

SERVICE VALVES FOR REFRIGERATION

HRS, HRSB, HRSN

02.07.2026



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1 Product overview HRS/HRSB/HRSN

HRS / HRSB / HRSN

HRS: Service valves - O-ring stem seal

HRS	Connection	Form	Material	Valve type
HRS	Materials			
HRS PS63	Various connections	Straight-way	St	HRS D ...
			NIRO	HRS D NIRO ...
		Angle	St	HRS E ...
			NIRO	HRS E NIRO ...
HRS MAV PS63	Various connections	Straight-way	St	HRS MAV D ...
			NIRO	HRS MAV D NIRO ...
		Angle	St	HRS MAV E ...
			NIRO	HRS MAV E NIRO ...

HRSB: Service valves - with metal bellows

HRSB	Connection	Form	Material	Valve type
HRSB	Materials			
HRSB PS40	Various connections	Straight-way	NIRO	HRSB D NIRO ...
		Angle	NIRO	HRSB E NIRO ...
HRSB MAV PS40	Various connections	Straight-way	NIRO	HRSB MAV D NIRO ...
		Angle	NIRO	HRSB MAV E NIRO ...

HRSN: Needle valves - O-ring stem seal

HRSN	Connection	Form	Material	Valve type
HRSN	Materials			
HRSN PS63	Various connections	Straight-way	St	HRSN D ...
			NIRO	HRSN D NIRO ...
		Angle	St	HRSN E ...
			NIRO	HRSN E NIRO ...
HRSN MAV PS63	Various connections	Straight-way	St	HRSN MAV D ...
			NIRO	HRSN MAV D NIRO ...
		Angle	St	HRSN MAV E ...
			NIRO	HRSN MAV E NIRO ...
Information	HRS with accessories			
	HRS with various accessories			
	HRS with accessories			
	HRS with blind nut BM			
	Legal notices			

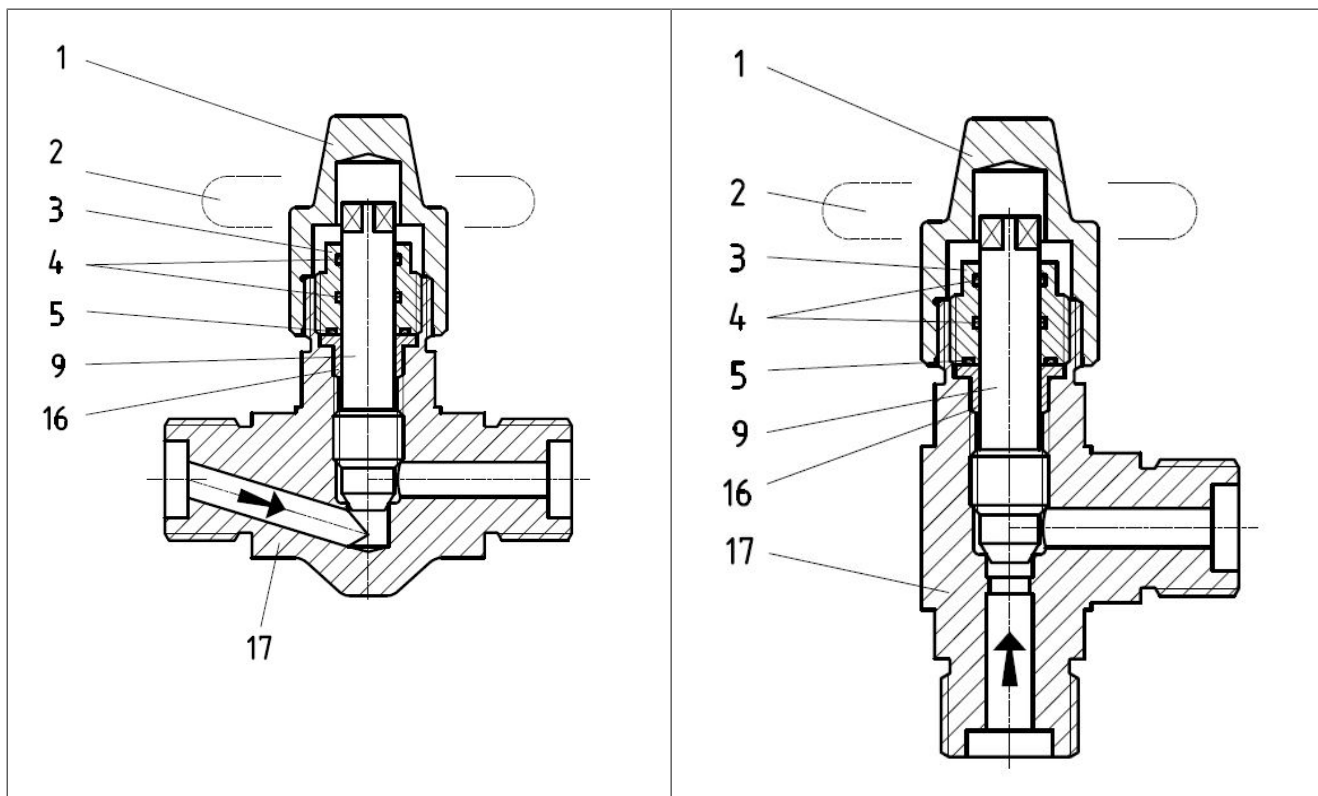
St = steel / NIRO = stainless steel

2 HRS materials

HRS materials

Designation and materials

HRS - service valve



	Part	Material for steel valves	Material for stainless steel valves
1	Cap	11SMn30 1.0715	X8CrNiS18-9 1.4305
2	Handwheel	Steel	Steel
3	Guide bush	11SMn30 1.0715	X8CrNiS18-9 1.4305
4	O-ring A	CR, NBR, HNBR, EPDM*	CR, NBR, HNBR, EPDM*
5	O-ring B	CR, NBR, HNBR, EPDM*	CR, NBR, HNBR, EPDM*
9	Stem	X6CrNiMoTi17-12-2 1.4571	X8CrNiS18-9 1.4305
16	Back seal	X8CrNiS18-9 1.4305	X8CrNiS18-9 1.4305
17	Body	P250GH 1.0460 electrogalvanised	X6CrNiMoTi17-12-2 1.4571

