

## AK Condense Vessels

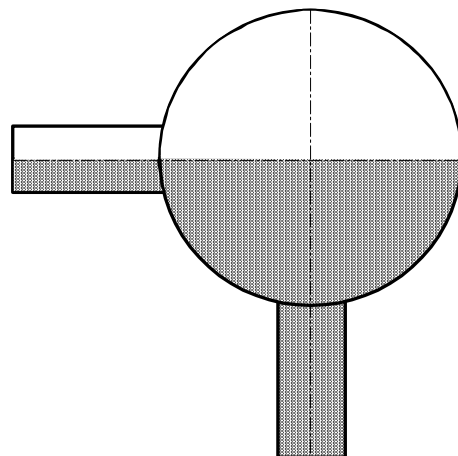
### Application

For steam flow-rate measurement instruments for stabilization condensate column. Excess condensate may run back into main pipe or missing condensate may form quickly again in the vessels when having load changes and the affiliated displacement of pipe contents.

### Construction

According to DIN 19211 welded together out of hot pressed hemispherical heads with two 90°-staggered connecting pieces.

According to the operating conditions the materials are boiler plate H II, stainless steel or heat-resistant steel 13CrMo44 and 13CrMo910.



### Technical Details

<b>Contents:</b>	300cm <sup>3</sup> for standard type out of boiler plate H II The contents diminishes depending on the wall thickness.
<b>Nominal pressure:</b>	Type AK 100 up to PN 100 (ANSI up to xxxx lbs) Type AK 320 up to PN 320 (ANSI up to xxxx lbs) Type AK 500 up to PN 500 (ANSI up to xxxx lbs)
<b>Temperature:</b>	Up to 550 °C The loading of temperature depends on operation pressure and the used material. Refer to span of application on overleaf diagram.
<b>Outer-Ø:</b>	89 mm
<b>Length:</b>	For the standard type it amounts to 110 mm and corresponds therefore the dimensions of 2, 4 and 6 of DIN 19211. On special request it is possible to deliver lengths of 230 mm; this means that the contents –depending on the material- increases up to 450, 800 or 900 cm <sup>3</sup> .
<b>Connections:</b>	As standard according to overleaf table. Additionally it is possible to manufacture according to customer specifications.

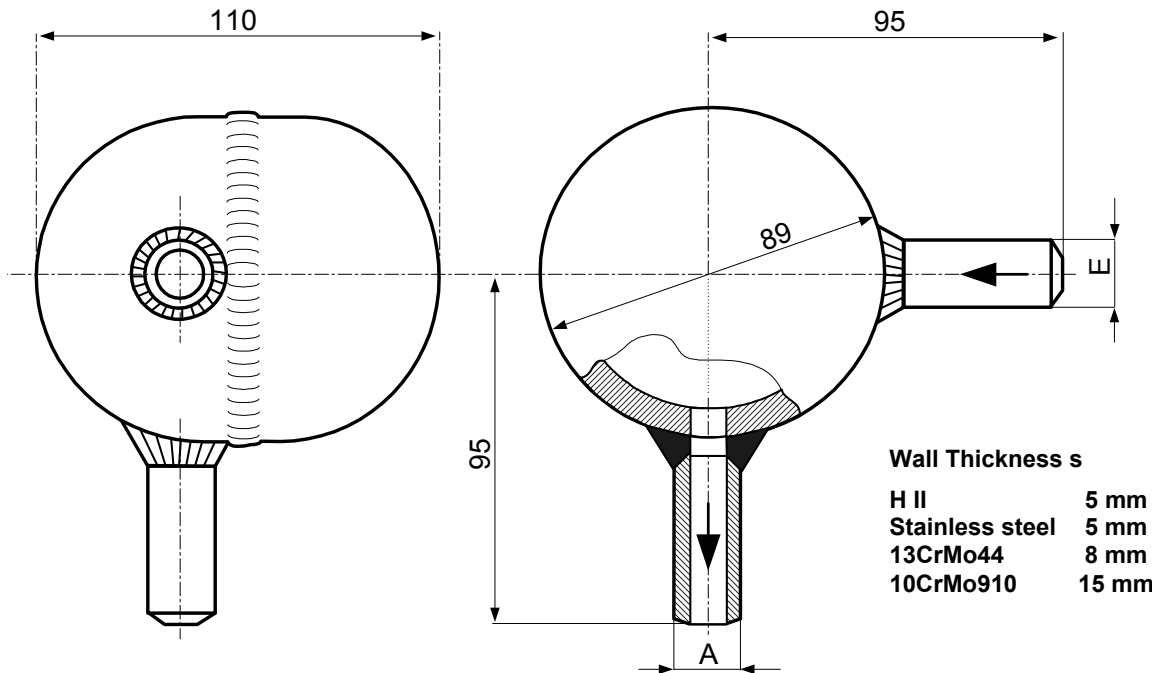
### Materials

Type	Material	W-No.	Nominal Pressure	Temperature
<b>AKH 100</b>	Boiler Plate H II	1.0425	PN 100	300°C
<b>AKV 100</b>	Stainless Steel	1.4571	PN 100	400°C
<b>AK 320</b>	13CrMo44	1.7335	PN 320	500°C
<b>AK 500</b>	10CrMo910	1.7380	PN 500	550°C

### Material Certificates

On request it is possible to deliver material certificates for hemispherical heads and connecting pieces according to EN 10204 (DIN 50049) 3.1B; for 13CrMo44 and 10CrMo910 also with 3.1A (TÜV). Pressure test certificates are possible to deliver.

**Dimensional Sketch**



**Summary of Types and Connection Types**

Type	Material	Inlet E	Outlet A
AKH 100 G	H II	S 21,3 x 4 S 21,3 x 4 S 21,3 x 4 S 17,2 x 4	S 21,3 x 4 E 16 x 3 E 12 x 2 E 12 x 2
AKH 100 F	H II	S 21,3 x 4 S 21,3 x 4 G 1/2" G 1/2" 1/2" NPT	G 5/8" G 1/2" G 1/2" E 16 x 3 1/2" NPT
AKV 100 G	1.4571	S 17,2 x 3 S 21,3 x 4	E 12 x 2 E 16 x 3
AKV 100 F	1.4571	G 1/2" S 17,2 x 3	G 1/2" G 1/2"
AK 320 G	13CrMo44	S 21,3 x 4	S 21,3 x 4
AK 320 F	13CrMo44	S 21,3 x 4 G 5/8"	G 5/8" G 5/8"
AK 500	10CrMo910	S 21,3 x 4 S 24 x 7,1	S 21,3 x 4 S 24 x 7,1

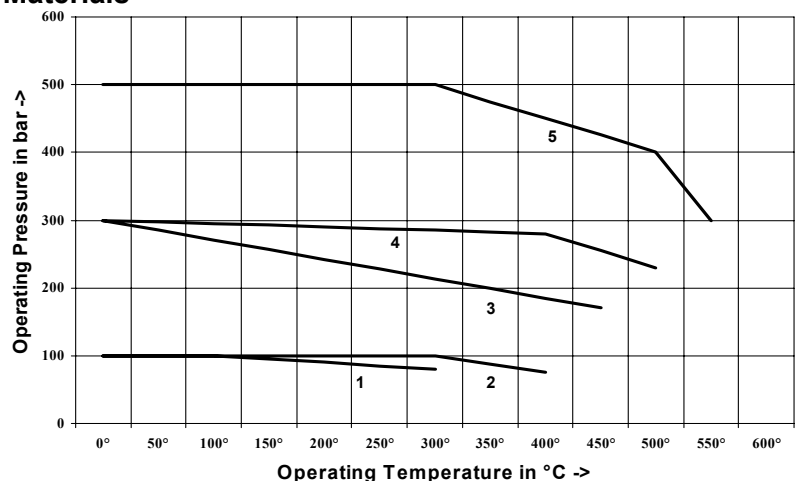
- S = Welding Joint
- E = Smooth pipe for Compression-type fitting
- G 1/2" = thread union for flange Connection DIN 19207
- G 5/8" = thread union for flange Connection DIN 19207

Accessories for flange connection DIN 19207

See page 97.4

**Span of Application for Vessels and Materials**

Curve	Type	Materials	Joint
1	AK 100	H II, 1.4571	E, G 1/2"
2	AK 100	H II, 1.4571	S, G 5/8"
3	AK 320	13CrMo44	G 5/8"
4	AK 320	13CrMo44	S
5	AK 500	10CrMo910	S



