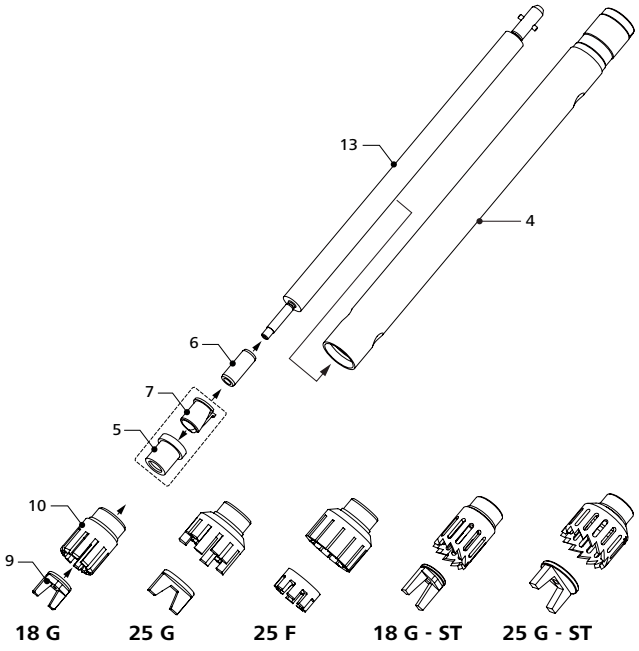
IKA

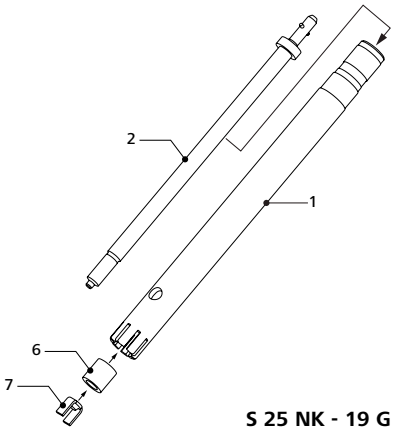
designed for scientists

Dispergierwerkzeuge / Dispersion tools / Outils dispersants

S 25 N - 18 G
S 25 N - 25 G
S 25 N - 25 F
S 25 N - 18 G - ST
S 25 N - 25 G - ST
S 25 NK - 19 G



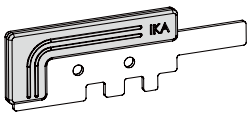
18 G **25 G** **25 F** **18 G - ST** **25 G - ST**



S 25 NK - 19 G

Werkzeug / Tools / Outils

Flachschlüssel
Flat key
Clé plate



Schaftschlüssel
Shaft key
Clé de la tige

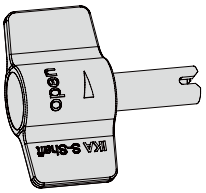
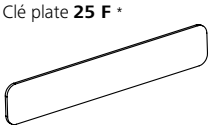


Fig. 1

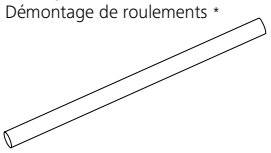
Werkzeug / Tools / Outils

Flachschlüssel **25 F** *
Flat key **25 F** *
Clé plate **25 F** *



* Nur für **S 25 N - 25 F!**
* Only for **S 25 N - 25 F !**
* Uniquement pour **S 25 N - 25 F!**

Lagerabzieher *
Bearing remover *
Démontage de roulements *



* Nur für **S 25 NK - 19 G!**
* Only for **S 25 NK - 19 G !**
* Uniquement pour **S 25 NK - 19 G!**

Fig. 2

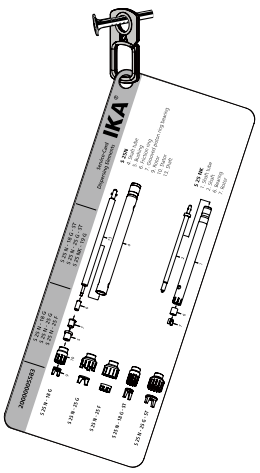


Fig. 3

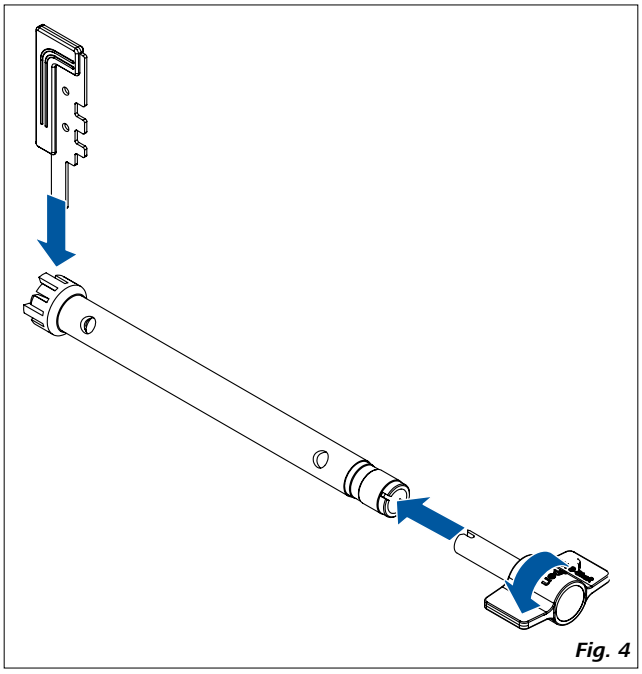


Fig. 4

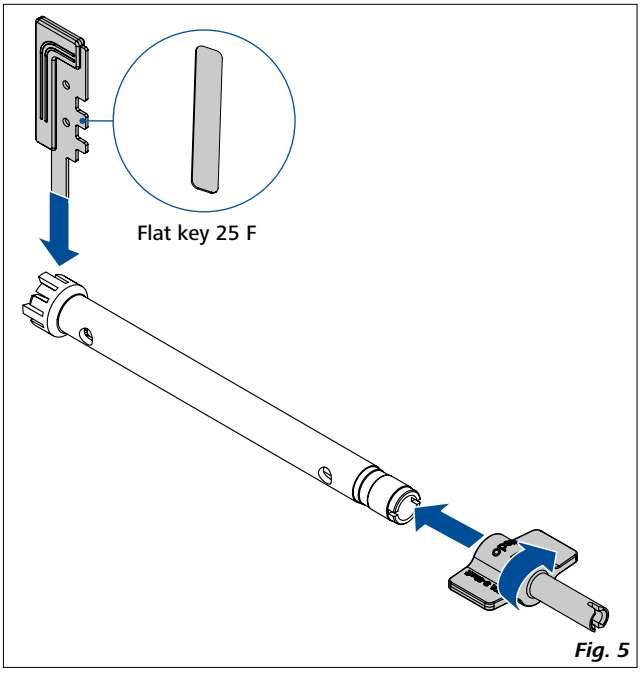


Fig. 5

Source language: German

EN

Content

Explication of warning symbols

⚠ DANGER Indicates an (extreme) hazardous situation, which, if not avoided, will result in death, serious injury.

⚠ WARNING Indicates a hazardous situation, which, if not avoided, can result in death, serious injury.

⚠ CAUTION Indicates a potentially hazardous situation, which, if not avoided, can result in injury.

⚠ NOTICE Indicates practices which, if not avoided, can result in equipment damage.

⚠ CAUTION Burns hazard!

Safety instructions

- **Read the operating instructions in full before starting up and follow the safety instructions.**
- Keep the operating instructions in a place where they can be accessed by everyone.
- Ensure that only trained staff work with the appliance.
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.

⚠ CAUTION The dispersion tool may heats up during operation. In particular in the processing of hot medium, the tool must be cooled before it can be removed from the drive.

