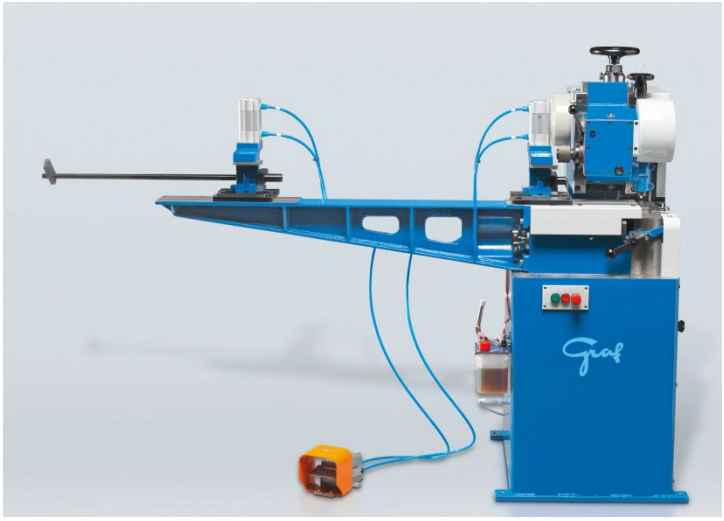
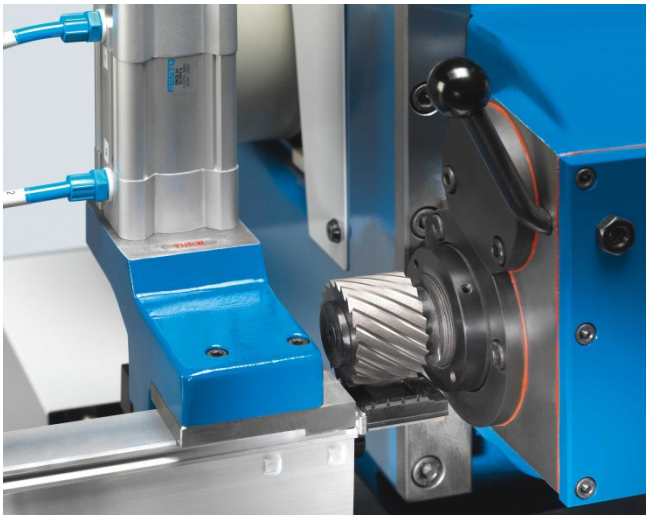




DKF 10 – Instruction Manual

Flat End Milling Machine

Edition: September 2020/pg

Superior Performance

Graf + Cie AG Bildaustrasse 6 8640 Rapperswil Switzerland
☏ +41 55 221 71 11 Fax +41 55 221 72 33
E-Mail: info@graf-companies.com Website: www.graf-companies.com

Instruction manual DKF 10

Translation from the original instruction manual / german.

EC-Declaration of conformity

Graf + Cie AG
Bildaustrasse 6
CH-8640 Rapperswil
T +41 55 221 71 11
F +41 55 221 72 33
www.graf-companies.com

Rapperswil,

Graf + Cie AG declare that the product:

Bezeichnung: Flat End Milling Machine

Typ: DKF 10

Serial-No.: -------
Machine -No.: -------

fulfils the following relevant provisions:

2006/42/EC (EC Machinery Directive)
including their modifications

Reference to the harmonised standards:

EN 60204-1 Safety of machines – Electrical equipment of machines,
Part 1: General requirements

Responsible for the documentation: Quality Manager
Graf + Cie AG, Bildaustrasse 6, 8640 Rapperswil, Switzerland

Graf + Cie AG

Index

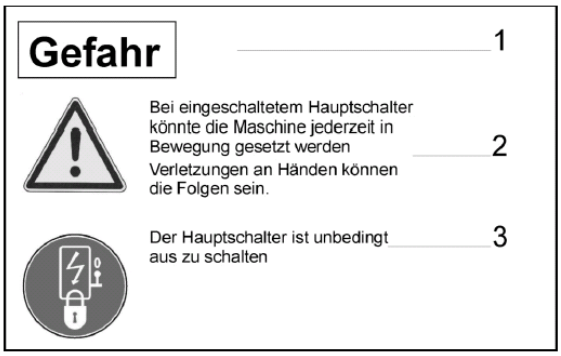
Index

1. Safety

1. Safety

1.1 Symbols in the document

Example of a note on safety



1 Signal word

"Danger", "Warning", "Caution", "Important" classify the safety precautions.

2 Risk

Description of the risk situation The potential consequences of the damage are also described.
The description of the risk involved is emphasised by a symbol.

3 Directions for avoiding danger

Description of what needs to be done or avoided in order to prevent accidents and damage occurring. The direction for avoiding danger can be emphasised by a command or prohibition symbol.

It is absolutely essential to observe the safety precautions.
Safety precautions are classified and highlighted by signal words.
The example shows a safety precaution indicated by the signal word "Danger".

DANGER
Maximum danger level. This is used in the case of risks where there are very far-reaching consequences, with fatal injuries, irreversible or incurable injuries and very serious but curable injuries "DANGER" is only used when damage is highly likely to occur due to improper behavior

WARNING
Second highest level of danger used for risks where there are far-reaching consequences, the same as at maximum danger level. Unlike maximum level, "WARNING" is used where the probability of damage occurring in the case of improper behavior is only slight.

CAUTION
Moderate level of danger is used in the case of risks where the consequences are less serious, completely curable injuries to only slight injuries with short absence from work. Also used for damage to property with far-reaching consequences.

IMPORTANT
Low level of danger is used when there is a risk of slight damage to property.

Danger symbols

General hazard area

Risk of injury

Risk of injury due to part of the body being pulled in

Risk of injury due to being pulled in

Hazardous voltage

Electric shock from capacitor

Risk of stumbling

Prevention symbols

Use eye protection

Wear protective footwear

No admittance

Shut down power before working on the installation

Switch off via the main switch and secure switch with a padlock

Press EMERGENCY STOP button

Do not touch

Wear safety gloves

No admittance to unauthorized personnel

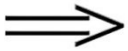
Symbols in the Document

The page indicated refers to the currently selected chapter.

More information on this subject can be found on the page indicated

Incorrect application, not permissible

Correct application, OK



Outcome. For example, after an operation step

1.2 Legal stipulations

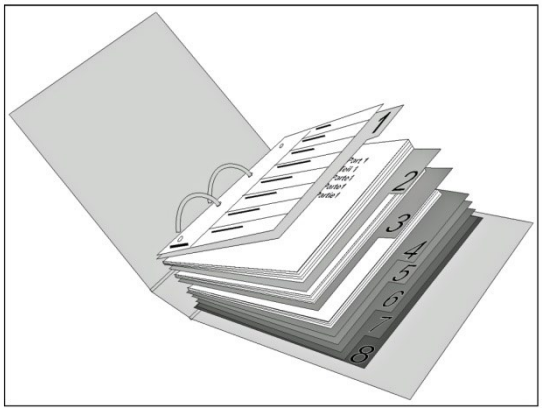
1.2.1 Liability

Graf has issued this instruction manual to the best of its knowledge and belief. Graf cannot accept any liability for possible editorial deficiencies and errors within this instruction manual. Graf reserves the right to implement changes at any time in the instruction manual or on the device described therein without prior advice. No part of this instruction manual may be reproduced, transferred, altered or translated in any way without the prior written consent of Graf + Cie AG Rapperswil. The attaching of foreign parts may effect the characteristics of the device and its safety. Graf cannot accept any responsibility for any damage caused by such parts. The German edition is relevant for the contents of this instruction manual.

1.3 General notes on safety

1.3.1 Safety precautions

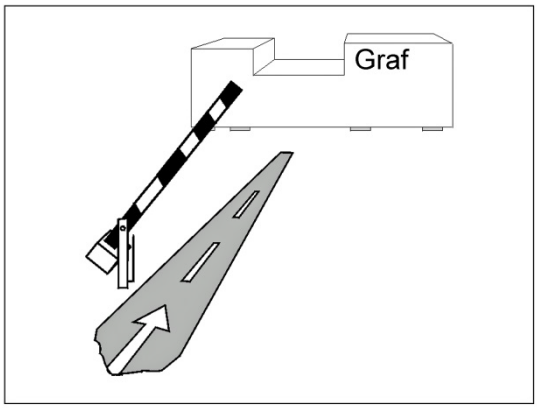
Availability oft he operating instructions



All sets of instructions, especially documents relating to safety, must be kept in a place where the staff can consult them freely.

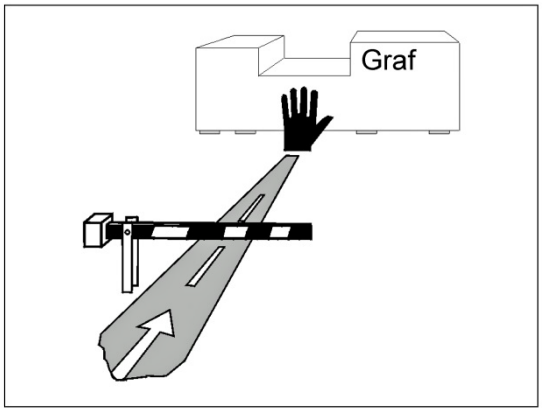
Only those who have access to correct information can work safely and efficiently.

Access available only for trained and authorized persons.



Appropriate measures are to be taken to ensure that only authorized or trained personnel have access to the machinery.

No admittance to unauthorized persons



Appropriate structural and organizational measures must be taken to ensure that untrained persons have no access to the machinery.

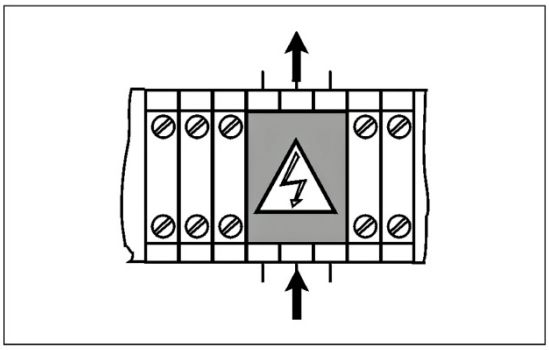
Regional safety regulations
Local safety regulations and laws in force in the individual countries must be observed.

Obligatory notification
Should an accident occur on a machine or should it become clear that operating a machine constitutes a potential danger, Graf + Cie AG, CH-8640 Rapperswil, must be informed immediately in writing.

Graf + Cie AG declines all liability for any damage that may occur due to failure to observe this regulation.

Work on electric components
With the machine shut down, turn off the main switch and secure with a padlock.
Only qualified electricians may work and carry out checks in the electric and electronic areas.
For operational checks and troubleshooting in test operating mode, it may be necessary to work with live voltage on certain units. This kind of work demands particular care and attention, with instruments and tools in perfect working order.
In order to guarantee correct operating process the sensors must not be actuated during normal running.

External voltage

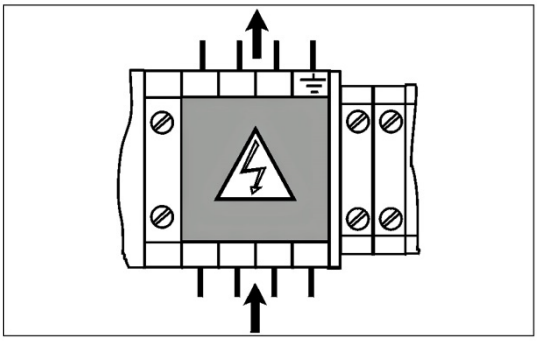


Certain circuits may still be carrying live voltage even when the main or safety switch is off.

These circuits are marked at the terminals according to the diagram.

Particular care and attention is required in this area.

Supply line



The supply line to the main switch is live even when the main switch is off.

The terminals of the supply line are marked according to the diagram.

Particular care and attention is required in this area.

Covers that are tightly screwed down

Covers that are tightly screwed down, as well as inspection windows and piping, must not be removed unless operating conditions on the machine are safe.

Operating conditions on the machine are not safe unless the following requirements are met. The main switch or safety switch must be turned off and secured with a padlock. In addition, no components must be moving.

The covers must be put back in place before the machine is put back into operation again.

Maintenance work
Observe the maintenance regulations of the machine concerned.
During maintenance work, turn off the main or safety switch and secure with a padlock.
This prevents the machine being inadvertently switched on by a third person.

Auxiliary agents and tools
Auxiliary agents such as ladders, hoisting devices etc. must be in perfect condition.
Tools and other auxiliary agents must not be deposited on machines that are running.
Falling objects may cause accidents or damage.
Whenever chemicals such as solvents are used, the instructions of the manufacturer concerned must be observed.
If work is carried out in which the danger of eye injury is not fully excluded, protective goggles must be worn.
This applies particularly to cleaning jobs involving compressed air.
Oil or grease residue on the floor is to be removed immediately.

Practical clothing
For operating reasons, it is not possible to secure all rotating or moving parts of a machine for the purpose of preventing accidents. The risk of accidents in such areas can be considerably reduced by wearing appropriate clothing.
Do not wear loose clothing (wide open sleeves, scarves, ties etc.)
Long hair must be specially protected. Always wear a cap.
Always wear protective goggles for grinding work.
Do not wear rings on your fingers or wristwatches.
Do not carry tools in open breast pockets. These objects might drop out or fall into the machine.

Work on buildings and installations in the vicinity of the machine
If it is necessary to carry out such work, the machine must be shut down. This applies particularly if it is necessary to work above the machine.
Do not climb onto the machine or use it as "scaffolding".

Alterations to machines and appliances
The machines are constructed in accordance with the state of the art.
The machines are tested and approved only in their original versions.
Installing parts made by other manufacturers may alter the characteristics of a machine and impair its operating reliability. Graf + Cie AG declines all liability for any damage of this nature.

Disposal
In the event that the machine is to be permanently put out of operation, the statutory rules in the relevant country, concerning reutilization, recycling and waste disposal, must be observed.
Any oil, grease or batteries in the machine must be disposed of in a proper manner.

Think safe.
For reasons related to operability, productivity etc. it is not possible to eliminate completely all sources of danger.
Particularly in such cases, the overestimating of one's own abilities or presumptuous thinking along the lines of: “Nothing can happen to me”?, are the greatest sources of risk.
Daily routine jobs also demand constant attention.

Thinking safe reduces the risk of injury and is therefore never a waste of time.

Fireproofing textile machines

Type of danger
Localized fires may result from various textile processes due to the ignition of fibres, fly or fibre dust, especially where cotton comes into contact with heated bearings, sparks from metallic impurities and electric sparks.
Such fires on our textile machines may cause slight damage to property or the environment and there is a low probability of personal injury by burning or inhalation of toxic smoke.

Accordingly, manually operated fire extinguishers must be provided in the spinning mill suitable for combatting fires of the following categories:

Fire classification A:
Solid materials, mainly of an organic nature, which would normally burn when exposed to glowing heat, such as textiles (fibers, fly or fiber dust), compound materials containing rubber.

Fire classification B:
Liquid or liquefying materials, such as oil, grease, paint, resin, wax, plastic.
Suitable extinguishing agents must be supplied according to this division into fire classifications.
These may be, for example:
water, with or without additives, for reducing the surface tension for instance.
foam
powder
quenching gases e.g. carbon dioxide, nitrogen, argon and mixtures

The use of powder extinguishers of this fire classification is also permitted to extinguish fires on low-voltage equipment. To reduce subsequent damage due to soiling, however, we strongly recommend the use of quenching gases.

Number, size and distribution of extinguishing agents must be determined in conjunction with the regional offices responsible for fire safety.

Furthermore, the personnel must be instructed in the use of the fire extinguishing equipment, escape routes, etc., in accordance with local regulations.

Every operator of textile machinery must actively support fire-protection and firefighting in his/her company.

1.4 Machine identification

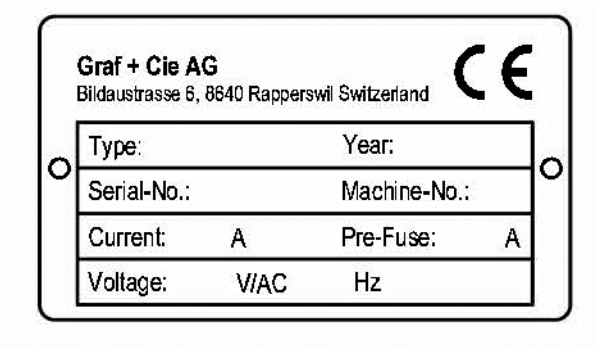
Manufacturer

Graf + Cie AG
Bildaustrasse 6
Postfach
CH-8640 Rapperswil

Tel. +41-(0)55-221-7111
Fax +41-(0)55-221-7233

1.4.1 Name plate

The information contained in this instruction manual refers to the DKF 10 Flat-End-Milling Machine with the following identification plate:

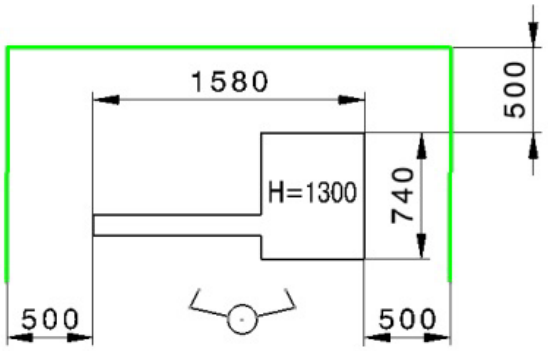


- Machine type
- Year of make
- Serial number
- Machine number
- Current (Ampere)
- Pre-Fuse (Ampere)
- Voltage (Volt/Alternating current)
- Hertz

The above details have to be indicated on possible enquiries for spare parts.

