

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Brakes**

with type designation(s)

SFB, sizes: 6.3-10-16-25-40-63-100-160-250-400-630-1000**SFB-H sizes: 6,3-10-16-25-40-63-100-160-250-400-630****SFB-SH sizes: 6,3-10-16-25-40-63-100-160-250-400-630-1000**

Issued to

PINTSCH BUBENZER GmbH
Dinslaken, Germany

is found to comply with

DNV GL standard DNVGL-ST-0378 – Standard for offshore and platform lifting appliances**DNV GL standard DNVGL-ST-0377 – Standard for shipboard lifting appliances****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2017-07-01**for **DNV GL**This Certificate is valid until **2022-06-30**.DNV GL local station: **Essen**Approval Engineer: **Andreas Andrecht**

Oliver Darley
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-004160-9**
 Certificate No: **TAS000008B**
 Revision No: **4**

Product description

The safety brakes are applied mechanically when the current is disconnected. This ensures that the brake operates in the event of a power failure. The SFB series are suitable for dynamic and static braking. A dust/water protection degree of IP67 is offered.

Capacities SFB brakes:

Size	Norminal brake torque in Nm	Size	Norminal brake torque in Nm
6.3	63	100	1 000
10	100	160	1 600
16	160	250	2 500
25	250	400	4 000
40	400	630	6 300
63	630	1 000	10 000

Capacities SFB-H brakes:

Size	Norminal brake torque in Nm	Size	Norminal brake torque in Nm
6.3	100	100	1 600
10	160	160	2 500
16	250	250	4 000
25	400	400	6 300
40	630	630	10 000
63	1000		

Capacities SFB-SH brakes:

Size	Norminal brake torque in Nm	Size	Norminal brake torque in Nm
6.3	80	100	1 300
10	130	160	2 100
16	210	250	3 300
25	350	400	5 200
40	550	630	8 000
63	800	1000	13 000

Application/Limitation

1. The brakes are to be used in connection with electric motors for hoisting and pulling purpose.
2. If DNV GL Product Certificate is to be issued, each item is to be surveyed to the full satisfaction of the attending surveyor according to agreed procedures. The DNV GL Product Certificate is to be issued by the surveyor.
3. Product, material and test certificate is to accompany each product/delivery.
4. When the electromagnetic field is relieved, the spring pressure is to be applied to obtain the necessary brake torque, which is not to be less than 80% in excess of maximum torque on the brake caused by the loads being regarded as static loads. The brake capacity must be considered in conjunction with the current dynamic coefficient.
5. Test to be carried out of each product ensuring braking torque being obtained.

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Type Approval documentation

Drawing No.	Rev.	Title	Status	Stamped
000 598 900-951	C	SFB 6,3	Approved	2007-12-19
000 597 400-951	C	SFB 10	Approved	2007-12-19
000 595 900-951	C	SFB 16	Approved	2007-12-19
000 594 300-951	C	SFB 25	Approved	2007-12-19
000 590 100-951	B	SFB 40	Approved	2007-12-19
000 585 900-951	C	SFB 63	Approved	2007-12-19
000 586 600-951	C	SFB 100	Approved	2007-12-19
000 588 300-951	C	SFB 160	Approved	2007-12-19
000 579 600-951	C	SFB 250	Approved	2007-12-19
000 579 900-951	C	SFB 400	Approved	2007-12-19
000 592 500-951	C	SFB 630	Approved	2007-12-19
000 617 100-951	A	SFB 1000	Approved	2007-12-19
001 133 002-953	-	Electromagnetic Two-Disc Spring-Set Brake SFB	For Inf.	2007-12-19
000 684 600-976	-	Prüfanweisung Bremse SFB 6,3-1000	For Inf.	2007-12-19
047010012-009	-	Druckfeder	For Inf.	2013-05-15
047010016-012	-	Druckfeder	For Inf.	2013-05-15
047 010 023-003	-	Druckfeder	For Inf.	2013-05-15
000 752 600-954	-	Druckfeder	For Inf.	2013-05-15
047 010 016-012	-	Druckfeder	For Inf.	2013-05-15
047 010 012-009	-	Druckfeder	For Inf.	2013-05-15
001 133 202-953	-	Brake SFB-H	Approved	2013-05-15
-	05-08	Brake SFB-SH (400-SH – 1000-SH)	Approved	2013-05-15
-	05-08	Brake SFB-SH (6.3-SH – 250-SH)	Approved	2013-05-15
-	-	Calculation number of springs SFB 10	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 10-H	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 10-SH	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 400	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 400-H	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 400-SH	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 630	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 630-H	For Inf.	2013-05-15
-	-	Calculation number of springs SFB 630-SH	For Inf.	2013-05-15
001 367 6xx-214	-	Mitnehmernabe SFB 1000	Approved	2013-05-15
000 591 5xx-214	-	Mitnehmernabe SFB 630	Approved	2013-05-15
001 214 3xx-214	-	Mitnehmernabe SFB 160-250-400	Approved	2013-05-15
000 600 4xx-214	-	Mitnehmernabe SFB 63-100	Approved	2013-05-15
001 043 3xx-214	-	Mitnehmernabe SFB 40	Approved	2013-05-15
000 594 7xx-214	-	Mitnehmernabe SFB 16-25	Approved	2013-05-15
000 602 2xx-214	-	Mitnehmernabe SFB 6,3-10	Approved	2013-05-15

Tests carried out

Tests as given in Prüfanweisung Bremse SFB 6,3-1000 (Sachnummer: 000 684 600-976) are to be carried out.

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Marking of product

The brake is to be marked with the manufacturer's name or trademark and type number identification.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE