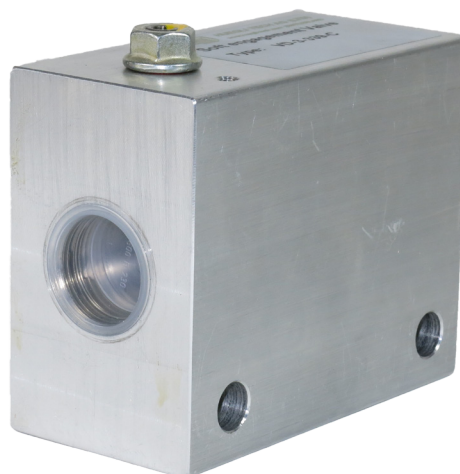


Soft Engagement Valve

VD-3-339-C

Features and Benefits

- Setting possible for all starter sizes
- Easy instalation
- Low maintenance
- Corrosia resistance

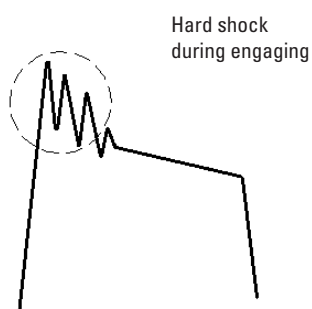


Hydraulic Starting Soft Engagement Valve

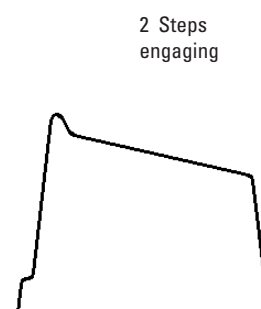
Soft starting of Engines.

The soft engagement valve prevents hard engaging of the pinion and abruprt break away of engine. Thuss all mechanical parts of the engine are treated with care what will increase it's lifetime very much.

With VD-Ventil



Without VD-Ventil



Soft Engagement Valve

VD-3-339-C

Technische Spezifikationen

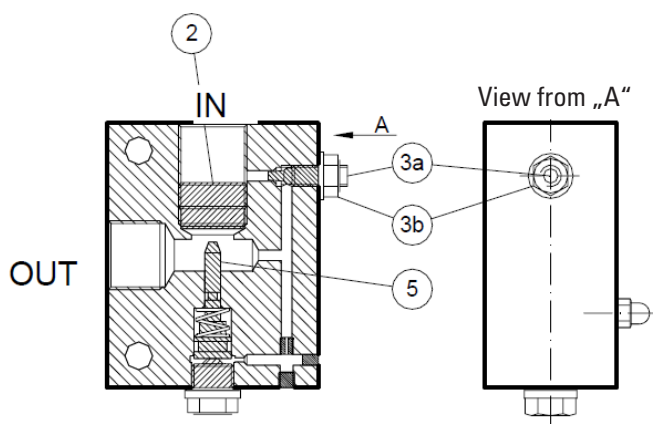
Functional principle

When the starter control valve is opened, oil under high pressure flows from the accumulator to the VD 3-339-C soft engagement valve. Its internal valve (2) remains yet closed. But a small amount of pilot oil flows passed the throttle screw (3) in the starter, which begins to rotate, causing the pinion to smoothly engage into the ring gear. As the increasing oil pressure begins to crank the engine, it will lift the piston (5) and thus open the check valve (2) to allow full flow into the starter, which then turns the engine to firing speed. This entire starting cycle eliminates shockwaves in the hydraulic circuit, reduces mechanical wear to a minimum, but provides high engine starting speed for reliable starting at any temperature.

Adjustment

For optimal starting cycle performance, the different starter sizes require different amounts of initial pilot oil. The correct amount can be adjusted at the throttle screw (3a). Whenever the starter size is not specified in the order, the throttle screw (3a) will be factory set for the CMA starter size, based on hydraulic fluid with a viscosity of 25,3 centistoke at 20°C and 1,8 centistoke at 50°C. Thicker oils may need slightly different settings.

