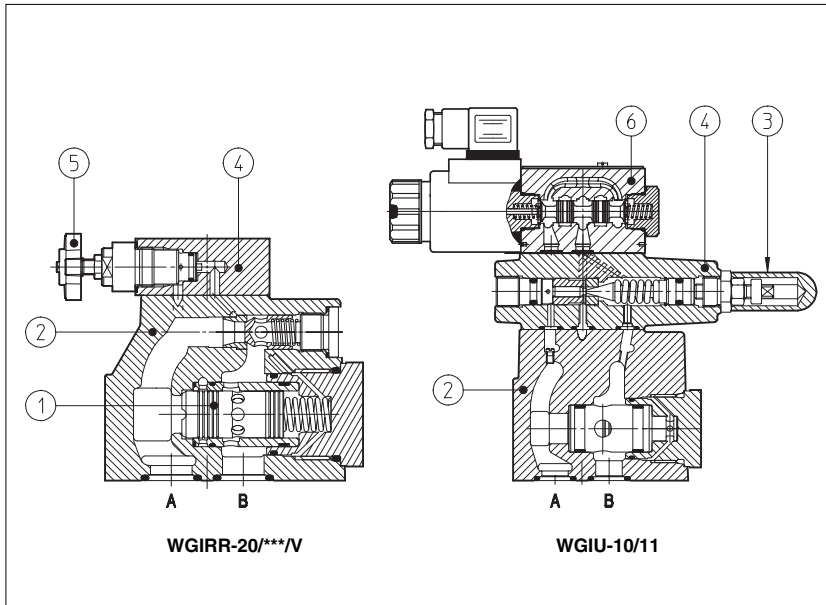


Pressure control valves type **WGIR, WGIU**

two stage, subplate mounting, ISO 5781 sizes 10 and 20



WGIR and WGIU are double stage pressure control valves with balanced poppet designed to operate in oil hydraulic systems.

WGIR: pressure reducing;

WGIU: unloading.

In standard versions the piloting pressure of the poppet ① of the main stage ② is regulated by means of a grub screw protected by cap ③ in the cover ④.

Optional versions with setting adjustment by handwheel ⑤ instead of the grub screw are available on request.

Clockwise rotation increases pressure.

Unloading valves WGIU can be equipped with a venting solenoid valve ⑥.

The secondary setting control can be made through the independent pilot port X. Mounting surface: ISO 5781 sizes 10 and 20.

Max flow:

for WGIR = 160, 300 l/min

for WGIU = 100, 200 l/min

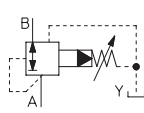
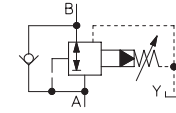
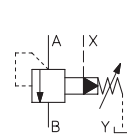
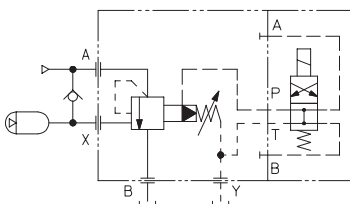
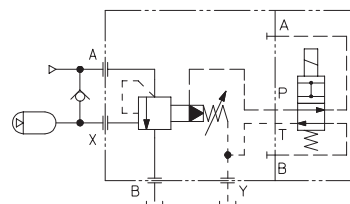
Pressure up to 350 bar.

1 MODEL CODE

WGIU	*	-	20	/	1	0	/210	/V	N	24DC	**	/*
Pressure control valves subplate mounting WGIR = pressure reducing WGIU = unloading					(1)	(1)			(1)	(1)		Synthetic fluids: PE = phosphate ester
Only for WGIR: R = with check valve - = without check valve												Design number
Size: 10 20												Supply voltage, see section 7: 00 = solenoid valve without coils (only for OI solenoid)
Number of different setting pressure 1 = one setting pressure												Connector type, see section 6: N = standard connector WP-666 P = connector with signal led WP-667 Q = connector with built-in rectifier bridge WP-669
0 = venting with de-energized solenoid 1 = venting with energized solenoid												Options: /V = regulating handwheel instead of a grub screw protected by cap Only for WGIU: /D = internal drain - = standard unloading characteristics /6 = other unloading characteristics, see section 5
Pressure range: 50 = 4÷50 bar (WGIR*); 100 = 6÷100 bar; 210 = 7÷210 bar; 350 = 8÷350 bar												

(1) Only for WGIU with solenoid valve for venting

2 HYDRAULIC CHARACTERISTICS

				
				
