

## **VALVE SOLUTIONS** FOR BUILDING SERVICES



# **AVK GROUP**

The AVK Group designs, manufactures, and markets innovative quality products, many of which are part of recycling initiatives and processes or energy, water, and infrastructure solutions. At the same time our foundation is to act responsibly towards both employees, the environment, and the society around us.

#### ABOUT THE AVK GROUP: FROM LOCAL SHOP TO GLOBAL SCALE

In 1941, Aage Valdemar Kjrer established AVK as a local machine shop. The main task of the business was the production of compressors for refrigeration and refrigerating plants for customers from all over Denmark. These values have made AVK grow from a local firm with 5 employees to a Group with +4,500 employ-ees supplying products to customers worldwide.

Our Expect. .. AVK concept helps us reach even higher. We must expect more from ourselves and deliver products and services that live up to and exceed our customers' expectations. This is why I expect that every single one of our employees worldwide will do their utmost to live up to these goals. The guiding principles and the connections back in time must form the basis of our principles in the time ahead. This way, AVK will also be the safe choice in the years to come.

"His guiding principles were quality, continuity and close customer relations. He knew that the prod-ucts were in order, and there ore he was able to o er an extensive product guarantee. hese guid-ing principles were important val-ues, which I brought along when I took over his machine shop in 1970."







## ICV<sup>™</sup> - a proud member of the AVK Group

The AVK Group of Denmark is a privately owned industrial group that currently comprises 77 companies.

AVK's core business is the production of **valves**, **hydrants and accessories** for the water and gas distribution network, sewage treatment and fire protection. Furthermore, AVK has built up strong brands supplying valves and controls for water treatment, dams & reservoirs, buildings, HVAC, chemical processing, marine and other industrial sectors.

AVK best in class factories cast, machine, coat valves all over the world. AVK also produces its own sealing materials and other essential components in its own factories.

AVK products are designed to the major international standards and are sold in more than 80 countries worldwide. When dealing with the AVK Group expect quality, reliability, functionality and long lifetime in service.  $\mathsf{ICV}^{\mathsf{TM}}$  is a fully owned subsidiary of the AVK Group A/S.

ICV<sup>™</sup> (Indoor Climate Valves) is the building solution department of the AVK Group. Originally under the AVK Water segment the ICV business area was established as a separate AVK subsidiary brand in 2006 to allow for even greater focus on buildings.

ICV develops, produces, and markets all over the world - total valve solutions for buildings with valves produced by AVK. This includes heating ventilation and airconditioning (HVAC), drinking and wastewater in buildings

- General and manual valves (photo below
- Motorized control valves (photo below
- Balancing solutions (next page

ICV's balancing solutions include all balancing valves typically used for buildings with innovative solutions and durable materials.









#### General valve range (as shown)

756 double flanged double eccentric butterfly valve
76 centric butterfly valve
9002, 02, 21 resilient seated rising and non-rising stem gate valves
37, 54 metal seated rising and non-rising stem gate valves
41 swing check valves
53 ball check valves
903, 904 (silent) check valves
901 globe valve, rising and non-rising stem metal seated gate valve
910 strainer
906 threaded bronze valves
912, 851 air valve
907 threaded stainless steel valves 910 strainer, 904 check valve, 907 ball valve, 901 gate valves

Flanged stainless steel valves 910 strainer, 904 check valve, 907 ball valve, 901 gate valve 911 rubber and stainless steel flexible joints and expansion joints

# **GENERALVALVES**



Series 76 Concentric butterfly valve with loose liner Wafer type DN50-300 PN16 Ductile iron Options:

· various actuators



Series 76/70-003 Concentric butterfly valve, with loose liner DN350-DN400 PN16 Ductile Iron

Options: • various actuators



#### Series 756/100

Butterfly valve Double eccentric Double flanged Integral seat IP 67 gearbox DN150-2800 PN10/16 Ductile iron

- Options:
- stainless steel seat
- PN25 in DN150-1200 • internal enamel

**Resilient seated** gate valve Double flanged gate valve, Non-rising stem EN1074-1&2 DN50-200 Stainless steel



Series 02/20 Flanged gate valve Face-to-face BS DN50-400 PN10/16 Ductile iron



Series 21/38 Flanged gate valve, rising stem DN50-400 PN10/16 Ductile iron

#### Metal seated gate valve

- · Double Flange connection
- · Non-rising stem · DN50-300
- · PN16



#### **Y-strainer Stainless**

- · Double Flange connection
- · DN50-400
- · PN16/PN25

#### Silent check valve

- · Double Flange connection · DN50-300
- PN16
- · Stainless steel



Series 76/70-009 Concentric butterfly valve, with loose liner DN50-DN600 PN16 Stainless steel Options:

· various actuators



**Concentric butterfly valve** Full lug PN16 DN50-600 Stainless steel



# GENERAL VALVES



#### Series S903/02

- Wafer connection
- $\cdot$  Ductile iron body
- · Alu bronze stem
- · Alu bronze disc
- Alu bronze seat
  Fusion bonded epoxy coating
- DN50-DN300
- PN16

Optional SS AISI 304, AISI 316 disc/stem/seat



#### Series 904/03 Swing check valve

To MSS SP-136 FTF to ASME B16.10 Body, bonnet, disc, DI ASTM A536 Seat ring Brass ASTM B16 Gasket NBR Bolt St st AISI304 Epoxy coating 100um Flange to ANSI B16.42/16.1 DN50

- DN600 PN cl150



#### Series 911/01, 911/02 Flexible joint

- $\cdot$  Single sphere/double sphere
- Flange connection
   Nylon tire cord reinforcement
- · EPDM body
- Galvanized steel flange
- · DN50-600
- · PN16/PN25

Other rubber material on request



#### Series 911/06 Flexible Joint Steel

- · Flange end
- · Stainless steel AISI 304 tube
- · Stainless steel AISI 304 braid

Stainless steel AISI 316 tube/braid

- · Galvanized steel flange
- · DN32-800
- · PN16/PN25

Optional



#### Series S903/00 Globe silent check valve

- Flange type
- Ductile iron body
   Metal seated
- Fusion bonded epoxy coating
- Fusion bonded epo.
   Spring (storm, CC20)
- · Spring/stem: SS304
- · DN65-400 PN16/25
- · Optional SS AISI 316 spring



- · Wafer connection
- Ductile iron body
- · Stainless steel AISI 316
- stem • Stainless steel AISI 316 disc
- · EPDM seat
- · Fusion bonded epoxy
- coating
- · DN50-DN600
- ·PN16

#### Series 911/03 Expansion Joint Double sphere

- · Double sphere
- Thread connection
- · Nylon tire cord reinforcement
- · EPDM body
- · Galvanized DI thread end
- ·DN15-50
- ·PN16

Other rubber material on request



#### Series 911/08 Expansion Joint

- $\cdot$  Flange end
- · Stainless steel AISI 304 tube
- $\cdot$  Galvanized steel tie rod
- · Galvanized steel flange
- · DN32-1200
- · PN16/PN25



#### Product series S903/01

- $\cdot$  Flange type
- $\cdot$  Ductile iron body
- · Alu bronze stem
- · Alu bronze disc
- · Alu bronze seat
- · Fusion bonded epoxy coating
- · DN50-DN600
- · PN16/PN25

Optional SS AISI 304, AISI 316 disc/stem/ seat

#### Series 910/X0 Y-strainer

- · Flange connection
- · Ductile iron body
- · Stainless steel AISI 304 filter
- $\cdot$  Galvanized steel drain plug
- NBR 0-ring
- · DN50-600
- · PN16/PN25 Stainless steel AISI
- 316 drain plug



#### Series 911/04, 911/05 Flexible Joint

- · Thread end
- · Stainless steel AISI 304 tube
- · Stainless steel AISI 304 braid\*
- · Galvanized steel thread
- · DN15-50
  - · PN16/PN25

