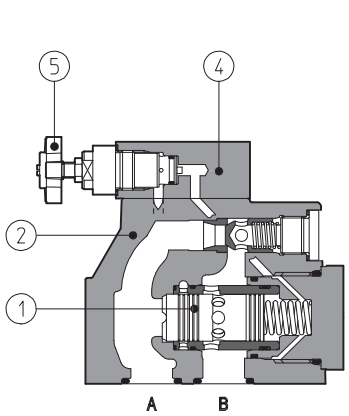
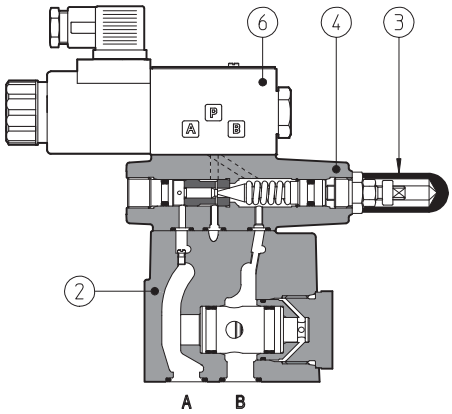
Pressure control valves type AGIR, AGIS, AGIU

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



AGIRR-20/*/V**



AGIU-10/11...-E

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 type:

- DHI for AC and DC supply, with **cURus** certified solenoids
- DHE for AC and DC supply, high performances
- DHER, as DHE but with **cURus** certified solenoids

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

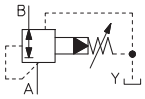
1 MODEL CODE

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

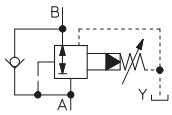
- **AGIU**: Pressure control valves subplate mounting
  AGIR = pressure reducing
  AGIS = sequence
  AGIU = unloading
- *****: Only for AGIR and AGIS:
  R = with check valve
  - = without check valve
- **20**: Size:
  10
  20
  32
- **1** (1): Number of different setting pressure
  1 = one setting pressure
- **0** (1): **0** = venting with de-energized solenoid
  1 = venting with energized solenoid
- **/210**: Pressure range:
  50 = 4÷50 bar (AGIR*); **100** = 6÷100 bar; **210** = 7÷210 bar; **350** = 8÷350 bar
- **/V**: 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
  /WP = prolonged manual override protected by rubber cap (1)
  - = standard unloading characteristics
  /5, /6, /7 = other unloading characteristics, see section 5
- **-I** (1): Pilot valve:
  -I = DHI for AC and DC supply, with **cURus** certified solenoids
  -E = DHE for AC and DC supply, high performances
  -ER = DHER as DHE but with **cURus** certified solenoids
- **X** (1): **X** = without connector
  See section 6 for available connectors, to be ordered separately
- **24DC** (1): Voltage code, see section 7:
  00 = solenoid valve without coils (only for OI solenoid)
- ****** Series number
- **/*** Seals material:
  omit for NBR (mineral oil & water glycol)
  PE = FPM

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

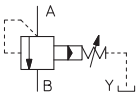
2 HYDRAULIC CHARACTERISTICS



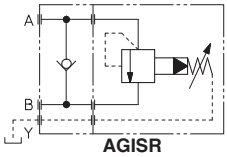
AGIR



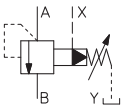
AGIRR



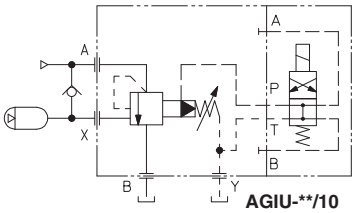
AGIS



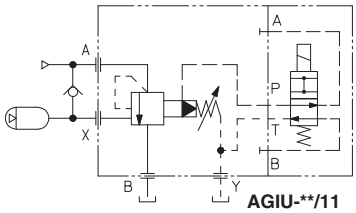
AGISR



AGIU



AGIU-/10**



AGIU-/11**

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

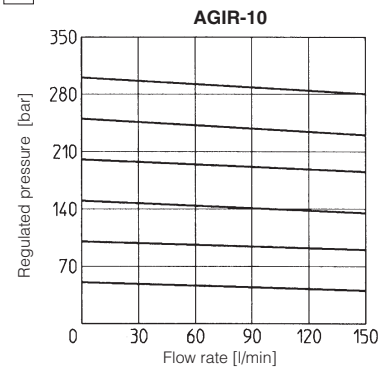
Assembly position / location	Any position
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	-20°C to + 70°C
Fluid	Hydraulic oil as per DIN 51524 . . . 535; for other fluids see section 1
Recommended viscosity	15 ÷ 100 mm²/s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 4401 class 21/19/16 NAS 1638 class 10 (filters at 25 μm value with β25 ≥ 75 recommended)
Fluid temperature	-20°C +60°C (standard seals) -20°C +80°C (/PE seals)

