GUORUI HYDRAULIC
INNOVATION LEADS THE FUTURE

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GUORUI HYDRAULIC
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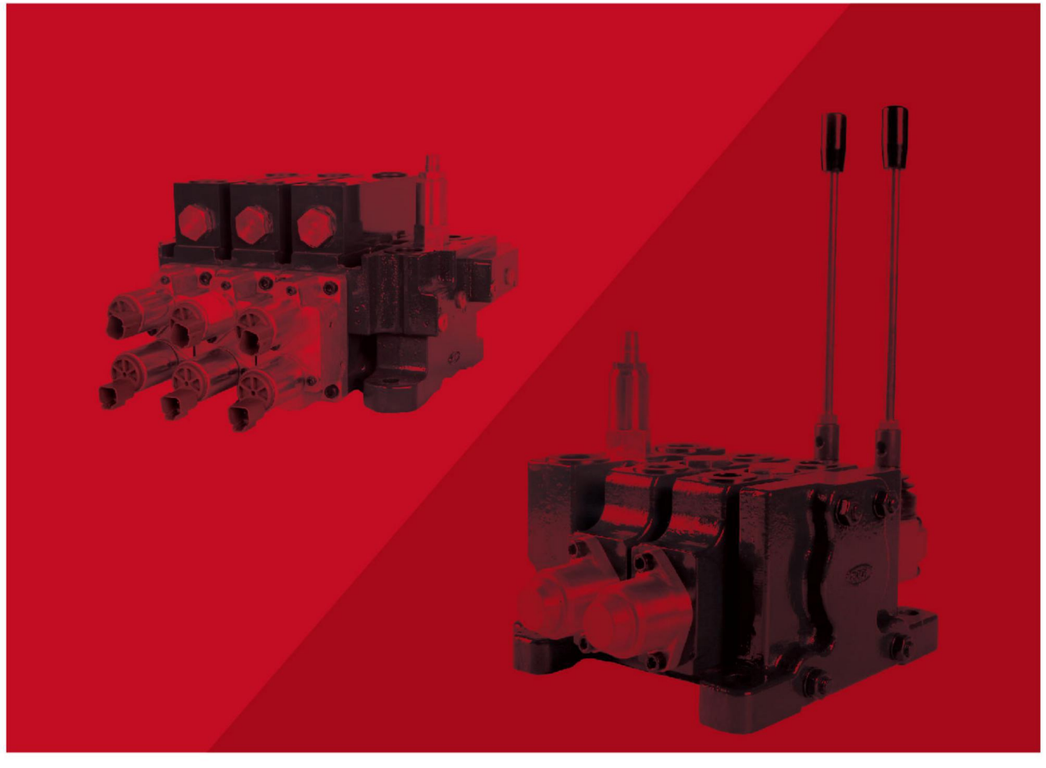
SECTIONAL VALVES

GKV35 / GKV50 / GKV80



GUORUI HYDRAULIC

Keep the concept seeking excellence, GRH try our best
to create more value for you with products and service

GUORUI HYDRAULIC

Supplier of the Whole Hydraulic System

GRH manufacture was established in 1986, focusing on R&D, manufacture and sales of hydraulic products. GRH owns world top level R&D team, as well as invention patents, sales covers global market. Targeting at vision of Excellence, GRH keeps creating more value for customers by quality products, professional technology and experienced service.

645,835 sq.ft Modern Manufacture

Since the opening of 3rd generation modern manufacture in 2015, the total area covers 1,291,669 sq.ft, while the construction area covers 645,835 sq.ft, there are IT machining equipment, test and inspection equipment, meets various requirement of global customers.

Customer First

With leading technology, quality product, and professional service, GRH has covered the global market with more than 60 countries and regions, become the strategic partner of many international famous OEM enterprises.

Instant Efficient Service

Technical Team offers accurate solutions to the service, including the product model selection, product test, installation and commissioning, debugging etc., so as to keep in touch with right department of each customer in time and respond to the customer's requirement.

9 Series Products
Covers the Whole Hydraulic Business

As a supplier of hydraulics, our business covers: hydraulic motors, hydraulic control valves, hydraulic gear pumps, power units and hydraulic systems, etc. Products are widely used in construction machinery, agricultural machinery, industry equipment.

GUORUI HYDRAULIC
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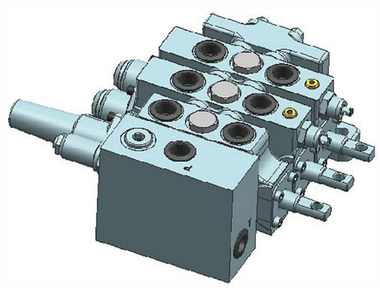

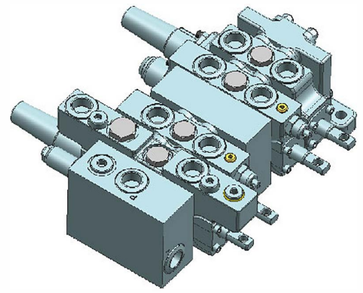

GKV80 Series Sectional Control Valves

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Introduction of GKV80

GKV80 series sectional valves are open center valves. Mainly used in mobile machines such as, agricultural machinery, construction machines, mining equipment, material handling equipment as well as maintenance machines. All valve series adapted modular design. The system designer can choose different modules to design a complex system. Main valve spool is designed to satisfy with the customer requirements, which provides excellent flow characteristics and very low flow force. With different inlet modules, it gives user the freedom for choosing different relief valve and different port locations. There are number of different work section modules to choose from, to satisfy with the customer needs. Different end sections also provide the customer needs for return ports or power beyond functions.

Functions

- Inlet module with pilot supply
- Inlet module without pilot supply
- A/B Port with overload relief valve on work section
- A port with overload relief valve on work section
- B port with overload relief valve on work section
- A/B ports with P.O. checks
- A port with P.O. check
- B port with P.O. check
- A port with mechanical P. O. check
- B port with mechanical P. O. check
- End section with oil return port
- End section without oil return port
- End section with power beyond
- Provide other cartridge valve option

Features

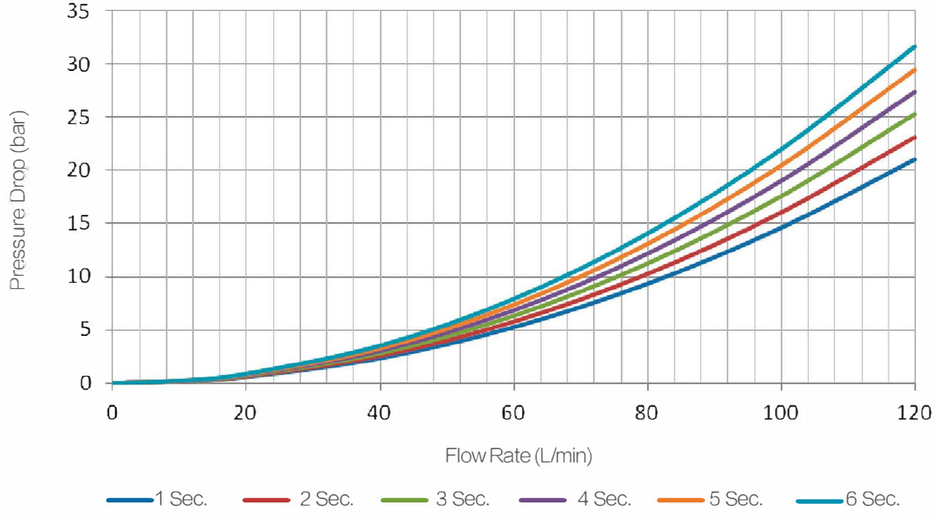
- Cast iron body (inlet section, main section and end section).
- Spring cap, mechanical detent cap, as well as electoral or hydraulic pilot controlled module body are made by cast aluminum or die cast aluminum.
- Parallel circuit. Each section has its own load check valve, Each section has load relief option and relief style options.
- Can be changed to series circuit.
- Provides dump valve options for each work port.
- Provides different drive modules (electrical, hydraulic remote, manually control, wire driving).
- Provides power beyond port.
- Can be modified to be a closed center valve.
- Provides mechanical detent.
- Provides options for different relieves and different relief valve locations in the inlet.
- Provides options for P. O. check valve for each work port.
- Provides options for mechanically actuated P. O. check valves to satisfied with the needs for tractors and mobile cranes.
- Provides different spool functions to be used for controlling double acting cylinder , single acting cylinders, hydraulic motors.
- Provides floating functions for spools.
- Provides excellent flow characteristics and small operating force.
- Can be proportionally controlled without pressure compensation.
- Can be assembled with 1-8 work sections.

Technical Data

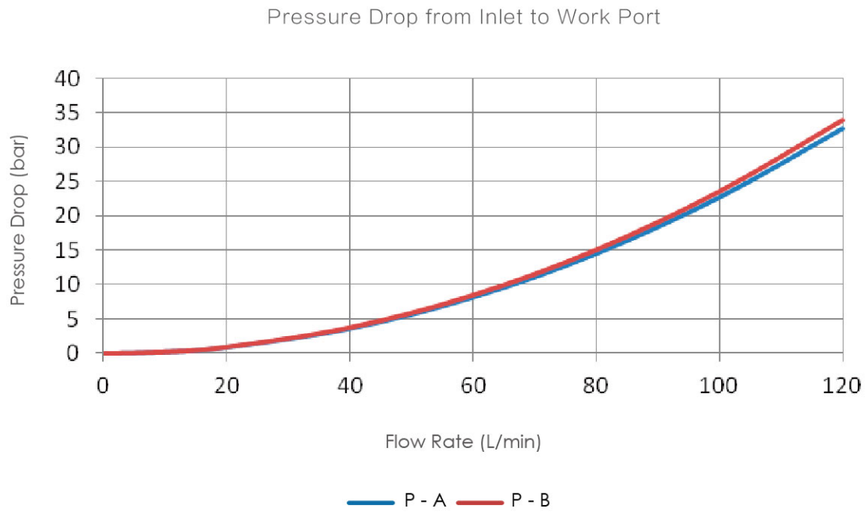
Rated flow rate	80 L/min	Internal leakage(@70 bar)A、B to T	15-20 cc/min
Maximum flow rate	100 L/min	Internal leakage(@70 bar)A、B to T	
Minimum flow rate	20 L/min	With P.O. check	2-5 cc/min
Maximum pressure at P port	350 bar	Spool stroke(1、2 position)	+7/-7mm
Maximum pressure at A、B port	350 bar	With floating function(1、2 and F position)	+7/-7-10mm
Maximum pressure at T port	25 bar		
Solenoid can be either 12 VDC or 24 VDC，corresponding current is 0 - 1.5 or 0 - 0.75 Amp.			

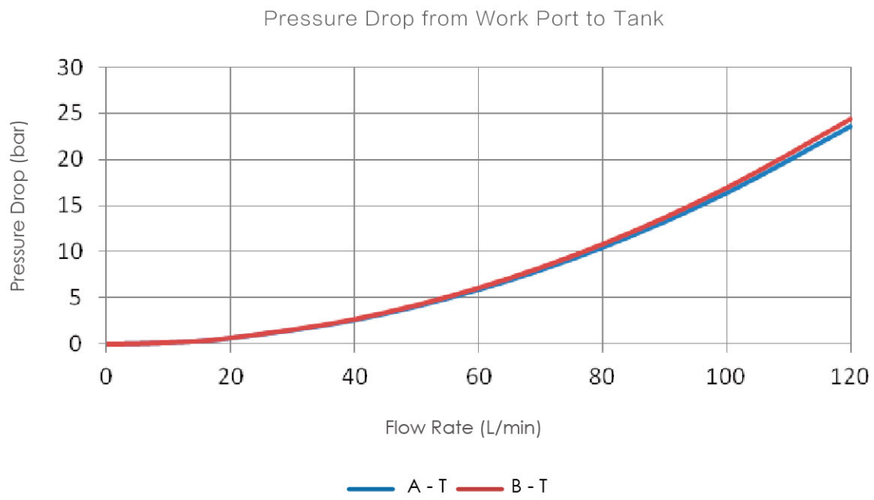
Performance Data

Pressure Drop from Inlet to Tank at Neutral Position (P to T)