Optional Stainless steel AISI 316 tube/braid/thread end Female/male thread end

\* No braid for DN15-20 for FCU use

material on red

## STAINLESS STEEL VALVE **BSPT THREAD END, FLANGED TYPE**



#### Series 907/01 Stainless steel gate valve

- · Thread to BSPT
- · Stainless steel AISI 304 body
- · Stainless steel AISI 304 stem
- · Stainless steel AISI 304 disc
- · Stainless steel AISI 304 seat
- · PTFE packing
- ·DN15-50
- · PN16

Optional

Stainless steel AISI 316



#### Series 910/06 Stainless steel strainer

- Thread to BSPT
- · Stainless steel AISI 304 body
- · Stainless steel AISI 304 pin
- · Stainless steel AISI 304 disc
- · Stainless steel AISI 304 seat
- · PTFE gasket
- · DN15-50
- · PN16
- Optional Stainless steel AISI 316



#### Series 907/02 Stainless steel globe

- · Thread to BSPT
- · Stainless steel AISI 304 body
- · Stainless steel AISI 304 stem
- · Stainless steel AISI 304 disc
- · Stainless steel AISI 304 seat
- · PTFE packing
- · DN15-50
- · PN16

#### Optional

Stainless steel AISI 316



#### Series 907/03 Stainless steel check valve

- · Thread to BSPT
- · Stainless steel AISI 304 body
- · Stainless steel AISI 304 pin
- · Stainless steel AISI 304 disc
- · Stainless steel AISI 304 seat
- · PTFE gasket
- · DN15-50
- · PN16

Optional Stainless steel AISI 316



#### Series 901/03 **Rising stem gate valve**

- · Flange type
- · Stainless steel
- · Body/bonnet/stem/wedge SS304 or SS316
- · CI handwheel
- · FTF GB12221
- · DN50 DN400
- · PN16/PN25



#### Series 904/02

#### Swing check valve

- · Flange type
- · Stainless steel
- · Body/disc/shaft SS304 or
- SS316
- · Flange to EN1092
- · DN50-DN300
- · PN16/PN25



#### Series 907/08 Stainless steel ball valve

- · Flange type · Stainless steel AISI 304 or
- 316
- · PTFE seat
- · Carbon steel lever
- · DN15-DN250
- · PN16/PN25



#### Series 910/05 Stainless steel strainer

- · Stainless steel AISI 304 or 316
- · Flange type
- Flange to EN1092
- · DN50-DN300
- · PN16/PN25

- · PTFE seat ·DN15-50 · PN16/PN25

Stainless steel ball valve

Optional

# · Thread to BSPT

Series 907/04

Stainless steel AISI 316

· Stainless steel AISI 304 body · Stainless steel AISI 304 stem · Stainless steel AISI 304 ball

## BRONZEVALVE **BS21 THREAD END**



#### Series 906/02 Bronze gate valve

- · Thread to BSPT
- · Bronze CC491K body
- · DZR brass CW602N stem
- · Bronze CC491K disc
- · Bronze CC491K seat
- · PTFE packing
- · DN15-50
- · PN20/PN25



#### Series 906/02 Bronze rising stem gate valve

- · Thread to BS21
- · Bronze CC491K body
- · DZR brass CW602N stem
- · Bronze CC491K disc
- · Bronze CC491K seat
- · PTFE packing
- · DN15-50
- · PN20



#### Series 906/04 Bronze globe valve

- · Thread to BSPT
- · Bronze CC491K body
- · DZR brass CW602N stem
- · DN15-25 DZR brass CW602N disc
- DN32-50 bronze CC491K disc · Bronze CC491K seat
- · PTFE packing
- · DN15-50
- · PN16/PN20



#### Series 906/08 **Ball valve**

- · Thread to BSPT
- · Bronze CC491K body
- · DZR brass CW602N stem
- · Chrome plated brass
- CW617N ball
- · PTFE seat
- · DN15-50
- · PN20/PN25



#### Series 910/07 **Bronze Y-strainer**

- · Thread to BS21
- · Bronze CC491K body
- · Stainless steel AISI 304 filter
- · Bronze CC491K cap
- · PTFE gasket
- · DN15-50
- PN20



#### Series 906/06 Bronze check valve

- · Thread to BSPT
- · Bronze CC491K body
- · DZR brass CW602N disc · Bronze CC491K seat
- · PTFE gasket
- · DN15-50
- · PN20



#### Series 912 Auto air valve

- · hread connect
- · CW617N brass body
- · CW617N brass stem
- spring
- · DN15-DN25
- · PN16

Optional Stainless steel AISI 304 filter

· PTFE insert











#### **ICV** motorized control valves

- 951 Flowmaster<sup>™</sup> PICV (p. 6-9)
- 920/3 & 920/4 motorized control stroke valves (p. 10-13)
- 920/2 motorized control ball valve (p. 14-17)
- 925/06 & 925/76 motorized control butterfly valve (p. 18-23)
- 920/1 motorized on/off valve for fancoil (p. 24-25)
- 955 Flowmaster™ FC for fancoils (p. 26-27)

### **MOTORIZED CONTROL VALVES** PICN



### 951 FLOWMASTER **PICV - PRESSURE INDEPENDENT MOTORIZED** CONTROL BALANCING VALVE

951-0150-15170X

951-0200-15-70X

150

200

30-400

30-400

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300

150

	ICV No.				951-000-98	804 98	51-000-9806	9200420248	9200420249
leating	Force (Nm)				250N		400N	1200N	5000N
Cooling	Running time (50/6	0Hz)			75		140	114/95	240/175
Source	IP Class				IP44		IP54	IP54	IP54
<i>entilation</i>	241/40	Control signa	ıl		N	lodulating	0-10V, 020mA,	2-10V/420mA, 2P c	on/off
	24VA0	Feedback (po	osition) signa	1			1-10V, 2-10V		
PN25 ~ps [kPa] 0120	°C ICV No. DN Range			Kvs (m³/h) ps	kPa]	~ps [kPa]	~ps [kPa]	~ps [kPa]	
	951-015-2011	15 low	16-400	0.0750625	400				
*	951-020-2011	20 low	16 -400	0.131 –1.05	400				
HT.	951-025-2011	25 low	16 -400	0.231 -1.722	300				
A	951-015-2012	15	18 -400	0.244 -1.724	400				
and a second	951-020-2012	20	22 -400	0.292 –2.039	300				
7	951-025-2012	25	22 -400	0.292 –2.039	300				
NN	951-032-2012	32	18 –400	0.465 –3.056	300				
	951-040-2012	40	16 –400	2.022 -7.105			300		
	951-050-2012	50	16 -400	2.204 -8.586			300		
PN16/25 595°C	ICV No.	DN	~ps [kPa] Range	<b>Kvs (mậ⁄hj</b> kPa]		ĩps [kPa]	~ps [kPa]	~ps [kPa]	
	951-0040-15012X	40	30-400	1.0 -7.7				500	
	951-0050-15012X	50	30-400	2.0 -12.1				400	
L AL A	951-0065-15012X	65	30-400	3.0 - 20.4				300	
1.4	951-0080-15012X	80	30-400	5.0 -40.0				300	
	951-0100-15170X	100	30-400	10.0 -45.3					300
	951-0125-15170X	125	30-400	15.0 -70.7					300

20.0 -101.8

50.0 - 360.0



#### **Recommended application:**

The 951 PICV is installed on the return pipe of any terminal coil offering the combined benefits of optimal modulating flow control valve, differential dynamic pressure balancing control, and manual balancing valve – all in one – for airhandling units, fresh air units, fan coils and all other terminal equipment. Full stroke modulation is ensured regardless of the presetting. "First open" cap to allow for installation and commissioning before actuator is installed. Removable pressure regulator cartridge makes small-pipe flushing and pipe cleaning easy

High quality DZR brass ensures no corrosion

#### Innovative solution



The preset and volumetric flow control functions in one component (left), and pressure regulator (right) –replaceable, compact and innovative

#### Maximum flow limiter



Simple presetting of maxium volumeric flow by inbuilt dial in brass valve

#### P/T Ports - Pressure testing ports



Safe and easy calibration of volumetric flow (Δp) using the ICV PFM Bluetooth commissioning instrument

#### **High grade materials**



High grade materials: corrosion resistant brass, AVK rubber sealing, GG25 ductile iron ensures longevity

#### Inbuilt pressure regulator



Very wide differential pressure control ranges 30-400kpa (dp<sub>min</sub>- d

max )
Very high constant flow precision at
+/-5% of flowrate.

