

HPC VALVES



**Hydraulic
Pressure
Control Valves**



Hydraulic Pressure Control Valves

General

The HPC series is a range of hand or foot operated pilot pressure reducing valves intended for hydraulic remote control of VW valves, HPV or MPV pumps, and HMV motors.

The valves have been designed for many different mobile applications such as cranes, forestry equipment and excavating machinery.

HPC valves provide the following benefits to our customers:

- Freedom of choice when locating components
- Ease of mounting and testing
- Excellent operating and control characteristics
- Simple means of matching control characteristics to valve, pump, etc.

Design and Function

HPC valves are available in three basic configurations. The first is the single axis lever operated control, which is constructed from sections, each containing two pressure reducing valves. The sections may be used individually as single functions or the required number can be stacked for multi-lever operation.

The valve is available as a double housing model with all ports in the bottom face for joystick operation.

The valve is also available as a pedal operated design with two pressure reducing valves in the section and all ports in the bottom.

The valve body is cast iron. The hardened and precision ground spools guarantee a high degree of wear resistance and minimum internal leakage.

Special low-friction seals of nitrile rubber provide effective protection against external leakage. The valve is designed to give a minimum of hysteresis and has excellent control properties.

Hand levers are made of steel with an anti-corrosion surface treatment and are fitted with plastic handles of various designs. The pedal is manufactured from pressed steel plate with corrosion-resistant coating.

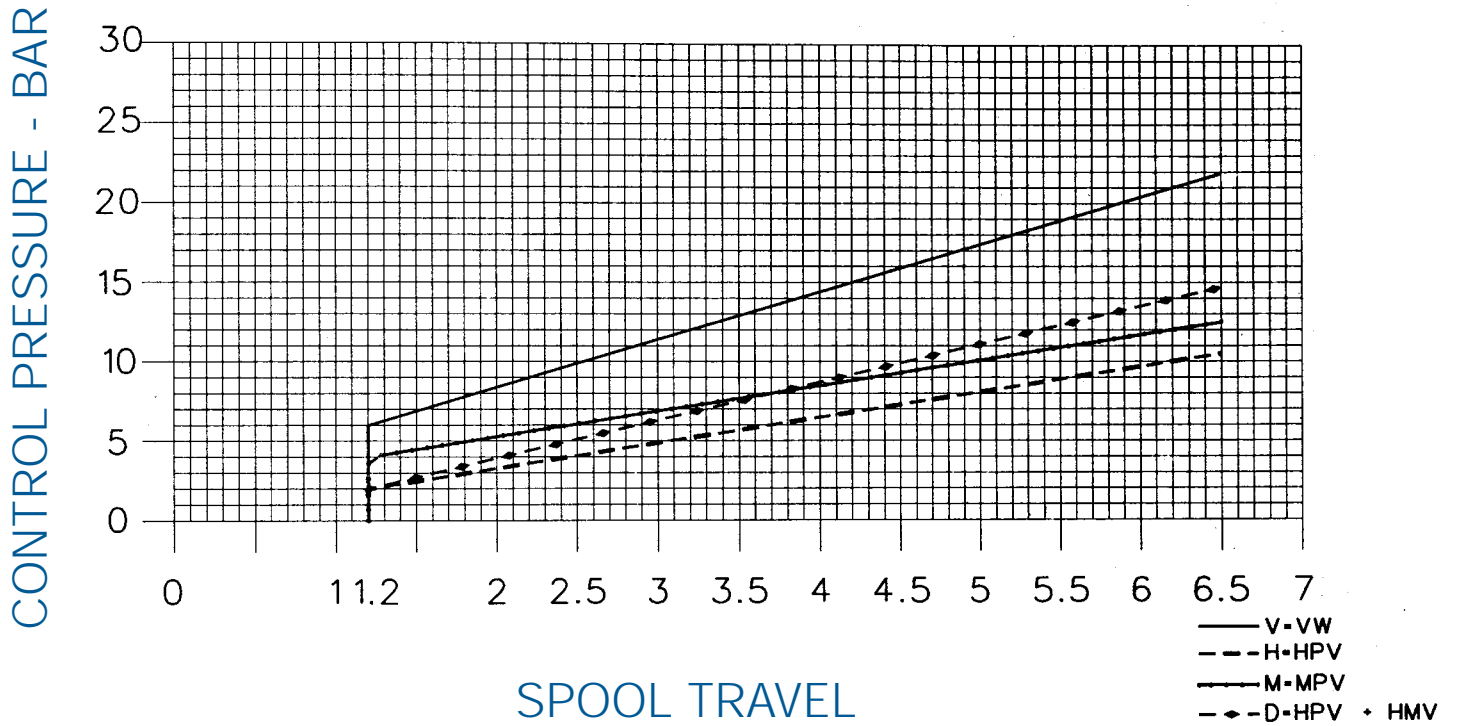
HPC valves are available in various combinations with a number of options as follows:

- Single axis with ball-type lever handle, for one double-acting function
- Multi-lever (ball-type) operated, for up to 6 double-acting functions
- Joystick lever operated for two double-acting functions
- Joystick handle with two-position push-button switch
- Joystick handle with three-position rocker switch
- Joystick handle with ergonomic design
- Foot pedal operated for a double-acting function

These features can be combined with control pressure ranges to match with a VW valve, HPV pump, MPV pump or an HPV pump combined with an HMV motor. Many additional options are available through LHC engineering such as special spring ranges and up to 5 pushbutton switches in the ergonomic handle.

HPC Control Characteristics

HPC CONTROL CHARACTERISTICS



Technical Data

Input pressure, maximum	100 bar (1450 psi)
Control pressure range	1-75 bar (15-1088 psi)
Recommended input pressure	max output pressure plus 15 bar
Return line pressure, maximum	3 bar (45 psi)
Control flow, maximum	15l/min (4 US gpm)
Oil temperature range	-20 °C to +70 °C
Ambient temperature range	-40 °C to +60 °C
Hysteresis, maximum	0.5 bar (7 psi)
Viscosity range	10-380 cSt
Filtration	10µm abs (ISO 4406 Target Contamination Class 16/13)
Leakage	20cc/min per spool (@50 °C. 30 cSt and 40 bar input pressure)
Angular displacement	
Single axis lever	±25°
Joystick lever	±18° one function fully actuated ±25° both functions fully actuated
Foot pedal	±10°
Weight	
Single axis lever	1.6 kg (3.5 lb)
Joystick lever	3.2 kg (7.1 lb)
Foot pedal	3.0 kg (6.6 lb)

Lever forces

Normal single axis lever torque:	
Fully actuated at 30 bar (435 psi)	2.0 Nm
Normal joystick lever torque with two directions of movement:	
One function fully actuated at 30 bar (435 psi)	3.0 Nm
Both functions fully actuated at 30 bar (435 psi)	4.2 Nm
Normal foot pedal torque:	
Fully actuated at 30 bar (435 psi)	8.5 Nm

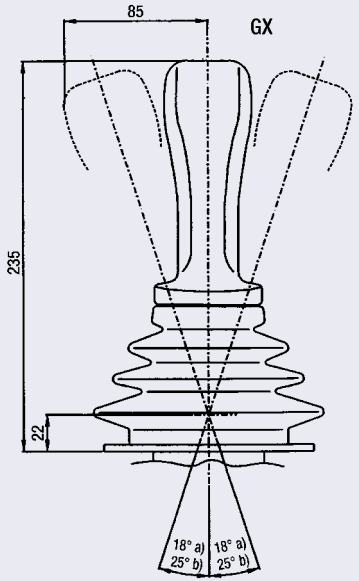
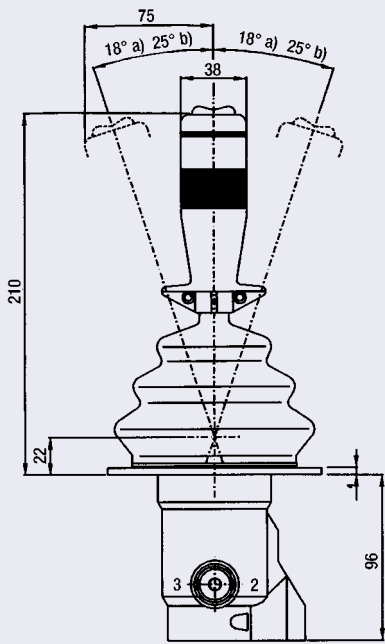
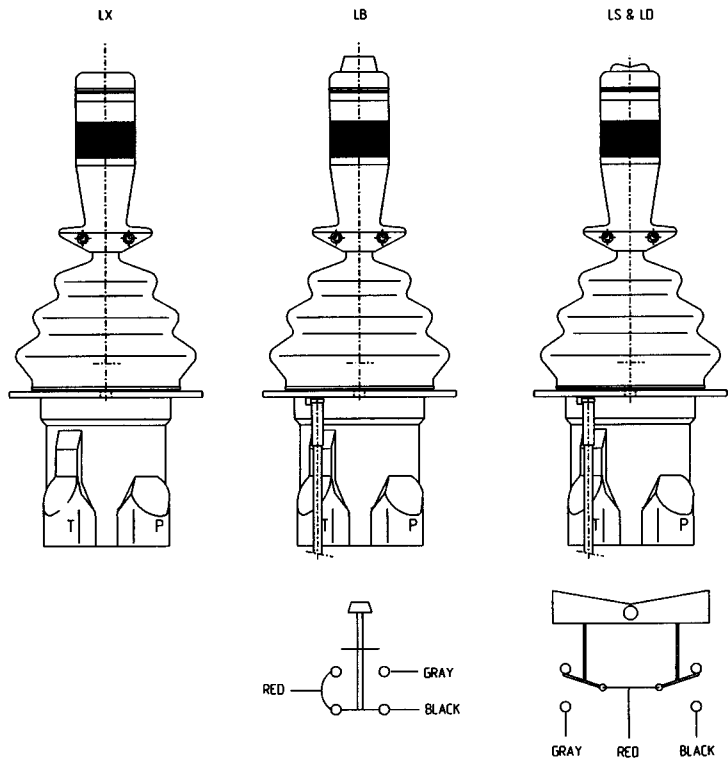
Electrical data

Pushbutton lever	
Two position switch breaking capacity:	
Resistive load	2A/30V
Inductive load	1A/30V, 100mH
Rocker switch lever	
Three position switch breaking capacity	
Resistive load	3A/30V
Inductive load	2.5A/30V, 100mH

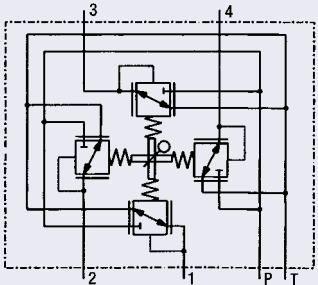
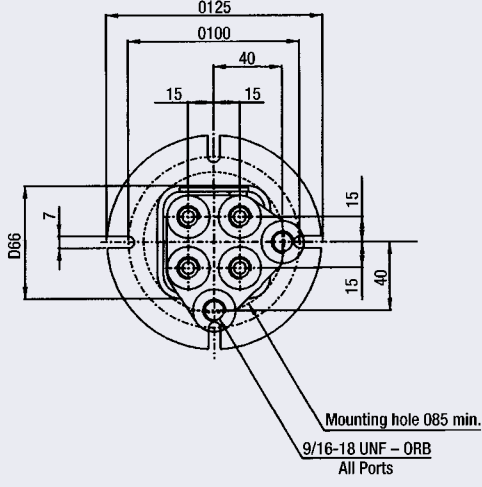
Ports

All ports are 9/16-18UNF, ORB
recommended control pressure lines—1/4" ID or larger for long runs or cold weather.

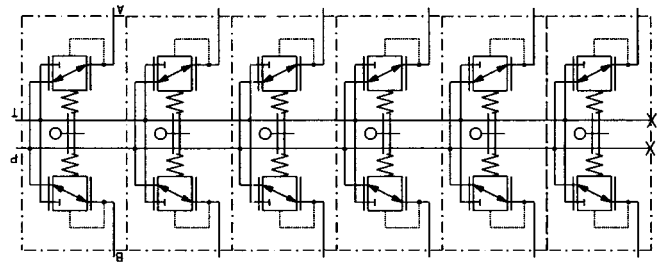
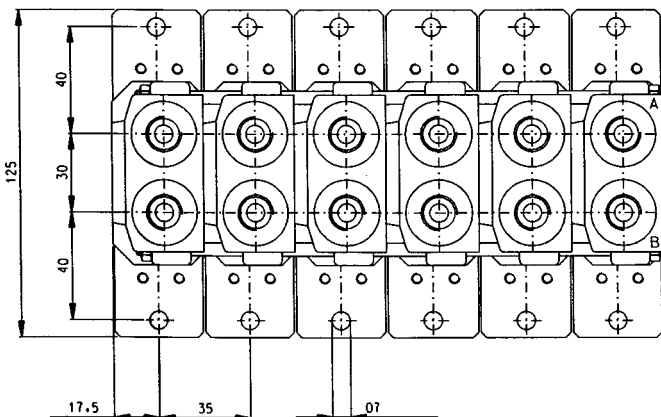
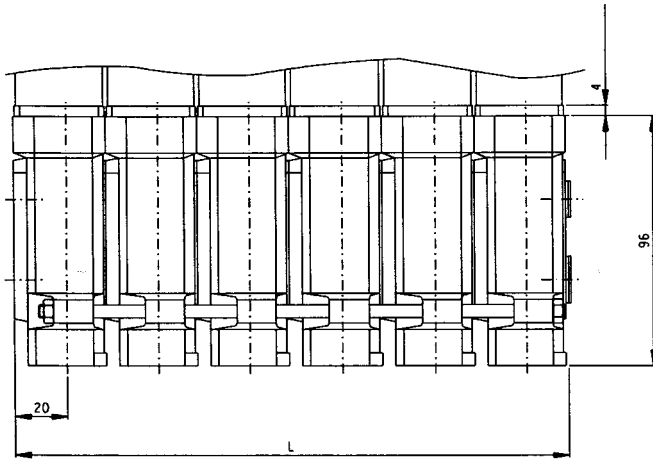
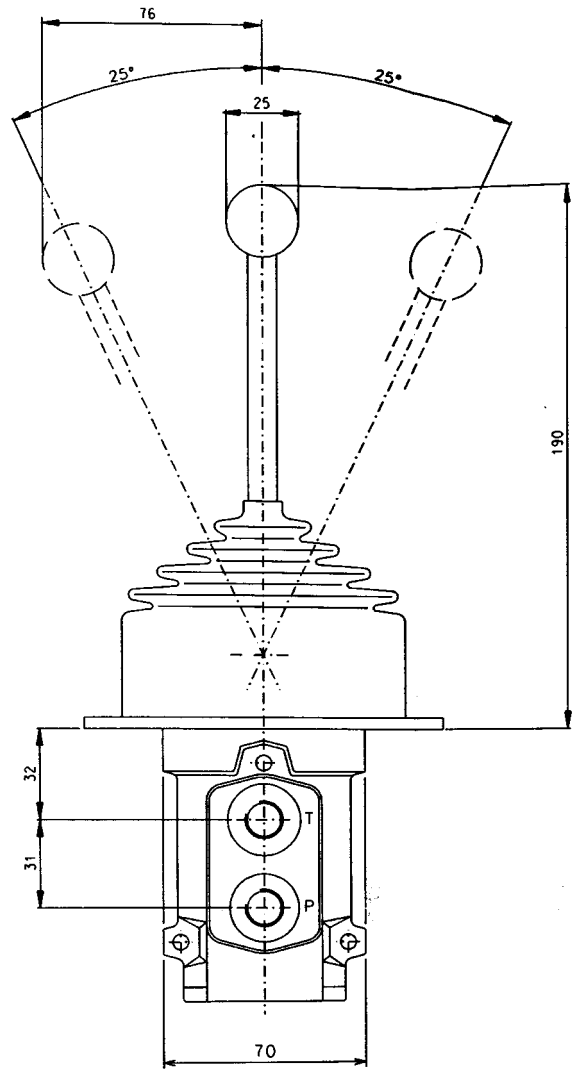
Hydraulic Joystick Pilot Controller



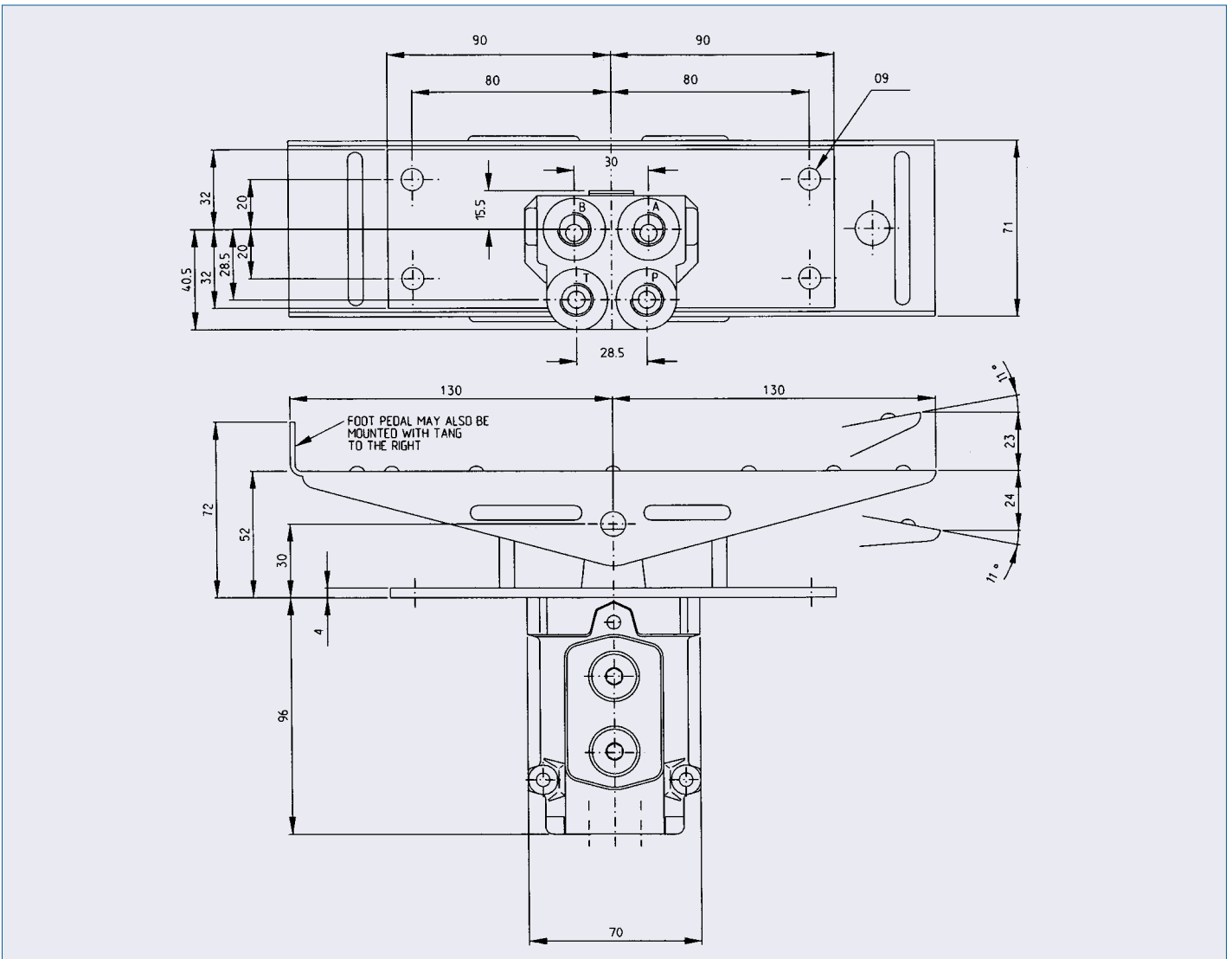
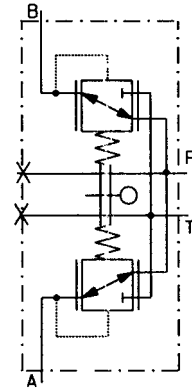
a) ONE FUNCTION FULLY ACTUATED
b) BOTH FUNCTIONS FULLY ACTUATED



Single Axis Hydraulic Pilot Controller

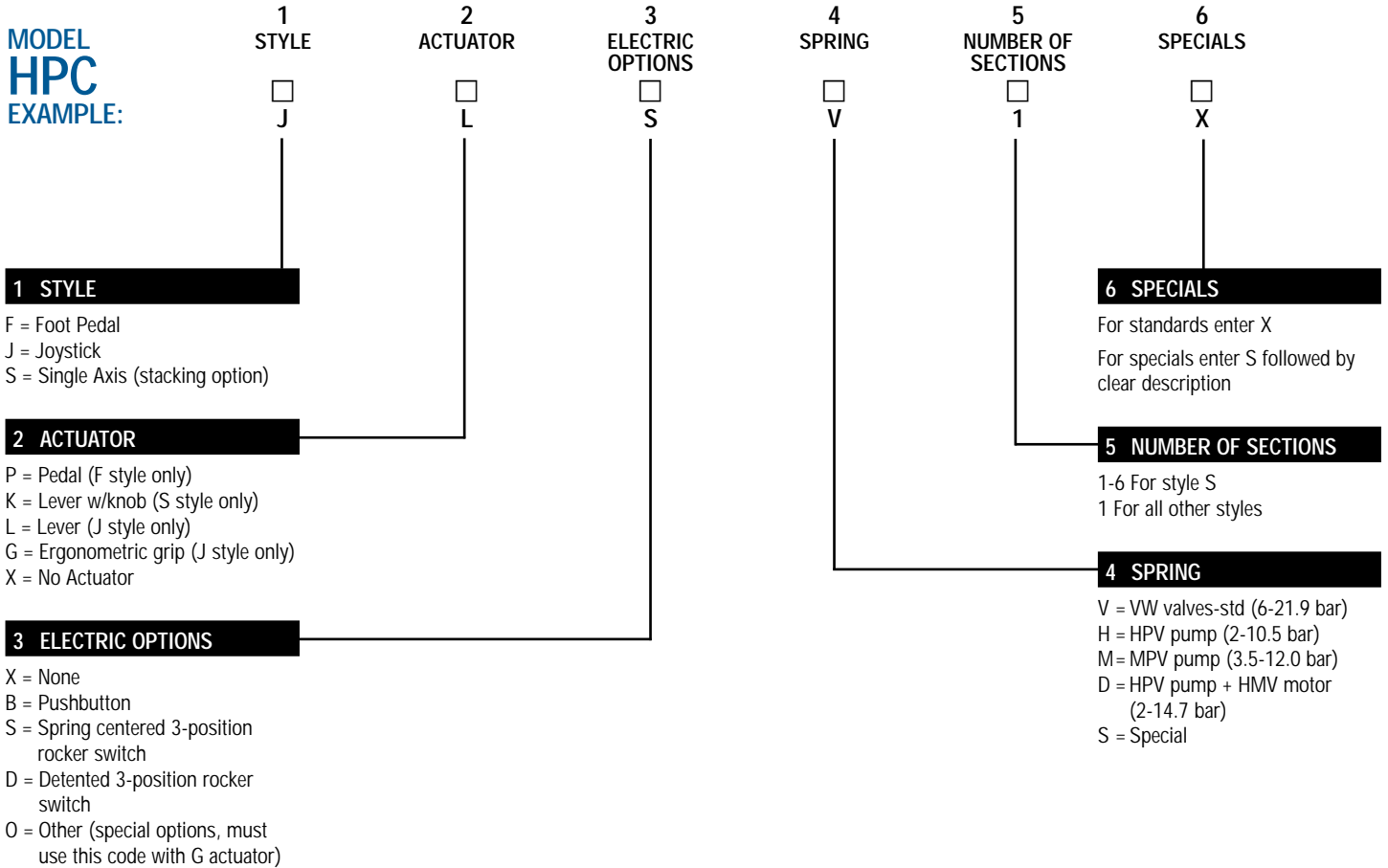


Hydraulic Foot Pedal Pilot Controller



Model Codes for Pilot Controllers

Model Codes for Hydraulic Pilot Controllers



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