⚠ NOTICE When in operation the dispersion tool can become hot. If the dispersion tool is not inserted into the drive flange correctly or the medium is hot, it can become extremely hot.

⚠ WARNING Don't touch rotating parts during operation.

⚠ CAUTION Wear your personal protective equipment in accordance with the hazard category of the medium to be processed. Otherwise there is a risk of splashing and evaporation of liquids; body parts, hair, clothing and jewelry getting caught.

- The work has to be interrupted immediately if you notice unusual noise and/ or increasing emission of liquid from the upper, sidewise rinsing drilling. The bearings must be controlled, and replaced if necessary.
- Note the operating instructions of the disperser unit.
- Abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on.
- Do not use any damaged dispersion tools e.g. with hairline cracks or splits.

⚠ NOTICE Never run the dispersion tool dry. Without cooling by the medium the bearing will be destroyed.

- The dispersion tool is not suitable for continuous operation. Likewise the optimal dispersion duration and rotating frequency must be determined by attempts. Usually a few seconds are sufficient, maximum duration is one minute. Longer application times bring no improvements, increase however the sample temperature substantially.
- Dispersing causes the medium to heat up.
- Note the min./max. immersion depth in the "**Technical data**".
- The function of the dispersion tools depends on the condition of the sharp edges of rotor and stator (integrated in the shaft tube). Abrasive media can round off these edges fast, whereby the disperse effect diminishes.
- The gasket and bearings are made of PTFE and rustproof steel; the following points should therefore be noted: *Chemical reactions of PTFE occur in contact with molten or solute alkali metals and alkaline earth metals, as well as with fine powders of metals in groups 2 and 3 of the periodic system at temperatures above 300 °C - 400 °C. Only elementary fluorine, chlorotrifluoride and alkali metals attack it; halogenated hydrocarbons have a reversible swelling effect.*
  (Source: Römpps Chemie-Lexikon and "Ulmann", Volume 19)

Product information

- **S 25 N:** The shaft bearing of the dispersion tools consist of a slide bearing (PTFE).
  S 25 NK: The shaft bearing of the dispersion tools consist of a slide bearing (PTFE) and a ball bearing (at the top).
- All materials are FDA (Food and Drug Administration) conform.

Application instructions

Application: Wet crushing, dispersions, emulsifying (Batch-operation).

Unpacking

Unpacking:
- Please unpack the device carefully.
- In case of any damage, a detailed report must be sent immediately (post, rail or forwarder).

Delivery scope:
- Dispersion tool according to you order
- Shaft key (see **Fig. 1**)
- Flat key (see **Fig. 1**)
- Flat key **25 F** (only with **S 25 N - 25 F**, see **Fig. 2**)
- Bearing remover (only with **S 25 NK - 19 G**, see **Fig. 2**)
- Mesh bag (for collecting and packaging small parts of the dispersion tool for cleaning, e.g. washing the rotator, bushing, friction ring and grooved piston ring bearing in dishwasher.)
- Hook (for hook and hang the service card, see **Fig. 3**)
- Technical information
- Short instruction.

Spare parts list

S 25 N

Item	Designation
4	Shaft tube
5	Bushing
6	Friction ring
7	Grooved piston ring bearing
9	Rotor
10	Stator
13	Shaft

S 25 NK

Item	Designation
1	Shaft tube
2	Shaft
6	Bearing
7	Rotor

Spare parts diagram see front page.
For orders of spare parts, please specify the type of dispersion tool and the designation of the spare part.

Maintenance and cleaning

Cleaning:

The sterilization of the complete **S 25 N** dispersion tool is possible.
The sterilization of the ball bearing which is assembled on the shaft (**2**) of the **S 25 NK - 19 G** is not possible.

Allowed procedures	Sterilization techniques
Damp heat	Autoclave to 121°C at 2 bar positive pressure.
Chemical procedures	By germ - killing dissolvent alcohol, phenol, formalin.... Disinfectant remainders are to be removed with germ - free water.
Hot air	Germ - killing by hot-air with 160 to 190 °C (approx. 30 min.).

