

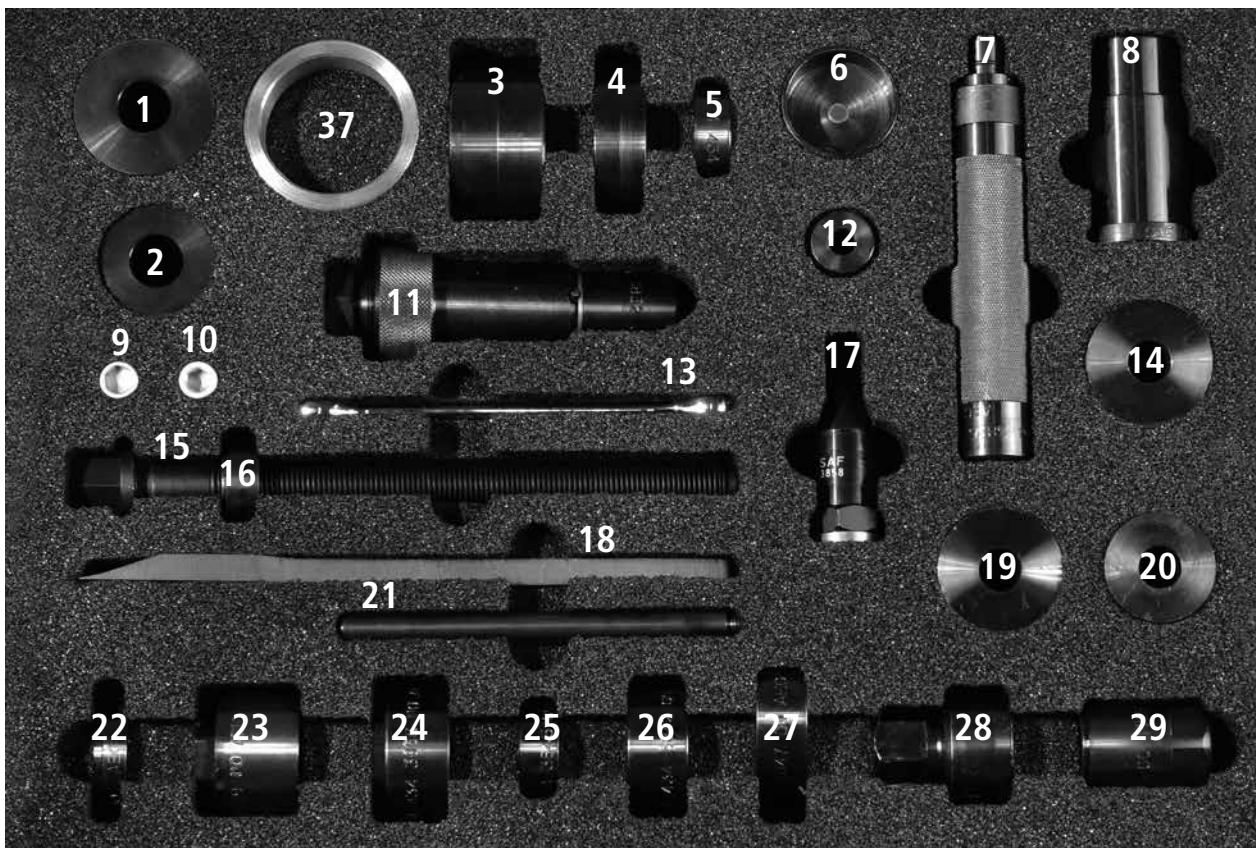
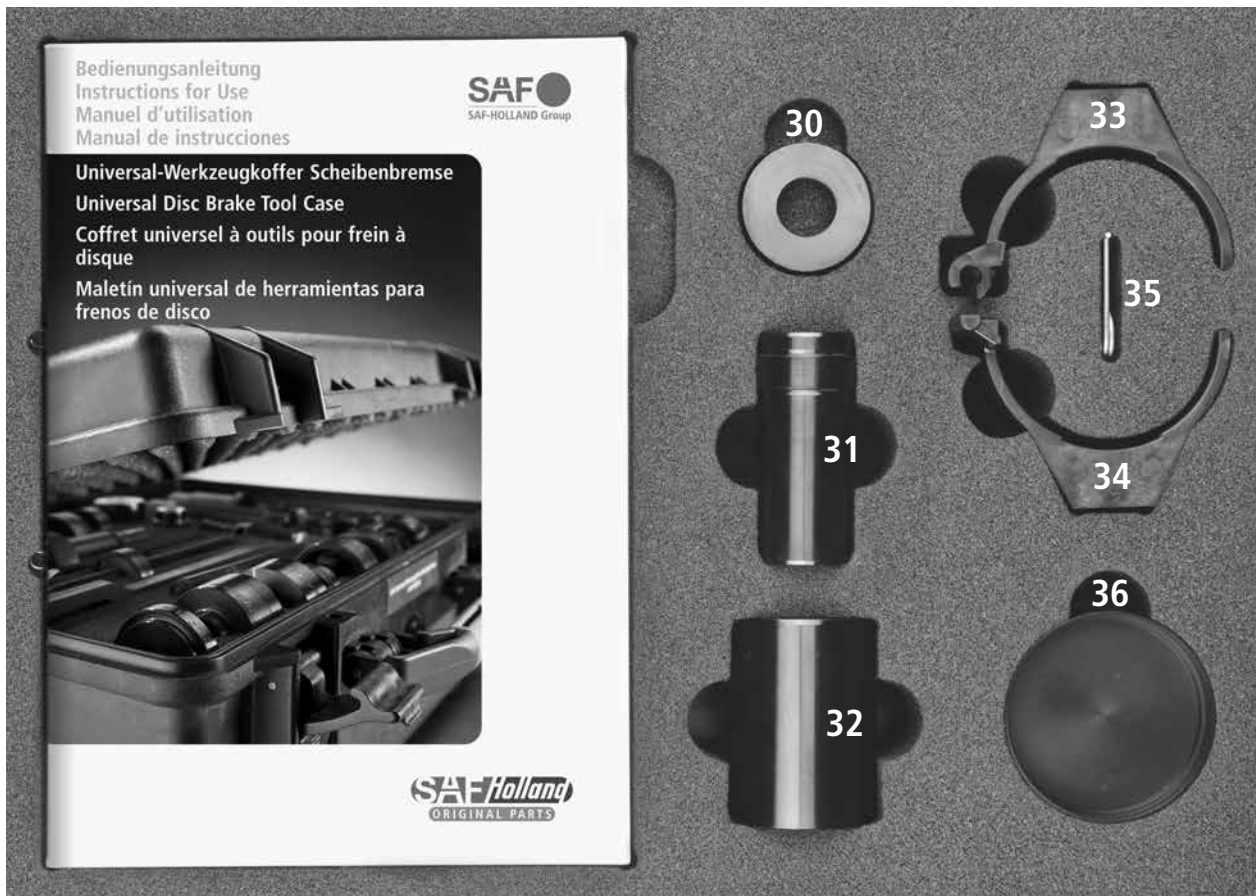
Instructions for use

