



## MB-4 SERIES

# Monoblock Directional Control Valves

FOR MOBILE AND INDUSTRIAL  
HYDRAULIC APPLICATIONS



Innovative Designs  
Professional Quality  
Customer Satisfaction !



**油力油壓工業股份有限公司**  
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Survey 04-2322 7607

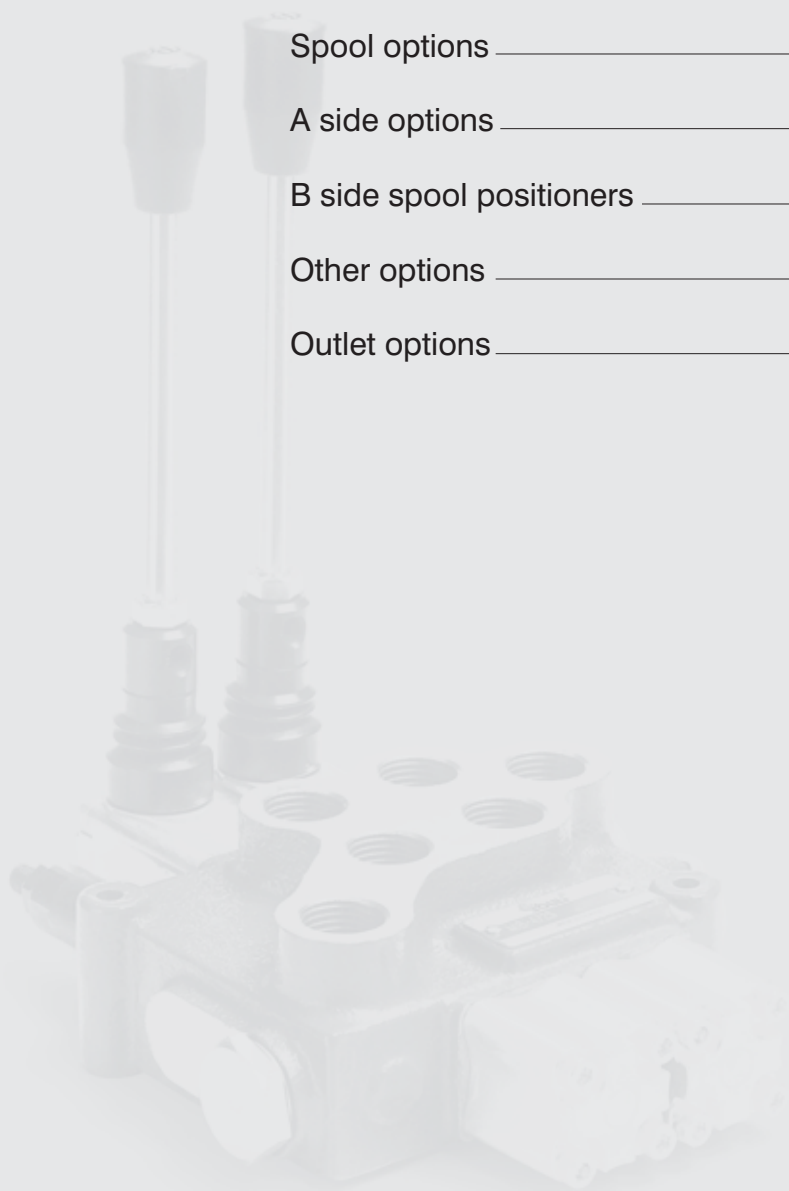


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# MB-4 Chapters

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For Mobile And Industrial Hydraulic Applications.

## MONOBLOCK DIRECTIONAL CONTROL VALVES

MB-2 / MB-3 / MB-4 / MB-5 / MSB-5

## SECTIONAL DIRECTIONAL CONTROL VALVES

SN-3 / SN-4 / SN-6 / SN-8



### MB-2

ONLY ONE SECTION AVAILABLE

Nominal flow rate	45 l/min	12 US gpm
Operating pressure (maximum)	250 bar	3600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



### MB-3

AVAILABLE SECTIONS FROM 1 TO 7

Nominal flow rate	45 l/min	12 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



### MB-4

AVAILABLE SECTIONS FROM 1 TO 6

Nominal flow rate	60 l/min	16 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



### MB-5

AVAILABLE SECTIONS FROM 1 TO 6

Nominal flow rate	80 l/min	21 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



## MSB-5

AVAILABLE SECTIONS FROM 1 TO 6

With Independent load check valve in each section, and optional port relief.

Nominal flow rate	80 l/min	21 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



## SN-3

AVAILABLE SECTIONS FROM 1 TO 12

Nominal flow rate	50 l/min	13 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



## SN-4

AVAILABLE SECTIONS FROM 1 TO 12

Nominal flow rate	80 l/min	21 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



## SN-6

AVAILABLE SECTIONS FROM 1 TO 12

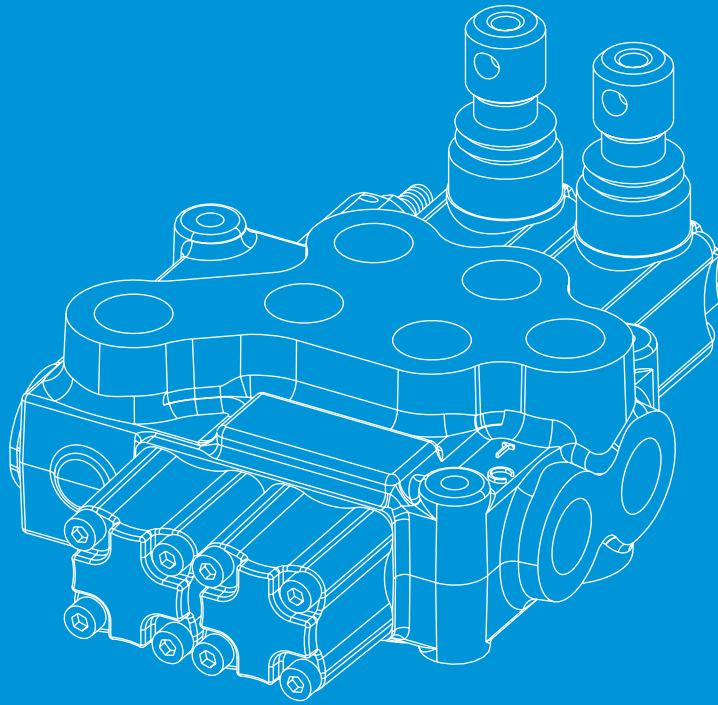
Nominal flow rate	140 l/min	37 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



## SN-8

AVAILABLE SECTIONS FROM 1 TO 12

Nominal flow rate	240 l/min	63 US gpm
Operating pressure (maximum)	315 bar	4600 psi
Back pressure (maximum) on outlet port T	25 bar	360 psi



*Innovative Designs*  
*Professional Quality*  
*Customer Satisfaction !*

AVAILABLE SECTIONS FROM

1 TO 6

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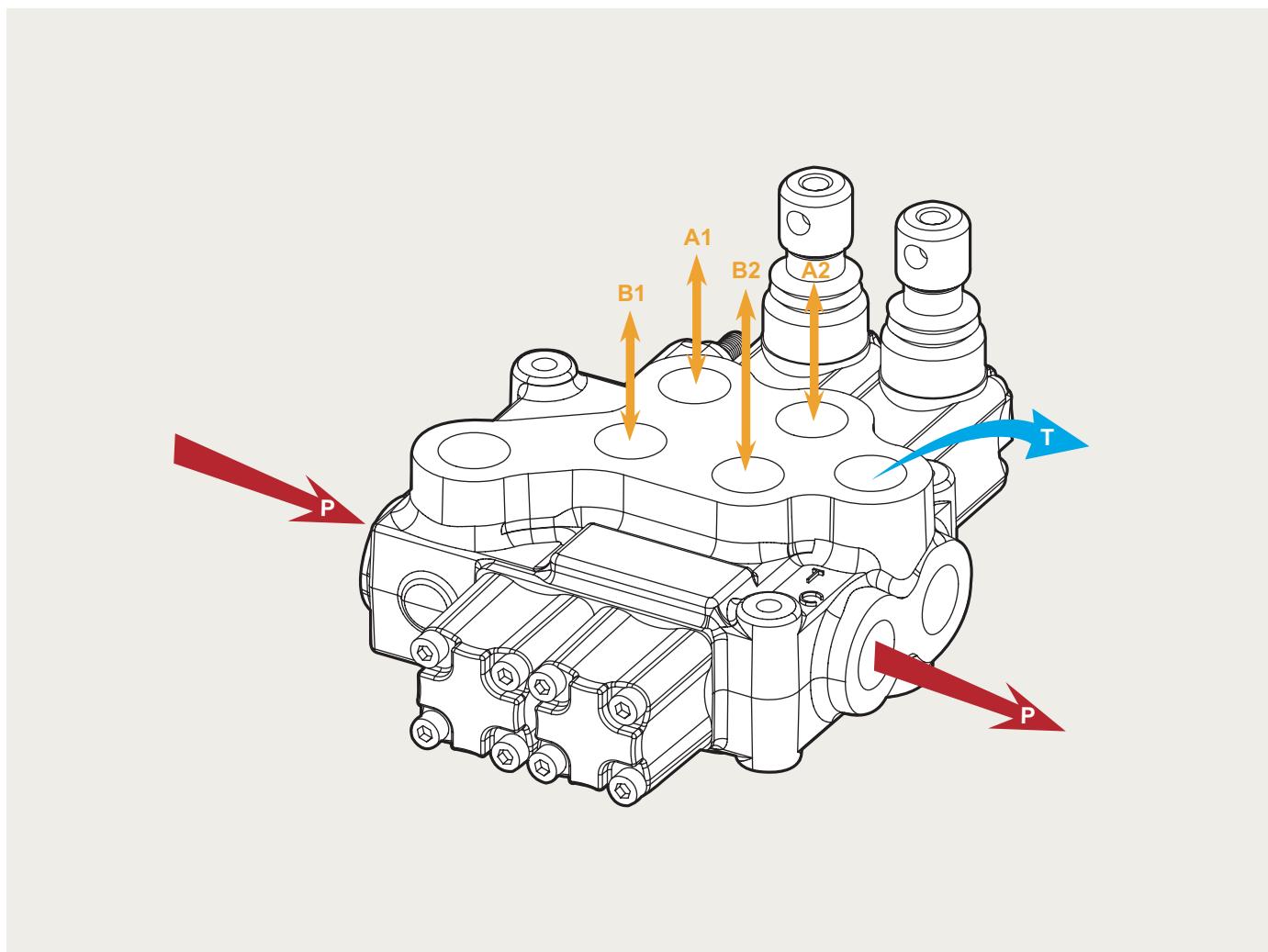
# MB-4

## Monoblock Directional Control Valves



# MB-4

## Monoblock Directional Control Valves



### MB-4 Specifications

Nominal flow rate		60 l/min	16 US gpm
Operating pressure (maximum)		315 bar	4600 psi
Back pressure (maximum)	on outlet port T	25 bar	360 psi
Fluid temperature range	with NBR(BUNA-N) seals	from - 20° to 80°C	from - 4° to 176° F
	with FPM(VITON) seal	from - 20° to 100°C	from - 4° to 212° F
Viscosity	operating range	from 15 to 75 mm <sup>2</sup> /s	from 15 to 75 cst
	min	12 mm <sup>2</sup> /s	12 cst
	max.	400 mm <sup>2</sup> /s	400 cst
Ambient temperature range		from - 40° to 60°C	from - 40° to 140° F

