Barclay Blvd. • Lincolnshire, IL 60069 USA
Ph: 847 793 2300 • Fx: 847 793 0086
Web: www.hydraforce.com • E-Mail: sales@hydraforce.com
ISO 9001 & QS 9000 • Member: National Fluid Power Association

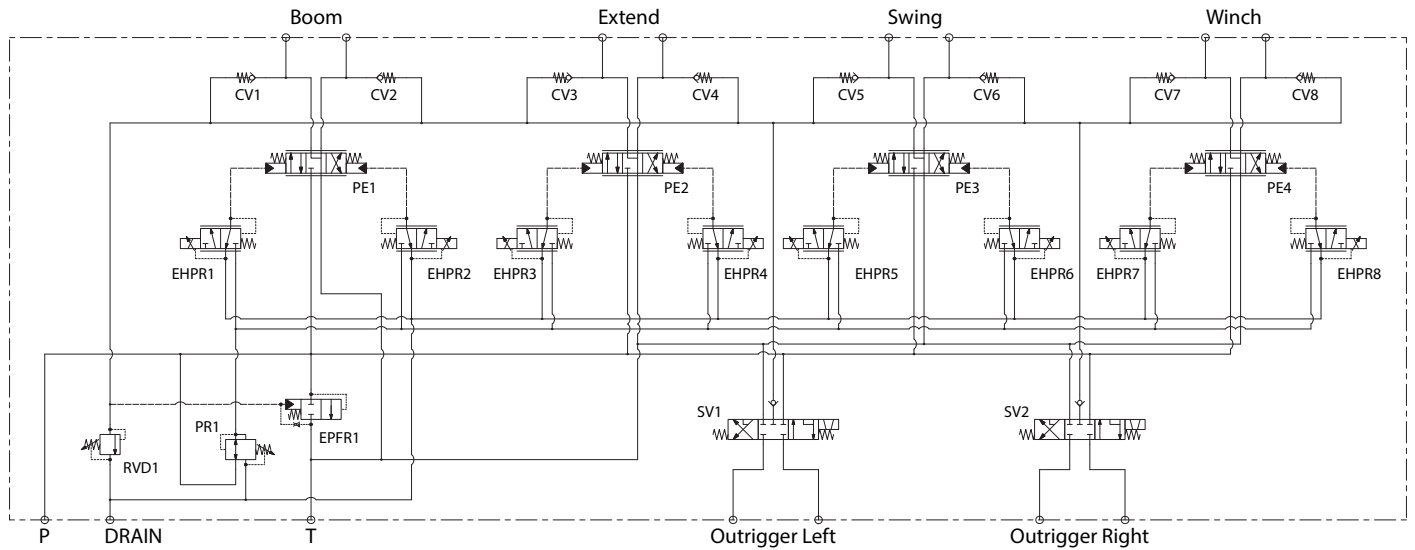
HYDRAFORCE HYDRAULICS, LTD.

Advanced Manufacturing Hub • 250 Aston Hall Road
Birmingham B6 7FE United Kingdom
Ph: 44 121 333 1800 • Fx: 44 121 333 1810
Web: www.hydraforce.com • E-Mail: sales-uk@hydraforce.com
Member: British Fluid Power Association and Verband Deutscher Maschinen- und Anlagenbau e.V. (VDMA) • ISO 9001 & ISO 14001

HYDRAFORCE HYDRAULIC SYSTEMS (CHANGZHOU) CO., LTD.

388 W. Huanghe Road • Building 15A
GDH Changzhou Airport Indl Park
Xinbei District • Changzhou, China 213022
Ph: 86 519 6988 1200 • Fx: 86 519 6988 1205
Web: www.hydraforce.com • E-Mail: sales@hydraforce.com
ISO 9001: 2008

Pilot-operated control circuit



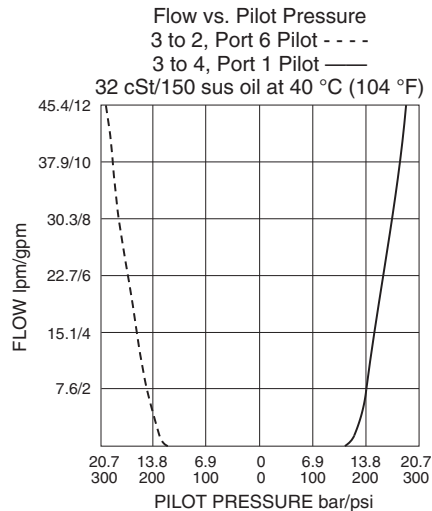
When paired with our G3 pilot valves, you get very precise electrohydraulic control. In this example circuit for a truck-mounted crane, HPE16-S67DM, and HPE42-S67DM proportional pilot-operated directional valves control boom, swing, winch, and telescope functions. EHPR98-G35 pressure reducing/relieving valves provide the electrical pilot stage for each function. EPFR10-S35 provides bypass-type pressure compensation for the pump gallery. PR58-38 regulates pilot pressure supply, and SV10-57C valves provide extend/retract function for two outriggers.

