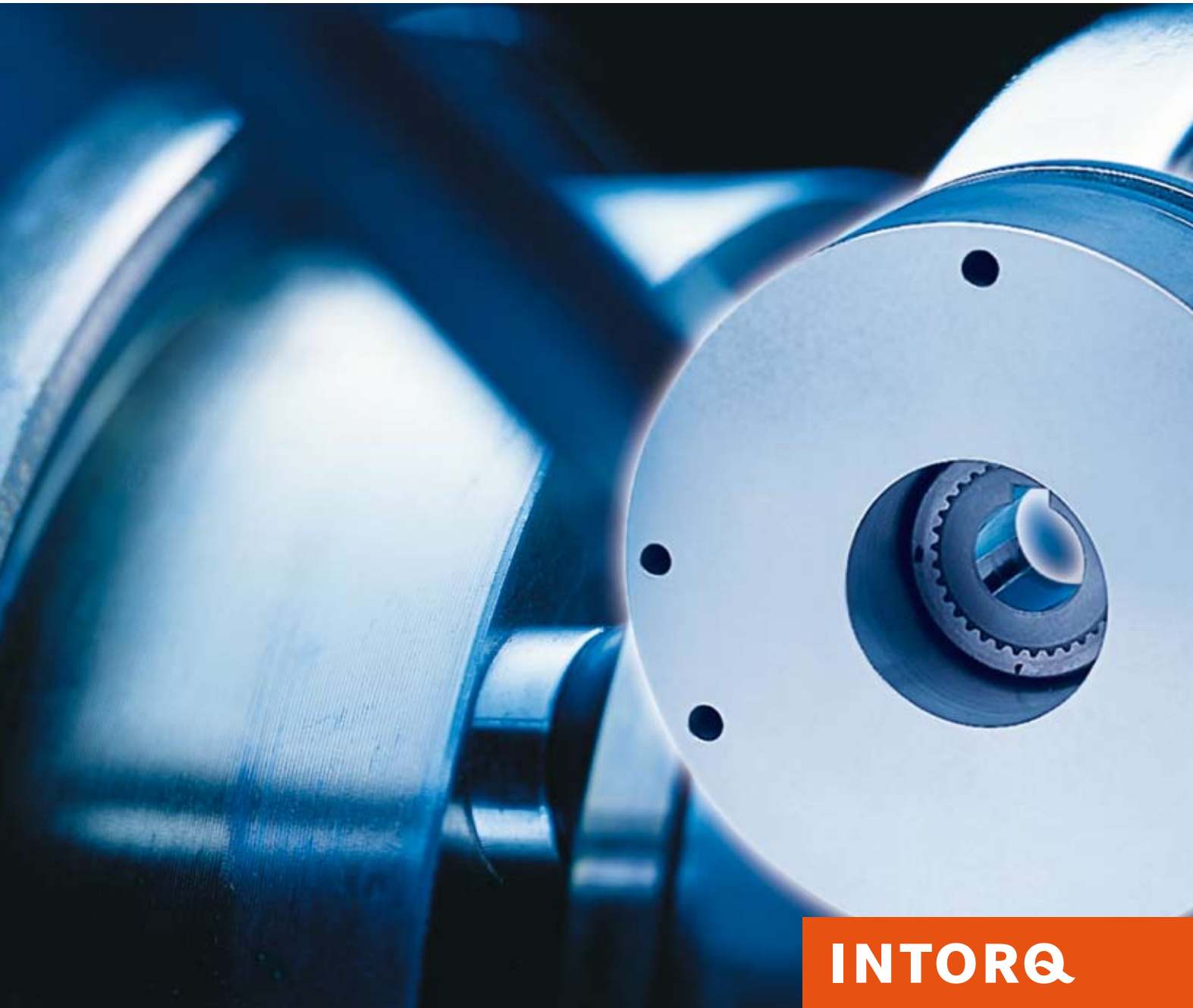


# Spring-applied brake **INTORQ BFK457**

Also available in a low-noise design < 50 dbA  
0,12 - 125 Nm



**INTORQ**

setting the standard

[www.intorq.de](http://www.intorq.de)



## Compact and easily fitted BFK457

Often, the brake is only required to perform its basic function. The BFK457 is ideal for these situations. The speed of fitting with integral fixing screws and fixed air gap make this spring-applied brake even more attractive.

Thanks to the quality standards which we apply to research and development, production and assembly, the INTORQ BFK457 spring-applied brakes meet the highest demands. These electromagnetically released spring-applied brakes can be used wherever rapid deceleration of moving masses or controlled holding of masses is required.

Since the braking force comes from pressure springs, the braking torque, which is generated by friction, is available when no current is applied – even in the event of a mains failure. The brake is released electromagnetically.

### Applications

- General engineering
- Engine construction
- Vehicles for the disabled
- Automation technology
- Sport and recreation
- Rotary indexing technology
- Industrial trucks
- Hoists
- Materials handling technology
- Wood working machines

**Sizes 01/02/03/04/05**

- Braking torques: 0.12–4 Nm (5 sizes)
- Compact design: Fully assembled with rotor and flange
- Can be mounted on both sides
- Manual release available as an option



*Compact, sizes 01 and 02*



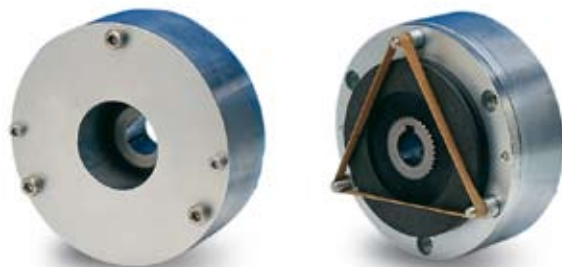
*Compact, sizes 03, 04, 05*

**Sizes 06/08/10/12/14/16**

- Braking torques: 4–125 Nm (6 sizes)
- Emergency manual release
- Designs:
  - Compact: Fully assembled with rotor and flange
  - Basic: Stator complete with rotor
- Manual release available as an option



*Compact*



*Basic*

**Additional features for all sizes**

- Standard voltages DC 24 V and 205 V (other voltages on request)
- Temperature class F (155°C)
- Compact design with flange – for small overall dimensions
- Easy assembly by means of integrated fixing screws
- No fixed bearing is required on the brake

**General Information**

INTORQ brakes are designed so that the stated rated torques are reliably attained after a short run-in operation. Given the fluctuating properties of the organic friction linings used and changing environmental conditions, there may however be deviations from the stated braking torques. Appropriate safety factors in the design must take this into account.

An increased breakaway torque may in particular be experienced in damp conditions and with changing temperatures after long downtimes.

The braking torque should be checked when using the brake on the customer's friction surfaces. If the brake is being used solely as a holding brake without any dynamic load, the friction lining must be reactivated regularly.



*Manual release available as an option*

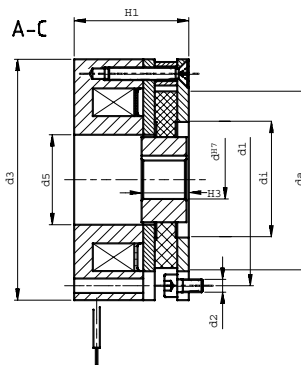
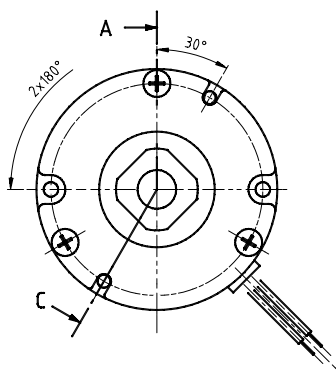


*Also available in a low-noise design < 50 dB(A) (optional)*

# Spring-applied brake BFK457-01-...-05

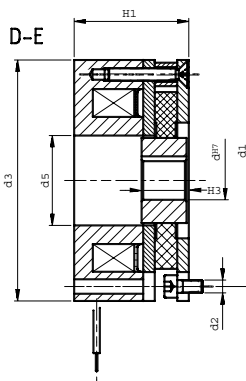
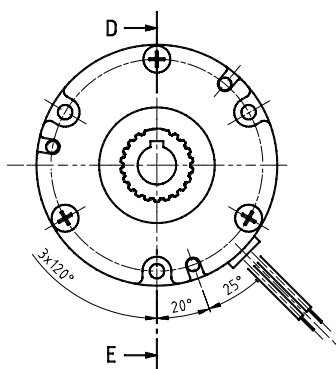


Sizes 01 and 02



Installation, flange side

Sizes 03 to 05



Size	$M_K$	$M_{Kmax}$	$P_{20^\circ}$	$d^{H7}$	$d_3$	$H_1$	$d_1$	$d_2$	$d_5$	$d_4$	$d_i$	$H_3$	$S_{ü}^2$	$S_{ü \text{ max at } M_K}$	$S_{ü \text{ max at } M_{Kmax}}$	$m$
01	0.12	0.24	5	6 <sup>1</sup>	37	31.3	32	2xM2.5	13.5	25	18	9	$0.1^{+0.1}_{-0.05}$	0.35	0.23	0.2
02	0.25	0.5	6.6	7 <sup>1</sup>	47	31	40	2xM3	16	32	21	12	$0.15^{±0.1}$	0.35	0.23	0.25
03	0.5	1.0	9	6/7/9	56	31.8	48	3xM3	19	38.5	30	15	$0.15^{±0.1}$	0.4	0.3	0.4
04	1	2.0	11.5	7/8/10	65	33.8	58	3xM3	24	47.5	35	15	$0.15^{±0.1}$	0.4	0.3	0.55
05	2	4.0	13	8/10/11/12	75	35.9	66	3xM4	28	55	40	15	$0.15^{±0.1}$	0.4	0.3	0.8

<sup>1</sup> Without keyway

<sup>2</sup> Minimum air gap, the actual value is determined by the sum tolerances of the individual components

Size	$M_K$ [Nm]	Max. speed $\Delta n_{o \text{ max}}$ [rpm]	Max. permissible switching energy per operation $Q_E$ [J]	Transition operating frequency $S_{Hü}$ [h <sup>-1</sup> ]	Operating times [ms] with standard rated torque and $S_{Lü r}$ DC switching				Moment of inertia of rotor [kgcm <sup>2</sup> ]
					$t_{11}$	$t_{12}$	$t_1$	Release $t_2$	
01	0.12	5000	200	160	2	9	11	17	0.00254
02	0.25	5000	400	125	3	5	8	17	0.01
03	0.5	5000	800	100	5	7.5	12.5	18	0.021
04	1	5000	1200	90	9	9	18	23	0.058
05	2	5000	1800	80	10	16	26	35	0.105

■ Voltages: 24 V, 205 V, (103 V)

■  $M_K$ : Rated torque of the brake in Nm, based on  $\Delta n = 100$  rpm

■ **Caution!**: The braking torque depends on the speed

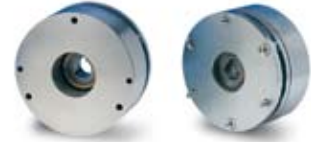
■  $P_{20}$ : Coil power at 20 °C in W

■ Standard keyway according to DIN 6885/1-P9

■ Length of connecting cable: 400 mm

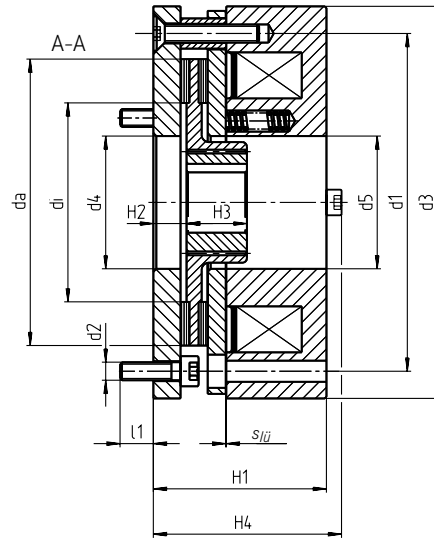
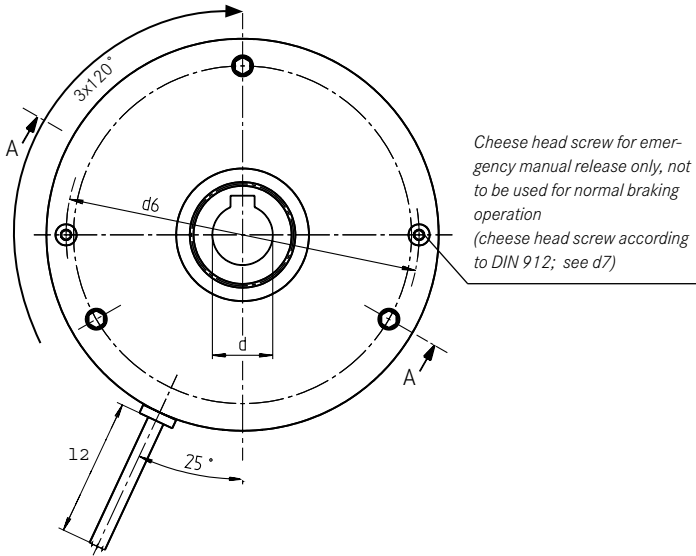
■ All dimensions in mm

■ Subject to alternations



# Spring-applied brake BFK457-06-...-16

Compact design, fully assembled with rotor and flange



Size	M <sub>K</sub>	M <sub>K</sub> max.	P <sub>20</sub>	d17 pilot.	dH7 standard	d1	d2	d3	d4	d5	d6	d7	da	di	H1	H2	H3	H4	l1*	l2	S <sub>lü</sub> ± 0.1	S <sub>lü</sub> max at M <sub>K</sub>	S <sub>lü</sub> max at M <sub>K</sub> max.	m (kg)
06	4	6	20	10	11/12/14/15	72	3xM4	84	31	31	77	M4x30	60	40	41.3	7.5	18	45.3	6	400	0.2	0.6	0.4	1.1
08	8	12	25	10	11/12/14/15/20	90	3xM5	102	42	41.5	93.5	M5x35	77	47	49.8	8.5	20	54.8	9	400	0.2	0.6	0.45	1.9
10	16	23	30	10	15/20	112	3xM6	130	44	44	117	M5x40	95	66	56.4	10	20	61.4	12	400	0.3	0.7	0.5	3.8
12	32	46	40	14	20/25	132	3XM6	150	52	52	136.3	M5x45	115	70	62.4	10	25	67.4	12	400	0.3	0.8	0.5	5.7
14	60	95	50	14	20/25/30	145	3XM8	165	55	60	150	M6x55	124	80	77.3	13	30	83.3	14	400	0.3	0.8	0.5	8.6
16	80	125	55	15	25/30/35/38	170	3xM8	190	70	70	174.5	M6x60	149	104	83.5	13.3	30	89.5	14	600	0.3	0.9	0.6	12.0

Size	M <sub>K</sub> [Nm]	Max. speed Δn <sub>o</sub> max [rpm]	Max. permissible switching energy per operation Q <sub>E</sub> [J]	Transition operating frequency S <sub>hü</sub> [h <sup>-1</sup> ]	Operating times [ms] with standard rated torque and S <sub>lü r</sub> DC switching				Moment of inertia of rotor [kgcm <sup>2</sup> ]
					t <sub>11</sub>	t <sub>12</sub>	t <sub>1</sub>	Release t <sub>2</sub>	
06	4	6000	3000	79	29	19	48	37	0.13
08	8	5000	7500	50	60	35	95	42	0.45
10	16	4000	12000	40	35	60	95	100	2.00
12	32	3600	24000	30	45	53	98	135	4.50
14	60	3600	30000	28	50	57	107	240	6.30
16	80	3600	36000	27	71	50	121	275	15.00

Standard voltages for:

- Sizes 06-12: 24 V; 205 V
- Sizes 14-16: 24 V; 42 V; 205 V

M<sub>K</sub>: Rated torque of the brake in based on Δn = 100 rpm

Caution! The braking torque depends on the speed, refer to the Operating Instructions.

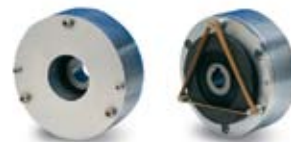
P<sub>20</sub>: Coil power at 20 °C in W, deviation up to ± 10% is possible, depending on the selected supply voltage

\* Please contact the manufacturer if a different mounting surface made from steel is used.

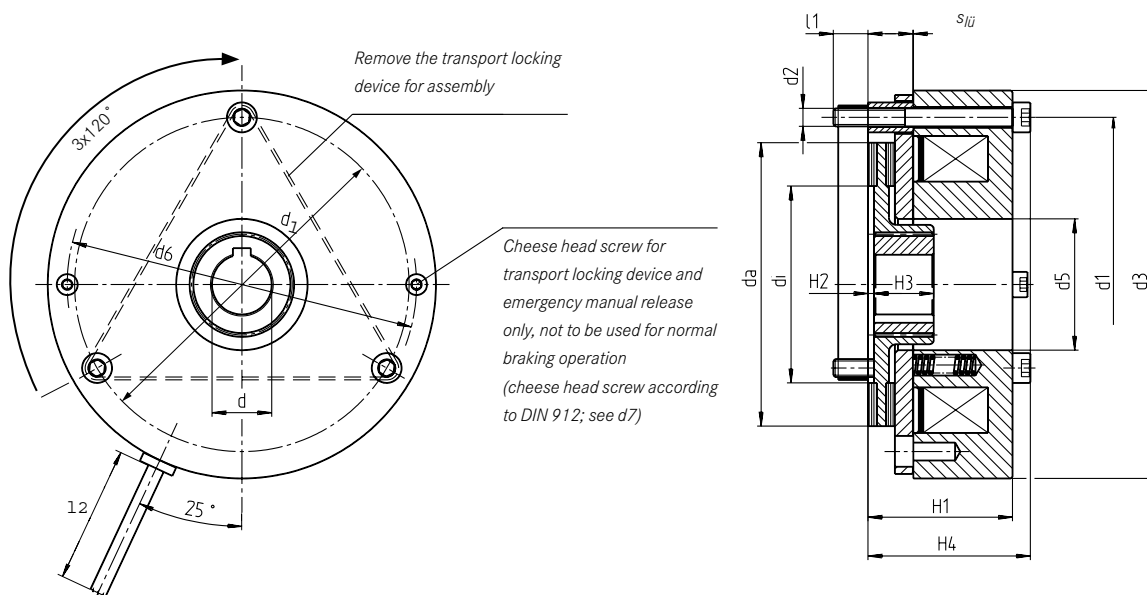
Standard keyway according to DIN 6885/1-P9

All dimensions in mm

# Spring-applied brake BFK457-06-...-16



## Basic design: Stator complete with rotor



Size	M <sub>K</sub>	M <sub>K</sub> max.	P <sub>20</sub>	d <sup>J</sup> pilot	d <sup>H7</sup> standard	d1	d2	d3	d5	d6	d7	d <sub>a</sub>	d <sub>i</sub>	H1	H2	H3	H4	l1*	l2	S <sub>iū</sub> ± 0.1	S <sub>iū</sub> max at M <sub>K</sub>	S <sub>iū</sub> max at M <sub>K</sub> max	m (kg)
06	4	6	20	10	11/12/14/15	72	3xM4	84	31	77	M4x30	60	40	35.3	1	18	39.3	9.7	400	0.2	0.6	0.4	0.9
08	8	12	25	10	11/12/14/15/20	90	3xM5	102	41.5	93.5	M5x35	77	47	42.8	1.5	20	47.8	12.2	400	0.2	0.6	0.45	1.5
10	16	23	30	10	15/20	112	3xM6	130	44	117	M5x40	95	66	48.4	2	20	54.4	11.5	400	0.3	0.7	0.5	3.0
12	32	46	40	14	20/25	132	3xM6	150	52	136,3	M5x45	115	70	54.4	2	25	60.4	11	400	0.3	0.8	0.5	4.7
14	60	95	50	14	20/25/30	145	3xM8	165	60	150	M6x55	124	80	66.3	2	30	74.3	14	400	0.3	0.8	0.5	7.1
16	80	125	55	15	25/30/35/38	170	3xM8	190	70	174.5	M6x60	149	104	72.5	2.25	30	80.5	12.5	600	0.3	0.9	0.6	10.0

Size	M <sub>K</sub>	Max. speed Δn <sub>o</sub> max	Max. permissible switching per operation Q <sub>E</sub>	Transition operating frequency S <sub>hū</sub>	Operating times [ms] with standard rated torque and S <sub>Lū r</sub> DC switching				Moment of inertia of rotor [kgcm <sup>2</sup> ]
	[Nm]	[rpm]	[J]	[h <sup>-1</sup> ]	t <sub>11</sub>	t <sub>12</sub>	t <sub>1</sub>	Release t <sub>2</sub>	
06	4	6000	3000	79	29	19	48	37	0.13
08	8	5000	7500	50	60	35	95	42	0.45
10	16	4000	12000	40	35	60	95	100	2.00
12	32	3600	24000	30	45	53	98	135	4.50
14	60	3600	30000	28	50	57	107	240	6.30
16	80	3600	36000	27	71	50	121	275	15.00

- Standard voltages for:
  - Sizes 06-12: 24 V; 205 V
  - Sizes 14-16: 24 V; 42 V; 205 V

M<sub>K</sub>: Rated torque of brake in Nm based on Δn = 100 rpm

Caution! The braking torque depends on the speed, refer to the Operating Instructions.

P<sub>20</sub>: Coil power at 20 °C in W, deviation up to ± 10% is possible, depending on the selected supply voltage

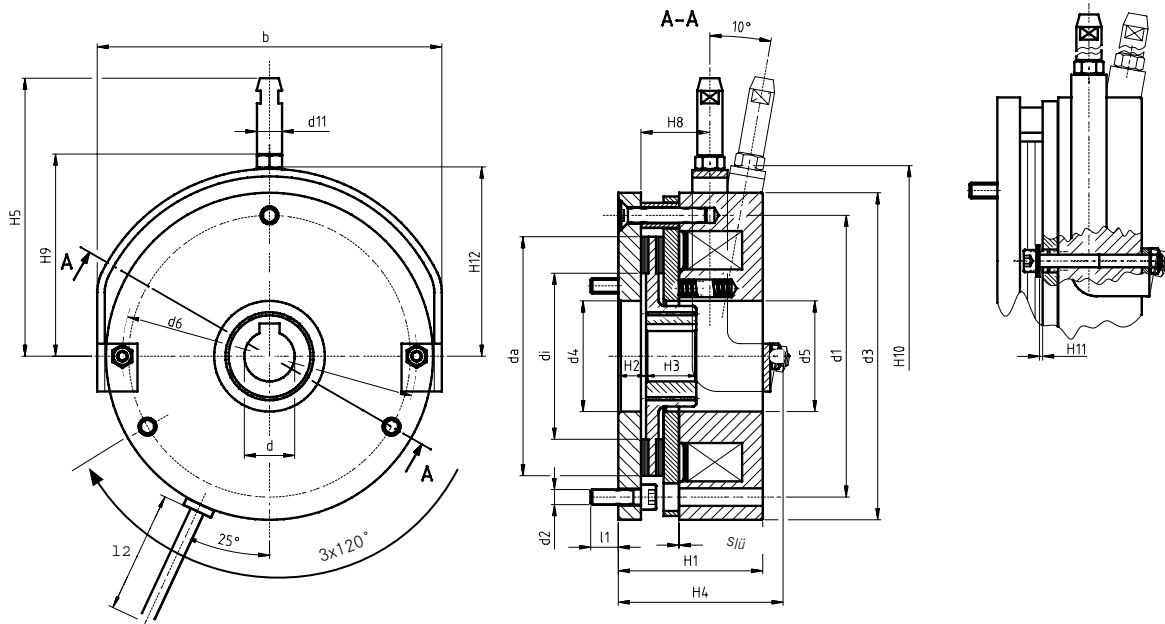
- \* Please contact the manufacturer if a different mounting surface made from steel is used
- Standard keyway according to DIN 6885/1-P9
- All dimensions in mm

# Spring-applied brake BFK457-06-...-16



INTORQ

Basic and compact design with assembled manual release



Size	M <sub>K</sub>	M <sub>K</sub> max.	P <sub>20°</sub>	b	d <sub>I7</sub> pilot	d <sup>H7</sup> standard	d <sup>H7</sup> max.	d1	d2	d3	d4	d5	d6	d7	d11	da	di	H1	H2
06	4	6	20	90	10	11/12/14/15	15	72	3xM4	84	31	31	77	M4x30	8	60	40	41.3	7.5
08	8	12	25	108	10	11/12/14/15/20	20	90	3xM5	102	42	41.5	93.5	M5x35	8	77	47	49.8	8.5
10	16	23	30	137	10	15/20	20	112	3xM6	130	44	44	117	M5x40	10	95	66	56.4	10
12	32	46	40	157	14	20/25	25	132	3xM6	150	52	52	136.3	M5x45	10	115	70	62.4	10
14	60	95	50	174	14	20/25/30	30	145	3xM8	165	55	60	150	M6x55	12	124	80	77.3	13
16	80	125	55	203	15	25/30/35/38	38	170	3xM8	190	70	70	174.5	M6x60	12	149	104	83.5	13.3

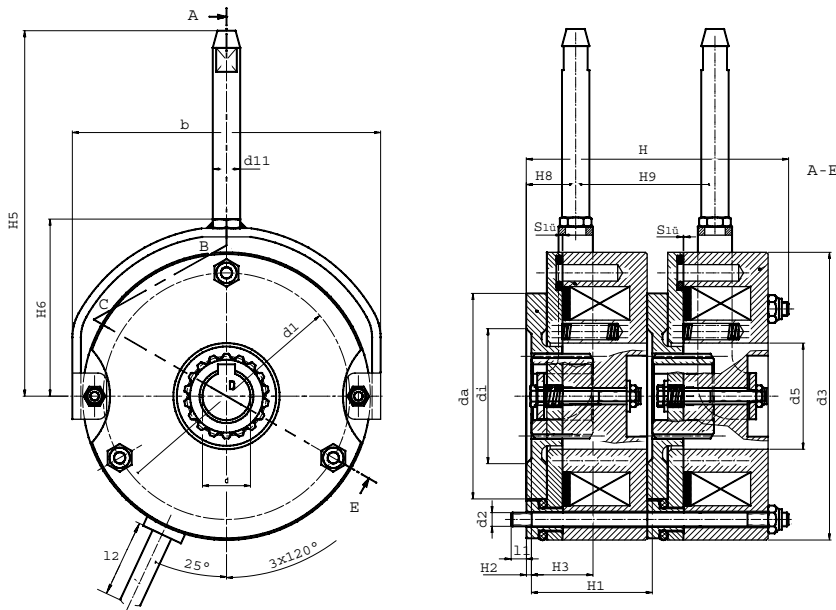
Size	M <sub>K</sub>	M <sub>K</sub> max.	H3	H4	H5	H6	H8	H9	H10	H11	H12	l1*	l2	S <sub>lū</sub> ± 0.1	S <sub>lū</sub> max at M <sub>K</sub>	S <sub>lū</sub> max at M <sub>K</sub> max	m (kg)
06	4	6	18	45.3	107	15.8	15.8	53	52.4	1	49	6	400	0.2	0.6	0.4	1.1
08	8	12	20	54.8	118	16.3	16.3	64	64	1	59	9	400	0.2	0.6	0.45	1.9
10	16	23	20	61.4	142	27.4	27.4	79	77.3	1	74	12	400	0.3	0.7	0.5	3.8
12	32	46	25	67.4	162	29.4	29.4	89	88.3	1	84	12	400	0.3	0.8	0.5	5.7
14	60	95	30	83.3	201	33	33	100	99.7	1	94	14	400	0.3	0.8	0.5	8.6
16	80	125	30	89.5	250	37.4	37.5	116	114.8	1	108	14	600	0.3	0.9	0.6	12.0

