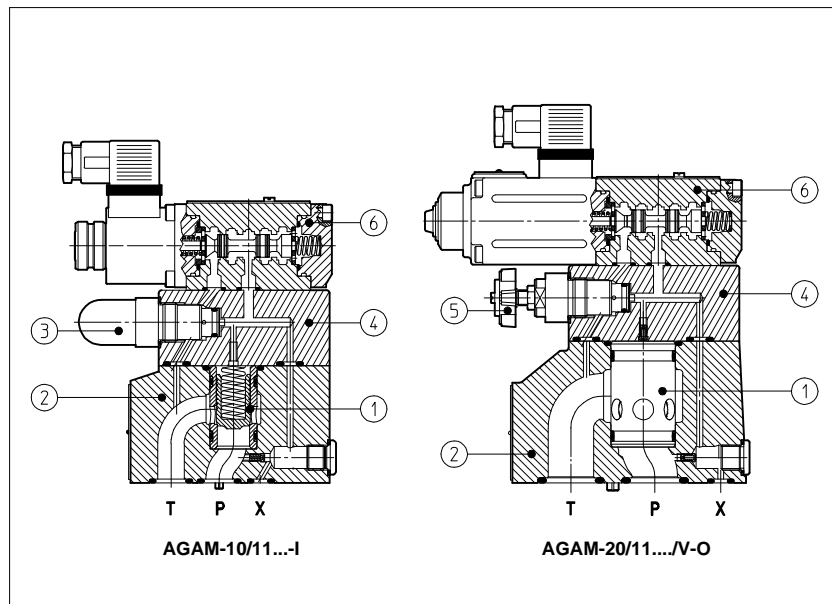


# Pressure relief valves type AGAM

two stage, subplate mounting - ISO/Cetop size 06R, 08R, 10R



AGAM are double stage pressure relief valves with balanced poppet, designed to operate in oil hydraulic systems.

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 the pressure.

AGAM can be equipped with a venting solenoid valve ⑥ (for normally open or normally closed valves).

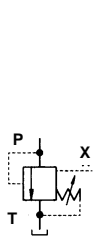
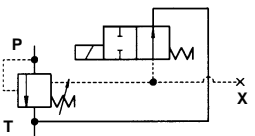
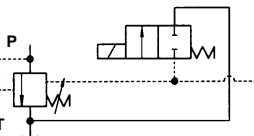
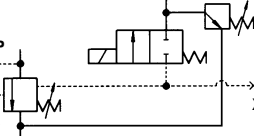
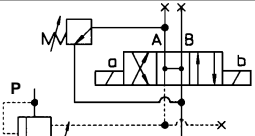
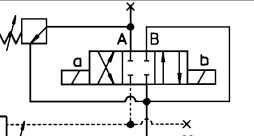
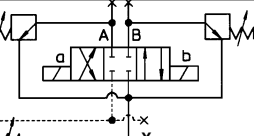
Mounting surface: ISO/Cetop 06R, 08R and 10R.  
 Max flow: 200, 400 and 600 l/min respectively.  
 Pressure up to 350 bar.

## 1 MODEL CODE

<b>AGAM</b>	<b>- 20 / 2</b>	<b>0 / 210</b>	<b>/100/100</b>	<b>/V</b>	<b>-I</b>	<b>X</b>	<b>24DC</b>	<b>**</b>	<b>*</b>
AGAM = pressure relief valve subplate mounting	(1)	(1)	(1)	(1)	(1)	(1)	(1)		Synthetic fluids: /WG = water-glycol /PE = phosphate ester
Size: 10 = ISO/Cetop 06R; 20 = ISO/Cetop 08R; 32 = ISO/Cetop 10R;									Design number
Number of the different setting pressure values: 1 = one setting pressure 2 = two setting pressure 3 = three setting pressure									Supply voltage, see section 7: 00 = solenoid valve without coils (only for OI solenoid)
0 = venting with de-energized solenoid 1 = venting with energized solenoid 2 = without venting									X = without connector See section 6 for available connectors, to be ordered separately
Pressure range: 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 -O = solenoid OO (DHO) for DC supply
									Options: /V = setting adjustment by handwheel instead of a grub screw protected by cap
									Pressure range of second/third setting: 100 = 6 - 100 bar; 210 = 7 - 210 bar; 350 = 8 - 350 bar