## AV 100 Shut-Off Valves

Light-duty design

### Application

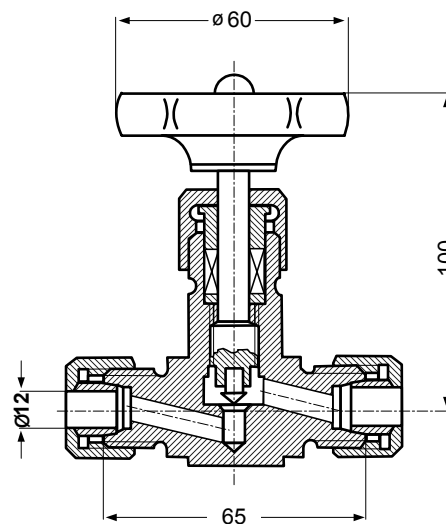
For flow-rate measurement instruments (gases, steams and fluids) to shut-off joints of DP-Flow elements.

### Construction

Casing and head end completely forged out of unalloyed high-grade steel C22 or stainless steel 1.4571 according to conditions of operation. Seat is mounted into casing and not exchangeable. For oxygen a design free from grease is possible (additional costs).

### Technical Details

<b>Nominal pressure:</b>	DN 5 (ANSI xxx)
<b>Nominal diameter:</b>	up to PN 100 (ANSI xxx)
<b>Temperature:</b>	up to 250°C Depending on operating pressure The diagram on page 97.4 shows span of application
<b>Spindle:</b>	with enrolled cone
<b>Packing:</b>	Pure graphite resp. PTFE
<b>Handwheel:</b>	Polyamide fortified with fibre glass with recessed square



AV 100 E

### Connections

Type	Material	Inlet	Outlet
AV 100 E	C22	E 12	E 12
	1.4571	E 12	E 12

E = compression-type fitting DIN 2353

### Special Designs

The shut-off valve AV 100 may also be delivered made out of material C22 as special design for all gases according "DVGW-Arbeitsblatt" (worksheet) with DVGW-test according to DIN 3537.

## AV 400 Shut-Off Valves

Heavy-duty design

### Application

For flow-rate measurement instruments (gases, steams and fluids) to shut-off joints of DP-Flow elements.

### Construction

With exchangeable head end and enclosed spindle thread. Valve body forged out of unalloyed high-grade steel C22 and stainless steel 1.4571.

For oxygen a design free from grease is possible (additional costs).

### Technical Details

**Nominal pressure:** DN 8 (ANSI xxx)

**Nominal diameter:** up to PN 400 (ANSI xxx)

**Temperature:** up to 250°C  
Depending on operating pressure  
The diagram on page 97.4 shows span of application

**Spindle:** back sealing

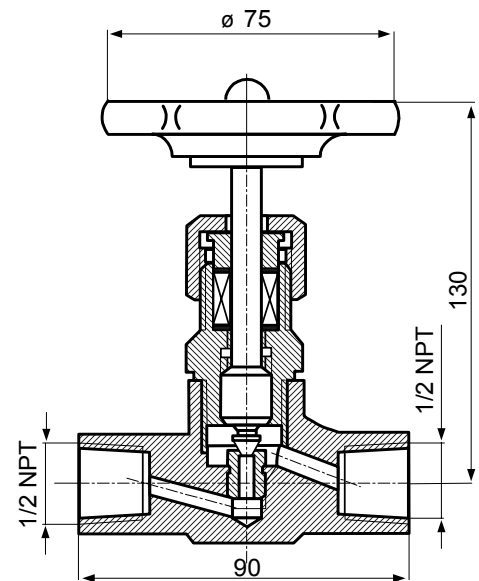
**Cone:** Enrolled, movable

**Seat:** Exchangeable

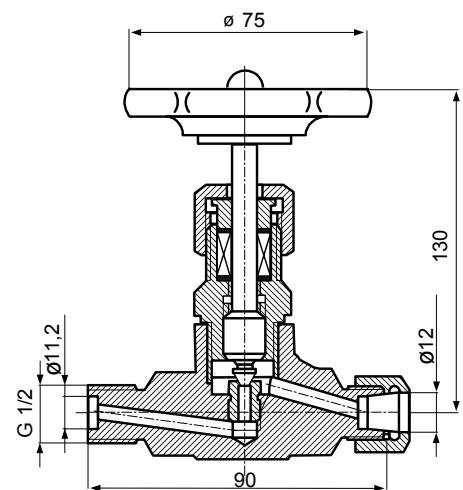
**Packing:** Pure graphite resp. PTFE

**Handwheel:** moulded

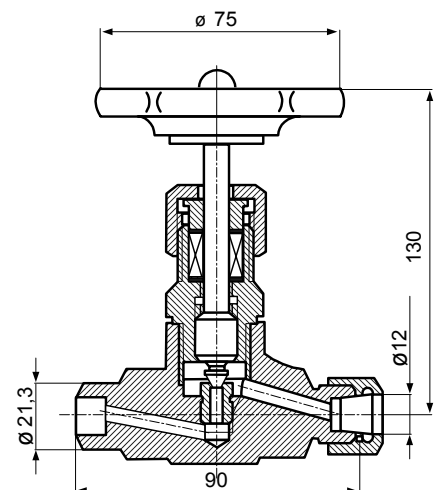
**Connections:** As standard design according to following table. Additionally it is possible to manufacture according to customer specification and DIN 19208 (weld joint 21,3 x 6,3 and 24 x 7,1).



AV 400 M



AV 400 F



AV 400 S

Type	Material	Inlet	Outlet
AV 400 M	C22 and 1.4571	1/2 NPT 1/2 NPT G 1/2	1/2 NPT E 12 E 12
AV 400 E	C22 C22 1.4571	E 16 E 12 E 12	E 12 E 12 E 12
AV 400 F	C22 C22 1.4571	G 1/2 * G 5/8 * G 1/2 *	E 12 E 12 E 12
AV 400 S	C22 and 1.4571	S 17,2 x 4 S 21,3 x 4 S 21,3 x 4 S 21,3 x 4	E 12 S 21,3 x 4 S 14 x 2,5 E 12

E = compression-type fitting

S = welding connection

\* = thread union for flange connection DIN 19207 (for accessories see page 97.4)

## AV 320 Shut-Off Valves

Heavy-duty design

### Application

For flow-rate measurement instruments (gases, steams and fluids) to shut-off joints of DP-Flow elements.

### Construction

With exchangeable head end and spindle thread positioned outside. Valve body forged out of alloyed, heat resistant steel 13CrMo44 (1.7335) and for type AV320 T also out of 10CrMo910 (1.7380).

### Technical Details

**Nominal pressure:** AV 320 B DN 8 (ANSI xxx)  
AV 320 T DN 12 (ANSI xxx)

**Nominal diameter:** up to 500 bar

**Temperature:** up to 550°C  
Depending on operating pressure and Material. The diagram on page 97.4 shows span of application

**Spindle:** back sealing

**Cone:** Enrolled, movable

**Seat:** Exchangeable

**Packing:** Superheated steam out of pure graphite

**Handwheel:** Drawn out of steel panel with recessed square

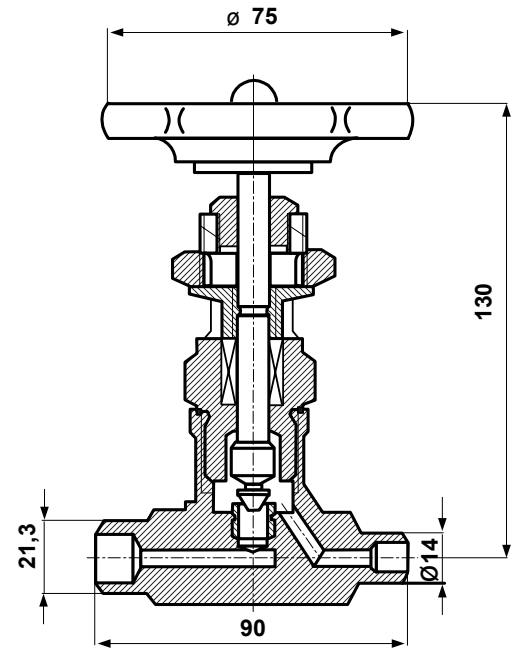
**Connections:** As standard design according to following table. Additionally it is possible to manufacture according to customer specification and DIN 19208 (weld joint 21,3 x 6,3 and 24 x 7,1).

