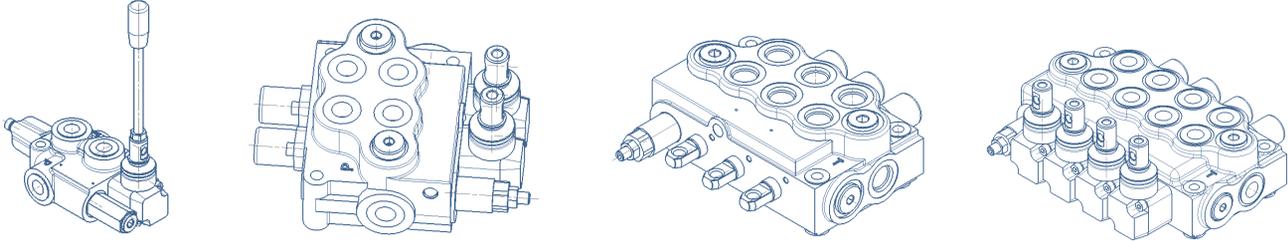


GDV45 Series Monoblock Valves



Main Features

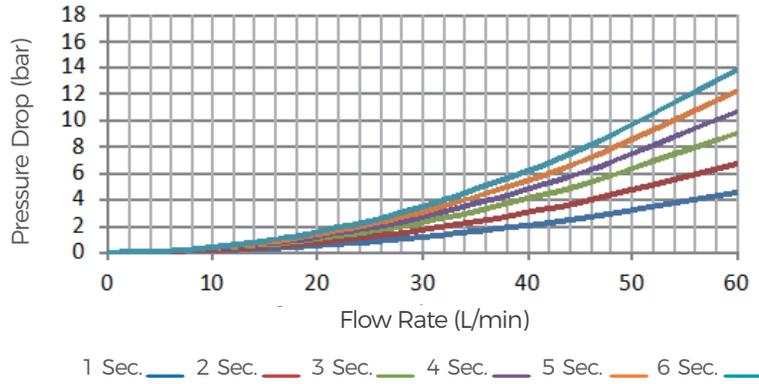
- Cast iron monoblock body.
- Spring cap and mechanical detent cap are made in die cast aluminum.
- Parallel circuit. Inlet passage has a load check valve.
- Provides manual control and wire pulling control modules.
- Provides power beyond options.
- Provides mechanical detent.
- Provides different spool functions to satisfy the needs for customers to control double and single cylinders, as well as to control hydraulic motors.
- Provide excellent flow characteristics and small operating force.
- Provides 6 different assemblies from 1 spool to 6 spools.

Technical Data

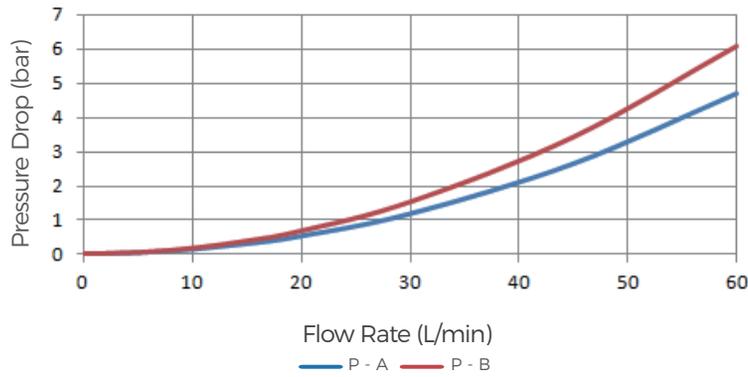
Rated flow rate	45 L/min	With NBR seals	-20°C- 80°C
Maximum flow rate	55 L/min	With FKM seals	-20°C- 100°C
Maximum pressure at P port	310 bar	Spool stroke(1/2 position)	+7/-7 mm
Maximum pressure at A/B port	310 bar	With floating function (1/2 /F position)	+7/-7 -9 mm
Maximum pressure at T port	25 bar	Recommend hydraulic oil viscosity range	15-75 mm ² /s
Internal leakage(@70 bar)	A/B to T 30-35cc/min	Recommend temperature range	-40°C- 60°C

Performance Data

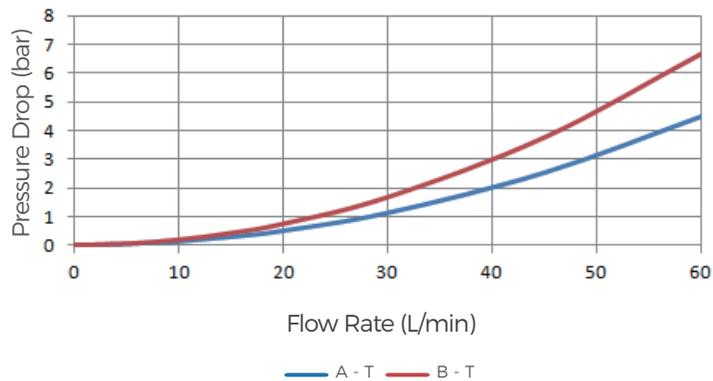
At Neutral, Pressure Drop (P to T)



Pressure Drop(P to A/B)

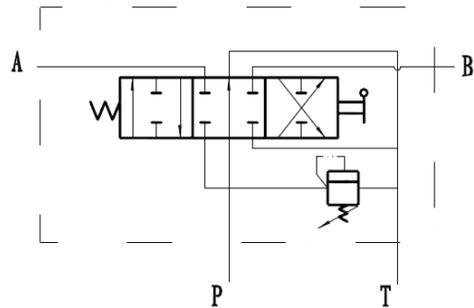
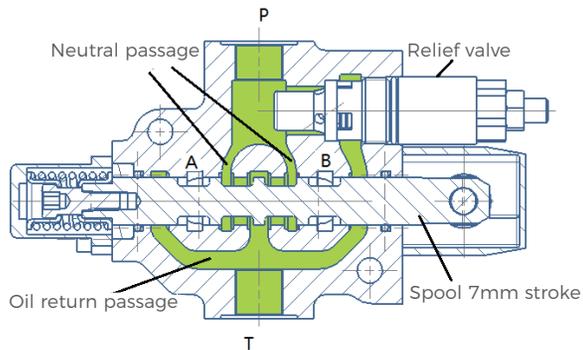


Pressure Drop(A/B to T)



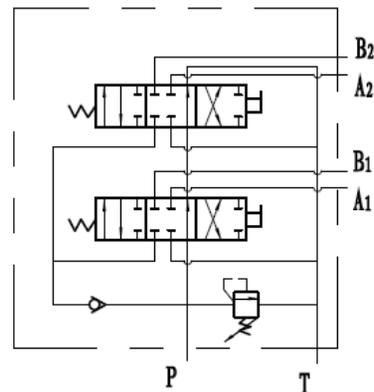
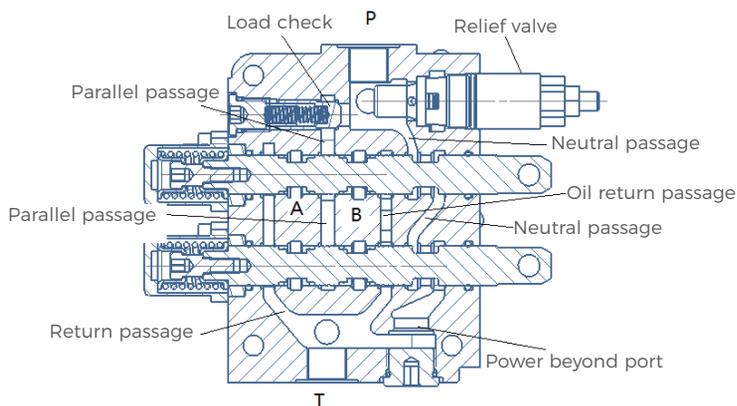
Basic Operating Principle

GDV45-1: 1 Spool Monoblock Valve



GDV45-1 is an one spool valve. It is also an open center 3-position 4-way valve. When spool is in neutral, flow from pump passes through neutral passage to tank, and produces very little pressure drop. When spool is moved to 1 or 2 position, the neutral passage is blocked by spool. The flow from pump has to pass through the parallel passage to provide flow to spools metering to work port. The spool stroke is 7 mm. For GDV45-1 monoblock valve, it cannot provide power beyond function.