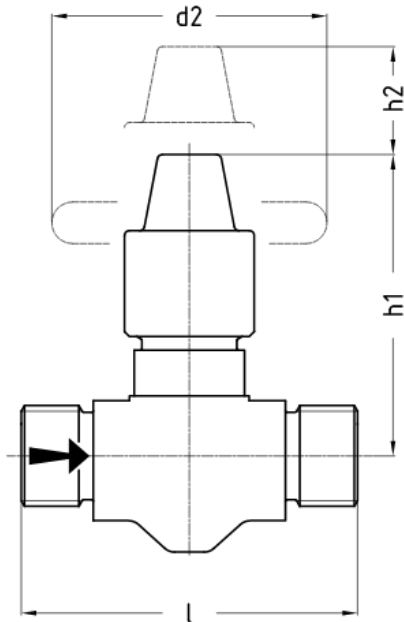
* depending on the refrigerant used

3 HRS D

D: Straight-way

HRS steel service valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines

Example: **HRS D A11 A11**



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)			
		Body connections		Accessories					
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple	66	65	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	65	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	65	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	65	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	65	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			66	65	20	60
Other	Other	Other	Other	without	without	66	65	20	60

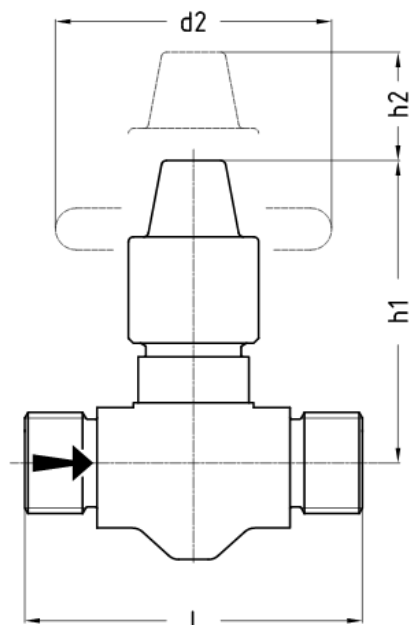
Table 1: Coding, connections, dimensions in mm:

4 HRS D NIRO

D: Straight-way

HRS stainless steel service valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines

Example: **HRS D NIRO A11 A11**



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN63	63	63	63	63	PS [bar]

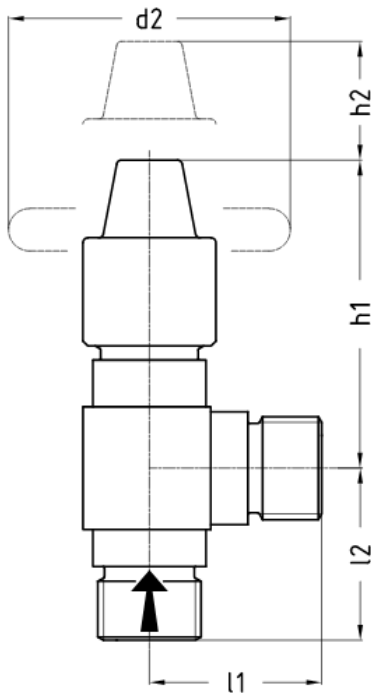
Coding		Connections				mm (without accessories)			
		Body connections		Accessories					
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	65	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	65	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	65	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	65	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	65	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			66	65	20	60
Other	Other	Other	Other	without	without	66	65	20	60

Table 2: Coding, connections, dimensions in mm:

5 HRS E

E: Angle

Service valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN63	47.2	63	63	63	PS [bar]

Coding:		Connections:				mm (without accessories)				
Inlet	Outlet	Body connections		Accessories		Inlet	Outlet	Inlet	Outlet	
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	60	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	60	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	60	20	60
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	60	20	60
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	60	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	60	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"- LH		Right-left nut G1/2"- LH-G1/2"	32	32	60	20	60
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	60	20	60

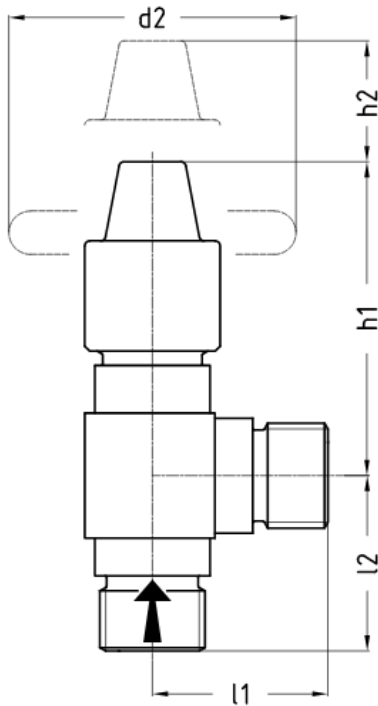
Coding:		Connections:				mm (without accessories)				
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	60	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	60	20	60
Other	Other	Other	Other	without	without	32	32	60	20	60

Table 3: Coding, connections, dimensions in mm:

6 HRS E NIRO

E: Angle

HRS stainless steel service valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)				
		Body connections		Accessories						
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l1	l2	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	60	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	60	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	60	20	60
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	60	20	60
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	60	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	60	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"- LH		Right-left nut G1/2"- LH-G1/2"	32	32	60	20	60
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	60	20	60

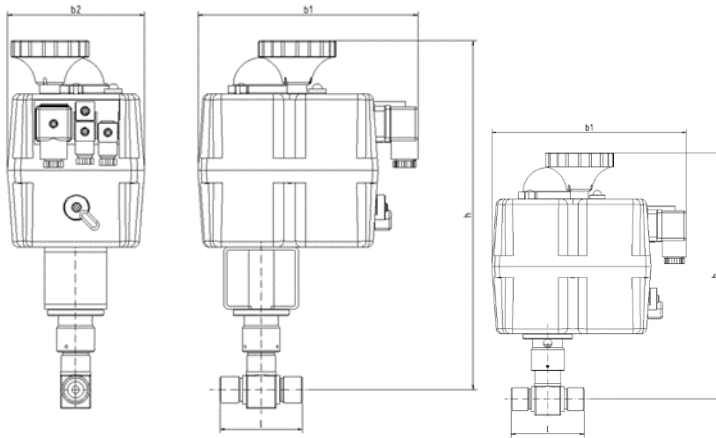
Coding		Connections				mm (without accessories)				
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	60	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	60	20	60
Other	Other	Other	Other	without	without	32	32	60	20	60

Table 4: Coding, connections, dimensions in mm:

7 HRS MAV D

D: Straight-way

HRS MAV steel service valve with electronic actuator - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Example: **HRS MAV D A11 A11**

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN63	63	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)				
		Body connections		Accessories						
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l	h1	h2	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	270	220	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	270	220	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	270	220	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			66	270	220	185	110
Other	Other	Other	Other	without	without	66	270	220	185	110