Valve model	WGIR-10	WGIR-20	WGIU-10	WGIU-20
Max flow [l/min]	160	300	100	200
Pressure range [bar]	4÷50 (WGIR*); 6÷100; 7÷210; 8÷350			

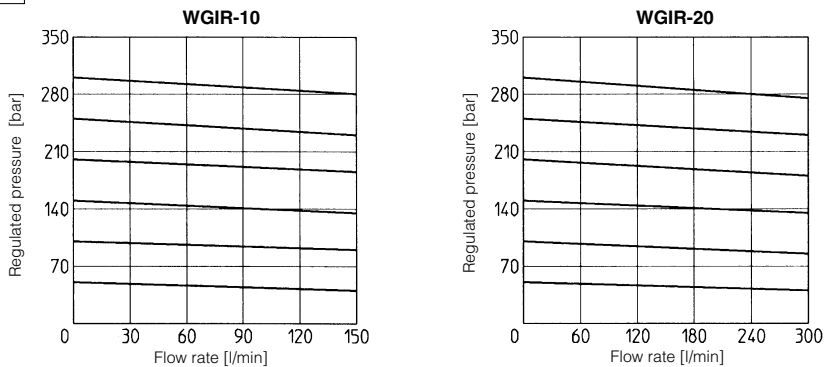
3 MAIN CHARACTERISTICS OF PRESSURE CONTROL VALVES TYPE WGIR, WGIU

Assembly position / location	Any position
Subplate surface finishing	Roughness index $\sqrt{0.4}$, flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	-20°C to + 70°C
Fluid	Hydraulic oil as per DIN 51524 . . . 535; for other fluids see section 11
Recommended viscosity	15 ÷ 100 mm ² /s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 µm value and $\beta_{0.5} \geq 75$ (recommended)
Fluid temperature	-20°C +60°C (standard seals) -20°C +80°C (/PE seals)

3.1 Coils characteristics

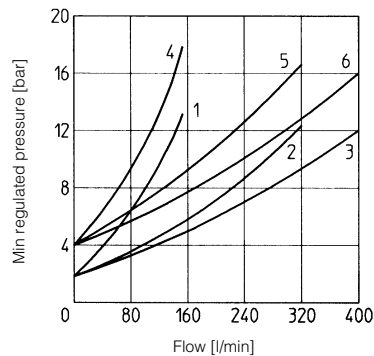
Insulation class	H
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 7
Supply voltage tolerance	± 10%

4 REGULATED PRESSURE VERSUS FLOW DIAGRAMS based on mineral oil ISO VG 46 at 50°C



5 OPERATING DIAGRAM based on mineral oil ISO VG 46 at 50°C

- 1 = WGIR-10 A → B
- 2 = WGIR-20 A → B
- 3 = WGIR-32 A → B
- 4 = WGIR-10 B → A
- 5 = WGIR-20 B → A
- 6 = WGIR-32 B → A



Differential pressure for WGIU

- 1 = WGIU-*/... (standard) differential pressure = 10%
(example: unloading pressure = 100 bar
resetting pressure = 90 bar)
- 2 = WGIU-*/.../6 differential pressure = 30%
(example: unloading pressure = 100 bar
resetting pressure = 70 bar)

NOTES

- 1) Short pipes with low resistance must be used between the unloading valve and the accumulator;
- 2) When the resistance is high, the hydraulic pilot signal must be taken as closed as possible to the accumulator;
- 3) With high pump flow and small valve differential pressure of intervention the version with external drain is advisable.

