

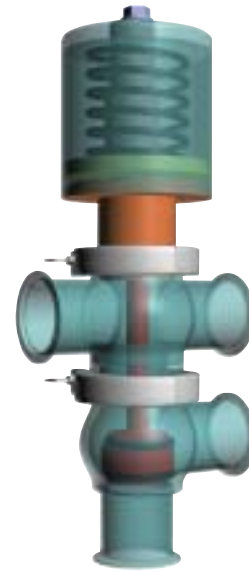
# DCX3 - DCX4 changeover valves technical description

## **DEFINOX changeover valve**

technology changes fast. The current generation of spherical-bodied changeover valves, **the DCX3 and DCX4**, has superseded **the cylindrical-bodied changeover valves**.

**These modern valves** have been designed to provide a comprehensive response to market demands and integrate leading-edge technologies (metal-on-metal seal and flexible diaphragm versions, etc.). They are equipped as standard with a floating-seal plug guaranteeing excellent valve cleaning properties.

These valves have successfully passed the EHEDG tests.



## **Design**

The DCX3 - DCX4 changeover valves consist of three main subassemblies:

- **a spherical body with branch outlets providing a variety of configurations** made from 316L stainless steel according to a technique that ensures a good level of homogeneity in the material.

The spherical form ensures optimum fluid flow and a reduction in pressure losses. The extra-thick walls guarantee excellent mechanical strength as well as a sturdy valve assembly and therefore a firm support for the plug on the bearing surface.

The polished interior finish ( $R_a = 0,8 \mu\text{m} = 180 \text{ grit}$ ) contributes to outstanding in-line cleanability.

The add-on pipes provide the usual combinations + - L - T for DCX3 and L/L - T/L - L/T for DCX4.

Each nominal diameter corresponds to a particular sphere diameter avoiding fluid retention inside the valve. Final hyperquenching regenerates the stainless steel, releasing stress, and contributes to the geometric stability of the body.

Modular assembly allows different orientations of the upper and lower lines.

- **a one-piece plug with a PFA floating seal for DCX3.**

- **a one-piece double plug with PFA floating seals for DCX4.** In the standard version, the one-piece plug is made from 316L stainless steel. The design and machining quality reduce pressure losses. The stem is chromium-plated to reduce friction wear.

- **a driving mechanism (pneumatic actuator or manual control).**

- **the floating seal.**

The PFA (PerFluoroAlcoxy) floating seal is clipped into the plug housing. The floating arrangement makes for outstanding cleanability. On dilating, it allows circulation of the cleaning fluid around all sides. The elastomer structure also guarantees an absence of porosity or cracking, sources of contamination and bacteria development.

These elements are clamped together for good centering and quick removal. The parts are designed and manufactured to be fully interchangeable.

# DCX3 - DCX4 changeover valves technical description

## DCX3 - DCX4 manual changeover valves

A stainless steel device drives the plug smoothly and progressively. This device is equipped with a compression spring to offset the risks of the assembly working loose due to vibration. An indicator warns the user of stem leaks.

The manual control consists of the following main parts:

- a 304L stainless steel handle,
- a lantern clamped onto the body,
- an operating screw with holding part,
- a compression spring.



Manual DCX3



Manual DCX4

## DCX3 - DCX4 automated changeover valves

This actuator is delivered as standard with a NC (Normally Closed) configuration although it can easily be adapted to a NO (Normally Open) or double-acting configuration.

It is sized to guarantee valve operation with maximum pressure exerted on or under the plug.

The mounting plate and seal are flush inside the body.

It is supplied as standard with adjustable air fittings for Rilsan 4/6 hoses.

A detection cam for a signal-back unit can be fitted to the stem protruding from the actuator.

The valve is designed to operate vertically (better fluid flow).

The pneumatic actuator consists mainly of the following parts:

- a 304L stainless steel outer cylinder with a lantern and body mounting plate,
- a one-piece stem/piston assembly mounted on a guide ring,

- one or two springs with an anti-corrosion coating,
- a cover held by a stainless steel retaining ring.



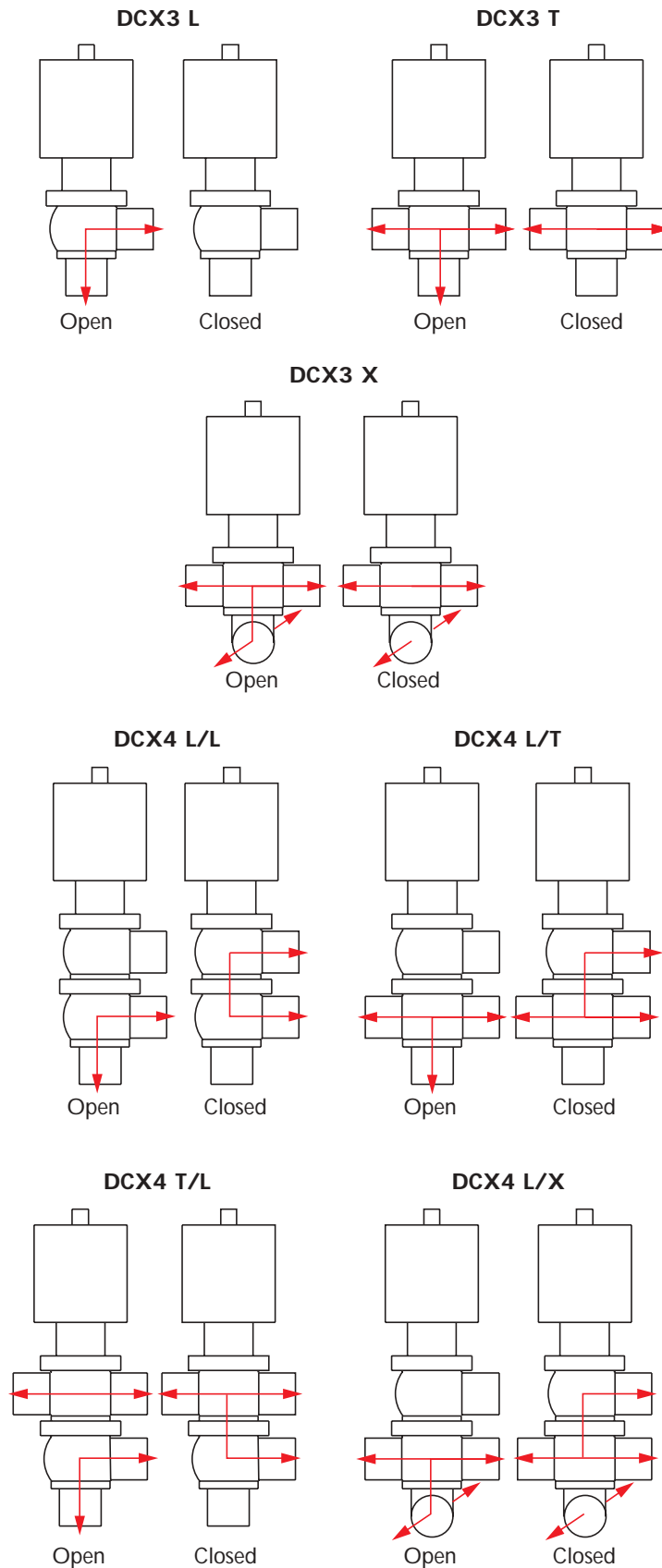
Automated DCX3



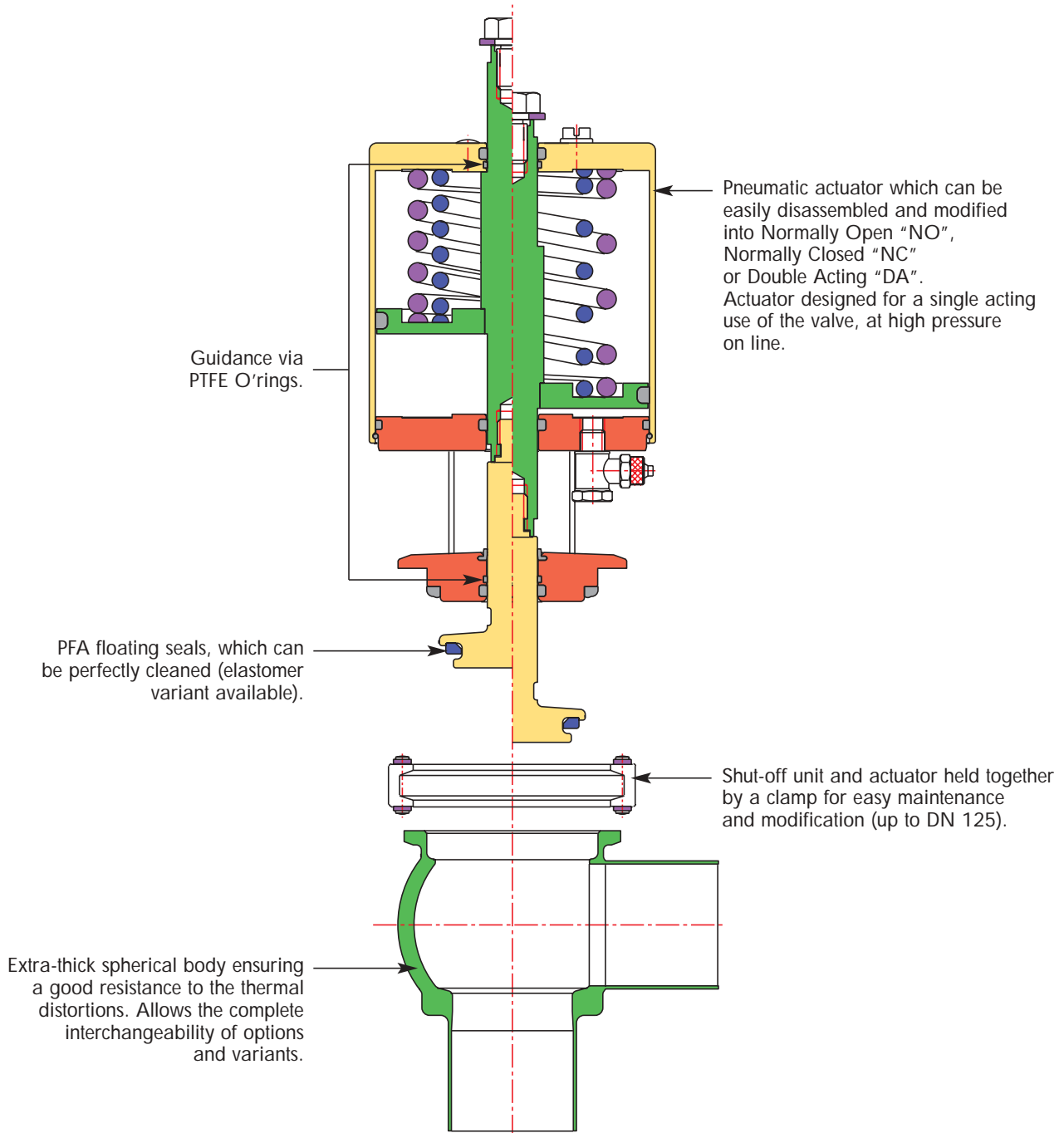
Automated DCX4

# DCX3 - DCX4 changeover valves technical description

## Examples of the most common body configurations



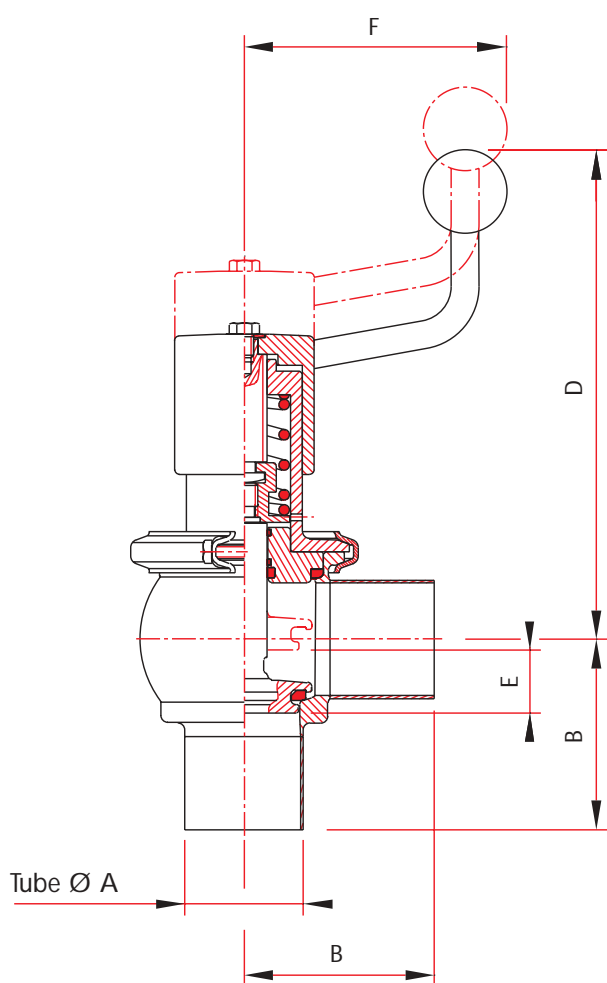
## Automated DCX3 changeover valve features



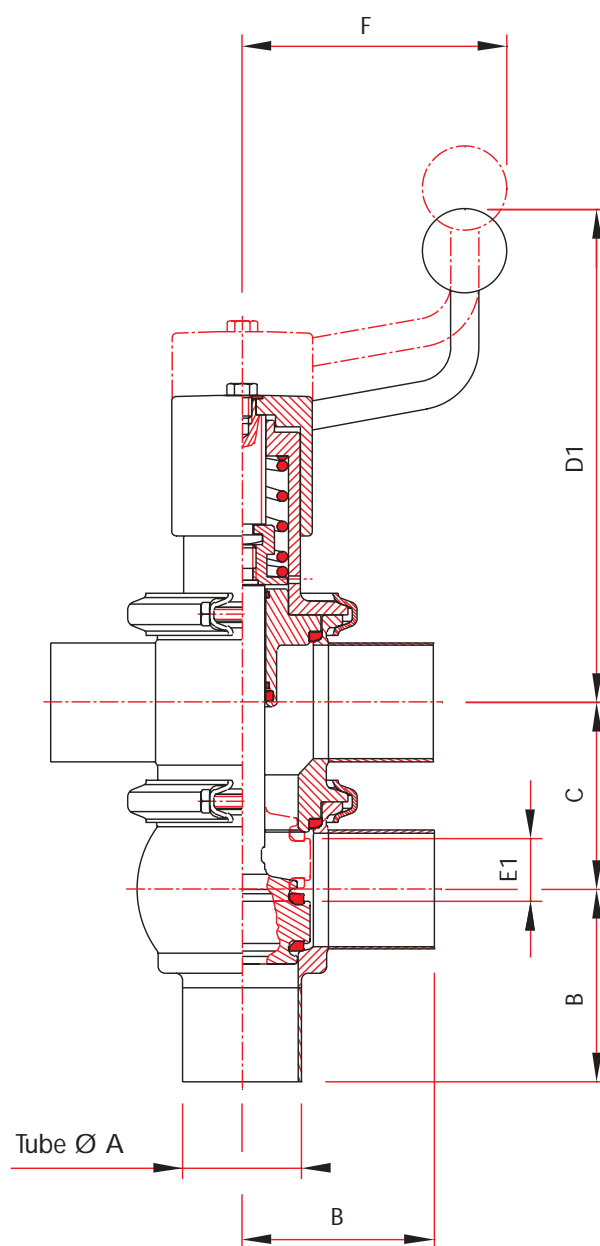
# Manual and automated DCX3 - DCX4 changeover valves dimensions

