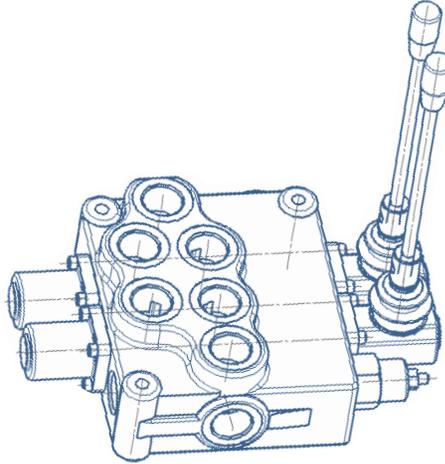


GDV160 Series Monoblock Valves



Main Features

- Cast iron monoblock valve body.
- Spring cap and mechanical detent cap are made in die cast aluminum.
- Parallel circuit. Each spool has its own load check valve.
- Provides different drive modules (electrical, hydraulic remote, manually control, wire driving).
- Provides power beyond port.
- Provides mechanical detent.
- Provides different spool functions to be used for controlling double acting cylinders, single acting cylinders, hydraulic motors.
- Provides small operating force and excellent flow characteristics.
- Can be made with 1-4 spools (now we can offer 2 spools).

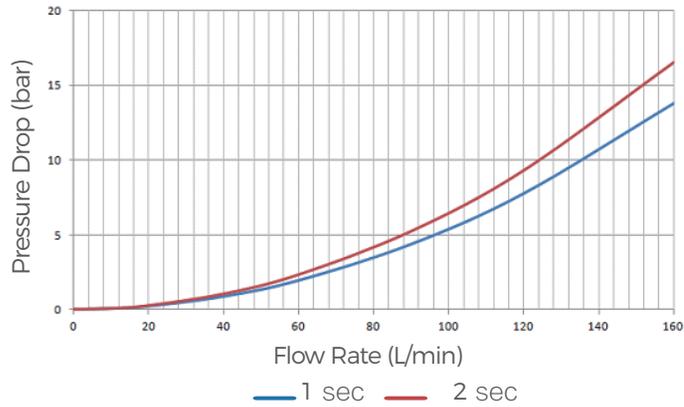
Technical Data

Rated flow rate	160 L/min	With NBR seals	-20°C- 80°C
Maximum flow rate	170 L/min	With FKM seals	-20°C- 100°C
Maximum pressure at P port	310 bar	Spool stroke(1, 2 position)	+7/-7mm
Maximum pressure at A/B port	310 bar	With floating function(1, 2, F position)	+7/-7 -9mm
Maximum pressure at T port	25 bar	Recommend hydraulic oil viscosity range	15-75mm ² /s
Internal leakage(@70 bar)	A/B to T 30-35cc/min	Recommend temperature range	-40°C- 60°C

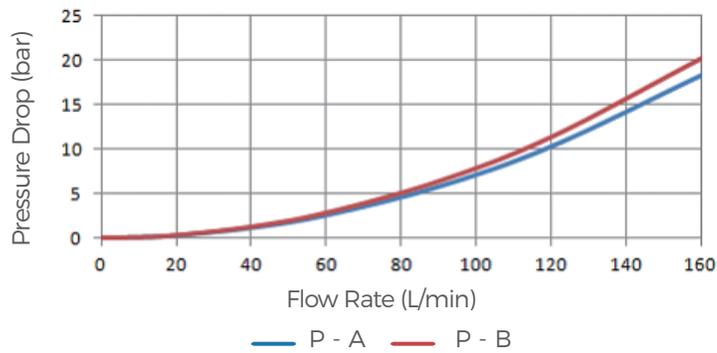
Solenoid can be either 12 VDC or 24 VDC, corresponding current is 0 - 1.5 or 0 - 0.75 Amp.

Performance Data

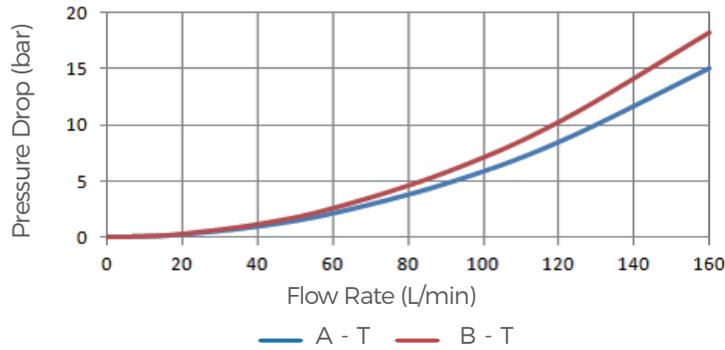
At Neutral, Pressure Drop (P to T)



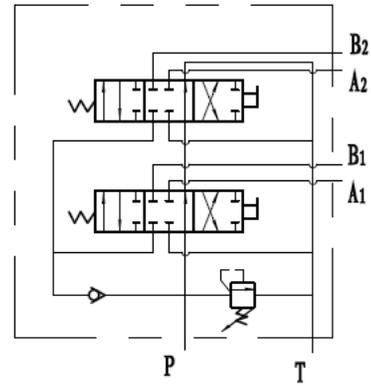
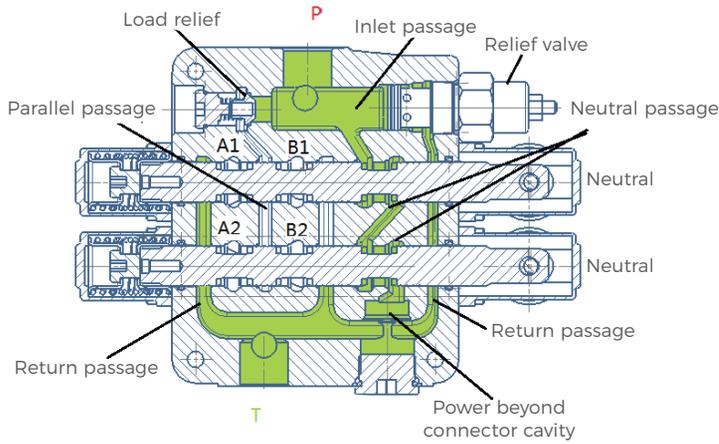
Pressure Drop (P to A/B)



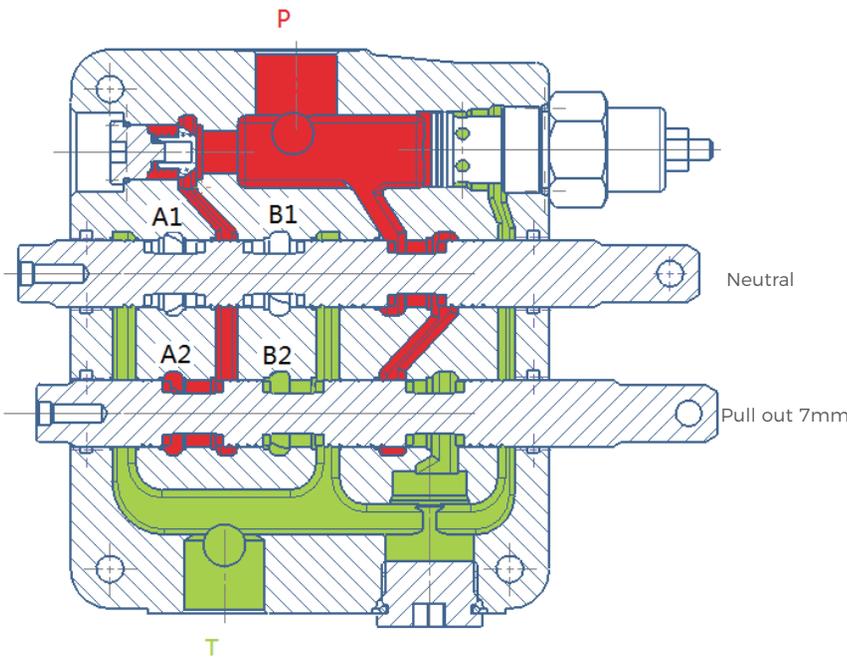
Pressure Drop (A/B to T)



Basic Operating Principle



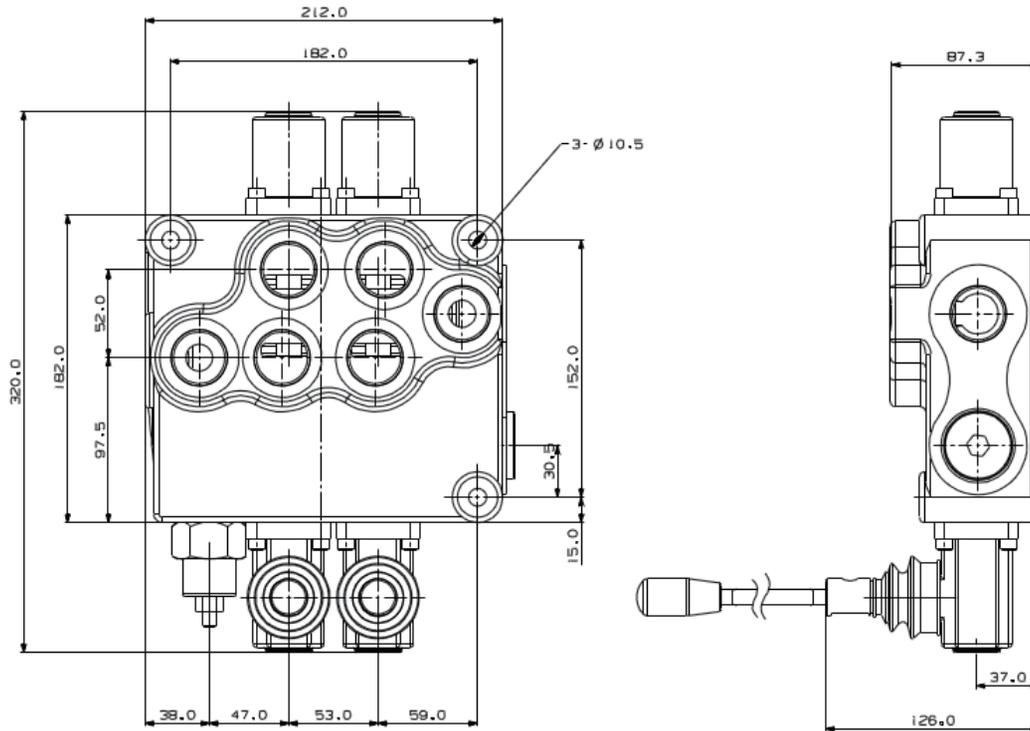
GDV160 series monoblock valve is an open centered 3-position 4-way valve. When spool is in its neutral position, the flow from pump passes through the neutral passage to tank, with very low pressure drop. When one of the spool is moved to 1 or 2 position, the neutral passage is blocked. The flow from pump can only pass through load check valve to parallel passage, then, through spool opening to work port A or B.



AS shown in the picture, the first spool is in neutral position, flow from pump flows to parallel passage through the load check valve to supply flow to two spools. Because the second spool is pulled out 7mm, the second spool opening between parallel passage to A2 port allows flow to enter the A2 port. B2 port connected to return passage. Neutral passage is blocked by second spool.

