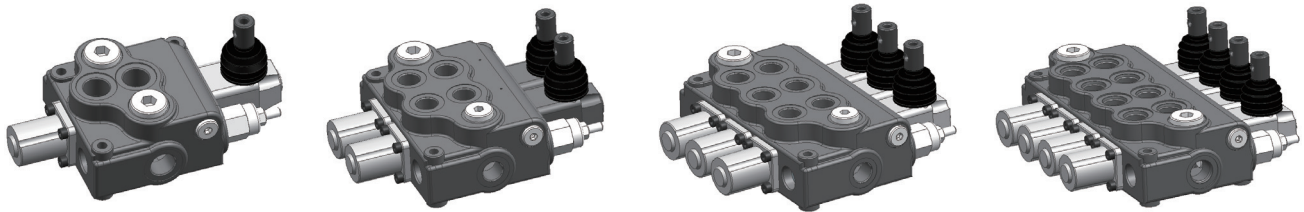


## GDV70 Series Monoblock Valves



### Main Features

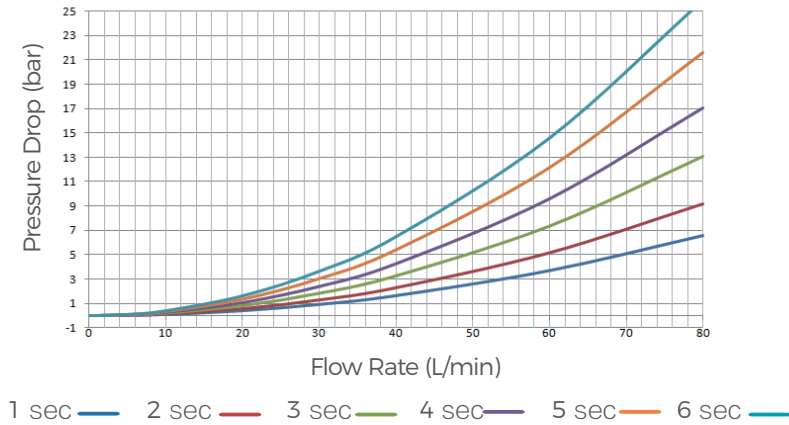
- Cast iron monoblock body.
- Spring cap and mechanical detent cap are made in die cast aluminum.
- Parallel circuit. Inlet passage has a load check valve.
- Provides manual control and wire pulling control modules.
- Provides power beyond options.
- Provides mechanical detent.
- Provides different spool 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

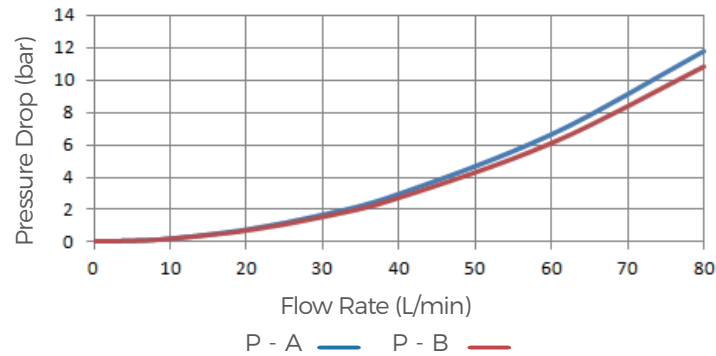
Rated flow rate	70 L/min	With NBR seals	-20°C-80°C
Maximum flow rate	80 L/min	With FKM seals	-20°C-100°C
Maximum pressure at P port	310 bar	Spool stroke (1, 2 position)	+7/-7 mm
Maximum pressure at A/B port	310 bar	With floating function (1, 2, F position)	+7/-7 -9 mm
Maximum pressure at T port	25 bar	Recommend hydraulic oil viscosity range	15-75mm²/s
Internal leakage (@70bar)	A/ B to T 30-35 cc/min	Recommended temperature range	-40°C-60°C

## Performance Data

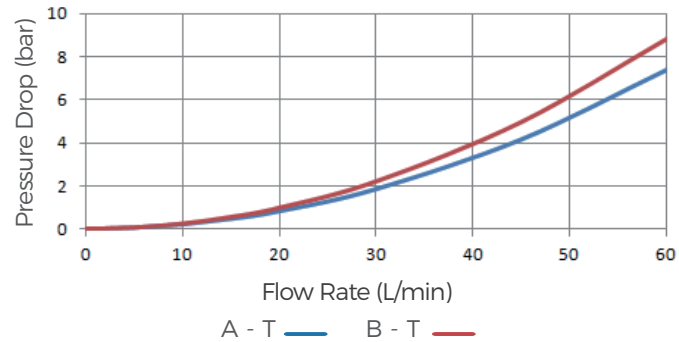
At Neutral, Pressure Drop ( P to T )



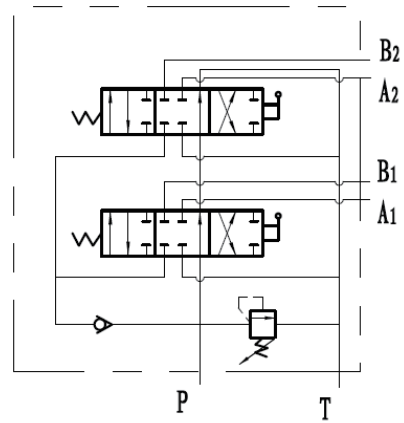
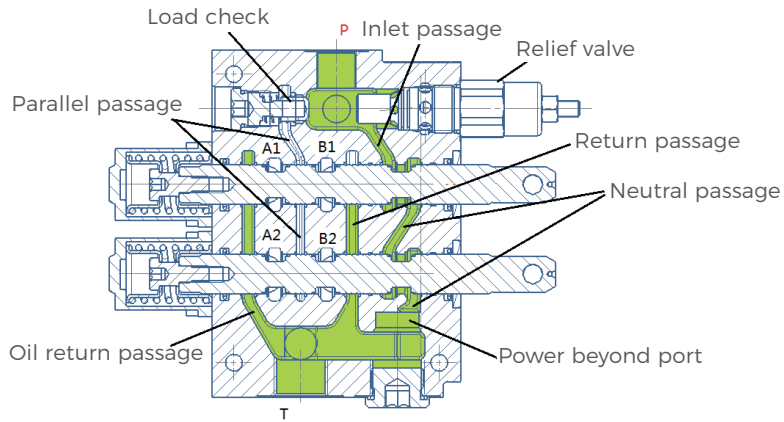
Pressure Drop ( P to A/B )



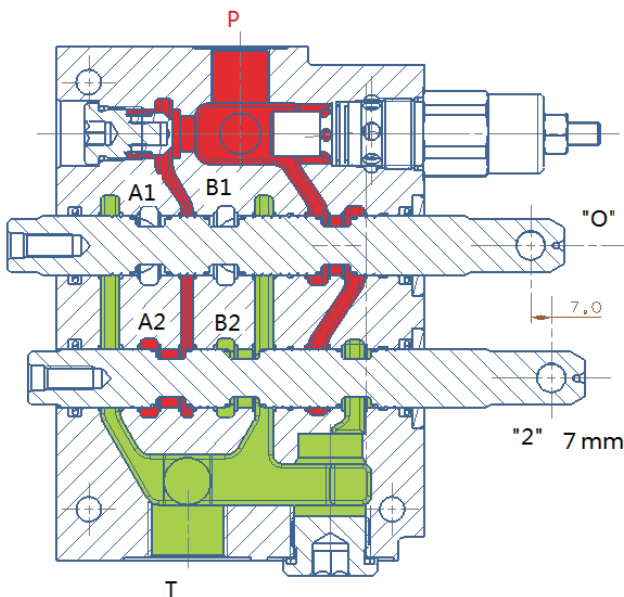
Pressure Drop ( A/B to T )