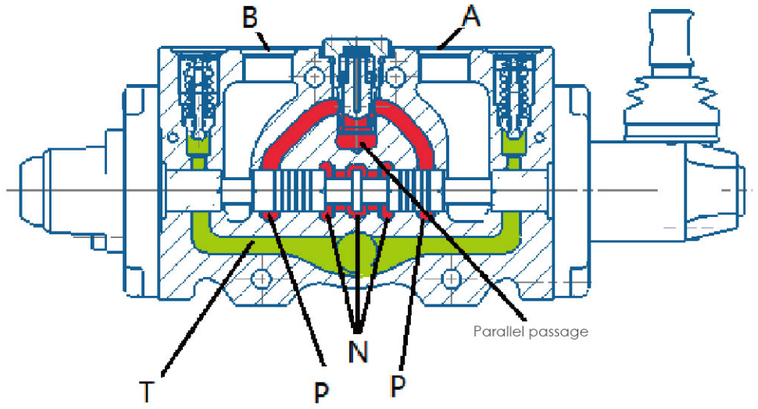


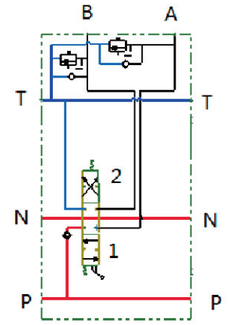
Performance Data



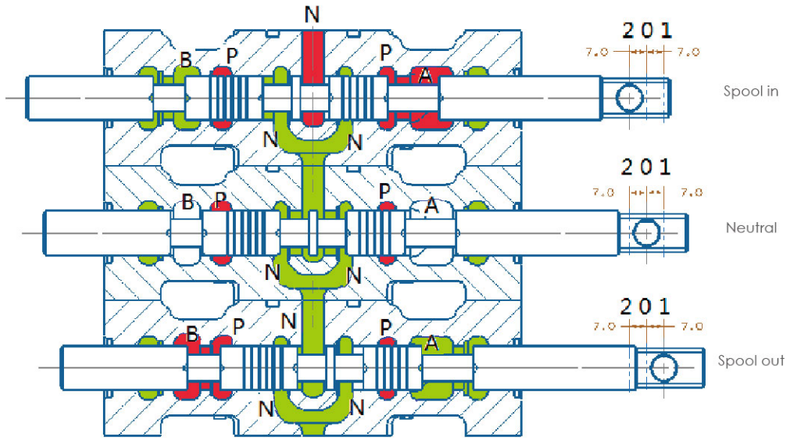


Basic Operation Principle





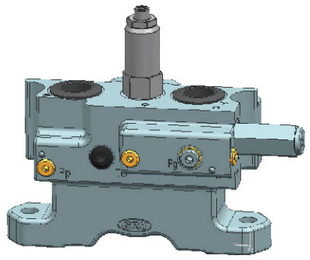
GKV series sectional valve is an open centered 3-position 4-way valve. When spool is in its neutral position, the flow from pump passes through the neutral passage to tank, with very low pressure drop. When one of the spool is moved to 1 or 2 position, the neutral passage is blocked. The flow from pump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

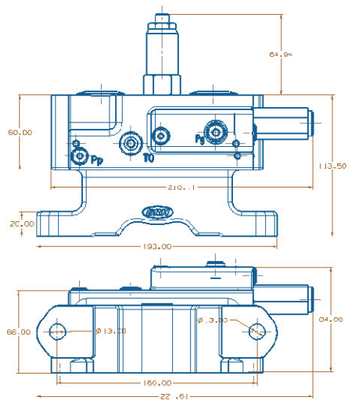


For multi-section valves, if one of the section spool is in 1 or 2 position, then, there is no flow in its down stream section neutral passage. The main throttle occurs on the valve opening between bridge passage and spool . The operator can control more than one spools, but the magnitude of the flow rate for each controlled section is dependent on the load.

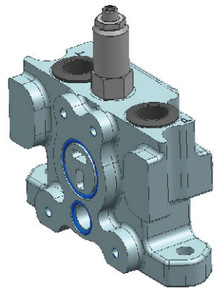
Inlet Section Dimensions

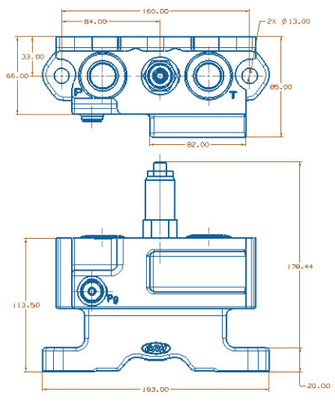
JK01 Inlet Section



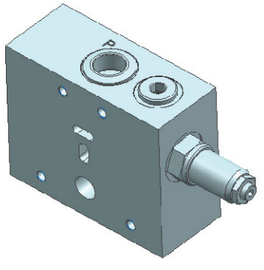


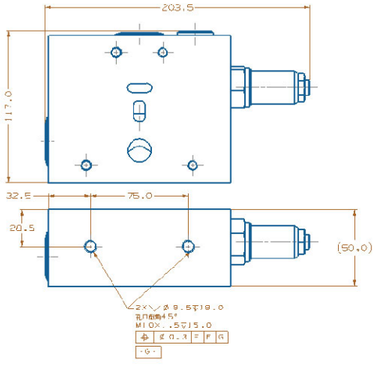
JK02 Inlet Section



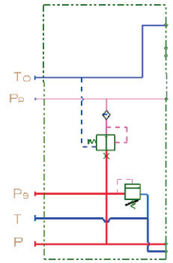
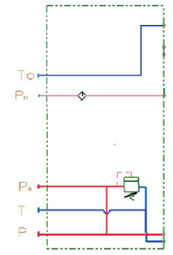
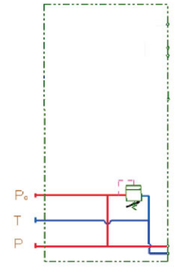


JK03 Inlet Section



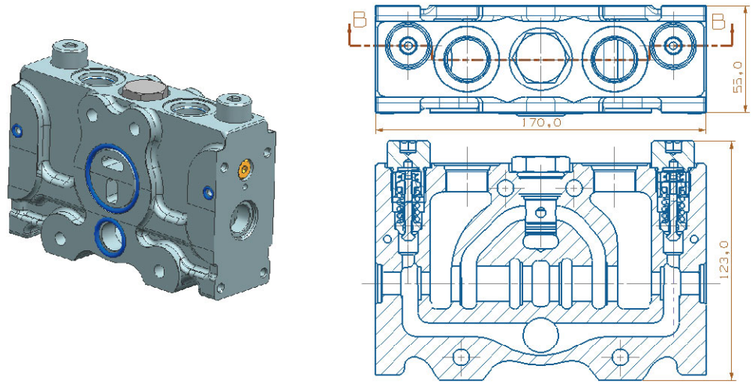


Inlet Section Hydraulic Schematics

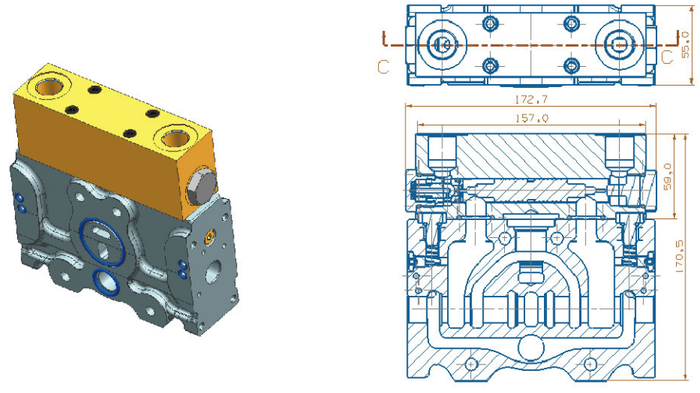
Code	Hydraulic Schematic	Main Function	Notes
K01		Inlet section with pilot supply	
JK02		Inlet section without pilot supply	
JK03		Basic inlet	

Typical Work Section Dimensions

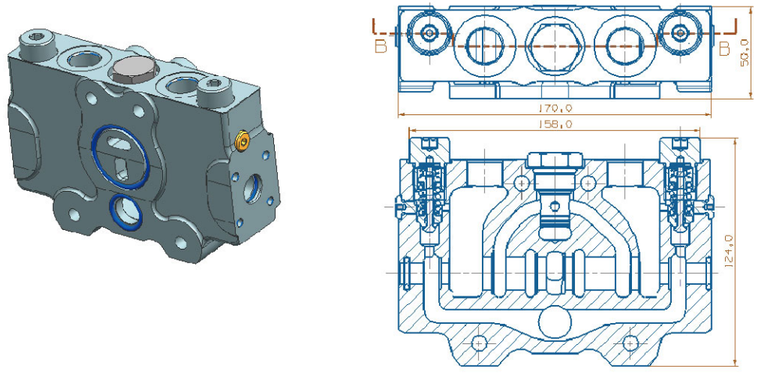
ZK01 Work Section



ZK05 Work Section

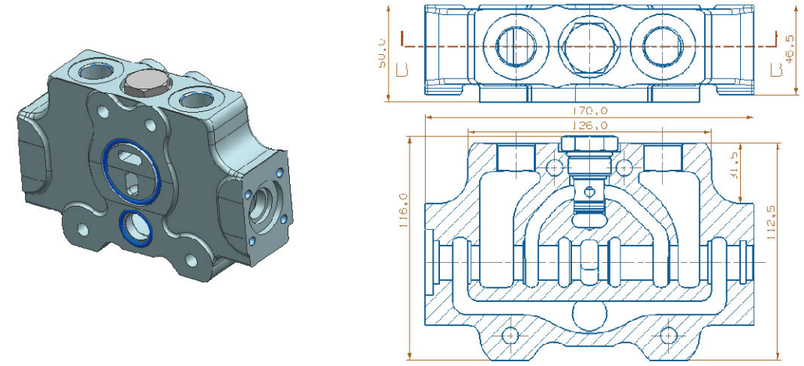


ZK07 Work Section



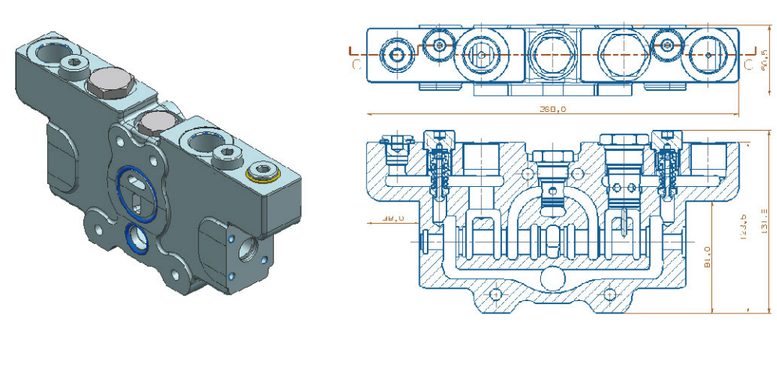
Typical Work Section Dimensions

ZK08 Work Section

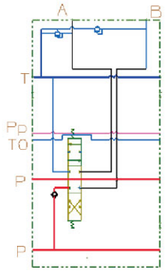
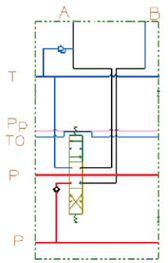
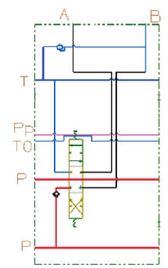
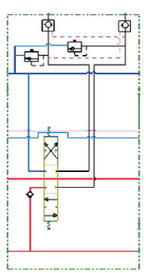


ZK10 Work Section

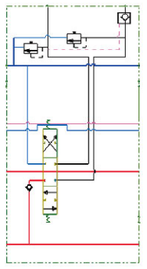
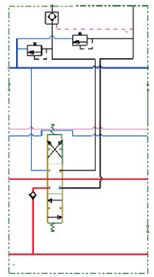
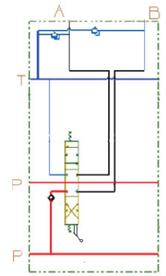
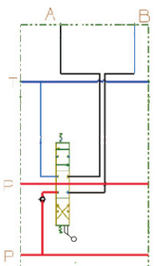
ZK11 Work Segment



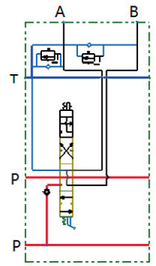
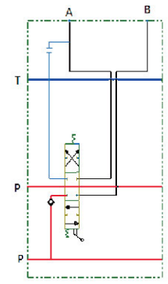
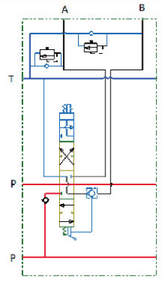
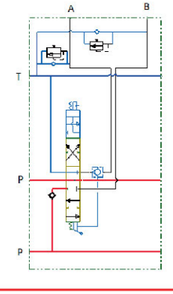
Typical Work Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
ZK01		Load relief valves at both A and B ports	
ZK02		Load relief valve at A port	
ZK03		Load relief valve at B port	
ZK04		Load relief valves and PO check at both A and B ports	

