

# DATA SHEET

T 8139 EN

## Type 3353 Angle Seat Valve



### Application

On/off valve with pneumatic piston actuator

<b>Valve size</b>	<b>DN 15 to 50 (NPS ½ to 2)</b>
<b>Pressure rating</b>	<b>PN 40</b>
<b>Temperature range</b>	<b>-10 to +180 °C</b>

Globe valve with an angle seat body and a soft-seated flat plug with

- Pneumatic piston actuator
- Stainless steel body

Permissible media

- Water
- Air
- Neutral gases and liquids
- Oils
- Steam up to 180 °C
- Corrosive media

Easy to service and low price thanks to

- Replaceable soft seal
- Safe relief of the actuator springs without having to use a spring compressor

### Version

Angle seat valve in valve sizes DN 15 to 80 (NPS ½ to 2), body made of stainless steel 1.4408, nominal pressure PN 40

Pneumatic piston actuator with either 30 or 60 cm<sup>2</sup> effective area (63 or 90 mm piston diameter)

**Type 3353** · Angle seat valve, end connections with female thread (Fig. 1) or with welding ends according to ISO 4200, DIN 11850 Series 2 or ISO 2037

### Accessories

- Type 4740 Limit Switch with inductive proximity switches or with microswitches, optionally with 3/2-way solenoid valve (max. 7 bar; Fig. 2)
- Fixture for holding proximity switches with M12 thread
- Limit switch with inductive proximity switches for spring-to-close or spring-to-open version
- NAMUR adapter to attach a solenoid valve
- 3/2-way solenoid valve with G ½ for direct attachment to the actuator (double nipple required for mounting) in DN 1.5; 0 to 12 bar; 24 V DC or 230 V AC, optional silencer
- Double nipple G ½ x G ¼ detachable, brass



**Fig. 1:** Type 3353 Angle Seat Valve with pneumatic actuator  
End connections with female thread



**Fig. 2:** Type 4740 Limit Switch with optional solenoid valve on a  
Type 3353 Angle Seat Valve

### Principle of operation

The process medium flows through the valve in the direction indicated by the arrow in the flow-to-open direction. The valve plug position determines the cross-sectional area between the seat and plug.

### Fail-safe action

Depending on how the springs are arranged in the pneumatic actuator (Fig. 4 and Fig. 5), the valve has two fail-safe positions that become effective when the supply air or control signal fails:

- **Fail-close (FA/NC):** the valve is closed upon air supply or control signal failure.
- **Fail-open (FE/NO):** the valve is opened upon air supply or control signal failure.