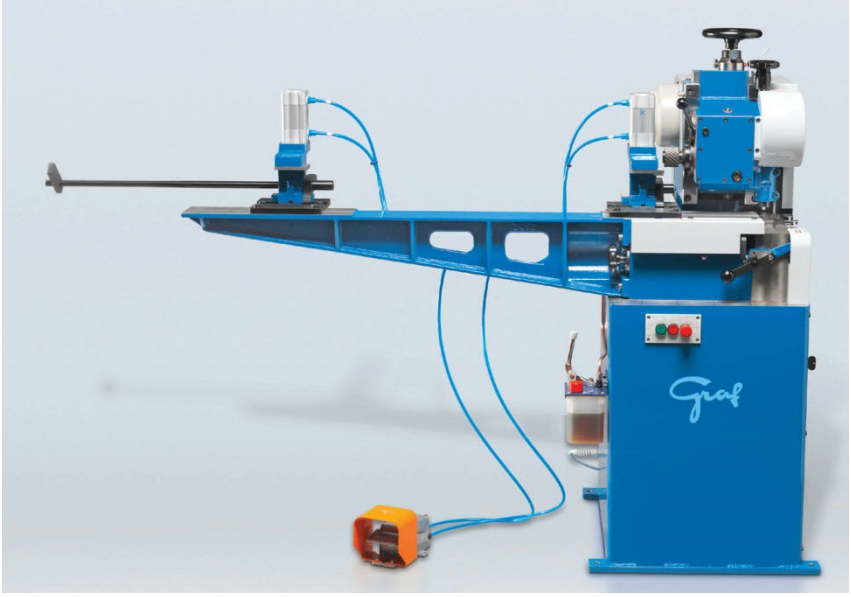
1.4.2 Description of the work place

To assure optimum accessibility to the milling machine and to the air supply, the DKF 10 should be positioned according to the following drawing. In addition adequate lighting of the work place is essential since the machine is not equipped with a lighting system.
(see point 3.2.4 lighting)



1.5 Machine description

1.5.1 Flat End Milling Machine DKF 10



Graf + Cie AG has manufactured a service machine for the milling of the seatings as well as the hollow of flat bars, the DKF 10, referred to as ‚device'.

It is the aim of this instruction manual to familiarize you as the operator with the proper use and safe application of the device.

1.5.2 Intended application

The intended application for the DKF 10 is the milling of the seatings and hollows of flat bars.
Any application exceeding the intended application is considered improper. Graf cannot be held responsible for possible damage caused by improper application; the respective risk lays solely with the operator.

1.6 Technical data

Motor rating	1.1 kW
Spindle speed HSS Spindle speed carbide HS	260 U/min. 430 U/min.
Feed motor rating	0.25 kW
Air Supply	6 bar
Weight	435 kg
Mains supply/frequency (drive)	See identification plate on DKF 10 drive motor

1.7 Emissions

Noise nuisance 65 dB

1.8 Commissioning

Machines manufactured by Graf + Cie AG must always be assembled and commissioned by Graf's own staff.
Should the assembly of new or existing plant be carried out by a third party, however, Graf + Cie AG declines all liability.

1.9 Decommissioning

Put the machine into a safe state.
Disconnect the power supply.
Protect the machine from misuse.
Secure the machine in such a way that when it is idle there is no risk of injury to any person.
The machine-specific regulations with regard to decommissioning must be observed.
The machine must be suitably protected against soiling and corrosion.
These regulations, and particularly the safety regulations, must be adhered to most exactly.

1.10 Putting back into operation

All elements affecting safety must be tested to ensure that they are in perfect operating condition.
The machine-specific regulations with regard to re-commissioning must be observed. These regulations, and particularly the safety regulations, must be adhered to most exactly.

1.11 Disposal

The environmentally friendly disposal of equipment, electronic components, recyclable materials and other components of the resharpening device is governed by national and regional laws. For detailed information on the correct disposal please contact the local authorities responsible.

2. General remarks

2. General Remarks

The DKF 10 (Flat End Milling Machine 10) is a semi-automatic machine, used for the precision milling of the seatings and hollows of the flat bars.

Depending on the execution, different types of flat bars from 37" to 60" can be milled.

The DKF 10 is available with a pneumatic clamping device and the machine is set to the required operating voltage in our works prior to delivery.

The necessity to mill the flat ends is determined by measuring the contact surfaces on the control device supplied with the machine as well as by visual inspection. Furthermore the specific instructions issued by the card maker apply in connection with the treatment of flat bars (e.g. instruction Rieter – Graf with reference to flat bars C60 / C70).

Milling is a must if the seatings of the flat ends were coated or the base surfaces for the flat clothings were plastic coated.
The more precisely the seatings are milled, the less grinding will have to be done on the flat clothings later.

Flat ends of Rieter C50 / C51 flat bars must only be milled, if the minimal height of the front seating of 23.8 mm (+/- 0.1) and 24.6 mm (+/- 0.1) of the back seating has not been reached.

An optimal result does not only depend on the milling of the flat ends but also on a level and smooth base surface for the flat clothings. Therefore the contact surface for the flat clothings should be measured prior to any possible milling.
Should the tolerance (measured over the entire length) exceed 5/100 mm per flat and 1/10 mm per set, the contact surfaces for the flat clothing need to be reglazed or new synthetic slide shoes have to be installed (for Rieter C60 / C70 alu flat bars; available from Rieter).
Our production program includes the DBA (Flat Glazing Equipment) as well as the DKB (Flat End Reconditioning)

2.1 Directions for installation

Caution!

Place cables so that nobody will stumble over them. The connecting cables must be installed so that they can not be squeezed or damaged in any other way.

DANGER!

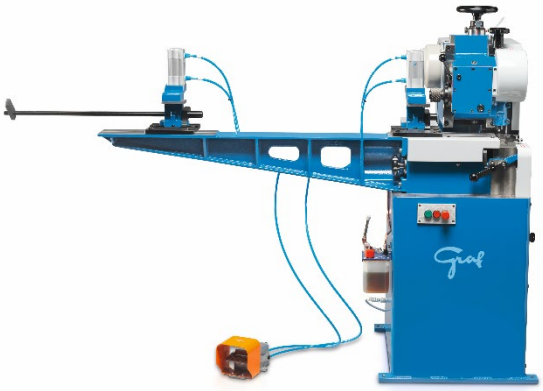
The cable of the DKF 10-drive must be fitted with a plug according to the country's regulation. This plug is not part of the delivery scope.

3. Scope of Delivery / Installation

3. Scope of Delivery / Installation

3.1 Scope of Delivery

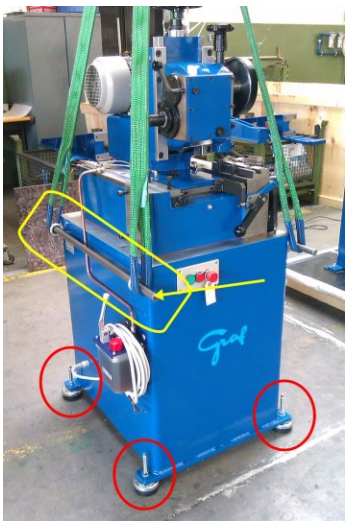
Basic equipment:



- Milling machine DKF 10 with pneumatic clamping device and air-cooling (only required for milling of Rieter C60/C70 synthetic glide shoes).
- 1 Copying Template (depending on the flat type)
- 1 Set Milling Cutters, HSS or Carbide tipped type (1 face milling cutter, 1 slotting cutter) or 1 special milling cutter for synthetic material for Rieter C60 / C70 flat bars.
- Control device with dial gauge and measuring beam

Accessories:

- For further copying templates see ☞ page 43
- For further milling cutters see ☞ page 43
- Card-specific tensioning levers see page 43
- Parts for wear and tear for 2 – 3 years



3.2 Installation

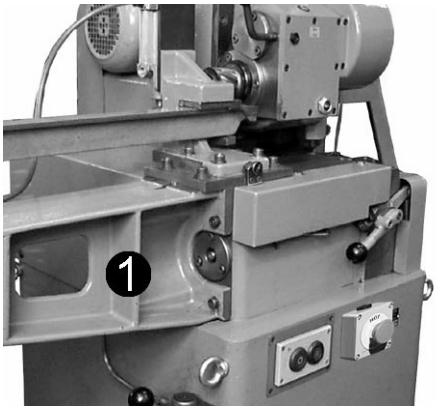
3.2.1 Unpacking of the machine

- Remove top lid of the box
- Remove side panels of the box
- Cut and remove foil
- Unscrew screws at the machine base
- Slide tubes supplied through ring bolts with ends evenly protruding
- Use crane to lift machine on the 4 protruding ends of the tubes
- Once machine is lifted, provisionally attach the 4 levelling feet to the 4 attachment lugs and position machine at the desired location.

3.2.2 Setting up

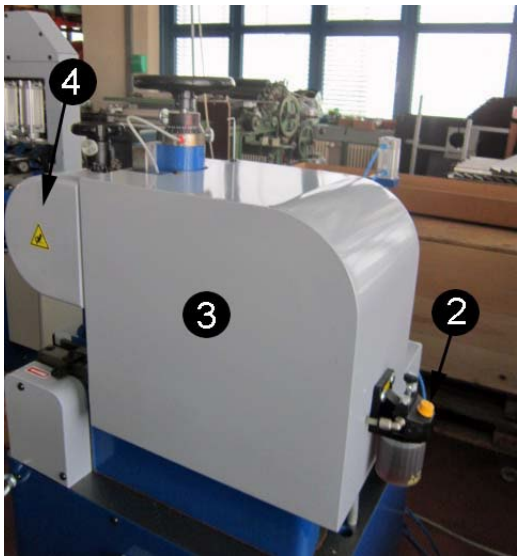
The DKF 10 can be installed without any special foundation, however the floor should be firm and level.

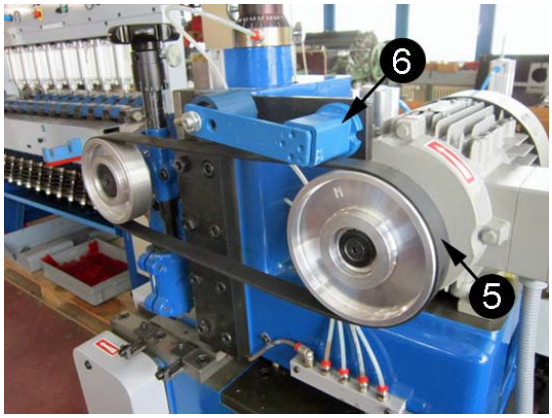
3.2.3 Adjustments



- Attach supporting arm (1), with exact positioning from top by means of the 2 pins (ø 8 x 36 mm) pre-installed (in the supporting arm). Attachment with 4 allen screws M10 x 35 mm
- Slide pneumatic clamping devices loosely on to the supporting arm and connect to air supply
- Install all pneumatic hoses supplied for the air cooling of the milling cutter and connect with foot pedal

Attention!





- The basic equipment of the machine is supplied either for the milling of cast iron bars or aluminium flats with synthetic slide shoes of Rieter C60/C70 cards. The version supplied can be determined by first removing the central lubrication unit (2) followed by the covers (3 + 4); then the belt pulleys for the drive of the milling spindle become visible
  If the belt pulleys are marked with M (motor) and G (gear box), the DKF 10 is set up for the milling of synthetic slide shoes. If a larger belt pulley is installed in the front and a smaller one in the back, the machine is set up for the milling of flat ends of cast iron bars. Depending on the type of flat, the correct combination of belt pulleys needs to be installed as otherwise the milling cutters may get damaged or wear out prematurely!
  Use belt tensioner (6) to correctly set tension of drive belt (5).
  Follow this step with „4.2 Checking of electrical connections / sense of rotation of milling spindle" and finally reinstall covers (3 + 4).

Attention!

To prevent excessive vibration the 4 levelling feet should be used to align the machine (place spirit level on to machined surface of supporting arm (1).

Check whether mains voltage corresponds to the operating voltage. Connect plug (must be done by qualified electrician.☞ Please refer to enclosed diagram).

3.2.4 Illumination

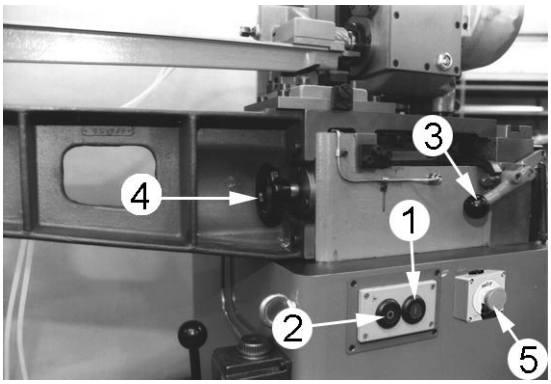
Illumination according to EN 1837 with minimum of 500 Lux should be provided within the working area (measured at the tip of the tool with opened, locked, mobile or separate protective device).

4. Initial Operation

4. Initial Operation

4.1 Operating procedure

4.1.1 Operating elements



- Green push button (2) „ON“
- Red push button (1) „OFF“
- Feed lever (3) „in-feed“
- Hand wheel (4) for manual in-feed
- Emergency Stop (5)

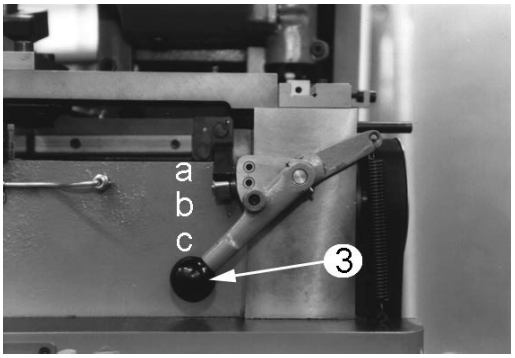
Attention! Protective covers must not be removed as long as machine is running!

4.1.2 Functions of the operating elements

- Green push button (2) simultaneously starts the spindle motor and the feed motor.
- Milling spindle start to rotate
- Depending on the position of the feed lever (3) in feed will begin

Attention! Lever (3) must be moved only when both, spindle and feed motor are running.

- Red push button (1) stops the drive- and feed motor (regardless of the position of the feed slide)

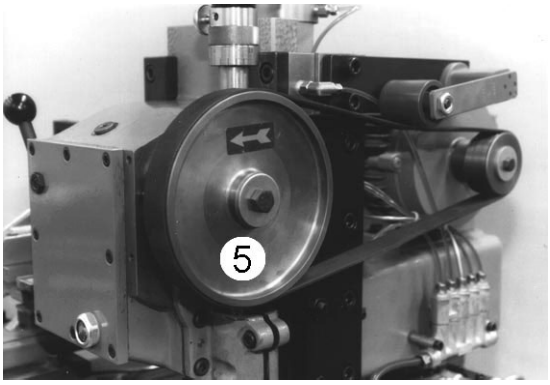


- Feed lever (3) is set in the uppermost position (a) for starting the in-feed
- Following the start of the in-feed, the feed lever (3) will automatically go to the middle position (b). The in-feed is switched off in the lowest position (c)

Attention! The milling cutter continues to run if feed lever (3) is in position ‘C’!

Attention! After stopping the in-feed during the milling process, the flat being milled has to be removed before restarting as the machine will always continue its process in the same mode in which it was stopped.

4.2 Checking of electrical connections / Sense of rotation of milling spindle



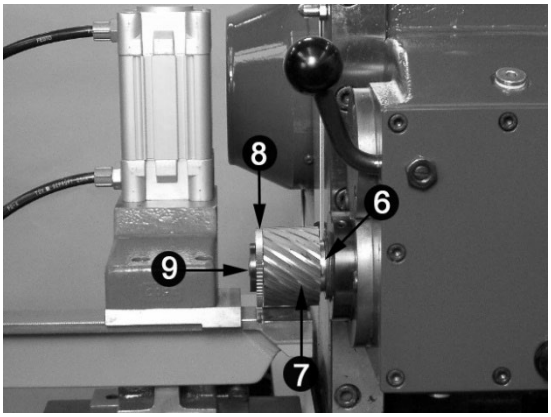
- Put feed lever in the lowest position (in-feed is stopped)
- Press green push button "ON" → machine runs
- Belt pulley (5) must rotate in direction of arrow.

In case the belt pulley rotates in the wrong direction, correctly connect the plug (poles to be reversed by electrician) and repeat above stops.

4.3 Installation of the milling cutters

Before changing the milling cutter press green push-button (2) ‚ON', then set feed lever (3) in the uppermost position A. Once the milling cutter reaches the foremost position, set feed lever to position B and press red push-button (1) 'OFF'. The milling spindle is now released and the milling cutters can be changed without the pneumatic clamping device requiring to be moved!
Face milling cutter and slotting cutter (depending on type of flats) are slipped on to the milling spindle (6), (without the slotting cutter in case of Rieter C60/C70 flats):

1 Face milling cutter Ø 52 mm HSS or HM (carbide tipped)
1 Face milling cutter Ø 52 mm HSS for Alu-flats with synthetic slide shoes (Rieter C60/C70)
1 HM (carbide-tipped) Ø 52 mm
2 Slotting cutter dia. 53 mm HSS (1 x for installation + 1 x as replacement)

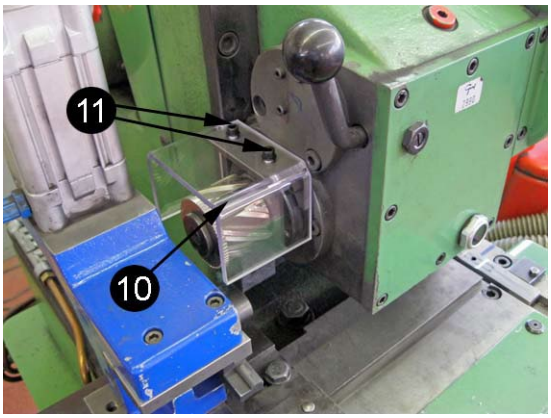


- Slip-on face milling cutter (7) (Observe tooth direction)
- Slip-on slotting cutter (8) (Observe tooth direction)
- Mount clamping disk (9) with screw

Attention! For the milling of the synthetic slide shoes of Rieter C60 – C70 alu flats the slotting cutter (8) must not be installed or be removed if installed. The special face milling cutter for synthetic slide shoes has to be installed!

