Regulating valves
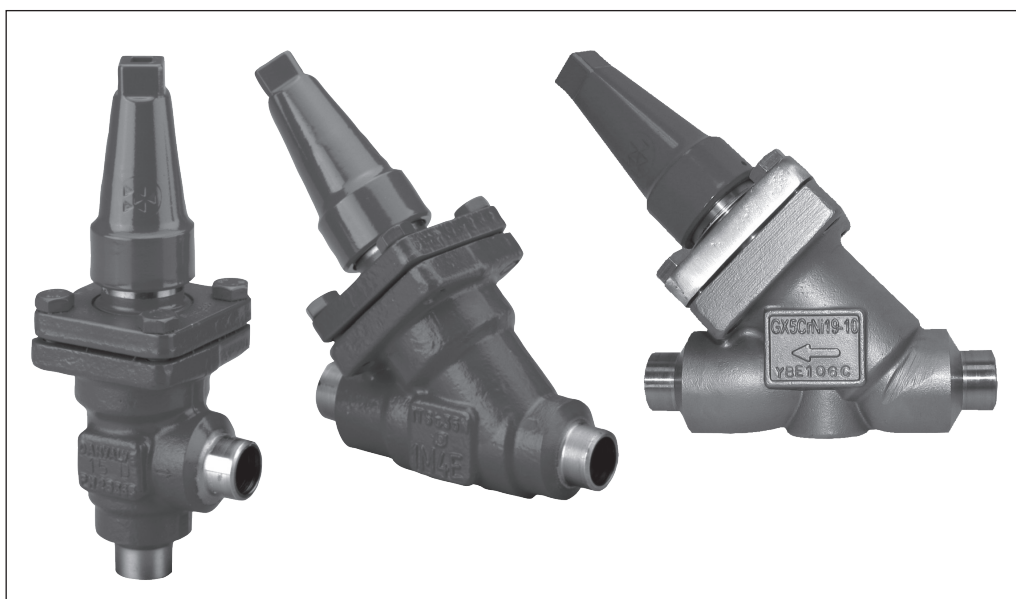Type REG 6-65
Type REG-SS 15-40

Content   **Page**

Introduction

REG are angle-way and straight-way regulating valves, which act as normal stop valves in closed position.

The valves are designed to meet the strict quality requirements on refrigerating installations specified by the international classification societies and are carefully designed to present favourable flow conditions and accurate linear characteristics.

REG are equipped with vented cap and have internal backseating enabling the spindle seal to be replaced with the valve still under pressure.

Features

- Applicable to all common non flammable refrigerants including R 717 and non corrosive gases/liquids dependent to sealing material compatibility
- Designed to ensure perfect regulation
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure
- Easy to disassemble for inspection and possible repair
- Max. operating pressure:
  REG: 40 bar g (580 psi g)
  REG-SS: 52 bar g (754 psi g)
  (valves for higher operating pressure available on request)
- Full temperature range packing gland −50/+150°C (−58/+302°F)

- Low temperature range packing gland for REG-SS
  −60/+150°C (−76/+302°F)
- Act as a normal stop valve in closed position
- Housing and bonnet material is low temperature steel (**REG-SS in stainless steel**) according to requirements of the Pressure Equipment Directive and other international classification authorities
- Exact capacity and setting of the valve can be calculated for all refrigerants by means of "DIRcalc™" (Danfoss Industrial Refrigeration calculation programme)
- Classification: To get an updated list of certification on the products please contact your local Danfoss Sales Company.

| Technical leaflet | Regulating valves, types REG 6 - 65 and REG-SS 15-40 |

Design

Housing
Made of special, cold resistant steel (stainless steel for REG-SS) approved for low temperature operation.

Connections
Available with the following connections:
- Butt-weld DIN (EN 10220)
  – DN 6 - 65 (¼ - 2½ in.)
- Butt-weld ANSI (B 36.10 Schedule 80)
  – DN 6 - 40 (¼ - 1½ in.)
- Butt-weld ANSI (B 36.10 Schedule 40)
  – DN 50 - 65 (2 - 2½ in.)
- Socket weld (ANSI B 16.11)
  – DN 15 - 40 (½ - 1½ in.)
- Soldering connections (ANSI B 16.22)
  – DN 10 - 22 ($^3/_8$ - $^7/_8$ in.)
- FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)
  – DN 15 - 32 (½ - 1¼ in.)

Valve cone
The valve cone is designed to ensure perfect regulation. A wide programme of valves and
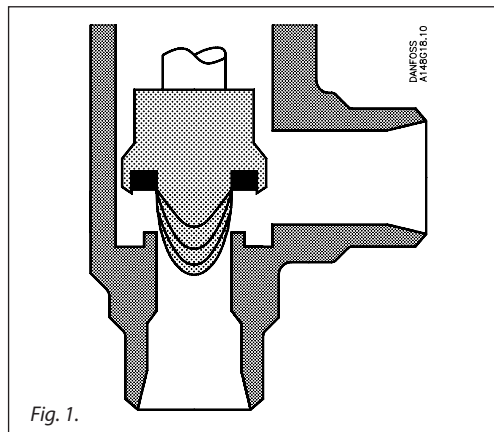
various precision cones provide an extensive regulating area, and irrespective of the refrigerant used, it is easy to obtain the correct capacity (see fig. 1). A cone seal ring provides perfect sealing at a minimum closing momentum.

The valve cone can be turned on the spindle, thus there will be no friction between the cone and the seat when the valve is opened and closed.

Spindle
Made of polished stainless steel, which is ideal for O-ring sealing.

Packing gland - REG
The "full temperature range" packing gland ensures perfect tightness in the whole range: –50/+150°C (–58/+302°F). The packing glands are equipped with a scraper ring to prevent penetration of dirt and ice into the packing gland.

Packing gland - REG-SS (Stainless steel version):
The stainless steel packing gland comprises a spring loaded seal packing gland which ensures a perfect tightness in the range –60/+150°C (–76/+302°F). The packing glands are equipped with a scraper ring to prevent penetration of dirt and ice into the packing gland.

Installation
Install the valve with the spindle up or in horizontal position. The flow must be directed towards the cone.

The valve is designed to withstand high internal pressure. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.

For further information refer to installation instruction for REG.

DANFOSS
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Fig. 1.

CE

Pressure Equipment Directive (PED)
REG valves are approved according to the European standard specified in the Pressure Equipment Directive and are CE marked.

For further details / restrictions - see Installation Instruction.

REG valves	
Nominal bore	DN32 - 65 (1$^1/_4$ - 2$^1/_2$ in.)
Classified for	Fluid group I
Category	II

Technical data

- *Refrigerants*
  Applicable to all common non flammable refrigerants including R 717 and non corrosive gases/liquids dependent on sealing material compability.

  For further information please see installation instruction for REG.

  Flammable hydrocarbons are not recommended. For further information please contact your local Danfoss Sales Company.

- *Temperature range*
  REG: –50/+150°C (–58/+302°F).
  REG-SS: –60/+150°C (–76/+302°F)

- *Pressure range*
  Max. operating pressure:
  REG: 40 bar g (580 psig).
  REG-SS: 52 bar g (754 psi g)
  Valves for higher working pressure are available on request.

- *Flow coefficients*
  Flow coefficients for fully opened valves from k_v = 0.17 to 81.4 m³/h (C_v = 0.12 to 57.3 USgal/min)

Computation and selection

Introduction
In refrigeration plants, regulating valves are primarily used in liquid lines in order to regulate the flow of refrigerant. The valves can, however, also be used as expansion valves. From a calculation point of view the two fields of application are very different.

Normal flow is the term used to describe the general case where the flow through the valve is proportional to the square root of the pressure drop across it and inversely proportional to the density of the refrigerant (Bernouillis equation).

This relationship between mass flow, pressure drop and density satisfies the majority of all valve applications with refrigerants and brines.

Normal flow is characterised by turbulent flow through the valve without any phase change. The following capacity curves are based on the above mentioned assumption.

Application of the regulating valves outside the normal flow area will reduce the capacity of the valve considerably. In such cases it is recommended to use "DIRcalc™" (Danfoss Industrial Refrigeration calculation programme).

Fig. 2. Location of valve in system (marked with grey)
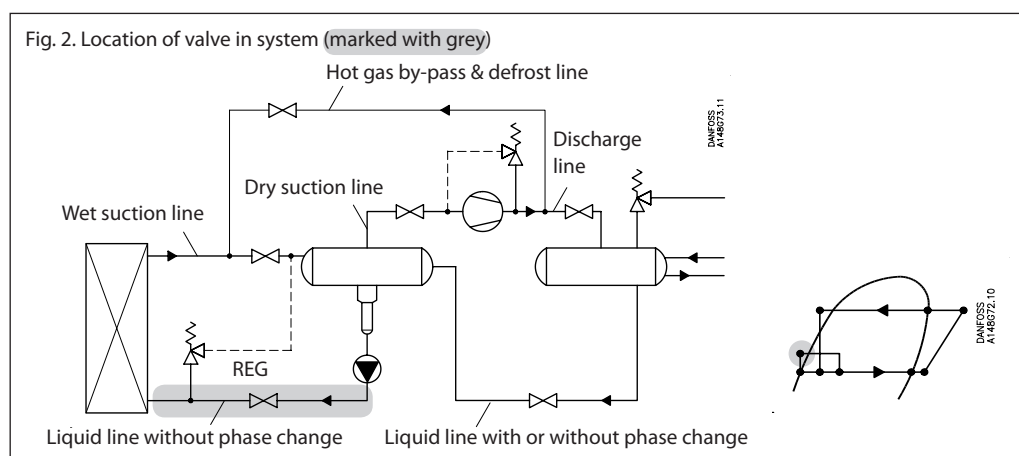
Sizing regulating valve for liquid flow
Liquid refrigerants: Use the liquid tables, fig. 8 - 17. For other refrigerants and brines, "Normal flow" (Turbulent flow); see below and use the flow coefficient tables (fig. 3 - 7).