Universal Disc Brake Tool Case

Edition 09/2014







No.	SAF Part. No.	Designation
1	4 434 3846 00	Puller for floating bearing, type SN
2	4 434 3838 00	Puller sleeve
3	4 434 3833 00	Driver cup
4	4 434 3835 00	Driver cup – adapter
5	4 434 3850 00	Insert with magnet
6	4 434 3849 00	Driver with magnet
7	4 434 3856 00	Handle
8	4 434 3851 00	Driver sleeve
9	4 434 3826 00	W.A.F. 8
10	4 434 3827 00	W.A.F. 10
11	4 434 3832 00	Caulking and pulling tool
12	4 434 3843 00	Driver for sheet metal sleeve
13	4 434 3825 00	Ring / open-jaw spanner
14	4 434 3853 00	Driver sleeve
15	4 434 3837 00	Threaded spindle TR20x2
16	4 434 3848 00	Thrust bearing
17	4 434 3858 00	Spindle – short/long
18	4 434 3844 00	Lever fork
19	4 434 3852 00	Driver sleeve
20	4 434 3854 00	Driver sleeve
21	4 434 3834 00	Retaining bar
22	4 434 3840 00	Puller plate
23	4 434 3839 00	Puller sleeve for bellows
24	4 434 3855 00	Driver
25	4 434 3845 00	Puller sleeve
26	4 434 3842 00	Adapter ring
27	4 434 3847 00	Puller plate
28	4 434 3836 00	Thruster with hexagon head
29	4 434 3841 00	Nut TR20x2
30	4 434 3890 00	Clamp SBS2220H
31	4 434 3889 00	Mandrel SBS2220H
32	4 434 3884 00	Cup SBS2220H
33	4 434 3888 00	Calliper bellows press, right SBS2220H
34	4 434 3887 00	Calliper bellows press, left SBS2220H
35	4 434 3885 00	Pulling bracket SBS2220H
36	4 434 3886 00	Thrust plate bellows press SBS2220H
37	4 434 3893 00	Ring (SL7 / SM7)