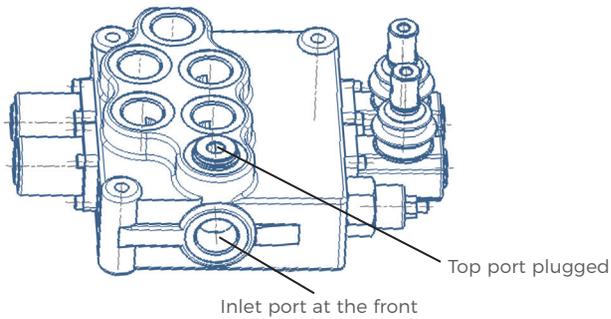
Dimensions

GDV160-2: 2 Spools Monoblock Valve

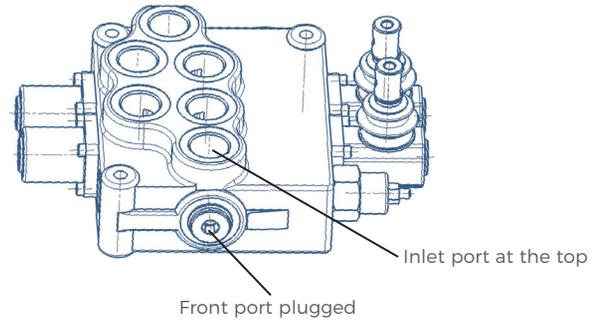


Inlet Port Options

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

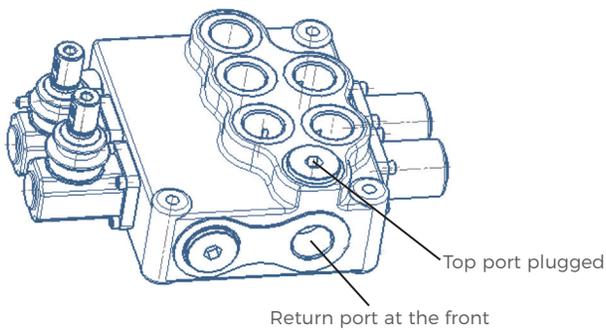


Inlet Port Option Code: P2 (Inlet port at the top)

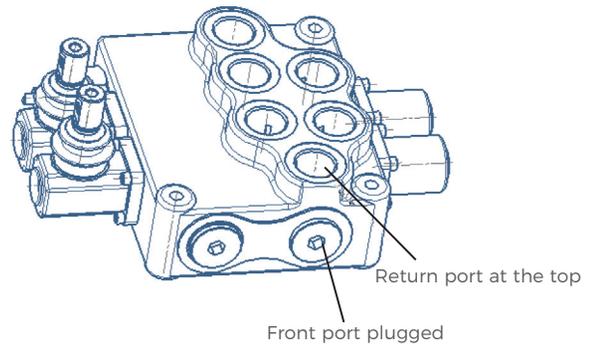


Return Port Options

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



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

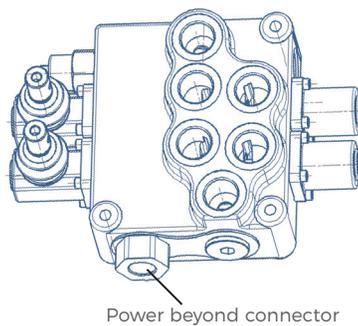


Power Beyond Options

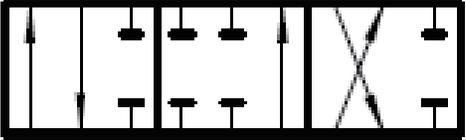
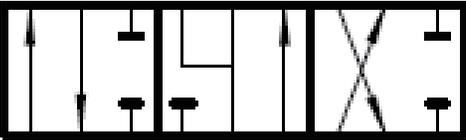
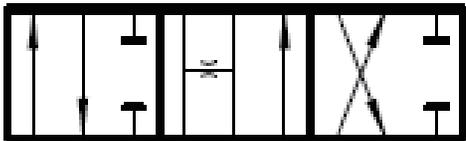
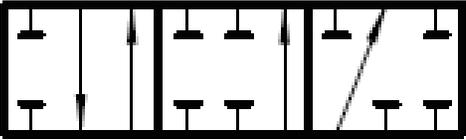
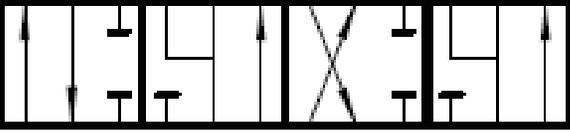
Power Beyond Option Code:

D1 (Pump flow output to a power beyond connector)

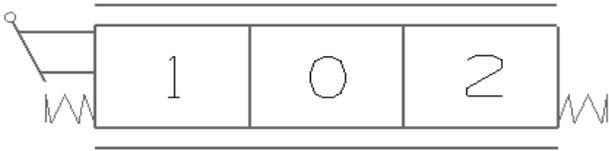
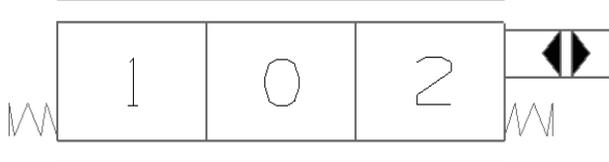
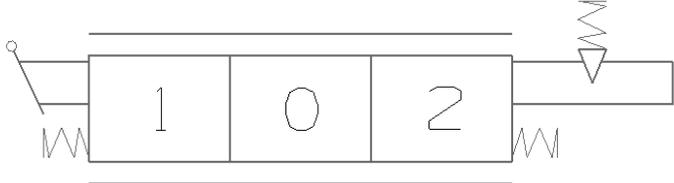
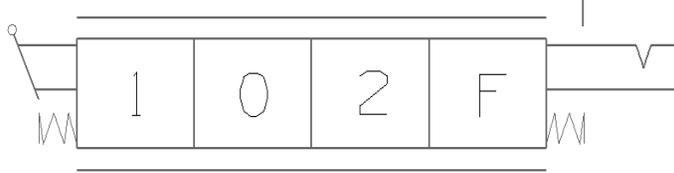
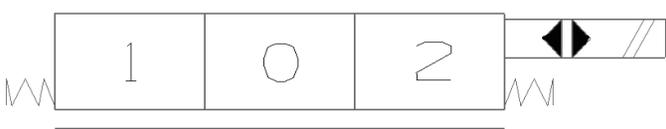
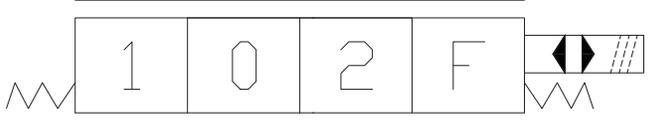
D0 (Without power beyond)



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		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

GDV160	-P*	/***	-T*	-D*	-O1	-FG*	KQ*
a	b	c	d	e	f	g	h

- Ⓐ Model
- Ⓑ Inlet port code
- Ⓒ Inlet relief setting(bar)
- Ⓓ Return port code
- Ⓔ Power beyond option code
- Ⓕ First spool
- Ⓖ Spool function
FG1, FG2, FG3, FG4, FG5, FG6
- Ⓗ Drive code
KQ1, KQ2, KQ3, KQ4, KQ5, KQ6

-O2	-FG*	-KQ*
i	j	k

- Ⓘ Second spool
- ⓷ Spool function
FG1, FG2, FG3, FG4, FG5, FG6
- Ⓚ Drive code
KQ1, KQ2, KQ3, KQ4, KQ5, KQ6

Ordering Example

GDV160	-P1	/210	-T1	-D0	-O1	-FG1	KQ1
a	b	c	d	e	f	g	h

- Ⓐ Model
- Ⓑ Inlet port at the front
- Ⓒ Inlet relief setting(210bar)
- Ⓓ Return port at the front
- Ⓔ Without power beyond
- Ⓕ First spool
- Ⓖ Spool function: O-type
- Ⓗ Drive mode: manual control

-O2	-FG2	-KQ1
i	j	k

- Ⓘ Second spool
- ⓷ Spool function: Y-type
- Ⓚ Drive mode: manual control