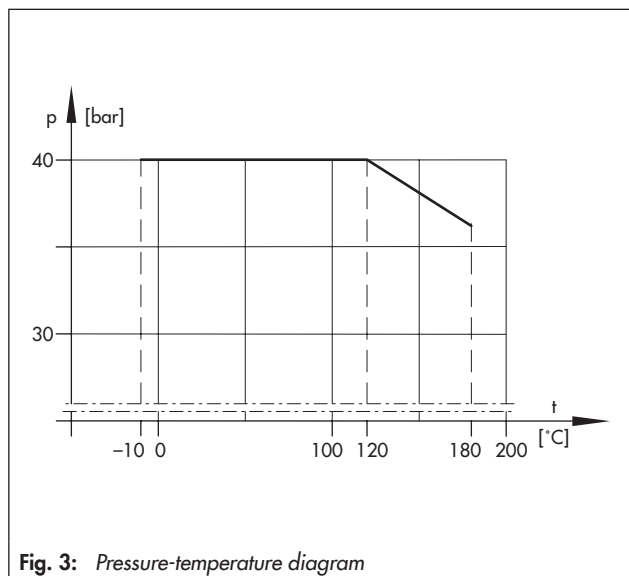


Fig. 3: Pressure-temperature diagram

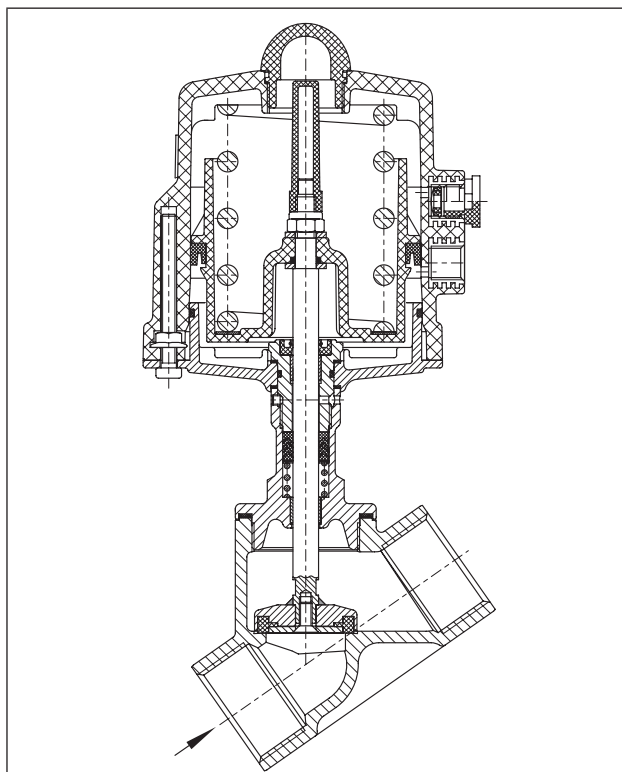


Fig. 4: Type 3353 Angle Seat Valve  
Fail-close actuator

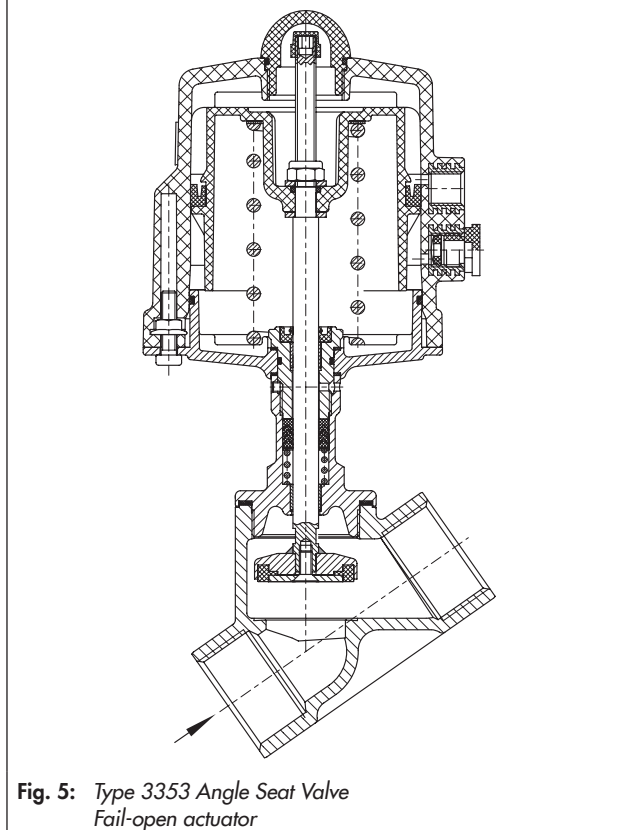


Fig. 5: Type 3353 Angle Seat Valve  
Fail-open actuator

**Table 1:** Technical data for Type 3353 Angle Seat Valve

Valve size	DN 15 to 50 · NPS ½ to 2
Material	1.4408
Type of connection	Welding ends · Threaded ends
Pressure rating	PN 40
Seat-plug seal	Soft seal
Characteristic	On/off
<b>Actuator</b>	30 cm <sup>2</sup> (Ø = 63 mm) or 60 cm <sup>2</sup> (Ø = 90 mm)
Permissible signal pressure	Minimum according to Table 4.1 and Table 4.2 · Maximum 8 bar
Control pressure connection	G ¼
<b>Temperature range</b>	
Permissible medium temperature	-10 to +180 °C
Permissible ambient temperature	-10 to +60 °C
<b>Permissible flow velocity</b>	
Max. velocity at the valve outlet	Liquids: 3 m/s · Gases: 0.3 Mach

**Table 2:** Materials

Valve body	Cast stainless steel 1.4408
Connecting piece	1.4408
Actuator stem	1.4404
Flat plug	1.4404
Seat ring	PTFE, glass fiber reinforced
Packing	PTFE/carbon, spring-loaded
Guide bushing	Zinc-plated steel/bronze · Option: plastic IGUS Iglidur®
<b>Actuator</b>	
Cover	PA 66, glass fiber reinforced
Piston	PA 66, glass fiber reinforced
Bottom section	1.4408

