

CART M, CART ARE Pressure valves

Relief, direct, poppet type, screw-in



Sizes
G1/2" ÷ M35

Qmax
2,5 ÷ 120
l/min

Pmax
420
bar

Features

- Screw-in execution
- Optional Leak-free execution
- Optional version conforming to 2006/42/EC
- Handwheel and Knobs options for pressure regulation
- Low temperature option -40°C

Description

CART are screw-in, direct operated pressure relief valves.

They are used to limit the max pressure in the hydraulic systems or to protect part of the circuit from overpressure.

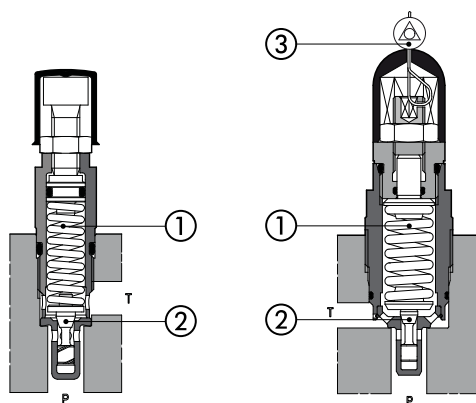
They are available in six sizes for different flow and pressure ranges.

The cartridge execution is specifically designed to reduce the dimension of blocks and manifolds, without penalizing the functional characteristics.

Option RS, conforms to the Machine Directive (2006/42/CE), with factory preset and lead sealed regulation.

The factory pressure setting required by the customer corresponds to the valve's cracking pressure.

Overview



- 1 - Spring
- 2 - Poppet
- 3 - Pressure adjustment screw (lead sealed)

1 MODEL CODE

CART	M-4	/	350	/	RS	/	300	/	*	/	*
1	2		3		4		5		6		7

1 - Valve type					
CART	Screw-in relief cartridges				
2 - Valve size and ports dimensions					
M-3	G1/2"				
M-4	M14x1				
M-5	M20x1,5				
M-6	M33x1,5				
ARE-15	M32x1,5				
ARE-20	M35x1,5				
3 - Max pressure setting [bar]					
Max pressure	standard	option /R	option /RS	Valve type	
50	√	-	-	CART M-3	
100	√				
210	√				
350	√				
420	√				
100	√		-	CART M-4	
210	√		-		
220	-	√			
270	-	√			
350	√		√		
420	√		-		
50	√	-	-	CART M-5	
100	√				
210	√				
250	√				
350	√				
50	√	√	-	CART M-6	
100	√	√	-		
210	√	√	-		
220	-	-	√		
270	-	-	√		
330	-	-	√		
350	√	√	√		
500	√	√	-	CART ARE-15	
15	√	√	-		
50	√	√	-		
75	√	√	-		
150	√	√	√		
190	-	-	√		
230	-	-	√		
250	√	√	-		
350	√	-	-	CART ARE-20	
420	√	√	-		
50	√		-		
100	√				
210	√				
315	√				
400	√				

4 - Construction options		
R	leak free execution (1)	
RS	leak free execution plus lead sealed regulation conforming to 2006/42/CE	
V	regulating handwheel	not for RS
VF	regulating knob	
VS	regulating knob with safety locking	

See section 6

(1) Standard execution of CART M-4 and CART ARE-20 provides the leak free feature, then the /R is always present in the valve model code, with the exception in case of RS options

5 - Factory pressure setting - only for RS option [bar]	
300	value of setting pressure.

The customer define the setting value.

min step: 1 bar, min pressure setting 25 bar

Example **300** = 300 bar

6 - Series identification - not required for ordering	
.....	series number

7 - Seals material	
-	NBR
PE	FKM
BT	NBR low temperature

2 HYDRAULIC SYMBOLS



3 GENERAL CHARACTERISTICS

Assembly position	Any position
Ambient temperature range	Standard = -30°C ÷ +70°C; /PE option = -20°C ÷ +70°C; /BT option = -40°C ÷ +70°C
Storage temperature range	Standard = -30°C ÷ +80°C /PE option = -20°C ÷ +80°C /BT option = -40°C ÷ +80°C
Corrosion resistance	Salt spray test (EN ISO 9227) > 200 h
Compliance	Comply with Directive 2011/65/EU as amended (RoHS 2), including Delegated Directive (EU) 2015/863 and all subsequent Delegated Directives in force on the date of this statement REACH Regulation (EC) n°1907/2006
MTTFd values according to EN ISO 13849	150 years, for further details see technical table P007
Surface protection	Zinc coating with black passivation

4 HYDRAULIC CHARACTERISTICS

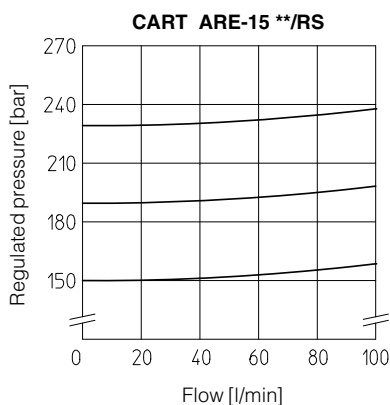
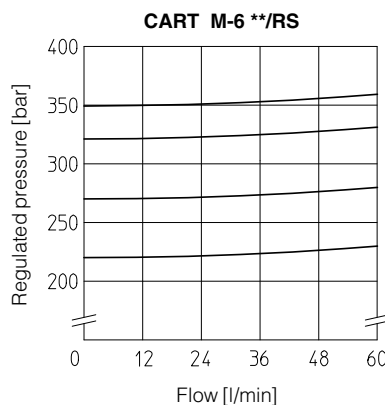
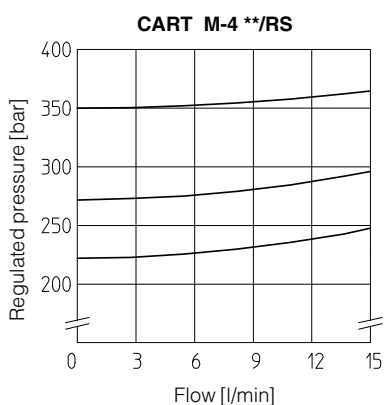
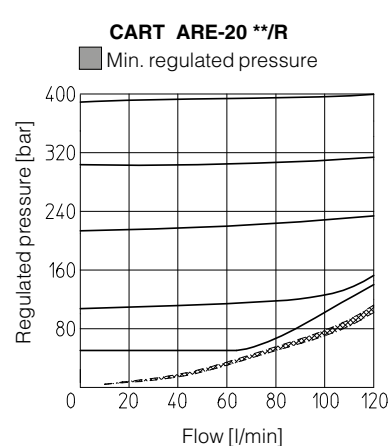
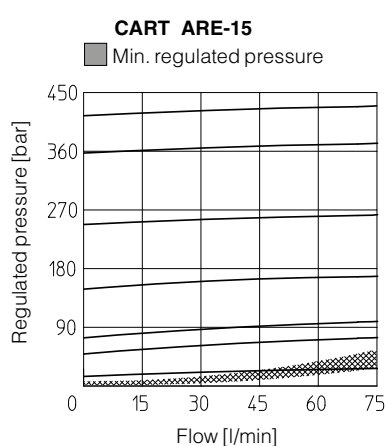
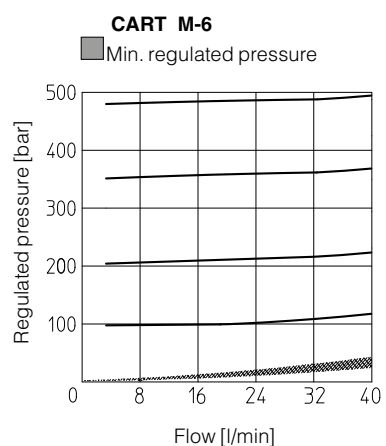
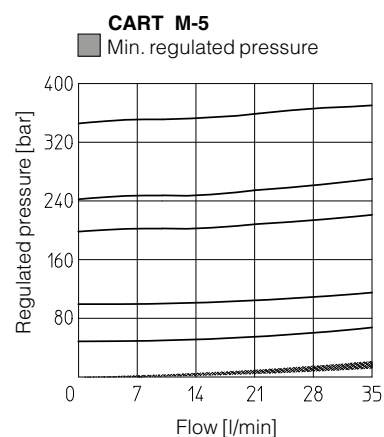
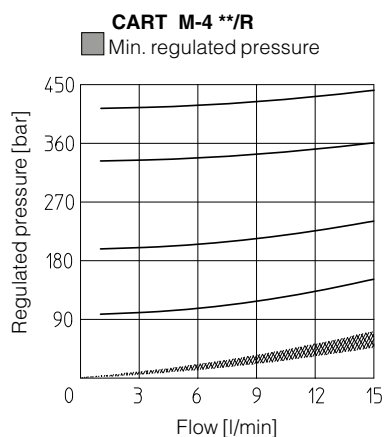
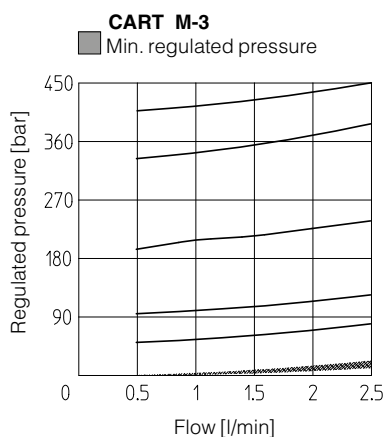
Valve model		CART M-3	CART M-4	CART M-5	CART M-6	CART ARE-15	CART ARE-20
Max pressure setting [bar]	Standard	50, 100, 210, 350, 420	100, 210, 350, 420	50, 100, 210, 250, 350	50, 100, 210, 350, 500	15, 50, 75, 150, 250, 350, 420	50, 100, 210, 315, 400
	/R		100, 210, 350, 420		50, 100, 210, 350, 500	15, 50, 75, 150, 250, 420	50, 100, 210, 315, 400
	/RS		220, 270, 350		220, 270, 330, 350	150, 190, 230	
Pressure range [bar]	Standard	4÷50, 6÷100, 7÷210, 8÷350, 15÷420	6÷100, 7÷210, 8÷350, 15÷420	2÷50, 3÷100, 5÷210, 7÷250, 8÷350	2÷50, 3÷100, 8÷210, 15÷350, 15÷500	2÷15, 3÷50, 4÷75, 8÷150, 8÷250, 8÷350, 15÷420	3÷50, 5÷100, 6÷210, 8÷315, 10÷400
	/R		6÷100, 7÷210, 8÷350, 15÷420		2÷50, 3÷100, 10÷210, 15÷350, 15÷500	2÷15, 3÷50, 4÷75, 8÷150, 8÷250, 15÷420	3÷50, 5÷100, 6÷210, 8÷315, 10÷400
	/RS		210÷260, 260÷300, 300÷370		200÷250, 250÷290, 290÷350, 310÷370	130÷170, 170÷210, 210÷250	
Max. pressure at port T [bar]		250	350	250			
Max flow [l/min]	Standard	2,5	15	35	40	75	120
	/R	2,5	15	35	40	75	120
	/RS		15		60	100	

