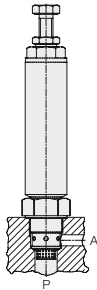




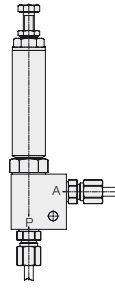
## Pressure Reducing Valve without leakage oil port max. operating pressure 500 bar



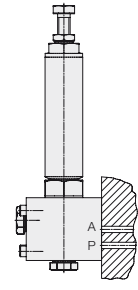
Threaded-body valve



Pipe connection



Flange-mounted type



### General subjects

Pressure reducing valves maintain the pressure at the cylinder port A (secondary pressure) more or less constant at a variable but always higher input pressure P (primary pressure).

### Function

Below the adjusted secondary pressure the hydraulic oil flows without any impediments from P to A. In case of pressure increase to the desired closing pressure a hermetically sealed pressure reducing valve shuts off the oil flow. Thereby a further pressure increase is avoided, also in case of further increasing primary pressure P.

In case of a pressure drop, e.g. because of a leakage at a cylinder, the check valve will be opened by a strong spring against the existing primary pressure. Hydraulic oil can continue flowing until the adjusted secondary pressure is obtained.

Increasing secondary pressure, e.g. due to temperature rise cannot be compensated, since there is no leakage oil port (see "Important notes"). Pressure reducing valves with leakage oil port see data sheet C 2.9532

### Application

This pressure reducing valve is especially suitable for clamping systems which will be uncoupled from the pressure generator, e.g. pallets, because an additional leakage oil line is not available.

### Limits of application

The pressure reducing valve can only be used in static clamping systems. The connected clamping elements must be leakage-free.

### Important notes

Due to the missing leakage oil port an increasing pressure cannot be compensated at the secondary side. Pressure increase is possible because of temperature increase, external forces or damage of the valve seat by swarf.

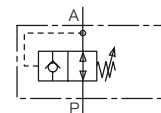
Recommendation: Installation of an additional pressure relief valve at the secondary side as a safety measure against pressure increase. The opening pressure should be adjusted approx. 10 % above the secondary pressure, however, should not exceed the admissible operating pressure of the connected elements.

The secondary pressure can be adjusted and controlled by means of a pressure gauge. By this way the required sealing of the system is controlled too.

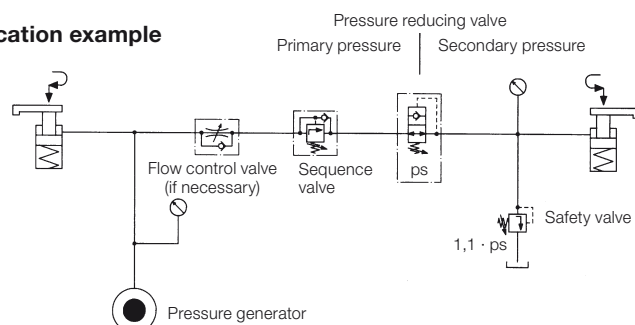
The sequence shown in the application below should be considered if flow control valves and sequence valves are connected in series.

### Advantages

- Optimisation of the clamping force of individual cylinders or groups of cylinders
- Pressure limitation to the admissible operating pressure of individual cylinders or groups of cylinders
- Big adjusting range
- Automatic regulation in case of pressure drops at the secondary side
- No leakage oil port required
- Can be used in uncoupled clamping systems e.g. on clamping pallets
- Different installation possibilities
- Mounting body with pressure gauge connection
- Possibility to lead



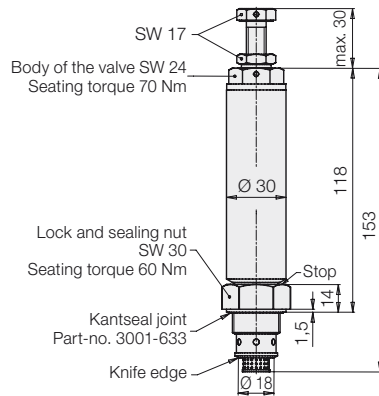
### Application example



# Pressure reducing valves

## General characteristics

Configuration	Ball-type poppet valve, 2 ports
Mounting position	any
Connections	P = Input (primary side) G 1/4
	A = Cylinder (secondary side) M = Pressure gauge
Operating press.	max. 500 bar (primary press.)
Range of adjustment	30* –380 bar (sec. pressure) *) see also diagram "Limit curve of the lowest possible adjusting pressure"
Hysteresis	see diagram "Possible drop of the secondary pressure"
Flow rate	max. 10 l/min.
Pressure drop	see diagram "Δ p-Q characteristic curve"
Hydraulic oil	HLP 22 as per DIN 51524 ISO VG 10...68 as per DIN 51519
Viscosity range	Recommendation 10...500 mm <sup>2</sup> /s
Environmental temperature	-40...+80 °C