**Table 3:** Overview: Valve sizes, flow coefficients and seat diameters

Valve size	DN	15	20	25	32	40	50
	NPS	½	¾	1	1¼	1½	2
Flow coefficient	K <sub>VS</sub>	5	9	17	23	40	52
Seat Ø	mm	20		31		48	
Travel	mm	15					

**Table 4:** Permissible differential pressures for Type 3353 Angle Seat Valve

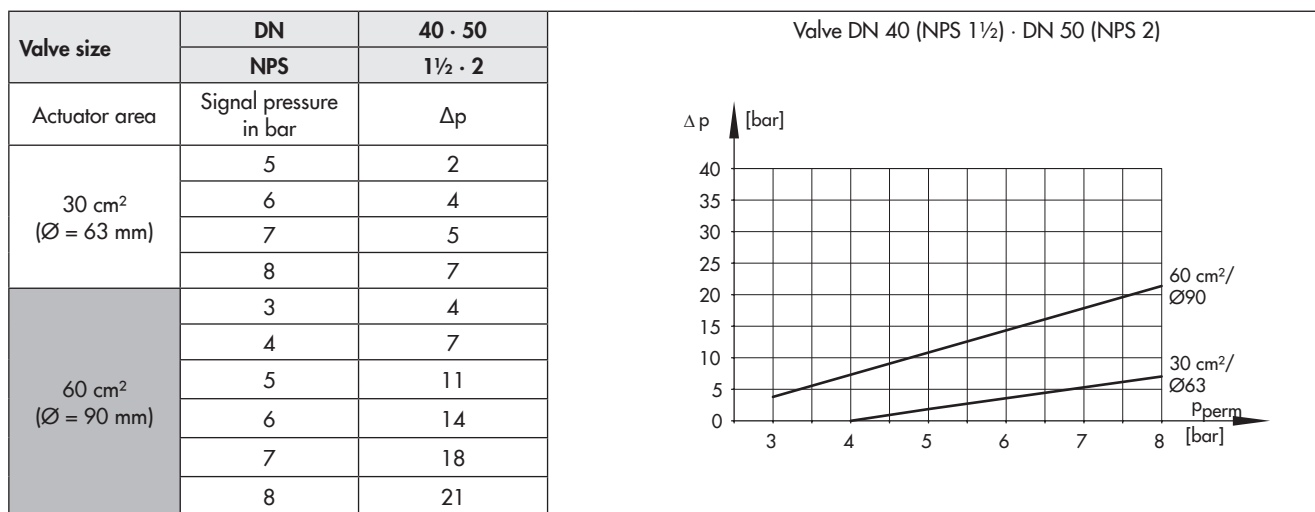
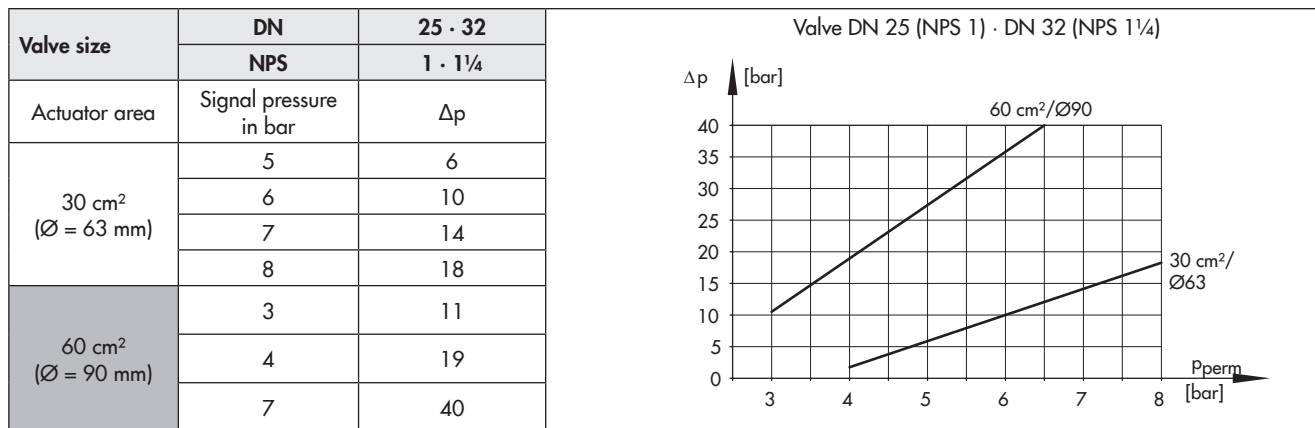
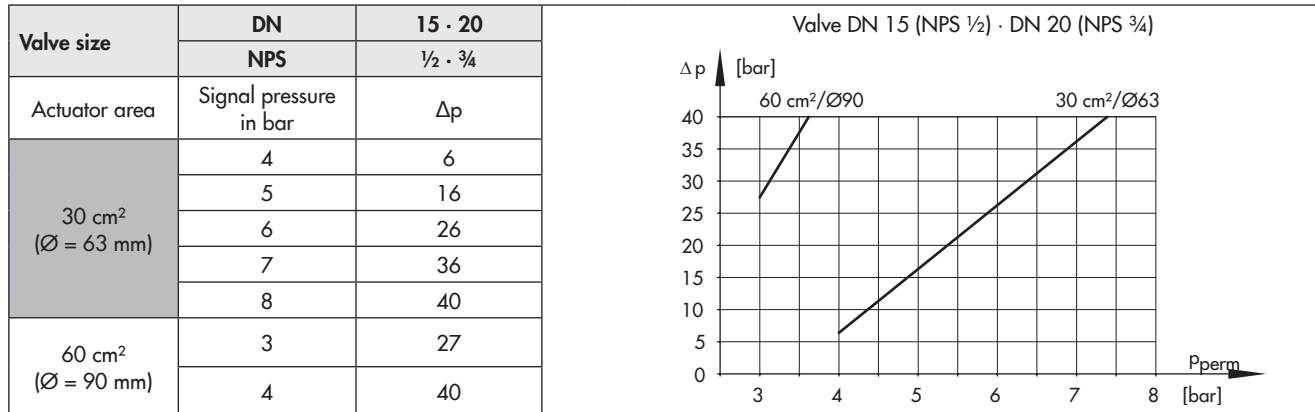
The specifications for the standard version have a gray background.

