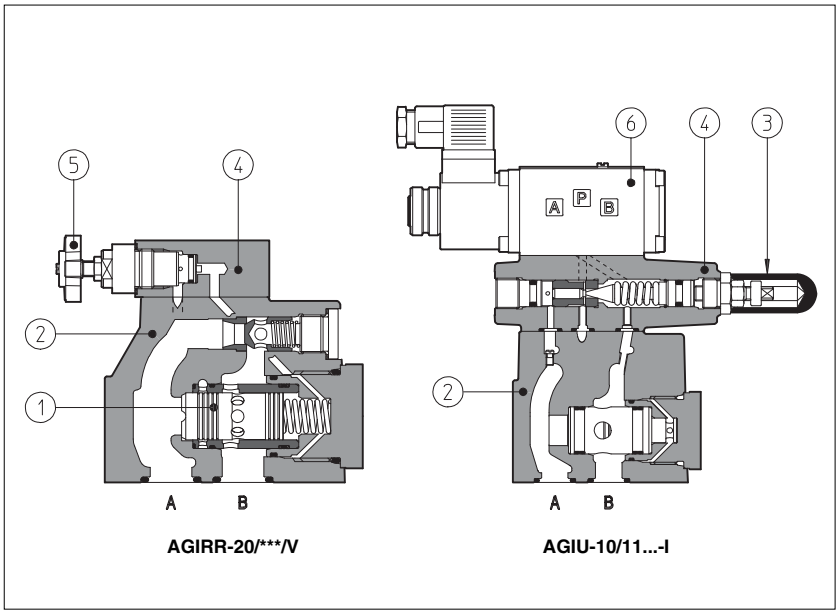
Pressure control valves type AGIR, AGIS, AGIU

two stage, subplate mounting, ISO 5781 sizes 10, 20 and 32



AGIRR-20/*/V** **AGIU-10/11...-I**

AGIR, AGIS and AGIU are double stage pressure control valves with balanced poppet designed to operate in oil hydraulic systems.
AGIR: pressure reducing;
AGIS: sequence;
AGIU: 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 AGIU can be equipped with a venting solenoid valve ⑥ (for normally open or normally closed valves).
Another setting control can be made through the independent pilot port.
Mounting surface: ISO 5781 sizes 10, 20 and 32.
Max flow:
for AGIR = 160, 300, 400 l/min
for AGIS = 200, 400, 600 l/min
for AGIU = 100, 200, 300 l/min.
Pressure up to 350 bar.

1 MODEL CODE

AGIU	*	-	20	/	1	0	/210	/V	-I	X	24DC	**	/*
					(1)	(1)			(1)	(1)	(1)		

Pressure control valves subplate mounting
AGIR = pressure reducing
AGIS = sequence
AGIU = unloading

Only for AGIR and AGIS:
R = with check valve
- = without check valve

Size:
10
20
32

Number of different setting pressure
1 = one setting pressure

0 = venting with de-energized solenoid
1 = venting with energized solenoid

Pressure range:
50 = 4÷50 bar (AGIR*); **100** = 6÷100 bar; **210** = 7÷210 bar; **350** = 8÷350 bar

Solenoid of pilot valve:
-I = solenoid OI (DHI) for AC and DC supply

X = without connector
See section 6 for available connectors, to be ordered separately

Voltage code, see section 7:
00 = solenoid valve without coils (only for OI solenoid)

Series number

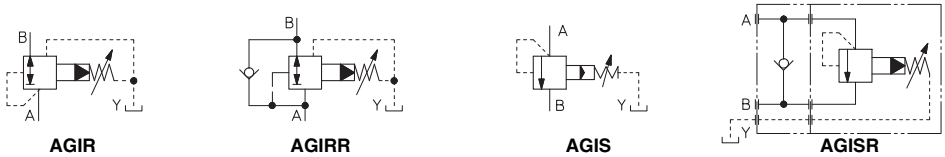
Syntethic fluids:
WG = water-glycol
PE = phosphate ester

