



MF100/230-SR and MF100/230-SR-E Actuator with emergency control function for valves from the RK/RB/RF/RGD/RWG/ RGDE series

Application

The actuators with emergency control function MF100/230-SR and MF100/230-SR-E with a positioning force of 1000 N are used for fine stroke adjustment of two-way and three-way valves of the types:

- RK15..50/65K(-BF)
- RB15..50(-BK)
- RF15..50/65K(-BF)
- RGD15..40
- RWG15..40
- RGDE25..50

This is controlled with one of the following signals:

- 3-point signal open/stop/closed energized
- 3-point signal open/stop/closed floating

The actuator has an emergency control function that, depending on the type of valve used, automatically closes or opens valves with spring force in the event of a power failure.

Emergency control function: Drive extended without current

The actuator MF100/230-SR-E additionally has an auxiliary switch module with two galvanically separated changers for the optional message of the valve positions open or closed.



Note

This document does not contain safety instructions.

You can find detailed information about handling the actuator in the operating instructions 3.10-40.115-90 "MF100/230-SR and MF100/230-SR-E actuator for valves from the RK/RB/RF/RGD/RWG/ RGDE series".

Technical Data

Nominal voltage	110..230 V AC $\pm 10\%$; 50/60 Hz
Dimensioning	29 VA (AC)
Switch-on current	max. 7 A, < 1 ms, < 0.049 A ² s
Power consumption	Sleep mode: 8 VA (AC)
	Nominal: 19 VA (AC)
Auxiliary switch	Auxiliary switch module only for MF100/230-SR-E 2 floating changeover contacts, contact load max. 3 A, 250 V AC
Cable cross section	min. 0.75 mm ²
Regulation	3-point signal (open/stop/closed); maximum switch-on time 0,35 s
Position feedback	Adjustable via DIP switch
	- Voltage signal DC 0(2) to 10 V; < 5 mA, invertible; approx. 12.5 V signal in case of malfunction - Current signal 0(4)..20 mA; Ri = 0.5 k Ω ; invertible; approx. 0 mA signal during fault



Product Data Sheet

MF100/230-SR and MF100/230-SR-E

Stroke	Max. 20 mm, automatic stroke adjustment though initialization
Actuating speed	Approx. 1 s/mm (factory setting) Approx. 9 s/mm
Emergency stop speed	Approx. 1 s/mm
Emergency control function	Actuator extending without current, by means of return spring
Positioning force	Nominal 1000 N
Ambient temperature	0..55 °C
Ambient humidity	0..95% r.h., non-condensing
Degree of protection	IP54
Protection class	I in accordance with EN 60730
Installation position	180°, anywhere from vertically above the valve to a horizontal position
Maintenance	Maintenance-free
Weight	MF100/230-SR: 2.80 kg, MF100/230-SR-E: 2.81 kg

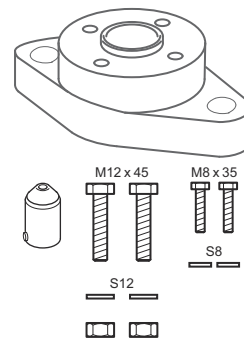
Accessories

Z189

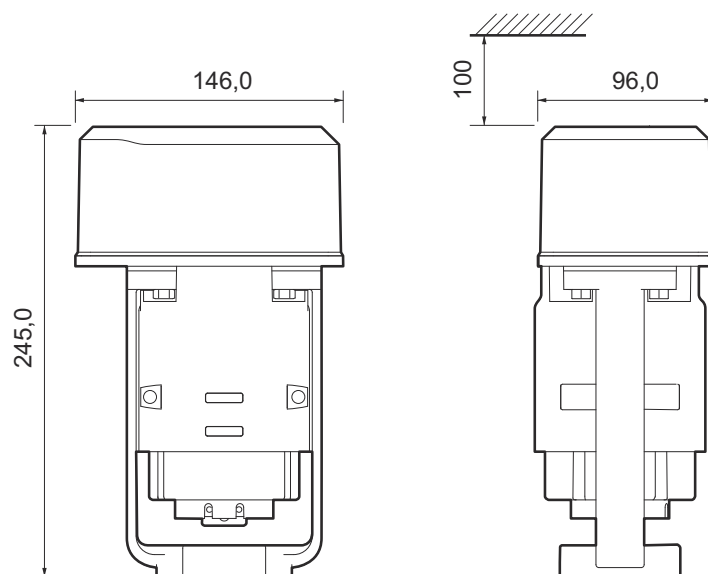
Mounting kit for RGDE. up to DN50

When valve/actuator combinations are delivered from the factory, the Z189 mounting kit is preassembled.

Mounting instructions 3.10-40.299-99 contains further information on the mounting (included with accessory Z189).



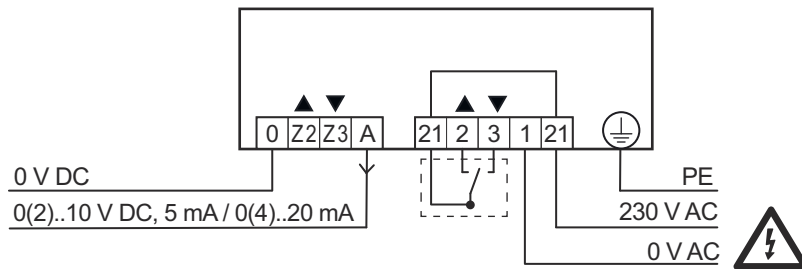
Dimensions



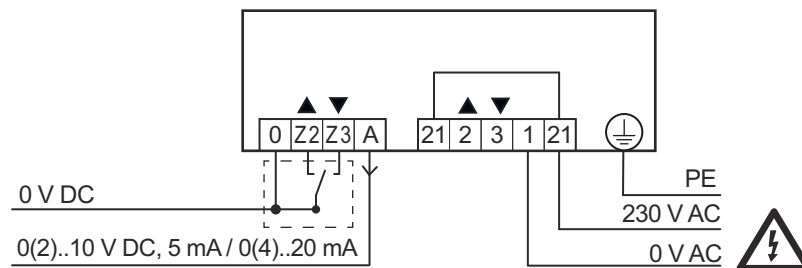


Connection

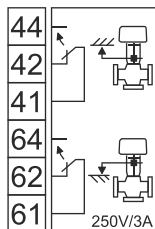
- 3-point signal open/stop/closed energized



- 3-point signal open/stop/closed floating



Connection of auxiliary switch only for MF100/230-SR-E





RK15..RK50/65K(-BF) three-way/two-way valve with actuator

Application

The gray cast iron three-way valves and two-way valves with actuator are used for the precise mixing of liquids or for regulating liquid volumes.

