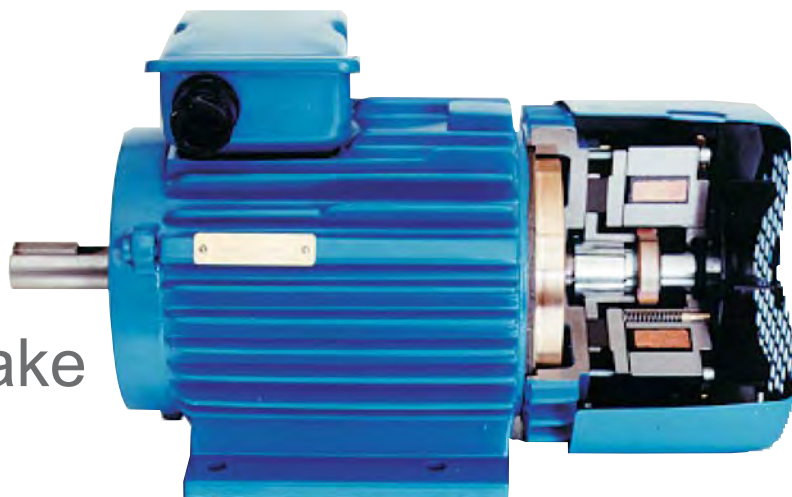


Service Instructions

BZFM

Electromagnetic- Double - Face Spring - Applied Brake



These operating instructions are intended to enable the user to operate the Stromag Dessau product safely and effectively, to use it sensibly and to maintain it properly so as to exclude the possibility of any damage or incorrect operation.

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1. General hints how to operate the brake

1.1. Conditions of application

Protection class up to IP 54 in accordance with DIN 40050 (VDE 0470)

Electrical design of brakes in accordance with DIN 0580 in insulation class F. The brake corresponds to Directive 93/68/EEC (Low Voltage Directive).

Acceptance certificates are deposited with Germanischer Lloyd.

In relation to the available mains A.C. voltage, the EMC as per directive 89/336 EEC can be assured by the user provided that a rectifier module produced by Stromag Dessau GmbH is fitted:

- Type EGV 500 (single-way rectifier) assembly into the motor terminal box
- Type BG 270 (bridge rectifier) assembly into the motor terminal box.

The products are marked accordingly.

Mode of operation: S1,S4.

Horizontal installation. Vertical operation after consultation with manufacturer.

With the friction pairing steel/ organic friction lining the brake may only be used for dry running under the conditions described in chapter 6..

In addition, compliance with the assembly, dismantling, commissioning and installation conditions specified by the manufacturer must be ensured.

Non-compliance with these conditions or any use beyond this shall be deemed use not in accordance with the specification.

The manufacturer shall not be liable for any such use, the risk shall be exclusively born by the user.

If the brake is to be used outside this contractual scope of operation, contact Stromag Dessau GmbH for further details (address see chapter 8.3).

1.2. Safety guidelines

1.2.1. Safety symbol



This symbol precedes all safety guidelines in these operating instructions where a danger to life and limb is involved. Make sure to comply with these guidelines and ensure particular caution. Pass on the safety guidelines to any other users.

1.2.2. The "Caution" instruction

The "CAUTION" note will be found in connection with all industrial safety hints which must be complied with in order to ensure observation of the guidelines, regulations, suggestions and the proper performance of work, as well as in order to prevent damage to or destruction of the brake.

1.2.3. Safety during operation

Make sure to pay special attention to the following safety hints:

The brake is state-of-the-art design and operationally safe. Danger may be caused, however, by improper operation by unskilled and inadequately trained personnel. **Each person** in the user's factory dealing with the **assembly, dismantly, installation or re-installation, commissioning, operation and upkeep** (inspection, maintenance, repair) **of the brake, must be authorized, properly trained and instructed.** He/she must have read and understood the complete operating instructions and in particular the safety guidelines.

We shall not be liable for any damage or fault caused by non-compliance with the operating instructions.

Make sure not to operate the brake in such a way that its safety might be impeded.

In case the user carries out any modifications which might impede the safety of the brake, he/she shall immediately notify the supplier of such modification (see chapter 8.3.).

The user is obliged to check the faultless condition of the brake before using it.

The user shall not carry out any conversions or changes which could impede the safety of the brake, nor shall he/she use any components or accessories from other manufacturers.

After electrical installation or repair work, test the protective measures applied (such as grounding resistor).

Caution!

The user shall always ensure compliance with the local safety and accident prevention rules during operation.

This brake is subject to technical modifications serving to improve the function and operation of the brake.

We recommend to include these instructions in the operating instructions of the user (machine manufacturer).

1.3. Transportation

1.3.1. Packaging

Packaging will depend on the transportation route and the transport mode. Always ensure compliance with any symbols attached.

1.3.2. Pre-mounting condition

The add on brakes are used for the conversion of conventional standard motors and gear motors in brake motors. They are ready for assembly as an compact pre-adjustet brake system usable independently and without any mechanical processing work.

1.3.3. Sensitivity

Caution!

Make sure to avoid damage as a result of shocks or impacts during transportation. Special care should be exercised with regard to the radial connecting cable.

2. Technical data

2.1. Mechanical data

Table 1

Size BZFM...	M _N	M _{dyn}	n ₀	n _{ZN}	Airgap off		t _i	1) t ₅	2) t ₅	P _{VN}	W	J	m
	stat. Nm	Nm	Min ⁻¹	min ⁻¹	min mm	max mm	ms	ms	ms	kW	kJ	kgcm ²	kg
0,25	3	2,7	3600	2900	0,25	0,4	55	20	120	0,01	4	0,4	1,5
0,63	6,25	5,7	3600	2900	0,3	0,5	70	25	150	0,015	6	0,9	2,1
1,6	13,5	12,5	3600	2900	0,3	0,5	85	30	170	0,02	9	2,0	3,0
2,5	27	24,5	3600	2900	0,3	0,5	125	35	210	0,028	13	3,0	5,0
4	37	33,6	3600	2900	0,3	0,6	150	40	230	0,033	16	4,6	6,3
6,3	65	59	3600	2900	0,4	0,7	190	50	260	0,046	22	7,0	9,3
10	125	113	3600	2900	0,4	0,7	310	60	280	0,09	32	25	14,8
16	250	220	3600	2900	0,4	0,7	350	70	310	0,11	48	45	22,0
25	380	345	3600	1450	0,4	0,7	410	80	380	0,14	60	87	31,6