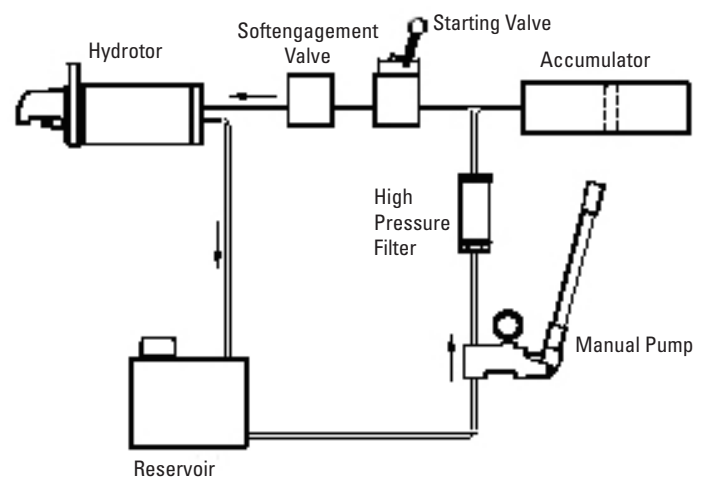
Starter Size	Outwards turns (CCW) of adjustment screw 3a
CMO	0.5
CMA	0.75
CMD-2 / HCD-2	2
CMD-3 / HCD-3	2
CME	3.0



Setting Procedure

- Determine which starter size is used
- Engage a 4 mm allen key into the throttle screw (3a) and hold in position.
- Loosen the counter nut (3b) with a 13 mm spanner one full turn CCW, and hold.
- Slowly turn the throttle screw (3a) clockwise, until it is bottoming. Then turn the throttle screw (3a) as many turns CCW as indicated in the table corresponding to the starter size used. Hold it precisely in this position and tighten the counter nut (3b). **14-15Nm**
- Some sealer paint may be applied to the counter nut and throttle screw.

VD-3-339C Installation



Lay out of a typical starting system with recharging by hand pump only.

The soft engagement valve is fitted between the control valve and the inlet of the hydraulic starter.

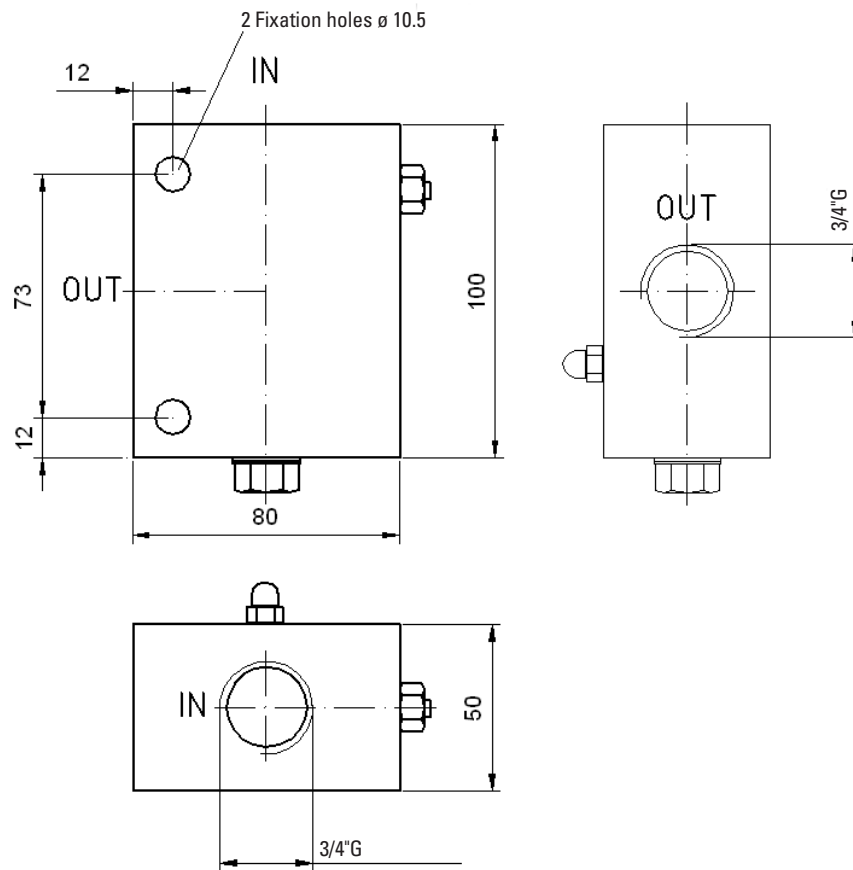
Specifications

Max. operating pressure:..... 220 bar (3050 PSI)
 Max. flowrate:200 l/min.(52 GPM)
 Setting:..... see table page 1
 Material: Valve body: Aluminum
 Weight:.....1.1kg

Soft Engagement Valve

VD-3-339-C

Dimensions (in mm):



Local Distributor / Partner: