



Application

On/off valve with pneumatic piston actuator

| | |
|--------------------------|-------------------------------|
| Valve size | DN 15 to 50 (G ½ to 2) |
| Pressure rating | PN 40 |
| Temperature range | -10 to +180 °C |

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 (G ½ to 2), body made of stainless steel 1.4408, nominal pressure PN 40

Pneumatic piston actuator with either 30 or 60 cm² 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 ⅛ for direct attachment to the actuator (double nipple required for mounting) in DN 15 (G ½); 0 to 12 bar; 24 V DC or 230 V AC, optional silencer
- Double nipple G ⅛ 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

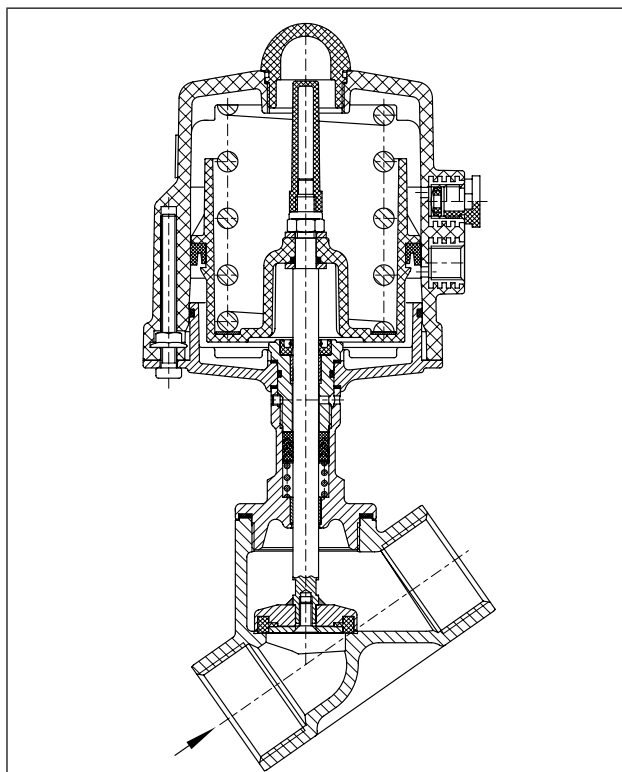
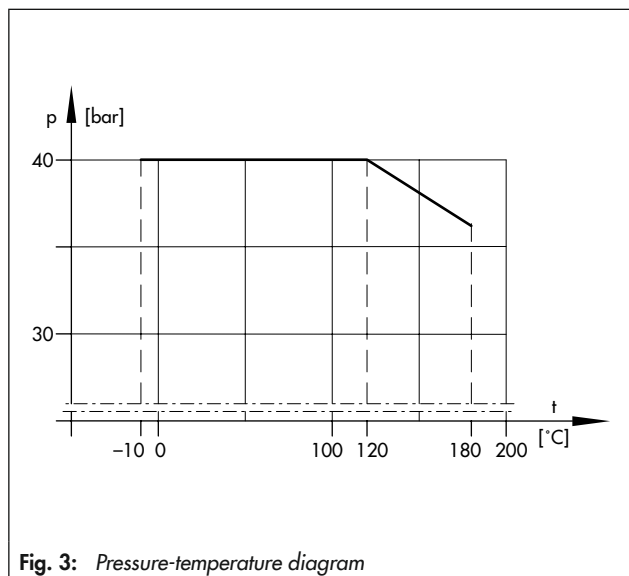
Principle of operation

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.