4.3.1 Installation of protective Plexiglas cover of the milling cutter

Use the 2 Allen screws (11) supplied to attach the protective Plexiglas cover (10) to the mounting bracket fastened to the machine. It must not be removed while milling spindle is running.



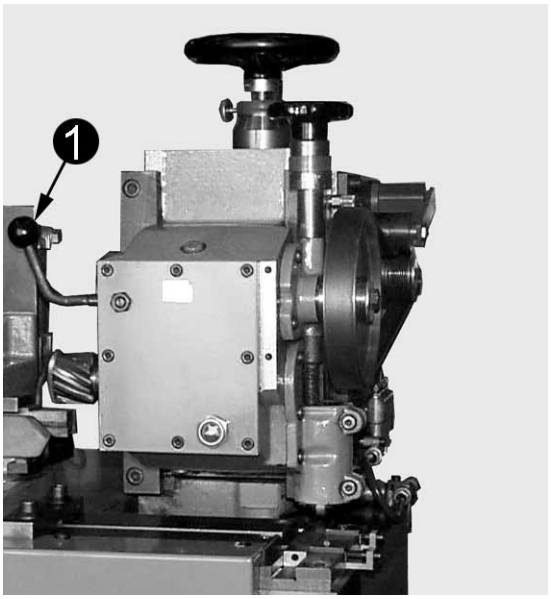
Attention!

When milling synthetic slide shoes the face milling cutter is air-cooled during the milling process. In case of excessive accumulation of chips on the protective Plexiglas cover these should be removed by compressed air from time to time. The milling spindle must be turned off for the cleaning!
The protective Plexiglas cover must not be removed as long as the milling spindle runs!

4.4 Setting of the revolutions / min

The speed depends on the quality of the milling cutter and is set by means of lever (1):
HSS-cutters: = 260 rpm for cast iron bars; 420 rpm for alu flats with synthetic slide shoes

HM-cutters: = 420 U/min for cast iron bars



(1) Lever fully extended: 420 U/min.
(1) Lever fully pushed in: 260 U/min.

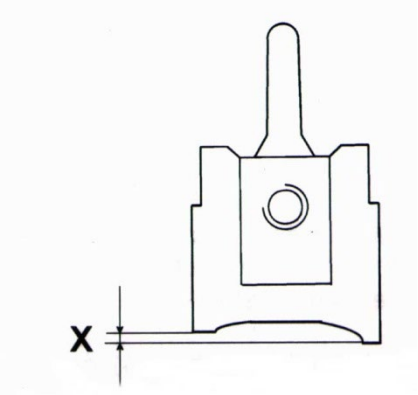
Attention! Lever must only be adjusted when machine is not in operation.

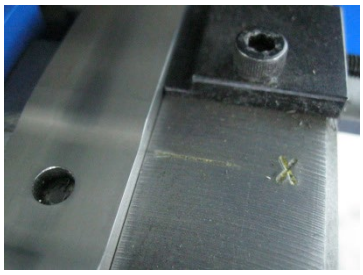
4.5 Selection of Copying Template

- The selection of the copying template depends on the inclination (X) of the flat- => The copying template has to correspond with the type of flat !! (☞ please refer to attachment, listing the flat measurements).

- Following templates are available:

0° / 0° 45' / 0° 50' / 1° / 1° 1' 30" / 1° 22' → for respective measurements of the inclination (difference in mm between higher seating in the back and lower seating in front) please refer to the attached table ‚Machinery equipment'.





- Make sure copying template and groove are thoroughly cleaned
- Insert template into groove (higher side to the back)

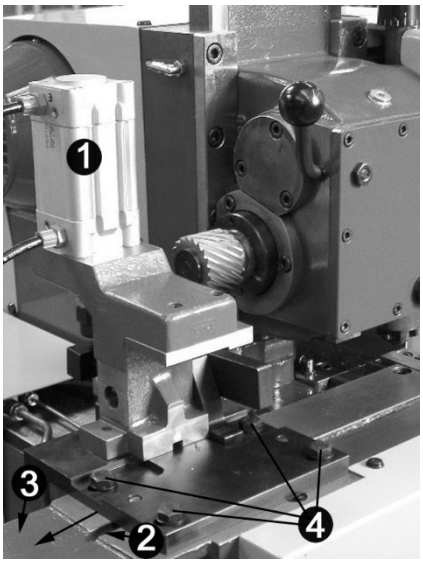
Attention!

The inclination (angle) of the copying template has to correspond with the inclination of the flat-end to be milled. The back seating surface has to correspond with marking ‚X'!

4.6 Installation and setting up of clamping device

4.6.1 Installation of the clamping device

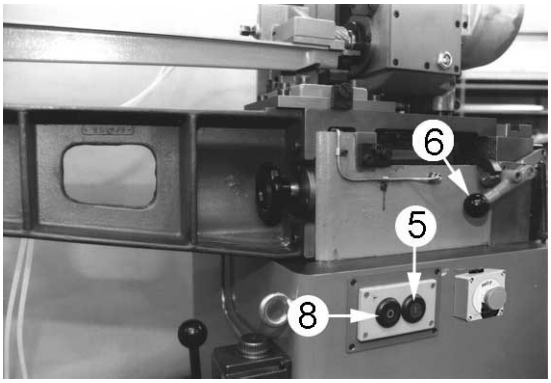
A sample flat bar should be used for the installation of the pneumatic clamping device!



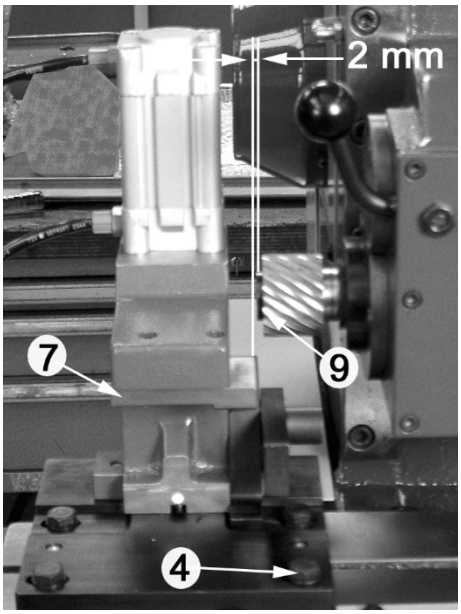
- Insert right clamping device (1) into groove (2) of the the supporting arm (3)
- Screw-in hexagon socket screws (4)

Attention!

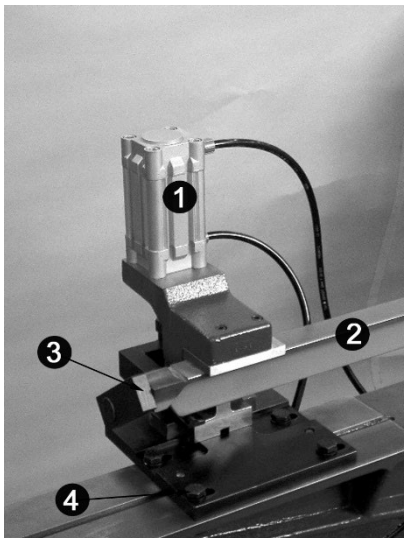
- Slide clamping device to the extreme left to avoid the face milling cutter getting into contact with the clamping device !!
- Fasten hexagon socket screws (4)



- Press green push button „ON“ (8) → Milling spindle rotates
- Set feed lever (6) in uppermost position → In-feed starts



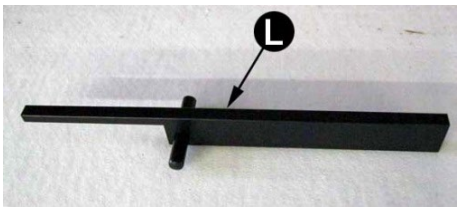
- If face milling cutter is positioned next to clamping jaw (7), stop in-feed and milling spindle by pushing red push button "OFF" (5)
- Unfasten hexagon socket screws (4)
- Set distance between clamping device (7) of the right-hand clamping device and the clamping disk (9) of the face milling cutter to approx. 2 mm (by moving the entire clamping device)
- Tighten hexagon socket screws (4)



- Insert keys of left clamping device (1) into groove of the supporting arm
- Position flat-iron in right hand clamping device and tighten (if there is not sufficient room, move spindle head upwards with the large hand wheel)
- Position left-hand clamping device (1) to allow base surface for the flat clothings (2) to rest on the stop plate (3)
- Insert and tighten hexagon socket screws (4)

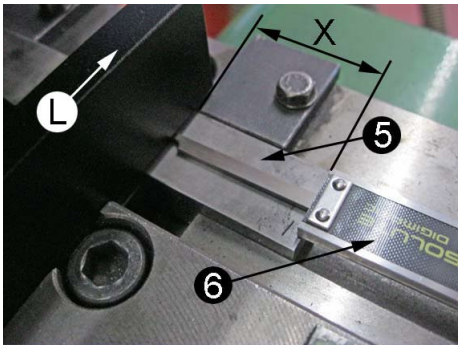
4.6.2 Aligning of the clamping device (recording of the setting measurements)

As the flat bars of individual types of cards vary in width, it may be necessary to realign the clamping device, i.e. adjust it to the width of the flat bar. The use of a digital sliding caliper is recommended for the measuring.
The setting gauge, article No. 00303668, supplied with the machine or available from Graf for older machines, is required for this process. This setting gauge allows the clamping device R + L to be precisely set to the copying template according to the flat bar.



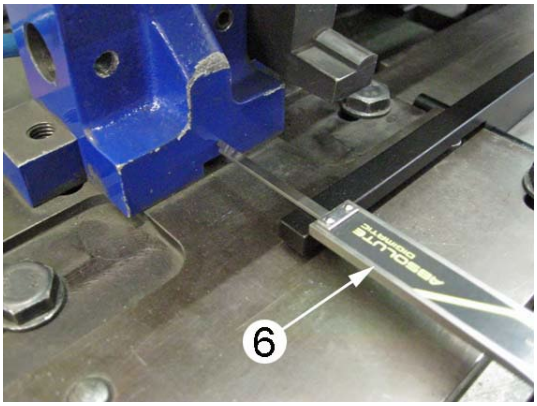
- Setting gauge Art. No. 00303668 (L)

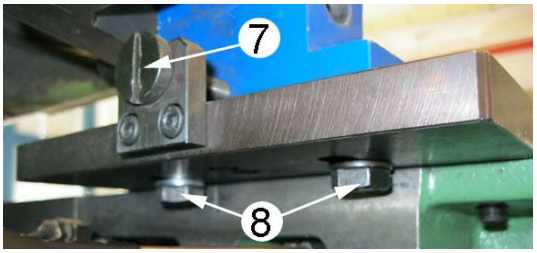
Insert gauge (L) into the groove (4) of the retaining plate. Use depth gauge (6) of caliper to measure distance (X) from the setting gauge (L) to the front edge of the copying template (5).
Measurement X allows the calculation of the setting dimension Y:
Y = 100 – ½ width of flat bar – X



Example:
99 is a calculated and constant value
Width of flat bar 33, 4 mm (measured)
Measurement X = 35,5 mm (measured)
Y = 100 – 16,7 (½ width of flat bar) – 35,5 (X) = 47,8 mm
The clamping device L + R is now set to measurement X 47.8 mm by means of the depth (6) and the gauge.

4.6.3 Aligning of the clamping device (right-hand side)





Use depth gauge and setting gauge to set the clamping device on the right-hand side to the calculated setting dimension Y (47,8 mm, example).
The required distance can be set with setting screw (7), located on the back side of the clamping device. First the 2 fastening screws (8) on the bottom have to be loosened and slightly refastened. Once the correct distance is reached, firmly tighten the 2 fastening screws and recheck distance! Then recheck measurement X!

4.6.4 Aligning of the clamping device (left-hand side) + installation of flat buffer

The clamping unit on the left-hand side is set likewise to the calculated setting dimension (46,3 mm, example).

Attention!

The aligning should be carried out precisely as otherwise the seatings of the flat ends will be milled at a slant. The use of a digital caliper is highly recommended. For the milling of 40“ flats the short buffer is required, for the milling of 60“ flats the long one.

4.6.5 Installation or exchange of tension levers (right- and left-hand side)

Depending on the scope of delivery (types of cards) the following tension levers are supplied:

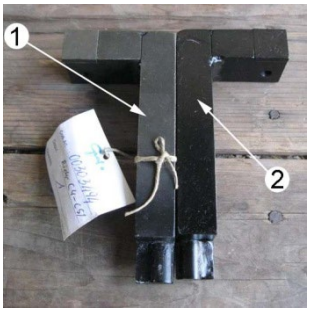
<u>Tension lever right-hand side</u>

Tension lever for Rieter C4 to C51 cards	00303635
Tension lever for Rieter C60/C70 and SSI KU 12 cards	003041475
Tension lever adjustable for various cards	00303361

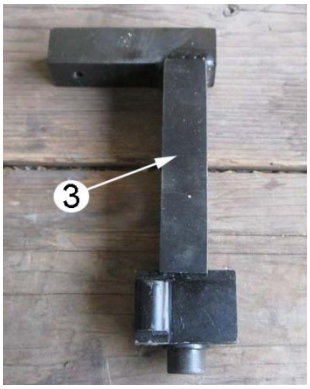
<u>Tension lever left-hand side</u>

Tension lever for Rieter C4 to C51 cards	00303494
Tension lever for Crosrol and SSI KU12 cards	00303354
Tension lever for Rieter C60/C70 cards	003041475
Tension lever adjustable for various cards	00303582

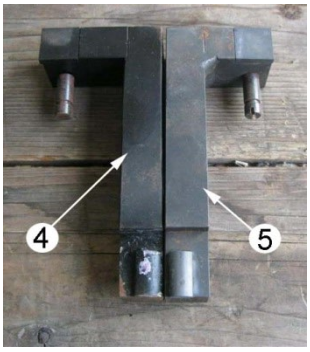
- Tension lever for Rieter C60/C70 and SSI KU12 (identical execution for tension levers left- and right-hand side); Art. No. 003041475



- Tension lever (1) for Rieter C4 – C51 (right-hand side) Art.-No. 00303494
- Tension lever (2) for Rieter C4 – C51 (left-hand side) Art.-No. 00303635

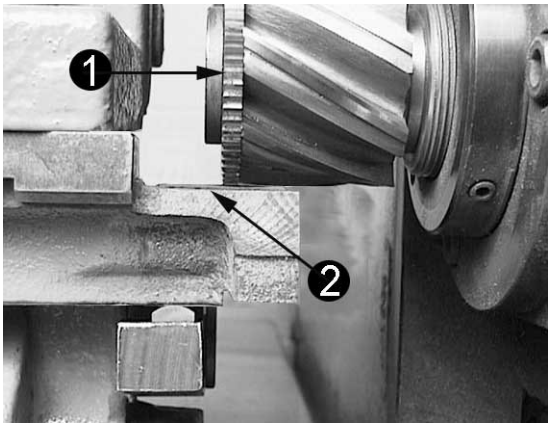


- Tension lever (3) for various types of flats (right-hand side/adjustable) Art.-No. 00303582



- Tension lever (4) for Crosrol (right-hand side) + SSI KU12 (right-hand side) Art.-No. 00303354
- Tension lever (5) for various types of cards (left-hand side); Tension lever for Crosrol flats (left-hand side) Art.-No. 00303361

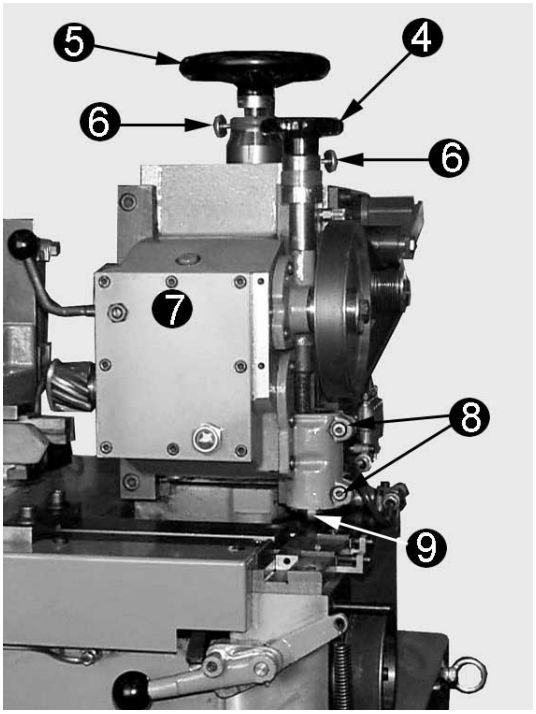
4.6.6 Setting of the flat stop (3/left-hand side) for correct milling position



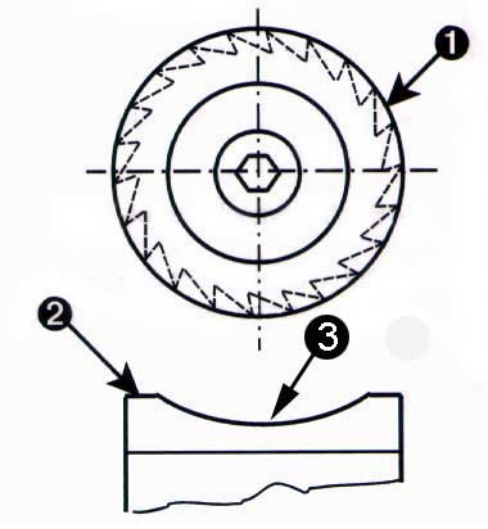
- Insert and clamp flat-iron so that the slotting cutter (1) is positioned approximately in the centre of the seating (2)

Attention!

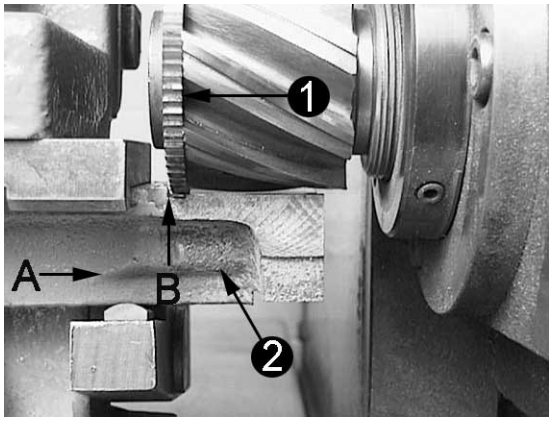
Higher of the two seatings of flat end must be positioned at rear of machine.



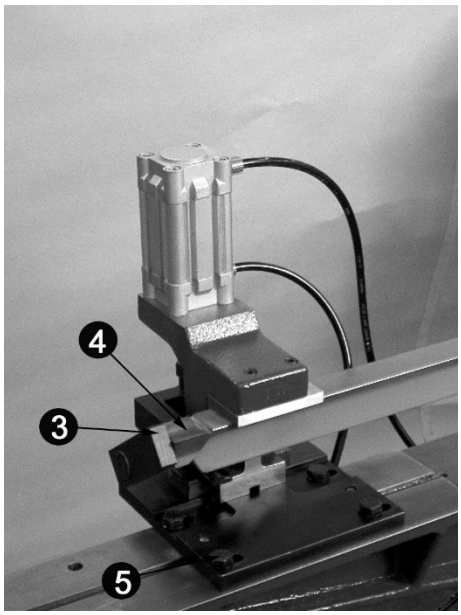
- Loosen the setting screws (6) on the two hand wheels (4/5)
- Fix the scale rings to the two hand wheels (4+5) with setting screws (6)
- Raise spindle head (7) with large hand wheel (5) (anti-clockwise, scale reading decreasing)
- Unfasten hexagon socket screws (8)
- Raise copying roller (9) with small hand wheel (4) (clockwise, scale reading increasing)
- Disengage in-feed (feed lever in bottom position)
- Press green push-button "ON" --> milling spindle rotates
- Engage in-feed (feed lever in middle position)



- When shaft of milling spindle and centre of flat end are approximately lined up (see drawing) disengage in-feed (feed lever in bottom position)
- Lower spindle head (7) with large hand wheel (5) (clockwise, scale reading increasing) until slotting cutter (1) is positioned approx. 0,5 mm above hollow (3)
- Press red push-button "OFF" --> milling spindle stops rotating



- Release both clamping devices and push flat-iron (2) towards milling cutter (A), until edge B touches milling cutter (1)
- Clamp flat with both clamping devices by pressing the foot pedal.

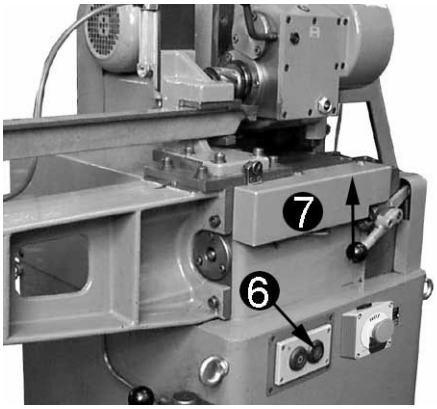


- Move stop plate (3) to flat end (4) and fix with hexagon socket screws (5)
- Raise spindle head with large hand wheel (anti-clockwise, scale reading decreasing)
- Press green push button "ON" --> milling spindle rotates
- Engage in-feed (move feed lever from bottom to middle position) --> spindle head returns to starting position
- Press red push button "OFF" --> milling spindle stops rotating

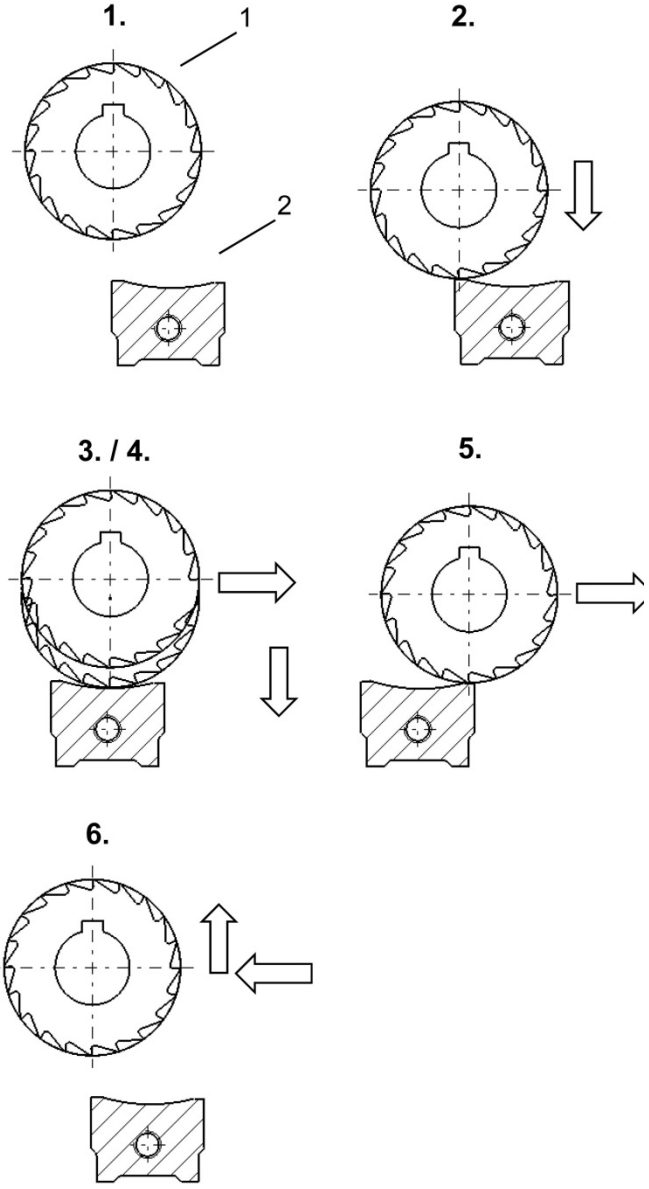
4.6.7 Setting of the milling process for seating on right-hand side of flat

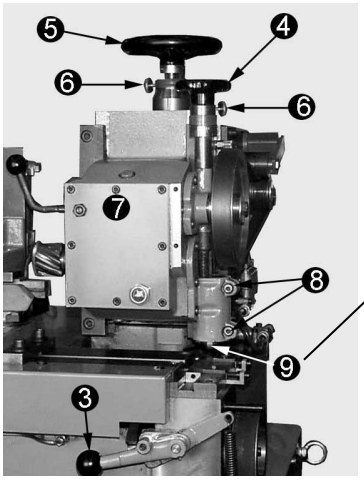
Attention!

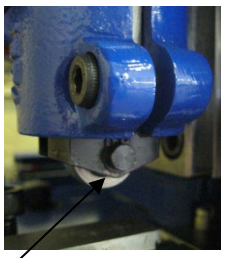
The inclination of the template has to correspond with the inclination of the flat end! (please see point 4.5 / 5.1)



- Press green push button „ON“ (6)
- Engage in-feed (feed lever in uppermost position (7)





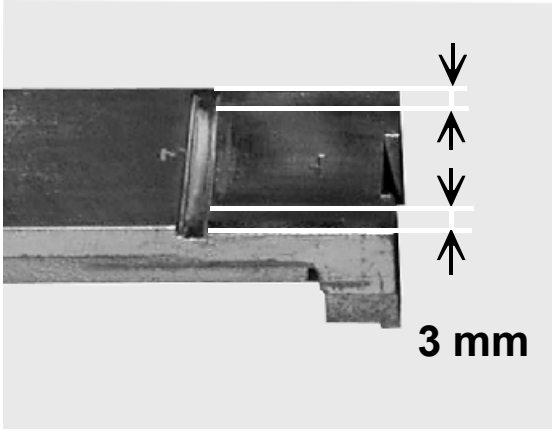


- **1.** Stop in-feed as soon as milling spindle (1) is positioned above the rear seating (2) (feed lever in bottom position)
- **2.** Lower spindle head (7) with large hand wheel (5) (clockwise, scale reading increasing) until the face milling cutter (1) touches the seating (2), then secure with setting screw (6).
- Turn small hand wheel (4) (anti-clockwise, scale reading decreasing) until copying roller touches template, then secure with setting screw (6).
- Start in-feed (3) (move feed lever from bottom to middle position) spindle head advances
- **3.** Stop in-feed (3) as soon as shaft of milling spindle is positioned above the centre of the hollow (feed lever in bottom position)
- **4.** Use large hand wheel (5) to lower the milling head (7) (clockwise, scale reading increasing) until the copying roller (9) is positioned at the lowest point of the copying template (depth of hollow 1.2 mm for cast iron bars)
- Set scale to "O" on both hand wheels
- Fasten setting screws (6) and hexagon socket screws (8)
- **5.** Start in-feed (3) (feed lever in middle position) --> milling head advances and then
- **6.** returns to starting position
- For control purposes reengage in-feed (3) and repeat milling process, steps **1. – 6.** (feed lever in top position).

Attention!

Usually, the removal of 0.2 - 0.3 mm of material is sufficient for normally worn seatings of cast iron bars. In case of **new synthetic slide shoes** an infeed of 0.1 mm is sufficient.
The milling intensity is set by synchronized feeding by means of the hand wheels (4 + 5), (clock-wise direction). Both Allen screws (8) to be loosened for feeding and to be refastened once setting is done.

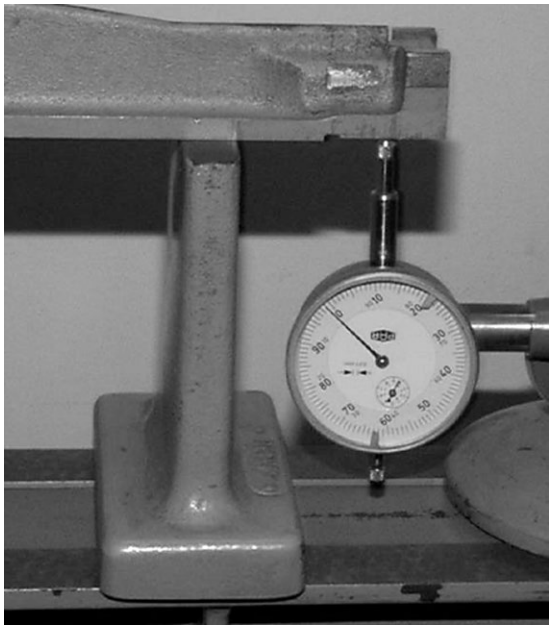
4.6.8 Checking of seatings and inclination of seatings of cast iron bars



- Install flat supports for cast iron bars to the control beam.
- Check width of the seatings. Both seatings have to be of equal width (3mm)

Attention!

A possible difference in the width of the seatings has to be compensated by moving the left and right clamping device.



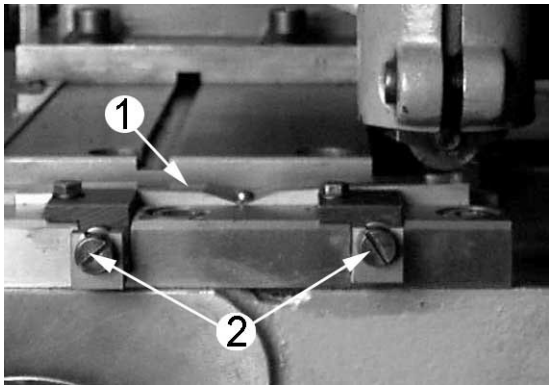
- Place flat bars with contact surface of the clothings on to two control supports.
- Measure inclination of seatings. Deviations between right- and left-hand seating exceeding 3/100 mm need to be corrected by remilling of the seating. For reference measures of inclination (difference in height between higher back seating and lower front seating in mm) please refer to the attached table ‚Machinery equipment‘.

4.6.9 Checking of the seatings of Rieter C60/C70 flats with synthetic slide shoes

Install flat supports (semi-circular compensation plates) for Rieter C60/C70 flats tot he control beam. The radius of 415 mm of the compensation plates corresponds with the radius of the synthetic slide shoes.

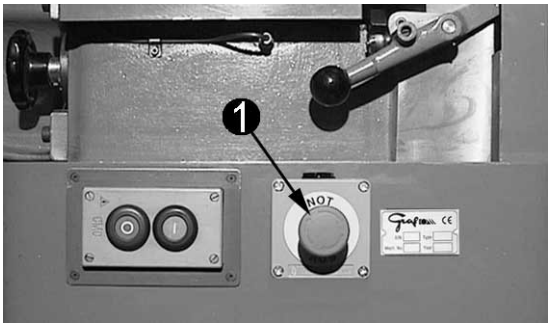
The following documents serve for the correct measuring of the flats:
Graf Technical Information 15/01/12
Rieter Service Info P-DAC / P. Jelinek
Graf Instruction manual ‚digital measuring device “, Art.-Nr. 005043336

Attention! Unlike in case of the cast iron flat ends no actual widths of seatings are visible on the synthetic slide shoes. Therefore the centricity of the 2 clamping devices to the milling axis needs to be checked and corrected if necessary when changing from milling cast iron flat ends to synthetic slide shoes. see point 4.6



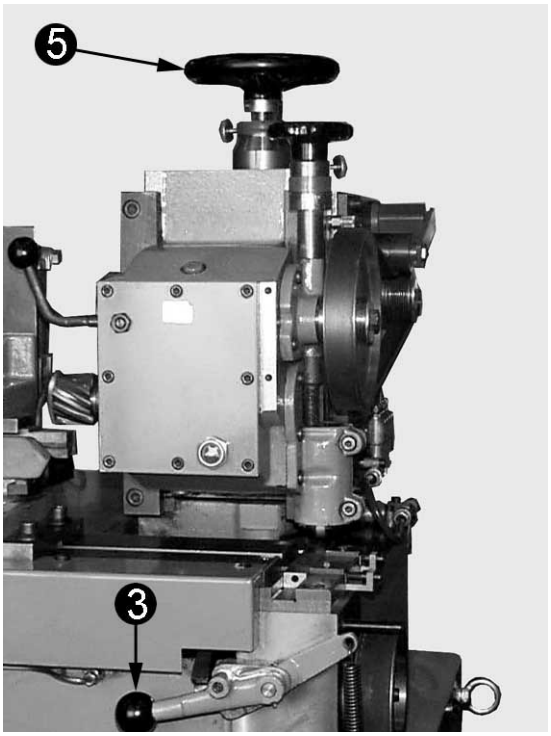
- If the inclination is not correct (+/- 0.03 mm), copying template (1) and groove need to be thoroughly cleaned.
- If inaccuracy remains despite cleaning, the inclination can be adjusted manually by turning the setting screws (2).

4.6.10 Emergency stop



- EMERGENCY-OFF button (1) to be pressed in emergencies only. Pushing the EMERGENCY-OFF button will bring the milling drive and feed movement to an immediate standstill.
- Immediately turn off in-feed (3), putting feed lever into bottom position.
- Turn EMERGENCY-OFF button in direction of the arrow for unlocking.

Attention!



- Activating the EMERGENCY-OFF button stops the process. When machine is restarted, the incomplete process will be continued.
- If this is not desired, turn large hand wheel (5) to raise the milling cutter (anti-clockwise, scale reading decreasing) until it is outside the danger area. Activate in-feed (3) by moving feed lever to middle position. Milling head will advance and then return to its starting position.

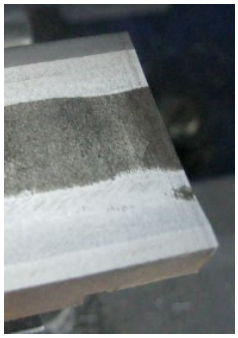
4.6.11 Milling of the seatings of cast iron flat bars

Operator to wear safety goggles for milling operation; hands to be strictly kept out of the area of the rotating face milling cutter.

- Random-test set of flats for lowest flat
- Insert lowest flat into clamping devices (higher contact surface in the rear)
- Press green push button „ON“ → milling spindle rotates
- Start in-feed (feed lever in uppermost position)

Attention!

If the contact surfaces are not sufficiently milled, add 0.1 - 0.2 mm on both hand wheels until contact surfaces are properly milled.



At the time of initial milling, the milled surface may appear as shown in the picture on the left. Since the front and back seatings are however milled impeccably, it is not necessary to mill the hollow any deeper (weakening of the flat end).

- Measure inclination of the contact surfaces on the checking device
  ☞ see chapter 4.6.8/4.6.9.

The entire set of flat bars is milled on one side first and then on the opposite side (otherwise the copying template would have to be turned for each flat).

To avoid any flat being milled twice on the same side (after turning the copying template) each flat head should be marked with a chalk mark.

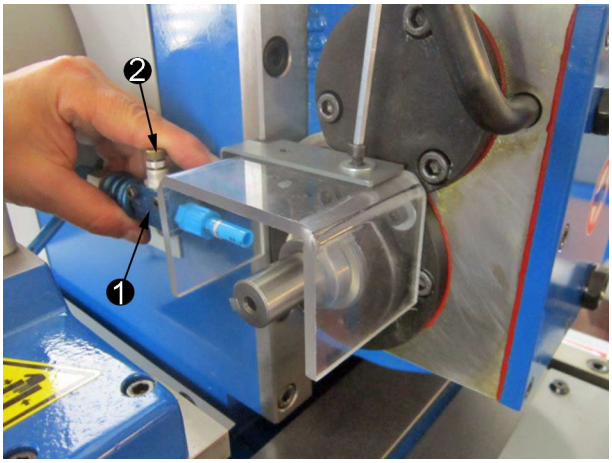
- To mill the second side, the copying template has to be turned by 180 degrees
- Thoroughly clean template and groove before re-inserting
- Following milling, measure both sides of the first flat on the checking device
  ☞ see chapter 4.6.8/4.6.9 and put it aside as reference sample for later checks.
- Possible differences in height between first and second side should be corrected by adjusting the two hand wheels

4.6.12 Milling of the seatings of Rieter C60/C70 60“ flats with synthetic slide shoes

Operator to wear safety goggles for milling operation; hands to be strictly kept out of the area of the rotating face milling cutter.