## Manual DCX3 - DCX4 changeover valves

Manual DCX3 valve



Manual DCX4 valve



## Manual and automated DCX3 - DCX4 changeover valves dimensions

ITDFX101 GB - REV 1 - MAY 2002



### Manual DCX3 - DCX4 changeover valves

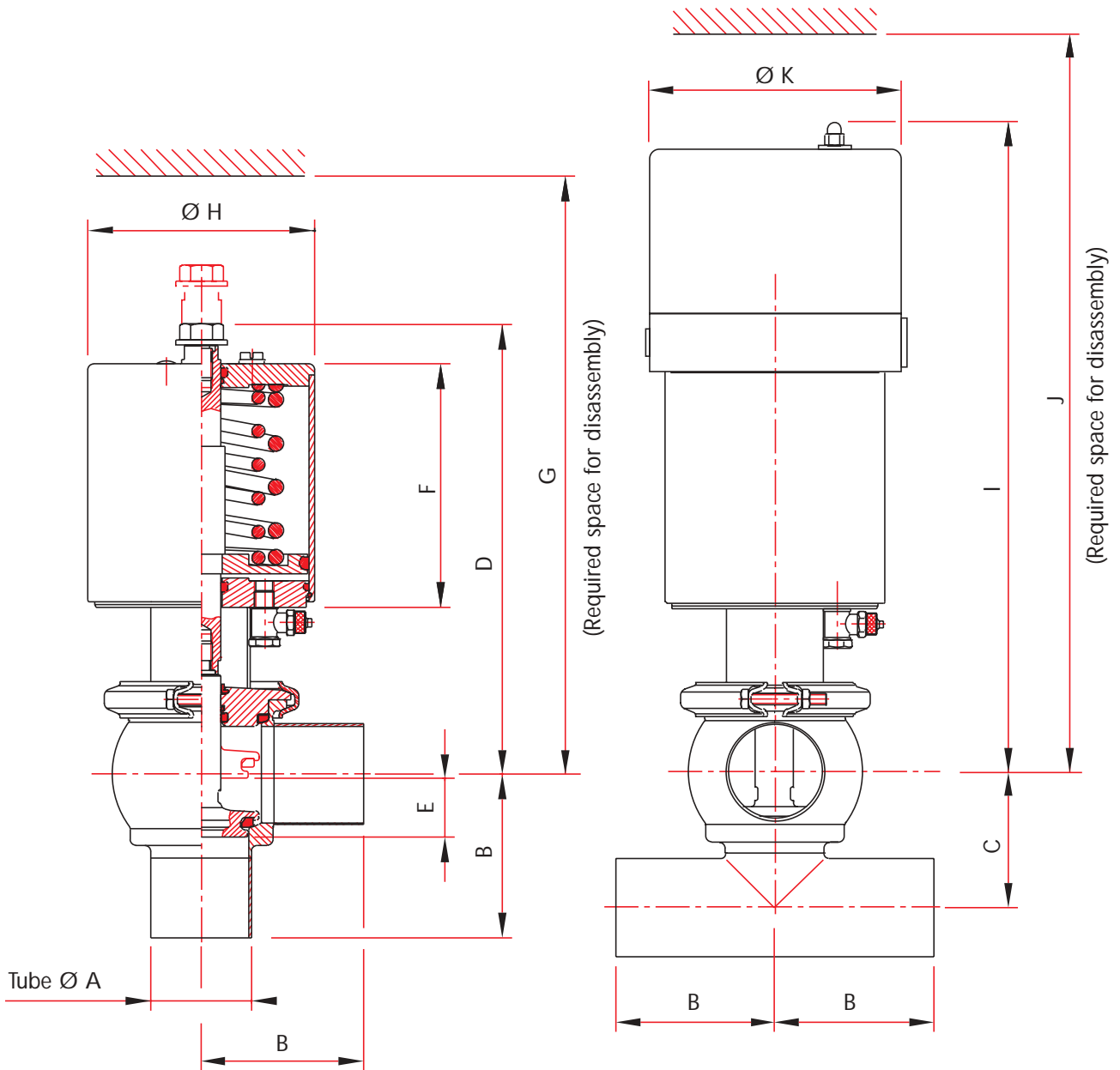
SMS	DN		Tube Ø A	B	C	D	D 1	Stroke E	Stroke E 1	F	Weight in kg DCX3	Weight in kg DCX4
	DIN	US										
25			25 x 1,2	55	55	200	198	17	14	115	3	4
		1"	25,4 x 1,65	51	82,5	200	198	17	14	115	3	4
	25		28 x 1	55	55	200	198	17	14	115	3	4
			34 x 1	55	65	200	198	17	17	115	3	4
38			38 x 1,2	70	70	202	200	19	18	115	3	5
		1"1/2	38,1 x 1,65	57	82,5	202	200	19	18	115	3	5
			40 x 1	70	70	202	200	19	18	115	3	5
		2"	50,8 x 1,65	76	95	210	208	27	27	115	4	6
51			51 x 1,2	82	80	210	208	27	27	115	4	6
	50		53 x 1,5	80	80	210	208	27	27	115	4	6
		2"1/2	63,5 x 1,65	76	108	229	227	35	32	115	6	10
63			63,5 x 1,6	105	95	229	227	35	32	115	6	10
			70 x 2	108	100	229	227	35	32	115	6	11
	65		76 x 1,65	82	120	229	227	35	32	115	6	11
		3"	76 x 2	110	105	229	227	35	32	115	6	11
76			85 x 2	115	130	251	249	38	36	115	12	15
	80		101,6 x 2,1	130	165	261	259	40	35	115	13	27
104		4"	104 x 2	130	150	261	259	40	35	115	13	27
	100		104 x 2	130	150	261	259	40	35	115	13	27

# Manual and automated DCX3 - DCX4 changeover valves dimensions

## Automated DCX3 changeover valve

Without control unit

With control unit



## Manual and automated DCX3 - DCX4 changeover valves dimensions

ITDFX101 GB - REV 1 - MAY 2002

11

### Automated DCX3 changeover valve

SMS	DN		Tube Ø A	B	C	D	Stroke E	F	G	Ø H	Weight* in kg	I	J	Ø K
	DIN	US												
25		1"	25 x 1,2	55	45	193	17	109,5	240	89	4	300	330	130
			25,4 x 1,65	51	45	192	17	109,5	240	89	4	300	330	130
	25		28 x 1	55	47	192	17	109,5	240	89	4	300	330	130
			34 x 1	55	51	197	17	109,5	250	89	4	305	340	130
38		1"1/2	38 x 1,2	70	55	195	21	109,5	255	89	4	307	345	130
			38,1 x 1,65	57	55	195	21	109,5	255	89	4	307	345	130
	40	2"	40 x 1	70	55	195	21	109,5	255	89	4	307	345	130
			50,8 x 1,65	76	70	224	29	123	295	114	7	336	380	130
51			51 x 1,2	82	70	224	29	123	295	114	7	336	380	130
			53 x 1,5	80	71	224	29	123	295	114	7	336	380	130
63		2" 1/2	63,5 x 1,65	76	85	276	35	159	360	167	16	386	435	130
			63,5 x 1,6	105	85	276	35	159	360	167	16	386	435	130
	65		70 x 2	108	93	277	35	159	370	167	16	388	445	130
			76 x 1,65	82	95	281	35	159	375	167	16	392	455	130
76			76 x 2	110	95	281	35	159	375	167	16	392	455	130
			85 x 2	115	105	324	40	181	435	216	27	433	505	130
	80		101,6 x 2,1	130	125	333	40	181	465	216	28	442	535	130
			104 x 2	130	125	333	40	181	465	216	28	442	535	130
104		4"	104 x 2	130	125	333	40	181	465	216	28	442	535	130
			104 x 2	130	125	333	40	181	465	216	28	442	535	130
	125		129 x 2	160	155	488	70	285	575	270	62	595	695	130
			154 x 2	180	180	500	70	285	610	270	65	606	730	130
	150		152,4 x 2,75	180	180	500	70	285	610	270	65	606	730	130

\* Without control unit

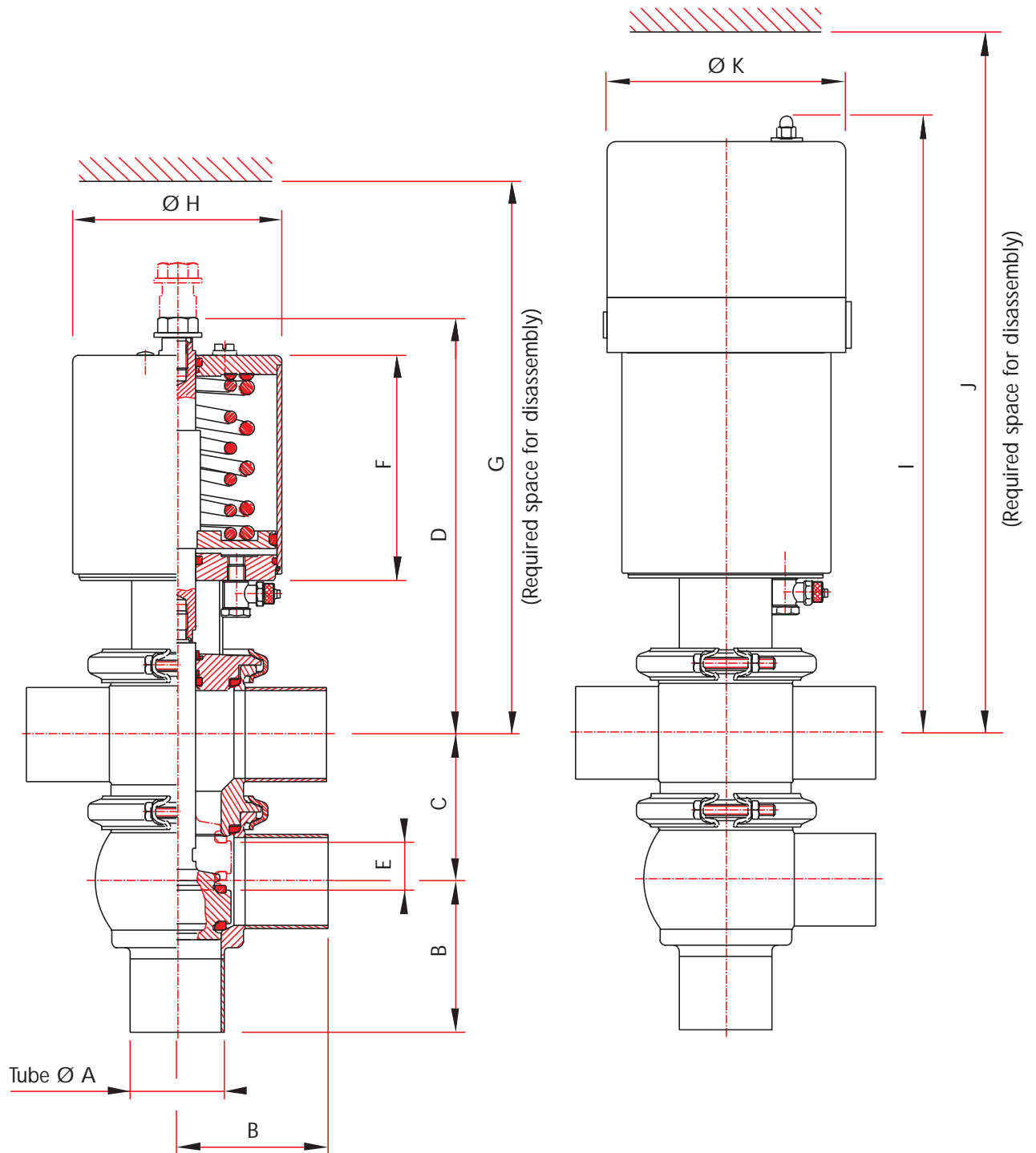


# Manual and automated DCX3 - DCX4 changeover valves dimensions

## Automated DCX4 changeover valve

Without control unit

With control unit



## Manual and automated DCX3 - DCX4 changeover valves dimensions

ITDFX101 GB - REV 1 - MAY 2002

13

### Automated DCX4 changeover valve

SMS	DN		Tube Ø A	B	C	D	Stroke E	F	G	Ø H	Weight* in kg	I	J	Ø K
	DIN	US												
25		1"	25 x 1,2	55	55	192	14	109,5	240	89	5	300	330	130
			25,4 x 1,65	51	82,5	192	14	109,5	240	89	5	300	330	130
	25		28 x 1	55	55	192	14	109,5	240	89	5	300	330	130
			34 x 1	55	65	194	17	109,5	250	89	5	305	340	130
38		1"1/2	38 x 1,2	70	70	195	18	109,5	255	89	5	307	345	130
			38,1 x 1,65	57	82,5	195	18	109,5	255	89	5	307	345	130
	40	2"	40 x 1	70	70	195	18	109,5	255	89	5	307	345	130
			50,8 x 1,65	76	95	225	27	123	300	114	9	336	385	130
51	50	2" 1/2	51 x 1,2	82	80	225	27	123	300	114	9	336	385	130
			53 x 1,5	80	80	225	27	123	300	114	9	336	385	130
63	65	3"	63,5 x 1,65	76	108	275	32	159	360	167	20	386	440	130
			63,5 x 1,6	105	95	275	32	159	360	167	20	386	440	130
76	80	4"	70 x 2	108	100	277	31	159	370	167	20	388	445	130
			76 x 1,65	82	120	280	32	159	375	167	21	392	455	130
104	100		76 x 2	110	105	280	32	159	375	167	21	392	455	130
			85 x 2	115	130	327	36	181	440	216	28	433	510	130
	125		101,6 x 2,1	130	165	335	35	181	470	216	40	442	540	130
			104 x 2	130	150	335	35	181	470	216	40	442	540	130
	150		104 x 2	130	150	335	35	181	470	216	40	442	540	130
			129 x 2	160	165	488	56	285	590	270	73	595	710	130
	6"		154 x 2	180	195	500	62	285	620	270	78	606	740	130
			152,4 x 2,75	180	195	500	62	285	620	270	78	606	740	130

\* Without control unit

# Manual and automated DCX3 - DCX4 changeover valves working conditions

## Manual DCX3 - DCX4 changeover valves

SMS	DN		Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (kV)	Pressure drop (Cv)	Sealing pressure (Bar)
	DIN	US					
25	25	1"	6	0,4	21	24,36	8
			6	0,4	24	27,84	8
			6	0,4	36	41,76	8
38		1"1/2	6	0,4	42	48,72	8
			6	0,4	44	51,04	8
51		2"	6	0,4	82	95,12	8
			6	0,4	85	98,6	8
63		2" 1/2	6	0,4	128	148,48	8
			6	0,4	142	164,72	8
76		3"	6	0,4	170	197,2	8
			6	0,4	190	220,4	8
104		4"	6	0,4	290	336,4	8

FOR ALL DIAMETERS OF MANUAL DCX3 - DCX4 CHANGEOVER VALVES

Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 120 °C
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## Manual and automated DCX3 - DCX4 changeover valves working conditions

ITDFX101 GB - REV 1 - MAY 2002

### Automated DCX3 - DCX4 changeover valves

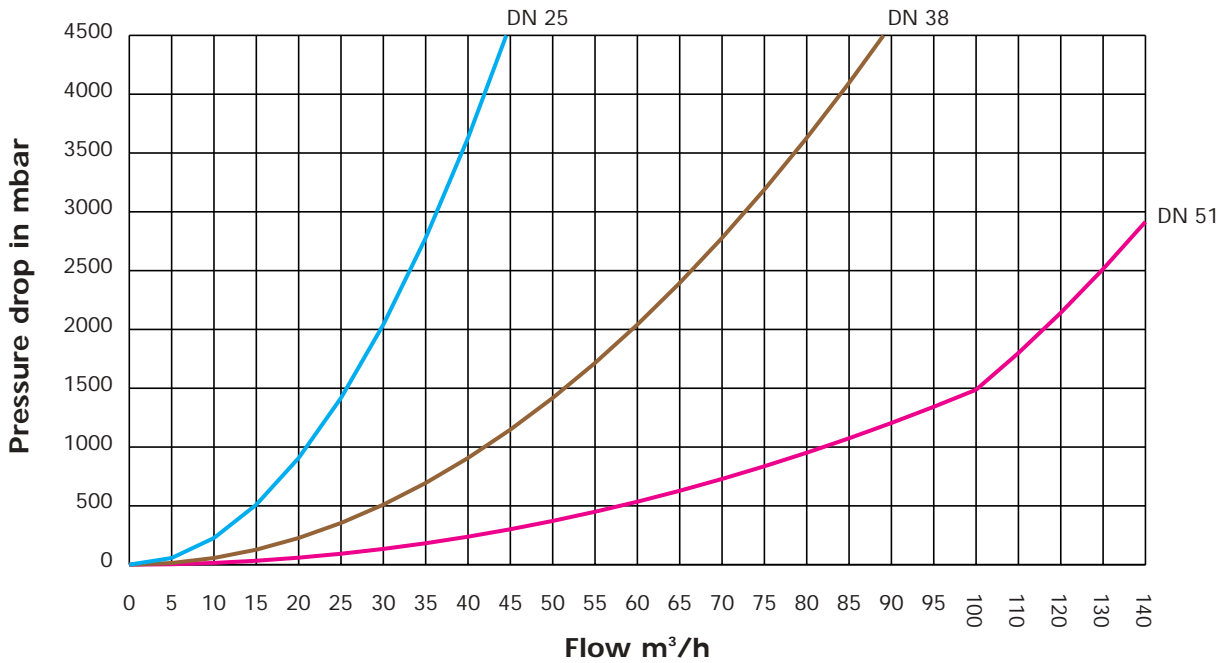
SMS	DN	DIN	US	Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (kV)	Pressure drop (CV)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
25	25	25	1"	6	0,4	21	24,36	8	1,5	1
				6	0,4	24	27,84	8	1,5	1
				6	0,4	36	41,76	8	1,5	1
38	40	50	1"1/2	6	0,4	42	48,72	8	1,5	1
				6	0,4	44	51,04	8	1,5	1
51	50	65	2"	6	0,4	82	95,12	8	3	2
				6	0,4	85	98,6	8	3	2
63	65	80	2" 1/2	6	0,4	128	148,48	8	6,6	5
				6	0,4	142	164,72	8	7	5
76	80	100	3"	6	0,4	170	197,2	8	7,2	5
				6	0,4	190	220,4	8	12	9
104	125	150	4"	6	0,4	290	336,4	8	14,4	9
				6	0,4	348	403,68	8	27	24
			6"	6	0,4	418	484,88	8	30	24

#### FOR ALL DIAMETERS OF AUTOMATED DCX3 - DCX4 CHANGEOVER VALVES

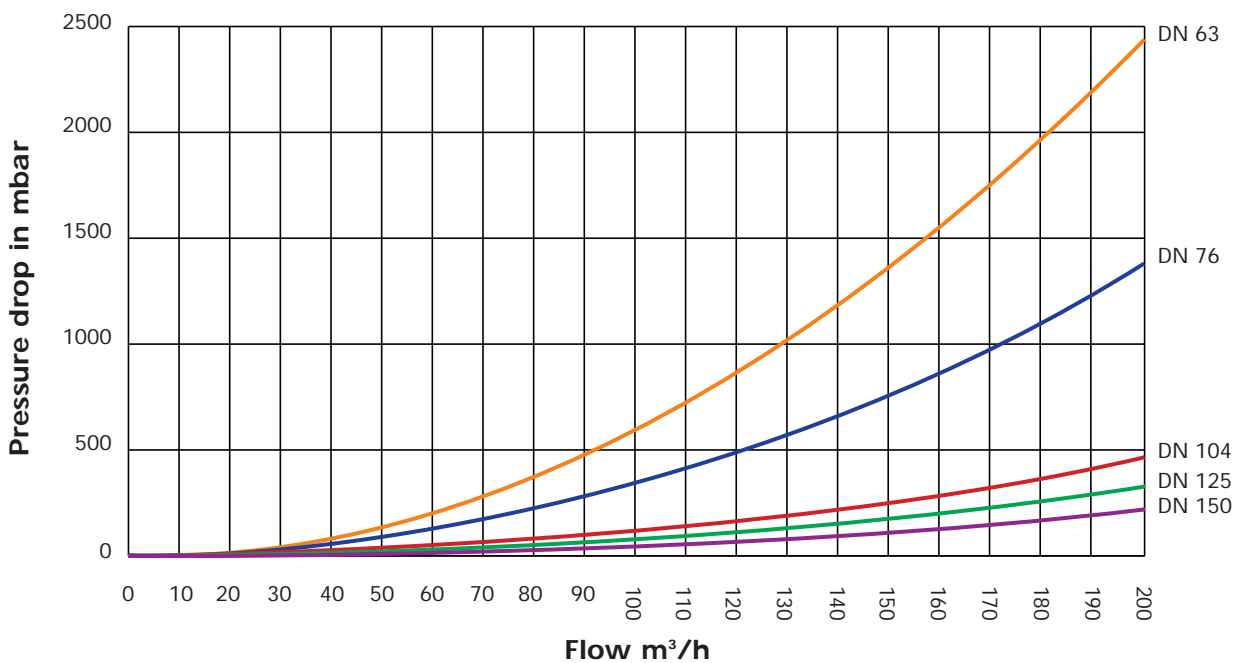
Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 120 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	

# Manual and automated DCX3 - DCX4 changeover valves working conditions

## Pressure drop DCX3 changeover valves DN 25 to DN 51

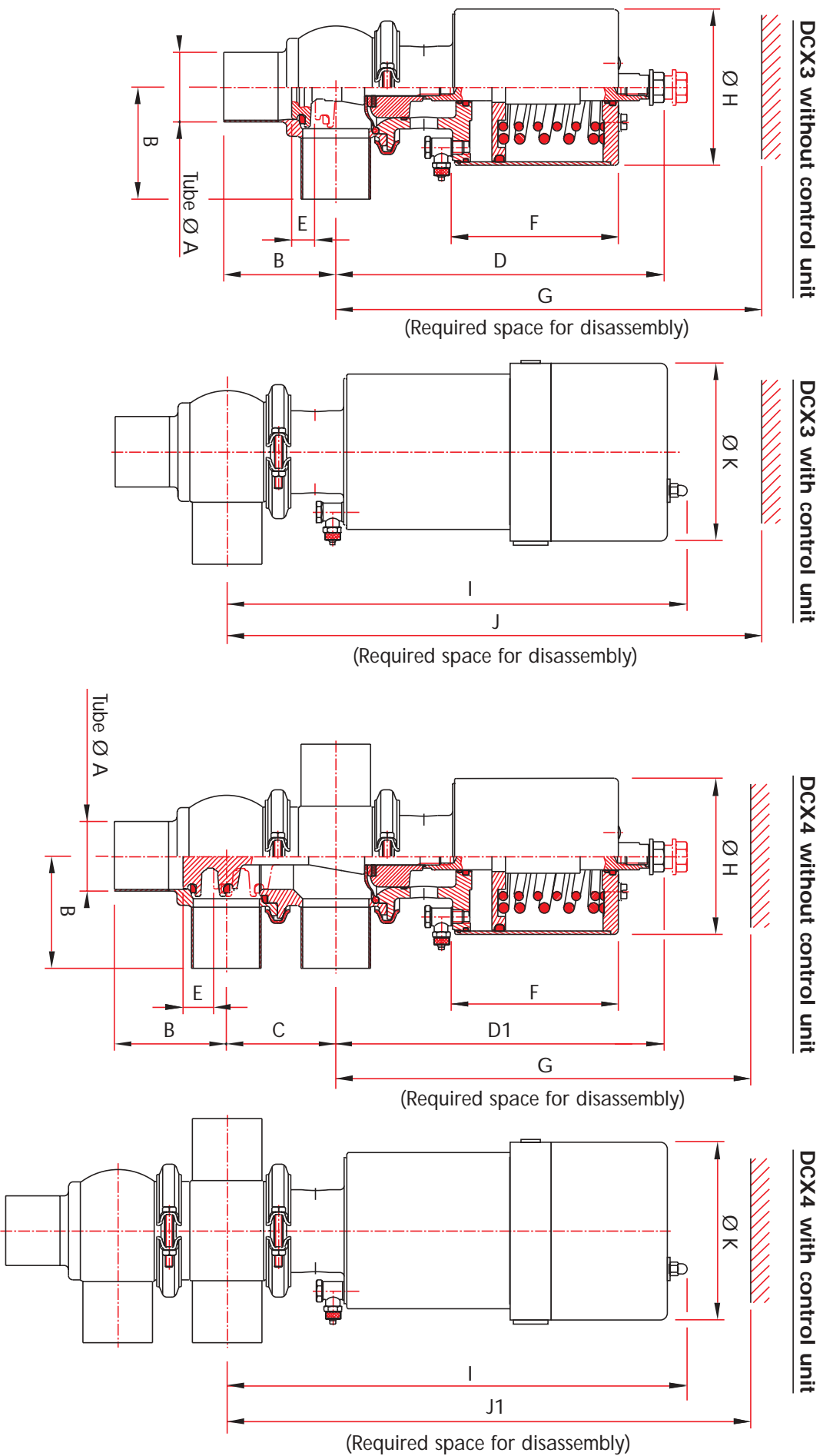


## Pressure drop DCX3 changeover valves DN 63 to DN 150



# DCX3 - DCX4 changeover valves options

Automated DCX3 - DCX4 diaphragm changeover valves



## DCX3 - DCX4 changeover valves options

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### Automated DCX3 - DCX4 diaphragm changeover valves

SMS	DN		Tube Ø A	B	C	D	D1	Stroke E	F	G	Ø H	Weight in kg DCX3*	Weight in kg DCX4*	I	J	J1	Ø K
	DIN	US															
25			25 x 1,2	55	55	198	195	11	109,5	245	89	4,5	5,5	300	335	340	130
			25,4 x 1,65	51	82,5	198	195	11	109,5	245	89	4,5	5,5	300	335	340	130
		1"	28 x 1	55	55	198	195	11	109,5	245	89	4,5	5,5	300	335	340	130
			34 x 1	55	65	203	200	11	109,5	255	89	4,5	5,5	305	345	350	130
38			38 x 1,2	70	70	204	201	11	109,5	265	89	4,5	5,5	307	360	365	130
			38,1 x 1,65	57	82,5	204	201	11	109,5	265	89	4,5	5,5	307	360	365	130
		1"1/2	40 x 1	70	70	204	201	11	109,5	265	89	4,5	5,5	307	360	365	130
			50,8 x 1,65	76	95	239	236	17	123	310	114	7,5	9,5	336	390	395	130
51			51 x 1,2	82	80	239	236	17	123	310	114	7,5	9,5	336	390	395	130
			53 x 1,5	80	80	239	236	17	123	310	114	7,5	9,5	336	390	395	130
		2"1/2	63,5 x 1,65	76	108	286	283	25	159	370	167	17	21	386	445	450	130
63			63,5 x 1,6	105	95	286	283	25	159	370	167	17	21	386	445	450	130
			70 x 2	108	100	289	286	25	159	385	167	17	21	388	460	465	130
		65	76 x 1,65	82	120	292	289	25	159	390	167	17	22	392	465	470	130
		3"	76 x 2	110	105	292	289	25	159	390	167	17	22	392	465	470	130
76			85 x 2	115	130	333,5	330,5	35	181	445	216	28	29	433	510	515	130
		80	101,6 x 2,1	130	165	342,5	339,5	35	181	475	216	29	41	442	540	545	130
		4"	104 x 2	130	150	342,5	339,5	35	181	475	216	29	41	442	540	545	130
104			104 x 2	130	150	342,5	339,5	35	181	475	216	29	41	442	540	545	130

\* Without control unit

### Design

It is possible to equip the DCX3 - DCX4 with a PTFE (PolyTetraFluor Ethylene) diaphragm that forms a physical barrier between the inside of the valve and the outside environment.

This valve, which is the same size as the base valve, is equipped with a leakage indicator to warn of a possible diaphragm rupture.

A standard valve can be converted to a diaphragm valve by changing the plug and actuator. The stroke on these valves is slightly

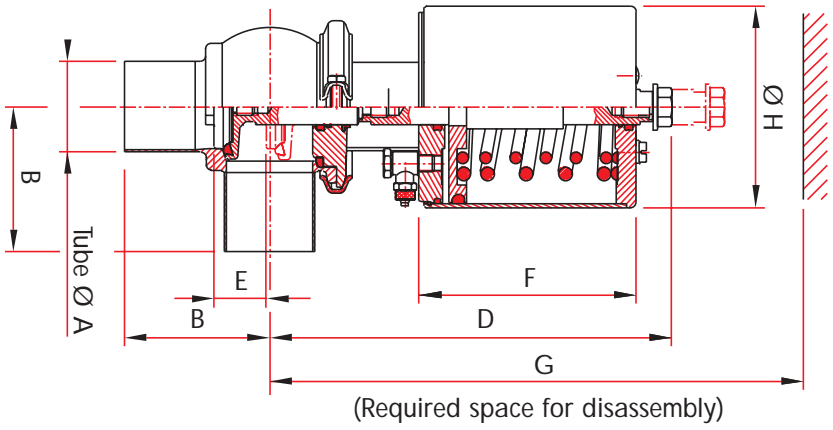
shorter than on a standard DCX valve.

# DCX3 - DCX4 changeover valves options



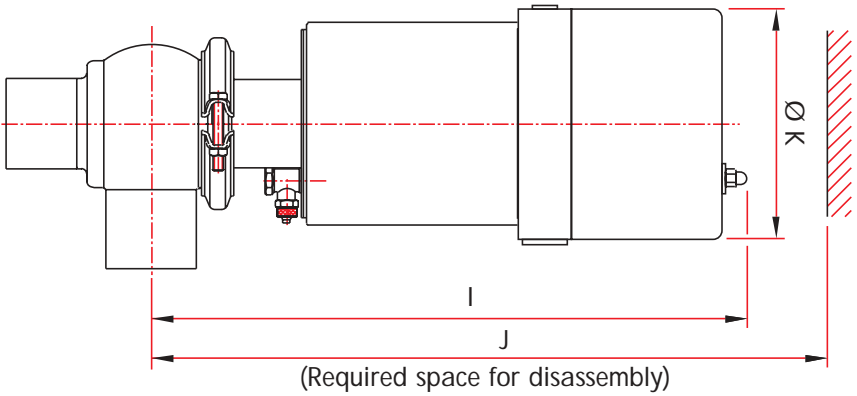
## Automated DCX3 - DCX4 elastomer sealing changeover valves

DCX3 without control unit



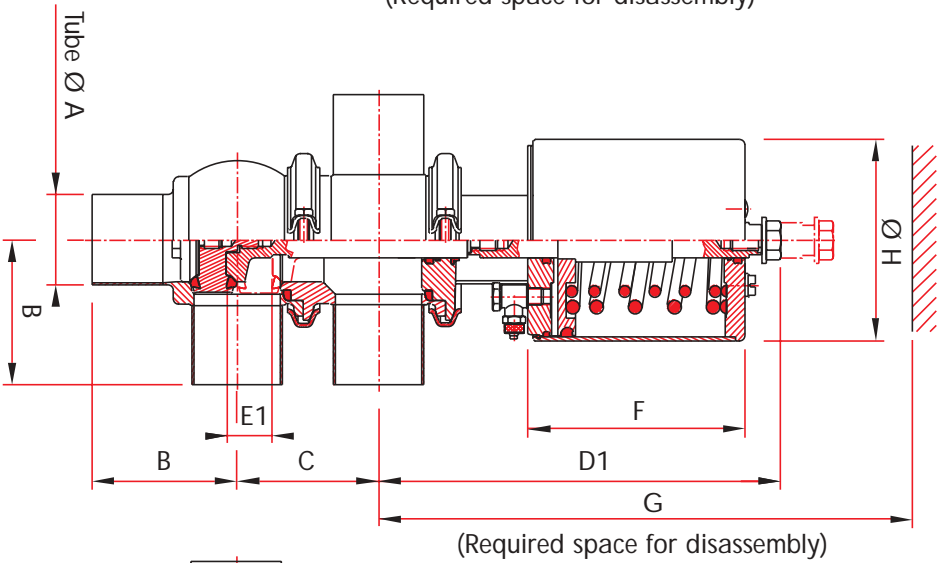
(Required space for disassembly)

DCX3 with control unit



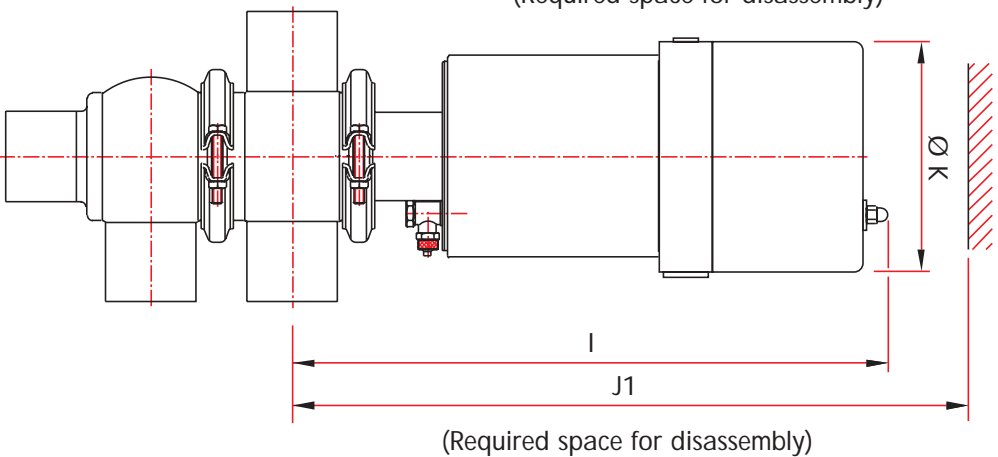
(Required space for disassembly)

DCX4 without control unit



(Required space for disassembly)

DCX4 with control unit



(Required space for disassembly)





## DCX3 - DCX4 changeover valves options

ITDFX101 GB - REV 1 - MAY 2002

### Automated DCX3 - DCX4 elastomer sealing changeover valves

SMS	DN		Tube Ø A	B	C	D	D 1	Stroke E	Stroke E1	F	G	Ø H	Weight in kg DCX3*	Weight in kg DCX4*	I	J	J1	Ø K
	DIN	US																
25			25 x 1,2	55	55	193	192	17	14	109,5	240	89	4	5	300	330	330	130
		1"	25,4 x 1,65	51	82,5	192	192	17	14	109,5	240	89	4	5	300	330	330	130
	25		28 x 1	55	55	192	192	17	14	109,5	240	89	4	5	300	330	330	130
			34 x 1	55	65	197	194	17	17	109,5	250	89	4	5	305	340	340	130
38			38 x 1,2	70	70	195	195	21	18	109,5	255	89	4	5	307	345	345	130
		1"1/2	38,1 x 1,65	57	82,5	195	195	21	18	109,5	255	89	4	5	307	345	345	130
	40		40 x 1	70	70	195	195	21	18	109,5	255	89	4	5	307	345	345	130
		2"	50,8 x 1,65	76	95	224	225	29	27	123	300	114	7	9	336	380	385	130
51			51 x 1,2	82	80	224	225	29	27	123	300	114	7	9	336	380	385	130
	50		53 x 1,5	80	80	224	225	29	27	123	300	114	7	9	336	380	385	130
		2"1/2	63,5 x 1,65	76	108	276	275	35	32	159	360	167	16	20	386	435	440	130
63			63,5 x 1,6	105	95	276	275	35	32	159	360	167	16	20	386	435	440	130
	65		70 x 2	108	100	277	277	35	31	159	370	167	16	20	388	445	445	130
		3"	76 x 1,65	82	120	281	280	35	32	159	375	167	16	21	392	455	455	130
76			76 x 2	110	105	281	280	35	32	159	375	167	16	21	392	455	455	130
	80		85 x 2	115	130	324	327	40	36	181	440	216	27	28	433	505	510	130
		4"	101,6 x 2,1	130	165	333	335	40	35	181	470	216	28	40	442	535	540	130
104			104 x 2	130	150	333	335	40	35	181	470	216	28	40	442	535	540	130
	100		104 x 2	130	150	333	335	40	35	181	470	216	28	40	442	535	540	130

\* Without control unit

## Design

The plug may be fitted with an elastomer (fluorated elastomer (FKM), silicone, EPDM) seal. This variant is recommended if the circulating fluid contains hard particles that may be trapped between the plug seal and the seat.

This plug (composed of several parts) is directly interchangeable with the standard valve equipped with a PFA floating seal.

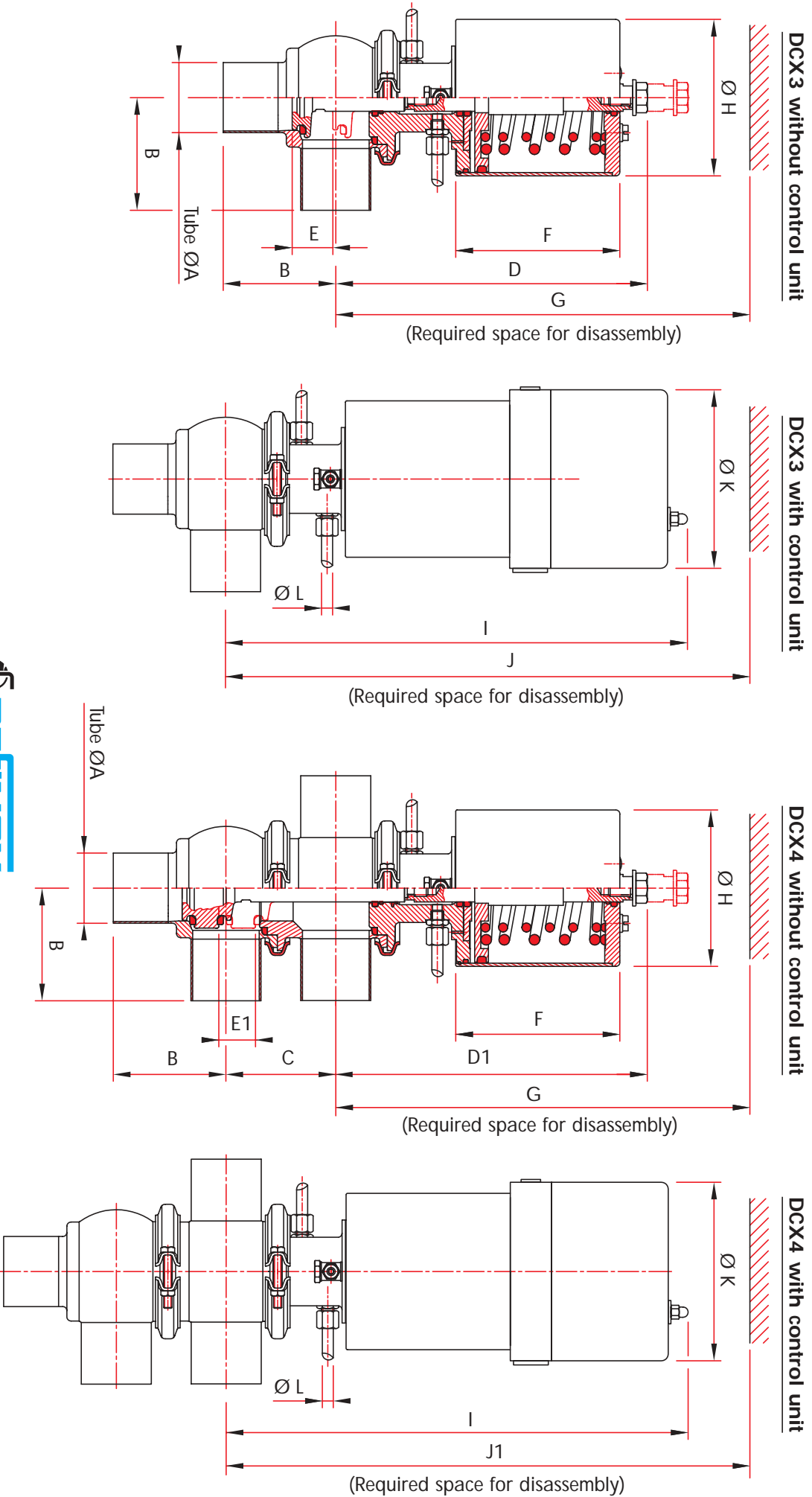
The sealing characteristics are retained although the type of seal used determines the temperature and chemical resistance limits of the valve.



# DCX3 - DCX4 changeover valves options



## Automated DCX3 - DCX4 changeover valves with aseptic guide bearing



## DCX3 - DCX4 changeover valves options

ITDFX101 GB - REV 1 - MAY 2002

32

### Automated DCX3 - DCX4 changeover valves with aseptic guide bearing

SMS	DN		Tube Ø A	B	C	D	D1	Stroke E	Stroke E1	F	G	Ø H	Weight in kg DCX3*	Weight in kg DCX4*	I	J	J1	Ø K	Ø L
	DIN	US																	
25			25 x 1,2	55	55	193	192	17	14	109,5	240	89	4,5	5,5	300	330	330	130	6/8
		1"	25,4 x 1,65	51	82,5	192	192	17	14	109,5	240	89	4,5	5,5	300	330	330	130	6/8
	25		28 x 1	55	55	192	192	17	14	109,5	240	89	4,5	5,5	300	330	330	130	6/8
		32	34 x 1	55	65	197	194	17	17	109,5	250	89	4,5	5,5	305	340	340	130	6/8
38			38 x 1,2	70	70	195	195	21	18	109,5	255	89	4,5	5,5	307	345	345	130	6/8
		1"1/2	38,1 x 1,65	57	82,5	195	195	21	18	109,5	255	89	4,5	5,5	307	345	345	130	6/8
	40		40 x 1	70	70	195	195	21	18	109,5	255	89	4,5	5,5	307	345	345	130	6/8
		2"	50,8 x 1,65	76	95	224	225	29	27	123	300	114	7,5	9,5	336	380	385	130	6/8
51			51 x 1,2	82	80	224	225	29	27	123	300	114	7,5	9,5	336	380	385	130	6/8
	50		53 x 1,5	80	80	224	225	29	27	123	300	114	7,5	9,5	336	380	385	130	6/8
		2"1/2	63,5 x 1,65	76	108	276	275	35	32	159	360	167	17	21	386	435	440	130	6/8
63			63,5 x 1,6	105	95	276	275	35	32	159	360	167	17	21	386	435	440	130	6/8
	65		70 x 2	108	100	277	277	35	31	159	370	167	17	21	388	445	445	130	6/8
		3"	76 x 1,65	82	120	281	280	35	32	159	375	167	17	22	392	455	455	130	6/8
76			76 x 2	110	105	281	280	35	32	159	375	167	17	22	392	455	455	130	6/8
	80		85 x 2	115	130	324	327	40	36	181	440	216	29	39	433	505	510	130	6/8
		4"	101,6 x 2,1	130	165	333	335	40	35	181	470	216	30	42	442	535	540	130	6/8
104			104 x 2	130	150	333	335	40	35	181	470	216	30	42	442	535	540	130	6/8
	100		104 x 2	130	150	333	335	40	35	181	470	216	30	42	442	535	540	130	6/8

\* Without control unit

## Design

The DCX3 - DCX4 can be fitted with an aseptic guide bearing which steam or fluid (washing - rinsing) circulates through to clean

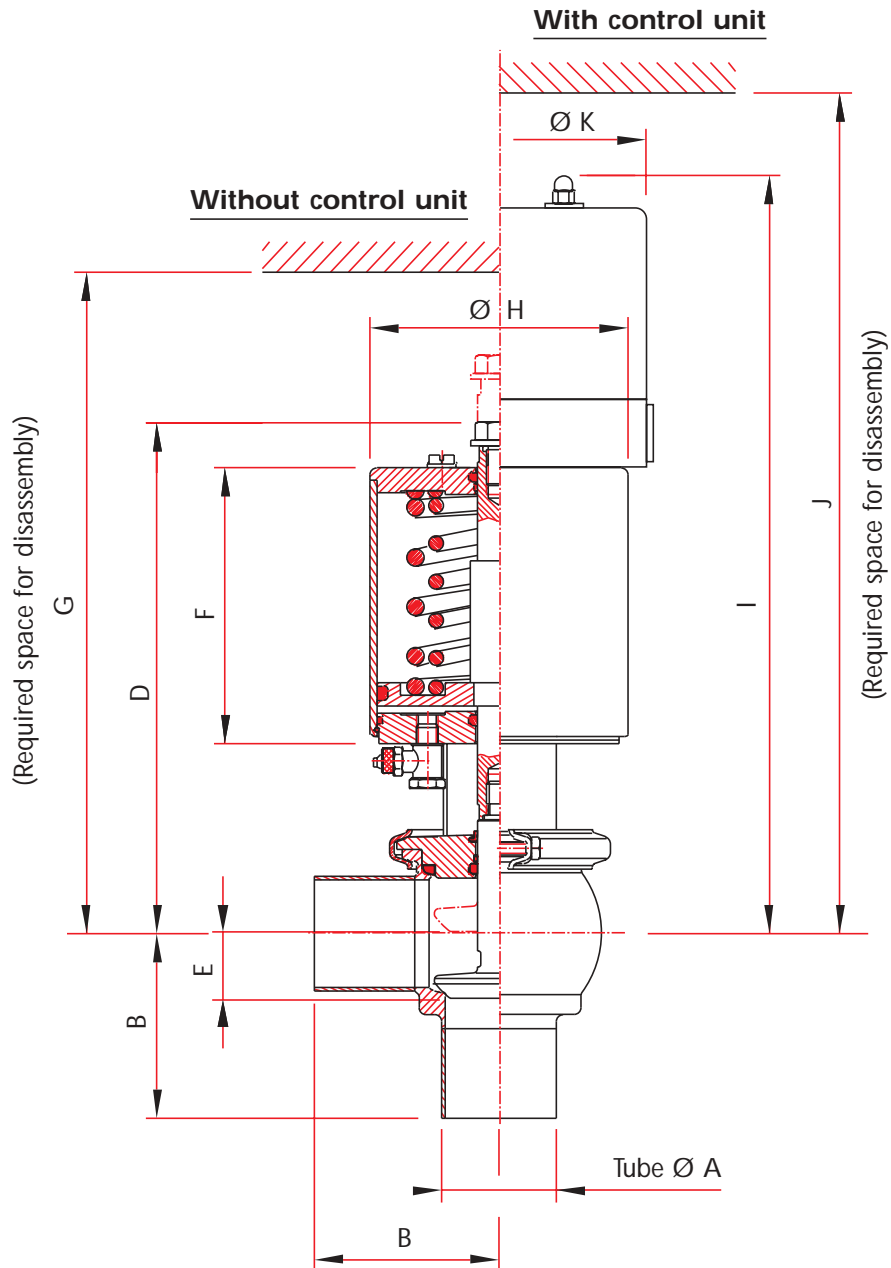
the parts of the plug, which come into contact with the outside environment on the valve outstroke. When the valve closes, the stem in

contact with the outside environment is sterilised before penetrating the valve body.



## DCX3 - DCX4 changeover valves options

### Automated DCX3 changeover valve metal/metal sealing



### Design

In certain specific cases (abrasive products), it may be necessary to remove the seals and provide a tight metal-on-metal contact. This alteration requires special

manufacturing and a plug and body pairing. (Please consult us regarding this type of application).

## DCX3 - DCX4 changeover valves options

ITDFX101 GB - REV 1 - MAY 2002

### Automated DCX3 changeover valve metal/metal sealing

DN			Tube Ø A	B	D	Stroke E	F	G	Ø H	Weight in kg*	I	J	Ø K
SMS	DIN	US											
25			25 x 1,2	55	193	17	109,5	240	89	4	300	330	130
			25,4 x 1,65	51	192	17	109,5	240	89	4	300	330	130
		1"	28 x 1	55	192	17	109,5	240	89	4	300	330	130
38			34 x 1	55	197	17	109,5	250	89	4	305	340	130
			38 x 1,2	70	195	21	109,5	255	89	4	307	345	130
		1"1/2	38,1 x 1,65	57	195	21	109,5	255	89	4	307	345	130
			40 x 1	70	195	21	109,5	255	89	4	307	345	130
		2"	50,8 x 1,65	76	224	29	123	295	114	7	336	380	130
51			51 x 1,2	82	224	29	123	295	114	7	336	380	130
			53 x 1,5	80	224	29	123	295	114	7	336	380	130
		2"1/2	63,5 x 1,65	76	276	35	159	360	167	16	386	435	130
63			63,5 x 1,6	105	276	35	159	360	167	16	386	435	130
			70 x 2	108	277	35	159	370	167	16	388	445	130
		3"	76 x 1,65	82	281	35	159	375	167	16	392	455	130
76			76 x 2	110	281	35	159	375	167	16	392	455	130
			85 x 2	115	324	40	181	435	216	27	433	505	130
		4"	101,6 x 2,1	130	333	40	181	465	216	28	442	535	130
104			104 x 2	130	333	40	181	465	216	28	442	535	130
			104 x 2	130	333	40	181	465	216	28	442	535	130

\* Without control unit

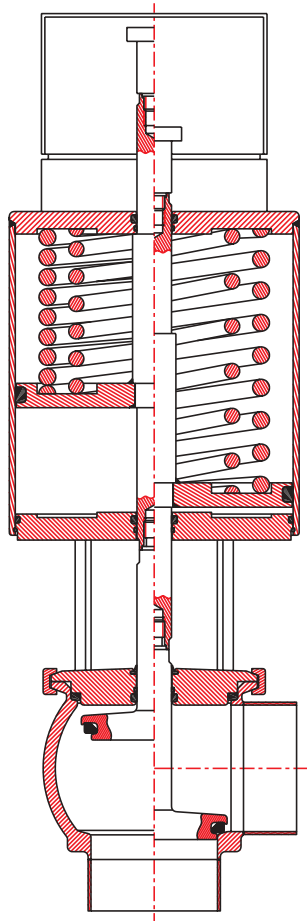
### Automated DCX3 long stroke changeover valve

The DCX3 has a plug stroke which, when fully open, guarantees a fluid flow area in excess of the nominal tube section.

However, the fact that the plug is present in the fluid stream restricts the use of this valve as a number of fibrous or fragile products cannot accept the presence of an obstacle. The "long stroke" DCX3 valve provides maximum plug clearance

and thereby avoids fluid break-up and the trapping of fibres in suspension.

Using the standard DCX3 body and possessing similar characteristics, the long-stroke DCX3 is a single-acting valve (or double-acting, if necessary) with an extended actuator and plug. A "tank bottom" version is also available.



### DCX3 bellows changeover valve

This is a specially designed valve that uses metal bellows in place of a plastomer diaphragm.

(Please consult us regarding this type of application).

## DCX3 - DCX4 changeover valves options

ITDFX101 GB - REV 1 - MAY 2002

### Automated DCX3 - DCX4 diaphragm changeover valves working conditions

SMS	DN		Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (Kv)	Pressure drop (Cv)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
	DIN	US							
25	25	1"	6	0,4	21	24,36	8	1,3	0,5
	25		6	0,4	24	27,84	8	1,3	0,5
	32		6	0,4	36	41,76	8	1,3	0,5
38	40	1"1/2	6	0,4	42	48,72	8	1,3	0,5
			6	0,4	44	51,04	8	1,3	0,5
51	50	2"	6	0,4	82	95,12	8	2,5	1
			6	0,4	85	98,6	8	2,5	1
63		2" 1/2	6	0,4	128	148,48	8	6	3,5
	65		6	0,4	142	164,72	8	6,4	3,5
76	80	3"	6	0,4	170	197,2	8	6,6	3,5
			6	0,4	190	220,4	8	11	8
104	100	4"	6	0,4	290	336,4	8	13	8

#### FOR ALL DIAMETERS OF DCX3 - DCX4 DIAPHRAGM CHANGEOVER VALVES

Maximum temperature: +140 °C	Minimum temperature: +2 °C	Temperature difference: 100 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	

## DCX3 - DCX4 changeover valves options



### Automated DCX3 - DCX4 elastomer sealing changeover valves working conditions

SMS	DN		Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (Kv)	Pressure drop (Cv)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
	DIN	US							
25	25	1"	6	0,3	21	24,36	8	1,5	1
	25		6	0,3	24	27,84	8	1,5	1
	32		6	0,3	36	41,76	8	1,5	1
38		1"1/2	6	0,3	42	48,72	8	1,5	1
	40		6	0,3	44	51,04	8	1,5	1
51		2"	6	0,3	82	95,12	8	3	2
	50		6	0,3	85	98,6	8	3	2
63		2" 1/2	6	0,3	128	148,48	8	6,6	5
	65		6	0,3	142	164,72	8	7	5
76		3"	6	0,3	170	197,2	8	7,2	5
	80		6	0,3	190	220,4	8	12	9
104		4"	6	0,3	290	336,4	8	14,4	9

#### FOR ALL DIAMETERS OF DCX3 - DCX4 ELASTOMER SEALING CHANGEOVER VALVES

Maximum temperature: +120 °C	Minimum temperature: 0 °C	Temperature difference: 100 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	





## DCX3 - DCX4 changeover valves options

ITDFX101 GB - REV 1 - MAY 2002

### Automated DCX3 - DCX4 changeover valves with aseptic guide bearing working conditions

DN		Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (kV)	Pressure drop (Cv)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
SMS	DIN							
25	25	6	0,4	21	24,36	8	1,5	1
	32	6	0,4	24	27,84	8	1,5	1
	40	6	0,4	36	41,76	8	1,5	1
38		6	0,4	42	48,72	8	1,5	1
	50	6	0,4	44	51,04	8	1,5	1
51		6	0,4	82	95,12	8	3	2
	63	6	0,4	85	98,6	8	3	2
	76	6	0,4	128	148,48	8	6,6	5
	104	6	0,4	142	164,72	8	7	5
		6	0,4	170	197,2	8	7,2	5
		6	0,4	190	220,4	8	12	9
		6	0,4	290	336,4	8	14,4	9

#### FOR ALL DIAMETERS OF DCX3 - DCX4 CHANGEOVER VALVES WITH ASEPTIC GUIDE BEARING

Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 120 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	

## DCX3 - DCX4 changeover valves options



### DCX3 changeover valve metal/metal sealing working conditions

SMS	DN		Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (Kv)	Pressure drop (Cv)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
	DIN	US							
25	25	1"	6	0,7	21	24,36	8	1,5	1
	32		6	0,7	24	27,84	8	1,5	1
			6	0,7	36	41,76	8	1,5	1
38		1" 1/2	6	0,7	42	48,72	8	1,5	1
	40		6	0,7	44	51,04	8	1,5	1
51		2"	6	0,7	82	95,12	8	3	2
	50		6	0,7	85	98,6	8	3	2
63		2" 1/2	6	0,7	128	148,48	8	6,6	5
	65		6	0,7	142	164,72	8	7	5
76		3"	6	0,7	170	197,2	8	7,2	5
	80		6	0,7	190	220,4	8	12	9
104	100	4"	6	0,7	290	336,4	8	14,4	9

#### FOR ALL DIAMETERS OF DCX3 CHANGEOVER VALVES METAL/METAL SEALING

Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 140 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	

# DCX3 FdC tank bottom changeover valve technical description

## Design

The DEFINOX tank bottom changeover valve possesses the same qualities as DCX3 process changeover valves (floating seal, extra-thick body, strength, etc.). It differs, however, by the shape of the body and plug forming a seal tight up to the tank bottom.

Automatic and manual versions using the same driving mechanisms as the DCX3 are available, as well as a choice of raising or lowering plug.

Also as an option, this valve can be equipped with a long-stroke actuator for total plug clearance and a reduced pressure drop. This version is particularly recommended for fragile or heterogeneous products.



## Options

### **One-piece body**

On request, we can manufacture bodies incorporating the flange to the size of the tank bottom.

### **Tank bottom valve with lowering plug and metal-on-metal seal**

General size requirements are the same as for the DCX3 tank bottom valve. This valve is made to order.

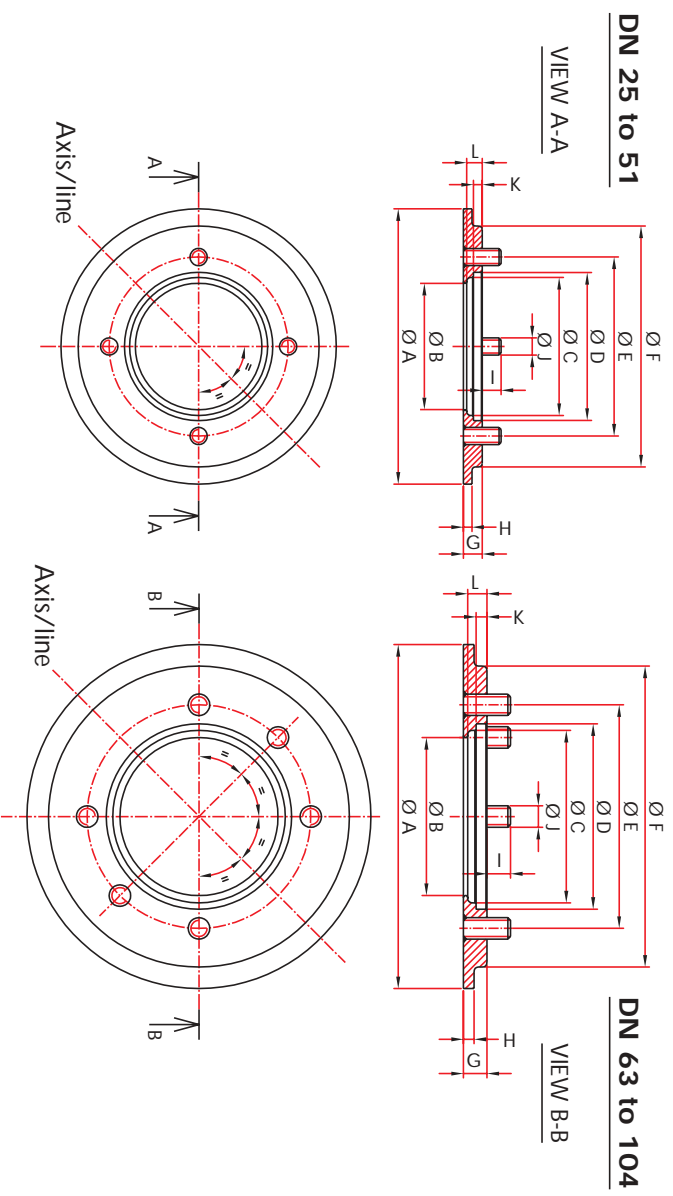
### **Manual tank bottom changeover valve**

The tank bottom changeover valve can be equipped with a manual device, instead of the pneumatic actuator.

# DCX3 Fdc tank bottom changeover valve technical description

ITDFX101 GB - REV 1 - MAY 2002

## DCX3 Fdc flange

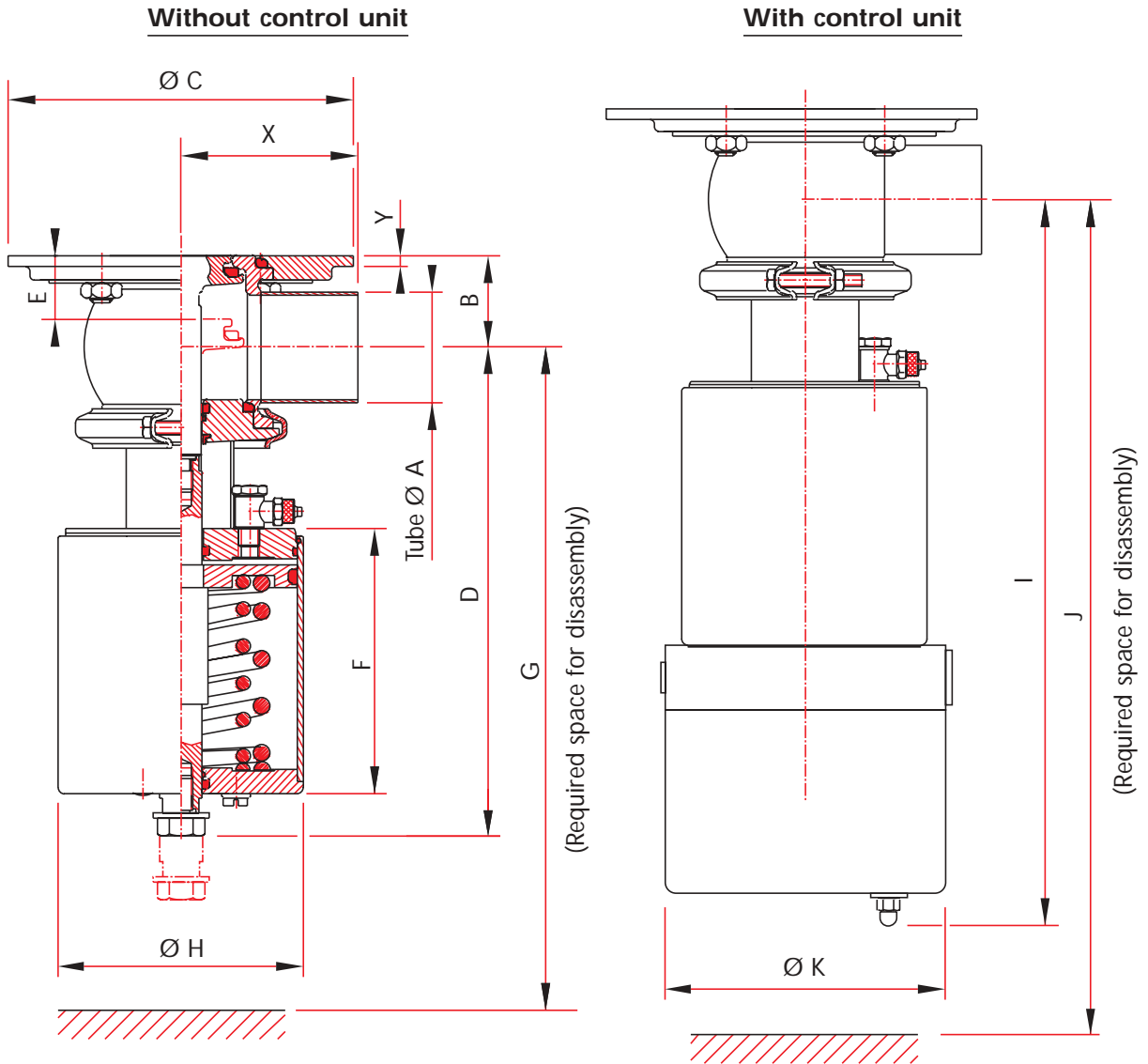


SMS	DN		Ø A	Ø B	Ø C	Ø D	Ø E	Ø F	G	H	I	Ø J	K	L
	DIN	US												
25	25	1"	139,25 ±0,25	61,4 ±0,1	68,2	80,2 ±0,05	94	124	11	6	12	M10	5	9 ±0,1
38	32	1" 1/2	139,25 ±0,25	61,4 ±0,1	68,2	80,2 ±0,05	94	124	11	6	12	M10	5	9 ±0,1
	40		139,25 ±0,25	61,4 ±0,1	68,2	80,2 ±0,05	94	124	11	6	12	M10	5	9 ±0,1
51	50	2"	159,25 ±0,25	73,5 ±0,1	80,2	86,2 ±0,05	104	140	11	6	12	M10	5	9 ±0,1
63	65	2" 1/2	189,25 ±0,25	99,2 ±0,1	106	116,2 ±0,05	134	168	11	6	12	M10	5	9 ±0,1
76		3"	189,25 ±0,25	99,2 ±0,1	106	116,2 ±0,05	134	168	11	6	12	M10	5	9 ±0,1
	80		249,25 ±0,25	146 ±0,1	155,2	168,7 ±0,05	190	230	17	10	16	M12	8,5	14 ±0,1
104	100	4"	249,25 ±0,25	146 ±0,1	155,2	168,7 ±0,05	190	230	17	10	16	M12	8,5	14 ±0,1

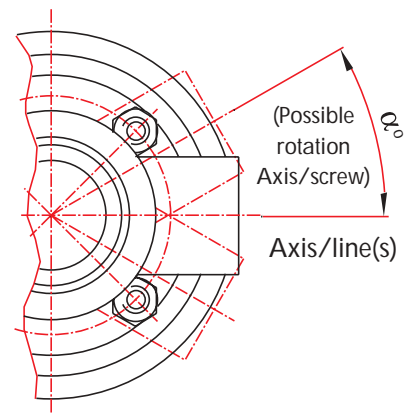
# DCX3 FdC tank bottom changeover valve dimensions

## lowering or raising plug

### DCX3 FdC tank bottom valve with lowering plug



**Body/flange partial bottom view**



## DCX3 Fdc tank bottom changeover valve dimensions lowering or raising plug

ITDFX101 GB - REV 1 - MAY 2002

53

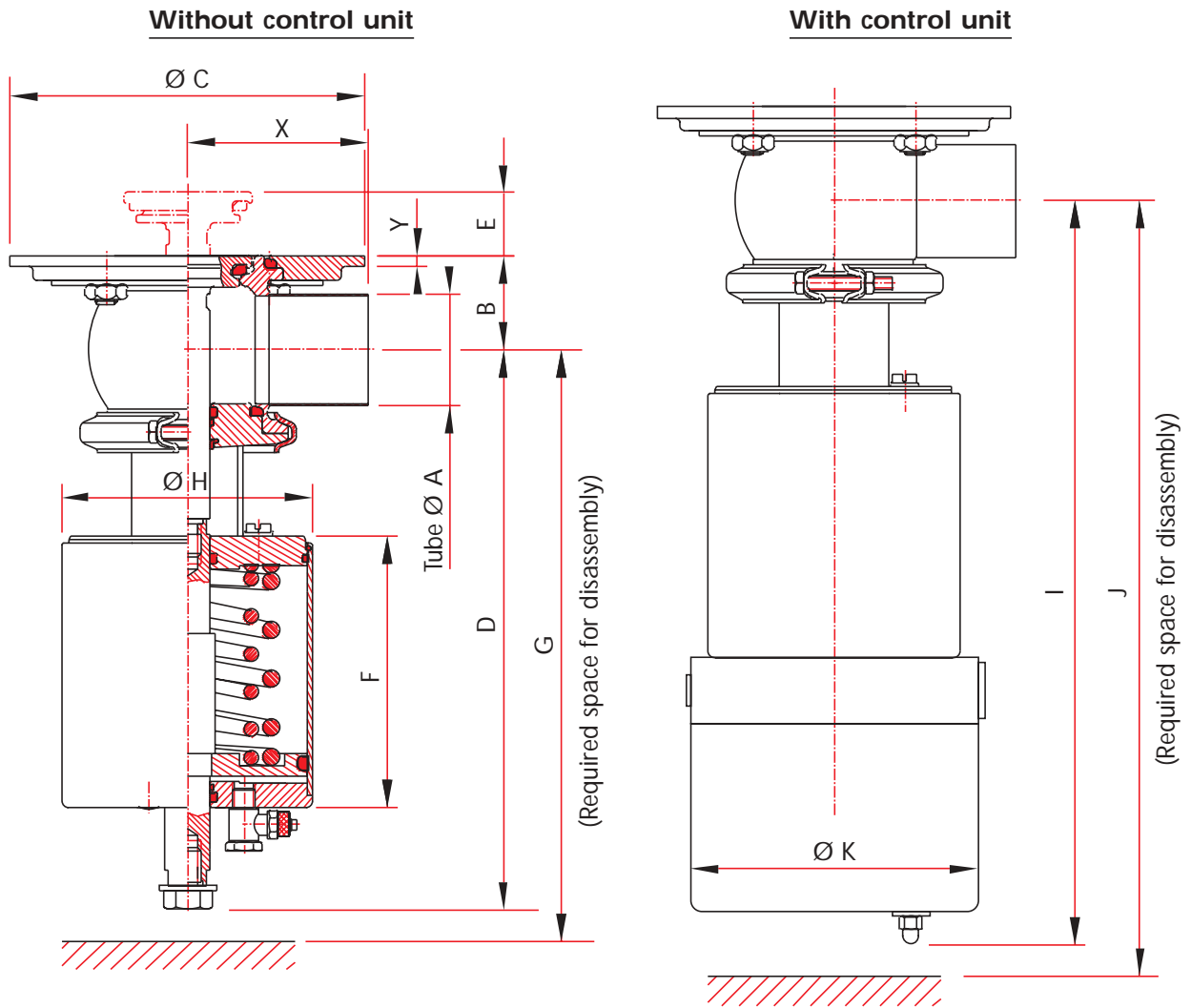
### DCX3 Fdc tank bottom valve with lowering plug

SMS	DN		Tube Ø A	B	Ø C	D	E	F	G	Ø H	X	Y	α°	Weight in kg*	I	J	Ø K
	DIN	US															
25			25 x 1,2	29,5	139	189	23,5	109,5	245	89	55	6	21	4,5	300	335	130
			25,4 x 1,65	29,5	139	189	23,5	109,5	245	89	51	6	21	4,5	300	335	130
			28 x 1	30,5	139	191,5	22,5	109,5	250	89	55	6	20	4,5	300	335	130
			34 x 1	33,5	139	192	25,5	109,5	255	89	55	6	18	4,5	305	345	130
38			38 x 1,2	35	139	193,5	25,5	109,5	260	89	70	6	16	4,5	307	350	130
			38,1 x 1,65	35	139	193,5	25,5	109,5	260	89	57	6	16	4,5	307	350	130
			40 x 1	36	139	194	26	109,5	265	89	70	6	15	4,5	307	350	130
			50,8 x 1,65	42,5	159	226	29,5	123	310	114	76	6	19	7,5	336	390	130
51			51 x 1,2	42,5	159	226	29,5	123	310	114	82	6	19	7,5	336	390	130
			53 x 1,5	42,5	159	226	29,5	123	310	114	80	6	17	7,5	336	390	130
			63,5 x 1,65	48,5	189	275,5	35	159	375	167	76	6	23	17	386	450	130
			63,5 x 1,6	48,5	189	275,5	35	159	375	167	105	6	23	17	386	450	130
63			70 x 2	52	189	279	34,5	159	380	167	108	6	20	17	388	455	130
			76 x 1,65	55	189	282	35	159	395	167	82	6	18	17	392	470	130
76			76 x 2	55	189	282	35	159	395	167	110	6	18	17	392	470	130
			85 x 2	65	249	328,5	39,5	181	460	216	115	10	23	28	433	525	130
			101,6 x 2,1	75	249	337	40	181	490	216	130	10	21	29	442	555	130
			104 x 2	75	249	337	40	181	490	216	130	10	21	29	442	555	130
104			104 x 2	75	249	337	40	181	490	216	130	10	21	29	442	555	130
			104 x 2	75	249	337	40	181	490	216	130	10	21	29	442	555	130

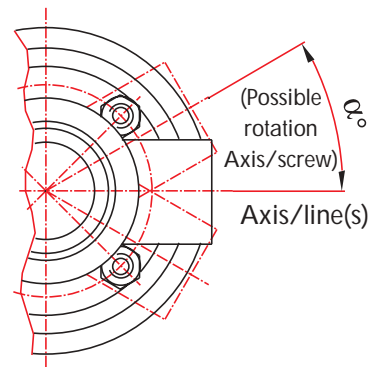
\* Without control unit

# DCX3 FdC tank bottom changeover valve dimensions lowering or raising plug

## DCX3 FdC tank bottom valve with raising plug



Body/flange partial bottom view



## DCX3 Fdc tank bottom changeover valve dimensions lowering or raising plug

ITDFX101 GB - REV 1 - MAY 2002

### DCX3 Fdc tank bottom valve with raising plug

SMS	DN		Tube Ø A	B	Ø C	D	E	F	G	Ø H	X	Y	α°	Weight in kg*	I	J	Ø K
	DIN	US															
25			25 x 1,2	29,5	139	205	21	109,5	220	89	55	6	21	4,5	300	315	130
		1"	25,4 x 1,65	29,5	139	205	21	109,5	220	89	51	6	21	4,5	300	315	130
	25		28 x 1	30,5	139	204,5	19,5	109,5	220	89	55	6	20	4,5	300	315	130
				33,5	139	209	20,5	109,5	225	89	55	6	18	4,5	305	320	130
	32		34 x 1	35	139	210,5	20	109,5	225	89	70	6	16	4,5	307	325	130
				38 x 1,2	35	139	210,5	20	109,5	225	89	70	6	16	4,5	307	325
	38		38,1 x 1,65	35	139	210,5	20	109,5	225	89	57	6	16	4,5	307	325	130
				40 x 1	36	139	212	20,5	109,5	230	89	70	6	15	4,5	307	325
	40		50,8 x 1,65	42,5	159	252	28	123	270	114	76	6	19	7,5	336	355	130
				51 x 1,2	42,5	159	252	28	123	270	114	82	6	19	7,5	336	355
	51		53 x 1,5	42,5	159	252	28	123	270	114	80	6	17	7,5	336	355	130
				63,5 x 1,65	48,5	189	307,5	35	159	325	167	76	6	23	17	386	405
	63		63,5 x 1,6	48,5	189	307,5	35	159	325	167	105	6	23	17	386	405	130
				70 x 2	52	189	311	34,5	159	330	167	108	6	20	17	388	405
	65		70 x 2	52	189	311	34,5	159	330	167	108	6	20	17	388	405	130
				76 x 1,65	55	189	314	35	159	330	167	82	6	18	17	392	410
	76		76 x 2	55	189	314	35	159	330	167	110	6	18	17	392	410	130
				85 x 2	65	249	363,5	39,5	181	395	216	115	10	23	28	433	465
	80		101,6 x 2,1	75	249	372,5	39,5	181	405	216	130	10	21	29	442	475	130
				104 x 2	75	249	372,5	39,5	181	405	216	130	10	21	29	442	475
104			104 x 2	75	249	372,5	39,5	181	405	216	130	10	21	29	442	475	130
				100			75	249	372,5	39,5	181	405	216	130	10	21	29

\* Without control unit





# DCX3 - DCX4

## small size changeover valve

### technical description



● Manual  
small size DCX3



● Automated  
small size DCX3



● Automated  
small size DCX4

### ● Design

In addition to the traditional range of diameters from 25 to 150 mm, DEFINOX proposes small changeover valves with the same configurations as standard changeover valves. These valves are

characterised by their small size and their ability to withstand high pressure. Signal-back equipment is limited to the 104 mm unit.