(1) Only for AGAM with solenoid valve for venting and/or for the selection of the setting pressure

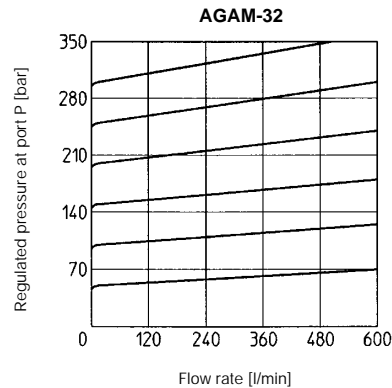
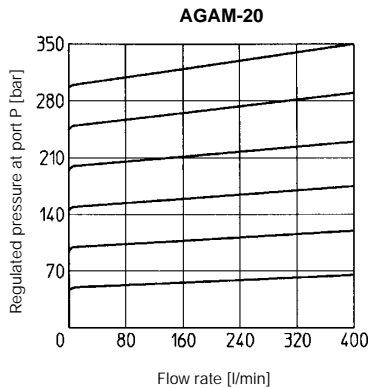
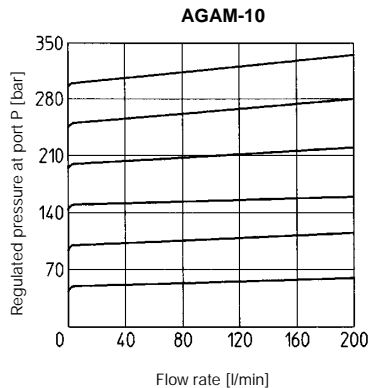
## 2 HYDRAULIC CHARACTERISTICS

<b>AGAM</b>	<b>AGAM-*/10</b>	<b>AGAM-*/11</b>	<b>AGAM-*/22</b>
			
			
	<b>AGAM-*/20</b>	<b>AGAM-*/21</b>	<b>AGAM-*/32</b>
Size	10	20	32
Max flow [l/min]	200	400	600
Pressure range [bar]	6-100; 7-210; 8-350		

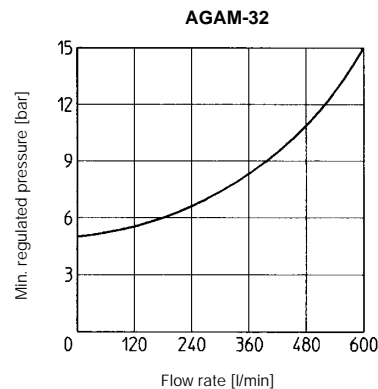
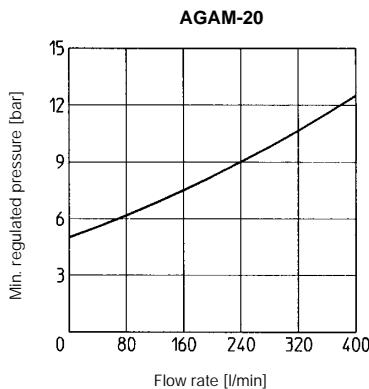
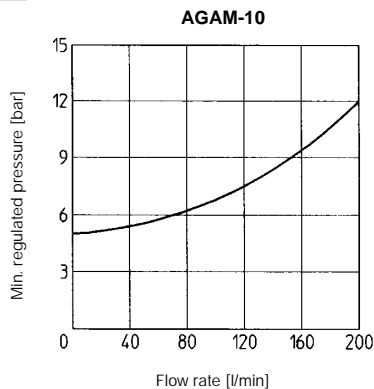
**3 MAIN CHARACTERISTICS OF PRESSURE CONTROL VALVES TYPE AGAM**

Assembly position / location	Any position
Subplate surface finishing	Roughness index $\sqrt{Ra}$ , 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 mm <sup>2</sup> /s at 40°C (ISO VG 15 ÷100)
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 µm value and $\beta_{10} \geq 75$ (recommended)
Fluid temperature	T ≤ 80°C, if T ≥ 60°C select /PE seals

**4 REGULATED PRESSURE VERSUS FLOW DIAGRAMS**



**5 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS**



**6 ELECTRIC CONNECTORS ACCORDING TO DIN 43650 FOR AGAM WITH SOLENOID VALVE**

The connectors must be ordered separately

Code of connector	Function
<b>SP-666</b>	Connector IP-65, suitable for direct connection to electric supply source
<b>SP-667</b>	As SP-666 connector IP-65 but with built-in signal led, suitable for direct connection to electric supply source
<b>SP-669</b>	With built-in rectifier bridge for supplying DC coils by alternating current (AC). Only for versions -OX

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

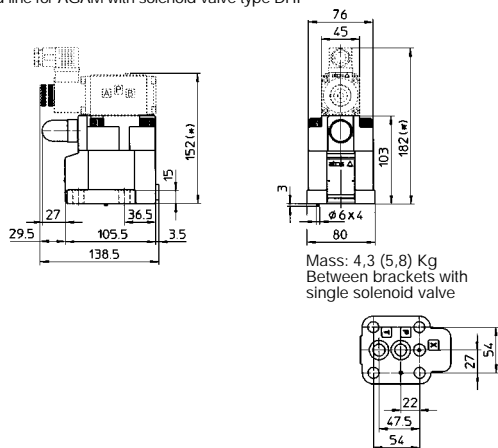
**7 ELECTRIC FEATURES FOR AGAM WITH SOLENOID VALVE**

Type of solenoid	External supply nominal voltage (1) (2)		Type of connector	Power consumption (4)	Code of spare coil (6)	Colour of coil label
OI	DIRECT CURRENT	6 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
		12 DC				
		24 DC				
		48 DC				
OI	ALTERNATE CURRENT	110/50 AC (3)	SP-666 or SP-667	60 VA (5)	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
		120/60 AC				
		230/50 AC (3)				
		230/60 AC				
OO	DIRECT CURRENT	12 DC	SP-666 or SP-667	32 W	-	-
		24 DC		40 W	-	-
		110 DC		-	-	-
		220 DC		-	-	-
OO	ALTERNATE CURRENT	110/50 AC	SP-669	40 VA	-	-
		120/60 AC		35 VA	-	-
		230/50 AC		40 VA	-	-
		230/60 AC		35 VA	-	-

- (1) Tolerance on the nominal voltage is ±10%.
- (2) For other supply voltages available on request see technical table E010.
- (3) 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.
- (4) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.
- (5) 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.
- (6) Protection class H; Duty cycle: 100%. Connector protection degree: IP 65.

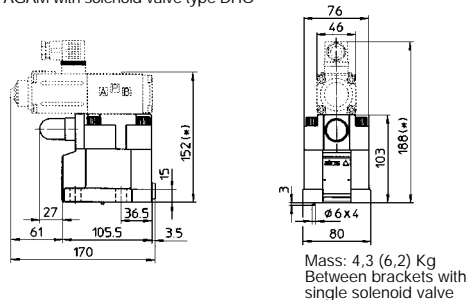
**8 DIMENSIONS [mm]**

Dotted line for AGAM with solenoid valve type DHI



**AGAM-10**

Dotted line for AGAM with solenoid valve type DHO



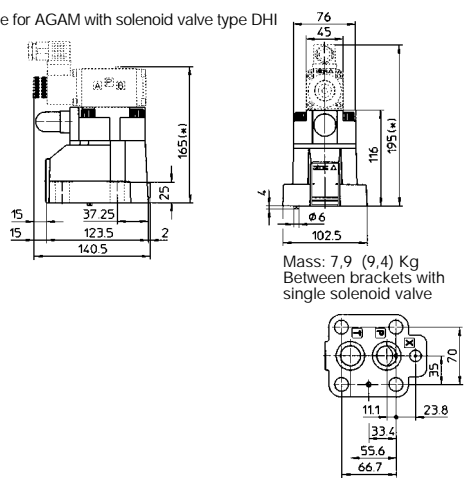
**ISO/Cetop 06R**

fastening bolts: 4 socket head screws M12x35  
 Seals: 2 OR 123; 1 OR 109  
 Ports P, T:  $\varnothing = 14$  mm  
 Ports X:  $\varnothing = 3,2$  mm