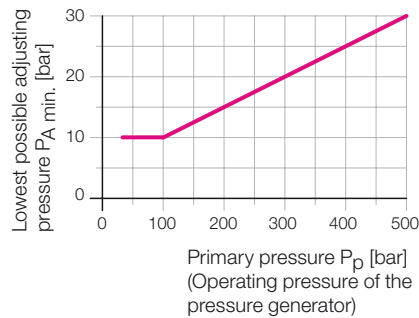
### Part-no. 2953-100

Weight: approx. 0.7 kg

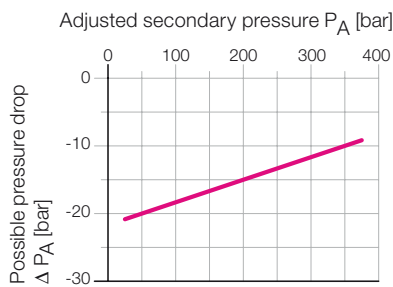
### Mounting instructions

1. Before screwing in, turn back lock and sealing nut up to the stop.
2. Screw in valve body and tighten by 70 Nm. Sealing is made metallically on the counter-bore of 118°.
3. Tighten the lock and sealing nut by 60 Nm. Sealing is made by the Kantseal joint on the counterbore diameter of 30 mm. The Kantseal joint is included in the delivery. Disassembly is made in reverse sequence.

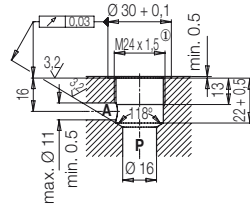
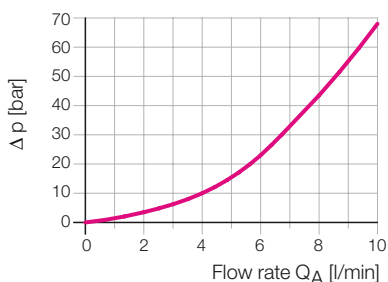
Limit curve of the lowest possible adjusting pressure  $P_{A \min.}$  as a function of the operating pressure  $P_P$



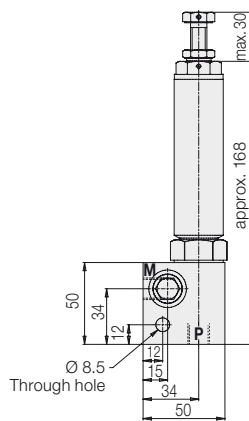
Possible drop of the secondary pressure  $\Delta P_A$  before start of the function of regulation



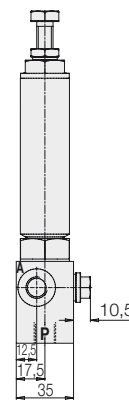
Δ p-Q characteristic curve (P → A and A → P) in case of open valve, if  $P_P$  is smaller than  $P_A$   
Test medium viscosity: 50 cSt



① Threaded counterbore max.  $\varnothing 24+0,2$



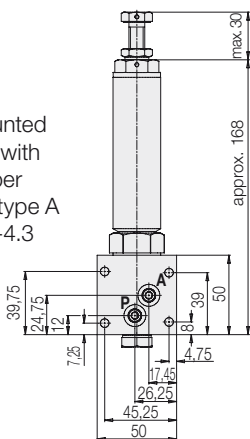
Ports A, P and M = G 1/4



### Part-no. 2953-111

Weight: approx. 1.3 kg

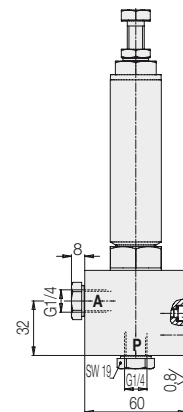
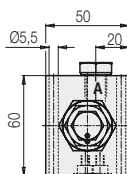
Flange-mounted connection with pattern as per DIN 24300 type A CETOP 4.2-4.3 ISO 4401



4 screws  
M5x70  
DIN 912-12.9

### Part-no. 3300-310

(not included in the delivery)



### Part-no. 2953-110

Weight: approx. 1.5 kg

O-ring 10x2  
Part-no. 3001-078  
included in our delivery

Remove plugs before manifold-mounting

A pressure gauge can be connected to port A.