Typical Work Section Hydraulic Schematics

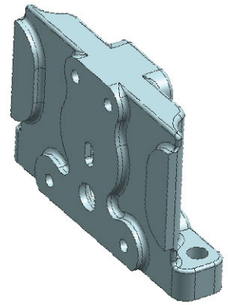
Code	Hydraulic Schematic	Main Function	Notes
ZK05		Load relief valves at both A and B ports and PO check at B port	
ZK06		Load relief valves at both A and B ports and PO check at A port	
ZK07		Load relief valves at both A and B ports and manual control (Section thickness is 50mm)	
ZK08		Basic Work Section manual control (Section thickness is 50mm)	

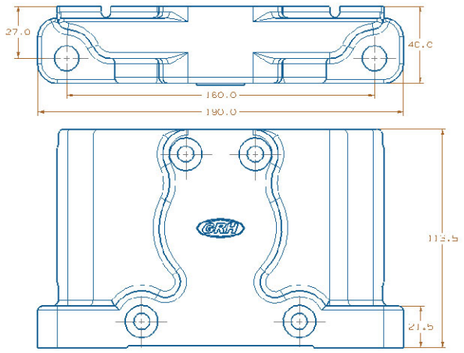
Typical Work Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
ZK09		Load relief valves at both A and B ports and manual control 4th position floating (Section thickness is 50mm)	
ZK10		Basic work section manual control A dump valve at A port (Section thickness is 50mm)	Agricultural tractor Applications
ZK11		Load relief valves and anti-cavitation valves at both A and B ports manual control 4th position floating Mechanically operated PO check at B port. (Section thickness 50mm)	Mobile cranes and tractor hitch applications
ZK12		Load relief valves and anti-cavitation valves at both A and B ports manual control 4th position floating Mechanically operated PO check at A port. (Section thickness 50mm)	Mobile cranes and tractor hitch applications

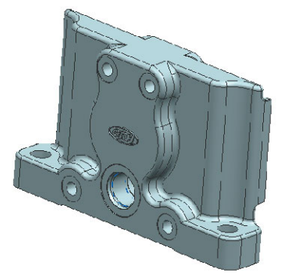
Typical End Section Dimensions

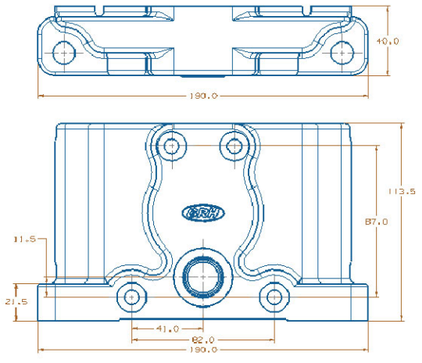
DK01 End Section



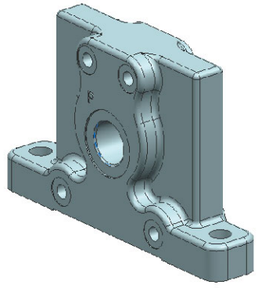


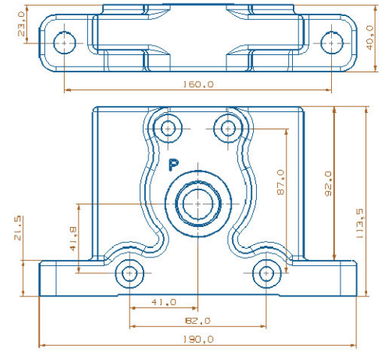
DK02 End Section



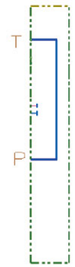
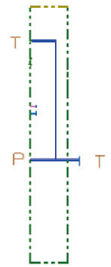
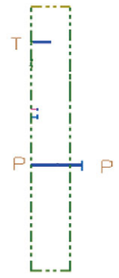


DK03 End Section

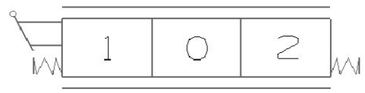
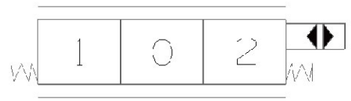
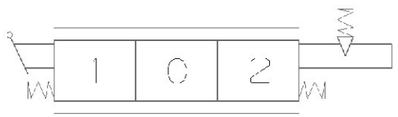
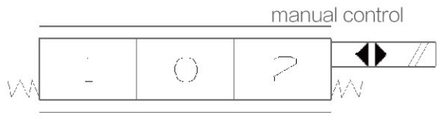
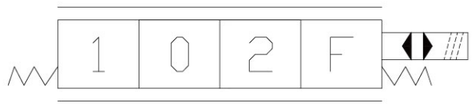
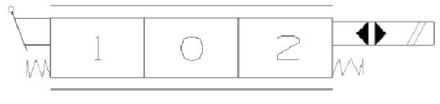




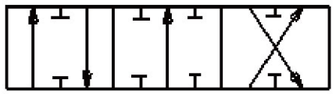
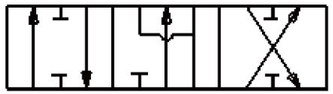
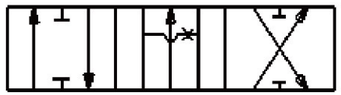
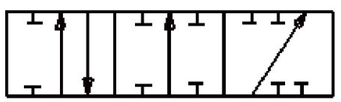
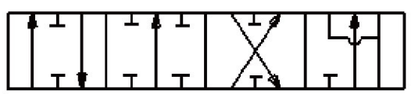
Typical End Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
DK01		End section without T port	
DK02		End section with T port	
DK03		End section with power beyond port	Tractor applications

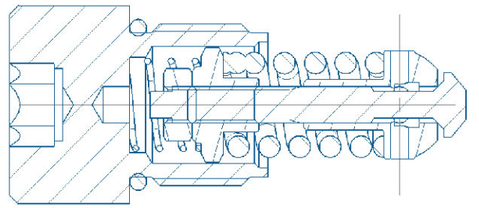
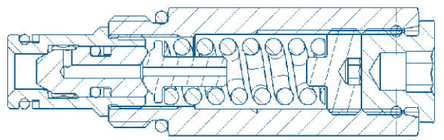
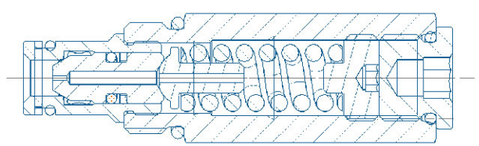
Work Section Drive Styles

Drive Style Code	Hydraulic Schematic	Function
KQ1		Standard manual control
KQ2		Hydraulic remote control
KQ3		Manual control with mechanical detent
KQ4		Manually controlled with 4th position floating and detent
KQ5		Electrical actuated (on/off)
KQ6		Electrical actuated with floating function
KQ7		Electrical control (ON/OFF control with option of manual control)

Typical Spool Functions

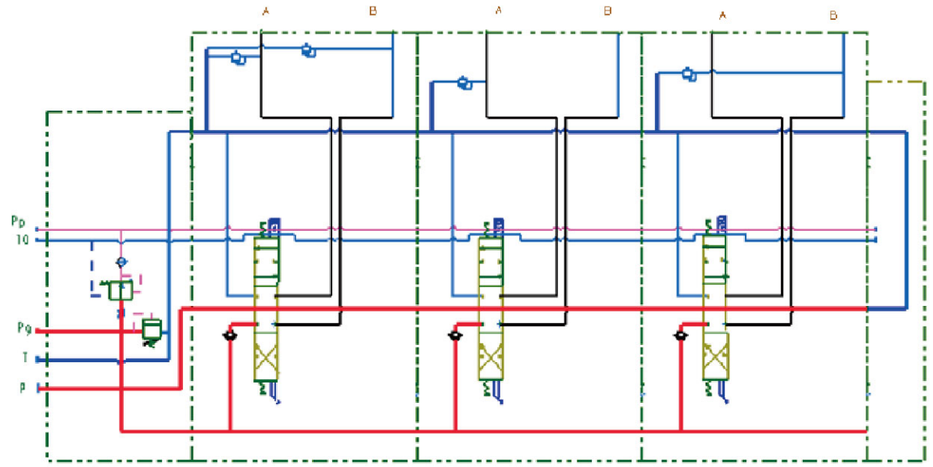
Drive Style Code	Spool Type	Function	Notes
FG1		3-position 4-way At neutral：P、T、A、B are all blocked	Double acting cylinder applications
FG2		3-position 4-way At neutral：P blocked, T、A、Bconnected	Hydraulic motor applications
FG3		3-position 4-way At neutral：P、A、B and T all connected	Hydraulic motor applications
FG4		3-position 3-way At neutral：P、T、A、B all blocked	Single acting cylinder applications
FG5		4-position 4-way At neutral：P、T、A、and B are all blocked 4th position floating	Double acting cylinder applications
FG6		4-position 4-way At neutral：P blocked, T、A and B are connected 4th position floating	Double acting cylinder or hydraulic motor applications

Load Relief Valve Types

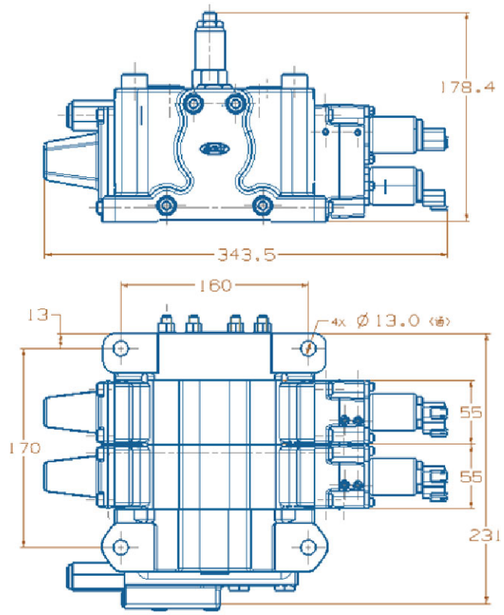
Code	Section drawing	Notes
RF0	Without load relief valve	Without load relief valve
RF1		Relief valve with anti-cavitation function
RF2		Direct acting relief valve
RF3		Differential pressure relief valve

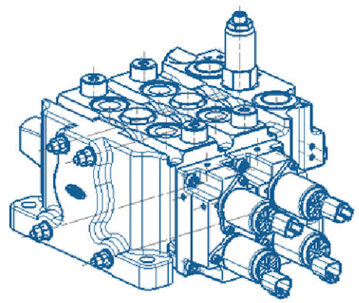
Application Example

Electro-hydraulic Controlled with Manual Override



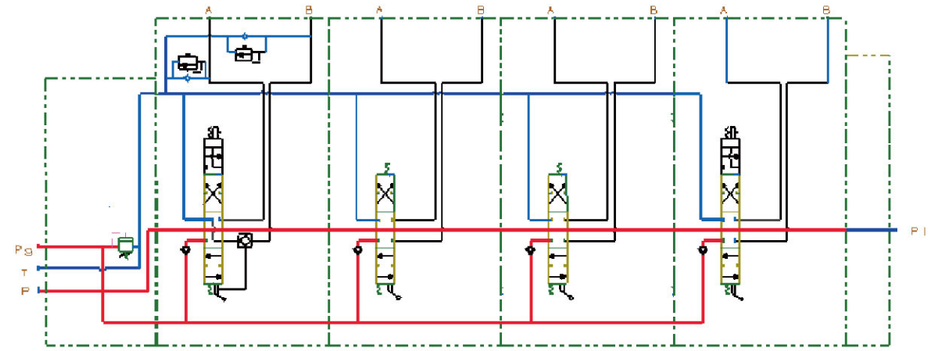
3 Sections Stack Valve



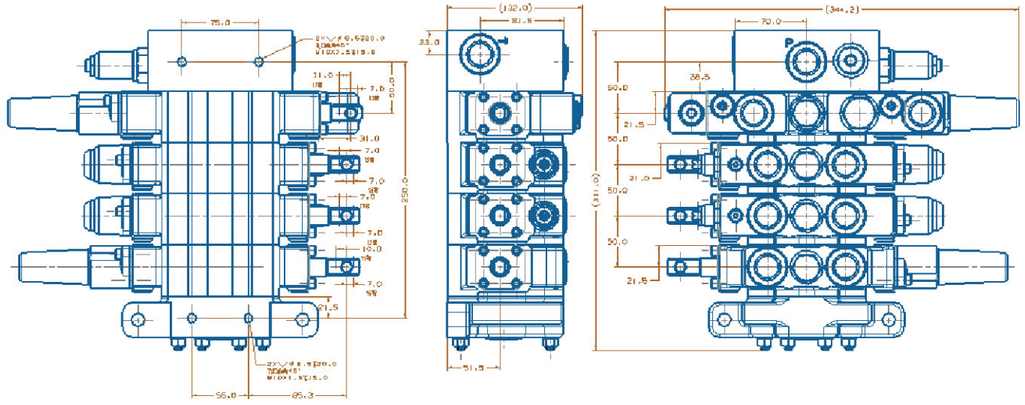


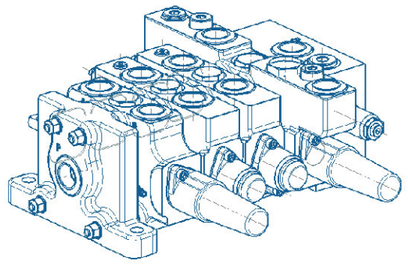
Application Example

Manual Control Valve (Tractor Hydraulic System)



4 Sections Stack Valve





Ordering Code

GKV80	−*	−JK**	/***	−DK**	−O1	−ZK**	KQ*	−FG*	−DC/**	−QL/***	−RF*	−O2	...
a	b	c	d	e	f	g	h	i	j	k	l	m	n

ⓐ Model
ⓑ Number of sections
ⓒ Inlet section code
ⓓ Inlet relief valve settings(bar)
ⓔ End section code
ⓕ First section
ⓖ Work section code
ⓗ Drive style code
ⓘ Spool function code
ⓙ Electrical option
12VDC、24VDC、00=none electrical
ⓚ Desired flow rate(L/min)
ⓛ Load relief valve style
ⓜ Second section
ⓝ ……

Ordering Example

GKV80	−3	−JK01	/210	−DK01	−O1	−ZK02	−KQ5	−FG1	−DC/12	−QL/100	−RF1
a	b	c	d	e	f	g	h	i	j	k	l

ⓐ Model
ⓑ Three sections
ⓒ Inlet section code
ⓓ Inlet relief valve settings(210bar)
ⓔ End section code
ⓕ First section
ⓖ Work section code
ⓗ Drive style code
ⓘ Spool function code
ⓙ 12VDC
ⓚ Desired flow rate(100L/min)
ⓛ Load relief valve style(L/min)

−O2	−ZK01	−KQ1	−FG2	−DC/00	−QL/100	−RF2
m	n	o	p	q	r	s

ⓜ Second section
ⓝ Work section code
ⓞ Drive style code
ⓟ Spool function code
ⓠ No electric
ⓡ Desired flow rate(100L/min)
ⓢ Load relief valve style(Direct acting)

−O3	−ZK01	−KQ2	−FG3	−DC/12	−QL/80	RF3
t	u	v	w	x	y	z

ⓣ Third section
ⓤ Work section code
ⓥ Drive style code
ⓦ Spool function code
ⓧ 12 VDC
ⓨ Desired flow rate (80L/min)
ⓩ Load relief valve type

Notes

Ordered valve is GKV80 series with 3 work sections. Inlet relief setting pressure is 210 bar. End section has no T port. In the first work section, there is a load relief valve in A port. The spool of this section is driven by electrical drive module with 12VDC. The spool function is O function. Desired flow rate is 100L/min. The load relief has an anti-cavitation function. The second work section is manually controlled. There are load relief valves on both A and B ports. Spool function is Y function. Desired flow is 100L/min. Load relief is a direct acting relief. The third section is hydraulic remote controlled. There are load relief valves on both A and B ports. The spool function is H function. Desired flow is 80L/min.The load relief valves are differential pressure type.

GKV50 Series Sectional Control Valves

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Introduction of GKV50

GKV50 series sectional valves are open center valves. Mainly used in mobile machines such as, agricultural machinery, construction machines, mining equipment, material handling equipment, as well as maintenance machines. All valve series adapted modular design. The system designer can choose different modules to design a complex system. The spool in work section is designed to satisfy with the customer requirements, which provides excellent flow characteristics and very low flow force. With different inlet modules, it gives user the freedom for choosing different relief valve and different port locations. There are number of different work section modules to choose from, to satisfy with the customer needs. Different end sections also provide the customer needs for return ports or power beyond functions.

Functions

- Inlet module with two stage relief valve
- Inlet module with direct acting relief valve
- A/B port with overload valve on main section
- A port with overload valve on work section
- B port with overload valve on work section
- A port with dump valve
- B port with dump valve
- A/B port with a mechanical P. O. check
- A port with a mechanical P. O. check
- B port with a mechanical P. O. check
- End section with oil return port
- End section without oil return port
- End section with power beyond

Features

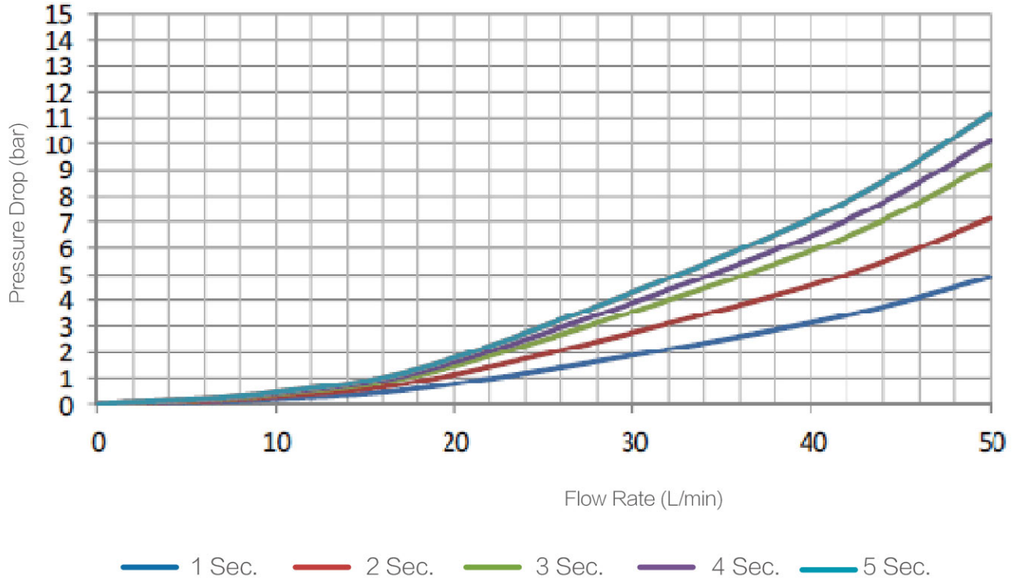
- Cast iron body (inlet section, main section and end section).
- Spring cap, mechanical detent cap, as well as electoral or hydraulic pilot controlled module body are made by cast aluminum or die cast aluminum.
- Parallel circuit. Each section has its own load check valve, Each section has load relief option and relief style options.
- Can be changed to series circuit.
- Provides dump valve options for each work port.
- Provides different drive modules (electrical, hydraulic remote, manually control, wire driving).
- Provides power beyond port.
- Can be modified to be a closed center valve.
- Provides mechanical detent.
- Provides options for different type of relieves and different relief valve locations in the inlet.
- Provides options for mechanically actuated P. O. check valves to satisfied with the needs for tractors and mobile cranes.
- Provides different spool functions to be used for controlling double acting cylinder , single acting cylinders, hydraulic motors.
- Provides floating functions for spools.
- Provides excellent flow characteristics and small operating force.
- Can be proportionally controlled without pressure compensation.
- Can be assembled with 1-8 main sections.

Technical Data

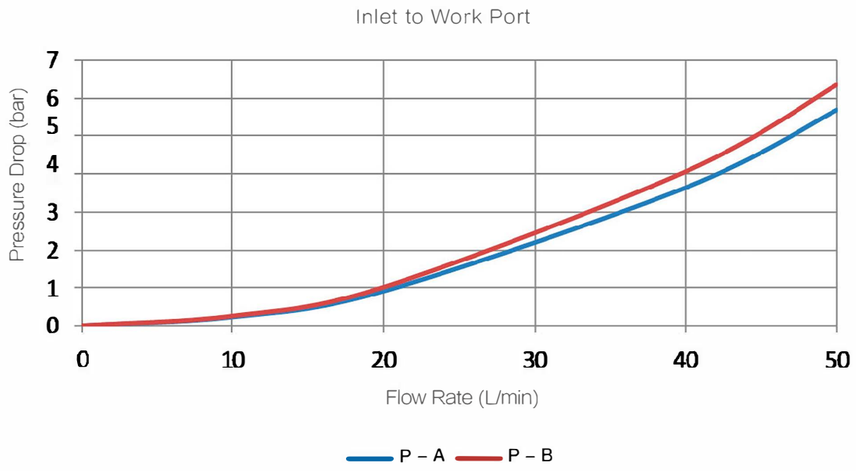
Rated flow rate	50 L/min	Internal leakage(@70 bar)A、B to T	25-35 cc/min
Maximum flow rate	60 L/min	Internal leakage(@70 bar)A、B to T	
Minimum flow rate	20 L/min	With P. O. check	2-5 cc/min
Maximum pressure at P port	350 bar	Spool stroke(1、2 position)	+7/-7mm
Maximum pressure at A、B ports	350 bar	With floating function(1、2 and F position)	+7/-7 -10mm
Maximum pressure at T port	25 bar		
Solenoid can be either 12 VDC or 24 VDC，corresponding current is 0 - 1.5 or 0 - 0.75 Amp.			

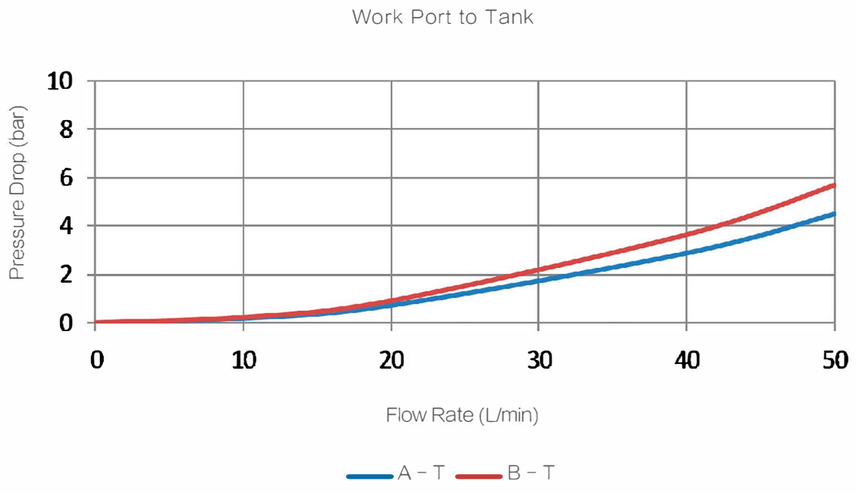
Performance Data

Pressure Drop from Inlet to Tank at Neutral Position (P to T)



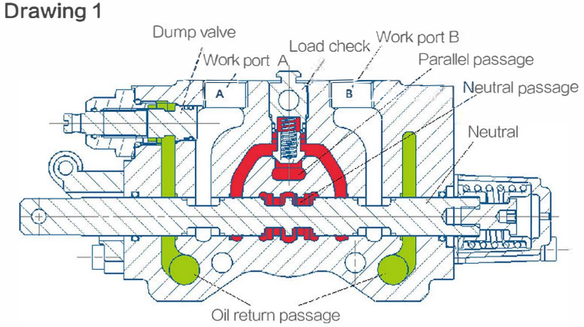
Performance Data



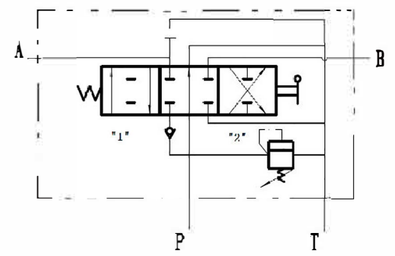


Basic Operation Principle

Drawing 1

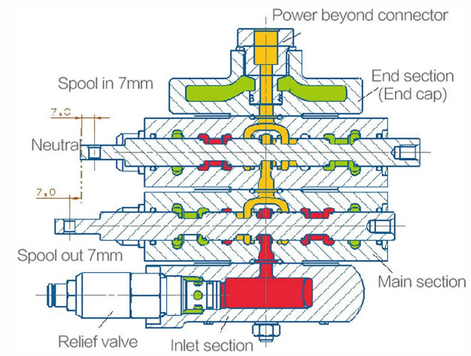


Drawing 2

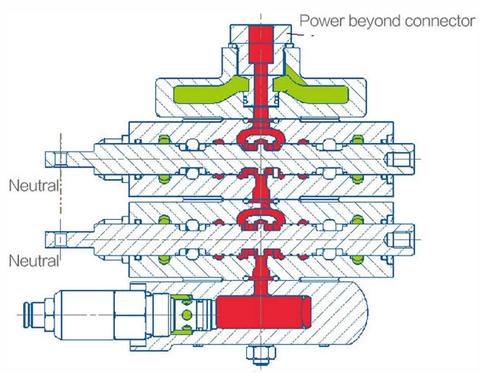


GKV50 series sectional valves is an open centered 3-position 4-way valve. When spool is in its neutral position, the flow from pump passes through the neutral passage to tank, with small pressure drops. When one of the spool is moved to 1 or 2 position, the neutral passage is blocked. The flow from pump can only pass the parallel passage to load check valve, then, passes through the bridge and spool opening to work port A or B.

Drawing 3



Drawing 4

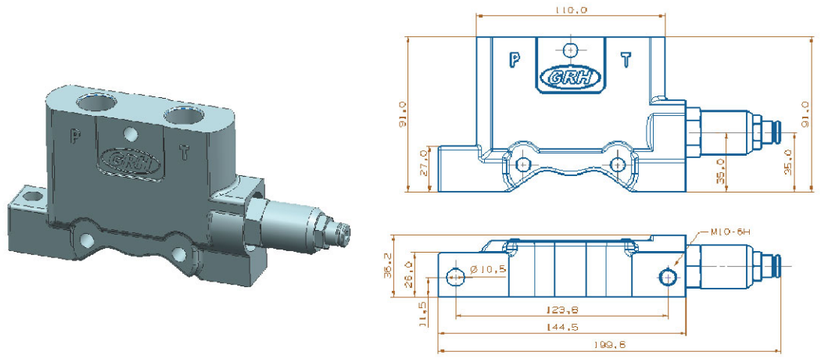


For multi-section valves, if one of the sections spool is in Spool in or Spool out position, then, there is no flow in its down stream sections neutral passage. The main throttle occurs on the valve opening between bridge passage and spool. The operator can control more than one spools, but the magnitude of the flow rate for each controlled section depends on the magnitude of the load, as shown in drawing 3.

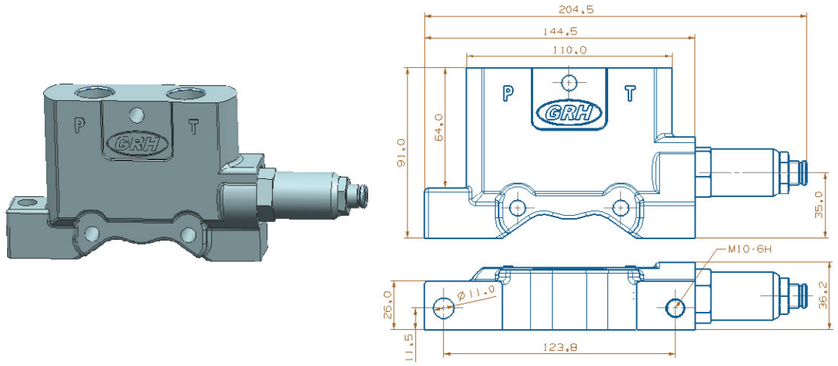
When power beyond function is selected as shown in drawing 4, when all spools are in neutral position, the flow from inlet passes neutral passage to power beyond port to provide source of the flow to other auxiliary functions.

Inlet Section Dimensions

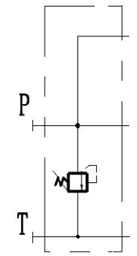
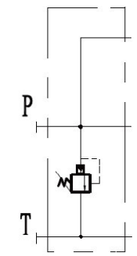
JK01 Inlet Section



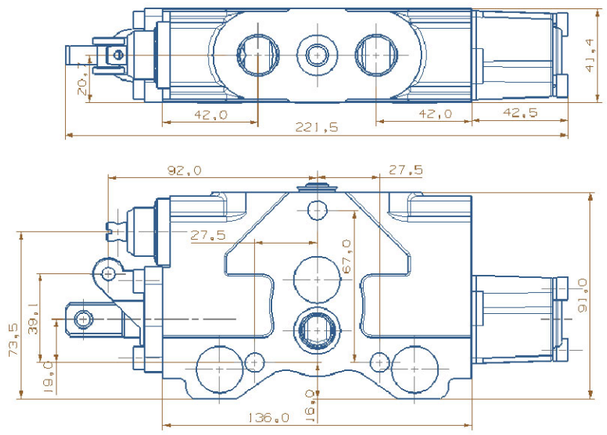
JK02 Inlet Section



Inlet Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
JK01		Inlet section with direct acting relief valve	
JK02		Inlet section with two stage relief valve	

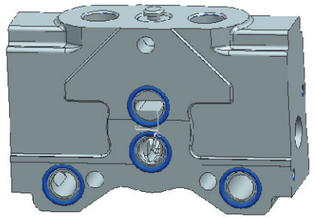
Typical Work Section Dimensions

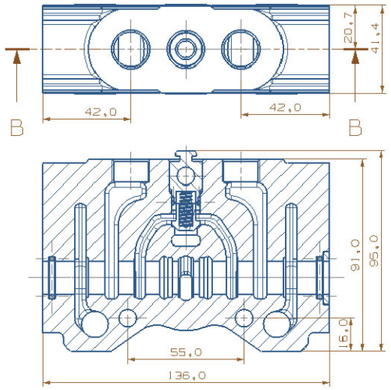


GUORUI HYDRAULIC
INNOVATION LEADS THE FUTURE

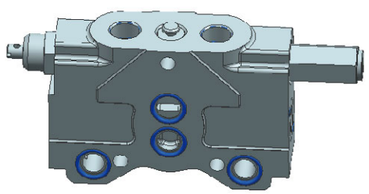
Typical Work Section Dimensions

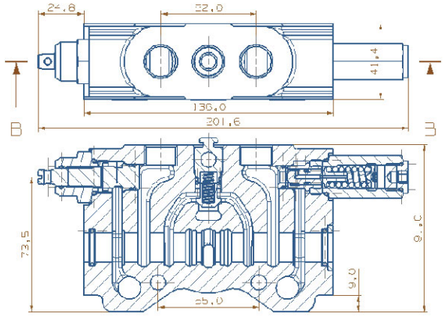
YT01 Work Section



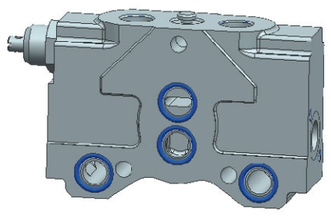


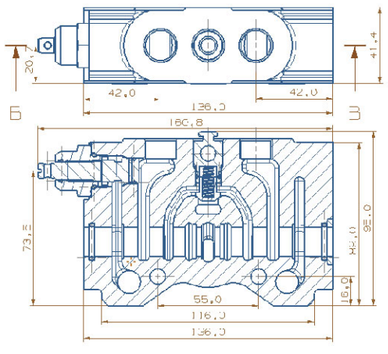
YT06 Work Section



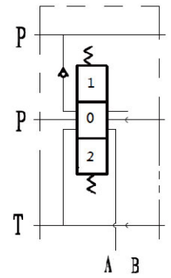
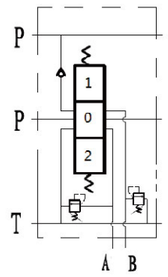
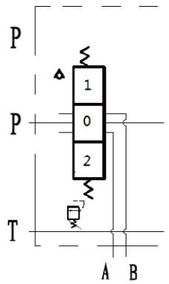
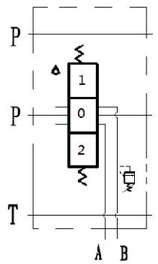


YT07 Work Section

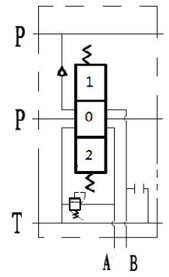
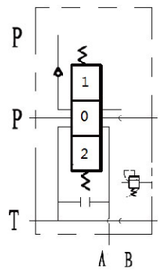
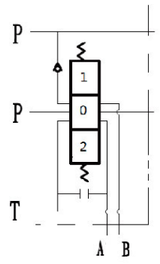
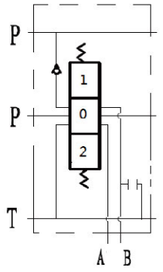




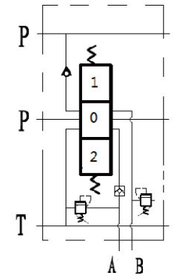
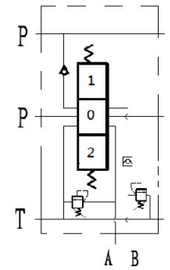
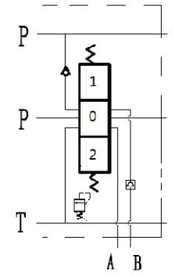
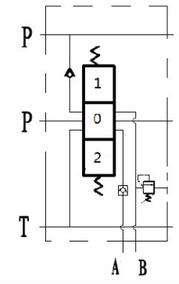
Typical Work Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
YT01		Standard Section without over load relief valves at both A and B ports	
YT02		Both A and B ports have over load relief valves	
YT03		One over load relief valve on A port	
YT04		One over load relief valve on B port	

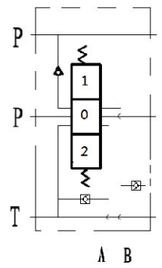
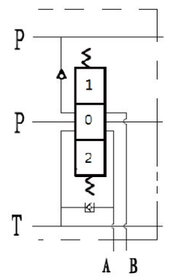
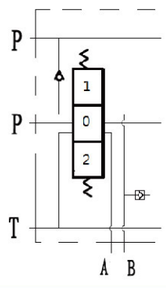
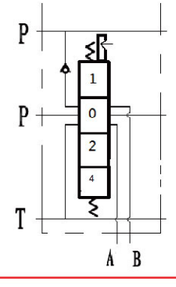
Typical Work Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
YT05		One over load relief valve on A port One dump valve on B port	Tractor and other auxiliary equipment applications
YT06		One over load relief valve on B port One dump valve on A port	Tractor and other auxiliary equipment applications
YT07		One dump valve on A port	Tractor and other auxiliary equipment applications
YT08		One dump valve on B port	Tractor and other auxiliary equipment applications

Typical Work Section Hydraulic Schematics

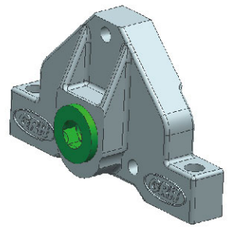
Code	Hydraulic Schematic	Main Function	Notes
YT09		Over load relief valves on both A and B ports. One mechanically actuated P. O. check on A port.	Tractor and other load lifting equipment applications
YT10		Over load relief valves on both A and B ports. One mechanically actuated P. O. check on B port.	Tractor and other load lifting equipment applications.
YT11		One load relief valves on A port. One mechanically actuated P. O. check on B port.	Tractor and other load lifting equipment applications.
YT12		One load relief valves on B port. One mechanically actuated P. O. check on A port.	Tractor and other load lifting equipment applications.