6 ELECTRIC CONNECTORS ACCORDING TO DIN 43650 FOR WGIU WITH SOLENOID VALVE

The connectors must be ordered separately

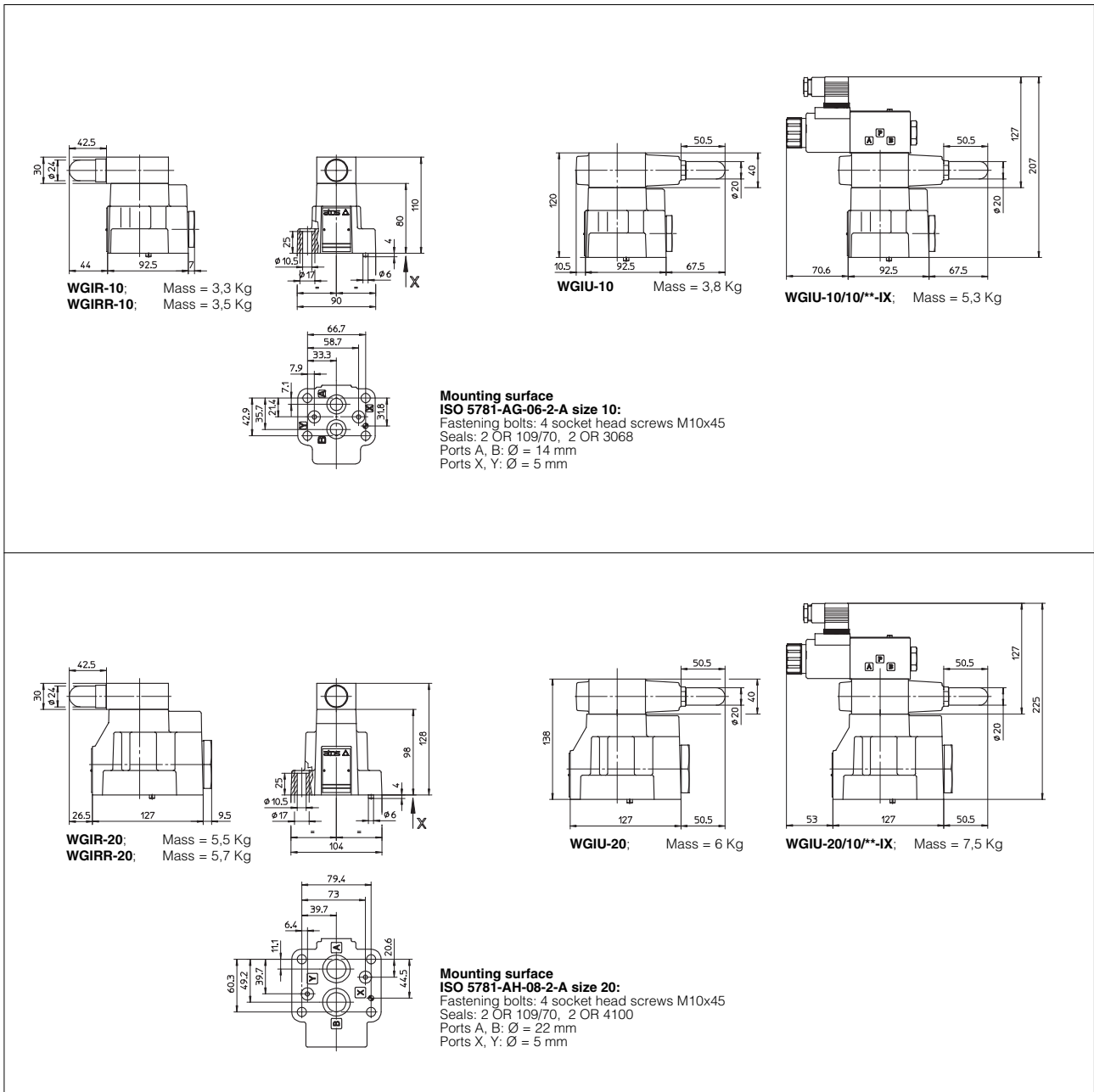
Code of connector	Function
WP-666 (option -N)	Connector IP-65, suitable for direct connection to electric supply source
WP-667 (option -P)	As WP-666 connector IP-65 but with built-in signal led, suitable for direct connection to electric supply source
WP-669 (option -Q)	With built-in rectifier bridge for supplying DC coils by alternate current (AC 110V and 220V - I _{max} 1A).

7 ELECTRIC FEATURES FOR WGIU WITH SOLENOID VALVE

External supply nominal voltage ± 10%	Type of connector	Power consumption (2)	Code of spare coil
12 DC	WP-666 or WP-667	30 W	SP-WCOE-12DC
24 DC			SP-WCOE-24DC
110/50/60 AC	WP-667	58 VA	SP-WCOE-110/50/60AC (1)
220/50/60 AC			SP-WCOE-220/50/60AC (1)
110/50/60 AC	WP-669	30 W	SP-WCOE-110DC
220/50/60 AC			SP-WCOE-220DC

- (1) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10 ÷ 15% and the power consumption is 52 VA.
- (2) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.
- (3) When solenoid is energized, the inrush current is approx 3 times the holding current. Inrush current values correspond to a power consumption of about 160 VA.

8 DIMENSIONS [mm]



Overall dimensions refer to valves with connectors type SP-666