Overview

The HYDAC range of direct and pilot operated check valves provide a broad selection of cartridge and inline products with operating pressure rating of up to 6000 psi (420 bar). All valves have a one piece body design and hardened balls or poppets. This provides an excellent product with reliable seating, 2 drops/minute maximum internal leakage, dirt-tolerance and long life.

Check Valves offer optional bias springs and flow capacity up to 44 gpm (165 l/min). Check valve cartridges fit into Industry standard cavities. A wide selection of cracking pressures are available from 5 to 70 psi (0.35 – 5 bar). Thus they could be used not only as a conventional check but also as a low pressure relief valves.

Pilot Operated Check Valves are available for flows up to 40 gpm (150 l/min) and pilot ratios 3:1 and 4:1. These valves positively lock a load from port 1 to port 2 until pilot pressure applied to port 3 is sufficient to unseat the valve. This flow path provides for higher flow rating in a given cavity, excellent stability and repeatability. They also fit into the same cavity as HYDAC counterbalance valves. These valves provide a low cost alternative to load control when the dynamics of neither overrunning loads nor load release speed are factors to be considered in the design of the hydraulic circuit. They are used for:

- Position load locking.
- As an alternative to counterbalance valves where neither the overrunning loads or release speed are factors in the application.

Single Pilot-to-Open Check Valves and Dual Pilot-to Open Check Valves are inline housed, pilot operated, hydraulic check valves for use as a blocking or load holding device for flow rates up to 20 gpm (80 l/min) and 6000 psi (420 bar). They feature:

- Hardened closing element in a check valve to ensure extended service life and 2 drops/min maximum internal leakage
- Multiple bias spring options for back pressure application flexibility
- Optional sealed pilot piston
- Check section serviceable as a cartridge
- All zinc-plated external cartridge surfaces
- Aluminum or steel inline housings

Counterbalance Valve RS08-01 is a compact cartridge design with operating pressure up to 5000 psi (350 bar) and flow rate up to 10 gpm (38 l/min). These valves are used for

- Precise control of overrunning loads
- Positive load holding in any position
- Protection from pump cavitation
- Thermal expansion relief protection
- Preventing actuators from running ahead of the pump supply

Counterbalance Valves have:

- A built in check valve feature allowing free flow in one direction
- A relief feature controlling flow in the other direction
- A pilot signal that overrides the relief setting providing the counterbalance function

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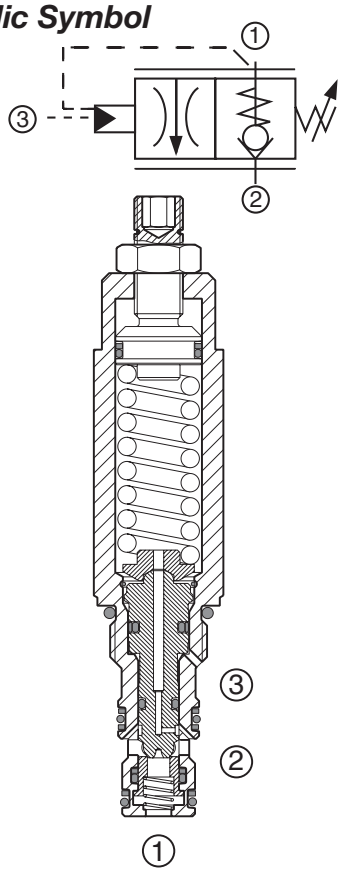
RS08-01
Counterbalance Valve
Up to10 gpm (38 l/min) • 5000 psi (350 bar)

Hydraulic Symbol



Description

A screw-in cartridge, 3-port, externally piloted counterbalance valve for precise control of overrunning loads, with load holding capabilities, thermal relief protection and free reverse flow check features.

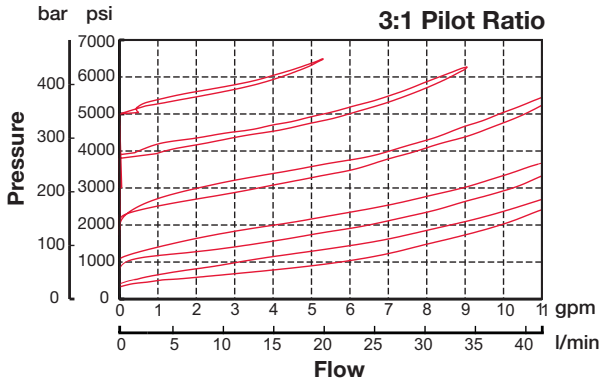
Operation

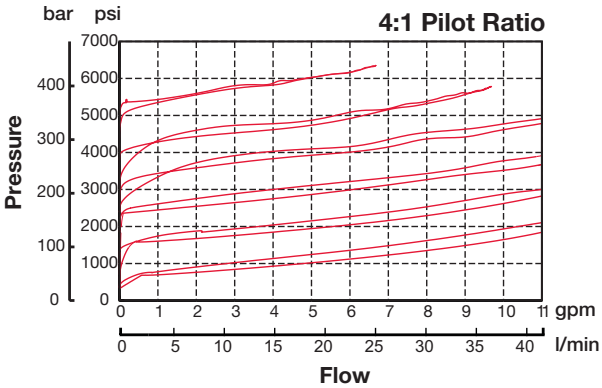
The RS08 allows free flow from port 2 (inlet) to port 1 (load). Flow from port 1 to port 2 is blocked until either the pressure setting has been reached or sufficient pilot pressure has been applied to port 3 (pilot). The RS08 has optional 3:1 and 4:1 pilot ratios. It will open when pilot pressure = 1/3 (or 1/4) of the difference between the set pressure and the load pressure.

Features

- Excellent stability through entire flow range
- Adjustable across specified pressure range
- Positive stop prevents spring from over adjustment (options V, H)
- Stroke limiting device for enhanced safety
- Internal seals to minimize leakage
- Same cavity as the RP08A-01 P.O. Check valve.
- Hardened poppet and seat to ensure extended service life and low leakage
- All external surfaces zinc-plated
- Industry common cavity

Performance





Specifications

Operating Pressure	5000 psi (350 bar)
Nominal Flow	10 gpm (38 l/min)
Internal Leakage	5 drops/min. (0.25 cc/min) max. to 80% of nominal settings
Pilot Ratios	3:1, 4:1
Check Valve Cracking Pressure	14 psi (1.0 bar)
Fluid Operating Temp. Range	-4° to 248°F (-20° to +120°C) *(Consult factory for usage at temp. outside range.)*
Fluid Compatibility	Mineral-based or synthetics with lubricating properties
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.
Installation	No orientation restrictions
Cavity	FC08-3 *(see Line Bodies & Cavities section)*
Cavity Tools	Rougher: 02580086 Finisher: 02580087
Cartridge Weight	0.58 Lbs. (.266 kg)
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Anodized aluminum knobs. *(option H)* Buna N or Viton® o-rings, and PTFE back-up rings.
Seal Kits Buna-N Viton®	FS083-N P/N: 03054795 FS083-V P/N: 02591059

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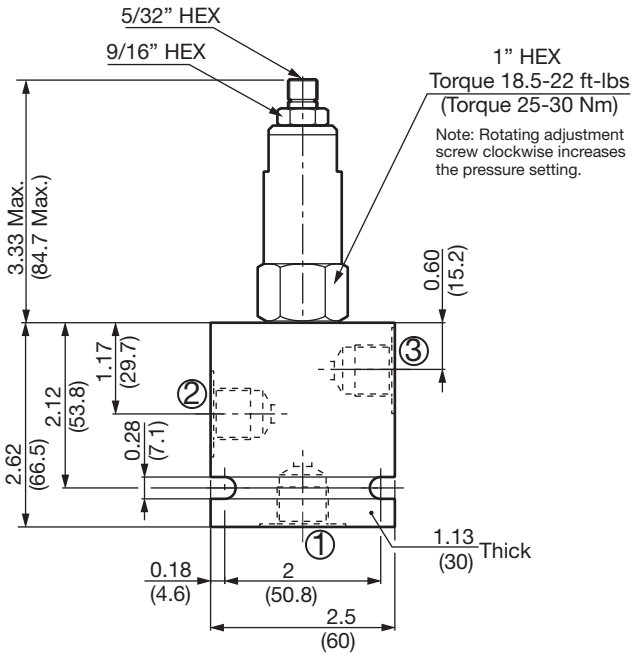
Dimensions