## Basic Operating Principle



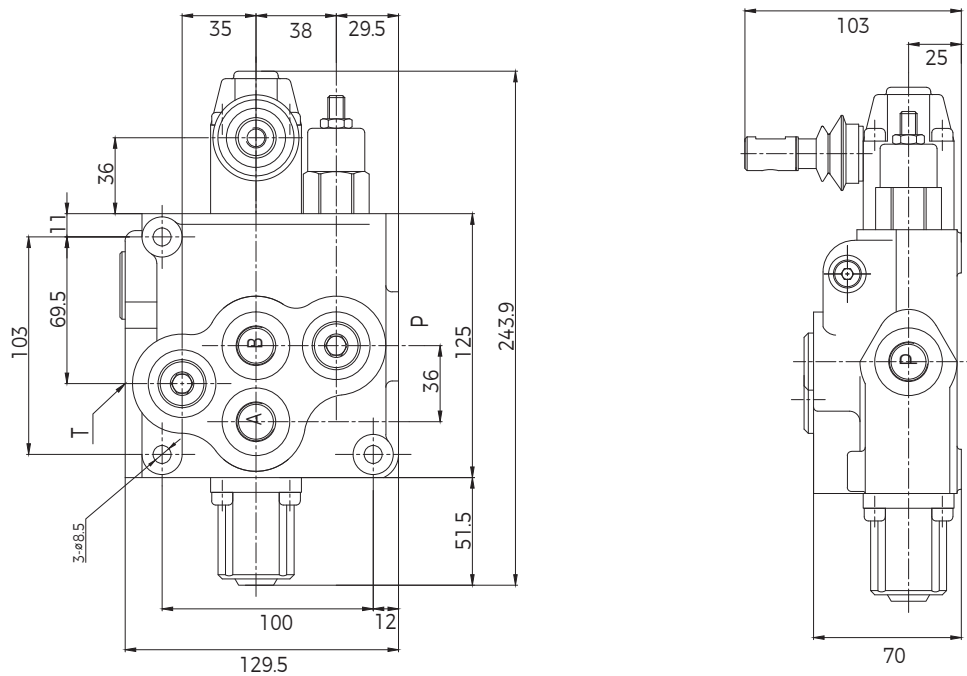
GDV-70 series monoblock valve is an open centered 3-position 4-way valve. When spool is in its neutral position, the flow from pump passes through the neutral passage to tank, with very low pressure drop. When one of the spool is moved to 1 or 2 position, the neutral passage is blocked. The flow from pump can only pass through load check to parallel passage, then through the spool opening to work port A or B.



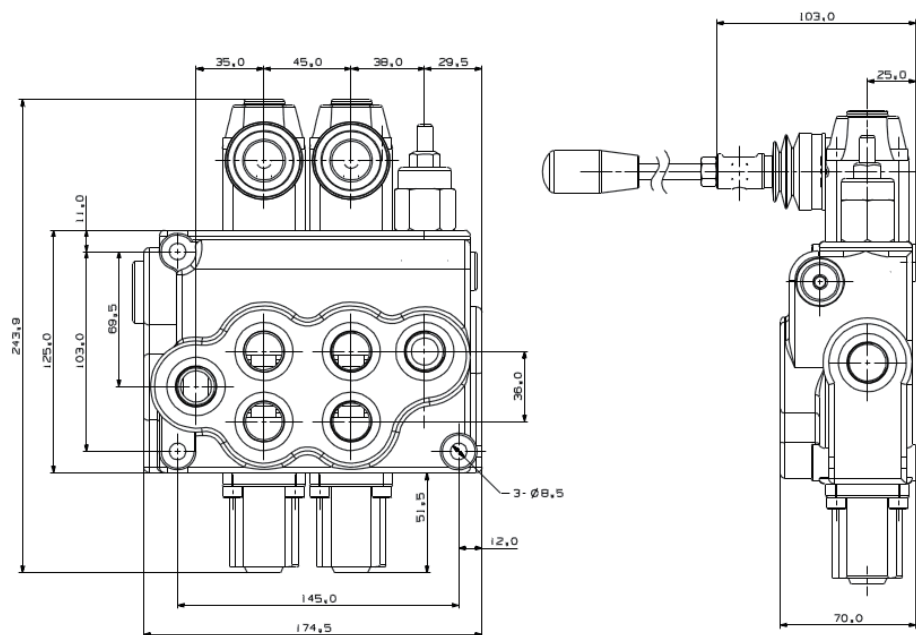
As shown in the picture, when first spool is in neutral, flow from pump passes through load check valve and enters the parallel passage to supply flow to both spools. Due to second spool is moved to 2 position, the flow from parallel passage flows to A2 through the spool opening. The flow from B2 flows to return passage through the spool's another opening. Neutral passage is blocked by the second spool.

## Dimensions

## GDV70-1: 1 Spool Monoblock Valve

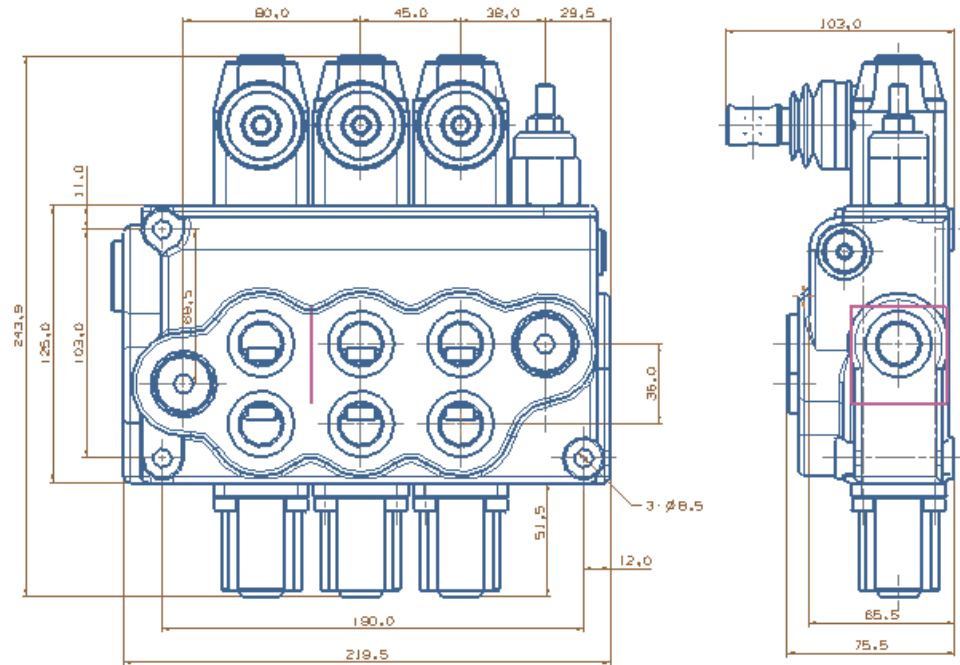


## GDV70-2: 2 Spools Monoblock Valve

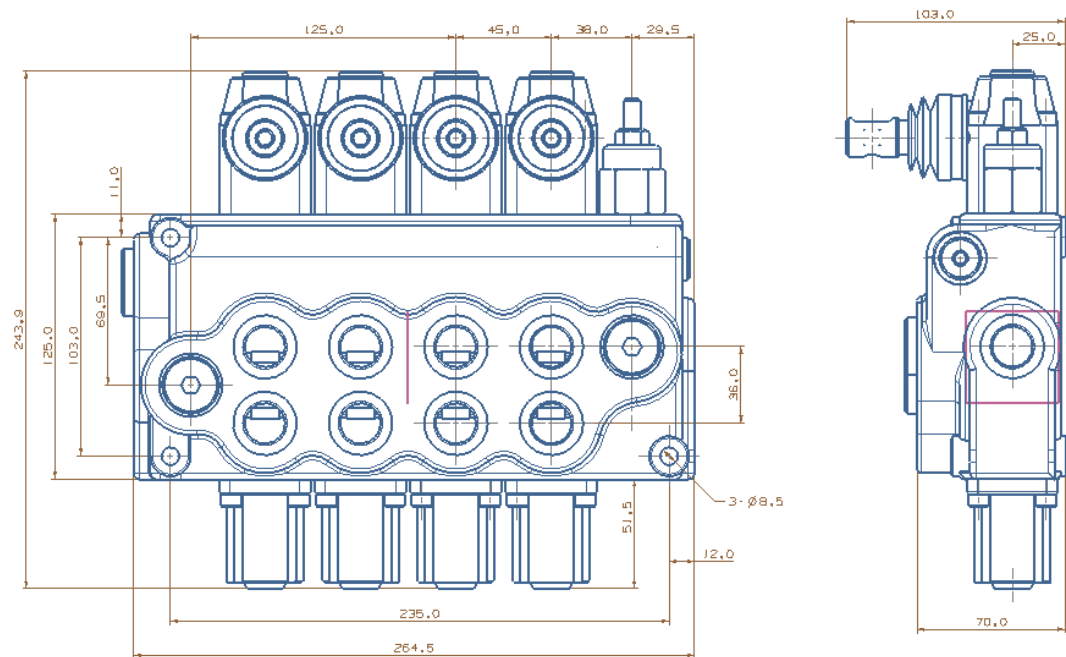


## Dimensions

GDV70-3: 3 Spools Monoblock Valve

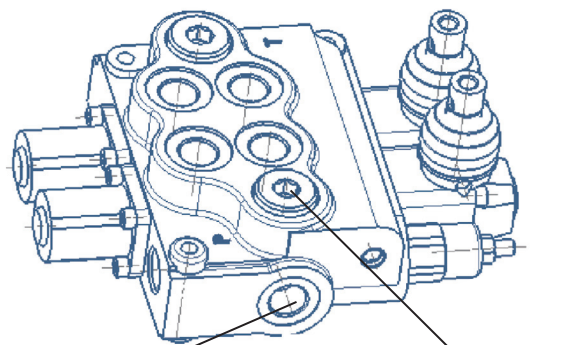


GDV70-4: 4 Spools Monoblock Valve



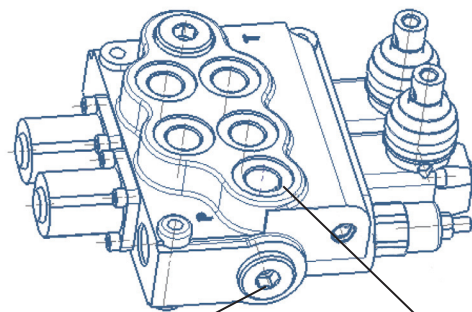
## Inlet Options

Inlet Option Code: P1 (Port at the front)



Inlet Port at the front      Port at the top plugged

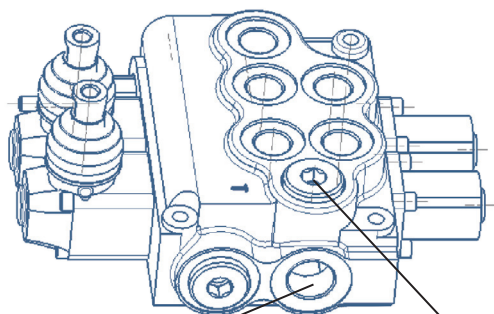
Inlet Port Code: P2 (Port at the top)



Port at the front plugged      Inlet port at the top