SI-units

Mass flow:

$$k_v = \frac{G}{\sqrt{\rho \times 1000 \times \Delta p}} = G \times C_A \ [m^3/h]$$

Volume flow:

$$k_v = \frac{\dot{V}}{\sqrt{\dfrac{1000 \times \Delta p}{\rho}}} \ [m^3/h]$$

American units

Mass flow:

$$C_v = \frac{0.95 \times G}{\sqrt{\rho \times \Delta p}} = 31.6 \times G \times C_A \ [USgal/min.]$$

Volume flow:
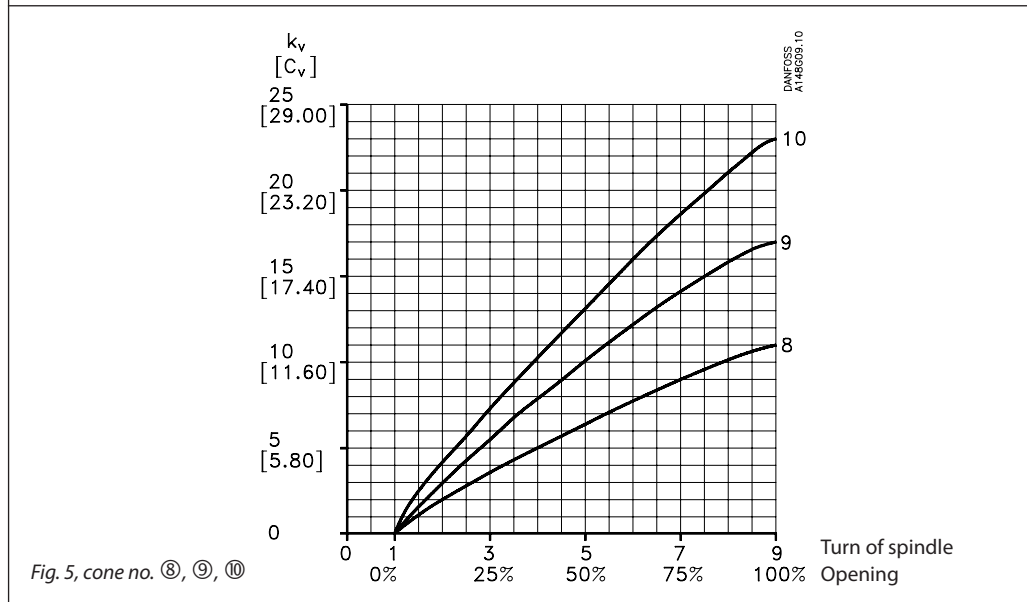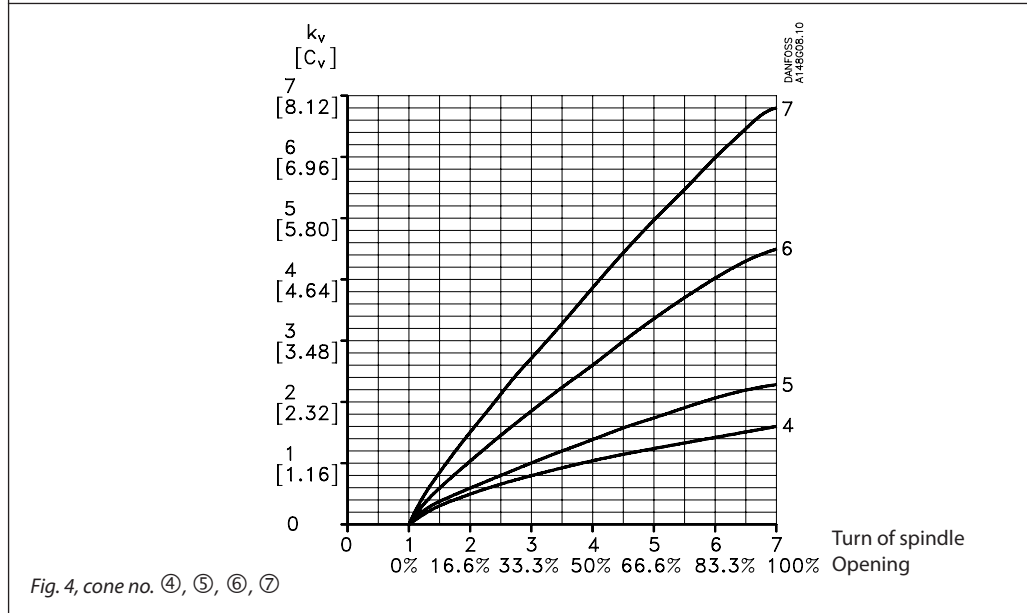
$$C_v = \frac{0.127 \times \dot{V}}{\sqrt{\dfrac{\Delta p}{\rho}}} \ [USgal/min.]$$

k_v	[m³/h]	Quantity [m³/h] of water flowing through a valve at a pressure loss of 1 bar (according to VDE/VDI Norm 2173).
P_1	[bar]	Pressure before the valve (upstream).
P_2	[bar]	Pressure after the valve (downstream).
Δp	[bar]	Actual pressure loss across the valve (P_1–P_2).
G	[kg/h]	Mass flow through the valve.
$\dot{V}$	[m³/h]	Volume flow through the valve.
ρ	[kg/m³]	Density of the refrigerant before the valve.
C_A		Calculation factor (fig. 18).

C_v	[US gal/min]	Quantity [US gal/min] of water flowing through a valve at a pressure loss of 1 psi.
P_1	[psi]	Pressure before the valve (upstream).
P_2	[psi]	Pressure after the valve (downstream).
Δp	[psi]	Actual pressure loss across the valve (P_1–P_2).
G	[lb/min]	Mass flow through the valve.
$\dot{V}$	[US gal/min]	Volume flow through the valve.
ρ	[lb/ft³]	Density of the refrigerant before the valve.
C_A		Calculation factor (fig. 18).

Computation and selection   *Flow coefficient*
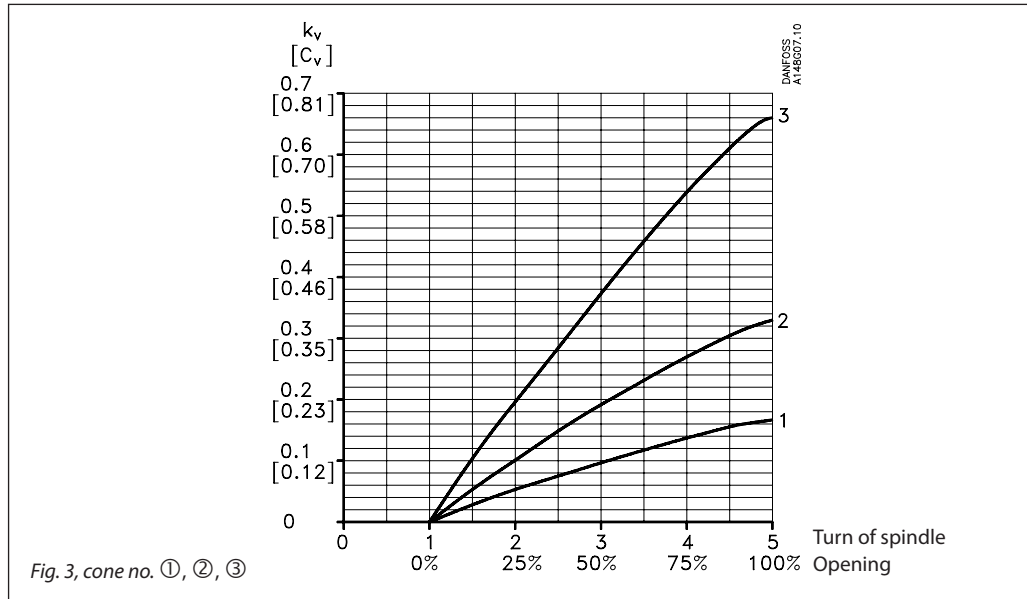
Fig. 3, cone no. ①, ②, ③

Fig. 4, cone no. ④, ⑤, ⑥, ⑦

Fig. 5, cone no. ⑧, ⑨, ⑩

For choice of valve size and
connection see "Connections".

Technical leaflet   **Regulating valves, types REG 6 - 65 and REG-SS 15-40**

Computation and selection   *Flow coefficient*

Fig. 6, cone no. ⑪
(REG 50)

Fig. 7, cone no. ⑫
(REG 65)
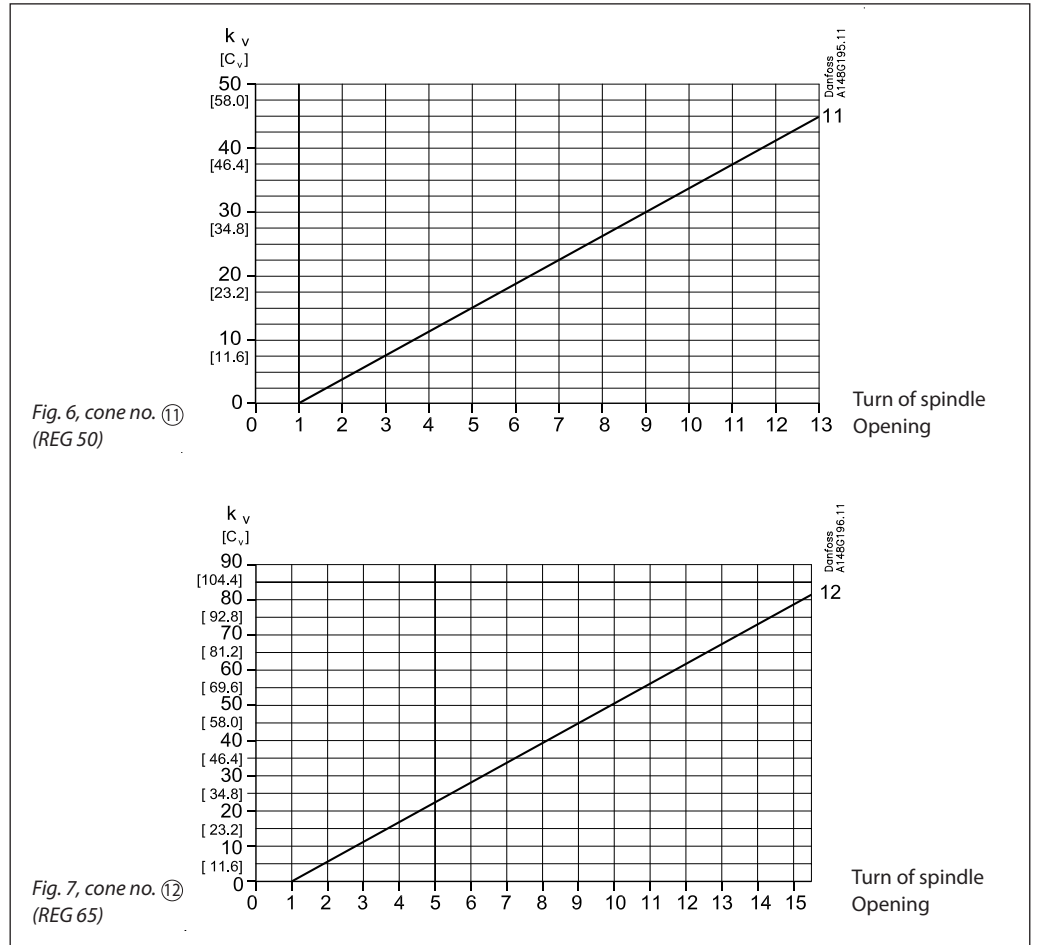
Liquid R 717, density: 670 kg/m³ [42 lb/ft³]

For choice of valve size and connection see "Connections".

Fig. 8, cone no. ①, ②, ③

Technical leaflet   **Regulating valves, types REG 6 - 65 and REG-SS 15-40**

Computation and selection   *Liquid R 717, density: 670 kg/m³ [42 lb/ft³]*

Fig. 9, cone no. ④, ⑤, ⑥, ⑦

For choice of valve size and connection see "Connections".

Fig. 10, cone no. ⑧, ⑨, ⑩

Computation and selection   *Liquid R 717, density: 670 kg/m³ [42 lb/ft³]*

Fig. 11, cone no. ⑪

Fig. 12, cone no. ⑫

For choice of valve size and connection see "Connections".

Computation and selection   *Liquid R 22, density: 1360 kg/m³ [85 lb/ft ³]*

Fig. 13, cone no. ①, ②, ③

Fig. 14, cone no. ④, ⑤, ⑥, ⑦
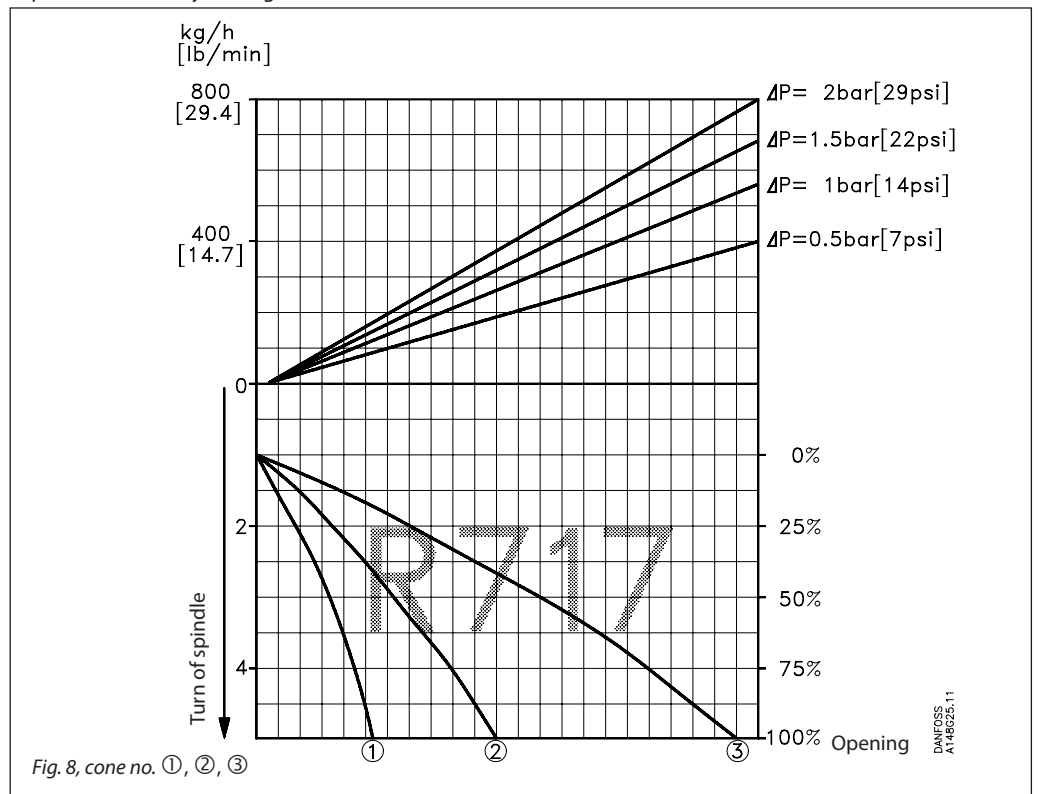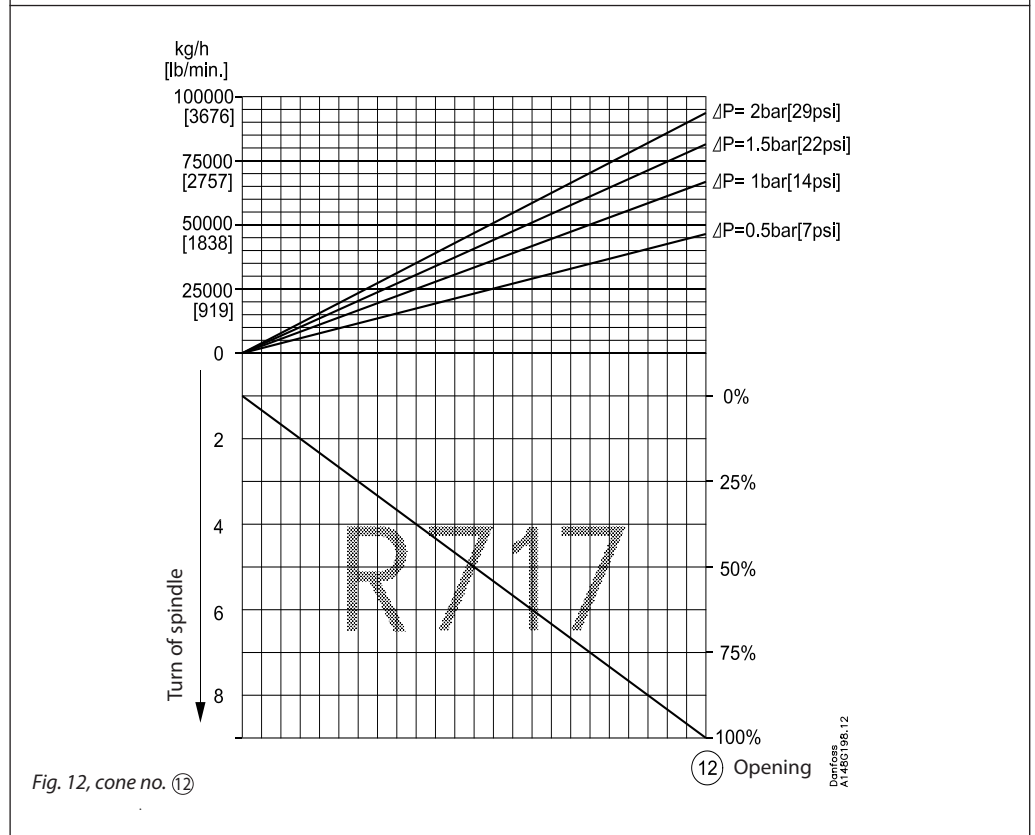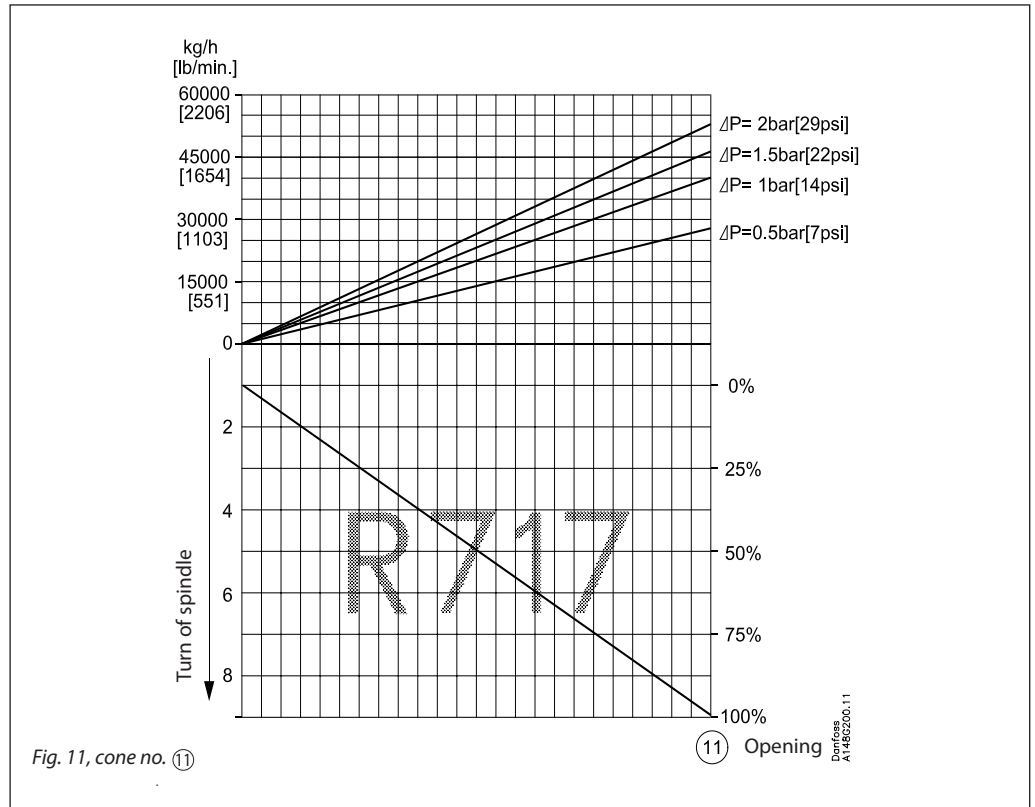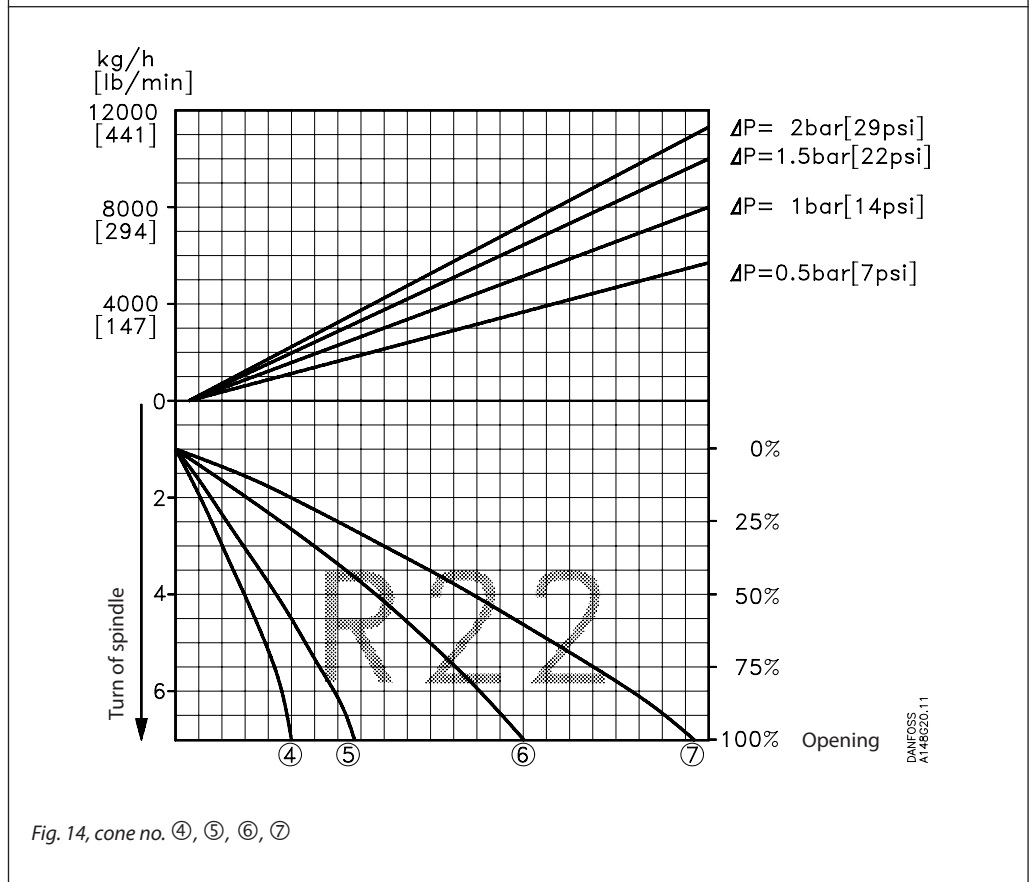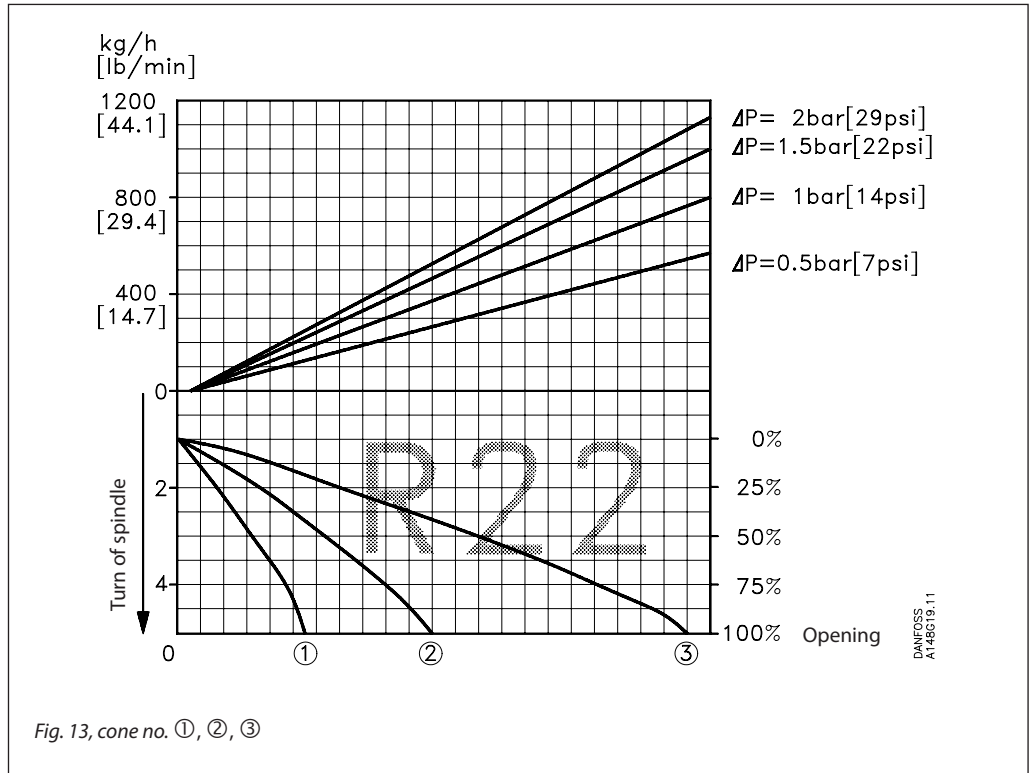
For choice of valve size and connection see "Connections".