**Table 4.1:** Fail-close (FA/NC) version

Valve size		DN	15 · 20	25 · 32	40 · 50
		NPS	½ · ¾	1 · 1¼	1½ · 2
Actuator	Signal pressure in bar	Δp			
Actuator area					
30 cm <sup>2</sup>	5.0	20	10	4	
60 cm <sup>2</sup>	3.8	40	16	6	
	5.4	–	25	10	

**Table 4.2:** Fail-open (FE/NO) version · Breakdown according to valve size and actuator area

Required actuators and signal pressures to close the valve at the specified differential pressure



**Table 5:** Dimensions in mm and weights in kg**Table 5.1:** Version with female thread

Valve size	DN	15	20	25	32	40	50
	NPS	½	¾	1	1¼	1½	2
Face-to-face dimension L	mm	65	75	90	110	120	150
End-to-end length L1	mm	170	175	197	205	210	226
Height including actuator H	mm	193	194	211	212	224	226
Body connection	G	G ½	G ¾	G 1	G 1¼	G 1½	G 2
Thread length t	mm	15	16	19	22	22	26
Valve weight	kg	0.28	0.33	0.64	0.8	1.3	1.9

**Table 5.2:** Version with welding ends according to ISO 4200, DIN 11850 Series 2 and ISO 2037

Valve size	DN	15	20	25	32	40	50
	NPS	½	¾	1	1¼	1½	2
Face-to-face dimension L	mm	100	120	150	160	180	190
End-to-end length L1	mm	187	197	227	218	230	241
Height H including actuator	mm	197	199	214	223	230	229
Welding ends according to ISO 4200							
Ød1 connection	mm	18.1	23.7	29.7	38.4	44.3	55.1
Wall thickness s	mm	1.6		2		2.6	
Welding ends according to DIN 11850 Series 2							
Ød1 connection	mm	16	20	26	32	38	50
Wall thickness s	mm	1.5		1.5		1.5	
Welding ends according to ISO 2037							
Ød1 connection	mm	15.2	19.3	22.6	31.3	35.6	48.6
Wall thickness s	mm	1		1.2		1.2	
Valve weight	kg	0.28	0.33	0.64	0.8	1.3	1.9