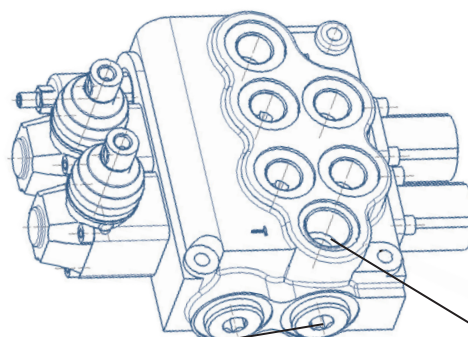
## Return Port Options

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



Return port at the front      Port at the top plugged

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



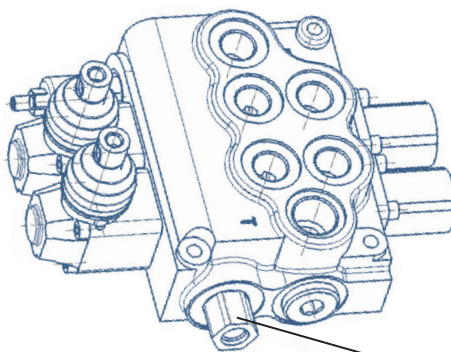
Port at the front plugged      Return port at the top

## Power Beyond Options

Power Beyond Option Code:

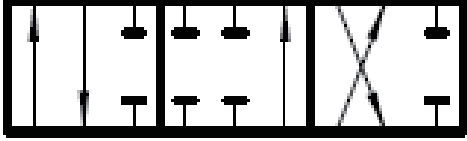
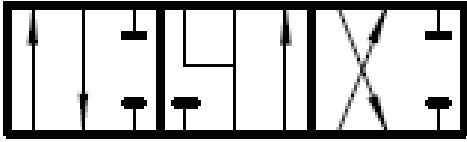
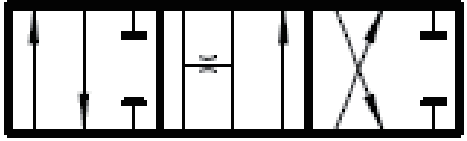
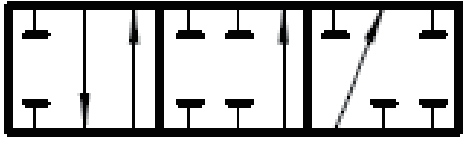