#### **Volumetric control valve**



Precise volumetric flow control valve using ICV's 24V modulating actuators 100 valve authority ensured Ensures temperature control and comfort to coil

Body: DZR Brass EN CW602N Regulator: PPS with 40% glass Flow limiter: PPO Spring: Stainless steel O-ring: EPDM Body: 89/336/EEC, 93/68/EEC

Body: ductile GG25 Stem: AISI 304 Diaphragm: EPDM Internals: Standards: BS EN 12266, 1092-2

### **MOTORIZED CONTROL** STROKE VALVES



### 920/3 Motorized threaded control stroke valve 920/4 Motorized flanged control stroke valve

1993	-		
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Air handing units Free hair units Heating equipment Free hair units Heating equipment Boltioning time (60/60Hz)IndextIndexIndexIndextIn		ICV No.					9201061/3	9202102/4	9202122/4	9202182/4	
Presh air units Heating equipment Energy distribution Persona in units Persona in units Persona in units Persona in unitsPositioning time (50/60H2 Persona Control Persona Control Persona Persona in unitsPositioning time (50/60H2 Persona Control Persona Control Persona Control Persona <td>Air handling units</td> <td>Force (N)</td> <td></td> <td></td> <td></td> <td></td> <td>600N</td> <td>1000N</td> <td>1200N</td> <td>1800N</td> <td></td>	Air handling units	Force (N)					600N	1000N	1200N	1800N	
Heating equipme Energy distribution         IP Class	Fresh air units	Positioning time (50/60Hz)					92/76	105/90	114/95	210/175	
Energy distribution         24VAC         Inc. (Control (Contro) (Control (Control (Control (Contro) (Control (Cont	Heating equipment	IP Class					IP54	IP54	IP54	IP54	
Position         Position         Gene         Position         Gene         Gene <thgene< th="">         Gene         <thgene< th=""></thgene<></thgene<>	Energy distribution	04/40		Control	signal			0-10V-020n	nA, 2-10V/420r	nA, on/off	
PN16 595 °CICV No. 2-way MOD/ONOFFICV No. 3-way MOD/ONOFFDNStrokeKvs (m3/n)ps [kPa]ps [kPa] <th< th=""><th></th><th>24VAG</th><th></th><th colspan="2">Positioning feedback signal</th><th>0-10V, 2-10V</th><th>0-1</th><th colspan="2">0-10V, 2-10V, on/off</th><th></th></th<>		24VAG		Positioning feedback signal		0-10V, 2-10V	0-1	0-10V, 2-10V, on/off			
920-03-1-0015-11061/2         920-03-1-0015-12061/2         15         3.1         600         Image: constraint of the state of the	PN16 -595 °C	ICV No. 2-way MOD/ONOFF	ICV No. 3-way MOD/ONOFF	DN	Stroke	Kvs (m3/h)	~ps [kPa]	~ps [kPa]	~ps [kPa]	~ps [kPa]	
920-03-1-0020-11061/2         920-03-1-0020-12061/2         20         15         5         600         ()         ()         ()           920-03-1-0025-11061/2         920-03-1-0025-12061/2         25         20         7.4         600         () <td></td> <td>920-03-1-0015-11061/2</td> <td>920-03-1-0015-12061/2</td> <td>15</td> <td>15</td> <td>3.1</td> <td>600</td> <td></td> <td></td> <td></td> <td></td>		920-03-1-0015-11061/2	920-03-1-0015-12061/2	15	15	3.1	600				
920-03-1-0025-11061/2         920-03-1-0025-12061/2         25         20         7.4         600         1		920-03-1-0020-11061/2	920-03-1-0020-12061/2	20	15	5	600				
920-03-1-0032-11061/2         920-03-1-0032-12061/2         32         20         11.5         550         F           920-03-1-0040-11061/2         920-03-1-0040-12061/2         40         20         14         450         F         F           920-03-1-0050-11061/2         920-03-1-0050-12061/2         50         20         45         300         F         F           920-03-2-0065-11101/2         920-03-2-0065-12101/2         65         20         63         300         F         F           920-03-2-0080-110101/2         920-03-2-0080-12101/2         80         20         78         250         F	1	920-03-1-0025-11061/2	920-03-1-0025-12061/2	25	20	7.4	600				
920-03-1-0040-11061/2         920-03-1-0040-12061/2         40         20         14         450         Image: constraint of the state	Ť	920-03-1-0032-11061/2	920-03-1-0032-12061/2	32	20	11.5	550				
920-03-1-0050-11061/2         920-03-2-0065-12101/2         50         20         45         300         Image: constraint of the state	Contraction of the local division of the loc	920-03-1-0040-11061/2	920-03-1-0040-12061/2	40	20	14	450				
920-03-2-0065-11101/2         920-03-2-0065-12101/2         65         20         63         300         (1)           920-03-2-0080-110101/2         920-03-2-0080-12101/2         80         20         78         250         (1)           920-042-0065-13121/3         920-042-0065-14121/3         65         20         75         500         500           920-042-0080-13121/3         920-042-0080-14121/3         80         20         100         500         500           920-042-0100-13181/3         920-042-0100-14181/3         100         38         125         500         300           920-042-0100-13181/3         920-042-0125-14181/3         100         38         200         100         500         300           920-042-0150-13181/3         920-042-0150-14181/3         100         38         125         500         300	100	920-03-1-0050-11061/2	920-03-1-0050-12061/2	50	20	45	300				
920-03-2-0080-110101/2         920-03-2-0080-12101/2         80         20         78         250         400           920-042-0065-13121/3         920-042-0065-14121/3         65         20         75         60         500           920-042-0080-13121/3         920-042-0080-14121/3         80         20         100         500         500           920-042-0100-13181/3         920-042-0100-14181/3         100         38         125         60         300           920-042-0125-13181/3         920-042-0125-14181/3         125         38         200         60         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         60         60         300           920-042-0150-13181/3         920-043-0200-14701/3         200         38         400         60         500         500		920-03-2-0065-11101/2	920-03-2-0065-12101/2	65	20	63		300			
920-042-0065-13121/3         920-042-0065-14121/3         65         20         75         500           920-042-0080-13121/3         920-042-0080-14121/3         80         20         100         500         500           920-042-0100-13181/3         920-042-0100-14181/3         100         38         125         500         300           920-042-0125-13181/3         920-042-0125-14181/3         125         38         200         500         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         500         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         500         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         500         500		920-03-2-0080-110101/2	920-03-2-0080-12101/2	80	20	78		250			
920-042-0080-13121/3         920-042-0080-14121/3         80         20         100         500           920-042-0100-13181/3         920-042-0100-14181/3         100         38         125         300         300           920-042-0125-13181/3         920-042-0125-14181/3         125         38         200         6         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         6         300           920-042-0150-13181/3         920-043-0200-14701/3         200         38         400         6         500		920-042-0065-13121/3	920-042-0065-14121/3	65	20	75			500		
920-042-0100-13181/3         920-042-0100-14181/3         100         38         125         300           920-042-0125-13181/3         920-042-0125-14181/3         125         38         200         300           920-042-0150-13181/3         920-042-0150-14181/3         125         38         200         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         300           920-043-0200-13701/3         920-043-0200-14701/3         200         38         400         400		920-042-0080-13121/3	920-042-0080-14121/3	80	20	100			500		
920-042-0125-13181/3         920-042-0125-14181/3         125         38         200         300           920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         300           920-043-0200-13701/3         920-043-0200-14701/3         200         38         400         300	And and	920-042-0100-13181/3	920-042-0100-14181/3	100	38	125				300	
920-042-0150-13181/3         920-042-0150-14181/3         150         38         285         300           920-043-0200-13701/3         920-043-0200-14701/3         200         38         400         300		920-042-0125-13181/3	920-042-0125-14181/3	125	38	200				300	
920-043-0200-13701/3 920-043-0200-14701/3 200 38 400	· •	920-042-0150-13181/3	920-042-0150-14181/3	150	38	285				300	
		920-043-0200-13701/3	920-043-0200-14701/3	200	38	400					