**Table 5.3:** Pneumatic piston actuator

Version	Actuator area (piston Ø)	30 cm <sup>2</sup> /Ø63 mm	60 cm <sup>2</sup> /Ø90 mm	
			1 spring	2 springs
Housing ØD	mm	100	127	
Control pressure connection		G ¼		
Weight	kg	1.35	2.2	2.75

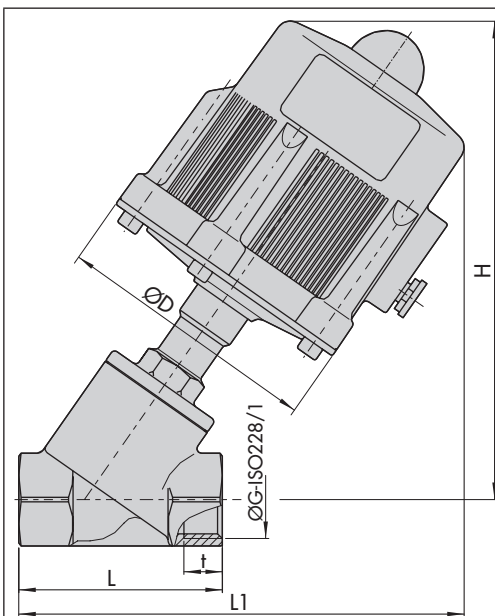


Fig. 6: Type 3353 Angle Seat Valve with female thread

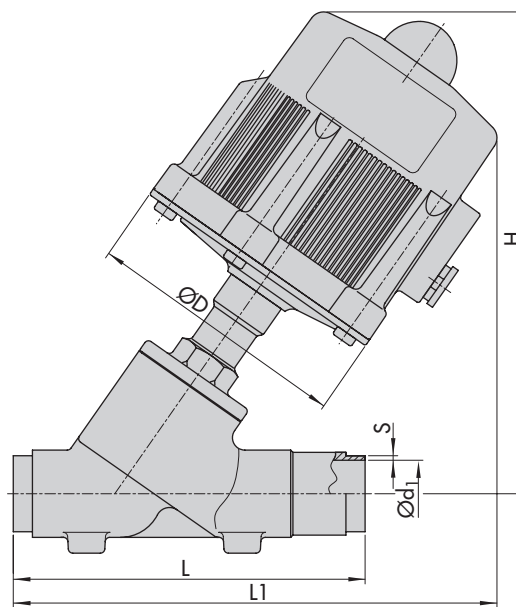


Fig. 7: Type 3353 Angle Seat Valve with welding ends

### Ordering text

The following specifications are required on ordering:

### Operational data (for sizing performed by SAMSON)

Process medium	<input type="checkbox"/> Water
	<input type="checkbox"/> Steam
	<input type="checkbox"/> Neutral gas (e.g. air, nitrogen)
	<input type="checkbox"/> ...
Flow rate	Max. ...
Input pressure $p_1$	... bar
Output pressure $p_2$	... bar
Differential pressure $\Delta p$	... bar
Temperature $T_1$	... °C

### Type 3353 Angle Seat Valve

Valve size	DN/NPS ...
Flow rate	$K_{VS}$ ...
Connection	<input type="checkbox"/> Female thread
	<input type="checkbox"/> Welding ends acc. to ISO 4200
	<input type="checkbox"/> Welding ends acc. to DIN 11850
	<input type="checkbox"/> Welding ends acc. to ISO 2037

### Pneumatic actuator

Actuator area (piston $\varnothing$ )	<input type="checkbox"/> 30 cm <sup>2</sup> /63 mm
	<input type="checkbox"/> 60 cm <sup>2</sup> /90 mm, 1 spring
	<input type="checkbox"/> 60 cm <sup>2</sup> /90 mm, 2 springs
Fail-safe position	<input type="checkbox"/> Fail-close
	<input type="checkbox"/> Fail-open

### Additional equipment

Limit switch	<input type="checkbox"/> Electric (fail-close)
	<input type="checkbox"/> Electric (fail-open)
	<input type="checkbox"/> Inductive (fail-close)
	<input type="checkbox"/> Inductive (fail-open)
Fixture for holding proximity switches	<input type="checkbox"/>
NAMUR adapter	<input type="checkbox"/>
3/2-way solenoid valve and double nipple	<input type="checkbox"/> 24 V DC
	<input type="checkbox"/> 230 V AC
Silencer and fitting for solenoid valve	<input type="checkbox"/>