3.1 Coils characteristics

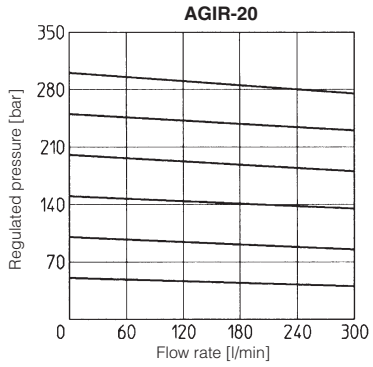
Insulation class	H
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 7
Supply voltage tolerance	± 10%
Certification (only for -I and -ER version)	**cURus** North American standard

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

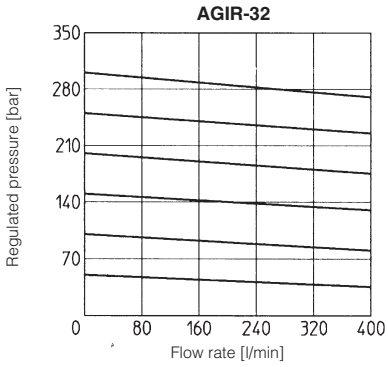
AGIR-10



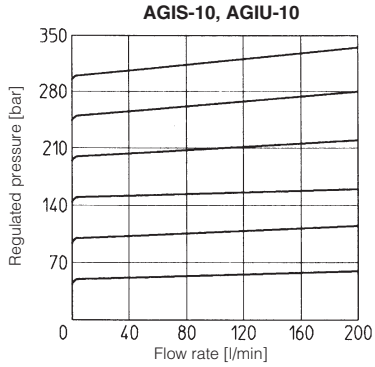
AGIR-20



AGIR-32

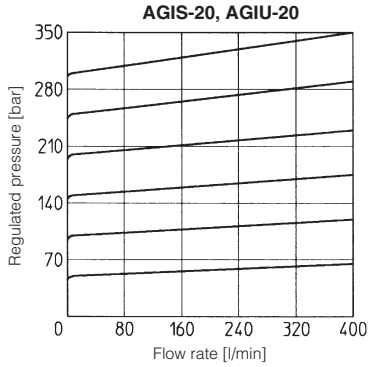


AGIS-10, AGIU-10



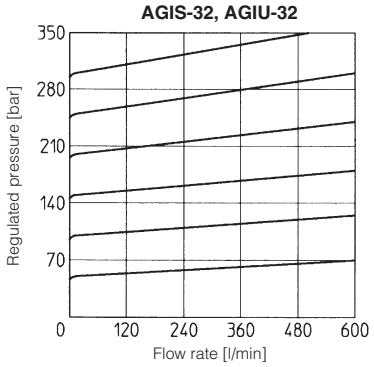
Note: for AGIU-10, the max flow rate is 100 l/min

AGIS-20, AGIU-20



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

AGIS-32, AGIU-32

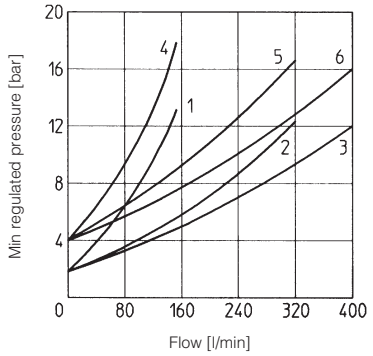


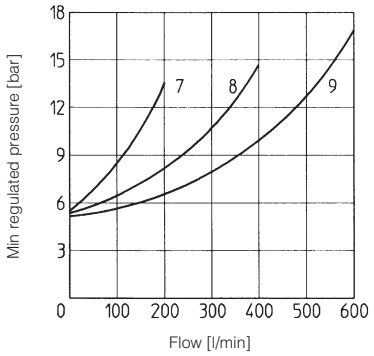
Note: for AGIU-32, the max flow rate is 300 l/min