The valves can be used as two-way valves using the BF blank flange on gate B.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.

Types

Gray cast iron three-way valve RK15..50/RK65K for actuator MF100/230-SR or MF100/230-SR-E, for water up to 120°C; 6 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RK15/0,63	15	6	0.63	6	2.2	Port A: Open
RK15/1,0	15	6	1.0	6	2.2	Port A: Open
RK15/1,6	15	6	1.6	6	2.2	Port A: Open
RK15/2,5	15	6	2.5	6	2.2	Port A: Open
RK15	15	6	4.0	6	2.2	Port A: Open
RK20	20	6	6.3	6	3.0	Port A: Open
RK25	25	6	10	6	3.7	Port A: Open
RK32	32	6	16	6	5.6	Port A: Open
RK40	40	6	25	5.5	7.0	Port A: Open
RK50	50	6	40	3.5	8.4	Port A: Open
RK65K	65	6	63	1.5	14.7	Port A: Open



Gray cast iron three-way valve RK15..50-BK/RK65K-BF for actuator MF100/230-SR or MF100/230-SR-E, for water up to 120°C; 6 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RK15/0,63-BF	15	6	0.63	6	2.8	Valve: Open
RK15/1,0-BF	15	6	1.0	6	2.8	Valve: Open
RK15/1,6-BF	15	6	1.6	6	2.8	Valve: Open
RK15/2,5-BF	15	6	2.5	6	2.8	Valve: Open
RK15-BF	15	6	4.0	6	2.8	Valve: Open
RK20-BF	20	6	6.3	6	3.9	Valve: Open
RK25-BF	25	6	10	6	4.8	Valve: Open
RK32-BF	32	6	16	6	7.1	Valve: Open
RK40-BF	40	6	25	5.5	8.8	Valve: Open
RK50-BF	50	6	40	3.5	10.5	Valve: Open
RK65K-BF	65	6	63	1.5	17.9	Valve: Open

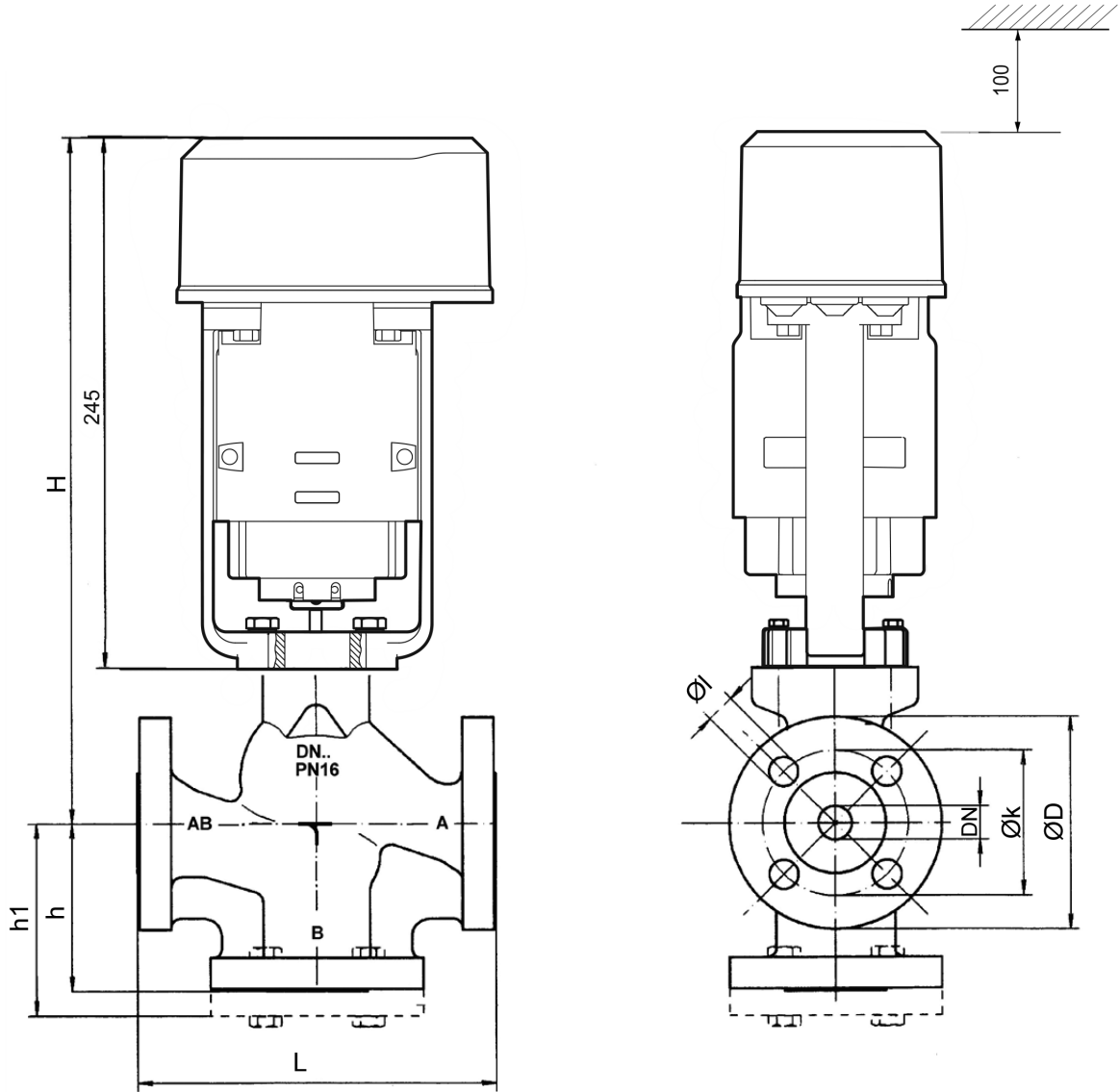


Technical Data: RK..(-BF) Valves

Nominal width	DN15..65	
Pressure rating	PN 6	
Connection	Flanges to EN 1092-2 type 21	
Characteristic curve	RK..	Ports A → AB = equal percentage Gates B → AB = linear
	RK..-BF	Ports A → AB = equal percentage
Positioning stroke	RK15..50(-BF): 14 mm RK65K(-BF): 20 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium	Water or max. 50% glycol-water mixtures (pH 6.5..10)	
Medium temperature	0..130 °C (max. 120 °C at 6 bar) up to -10 °C only with spindle heating	
Housing	Gray cast iron EN-JL1040	
Valve seat	CrNi steel 1.4021	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Stem seal	O-rings with guide bushes EPDM/PTFE, maintenance-free	



Dimensions



DN	L	Ø D	Ø k	Ø l	H	h	h1 (RK...BF)
15	130	80	55	4x Ø 18	287	65	79
20	150	90	65	4x Ø 18	292	70	84
25	160	100	75	4x Ø 18	297	75	91
32	180	120	90	4x Ø 18	300	95	111
40	200	130	100	4x Ø 18	303	100	116
50	230	140	110	4x Ø 18	303	100	118
65	290	160	160	4x Ø 18	352	120	144
Measurement L to h1 in mm							



RB15..50(-BK) three-way/two-way valve with actuator

Application

The red cast iron three-way valves and two-way valves with actuator are used for the precise mixing of liquids or for regulating liquid volumes.

The valves can be used as two-way valves using the BK blank cover on gate B.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.

Types

Gunmetal three-way valve RB15..50 with actuator MF100/230-SR or MF100/230-SR-E, for water up to 120°C; 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RB15/0,63	15	16	0.63	16	0.9	Port A: Open
RB15/1,0	15	16	1.0	16	0.9	Port A: Open
RB15/1,6	15	16	1.6	16	0.9	Port A: Open
RB15/2,5	15	16	2.5	16	0.9	Port A: Open
RB15	15	16	4.0	16	0.9	Port A: Open
RB20	20	16	6.3	16	1.4	Port A: Open
RB25	25	16	10	15	1.7	Port A: Open
RB32	32	16	16	9	3.4	Port A: Open
RB40	40	16	25	5.5	4.0	Port A: Open
RB50	50	16	40	3.5	5.6	Port A: Open



Gunmetal two-way valve RB15..50-BK for actuator MF100/320-SR2 or MF100/230-SR-E, for water up to 120°C; 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RB15/0,63-BK	15	16	0.63	16	0.9	Valve: Open
RB15/1,0-BK	15	16	1.0	16	0.9	Valve: Open
RB15/1,6-BK	15	16	1.6	16	0.9	Valve: Open
RB15/2,5-BK	15	16	2.5	16	0.9	Valve: Open
RB15-BK	15	16	4.0	16	0.9	Valve: Open
RB20-BK	20	16	6.3	16	1.4	Valve: Open
RB25-BK	25	16	10	15	1.7	Valve: Open
RB32-BK	32	16	16	9	3.4	Valve: Open
RB40-BK	40	16	25	5.5	4.0	Valve: Open
RB50-BK	50	16	40	3.5	5.6	Valve: Open

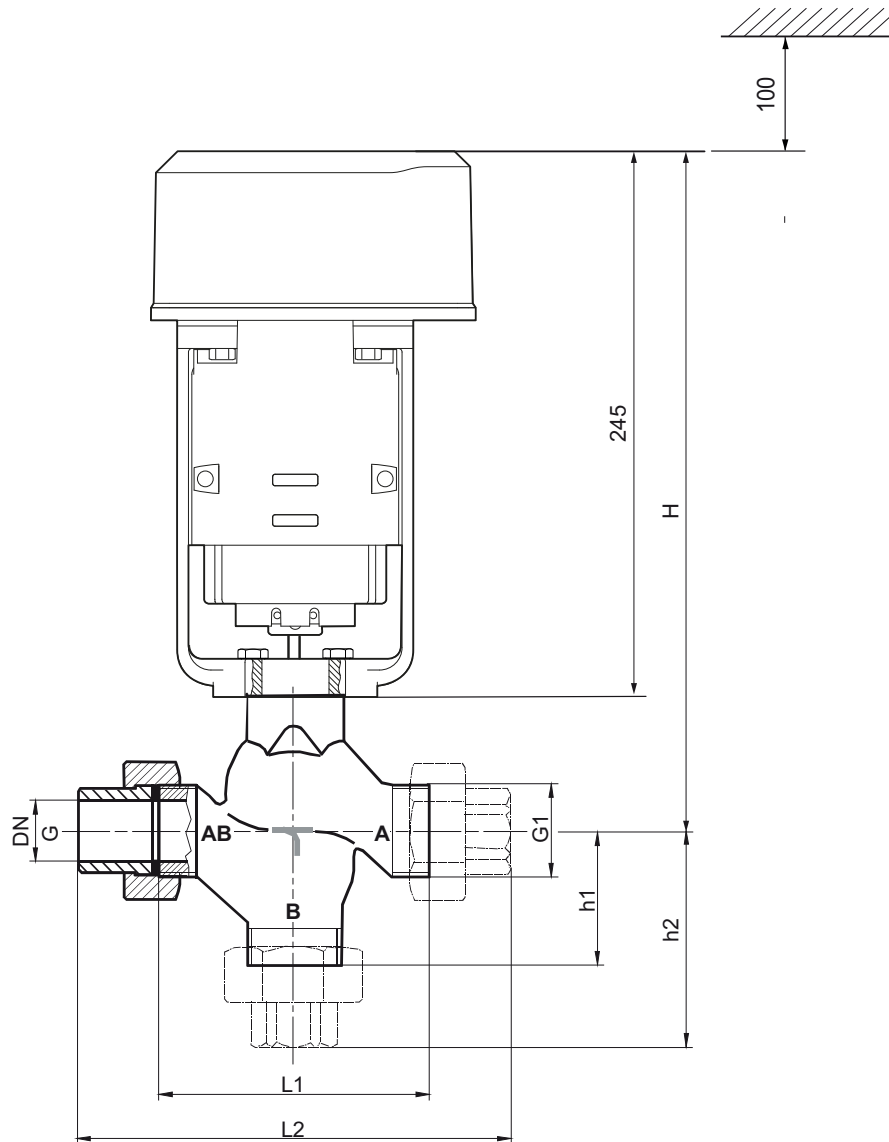


Technical Data: RB..(BK) Valves

Nominal width	DN15..50	
Pressure rating	PN 16	
Connection	Male thread in accordance with ISO 228/1, with female thread fittings in accordance with ISO 7/1	
Characteristic curve	RB..	Ports A → AB = equal percentage
		Gates B → AB = linear
	RB..-BF	Ports A → AB = equal percentage
Positioning stroke	RB15..20(-BK): 12 mm RB25..50(-BK): 14 mm	
Leak rate	EN 1349 - Seat leak VI G 1 (sealing)	
Medium	Water or max. 50% glycol-water mixtures (pH value 6.5..10)	
Medium temperature	0..150 °C (max. 120 °C at 16 bar) Horizontal drive position only permissible from 130 °C and above up to -10 °C only with spindle heating	
Housing	Gunmetal, Rg-5 / CC491K	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Stem seal	EPDM peroxide-cured O-rings, maintenance-free	
Pipe connections	Female thread fittings and Union nuts malleable cast iron GTW, blue chromated	
Blank cover for RB.-BK	Union nuts malleable cast iron GTW, blue chromated; Steel gasket	



Dimensions



Version RB .. -BK (two-way valve) with blank cover on gate B

DN	L1	L2	h1	h2	H	G	G1
15	62	114	40	66	282	1/2	1
20	75	127	41	67	285	3/4	1 1/4
25	80	138	45	74	288	1	1 1/2
32	120	184	55	89	297	1 1/4	2
40	130	198	60	94	300	1 1/2	2 1/4
50	150	222	65	101	300	2	2 3/4
Dimensions L1 to H in mm, connection threads G1 in inches							



RF15..50/65K(-BF) three-way/two-way valve with actuator

Application

The gray cast iron three-way valves and two-way valves with actuator are used for the precise mixing of liquids or for regulating liquid volumes.

The valves can be used as two-way valves using the BF blank cover on gate B.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.

Types

Gray cast iron three-way valve RF15..50/RF65K for MF100/230-SR or MF100/230-SR-E actuator for water up to 120°C; 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RF15/0,63	15	16	0.63	16	3.1	Port A: Open
RF15/1,0	15	16	1.0	16	3.1	Port A: Open
RF15/1.6	15	16	1.6	16	3.1	Port A: Open
RF15/2,5	15	16	2.5	16	3.1	Port A: Open
RF15	15	16	4.0	16	3.1	Port A: Open
RF20	20	16	6.3	16	4.0	Port A: Open
RF25	25	16	10	15	5.0	Port A: Open
RF32	32	16	16	9.5	7.6	Port A: Open
RF40	40	16	25	6	9.1	Port A: Open
RF50	50	16	40	3.5	11.6	Port A: Open
RF65K	65	16	63	2	19.1	Port A: Open



Gray cast iron two-way valve RF15..50-BF/RF65K-BF usable for actuator MF100/230-SR or MF100/230-SR-E, for water up to 120 °C, 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RF15/0,63-BF	15	16	0.63	16	4.1	Valve: Open
RF15/1,0-BF	15	16	1.0	16	4.1	Valve: Open
RF15/1,6-BF	15	16	1.6	16	4.1	Valve: Open
RF15/2,5-BF	15	16	2.5	16	4.1	Valve: Open
RF15-BF	15	16	4.0	16	4.1	Valve: Open
RF20-BF	20	16	6.3	16	5.3	Valve: Open
RF25-BF	25	16	10	15	6.6	Valve: Open
RF32-BF	32	16	16	9.5	10.0	Valve: Open
RF40-BF	40	16	25	6	11.8	Valve: Open
RF50-BF	50	16	40	3.5	13.3	Valve: Open
RF65K-BF	65	16	63	2	24.8	Valve: Open

