**Description:**

- compact 3-way ball valve with flanges in steel or stainless steel design
- 4-pieces body construction
- full passageway
- NFD17: T-bore / 4 seat sealings
- NFC17: L-bore / 2 seat sealings
- flanges acc. to EN1092-1 / PN40 or PN16
- blow out safe, spindle mounted from inside
- top flange acc. to ISO 5211
- sealing for spindle with a triple chevron packing
- antistatic device
- double body sealing
- chambered seat sealing from 3-sides
- TA-Luft

Range of application:

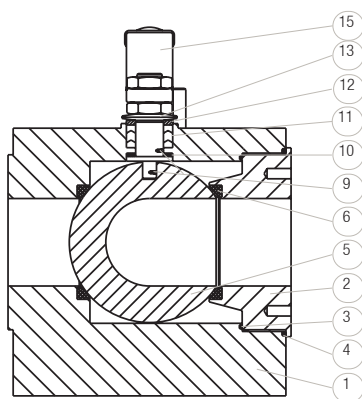
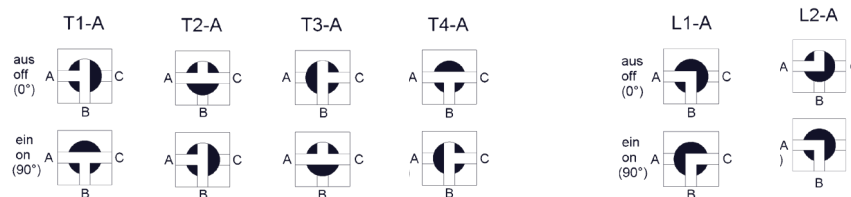
- 3-way ball valve for highest requirements.
- less space requirements by compact design
- with mounting flange acc. to DIN ISO 5211 for direct mounting
- working pressure PN16 up to PN40 (see pressure temperature diagram)
- temperature range: -20°C up to +180°C (see pressure temperature diagram)
- any installation position

Comments:

Since the year of production 09/97 all carbon steel ball valves are provided with a modified coating (modified epoxy / poliamid primer to RAL 5012 colour blue with a film thickness of at least 0.030mm). (see technical information in the installation and maintenance manual)

L-bore (NFC17) / T-bore (NFD17): Different switch positions are possible, please specify with your order. The ball position is marked on the spindle!

T=T-bore, L=L-bore, A=automation



pos.	part	standard VA		standard ST		optional material	
1	body	1.4401	O	1.0402 pretreated	J	1.4301 / 1.4308	O
2	body screw connection	1.4401		1.0402 pretreated			
3	primary sealing	PTFE		PTFE			
4	secondary sealing	FKM		FKM			
5	ball	1.4401	O	1.4301	P		
6	seat sealing	PTFE	T	PTFE	T	PTFE fibre glass reinforced* PTFE with metal core* PE	G U P
8	spindle	1.4401		1.4301			
9	antistatic device	1.4401		1.4401			
10	friction ring	PTFE		PTFE			
11	chevron packing	PTFE / graphite	R	PTFE / graphite	R		
12	thrust ring	1.4404		1.4404			
13	disc spring	50CrV4 galvanised zinc-plated		50CrV4 galvanised zinc-plated			
15	hand lever	St 37 galvanised zinc-plated		St 37 galvanised zinc-plated			

*higher temperature resistance with other seat sealing:

- PTFE fibre-glass reinforced: -10°C up to 195°C medium temperature
- PTFE graphite/carbon: -10°C up to +210°C medium temperature

Up to DN65 the design of the stainless steel ball valves is "angular".

All types are also available with flanges acc. to ANSI150 and ANSI300.

3-WAY COMPACT FLANGED BALL VALVE, MANUALLY OPERATED AND AUTOMATED

options:

Carbon steel ball valves of the series KFA16 are provided with a modified coating (modified epoxy / poliamid primer RAL 5012 color blue with a film thickness of at least 0.030 mm). For outdoor applications a proper intermediate and finishing coat shall be applied within 90 days.

For details about the order code see "Order information". An overview of the complete material code you can find at the beginning of each product section of the product catalogue.

