ENGINEERING
TOMORROW

Data Sheet

Shut-off valve
Type **AVR AE 350-500**

Designed to meet all industrial refrigeration application requirements

AVR-AE are angleway and straightway shut-off valves designed to meet all industrial refrigeration application requirements.

The valves are made of carbon steel and comes with DIN and ANSI butt weld connections.

Features

- For natural refrigerants (Ammonia, CO_2) and non-corrosive gases and liquids acc. to EN 378-1 and for brine
- Optional accessories:
  - Heavy duty industrial handwheel for frequent operation
  - Vented cap for infrequent operation
- Available in straightway/angleway version with extended bonnet for insulated systems
- The bonnet is suitable for installation in insulated low temperature applications
- Equipped with equilibrating disk

Media

Refrigerants

Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO2). For further information please see installation guide for SVA.

New refrigerants

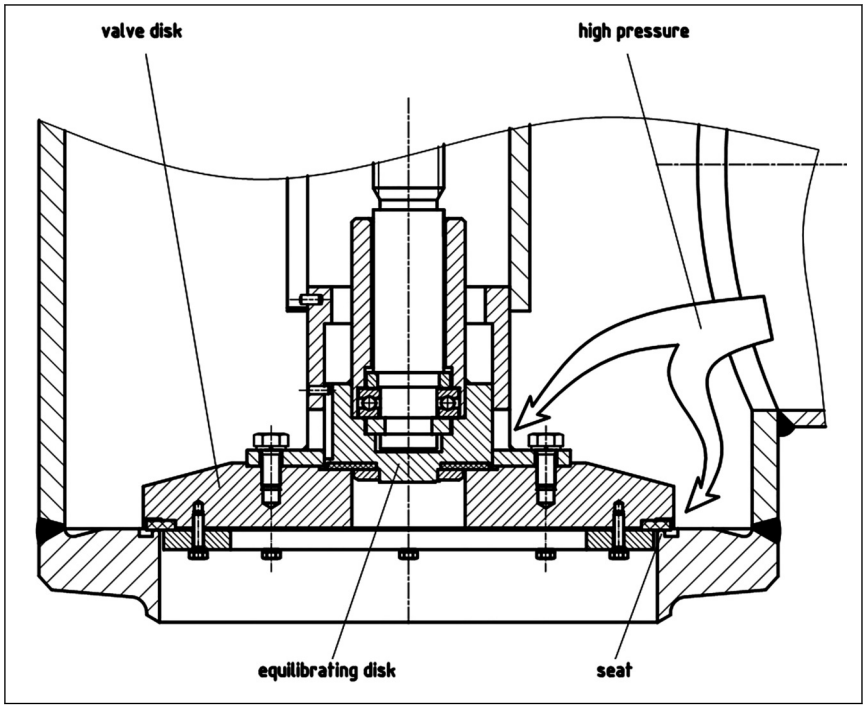
Danfoss products are continually evaluated for use with new refrigerants depending on market requirements.

When a refrigerant is approved for use by Danfoss, it is added to the relevant portfolio, and the R number of the refrigerant (e.g. R513A) will be added to the technical data of the code number. Therefore, products for specific refrigerants are best checked at store.danfoss.com/en/, or by contacting your local Danfoss representative.

Equilibrating disk

AVR AE 350-500

All AVR AE 350-500 are equipped with an equilibrating disk.



Valves with equilibrating disk should be installed in the direction, which makes sure that the higher pressure pushes from the top of the disk when the valve is closed. If this is the case, AVR valves closes tight, no matter how high the differential pressure is (maximum: nominal pressure). If an AVR valve is installed the other way around, the valve closes tight up to a maximum differential pressure according to EN 12284.

Table 1: Maximum differential pressure according to EN 12284

Nom. pressure	Max. diff. pressure	DN 350	DN 400	DN 500
PN25	Δp (bar)	4,5	3,5	

Product specification

AVR-D AE 350-400 and AVR-D AE DV 350-400

D - Straightway
AE - Butt weld connections
DV - Cover extension

Table 2: Pressure/temperature limits of application

DN	Inch	PN	-60	-40	-25	-10	+50	+150	TS [°C]
DN 350	**14”**	PN25	7,3	18,3	18,7	25	25	25	PS [bar]
DN 400	**16”**	PN25	7,3	18,3	18,7	25	25	25	PS [bar]

PS: max. allowable working pressure in bar gauge
TS: max. allowable working temperature in °C, associated with PS

AVR-E AE 350-500 and AVR-E AE DV 350-500

E - Angleway
AE - Butt weld connections
DV - Cover extension

Table 3: Pressure/temperature limits of application

DN	Inch	PN	-60	-40	-25	-10	+50	+150	TS [°C]
DN 350	**14”**	PN25	7,3	18,3	18,7	25	25	25	PS [bar]
DN 400-500	**16”-20"**	PN25	7,3	18,3	18,7	25	25	25	PS [bar]

PS: max. allowable working pressure in bar gauge
TS: max. allowable working temperature in °C, associated with PS

Material specification

Figure 1: AVR AE 350-500

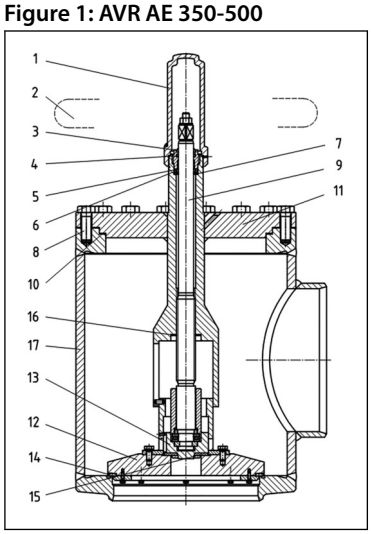


Table 4: Part description

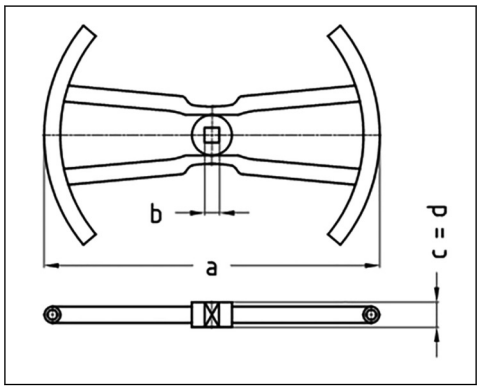
S.No	Part	Material steel valves
1	Cap	Aluminium AlSi10Mg
2	Hand wheel	Steel
3	Scraper ring	NBR
4	O-ring A	CR, NBR, HNBR, EPDM, FPM(*)
5	O-ring B	CR, NBR, HNBR, EPDM, FPM
6	Spring loaded U-ring	PTFE
7	Flat seal ring screwed-in bush	AFM30

S.No	Part	Material steel valves
8	Cover screw	8.8
9	Stem	X8CrNiS18-9 1.4305
10	Flat seal ring cover	AFM30
11	Cover	S355J2 1.0577
12	Valve disc	S355J2 1.0577
13	Equilibrating disc	S355J2 1.0577
14	Flat seal ring valve disc	PTFE
15	Flat seal ring equilibrating disc	PTFE
16	Back seat	PTFE
17	Body	P235GH 1.0345 S355J2 1.0577 G20Mn5 +QT

(*) Depending on used refrigerant

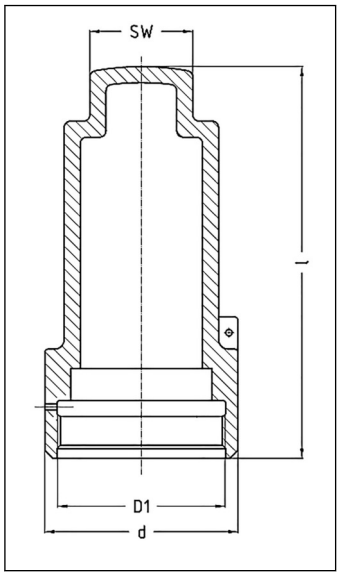
Options

HR
handwheel
DN 350-500



Type AVR				
	Diameter	Hub square	Hub height	Height
DN	a	b	c	d
350-400	630	28	46	46

K
Cap
DN 350-500



Type AVR				
	Height	Diameter	Thread	Spanner flats
DN	l	d	D1	SW
350	260	100	M80x3	60
400	319	100	M80x3	90
500	325	100	M80x3	90

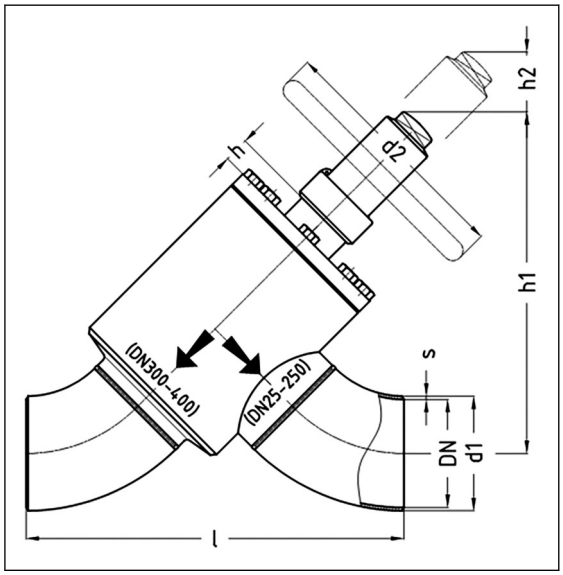
NOTE:
Dimensions are in mm.

Flow factor

DN	350	400	500
Flow factor K_V[m^3/h]	2120	3140	5080

Dimension and weight

AVR-D AE 350-400 and AVR-D AE DV 350-400

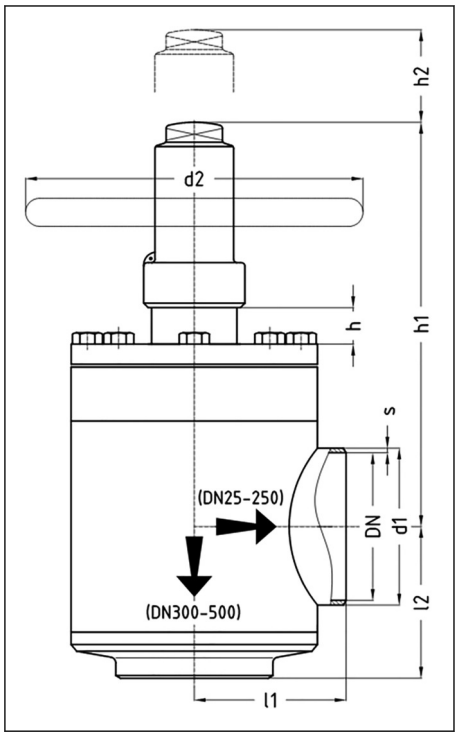


Nominal size		Butt welding ends acc. to													
		ISO series 1			ISO series 2		ANSI Sched 40		ANSI Sched 80						
DN	Inch	d1	s[1]	s	d1	s	d1	s	d1	s	l	h	h1	h2	d2
350	14"	355,6	8,0				355,6	11,1			1215	107	906	350	630
400	16"	406,4	8,8				406,4	12,7			1380	112	1047	360	630

[1] PN25/PN40, h2 = dismantling measure, * Flow direction see arrow in sketch

NOTE:
Dimensions are in mm.

AVR-E AE 350-500 and AVR-E AE DV 350-500



Nominal size		Butt welding ends acc. to														
		ISO series 1			ISO series 2		ANSI Sched 40		ANSI Sched 80							
DN	Inch	d1	s[1]	s	d1	s	d1	s	d1	s	l1	l2	h	h1	h2	d2
350	14"	355,6	8,0				355,6	11,1			325	325	107	708	485	630
400	16"	406,4	8,8				406,4	12,7			365	365	112	832	500	630
500	20"	508,0	10,0				508,0	15,1			465	465	132	960	700	630

[1] PN25/PN40, h2 = dismantling measure, * Flow direction see arrow in sketch

NOTE:
Dimensions are in mm.

Ordering

Type	Size		Weight		Code number
	mm	in.	kg	lb.	
AVR 350 A ANG Shut-off valve Handwheel	350	14	380	838	**148B4801**
AVR 400 A ANG Shut-off valve Handwheel	400	16	544	1199	**148B4802**
AVR 500 A ANG Shut-off valve Handwheel	500	20	905	1995	**148B4803**
AVR 350 A ANG Shut-off valve Cap	350	14	380	838	**148B4804**
AVR 400 A ANG Shut-off valve Cap	400	16	544	1199	**148B4805**
AVR 500 A ANG Shut-off valve Cap	500	20	905	1995	**148B4806**
AVR 350 A STR Shut-off valve Handwheel	350	14	480	1058	**148B4807**
AVR 400 A STR Shut-off valve Handwheel	400	16	710	1565	**148B4808**
AVR 350 A STR Shut-off valve Cap	350	14	480	1058	**148B4809**
AVR 400 A STR Shut-off valve Cap	400	16	710	1565	**148B4810**
AVR 350 D ANG Shut-off valve Handwheel	350	14	380	838	**148B4811**
AVR 400 D ANG Shut-off valve Handwheel	400	16	544	1199	**148B4813**
AVR 500 D ANG Shut-off valve Handwheel	500	20	905	1995	**148B4815**
AVR 350 D STR Shut-off valve Handwheel	350	14	480	1058	**148B4812**
AVR 400 D STR Shut-off valve Handwheel	400	16	710	1565	**148B4814**

A = ANSI butt-weld
D = DIN butt-weld
ANG = Angular
STR = Straight

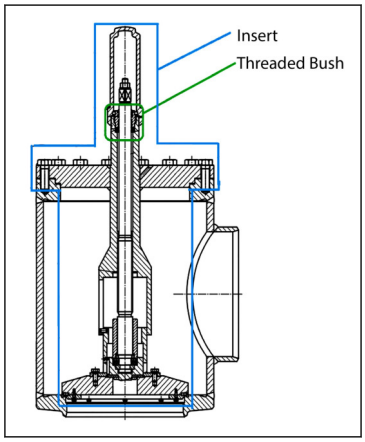
Spare Parts

Type	Size		Danfoss Part Number
	mm	in.	
Threaded Bush - Complete for all sizes	350-500	14-20	**148B4816**
Gasket Set 350	350	14	**148B4817**
Gasket Set 400	400	16	**148B4818**
Gasket Set 500	500	20	**148B4819**
Valves Insert 350	350	14	**148B4820**
Valves Insert 400	400	16	**148B4821**
Valves Insert 500	500	20	**148B4822**

Gasket set - for repair, contains: 2x CR o-rings, 1 x spring-elastic PTFE ring, 2 x flat sealing ring SB (under screw bushing) AFM30, 1 x flat sealing ring for valve cover AFM30, 1 x flat sealing ring for back-sealing PTFE, 1 x scraper NBR, 1 flat sealing ring for valve seat PTFE.

Valve insert – for overhaul repair, contains all internal parts including gaskets, i. e. stem, valve disk, threaded bush plus valve cover with screws and name plate (with new serial number!), as well as cap, pre-assembled.

Figure 2: Spare Parts



ENGINEERING
TOMORROW

Online support

Danfoss offers a wide range of support along with our products, including digital product information, software, mobile apps, and expert guidance. See the possibilities below.

The Danfoss Product Store

The Danfoss Product Store is your one-stop shop for everything product related—no matter where you are in the world or what area of the cooling industry you work in. Get quick access to essential information like product specs, code numbers, technical documentation, certifications, accessories, and more.
Start browsing at store.danfoss.com.

Find technical documentation

Find the technical documentation you need to get your project up and running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more.

Start searching now at www.danfoss.com/en/service-and-support/documentation.

Danfoss Learning

Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications, industry topics, and trends that will help you do your job better.

Create your Danfoss Learning account for free at www.danfoss.com/en/service-and-support/learning.

Get local information and support

Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert—all in your own language.

Find your local Danfoss website here: www.danfoss.com/en/choose-region.

Spare Parts

Get access to the Danfoss spare parts and service kit catalog right from your smartphone. The app contains a wide range of components for air conditioning and refrigeration applications, such as valves, strainers, pressure switches, and sensors.

Download the Spare Parts app for free at www.danfoss.com/en/service-and-support/downloads.

Coolselector®2 - find the best components for you HVAC/R system

Coolselector®2 makes it easy for engineers, consultants, and designers to find and order the best components for refrigeration and air conditioning systems. Run calculations based on your operating conditions and then choose the best setup for your system design.

Download Coolselector®2 for free at coolselector.danfoss.com.

Danfoss A/S
Climate Solutions • danfoss.com • +45 7488 2222