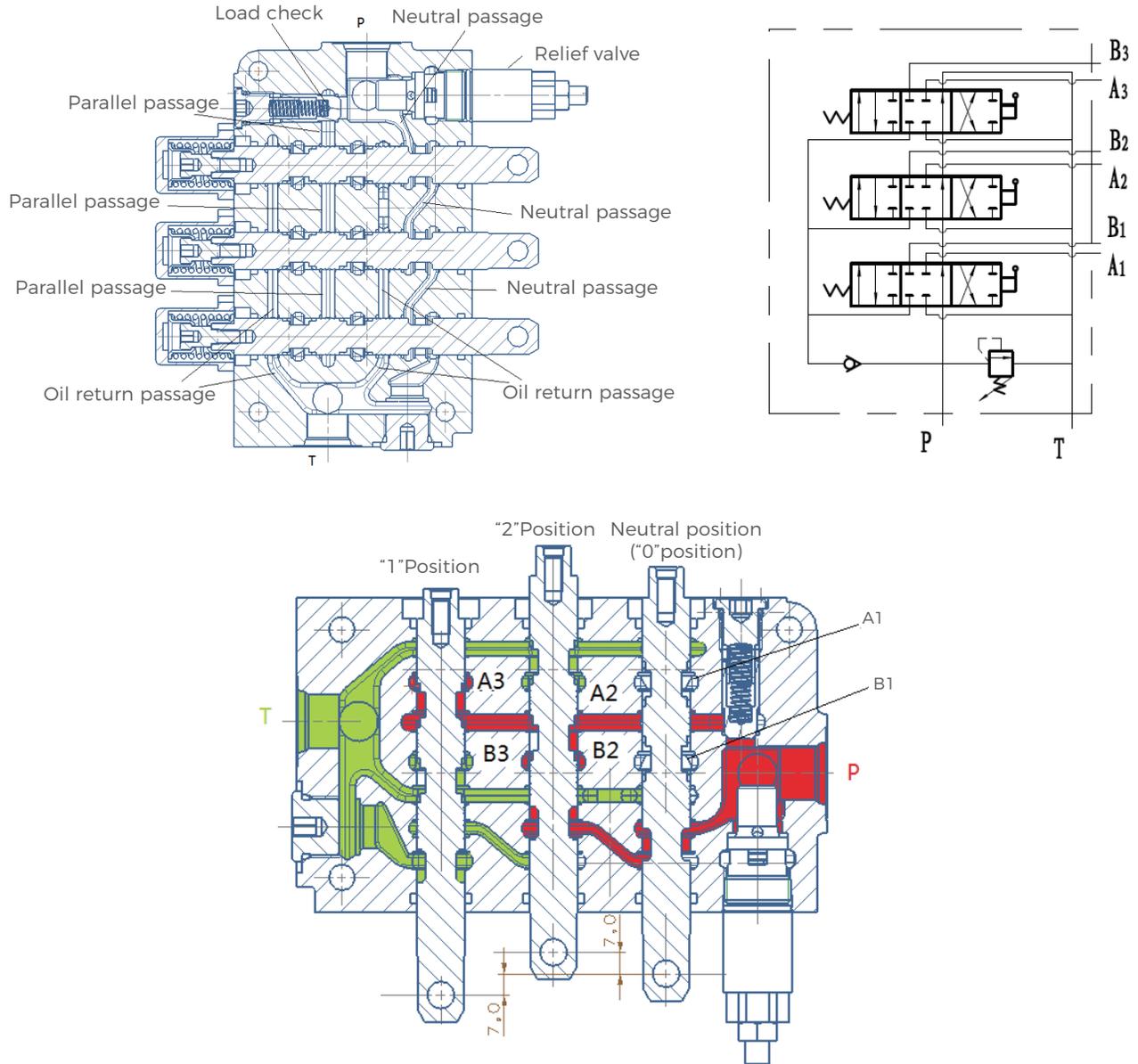
GDV45-2: 2 Spools Monoblock Valve



GDV45-2, two spools monoblock valve is also an open center 3-position 4-way valve. When spools are all in neutral, flow from pump passes through neutral passage to tank, and produces very little pressure drop. When one of the spools is moved to 1 or 2 position, the neutral passage is blocked by the spool. The flow from pump has to pass through the parallel passage to provide flow to spools metering to work port. There are options to choose for location of the inlet port and return port. There is also an option to have power beyond port. If first spool is moved to 1 or 2 position, then, the second spools neutral passage has no flow. The operator can operate two spools at the same time, but the speed of the controlled device is dependent on the load of the device.

