



ACP Series Piston Accumulators

*PED 97/23/EC accumulators for
working pressures up to 275 bar*

*Catalogue HY07-1246/UK
July 2002*



Introducing the new ACP Series

Parker's new ACP Series piston accumulators are tough, reliable units designed to withstand high compression ratios. Offering exceptional strength and fatigue resistance, the ACP range of premium quality accumulators combines a design proven in the most demanding mobile and industrial environments with an innovative manufacturing process. ACP Series piston accumulators are a cost-effective alternative to diaphragm and bladder accumulator designs.

Why use 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

Specification

Standard volumes	0.08 to 0.95 litres
Bore diameters	40mm and 50mm
Max. working pressure	260 bar – 40mm bore sizes 275 bar – 50mm bore sizes
Max. piston speed	4m/s
Working temp. range	shell: -20°C to +150°C seals: see table on page 3

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

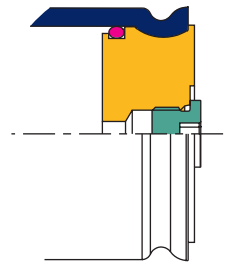
The ACP Series feature a dished, lightweight aluminium piston, deep-walled for stability in the bore.

- high efficiency – fast response times
- reduced system shock in rapid cycling applications
- extra gas capacity

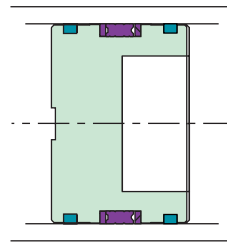
Rugged Construction

ACP Series accumulators feature a 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.

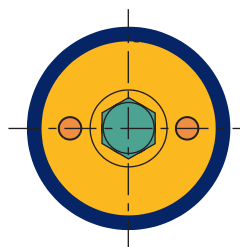
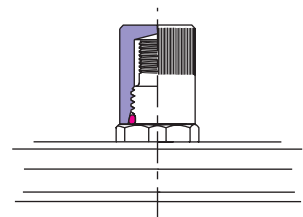
- dependable, full pressure storage of hydraulic energy
- effective separation of fluid and gas for long service intervals
- reduced wear for extended service life
- safe in operation – cannot suffer catastrophic failure

Unlike a bladder or diaphragm unit, the piston and seal design prevents sudden failure of the accumulator, making the ACP particularly suitable for applications such as steering and braking circuits where catastrophic failure could be dangerous.

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.

Application Data

Piston Accumulators

ACP Series

Applications

- Construction and mining equipment – suspension and load stabilising systems, emergency back-up for steering, braking and pilot circuits
- Hydrostatic drives – shock absorption when changing direction
- Assembly automation – reducing noise and smoothing pump pulsations
- Fork lifts and cherry pickers – pressure spike damping
- Transportation vehicles – suspension and braking systems
- Turbine engines – maintaining oil pressure for lubrication
- Machine tools – energy saving

Pressure Equipment Directive 97/23/EC

All ACP Series piston accumulators are manufactured in compliance with the European Pressure Equipment Directive 97/23/EC, recognized and accepted in all member states of the European Union and European Economic Area. Accumulators with a gas volume of less than 1 litre do not require CE marking or a Declaration of Conformity, but must be manufactured in accordance with sound engineering practice to ensure safety in use.

Mounting

The choice of lengths and bore sizes available in the ACP range makes these piston accumulators particularly suitable for applications where mounting space is critical. The same fluid capacity can be achieved from different configurations of bore and overall length, providing exceptional versatility for the designer.

'U' bolts are recommended for the secure attachment of larger ACP accumulators – please contact the factory for further information.

Seals, Fluids and Temperature Ranges

Seal Type	Code	Fluid Medium	Temperature Range
Nitrile (NBR)	K	General purpose, petroleum-based fluids	-30°C to +75°C
Fluorocarbon Elastomer (FPM)	E	High temperature and/or synthetic fluids	-25°C to +120°C
Ethylene Propylene (EPR)	D	Phosphate-esters	-40°C to +120°C
Hydrogenated Nitrile (HNBR)	H	Most oil-based and biodegradable fluids	-40°C to +160°C

Optional Ports

Hydraulic ports are available in a range of male and female sizes, in both BSPP, metric and SAE styles. Metric ports are offered to both the DIN 3852-1 and the ISO 6149-1 standards – see pages 4 and 5.

Maximum Flow Rates

Volume Litres	Max. Recommended Flow Litres per Minute
0.08 - 0.32	40
0.50 - 0.95	100

The flow rates shown are for standard port sizes. For higher flow ports, please contact the factory.

Parker's Accumulator Product Range

Parker offers an extensive range of accumulators and associated products for mobile and industrial applications. In addition to the accumulators listed in the table, the

range includes UCA charging and gauging kits (bulletin no. 1244-T) and ASB safety blocks (catalogue no. 1241).

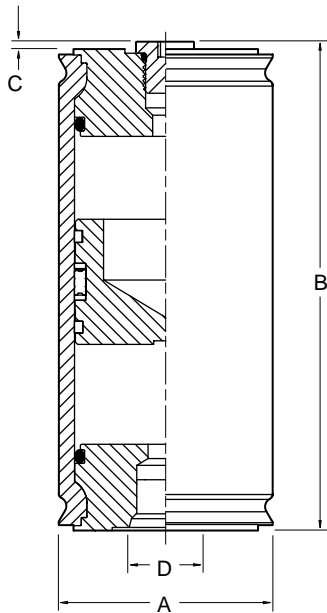
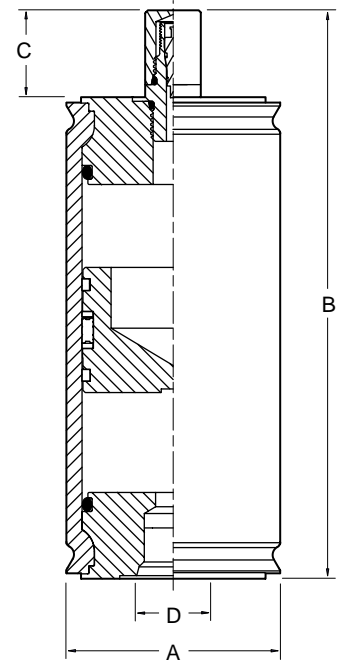
Series	Construction & Type	Standard Approval	Max. Working Pressure	Fluid Capacity litres	Bore Dia.	Max. Piston Speed	Mounting Interface	Catalogue
ACP	Crimped, piston	CE	275*	0.08-0.95	40-50mm	4m/s	Metric	1246/UK
A	Threaded, piston	CE	350	0.1-38	50-150mm 2-6 in.	4m/s	Metric & Inch	1245/UK
AP	Threaded, piston	CE	350	6-300	180-360mm	8m/s	Metric	1240/UK
ABE	Bladder	CE	350	1-48.5	–	–	Metric	1235/UK

* 260 bar for 40mm bore models

Dimensions

Dimensions – ACP with Gas Valve (Code A)

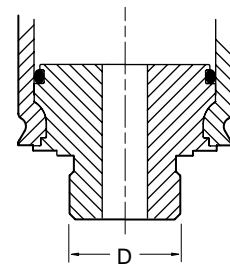
Model	Code	Bore Ø	Volume Litres	A	B	C	D (BSPP)	
							Female	Male
ACP04EA	008	38	0.08	44.5	155	25.4	G3/8	G3/4
	016		0.16		225			
	032		0.32		365			
	050		0.50		523			
ACP05EA	016	51	0.16	60.5	177	25.4	G3/4	G1
	032		0.32		254			
	050		0.50		341			
	075		0.75		461			
	100		0.95		558			



Dimensions – ACP without Gas Valve (Code D)

Model	Code	Bore Ø	Volume Litres	A	B	C	D (BSPP)	
							Female	Male
ACP04ED	008	38	0.08	44.5	132	2	G3/8	G3/4
	016		0.16		202			
	032		0.32		342			
	050		0.50		500			
ACP05ED	016	51	0.16	60.5	154	2	G3/4	G1
	032		0.32		231			
	050		0.50		318			
	075		0.75		438			
	100		0.95		534			

Male Port – all models



Port Availability

Model	Female BSPP			Male BSPP		Female Metric *			Male Metric *		Female SAE			Male SAE	
	3/8	1/2	3/4	3/4	1	M14x1.5	M18x1.5	M22x1.5	M18x1.5	M22x1.5	6	8	10	12	16
ACP04	●	○		●		○	●		○	●	●			●	
ACP05	○	○	●	○	●	○	○	●	○	●	○	●	○	○	●

