

## Summary

**Double-piston actuator  
Type SAD-HD/SAF-HD  
simple-/double acting with hydraulic  
Attenuation**

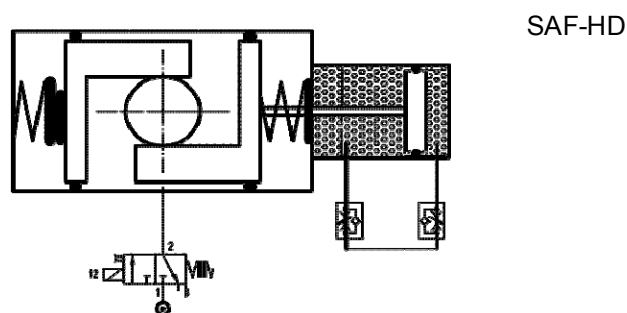
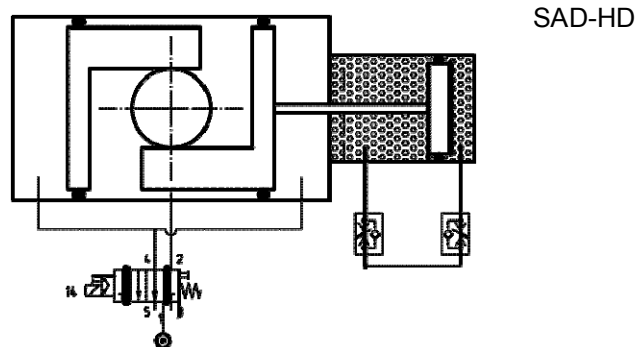
**These instructions apply only in conjunction with the assembly instructions SAD / SAF!**

## Function

The reciprocating motion of a piston rod is transferred to a hydraulic piston. This piston moves in a closed hydraulic system, which has an adjustable cross-section Change (slot throttle) influences the steaming time.

The variably adjustable speed of the OPEN and CLOSE movement is realized through two way flow control valves.

## Principle of representation



## Advantage

- Avoids pressure shock in the piping system.
- Fittings and lining are preserved
- Even with large variations in temperature almost constant steaming times
- By the infinitely adjustable speed is an adaptation to the environment influences possible on site
- OPEN and CLOSE movement independently adjustable.



## Technical data

Angle of rotation:: 0° bis 90°  
 Torques see SAD/SAF 90°  
 Pressure Range: max. 6 bar  
 Temperature range: -20°C bis +80°C

Actuator	min. Operating time [sec]				max. Operating time [sec]			
	OPEN		CLOSE		OPEN		CLOSE	
	SAD	SAF <sub>s</sub>	SAD	SAF <sub>s</sub>	SAD	SAF <sub>s</sub>	SAD	SAF <sub>s</sub>
20	0,6	0,7	0,5	0,4	7,5	8,0	7,5	7,5
25	1,0	1,2	0,9	0,8	8,5	9,0	8,5	9,0
30	1,4	1,7	1,3	1,0	10,0	12,0	10,0	12,0
33	2,7	3,3	2,8	2,2	15,0	17,0	15,0	17,0
35	3,5	4,1	3,0	2,7	16,0	18,0	16,0	18,0
40	4,0	5,7	4,8	3,0	18,0	19,0	18,0	19,0
42	5,8	8,0	7,0	4,9	20,0	22,0	20,0	22,0

Between the above min. and max. Switching time is a variable setting possible. All data were determined under the following preconditions:

Operating pressure  $p_e = 4,5$  bar  
 Springs number  $n = 16$  (bei SAF)  
 Ambient temperature = 20°C  
 Actuator without load

### Options

End position damping, e.g.:

0° to 70° low steaming time,  
 70° to 90° high steaming time  
 0° to 0° low steaming time

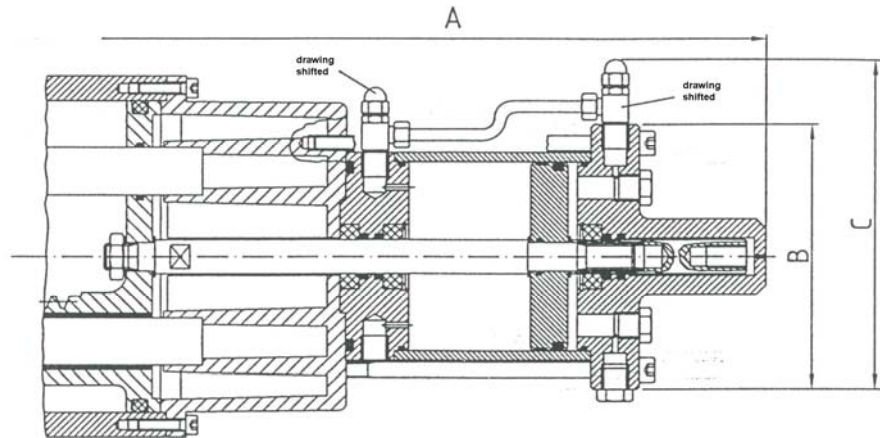
The way-/ Time ratio is freely selectable.

extended temperature range:

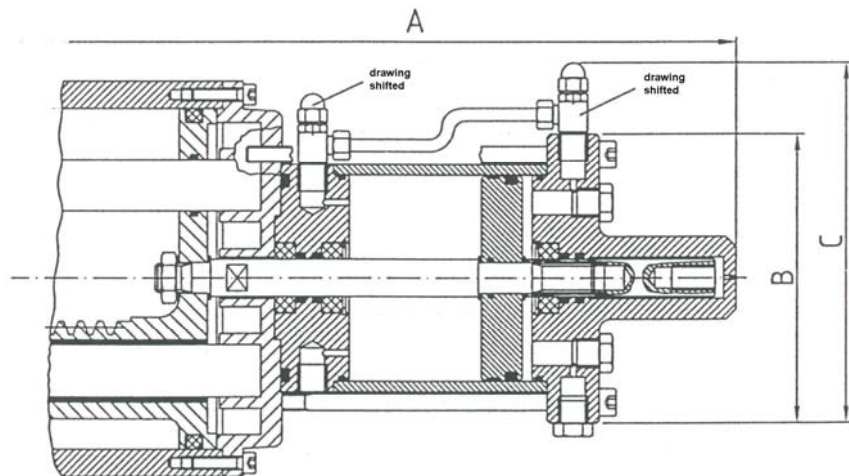
Low temperature: -40°C  
 High temperature: 100°C



**Dimensions / Weight**



SAF-HD 20-42



SAD-HD 20-42

Actuator	A [mm]		B [mm]		C [mm]		Weight [kg]	
	SAD	SAF	SAD	SAF	SAD	SAF	SAD	SAF
20	313	348	100		150		6,5	6,9
25	355	416	100		150		8,7	10,5
30	390	447	100		150		13,4	15,0
33	487	617	140		190		20,1	25,5
35	503	687	140		190		24,8	32,5
40	507	723	140		190		30,5	45,5
42	599	789	140		190		41,7	59,0