	Page
Spare parts list.....	3-4
Important note.....	6

KNORR brake calliper

Replace the calliper guide

Brake calliper type SB6 and SB7

Repair of the floating bearing	7
Repair of the fixed bearing	7

Brake calliper type SB6...(SN) and SB7...(SN)

Repair of the floating bearing (rubber bush).....	8
Repair of the fixed bearing	8-9

Brake calliper type SB7...(SK) and SB7... (SN) (SAF Part No. XX.XXX.XXXX.21)

Repair of the floating bearing	10
Repair of the fixed bearing	11-12

Replace the thrusters with bellows

Brake calliper type SB6 and SB7

Replace the thruster bellows incl. inner seal.....	13
--	----

Brake calliper type SL7 and SM7

Replace the thruster bellows.....	13
-----------------------------------	----

Brake calliper type SB6...(SN), SB7...(SN), SK7

Replace the thruster bellows incl. inner seal.....	14
--	----

SAF brake calliper

Brake calliper type SBS2220H

Mounting of thrust plate bellow	15
---------------------------------------	----

Replace the calliper guide

Repair of the floating bearing (plastic bearing)	16
Repair of the fixed bearing	16
Exchange of reset shaft.....	17

WABCO brake calliper

Replace the calliper guide

Brake calliper WABCO (PAN 19-1, PAN 19-1 <i>plus</i> and PAN 22-1)	18
--	----

These "Instructions for Use" are intended purely to assist the customer in maintenance and repair work (service) on SAF axles with disc brakes using the enclosed tools. They have been written and are suitable exclusively for employees with the necessary technical competence in the commercial vehicle industry and the commercial vehicle trade. They must not be passed on to third parties. In addition, the following conditions shall apply:

1. The enclosed tools are exclusively suitable for use in the course of repair and maintenance work (service) on the brakes from the manufacturers KNORR, SAF-HOLLAND and WABCO listed below:

- KNORR SB6
- KNORR SB6...(SN)
- KNORR SB7
- KNORR SB7...(SN)
- KNORR SB7...(SK)
- KNORR SL7 / SM7
- SAF SBS2220H
- WABCO PAN 19-1
- WABCO PAN 19-1 *plus*
- WABCO PAN 22-1

SAF-HOLLAND assumes no responsibility or liability for these "Instructions for use" in conjunction with maintenance and repair work (service) on other brakes or on brakes from other manufacturers or its tools other than those enclosed are used.

2. The contents and information in these "Instructions for use" do not represent guarantees in the sense of the German Civil Code (BGB), nor can they be construed as such.
3. SAF-HOLLAND assumes unlimited liability from these "Instructions for use" in particular for the correctness, completeness or up-to-dateness of the information contained, for claims for damages or for compensation for any unnecessary expenditures only in cases of gross negligence and intent. SAF-HOLLAND accepts no liability, however, for minor cases of negligence, insofar as no major obligations, damage from impairment of life, physical well-being or health of any persons or guarantees or rights under the Product Liability Act are affected. The same shall apply to minor cases of negligence on the part of persons employed by SAF-HOLLAND. SAF-HOLLAND shall be liable for minor cases of negligence where major obligations are infringed, but limited to the typical damage foreseeable at the time of the handover of these "Instructions for use".
4. The SAF-HOLLAND brand names mentioned in these "Instructions for use" are not necessarily marked as such in all cases. Nevertheless, SAF-HOLLAND points out that they are subject to the rules of the trade mark laws, in particular the provisions of the German Trade Marks Act (MarkenG).
5. The texts and illustrations contained in these "Instructions for use" are covered by SAF-HOLLAND copyrights, in particular the rights of use and exploitation, and may only be duplicated or distributed with the prior written authorisation of SAF-HOLLAND.
6. Should any disputes with SAF-HOLLAND arise out of or in conjunction with the use of these "Instructions for use", these shall be subject exclusively to the law of the Federal Republic of Germany. Sole venue for all disputes out of or in conjunction with these "Instructions for use" shall be head office of SAF-HOLLAND.
7. Should any provision or part of a provision in this Note be or become inapplicable or incomplete, this shall not affect the validity of the other provisions. SAF-HOLLAND and the use of these "Instructions for use" shall then undertake to replace the inapplicable provision by an applicable provision coming closest to the intended economic purpose of this Note. The same shall apply in the event of an incomplete provision.
8. If and insofar as this Note contains no provisions, in particular with respect to the enclosed tools proper, the rights and obligations between SAF-HOLLAND and the user of these "Instructions for use" shall be governed by the latest version of the SAF-HOLLAND "General Conditions of Sale and Delivery". The application of the General Terms of Business, in particular the Purchasing Conditions, of the user of these "Instructions for use" shall be ruled out.
9. During all maintenance and repair work, be sure to observe the instructions of the respective brake manufacturer.

Caution

All screws and bolts may only be used once. The specified tightening torque applies for dry tightening. Unless otherwise specified, no additional bolt locking means are necessary. The bolt tightening torques must always be taken from the applicable maintenance and repair manuals. (www.safholland.com)

KNORR BRAKE CALLIPERS

Replace the calliper guide

Brake calliper type SB6 and SB7

Repair of the floating bearing (rubber bearing)

Special tools required:

No special tools required here.

Repair of the fixed bearing

Special tools required:

Puller for fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 2; 15; 16; 25; 26; 29.
Assemble the tool as illustrated in the figure.



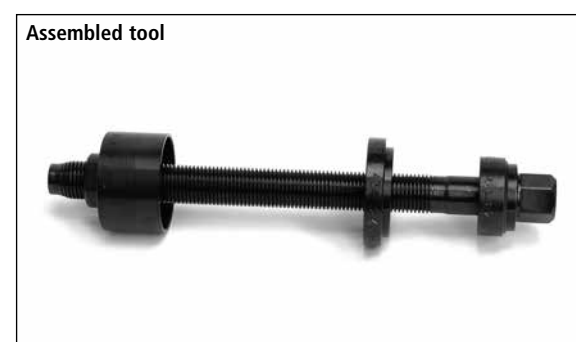
Puller for fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 11; 15; 16; 22; 26; 29.
Assemble the tool as illustrated in the figure.



Puller for bellows

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 22; 23.
Assemble the tool as illustrated in the figure.



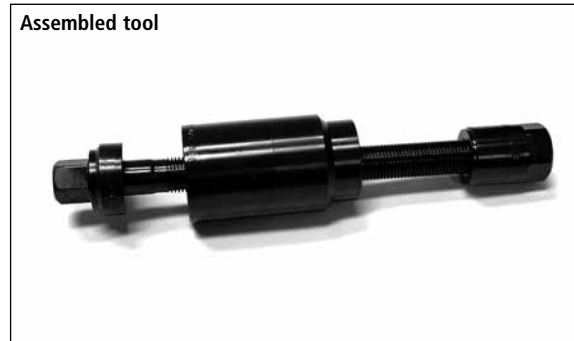
Brake calliper type SB6...(SN) and SB7...(SN)

Repair of the floating bearing (rubber bush)

Special tools required for the rubber bush:

Puller

Individual parts required: The following tool parts from the tool case are required: No. 2; 15; 16; 29.
Assemble the tool as illustrated in the figure.



Puller

Individual parts required: The following tool parts from the tool case are required: No. 1; 15; 16; 27; 29.
Assemble the tool as illustrated in the figure.

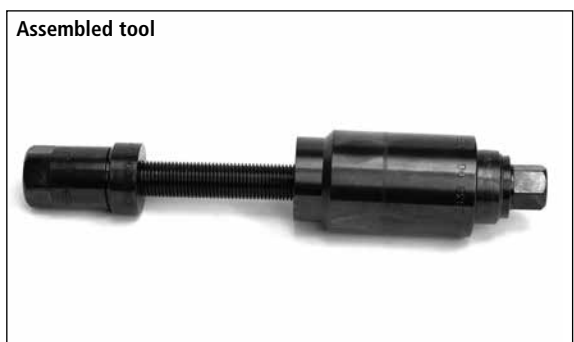


Repair of the fixed bearing

Special tool required for repairing the fixed bearing:

Puller

Individual parts required: The following tool parts from the tool case are required: No. 2; 15; 16; 25; 29.
Assemble the tool as illustrated in the figure.



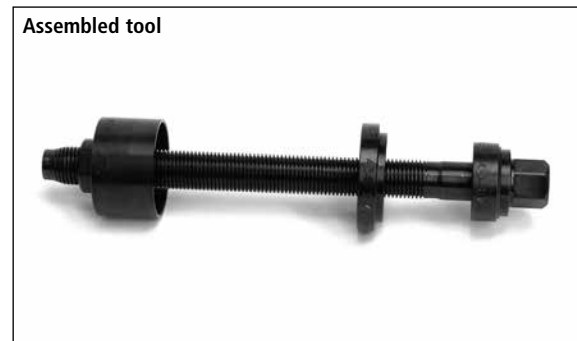
Puller

Individual parts required: The following tool parts from the tool case are required: No. 11; 15; 16; 22; 29.
Assemble the tool as illustrated in the figure.



Puller for bellows

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 22; 23.
Assemble the tool as illustrated in the figure.



Floating bearing

Individual parts required: The following tool parts from the tool case are required: No. 7; 12.
Assemble the tool as illustrated in the figure.



Fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 5; 6; 21.
Assemble the tool as illustrated in the figure.



Brake calliper type SB7...(SK) and SB7...(SN) (SAF Part No. XX.XXX.XXXX.21)**Repair of the floating bearing**

Special tools required:

Puller for floating bearing

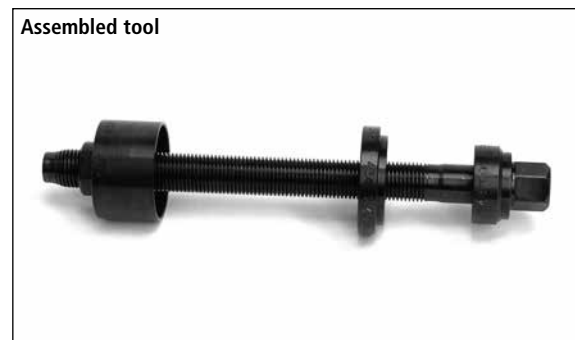
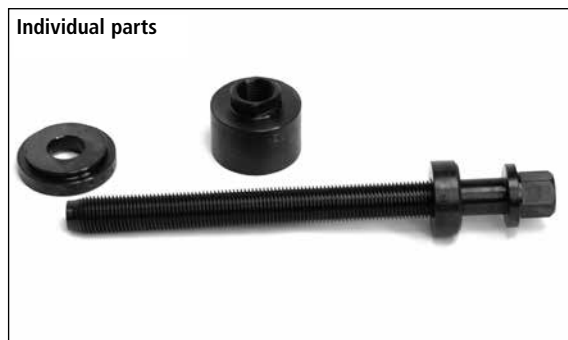
Individual parts required: The following tool parts from the tool case are required: No. 2; 15; 16; 25; 29.
Assemble the tool as illustrated in the figure.

**Puller for floating bearing**

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 23; 25; 29.
Assemble the tool as illustrated in the figure.

**Puller for bellows**

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 22; 23.
Assemble the tool as illustrated in the figure.

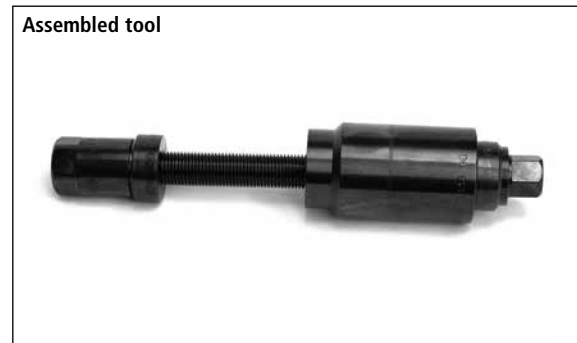


Repair of the fixed bearing

Special tools required:

Puller for fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 2; 15; 16; 25; 29.
Assemble the tool as illustrated in the figure.



Puller for fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 11; 15; 16; 22; 29.
Assemble the tool as illustrated in the figure.



Puller for bellows

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 22; 23.
Assemble the tool as illustrated in the figure.



Tools for driving on cap

Individual parts required: The following tool parts from the tool case are required: No. 5; 6; 21.
Assemble the tool as illustrated in the figure.

**Fixed bearing cap**

Assemble all three tools as illustrated.

**Floating bearing cap**

Assemble the tool without No. 5.



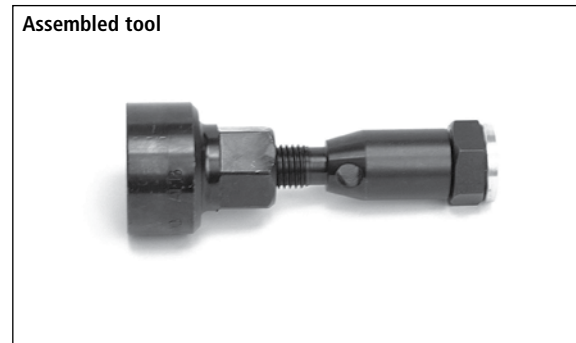
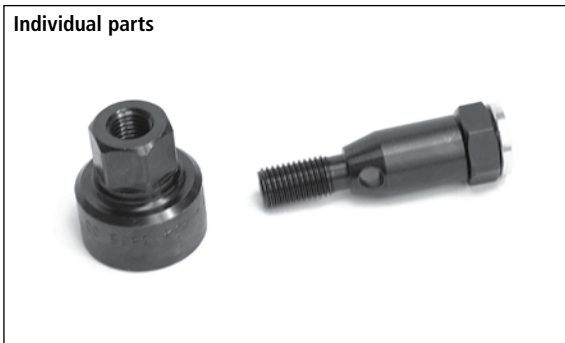
Replace the thrusters with bellows Brake calliper type SB6 and SB7

Replace the thruster bellows incl. inner seal

Special tools required:

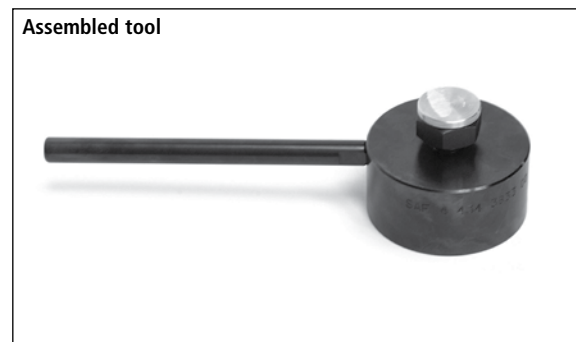
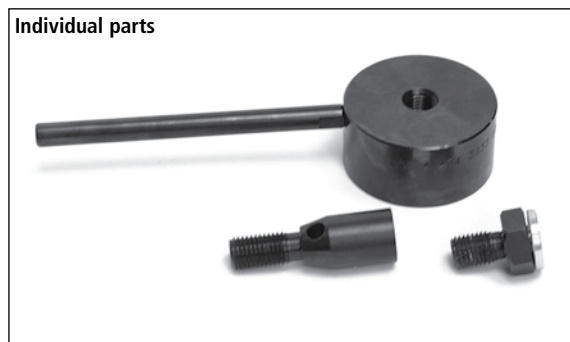
Tool for inner seal

Individual parts required: The following tool parts from the tool case are required: No. 17; 28.
Assemble the tool as illustrated in the figure.



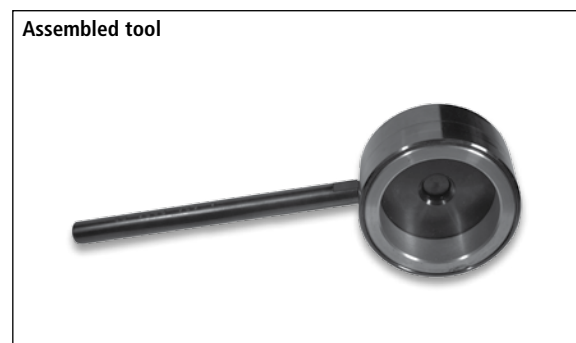
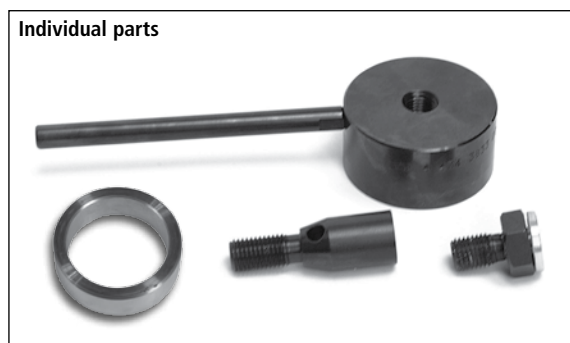
Tool for thruster with bellows

Individual parts required: The following tool parts from the tool case are required: No. 3; 17; 21.
Assemble the tool as illustrated in the figure.



Replace the thrusters with bellows Brake calliper type SL7 and SM7

Individual parts required: The following tool parts from the tool case are required: No. 3; 17; 37.
Assemble the tool as illustrated in the figure.



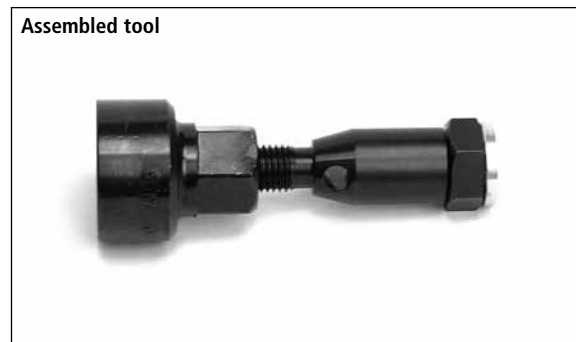
Brake calliper type SB6...(SN), SB7...(SN), SK7

Replace the thruster bellows incl. inner seal

Special tools required:

Tool for inner seal

Individual parts required: The following tool parts from the tool case are required: No. 17; 28.
Assemble the tool as illustrated in the figure.

**Tool for thruster with bellows**

Individual parts required: The following tool parts from the tool case are required: No. 3; 4; 17; 21.
Assemble the tool as illustrated in the figure.



SAF BRAKE CALLIPER

Brake calliper type SBS2220H

Mounting of thrust plate bellow

Special tools required:

Thrust plate bellows press

Individual parts required: The following tool parts from the tool case are required: No. 36



Mounting of bellow with bellows press

Special tools required:

Calliper bellows press

Individual parts required: The following tool parts from the tool case are required: No. 33; 34.
Assemble the tool as illustrated in the figure.



Brake calliper type SBS2220H

Replace the calliper guide

Repair of the floating bearing (plastic bearing)

Special tools required:

No special tools required here.

Repair of the fixed bearing

Special tools required:

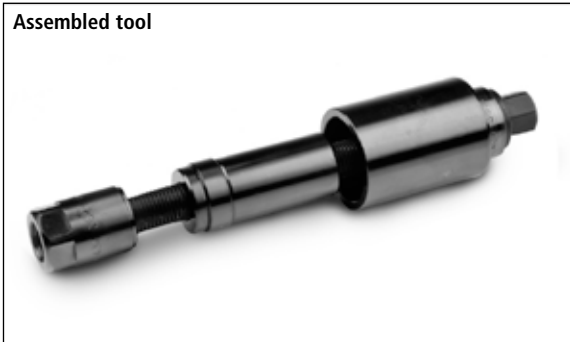
Puller for fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 29; 30; 31; 32.
Assemble the tool as illustrated in the figure.

Individual parts



Assembled tool



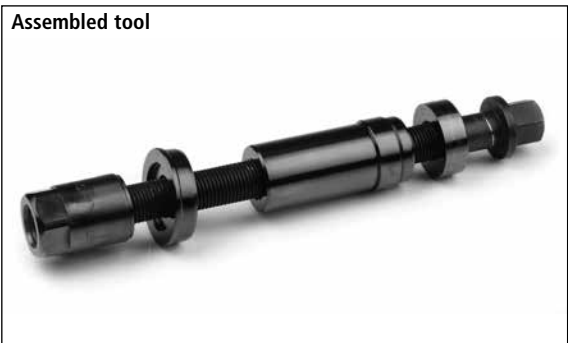
Puller for fixed bearing

Individual parts required: The following tool parts from the tool case are required: No. 15; 16; 29; 30; 31.
Assemble the tool as illustrated in the figure.

Individual parts



Assembled tool



Brake calliper type SBS2220H

Replace the calliper guide

Exchange of reset shaft

Special tools required:

Pulling bracket for resetting

Individual parts required: The following tool parts from the tool case are required: No. 35



WABCO BRAKE CALLIPER**Brake calliper type PAN 19-1, PAN 19-1 *plus* and PAN 22-1**

Special tools required:

Individual parts required:

The following tool parts from the tool case are required:
No. 7; 8; 14; 19; 20.

Assemble the tool as illustrated in the figure.

Individual parts

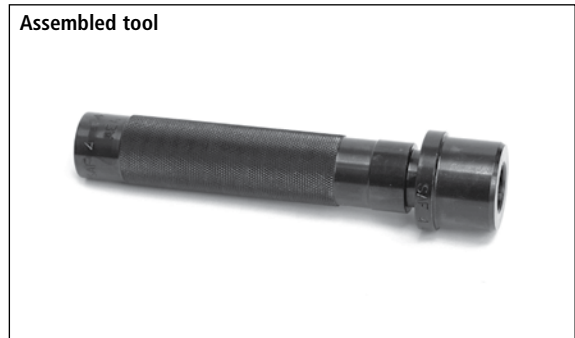
**Driver for the guide bushes**

Individual parts required:

The following tool parts from the tool case are required:
No. 7; 20.

Assemble the tool as illustrated in the figure.

Assembled tool

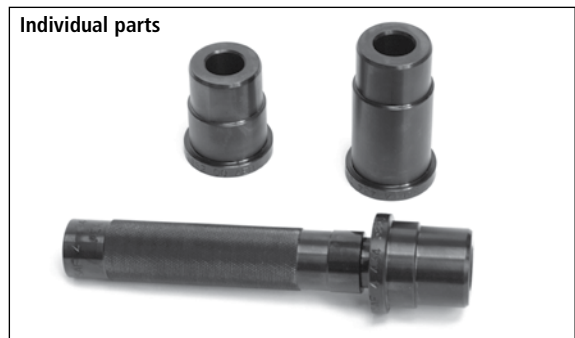
**Driver tool for the guide bushes**

Individual parts required:

The following tool parts from the tool case are required:
No. 7; 8; 14; 19.

Assemble the tool as illustrated in the figure.

Individual parts

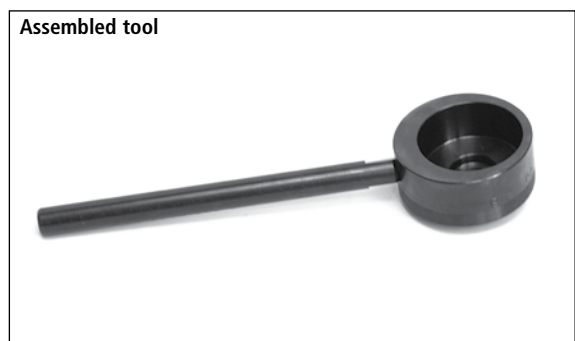
**Tool for driving out the steel caps**

Individual parts required:

The following tool parts from the tool case are required:
No. 21; 24.

Assemble the tool as illustrated in the figure.

Assembled tool



We are always there for you

Emergency +49 6095 301-247

Service +49 6095 301-602

Aftermarket +49 6095 301-301

Operator +49 6095 301-0

Fax +49 6095 301-259

originalparts@safholland.de

service@safholland.de

www.safholland.com