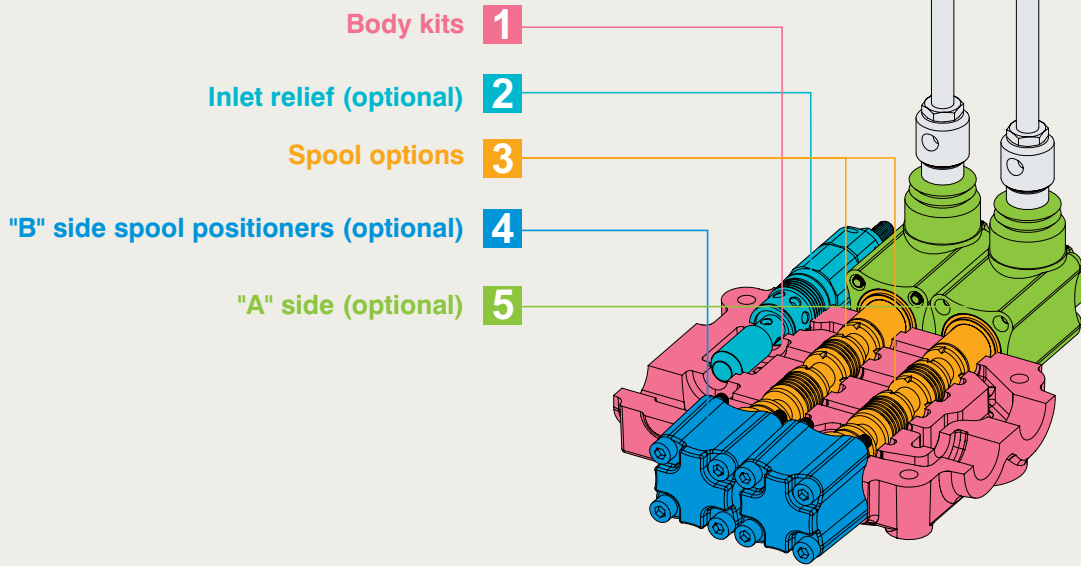
• All specifications, dimensions and design characteristics shown in this catalogue are subject to change without notice.

# MB-4

## Monoblock Directional Control Valves

MB-4 / **2 - S - 3** / **1 8 L** / G - 4 / M3

1   
 2   
 3   
 4   
 5



1:	Body kits	WITHOUT SERVICE PORT VALVES PREARRANGEMENT
TYPE		DESCRIPTION
	1 - S	1 section
	2 - S	2 sections
	3 - S	3 sections
	4 - S	4 sections
	5 - S	5 sections
	6 - S	6 sections

2: Inlet Relief (optional)			
TYPE	CODE	DESCRIPTION	PAGE
MG-2	YLMB42002	Range 40 to 80 bar / 580 to 1150 psi, standard setting 80 bar / 1150 psi	P. 11
MG-3	YLMB42003	Range 63 to 200 bar / 900 to 2900 psi, standard setting 120 bar / 1750 psi	P. 11
MG-4	YLMB42004	Range 160 to 315 bar / 2300 to 4600 psi, standard setting 220 bar / 3200 psi	P. 11
SV	YLMB42100	Relief valve blanking plug	P. 11

# MB-4

## Monoblock Directional Control Valves

3: Spool options			
TYPE	CODE	DESCRIPTION	PAGE
1	YLMB43001	Double acting, 3 positions, with A, B closed in neutral position	P. 12
2	YLMB43002	Double acting, 3 positions, with A, B open to Tank in neutral position	P. 12
3	YLMB43003	Single acting on A closed in neutral position, 3 positions, B plugged	P. 13
4	YLMB43004	Single acting on B closed in neutral position, 3 positions, A plugged	P. 13
5	YLMB43005	Double acting, 3 positions, with B open to Tank in neutral position	P. 14
6	YLMB43006	Double acting, 3 positions, with A open to Tank in neutral position	P. 14
7	YLMB43007	Single acting on A open to Tank in neutral position, 3 positions, B plugged	P. 15
8	YLMB43008	Single acting on B open to Tank in neutral position, 3 positions, A plugged	P. 15
9	YLMB43009	Double acting, 3 positions, with P, T, A, B closed in neutral position (Closed center)	P. 16
1 0	YLMB43010	Double acting, 3 positions, with A, B open to Tank and P, T closed in neutral position (Closed center)	P. 16
5DY	YLMB43052	Double acting, 4 position, floating circuit in 4th position with A, B open to Tank by pulling the lever	P. 17
5PYX	YLMB430511	Double acting, 4 positions, floating circuit in 4th position with A, B open to Tank by pushing the lever (with check valve)	P. 17
5PY	YLMB43051	Double acting, 4 positions, floating circuit in 4th position with A, B open to Tank by pushing the lever	P. 18
Z41	YLMB43041	Double acting, 4 positions, regenerative circuit in 4th position with P open to A, B by pulling the lever (Rest in pos. 1)	P. 18
Z42	YLMB43042	Double acting, 4 positions, regenerative circuit in 4th position with P open to A, B by pulling the lever (Rest in pos. 0)	P. 19

4: B Side Spool Positioners			
TYPE	CODE	DESCRIPTION	PAGE
6-1	YLMB44061	Detent in pos. 1-0-2, without spring centered	P. 23
6-2	YLMB44062	2 positions, detent in pos. 0-2, without spring centered	P. 23
6-3	YLMB44063	2 positions, detent in pos. 1-0, without spring centered	P. 23
8D2	YLMB44200	With spring return to neutral position and pin with M8 male thread for dual control	P. 23
8EP3	YLMB44300	ON/OFF Electro-Pneumatic actuator	P. 24
8P	YLMB44080	ON/OFF Pneumatic actuator	P. 24
8MG1 (NO)	YLMB44801	Microswitch kit operated in pos. 1 (Normally Open)	P. 27
8MG2 (NO)	YLMB44802	Microswitch kit operated in pos. 2 (Normally Open)	P. 27
8MG3 (NO)	YLMB44803	Microswitch kit operated in pos. 1&2 (Normally Open)	P. 27
MG (NO)	YLMB44804	Microswitch with NO terminal	P. 27
8MG1 (NC)	YLMB448011	Microswitch kit operated in pos. 1 (Normally Closed)	P. 27
8MG2 (NC)	YLMB448021	Microswitch kit operated in pos. 2 (Normally Closed)	P. 27
8MG3 (NC)	YLMB448031	Microswitch kit operated in pos. 1&2 (Normally Closed)	P. 27
MG (NC)	YLMB448041	Microswitch with NC terminal	P. 27
8	YLMB44008	With spring return to neutral position	P. 28
8-1	YLMB44081	2 positions, with spring centered from pos. 1	P. 28
8-2	YLMB44082	2 positions, with spring centered from pos. 2	P. 28
9-1	YLMB44091	Detent in pos. 1, 2 with spring centered	P. 28
9-2	YLMB44092	Detent in pos. 2 with spring centered	P. 28
9-3	YLMB44093	Detent in pos. 1 with spring centered	P. 28

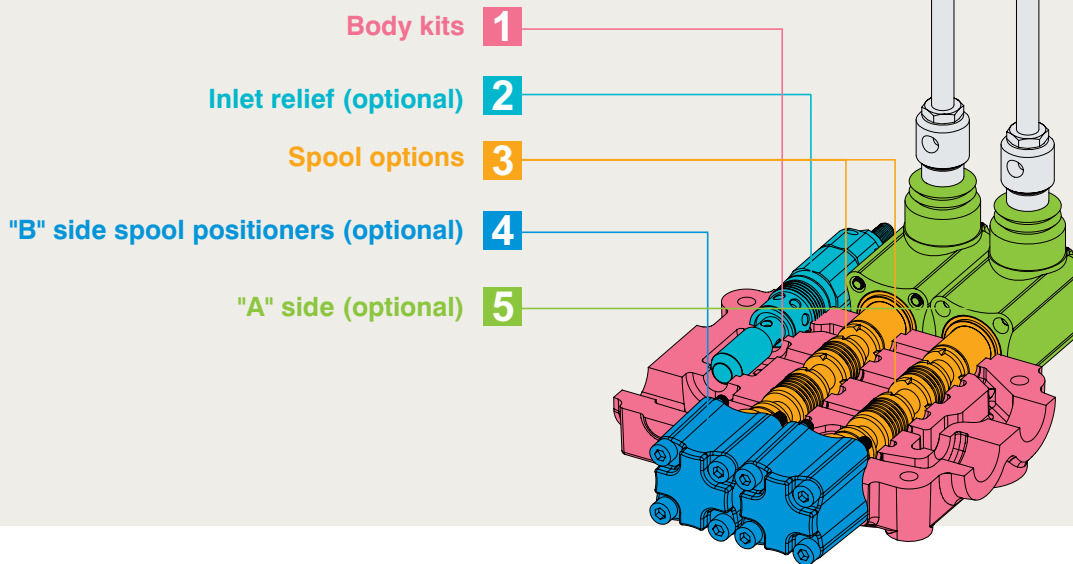


# MB-4

## Monoblock Directional Control Valves

MB-4 / **2-S-3** / **18L** / G-4 / M3

1 2 3 4 5



### 4: B Side Spool Positioners

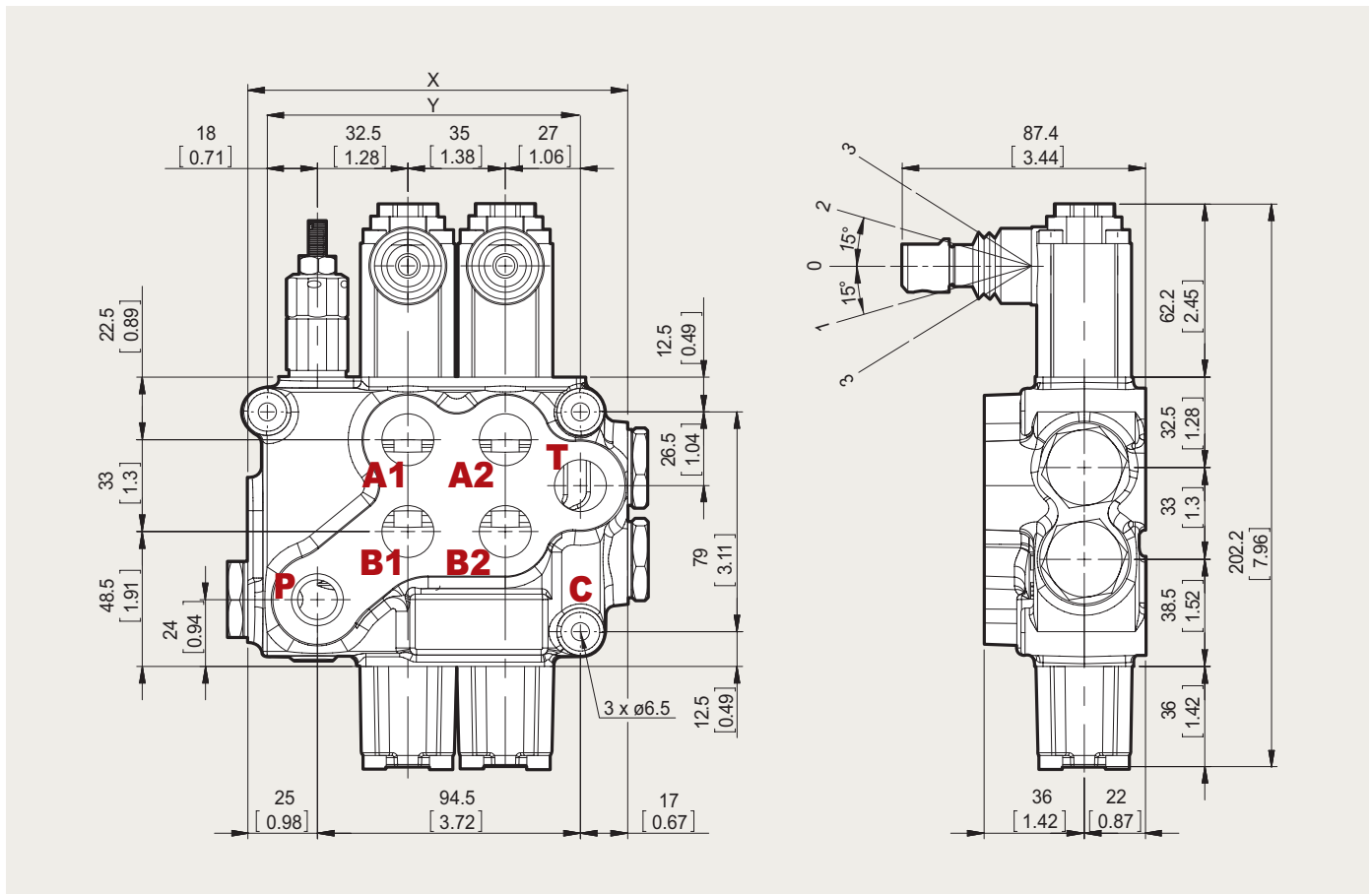
TYPE	CODE	DESCRIPTION	PAGE
8ED3+RV-KE1R3	YLMB44201	1S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)	P. 25
8ED3+RV-KE2R3	YLMB44202	2S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)	P. 25
8ED3+RV-KE3R3	YLMB44203	3S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)	P. 25
8ED3+RV-KE4R3	YLMB44204	4S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)	P. 25
8ED3+RV-KE5R3	YLMB44205	5S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)	P. 25
8ED3+RV-KE6R3	YLMB44206	6S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)	P. 25
8ER3+KE1S0	YLMB44401	1S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	P. 26
8ER3+KE2S0	YLMB44402	2S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	P. 26
8ER3+KE3S0	YLMB44403	3S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	P. 26
8ER3+KE4S0	YLMB44404	4S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	P. 26
8ER3+KE5S0	YLMB44405	5S:ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	P. 26
8ER3+KE6S0	YLMB44406	6S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	P. 26

### 5: A Side (optional)

TYPE	CODE	DESCRIPTION	PAGE
L	YLMB45000	Standard lever box	P. 20
SLP	YLMB45001	Without lever box, with dust-proof plate	P. 20
LCB	YLMB45002	Joystick lever for 2 section operation	P. 21
TQ	YLMB45003	Flexible cable connection	P. 22

# MB-4 Dimensions

## Monoblock Directional Control Valves



### Standard threads

Ports	Inlet P	A and B	Outlet T and C
BSP	G1/2	G1/2	G1/2
UN-UNF	3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)
METRIC	M18x1.5	M18x1.5	M18x1.5

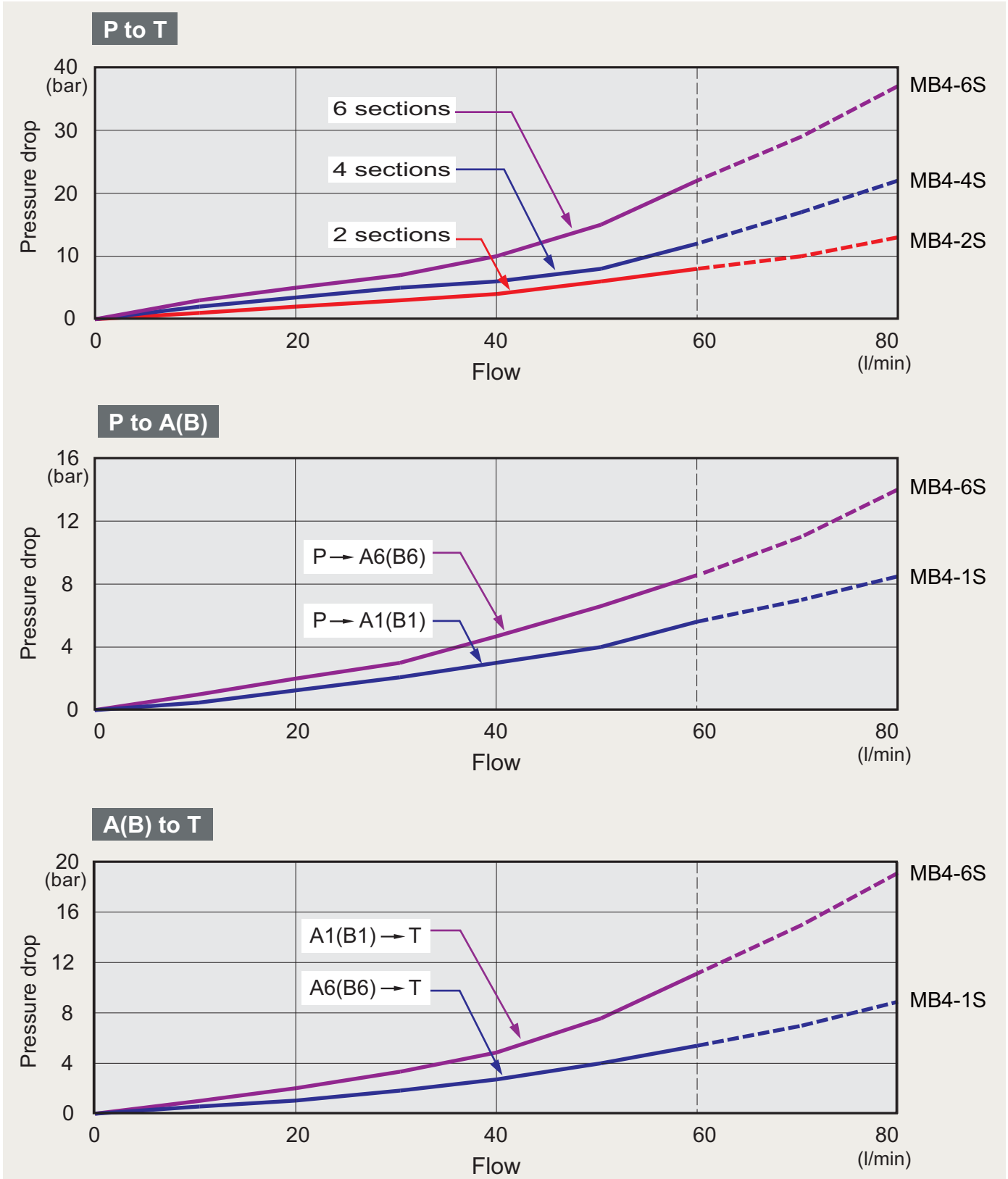
• G-3/8 : G3 G-1/2 : G4 G-3/4 : G6 G-1 : G8 G-1 1/4 : G10  
 • SAE 8: E8 SAE 10: E10 SAE 12: E12 SAE 16: E16 SAE 20: E20

### Standard dimensions

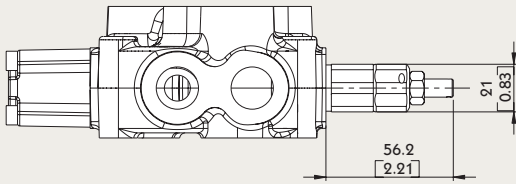
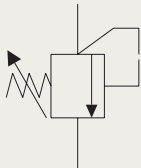
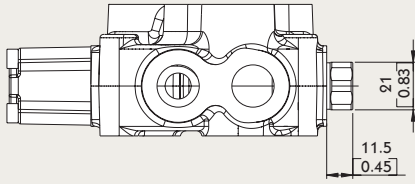

TYPE	X		Y	
	mm	in	mm	in
MB4 /1S	101.5	4	77.5	3.05
MB4 /2S	136.5	5.37	112.5	4.33
MB4 /3S	171.5	6.75	147.5	5.81
MB4 /4S	206.5	8.13	182.5	7.19
MB4 /5S	241.5	9.51	217.5	8.56
MB4 /6S	276.5	10.89	252.5	9.94

# MB-4 Performance curve chart

## Monoblock Directional Control Valves



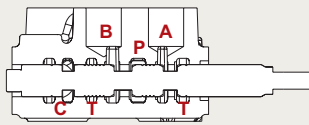
# MB-4 Inlet Relief (Optional) Monoblock Directional Control Valves

Type MG	
	<p><b>Direct pressure relief valve:</b></p> 
Type SV	
	<p><b>Relief valve blanking plug:</b></p> 

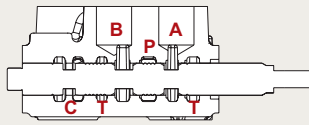
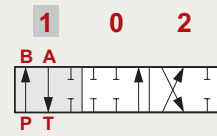
# MB-4 Spool Options

## Monoblock Directional Control Valves

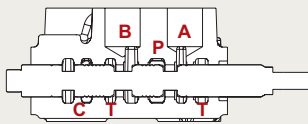
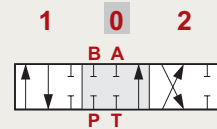
### TYPE 1



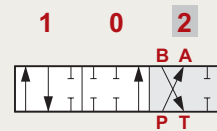
P → B  
A → T  
C closed



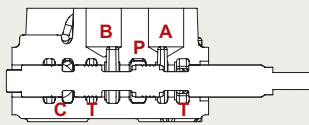
P & A & B & T close  
C open



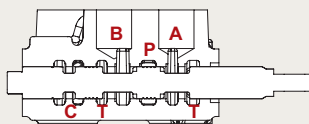
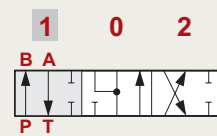
P → A  
B → T  
C closed



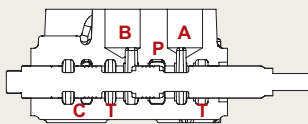
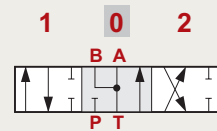
### TYPE 2



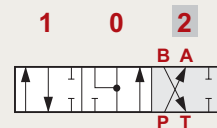
P → B  
A → T  
C closed



A & B → T  
P closed  
C open

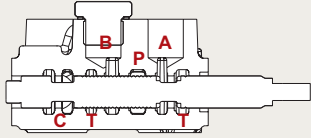
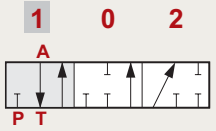
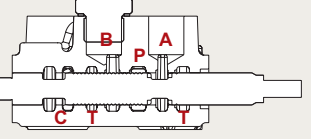
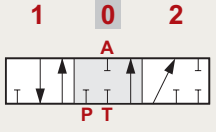
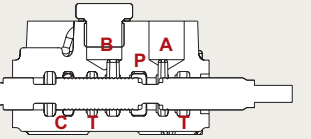
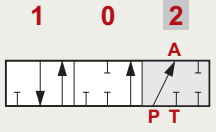
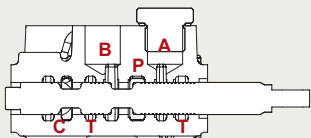
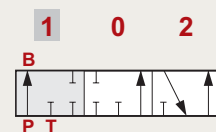
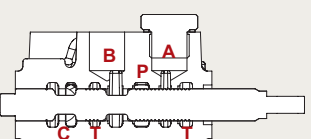
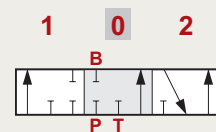
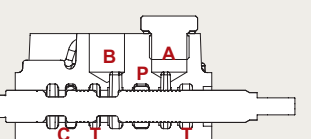
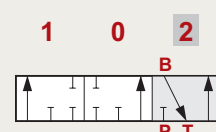


P → A  
B → T  
C closed



# MB-4 Spool Options

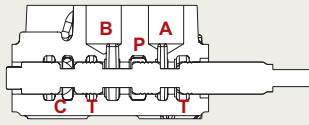
## Monoblock Directional Control Valves

TYPE 3		
	<p>A → T</p> <p>P closed</p> <p>C open</p>	 <p>"B" port plugged</p>
	<p>P &amp; A &amp; T close</p> <p>C open</p>	 <p>"B" port plugged</p>
	<p>P → A</p> <p>T &amp; C closed</p>	 <p>"B" port plugged</p>
TYPE 4		
	<p>P → B</p> <p>T &amp; C closed</p>	 <p>"A" port plugged</p>
	<p>P &amp; B &amp; T close</p> <p>C open</p>	 <p>"A" port plugged</p>
	<p>B → T</p> <p>P closed</p> <p>C open</p>	 <p>"A" port plugged</p>

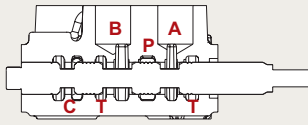
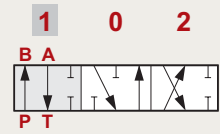
# MB-4 Spool Options

## Monoblock Directional Control Valves

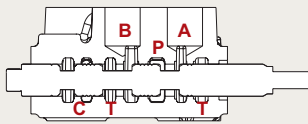
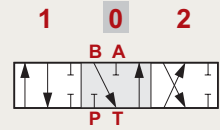
### TYPE 5



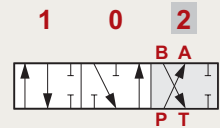
P → B  
A → T  
C closed



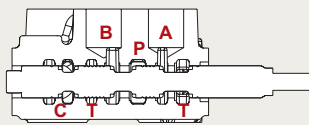
B → T  
P & A close  
C open



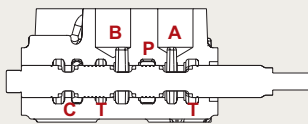
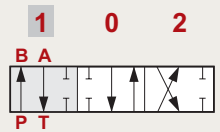
P → A  
B → T  
C closed



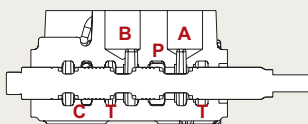
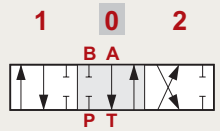
### TYPE 6



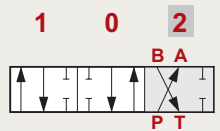
P → B  
A → T  
C closed



A → T  
P & B closed  
C open

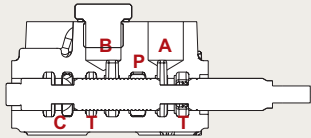
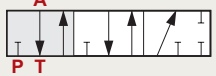
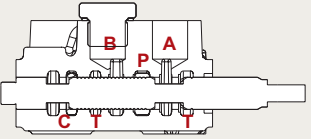
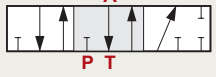
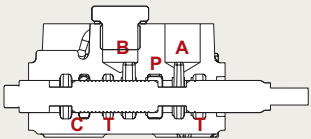
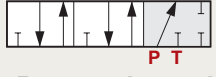
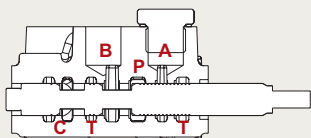

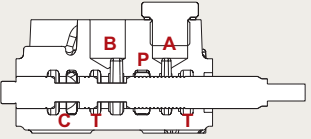

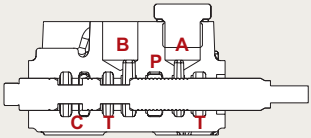



P → A  
B → T  
C closed



# MB-4 Spool Options

## Monoblock Directional Control Valves

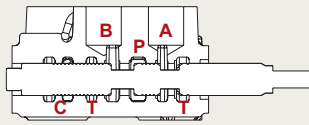
TYPE 7		
	<p>A → T P closed C open</p>	<p>1 0 2 A P T "B" port plugged</p> 
	<p>A → T P closed C open</p>	<p>1 0 2 A P T "B" port plugged</p> 
	<p>P → A C &amp; P closed</p>	<p>1 0 2 A P T "B" port plugged</p> 
TYPE 8		
	<p>P → B C &amp; P closed</p>	<p>1 0 2 B P T "A" port plugged</p> 
	<p>B → T P closed C open</p>	<p>1 0 2 B P T "A" port plugged</p> 
	<p>B → T P closed C open</p>	<p>1 0 2 B P T "A" port plugged</p> 



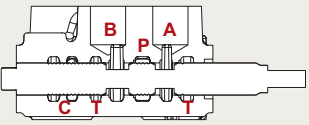
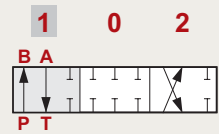
# MB-4 Spool Options

## Monoblock Directional Control Valves

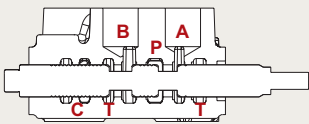
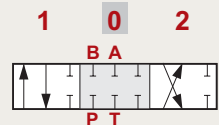
### TYPE 9



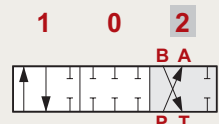
P → B  
A → T  
C closed



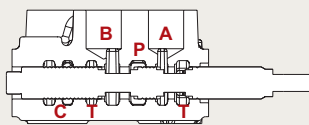
P & A & B & T closed  
C closed



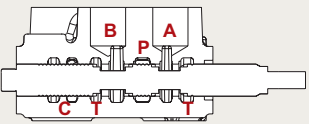
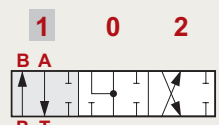
P → A  
B → T  
C closed



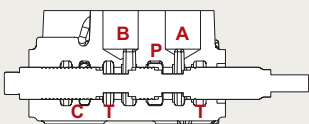
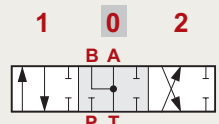
### TYPE 10



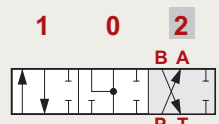
P → B  
A → T  
C closed



A & B → T  
P & C close

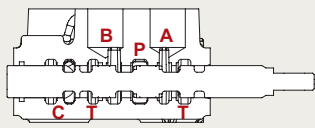
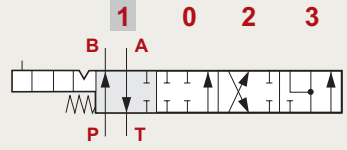
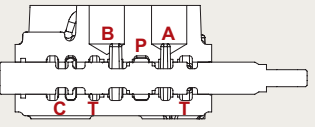
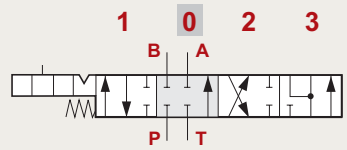
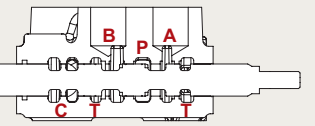
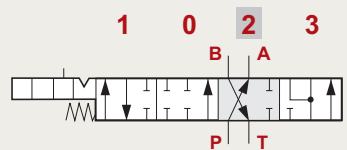
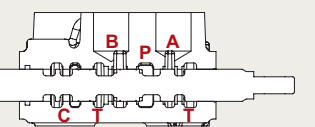
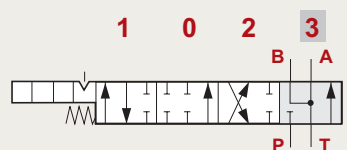


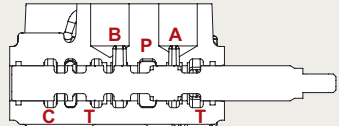
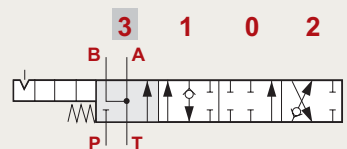
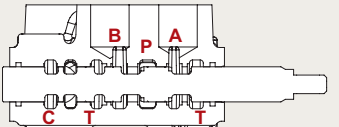
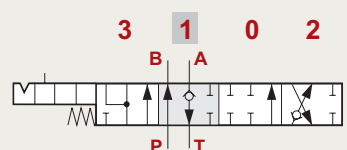
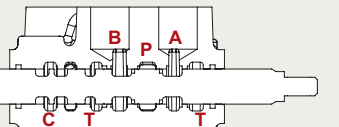
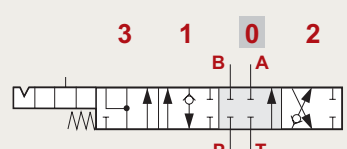
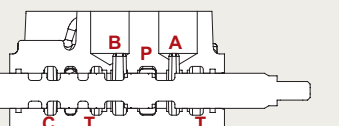
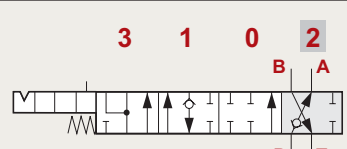
P → A  
B → T  
C closed



# MB-4 Spool Options

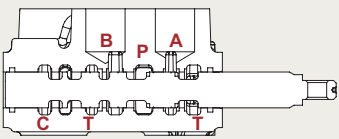
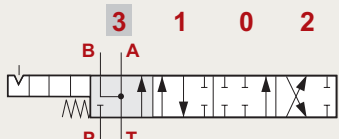
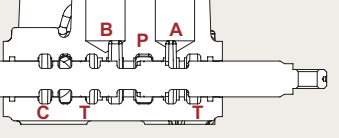
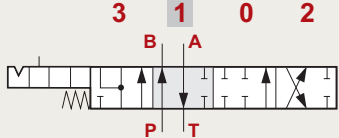
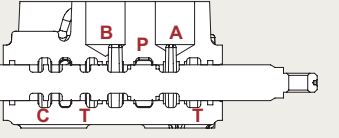
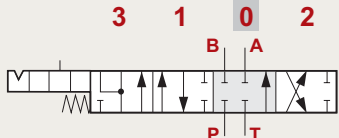
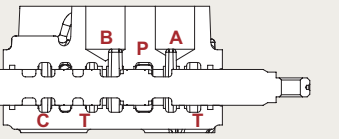
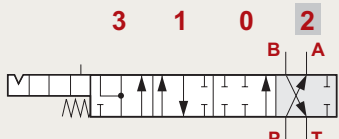
## Monoblock Directional Control Valves

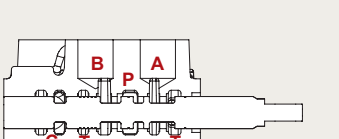
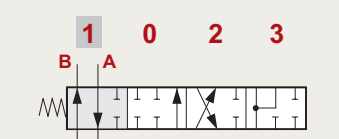
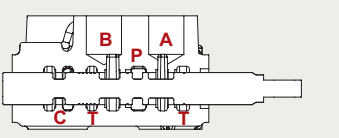
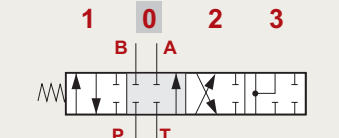
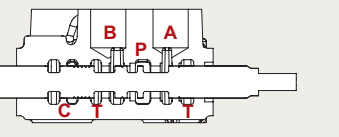
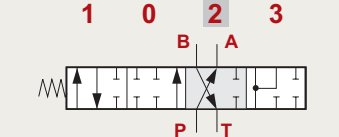
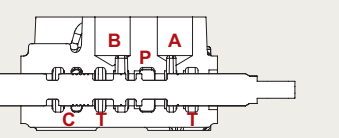
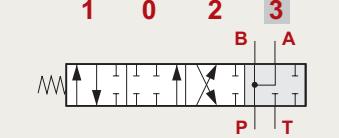
TYPE 5DY	NOTE: WITH SPECIAL BODY AND SPECIAL POSITIONER	
	<p>P → B</p> <p>A → T</p> <p>C closed</p>	
	<p>P &amp; T &amp; A &amp; B closed</p> <p>C open</p>	
	<p>P → A</p> <p>B → T</p> <p>C closed</p>	
	<p>A &amp; B → T</p> <p>P closed</p> <p>C open</p>	

TYPE 5PYX	NOTE: WITH SPECIAL BODY AND SPECIAL SPECIAL POSITIONER	
	<p>A &amp; B → T</p> <p>P closed</p> <p>C open</p>	
	<p>P → B</p> <p>A → T</p> <p>C closed</p>	
	<p>P &amp; T &amp; A &amp; B closed</p> <p>C open</p>	
	<p>P → A</p> <p>B → T</p> <p>C closed</p>	

# MB-4 Spool Options

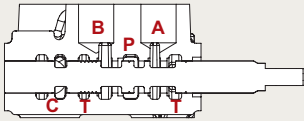
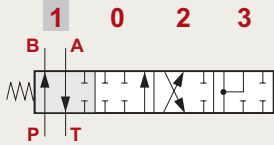
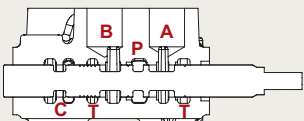
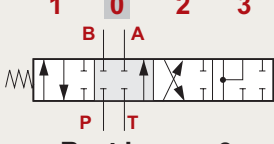
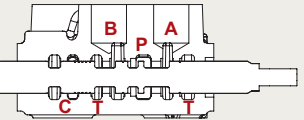
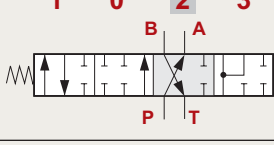
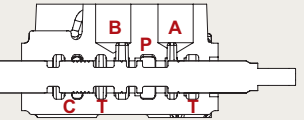
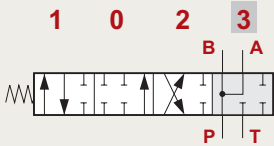
## Monoblock Directional Control Valves

TYPE 5PY	NOTE: WITH SPECIAL BODY AND SPECIAL POSITIONER	
	<p>A &amp; B → T P closed C open</p>	
	<p>P → B A → T C closed</p>	
	<p>P &amp; T &amp; A &amp; B closed C open</p>	
	<p>P → A B → T C closed</p>	

TYPE Z41	NOTE: WITH SPECIAL BODY AND SPECIAL POSITIONER	
	<p>P → B A → T C closed</p>	 <p>Rest in pos. 1</p>
	<p>P &amp; A &amp; B &amp; T closed C open</p>	
	<p>P → A B → T C closed</p>	
	<p>P → A &amp; B T &amp; C closed</p>	

# MB-4 Spool Options

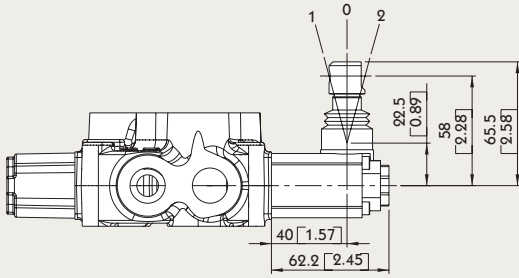
## Monoblock Directional Control Valves

TYPE Z42	NOTE: WITH SPECIAL BODY AND SPECIAL POSITIONER	
	<p>P → B A → T C closed</p>	
	<p>P &amp; A &amp; B &amp; T closed C open</p>	 <p>Rest in pos. 0</p>
	<p>P → A B → T C closed</p>	
	<p>P → A &amp; B T &amp; C closed</p>	

# MB-4 A Side

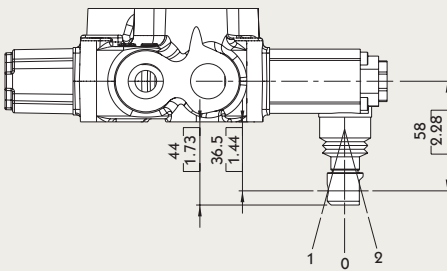
## Monoblock Directional Control Valves

### Type L



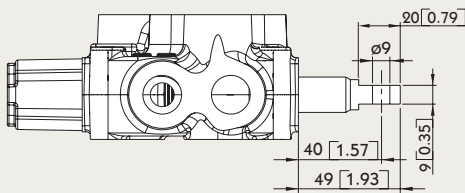
**Type L:**  
STANDART LEVER KIT

### Type R



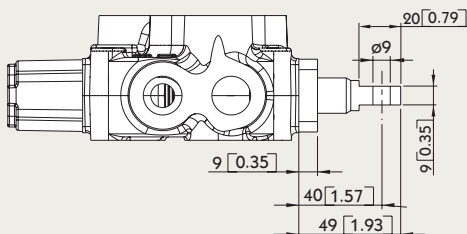
**Type R:**  
STANDART LEVER KIT  
(ROTATED 180 DEGREE)

### Type SL



**Type SL:**  
WITHOUT ANY COVER

### Type SLP

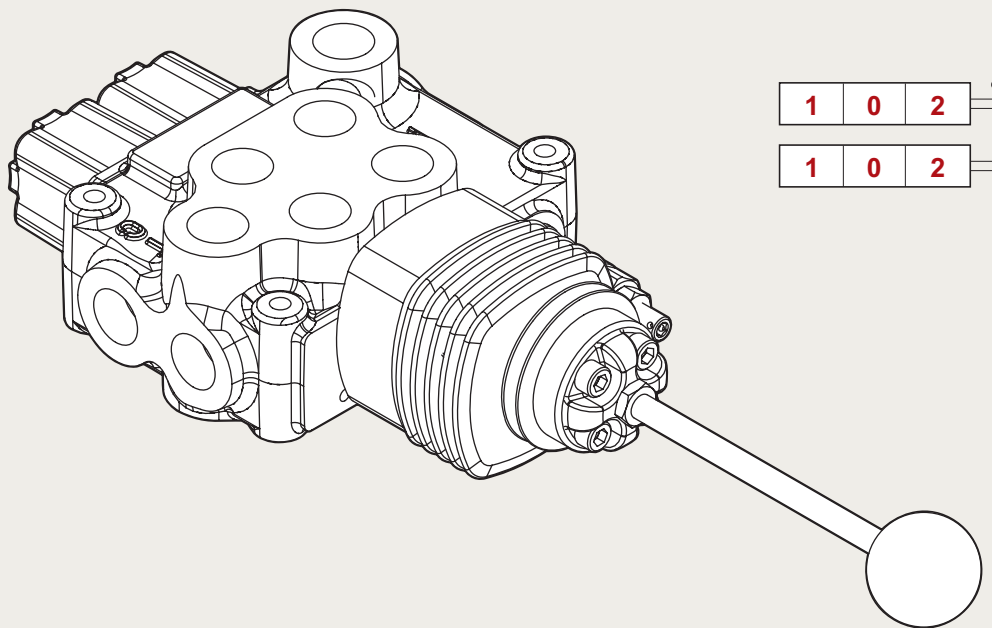


**Type SLP:**  
WITH DUST-PROOF PLATE

# MB-4 A Side

## Monoblock Directional Control Valves

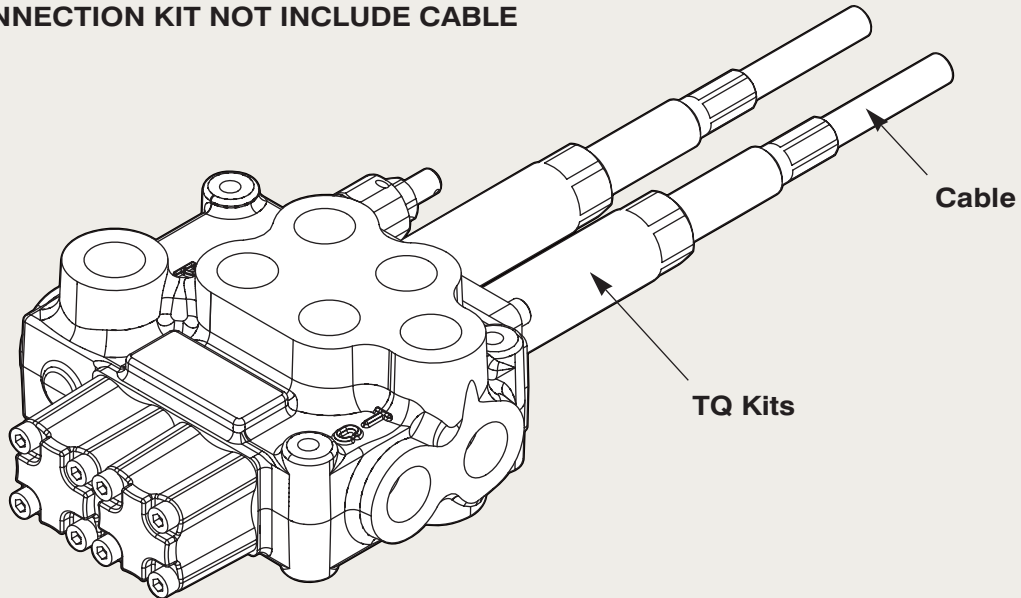
### LCB: Joystick control



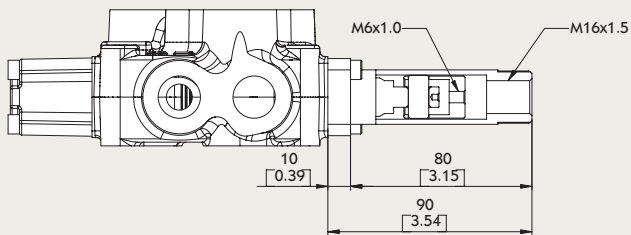
Type LCB	LCB1	LCB2
Type LCB	LCB3	LCB4

# MB-4 A Side Monoblock Directional Control Valves

Note : CONNECTION KIT NOT INCLUDE CABLE



## Type TQ

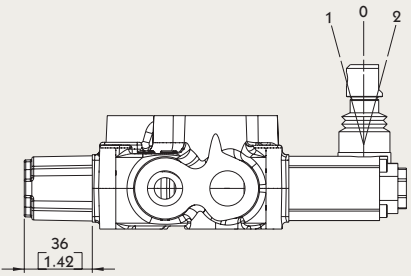





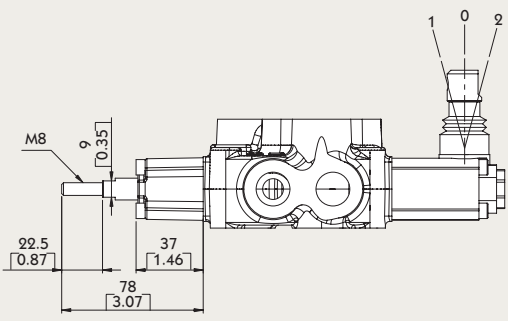

TQ Kit:



# MB-4 B Side

## Monoblock Directional Control Valves

Type 6		
		<p><b>6-1 Kit:</b> DETENT IN POS. 1-0-2, WITHOUT SPRING CENTERED</p>
		<p><b>6-2 Kit:</b> 2 POSITIONS, DETENT IN POS. 0-2, WITHOUT SPRING CENTERED</p>
		<p><b>6-3 Kit:</b> 2 POSITIONS, DETENT IN POS. 1-0, WITHOUT SPRING CENTERED</p>

Type 8D2		
		<p><b>8D2 Kit:</b> WITH SPRING RETURN TO NEUTRAL POSITION AND PIN WITH M8 MALE THREAD FOR DUAL CONTROL</p>

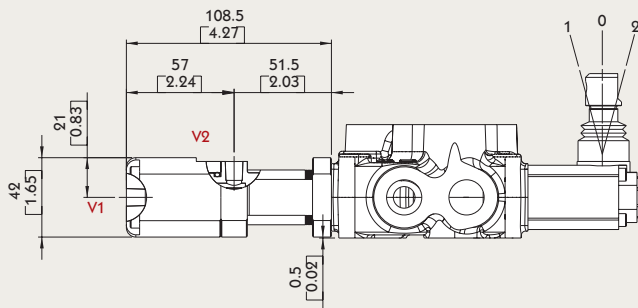


# MB-4 B Side

## Monoblock Directional Control Valves

### Type 8P

V1 & V2 : NPT 1/8 - 27

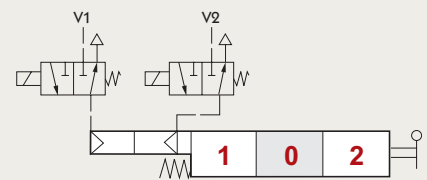
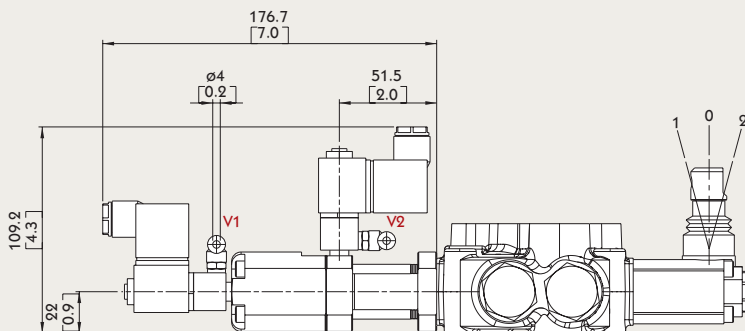


#### Operating feature :

PILOT PRESSURE (MIN.) ..... 5.5 BAR / 80 PSI

PILOT PRESSURE (MAX.) ..... 10 BAR / 145 PSI

### Type 8EP3



#### Solenoid operating features :

NOMINAL VOLTAGE: 24VDC

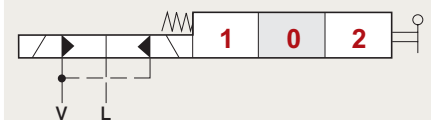
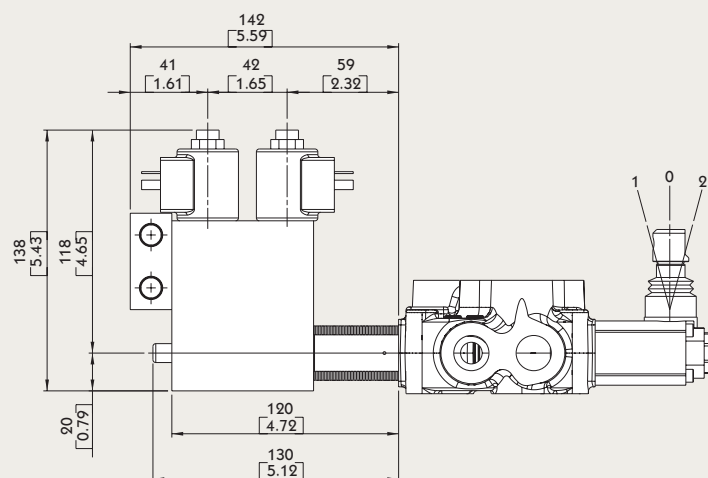
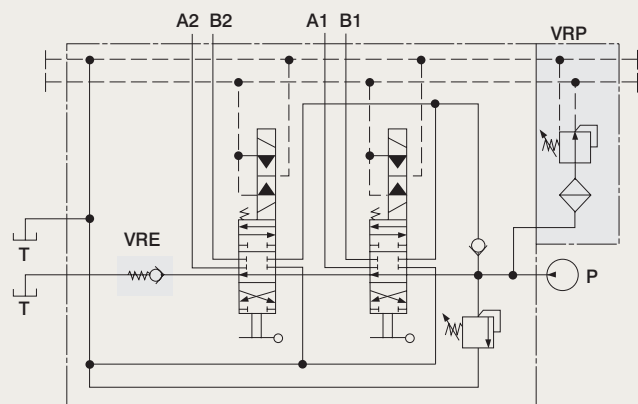
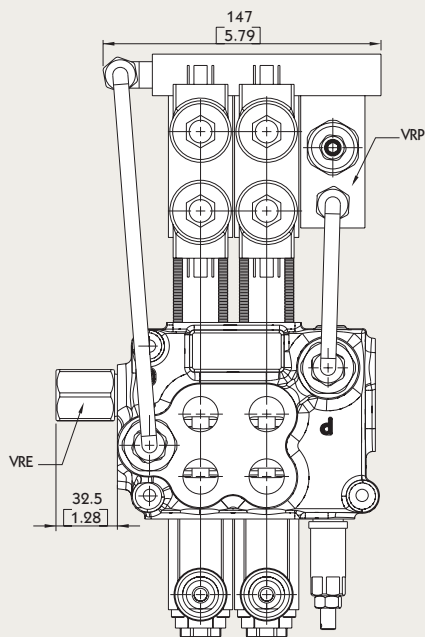
NOMINAL VOLTAGE TOLERANCE:  $\pm 10\%$

POWER RATING: 5W

# MB-4 B Side

## Monoblock Directional Control Valves

### Type 8ED3



#### Operating features :

- PILOT PRESSURE: • MIN. 10 BAR / 145 PSI  
 • MAX. 50 BAR / 725 PSI
- MAX. BACKPRESSURE ON DRAIN L: 25 BAR / 360 PSI

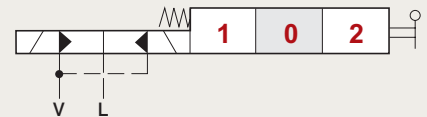
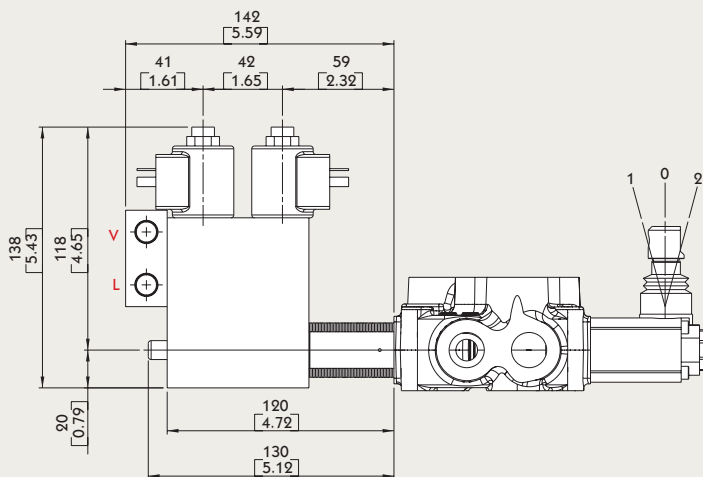
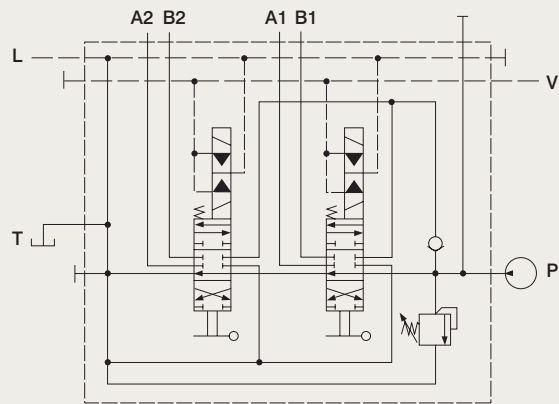
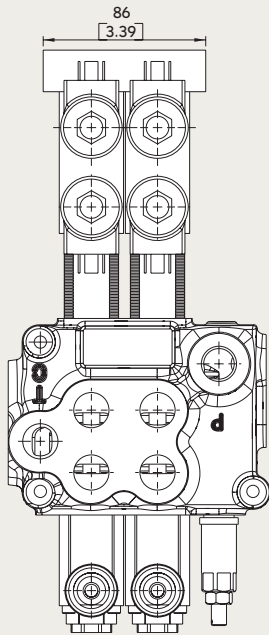
#### Coil features :

- NOMINAL VOLTAGE TOLERANCE:  $\pm 10\%$
- ELECTRIC POWER: 21 W
- STANDARD VOLTAGE: 12 VDC / 24 VDC

# MB-4 B Side

## Monoblock Directional Control Valves

### Type 8ER3



#### Operating features :

PILOT PRESSURE: • MIN. 10 BAR / 145 PSI  
 • MAX. 50 BAR / 725 PSI

MAX. BACKPRESSURE ON DRAIN L: 25 BAR / 360 PSI

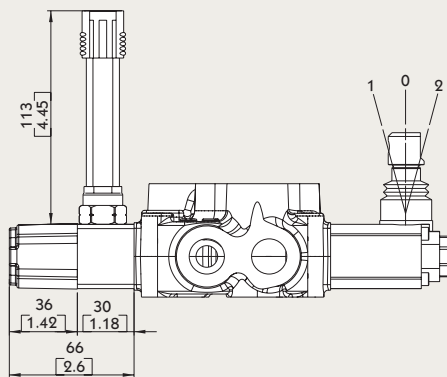
#### Coil features :

NOMINAL VOLTAGE TOLERANCE:  $\pm 10\%$   
 ELECTRIC POWER: 21 W  
 STANDARD VOLTAGE: 12 VDC / 24 VDC

# MB-4 B Side

## Monoblock Directional Control Valves

### Type 8MG



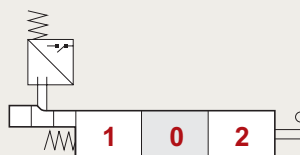
#### MICROSWITCH

#### Operating features :

MECHANICAL LIFE: • 5X10<sup>6</sup> OPERATIONS

ELECTRICAL LIFE (RESISTIVE LOAD):

- 10<sup>6</sup> OPERATIONS - 7A / 13.5 VDC
- 5x10<sup>4</sup> OPERATIONS - 10A / 12 VDC
- 5x10<sup>4</sup> OPERATIONS - 3A / 28 VDC



#### 8MG1 Kit:

MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 1



#### 8MG2 Kit:

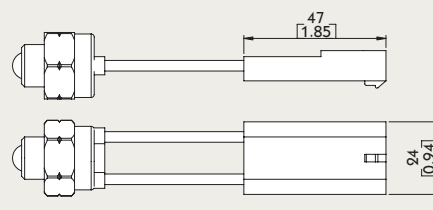
MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 2



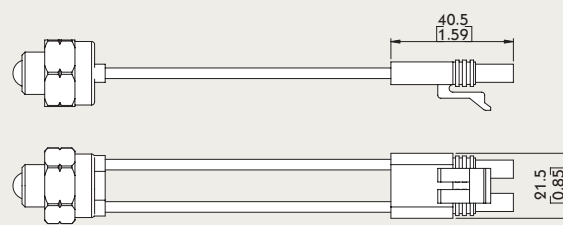
#### 8MG3 Kit:

MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 1 AND POS. 2

#### With NO contact (female connector with male end)



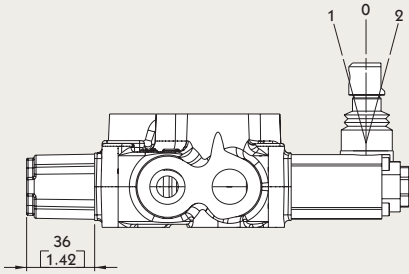
#### With NC contact (male connector with female end)



# MB-4 B Side

## Monoblock Directional Control Valves

### Type 8



#### 8 Kit:

SPRING RETURN TO NEUTRAL POSITION



#### 8-1 Kit:

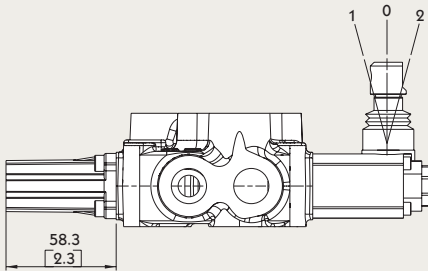
SPRING RETURN TO NEUTRAL POSITION.  
(2 POSITIONS)



#### 8-2 Kit:

SPRING RETURN TO NEUTRAL POSITION.  
(2 POSITIONS)

### Type 9



#### 9-1 Kit:

DETENT IN POS. 1, 2 WITH SPRING CENTERED



#### 9-2 Kit:

DETENT IN POS. 2 WITH SPRING CENTERED



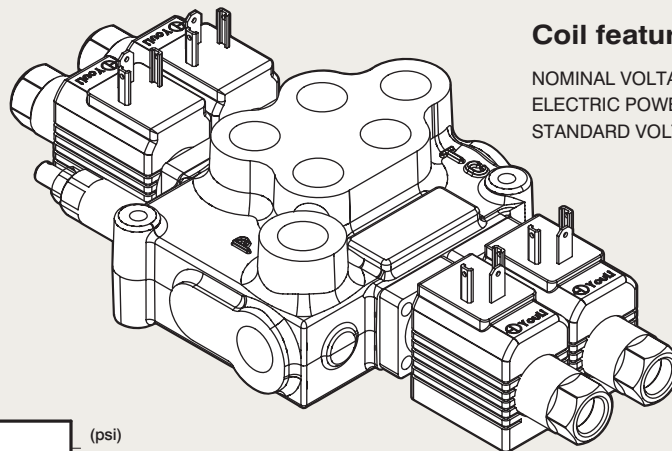
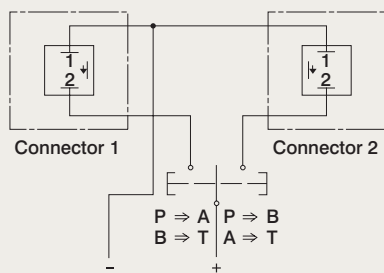
#### 9-3 Kit:

DETENT IN POS. 1 WITH SPRING CENTERED

# MB-4 B Side (Optional controls)

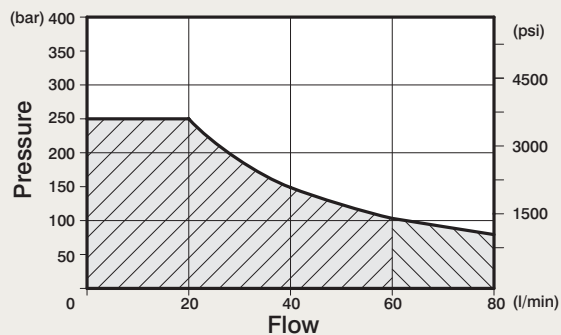
## Monoblock Directional Control Valves

### Electric wiring example



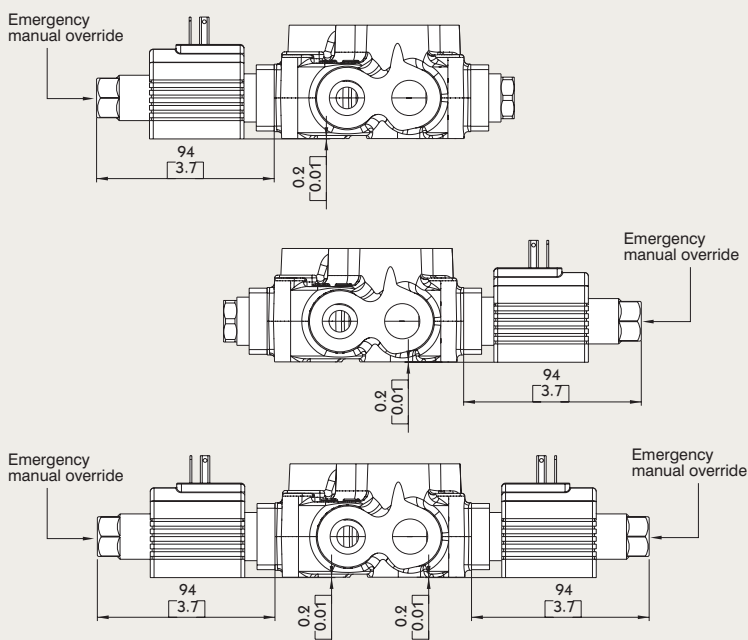
### Coil features :

NOMINAL VOLTAGE TOLERANCE: ±10%  
ELECTRIC POWER: 36 W  
STANDARD VOLTAGE: 12 VDC / 24 VDC



Nominal flow rating		60 L/min	16 US gpm
Operating pressure (Max.)		250 bar	3650 psi
Back pressure (Max.)	on outlet port T	5 bar	70 psi
Fluid temperature	with NBR seals	-20°C ~ 80°C	-4°F ~ 176°F
	with FPM seals	-20°C ~ 100°C	-4°F ~ 212°F
Viscosity	Operating range	15mm <sup>2</sup> /s ~ 75mm <sup>2</sup> /s	15 ~ 75 cst
	Max.	400mm <sup>2</sup> /s	400 cst
	Min.	12mm <sup>2</sup> /s	12 cst
Ambient temperature		-40°C ~ 60°C	-40°F ~ 140°F
Internal Leakage A(B)→T	ΔP = 100bar at 40°C	10 cm <sup>3</sup> /min	0.61 in <sup>3</sup> /min

### Type 8ES



**8ES1 Kit:**  
ACTING IN 1

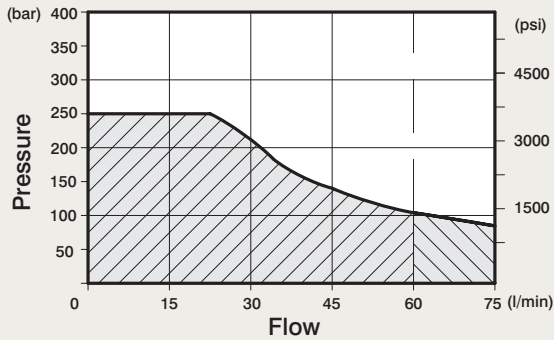


**8ES2 Kit:**  
ACTING IN 2

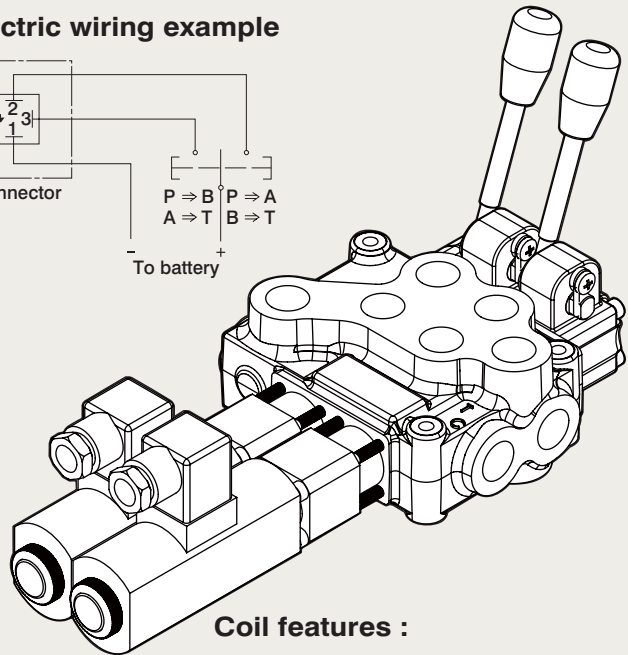
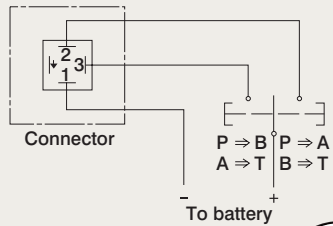