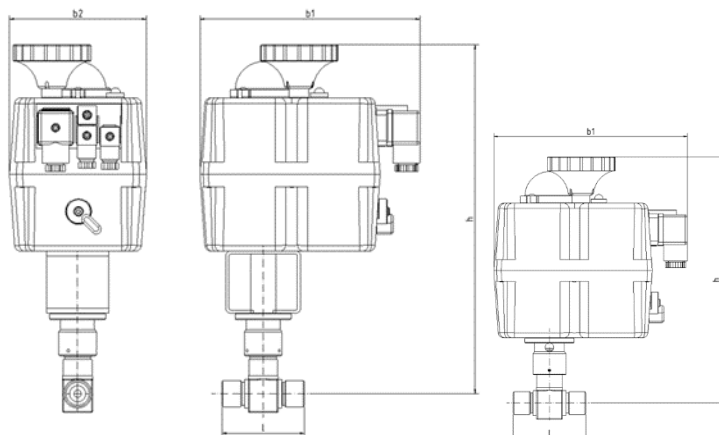
Table 5: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm

8 HRS MAV D NIRO

D: Straight-way

Service valve with electronic actuator - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Example: **HRS MAV D NIRO A11 A11**

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ... 1/2"	PN63	63	63	63	63	PS [bar]

Coding		Connections:				mm (without accessories)				
Inlet	Outlet	Body connections		Accessories		l	h1)	h2)	b1	b2
		Inlet	Outlet	Inlet	Outlet					
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	270	220	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	270	220	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	270	220	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			66	270	220	185	110
Other	Other	Other	Other	without	without	66	270	220	185	110

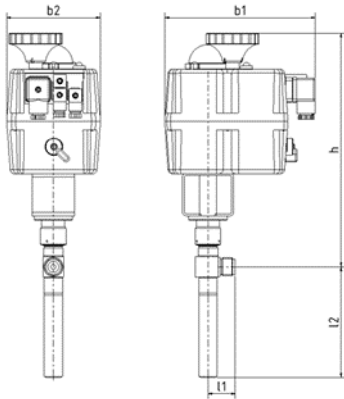
Table 6: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm:

9 HRS MAV E

E: Angle

HRS MAV steel service valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ... 1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections		mm (without accessories)							
Inlet	Outlet	Body connections		Accessories		l1	l2	h1)	h2)	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	265	215	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	265	215	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	265	215	185	110
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	265	215	185	110
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	265	215	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	265	215	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2" -LH-G1/2"	32	32	265	215	185	110
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	265	215	185	110
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	265	215	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	265	215	185	110
Other	Other	Other	Other	without	without	32	32	265	215	185	110

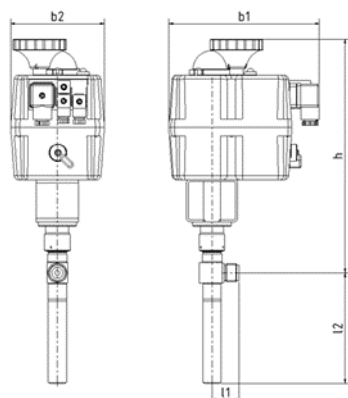
Table 7: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm:

10 HRS MAV E NIRO

E: Angle

Service valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN63	63	63	63	63	PS [bar]

Coding:		Connections:				mm (without accessories)					
Inlet	Outlet	Body connections		Accessories		I1	I2	h1)	h2)	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple /13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	265	215	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple / 13.5 x 1.8	Blind nut	32	32	265	215	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	265	215	185	110
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	265	215	185	110
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	265	215	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	265	215	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH-G1/2"	32	32	265	215	185	110
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	265	215	185	110
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	265	215	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	265	215	185	110
Other	Other	Other	Other	without	without	32	32	265	215	185	110

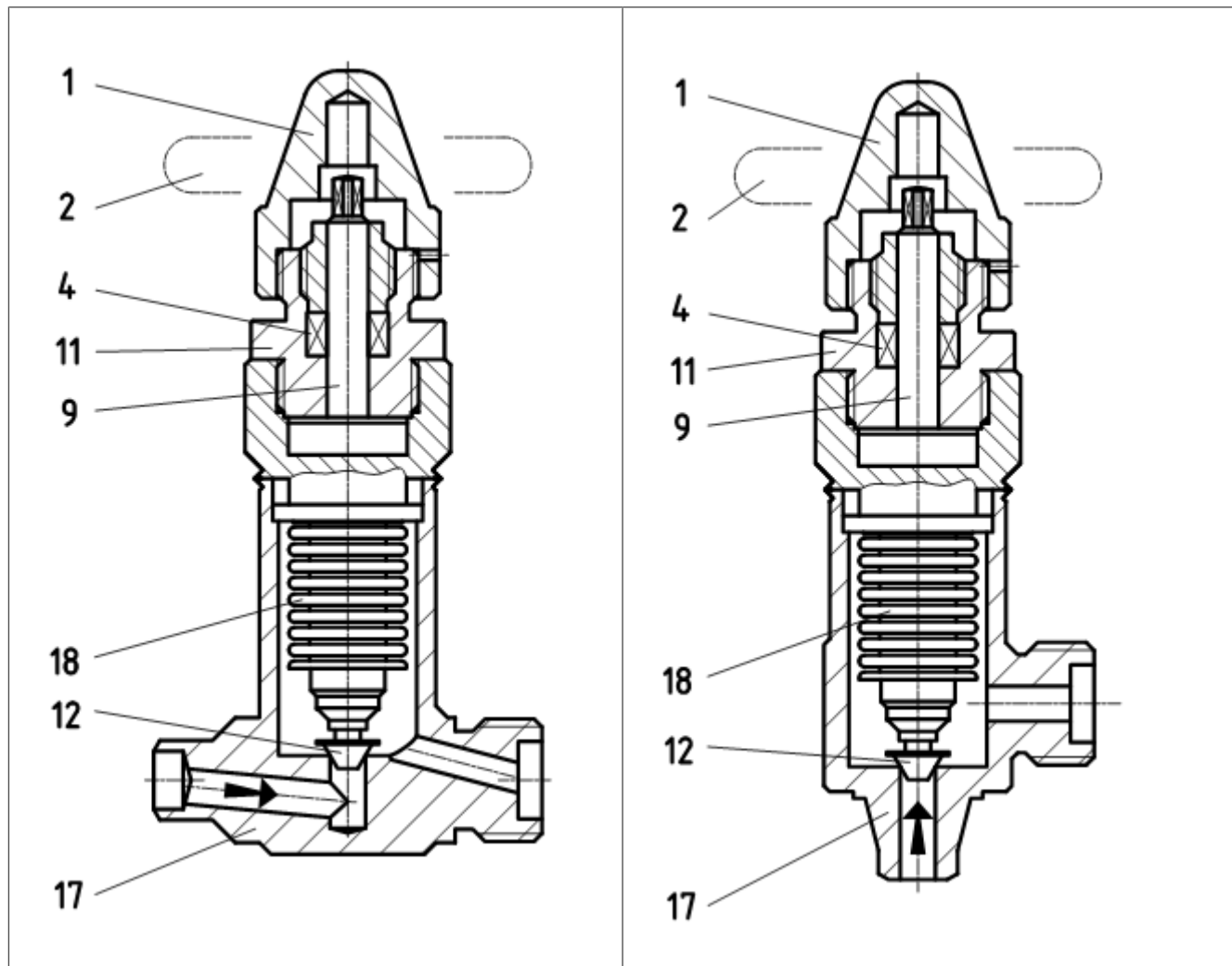
Table 8: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm:

11 HRSB materials

Designation and materials

HRSB - service valve with metal bellows



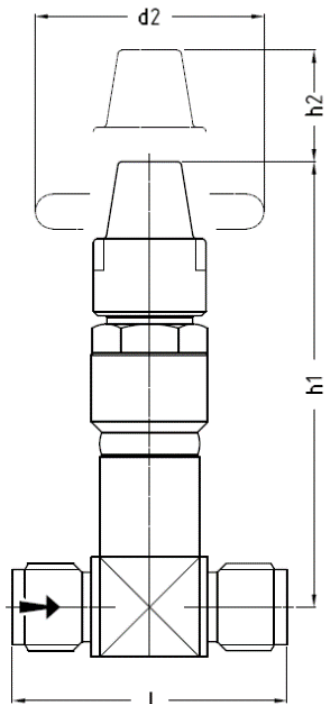
Part	Material for steel valves	Material for stainless steel valves
1 Cap		X6CrNiMoTi17-12-2 1.4571
2 Handwheel		Steel
4 Sealing ring A		PTFE-graphite
9 Stem		X6CrNiMoTi17-12-2 1.4571
11 Bonnet		X6CrNiMoTi17-12-2 1.4571
12 Valve disc		X6CrNiMoTi17-12-2 1.4571
17 Body		X6CrNiMoTi17-12-2 1.4571
18 Metal bellows		X6CrNiMoTi17-12-2 1.4571

12 HRSB D NIRO

D: Straight-way

HRSB stainless steel service valve - with metal bellows for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines

Example: **HRSB D NIRO A11 A11**



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN40	40	40	40	40	PS [bar]

Coding		Connections				mm (without accessories)			
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	105	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	105	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	105	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	105	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	105	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			66	105	20	60
Other	Other	Other	Other	without	without	66	105	20	60

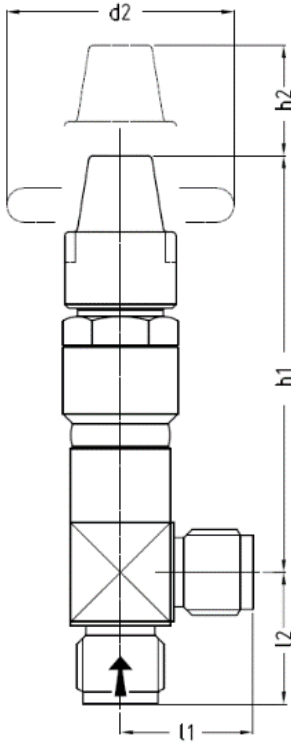
Table 9: Coding, connections, dimensions in mm:

13 HRSB E NIRO

E: Angle

HRSB stainless steel

Service valve - with metal bellows for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN40	40	40	40	40	PS [bar]

Coding		Connections				mm (without accessories)				
		Body connections		Accessories						
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l1	l2	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread d G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	100	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	100	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	100	20	60
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	100	20	60
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	100	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	100	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH-G1/2"	32	32	100	20	60
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	100	20	60

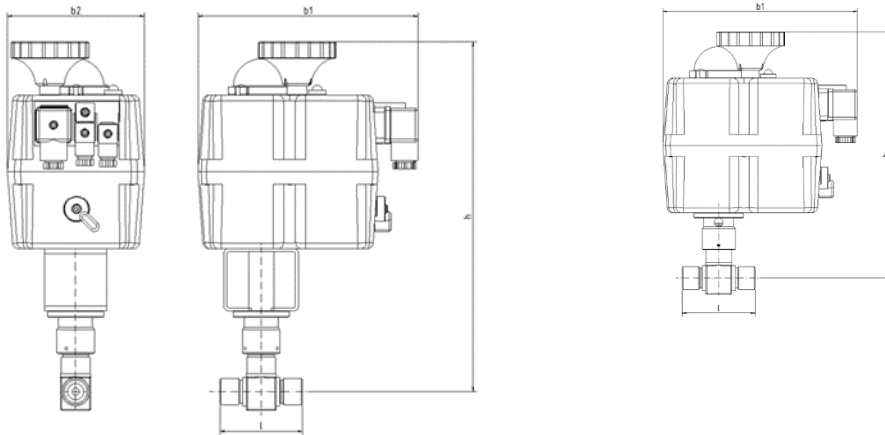
Coding		Connections				mm (without accessories)				
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	100	20	60
A1	A1	Male thread G1/2"	Male thread /G1/2"		-	32	32	100	20	60
Other	Other	Other	Other	without	without	32	32	100	20	60

Table 10: Coding, connections, dimensions in mm:

14 HRSB MAV D NIRO

D: Straight-way

HRSB MAV stainless steel service valve - with metal bellows for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Example: **HRSB MAV D NIRO A11 A11**

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN40	40	40	40	40	PS [bar]

Coding		Connections				mm (without accessories)				
Inlet	Outlet	Body connections		Accessories		l	h1)	h2)	b1	b2
		Inlet	Outlet	Inlet	Outlet					
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	310	260	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	310	260	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	310	260	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	310	260	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	310	260	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			66	310	260	185	110
Other	Other	Other	Other	without	without	66	310	260	185	110

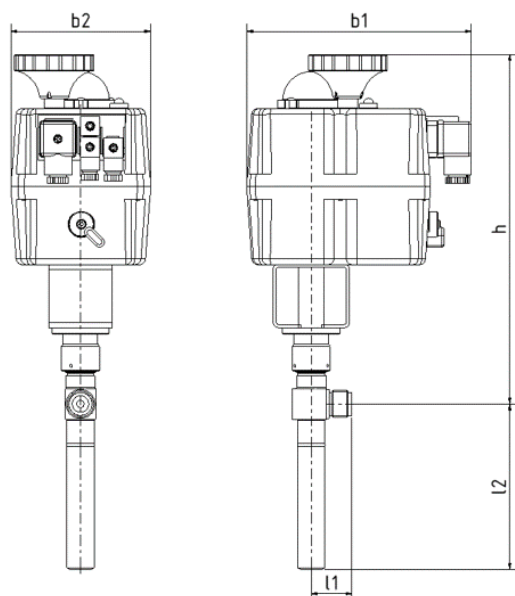
Table 11: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm:

15 HRSB MAV E NIRO

E: Angle

HRSB MAV stainless steel service valve - with metal bellows for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN40	40	40	40	40	PS [bar]

Coding		Connections				mm (without accessories)					
Inlet	Outlet	Body connections		Accessories		l1	l2	h1)	h2)	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	305	255	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	305	255	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	305	255	185	110
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	305	255	185	110
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	305	255	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	305	255	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2" -LH-G1/2"	32	32	305	255	185	110
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	305	255	185	110
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	305	255	185	110

Coding		Connections				mm (without accessories)					
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	305	255	185	110
Other	Other	Other	Other	without	without	32	32	305	255	185	110

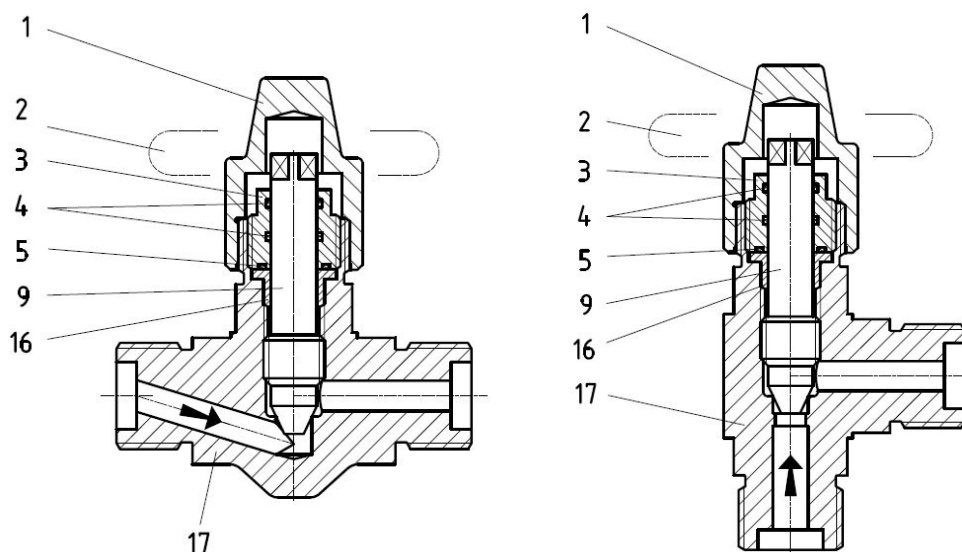
Table 12: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm:

16 HRSN materials

Designation and materials

HRSN needle valve



Part		Material for steel valves	Material for stainless steel valves
1	Cap	11SMn30 1.0715	X8CrNiS18-9 1.4305
2	Handwheel	Steel	Steel
3	Guide bush	11SMn30 1.0715	X8CrNiS18-9 1.4305
4	O-ring A	CR, NBR, HNBR, EPDM*	CR, NBR, HNBR, EPDM*
5	O-ring B	CR, NBR, HNBR, EPDM*	CR, NBR, HNBR, EPDM*
9	Stem	X6CrNiMoTi17-12-2 1.4571	X8CrNiS18-9 1.4305
16	Back seal	X8CrNiS18-9 1.4305	X8CrNiS18-9 1.4305
17	Body	P250GH 1.0460 Electro-galvanised	X6CrNiMoTi17-12-2 1.4571
18	Needle plug	1.0715	1.4305

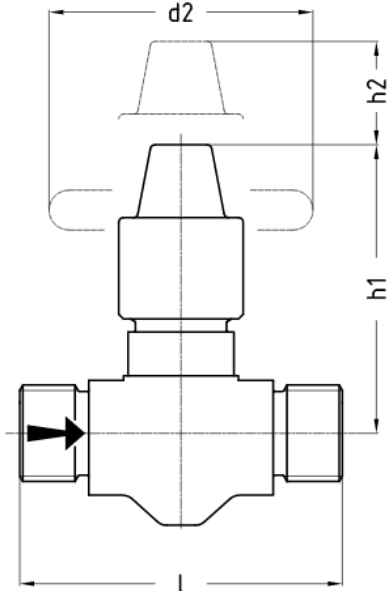
* depending on the refrigerant used

17 HRSN D

D: Straight-way

HRSN steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines

Example: **HRSN D A11 A11**



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ... 1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)			
		Body connections		Accessories					
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	65	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	65	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	65	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	65	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	65	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			66	65	20	60
Other	Other	Other	Other	without	without	66	65	20	60

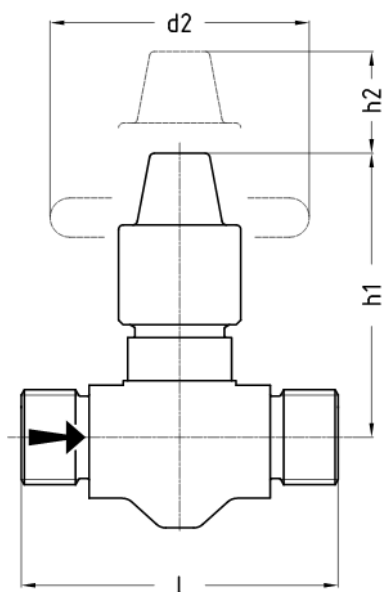
Table 13: Coding, connections, dimensions in mm:

18 HRSN D NIRO

D: Straight-way

HRSN stainless steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines

Example: **HRSN D NIRO A11 A11**



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN63	63	63	63	63	PS [bar]

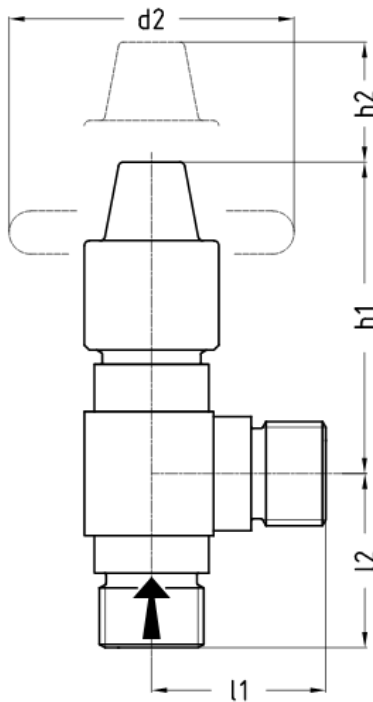
Coding		Connections				mm (without accessories)			
		Body connections		Accessories					
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	65	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	65	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	65	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	65	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	65	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			66	65	20	60
Other	Other	Other	Other	without	without	66	65	20	60

Table 14: Coding, connections, dimensions in mm:

19 HRSN E

E: Angle

HRSN steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)				
		Body connections		Accessories						
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l1	l2	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	60	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	60	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	60	20	60
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	60	20	60
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	60	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	60	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"- LH		Right-left nut G1/2"- LH-G1/2"	32	32	60	20	60
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	60	20	60

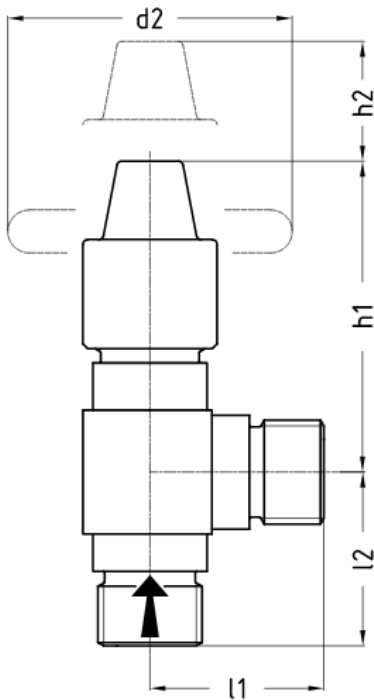
Coding		Connections				mm (without accessories)				
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	60	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	60	20	60
Other	Other	Other	Other	without	without	32	32	60	20	60

Table 15: Coding, connections, dimensions in mm:

20 HRSN E NIRO

E: Angle

HRSN stainless steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ... 1/2"	PN63	63	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)				
Inlet	Outlet	Body connections		Accessories						
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l1	l2	h1	h2	d2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	60	20	60
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	60	20	60
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	60	20	60
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	60	20	60
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	60	20	60
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	60	20	60
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH-G1/2"	32	32	60	20	60
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	60	20	60

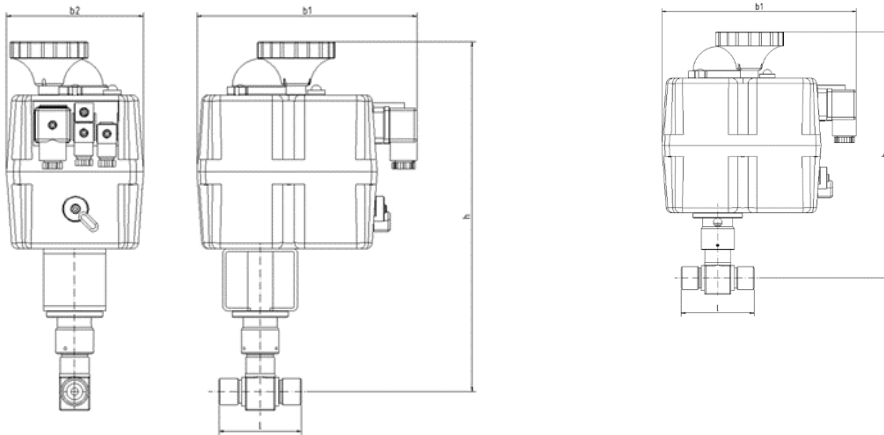
Coding		Connections				mm (without accessories)				
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	60	20	60
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	60	20	60
Other	Other	Other	Other	without	without	32	32	60	20	60

Table 16: Coding, connections, dimensions in mm:

21 HRSN MAV D

D: Straight-way

HRSN MAV steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Example: **HRSN MAV D A11 A11**

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ... 1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)				
Inlet	Outlet	Body connections		Accessories		l	h1)	h2)	b1	b2
		Inlet	Outlet	Inlet	Outlet					
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	270	220	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	270	220	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	270	220	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			66	270	220	185	110
Other	Other	Other	Other	without	without	66	270	220	185	110

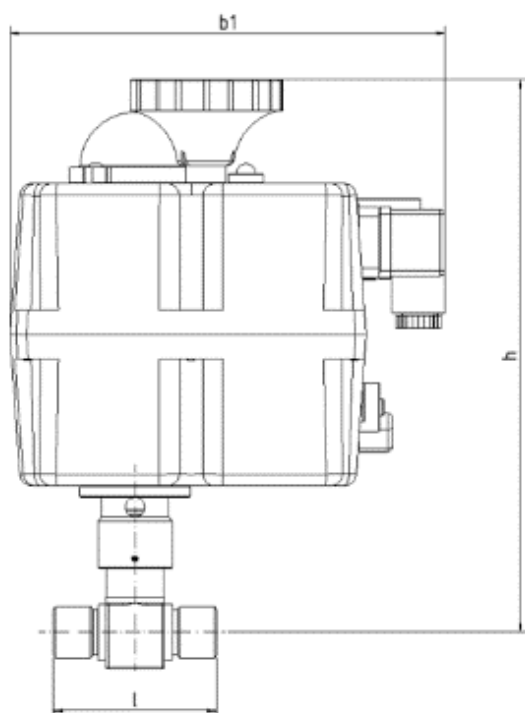
Table 17: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm:

22 HRSN MAV D NIRO

D: Straight-way

HRSN MAV stainless steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Example: **HRSN MAV D NIRO A11 A11**

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)				
Inlet	Outlet	Body connections		Accessories		l	h1)	h2)	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	66	270	220	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	66	270	220	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	66	270	220	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH G1/2"	66	270	220	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			66	270	220	185	110
Other	Other	Other	Other	without	without	66	270	220	185	110

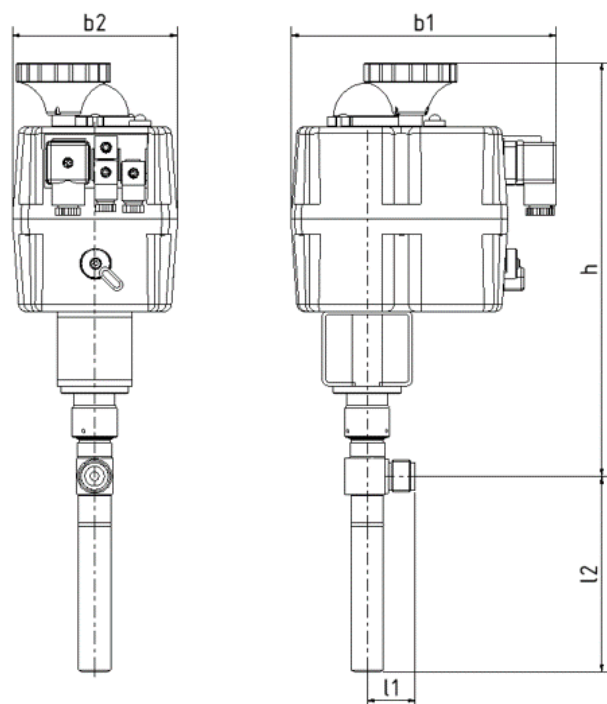
Table 18: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm

23 HRSN MAV E

E: Angle

HRSN MAV steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



1) Direct mounting 2) Mounting accessories for heat dissipation

Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8" ...1/2"	PN63	47.2	63	63	63	PS [bar]

Coding		Connections		mm (without accessories)							
Inlet	Outlet	Inlet	Outlet	Accessories		Inlet	Outlet	h1)	h2)	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	265	215	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	265	215	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	265	215	185	110
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	265	215	185	110
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	265	215	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	265	215	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH-G1/2"	32	32	265	215	185	110
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	265	215	185	110

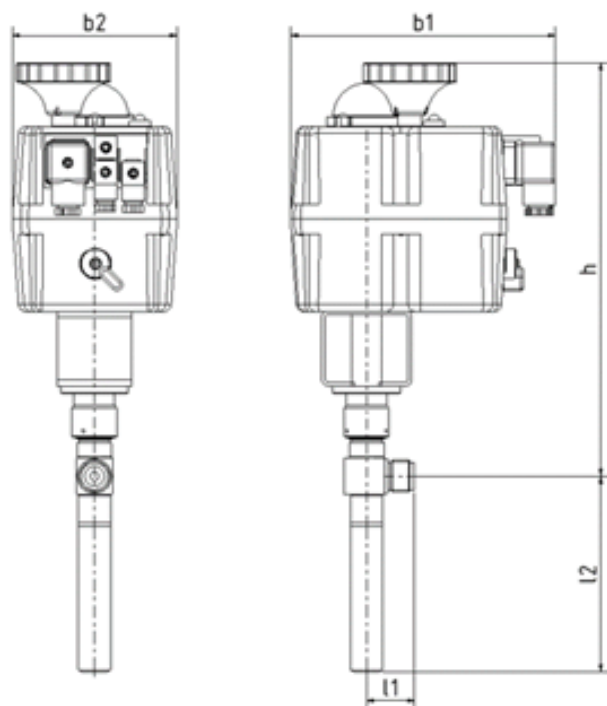
Coding		Connections				mm (without accessories)					
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	265	215	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	265	215	185	110
Other	Other	Other	Other	without	without	32	32	265	215	185	110

Table 19: Coding, connections, dimensions in mm, 1) Mounting accessories for heat dissipation; 2) Direct mounting mm

24 HRSN MAV E NIRO

E: Angle

HRSN MAV stainless steel needle valve - O-ring stem seal for natural refrigerants (NH₃, CO₂) and non-corrosive gases and liquids according to EN 378-1 as well as brines



Pressure/temperature operating limits:

PS: Max. allowable operating pressure in bar

TS: Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

PN: Nominal pressure rating

DN / INCH	PN	-60	-10	+50	+150	TS [°C]
DN 6...15 1/8"...1/2"	PN63	63	63	63	63	PS [bar]

Coding		Connections				mm (without accessories)					
		Body connections		Accessories							
Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	l1	l2	h1)	h2)	b1	b2
A11	A11	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Welding nipple 13.5 x 1.8	32	32	265	215	185	110
A11	A12	Male thread G1/2"	Male thread G1/2"	Welding nipple 13.5 x 1.8	Blind nut	32	32	265	215	185	110
D0	A12	Welding end 13.5 x 1.8	Male thread G1/2"		Blind nut	32	32	265	215	185	110
D0	AL4	Welding end 13.5 x 1.8	Male thread M12x1.5 Ra6		Weld ball nipple	32	32	265	215	185	110
E0	A64	Welding end 17.2 x 1.8	Male thread M16x1.5 Ra10		Weld ball nipple	32	32	265	215	185	110
F0	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	32	265	215	185	110
F0	A23	Welding end 21.3 x 2.0	Male thread G1/2"-LH		Right-left nut G1/2"-LH-G1/2"	32	32	265	215	185	110
F0	A82	Welding end 21.3 x 2.0	Male thread M18x1.5 Ra12		Weld ball nipple	32	32	265	215	185	110

Coding		Connections				mm (without accessories)					
F5	A12	Welding end 21.3 x 2.0	Male thread G1/2"		Blind nut	32	130	265	215	185	110
A1	A1	Male thread G1/2"	Male thread G1/2"			32	32	265	215	185	110
Other	Other	Other	Other	without	without	32	32	265	215	185	110

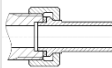
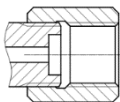
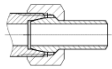
Table 20: Coding, connections, dimensions in mm:

1) Mounting accessories for heat dissipation 2) Direct mounting mm

25 HRS with accessories

HRS with various accessories

HRS service valves can be ordered with a variety of threaded connections. Please enquire about screw ends and threaded connections that are not listed below.