Type	Material	Inlet	Outlet
AV 320 B	13CrMo44	S 21,3 x 4	S 21,3 x 4
		S 21,3 x 4	S 14 x 2,5
		S 21,3 x 4	E 12
		G 5/8 *	E12
AV 320 T	13CrMo44	S 21,3 x 4	S 21,3 x 4
		S 21,3 x 4	S 14 x 2,5
		S 21,3 x 4	E 12
	10CrMo910	S 21,3 x 4	S 21,3 x 4
		S 21,3 x 4	S 14 x 2,5

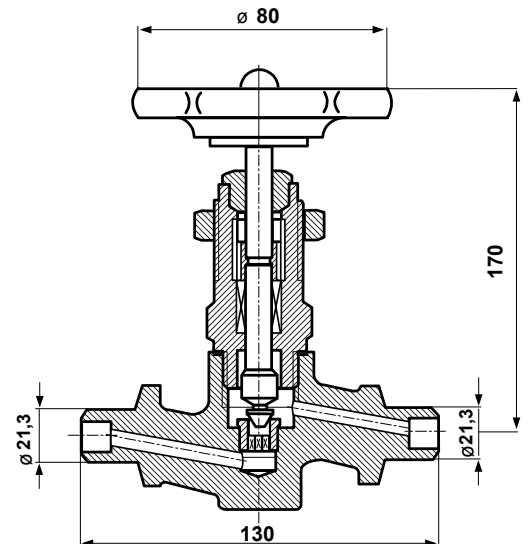
E = compression-type fitting

S = welding connection

\* = DIN 19207



AV 320 B



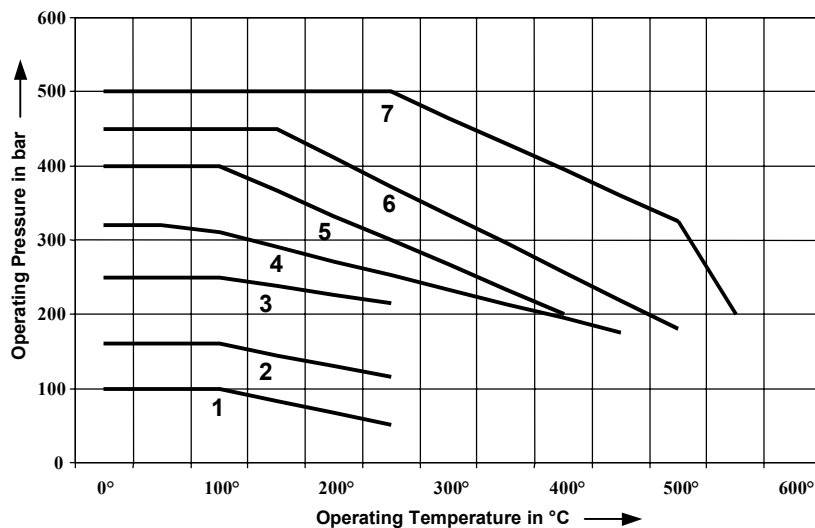
AV 320 T

### Span of application for valves and materials

You may take the span of application from following diagram.

The pressure- temperature course is much more determined by forged ring than by the joints. Therefore this diagram is only guiding data.

Curve	Type	Materials	Joint
1	AV 100	C22, 1.4571	E
2	AV 400M	C22, 1.4571	G 1/2
	AV 400F	C22, 1.4571	G 1/2
3	AV 400F	C22	G 5/8
4	AV 320B	13CrMo44	G 5/8
5	AV 400E	C22, 1.4571	E
	AV 400S	C22, 1.4571	S
6	AV 320B	13CrMo44	S
	AV 320T	13CrMo44	S
7	AV 320T	10CrMo910	S



### Material Certificates

Material certificates for valve body according to EN 10204 (DIN 50049 3.1B).  
For type **AV 320T** consisting of 1.7335 and 1.7380 also with 3.1A (TÜV).

### Materials

	Carbon Steel		Alloyed Structural Steel (heatresistant)		Stainless Steel	
<b>Casing</b>	C22.8	1.0460	13CrMo44 and 10CrMo910	1.7335 1.7380	X6CrNiTi17122	1,4571
<b>Spindle</b>	X12CrMoS17	1.4104	X6CrNiTi17122	1,4571	X6CrNiTi17122	1,4571
<b>Cone</b>	X12CrMoS17	1.4104	X6CrNiTi17122	1,4571	X6CrNiTi17122	1,4571
<b>Seat</b>	X12CrMoS17	1.4104	X6CrNiTi17122	1,4571	X6CrNiTi17122	1,4571
<b>compression gland</b>	9S20	1.0711	X10CrNiS189	1.4305	X10CrNiS189	1.4305
<b>coupling nut</b>	9S20	1.0711	X10CrNiS189	1.4305	X10CrNiS189	1.4305
<b>Packing</b>	Pure Graphite	/	Pure Graphite	/	PTFE	/
<b>Handwheel</b>	Moulded	/	Steel Panel	/	Moulded	/

### Accessories for Flange Joint according to DIN 19207

For every connection according to DIN 19207 following accessories are necessary and has to be ordered separately:

<b>G 1/2</b>	2 Thread Flanges G 1/2 1 Gasket 17x11,2x1,5 4 Screws M10x45 DIN 931 with nuts	<b>G 5/8</b>	2 Thread Flanges G 5/8 1 Gasket 20,x11,7x1,5 4 Screw bolts M12x70 DIN 2510 with nuts
--------------	---	--------------	--

The materials of the flanges and screws correspond to the valve type and the application.

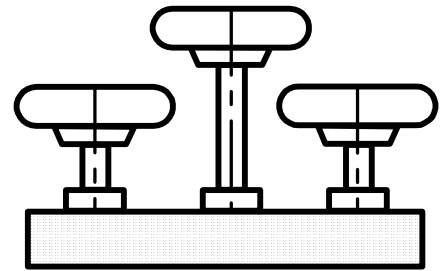
### Additional Accessories

- Ball valves and transverse valves out of steel, stainless steel and plastics
- Bellow valves out of steel and stainless steel

## AB Manifolds

### Application

For steam flow-rate measurement instruments to shut-off and blow-off DP-flow ducts and zero adjustment control of connected measuring transmitter.



### Construction

As 3-way and 5-way manifold.

The 3-way manifolds serve for shutting-off of DP-flow ducts and for zero adjustment control of connected measuring transmitter. As an add-on the 5-way manifolds have two blow-off valves.

Both constructions may be delivered either for wall mounting or for direct connection with the measuring transmitter (DIN 19213).

The manifold housing consists of unalloyed high-grade steel and stainless steel 1.4571 and is forged out of one piece. Special constructions may be carried out in 13CrMo44.

### Technical Details

<b>Nominal Pressure:</b>	DN 5 (ANSI xxx)
<b>Nominal pressure:</b>	up to PN 400 (ANSI up to xxxx lbs)
<b>Temperature:</b>	Up to 400 °C
<b>Valve Heads:</b>	Exchangeable
<b>Spindle:</b>	Back sealing
<b>Cone:</b>	Enrolled, movable
<b>Seat:</b>	Exchangeable
<b>Packing:</b>	Pure graphite resp. PTFE
<b>Handling:</b>	3-way manifolds: with handwheel 5-way manifolds: with detachable socket wrench
<b>Connections:</b>	As standard according to following table. Additionally it is possible to manufacture along customer specifications.

Type	Material	Inlet	Outlet
AB 3 400 E	C22 and 1.4571	E 12	E 12 (wall mounting)
AB 3 160 T	C22 and 1.4571	E 12	measuring transmitter
AB 5 400 E	C22 and 1.4571	E 12	E 12 (wall mounting)
AB 5 160 T	C22 and 1.4571	E 12	measuring transmitter

E = Compression-Type Fitting

### Particularities

For direct connection to the measuring transmitter it is always necessary to specify its type because different mounting screws are needed.

### Additional Scope of Delivery

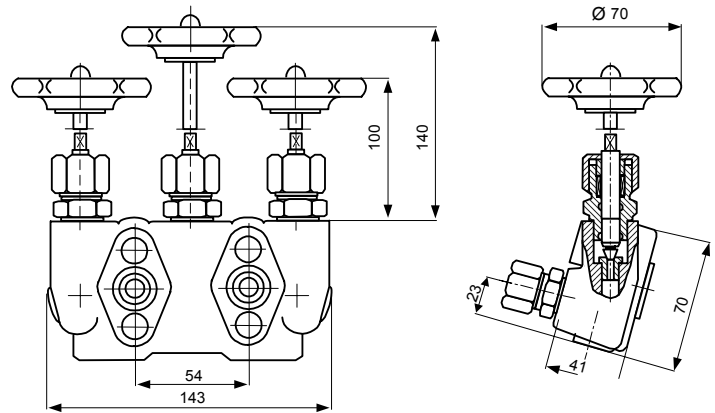
1. free of oil and grease for oxygen
2. with oversized valve spindles
3. valve heads with bellow and safety compression gland
4. material certificate according to EN 10204 (along with DIN 50049 3.1B).