(\*) For versions /20, /21, /22, /32 the height is increased by 30 mm

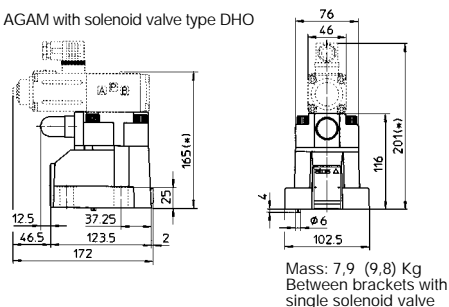
(\*) For versions /20, /21, /22, /32 the height is increased by 30 mm

Dotted line for AGAM with solenoid valve type DHI



**AGAM-20**

Dotted line for AGAM with solenoid valve type DHO



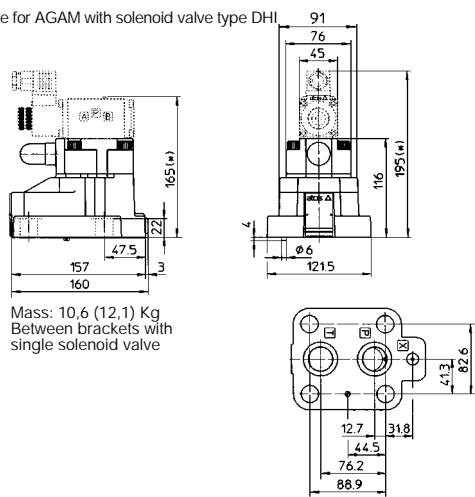
**ISO/Cetop 08R**

fastening bolts: 4 socket head screws M16x50  
 Seals: 2 OR 4112; 1 OR 109  
 Ports P, T:  $\varnothing = 24$  mm  
 Ports X:  $\varnothing = 3,2$  mm

(\*) For versions /20, /21, /22, /32 the height is increased by 30 mm

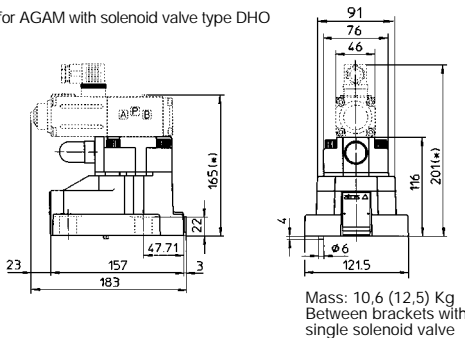
(\*) For versions /20, /21, /22, /32 the height is increased by 30 mm

Dotted line for AGAM with solenoid valve type DHI



**AGAM-32**

Dotted line for AGAM with solenoid valve type DHO



**ISO/Cetop 10R**

fastening bolts: 4 socket head screws M20x60  
 Seals: 2 OR 4131; 1 OR 109  
 Ports P, T:  $\varnothing = 28$  mm  
 Ports X:  $\varnothing = 3,2$  mm

(\*) For versions /20, /21, /22, /32 the height is increased by 30 mm

(\*) For versions /20, /21, /22, /32 the height is increased by 30 mm

Overall dimensions refer to valves with connectors type SP-666

**9 MOUNTING SUBPLATES**

Valve	Subplate model	Port location	BSP ports			Ø Counterbore [mm]			Mass [Kg]
			P	T	X	P	T	X	
AGAM-10	BA-306	Ports P, T, X underneath;	1/2"	3/4"	1/4"	30	36,5	21,5	1,5
AGAM-20	BA-406		3/4"	3/4"	1/4"	36,5	36,5	21,5	3,5
	BA-506		1"	1"	1/4"	46	46	21,5	3,5
AGAM-32	BA-706		1 1/2"	1 1/2"	1/4"	63,5	63,5	21,5	6