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# Piston Accumulators

ACP Series (up to 275 bar)



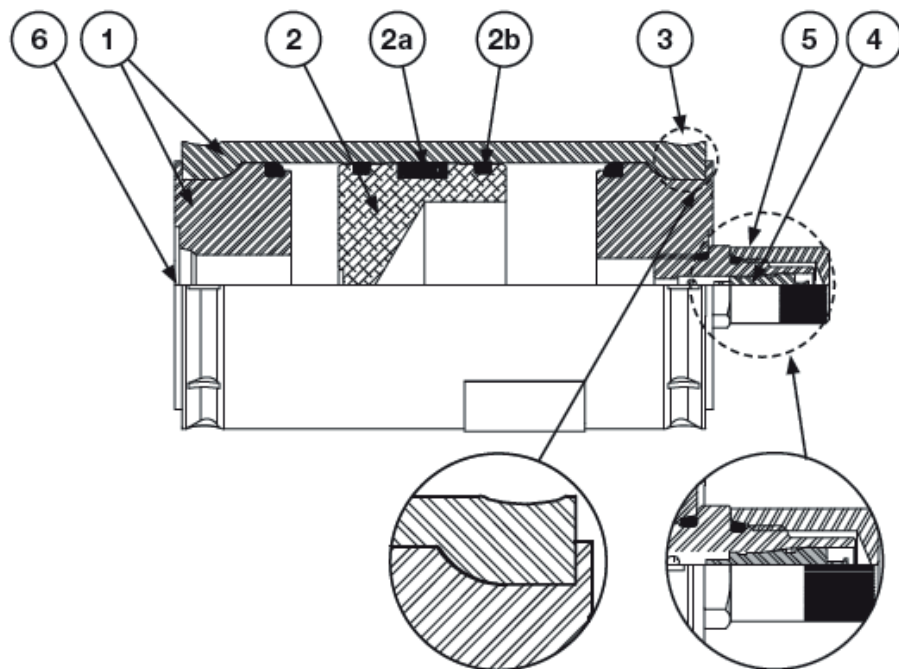
ENGINEERING YOUR SUCCESS.

**Introduction and Benefits**

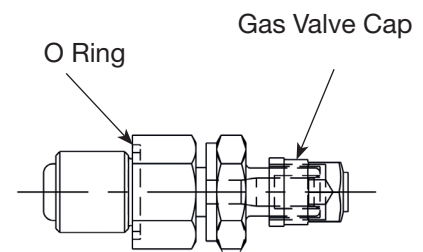
# Benefits

**Key Advantages of an ACP Series Piston Accumulator:**

- High-strength crimped construction provides long, reliable service life
- Small piston seal area minimizes the permeability problems associated with diaphragm accumulators
- Maintenance-free, sealed-for-life design
- Versatile – wide range of lengths and bore sizes allows installation to be adapted to available space
- Rechargeable and ‘tamperproof’ versions – available with gas valve for customer charging, or valveless
- Manufactured to EU Pressure Equipment Directive 97/23/EC – can be used in any European Union or EEA country without additional certification
- Custom sizes available for unique applications
- Piston design prevents sudden accumulator failure and is customized to fit the application



**Optional Heavy Duty Valve**



**ACP Piston Components**

- 1 High strength, compact shell and cap material** allows heat to dissipate effectively and is micro-finished for extended seal life
- 2 Lightweight piston design** allows for fast response to reduce system shock in rapid cycling applications
- 2a Piston seal’s unique, five bladed V-O-ring** with back-up washers eliminates seal roll-over and ensures total separation of fluid and gas (40mm size incorporates a T-seal with energised PTFE piston ring).
- 2b PTFE glide rings** eliminate metal-to-metal contact between tube and piston reducing wear and extending service life.
- 3 Patented crimped design** provides high-strength coupling of caps to steel tube plus superior fatigue life versus welded type connections.
- 4 “Schrader” style gas valve** is standard on all ACP accumulators for ease of precharging. (Pre-charged accumulators are available featuring specially designed threaded plug and no gas valve option.)
- 5 Gas valve cap** protects valve and serves as secondary seal. Knurled cap design allows easy installation without tools.
- 6 Port types** are available in a wide range of female sizes in both SAE and BSPP styles.

# Applications

Ideal for mobile and construction equipment

**Fork lifts and cherry pickers**

- pressure spike damping

**Transportation vehicles**

- suspension and braking systems

**Construction and Mining**

- suspension and load stabilising systems, emergency back-up steering, braking and pilot circuits

**Turbine Engines**

- maintaining oil pressure for lubrication

**Machine Tools**

- energy saving

**Hydrostatic Drives**

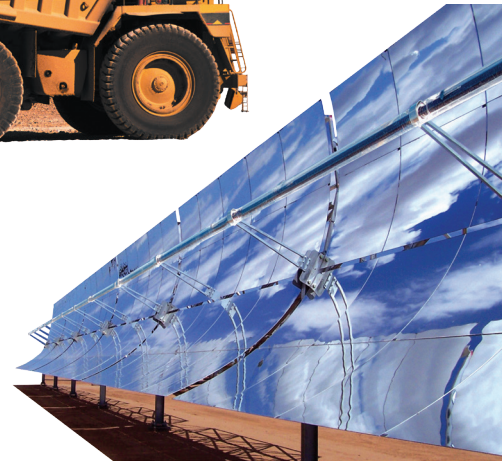
- shock absorption when changing direction

**Assembly Automation**

- reducing noise and smoothing pump pulsations

**Renewable Energy (Wind and Solar)**

- Braking systems for wind turbines



# Main Features

**Actual Bore Sizes & Maximum Flow Rates**

Bore Size	Actual Bore Size		Max. Recommended Flow Rate*
	in	mm	
mm			l/m
40	1.50	38.20	209
50	2.02	51.44	380
80	3.00	76.20	834
100	4.03	102.4	1504

\*Note: Based on 120 in/sec maximum piston speed, port & fitting size will become limiting factors for most applications.

**Bore Size, Pressures & Temperature Range**

Bore Size (mm)	Max. Working Pressure (bar)	Volume (Litres)		Material Working Temperature Range °C
		Min	Max	
40	260	0.02	0.75	-20°C to +150°C
50	275	0.08	2	-20°C to +150°C
80	275	0.25	8	Material to -40°C
100	275	0.7	12	available on request

**Materials**

- Shell - Carbon Steel
- Caps - Carbon Steel
- Pistons - Aluminium
- Gas Valve Body - Carbon Steel
- Gas Valve Cap - Carbon Steel
- Piston Glide Rings - PTFE
- Piston & End Seals - Various polymers
- Piston Seal Backups - PTFE

**Rechargeable or 'Tamperproof' Designs**

ACP Series accumulators are available in two versions. Rechargeable models allow the user to monitor and regulate the gas pre-charge to suit different operating conditions, and feature a Schrader-type gas valve cartridge to ISO 4570 8V1. Tamperproof, sealed-for-life versions of the ACP are pre-charged on assembly to customer specification and are completely maintenance-free.

**Features and Benefits**

**Lightweight Piston**

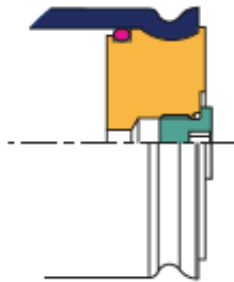
The ACP Series feature a dished, lightweight aluminium piston deep-walled for stability in the bore.

- High efficiency - fast response times
- Reduced system shock in rapid cycling applications
- Extra gas capacity

**Rugged Construction**

ACP Series accumulators feature high strength, compact, steel shell and caps, permanently joined and sealed by a revolutionary crimping process.

- Effective heat dissipation prevents fluid and seal degradation
- Superior fatigue life
- Micro-finished for extended seal life



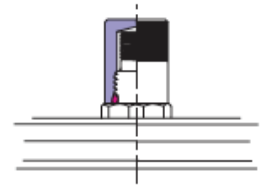
**Effective, Durable Sealing**

50mm bore models feature Parker's unique, patented five bladed V-O-ring piston seal. The 40mm model combines an elastomeric seal with a low friction PTFE piston ring. All models employ PTFE bearing rings to eliminate metal-to-metal contact between the tube and piston.

- Dependable, full pressure storage of hydraulic energy
- Effective separation of fluid and gas for long service intervals
- Reduced wear for extended service life
- Safe in operation - cannot suffer catastrophic failure

**Protective Steel Gas Cap**

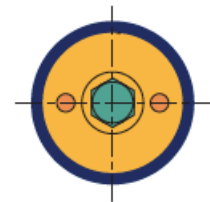
Models fitted with a gas valve are supplied with a protective steel cap. Tamperproof versions are fitted with a threaded plug which provides progressive release of pre-charge pressure prior to safe disposal.



- Steel cap reduces the risk of damage from external impact
- Security - cap provides a secondary seal

**Spanner Holes**

To permit easy installation on hydraulic manifolds, or in areas where mounting space is restricted, spanner holes are provided on all models.



**External Coasting**

- Standard Black Paint according to AES-20
- Optional Nickel-plating
- Other options available upon request

**Cleanliness & Flushing**

- Maximum ISO Code Cleanliness Acceptable
- ISO 4406 18/16/13
- Customised flushing is available upon request

**Approvals**

Approvals	ACP04*	ACP05	ACP08	ACP10
PED 2014/68/EU		•	•	•
CRN		•	•	•
AS 1210		•	•	•

\* ACP04 is manufactured in accordance with article 3.3 of PED

**Seals, Fluids and Temperature Ranges**

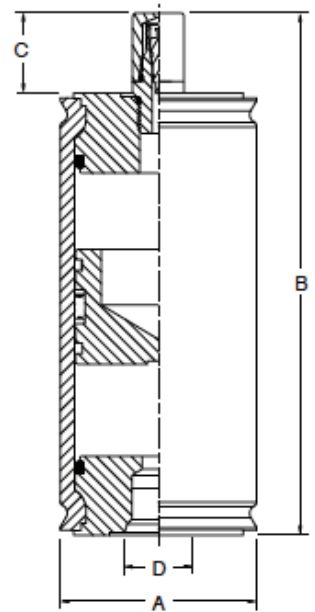
Code	ACP Seals	"Min Temp"	"Max Temp"	"Fluid Classification"	"Fluid Type"	Maximum Velocity (m/s)
K	"NBR (Nitrile)"	-29°C	74°C	"HFB-HFC HM-HV"	"Mineral Oils & Water Glycols"	4 m/s
H	"HNBR (Hydrogenated Nitrile)"	-32°C	150°C	"HFB-HFC HM-HV"	"Mineral Oils & Water Glycols"	4 m/s
E	"FPM (Fluorocarbon elastomer)"	-23°C	121°C	"HFB HM-HV"	"Synthetic Oils"	4 m/s
D	"EPDM (Ethylene Propylene)"	-40°C	121°C	HFD	"Ester Fluids"	4 m/s
Q	"LT-NBR (Low Temperature Nitrile)"	-45°C	71°C	HM-HV	"Mineral Oils"	4 m/s
X	"Low Friction T Seal Consult Parker ACDE"	-43°C	121°C	HM-HV	"Mineral Oils & Water Glycols"	4 m/s
S	"Special Consult Parker ACDE"			TBA	TBA	4 m/s

**Dimensions**

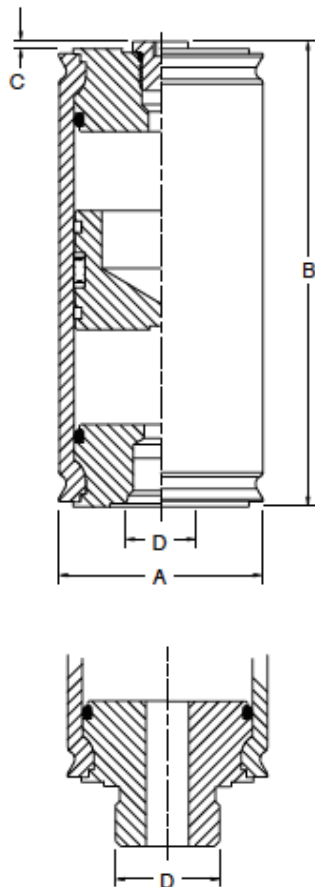
# Dimensions

**Dimensions - ACP with Gas Valve (Code A)**

Model	Code	Bore ø	Volume Litres	A	B	C	D (BSPP)		
							Female	Male	
ACP04EA	008	40	0.08	44.5	155	25.4	G 3/8	G 3/4	
	016		0.16						225
	032		0.32						365
	050		0.50						523
ACP05EA	016	50	0.16	60.5	177	25.4	G 3/4	G1	
	032		0.32						254
	050		0.50						341
	075		0.75						461
	100		0.95						558
ACP08EA	032	80	0.32	90.4	196.4	25.4	G 3/4	G1	
	100		0.95						334.7
	400		4.00						1004
	600		6.00						1443
	800		8.00						1883
ACP10EA	075	100	0.75	120.9	240.6	25.4	G1	G1	
	200		2.00						392.6
	600		6.00						878.8
	800		8.00						1122
	1200		12.00						1606



**Dimensions - ACP without Gas Valve (Code D)**



Model	Code	Bore ø	Volume Litres	A	B	C	D (BSPP)		
							Female	Male	
ACP04ED	008	40	0.08	44.5	132	2	G 3/8	G 3/4	
	016		0.16						202
	032		0.32						342
	050		0.50						500
ACP05ED	016	50	0.16	60.5	154	2	G 3/4	G1	
	032		0.32						231
	050		0.50						318
	075		0.75						438
	100		0.95						534
ACP08ED	032	80	0.32	90.4	171	2	G 3/4	G1	
	100		0.95						309.3
	400		4.00						978.7
	600		6.00						1418
	800		8.00						1857
ACP10ED	075	100	0.75	120.9	215.2	2	G1	G1	
	200		2.00						367.2
	600		6.00						853.4
	800		8.00						1096.6
	1200		12.00						1581

**Male Port - All models**

**Capacity**

**ACP04**

Code	Model	Volume (Litres)
002	04	0.02
008	04	0.08
016	04	0.16
050	04	0.5
075	04	0.75

**ACP05**

008	05	0.08
016	05	0.16
032	05	0.32
050	05	0.50
075	05	0.75
100	05	0.95
125	05	1.25
150	05	1.50
175	05	1.75
200	05	2.00

**ACP08**

Code	Model	Volume (Litres)
025	08	0.25
050	08	0.50
100	08	1.00
150	08	1.50
200	08	2.00
250	08	2.50
300	08	3.00
400	08	4.00
500	08	5.00
600	08	6.00
700	08	7.00
800	08	8.00

**ACP10**

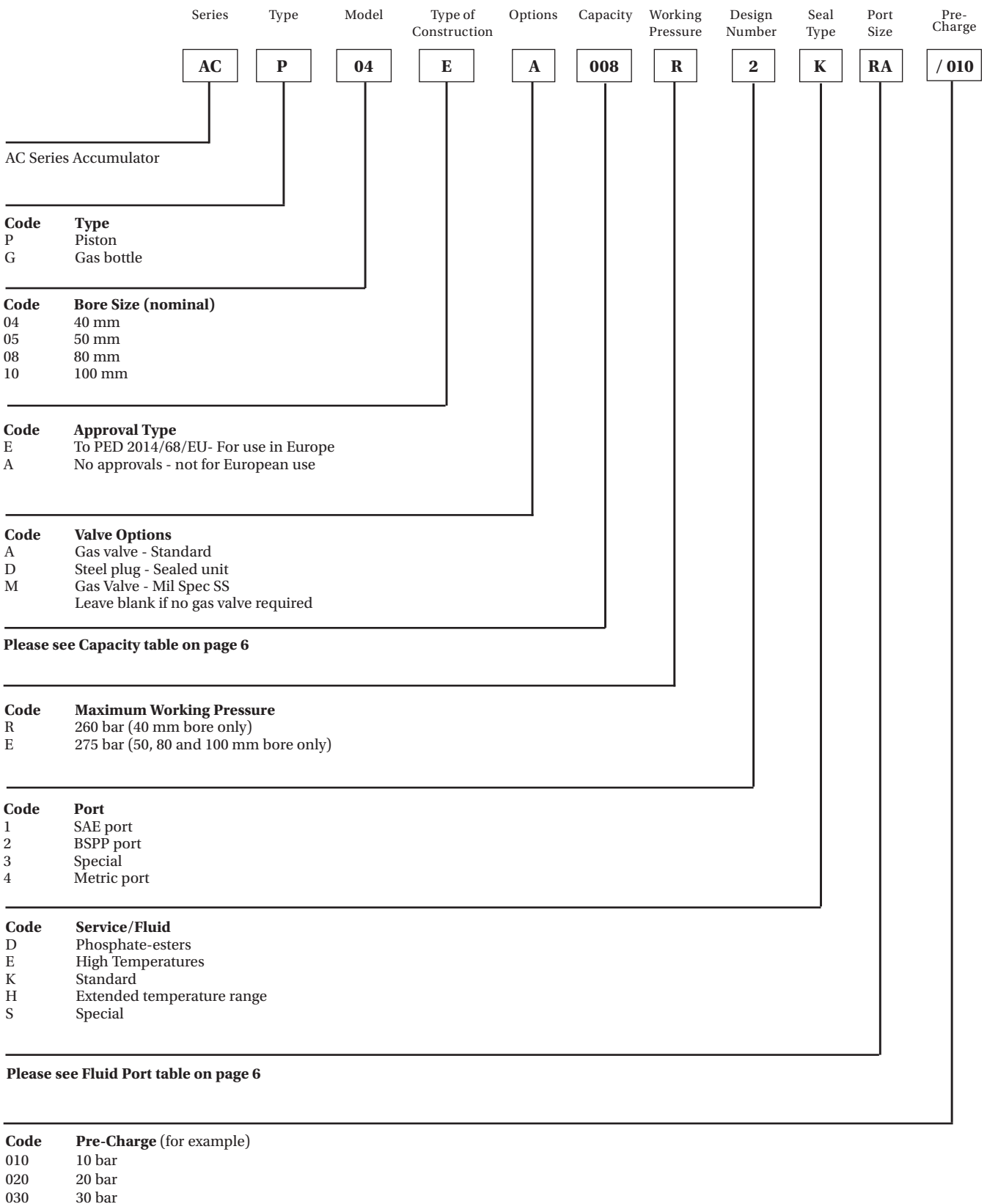
070	10	0.70
100	10	1.00
150	10	1.50
200	10	2.00
300	10	3.00
400	10	4.00
500	10	5.00
1000	10	10.00
1100	10	11.00
1200	10	12.00

**Fluid Ports**

Port Type	Code	ACP04	ACP05	ACP08	ACP10
SAE6 Female	TB	•	•	•	•
SAE8 Female	TC		•	•	•
SAE10 Female	TI		•	•	•
SAE12 Female	TD			•	•
SAE16 Female	TE			•	•
SAE12 Male	AD	•	•	•	•
SAE16 Male	AE		•	•	•
G1/4	RH	•	•	•	•
G3/8	RA	•	•	•	•
G1/2	RB	•	•	•	•
G3/4	RC		•	•	•
G 1	RD		•	•	•
G3/4 Male	LC			•	•
G 1 Male	LD			•	•
M14 x 1.5 Female	GA	•	•	•	•
M18 x 1.5 Female	GB	•	•	•	•
M22 x 1.5 Female	GC		•	•	•
M18 x 1.5 Male	HB	•	•	•	•
M22 x 1.5 Male	HC	•	•	•	•

**Ordering Code**

# How to order



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### US Product Information Centre

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