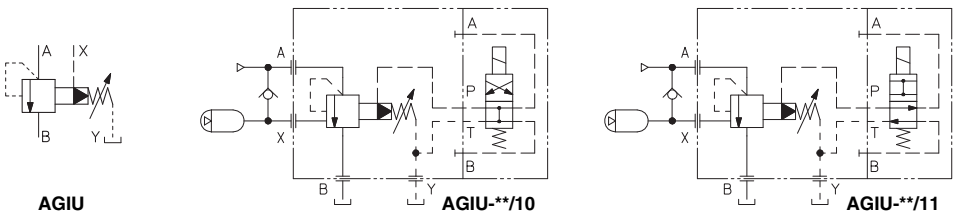
Options (2):
/V = regulating handwheel instead of a grub screw protected by cap
/VF = regulating knob instead of a grub screw protected by cap (only for AGIS, AGIU)
/VS = manual override with safety locking instead of a grub screw protected by cap (only for AGIS, AGIU)

Only for AGIU:
/D = internal drain
- = standard unloading characteristics
/5, /6 and **/7** = other unloading characteristics, see section 5

(1) Only for AGIU with solenoid valve for venting
(2) For handwheel features, see technical table K150

2 HYDRAULIC CHARACTERISTICS





Valve model		AGIR-10	AGIR-20	AGIR-32	AGIS-10	AGIS-20	AGIS-32	AGIU-10	AGIU-20	AGIU-32
Max flow	[l/min]	160	300	400	200	400	600	100	200	300
Pressure range	[bar]	4÷50 (AGIR*); 6÷100; 7÷210; 8÷350								

3 MAIN CHARACTERISTICS OF PRESSURE CONTROL VALVES TYPE AGIR, AGIS, AGIU

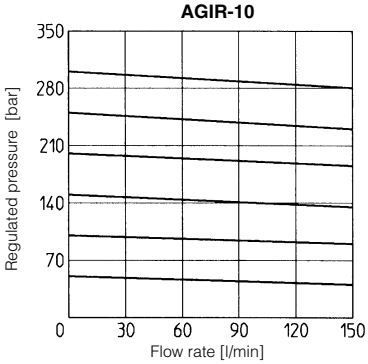
Assembly position / location	Any position
Subplate surface finishing	Roughness index $\sqrt{}^{0.4}$, flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	-20°C to + 70°C
Fluid	Hydraulic oil as per DIN 51524 . . . 535; for other fluids see section 1
Recommended viscosity	15 ÷ 100 mm²/s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 μm value and $\beta_{25} \geq 75$ (recommended)
Fluid temperature	-20°C +60°C (standard and /WG seals) -20°C +80°C (/PE seals)

3.1 Coils characteristics

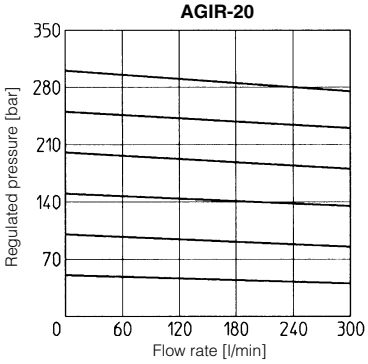
Insulation class	H
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 7
Supply voltage tolerance	± 10%