Basic Operating Principle

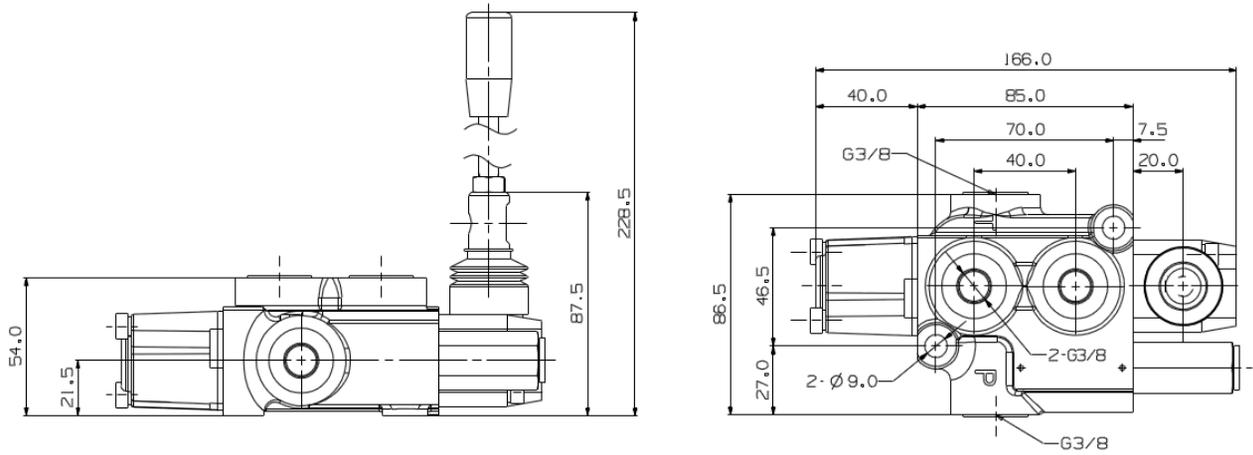
GDV45-3: 3 Spools Monoblock Valve



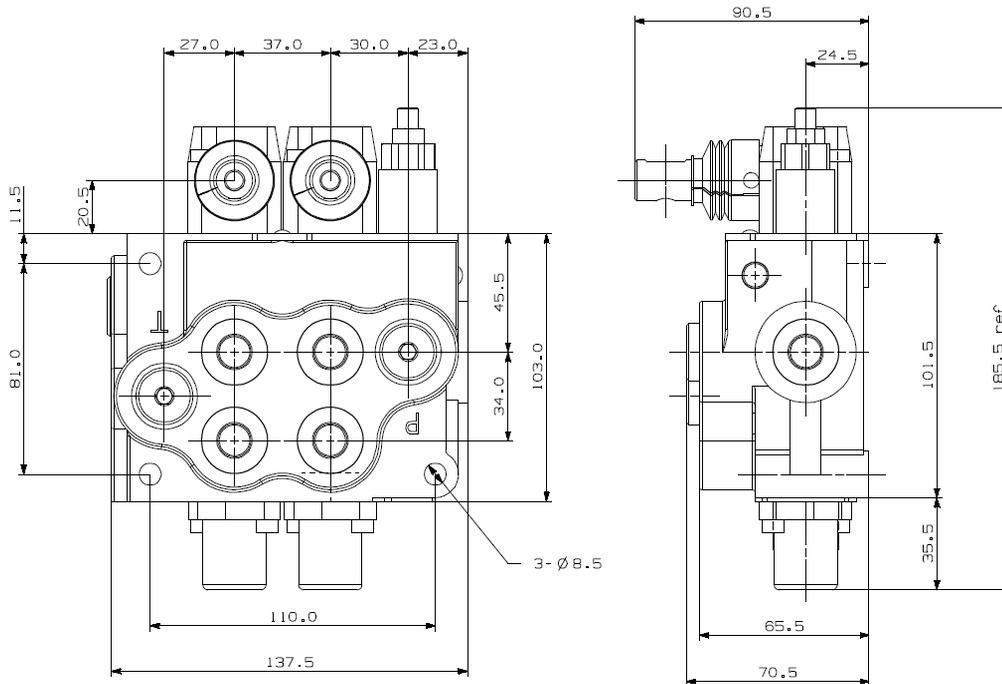
GDV45-3 is a three spools monoblock valve. It is also an open center 3-position 4-way valve. The three spools were moved as shown in the above picture. The first spool is in neutral (O position). The spool metering to A1 and B1 are all blocked. The second spool is moved to 2 position, flow from parallel passage flows through spool opening to B2 port, flow from A2 port returns through another opening spools. The third spool is moved to 1 position, flow from parallel passage flows to A3 through opening spool. Flow in B3 port flows to return passage through the another opening spools.