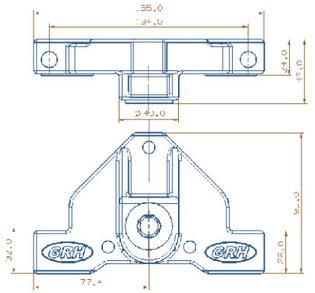
Typical Work Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
YT13		Anti-cavitation valves on both A and B ports	Hydraulic motor applications
YT14		Anti-cavitation valves on A port	Hydraulic motor applications
YT15		Anti-cavitation valves on B port	Hydraulic motor applications
YT16		Fourth section has mechanical detent	

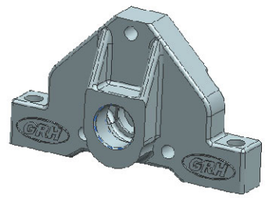
Typical End Section Dimensions

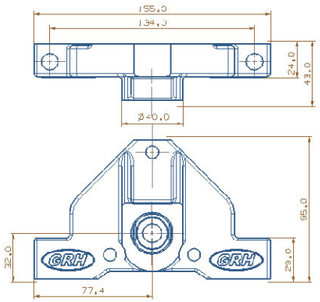
DY01 End Section (End Cap)



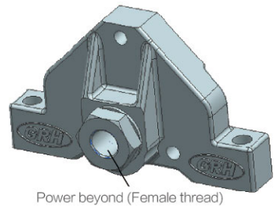


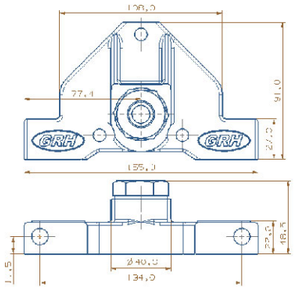
DY02 End Section (End Cap)



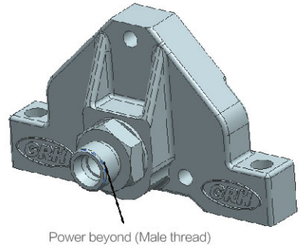


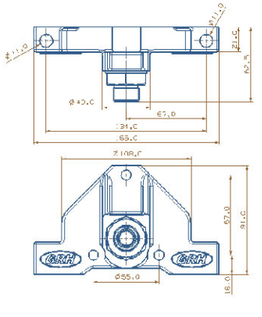
DY03 End Section (End Cap)



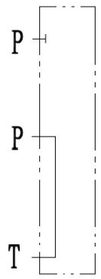
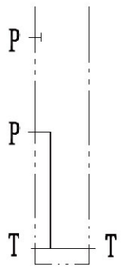
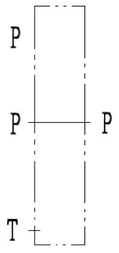
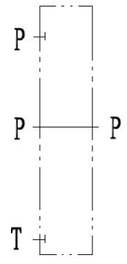


DY04 End Section (End Cap)

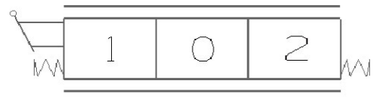
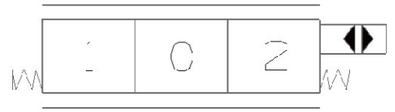
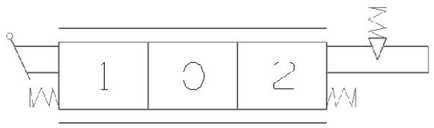
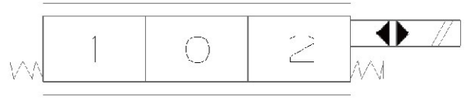
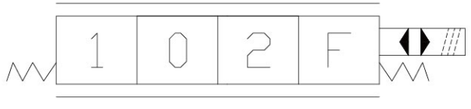




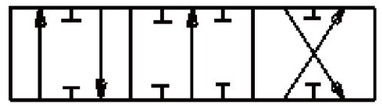
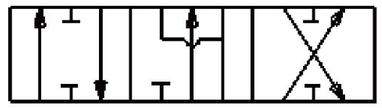
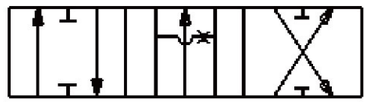
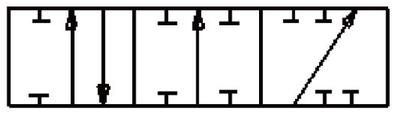
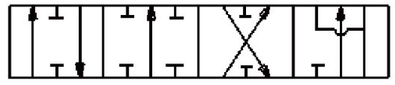
Typical End Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
DY01		No oil return port	
DY02		Oil return port on the end section	
DY03		No oil return port With power beyond port (Internal thread connector)	Tractor application
DY04		No oil return port With power beyond port (External thread connector)	Tractor application

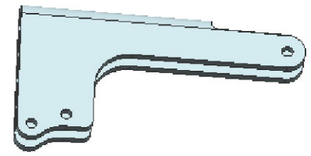
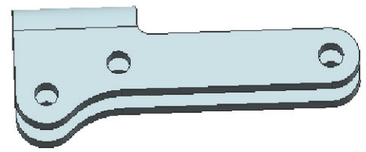
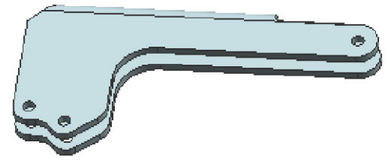
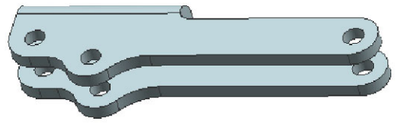
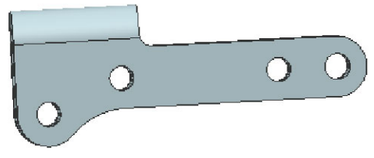
Work Section Drive Styles

Drive Style Code	Hydraulic Schematic	Function
KQ1		Standard manual control
KQ2		Hydraulic remote control
KQ3		Manual control with mechanical detent
KQ4		Manual control with 4th position floating and detent
KQ5		Electrical actuated(on/off)
KQ6		Electrical actuated with floating function

Typical Spool Functions

Drive Style Code	Hydraulic Schematic	Function	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		4-position 4-way At neutral：P、T、A、and B are all blocked 4th position floating	Double acting cylinder applications
FG6		4-position 4-way At neutral：P blocked, T、A and B are connected 4th position floating	Double acting cylinder or hydraulic motor applications

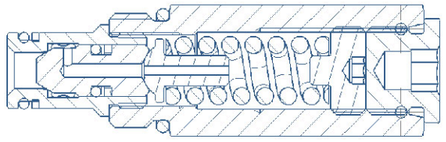
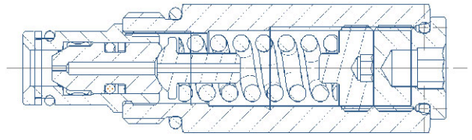
Handle Bracket Types

Code	Drawing	Notes
SL0	Valve without handle bracket	
SL1		
SL2		
SL3		
SL4		
SL5		

Handle Types

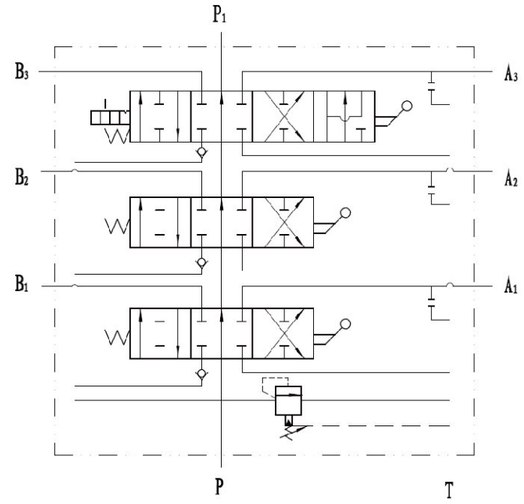
Code	Drawing	Notes
SB0	No Handle	
SB1		
SB2		
SB3		
SB4		Long handle

Load Relief Valve Types

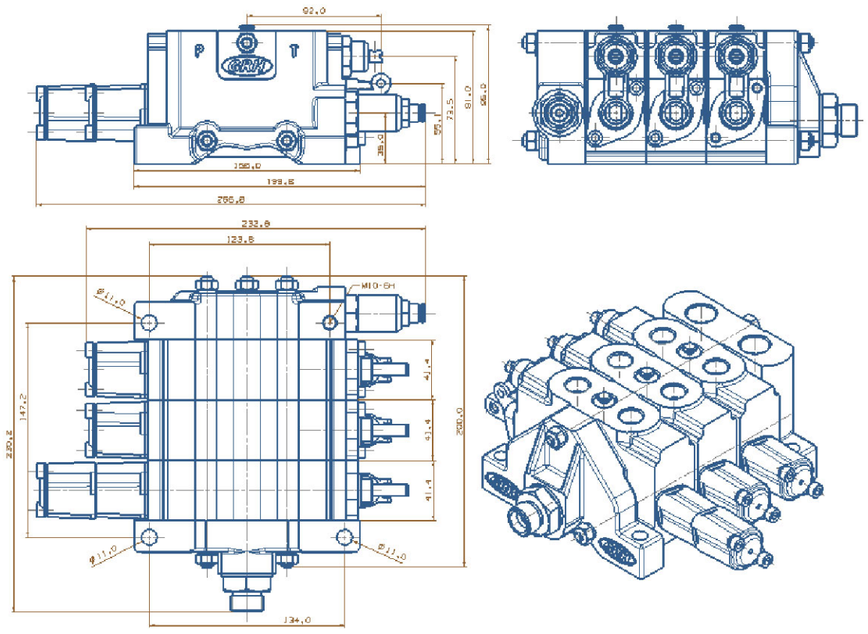
Code	Drawing	Notes
RF0	No over load relief valve	No over load relief valve
RF1		Direct acting relief valve
RF2		Differential relief valve

Application Example

3 Section Stack Valve (Third Section Has Mechanical Detent and Floating Function)



Munual Control 3 Section Valve



Ordering Code

GKV50	/*	−JY**	/***	−DY**	−O1	−YT**	−KQ*	−FG*	−DC/**	−QL/***	−SL*	−SB*	−RF*
a	b	c	d	e	f	g	h	i	j	k	l	m	n

ⓐ Model
ⓑ Number of sections
ⓒ Inlet section code
ⓓ Inlet relief valve settings(bar)
ⓔ End section code
ⓕ First section
ⓖ Work section code
ⓗ Drive style code
ⓘ Spool function code
ⓙ Electrical option
12VDC、24VDC、00=none electrical
ⓚ Desired flow rate (L/min)
ⓛ Handle bracket code
ⓜ Handle code
ⓝ Over load relief valve code

−O2	−YT**	−KQ*	−FG*	−DC/**	−QL/***	−SL*	−SB*	−RF*	−O3	·····
o	p	q	r	s	t	u	v	w	x	y

ⓞ Second section
ⓟ Work section code
ⓠ Drive style code
ⓡ Spool code
ⓢ Electrical option
12VDC、24VDC、00=none electrical
ⓣ Desired flow rate (L/min)
ⓤ Handle bracket code
ⓥ Handle code
ⓦ Over load relief valve code
ⓧ Third section
ⓨ ·····

Ordering Example

GKV50	/*	−JY2	/210	−DY1	−O1	−YT01	−KQ1	−FG2	−DC/00	−QL/40	−SL1	−SB1	−RF0
a	b	c	d	e	f	g	h	i	j	k	l	m	n

ⓐ Model
ⓑ Two section valve
ⓒ Inlet section code
ⓓInlet relief valve settings(210bar)
ⓔ End section code
ⓕ First section
ⓖ Work section code
ⓗ Drive style code
ⓘ Spool function code
ⓙ None electrical
ⓚ Desired flow rate(40L/min)
ⓛ Handle bracket code
ⓜ Handle code
ⓝ Over load relief valve code

−O2	−YT03	−KQ2	−FG3	−DC/00	−QL/50	−SL0	−SB0	−RF2
a	b	c	d	e	f	g	h	i

ⓐ Second section
ⓑ Work section code
ⓒ Drive code
ⓓ Spool code
ⓔ No electric
ⓕ Desired flow rate(50L/min)
ⓖ Handle bracket code(No bracket)
ⓗ Over load relief valve code(Differential type)
ⓘ Handle code(No handle)

Notes

Choose GKV50 series sectional valve, with two work sections，Inlet relief valve is set 210 bar. There is no return port on end section of the stack. The first work section is basic standard section without over load relief valves. This section is manual control (wire pulling type). Spool is Y type. Desired flow rate for the first section is 40L/min. Not required for handle and handle bracket. The second section is hydraulic remote control. There is an over load relief on A port. Spool is H type. Desired flow is 50L/min。Not required for handle and handle bracket. The overload relief is differential type.

GKV35 Series Sectional Valves

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Typical Work Section Dimensions 51

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Introduction of GKV35

GKV35 series sectional valves are open center valves. Mainly used in mobile machines such as, agricultural machinery, construction machines, mining equipment, material handling equipment as well as maintenance machines. The valve series adapted modular design. The system designer can choose different modules to design a complex system. Main valve spool is designed to satisfy with the customer requirements, which provides excellent flow characteristics and very low flow force. With different inlet modules, it gives user the freedom for choosing different relief valve and different port locations. There are number of different work section modules to choose from, to satisfy with the customer needs. Different end sections also provide the customer needs for return ports or power beyond functions.

Functions

- A/B Port with overload valve on main section
- A Port with overload valve on main section
- B Port with overload valve on main section
- A/B Port with dump valve
- End section with oil return port
- End section without oil return port
- End section with power beyond port
- Provide other cartriage valve option

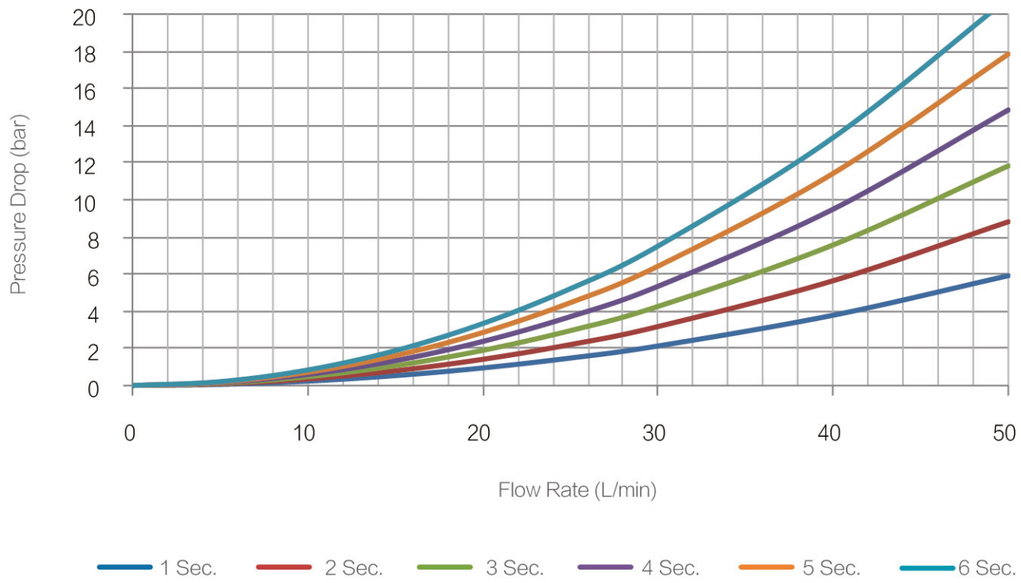
Features

- Cast iron body (inlet section, main section and end section).
- Spring cap, mechanical detent cap, as well as electic or hydraulic pilot controlled module body are made by cast aluminum or die-cast aluminum.
- Parallel circuit. Each section has its own load check valve, Each section has load relief option and relief style options.
- Can be changed to series circuit.
- Provides dump valve options for each work port.
- Provides different drive modules (hydraulic remote, manual control, wire driving).
- Provides power beyond port.
- Can be modified to be a closed center valve.
- Provides mechanical detent.
- Provides options for different type of relieves and different relief valve locations in the inlet.
- Provides options for mechanically actuated P. O. check valves to satisfied with the needs for tractors and mobile cranes.
- Provides different spool functions to be used for controlling double acting cylinder , single acting cylinders, hydraulic motors.
- Provides floating functions for spools.
- Provides excellent flow characteristics and small operating force.
- Can be proportional control without pressure compensation.
- Can be assembled with 1-8 main sections.

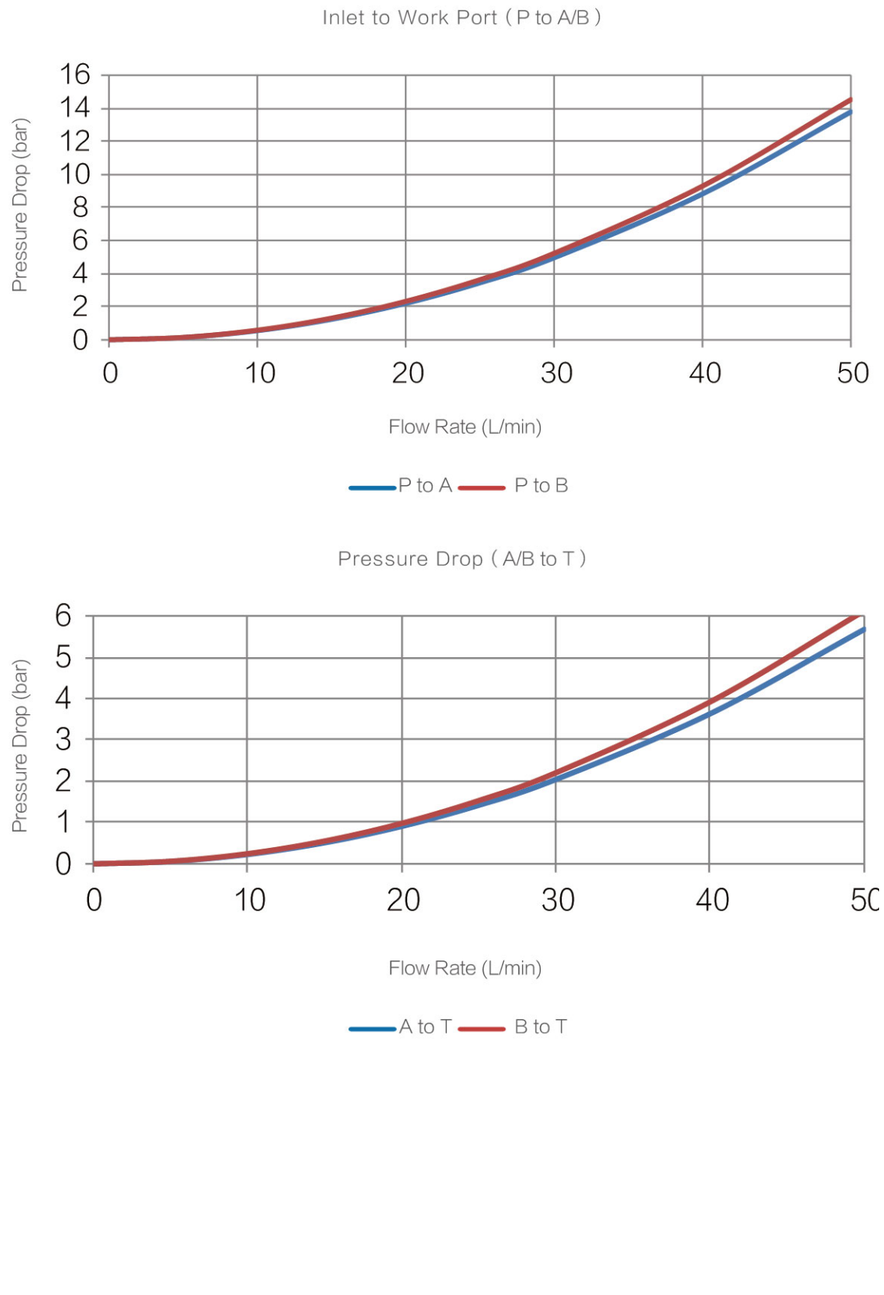
Technical Data

Rated Flow Rate	35 L/min	Internal Leakage(@70 bar)A、B to T	15-20 cc/min
Maximum Flow Rate	40 L/min	Internal Leakage(@70 bar)A、B to T	
Minimum Flow Rate	10 L/min	With P.O. check	2-5 cc/min
Maximum Pressure at P port	210 bar	Spool Stroke(1、2 position)	+7/-7 mm
Maximum Pressure at A、B port	210 bar	With floating function(1、2 and F position)	+7/-7-10mm
Maximum Pressure at T port	25 bar		
Solenoid can be either 12 VDC or 24 VDC，corresponding current is 0 - 1.5 or 0 - 0.75 Amp.			

Performance Data

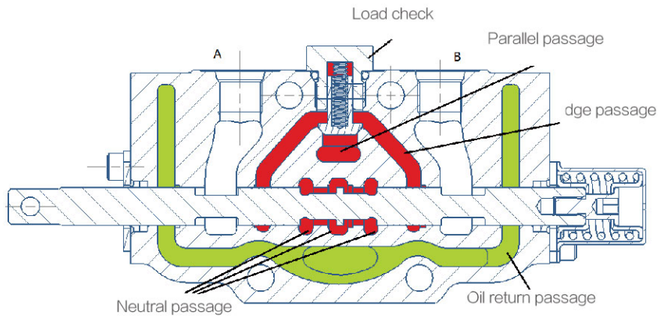


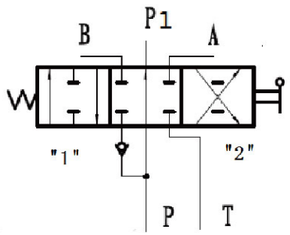
Performance Data



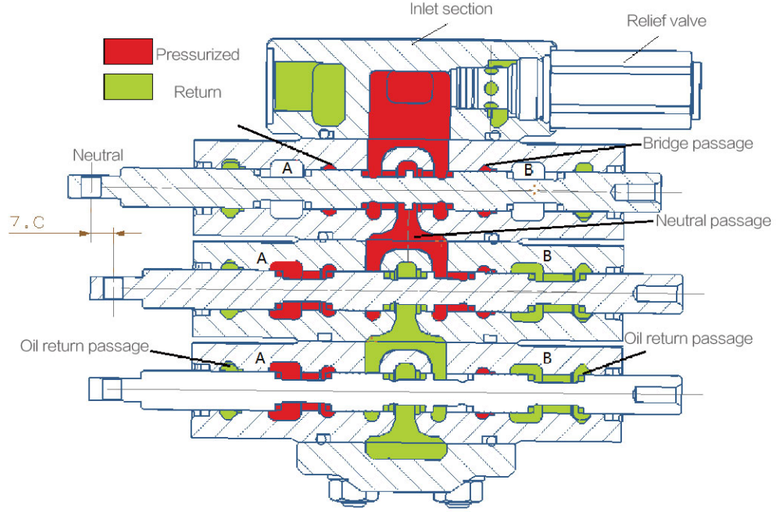
Order Example - 订购实例

Basic Operation Principle





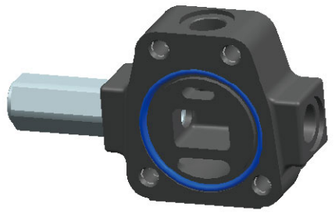
GKV35 series sectional valve is an open centered 3-position 4-way valve. When spool is in its neutral position, the flow from pump passes through the neutral passage to tank, with small pressure drops. When one of the spool is moved to 1 or 2 position, the neutral passage is blocked. The flow from pump can only pass the parallel passage to load check valve. Then, passes through the bridge and spool opening to work port A or B.

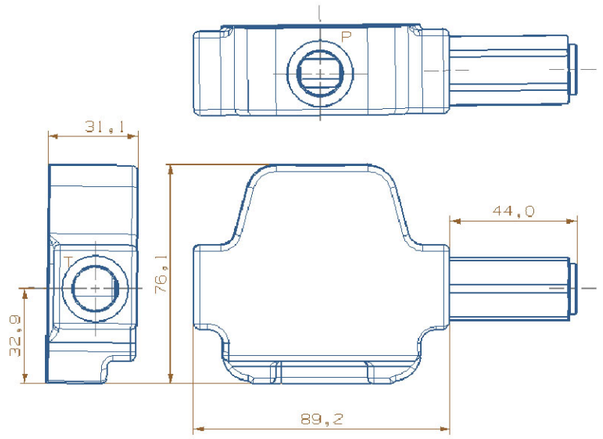


For multi-section valves, if one of the section spool is in 1 or 2 position, then, there is no flow in its down stream section neutral passage. The main throttle occurs on the valve opening between bridge passage and spool . The operator can control more than one spools, but the magnitude of the flow rate for each controlled section depends on the load.