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

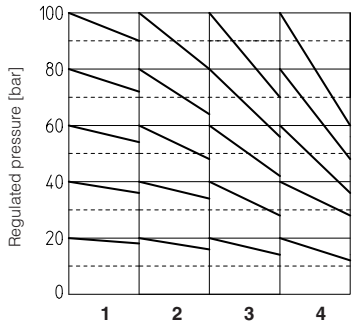
7 = AGIS-10
8 = AGIS-20
9 = AGIS-32

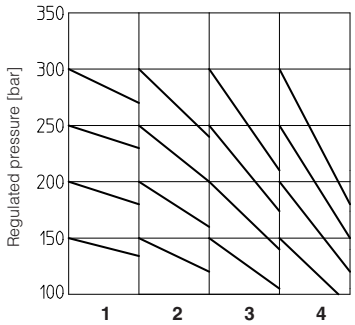




Opening/closing diagram for AGIU

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
666	Connector IP-65, suitable for direct connection to electric supply source
667	As 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 AGAM WITH SOLENOID VALVE

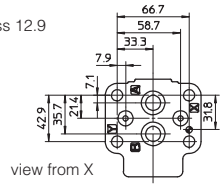
Solenoid valve type	External supply nominal voltage ± 10% (1)		**Voltage code**	Type of connector	Power consumption (3)	Code of spare coil DHI	Colour of coil label DHI	Code of spare coil DHE	Code of spare coil DHER
DHI DHE DHER	DC	12 DC 24 DC 110 DC 220 DC	**12 DC** **24 DC** **110 DC** **220 DC**	666 or 667	33 W (DHI) 30 W (DHE, DHER)	COU-12DC /80 COU-24DC /80 COU-110DC /80 COU-220DC /80	green red black black	COE-12DC/10 COE-24DC/10 COE-110DC/10 COE-220DC/10	COER-12DC/10 COER-24DC/10 COER-110DC/10 COER-220DC/10
	AC	110/50 AC (2) 115/60 AC 120/60 AC 230/50 AC (2) 230/60 AC	**110/50/60 AC** **115/60 AC** (5) **120/60 AC** (6) **230/50/60 AC** **230/60 AC**	666 or 667	60 VA (DHI) 58 VA (DHE, DHER) (4)	COI-110/50/60AC /80 - COI-120/60AC /80 COI-230/50/60AC /80 COI-230/60AC /80	yellow - white light blue silver	COE-110/50/60AC/10 COE-115/60AC/10 - COE-230/50/60AC/10 COE-230/60AC/10	COER-110/50/60AC/10 COER-115/60AC/10 - COER-230/50/60AC/10 COER-230/60AC/10

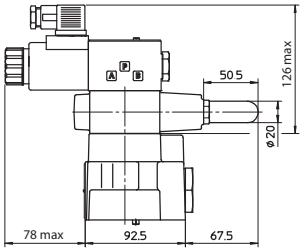
(1) For other supply voltages available on request see technical tables E010, E015.
(2) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10 ÷ 15% and the power consumption is 55 VA (DHI) and 58 VA (DHER)
(3) Average values based on tests performed 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.
(5) Only for DHE and DHER
(6) Only for DHI

8 DIMENSIONS [mm]

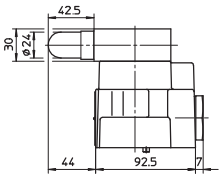
AGIR, AGIS, AGIU size 10

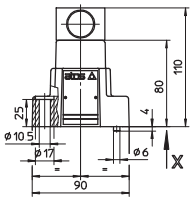
ISO 5781: 2000
Mounting surface: 5781-06-07-0-00
Fastening bolts:
4 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 3068
Ports A, B: Ø = 14 mm
Ports X, Y: Ø = 5 mm



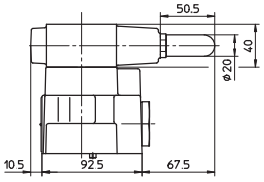


AGIU-10/10/-E(R)X**; Mass = 5,6 Kg

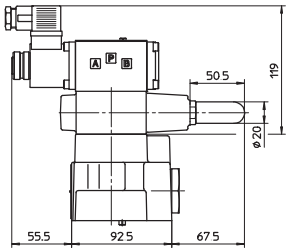




AGIR-10; Mass = 3,3 Kg
AGIRR-10; Mass = 3,5 Kg



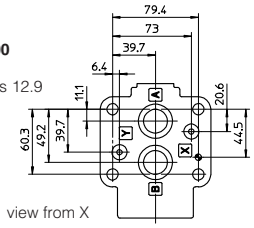
AGIS-10; Mass = 3,8 Kg
AGISR-10; Mass = 4 Kg
AGIU-10; Mass = 3,8 Kg