#### Highlight

valve types

**Comfortable and energy saving** Stroke design control concept offers the most precise control characteristics of the control

#### Safe

All standard control signals offered befitting all control manufacturers ensures perfect integration of building automation systems

#### Easy

Very wide offering of both threaded brass valves and the flanged cast ductile iron version



#### **Recommended application:**

The 920/3 and 920/4 motorized control stroke valves are installed on the return pipe of all coils requiring modulating flow control: Air handling units and fresh air units Chillers and cooling towers

Heating plants Energy distribution



9203702/4 5000N 240/175 IP54

~ps [kPa]

Body: brass H62 Stem: stainless steel Disc/seat: brass H62 Packing: PTFE+NBR

Housing: ABS

Gear: POM, Nylon

Bracket: die casting aluminum

alloy

Body: cast iron GG25 Stem: stainless steel AISI 302 Disc/seat: brass Packing: PTFE+fluororubber

#### EQ% equal percentage control curve



Equal percentage control characteristics (blue) combines with the energy flow/yield curve of the coil (red) to produce the required energy output in the room(green)

#### Valves

- Wide range of 2-way and 3-way valves available from DN32-200
- Triple sealing packing box of PTFE+Fluororubber (flanged) and PTFE+NBR (brass) ensures no neck leakage
- Pressure compensated design of flanged valves ensures high close-off pressures with minimum wear on the actuator
- Designed according to BS EN 1092-2 and hydraulically tested according to BS EN 12266. Ensures correction functionality (i.e. EQ) and strength
- DZR corrosion resistant brass body and seat ensures that valve is resistant longivety and functionality

#### Actuato

- Wide range 600N, 1000N, 1200N, 1800N, 5000N ensures economical fit for different valves sizes
- Easy to use manual override on the actuator
- Control signals 0-10V/0..20mA and 2-10/4..20mA available.
   Position feedback signals 0-10V and 2-10V selectable on the actuator
- Self-calibration ensures correct alignment of the control signal and the stroke position
- Normally open or normally closed can be selected on the actuator
- Work status light indicator makes it easier to realize functional issues after installation and commissioning
- Easy mounting saves time for the installer

### **MOTORIZED CONTROL** BALLVALVES









ICV 920/02 On/off 3 ways



ICV 920/02 ICV 920/02 Modulating 2 ways On/off 2 ways



#### Highlights

#### **Cost effective**

Control ball valves offer adequate control characteristics for affordable price

#### Easy

Easy mounting saves time during installation.

#### Safe

Wide portfolio from the same supplier makes design and product selection easy and safe



Recommended application: The 920/2 motorized control ball valves are installed on the return pipe of all coils requiring modulating flow control: Air handling units and fresh air units Chillers and cooling towers Heating plants Energy distribution

#### Actuators

- 220VAC 2P on/off control
   24VAC 0-10V (0-20mA) or 2-10V (4..20mA) control and 0-10V and 2-10V feedback signals available
- Rotation direction / normally open or normally closed selectable
- Self calibration function ensures that correct mounting of the actuator and that the correct flow and function is achieved
- Functional light indicating "normal", "self-calibration", and "fault" makes commissioning and fault finding easier
- IP54 housing sufficient for all standard installations
- Manual override for easy and proper mounting
- Running times below 130s (105/130)



Body: Brass Seat/gasket: PTFE Ball: chromed brass CW617N Stem: stainless steel AISI 304 O-ring: EPDM

Body: ductile cast iron Seat/gasket: PTFE Ball: chromed brass CW617N Stem: stainless steel AISI 304 O-ring EPDM

### **MOTORIZED CONTROL** BUTTERFLY VALVES





925/76



925/06



952/06/02



952/06/01

	ICV No. 925/06			-00040- 5XY	-00060- 7XY	-00090- 7XY	-00150- 7XY	-00281- 0XY	-00381- 2XY	-00601- 2XY	-01001- 2XY	-02001- 4XY	-03001- 6XY	-04001- 6XY
	Force Nm Positioning time (50/60Hz)		40	60	90	150	280	380	600	1000	2000	3000	4000	
Air handling units			14/17	14/17	14/17	17/20	22/26	22/26	24/29	24/29	75/90	75/90	60	
Fresh air units	IP Class			IP67										
Energy distribution 220 VAC									2P					
Lifergy distribution	220 VAO	Position	n feedback		Dry contact									
	380 VAC	Control	signal					0-10V, 2-	10V/420	mA				
	000 1/10	Positior	n feedback		0-10V, 2-10V									
PN16 to 110°C	ICV No.	mm	Kvs (m3/h)	~ps [kPa]										
	925-02-0050-X1YY	50	135	1600										
	925-02-0065-X1YY	65	220	1600										
	925-02-0080-X1YY	80	302	1600										
	925-02-0100-X1YY	100	600		1600									
100	925-02-0125-X1YY	125	1022			1600								
db	925-02-0150-X1YY	150	1579				1600							
	925-02-0200-X1YY	200	3136					1600						
	925-02-0250-X1YY	250	5340						1600					
	925-02-0300-X1YY	300	8250							1600				
	925-02-0350-X1YY	350	11917								1600			
	925-02-0400-X1YY	400	16388									1600		
	925-02-0450-X1YY	450	21705									1600		
	925-02-0500-X1YY	500	27908										1600	
	925-02-0600-X1YY	600	43116											1600



#### **Recommended application:**

The butterfly valves are recommended as modulating control or on/off control of all coils, chillers, cooling towers, and distribution for large diameters. Air handling units and fresh air units Chillers and cooling towers Heating plants Energy distribution

### Also available: lug type

Housing: aluminum alloy/Cast iron Hand wheel: cast iron Open/Close indicator Stainless steel AISI 304



#### Also available: double flanged





Body: ductile iron GGG40 Disc: Epoxy coated ductile iron Seat: EPDM Stem: stainless steel AlSI 420/2Cr13 Coating: epoxy coating RAL7011 > 100µm BS EN 1074-1

(Disc, seat, stem – other materials available)

6		12.	1000	a.								
	1	8										
<b>P</b>	(0)	()*			-	*			1	7		
									Close	an .		
Air handling units a Chilled and cooling Cooling towers District cooling sys	and fresh air units (AHU and I 1 water from chillers 1 stems Temperature range -10	FAU) ) - 130C						đ	0			
	1	925/7	′6-		0005	0010	0016	0025	0050	0060	0100	0200
		AC24V +10/-15%	6 0/		05D2FGH	07D2FGH	0700504		1000564	100050	1020504	1400504
On/off actuator	Operating voltage / tolerance	AC380V /3 phase Starting current Working current	2		05D0FGH 05D1FGH 0.25A 0.25A	07D0FGH 07D1FGH 0.58A 0.5A	07D1FGH 0.72A 0.68A	10D0FGHI 0.69A 0.6A	10D1FGHI 1.38A 1.2A	10D1FGHI 1.38A 1.2A	12D1FGHI 1.38A 1.2A	14D0FGH 14D1FGH 1.38A 1.2A
		925/76-	Position	Feedback	0005	0010	0016	0025	0050	0060	0100	0200
		AC24V +10/-15%	0-10V	0-10V	0532FGHI	0732FGHI						
		AC220V +10/-15%	420mA 0-10V	420mA 0-10V	0562FGHI 0530FGHI	0762FGHI 0730FGHI	0730FGHI	1030FGHI	1030FGHI	1030FGHI	1230FGHI	1430FGH
Modulating actuator	Operating voltage /		420mA	420mA	0560FGHI	0760FGHI	0760FGHI	1060FGHI	1060FGHI	1060FGHI	1260FGHI	1460FGHI
-	tolerance	AC380V /3 phase							-		-	-
		Nominal torque			50	100	160	250	500	600	1000	2000
	Operating data	Positioning time 9	90° at 50Hz (	sec)	30	30	30	30	30	30	30	30
	Davia	Angle of rotation		n.	00/10	00/00	00/00	90° (ma	ax +/-5°)	000/00	000/00	000/00
	FOWER	Max, medium ten	nperature	)	30/10	00/23	80/23	-10	80°C	300/90	300/90	300/90
General	Environmental	Ambient tempera Humidity	ture					-20 095	.55°C % r.h.			
	Degree of protection	Housing upright t Insulation class	o horizontal					IF NEM	968 //A F			
	Standards	JB/T8219-1999						JB/T82 EN607	19-1999			
Wafer type epoxy coated	ICV No.	DN (mm)	kvs [m3/h]	PN class <sup>°</sup> p	s (kPa) õs	s [kPa] ~ rps	[kPa] <sup>°</sup> os	[kPa] <sup>o</sup> ns [	kPal <sup>°</sup> os (k	(Pal <sup>°</sup> ns ík	Pal <sup>°</sup> ps (k	Pal
Si sattorny valvos	76-0050-72-8175026900	50	91	16	1400							-
(B)	76-0065-72-8175026900	65	206	16	1400							
	76-0080-72-8175026900	80	436	16	1400							
	76-0100-72-8175026900	100	660	16		1400						
NUMBER OF	76 0105 70 0175006000	105	1 200	16		1400						