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

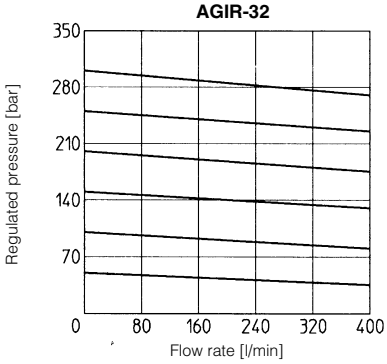
AGIR-10



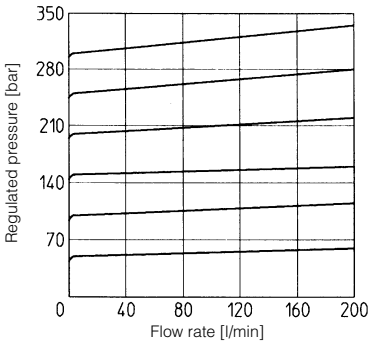
AGIR-20



AGIR-32

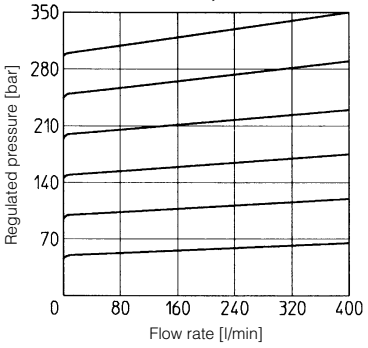


AGIS-10, AGIU-10



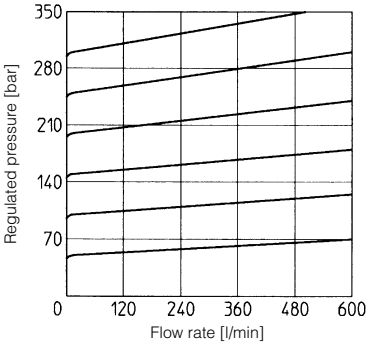
Note: for AGIU-10, the max flow rate is 100 l/min

AGIS-20, AGIU-20



Note: for AGIU-20, the max flow rate is 200 l/min

AGIS-32, AGIU-32

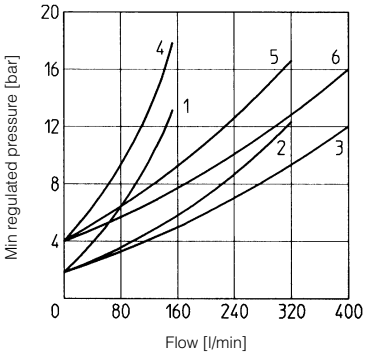


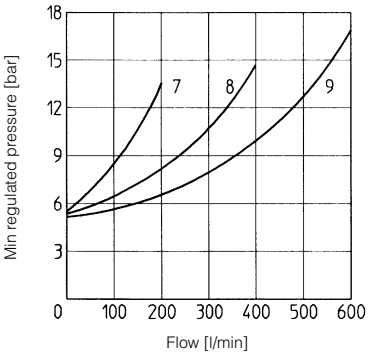
Note: for AGIU-32, the max flow rate is 300 l/min

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

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

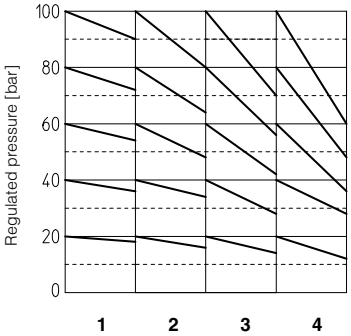
7 = AGIS-10
8 = AGIS-20
9 = AGIS-32

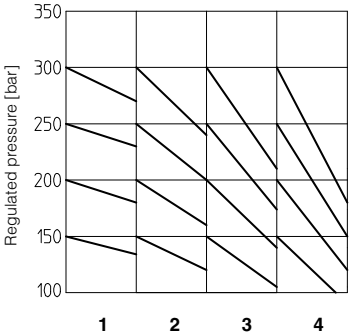




Opening/closing diagram for AGIU

1 = AGIU-**/...(standard) **3** = AGIU-**/.../6
2 = AGIU-**/.../5 **4** = AGIU-**/.../7





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 it is unadvisable to use the version with external drain;
4) When to use the BA-*25 subplates:
   a) in applications with working frequencies >10 Hz use subplates type BA-*25/4 (spring with 4 bar of cracking pressure);
   b) in applications with working frequencies <10 Hz use subplates type BA-*25/2 (spring with 2 bar of cracking pressure);

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

The connectors must be ordered separately

Code of connector	Function
SP-666	Connector IP-65, suitable for direct connection to electric supply source
SP-667	As SP-666 connector IP-65 but with built-in signal led, suitable for direct connection to electric supply source

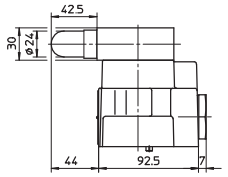
For other available connectors, see tab. E010 and K500.

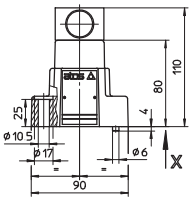
7 ELECTRIC FEATURES FOR AGIU WITH SOLENOID VALVE

Type of solenoid	External supply nominal voltage ± 10% (1)		**Voltage code**	Type of connector	Power consumption (3)	Code of spare coil	Colour of coil label
OI	DC	6 DC 12 DC 24 DC 48 DC	**6 DC** **12 DC** **24 DC** **48 DC**	SP-666 or SP-667	33 W	SP-COU-6DC /80 SP-COU-12DC /80 SP-COU-24DC /80 SP-COU-48DC /80	brown green red silver
	AC	110/50 AC (2) 120/60 AC 230/50 AC (2) 230/60 AC	**110/50/60 AC** **120/60 AC** **230/50/60 AC** **230/60 AC**	SP-666 or SP-667	60 VA (4)	SP-COI-110/50/60AC /80 SP-COI-120/60AC /80 SP-COI-230/50/60AC /80 SP-COI-230/60AC /80	yellow white light blue silver

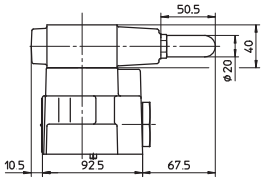
(1) For other supply voltages available on request see technical table E010.
(2) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10 ÷ 15% and the power consumption is 55 VA.
(3) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.
(4) When solenoid is energized, the inrush current is approx 3 times the holding current. Inrush current values correspond to a power consumption of about 150 VA.

8 DIMENSIONS [mm]

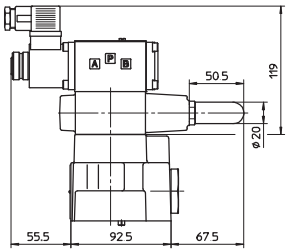




AGIR-10; Mass = 3,3 Kg
AGIRR-10; Mass = 3,5 Kg

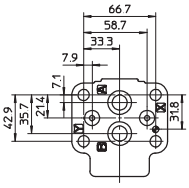


AGIS-10; Mass = 3,8 Kg
AGISR-10; Mass = 4 Kg
AGIU-10; Mass = 3,8 Kg



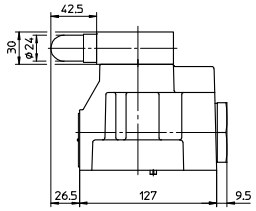
AGIU-10/10/-IX**; Mass = 5,3 Kg

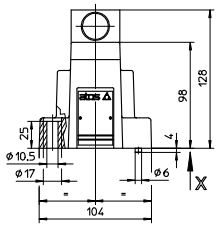
The drawing shows AGIU with solenoid valve type DHI



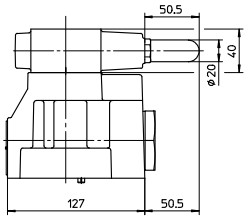
view from X

ISO 5781: 2000
Mounting surface: 5781-06-07-0-00
Fastening bolts:
4 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 3068
Ports A, B: Ø = 14 mm
Ports X, Y: Ø = 5 mm

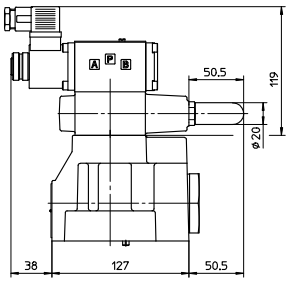




AGIR-20; Mass = 5,5 Kg
AGIRR-20; Mass = 5,7 Kg

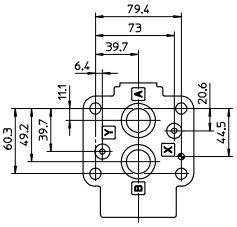


AGIS-20; Mass = 6 Kg
AGISR-20; Mass = 6,2 Kg
AGIU-20; Mass = 6 Kg



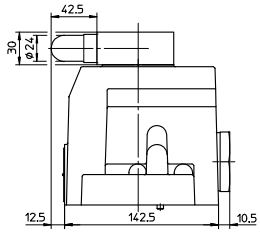
AGIU-20/10/-IX**; Mass = 7,5 Kg

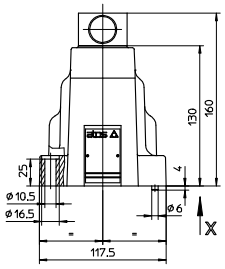
The drawing shows AGIU with solenoid valve type DHI



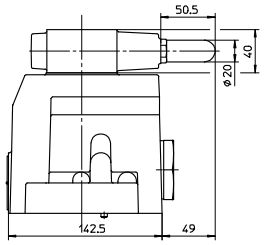
view from X

ISO 5781: 2000
Mounting surface: 5781-08-10-0-00
Fastening bolts:
4 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 4100
Ports A, B: Ø = 22 mm
Ports X, Y: Ø = 5 mm

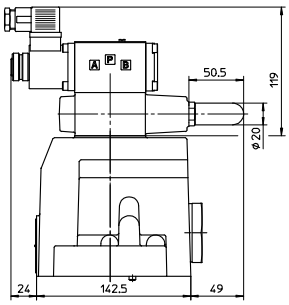




AGIR-32; Mass = 9,4 Kg
AGIRR-32; Mass = 9,6 Kg

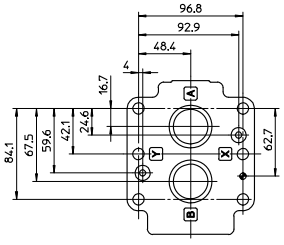


AGIS-32; Mass = 9,9 Kg
AGISR-32; Mass = 10,1 Kg
AGIU-32; Mass = 9,9 Kg



AGIU-32/10/-IX**; Mass = 11,4 Kg

The drawing shows AGIU with solenoid valve type DHI



view from X

ISO 5781: 2000
Mounting surface: 5781-08-13-0-00
Fastening bolts:
6 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 4131
Ports A, B: Ø = 28 mm
Ports X, Y: Ø = 5 mm

Overall dimensions refer to valves with connectors type SP-666

9 MOUNTING SUBPLATES

Valves	Subplate model	Port location	Ports				Ø Counterbore [mm]				Mass [Kg]
			A	B	X-Y	OUT	A	B	X-Y	OUT	
AGI*-10	BA-305	Ports A, B, Y underneath;	G 1/2"	G 1/2"	G 1/4"	-	30	30	21,5	-	1
AGI*-20	BA-505		G 1"	G 1"	G 1/4"	-	46	46	21,5	-	2
AGI*-32	BA-705		G 1 1/2"	G 1 1/2"	G 1/4"	-	63,5	63,5	21,5	-	7,5
AGIU-10	BA-325 (with incorporated check valve)	Ports A, B, Y underneath;	G 1/2"	G 3/4"	G 1/4"	G 1/2"	30	36,5	21,5	30	5
AGIU-20	BA-425 (with incorporated check valve)		G 1"	G 1"	G 1/4"	G 1"	46	46	21,5	46	6,5
AGIU-32	BA-625 (with incorporated check valve)		G 1 1/2"	G 1 1/2"	G 1/4"	G 1 1/2"	63,5	63,5	21,5	63,5	13

The subplates are supplied with fastening bolts. For further details see table K280