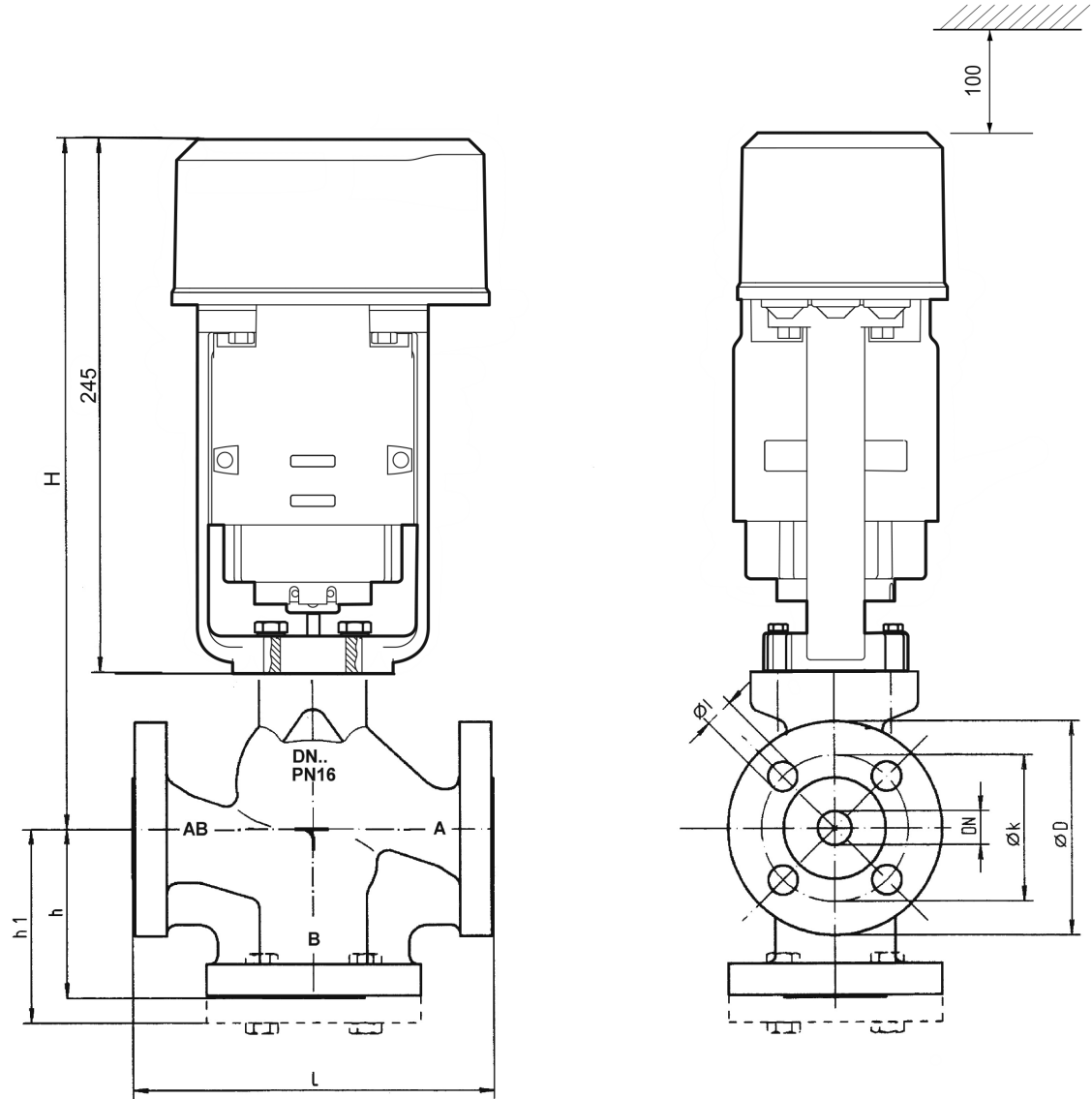


Technical Data: RF..(-BF) Valves

Nominal width	DN15..65	
Pressure rating	PN 16	
CE marking	CE symbol for RF65K	
Connection	Flanges EN 1092-2 type 21	
Characteristic curve	RF..	Ports A → AB = equal percentage Gates B → AB = linear
	RF..-BF	Ports A → AB = equal percentage
Positioning stroke	RF15..50(-BF): 14 mm RF65K(-BF): 20 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium	Water or max. 50% glycol-water mixtures (pH 6.5..10)	
Medium temperature	0..130 °C (max. 120 °C at 16 bar) up to -10 °C only with spindle heating	
Housing	Gray cast iron EN-JL1040	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Stem seal	O-rings EPDM, maintenance-free	



Dimensions



DN	L	Ø D	Ø k	Ø l	H	h	h1 (RF..-BF)
15	130	95	65	4x Ø 14	287	65	79
20	150	105	75	4x Ø 14	292	70	84
25	160	115	85	4x Ø 14	297	75	91
32	180	140	100	4x Ø 14	300	95	111
40	200	150	110	4x Ø 14	303	100	116
50	230	165	125	4x Ø 14	303	100	118
65	290	185	145	4x Ø 14	352	120	150
Measurement L to h1 in mm, flanges in accordance with DIN, PN16							



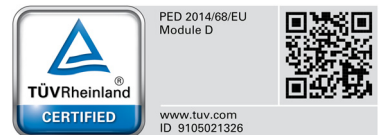
RGD15..40 two-way valve with actuator (TÜV certified)

Application

The MF100/230-SR(-E) spheroidal cast iron two-way valve with actuator is used for fine volume control of fluids and vapors and has an emergency control function that automatically closes the valve with spring force in the event of a power failure.

When valve-actuator combinations are delivered ex works, the product is certified in accordance with the Pressure Equipment Directive 2014/68/EU Category IV Module B (EU type examination, certificate no. 01 202 969/B-25-0006-01) and Module D (certificate no. 01 202 969/Q-25 0001.00).

The test was carried out by TÜV Rheinland Industrie Service (notified body for pressure equipment: 0035).



Types

RGD15..40 nodular iron two-way valve for actuator MF100/230-SR or MF100/230-SR-E, for water up to 120°C; 25 bar and hot water and vapor up to 200°C; 20 bar.