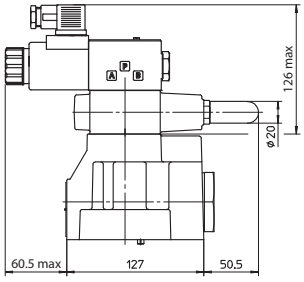
AGIU-10/10/-IX**; Mass = 5,3 Kg

AGIR, AGIS, AGIU size 20

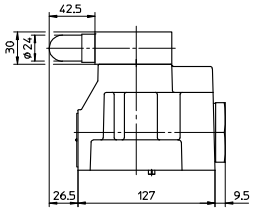
ISO 5781: 2000
Mounting surface: 5781-08-10-0-00
Fastening bolts:
4 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 4100
Ports A, B: Ø = 22 mm
Ports X, Y: Ø = 5 mm

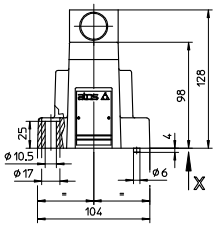


view from X

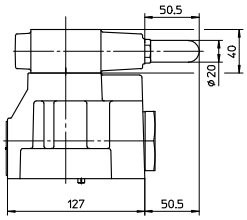


AGIU-20/10/-E(R)X**; Mass = 7,8 Kg

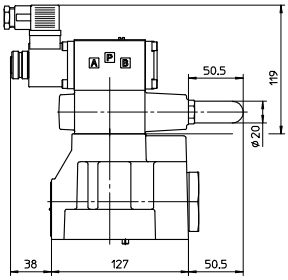




AGIR-20; Mass = 5,5 Kg
AGIRR-20; Mass = 5,7 Kg



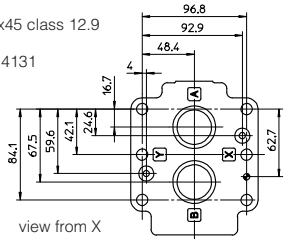
AGIS-20; Mass = 6 Kg
AGISR-20; Mass = 6,2 Kg
AGIU-20; Mass = 6 Kg



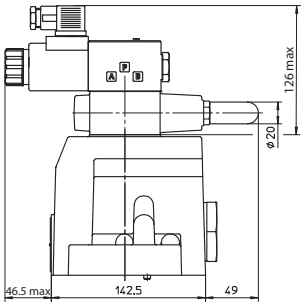
AGIU-20/10/-IX**; Mass = 7,5 Kg

AGIR, AGIS, AGIU size 32

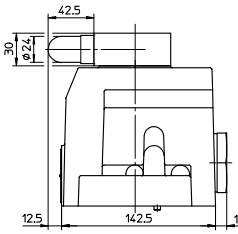
ISO 5781: 2000
Mounting surface: 5781-08-13-0-00
Fastening bolts:
6 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 4131
Ports A, B: Ø = 28 mm
Ports X, Y: Ø = 5 mm

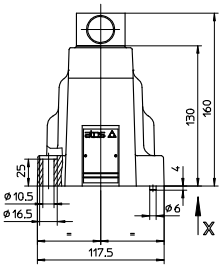


view from X

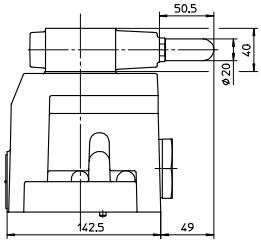


AGIU-32/10/-E(R)X**; Mass = 11,7 Kg

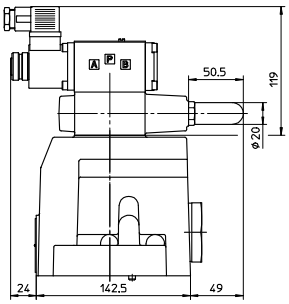




AGIR-32; Mass = 9,4 Kg
AGIRR-32; Mass = 9,6 Kg



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

Overall dimensions refer to valves with connectors type 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