1) DC-side switching 2) AC-side switching

2.2. Electrical data

Table 2a

Nominal Voltage DC	U _N = 24 V			U _N = 95 V			U _N = 103 V			U _N = 140 V		
Size BZFM...	R _K Ω	I _K A	P _K W	R _K Ω	I _K A	P _K W	R _K Ω	I _K A	P _K W	R _K Ω	I _K A	P _K W
0,25	29,3	0,82	20	508	0,19	18	664	0,16	16	832	0,17	24
0,63	24,9	0,96	23	345	0,28	26	524	0,20	20	661	0,20	26
1,6	18,2	1,32	32	266	0,36	34	415	0,25	26	505	0,26	34
2,5	14,0	1,70	40	190	0,50	48	294	0,35	36	451	0,31	44
4	12,0	2,00	48	164	0,58	55	259	0,40	41	320	0,44	61
6,3	8,9	2,70	65	128	0,74	70	198	0,52	54	251	0,56	78
10	7,0	3,44	83	100	0,95	90	124	0,83	86	200	0,70	98
16	5,6	4,27	102	84,3	1,13	107	106	0,97	100	160	0,88	123
25	4,0	5,94	142	62,6	1,52	144	98,8	1,11	123	163	0,86	120

Tabelle 2b

Nominal Voltage DC	$U_N = 190 \text{ V}$			$U_N = 207 \text{ V}$			$U_N = 240 \text{ V}$					
Size BZFM...	R_K Ω	I_K A	P_K W	R_K Ω	I_K A	P_K W	R_K Ω	I_K A	P_K W	R_K Ω	I_K A	P_K W
0,25	1566	0,12	23	1937	0,11	22	2429	0,10	24			
0,63	1379	0,14	26	1700	0,12	25	2120	0,11	27			
1,6	967	0,20	37	1237	0,17	35	1609	0,15	36			
2,5	839	0,23	43	1044	0,20	41	1297	0,19	44			
4	615	0,31	59	762	0,27	56	957	0,25	60			
6,3	489	0,39	74	612	0,34	70	766	0,31	75			
10	391	0,49	92	472	0,44	91	616	0,39	94			
16	293	0,65	123	375	0,55	114	462	0,52	125			
25	268	0,71	135	338	0,61	127	433	0,55	133			

Other voltages on request

M_{dyn}	:dynamic moment (friction moment) applies for dry operation with an oil- and grease-free friction lining after running-in
M_{stat}	:static moment (moment of adhesion, nominal torque of the brake)
n_0	:max. idling speed
n_{zn}	:nominal switching speed
P_k	:excitation output at 20°C
R_K	:coil resistance at 20°C
I_K	:energising current at 20°C
P_{vn}	:nominal braking capacity (S4-40% I.O.)
J	:mass moment of inertia of rotating parts
W	:switch work per switching operation, mode S2
t_1	:response delay (time from voltage connection up to the end of armature disc motion)
t_5	:response delay (time from voltage disconnection up to the end of the armature disc motion)
m	:weight of the brake
AC control	:via rectifier with the modules type BG 270, EGV 500,

The main parameters of the brakes are also given on the rating plate.

2.3. Torque, speed and other technical data

Admissible torques and other technical data are given in the tables of chapter 2.a. and 2.b.

Any technical parameters deviating from the values given in the table may be requested from the manufacturer or form part of the order acknowledgement.

2.4. Connecting dimensions

The connecting dimensions correspond to the IEC standard and DIN 42948 are given on the dimensional sheets "**BZFM**" M8-307 and M8-314 (appendix).

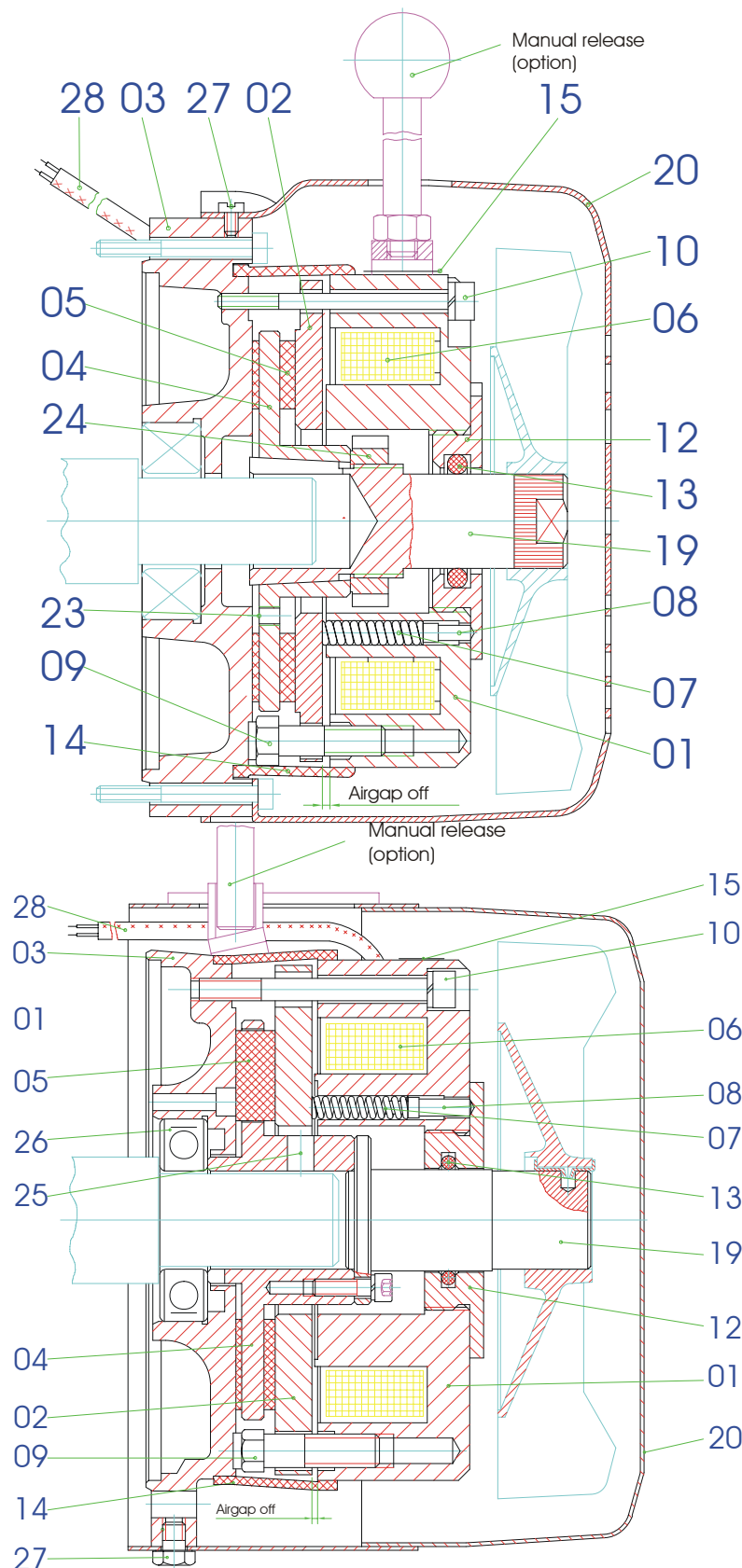
3. Setup, mode of operation and construction characteristics**3.1. Designation of individual components**

fig. 1a
BZFM 0,25 – 6,3

- 01 coilbody
- 02 armature disc
- 03 N-side end plate
- 04 friction lining carrier
- 05 friction lining
- 06 coil
- 07 pressure spring
- 08 spring bolt
- 09 adjusting screw
- 10 head bolt
- 11 mounting screw
- 12 adjusting ring
- 13 sealing ring
- 14 rubber collar
- 15 identification plate
- 19 shaft extension
- 20 fan cover
- 23 thread for „jack off“ screws
- 24 groove nut
- 25 pilot hole
- 26 bearing
- 27 cylindric screw
- 28 connection cable

Fig. 1b
BZFM 10 - 25

3.2. Function and design characteristics (fig. 1a and fig. 1b)

The brake **BZFM** is a spring loaded electromagnetic double-face brake which brakes without current and is released electromagnetically.

The coilbody (01) contains a coil (06) which is potted with an synthetic resin compound in accordance with insulating material class F, (max. limit of temperature 155°C).

If the coil (06) is not excited, the springs (07) which are situated in the internal and external pole, press the armature disc (02) against the floating formed with friction lining carrier (04). Thus is firmly clamped between the torsion-protected armature disc (02) and the N-side end plate (03) and thus prevented from rotating. At the sizes 0,25 – 6,3 the generated brake torque is transmitted via an interference –fit tapered arrangement, while at the sizes 10 – 25 the torque is transmitted by an adhesive bonded joint from the friction lining (05) via the friction lining carrier (04).

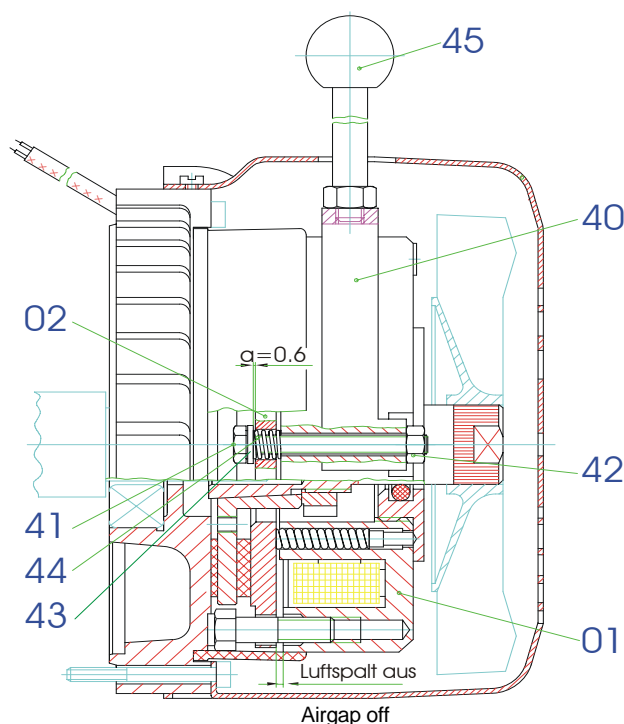
If the coil (06) is connected to a direct voltage as specified on the identification plate (15) or about a Stromag rectifier set (see also chap.2.2) to a alternating voltage, the magnetic force will draw the armature disc (02) to the coilbody (01) against the spring pressure (07). The friction lining (05) is released, the braking is cancelled and the brake is released.

3.3. Mechanical release (emergency release) (optional)

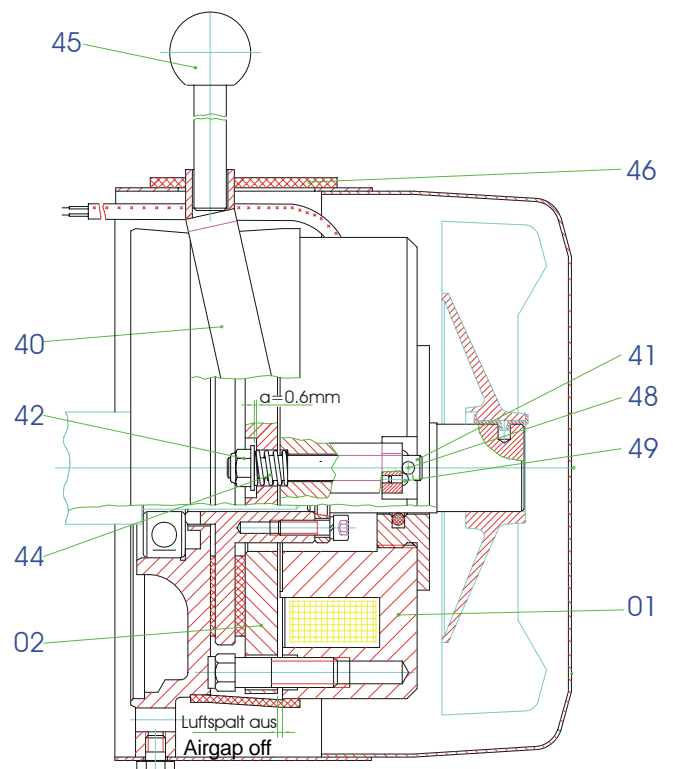
The brakes are constructed in such a way that any necessary manual release can be added without the need for any machining processes.

The manual release is to be used for the mechanical release in the case of emergency or for the adjusting of the system.

Size 0,25 – 6,3
figure 2a



Size 10 - 25
figure 2b



01 coilbody
02 armature disc
40 stirrup
41 hexagon screw or bolt
42 self locking nut
43 washer

44 compression spring
45 lever
46 rubber plate
48 straight grooved pin
49 grooved drive stud

3.3.1. Mounting of manual release for the sizes BZFM 0,25 - 6,3 (fig. 2a)

The manual release is not self-locking and is mounted as follows:

- Remove the fan cap from the brake and break-out the pre-punchings in the fan cap provided for the manual release.
- Unscrew the complete coil body assy (coil body (01) and armature disc (02)) from the N-side end plate (03).
- Fit the two hexagon screws (41) (2x180°) with washer (43) and pressure spring (44) into the coil body (01) coming from the armature disc (02).
- Mount the complete coil body with the fitted hexagon screws (41) and N-side end plate (03) to the motor or to the pertinent machine part resp.
- Place the stirrup (40) on coil body side onto the standing proud screws (41) into the accordingly provided millings.
- Fix the stirrup (40) by a self-locking nut (42) each on the two screws (41) and adjust the dimension $a = 0,6 \text{ mm}$ (fig. 2a) with unreleased brake (airgap „off“ as per table 1 chap. 2.1.).
- Mount the fan cap to the brake.
- Screw the lever (45) into the accordingly provided thread of the stirrup (40).

3.3.2. Mounting of the manual release for the sizes BZFM 10 - 25 (fig. 2b)

The manual release can be mounted without necessity to dismantle the brake.

It is not self-locking and is mounted as follows:

- Remove the fan cap from the brake and break-out the pre-punchings in the fan cap provided for the manual release.
- Insert the pressure springs (44) into the accordingly provided bores (2x180°)
- Place the stirrup (40) onto the coil body (01) into the accordingly provided millings (2x180°).
- Put the bolt (41) with straight grooved pin (48) through the stirrup and the coil body.
- Screw the nuts (42) onto the thread of the bolt (41) on armature disc side and adjust the dimension $a = 0,6 \text{ mm}$ (fig. 2b) with unreleased brake (airgap „off“ as per table 1 chap. 2.1.).
- Mount the fan cap to the brake. Thereby the connection piece of the stirrup (40) of the manual release stands proud the recess of the fan cap.
- Push the rubber plate (46) onto the connection piece of the stirrup (40) of the manual release on the fan cap up to limit stop.
- Only when intended to release the brake mechanically, fit the lever (45) into the connection piece of the stirrup (40).



Manual emergency release shall **not** be used to maintain temporary operation! The wear of the friction lining has to be re-adjusted timely according as per identification plate and technical data sheet, otherwise the braking effect will be cancelled by the screw or bolt (41) of the manual release.

3.4. Use of microswitches to monitor switching stages (optionally)

If the switching condition of the brake should be controlled a microswitch is used according fig.3. The microswitch prevents the motor by an additional locking switch from starting before the brake has been released.

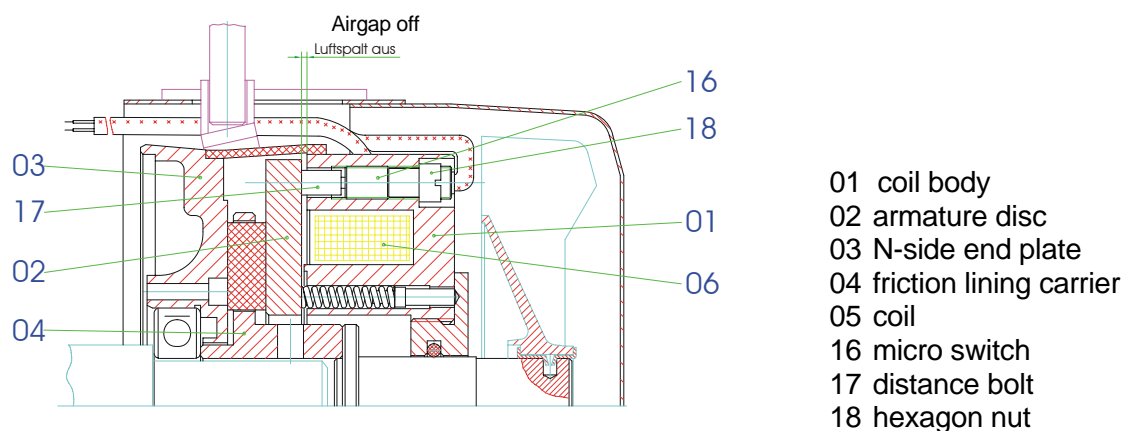


Figure 3

When the armature disc (02) is moved against the coil body (01) as a result of the electro-magnetic force of the coil (06) or the actuation of the mechanical emergency release device, (chap. 3.3.), it will operate a microswitch (16) via the distance bolt (17). Its switchpoint is located at the half of the "off min" airgap (chap 2.1).

The microswitch may be included in the control circuit of the motor contactor as a normally open or normally closed contact.

4. Mounting and dismantling of the brake

(Individual parts with Item-No. see chapt. 3.1.)

The brake is screwed to the motor by the attached mounting screws (11). After having mounted the brake, check the airgap and correct it, if necessary (see chap. 4.3.).

4.1. Mounting of the brake

4.1.1. Mounting

- Remove the fan cover of the motor and the N-side end plate of the motor
- Check the shaft end for burr, any grease and adherence to dimensions (see dimensional sheet M8-307 and M8-314 d₂)
- loose and remove the fan cover of the brake (20)
- remove the rubber collar (14)
- remove the adjusting ring (12)

Attention!

During the pre-mounting don't change the adjusting screws (09) as well as the cylindric screws (10) because the working airgap is already adjusted. Mounting in vertical position if possible.

- check the motor shaft for impact damages
- placing the brake on the motor in such a way that the brake's cable entry is at an angle of about 45 ° to the motor terminal box and the shaft extension (19) is to put off the motor shaft end easily
- fasten the brake to the motor by the attached mounting screws (11).
(when using 3 point N-side end plate the mounting screws are attached)

4.1.2 Setting the friction lining carrier

- to ensure maximum wear from the friction lining (05) on the sizes **0,25 to 6,3** the friction lining carrier (04) should be set initially with the aid of feeler gauges or thickness gauges to the preset dimension (table 3) by gently tightening the groove nut (24).
- after removing the feeler gauges the groove nut (24) must be tightened with the minimum wrench torques given in table 4 to ensure transmission of the braking torque. The pre set dimension is reduced to the distance "A" given in fig. 2a according table 3.
- on the sizes 10 to 25 the N-side shaft and hub bore should be carefully degreased before adhesive is applied. A coating of metal adhesive (e.g. Loctite 638) should be applied after which the brake should be placed on the hub up to the shaft collar or centring collar, rotating during the process.
- this results in a constant value for the distance "A" (fig. 2b, table 3).
- where more exacting safety requirements apply, the adhesive-bonded components may be pinned together in the pilot hole (25).

Table 3

Size BZFM	Distance for „A“ in mm	Pre-set dimension in mm
0,25 up to 1,6	1,5 - 0,3	2,0
2,5 up to 6,3	1,8 - 0,3	2,5
10 up to 25	2 ± 0,5	-

Table 4

Size BZFM	wrench torque in Nm
0,25	20
0,63	30
1,6	50
2,5	80
4	120
6,3	150

4.1.2. Monitoring of the airgap

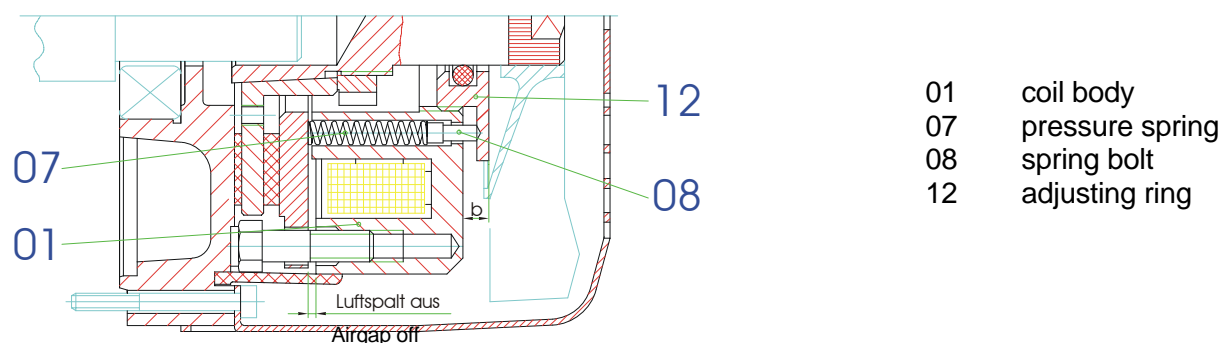
After the installation of the brake the control of the airgap “off” must be taken minimal on two places be opposed between the coilbody (01) and the armature disc (02) when the coil is currentless.

The airgap must be in accordance with the airgap “min” according table 1 chap. 2.1.

In the case of any deviation the airgap has to re-adjusted described in chap. 4.3.

4.2. Setting the brake torque

The torques given in the technical data (chap. 2.1.) were obtained only by fully tightening the adjusting ring (12).

**Figure 4**

A reduction can be made according figure 4 and table 5 up to a value of $0,55 \times M_N$.

table 5

size BZFM...V7		0,25	0,63	1,6	2,5	4	6,3	10	16	25
Reduction		Dimension b in mm (figure 4)								
M_N	Nm	3	3	3	3	3	3	5	5	5
$0,90 \times M_N$	Nm	3,65	3,65	3,95	4,15	4,15	4,50	6,60	6,90	6,70
$0,80 \times M_N$	Nm	4,30	4,30	4,90	5,30	5,30	6,00	8,10	8,80	8,30
$0,70 \times M_N$	Nm	4,95	4,95	5,85	6,45	6,45	7,50	9,70	10,70	10,00
$0,60 \times M_N$	Nm	5,60	5,60	6,80	7,60	7,60	9,00	11,20	12,60	11,60
$0,55 \times M_N$	Nm	5,95	5,95	7,30	8,20	8,20	9,70	12,00	13,55	12,45

4.3. Adjusting and re-adjusting of the airgap

The airgap of the brake must be re-adjusted, if:

- deviations from airgap „off min“ are noted on mounting
- friction lining wear occurred after application of the brake

Important note!

Check up: The brake must be torque free on the output side!

Disconnect the brake from current (from size 6.3 protect by stopping means), than dismantle as per chap. 4.5.

Adjusting and re-adjusting of the airgap: (proceed according fig.1)

- measuring of the airgap
- loosen the cylindric screws (10) for 1-2 revolutions
- screw-in uniformly the three adjusting screws (09) by the difference from the measured airgap „off min“ "Aus min" as per rating plate (15)

Important note!

¼ revolution of the adjusting screw correspondence to ca.0,25 mm.

- tighten the cylindric screws (10)
- control the airgap. The airgap should correspondence to the airgap "off min" shown in the table 1
- if necessary repeat the correcture of the airgap
- The airgap of the brake can be re-adjusted several times until the lower wear limit of the friction lining (05) is achieved (minimum thickness of the friction lining see table 6)

table 6

Size BZFM..	0,25	0,63	1,6	2,5	4	6,3	10	16	25
Min. thickness of friction lining mm	5,5	5,5	5,5	7,5	7,5	7,5	11	11	11
Maximum of wear mm	1,5	1,5	1,5	2,5	2,5	2,5	3	3	3

4.4. Current supplies and electrical connection of the brake

Make shure that the electrical connection is performed by expert personnel taking into account the installation regulations (such as DIN IEC 92).

The brakes can be connected to A.C. voltage through a rectifier module EGV 500 or BG 270 of the company Stromag Dessau GmbH, in compliance with the technical data (e.g. table 2).

This rectifier module can also be integrated in the terminal box of a motor.

The coil has been designed for 100% duty factor and connection to D.C. supply only, given on the identification plate (residual ripple< 0.5).

According to DIN VDE 0580 the permanently admissible voltage change is **+5% to -10%** of the nominal voltage.

The connection system is shown in fig.5a and 5b.

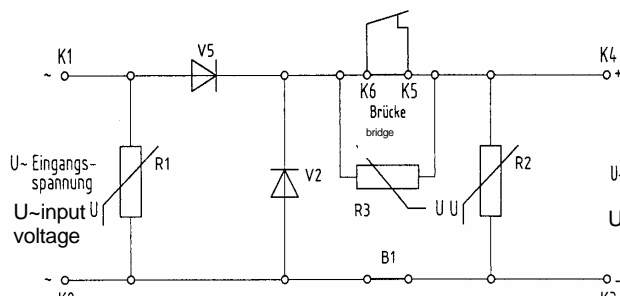


figure 5a one way rectification
e.g. with type EGV 500

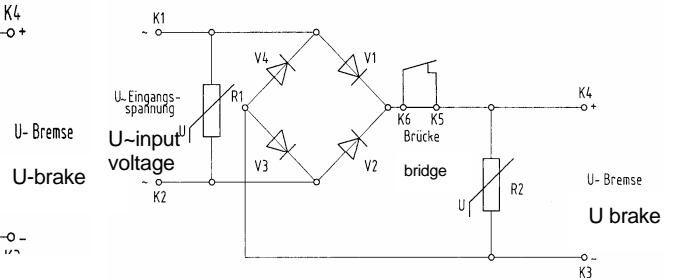


Figure 5b bridge rectification
e.g. with type BG 270

4.4.1. Installation of the rectifier

The rectifier module can be mounted in the terminal box of the motor eg. as shown in figure 6

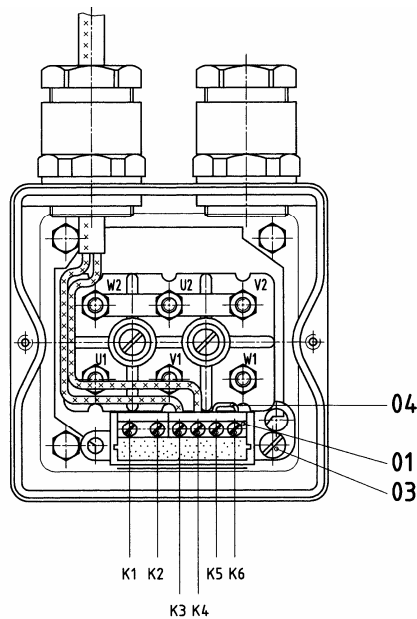


figure 6

- 01 terminal block
- 03 mounting screw
- 04 contact bridge

The terminal contacts are assigned as follows:

Table 7

Contact	Symbols	Assignment of contacts
K1 ; K2	~ ; ~	AC supply (K1 – phase conductor; K2 - N / PEN)
K3 ; K4	- ; +	DC output brake
K5 ; K6		Auxiliary contact connection (only with DC –side switching)

4.4.2. Alternative switching modes to disengage the brake

The rectifier modules cause with existing terminal contacts the DC side switching or the AC side switching, thereby influencing strongly the disengaging times.

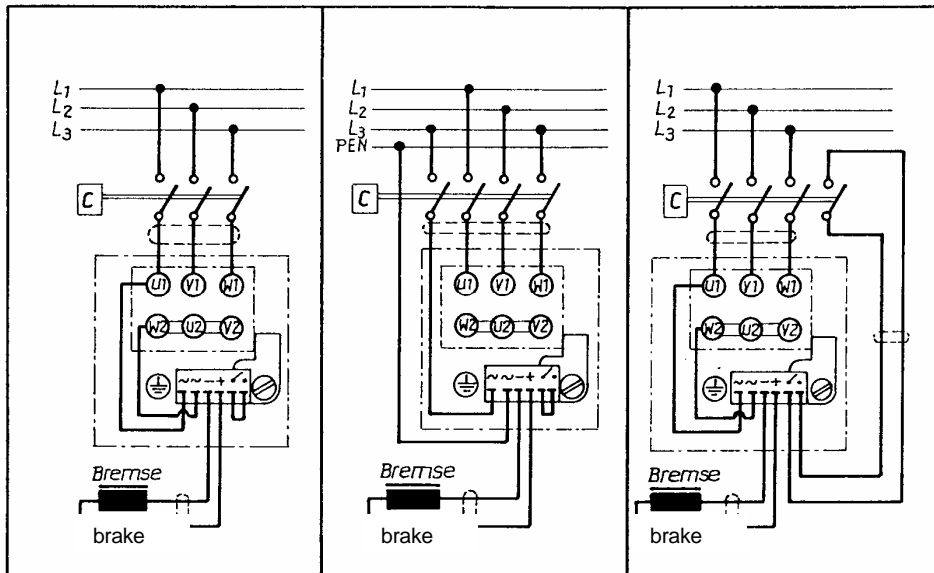


figure 7a

figure 7b

figure 7c

4.4.2.1. Disengagement on A.C. side with connection to the motor terminal (fig. 7a)

After having connected to the contacts (K1, K2) the feeding for A.C. voltage as per fig. 6 and fig. 7a and after having checked the conduct to the brake (K3, K4), immediately a simple switching on A.C. side is possible due to a contact link at the contacts (K5, K6) (provided on delivery).

By this switching the longest disengaging times, which may in the range of seconds, are achieved in relation to the motor type and the load torque.

4.4.2.2. Disengagement on A.C. side with separate A.C. voltage feeding (fig. 7b)

With switching method to fig. 7b a separate cable from the contactor for connection of the brake to A.C. voltage becomes necessary. The same conditions as described in chap. 4.4.2.1 apply.

On disengagement of the brake the switching times for disengagement on A.C. side as per table 1 are achieved.

4.4.2.3. Disengagement on D.C. side (fig. 7c)

If very short disengaging times are required, disengage on D.C. side as per fig. 7c,.

Remove the contact link (04) (fig. 6) connecting the contacts K5 and K6. Then link these contacts (K5, K6) through an additional control cable by means of auxiliary contacts of the motor contactor.

On disengagement of the brake the switching times as per table 1 for disengagement on D.C. side are achieved.

4.5. Dismantling

Dismantling is subject to the same instructions and regulations as installation. Carry out the operations in inversed order of succession!

Important note!

Check up: The brake must be torque-free on the output side.
Before removing the brake, disconnect it from the mains and secure with slings.

5. Setting into operation



Caution!

During start-up, please note that a new friction lining will not transmit the full braking torque.

This will only be realised after a number of braking operations under normal operating conditions, i.e. after smoothening of the friction surfaces.

6. Operation



Notwithstanding any instructions given below, operation of the brake must always comply with local mandatory safety and accident prevention rules. Compliance with these rules shall be ensured by the user.

6.1. Operating conditions

The operating conditions to be maintained for a faultless operation of the brake, are given below:

- The operating temperature should not be below **-30°C** and not above **+50°C**.
- In the case of higher and/or lower ambient temperatures, please contact our after-sales service (for address see Chapter 8.3).
- Air humidity may be 100%.

6.2. Duty cycle, switching frequency

The design as well as admissible loads on brakes as per braking torque, speed, switching capacity are given under „Technical Data“ (see Chapter 1) and the dimensional drawing (appendix). If any of these data are exceeded consult the manufacturer.

6.3. Trouble shooting (individual parts with Item-No. see chapter 3)

Fault	Possible causes	Remedy
Insufficient braking effect	Friction surfaces are not free from grease Brake not completely run-in Brake has been overloaded Adjusting ring (12) not turned-in or partly turned-in only.	change friction lining (05) Let brake run in Replace brake Turn in the adjusting ring (12) (chap. 4.2.)
No braking effect	The stirrup (40) of the manual release squeezes	Mount the manual release correct
Brake does not release	Airgap „off“ air gap too large due to wear of friction lining Armature disc (02) distorted Coil connecting voltage too low Coil (06) defective Rectifier module defective Feed line defective Contact points loose Spring rupture or foreign particles in the airgap	Re-adjust brake (chapter 4.3) Replace friction lining (05) Replace brake (Chapter 4) Check DC voltage supply Replace brake (chapt. 4) Replace rectifier module Renew feed line Re-tighten contact points Dismantling of brake, contact manufacturer
Idle-run torque of the brake too high	Airgap “off” too small	adjust the airgap (chapt. 4.3.)

7. Maintenance



Make sure to comply with chap. 1 "Safety guidelines" during all maintenance and inspection work.

As the brakes work under varying operation conditions, it is not possible to pre-define wear check, inspection maintenance and repair intervals.

Higher loads on the brakes (e.g. as a result of torque, speed, switching frequency, ambient temperature etc.) require shorter maintenance intervals.

Therefore it is first of all necessary to observe the brake with regard to safety and wear, and then adapt the maintenance intervals in accordance with the observation made.

Wear of the friction lining will result as a greater air gap "off"

Depending on the load of the brake, the air gap must be checked from time to time. This will be done by measuring of the air gap according to chapter 4.1.3.

If the max. airgap as determined in chap. 2 (table 1) is reached please readjust the airgap described in chap. 4.3.

Caution!

If the wear re-adjustment is not carried out early enough, both the transmission of the rated load torque and the lifting of the brake will not be ensured.

8. Spare parts stocking, after sales-service

8.1. After-sales service

Stocking of spare and parts subject to wear is an important precondition for permanent and reliable functioning of the brake.

friction lining carrier (04), friction lining (05) and armature disc (02), (for item see chapter 3.1.) are parts subject to wear.

Warranty will be provided only for the original spare parts supplied by us. We expressly state that the installation or use of spare parts other than the original ones supplied by us will negatively affect the design characteristics of the brake and thus have an impact on active and/or passive safety.

Stromag Dessau GmbH shall have no warranty obligations for any damage caused by the use of spare parts or accessories other than the original ones supplied by us.

Please bear in mind that often particular manufacturing and delivery specifications exist for parts manufactured by us or bought from others, and that we offer spare parts to the up-dated technical conditions and the up-dated legal prescriptions.

8.2. Data for the ordering of spare parts

Please specify the following details when ordering spare parts:

- Series and size of brake
- Consignment / fabrication number
- Location and designation of spare part
- Number of pieces

Designation of individual parts

- 01 Coil body
- 02 Armature disc
- 03 N-side end plate
- 04 friction lining carrier
- 05 Friction lining
- 06 Coil
- 07 Compression spring
- 08 Spring bolt
- 09 Adjusting screw
- 10 Cyl. screw
- 11 Mounting screw
- 12 Adjusting ring
- 13 sealing ring
- 14 rubber collar
- 15 identification plate
- 16 microswitch
- 17 distance bolt
- 18 hexagon nut
- 40 stirrup for manual release
- 41 hexagon head screw
- 42 self-locking nut or castel nut
- 43 washer
- 44 compression spring
- 45 lever for mechanical release
- 46 rubber plate
- 48 straight grooved pin
- 49 grooved drive stud

8.3. Address of after-sales service

This is our address for after-sales service and spare parts distribution:

**Stromag Dessau GmbH
Dessauer Straße 10
D-06844 Dessau
Germany**

**phone: (49) (0)340/2190-203
Fax: (49) (0)340/2190-201
E-mail: vertrieb.dessau@stromag.com
Internet: <http://www.stromag-dessau.de>**

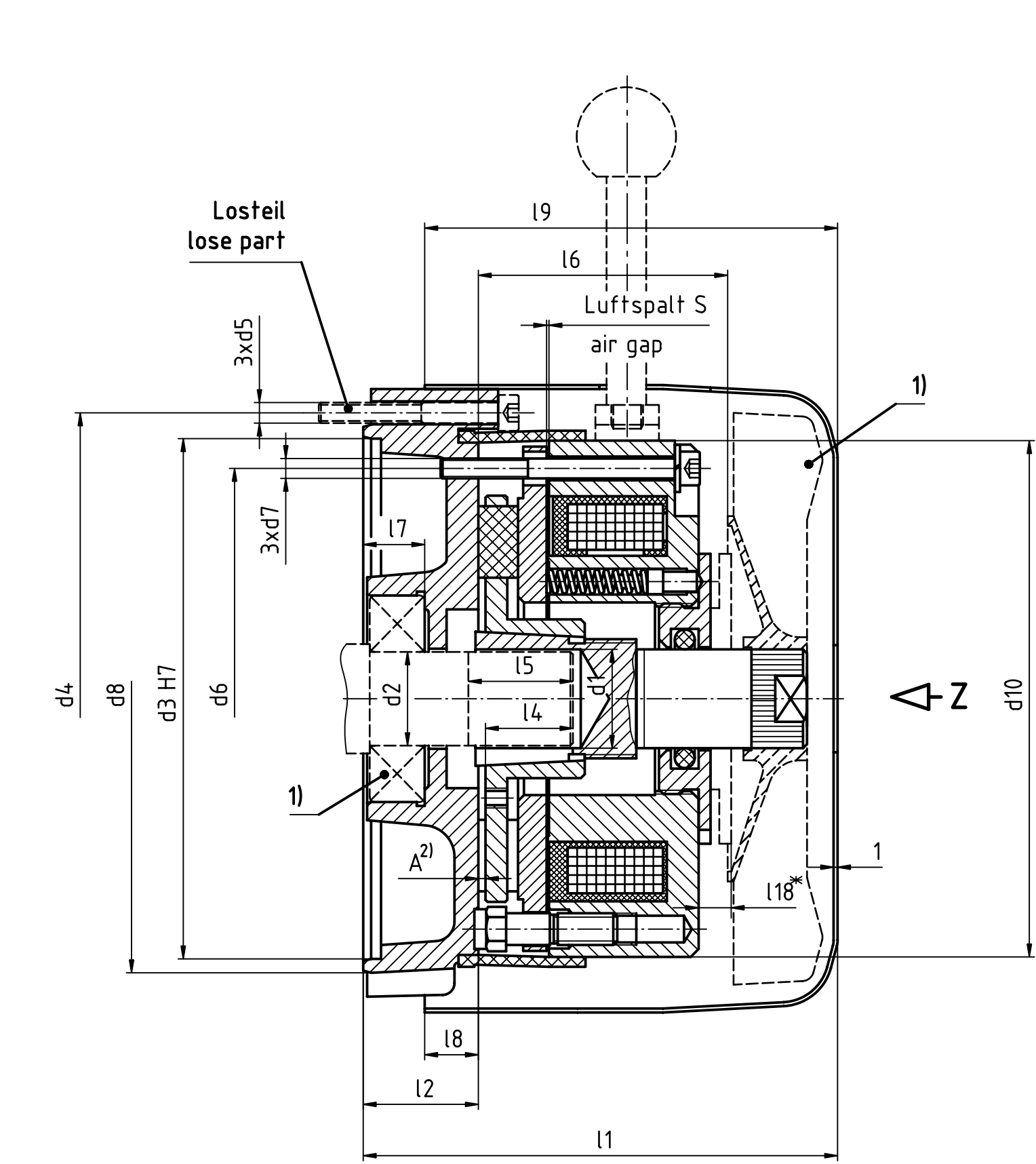
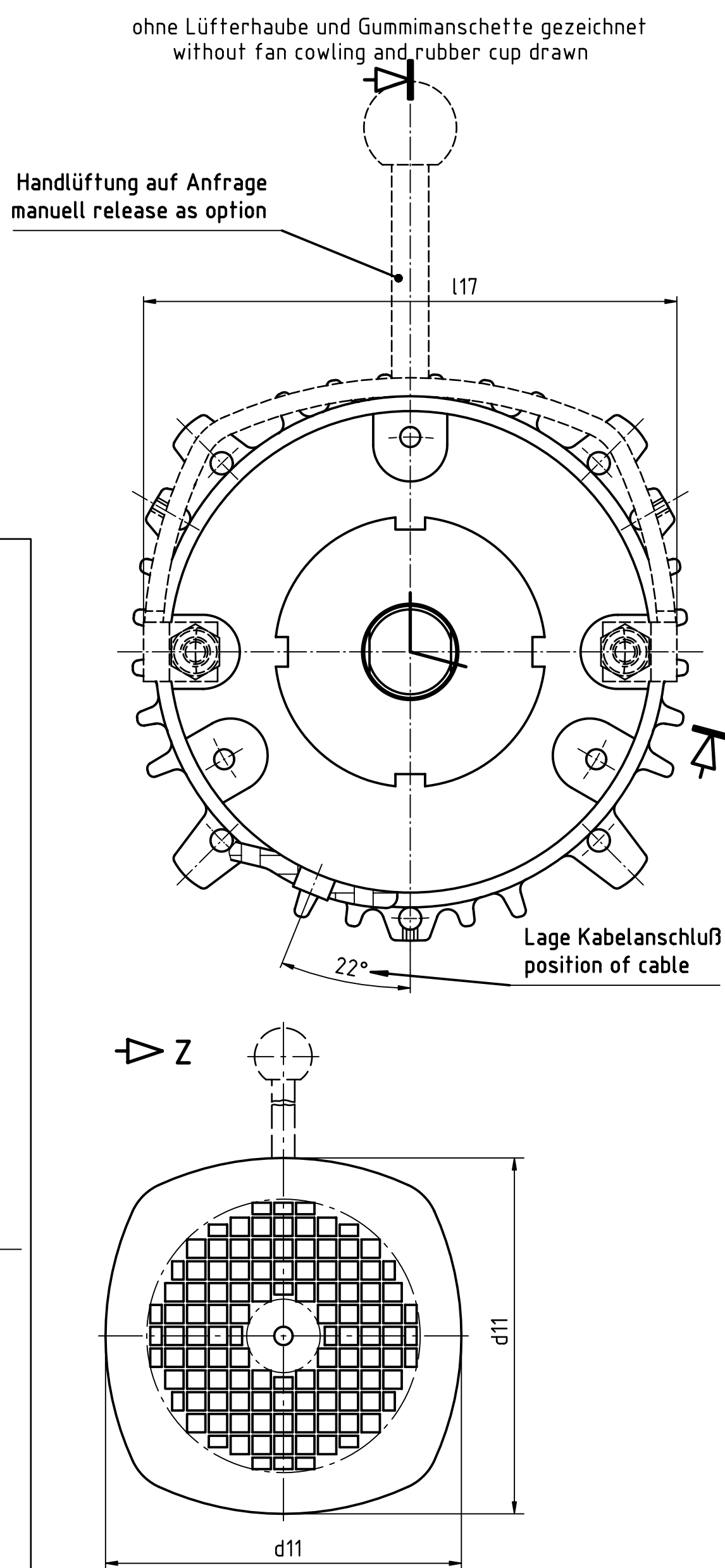
If you require a service engineer, please contact our "Technical after-sales service" under the above address.

9. Standards and directives cited

DIN 6885	Sheet 1 Fitting keys
DIN 40050	(VDE 0470) Protection classes
DIN 42948	Fastening flanges for electrical machines
DIN 42955	Concentricity of shaft ends, co-axial and true running of fastening flanges of rotating electrical machines
DIN IEC 92	Electrical equipment on ships
DIN VDE 0530	Rotating electrical machines
DIN VDE 0580	Regulations for electrical devices
VDE 0660 T 200/09.82,	Section 4.2.4, Table 1 - Inductive load
89/336/EEC (EMC)	Electromagnetic compatibility
93/68/EEC	Low Voltage Directive

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CAD- Zeichnung



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CAD- Zeichnung

ohne Lüfterhaube und Gummimanschette gezeichnet
without fan cowling and rubber cup drawn

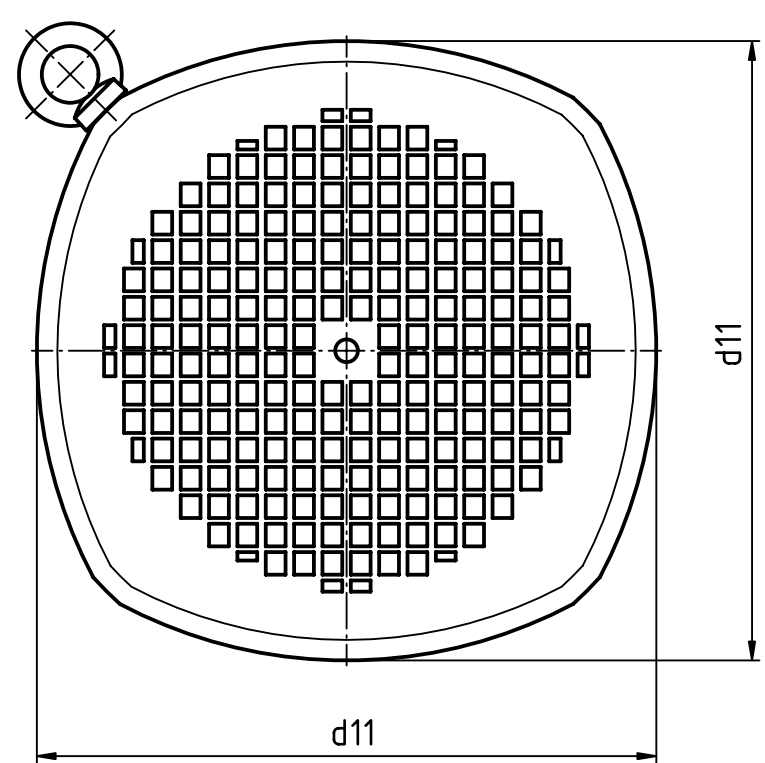
Handlüftung auf Anfrage
manuell release as option

Lage Kabelanschluß
position of cable

45°

l17

➤ Z



d11

d11

Aufsteckwelle der Bremse auf Motorwelle aufgeklebt (empfohlener Kleber Loctite 606).
Brake shaft extention must be mounted on the motor shaft by using Loctite 606.

1) Lüfter und Befestigungsteil gehören nicht zum Lieferumfang der Bremse. Bei Umrüstung des Standardmotors zum Bremsmotor werden diese Teile vom Motor verwendet.
Fan and fastener are not included in the delivery exent of the brake.
These parts will be taken from the motor on conversion of standard motor to brake motor.

*Bei Reduzierung des Nennmomentes um ca. 45%
With reduction of nominal torque of 45%