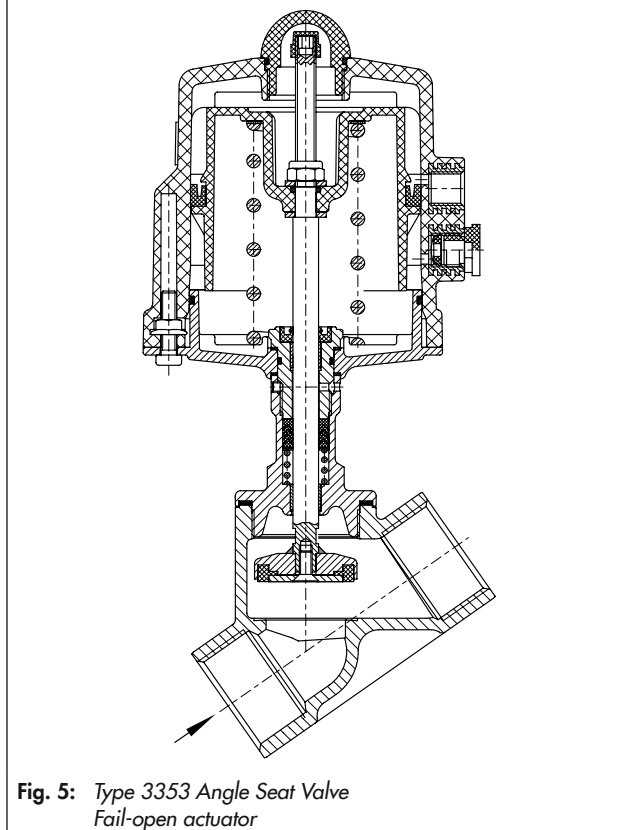
Fail-safe action

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. 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 · G 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 |
| Actuator | 30 cm ² (Ø = 63 mm) or 60 cm ² (Ø = 90 mm) |
| Permissible signal pressure | Minimum according to Table 4.1 and Table 4.2 · Maximum 8 bar |
| Control pressure connection | G ¼ |
| Temperature range | |
| Permissible medium temperature | -10 to +180 °C |
| Permissible ambient temperature | -10 to +60 °C |
| Permissible flow velocity | |
| 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 | Plastic IGUS Iglidur® |
| Actuator | |
| Cover | PA 66, glass fiber reinforced |
| Piston | PA 66, glass fiber reinforced |
| Bottom section | PA 66, glass fiber reinforced |

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

| Valve size | DN | 15 | 20 | 25 | 32 | 40 | 50 |
|------------------|-----------------|----|----|----|----|----|----|
| | G | ½ | ¾ | 1 | 1¼ | 1½ | 2 |
| Flow coefficient | K _{VS} | 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 |
|--------------------|------------------------|----|---------|---------|---------|
| | | G | ½ · ¾ | 1 · 1¼ | 1½ · 2 |
| Actuator | Signal pressure in bar | Δp | | | |
| Actuator area | | | | | |
| 30 cm ² | 5.0 | 20 | 10 | 4 | |
| 60 cm ² | 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