Lug type epoxy coated DI butterfly valves



		11001011010000												
	Standards	JB/T8219-1999							J	B/T8219-	1999			
o to d		CE		_						=INOU730	2-14			
Jaleu	ICV No.	DN (mm)	kvs [m3/h]	PN class <sup>°</sup> ps	[kPa]	~ps [kPa	i] ~ p	s [kPa]	~ps [kPa]	~ps [kPa]	ps [kP	a] ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Pa] ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	kPa]
	76-0050-72-8175026900	50	91	16	1400	)								
	76-0065-72-8175026900	65	206	16	1400	)								
	76-0080-72-8175026900	80	436	16	1400	)								
	76-0100-72-8175026900	100	660	16			1400							
	76-0125-72-8175026900	125	1,300	16			1400							
	76-0150-72-8175026900	150	2,100	16				14	00					
	76-0200-72-817502690014	200	4,100	16					14	400				
	76-0250-72-817502690015	250	6,090	16							1400			
	76-0300-72-817502690015	300	9,570	16								1400		
	76-0350-72-817502690015	350	12,958	16									1400	
	76-0400-72-817502690015	400	17,244	16										1400
ted	ICV No.	DN (mm)	Kvs (m3/h)	PN class <sup>°</sup> ps	[kPa]	~ps [kPa	ı] ~p	s [kPa]	~ps [kPa]	~ps [kPa]	ps [kP	a] ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Pa] ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	kPa]
	76-0050-73-8175026905	50	91	16	1400	)								
	76-0065-73-8175026905	65	206	16	1400	)								
	76-0080-73-8175026905	80	436	16	1400	)								
	76-0100-73-8175026905	100	660	16			1400							
	76-0125-73-8175026905	125	1,300	16			1400							
2	76-0150-73-8175026905	150	2,100	16				14	.00					
R	76-0200-73-817502690514	200	4,100	16					14	400				
5	76-0250-73-817502690515	250	6,090	16							1400			
-	76-0300-73-817502690515	300	9,570	16								1400		
	76-0350-73-817502690515	350	12,958	16									1400	
	76-0400-73-817502690515	400	17,244	16										1400
110	1000													
							M							

#### Description

F - Optional features

**G** - Optional features

I - Optional features

1 - Dual torque limiter

wrench

1 - Hand wheel

0-Standard

0-Standard

0-Standard Hexagon Allen

#### D - Actuator type

1 - on/off 2 - on/off dry point 3 -0-10V / 0-10V 4 -2-10V / 2-10V 5 -2-10V / 4-20mA 6 -4-20mA / 4-20mA

#### 20mA 1 - Potentiometer H - Optional features 0 - Standard 1 - Electrical heater

0 - 22VAC 1 - 380VAC (on/off) 2 - 24VAC\* 3 - 24VDC\*\*

E - Power

Housing: epoxy coated aluminum alloy Open close indicator High IP protection class High NEMA motor protection class Pre-mounted from factory Lightweight and reliable

#### Description

Disc: Epoxy coated DI EN-GJS-500/7 Body: DI ductile iron EN-GJS-500/7 GSK approved fusion bonded epoxy coating DIN30677-2 WRAS approved loose concentric EPDM liner Stem AISI 420 (1.4021) Flange drilling EN1092-2 Design EN593 Hydraulic test to EN1074-1, 2/EN12266 Optional: SS316 Disk, NBR or high °C EPDM liner Medium temperature range -10°C - 80°C

Standard AC220V

#### Actuator

- Light weight and small fits into small spaces. Actuator heaight only between 141 – 186 mm
- Wide range available from 50 Nm to 2000 Nm ensures economical fit of valve and actuator
- Produced according to JB and CE standards
- IP68 extra high protection class suitable for outdoors installations
- Auto-calibration ensure correct position feedback and correct functional integration of the valve and actuator
- Optional internal heating element ensures that condensation doesn't damage the circuits
- Optional easy to use large handwheel for manual override during commissioning
- Self-locking gear train for stable torques and long life
- Dew barrier disc DN50-300

#### **ICV 76 butterfly valves**

- Premium butterfly valve designed for HVAC, supply drainage and drinking water systems
- Long neck for temperature insulation. Mounted with dew barrier disc between
  valve and actuator for better anti-condensation protection
- Reinforced seating area at shaft. Shaft holes dimensioned to create compression around the shaft
- Integrated, profiled flange gasket
- Pin less and two stub shaft design
- PPOM bearings and an EPDM O-ring as backup sealing for no leakage
- PTFE coated bearings at the top and bottom of the disc for low friction
- The rubber ensures minimum biofilm formation which prevents contamination of the drinking water
- The rubber is approved for drinking water applications

### **MOTORIZED** ON/OFF VALVE



ICV 920-1 Motorized on/off valve for fancoils Offers on/off control of fan coils



**Recommended application:** For on/off control of fan coils

#### Highlights

Simple Simple installation and usage

#### Suitable

Normally closed suitable for most cooling applications

#### Easy

Manual override used during installation and maintenance, with only two wires for easy wiring.

#### Safe

Spring return ensures actuator returns to closed position in case of power failure

22		On/off			
PN16' to 90°C	ICV No. 2-way	mm	ĩps [kPa]	Kvs m³/h	
	920-01-0015-2	15	180	2	Body: DZR brass
and the second second	920-01-0020-2	20	180	3	Stem: stainless steel
and the	920-01-0025-2	25	180	3	Thread to BS 21
	920-01-0015-21	15	180	2	Hydraulic tested to EN 12266
	920-01-0020-21	20	180	3	
	920-01-0025-21	25	180	3	

### MOTORIZED DYNAMIC BALANCING VALVE





#### **Recommended application:**

The 955 Flowmaster<sup>™</sup> FC is installed on the return pipe of any fancoil. The correct flow cartridge is chosen based on flow requirements.