Dimensions

GDV45-1: 1 Spool Monoblock Valve

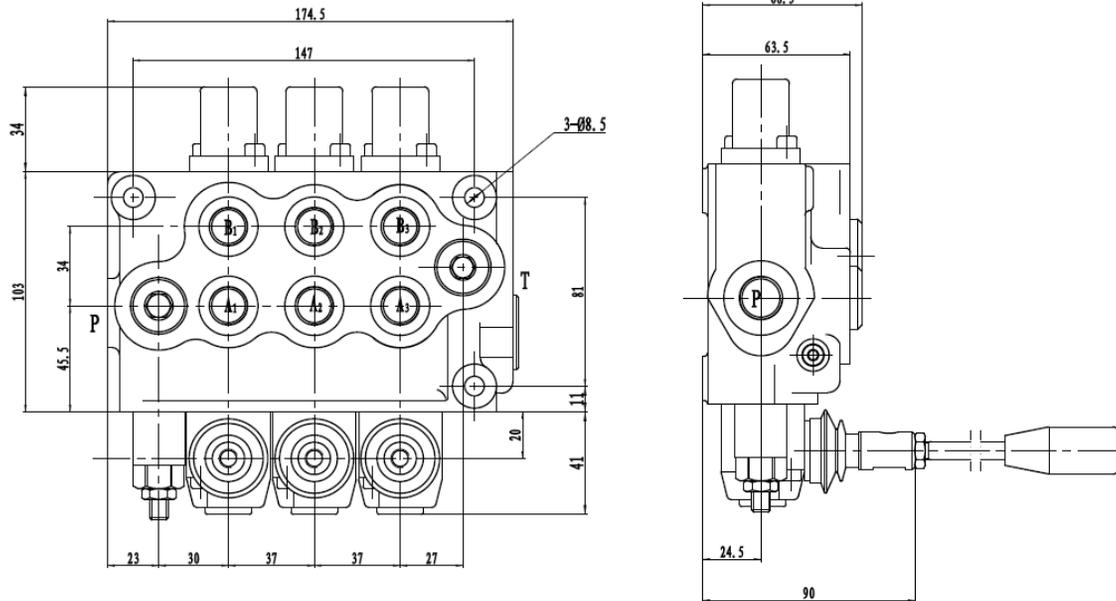


GDV45-2: 2 Spools Monoblock Valve

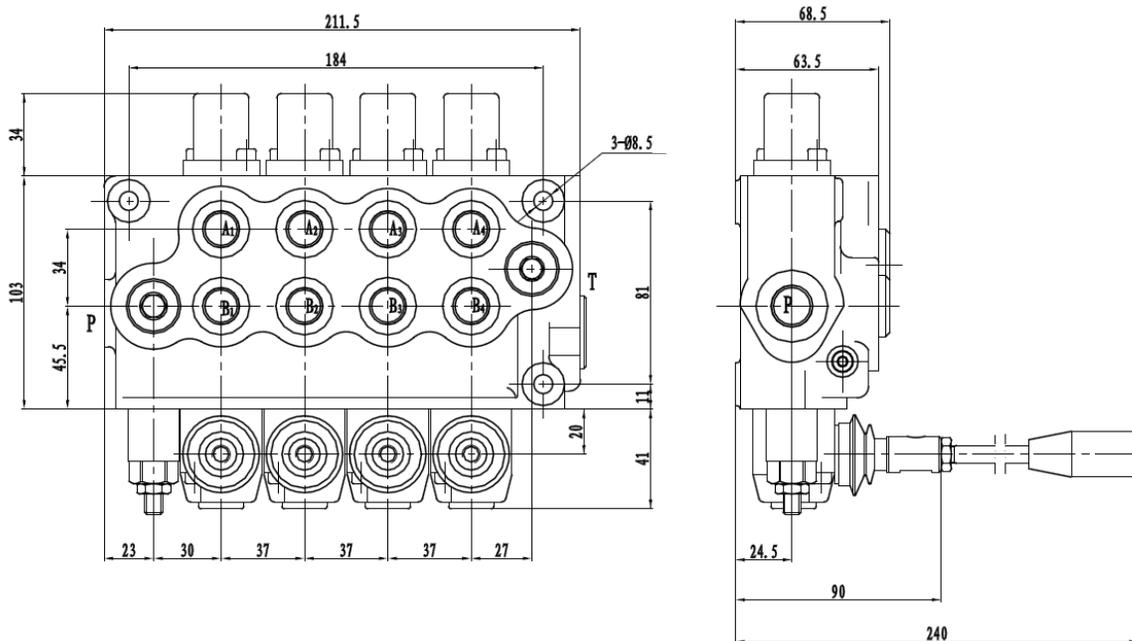


Dimensions

GDV45-3: 3 Spools Monoblock Valve

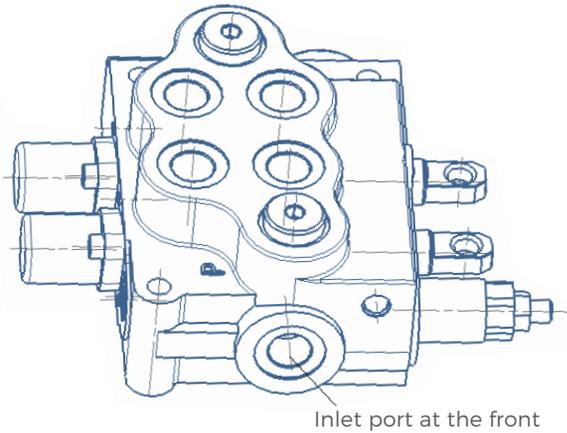


GDV45-4: 4 Spools Monoblock Valve

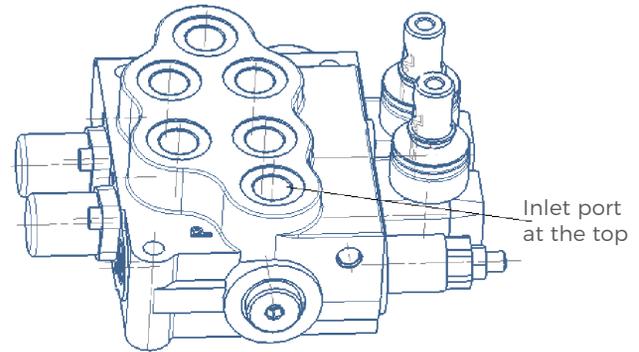


