

ELECTRIC OPERATED PROPORTIONAL PRESSURE REDUCING VALVE 8FGB4131021-**/**

GENERAL DESCRIPTION

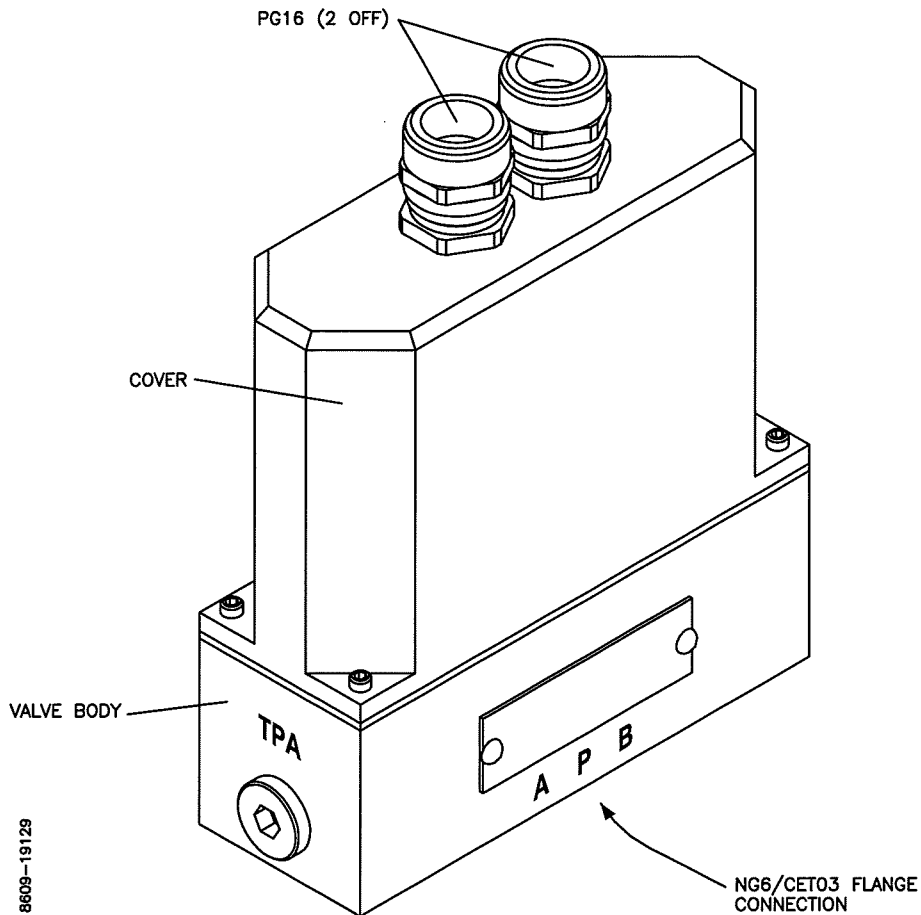


Figure 1 General Arrangement 8FGB4131021-**/**

The electric operated double 3/2 way proportional pressure reducing Valve (8 FGB) is a seawater resistant valve intended for proportional, electrically remote control of directional valves or similar applications. The valve has the following characteristics:

- Delivered for mounting to a sub plate according to ISO 03/Cetop 3
- Different pressure ranges are available.
- Electrical operation via Hydranor Joystick (HNJ) and Control Module (HNKV124V)
- Maximum 50 bar in port P.



MODULAR CODE

Options	Remarks	Design Code	Fill in
<i>Electric Pressure Reducing valve</i>			8FG
<i>Mounting</i>			
ISO 4401-03		B	B
<i>Type</i>			
Individual pressure in both ports	No option	4	4
<i>Pressure</i>			
50 Bar	No option	1	1
<i>Operation</i>			
Electric proportional	No option	3	3
<i>Size</i>			
06 mm	No option	1	1
<i>Spool type</i>			
	No option	02	02
<i>Spring Detent position</i>			
Spring centred	No option	1	1
<i>Modification</i>			
	No alternative		
<i>Pressure ranges (to be selected for both A and B port)</i>			
0 - 25 bar		11	
0 - 32 bar		12	
<i>Electric Voltage</i>			
24 Volt	Standard	24V	
12 Volt	On request	12V	

In example a 8FGB valve, spool type 02, with pressure range 0 - 25 bar in both port A and B, 24 Volt solenoid will have modular code: **8FGB4131021-11/11**

VALVE DESCRIPTION

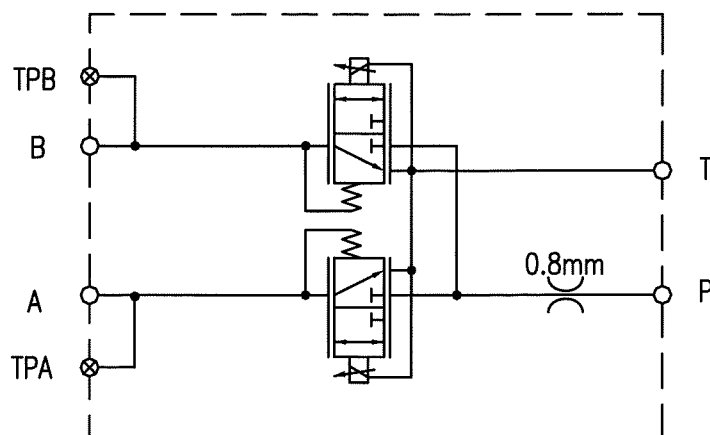


Figure 2 Circuit diagram 8FGB4131021-*/**

NOTES:

Avoid fluctuation in pressure port P, to achieve best result of the proportional control. Pressure in port T is directly additional to valve setting. An orifice diameter \varnothing 0.8 mm is mounted in port P.



DIMENSIONS

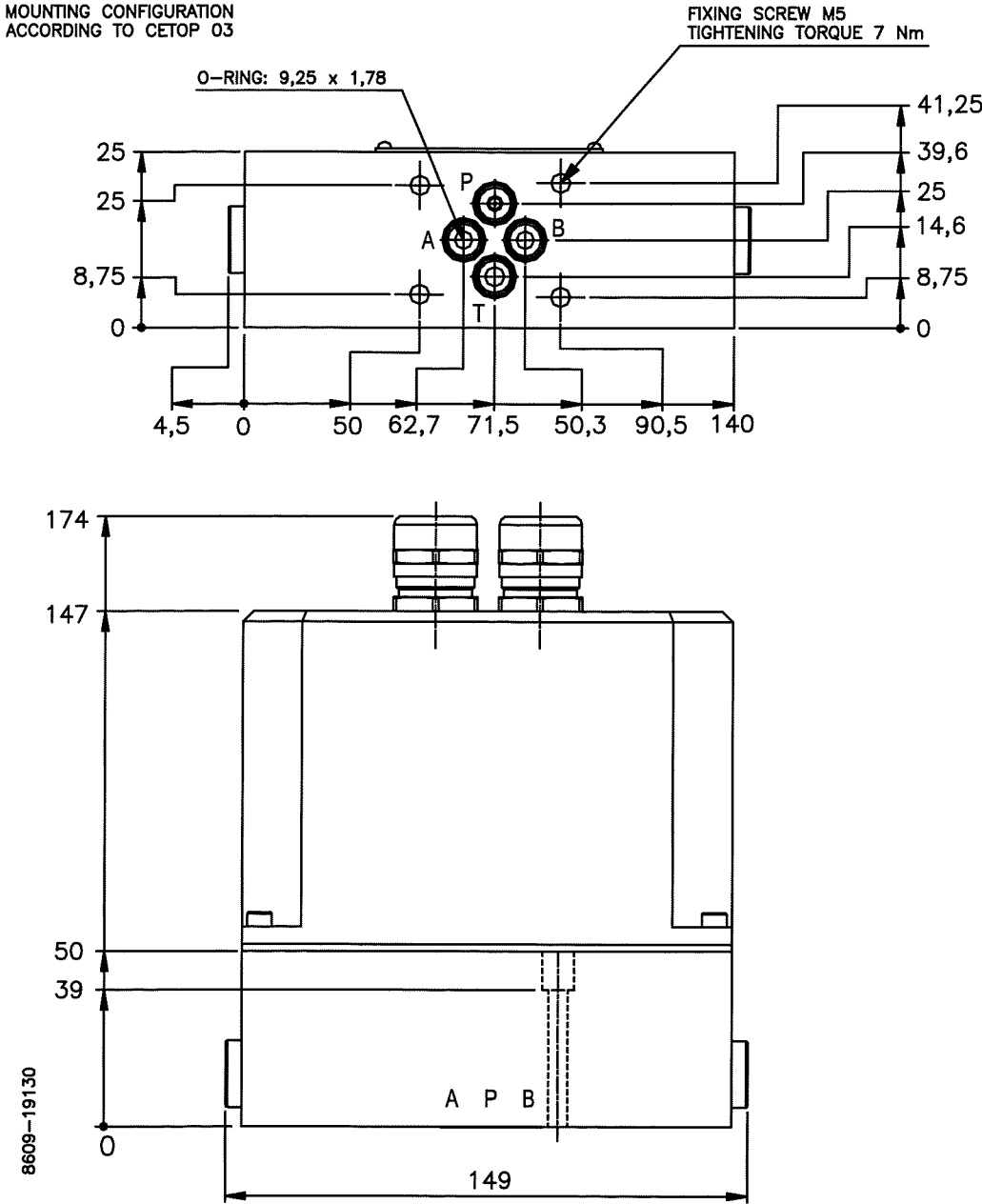


Figure 3 Dimensions 8FGB4131021-**/**



TECHNICAL DATA

Description	Symbol	Data	
Max. pressure in port P	P_{max}	50 bar	
Min nominal pressure in port P	P_{nom}	Pilot pressure + 5 bar	
Max. pressure in port T	T_{max}	10 bar (See note)	
Weight		5 kg	
Working Pressure	P	0 – 25/32 bar	
Flow A/B→T at $\Delta p=25$ bar	Q	4 l/min	
Hydraulic fluid		Mineral oils for hydraulic system	
Viscosity range:	ν	10 to 350 mm ² /s (cSt)	
Viscosity index:	VI	> 120	
Filtration, recommended filter with $\beta_{20} \geq 100$		Class 9 according to NAS 1638, 18/15 according to ISO 4406	
Fluid temperature range:	T	-20°C to + 70°C	
Ambient temperature range	T	-20°C to + 50°C	
Standard Body Material		EN-GJS-400-15 (GGG 40)	
Standard O-rings		Nitrile shore 70	
Voltage	U	24 V DC	12 V DC
Resistance R_{20} in Ω	R	21.2 ± 5%	5.3 ± 5%
Limit current	I	750 mA	1500 mA
PWM control frequency		100Hz	100Hz

Interfaces:

Description	Type	Data
El. connection	AMP Junior Power (included in delivery)	
Cable nipple	PG16	Cable dim. Ø10 – 14 mm
Screws	4 off M5 x 45-DIN 912 (To be order separately)	Tightening Torque 7.0 Nm
O-rings	4 off	9.25 x 1.78 mm



INSTALLATION

The Pressure Reducing Valve 8FGB4131021-*/** is installed with 4 off screws to a SUB plate (ISO 4401). Please refer to 'Interfaces', for details about screws and o-rings.

OPERATION

An electric signal applied to the valve will create a pressure on the ports, which is proportional to the current applied.

PRESSURE ADJUSTMENT

No adjustments are possible

MAINTENANCE

Check the valve for proper function. Visually check the valve and if required, paint unpainted (damaged) areas.

SPARE PART

O-ring set is available.

STORAGE

If storage longer than 6 months is expected, the valve must be kept in a dry room, free from dust and protected against sudden large temperature variations. For storage longer than 12 months, the valve must be filled with inhibition oil. Before use check all visible seals and flush with clean oil.

MARKING

Inlets and outlets are marked; refer to figure in section 'General Description'.

REFERENCES

This valve is designed to operate together with Control module for hydraulic proportional valve ref: chapter 8.2 and One Axis Joystick, ref: chapter 8.1.

ELECTRIC OPERATED PROPORTIONAL PRESSURE REDUCING VALVE 8FGBR4431021-****/**-**(D)

GENERAL DESCRIPTION

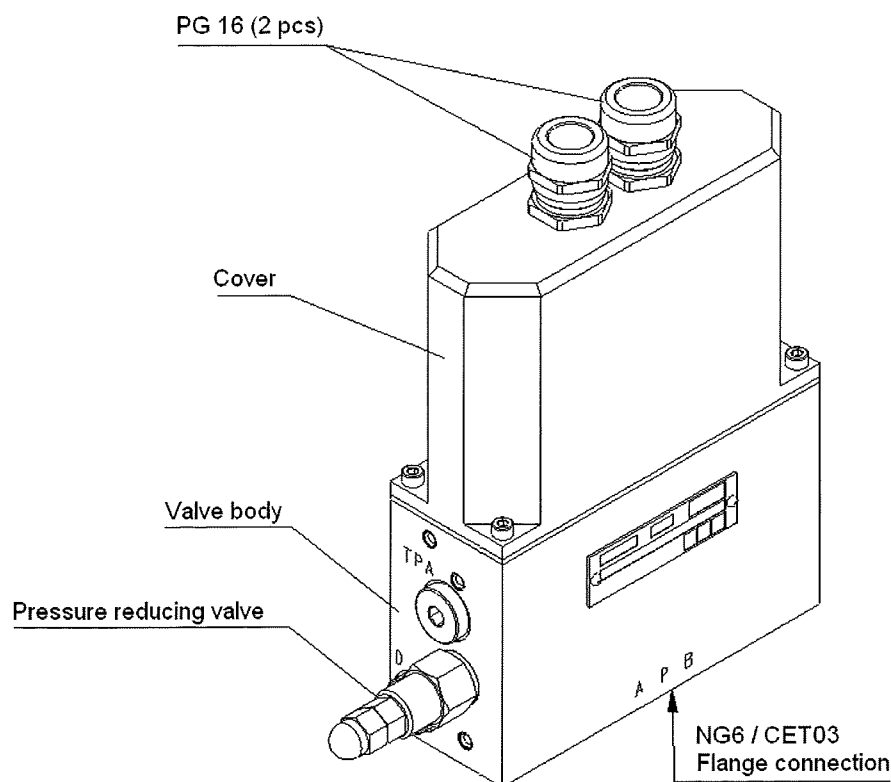


Figure 1 General Arrangement 8FGBR4431021-11/11-(D)

The electric operated double 3/2 way proportional pressure reducing Valve 8FGBR4431021-11/11-(D) is a seawater resistant valve intended for proportional, electrically remote control of directional valves or similar applications. The valve has the following characteristics:

- Delivered for mounting to a sub plate according to ISO 03/Cetop 3
- Different pressure ranges are available.
- Electrical operation via Hydranor Joystick (HNJ) and Control Module (HNKV124V)
- Maximum inlet pressure in port P is 350 bar.

**MODULAR CODE**

Options	Remarks	Design Code	Fill in
<i>Electric Pressure Reducing valve</i>			8FG
<i>Mounting</i>			
ISO 4401-03	No option	B	B
<i>Version</i>			
With An Extra Pressure Reducing Valve	No option	R	R
<i>Type</i>			
Individual pressure in both ports	No option	4	4
<i>Pressure</i>			
Max 350 Bar inlet pressure	Standard	4	4
<i>Operation</i>			
Electric proportional	No option	3	3
<i>Size</i>			
06 mm	No option	1	1
<i>Spool type</i>			
	No option	02	02
<i>Spring Detent position</i>			
Spring centred	No option	1	1
<i>Modification</i>			
		-	
<i>Pressure ranges (to be selected both for A and B port)</i>			
0 - 25 bar		11	
0 - 32 bar		12	
<i>Drain Option</i>			
Port "D" plugged; "T" open		-	
Port "D" open; "T" plugged		D	
<i>Electric Voltage</i>			
24Volt	Standard	24V	
12Volt	On request	12V	

In example 8FGBR, spool type 02, with pressure range 0 - 25 bar in both port A and B, and use of D port with T port at ISO 03 flange plugged, 24 Volt solenoids will have modular code: **8FGBR4431021-11/11-D**

VALVE DESCRIPTION

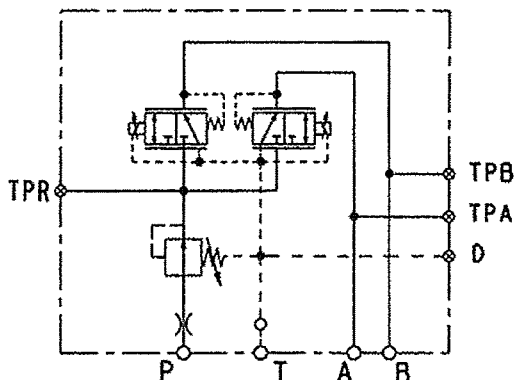


Figure 2.1 Circuit diagram 8FGBR4431021-*/**

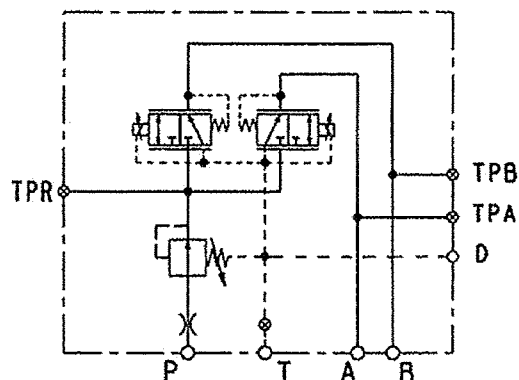


Figure 2.2 Circuit diagram 8FGBR4431021-*/**-D

NOTES:

- Avoid fluctuation in pressure in port P, to achieve best result of the proportional control.
- Pressure in port T/D is directly additional to valve setting.
- An orifice diameter \varnothing 0.8 mm is mounted in port P.