#### Materials

Cap DZR Brass CW602N Body DZR Brass CW602N Cartridge DZR Brass CW602N Stem:Stainless steel Actuator housing ABS

#### **Highlights**

#### To in one

Two in one on/off control valve and dynamic flow balancing valve

#### Exchange cartridge

Exchangeable cartridges for high/low flow and variable flow rates

#### Silent

ICVthermic actuator and internal diaphragm ensures silent operation preferred for hotels and homes

#### Fan coils



~ps 380 kPa	Force (N)	Stroke	IP	955-000-	9901 24	955-000-9	902 110	955-000-9903 220
~ pmax 230 kPa PN25	-10° tơ130N	4mm	IP40/44	VA	C	VAC	;	VAC
120°C	ICV No.(L/H)		Flow (l/s)	Min <sup>~</sup> p (kPa)	ICV No	o. (L/H)	Flow (I/s)	Min <sup>~</sup> p (kPa)
	952-10 1 115	C	0.007	7	952-11 1	1/2 1725	0.171	14
	952-10 1 117	C	0.01	7	952-11 1	1/2 1730	0.186	14
	952-10 1 119	C	0.012	7	952-11 1	1/2 1735	0.204	14
A	952-10 1/2 121	0	0.015	7	952-11 1	1/2 1740	0.222	16
	952-10 1/2 123	0	0.021	8	952-11 1	1/2 1745	0.242	19
	952-10 1/2 126	60	0.024	9	952-11 1	1/2 1750	0.26	21
	952-10 1/2 129	0	0.029	10	AVK. N	o. (L/H)	Flow (I/s)	Min ~p (kPa)
055 015 20 1	952-10 1/2 130	00	0.032	10	952-20 1	/2 2070	0.283	22
955-020-20-1	952-10 1/2 132	20	0.036	11	952-20 1	/2 2074	0.3	22
955-025-20-1	952-10 1/2 135	60	0.043	11	952-20 1	/2 2077	0.332	22
	952-10 1/2 137	0	0.049	12	952-20 1	/2 2082	0.371	23
	952-10 1/2 140	0	0.057	12	952-20 1	/2 2086	0.412	23
	952-10 1/2 143	0	0.067	12	952-20 1	/2 2088	0.439	23
	952-10 1/2 146	60	0.078	12	952-20 1	/2 2092	0.493	24
	952-10 1/2 149	0	0.089	13	952-20 1	/2 2094	0.509	24
	952-10 1/2 151	0	0.097	13	952-20 1	/2 2099	0.578	25
	952-10 1/2 154	0	0.111	13	952-20 1	1/2 2103	0.625	26
	952-10 1/2 157	0	0.132	14	952-20 1	1/2 2106	0.644	27
	952-10 1/2 162	20	0.151	14	952-20 1	1/2 2109	0.68	28

### **DELTAMATIC** BALANCING VALVE

-20°C to 120°C dP <sub>max</sub> (600/350 kPa)	DN15-25 PN25	ICV No. (L/H)	Flow (l/s)	Min ~p (kPa)	ICV No. (L/H)	Flow (I/s)	Min ~p (kPa)
		952-10 1 1150	0.007	7	952-11 1/2 1725	0.171	14
		952-10 1 1170	0.01	7	952-11 1/2 1730	0.186	14
		952-10 1 1190	0.012	7	952-11 1/2 1735	0.204	14
		952-10 1/2 1210	0.015	7	952-11 1/2 1740	0.222	16
		952-10 1/2 1230	0.021	8	952-11 1/2 1745	0.242	19
		952-10 1/2 1260	0.024	9	952-11 1/2 1750	0.26	21
		952-10 1/2 1290	0.029	10	AVK. No. (L/H)	Flow (I/s)	Min ~p (kPa)
Change and the		952-10 1/2 1300	0.032	10	952-20 1/2 2070	0.283	22
	952-15-20-10	952-10 1/2 1320	0.036	11	952-20 1/2 2074	0.3	22
	952-20-20-10	952-10 1/2 1350	0.043	11	952-20 1/2 2077	0.332	22
A STATE	952-25-20-10	952-10 1/2 1370	0.049	12	952-20 1/2 2082	0.371	23
4		952-10 1/2 1400	0.057	12	952-20 1/2 2086	0.412	23
		952-10 1/2 1430	0.067	12	952-20 1/2 2088	0.439	23
		952-10 1/2 1460	0.078	12	952-20 1/2 2092	0.493	24
		952-10 1/2 1490	0.089	13	952-20 1/2 2094	0.509	24
		952-10 1/2 1510	0.097	13	952-20 1/2 2099	0.578	25
		952-10 1/2 1540	0.111	13	952-20 1/2 2103	0.625	26
		952-10 1/2 1570	0.132	14	952-20 1/2 2106	0.644	27
		952-10 1/2 1620	0.151	14	952-20 1/2 2109	0.68	28
	DN32-50	ICV No. (L/H)	Flow (I/s)	Min ~p (kPa)	ICV No. (L/H)	Flow (I/s)	Min ~p (kPa)
	2	952-30 1/2 3073	0.188	12	952-40 1/2 4148	1.009	20
		952-30 1/2 3082	0.239	12	952-40 1/2 4152	1.072	21
		952-30 1/2 3089	0.283	12	952-40 1/2 4156	1.136	21
		952-30 1/2 3094	0.315	12	952-40 1/2 4164	1.199	21
		952-30 1/2 3096	0.331	12	952-40 1/2 4168	1 262	22
		952-30 1/2 3098	0.353	13	952-40 1/2 4173	1 325	22
		952-30 1/2 3102	0.375	13	952-40 1/2 4176	1.388	23
		952-30 1/2 3107	0.413	13	952-40 1/2 4182	1.514	24
a fer		952-30 1/2 3111	0.435	14	952-40 1/2 4191	1 64	25
A A	952-32-20-10	952-30 1/2 3112	0.453	14	952-40 1/2 4194	1.766	26
and the second sec	952-40-20-10	952-30 1/2 3118	0.504	14	952-40 1/2 4200	1 893	27
Concept Content	952-50-20-10	952-30 1/2 3124	0.556	15	952-40 1/2 4205	2 019	28
	002 00 20 10	952-30 1/2 3125	0.568	16	952-40 1/2 4211	2 145	30
		952-30 1/2 3129	0.603	16	952-40 1/2 4217	2 271	31
		952-30 1/2 3132	0.631	17	952-40 1/2 4222	2 397	33
		952-30 1/2 3135	0.661	17	952-40 1/2 4229	2 523	34
		952-30 1/2 3138	0.694	18	952-40 1/2 4235	2.65	36
		952-30 1/2 3142	0.733	18	952-40 1/2 4241	2.776	38
		952-30 1/2 3148	0.797	19	952-40 1/2 4248	2 902	40
		952-30 1/2 3156	0.886	21	952-40 1/2 4250	3.028	42
		952-30 1/2 3161	0.946	22	952-40 1/2 4262	3 154	44
			01010		002 10 1/2 1202	0.101	
			ICV No.	DN		Types	
	ORIFICE P TY	PE 10	952-XXXX	15-25		0.007-0.151	
0	ORIFICE P TY	'PE 11	952-XXXX	15-25		0.171-0.260	
<sup>0</sup> 0 0 0 0	ORIFICE P TY	'PE 20	952-XXXX	15-25		0.283-0.680	
	ORIFICE P TY	'PE 30	952-XXXX	32-50		0.188-0.968	
	ORIFICE P TY	PE 40	952-XXXX	32-50		1.009-3.154	
			ICV No.	DN			
$\frown$	LOCKING RING FO	R 10/11/20	952-0000-11	15-25			
	LOCKING RING F	OR 30/40	952-0000-31	32-50			

#### 952 DN15-50:

- Valve and cartridge: DZR Brass to EN CW602N
- Diaphragm: (reinforced) HNBR(LP/HP)
- O-rings: EPDM
- Pressure class: PN25
- Temperature: -20°C to 120°C
- Diff. differential pressure: 7-600 kPa
- Thread: ISO 228

#### 953 DN50-800 housing

- Body: ductile iron DIN 1693 GGG-40
- Cartridge: SS304/316
- O-rings: EPDM
- Fasteners: AISI 306
- Pressure class: PN16 (PN25)
- Temperature: -20°C to 110°C
- Diff. differential pressure: 13-600 kPa

#### Cartridges for Automatic Balancing Valve DN50-800, Deltamatic

<b>-20</b> °C to 120 °C	DN50-800 PN25	Maxpcs	ICV No. (SS304/316)	Flow (I/s)	Min ~p (kPa	ICV No.(SS304/316)	Flow (I/s)	Min ~p (kPa)
			953-50 1/2 5179	1.061	13	953-60 1/2 6285	4.733	34
			953-50 1/2 5184	1.092	13	953-60 1/2 6292	5.041	34
			953-50 1/2 5189	1.125	13	953-60 1/2 6301	5.221	35
			953-50 1/2 5194	1.167	13	953-60 1/2 6305	5.408	35
	953-0050-21-01	1	953-50 1/2 5200	1.222	13	953-60 1/2 6312	5.684	35
	953-0065-21-01	1	953-50 1/2 5206	1.289	14	953-60 1/2 6319	5.98	36
	953-0080-21-01	1	953-50 1/2 5213	1.375	14	953-60 1/2 6326	6.236	36
	953-0100-21-01	2	953-50 1/2 5220	1.475	14	953-60 1/2 6332	6.523	36
	953-0125-21-01	3	953-50 1/2 5227	1.583	14	953-60 1/2 6338	6.815	37
T TT	953-0150-21-01	4	953-50 1/2 5235	1.725	14	953-60 1/2 6344	7.117	38
	953-0200-21-01	7	953-50 1/2 5243	1.808	14	953-60 1/2 6349	7.369	38
- 0 (ac	953-0250-21-01	12	953-50 1/2 5251	1.967	14	953-60 1/2 6356	7.69	38
0 %	953-0300-21-01	15	953-50 1/2 5260	2.194	15	953-60 1/2 6362	8.099	38
	953-0350-21-01	19	953-50 1/2 5269	2.472	16	953-60 1/2 6367	8.32	39
	953-0400-21-01	26	953-50 1/2 5279	2.889	19	953-60 1/2 6373	8.605	39
	953-0450-21-01	33	953-50 1/2 5287	3.154	22	953-60 1/2 6379	8.961	40
	953-0500-21-01	40	953-50 1/2 5292	3.47	23	953-60 1/2 6385	9.324	40
	953-0600-21-01	56	953-50 1/2 5298	3.722	24	953-60 1/2 6391	9.709	40
	953-0800-21-01	85	953-50 1/2 5303	4.1	27	953-60 1/2 6393	10.093	42
			953-50 1/2 5308	4.444	29	953-60 1/2 6398	10.468	43
						953-60 1/2 6400	10.724	44
						953-60 1/2 6407	11.381	46
						953-60 1/2 6408	12.500	49
Access	ories		ICV No.		Accessorie	s	ICV	No.
BLIND F	PLUG		953-001-0000	LOCKI	NG RING FOR C	AR. DN50-80	953-00	)-100
CAR. BODY T	YPE 50 HP		953-501-0000		BOLT M10*	20	953-00	-2001
CAR. BODY T	YPE 60 HP		953-601-0000		SLICE Ø25 * (	Ø10	953-00	-2002
ORIFICE P	TYPE 50		953-XXXX		SLICE Ø20 * (	Ø10	953-00	-2004
ORIFICE P	TYPE 60		953-XXXX		DISTANCE		953-00-2003	
LOCKING RING F	OR ORIFICE P		953-0000-51		EYE BOLT	r i i i i i i i i i i i i i i i i i i i	953-00-300	
LOCKING BING FO	R CAR DN50-80		953-00-100					

#### EPDM diaphragm inside



dynamic balancing cartridges is the rolling EPDM diaphragm inside, which ensures that there is no internal/side leakage and that there is no noise during operation

Unique to ICV's



#### **Recommended application:**

- Installed on the supply pipe of equipment needing constant flow (i.e. refrigeration water for chillers).
- Balances the dynamic and static differential pressure and supply for equipment by ensuring a constant flow. May be installed in conjunction with motorized on/off valves but not typically with modulating motorized control valves.

## DELTACONTROL DIFFERENTIAL PRESSURE CONTROLLER



0 - 90°C	ICV No	DN	PN	q <sub>min</sub> /q <sub>max</sub> /q <sub>nom*</sub>	Control <sup>°</sup> p <sub>min-max</sub> kPa	Working <sup>°</sup> p <sub>min-max</sub> kPa	Main components and standards
495	908-03-0015-1005	15	16	0.6/1.0/2.5	20 -80	20 - 300	
1997	908-03-0020-1005	20	16	1.2/1.8/4.0	20 -80	20 - 300	Body, seat, bonnet, tube: Brass H62
	908-03-0032-1005	25	16	1.9/2.6/6.0	20 -80	20 - 300	Diaphragm EPDM
	908-03-0032-1005	32	16	2.62/3.8/8.5	20 -80	20 - 300	Adjustment wheel: ABS
	908-03-0040-1005	40	16	3.9/6.5/14.5	30 -100	20 - 300	BS 21 / BS EN 12266
	908-03-0050-1005	50	16	6.6/9.4/21	30 -100	20 - 300	
0 - 90°C	ICV No	DN	PN	q <sub>min</sub> /q <sub>max</sub> /q <sub>nom*</sub>	Control <sup>°</sup> p <sub>min-max</sub> kPa	Working ~p <sub>min-max</sub> kPa	Main components and standards
	908-03-0015-3004	15	25	0.05/0.60/3.60	5 - 30	20 - 400	
	908-03-0015-300401*	15	25	0.10/1.20/3.60	20 - 60	20 - 400	Body: DZB brass
	908-03-0020-3004	20	25	0.10/1.00/4.00	5 - 30	20 - 400	DP cartridge: PPS 40% glass
And the second	908-03-0020-300401*	20	25	0.15/2.00/4.00	20 - 60	20 - 400	Flow setting kit: PPO
MAS .	908-03-0025-3004	25	25	0.60/4.20/9.50	5 - 30	20 - 400	Spring: Stainless steel
De la	908-03-0025-300401*	25	25	0.70/4.20/9.50	20 - 60	20 - 400	Diaphragm: HNBR
- All	908-03-0032-3004	32	25	1.00/5.00/11.4	20 - 80	20 - 400	Pressure tube: Brass
	908-03-0040-3004	40	25	3.00/8.00/16.4	20 - 80	20 - 400	GD/113927, GD/17307
	908-03-0050-3004	50	25	5.00/15.0/17.9	20 - 80	20 - 400	
0 - 100°C	ICV No (PN16/25)	DN	PN	$\mathbf{q}_{\min}$ / $\mathbf{q}_{\max}$ / $\mathbf{q}_{\mathrm{nom}^{\star}}$	Control <sup>~</sup> p kPa	Working ~p kPa	Main components and standards
	908-03-0050-1103/3103	50	16/25	2.0/17/32	20-80*/40-160	30 - 300	
1	908-03-0065-1103/3103	65	16/25	4.2/25/50	20-80*/40-160	30 - 300	
	908-03-0080-1103/3103	80	16/25	5.5/40/80	20-80*/40-160	30 - 300	
1 200 1	908-03-0100-1103/3103	100	16/25	6.5/65/125	20-80*/40-160	30 - 300	Body, bonnet: ductile GGG40
	908-03-0125-1103/3103	125	16/25	8.0/90/160	20-80*/40-160	40 - 400	Seat, disc, spring, stem: Stainless steel
- <b>Page</b>	908-03-0150-1103/3103	150	16/25	18/154/280	20-80*/40-160	40 - 400	AISI 304
(manufa	908-03-0200-1103/3103	200	16/25	40/180/320	20-80*/40-160	40 - 400	Diaphragm EPDM
	908-03-0250-1103/3103	250	16/25	xx/499/910	10 - 160	40 - 400	P/T port DZR Brass CW617N
1200	908-03-0300-1103/3103	300	16/25	xx/767/1400	10 - 160	40 - 400	BS EN 12266/1092-2
	908-03-0350-1103/3103	350	16/25	xx/959/1750	10 - 160	40 - 400	
- Carlor	908-03-0400-1103/3103	400	16/25	xx/1542/2815	10 - 160	40 - 400	
	908-03-0450-1103/3103	450	16/25	xx/1991/3935	10 - 160	40 - 400	

\* Q  $_{\rm nom}$  is the maximum theoretical flow at 100kPa

The required differential pressure is adjustable using the stem/knob. Design on stroke principle ensures high stability



#### **Recommended application:**

The 908-3 differential pressure controller is installed on the return pipe and connected to the 908 manual balancing valve on the supply pipe through the copper tube. Offers precise and adjustable differential pressure balancing across flow and return pipes keeping the controlled hydraulic branch, building, or unit free of external pressure and flow fluctuations.