Inlet Port Options

Inlet Option Code: P1 (Inlet port at the front)

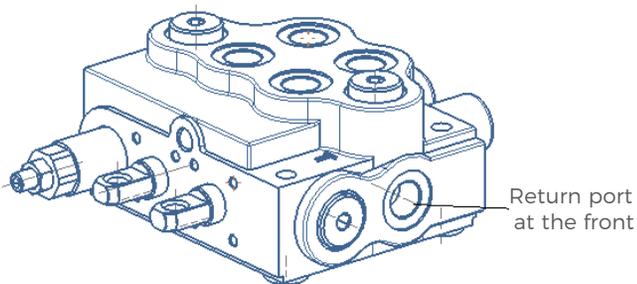


Inlet Port Option Code: P2 (Inlet port at the top)

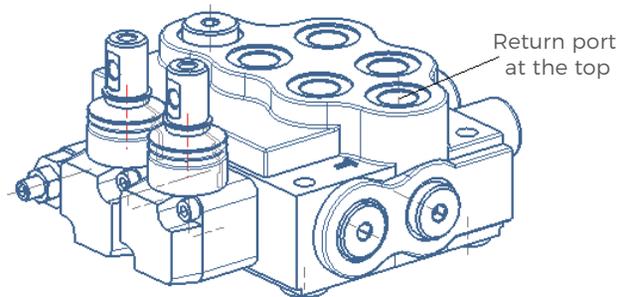


Return Port Options

Return Port Option Code: T1 (Return port at the front)



Return Port Option Code: T2 (Return port at the top)