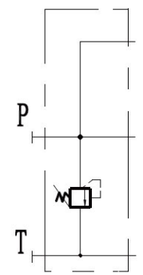
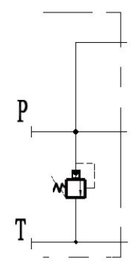
Inlet Section Dimensions

JS01 Inlet Section



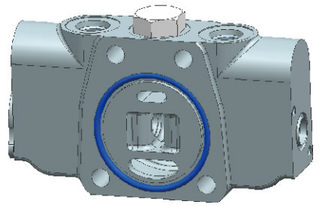


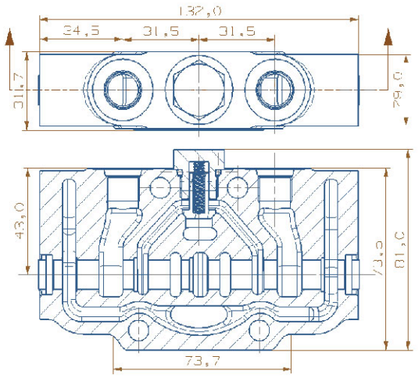
Inlet Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
JS01		Inlet section with direct acting relief valve	
JS02		Inlet section with two stage relief valve	

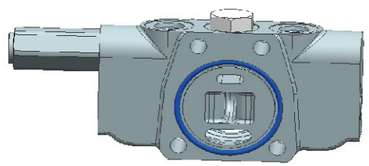
Typical Work Section Dimensions

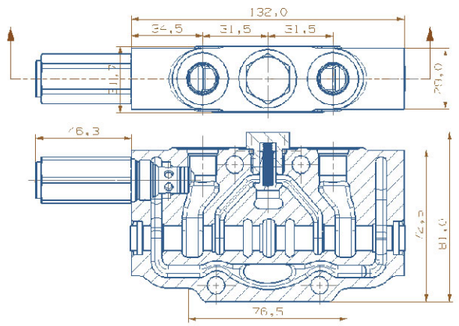
ZS01 Work Section



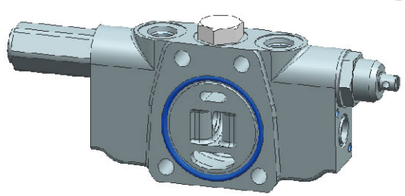


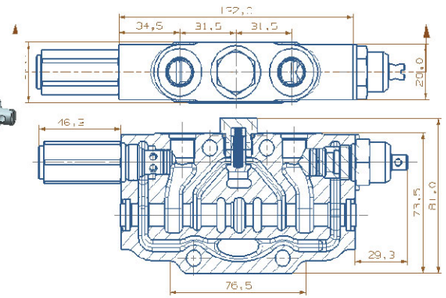
ZS04 Work Section



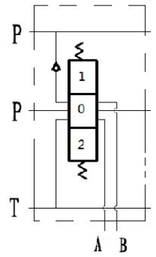
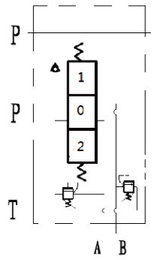
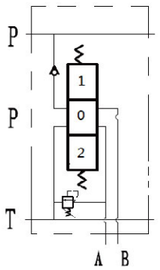
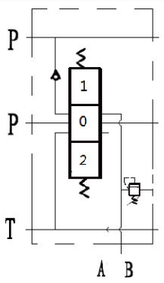


ZS06 Work Section

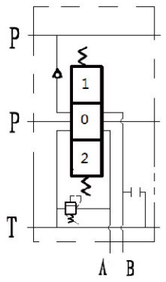
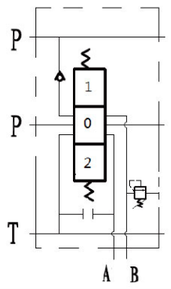




Typical Work Section Hydraulic Schematics

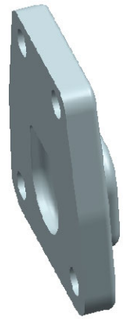
Code	Hydraulic Schematic	Main Function	Notes
ZS01		Basic section (no over load relief)	
ZS02		Overload relief valves on both A and B ports	
ZS03		Overload relief on A port	
ZS04		Overload relief on B port	

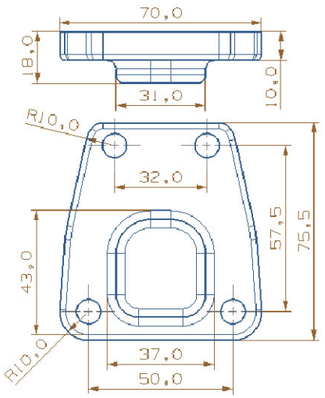
Typical Work Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
ZS05		Overload relief on A port Dump valve on B port	Tractor and auxiliary valve application
ZS06		Overload relief on B port Dump valve on A port	Tractor and auxiliary valve application

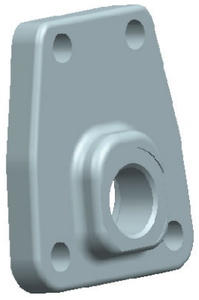
Typical End Section Dimensions

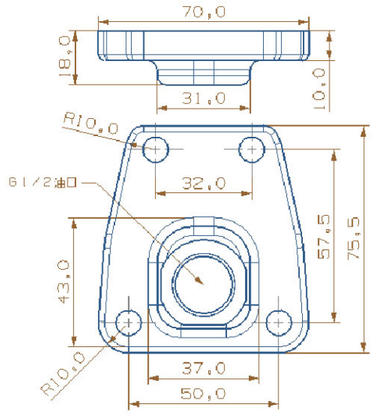
DK01 End Section



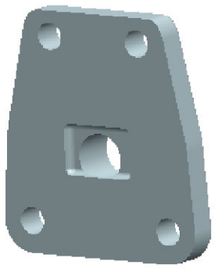


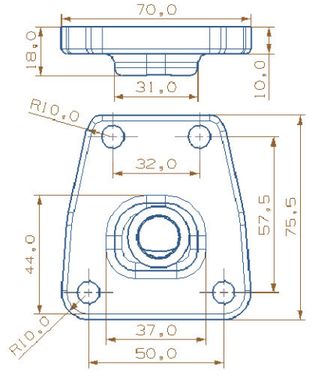
DK02 End Section



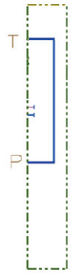
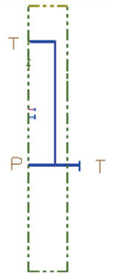


DK03 End Section

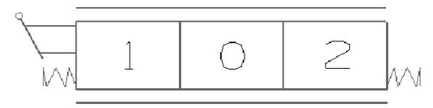
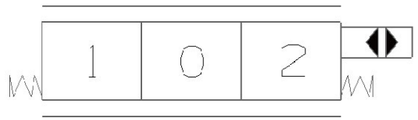
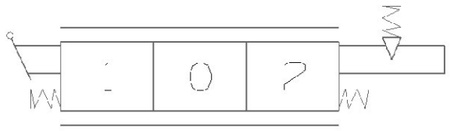
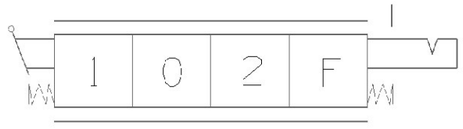
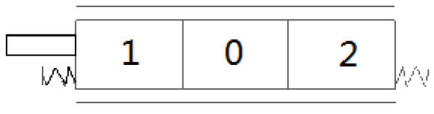




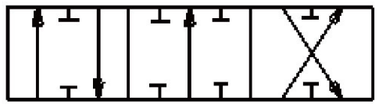
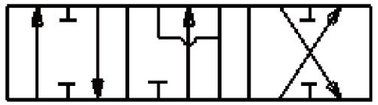
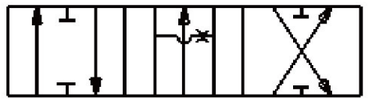
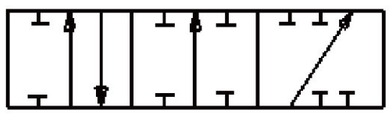
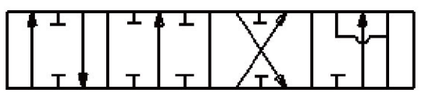
Typical End Section Hydraulic Schematics

Code	Hydraulic Schematic	Main Function	Notes
DK01		End section without T port	
DK02		End section with T port	
DK03		End section with power beyond port	Tractor applications

Work Section Drive Styles

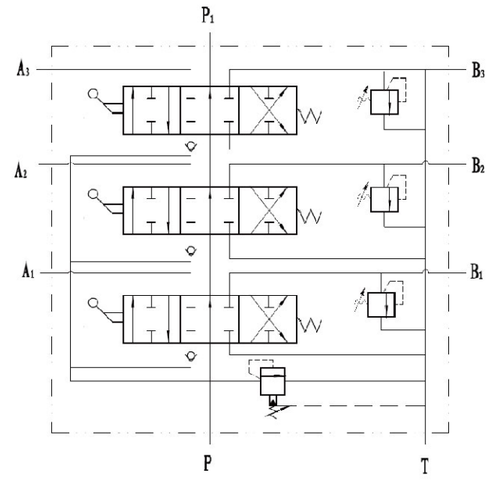
Drive Style Code	Hydraulic Schematic	Function
KQ1		Standard manual control
KQ2		Hydraulic remote control
KQ3		Manual control with mechanical detent
KQ4		Manual control with 4th position floating and detent
KQ5		Wire controlled

Typical Spool Functions

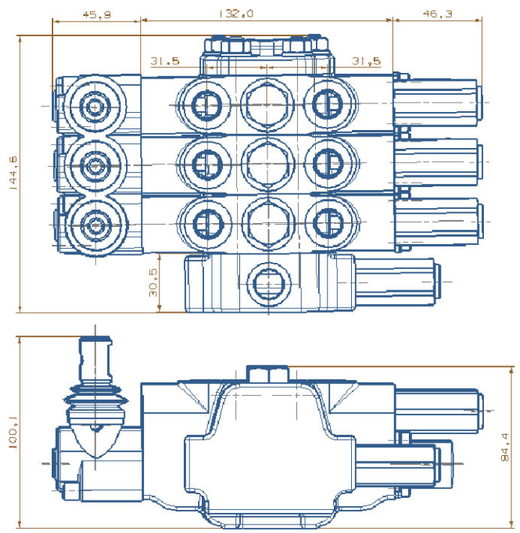
Drive Style Code	Hydraulic Schematic	Function	Notes
FG1		3-position 4-way At neutral: P、T、A、B are all blocked	Double acting cylinder applications
FG2		3-position 4-way At neutral: P blocked, T,A, Bconnected	Hydraulic motor applications
FG3		3-position 4-way At neutral: P、A、B and T all connected	Hydraulic motor applications
FG4		3-position 3-way At neutral: P、T、A、B all blocked	Single acting cylinder applications
FG5		4-position 4-way At neutral: P、T、A、 and B are all blocked 4th position floating	Double acting cylinder applications
FG6		4-position 4-way At neutral: P blocked, T, A and B are connected 4th position floating	Double acting cylinder or hydraulic motor applications

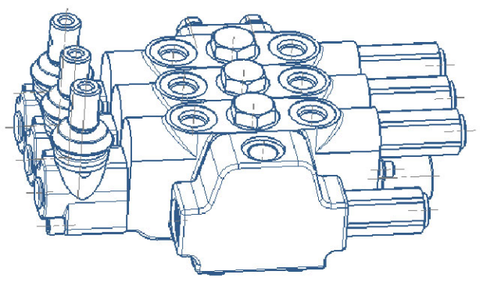
Application Example

Example Of Manually Controlled Sectional Valve



Three Section Valve Dimensions





Ordering Code

GKV35	/*	−JS**	/***	−DK**	−O1	−ZS**	KQ*	−FG*	−DC/**	−QL/***	−RF*	−O2	...
a	b	c	d	e	f	g	h	i	j	k	l	m	n

ⓐ Model
ⓑ Number of sections
ⓒ Inlet section code
ⓓ Inlet relief valve settings(210bar)
ⓔ End section code
ⓕ First section
ⓖ Work section code
ⓗ Drive style code
ⓘ Spool function code
ⓙ Electrical option
12VDC、24VDC、00=none electrical
ⓚ Desired flow rate(L/min)
ⓛ Over load relief valve code
ⓜ Second section
ⓝ ……

Ordering Example

GKV35	/3	−JS01	/210	−DK01	−O1	−ZS02	−KQ5	−FG1	−QL/30
a	b	c	d	e	f	g	h	i	j

ⓐ Model
ⓑ 3 section valve
ⓒ Inlet section code
ⓓ Inlet relief valve settings(210bar)
ⓔ End section code
ⓕ First section
ⓖ Work section code
ⓗ Drive style code
ⓘ Spool function code
ⓙ Desired flow rate(30L/min)

−O2	−ZS01	−KQ5	−FG2	−QL/30	−O3	−ZS01	−KQ5	−FG3	−QL/30
k	l	m	n	o	p	q	r	s	t

ⓚ 2nd section
ⓛ Work section code
ⓜ Drive style code
ⓝ Spool function code
ⓞ Desired flow rate (30L/min)
ⓟ 3rd section
ⓠ Work section code
ⓡ Drive style code
ⓢ Spool function code
ⓣ Desired flow rate(30L/min)

Notes

Ordered section valve is a three sectional valve. Inlet relief valve setting pressure is 210 bar. There is no return port on the end section. The first section has two load relief valves on A、B ports. The section is droved by wire. The spool function is a O type. The desired flow for the 30L/min. The overload relief is with anti-cavitation function. The second section is also droved by wire. There is no overload relief on either A or B port. The spool function is Y type ，The desired flow is 30L/min. The third section is droved by hydraulic remote. No overload relief on either A or B port. Spool function is H type, desires 30L/min flow.