## Dimensional Sketches

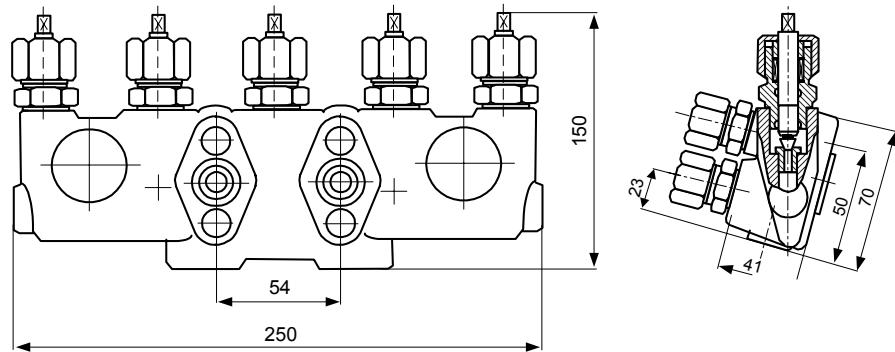
### Accessories

For direct connection the following accessories are needed and will be supplied with manifold:

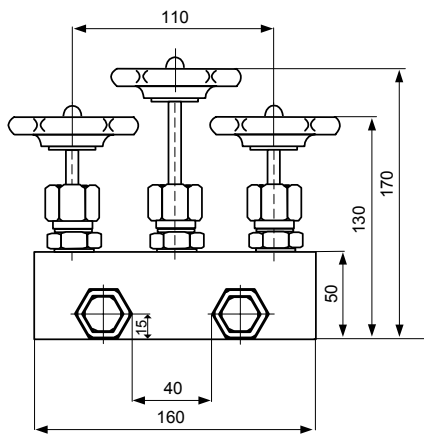
- 4 Stück Sechskantschrauben mit Unterlegscheiben  
M 12 x 50 DIN 931 oder  
7/16 UNF x 20 x 2"
- 2 Stück PTFE Dichtungen  
Ø 17,7 x Ø 2 x 2,9 DIN 19213
- 1 Steckschlüssel  
Bei 5-fach Ventilblöcken



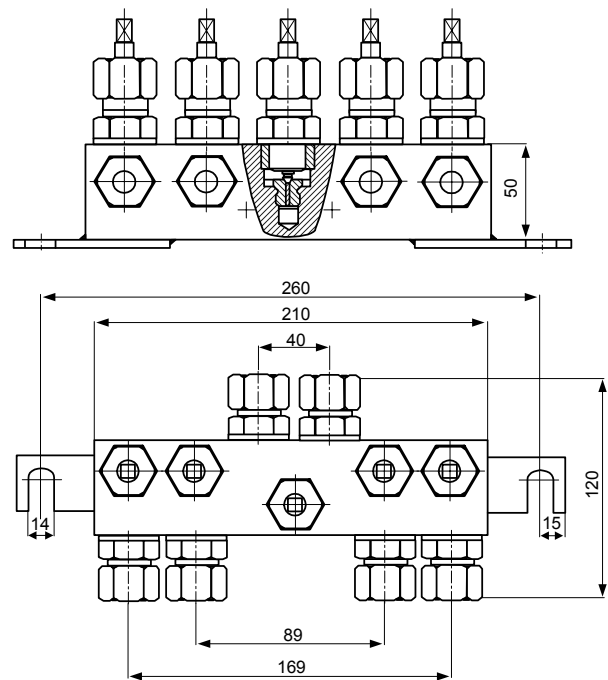
3-fach Ventilblock für Direktanschluss an den Messumformer ( AB 3 160 T)



5-fach Ventilblock für Direktanschluss an den Messumformer ( AB 5 160 T)



3-fach Ventilblock für Wandmontage ( AB 3 400 E)



5-fach Ventilblock für Wandmontage ( AB 5 400 E)