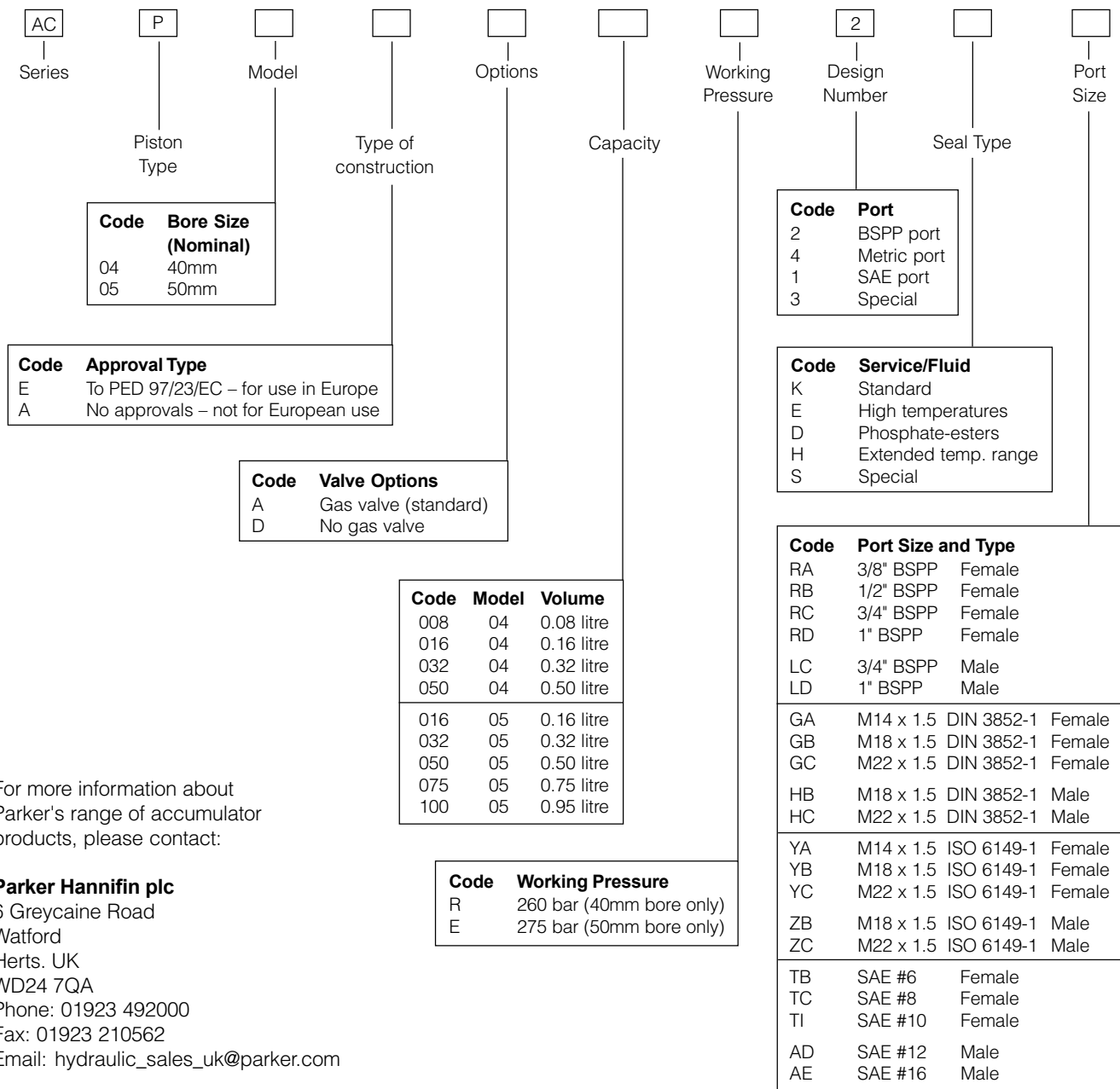
● standard
○ optional

* Metric ports are available to DIN 3852-1 or ISO 6149-1

All dimensions are in millimetres unless otherwise specified.

Ordering Code

**Piston Accumulators
ACP Series**



For more information about Parker's range of accumulator products, please contact:

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WARNING

Failure or improper selection or use of the product and/or systems described herein can cause death, personal injury and property damage.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that all aspects of the application are analysed and the information concerning the product or system in the current product catalogue is reviewed. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

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The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or authorized distributors. This offer and its acceptance are governed by the provisions stated in the full 'Offer of Sale'.

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