### ● Option

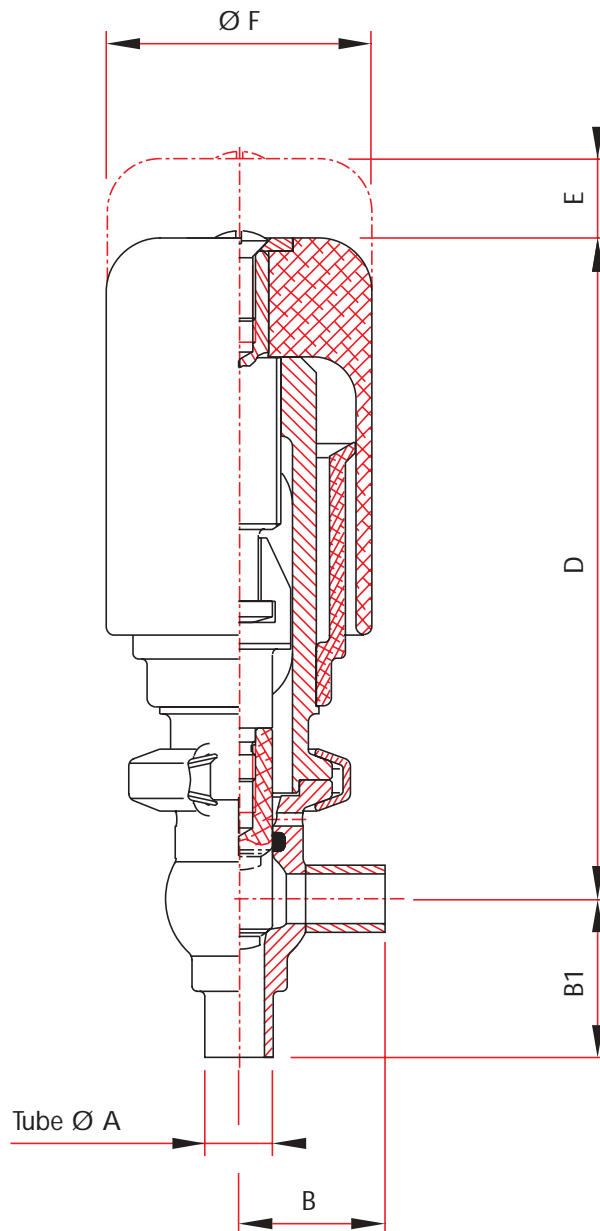
#### DCX3 small size changeover valve with a profiled plug

The DCX3 small size valve may be fitted with a profiled plug performing a flow control function in the manual control version.

This valve is available in 3/4" and 1", dimensions are the same as for the DCX3 manual microvalve.

# Manual and automated DCX3 - DCX4 small size changeover valve dimensions

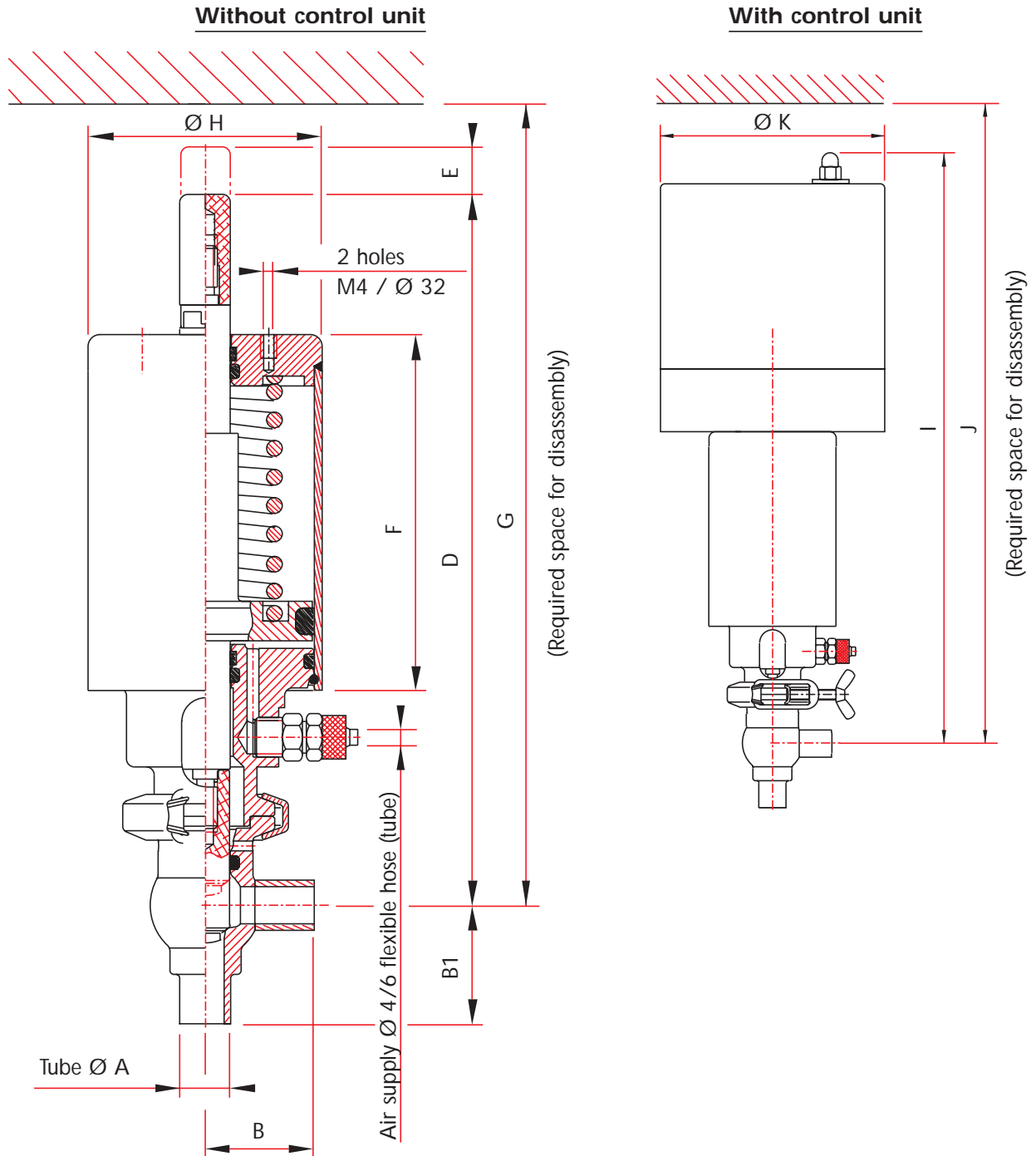
## Manual DCX3 small size changeover valve



DN	Tube Ø A	B	B1	D	Stroke E	Ø F	Weight in kg
1/2"	12,7 x 1,65	27,5	30	128	12	50	0,6
3/4"	19,05 x 1,65	29	35	130	12	50	0,6
1"	25,4 x 1,65	35,3	40	130	15	50	1

# Manual and automated DCX3 - DCX4 small size changeover valve dimensions

## Automated DCX3 small size changeover valve

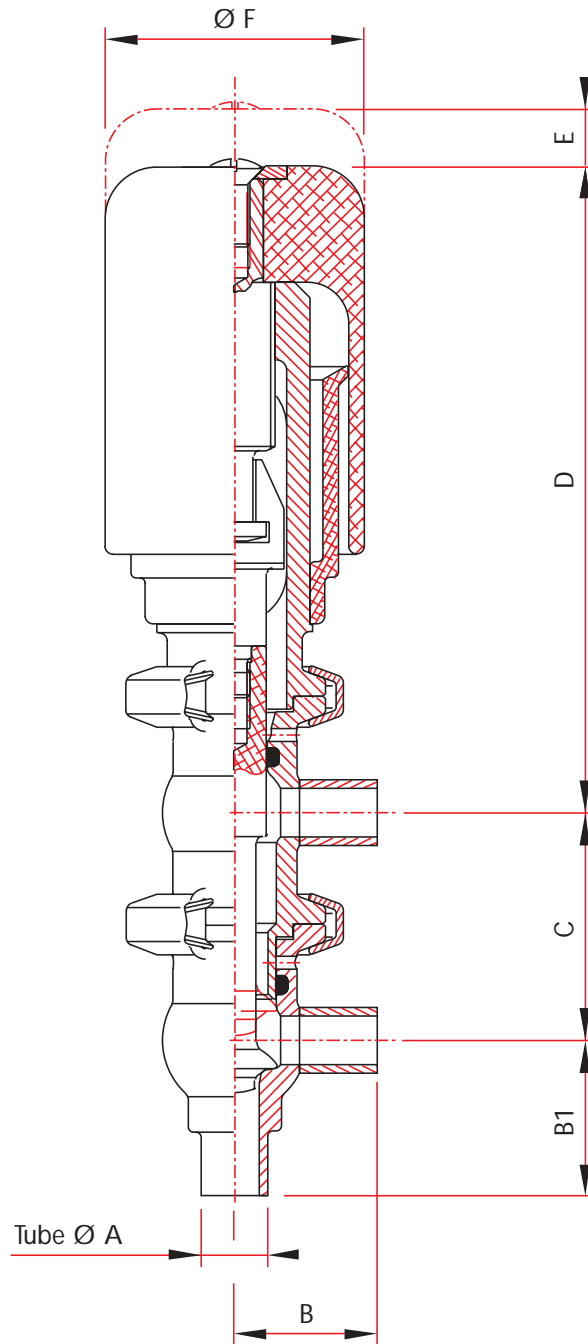


DN	Tube Ø A	B	B1	D	Stroke E	F	G	Ø H	Weight in kg*	I	J	Ø K
1/2"	12,7 x 1,65	27,5	30	192	12	90	215	59	1,5	275	298	104
3/4"	19,05 x 1,65	29	35	195	12	90	220	59	1,5	277	302	104
1"	25,4 x 1,65	35,3	40	212	15	103	240	71	1,9	292	320	104

\* Without control unit

# Manual and automated DCX3 - DCX4 small size changeover valve dimensions

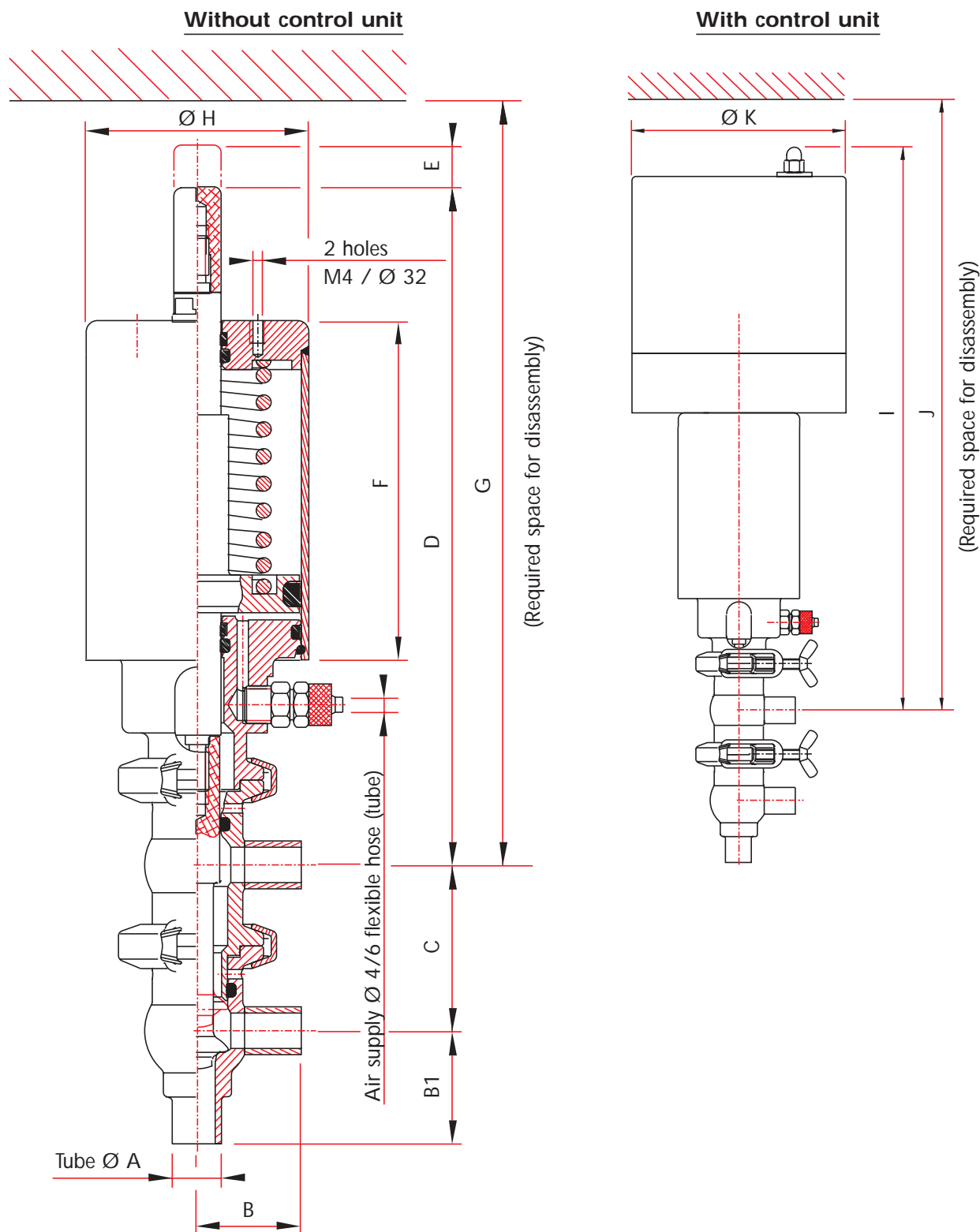
## Manual DCX4 small size changeover valve



DN	Tube Ø A	B	B1	C	D	Stroke E	Ø F	Weight in kg
1/2"	12,7 x 1,65	27,5	30	44	128	10,5	50	0,7
3/4"	19,05 x 1,65	29	35	44	130	11	50	0,7
1"	25,4 x 1,65	35,3	40	55	130	14,7	50	1,1

# Manual and automated DCX3 - DCX4 small size changeover valve dimensions

## Automated DCX4 small size changeover valve



DN	Tube Ø A	B	B1	C	D	Stroke E	F	G	Ø H	Weight in kg*	I	J	Ø K
1/2"	12,7 x 1,65	27,5	30	44	192	10,5	90	215	59	1,6	275	298	104
3/4"	19,05 x 1,65	29	35	44	195	11	90	220	59	1,7	277	302	104
1"	25,4 x 1,65	35,3	40	55	212	14,7	103	240	71	2	292	320	104

\* Without control unit

# Manual and automated DCX3 - DCX4 small size changeover valve working conditions

## Manual DCX3 - DCX4 small size changeover valve

DN US	Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (Kv)	Pressure drop (Cv)	Sealing pressure (Bar)
1/2"	16	0,4	3,2	3,71	18
3/4"	16	0,4	10,7	12,4	18
1"	16	0,4	21	24,36	18

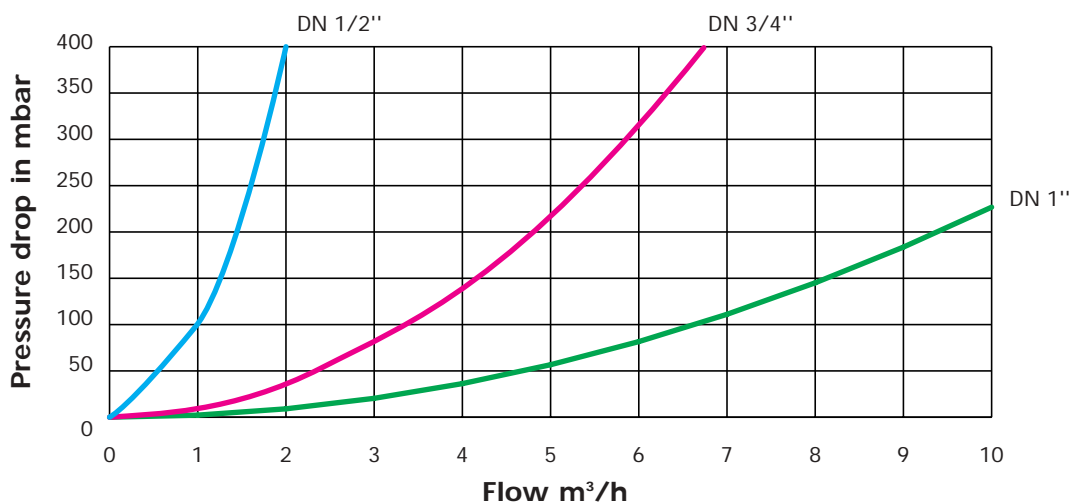
FOR ALL DIAMETERS OF DCX3 - DCX4 MANUAL SMALL SIZE CHANGEOVER VALVES		
Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 120 °C

## Automated DCX3 - DCX4 small size changeover valve

DN US	Pressure drop (Kv)	Pressure drop (Cv)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
1/2"	3,2	3,71	18	0,5	0,3
3/4"	10,7	12,4	18	0,5	0,3
1"	21	24,36	18	0,75	0,5

FOR ALL DIAMETERS OF DCX3 - DCX4 AUTOMATED SMALL SIZE CHANGEOVER VALVES		
Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 120 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	Maximum working pressure: 16 Bar
Vacuum resistance: 0,4 cm <sup>3</sup> /s		

## Pressure drop automated DCX3 small size changeover valve



# DCX3 regulating changeover valve

## Design



Based on the technology of the standard DCX3 L body changeover valve, DEFINOX has developed a food-grade regulating valve equipped with a profiled plug. Combined with a positioner, this valve regulates the flow rate, pressure or level on any fluid used in food processes from a (0) 4-20 mA or 0-10 V signal.

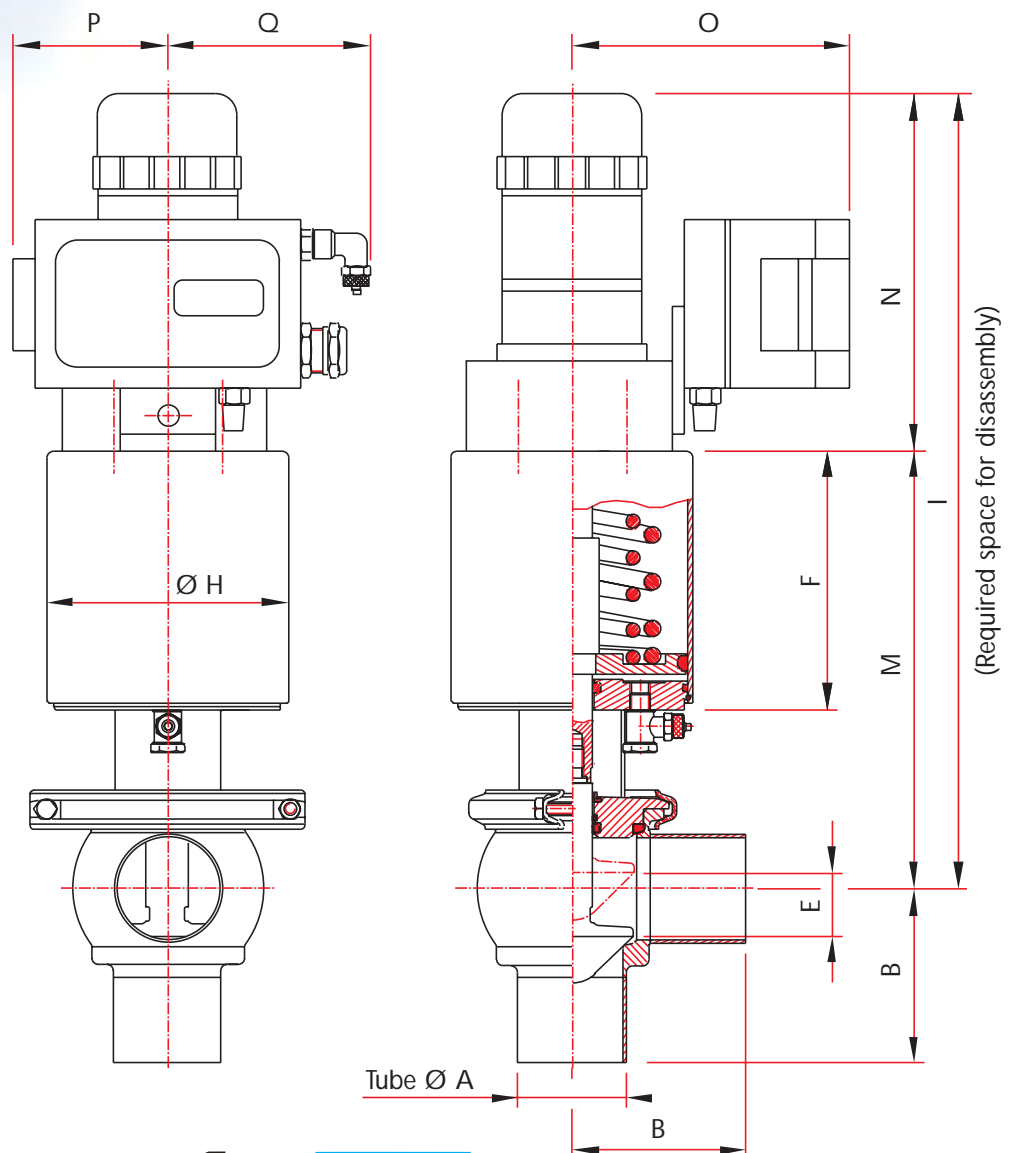
The electronic controls (PID regulator, electro-pneumatic control) are housed in a sealed unit mounted on the valve actuator, together with the instant plug position gauge.

As the plug does not have a seal, the valve is not 100% tight although a metal-on-metal type plug can be produced on request for a perfect seal.

This valve is available from DN 25 to DN 76.

Advantages :

- compact,
- 316L stainless steel structure,
- easy-to-program electronic functions.





## DCX3 regulating changeover valve

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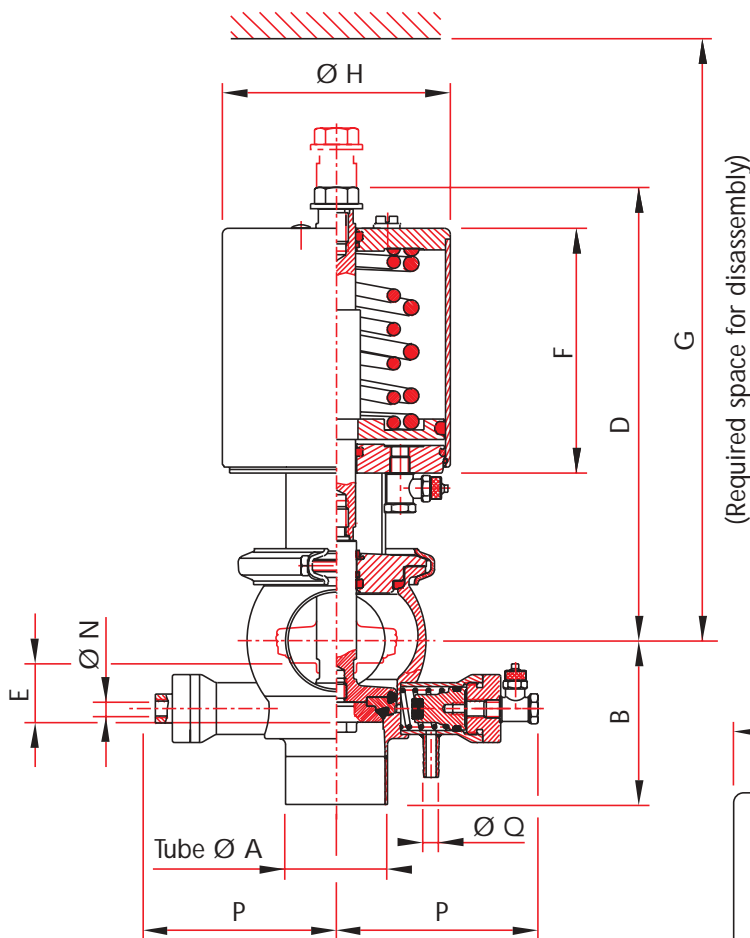
### Dimensions

SMS	DN		Tube Ø A	B	Stroke E	F	Ø H	I	M	N	O	P	Q	Weight in kg*
	DIN	US												
25			25 x 1,2	55	17	109,5	89	338	170	145	131	72	95	5,5
			25,4 x 1,65	51	17	109,5	89	338	170	145	131	72	95	5,5
			28 x 1	55	17	109,5	89	338	170	145	131	72	95	5,5
			34 x 1	55	17	109,5	89	343	175	145	131	72	95	5,5
38			38 x 1,2	70	21	109,5	89	345	177	145	131	72	95	5,5
			38,1 x 1,65	57	21	109,5	89	345	177	145	131	72	95	5,5
			40 x 1	70	21	109,5	89	345	177	145	131	72	95	5,5
			50,8 x 1,65	76	29	123	114	374	206	165	131	72	95	8,5
51			51 x 1,2	82	29	123	114	374	206	165	131	72	95	8,5
			53 x 1,5	80	29	123	114	374	206	165	131	72	95	8,5
			63,5 x 1,65	76	35	159	167	424	256	165	131	72	95	17,5
63			63,5 x 1,6	105	35	159	167	424	256	165	131	72	95	17,5
			70 x 2	108	35	159	167	426	258	165	131	72	95	17,5
			76 x 1,65	82	35	159	167	430	262	165	131	72	95	17,5
76			76 x 2	110	35	159	167	430	262	165	131	72	95	17,5
			85 x 2	115	40	181	216	471	303	165	131	72	95	28,5
			101,6 x 2,1	130	40	181	216	480	312	165	131	72	95	29,5
104			104 x 2	130	40	181	216	480	312	165	131	72	95	29,5
			104 x 2	130	40	181	216	480	312	165	131	72	95	29,5

\* With positioner

# DCX3 DE double sealing changeover valve

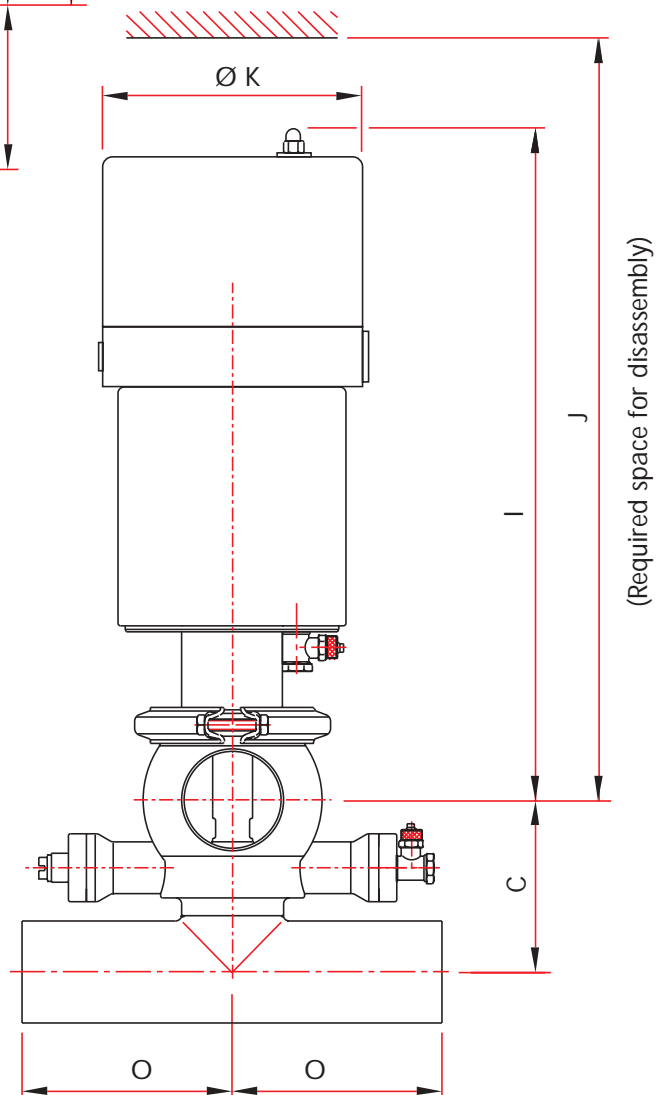
Without control unit



(Required space for disassembly)

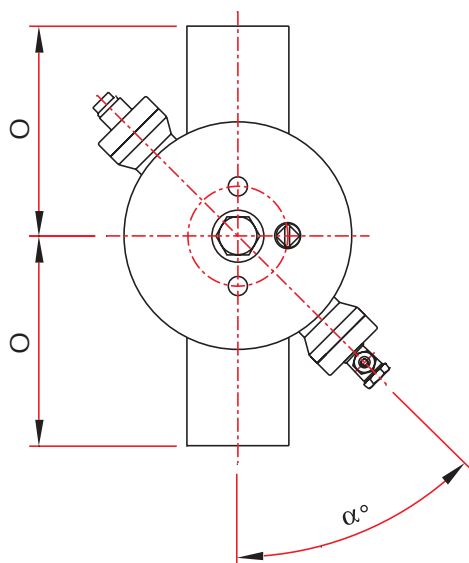


With control unit



(Required space for disassembly)

Above view



## DCX3 DE double sealing changeover valve

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### Dimensions

SMS	DN		Tube Ø A	B	C	D	Stroke E	F	G	Ø H	Ø N	O	P	Ø Q	α°	Weight in kg*	I	J	Ø K
	DIN	US																	
		2"	50,8 x 1,65	82	86	227	29	123	300	114	1/8 Gas	105	105	8	45	8	337	381	130
51			51 x 1,2	82	86	227	29	123	300	114	1/8 Gas	105	105	8	45	8	337	381	130
	50		53 x 1,5	80	87	227	29	123	300	114	1/8 Gas	105	105	8	45	8	337	381	130
		2" 1/2	63,5 x 1,65	105	100	276	35	159	360	167	1/8 Gas	130	115	8	45	17,5	385	435	130
63			63,5 x 1,6	105	100	276	35	159	360	167	1/8 Gas	130	115	8	45	17,5	385	435	130
	65		70 x 2	108	105	279	35	159	375	167	1/8 Gas	130	123	8	45	17,5	388	445	130
		3"	76 x 1,65	110	111	282	35	159	380	167	1/8 Gas	130	123	8	45	17,5	392	455	130
76			76 x 2	110	111	282	35	159	380	167	1/8 Gas	130	123	8	45	17,5	392	455	130
	80		85 x 2	115	122	330	40	181	445	216	1/8 Gas	155	137	8	45	29	435	507	130
		4"	101,6 x 2,1	130	139	338	40	181	470	216	1/8 Gas	155	137	8	45	30	443	536	130
104			104 x 2	130	139	338	40	181	470	216	1/8 Gas	155	137	8	45	30	443	536	130
	100		104 x 2	130	139	338	40	181	470	216	1/8 Gas	155	137	8	45	30	443	536	130

\* Without control unit

### Design

The DCX3 double-sealing valve performs the usual functions of a standard DCX3. However, thanks to a small air space, a potential leak can be detected between the two zones separated by the plug. This valve, an alternative to the VDCI mixproof valve, provides an adequate level of protection on product lines prior to treatment (pasteurisation) and utility systems (cleaning, propellant, etc.). It is capable of supporting excess pressure under the plug with a relief

discharge towards the leakage chamber. It can be fitted horizontally. Furthermore, it allows for a manifold arrangement with the possibility of a scraping mechanism on the bottom lines. It is available as standard for 50 to 100 mm diameters and requires a single operating control. It comprises:

- a non-independent double plug system,
- an extra-thick actuator body and

valve body providing good geometry of the assembly and a high level of resistance to mechanical or thermal distortions,

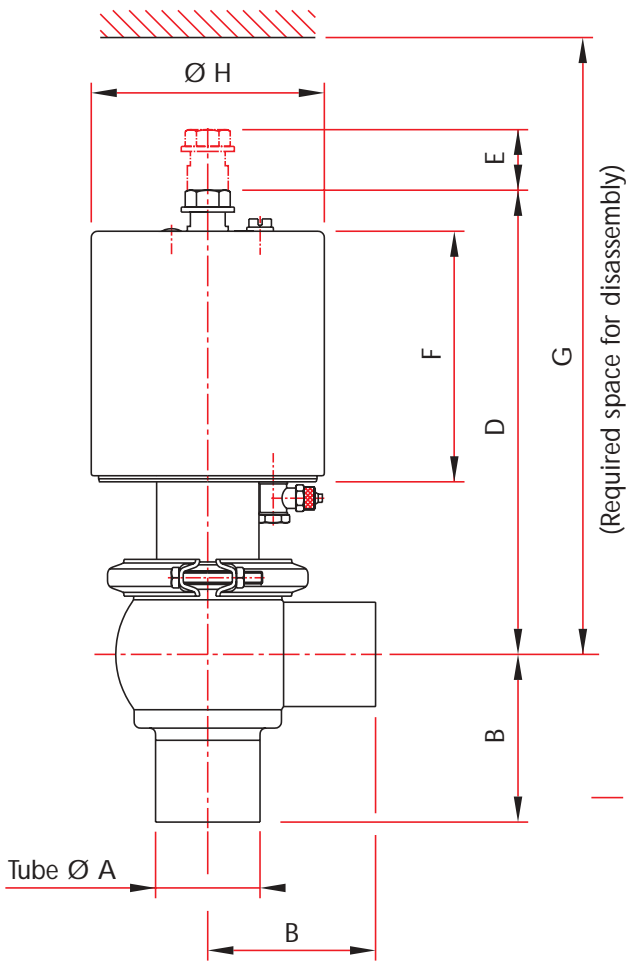
- a leakage chamber preventing any risk of mixing between the top and bottom bodies,
- a microvalve warns of a leak or possible seal damage,
- an optional microvalve controlled by CIP pressure to ensure cleaning of the leakage chamber with the valve closed.

Note: With 2 solenoid valves fitted onto the DCX3 DE, it is possible to clean the leakage chamber with the valve open by operating the leak microvalve. The surfaces of the seals can only be cleaned with the valve open.

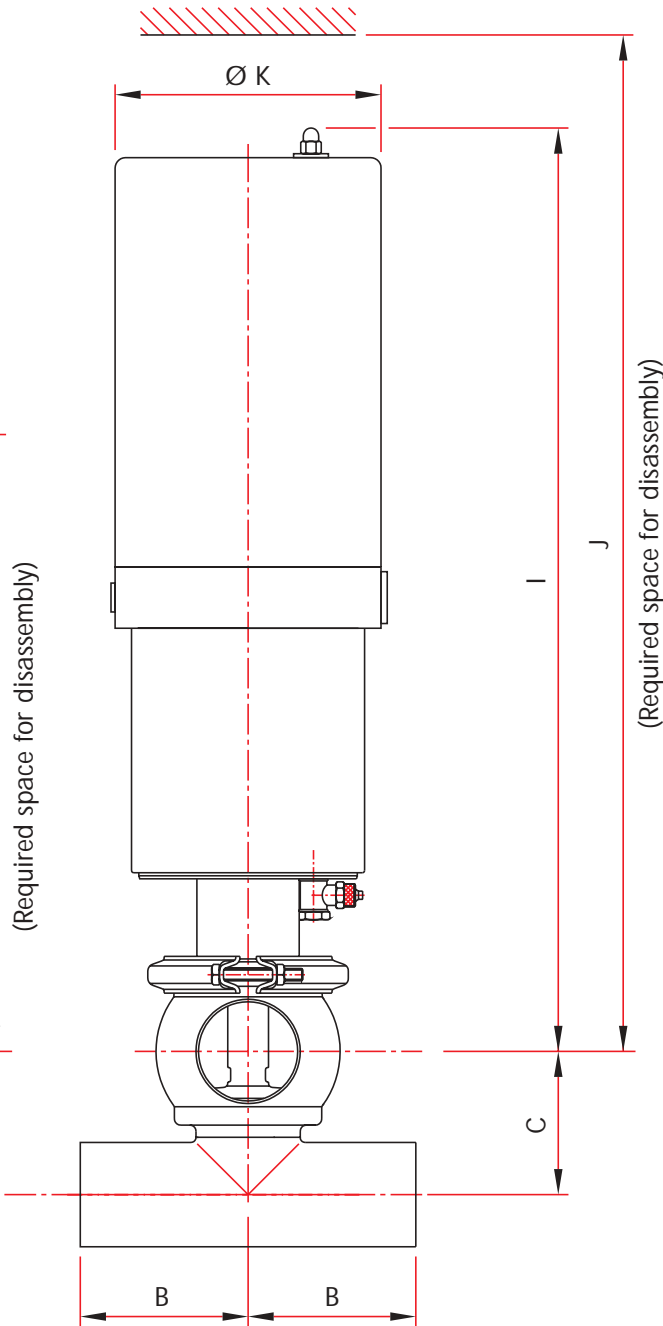
# DCX3 relief changeover valve



Without control unit



With pneumatic regulating unit



## DCX3 relief changeover valve

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### Dimensions

SMS	DN		Tube Ø A	B	C	D	Stroke E	F	G	Ø H	Weight in kg*	I	J	Ø K
	DIN	US												
25			25 x 1,2	55	45	193	17	109,5	240	89	4	415	445	130
		1"	25,4 x 1,65	51	45	192	17	109,5	240	89	4	415	445	130
	25		28 x 1	55	47	192	17	109,5	240	89	4	415	445	130
		32	34 x 1	55	51	197	17	109,5	250	89	4	420	455	130
38			38 x 1,2	70	55	195	21	109,5	255	89	4	422	460	130
		1"1/2	38,1 x 1,65	57	55	195	21	109,5	255	89	4	422	460	130
	40		40 x 1	70	55	195	21	109,5	255	89	4	422	460	130
		2"	50,8 x 1,65	76	70	224	29	123	295	114	7	451	495	130
51			51 x 1,2	82	70	224	29	123	295	114	7	451	495	130
	50		53 x 1,5	80	71	224	29	123	295	114	7	451	495	130
		2" 1/2	63,5 x 1,65	76	85	276	35	159	360	167	16	501	550	130
63			63,5 x 1,6	105	85	276	35	159	360	167	16	501	550	130
	65		70 x 2	108	93	277	35	159	370	167	16	503	560	130
		3"	76 x 1,65	82	95	281	35	159	375	167	16	507	570	130
76			76 x 2	110	95	281	35	159	375	167	16	507	570	130
	80		85 x 2	115	105	324	40	181	435	216	27	548	620	130
		4"	101,6 x 2,1	130	125	333	40	181	465	216	28	557	650	130
104			104 x 2	130	125	333	40	181	465	216	28	557	650	130
	100		104 x 2	130	125	333	40	181	465	216	28	557	650	130

\* Without regulating unit

### Design

To protect certain appliances or circuits (pump recycling, etc.), it is possible to take a standard DCX3 and make a valve that will relieve the main circuit above a preset pressure.