DIMENSIONS

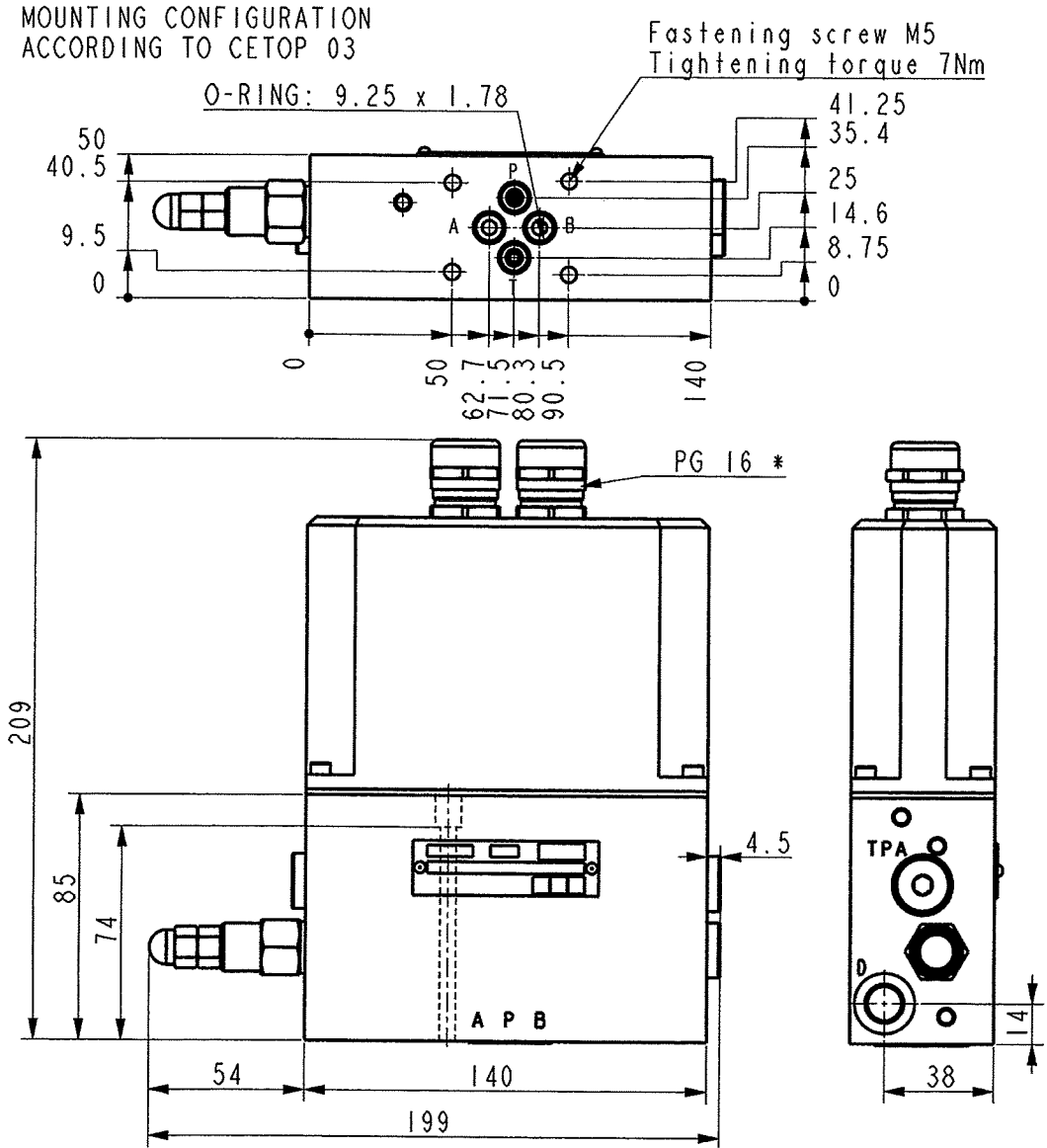


Figure 3. Dimensions 8FGBR4431021-**/**



TECHNICAL DATA

Description	Symbol	Data	
Max. pressure in port P	P_{max}	350 bar	
Min nominal pressure in port P	P_{nom}	Output pressure + 5 bar	
Max. pressure in port T and D	T/D_{max}	10 bar (See note)	
Weight		5 kg	
Working Pressure	P	0 – 25/32 bar	
Flow A/B→T at $\Delta p=25$ bar	Q	4 l/min	
Hydraulic fluid		Mineral oils for hydraulic system	
Viscosity range:	ν	10 to 350 mm ² /s (cSt)	
Viscosity index:	VI	> 120	
Filtration, recommended filter with $\beta_{20} \geq 100$		Class 9 according to NAS 1638, 18/15 according to ISO 4406	
Fluid temperature range:	T	-20°C to + 70°C	
Ambient temperature range	T	-20°C to + 50°C	
Valve Body Material		EN-GJS-400-15 (GGG 40)	
Standard O-rings		Nitrile shore 70	
Voltage	U	24 V DC	12 V DC
Resistance R_{20} in Ω	R	21.2 ± 5%	5.3 ± 5%
Limit current	I	750 mA	1500 mA
PWM control frequency		100Hz	100Hz

Note: Pressure in port T/D is directly additional to valve setting.

INTERFACES:

Description	Type	Data
El. connection	AMP Junior Power (included in delivery)	
Cable nipple	PG16	Cable dim. Ø10 – 14 mm
Screws	4 off M5 x 80-DIN 912 (To be order separately)	Tightening Torque 7.0 Nm
O-rings	4 off	9.25 x 1.78 mm



INSTALLATION

The Pressure Reducing Valve 8FGBR4431021-**/**-(D) is installed with 4 off screws to a SUB plate (ISO 4401). Please refer to 'Interfaces', for details about screws and o-rings.

OPERATION

An electric signal applied to the valve will create a pressure on the ports, which is proportional to the current applied.

REDUCED PRESSURE ADJUSTMENT

Reduced pressure **MUST NOT** exceed 50 bar.

Factory preset to 5 bar higher than output pressure.

Example for spring version -11/11(25 bar output) pressure reducing valve preset to 30 bar.

- Connect pressure gauge in port TPR.
- Loosen cap nut and nut for the pressure reducing valve adjusting screw.
- Turn adjusting screw clockwise to increase pressure setting for the pressure reducing valve. Turn adjusting screw counter clockwise to decrease pressure setting for the pressure reducing valve. Complete adjustment range is 5 turns.
- Tighten nut and cap nut for pressure reducing valve.

MAINTENANCE

Check the valve for proper function. Visually check the valve and if required, paint unpainted (damaged) areas.

SPARE PART

O-ring set is available.

STORAGE

If storage longer than 6 months is expected, the valve must be kept in a dry room, free from dust and protected against sudden large temperature variations. For storage longer than 12 months, the valve must be filled with inhibition oil. Before use check all visible seals and flush with clean oil.

MARKING

Inlets and outlets are marked; refer to figure in section 'General Description'.

REFERENCES

This valve is designed to operate together with Control module for hydraulic proportional valve ref: chapter 8.2 and One Axis Joystick, ref: chapter 8.1.