**8ES3 Kit:**  
ACTING IN 1 & 2

# MB-4 B Side (Optional controls) Monoblock Directional Control Valves



## Electric wiring example



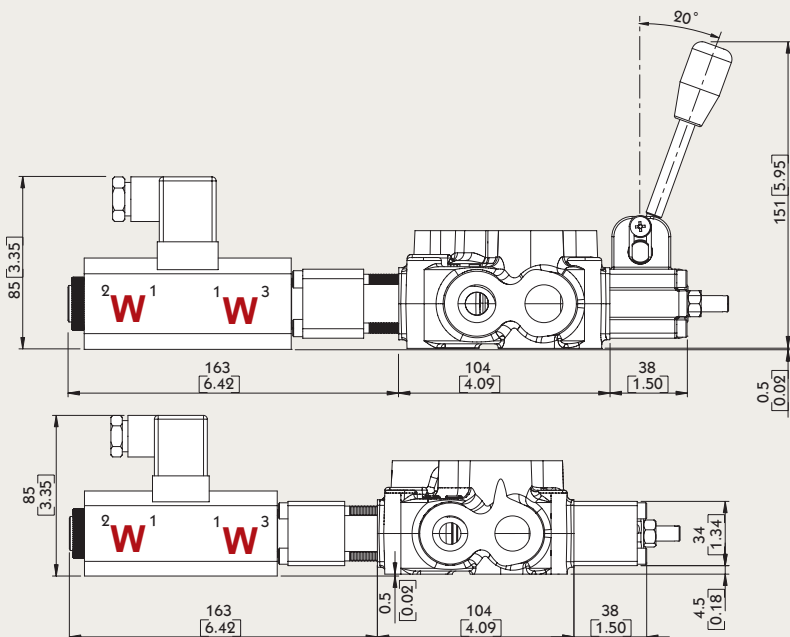
## Coil features :

NOMINAL EL. POWER: 60 WATT  
LIMITS OF AMBIENT TEMPERATURE : -20°C +70°C  
STANDARD VOLTAGE: 12 - 24 VDC (±10%)

Nominal flow rating		60 L/min	16 US gpm
Operating pressure (Max.)		250 bar	3650 psi
Back pressure (Max.)	on outlet port T	5 bar	70 psi
Fluid temperature	with NBR seals	-20°C~80°C	-4°F~176°F
	with FPM seals	-20°C~100°C	-4°F~212°F
Viscosity	Operating range	15mm <sup>2</sup> /s~75mm <sup>2</sup> /s	15~75 cst
	Max.	400mm <sup>2</sup> /s	400 cst
	Min.	12mm <sup>2</sup> /s	12 cst
Ambient temperature		-40°C~60°C	-40°F~140°F
Internal Leakage A(B)->T	ΔP = 100bar at 40°C	10 cm <sup>3</sup> /min	0.61 in <sup>3</sup> /min

Available sections from 1 to 3 section

## Type 8ESN



## 8ESNLES Kit:

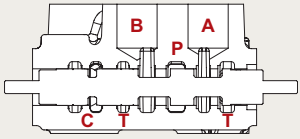
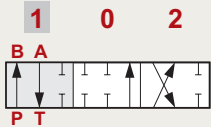
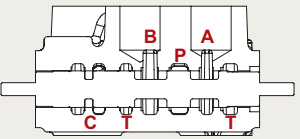
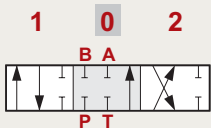
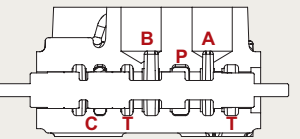
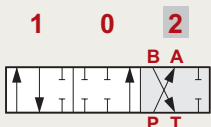
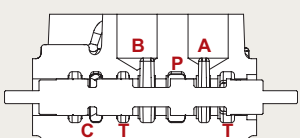
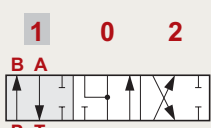
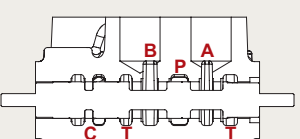

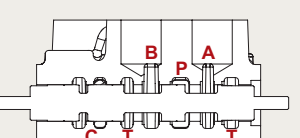
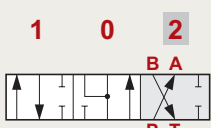


## 8ESNCAE Kit:



# MB-4 Special spool (Options for 8ES Kit)

## Monoblock Directional Control Valves

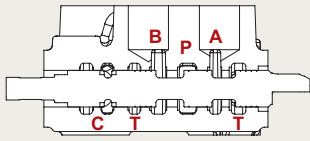
Type 8ES3#1		
	<p>P → B A → T C closed</p>	
	<p>P &amp; T &amp; A &amp; B closed C open</p>	
	<p>P → A B → T C closed</p>	
Type 8ES3#2		
	<p>P → B A → T C closed</p>	
	<p>A &amp; B → T P closed C open</p>	
	<p>P → A B → T C closed</p>	



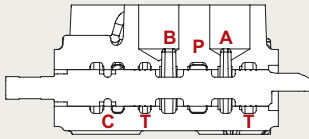
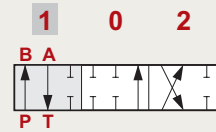
# MB-4 Special spool (Options for 8ESN Kit)

## Monoblock Directional Control Valves

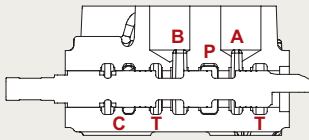
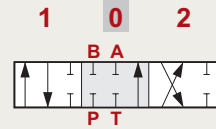
### Type 8ESN#1



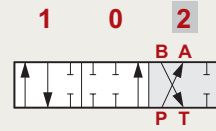
P → B  
 A → T  
 C closed



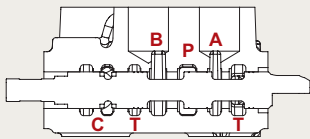
P & T & A & B closed  
 C open



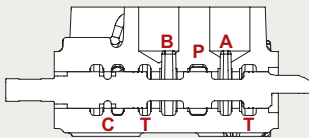
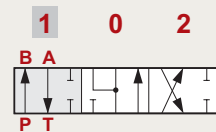
P → A  
 B → T  
 C closed



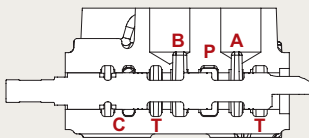
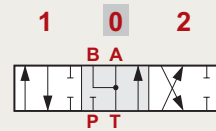
### Type 8ESN#2



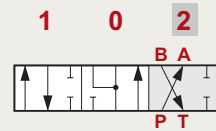
P → B  
 A → T  
 C closed



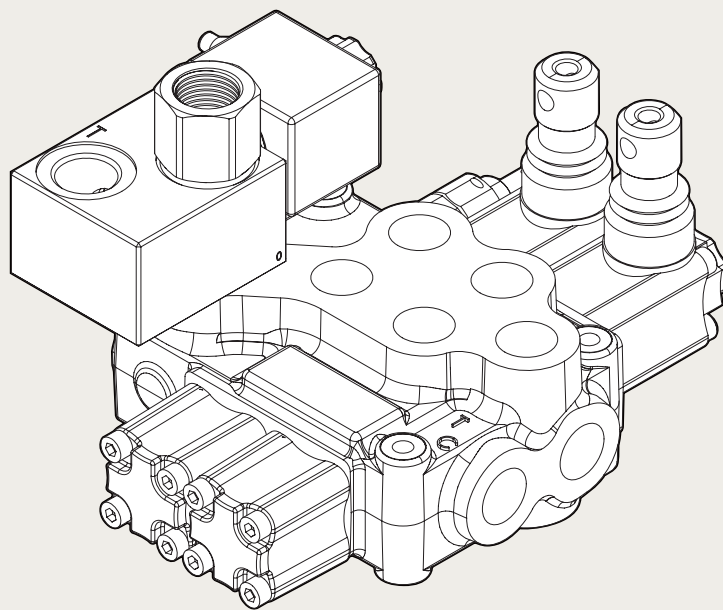
A & B → T  
 P closed  
 C open



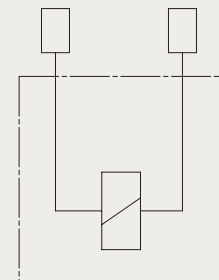
P → A  
 B → T  
 C closed



# MB-4 (Option - Dump valve (Emergency stop valve)) Monoblock Directional Control Valves

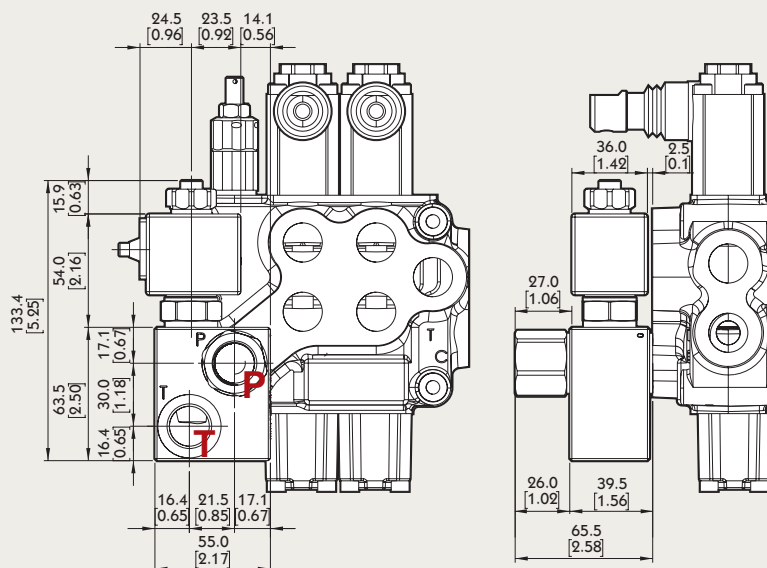


### Electric wiring example

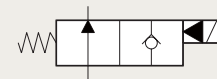


### Coil features :

NOMINAL VOLTAGE TOLERANCE :  $\pm 10\%$   
ELECTRIC POWER : 20W  
STANDARD VOLTAGE : 12VDC / 24VDC



P & T : G1/2

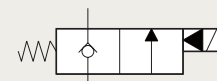


**TYPE :**

DUMP-G04-24VDC(NO)  
DUMP-G04-12VDC(NO)

**CODE :**

YLMB45424  
YLMB45412



**TYPE :**

DUMP-G04-24VDC(NC)  
DUMP-G04-12VDC(NC)

**CODE :**

YLMB454241  
YLMB454121

# MB-4 Outlet

## Monoblock Directional Control Valves

Power Beyond Conversion plug  
(Closed center plug)

