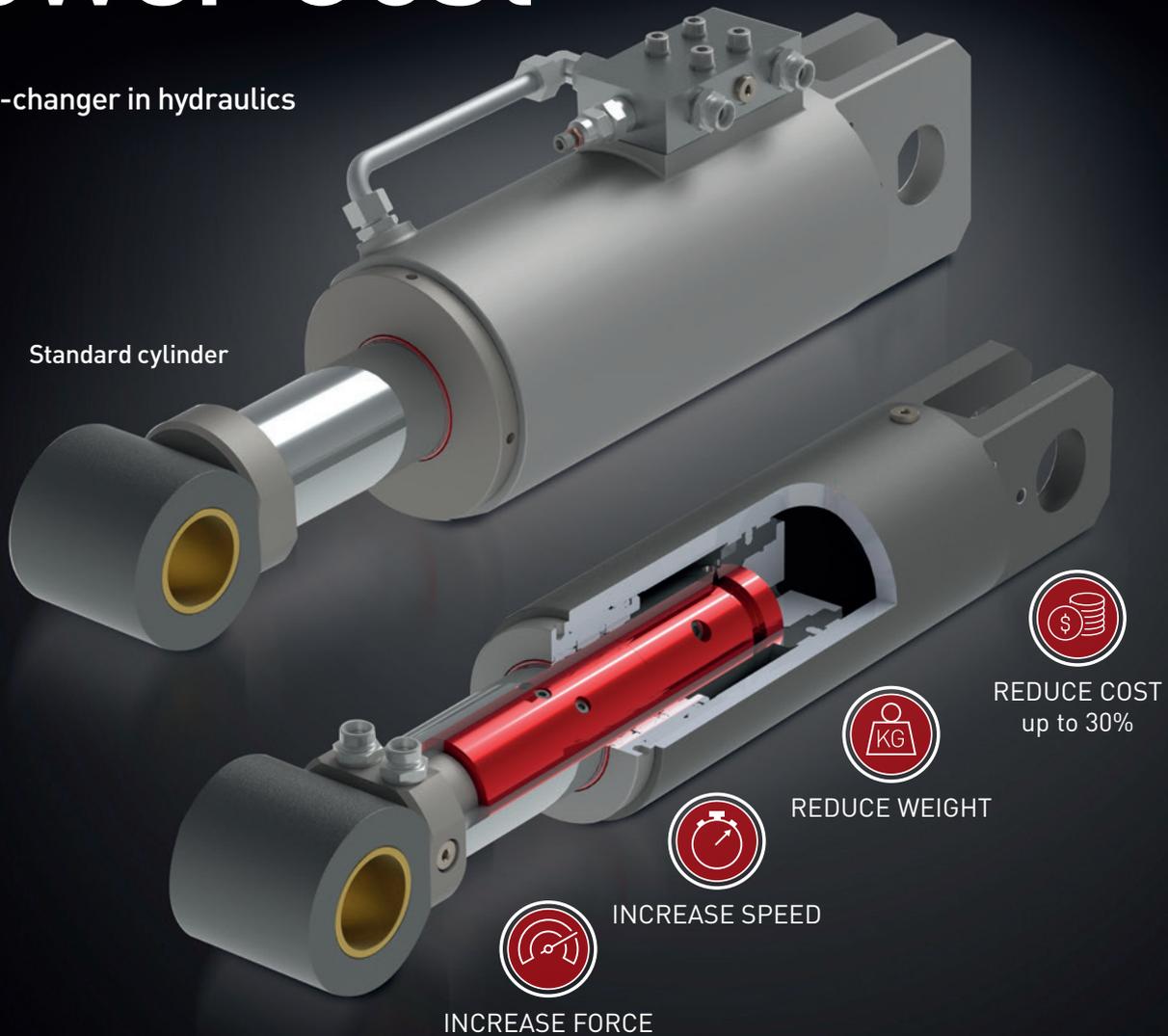


Higher Productivity at Lower Cost

A game-changer in hydraulics



PistonPower can be integrated in any new cylinder

Patents pending

PISTON POWER

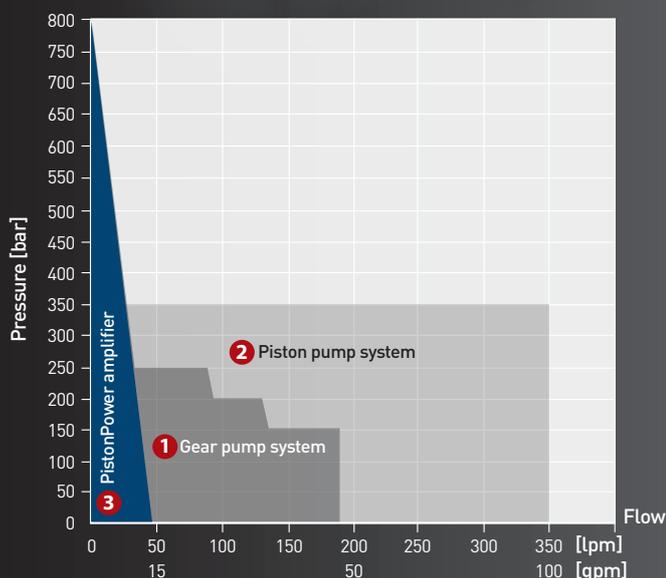
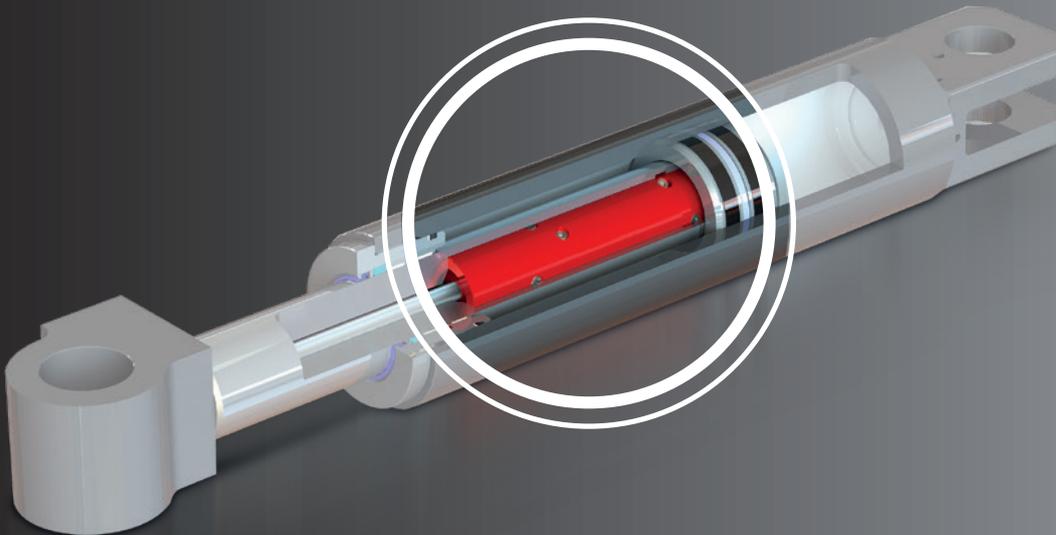
www.pistonpower.dk

A **game-changer** in hydraulics

Solve your demanding requirements in off-highway applications by using the cylinder integrated, automatic activated **High Pressure Amplifier** by PistonPower.

High pressure performance on machine key functions

- Automatically activated high pressure inside the cylinder
- Install & Go – no machine changes required
- Smooth transition during high pressure activation
- Cartridge with complete hydraulic system: counter balance and relief valves
- Eliminating leakage points



ForceShift™ technology

The high pressure on machine key functions is automatic and smoothly activated only when required, at high workload. High flow from system pump available at normal work load.

Technology comparison:

- 1** Gear pump flow at normal workload
- 2** Piston pump flow at normal workload
- 3** PistonPower high pressure at high workload.

Reduce cylinder cost

Maintain force and stroke

PistonPower cartridge amplifiers enable up to 30% reduction of cylinder size without impacting force and stroke.

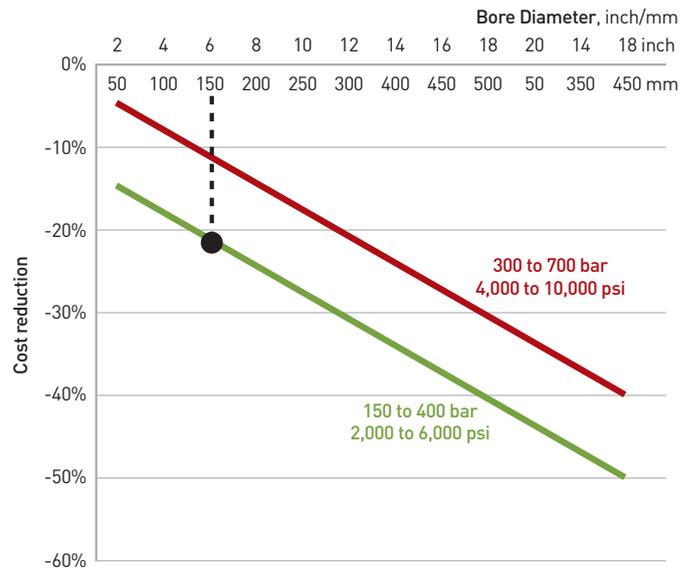
Cost reduction

Green line: Increase pressure from 150 to 400 bar.

Red line: Increase pressure from 300 to 700 bar.

- At same force high pressure equals cost reduction
- Decreasing cylinder diameter will reduce cost
- Larger cylinders will have higher cost reduction opportunity

Examples of cylinder cost reduction



Example:

A standard cylinder with a 150 mm / 6" bore diameter can be reduced in size by increasing pressure. Reduced size will enable cost saving.



Cylinder with PistonPower with same force and reduced diameter

The standard cylinder is with a bore diameter of 150 mm / 6" working up to 200 bar / 3000 psi and with external mounted loadholding HIC valve block.

The PistonPower cylinder is a new standard cylinder working up to 500 bar / 7,500 psi with a bore diameter of 95 mm / 4". The PistonPower cartridge amplifier is integrated and has the same force as the larger cylinder on the left. Load holding is integrated in the PistonPower cartridge amplifier.

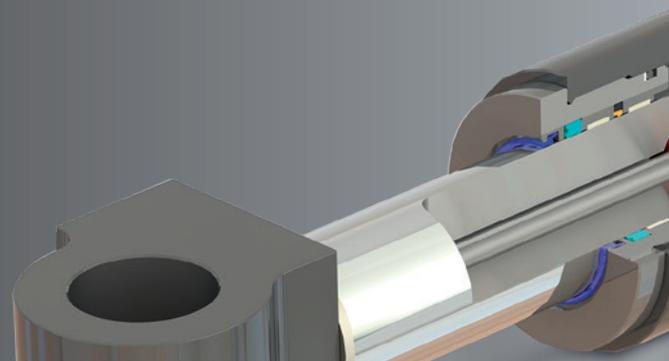
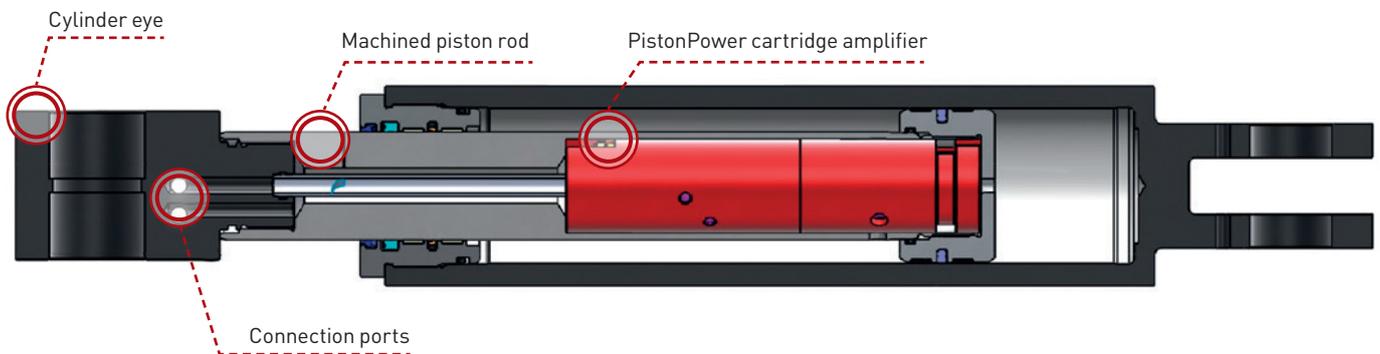
Easy integration in cylinder

- The cartridge integration in the cylinder is simple, fast and safe
- High pressure sealing is embedded in the PistonPower cartridge
- No external hydraulic connections required

Cylinder manufacturers can easily integrate the PistonPower cartridge amplifier

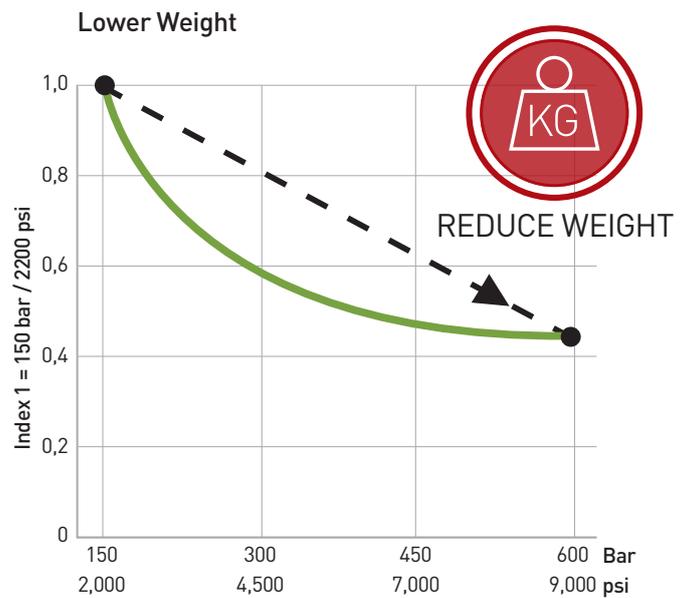
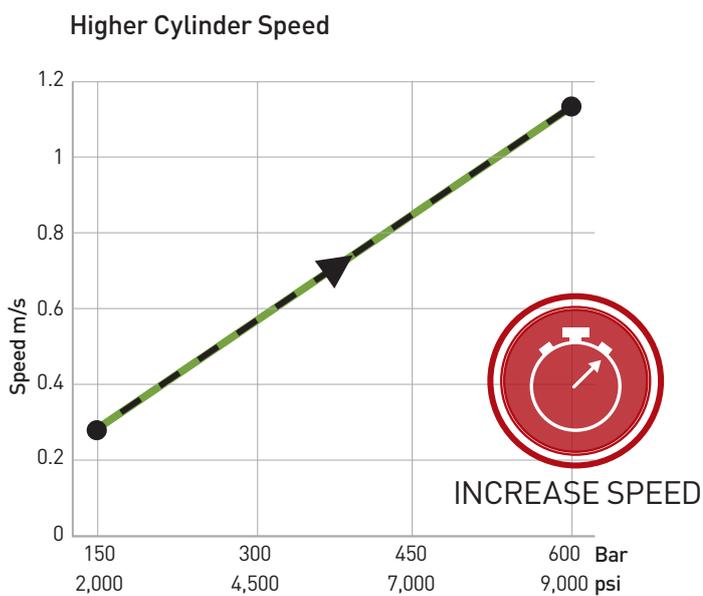
- The hydraulic system is integrated in the cartridge. No hydraulic system know-how is required during installation
- Optional valve adjustment can be done prior to cylinder assembly
- Only a simple machined channel in the piston rod is required
- PistonPower is designed for cylinder lifetime – only serviced along with the sealing
- High pressure is kept inside the cylinder. No high pressure hoses or connections required

Installation guide



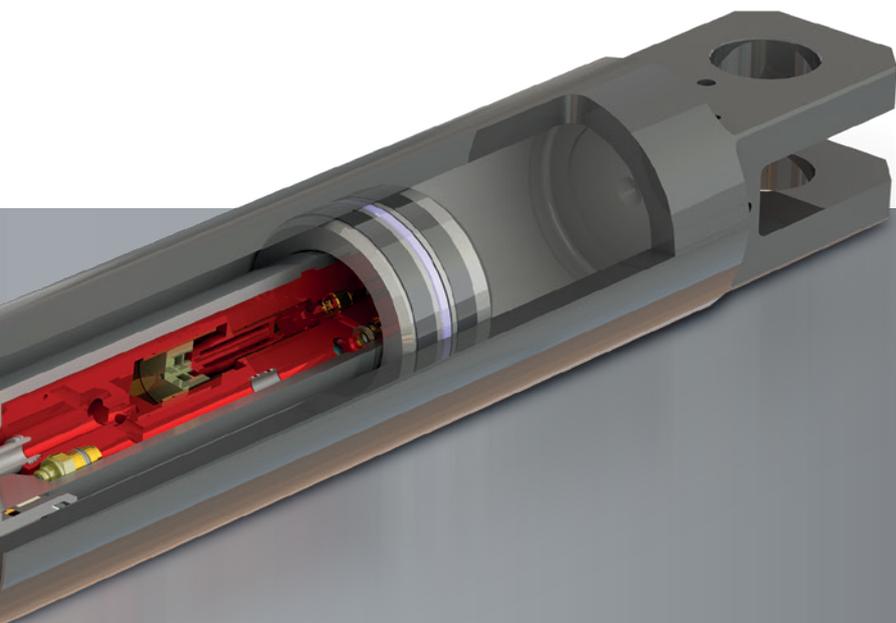
Reduce **weight** and Increase **speed**

At same force, a new cylinder with PistonPower integrated will increase speed, reduce weight and reduce cylinder cost.



Higher pressure in a cylinder with same force:

- will make the cylinder up to 3 times faster
- the weight will be reduced up to 50%
- the result is a cost reduction up to 30%

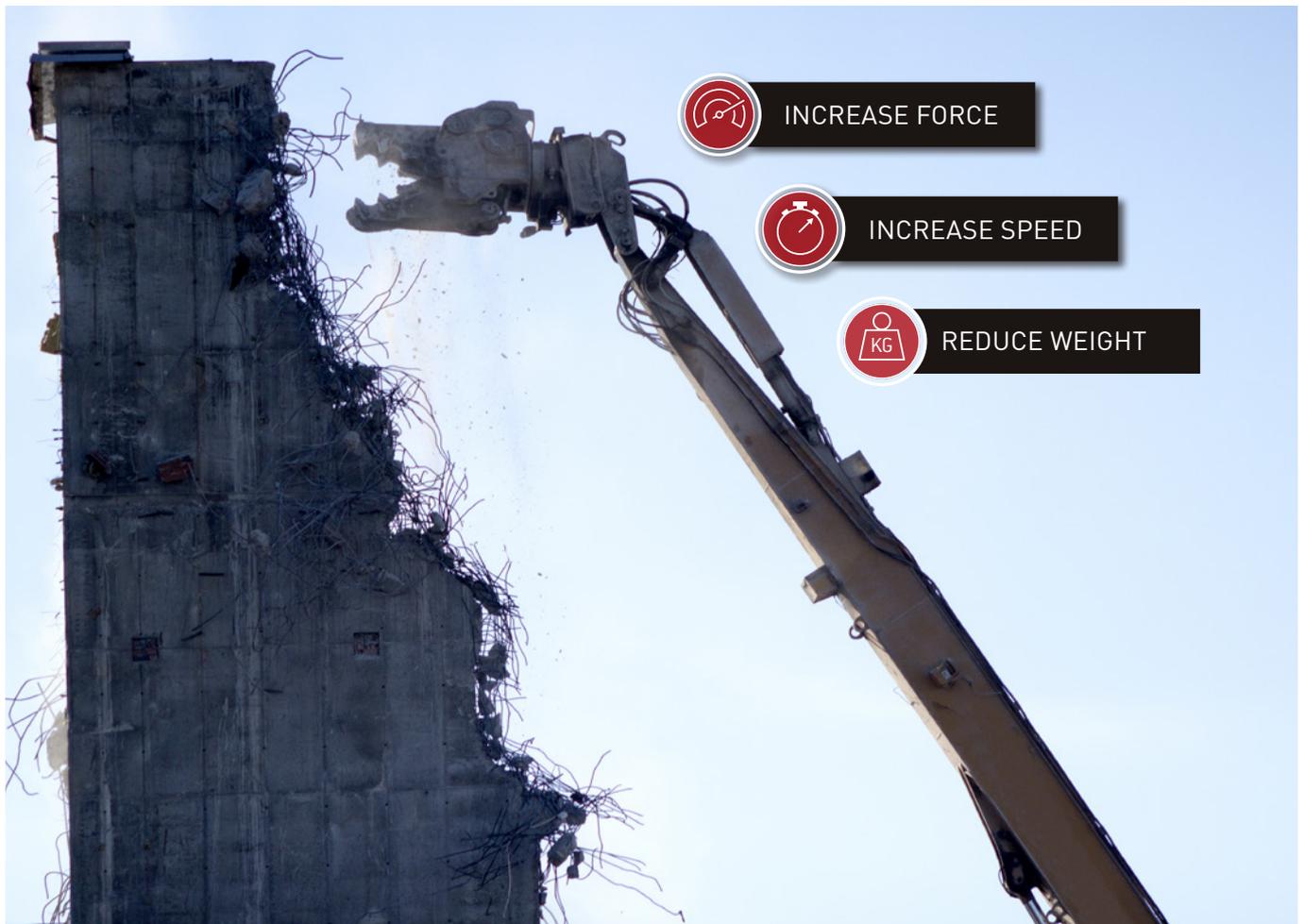


The innovative high pressure **technology**

High pressure systems are a thing of the past – no more extensive engineering, high pressure components, or complex rules and regulations. PistonPower is moving the industry forward, integrating high pressure inside the cylinder and eliminating the need for high pressure installations.

What's new

- Cartridge with complete hydraulic system inside a cylinder
- High pressure remains inside the cylinder
- Smooth, automated activation of a cylinder
- Opportunity to save cost on the complete hydraulic system.



Features and benefits of PistonPower

Features

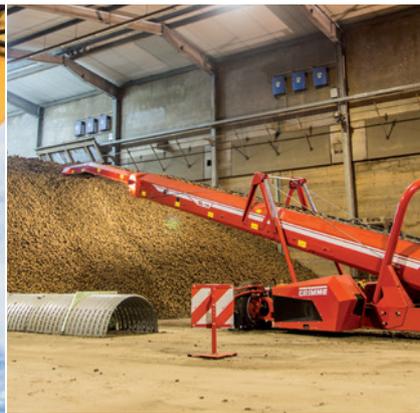
1. Demolition hammer effect "D"-line models
2. Integrated counterbalance "G"-line models
3. Adjustable sequence valve
4. High pressure relief valve
5. Flexible hydraulic design

Benefits

- ➔ 1. Fast and efficient for demolition
- ➔ 2. Precise and controllable on cranes
- ➔ 3. High pressure – only when required
- ➔ 4. Safe operation
- ➔ 5. Customized and application specific



