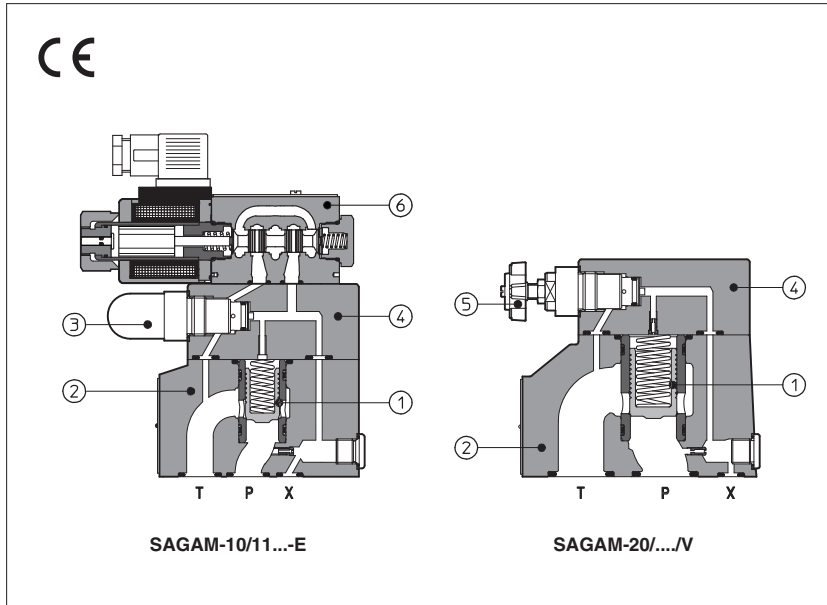


# Pressure relief valves type SAGAM

two stage, subplate mounting - ISO 6264 size 10, 20 and 32



**SAGAM** are two 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.

SAGAM can be equipped with a SDHE pilot solenoid valve ⑥ for venting or for different pressure setting.

Mounting surface: **ISO 6264 size 10, 20 and 32**

Max flow: **200, 400 and 600 l/min**

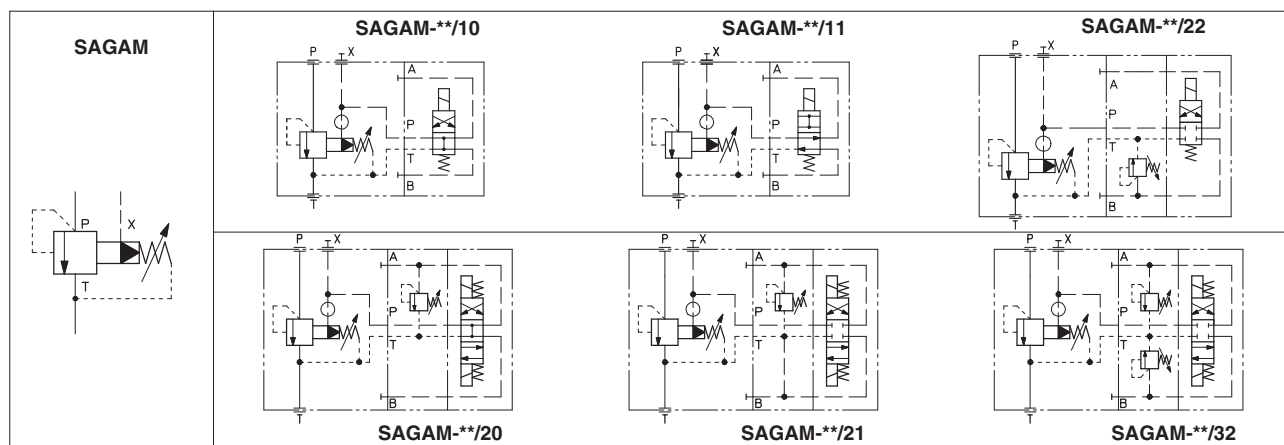
Max pressure up to **350 bar**

**1 MODEL CODE**

<b>SAGAM</b>	-	<b>20</b>	/	<b>10</b>	/	<b>210</b>	/	<b>100/100</b>		<b>V</b>	-	<b>E</b>		<b>X</b>		<b>24DC</b>	<b>**</b>	/	<b>*</b>
<p><b>SAGAM</b> = pressure relief valve subplate mounting</p>																			
<p>Size: <b>10 20 32</b></p>																			
<p>Setting pressure and venting option:                      - = one setting pressure without option  <b>10</b> = one setting pressure with venting, with de-energized solenoid  <b>11</b> = one setting pressure with venting, with energized solenoid  <b>20</b> = two setting pressure with venting, with de-energized solenoid  <b>21</b> = two setting pressure with venting, with energized solenoid  <b>22</b> = two setting pressure without venting  <b>32</b> = three setting pressure without venting</p>																			
<p>Setting: see section 3 for available setting</p>																			
<p>Pressure range of second/third setting (1):  <b>50</b> = 4÷50 bar      <b>100</b> = 6÷100 bar  <b>210</b> = 7÷210 bar      <b>350</b> = 8÷350 bar</p>																			
																		<p>Seals material, see section 4:                      - = NBR  <b>PE</b> = FKM  <b>BT</b> = HNBR</p>	
																		<p>Series number</p>	
																		<p>Voltage code, see section 7 (1):</p>	
																		<p><b>X</b> = without connector (1):                      See section 6 for available connectors, to be ordered separately  <b>-00-AC</b> = AC solenoid valve without coils  <b>-00-DC</b> = DC solenoid valve without coils</p>	
																		<p>Solenoid venting valve (1):  <b>E</b> = SDHE for AC and DC supply with <b>cURus</b> certified solenoids</p>	
																		<p>Options, see section 5  <b>E V WP Y</b></p>	

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

## 2 HYDRAULIC SYMBOLS



## 3 HYDRAULIC CHARACTERISTICS

Valve model	SAGAM-10	SAGAM-20	SAGAM-32
Setting [bar]	50; 100; 210; 350		
Pressure range [bar]	4÷50; 6÷100; 7÷210; 8÷350		
Max pressure [bar]	ports P, X = 350 Ports T, Y = 210 (without pilot solenoid valve) For version with pilot solenoid valve, see technical tables SHE015		
Max flow [l/min]	200	400	600

## 4 MAIN CHARACTERISTICS, SEALS AND FLUIDS - for other fluids not included in below table, consult our technical office

Assembly position	Any position		
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)		
Ambient temperature	Standard execution = -30°C ÷ +70°C /PE option = -20°C ÷ +70°C /BT option = -40°C ÷ +70°C		
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +80°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option) = -20°C ÷ +80°C HNBR seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity	15÷100 mm <sup>2</sup> /s - max allowed range 2,8 ÷ 500 mm <sup>2</sup> /s		
Max fluid contamination level	ISO4406 class 20/18/15 NAS1638 class 9, see also filter section at <a href="http://www.atos.com">www.atos.com</a> or KTF catalog		
	<b>Hydraulic fluid</b>	<b>Suitable seals type</b>	<b>Classification</b>
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	
Flame resistant with water	NBR, HNBR	HFC	ISO 12922

### 4.1 Coils characteristics (for SAGAM with solenoid venting valve)

Insulation class	<b>H</b> (180°C) for DC coils <b>F</b> (155°C) for AC coils	Due to the occurring surface temperatures of the solenoid coils, the European standards EN ISO 13732-1 and EN ISO 4413 must be taken into account
Protection degree to DIN EN 60529	<b>IP 65</b> (with connectors 666, 667, 669 correctly assembled)	
Relative duty factor	100%	
Supply voltage and frequency	See electric feature	
Supply voltage tolerance	± 10%	
Certification	<b>cURus</b> North American standard	

## 5 OPTIONS

- /E** = external pilot
- /V** = regulating handwheel instead of grub screw protected by cap
- /WP** = prolonged manual override protected by rubber cap (only for SAGAM with pilot solenoid valve)
- /Y** = external drain (only for SAGAM with pilot solenoid valve)

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

The connectors must be ordered separately

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

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

Solenoid valve type	External supply nominal voltage $\pm 10\%$ (1)		Voltage code	Type of connector	Power consumption (3) SDHE	Code of spare coil SDHE
SDHE	DC	12 DC 24 DC 110 DC 220 DC	<b>12 DC</b> <b>24 DC</b> <b>110 DC</b> <b>220 DC</b>	666 or 667	30 W	COE-12DC COE-24DC COE-110DC COE-220DC
	AC	110/50 AC (2) 230/50 AC (2)	<b>110/50/60 AC</b> <b>230/50/60 AC</b>	666 or 667	58 VA 58 VA (4)	COE-110/50/60AC COE-230/50/60AC

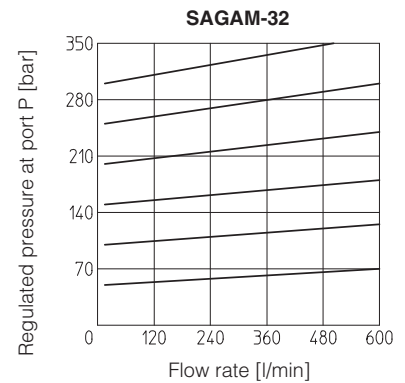
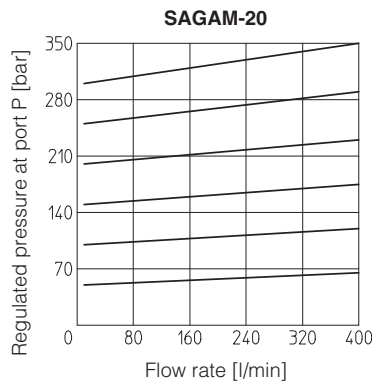
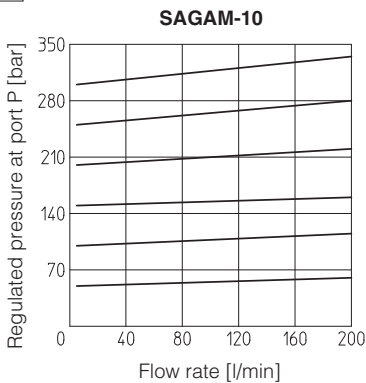
(1) For other supply voltages available on request see technical tables SHE015.

(2) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by  $10 \div 15\%$  and the power consumption is 55 VA

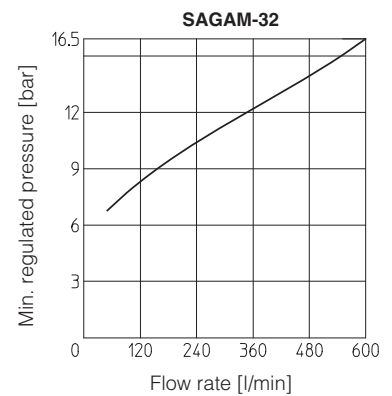
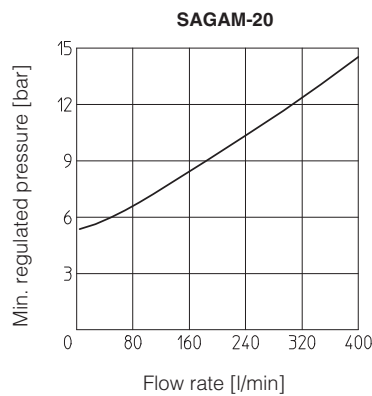
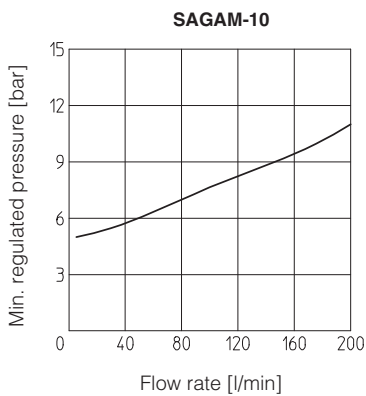
(3) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.

(4) When AC solenoid is energized, the inrush current is approx 3 times the holding current.

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

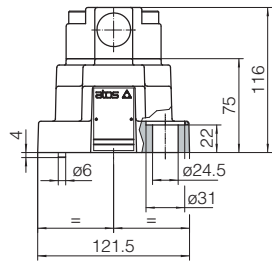
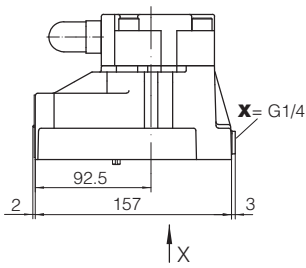


**9 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS** based on mineral oil ISO VG 46 at 50°C

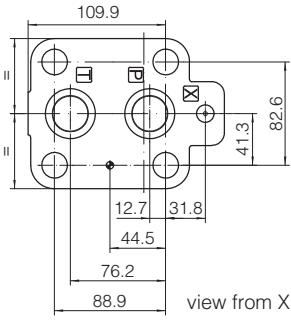




# SAGAM-32

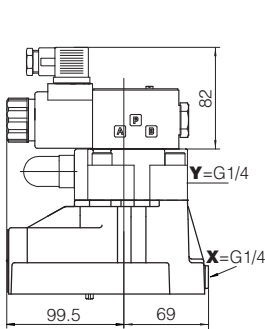


Mass: 6,2 Kg

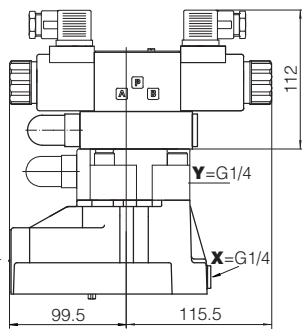


**ISO 6264: 2007**  
**Mounting surface: 6264-10-17-1-97**  
**(with M20 fixing holes instead of standard M18)**

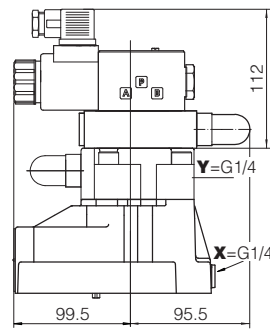
Fastening bolts:  
 4 socket head screws  
 M20x60 class 12.9  
 Tightening torque = 600 Nm  
 Seals: 2 OR 4131; 1 OR 109/70  
 Ports P, T:  $\varnothing = 28,5$  mm  
 Ports X:  $\varnothing = 3,2$  mm



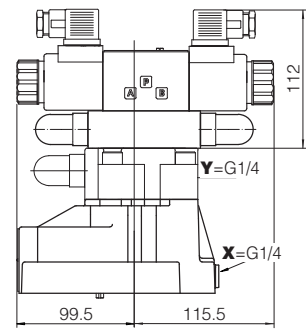
**SAGAM-32/10/\*\*-EX**  
**SAGAM-32/11/\*\*-EX**  
 Mass: 7,7 Kg



**SAGAM-32/20/\*\*-EX**  
**SAGAM-32/21/\*\*-EX**  
 Mass: 8,8 Kg



**SAGAM-32/22/\*\*-EX**  
 Mass: 8,5 Kg



**SAGAM-32/32/\*\*-EX**  
 Mass: 8,9 Kg

Overall dimensions refer to valves with connectors type 666