Computation and selection   *Liquid R 22, density: 1360 kg/m³ [85 lb/ft³]*

Fig. 15, cone no. ⑧, ⑨, ⑩
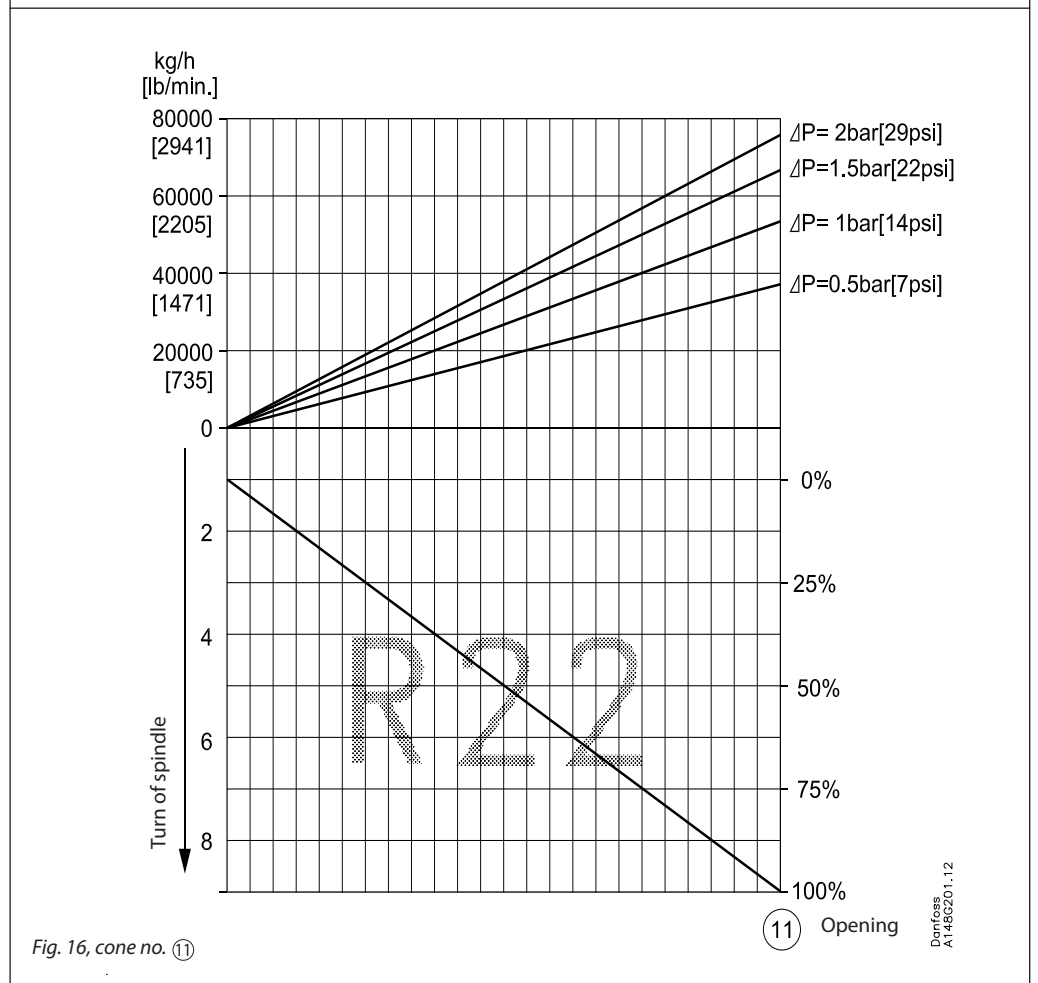
For choice of valve size and connection see "Connections".

Fig. 16, cone no. ⑪

Computation and selection   *Liquid R 22, density: 1360 kg/m³ [85 lb/ft ³]*

Fig. 17, cone no. ⑫

Calculation factor C$_A$

Fig. 18.
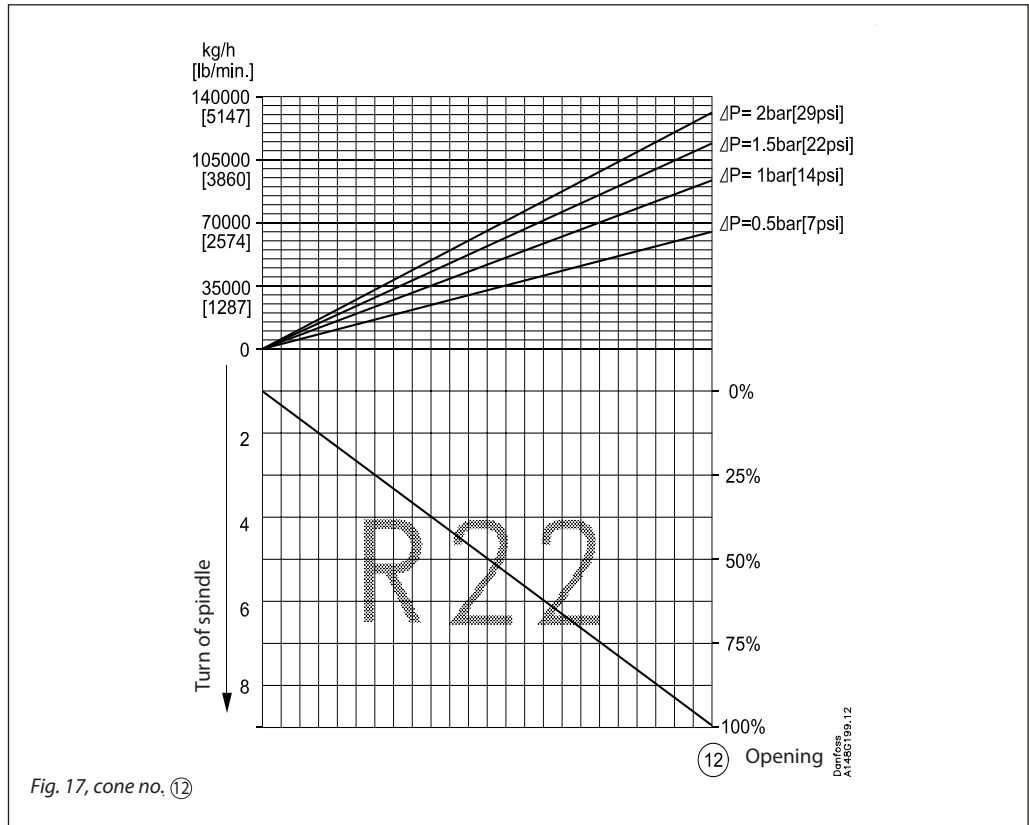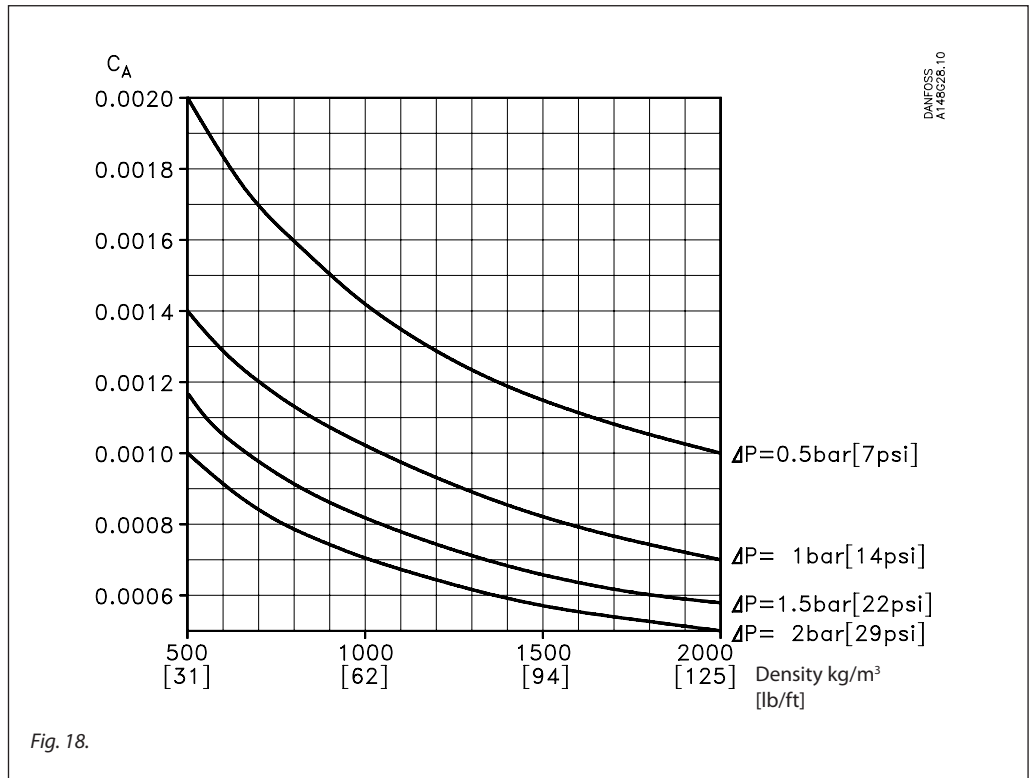
For choice of valve size and connection see "Connections".