Specifications

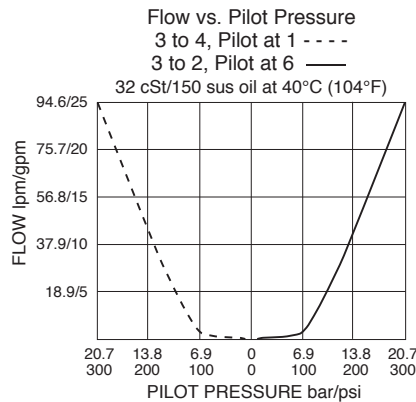
Size	12	16	42
Valve	HPE12-S67xM	HPE16-S67xM	HPE42-S67xM
Flow rating	45 lpm (12 gpm)	95 lpm (25 gpm)	170 lpm (45 gpm)
Max operating pressure ports 2, 3, 4 (inlet/work ports)	350 bar (5075 psi)	350 bar (5075 psi)	350 bar (5075 psi)
port 5 (tank)	69 bar (1000 psi)	69 bar (1000 psi)	69 bar (1000 psi)
ports 1, 6 (pilot)	35 bar (500 psi)	35 bar (500 psi)	35 bar (500 psi)

Performance

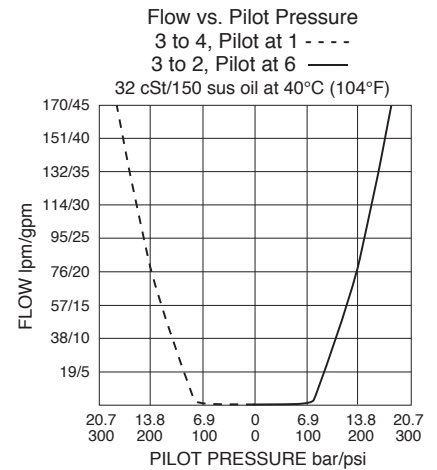
HPE12-S67xM



HPE16-S67xM



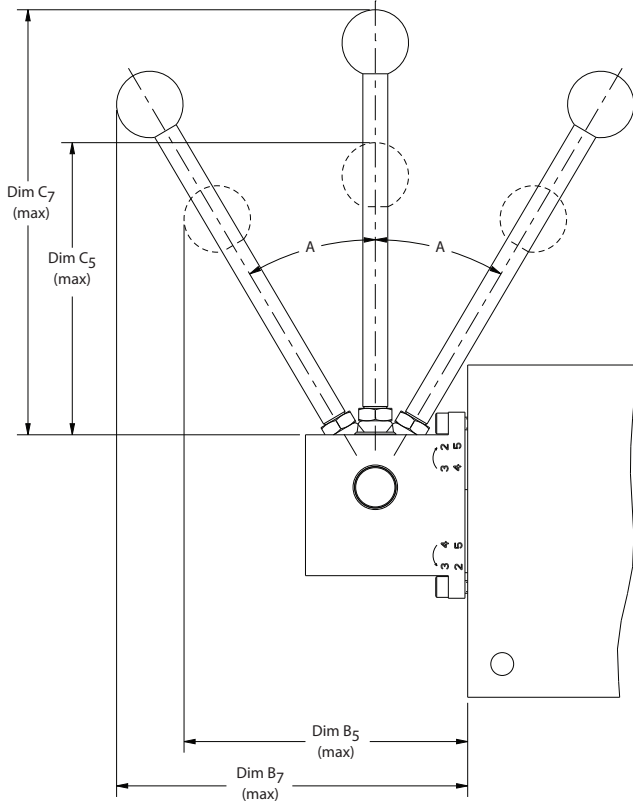
HPE42-S67xM



The content of this document implies no warranty of merchantability or fitness for a particular purpose. This information provides technical illustration only and is not a statement of suitability for any particular application. Each application is unique and we advise you to conduct your own tests and studies to determine the fitness of our products for your application.

Handle Travel

Dimensions in mm (in)

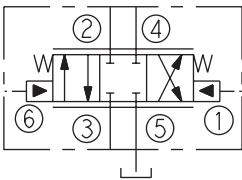


HPE valve	Angle 'A' (max)	120 mm (5 in) handle		170 mm (7 in) handle	
		Dim 'B' (max)	Dim 'C' (max)	Dim 'B' (max)	Dim 'C' (max)
HPE12-S67xM	17.2°	83.3 (3.276)	111.7 (4.396)	—	—
HPE16-S67xM	19.5°	87.8 (3.454)	111.7 (4.396)	—	—
HPE42-S67xM	30.5°	—	—	134.2 (5.283)	162.5 (6.396)

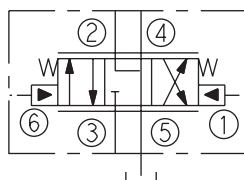
Note: Handle may be installed in any orientation. Ensure clearance for full range of travel.

Spool Options

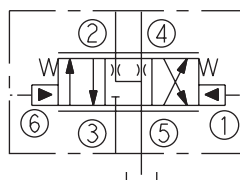
HPExx-S67CM



HPExx-S67DM



HPExx-S67HM



HPExx-S67KM