Model Code

RS08-01-C-N-3-500 V 300

Valve Model

Body & Ports

C	=	Cartridge only
AS6	=	SAE-6 ports, aluminum body
SS6	=	SAE-6 ports, steel body

Seals

N	=	Buna-N
V	=	Viton®

Pilot Ratio

3	=	3:1
4	=	4:1

Adjustment Range

050	=	75 to 500 psi (5 to 35 bar)
090	=	75 to 900 psi (5 to 60 bar)
180	=	75 to 1800 psi (5 to 125 bar)
330	=	75 to 3300 psi (5 to 230 bar)
500	=	75 to 5000 psi (5 to 350 bar)

Adjustment Options

F	=	Factory pre-set, non-adjustable *(must specify setting below)*
H	=	Knurled Hand Knob
K	=	Allen Head (HEX 5/32") w/ cover cap
V	=	Allen Head (HEX 5/32")

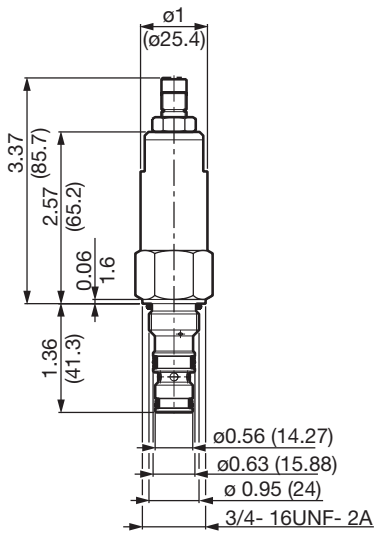
Setting *(optional)*

(omit)	=	Set at min. pressure for the range
XXX	=	Desired psi ÷ 10

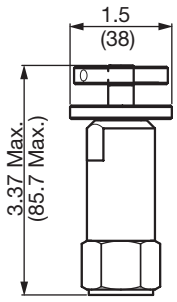
Example: 300 = 3000 psi

Adjustment Options

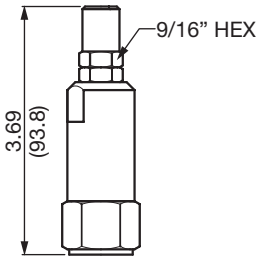
'V' - Allen Head (std)



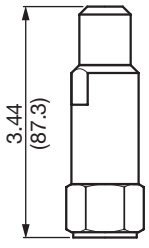
'H' - Hand Knob



'K' - Protective Cap

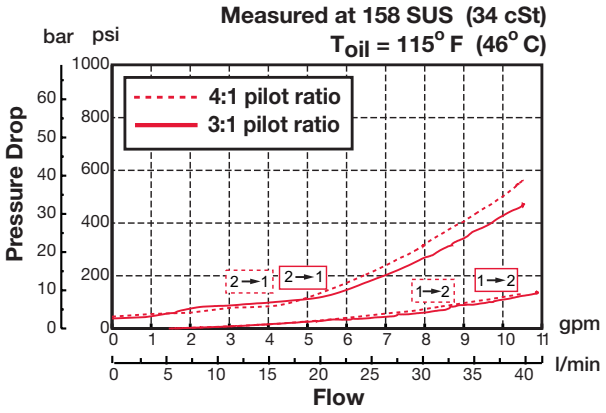


'F' - Tamper Proof Cap



All measurements in inches (mm).
Subject to technical modifications

Performance



Standard Line Bodies*

Code	Part No	Material	Pressure Rating	Weight
FH083-AS6	03011424	Aluminum, anodized	3500 psi (245 bar)	0.58 lb (0.26 kg)
FH083-SS6	00560920	Steel, Zinc plated	6000 psi (420 bar)	1.70 lb (0.77 kg)

**Please refer to Line Bodies & Cavities section for details*

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