Computation and selection
Example 1.

Refrigerant: R 717
Refrigerant flow: 2500 [kg/h]
Pressure drop: $\Delta p = 0.5$ [bar]

The above mentioned example is illustrated on the following flow rate diagram and shows that cone number 6 and 7 can be used. The main rule is that the cone with the minimum flow area gives the optimum regulation. However, owing to uncertainties cone number 6 opening degree

would be > 85%. In this case cone number 7 ~ 55% is recommended.

The example is only correct if the density of the refrigerant is approx. 670 (kg/m³), and there must be no build-up of flash gas in the valve.

Flow rate diagram
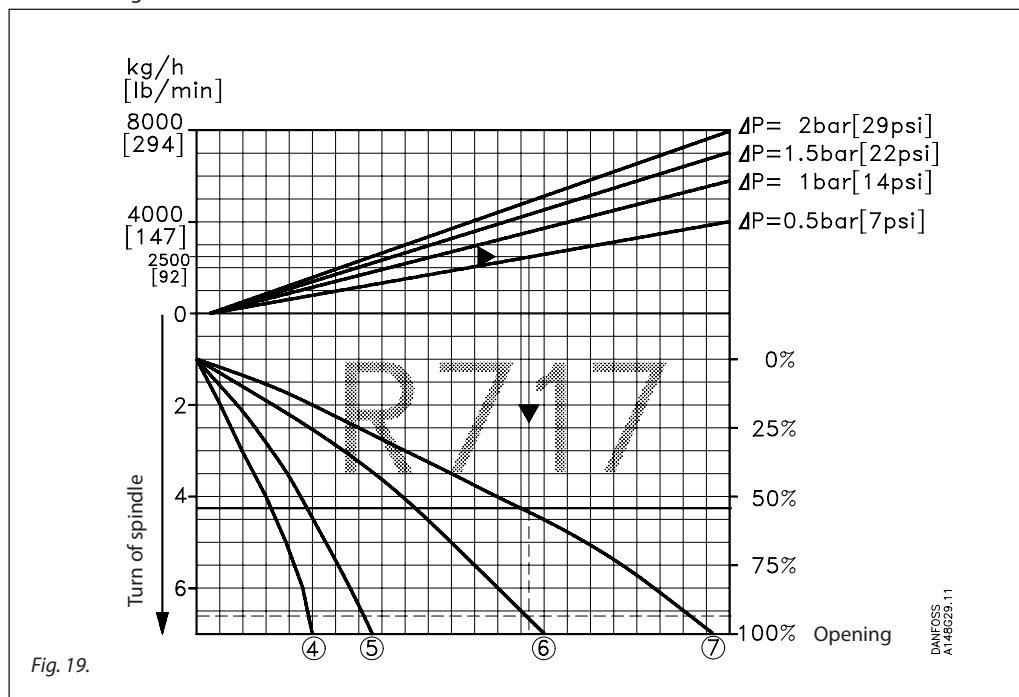
Fig. 19.

For choice of valve size and connection see "Connections".

Computation and selection
Example 2.

Brine, density ρ: 1150   [kg/m³]
Brine flow   G: 2,700   [kg/h]
Pressure drop Δp: 0.5   [bar]

In this example it is not possible to use the selection diagrams (fig. 8 - 17) as the refrigerant in question is not included.

Either use the curves of the k_v-values instead (fig. 3 - 7) and calculate the required k_v by means of the formulas in the "Introduction" passage at the beginning of this chapter. Alternativly calculate the k_v-values by means of the calculation factor C_A (fig. 18) and the flow rate diagram (in this example: fig. 4) as per the following calculation example.

Calculation example:

Required k_v-value
C_A = 0.00132 (from fig. 18)
k_v = $C_A \times G$
k_v = $0.00132 \times 2{,}700$ [kg/h]
 = 3.56 [m³/h]
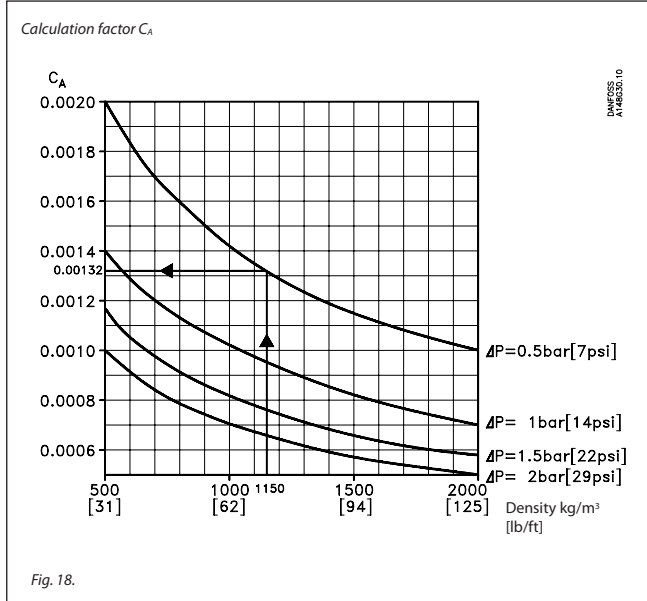
Fig. 18.
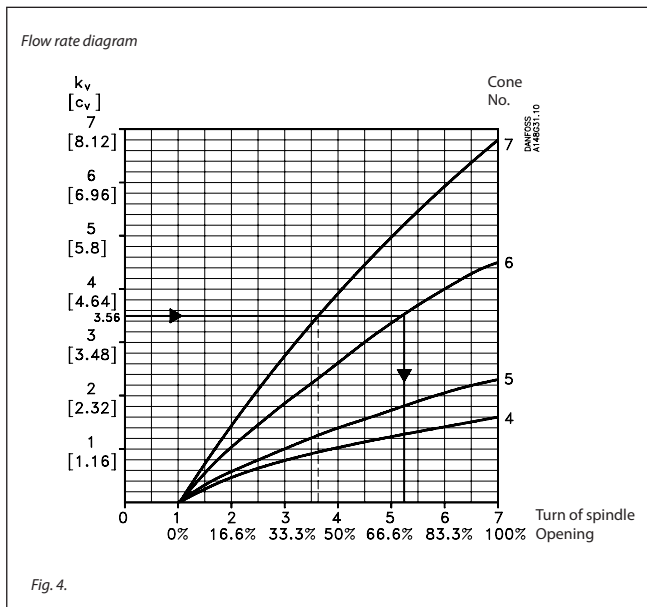
Cone no. 6 and 7 can be used. The optimum regulation is obtained if cone number 6 is used.

Fig. 4.

Material specification

| | REG 6 - 15 | REG 10 - 40 | REG 50 - 65 |
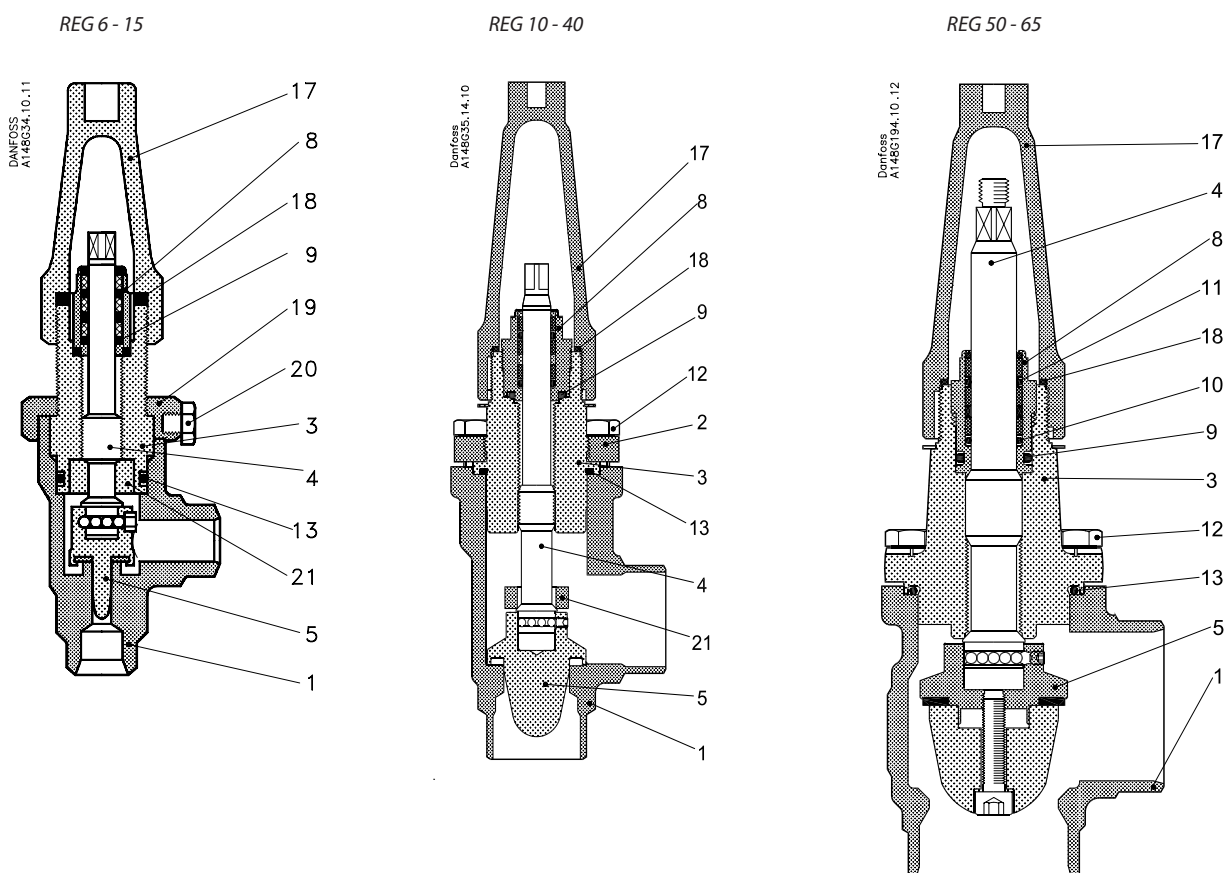
No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	P285QH EN10222-4		LF2A350
2	DN 10 - 40 (³/₈ - 1½ in.) – Bonnet, Flange	Steel	P275 NLI EN10028-3		
3	DN 6 - 40 (¼ - 1½ in.) – Bonnet, Insert DN 50 - 65 (2 - 2½ in.) – Bonnet, Flange	Steel	P285QH EN10222-4		
4	Spindle DN 6 - 40 (¼ - 1½ in.) DN 50 - 65 (2 - 2½ in.)	Stainless steel Stainless steel	X10CrNiS18-9, 17440 X8CrNiS18-9, 17440	Type 17, 683/13 Type 17, 683/13	AISI 303 AISI 303
5	Cone	Steel			
8	Packing gland	Steel			
9	DN 6 - 20 (¼ - ³/₄ in.) – Packing washer DN 25 - 65 (1 - 2½ in.) – O-ring	Non-asbestos Cloroprene (Neoprene)			
10-11	O-ring	Cloroprene (Neoprene)			
12	Bolts	Stainless steel	A2-70	A2-70	Type 308
13	O-ring	Cloroprene (Neoprene)			
17	Seal cap	Aluminium			
18	Gasket f. seal cap	Nylon			
19	Locking nut	Steel			
20	Screw	Steel			
21	Packing washer	PTFE (Teflon)			

Material specification
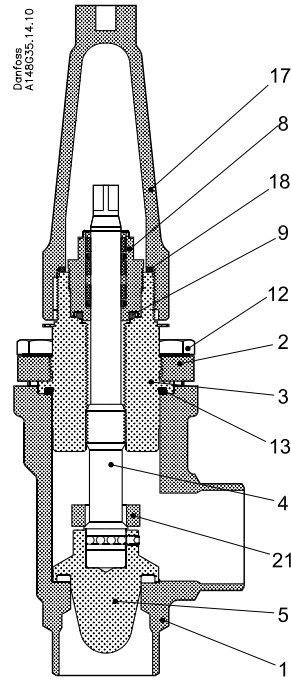
REG-SS 15 - 40 ($^1/_2$ - 1$^1/_2$")

No.	Part	Material	DIN/EN	ISO	ASTM
1	Housing	Stainless steel	X5CrNi18-10 EN10088		AISI 304
2	Bonnet, Flange	Stainless steel	X5CrNi18-10 EN10088		AISI 304
3	Bonnet, Insert	Stainless steel			
4	Spindle	Stainless steel	X8CrNiS18-9 DIN 17440	Type 17, 683/13	AISI 303
5	Cone	Steel			
8	Packing gland	Stainless steel			
9	Packing washer	Non-asbestos			
12	Bolts	Stainless steel	A2-70	A2-70	Type 308
13	O-ring	Cloroprene (Neoprene)			
17	Spindle seal cap	Aluminium			
18	Seal cap gasket	Nylon			
19	Locking nut	Steel			
20	Screw	Steel			
21	Packing washer	PTFE (Teflon)			

Connections

DIN
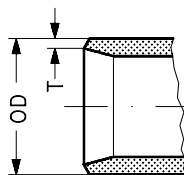
	Size mm	Size in.	OD mm	T mm	OD in.	T in.		Cone no.
Welding DIN (EN 10220)								
Small	6	$^1/_4$	13.5	2.3	0.531	0.091		① ② ③
	10	$^3/_8$	17.2	2.3	0.677	0.091		
Medium	15	$^1/_2$	21.3	2.3	0.839	0.091		④ ⑤ ⑥ ⑦
	20	$^3/_4$	26.9	2.3	1.059	0.091		
	25	1	33.7	2.6	1.327	0.103		
Large	32	$1^1/_4$	42.4	2.6	1.669	0.102		⑧ ⑨ ⑩
	40	$1^1/_2$	48.3	2.6	1.902	0.103		
	50	2	60.3	2.9	2.37	0.11		⑪
	65	$2^1/_2$	76.1	2.9	3	0.11		⑫

ANSI
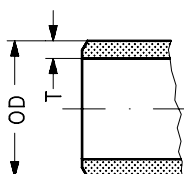
	Size mm	Size in.	OD mm	T mm	OD in.	T in.		Cone no.
Welding ANSI (B 36.10 Schedule 80)								
Small	6	$^1/_4$	13.5	3.0	0.531	0.118		① ② ③
	10	$^3/_8$	17.2	3.2	0.677	0.126		
Medium	15	$^1/_2$	21.3	3.7	0.839	0.146		④ ⑤ ⑥ ⑦
	20	$^3/_4$	26.9	4.0	1.059	0.158		
	25	1	33.7	4.6	1.327	0.181		
Large	32	$1^1/_4$	42.4	4.9	1.669	0.193		⑧ ⑨ ⑩
	40	$1^1/_2$	48.3	5.1	1.902	0.201		
Welding ANSI (B 36.10 Schedule 40)								
	50	2	60.3	3.9	2.37	0.15		⑪
	65	$2^1/_2$	73.0	5.2	2.87	0.20		⑫
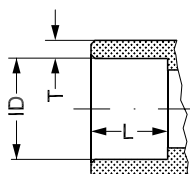
	Size mm	Size in.	ID mm	T mm	ID in.	T in.	L mm	L in.		Cone no.
SOC *Socket welding ANSI (B 16.11)*										
Medium	15	$^1/_2$	21.8	6.0	0.858	0.235	10	0.39		④ ⑤ ⑥ ⑦
	20	$^3/_4$	27.2	7.6	1.071	0.299	13	0.51		
Large	25	1	33.9	7.2	1.335	0.284	13	0.51		⑧ ⑨ ⑩
	32	$1^1/_4$	42.7	6.1	1.743	0.240	13	0.51		
	40	$1^1/_2$	48.8	6.6	1.921	0.260	13	0.51		
SA *Soldering (ANSI B 16.22)*										
Small	10	$^3/_8$	9.60		0.378		8	0.31		① ② ③
	15	$^1/_2$	12.75		0.502		10	0.39		
Medium	22	$^7/_8$	22.30		0.878		19	0.75		④ ⑤ ⑥ ⑦
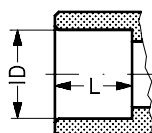
FPT
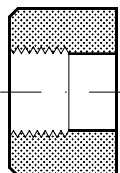
	Size mm	Size in.	Inside pipe thread		Cone no.
FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)					
Mellem	15	$^1/_2$	($^1/_2 \times 14$ NPT)		④ ⑤ ⑥ ⑦
	20	$^3/_4$	($^3/_4 \times 14$ NPT)		
Large	25	1	(1×11.5 NPT)		⑧ ⑨ ⑩
	32	$1^1/_4$	($1^1/_4 \times 11.5$ NPT)		

Dimensions and weights   *REG 6 - 40 in angleway version*

Small, REG 6 - 15   *Medium/Large, REG 10 - 40*   *Large, REG 50 - 65*
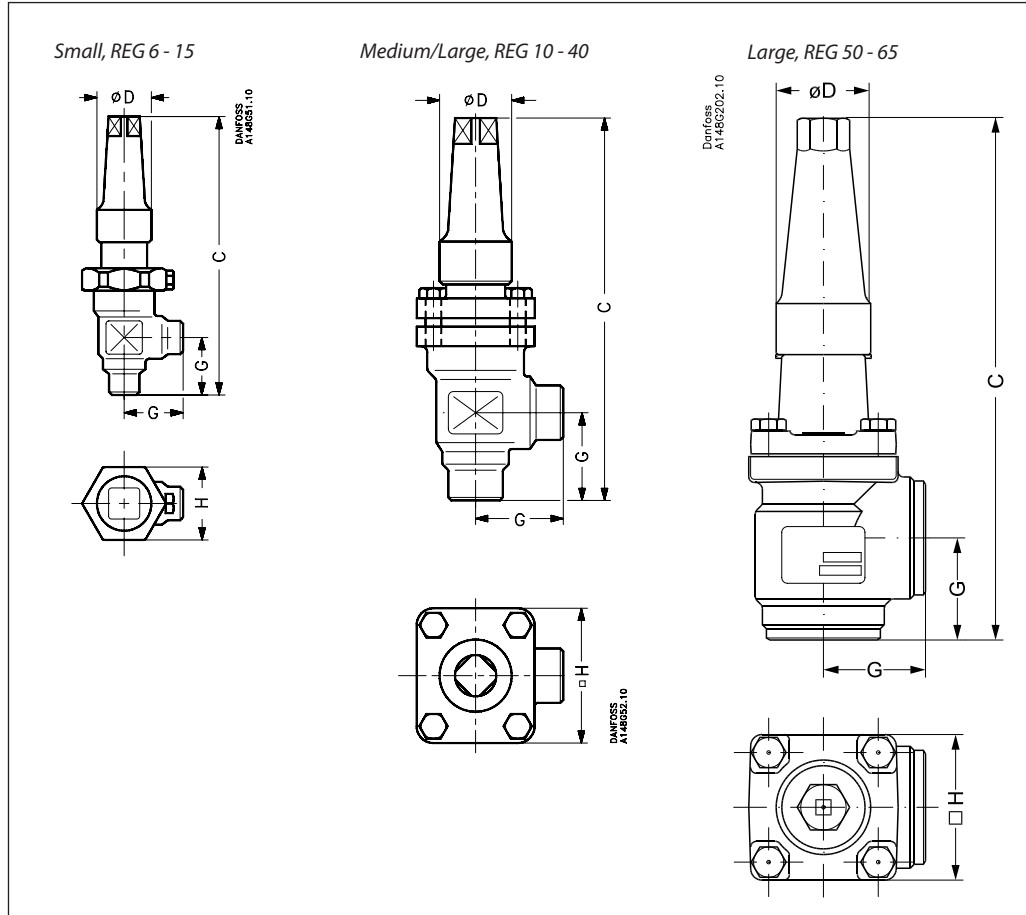
Valve size		C		G		ØD		□H		Weight
Small valve	mm	139		30		30		36		0.8 kg
housing	in.	5.47		1.18		1.18		1.42		1.8 lb
Medium valve	mm	182		45		38		60		1.4 kg
housing	in.	7.17		1.77		1.50		2.36		3.1 lb
Large valve	mm	237		55		50		70		2.4 kg
housing	in.	9.33		2.17		1.97		2.76		5.3 lb
REG 50	mm	280		60		50		77		3.2 kg
REG (2 in.)	in.	11.02		2.36		1.97		3.03		7.1 lb
REG 65	mm	305		70		50		90		4.8 kg
REG (2½ in.)	in.	12.01		2.76		1.97		3.54		10.6 lb
REG 32 SOC	mm	275		62		50		70		2.9 kg
REG (1¼ in.) SOC	in.	10.83		2.44		1.97		2.76		6.4 lb
REG 40 SOC	mm	275		62		50		70		2.9 kg
REG (1½ in.) SOC	in.	10.83		2.44		1.97		2.76		6.4 lb

Specified weights are approximate values only.

Dimensions and weights
(cont.)

REG 6 - 40 in straight way version

Small, REG 6 - 15   *Medium/Large, REG 10 - 40*
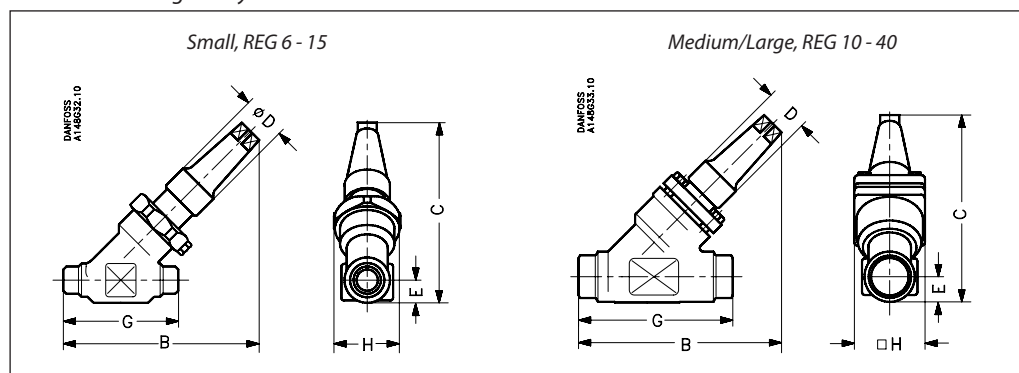
Valve size		C	B	E	G		∅D		□H		Weight
Small valve	mm	110	120	13	70		30		36		0.8 kg
housing	in.	4.33	4.72	0.51	2.76		1.18		1.42		1.8 lb
Medium valve	mm	145	155	20	120		38		60		2.0 kg
housing	in.	5.71	6.10	0.79	4.72		1.50		2.36		4.4 lb
Large valve	mm	200	215	26	155		50		70		3.0 kg
housing	in.	7.87	8.46	1.02	6.10		1.97		2.76		6.6 lb
REG 32 SOC	mm	209	222	27.4	155		50		70		3.0 kg
REG (1¼) SOC	in.	8.23	8.74	1.08	6.10		1.97		2.76		6.6 lb
REG 40 SOC	mm	213	222	31.0	155		50		70		3.0 kg
REG (1½) SOC	in.	8.39	8.74	1.22	6.10		1.97		2.76		6.6 lb

Specified weights are approximate values only.

Technical leaflet   **Regulating valves, types REG 6 - 65 and REG-SS 15-40**

Ordering

How to order
The table below is used to indentify the valve required.

Please note that the type codes only serve to identify the valves some of which may not form part of the standard product range. For further information please contact your local Danfoss Sales Company.

Type codes

Valve type	**REG**	Regulating Valves					
Nominal size in mm				Available connections			
			A	D	SOC	SA	FPT
(Valve size measured on the connection diameter)	**6**	DN 6	x	x			
	10	DN 10	x	x		x	
	15	DN 15	x	x	x	x	x
	20	DN 20	x	x	x		x
	22	DN 22				x	
	25	DN 25	x	x	x		x
	32	DN 32	x	x	x		x
	40	DN 40	x	x	x		
	50	DN 50	x	x			
	65	DN 65	x	x			
Connections	**A**	Welding branches: ANSI B 36.10 schedule 80, 15 - 40 (½ - 1½ in.) Welding branches: ANSI B 36.10 schedule 40, 50 - 65 (2 - 2½ in.)					
	D	Welding branches: DIN 2448					
	SOC	Socket weld: ANSI B 16.11					
	SA	Soldering branches: ANSI B 16.22					
	FPT	NPT inside pipe thread: ANSI/ASME B1.20.1					
Valve housing	**ANG**	Angle flow					
	STR	Straight flow					
Cone	Cone#	Flow area [mm²]					
	1	3					
	2	6					
	3	12					
	4	28					
	5	44					
	6	92					
	7	152					
	8	272					
	9	432					
	10	648					
	11	822					
	12	1978					

Verification of the combination between cone no. and valve connection

Valve size	Small valve	Medium valve	Large valve	REG 50	REG 65
Cone no.	① ② ③	④ ⑤ ⑥ ⑦	⑧ ⑨ ⑩	⑪	⑫

DIN	DN 6, 10, 15*	DN 15, 20, 25	DN 32, 40	DN 50	DN 65
ANSI	DN 6, 10	DN 15, 20, 25	DN 32, 40	DN 50	DN 65
SOC		DN 15, 20	DN 25, 32, 40		
SA	DN 10, 15	DN 22			
FPT		DN 15, 20	DN 25, 32		

*Small valve size 15 DIN is only available with cone number 3.

Ordering
(continued)

Example:
REG 15 DIN angleway with cone
no. 7 = **148G3242**

Important!
Where products need to be
certified according to specific
certification societies or where
higher pressures are required, the
relevant information should be
included at the time of order.

Angleway

Size		Type	Code no.
mm	in.		
DIN			
6	¹/₄	REG 6 D ANG CONE#1	**2415+426**
6	¹/₄	REG 6 D ANG CONE#2	**2415+427**
6	¹/₄	REG 6 D ANG CONE#3	**2415+428**
10	³/₈	REG 10 D ANG CONE#1	**2415+432**
10	³/₈	REG 10 D ANG CONE#2	**2415+433**
10	³/₈	REG 10 D ANG CONE#3	**2415+434**
15	¹/₂	REG 15 D ANG CONE#3	**2415+883**
15	¹/₂	REG 15 D ANG CONE#4	**148G3239**
15	¹/₂	REG-SS 15 D ANG CONE#4 52BAR	**148G3542**
15	¹/₂	REG 15 D ANG CONE#5	**148G3240**
15	¹/₂	REG-SS 15 D ANG CONE#5 52BAR	**148G3543**
15	¹/₂	REG 15 D ANG CONE#6	**148G3241**
15	¹/₂	REG-SS 15 D ANG CONE#6 52BAR	**148G3544**
15	¹/₂	REG 15 D ANG CONE#7	**148G3242**
15	¹/₂	REG-SS 15 D ANG CONE#7 52BAR	**148G3545**
20	³/₄	REG 20 D ANG CONE#4	**148G3247**
20	³/₄	REG-SS 20 D ANG CONE#4 52BAR	**148G3546**
20	³/₄	REG 20 D ANG CONE#5	**148G3248**
20	³/₄	REG-SS 20 D ANG CONE#5 52BAR	**148G3547**
20	³/₄	REG 20 D ANG CONE#6	**148G3249**
20	³/₄	REG-SS 20 D ANG CONE#6 52BAR	**148G3548**
20	³/₄	REG 20 D ANG CONE#7	**148G3250**
20	³/₄	REG-SS 20 D ANG CONE#7 52BAR	**148G3549**
25	1	REG 25 D ANG CONE#4	**148G3255**
25	1	REG-SS 25 D ANG CONE#4 52BAR	**148G3550**
25	1	REG 25 D ANG CONE#5	**148G3256**
25	1	REG-SS 25 D ANG CONE#5 52BAR	**148G3551**
25	1	REG 25 D ANG CONE#6	**148G3257**
25	1	REG-SS 25 D ANG CONE#6 52BAR	**148G3552**
25	1	REG 25 D ANG CONE#7	**148G3258**
25	1	REG-SS 25 D ANG CONE#7 52BAR	**148G3553**
32	1¹/₄	REG 32 D ANG CONE#8	**148G3263**
32	1¹/₄	REG-SS 32 D ANG CONE#8 52BAR	**148G3555**
32	1¹/₄	REG 32 D ANG CONE#9	**148G3264**
32	1¹/₄	REG-SS 32 D ANG CONE#9 52BAR	**148G3556**
32	1¹/₄	REG 32 D ANG CONE#10	**148G3265**
32	1¹/₄	REG-SS 32 D ANG CONE#10 52BAR	**148G3554**
40	1¹/₂	REG 40 D ANG CONE#8	**148G3269**
40	1¹/₂	REG-SS 40 D ANG CONE#8 52BAR	**148G3558**
40	1¹/₂	REG 40 D ANG CONE#9	**148G3270**
40	1¹/₂	REG-SS 40 D ANG CONE#9 52BAR	**148G3559**
40	1¹/₂	REG 40 D ANG CONE#10	**148G3271**
40	1¹/₂	REG-SS 40 D ANG CONE#10 52BAR	**148G3557**
50	2	REG 50 D ANG CONE#11	**148G3485**
65	2¹/₂	REG 65 D ANG CONE#12	**148G3486**

D = Butt-weld DIN
A = Butt-weld ANSI
SOC = Socket weld
SA = Soldering
FPT = Inside pipe thread

ANG = Angleway
STR = Straightway

Ordering
(continued)

Angleway

Size		Type	Code no.
mm	in.		
ANSI			
6	1/4	REG 6 A ANG CONE#1	**2415+474**
6	1/4	REG 6 A ANG CONE#2	**2415+475**
6	1/4	REG 6 A ANG CONE#3	**2415+476**
10	3/8	REG 10 A ANG CONE#1	**2415+480**
10	3/8	REG 10 A ANG CONE#2	**2415+481**
10	3/8	REG 10 A ANG CONE#3	**2415+482**
15	1/2	REG 15 A ANG CONE#4	**148G3276**
15	1/2	REG 15 A ANG CONE#5	**148G3277**
15	1/2	REG 15 A ANG CONE#6	**148G3278**
15	1/2	REG 15 A ANG CONE#7	**148G3279**
20	3/4	REG 20 A ANG CONE#4	**148G3284**
20	3/4	REG 20 A ANG CONE#5	**148G3285**
20	3/4	REG 20 A ANG CONE#6	**148G3286**
20	3/4	REG 20 A ANG CONE#7	**148G3287**
25	1	REG 25 A ANG CONE#4	**148G3292**
25	1	REG 25 A ANG CONE#5	**148G3293**
25	1	REG 25 A ANG CONE#6	**148G3294**
25	1	REG 25 A ANG CONE#7	**148G3295**
32	1 1/4	REG 32 A ANG CONE#8	**148G3300**
32	1 1/4	REG 32 A ANG CONE#9	**148G3301**
32	1 1/4	REG 32 A ANG CONE#10	**148G3302**
40	1 1/2	REG 40 A ANG CONE#8	**148G3306**
40	1 1/2	REG 40 A ANG CONE#9	**148G3307**
40	1 1/2	REG 40 A ANG CONE#10	**148G3308**
50	2	REG 50 A ANG CONE#11	**148G3487**
65	2 1/2	REG 65 A ANG CONE#12	**148G3488**
SOC			
15	1/2	REG 15 SOC ANG CONE#4	**148G3312**
15	1/2	REG 15 SOC ANG CONE#5	**148G3313**
15	1/2	REG 15 SOC ANG CONE#6	**148G3314**
15	1/2	REG 15 SOC ANG CONE#7	**148G3315**
20	3/4	REG 20 SOC ANG CONE#4	**148G3322**
20	3/4	REG 20 SOC ANG CONE#5	**148G3323**
20	3/4	REG 20 SOC ANG CONE#6	**148G3324**
20	3/4	REG 20 SOC ANG CONE#7	**148G3325**
25	1	REG 25 SOC ANG CONE#8	**148G3330**
25	1	REG 25 SOC ANG CONE#9	**148G3331**
25	1	REG 25 SOC ANG CONE#10	**148G3332**
32	1 1/4	REG 32 SOC ANG CONE#8	**148G3336**
32	1 1/4	REG 32 SOC ANG CONE#9	**148G3337**
32	1 1/4	REG 32 SOC ANG CONE#10	**148G3338**
40	1 1/2	REG 40 SOC ANG CONE#8	**148G3342**
40	1 1/2	REG 40 SOC ANG CONE#9	**148G3343**
40	1 1/2	REG 40 SOC ANG CONE#10	**148G3417**
FPT			
15	1/2	REG 15 FPT ANG CONE#4	**148G3389**
15	1/2	REG 15 FPT ANG CONE#5	**148G3390**
15	1/2	REG 15 FPT ANG CONE#6	**148G3391**
15	1/2	REG 15 FPT ANG CONE#7	**148G3392**
20	3/4	REG 20 FPT ANG CONE#4	**148G3397**
20	3/4	REG 20 FPT ANG CONE#5	**148G3398**
20	3/4	REG 20 FPT ANG CONE#6	**148G3399**
20	3/4	REG 20 FPT ANG CONE#7	**148G3400**
25	1	REG 25 FPT ANG CONE#8	**148G3405**
25	1	REG 25 FPT ANG CONE#9	**148G3406**
25	1	REG 25 FPT ANG CONE#10	**148G3407**
32	1 1/4	REG 32 FPT ANG CONE#8	**148G3411**
32	1 1/4	REG 32 FPT ANG CONE#9	**148G3412**
32	1 1/4	REG 32 FPT ANG CONE#10	**148G3413**

D = Butt-weld DIN
A = Butt-weld ANSI
SOC = Socket weld
SA = Soldering
FPT = Inside pipe thread

ANG = Angleway
STR = Straightway

Ordering
(continued)

D   = Butt-weld DIN
A   = Butt-weld ANSI
SOC = Socket weld
SA   = Soldering
FPT = Inside pipe thread

ANG = Angleway
STR = Straightway

Angleway

Size		Type	Code no.
mm	in.		

SA

Size		Type	Code no.
10	$^3/_8$	REG 10 SA ANG CONE#1 CU: 3/8"	**2415+559**
10	$^3/_8$	REG 10 SA ANG CONE#2 CU: 3/8"	**2415+560**
10	$^3/_8$	REG 10 SA ANG CONE#3 CU: 3/8"	**2415+561**
15	$^1/_2$	REG 15 SA ANG CONE#1 CU: 1/2"	**2415+565**
15	$^1/_2$	REG 15 SA ANG CONE#2 CU: 1/2"	**2415+566**
15	$^1/_2$	REG 15 SA ANG CONE#3 CU: 1/2"	**2415+567**
22	$^7/_8$	REG 22 SA ANG CONE#4 CU: 7/8"	**148G3363**
22	$^7/_8$	REG 22 SA ANG CONE#5 CU: 7/8"	**148G3364**
22	$^7/_8$	REG 22 SA ANG CONE#6 CU: 7/8"	**148G3365**
22	$^7/_8$	REG 22 SA ANG CONE#7 CU: 7/8"	**148G3366**

Ordering
(continued)

Straightway

Size		Type	Code no.
mm	in.		
DIN			
6	¹/₄	REG 6 D STR CONE#1	**2415+429**
6	¹/₄	REG 6 D STR CONE#2	**2415+430**
6	¹/₄	REG 6 D STR CONE#3	**2415+431**
10	³/₈	REG 10 D STR CONE#1	**2415+435**
10	³/₈	REG 10 D STR CONE#2	**2415+436**
10	³/₈	REG 10 D STR CONE#3	**2415+437**
15	¹/₂	REG 15 D STR CONE#4	**148G3243**
15	¹/₂	REG-SS 15 D STR CONG#4 52BAR	**148G3640**
15	¹/₂	REG 15 D STR CONE#5	**148G3244**
15	¹/₂	REG-SS 15 D STR CONG#5 52BAR	**148G3641**
15	¹/₂	REG 15 D STR CONE#6	**148G3245**
15	¹/₂	REG-SS 15 D STR CONG#6 52BAR	**148G3642**
15	¹/₂	REG 15 D STR CONE#7	**148G3246**
15	¹/₂	REG-SS 15 D STR CONG#7 52BAR	**148G3643**
20	³/₄	REG 20 D STR CONE#4	**148G3251**
20	³/₄	REG-SS 20 D STR CONG#4 52BAR	**148G3644**
20	³/₄	REG 20 D STR CONE#5	**148G3252**
20	³/₄	REG-SS 20 D STR CONG#5 52BAR	**148G3645**
20	³/₄	REG 20 D STR CONE#6	**148G3253**
20	³/₄	REG-SS 20 D STR CONG#6 52BAR	**148G3646**
20	³/₄	REG 20 D STR CONE#7	**148G3254**
20	³/₄	REG-SS 20 D STR CONG#7 52BAR	**148G3647**
25	1	REG 25 D STR CONE#4	**148G3259**
25	1	REG-SS 25 D STR CONG#4 52BAR	**148G3648**
25	1	REG 25 D STR CONE#5	**148G3260**
25	1	REG-SS 25 D STR CONG#5 52BAR	**148G3649**
25	1	REG 25 D STR CONE#6	**148G3261**
25	1	REG-SS 25 D STR CONG#6 52BAR	**148G3650**
25	1	REG 25 D STR CONE#7	**148G3262**
25	1	REG-SS 25 D STR CONG#7 52BAR	**148G3651**
32	1¹/₄	REG 32 D STR CONE#8	**148G3266**
32	1¹/₄	REG-SS 32 D STR CONG#8 52BAR	**148G3653**
32	1¹/₄	REG 32 D STR CONE#9	**148G3267**
32	1¹/₄	REG-SS 32 D STR CONG#9 52BAR	**148G3654**
32	1¹/₄	REG 32 D STR CONE#10	**148G3268**
32	1¹/₄	REG-SS 32 D STR CONG#10 52BAR	**148G3652**
40	1¹/₂	REG 40 D STR CONE#8	**148G3273**
40	1¹/₂	REG-SS 40 D STR CONG#8 52BAR	**148G3656**
40	1¹/₂	REG 40 D STR CONE#9	**148G3274**
40	1¹/₂	REG-SS 40 D STR CONG#9 52BAR	**148G3657**
40	1¹/₂	REG 40 D STR CONE#10	**148G3275**
40	1¹/₂	REG-SS 40 D STR CONG#10 52BAR	**148G3655**

D   = Butt-weld DIN
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SOC = Socket weld
SA   = Soldering
FPT = Inside pipe thread

ANG = Angleway
STR = Straightway

Technical leaflet   **Regulating valves, types REG 6 - 65 and REG-SS 15-40**

Ordering
(continued)

Straightway

Size		Type	Code no.
mm	in.		
ANSI			
6	¹/₄	REG 6 A STR CONE#1	**2415+477**
6	¹/₄	REG 6 A STR CONE#2	**2415+478**
6	¹/₄	REG 6 A STR CONE#3	**2415+479**
10	³/₈	REG 10 A STR CONE#1	**2415+483**
10	³/₈	REG 10 A STR CONE#2	**2415+484**
10	³/₈	REG 10 A STR CONE#3	**2415+485**
15	¹/₂	REG 15 A STR CONE#4	**148G3280**
15	¹/₂	REG 15 A STR CONE#5	**148G3281**
15	¹/₂	REG 15 A STR CONE#6	**148G3282**
15	¹/₂	REG 15 A STR CONE#7	**148G3283**
20	³/₄	REG 20 A STR CONE#4	**148G3288**
20	³/₄	REG 20 A STR CONE#5	**148G3289**
20	³/₄	REG 20 A STR CONE#6	**148G3290**
20	³/₄	REG 20 A STR CONE#7	**148G3291**
25	1	REG 25 A STR CONE#4	**148G3296**
25	1	REG 25 A STR CONE#5	**148G3297**
25	1	REG 25 A STR CONE#6	**148G3298**
25	1	REG 25 A STR CONE#7	**148G3299**
32	1¹/₄	REG 32 A STR CONE#8	**148G3303**
32	1¹/₄	REG 32 A STR CONE#9	**148G3304**
32	1¹/₄	REG 32 A STR CONE#10	**148G3305**
40	1¹/₂	REG 40 A STR CONE#8	**148G3309**
40	1¹/₂	REG 40 A STR CONE#9	**148G3310**
40	1¹/₂	REG 40 A STR CONE#10	**148G3311**
SOC			
15	¹/₂	REG 15 SOC STR CONE#4	**148G3316**
15	¹/₂	REG 15 SOC STR CONE#5	**148G3317**
15	¹/₂	REG 15 SOC STR CONE#6	**148G3318**
15	¹/₂	REG 15 SOC STR CONE#7	**148G3319**
20	³/₄	REG 20 SOC STR CONE#4	**148G3326**
20	³/₄	REG 20 SOC STR CONE#5	**148G3327**
20	³/₄	REG 20 SOC STR CONE#6	**148G3328**
20	³/₄	REG 20 SOC STR CONE#7	**148G3329**
25	1	REG 25 SOC STR CONE#8	**148G3333**
25	1	REG 25 SOC STR CONE#9	**148G3334**
25	1	REG 25 SOC STR CONE#10	**148G3335**
32	1¹/₄	REG 32 SOC STR CONE#8	**148G3339**
32	1¹/₄	REG 32 SOC STR CONE#9	**148G3340**
32	1¹/₄	REG 32 SOC STR CONE#10	**148G3341**
40	1¹/₂	REG 40 SOC STR CONE#8	**148G3344**
40	1¹/₂	REG 40 SOC STR CONE#9	**148G3345**
40	1¹/₂	REG 40 SOC STR CONE#10	**148G3346**
FPT			
15	¹/₂	REG 15 FPT STR CONE#4	**148G3393**
15	¹/₂	REG 15 FPT STR CONE#5	**148G3394**
15	¹/₂	REG 15 FPT STR CONE#6	**148G3395**
15	¹/₂	REG 15 FPT STR CONE#7	**148G3396**
20	³/₄	REG 20 FPT STR CONE#4	**148G3401**
20	³/₄	REG 20 FPT STR CONE#5	**148G3402**
20	³/₄	REG 20 FPT STR CONE#6	**148G3403**
20	³/₄	REG 20 FPT STR CONE#7	**148G3404**
25	1	REG 25 FPT STR CONE#8	**148G3408**
25	1	REG 25 FPT STR CONE#9	**148G3409**
25	1	REG 25 FPT STR CONE#10	**148G3410**
32	1¹/₄	REG 32 FPT STR CONE#8	**148G3414**
32	1¹/₄	REG 32 FPT STR CONE#9	**148G3415**
32	1¹/₄	REG 32 FPT STR CONE#10	**148G3416**

D   = Butt-weld DIN
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Ordering
(continued)

D   = Butt-weld DIN
A   = Butt-weld ANSI
SOC   = Socket weld
SA   = Soldering
FPT   = Inside pipe thread

ANG   = Angleway
STR   = Straightway

Straightway

Size		Type	Code no.
mm	in.		
SA			
10	$^3/_8$	REG 10 SA STR CONE#1 CU: 3/8″	**2415+562**
10	$^3/_8$	REG 10 SA STR CONE#2 CU: 3/8″	**2415+563**
10	$^3/_8$	REG 10 SA STR CONE#3 CU: 3/8″	**2415+564**
15	$^1/_2$	REG 15 SA STR CONE#1 CU: 1/2″	**2415+568**
15	$^1/_2$	REG 15 SA STR CONE#2 CU: 1/2″	**2415+569**
15	$^1/_2$	REG 15 SA STR CONE#3 CU: 1/2″	**2415+570**
22	$^7/_8$	REG 22 SA STR CONE#4 CU: 7/8″	**148G3367**
22	$^7/_8$	REG 22 SA STR CONE#5 CU: 7/8″	**148G3368**
22	$^7/_8$	REG 22 SA STR CONE#6 CU: 7/8″	**148G3369**
22	$^7/_8$	REG 22 SA STR CONE#7 CU: 7/8″	**148G3370**