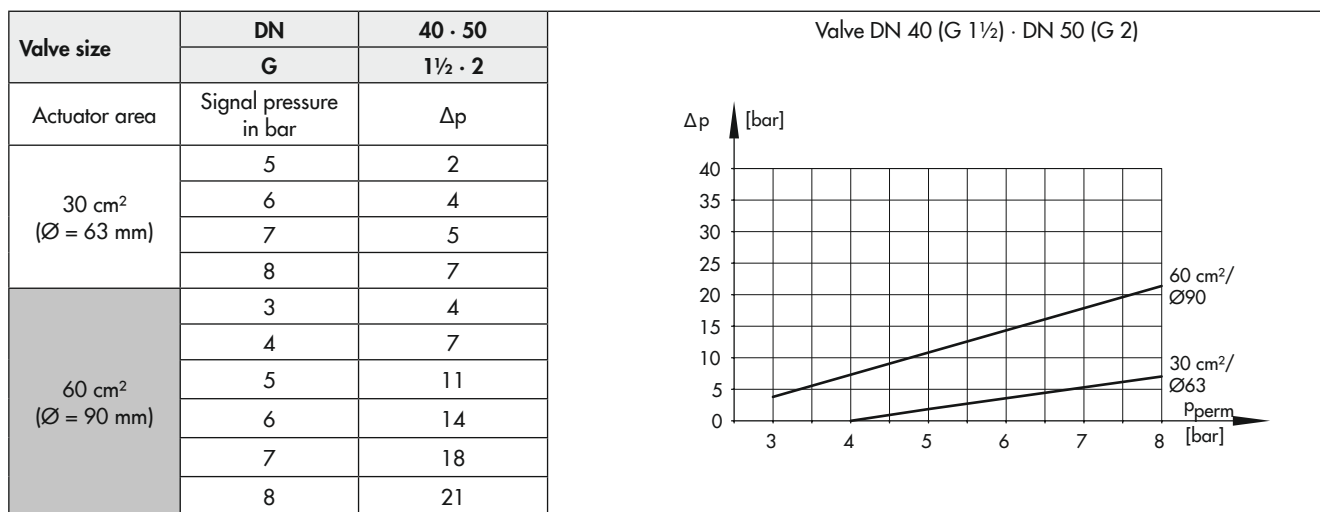
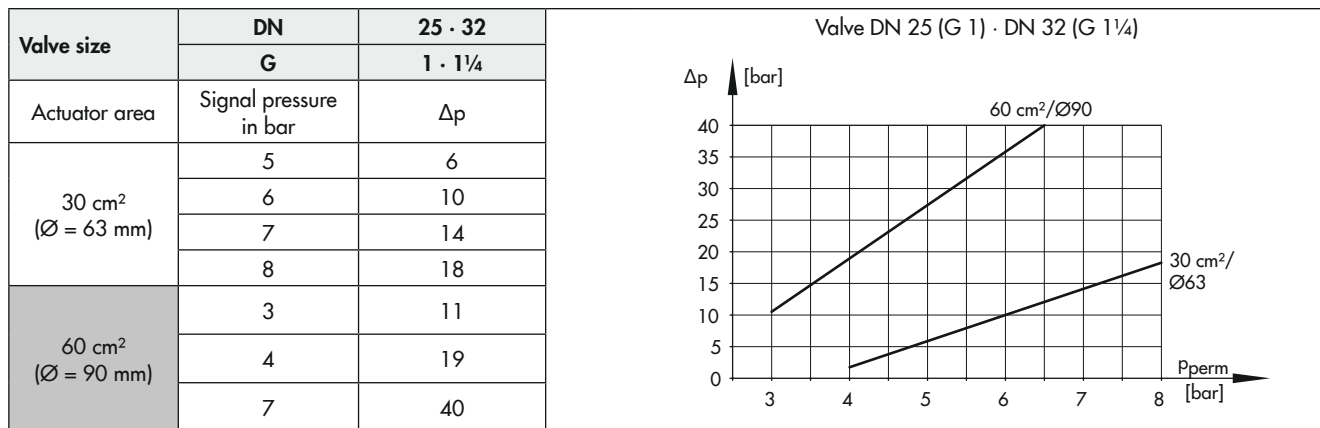
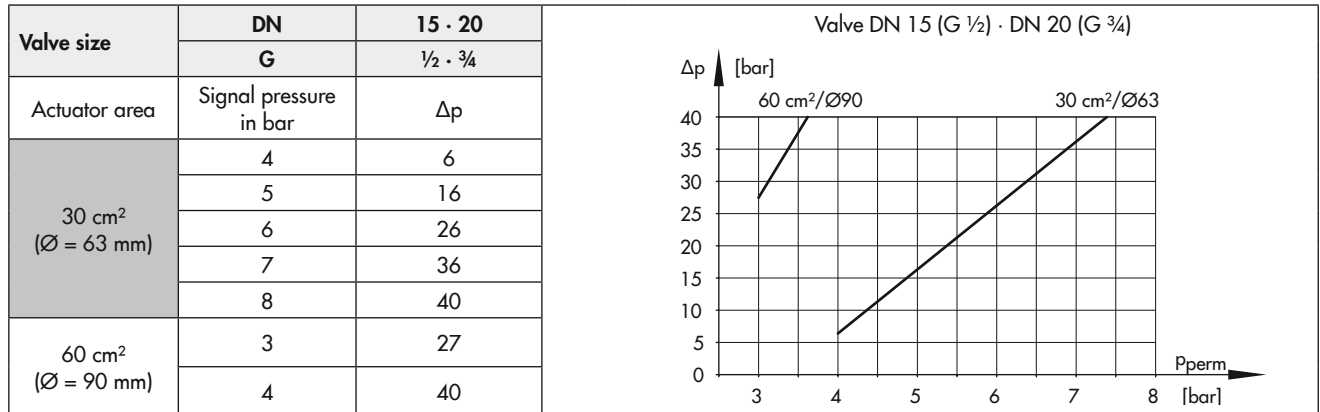