D1 (Pump flow output to a power beyond connector)

D0 (Without power beyond)

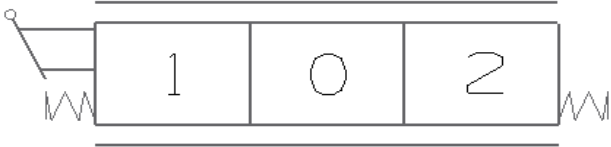
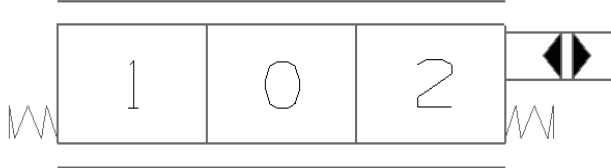
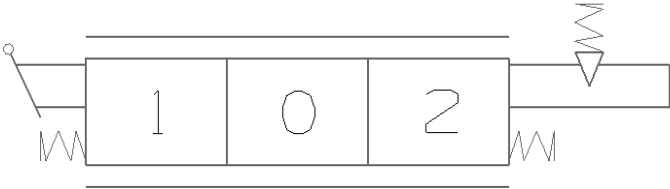
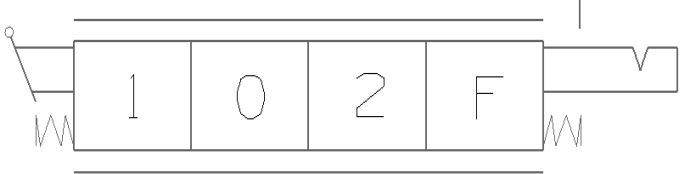
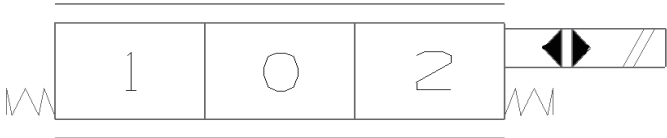
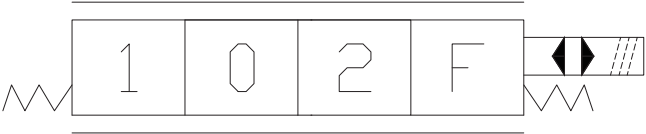


Power beyond connector

## 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 (not available)		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

GDV70	-*	-P*	/**	-T*	-D*	-O1	-FG*	KQ*	-DC/**	-AR/**
a	b	c	d	e	f	g	h	i	j	k

Ⓐ 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

Ⓢ Electrical option

12VDC, 24VDC, 00=none electrical

Ⓚ Relief settings of the over load relief at A port(bar)

If no relief, input for pressure: 000

-BR/**	-O2	.....
l	m	n

Ⓛ Relief settings of the over load relief at B port(bar)

If no relief, input for pressure: 000

Ⓜ Second spool

Ⓝ .....



## Ordering Example

GDV70	-3	-P1	/210	-T1	-D1	-O1	-FG1	KQ1	-DC/00	-AR/250	-BR/190
a	b	c	d	e	f	g	h	i	j	k	l

Ⓐ 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

Ⓘ Drive mode: standard manual control

Ⓢ Not electrical

Ⓚ Port A overload setting pressure 250bar

Ⓛ Port B overload setting pressure 190bar

-O2	-FG2	-KQ5	-DC/24	-AR/000	-BR/000	-O3	-FG2	-KQ2	-DC/00	-AR/220	-BR/000
m	n	o	p	q	r	s	t	u	v	w	x

Ⓜ Second spool

Ⓝ Spool function: Y-type

Ⓞ Drive mode: electrical drive

Ⓟ 24 VDC

Ⓠ Port A without overload valve

Ⓡ Port B without overload valve

Ⓢ Third spool

Ⓣ Spool function: Y-type

Ⓤ Drive mode: hydraulic remote

Ⓥ Not electrical

Ⓦ Port A overload setting pressure 220bar

Ⓧ Port B without overload valve