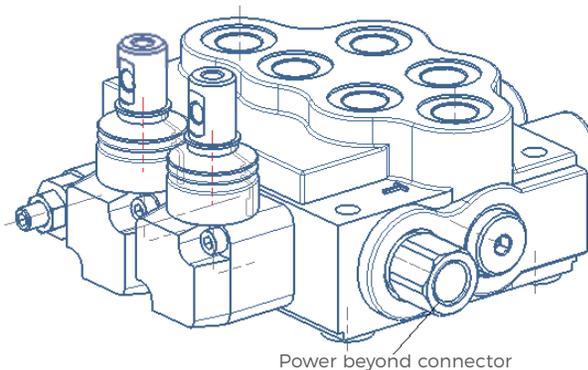


Power Beyond Options

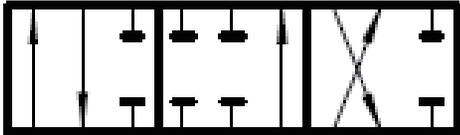
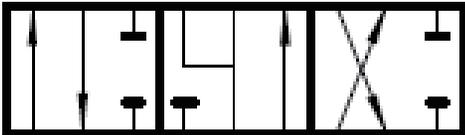
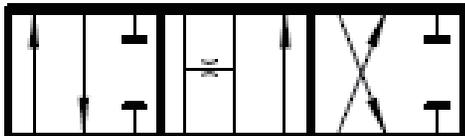
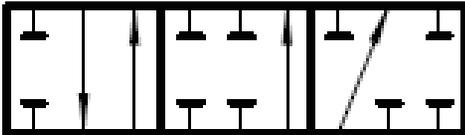
Power Beyond Option Code:

D1 (Pump flow output to a power beyond connector)