In this case, the DCX3 is equipped with an actuator with a special spring. The air supply to the actuator is fed firstly through a unit containing

a pressure reducer. The simultaneous action of the spring and the adjustable, reduced-pressure air defines the piston lifting pressure and

therefore the operating range of the valve in a relief valve configuration (see specific documentation).

A solenoid pilot valve mounted in the unit controls the forced opening of the valve during circuit cleaning, for example.

# DCX3 variants working conditions

## DCX3 regulating changeover valve working conditions

DN		Max. working pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (kV)	Pressure drop (CV)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
SMS	DIN							
25	25	6	0,7	21	24,36	8	1,5	1
	32	6	0,7	24	27,84	8	1,5	1
	40	6	0,7	36	41,76	8	1,5	1
38		6	0,7	42	48,72	8	1,5	1
	50	6	0,7	44	51,04	8	1,5	1
51		6	0,7	82	95,12	8	3	2
	63	6	0,7	85	98,6	8	3	2
	76	6	0,7	128	148,48	8	6,6	5
	104	6	0,7	142	164,72	8	7	5
		6	0,7	170	197,2	8	7,2	5
		6	0,7	190	220,4	8	12	9
		6	0,7	290	336,4	8	14,4	9

### FOR ALL DIAMETERS OF AUTOMATED DCX3 REGULATING CHANGEOVER VALVE

Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 140 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	

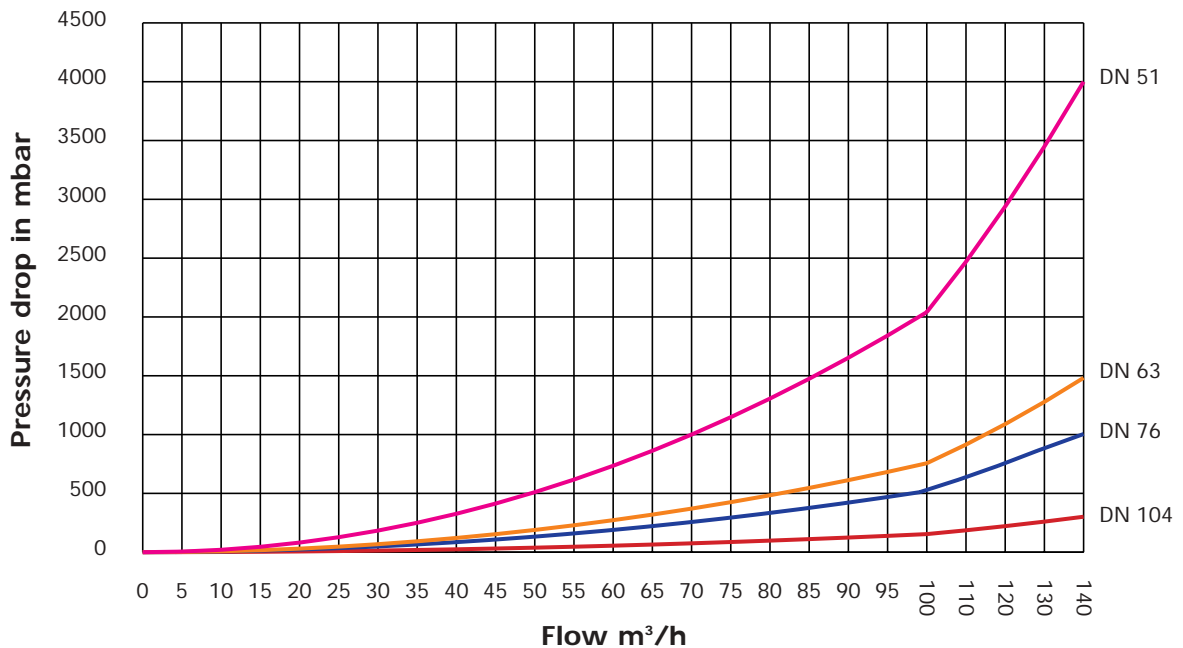
## DCX3 variants working conditions

### DCX3 DE double sealing changeover valve working conditions

DN			Pressure drop (Kv)	Pressure drop (Cv)	Opening time (s)	Air consumption (NI)
SMS	DIN	US				
51		2"	82	95,12	3	2
	50		85	98,6	3	2
63		2" 1/2	128	148,48	6,6	5
	65		142	164,72	7	5
76		3"	170	197,2	7,2	5
	80		190	220,4	12	9
104	100	4"	290	336,4	14,4	9

FOR ALL DIAMETERS OF AUTOMATED DCX3 DOUBLE SEALING CHANGEOVER VALVES		
Maximum temperature: +120 °C	Minimum temperature: 0 °C	Temperature difference: 100 °C
Maximum working pressure: 7 Bar	Vacuum resistance: 0,3 cm <sup>3</sup> /s	Sealing pressure: 8 Bar
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	

### Pressure drop DCX3 DE double sealing changeover valve



## DCX3 variants working conditions

### DCX3 relief changeover valve working conditions

DN		Max. calibration pressure (Bar)	Vacuum resistance (cm <sup>3</sup> /s)	Pressure drop (kV)	Pressure drop (CV)	Sealing pressure (Bar)	Opening time (s)	Air consumption (NI)
SMS	DIN							
25	25	12	0,4	21	24,36	13	1,5	1
	25	12	0,4	24	27,84	13	1,5	1
	32	12	0,4	36	41,76	13	1,5	1
38		12	0,4	42	48,72	13	1,5	1
	40	12	0,4	44	51,04	13	1,5	1
51		12	0,4	82	95,12	13	3	2
	50	12	0,4	85	98,6	13	3	2
63		12	0,4	128	148,48	13	6,6	5
	65	12	0,4	142	164,72	13	7	5
76		12	0,4	170	197,2	13	7,2	5
	80	12	0,4	190	220,4	13	12	9
104	100	12	0,4	290	336,4	13	14,4	9

#### FOR ALL DIAMETERS OF DCX3 RELIEF CHANGEOVER VALVE

Maximum temperature: +140 °C	Minimum temperature: -5 °C	Temperature difference: 120 °C
Maximum supply pressure: 8 Bar	Minimum supply pressure: 4,5 Bar	



## Standard signal back equipment suitable for the changeover valves

Automated DCX3 - DCX3 DE - DCX4 changeover valves DN 25 to 150  
Automated DCX3 FdC tank bottom changeover valves DN 25 to 100

Model	Signal back equipment & Fixing device	Components						Remarks
		Switch or Contact		Solenoid valve		Electronic		
		Reference	Characteristics	Reference	Characteristics	Reference	Characteristics	
Bracket	<b>Figure 2</b> St. St. bracket for M18 switch (M12 on request)	7007906 7007911 7007949 (M12)	PNP 10 - 36 V DC 20 - 250 V AC/DC PNP 10 - 36 V DC		None		None	1 or 2 switch(es) assembled Moulded cable: Lg 6 m
	<b>Figure 3</b> Double St. St. bracket for prismatic switches (40x26x12)	7007922 7007930 7007991	PNP 10 - 36 V DC 20 - 250 V AC/DC NAMUR		None		None	1 or 2 switch(es) assembled Moulded cable: Lg 2 m
Classic control unit	<b>Figure 4</b> Ø130 control unit H: 120 fixed on the actuator st. st. or smoked housing for switches and solenoid valve	7007922 7007930 7007991	PNP 10 - 36 V DC 20 - 250 V AC/DC NAMUR	7007943 7007944 7007947 7007948	24 V AC/DC 2,5 W 48 V AC/DC 2,5 W 110 V AC 2,5 VA 220 V AC 2,5 VA		None	1 or 2 switch(es) assembled, as well as 1 solenoid valve 3/2
	<b>Figure 5</b> Ø130 control unit H: 120 fixed on the actuator st. st. or smoked housing for contacts and solenoid valve	7007923	Contacteur I max: 100 mA 20 - 250 V AC/DC	7007943 7007944 7007947 7007948	24 V AC/DC 2,5 W 48 V AC/DC 2,5 W 110 V AC 2,5 VA 220 V AC 2,5 VA		None	1 or 2 contact(s) assembled, as well as 1 solenoid valve 3/2
	<b>Figure 6</b> Ø104 control unit H: 120 fixed on the actuator st. st. housing for switches and solenoid valve	7007922 7007930 7007991	PNP 10 - 36 V DC 20 - 250 V AC/DC NAMUR	7007943 7007944 7007947 7007948	24 V AC/DC 2,5 W 48 V AC/DC 2,5 W 110 V AC 2,5 VA 220 V AC 2,5 VA		None	1 or 2 switch(es) assembled, as well as 1 solenoid valve 3/2
DN 130 control unit AS-i link	<b>Figure 7</b> Ø104 control unit H: 120 fixed on the actuator st. st. housing for contacts and solenoid valve	7007923	Contacteur I max: 100 mA 20 - 250 V AC/DC	7007943 7007944 7007947 7007948	24 V AC/DC 2,5 W 48 V AC/DC 2,5 W 110 V AC 2,5 VA 220 V AC 2,5 VA		None	1 or 2 contact(s) assembled, as well as 1 solenoid valve 3/2
	<b>Figure 8</b> Ø130 control unit H: 110 fixed on the actuator st. st. or smoked housing for switches, 1 solenoid valve & AS-i module	7008045	Prismatic switch	7810504 7007952	Pilot & Interface	7707999 7010015	AS-i module with link cable and vampire connector	1 or 2 switch(es) assembled and 1 solenoid valve

# Standard signal back equipment suitable for the DCX3 - DCX3 DE - DCX4 changeover valves - DCX3 tank bottom changeover valves

- Photos and drawings of the figures mentioned on the data sheet



Fig. 2: St. St. bracket



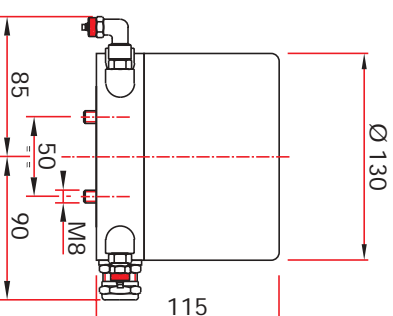
Fig. 4: Ø 130 control unit



Fig. 6: Ø 104 control unit



Fig. 8: Ø 130 control unit



Ø 130 standard control housing



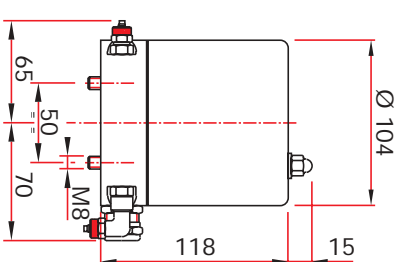
Fig. 3: Double st. st. bracket



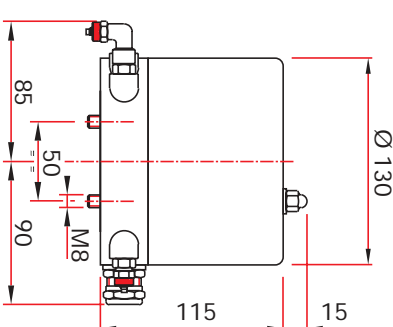
Fig. 5: Ø 130 control unit



Fig. 7: Ø 104 control unit



Ø 104 control unit st. st. housing



Ø 130 standard control unit st. st. housing

# Standard signal back equipment for the small size changeover valves

Automated DCX3 - DCX4 changeover valve small type DN 1/2" - 3/4" & 1"

## Photos and drawings of the figures mentioned on the data sheet



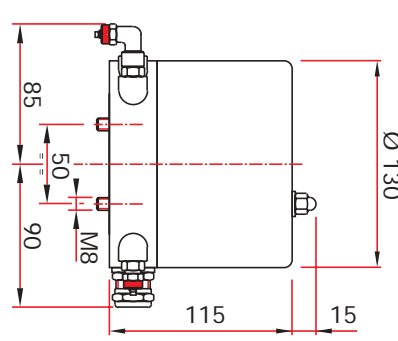
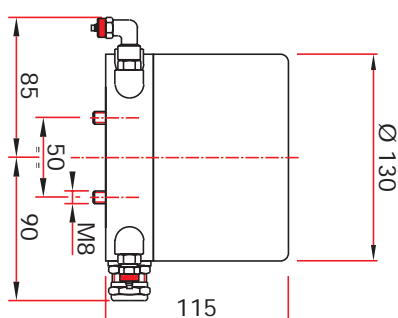
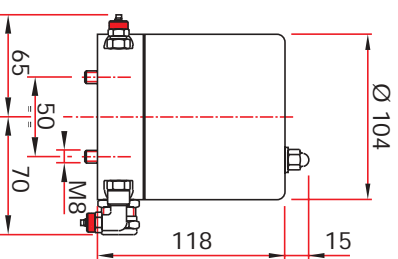
● Fig. 6: Ø 104 control unit



● Fig. 7: Ø 104 control unit



● Fig. 8: Ø 130 control unit



● Ø 104 control unit st. st. housing

● Ø 130 standard control unit smoked housing

● Ø 130 standard control unit st. st. housing

Model	Signal back equipment & Fixing device	Components				Remarks		
		Switch or Contact	Solenoid valve	Electronic				
	Reference	Characteristics	Reference	Characteristics	Reference	Characteristics		
Classic control unit	<b>Figure 6</b> Ø104 control unit H: 120 fixed on the actuator st. st. housing for switches and solenoid valve	7007922	PNP 10 - 36 V DC	7007943	24 V AC/DC 2,5 W	None	1 or 2 switch(es) assembled, as well as 1 solenoid valve 3/2	
		7007930	20 - 250 V AC/DC	7007944	48 V AC/DC 2,5 W			
		7007991	NAMUR	7007947	110 V AC 2,5 VA			
DN 130 control unit AS-i link	<b>Figure 7</b> Ø104 control unit H: 120 fixed on the actuator st. st. housing for contacts and solenoid valve  <b>Figure 8</b> Ø130 control unit H: 110 fixed on the actuator st. st. or smoked housing for switches, 1 solenoid valve & AS-i module	7007923	Contactor I max : 100 mA 20 - 250 V AC/DC	7007943	24 V AC/DC 2,5 W	None	1 or 2 contact(s) assembled, as well as 1 solenoid valve 3/2	
		7008045	Prismatic switch	7007944	48 V AC/DC 2,5 W			7707999
				7007948	220 V AC 2,5 VA	7010015		
				7810504	Pilot & Interface			
				7007952				

# DCX3 - DCX4 changeover valve signal back equipment

*The choice of signal back equipment depends on the functions to be performed.*

## Remarks regarding the standard signal back equipment

1 - On request, we can fit Ex microcontacts or Namur pneumatic switches in control units for explosive environments.

2 - Specific detection devices can be studied (lantern detection).

3 - The supply of a control unit includes the entry gland, wiring to the electric components terminal strip and the 4/6 or 6/8 (from DN 80) pneumatic hose from the unit to the actuator.

4 - Standard signal-back equipment can also be complemented by the following accessories:

- rapid air release
- stainless steel or semi-rigid wiring
- stainless steel air connection
- etc...

*Note: Detection switches not available for manual DCX3 DCX4 and manual small size changeover valves.*

## AS-i network

The AS-i network provides a reliable, cost-effective valve networking solution.

An AS-i module installed in each of the signal back units allows the control of all pneumatic functions

on DEFINOX valves (valve opening and closing, stroke of the plugs...) and read the information sent by the opening and closing sensors, via the AS-i network.

## Advantages of the AS-i network

- Open standard.
- Quick and easy to install and put into operation.
- Quick to wire up due to the use of "vampire" connectors and a non-shielded two-core cable.
- Free topology.
- Several AS-i masters available (PLC couplers or Profibus-DP, Device-Net, Interbus-S, WorldFip, Modbus, Modbus-Plus or other gateways).
- Max. 62 nodes on AS-i network distributed over 100 m of cable (300 m with repeaters).
- Cycle time : approx. 5ms for 31 nodes and 10 ms for 62 nodes.
- Transmission error control mechanisms.
- Extension possibilities.