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RGD15/0,4	15	25	0.4	25	3.2	Valve: Closed
RGD15/0,63	15	25	0.63	25	3.2	Valve: Closed
RGD15/1,0	15	25	1.0	20.5	3.2	Valve: Closed
RGD15/1,6	15	25	1.6	20.5	3.2	Valve: Closed
RGD15/2,5	15	25	2.5	20.5	3.2	Valve: Closed
RGD15	15	25	4.0	20.5	3.2	Valve: Closed
RGD25/6,3	25	25	6.3	11.8	4.8	Valve: Closed
RGD25	25	25	10	11.8	4.8	Valve: Closed
RGD32	32	25	16	8.6	6.3	Valve: Closed
RGD40	40	25	25	4.4	8.7	Valve: Closed

Technical Data: RGD.. Valves

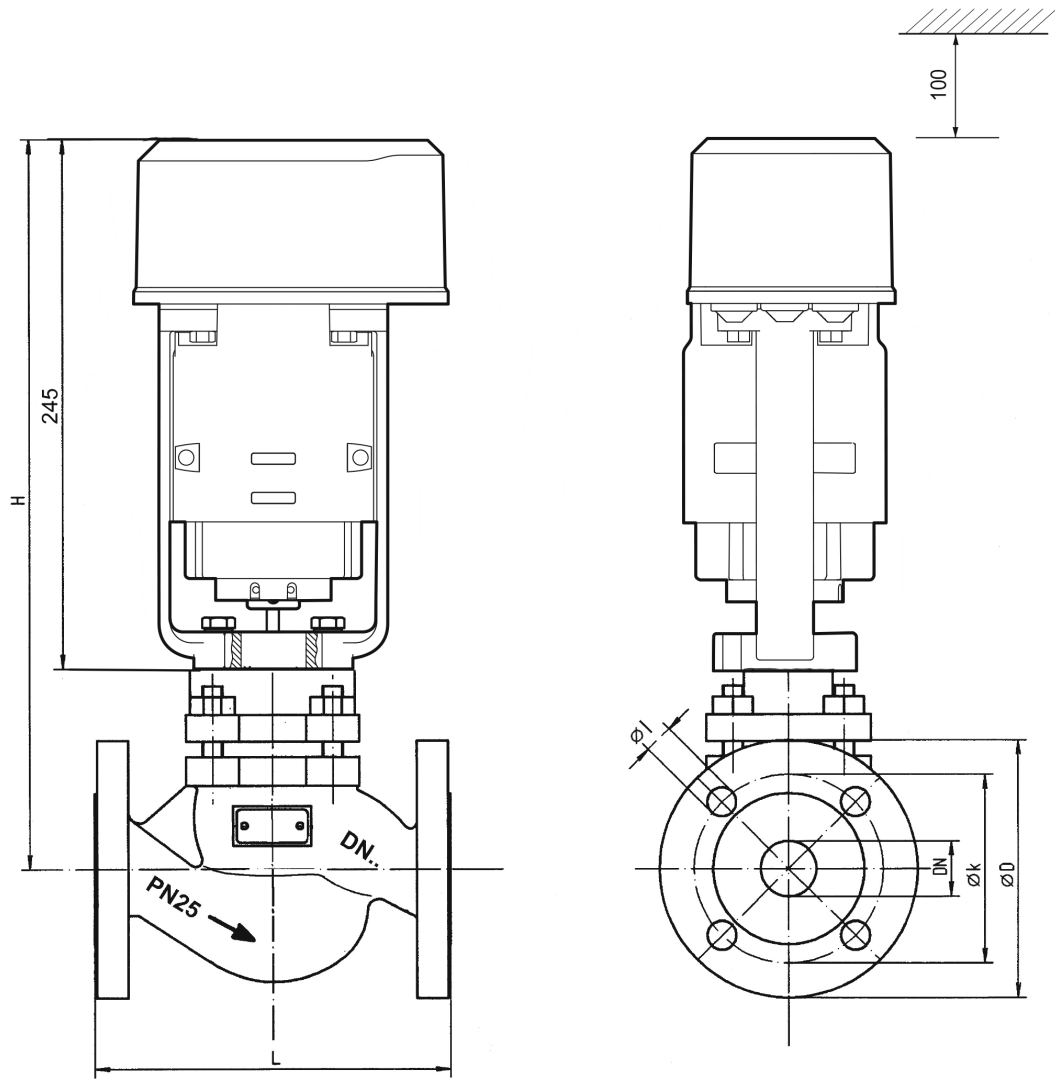
Nominal width	DN15..40
Pressure rating	PN 25
CE designation	CE marking from DN 32, notified body: 0525
Connection	Flanges DIN 2501-1, PN25, sealing strip form C DIN 2526
Characteristic curve	Equal percentage
Positioning stroke	15 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium	Water up to 120 °C; 25 bar max. 50% glycol/water mixtures (pH 6.5..10) up to 120 °C; 25 bar Hot water and steam up to 200 °C; 20 bar



Product Data Sheet
MF100/230-SR and MF100/230-SR-E

Medium temperature	0..200 °C up to -10 °C only with spindle heating	
Housing	Spheroidal cast iron GGG-40.3	
Valve seat	Stainless steel 1.4021	
Cone	DN15..32	Stainless steel 1.4571
	DN40	Stainless steel 1.4021
Valve spindle	Stainless steel 1.4571	
Stem seal	Chevron sleeves Univerdit with PTFE bushing, maintenance-free	

Dimensions



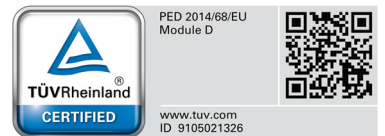
DN	L	Ø D	Ø K	Ø I	H
15	130	95	65	4xØ14	330
25	160	115	85	4xØ14	338
32	180	140	100	4xØ18	338
40	200	150	110	4xØ18	349
Measurement L to H in mm					



RWG15..40 three-way valves with actuator (TÜV certified)

Application

The MF100/230-SR(-E) spheroidal cast iron three-way valve with actuator is used for fine volume control of fluids and vapors and has an emergency control function that automatically closes valve gate B in the event of a power failure = straight passage A → AB, normally open. When valve-actuator combinations are delivered ex works, the product is certified in accordance with the Pressure Equipment Directive 2014/68/EU Category IV Module B (EU type examination, certificate no. 01 202 969/B-25-0006-01) and Module D (certificate no. 01 202 969/Q-25 0001.00). The test was carried out by TÜV Rheinland Industrie Service (notified body for pressure equipment: 0035).



