

Cartridge Amplifier CA300-D

Product Features

- **Cylinder integrated pressure amplifier up to 700 bar**
- **Hammer effect for demolition, CA-D**
- **By-pass flow up to 300 l/min**
- **Automatic activation with adjustable Sequence Valve**
- **Integrated Pilot Operated Check Valve**
- **Long life, compact and robust cartridge design**

Function

A high pressure hydraulic cylinder with a PistonPower integrated cartridge amplifier is an active part of the hydraulic system and the complete machine operation. The high pressure cylinder is used when a particular section of a hydraulic system has to be pressurized to a substantially higher pressure and the available primary pump pressure is maintained at a low pressure level.

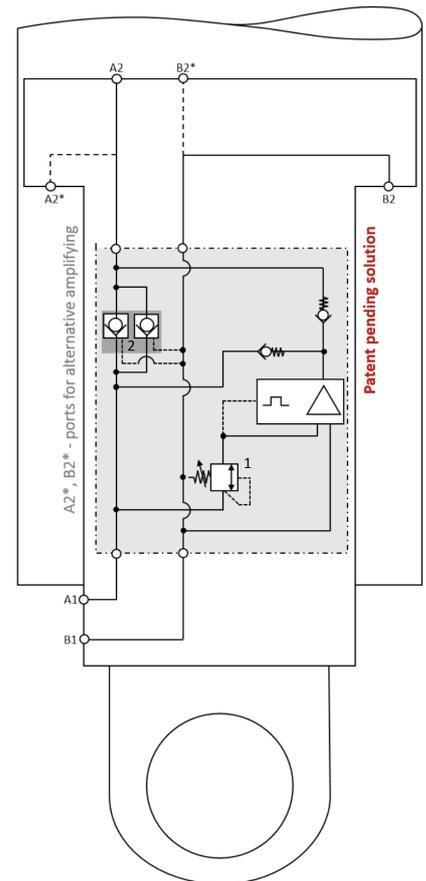
CA300-D enables single acting pressure amplification in the case of flow in the direction A1 to A2 (bypass). The flow direction A2 to A1 does not amplify and the flow passes through the open pilot operated check valve 2. Flow and pressure in direction B1 to B2 and B2 to B1 are not influenced by the amplification. If the hydraulic cylinder is extended with flow from A1 to A2 the cartridge amplifier operates in two modes.

Mode 1 – By-pass

If the pressure at the inlet A1 is lower than the pressure set up on the sequence valve 1, the amplification function is deactivated and the flow passes through the integrated pilot operated check valve 2. The full pump flow is available for extending the cylinder. The CA300-D is inactive and does not affect the system itself.

Mode 2 - Amplification

If the pressure at the inlet A1 exceeds the pressure set up on the sequence valve 1, the amplifier is automatically activated. The by-pass function is deactivated until the reach A2 the pressure level in A1. At this point, the system inlet pump pressure is amplified up to factor of amplification and the amplified flow is reduced relative to the amplification factor. The automatic activation of the amplifier is pre-set on the sequence valve 1 before cylinder integration.



Specifications of CA300-D

Product Specifications

- All integrated valves and components are designed for high pressure
- The lifetime tested for the use up to 10^7 amplification cycles
- Pilot Operated Check Valve w/o relief function
- Adjustable spring activated sequence valve
- Sequence valve with 100-350 bar range, one turn is 60 bar
- All seals are radial designed leakage free
- High strength steel housing and parts

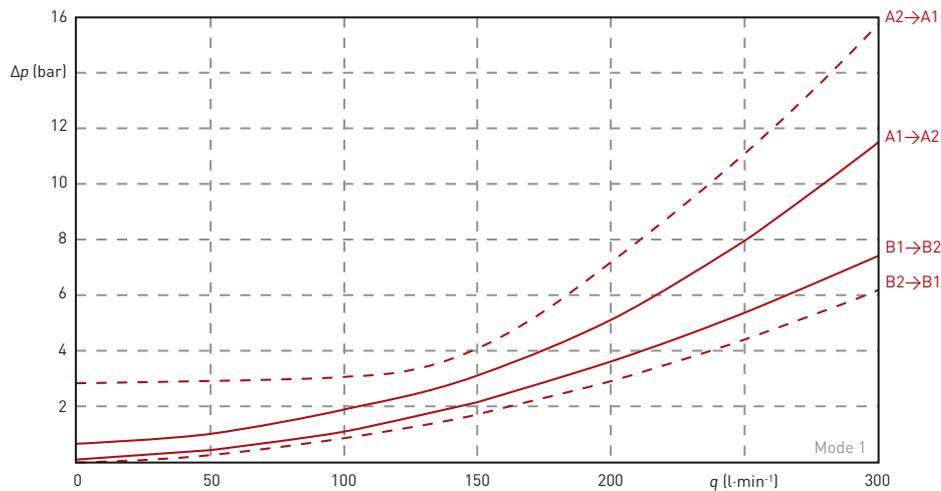
Filtration

To ensure optimal operation and long lifetime the CA-D system benefits from filtration. On attachment tools with frequent change and exposure to contamination, we recommend to use an inlet filtration, in addition to the machinery return filtration system. PistonPower requires that the contamination class of 20/18/15 according to ISO 4406 is not exceeded.

Fluid/Seal

- max. working temperature 90 °C (194 °F)
- hydraulic and transmission working fluids according DIN51524, part 2 and part 3 compatible with Viton internal seals (other media on request)

Pressure drop characteristic



Note: For applications or operating conditions not described, please contact PistonPower for further information.

CA300-D	Port			Dimensions	
	A1	A2	B1/B2	L	Ø
Pressure limitations <small>(Note: Contact us for higher pressure)</small>	290 / 350 bar (~4200 / 5000 psi)	700 bar (~10 000 psi)	350 bar (~5000 psi)	520 mm (20,472 in)	99.6 mm (3,921 in)
Amplification ratio	2.4 / 2.0				
Full Inlet Flow	300 l/min (~80 gpm)				

The data in this datasheet is provided for the purpose of describing the product and its features only. Because the products are subject to continual improvement, we reserve the right to amend the product specifications contained in this data sheet.

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PISTON POWER