- SV: spindle extension
- EB: relief well
- OF: free of oil and grease
- FS: fire safe
- SP: gland extension
- TD: minimal clearance volume with half shells
- PS: limit switch
- HZ: heating jacket
- ANSI: flange acc. to ANSI standard

For electric actuated valves only:

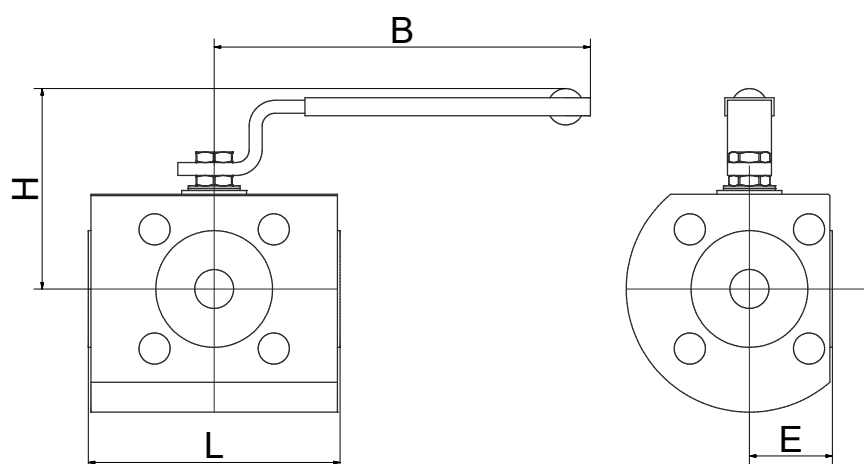
- AP: accumulator security pack
- PT: potentiometer
- PO: positioning system

For pneumatic actuated valves only:

- SD: sound absorber
- AD: exhaust air regulator
- PV: pilot valve

For details see data sheet "GMV3197", "GMV3163" (3/2 way) and "MVA01" (5/2 way). Other types on request.

- PS: positioning indicator
- For details see data sheet "MCM2" (mechanical), "MCN2" (inductive, with ATEX 94/9/EC) and "MCS2" (inductive). Other types on request.

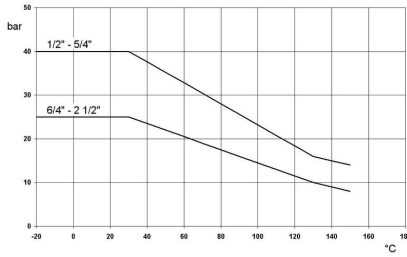


match code	size	nominal pressure	nominal size [mm]		L [mm]		H [mm]	E [mm]		B [mm]	CV* [m³/h]	torque** [Nm]		weight [kg]	
			NFC17	NFD17	NFC17	NFD17		NFC17	NFD17			NFC17	NFD17	NFC17	NFD17
			NFx17-52-3xRxT	DN15	PN40	15		97		70	32		145	n/a	11
NFx17-53-3xRxT	DN20	PN40	19		108		75	40		145	n/a	22	41	6.5	
NFx17-54-3xRxT	DN25	PN40	25		115		90	41		185	n/a	27	44	7.5	
NFx17-55-3xRxT	DN32	PN40	30		140		95	52.5		185	n/a	32	54	12	
NFx17-56-3xRxT	DN40	PN40	38		150		112	56		280	n/a	62	119	15.5	
NFx17-57-3xRxT	DN50	PN40	51		165		122	62		280	n/a	80	136	18	
NFx17-58-1xRxT	DN65	PN16	64		185		147	70		370	n/a	132	228	25.5	
NFx17-59-3xRxT	DN80	PN40	76	69	216		149	87		370	n/a	156	272	54	
NFx17-60-1xRxT	DN100	PN16	98	87	230		174	96		650	n/a	280	425	69	
NFx17-61-1xRxT	DN125	PN16	115	108	290		183	116		650	n/a	316	420	125	
NFx17-62-1xRxT	DN150	PN16	150	136	350	370	256	153	180	750	n/a	680	800	180	200

*CV value: The nominal flow rate CVs acc. to VDI/VDE 2173 shows the water quantity in cubic meter per hour with the valve fully opened, $\Delta p=1$ and the water temperature between 5°C and 30°C.

**Breakaway torque: all data were determined with 40 bar water at normal ambient temperature. Multiplier for frictional media is 1.3. If your configuration has special sealing material or your application has critical media consultation is obligatory.

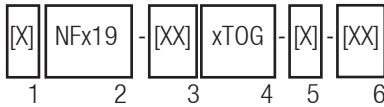
Pressure temperature diagram



The pressure temperature diagram shows the max. permissible working pressure in relation of the media temperature.

For the actuated units the actuator limits the permissible pressure range to the operating pressure as indicated above, as long as this is lower than the pressure range of the ball valve.