5 SEALS AND HYDRAULIC FLUIDS - for other fluids not included in below table, consult our technical office

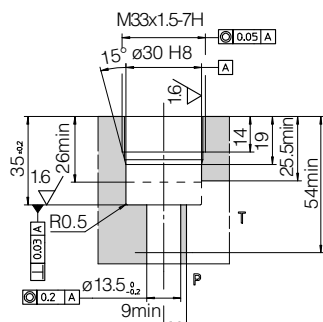
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +80°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option) = -20°C ÷ +80°C NBR low temp. seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity	15÷100 mm²/s - max allowed range 2,8 ÷ 500 mm²/s		
Max fluid contamination level	ISO4406 class 20/18/15 NAS1638 class 9, see also filter section at www.atos.com or KTF catalog		
Hydraulic fluid	Suitable seals type	Classification	Ref. Standard
Mineral oils	NBR, FKM, NBR low temp.	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR, NBR low temp.	HFC	

6 OPTIONS AVAILABILITY

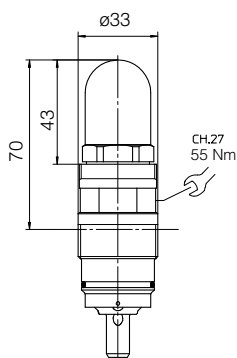
Valve model		CART M-3	CART M-4	CART M-5	CART M-6	CART ARE-15	CART ARE-20
Option	/R		standard		√	√	standard
	/RS		√		√	√	
	/V	√			√	√	√
	/VF				√	√	
	/VS				√	√	
Combined option	/RV				√	√	√
	/RVF				√	√	
	/RVS				√	√	



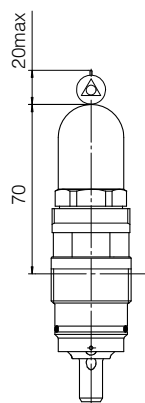
CART M-6



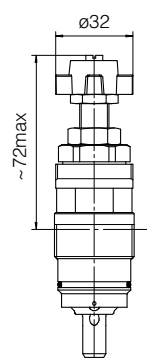
Standard



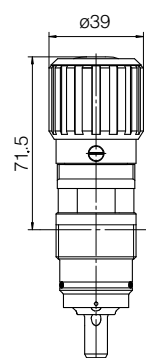
Option /RS



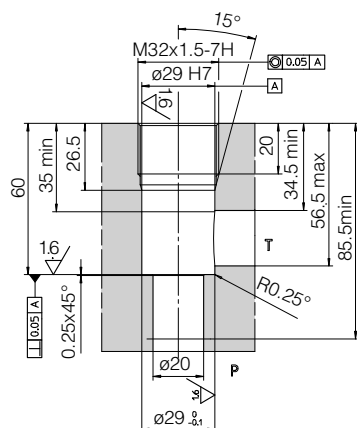
Option /V



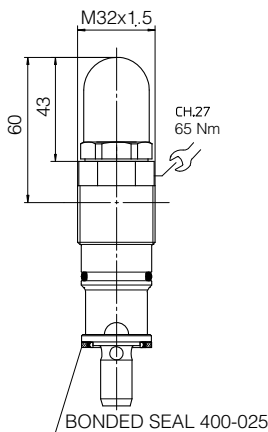
Option /VF
/VS



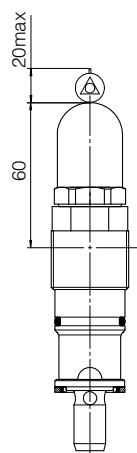
CART ARE-15



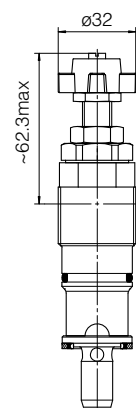
Standard



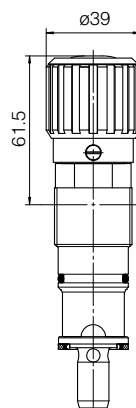
Option /RS



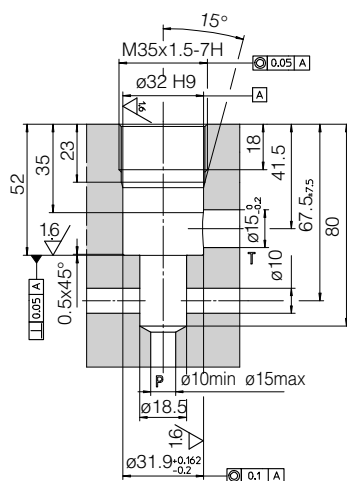
Option /V



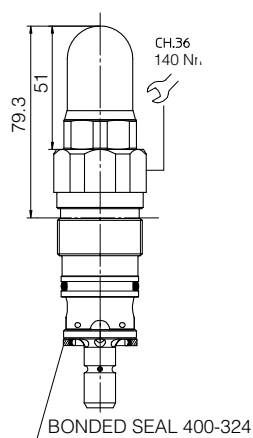
Option /VF
/VS



CART ARE-20



Standard



Option /V