Control range:  $P_1 - p_2$  is the adjustable differential pressure control range ensuring a constant total flow across the branch. Working range:  $P_2 - p_3$  is the working range across the valve which must be maintained for it to function properly

#### High control accuracy in wide balancing range



Deltaflow<sup>TM</sup> maintains a very precise +/-5% constant control  $\Delta p$  across the branch (p 1 - p 2). The total flow of the modulating control valves is kept stable at whichever setpoint (Q) regardless of outside influences.

#### P/T Ports - Pressure testing ports

- Safe and easy calibration of differential pressure flow ( $\Delta p$ ) using the ICV PFM Bluetooth commissioning instrument.
- The flow rate and Δp matrix of ICV's balancing valves are in the database of the instrument ensuring correct and easy commissioning



### **DELTAFLOW** MANUAL BALANCING VALVES





#### **Recommended application:**

Manual (static) balancing valves are installed on supply pipes to limit the maximum flow based on calculated flow requirements to avoid overflow which is not energy efficient and which would otherwise cause underflow in other parts of the system.

0 to 90°C	ICV No. PN25	DN	PN	Kvs max (m³/h)	Weight (kg)	
(The second seco	908-02-0015-3	15	25	2.2	0.58	Body: bronze CC491K
100	908-02-0020-3	20	25	4.6	0.65	Bonnet: DZR Brass CW602N/ bronze CC491K (DN15-25/32-50)
	908-02-0025-3	25	25	8.5	0.89	Stem, disc, ring, P/T ports: DZR brass CW602N
	908-02-0032-3	32	25	16.7	1.11	Flow orlince, drive sleeve: brass EN GW617N Seat PTEE DN25-50 O rings: EPDM
1	908-02-0040-3	40	25	26.1	1.46	Standards testing: BS EN 12266-1&2, Thread: BS 21
	908-02-0050-3	50	25	43.2	1.98	
-10 to 110°C	ICV No. PN16/25	DN	PN	Kvs max (m³/h)	Weight (kg)	
	908-0065-00-136/736	65	16/25	83	13.00	
	908-0080-00-136/736	80	16/25	101	15.00	Rady bannet plug (correction protected); ductile iron G IS-500-7
A	908-0100-00-136/736	100	16/25	200	22.00	Stem: Stainless steel 1.4021
and the second second	908-0125-00-136/736	125	16/25	275	30.00	Sealing: NBR rubber
	908-0150-00-136/736	150	16/25	385	42.00	P/T ports: DZR brass CW602N
	908-0200-00-136/736	200	16/25	572	64.00	Flanges: EB558
	908-0250-00-136/736	250	16/25	1214	134.50	Test: EN12266-182
	908-0300-00-136/736	300	16/25	1673	191.00	Design: BS7350:1990 (PN16)
	908-0350-00-136/736	350	16/25	2251	302.50	
	908-0400-00-136/736	400	16/25	2882	408.20	



ICV 908/02 Manual balancing valve



ICV 908/00 Manual balancing valve

#### Design made easy / fast and safe

- Wide range of solutions for hydraulic balancing (both static and dynamic) available makes design and selection safe and simple Precise visible measurement and scaling of flowrates means you get what you design
- Installation made fast and easy Easy to understand standardized flowrates and equal percentage design saves time and
- protects against installation mistakes
- Easy commissioning using ICV PFM
- Bluetooth commissioning tool means static balancing is simple and fast

#### Investments made safe

- High grade materials and intelligent design ensures functionality and a lifetime longer than usual
- Reliable and precise functionality satisfiesthe user and protects against complaints
- and later needs for refurbishments

#### Comfort made safe

- Precise static balancing ensures that all coils and users are protected against underflow receiving the necessary energy to maintain the desired comfort level
- Protects against overflow, resulting in lower cost and less wear on equipment

#### Highlights

#### A safe investment

Very wide range of intelligently designed valves from DN15-400 using high grade materials

#### Easy installation

Precise and visible measurements and tamper protection, with added benefits of ICV's own PFM Bluetooth commissioning tool

#### Safe

Balancing made safe during design, installation and remodeling for designers and installers





#### **HVAC** systems

ICV offers a high quality dedicted range of products for water-based HVAC systems in buildings heating, ventilation, air conditioning and cooling. The range typically includes threaded valves from DN15-50 and flanged valves from DN65-600 and above. Motorized control valves i.e. series 920 or motorized butterfly valves (925/06, 925/76 etc.) are installed on the return pipes of equipment in the HVAC system (chiller, cooling tower, air handling or fresh air units and

terminal equipment like fan coils to control the onemand flow of energy. The control signals of ICV's motorized valves seamlessly integrate with any building automation system or building controller. HVAC systems are closed circuit systems and balancing is therefore essential to prevent overflow or underflow and ensure energy saving. ICVs wide range of balancing valves including series 951 PICV (pressure independent motorized control valve), and series 908 balancing valves including differential pressure balancing valves, dynamic fixed flow balancing valves, and of course static/manual balancing valves etc. General valves (manual) valves are installed in large numbers throughtout the HVAC system, typically as shut-off valves i.e. series 76 butterfly valves on supply and return pipes before and after motorized control valves to allow for regular euipment maintenance and repairs without having to clear the entire system of water. This very wide series covers all needs and includes also check valves (series 903) installed after pumps to prevent backflow and damage, strainers (series 910) to sift out debris in water to prevent damage to system, flexible and expansion joints (series 911) used to prevent leakage or noise as the system expands and contracts during use and many other valves.



#### Plumbing and hydraulic balancing in buildings

ICV's manual valves covers most plumbing needs in commercialized buildings i.e. bronze valves, butterfly valves, globe valves, Y strainers etc are used throughout the plumbing system in buildings, and these types of valves are typically installed in large numbers. Hydraulic balancing is essential in the open-ended plumbing systems as well. AVK's series 859 of pressure reducing valves, pressure sustaining valves, constant flow valves, float level valves, solenoid valves as well

as other configurations and offeres excellent and precise control of water flows. Series 854 ball float valves, 924 water hammer arrestors, and a wide range in ICV's series 970 of hydraulic balancing valves.





#### Fire safety valves

ICV delivers its wide range of general valves as well as hydraulic balancing valves for in the mechanical part of the fire safety system and is ensuring safety in water supply in countless building projects. AVK's offering also includes hydrants.



#### District cooling and district heating

ICV through AVK's market leadership in the infrastructure water business has a unique advantage in supplying large valves for large district cooling systems.

AVK is a leading industrial production company of Denmark, where district heating system networks are exceptionally well-developed, and where energy saving, and environmental policies ensure a safe and efficient living environment. AVK and it's many fully owned industrial valve brands have been selling general valves i.e. butterfly valves for district heating

systems for many years.

Likewise, in warmer climates, the use of district cooling system as a means of increased energy efficiency and environmental protection is becoming more prevalent. ICV has delivered many general valves ie. 756 double flanged double eccentric butterfly valves, series 76 concentric loose liner butterfly valves and other general valves to many systems. Balancing valves are also supplied thanks to ICV's very wide range with balancing valves up to very large sizes, tyupically

Balancing valves are also supplied thanks to ICV's very wide range with balancing valves up to very large sizes, tyupically manual balancing valves and differential pressure balancing valves (908). Motorized valves typically include series 756 and 76 buttefly valves ensuring seamless integration in the the SCADA control system as all standard control and feedback signals are supplied.



#### **Data-centres**

Trust and reliability is essential when selecting valves to protect the huge equipment investment for data centers and hubs for todays electronic information society. For safety reasons typically a redundant (safety) system is installed, higher pressure classes at PN25 are selected and higher close off pressures of motorized valves are preferred. For butterfly valves sold in large numbers as pipe sizes are usually larger we also recommend using stainless steel disc series 76, or double flanged double eccentric butterfly valves series 756 for both manually or motorized control. Y-strainers, check valves, flexible and expansion joints, static and

dynamic balancing valves etc.

The entire wide offering of products typically offered for building HVAC are also available for data-centres in suitable designs: General valves, Motorized valves, Balancing valves, Hydraulic balancing valves



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