\* Please contact the manufacturer if a different mounting surface made of steel is used.



# Double spring-applied brake BFK457-06-...-16

Low-noise design <50-dbA



Size	M <sub>K</sub>	P <sub>20°</sub>	b	d <sub>J7</sub> pilot	d <sup>H7</sup> standard	d <sup>H7</sup> max.	d1	d2	d3	d5	d11	da	di	H	H1
06	2x4	20	90	10	11/12/14/15	15	72	3xM4	84	31	8	60	40	75.5	35.3
08	2x8	25	108	10	11/12/14/15/20	20	90	3xM5	102	41.5	8	77	47	90.5	42.8
10	2x16	30	137	10	15/20	20	112	3xM6	130	44	10	95	66	102.9	48.4
12	2x32	40	157	14	20/25	25	132	3xM6	150	52	10	115	70	114.7	54.4
14	2x60	50	174	14	20/25/30	30	145	3xM8	165	60	12	124	80	140.5	66.3
16	2x80	55	203	15	25/30/35/38	38	170	3xM8	190	70	12	149	104	153.1	72.5

Size	M <sub>K</sub>	H2	H3	H5	H6	H8	H9	l1*	l2	S <sub>air</sub> ± 0.1	S <sub>air max</sub> at M <sub>K</sub>	m (kg)
06	2x4	1	18	109	54	13	44	6	400	0.2	0.5	1.9
08	2x8	1.5	20	121.7	62	12.7	63.3	9	400	0.2	0.5	3.2
10	2x16	2	20	147	84	16	70	11	400	0.3	0.5	6.4
12	2x32	2	25	166	93	18.3	78.4	11	400	0.3	0.75	9.8
14	2x60	2	30	186	106	22	91.5	14	400	0.3	0.75	14.8
16	2x80	2.25	30	230	120.5	24.5	100	14	600	0.3	0.75	21.0

\* Please contact the manufacturer if a different mounting surface made of steel is used.

## Features

- Basic design without flange
- Noise-reduced armature plate
- Noise-reduced aluminium rotor
- Easy to assemble thanks to integrated fixing screws for direct mounting
- The brake is delivered in parts

# Model overview

## BFK457 spring-applied brake with accessories

**Size**                    ■ 01    ■ 02    ■ 03    ■ 04    ■ 05

■ **Compact:** Fully assembled with rotor and flange

■ 06    ■ 08    ■ 10    ■ 12    ■ 14    ■ 16

■ **Basic:** Stator with rotor

■ **Compact:** Fully assembled with rotor and flange

■ **Noise-reduced:** 2-x Basic in low-noise design

**Voltage**                ■ 24 V   ■ 205 V   ■ 42 V (sizes 14 and 16) (other voltages on request)

**Braking torque**

	01	02	03	04	05	06	08	10	12	14	16
■	0.12	0.25	0.5	1	2	4	8	16	32	60	80
■	0.24	0.5	1.0	2.0	4.0	6	12	23	46	90	125

**Manual release**     ■ Assembled

**Hub**                    ■ Bore diameter in mm (see technical data, tables)





## **INTORQ – Sales and Service around the world**

**INTORQ customers can reach us at any time and from anywhere in the world. Our Key Account Sales Team looks after key account customers and project business.**

In addition, we co-operate with Lenze's global sales organisation. You can contact us via Lenze Service by calling the 24-hour helpline (008000 24 46177).

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# **INTORQ**

setting the standard

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