If your application has strong temperature variations, you may need additional options like a relief well, to meet the figures. Please tell us your temperature variations with your order.



Order information:

1: automation:

- no specification: steel hand lever
- D: pneumatic double acting
- S: pneumatic single acting
- E: electric actuated

2: type (indicate switch position!)

- L-bore: NFC17
- T-bore: NFD17

3: connection size:

- 52 62 (DIN, see table)
- 82-92 (ANSI, on request)
- attached is the flange pressure:
PN10: 0
PN16: 1
PN25: 2
PN40: 3

4: materials:

- 1. digit: body material
- 2. digit: sealing for spindle
- 3. digit: ball material
- 4. digit: seat sealing

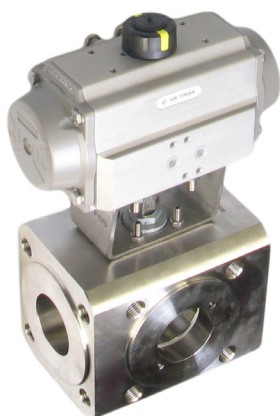
5: actuator:

- no specification: manually operated
- automated: see column "actuator"

6: options (see "options")

Please ask for field specifications that are not listed in this data sheet.

Before installation please consider the installation and maintenance manual, especially the safety indications!

**DNFC17 / SNFC17 / DNFD17 / SNFD17**

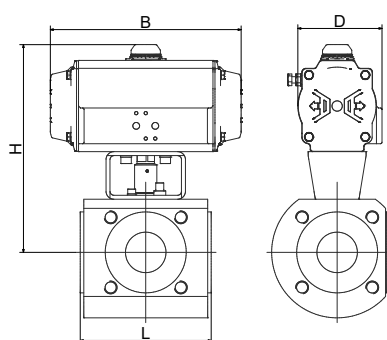
High quality pneumatic actuator made of alloy with air connection according to NAMUR and positioning indicator. The actuator works with the rack/bevel method. For further details see the technical data sheet "DR/SC".

Types double acting (the actuator opens and closes with compressed air) and single acting (the actuator opens with compressed air and closes with spring pressure).

The actuators are configured for use with fluid, gas and antifriction medium. **For critical media it is strictly recommended to inform us!**

Description:

- working pressure: 0 - 16 bar
- pilot pressure: 6 - 8 bar
- medium temperature: -20°C up to +120°C (at max. ambient temperature 40°C)

table 1: L-bore (double acting and single acting)**Attention!**

To avoid corrosion inside the spring chamber for single acting actuators caused by aggressive ambient air we recommend pilot valves with integrated air recirculation.

match code	double acting: DNFC17					single acting: SNFC17				
	actuator	H [mm]	B [mm]	D [mm]	weight [kg]	actuator	H [mm]	B [mm]	D [mm]	weight [kg]
xNFC17-52-3xRxT-x	DR010	172.5	118	62	4.97	SC015-K	175.5	136	72	5.32
xNFC17-53-3xRxT-x	DR015	180	136	72	7.72	SC030-K	196	153.5	84.5	8.4
xNFC17-54-3xRxT-x	DR030	201	153.5	84.5	9.42	SC060-G	218	203.5	93	10.9
xNFC17-55-3xRxT-x	DR030	206	153.5	84.5	13.92	SC060-I	223	203.5	93	15.4
xNFC17-56-3xRxT-x	DR060	239	203.5	93	18.7	SC100-I	252	241	106	20.3
xNFC17-57-3xRxT-x	DR060	249	203.5	93	21.2	SC150-I	274	259	118	24.72
xNFC17-58-1xRxT-x	DR100	280	241	106	29.82	SC220-I	320	304	136	35.42
xNFC17-59-3xRxT-x	DR150	294	259	118	59.82	SC220-K	322	304	136	63.92
xNFC17-60-1xRxT-x	DR220	354.5	304	136	78.3	SC450-I	386.5	394.5	166	87.3
xNFC17-61-1xRxT-x	DR300	380	333	146.5	136.1	SC450-K	400	394.5	166	143.3
xNFC17-62-1xRxT-x	DR600	450	422.5	181	199.6	SC1200-H	529	528	221.5	223.6

table 2: T-bore (double acting and single acting)

match code	double acting: DNFD17					single acting: SNFD17				
	actuator	H [mm]	B [mm]	D [mm]	weight [kg]	actuator	H [mm]	B [mm]	D [mm]	weight [kg]
xNFD17-52-3xRxT-x	DR015	175.5	136	72	5.22	SC030-I	191.5	153.5	84.5	5.9
xNFD17-53-3xRxT-x	DR030	196	153.5	84.5	8.3	SC060-I	213	203.5	93	9.9
xNFD17-54-3xRxT-x	DR030	201	153.5	84.5	9.42	SC060-K	218	203.5	93	10.9
xNFD17-55-3xRxT-x	DR060	223	203.5	93	15	SC100-G	246	241	106	16.8
xNFD17-56-3xRxT-x	DR100	252	241	106	19.7	SC220-H	292	304	136	25.42
xNFD17-57-3xRxT-x	DR100	262	241	106	22.2	SC220-I	302	304	136	27.92
xNFD17-58-1xRxT-x	DR220	320	304	136	34.12	SC300-K	332	333	146.5	38.12
xNFD17-59-3xRxT-x	DR220	322	304	136	62.62	SC450-H	374	394.5	166	72.3
xNFD17-60-1xRxT-x	DR450	386.5	394.5	166	84.3	SC600-J	405.5	422.5	181	92.3
xNFD17-61-1xRxT-x	DR450	400	394.5	166	140.3	SC600-J	419	422.5	181	148.3
xNFD17-62-1xRxT-x	DR900	494.5	474	200	225.6	SC2000-G	472.5	605	262	269.2

3-WAY COMPACT FLANGED BALL VALVE, MANUALLY OPERATED AND AUTOMATED



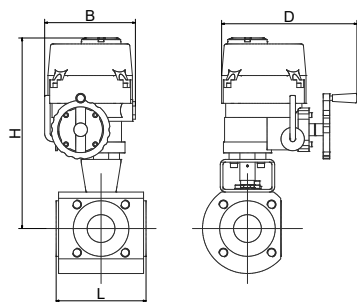
ENFC17 / ENFD17

High-quality electric actuator in compact design with a body made of high-strength plastics. It has a high-performance motor and a gear drive made of metal. A central control room heater and an electronic torque limiter are equipped as standard. For further details see the technical data sheet "J" or "CH"

Description:

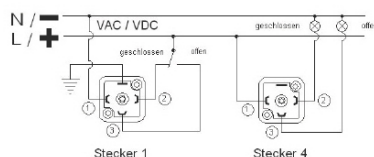
- working pressure: 0 - 16 bar
- deviating medium temperature -20°C up to +100°C (at max. ambient temperature of 40°C)

photo: type with actuator series: „CH..“



match code	actuator	H [mm]	B [mm]	D [mm]	weight [kg]
ENFC17-52-3xRxT-x	J420	235.5	177	110	5.65
ENFC17-53-3xRxT-x	J420	240	177	110	8.15
ENFC17-54-3xRxT-x	J435	267	177	110	9.45
ENFC17-55-3xRxT-x	J435	272	177	110	13.95
ENFC17-56-3xRxT-x	J485	313	177	110	18.8
ENFC17-57-3xRxT-x	J485	323	177	110	21.3
ENFC17-58-1xRxT-x	J2140	409	235	214	31.3
ENFC17-59-3xRxT-x	J2300	411	235	214	59.8
ENFC17-60-1xRxT-x	J2300	443.5	235	214	75.5
ENFC17-61-1xRxT-x	J2300	457	235	214	131.5
ENFC17-62-1xRxT-x	CH800	537	380	284	206.6

match code	actuator	H [mm]	B [mm]	D [mm]	weight [kg]
ENFD17-52-3xRxT-x	J420	235.5	177	110	5.65
ENFD17-53-3xRxT-x	J455	297	177	110	9.3
ENFD17-54-3xRxT-x	J455	302	177	110	10.3
ENFD17-55-3xRxT-x	J455	307	177	110	14.8
ENFD17-56-3xRxT-x	J2140	381	235	214	21.3
ENFD17-57-3xRxT-x	J2140	391	235	214	23.8
ENFD17-58-1xRxT-x	J2300	409	235	214	31.3
ENFD17-59-3xRxT-x	J2300	411	235	214	59.8
ENFD17-60-1xRxT-x	CH500	467.5	367	244	90.3
ENFD17-61-1xRxT-x	CH500	481	367	244	146.3
ENFD17-62-1xRxT-x	CH1100	537	380	284	226.6

AC/DC Beschaltung
(3 Draht):

information about the voltage:

- 0: 230V AC - CH actuator
- 19: 24V AC/DC up to 240V AC/DC - J actuator
- other voltages on request