For cleaning the dispersion tool, operate it in a dissolvent for dissolving the residuaries of the substance. Due to the large flow rate, rotor and stator are cleaned to a large extent. The dispersion tool must be divided and cleaned immediately after working, so that the adhering residuaries of the substance don't cultivate unwanted bacterial cultures.

S 25 N:

For cleaning purposes disassemble the dispersion tool as described below (items see front page):

- Unscrew the rotor (**9**) from the shaft (**13**), see **Fig. 4**:
  Hold the rotor (**9**) with the flat key.
  Screw off the rotor (**9**) by turning the shaft (**13**) in counterclockwise using the shaft key.
- Unscrew the stator (**10**) from the shaft tube (**4**) (left-hand thread), see **Fig. 5**:
  Hold the stator with the flat key.
  Screw off the stator by turning the shaft tube (**4**) in clockwise using the shaft key.
- Pull the shaft (**13**) out of the shaft tube in a downward direction. The individual parts threaded on the shaft (**5**, **6** and **7**) may simply be pulled off.
- The slotted bearing (**7**) shall be replaced in the case of wear.

S 25 NK:

For cleaning purposes disassemble the dispersion tool as described below (items see front page):

- Unscrew the rotor (**7**) from the shaft (**2**), see **Fig. 4**:
  Hold the rotor (**7**) with the flat key.
  Screw off the rotor (**7**) by turning the shaft (**2**) in counterclockwise using the shaft key.
- Pull the shaft (**2**) out of the shaft tube in an upward direction. Push the bearing (**6**) out of the shaft tube (**1**) by using the bearing remover included with the tool set.
- The bearing (**6**) shall be replaced in the case of wear.

The assembly of the dispersion tool takes place in reverse order.

⚠ NOTICE The rotor must not be tightened too strongly, otherwise the thread / rotor teeth will be damaged.

Spare parts order:

Spare parts diagram see front page.
For orders of spare parts please specify the serial number on the shaft tube, the type of dispersion tool and the designation of the spare part.

Repair:

Please send the dispersion tool for repair only after it has been cleaned and is free from any materials which may constitute a health hazard.

For repair, please request the "**Decontamination Certificate**" form **IKA** or use the download printout of it from **IKA**. If you require servicing, return the instrument in its original packaging. Stor-age packaging is not sufficient. Please also use suitable transport packaging.

Warranty

In accordance with **IKA** warranty conditions, the warranty period is 24 months. For claims under the warranty please contact your local dealer. You may also send the machine direct to our works, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs. The warranty does not cover wearing parts, nor does it apply to faults resulting from improper use or insufficient care and maintenance contrary to the instructions in this operating manual.

Technical Data

		S 25 N – 18 G	S 25 N – 25 G	S 25 N – 25 F	S 25 N – 18 G – ST	S 25 N – 25 G – ST	S 25 NK – 19 G
Working range	**ml**	10-1500	50-2000	50-2000	10-1500	50-2000	25-1500
Stator/Rotor (Ø)	**mm**	18/12.7	25/17	25/18	18/13.4	25/20	18/12.7
Gap between rotor and stator	**mm**	0.3	0.5	0.5	0.25	0.5	0.3
Max. allowable speed	**rpm**	25000					
Max. circumferential speed	**m/s**	16.6	22.2	23.6	17.5	26.2	16.5
Min./max. immersion depth	**mm**	40/165					
Material in contact with medium		PTFE, AISI 316L					
pH range		2–13					
Suitable for solvents and abrasive substances		Yes					
Max. Working temperature	**°C**	180	180	180	180	180	120
Ultimate fineness, suspensions	**µm**	10-50	15-50	5-25	10-50	15-50	10-50
Ultimate fineness, emulsions	**µm**	1–10	1-10	1-5	1-10	1-10	1-10

Subject to technical changes!