Table 5: Dimensions in mm and weights in kg**Table 5.1:** Version with female thread

| Valve size | DN | 15 | 20 | 25 | 32 | 40 | 50 |
|-----------------------------|----|------|------|------|------|------|-----|
| | G | 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 |
|--|----|------|------|------|------|------|------|
| | G | 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 ² /Ø63 mm | 60 cm ² /Ø90 mm | |
|-----------------------------|-----------------------------|----------------------------|----------------------------|-----------|
| | | | 1 spring | 2 springs |
| Housing ØD | mm | 100 | 127 | |
| Control pressure connection | | G ¼ | | |
| Weight | kg | 1.35 | 2.2 | 2.75 |

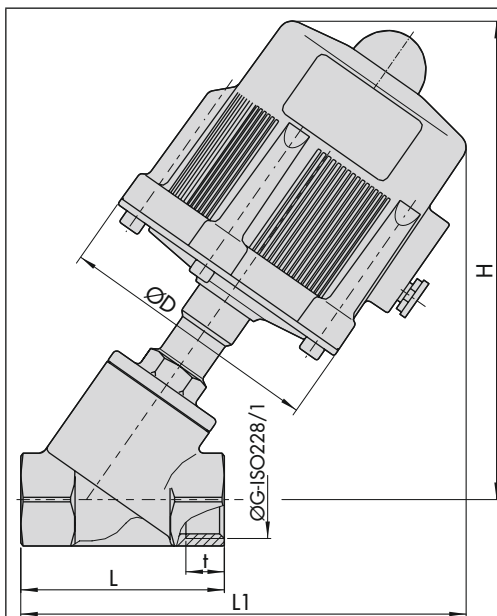


Fig. 6: Type 3353 Angle Seat Valve with female thread

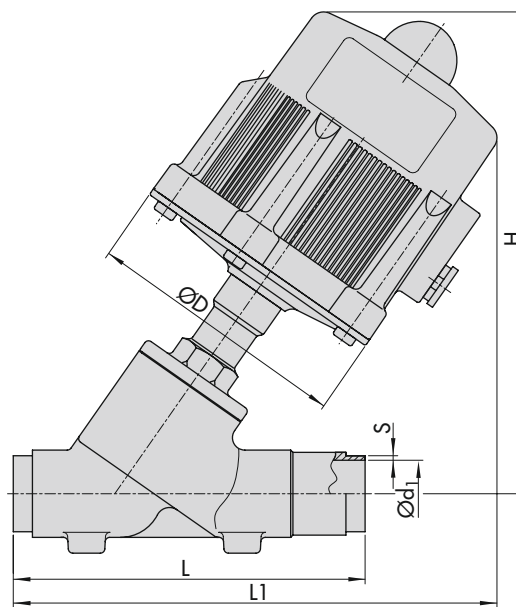


Fig. 7: Type 3353 Angle Seat Valve with welding ends

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 Δp | ... bar |
| Temperature T_1 | ... °C |

Type 3353 Angle Seat Valve

| | |
|------------|---|
| Valve size | DN/G ... |
| 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 \emptyset) | <input type="checkbox"/> 30 cm ² /63 mm |
| | <input type="checkbox"/> 60 cm ² /90 mm, 1 spring |
| | <input type="checkbox"/> 60 cm ² /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"/> |