D-line products for construction and demolition machinery



G-line products for soft controlled load lifting in any machine



Product Portfolio

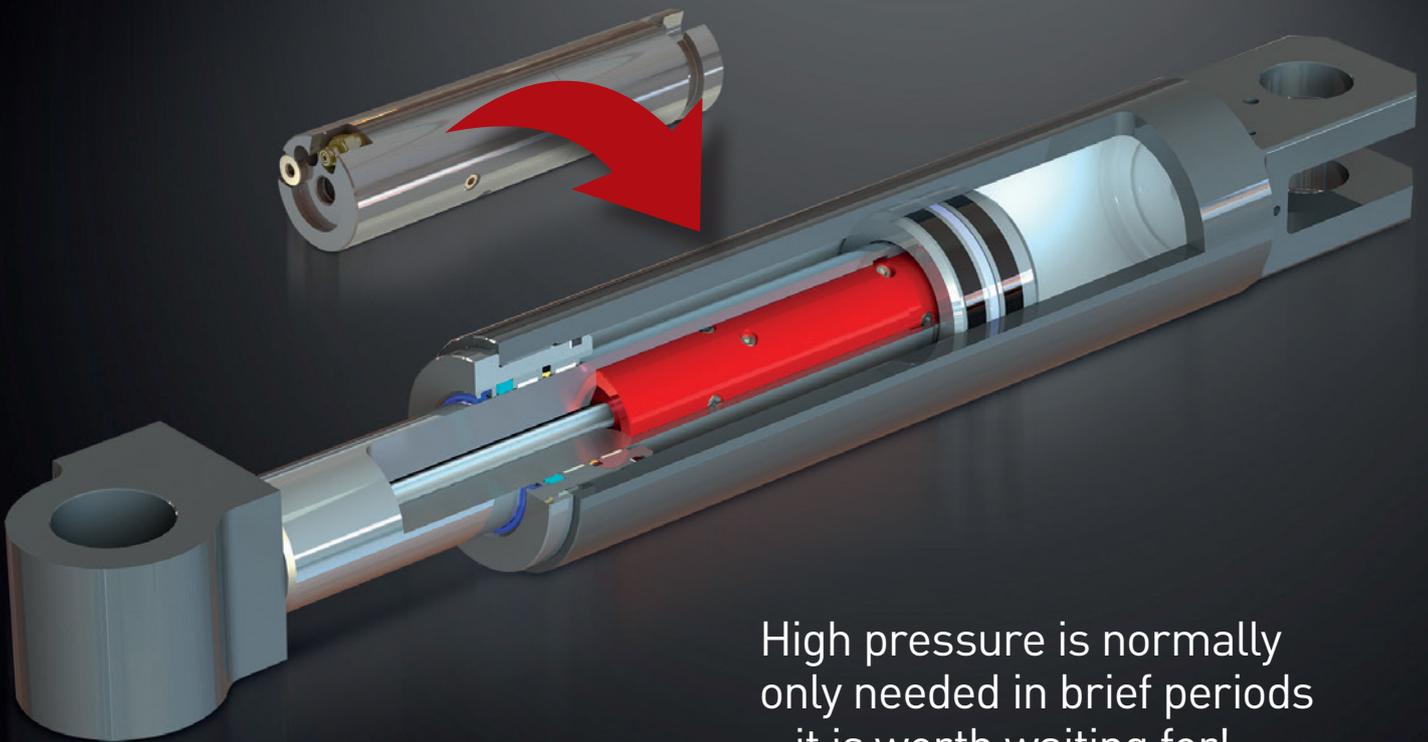
Product name	Integrated Features				Inlet pressure		Inlet & by-pass flow		Amplified pressure		Dimension Ø/L	
	Automatic activation	Demolition hammer	Relief valve	Load holding valve	Bar up to	PSI up to	LPM	GPM	Bar up to	PSI up to	mm	Inches
 D-Line for Demolition and Construction												
CA050-D	✓	✓		✓	350	5000	50	13	750	10,800	54.6/305	2, 15/12
CA100-D	✓	✓		✓	350	5000	100	25	800	11,600	69.6/305	2, 74/12
CA300-D	✓	✓		✓	350	5000	300	80	850	12,300	99.6/520	3, 92/20, 50
 G-Line for All Purpose Machinery												
CA050-G	✓		✓	✓	350	5000	50	13	750	10,800	54.6/305	2, 15/12
CA100-G	✓		✓	✓	350	5000	100	25	800	11,600	69.6/305	2, 74/12
CA300-G	✓		✓	✓	350	5000	300	80	850	12,300	99.6/520	3, 92/20, 50

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Inspired by the importance of a gearbox in a car, I got the idea of introducing automatic "gearshift" in standard hydraulic cylinders.

PistonPower is bringing my idea to market.

Jørgen M. Clausen, Entrepreneur & Innovator



High pressure is normally
only needed in brief periods
– it is worth waiting for!

PistonPower is an innovative technology company.
We integrate high pressure solutions in hydraulic cylinders.

Contact:
sales@pistonpower.dk / press@pistonpower.dk / www.pistonpower.dk

PISTON POWER

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