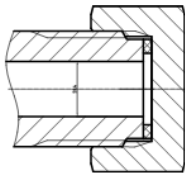
Accessory group	Valve designation	Valve code	Connections	
UM + ST Union nut with welding nipple				
 UM + ST	HRS D A11/A11	02560F07A5A31111	I/O:	G1/2" with UM + ST
	HRS E A11/A11	02660F07A5A31111	I/O:	G1/2" with UM + ST
	HRS D NIRO A11/A11	02560F07A8A31111	I/O:	G1/2" with UM + ST
	HRS E NIRO A11/A11	02660F07A8A31111	I/O:	G1/2" with UM + ST
DM Double nut right-hand/left-hand				
 DM	HRS D F0/A23	02562F10A5A30203	I:	Welding end 21.3x2.0 mm
			O:	G1/2"-LH with DN
	HRS E F0/A23	02662F10A5A30203	I:	Welding end 21.3x2.0 mm
			O:	G1/2"-LH with DN
	HRS D NIRO F0/A23	02562F10A8A30203	I:	Welding end 21.3x2.0 mm
		O:	G1/2"-LH with DN	
	HRS E NIRO F0/A23	02662F10A8A30203	I:	Welding end 21.3x2.0 mm
		O:	G1/2"-LH with DN	
	HRS E NIRO A6A/A23	02660F07A8A362A3	I:	G1/4"
			O:	G1/2"-LH with DN
UM + SKB Union nut with weld ball nipple				
 UM + SKB	HRS E AC/A84 PS63	02660F07A5A3C804	I:	M16x1.5-taper
			O:	M18x1.5 RA12 with UN + WBN
	HRS E A84/A84 PS63	02660F07A5A38844	I/O:	M18x1.5 RA12 with UN + WBN
	HRS E AS4/AS4 PS63	02660F07A5A3SS44	I/O:	M26x1.5 RA18 with UM+SKB
	HRS E AT4/AT4 PS63	02660F07A5A3TT44	I/O:	M30x2 RA22 with UM+SKB
	HRS E E4/AN4 PS63	02662F08A5A34N04	I:	Welding end 18x3 mm
			O:	G1/2" RA12 with UN + WBN
	HRS E AC/AN4 PS63	02660F07A5A3CN04	I:	M16x1.5-taper
			O:	G1/2" RA12 with UN + WBN
	HRS E AD/AN4 PS63	02660F07A5A3DN04	I:	M22x1.5-taper
			O:	G1/2" RA12 with UN + WBN
	HRS E E4/AP4 PS63	02662F08A5A34P04	I:	Welding end 18x3 mm
			O:	G3/4" RA18 with UN + WBN
	HRS E AD/AP4 PS63	02660F07A5A3DP04	I:	M22x1.5-taper
			O:	G3/4" RA18 with UN + WBN
	HRS E AG/AN4 PS63	02660F07A5A3GN04	I:	R1/4"-taper
		O:	G1/2" RA12 with UN + WBN	
	HRS E AX/AN4 PS63	02660F07A5A3XN04	I:	R1/2"-taper
		O:	G1/2" RA12 with UN + WBN	
	HRS E AN4/AC PS63	02660F07A5A3NC40	I:	G1/2" RA12 with UN + WBN
		O:	M16x1.5-taper	
	HRS E AC/A84 PS63	02660F07A5A3C804	I:	M16x1.5-taper
			O:	M18x1.5 RA12 with UN + WBN

I: = inlet/ O: = outlet

26 HRS with accessories

HRS with blind nut BM

HRS service valves can be ordered with a variety of threaded connections. Please enquire about screw ends and threaded connections that are not listed below.

Accessory group	Valve designation	Valve code	Connections	
BM Blind nut				
	HRS E E4/AN2 PS63	02662F08A5A34N02	I:	Welding end 18x3 mm
			O:	G1/2" RA12 with BN
	HRS E AC/AN2 PS63	02660F07A5A3CN02	I:	M16x1.5-taper
			O:	G1/2" RA12 with BN
	HRS E AD/AN2 PS63	02660F07A5A3DN02	I:	M22x1.5-taper
			O:	G1/2" RA12 with BN
	HRS E E4/AP2 PS63	02662F08A5A34P02	I:	Welding end 18x3 mm
			O:	G3/4" RA18 with BN
	HRS E AD/AP2 PS63	02660F07A5A3DP02	I:	M22x1.5-taper
			O:	G3/4" RA18 with BN
	HRS E AX/AN2 PS63	02660F07A5A3XN02	I:	R1/2"-taper
			O:	G1/2" RA12 with BN
	HRS E AN2/AC PS63	02660F07A5A3NC20	I:	G1/2" RA12 with BN
			O:	M16x1.5-taper
	HRS E AC/AN2/AN2	E2460F07C5ANN022	I:	M16x1.5-taper
			O1:	G1/2" RA12 with BN
			O2:	G1/2" RA12 with BN
	HRS D D0/A12	02562F07A5A30102	I:	Welding end 13.5x1.8 mm
			O:	G1/2" with BN
	HRS D F0/A12	02562F10A5A30102	I:	Welding end 21.3x2.0 mm
		O:	G1/2" with BN	
HRS D NIRO D0/A12	02562F07A8A30102	I:	Welding end 13.5x1.8 mm	
		O:	G1/2" with BN	
HRS D NIRO F0/A12	02562F10A8A30102	I:	Welding end 21.3x2.0 mm	
		O:	G1/2" with BN	
HRS E D0/A12	02662F07A5A30102	I:	Welding end 13.5x1.8 mm	
		O:	G1/2" with BN	
HRS E F0/A12	02662F10A5A30102	I:	Welding end 21.3x2.0 mm	
		O:	G1/2" with BN	
HRS E F6/A12	02662F10A5A36102	I:	Long welding end 21.3x2.0 mm	
		O:	G1/2" with /BM	
HRS E F8/A12	02662F10A5A38102	I:	Extra long welding end 21.3x2.0 mm	
		O:	G1/2" with BN	
HRS E NIRO D0/A12	02662F07A8A30102	I:	Welding end 13.5x1.8 mm	
		O:	G1/2" with BN	
HRS E NIRO F0/A12	02662F10A8A30102	I:	Welding end 21.3x2.0 mm	
		O:	G1/2" with BN	
HRS E NIRO F5/A12	02662F10A8A35102	I:	Long welding end 21.3x2.0 mm	
		O:	G1/2" with BN	

I: = inlet/ O: = outlet

27 Legal notices

- GEA AWP valves must be handled in accordance with the GEA AWP operating regulations.
- The safety instructions mentioned in the operating regulations must be observed.
- A hazard analysis is available for GEA AWP valves.
- GEA AWP valves must only be handled by authorised persons.
- The instructions for the use of personal protective equipment (PPE) must be observed.
- GEA AWP valves must be used for their intended purpose.
- This catalogue has been carefully created and checked; however, it may still contain errors. The technical specifications given in the catalogue are not contractually guaranteed properties. Technical specifications are only binding if they have been confirmed by us in writing.
- We reserve the right to make technical changes.
- Further information on our declarations of conformity, operating regulations, calculation software and the general terms and conditions can be found on our website www.awpvalves.com under the Tools/Downloads tab.
- Our general terms and conditions apply.

GEA AWP GmbH
Armaturenstr. 2
17291 Prenzlau
Germany
phone: +49 3984 8559-0
fax: +49 3984 8559-18
e-mail: info@awpvalves.com