Types

RWG15..40 nodular iron three-way valve for actuator MF100/230-SR or MF100/230-SR-E, for water up to 120°C; 25 bar and hot water and vapor up to 200°C; 20 bar.

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RWG15/1,0	15	25	1	20.5	5.1	Port A: Open
RWG15/1,6	15	25	1.6	20.5	5.1	Port A: Open
RWG15/2,5	15	25	2.5	20.5	5.1	Port A: Open
RWG15	15	25	4	20.5	5.1	Port A: Open
RWG25/6,3	25	25	6.3	11.8	7.1	Port A: Open
RWG25	25	25	10	11.8	7.1	Port A: Open
RWG32	32	25	16	8.6	9.7	Port A: Open
RWG40	40	25	25	4.4	13.0	Port A: Open

Technical Data: RWG.. Valves

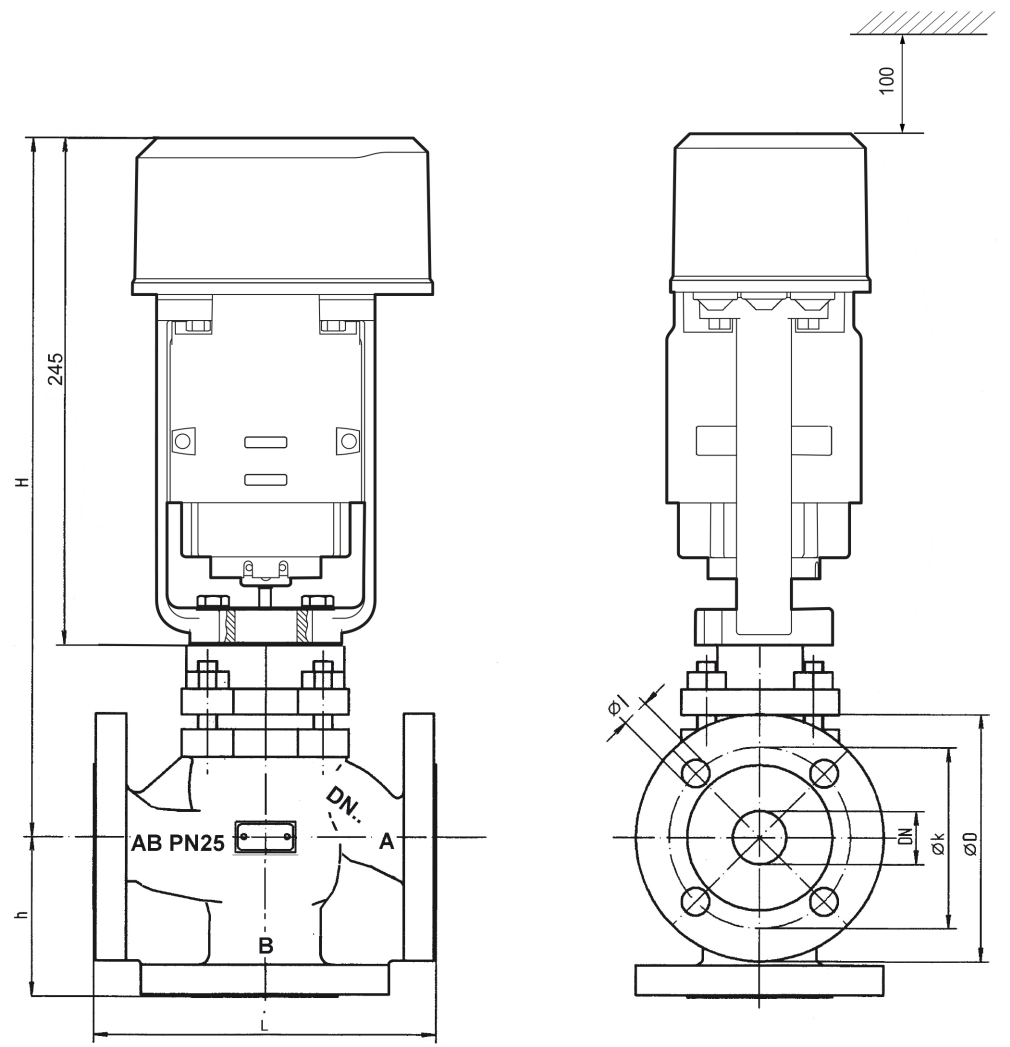
Nominal width	DN15..40	
Pressure rating	PN 25	
CE marking	CE marking from DN32, notified body: 0525	
Connection	Flange in accordance with DIN, PN25	
Characteristic curve	RWG..	Ports A → AB = equal percentage
		Gates B → AB = linear
Positioning stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium	Water up to 120 °C; 25 bar max. 50% glycol/water mixtures (pH 6.5..10) up to 120 °C; 25 bar Hot water and steam up to 200 °C; 20 bar	



Product Data Sheet
MF100/230-SR and MF100/230-SR-E

Medium temperature	0..200 °C As low as -10 °C only with spindle heating
Housing	Spheroidal cast iron GGG-40.3
Valve seat	Stainless steel 1.4021
Cone	DN15..32 CrNi steel 1.4571 DN40 CrNi steel 1.4021
Valve spindle	Stainless steel 1.4571
Stem seal	Chevron sleeves Univerdit with PTFE bushing (maintenance-free)

Dimensions



DN	L	Ø D	Ø k	Ø l	h	H
15	130	95	65	4 x Ø14	65	338
25	160	115	85	4 x Ø14	75	342
32	180	140	100	4 x Ø18	80	368
40	200	150	110	4 x Ø18	90	377.5
Measurement L to H in mm, flanges in accordance with DIN, PN25						



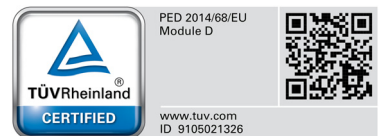
RGDE25..50 two-way valve with actuator (TÜV certified)

Application

The MF100/230-SR(-E) spheroidal cast iron two-way valve with actuator is used for fine volume control of fluids and vapors and has an emergency control function that automatically closes the valve with spring force in the event of a power failure.

When valve-actuator combinations are delivered ex works, the product is certified in accordance with the Pressure Equipment Directive 2014/68/EU Category IV Module B (EU type examination, certificate no. 01 202 969/B-25-0006-01) and Module D (certificate no. 01 202 969/Q-25 0001.00).

The test was carried out by TÜV Rheinland Industrie Service (notified body for pressure equipment: 0035).



Types

RGDE25..50 pressure-relief nodular iron two-way valve for actuator MF100-SR or MF100-SR-E, for water up to 120°C; 25 bar and hot water and vapor up to 200°C; 20 bar.

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RGDE25	25	25	10	20	7.0	Valve closed
RGDE32	32	25	16	20	9.0	Valve closed
RGDE40	40	25	25	20	12.0	Valve closed
RGDE50	50	25	40	16	15.0	Valve closed



NOTE

Z189 mounting kit required (see accessories page 2).

When valve/actuator combinations are delivered from the factory, the Z189 mounting kit is preassembled.

Technical data RGDE25..50 valves

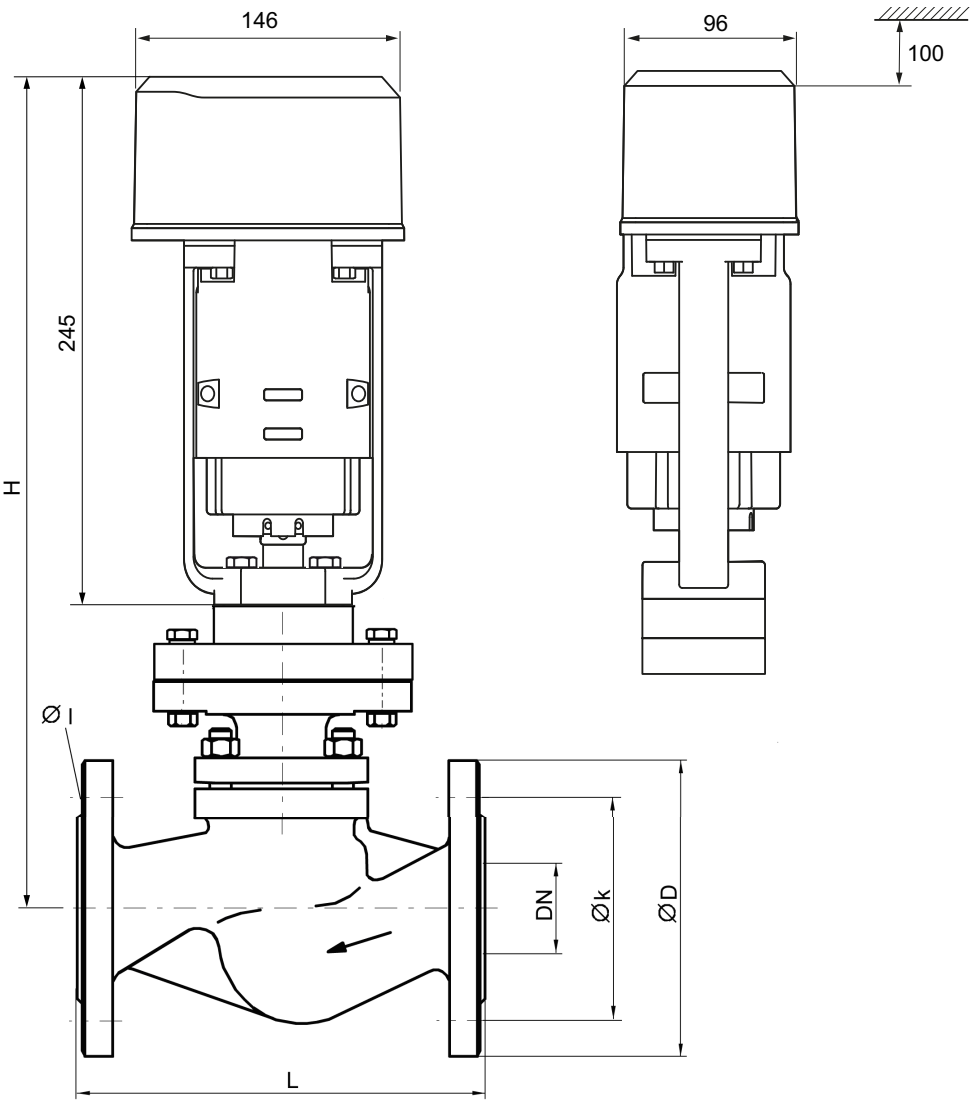
Nominal width	DN25..50
Pressure rating	PN 25
CE marking	CE marking, notified body 0525
Connection	Flanges DIN 2501-1, PN 25
Characteristic curve	Equal percentage
Positioning stroke	20 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium	Water up to 120 °C; 25 bar max. 50% glycol/water mixtures (pH 6.5..10) up to 120 °C; 25 bar Hot water and steam up to 200 °C; 20 bar



Product Data Sheet
MF100/230-SR and MF100/230-SR-E

Medium temperature	0..200 °C up to -10 °C only with spindle heating
Housing	Spheroidal cast iron GGG-40.3
Valve seat	CrNi steel 1.4021
Cone	CrNi steel 1.4021, metallic sealing, pressure relief cone seal made from PTFE with stainless steel insert (max. 200 °C)
Valve spindle	CrMo steel 1.4571
Stem seal	Chevron sleeves PTFE, maintenance-free

Dimensions



DN	L	Ø D	Ø k	Ø I	H
25	160	115	85	4x Ø 14	398.5
32	180	140	100	4x Ø 18	398.5
40	200	150	110	4x Ø 18	405.5
50	230	165	125	4x Ø 18	411.5
Measurement L to H in mm, flanges in accordance with DIN, PN 25					