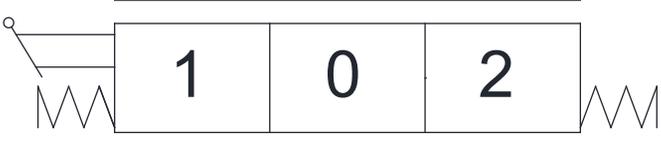
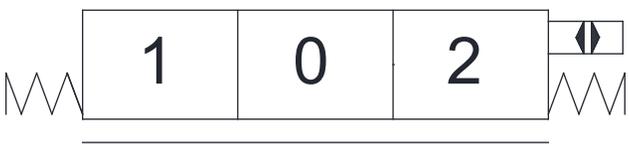
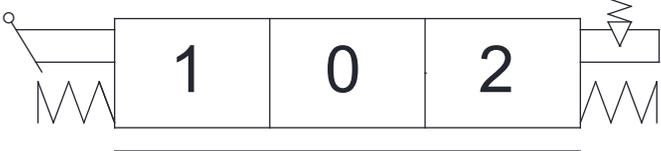
D0 (Without power beyond)



Typical Spool Functions

Spool Code	Spool Type	Functions	Notes
FG1		3-position 4-way At neutral: P, T, A, B are all blocked	Double acting cylinder applications
FG2		3-position 4-way At neutral: P blocked, T, A, B connected	Hydraulic motor applications
FG3		3-position 4-way At neutral: P, A, B and T all connected	Hydraulic motor applications
FG4		3-position 3-way At neutral: P, T, A, B all blocked	Single acting cylinder applications
FG5 (not available)		4-position 4-way At neutral: P, T, A, and B are all blocked 4th position floating	Double acting cylinder applications
FG6 (not available)		4-position 4-way At neutral: P blocked T, A and B are connected 4th position floating	Double acting cylinder or hydraulic motor applications

Drive Options

Drive Style Code	Hydraulic Schematic	Functions
KQ1		Standard manual control
KQ2		Hydraulic remote
KQ3		Manual control with mechanical detent
KQ4 (not available)		Manual control with 4th position floating and detent
KQ5 (not available)		Electrical drive(on/off)
KQ6 (not available)		Electrical actuated with floating function

Ordering Code

GDV45	-*	-P*	/***	-T*	-D*	-O1	-FG*	KQ*	-DC/**	-O2
a	b	c	d	e	f	g	h	i	j	k	l

- Ⓐ Model
- Ⓑ Number of spools
- Ⓒ Inlet port code
- Ⓓ Inlet relief setting(bar)
- Ⓔ Return port code
- Ⓕ Power beyond
- Ⓖ First spool
- Ⓗ Spool function
FG1, FG2, FG3, FG4, FG5, FG6
- Ⓘ Drive code
KQ1, KQ2, KQ3, KQ4, KQ5, KQ6
- ⓵ Electrical option
12VDC, 24VDC, 00=none electrical
- Ⓚ Second spool
- Ⓛ

Ordering Example

GDV45	-3	-P1	/210	-T1	-D1	-O1	-FG1	KQ1	-DC/00
a	b	c	d	e	f	g	h	i	j

- Ⓐ Model
- Ⓑ Three spools monoblock valve
- Ⓒ Inlet port at the front
- Ⓓ Inlet relief setting(210bar)
- Ⓔ Return port at the front
- Ⓕ Power beyond
- Ⓖ First spool
- Ⓗ Spool function: O-type
- Ⓘ Standard manual control
- ⓵ Not electrical

-O2	-FG2	-KQ5	-DC/24
k	l	m	n

-O3	-FG2	-KQ2	-DC/00
o	p	q	r

- Ⓚ Second spool
- Ⓛ Spool function: Y-type
- Ⓜ Drive code: electrical drive
- Ⓝ 24VDC
- ⓐ Third spool
- Ⓟ Spool function: Y-type
- Ⓠ Drive code: hydraulic remote
- Ⓡ Not electrical