- The milling cutter for synthetic material is required for the milling of synthetic slide shoes. In order to obtain a clean milling surface the milling cutter needs to be very sharp.

- The air supply is switched on by means of the sliding valve (1). The air supply is adjusted with the needle valve (2) and should be sufficient during the milling process to assure that there is no accumulation of synthetic chips on the milling cutter.



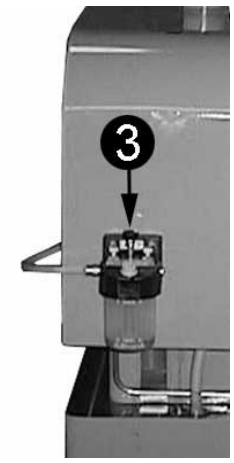
- If there is an excessive amount of synthetic chips in the milling area these should be removed with a dust and swarf vacuum. To avoid injury and damage to the milling cutter the machine must be switched off during cleaning.

- Slight synthetic burrs after milling can be carefully removed with a copper brush or Scotch-Brite

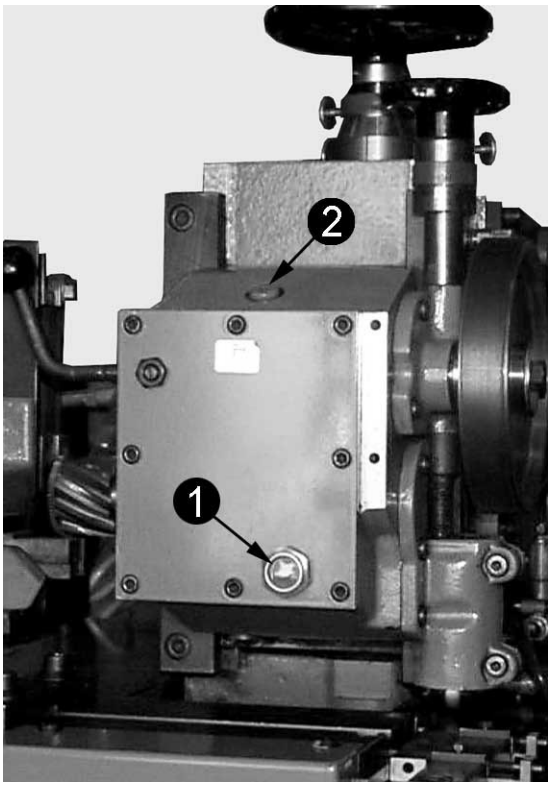
5. Service and Maintenance

5. Service and Maintenance

The maintenance of the DKF 10 is limited to regular control, cleaning and lubrication as well as an occasional changing of the face milling cutter.
Special attention should be paid to the cleaning of the copying template as well as the groove.



1. The lubrication of the DKF 10 is done by a central lubrication system. This (3) should be activated at least once a day prior to starting the milling operation.

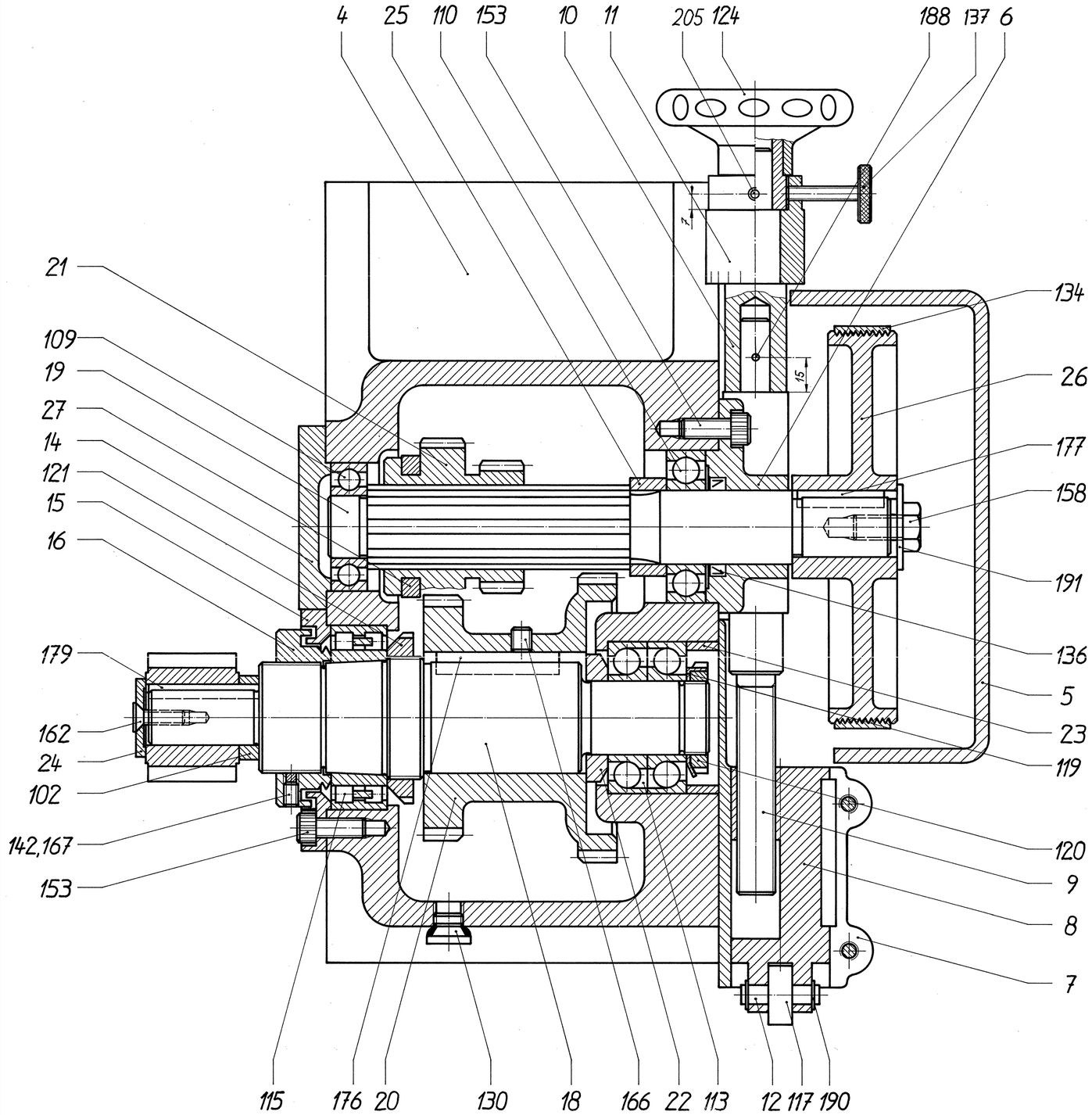


2. Turn on machine green push button

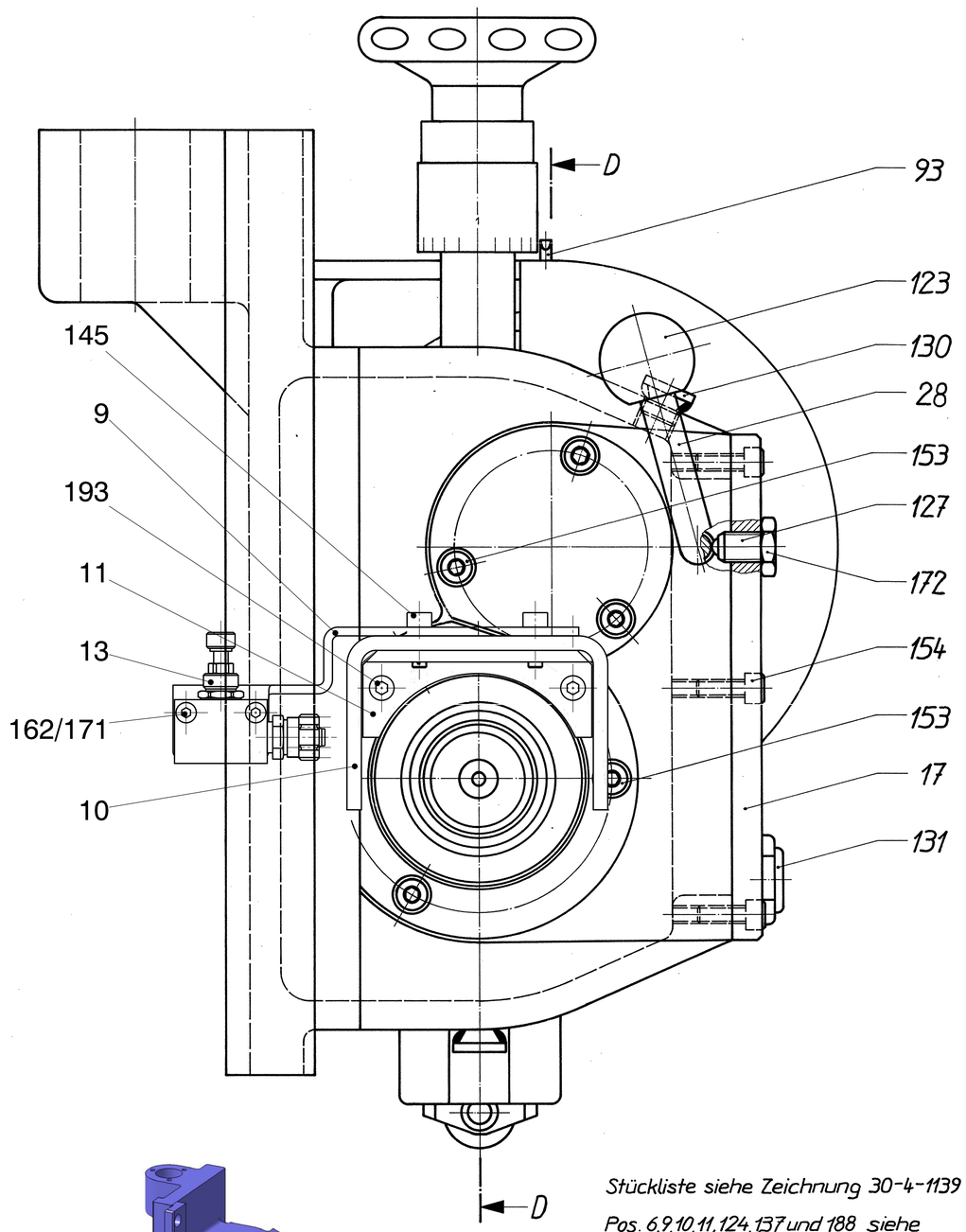
- Check oil-level gauge (1) (machine needs to be turned on since the oil level falls when machine is turned off)
- Should the amount of oil visible in the oil-level gauge not be sufficient (i.e. at 2/3 full, maximum filled-up), remove oil screw (2) and replenish oil
- Reattach oil screw (2)
- Operate lever (3) 2 – 3 times

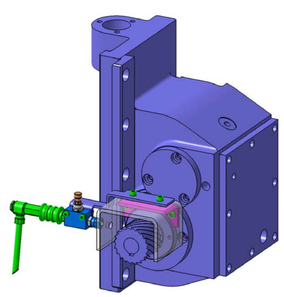
A lubrication oil with 9.5 E at 40 degrees centigrade should be used.

6. Attachment



Schnitt D-D





Stückliste siehe Zeichnung 30-4-1139

Pos. 6,9,10,11,124,137 und 188 siehe Stückliste 30-4-1302

Pos.	Menge	Bezeichnung	Lieferant	Bemerkung

Änderungen:

1)	04.09.84	Oe	6) Nr. 3684	30.04.14	str	
2)	02.03.90	CH	7)			
3)	04.07.91	BM	8)			
4)	04.10.91	ru	9)			
5) Nr. 3460	21.03.13	RP	10)			

Gehört zu Zeichnung 30-1-190/191/192
Ersetzt durch - 193/194 30-2-197
Ersatz für - gleiche Nummer
Allgemeintoleranzen nach ISO 2768 - mK

Zusammenstellung

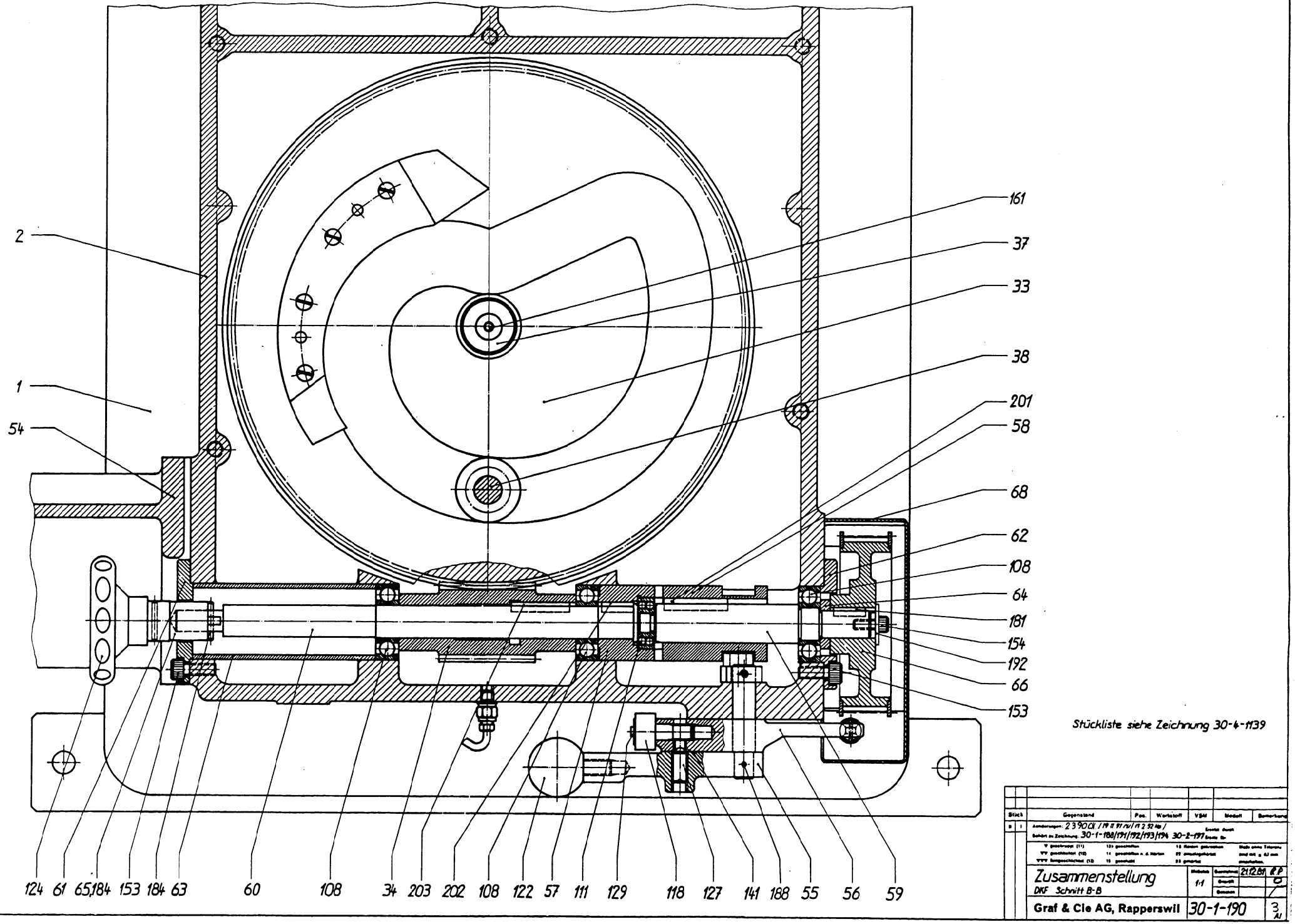
DKF Schnitt D-D

Massstab	Gezeichnet	21.03.13	RP
1:1	Geprüft	01.05.14	av

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk: ISO 16016 beachten (Refer to ISO 16016)

30-1-188,6



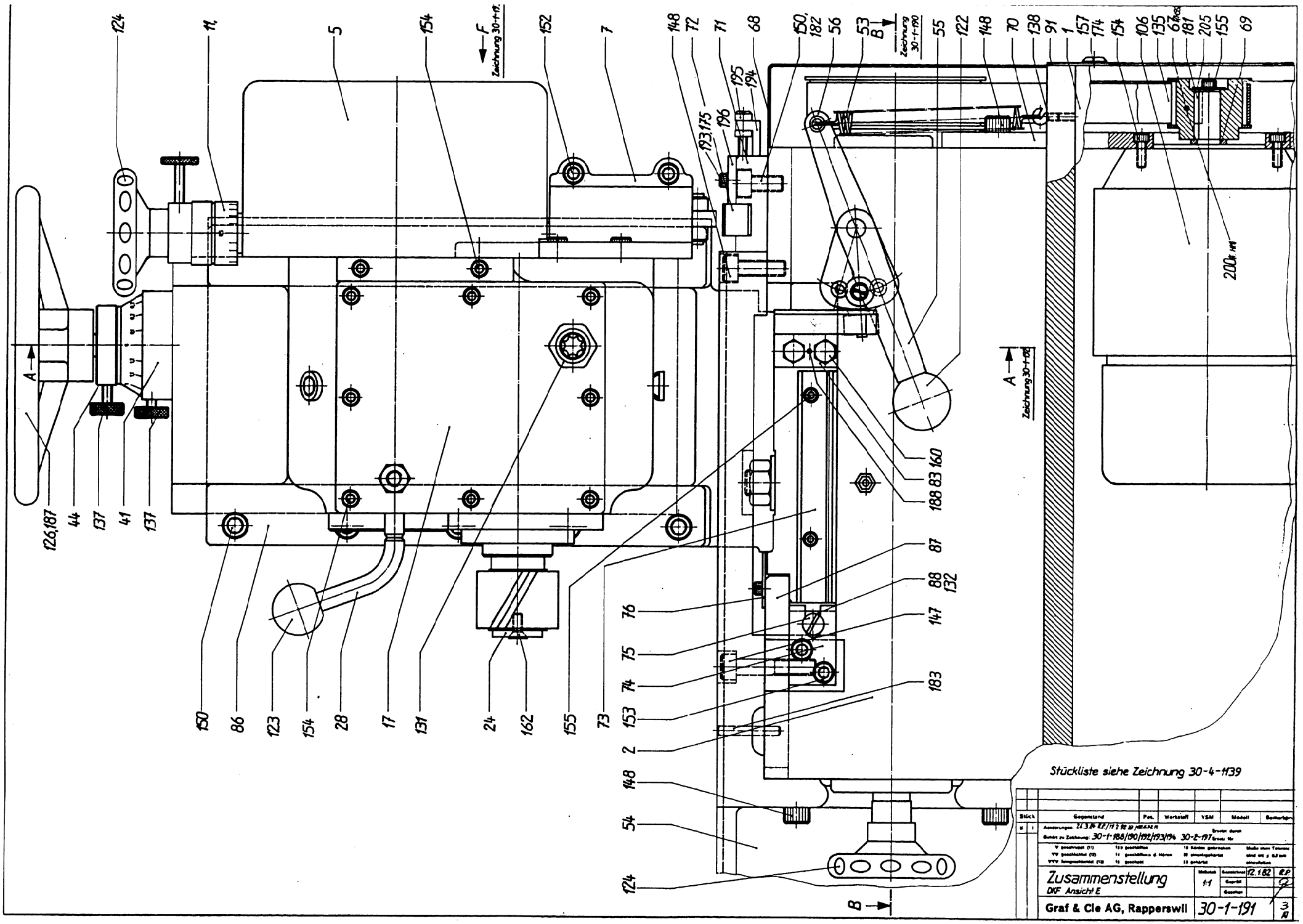
Stückliste siehe Zeichnung 30-4-1139

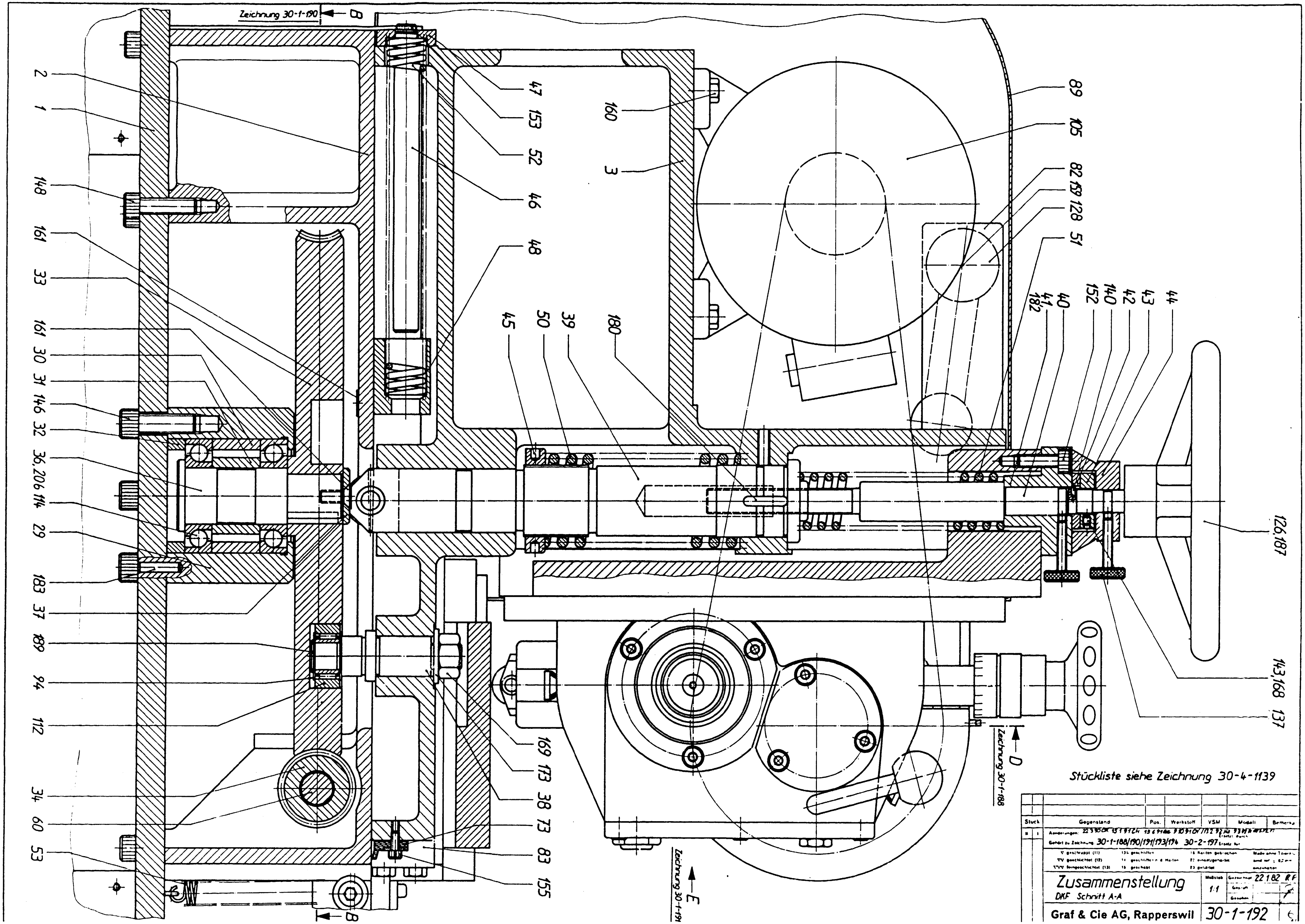
Stück	Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung
1	Zusammenstellung DKF Schnitt B-B					

Graf & Cie AG, Rapperswil

30-1-190

3


Stückliste siehe Zeichnung 30-4-1139
Zusammenstellung
DKF Ansicht E
Graf & Cie AG, Rapperswil
30-1-191



Stückliste siehe Zeichnung 30-4-1139

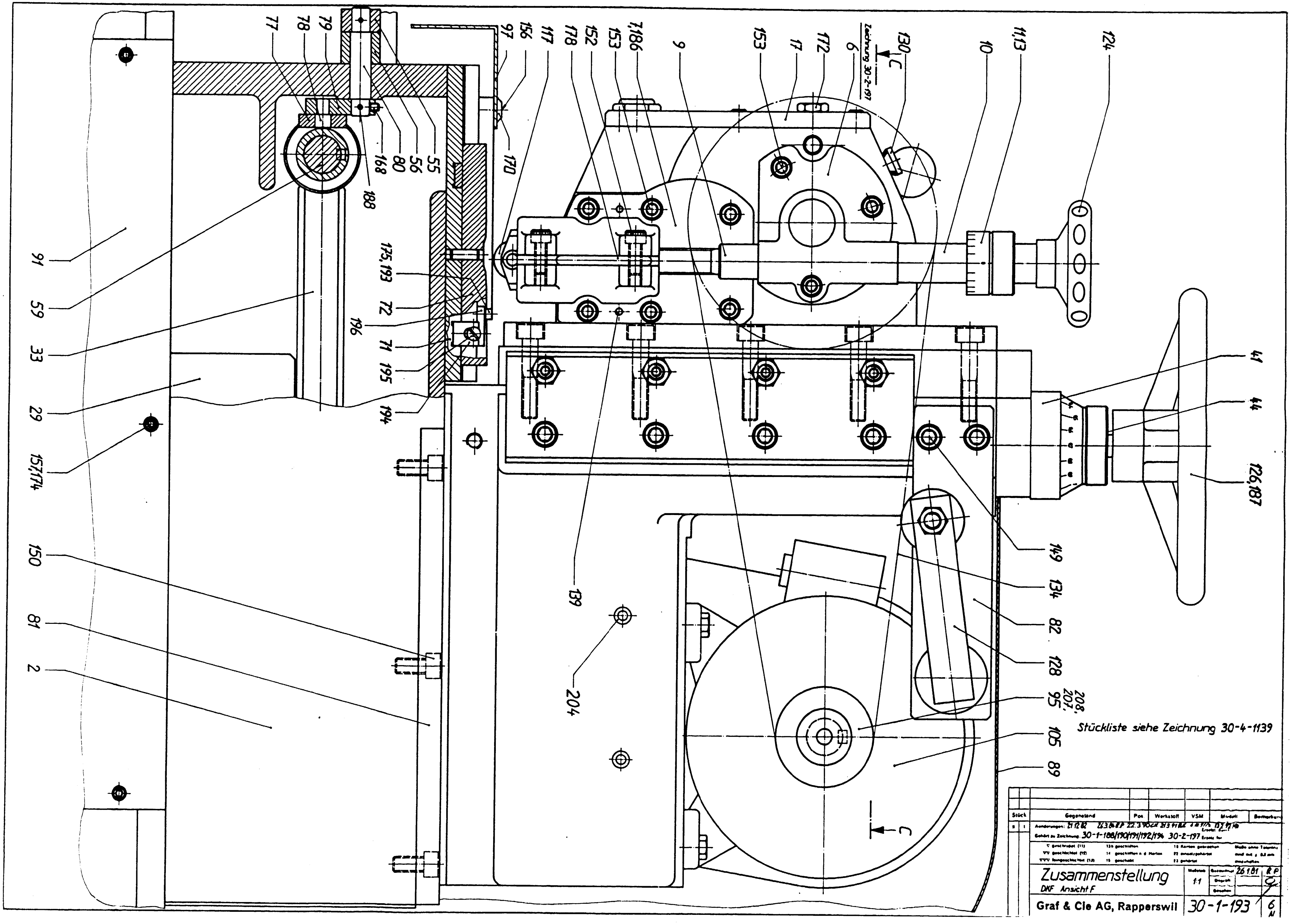
Stück		Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkg.
II	I	Aenderungen: 22 3 90 GK 13 1 91 Ch 13 6 91 ...					
		Gehört zu Zeichnung 30-1-188/190/191/193/194 30-2-197					

Zusammenstellung

DKF Schnitt A-A

Massstab 1:1 — Gezeichnet 22 1 82 RF

Graf & Cie AG, Rapperswil 30-1-192



Stückliste siehe Zeichnung 30-4-1139

Gehört zu Zeichnung: 30-1-188/190/191/192/194 30-2-197

Zusammenstellung

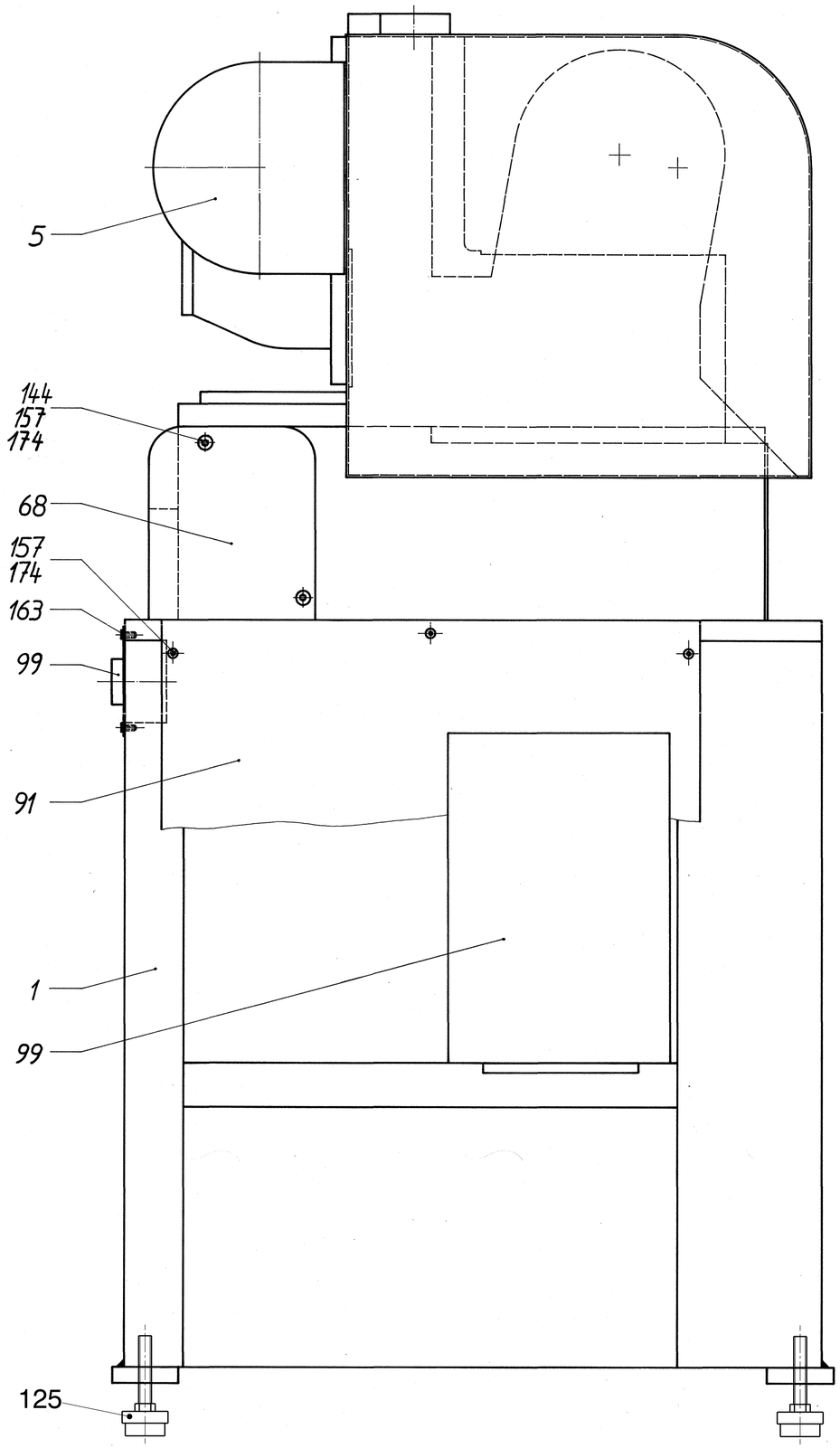
DKF Ansicht F

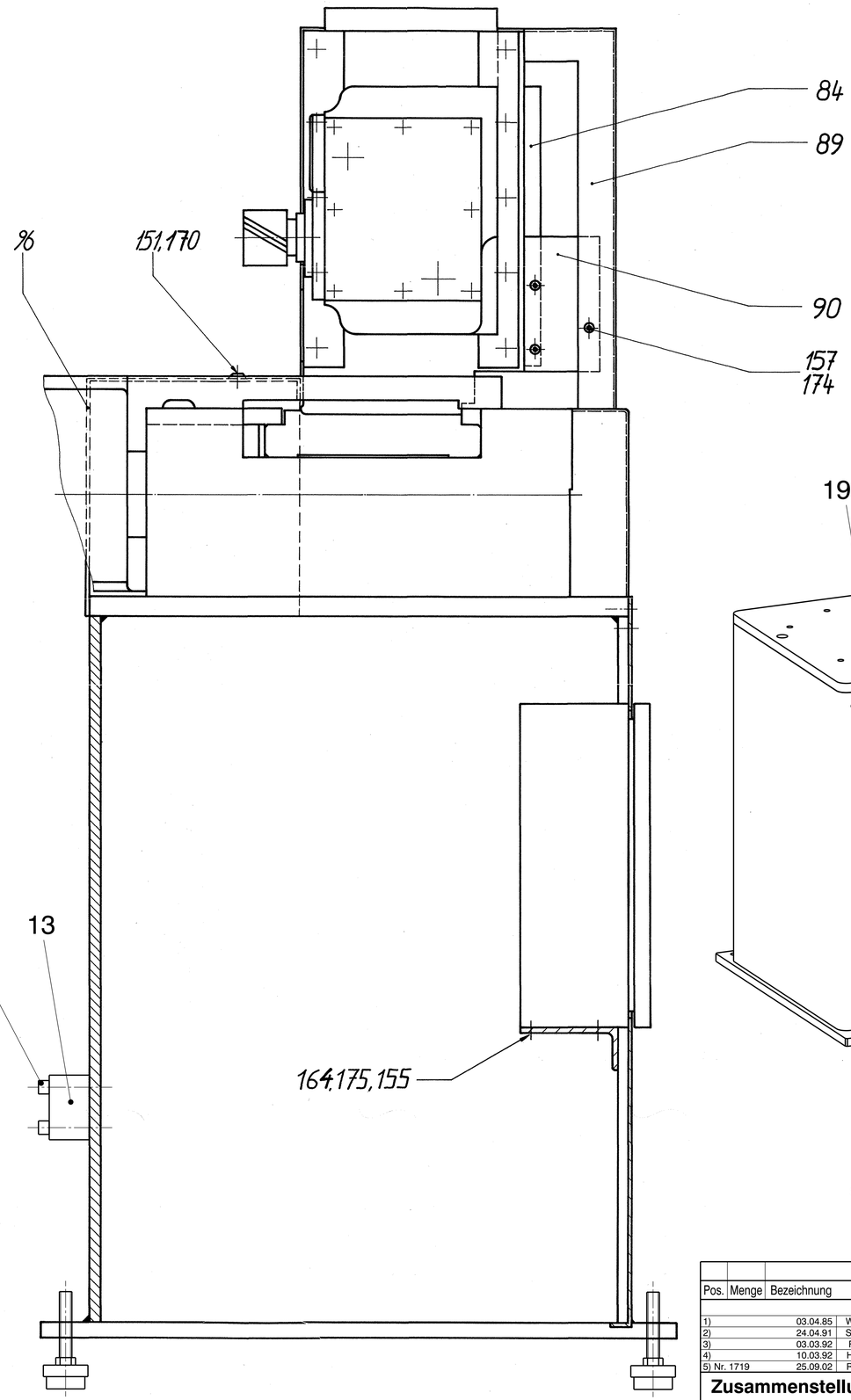
1:1

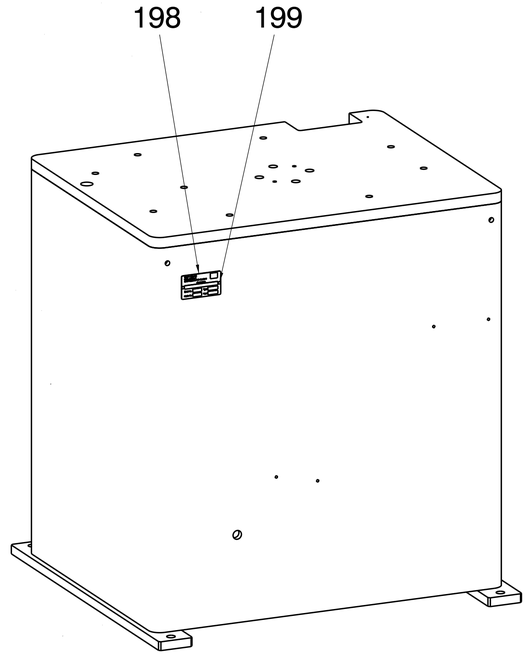
Graf & Cie AG, Rapperswil

30-1-193

6







Stückliste siehe Zeichnung 30-4-1139

Pos.	Menge	Bezeichnung	Lieferant	Bemerkung

Änderungen:

1)	03.04.85	We	6) Nr. 3363	12.10.12	RP
2)	24.04.91	Sto	7) Nr. 3684	30.04.14	str
3)	03.03.92	FI	8) Nr. 4806	04.03.20	chrp
4)	10.03.92	Ha	9)		
5) Nr. 1719	25.09.02	RP	10)		

Gehört zu Zeichnung - 30-1-188/190/191 /192/193 30-2-197
Ersetzt durch -
Ersatz für - gleiche Nummer
Allgemeintoleranzen nach ISO 2768 - mK

Zusammenstellung

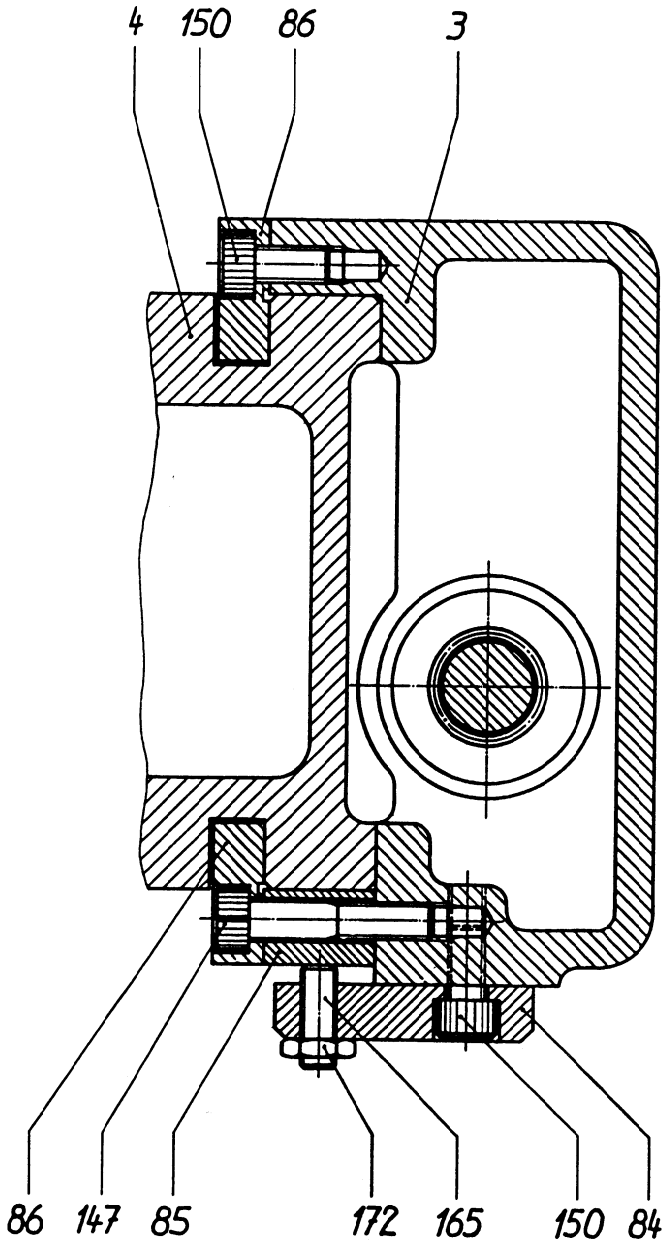
DKF

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk: ISO 16016 beachten (Refer to ISO 16016)

Massstab	Gezeichnet	12.10.12	RP
1:2.5	Geprüft	04.03.20	chcd

30-1-194,8



Stückliste siehe Zeichnung 30-4-1139

Stück	Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung
8	1					

Änderungen: Ersetzt durch .....

Gehört zu Zeichnung: 30-1-188/190/191/192/193/194 Ersatz für .....

Grundsymbol, Formgebung freigestellt
Bearbeitung durch Spanabnahme
Spanabnahme nicht erlaubt

N 12 ... N 1 Rauheitsklassen nach VSM 16220 und 16221

Maße ohne Toleranz sind nach DIN 7168 " mittel " einzuhalten.

Zusammenstellung
DKF Schnitt C-C

Maßstab 1:1

Gezeichnet 28.1.82 R.P.
Geprüft
Gesehen

Graf & Cie AG, Rapperswil

30-2-197

	1	Distanzring	30			30-4-4
	1	Lager	29			30-3-330
	1	Schaltstange	28			30-3-481
	1	Gabel	27		3619	30-4-862
	1	Riemenscheiben 60Hz	26	auf KA		
	1	Stützring	25			30-4-805
	1	Scheibe	24			30-4-751
	1	Distanzring	23			30-4-802
	1	Ring	22			30-4-800
	1	Ritzel	21			30-4-803
	1	Zahnrad	20		3620	30-3-304
	1	Keilwelle	19			30-3-300
	1	Fräsown spindel	18			30-3-301
	1	Deckel	17			30-3-457
	1	Ring	16			30-3-302
	1	Deckel	15			30-3-303
	1	Deckel	14			30-3-305
	1	Luftkühlung	13			30-4-1581
	1	Bolzen	12			30-4-1112
	1	Befestigungs-Winkel	11			30-4-1568
	1	Fräserabdeckung	10			30-4-1567
	1	Drosselhalter	9			30-3-689
	1	Rollenträger	8			30-3-464
	1	Deckel	7		1574	30-3-325
	1	Spindel komplett	6			30-4-1302
	1	Riemenverdeck	5		3783	30-2-192
			4			
			3			
	1	Schlitten-Kombination	2			30-4-1297
	1	Maschinenständer	1			30-1-189

Stück	Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/30-2-197
Ersetzt durch -
Ersatz für -

Blatt 1/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1139,21

	1	Schneckenwelle	60			30-3-4
	1	Welle	59			30-4-16
	1	Kupplung	58			30-4-1134
	1	Kupplung	57			30-4-1135
	1	Arretierhebel	56		1560	30-3-417
	1	Ausrückhebel	55			30-4-23
	1	Auflagebalken	54		3456	30-1-116
	1	Zugfeder	53			30-4-26
	1	Druckfeder	52			30-4-50
	1	Druckfeder	51			30-4-62
	1	Druckfeder	50			30-4-60
			49			
	1	Federhalter	48			30-4-12
	1	Federhalter	47			30-4-51
	1	Führungsbolzen	46			30-4-52
	1	Ringmutter	45			30-4-59
	1	Teilring	44			30-4-67
	1	Ringmutter	43			30-4-66
	1	Scheibe	42			30-4-65
	1	Büchse	41			30-3-475
	1	Spindel	40			30-3-13
	1	Rollenträger	39			30-3-11
	1	Lagerzapfen	38			30-4-1223
	1	Scheibe	37			30-4-865
	1	Lagerzapfen	36			30-4-3
			35			
	1	Schnecke	34			30-4-13
	1	Kurvenrad und Schablone	33			30-4-1298
	1	Ring	32			30-4-880
	1	Distanzring	31			30-4-702
Stück		Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/30-2-197

Ersetzt durch

Ersatz für

Blatt 2/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1139,21

			90				
	1	Verdeck	89				30-2-196
	2	Keil	88				30-3-9
	1	Platte	87				30-3-333
	2	Lineal	86				30-3-334
	1	Anschlag	85				30-3-12
	1	Platte	84				30-3-172
	1	Ausschaltnocken	83				30-3-10
	1	Spannarm	82				30-4-1133
	1	Platte	81				30-3-335
	1	Bolzen	80				30-4-22
	1	Ausruckhebel	79				30-4-21
	1	Gleitstein-Stift	78				30-4-20
	1	Gleitstein	77				30-4-19
	1	Deckleiste	76				30-4-53
	2	Stellschraube	75				30-4-7
	2	Stellplatte	74				30-4-136
	1	Wangenabstreifer	73				30-4-879
	1	Schablone	72	auf KA			
	1	Führungsplatte	71				30-3-504
	1	Motorplatte	70				30-3-472
	1	Distanzring	69				30-4-1131
	1	Verdeck	68				30-3-471
	1	Zahnriemenscheibe 50Hz	67	auf KA			
	1	Zahnriemenscheibe	66				30-4-1129
	1	Stellbolzen	65				30-4-38
	1	Distanzring	64				30-4-1130
	1	Distanzrohr	63				30-4-83
	1	Deckel	62				30-4-1127
	1	Deckel	61				30-4-863
Stück		Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/
Ersetzt durch 30-2-197
Ersatz für

Blatt 3/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1139,21

	1	Wellenmutter	120	KM 6			26900KM6
	1	Sicherungsblech	119	MB 6			26900MB6
	1	Kurvenrolle	118	KR 22			26KR22CDZ
	1	Stützrolle	117	STO 8		SKF	26ST08
			116				
	1	Zweireihiges Zylinderrollenlager	115	NN3009K			26NN3009K
	2	Einreihiges Schrägkugellager	114	7207B			267207B
	2	Einreihiges Schrägkugellager	113	7206BG			267206BG
	1	Stützrolle	112	NA2203.2RS		HYDREL	26NA22032RS
	1	Pendelkugellager	111	1201			261201
	1	Rillenkugellager	110	6206			266206
	1	Rillenkugellager	109	6205			266205
	3	Rillenkugellager	108	6204-2RS			2662042RS
			107				
	1	Drehstromkäfigmotor	106	QUFC71M6BR			290102....
	1	Drehstromkäfigmotor	105	QU90S4AT			290107....
	1	Fräsdornring A=12	104		2084B		30-4-73V
	1	Fräsdornring A=10	103		2084B		30-4-73IV
	1	Fräsdornring A=8	102		2084B		30-4-73III
	1	Fräsdornring A=6	101		2084B		30-4-73II
	1	Fräsdornring A=4	100		2084B		30-4-73I
	1	Elektroteile	99				30-4-1323
	1	Zentralschmierung	98				30-4-1179
	1	Verdeck	97				30-3-497
	1	Verdeck	96				30-3-656
	1	Riemenscheiben 50Hz	95	auf KA			
	2	Distanzscheibe	94	ø18/30x0.5	BN 748		2746183005
	1	Zyl-Sti	93				30-4-1141
			92				
	1	Verdeck	91				30-3-474
Stück		Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/30-2-197

Ersetzt durch

Ersatz für

Blatt 4/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

30-4-1139,21

	16	Zyl-Schr In-6kt	150	M10x20	912		27021020
	2	Zyl-Schr In-6kt	149	M10x25	912		27021025
	17	Zyl-Schr In-6kt	148	M10x35	912		27021035
	2	Zyl-Schr In-6kt	147	M10x50	912		27031050
	4	Zyl-Schr In-6kt	146	M12x35	912		27021235
	2	Zyl-Schr In-6kt	145	M5x14	912		27020514
	2	Distanzhalter	144				27660550
	1	Kupferstift	143	Cu		ø3x2	17450003
	1	Kupferstift	142	Cu		ø4x5	17450004
	3	Bohrbüchse	141	ø5/8x8	Nr.286	CBZ	27580005
	1	Zyl-Sti	140	5x10	12771A	CBZ	27250510
	2	Passkerbstift	139	5x25	1472		27230525
	1	Hakenschraube	138	Nr.902			Sch 1
	2	Rändelschraube	137	M6x30	653	CBZ	27440630
	1	Radial-Wellendichtring	136	30/40x7 BA72NBR902			25000003
	1	Zahnriemen	135	255L100		UIKER	2506255L100
	1	Poly-V-Riemen	134	Typ 1016J10		ANTRI	25030020
			133				
			132				
	1	Oelstands-Schauglas	131	600-4 1/2"G			27396004
	2	Verschlussschraube mit Dichtung	130	R 1/4"		CBZ	27570014
	1	Hohlkopf-Schmiernippel	129	18285		ABNOX	27590004
	1	Riemenspanner	128	RSE15 Nr.100233		ROSTA	25101001
	2	Druckstück	127	KM10HWN205S		INTER	25411001
	1	Handrad	126	19160-12-SN-14mm		LANKER	25023001
	4	Maschinenfuss	125	ZAL8035V120		GRIT	25600042
	1	Sternrad	124	1680-11-SN-14mm		LANKER	25022001
	1	Kugelgriff	123	1030-2-M8-GB		LANKER	25021002
	1	Kugelgriff	122	1036-6-M10-GS		LANKER	25021001
	1	Wellenmutter	121	KM10		26900KM10	30-4-1278
Stück		Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/30-2-197

Ersetzt durch

Ersatz für

Blatt 5/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1139,21

	1	Fed-Keil A	180	6x6x28	6885A		2734060628
	1	Federkeil	179				30-4-1507
	1	Fed-Keil A	178	6x6x63	6885A		2734060663
	1	Fed-Keil A	177	8x7x36	6885A		2734080736
	1	Fed-Keil A	176	14x9x50	6885A		2734140950
	4	U-Sch	175	M5	125A		27100005
	19	U-Sch Se 90°	174	5.3/16	13912		27160005
	1	U-Sch	173	17/34x4	13904		27111734
	5	6kt-Mu 0.5d	172	M10	936		27070010
	2	6kt-Mu	171	M4	934		27060004
	6	U-Sch Se 90°	170	6.4/18	13912		27160006
	1	6kt-Mu	169	M16	934		27060016
	2	Gew-Sti In-6kt	168	M5x6	913		27300506
	1	Gew-Sti In-6kt	167	M6x8	913		27300608
	1	Gew-Sti In-6kt	166	M8x10	913		27300810
	4	Gew-Sti In-6kt	165	M10x25	913		27301025
	4	6kt-Mu	164	M5	934		27060005
	4	Se-Schr In-6kt	163	M4x12	7991		27170412
	2	Zyl-Schr In-6kt	162	M4x25	912		27020425
	3	Se-Schr In-6kt	161	M8x20	7991		27170820
	5	6kt-Schr	160	M8x25	933		27000825
	1	6kt-Schr	159	M10x55	931		27011055
	1	6kt-Schr	158	M10x20	933		27001020
	19	Se-Schr In-6kt	157	M5x12	7991		27170512
	4	Se-Schr In-6kt	156	M6x12	7991		27170612
	9	Zyl-Schr In-6kt	155	M5x12	912		27020512
	15	Zyl-Schr In-6kt	154	M6x16	912		27020616
	24	Zyl-Schr In-6kt	153	M8x20	912		27020820
	5	Zyl-Schr In-6kt	152	M8x25	912		27020825
	2	Se-Schr In-6kt	151	M6x12	7991		27170612
Stück		Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/30-2-197

Ersetzt durch

Ersatz für

Blatt 6/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1139,21

			95				
	1	Zahnriemenscheibe 60Hz	67	auf KA			
	1	6kt-Schr	208	M8x20	933		27000820
	1	U-Sch Carrosserie	207	8x35x2.5	732		27110835
	1	Fed-Keil A	206	8x7x32	6885A		2734080732
	1	U-Sch Carrosserie	205	5x20x1.5	732		27110520
			204				
	1	Fed-Keil A	203	6x6x36	6885A		2734060636
	1	Fed-Keil A	202	6x6x20	6885A		2734060620
	1	Fed-Keil A	201	8x7x40	6885A		2734080740
	1	Zahnriemenscheibe für HM-Fräser	200	auf KA			
	2	Halbrundkerbnagel KN 4 DIN 1476-2.5x6-St	199			BN 893	27400256
	1	Maschinenschild	198				25360020
	4	Ringschraube	197	M10	580	BN 258	27200010
	2	Halter	196				30-4-1190
	2	Zustellschraube	195	Nr.909			Sch 2
	2	Keil	194				30-4-1188
	6	Zyl-Schr In-6kt	193	M5x10	912		27020510
	1	Carrosseriescheibe	192	6/25x1.8			27110625
	1	Carrosseriescheibe	191	10/40x2.5			27111040
	2	Si-Ring As	190	8x0.8	471		27280008
	1	Si-Ring As	189	17x1.0	471		27280017
	5	Kon-Sti	188	3x30	1		27260330
	1	Kon-Sti	187	3x40	1		27260340
	2	Passkerbstift	186	6x20	1472		27230620
	2	Zyl-Schr In-6kt	185	M6x45	912		27020645
	2	Zyl-Sti	184	3x25	12771A		27250325
	4	Passkerbstift	183	6x30	1472		27230630
	4	Passkerbstift	182	5x30	1472		27230530
	2	Fed-Keil A	181	5x5x20	6885A		2734050520
Stück		Bezeichnung	Pos.	Dimension	VSM/DIN	Lieferant	Bemerkung

I

Änderungen:

14) Nr.1640	12.04.02	RP	19) Nr.3460	20.03.13	RP
15) Nr.1651	15.05.02	RP	20) Nr.3684	30.04.14	str
16) Nr.1719	24.09.02	RP	21) Nr.4806	04.03.20	chrp
17) Nr.1826	21.02.03	RP	22)		
18) Nr.3363	12.10.12	RP	23)		

Gehört zu Zeichnung 30-1-188/190/191/192/193/194/30-2-197

Ersetzt durch

Ersatz für

Blatt 7/7

Deckel-Kopf-Fräse

DKF 10

Massstab	Gezeichnet	04.03.82	RP
%	Geprüft	04.03.20	chcd

Graf + Cie AG
CH-8640 Rapperswil

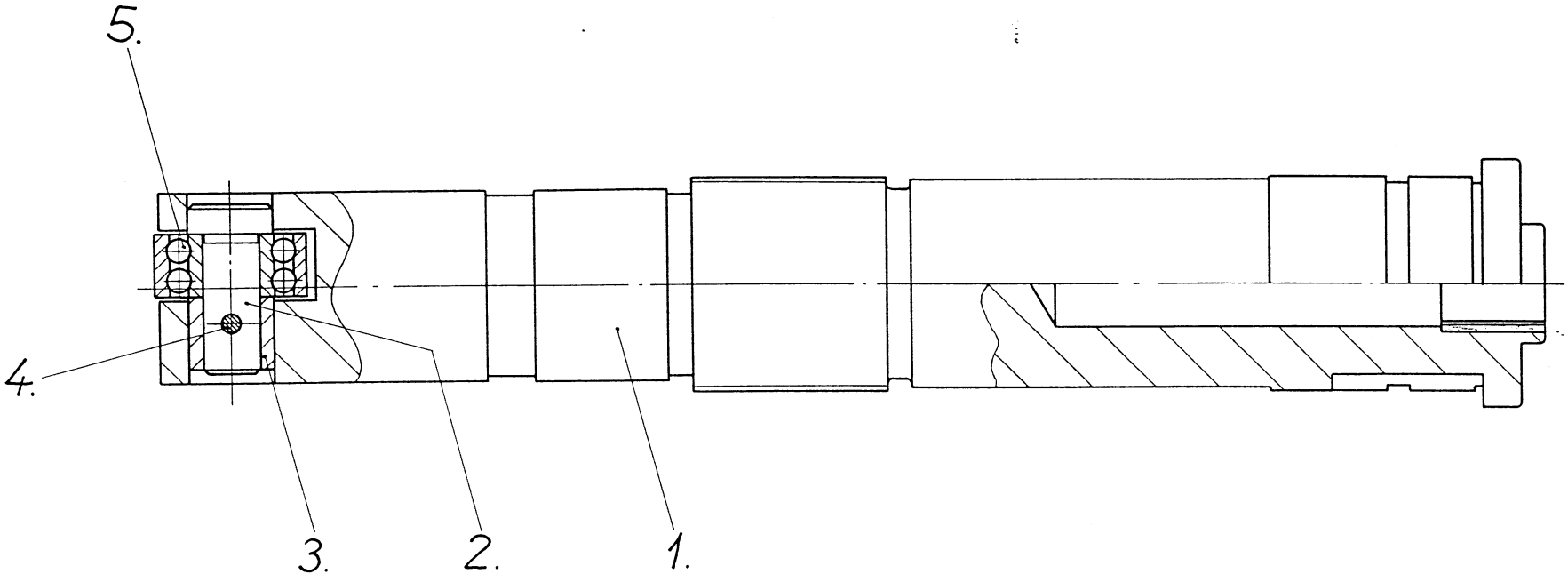
Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

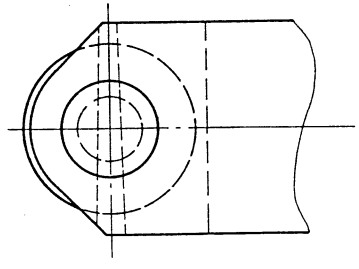
30-4-1139,21

	1	Spann-Sti schwe	205	4x25	12785	CBZ	27270425	
	1	Kon-Sti	188	3x30	1	CBZ	27260330	
	1	Rändelschraube	137	M6x30	653	CBZ	27440630	
	1	Sternrad	124	1680-11-SN-14mm		LANK	25022001	
			26					
			25					
			24					
			23					
			22					
			21					
			20					
			19					
			18					
			17					
			16					
			15					
			14					
			13					
			12					
	1	Teilring	11				30-4-1107	
	1	Stellbolzen	10				30-4-1108	
	1	Spindel	9				30-3-463	
			8					
			7					
	1	Deckel	6			1571	30-3-299	
			5					
			4					
			3					
			2					
			1					
Stück		Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung	

II	I	Aenderungen:	Gehört zu Zeichnung 30-1-188
		1) Pos. 205 neu; Pos. 188 noch 1 Stück (vorher 2) 4.10.91 ru	Ersetzt durch
		2)	Ersatz für
		3)	Blatt 1/1
		4)	
		5)	

Spindel komplet	Massstab	Gezeichnet	4.7.91	BM
DKF	%	Geprüft		
		Gesehen		
Graf + Cie AG, Rapperswil			30-4-1302.1	





	1	Zweireihiges Radialkugellager	5	4201			264201
	1	Kon. Stift	4	3 x 40	1		27260340
	1	Distanz - Büchse	3				30-4-58
	1	Bolzen	2				30-4-57
	1	Welle	1				30-3-541
Stück		Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung

II | I

Aenderungen: 1) Nr. 1732 10.10.02 RP

Gehört zu Zeichnung: 30-4-1139

Ersetzt durch

Ersatz für gl. Zchn. Nr

✓ Grundsymbol, Formgebung freigestellt
✓ Bearbeitung durch Spanabnahme
✓ Spanabnahme nicht erlaubt

N12 ..... N1 Rauheitsklassen nach VSM 10230 und 10231

Maße ohne Toleranz sind nach DIN 7168 "mittel„ einzuhalten.

Rollenträger

DKF

Maßstab	Gezeichnet	2.3.89	Utz
1:1	Geprüft	10.10.02	9
	Gesehen		

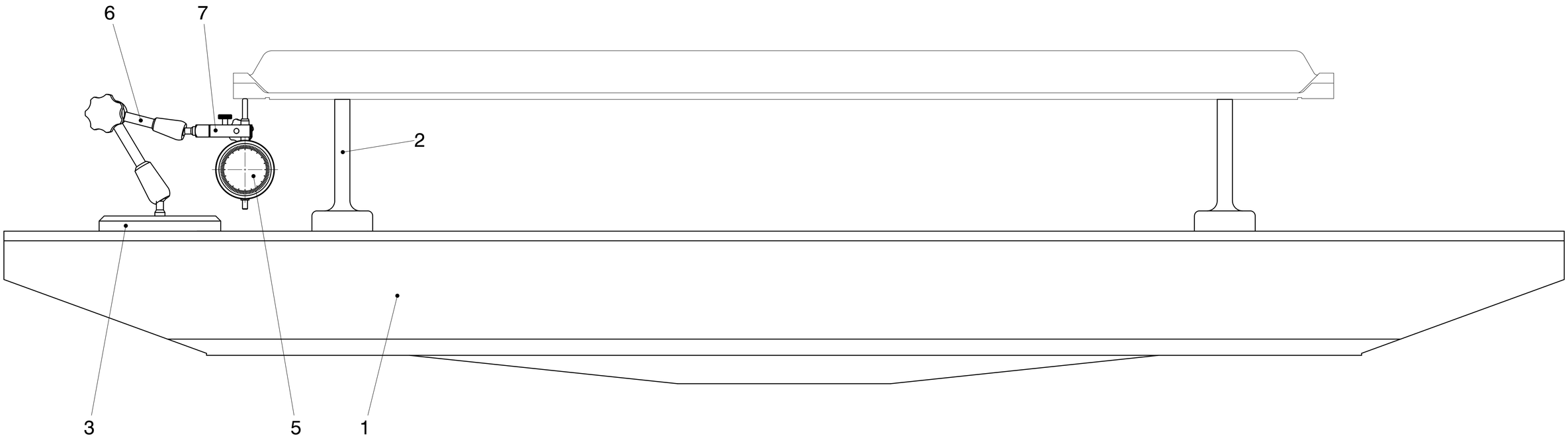
Graf + Cie AG, Rapperswil

30-3-11

1 A1

Baugruppe 003041298
Bezeichnung KURVENRAD U. SCHABLONE DKF
Zeichnung 30-4-1298
Menge 1
Teileart 1
ME ST

Pos Nr.	Komponente	Bezeichnung	Zeichnung	Mengenfaktor	ME
0010	00302003	KURVENRAD DKF	30-2-3	1,000	ST
0020	00303002	KURVENSCHABLONE DKF	30-3-2	1,000	ST
0030	27050612	ZYL-SCHR IN-6KT M 6X 12 N.K.	DIN6912	4,000	ST
0040	27230620	PASSKERBSTIFT KS 2 6X 20	DIN1472	2,000	ST



Stückliste 40" siehe Zeichnung 30-4-1136
Stückliste 60" siehe Zeichnung 30-4-1137

Pos.	Menge	Bezeichnung	Lieferant	Bemerkung

Änderungen:

1)	10.11.81	We	6)	
2)	13.11.91	Sto	7)	
3)	17.05.94	FI	8)	
4)	Nr. 3649 24.03.14	RP	9)	
5)			10)	

Gehört zu Zeichnung -
Ersetzt durch -
Ersatz für -
Allgemeintoleranzen nach ISO 2768 - mK

Kontrollvorrichtung

DKF

Massstab	Gezeichnet	24.03.14	RP
1:1	Geprüft	25.03.14	av

Graf + Cie AG
CH-8640 Rapperswil

30-1-165,4

Pos.	Menge	Bezeichnung	Lieferant	Bemerkung
7	1	Mikro-Feineinstellung C1200	BRC	25130006
6	1	Anbau-Gelenkstativ FISSO CLASSIC C100	BRC	25130005
5	1	Kontrolluhr PAR M2T	Stauffer	25130003
4				
3	1	Messteller		30-4-1561
2	2	Kontrollböckli		30-3-265
1	1	Kontrollschiene 40"		30-1-28

Änderungen:

1)		6)	
2)		7)	
3)		8)	
4)		9)	
5)		10)	

Gehört zu Zeichnung - 30-1-165
Ersetzt durch -
Ersatz für -

Allgemeintoleranzen nach ISO 2768 - mK

Kontrollvorrichtung 40"

DKF 10

Massstab	Gezeichnet	25.03.14	RP
1:1	Geprüft	25.03.14	av

Graf + Cie AG
CH-8640 Rapperswil

30-4-1136,0

Pos.	Menge	Bezeichnung	Lieferant	Bemerkung
7	1	Mikro-Feineinstellung C1200	BRC	25130006
6	1	Anbau-Gelenkstativ FISSO CLASSIC C100	BRC	25130005
5	1	Kontrolluhr PAR M2T	Stauffer	25130003
4				
3	1	Messteller		30-4-1561
2	2	Kontrollböckli		30-3-265
1	1	Kontrollbalken 60"		50-1-285

Änderungen:

1)		6)	
2)		7)	
3)		8)	
4)		9)	
5)		10)	

Gehört zu Zeichnung - 30-1-165
Ersetzt durch -
Ersatz für -

Allgemeintoleranzen nach ISO 2768 - mK

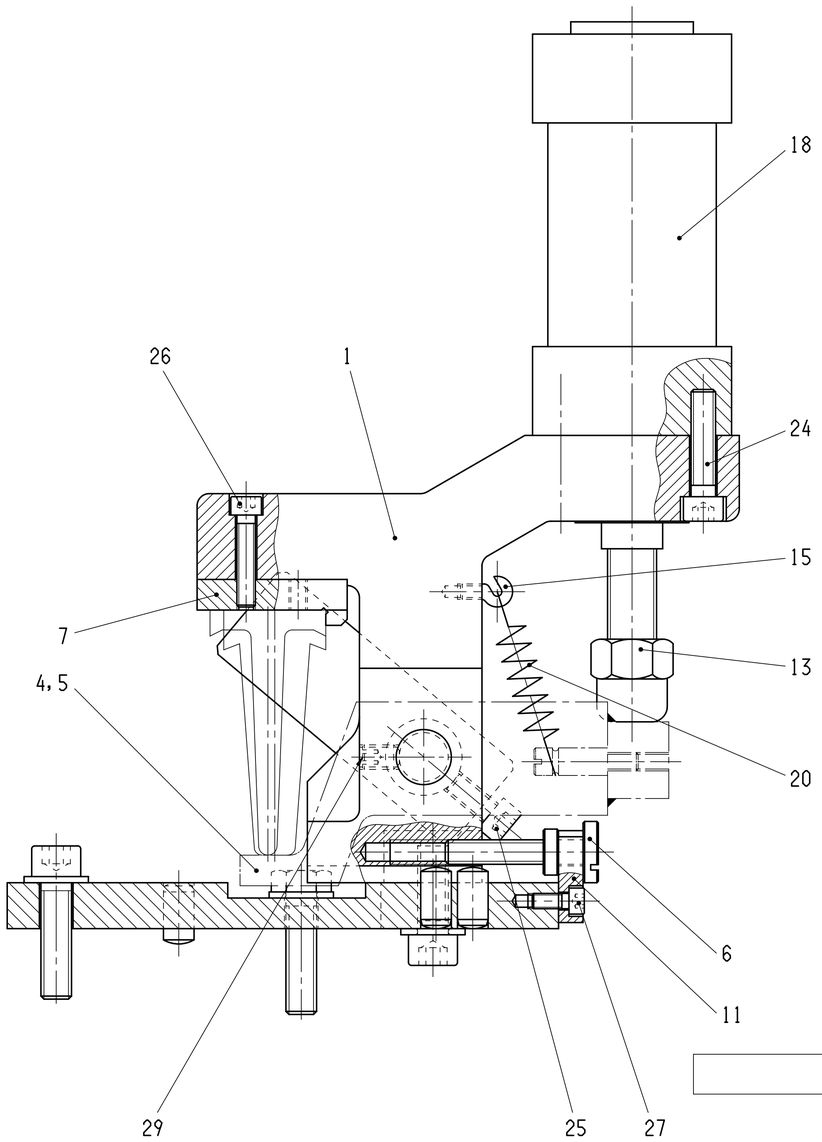
Kontrollvorrichtung 60"

DKF 10

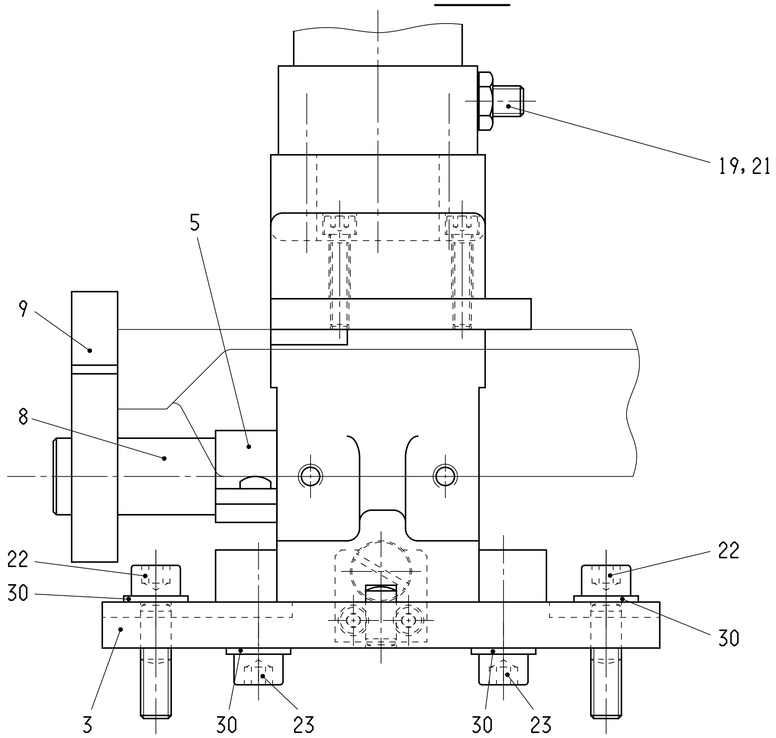
Massstab	Gezeichnet	25.03.14	RP
1:1	Geprüft	25.03.14	av

Graf + Cie AG
CH-8640 Rapperswil

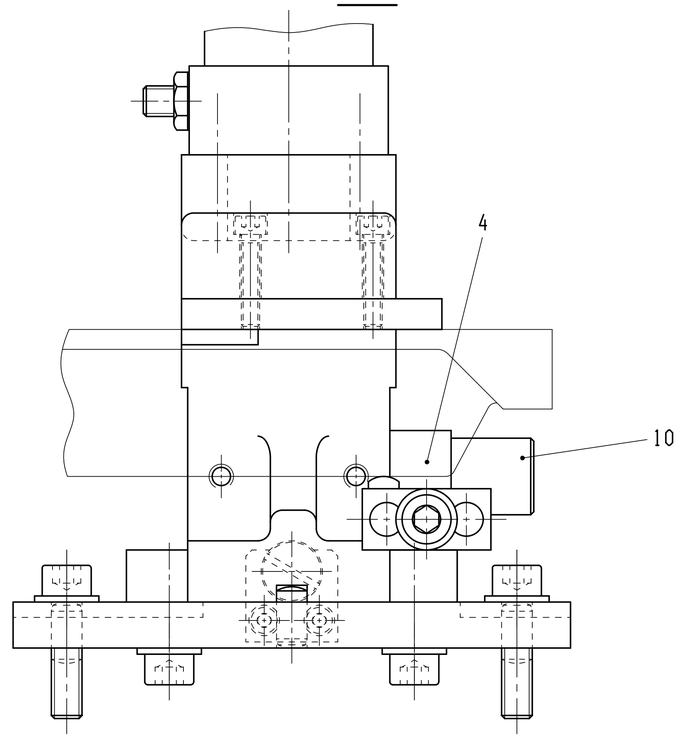
30-4-1137,0



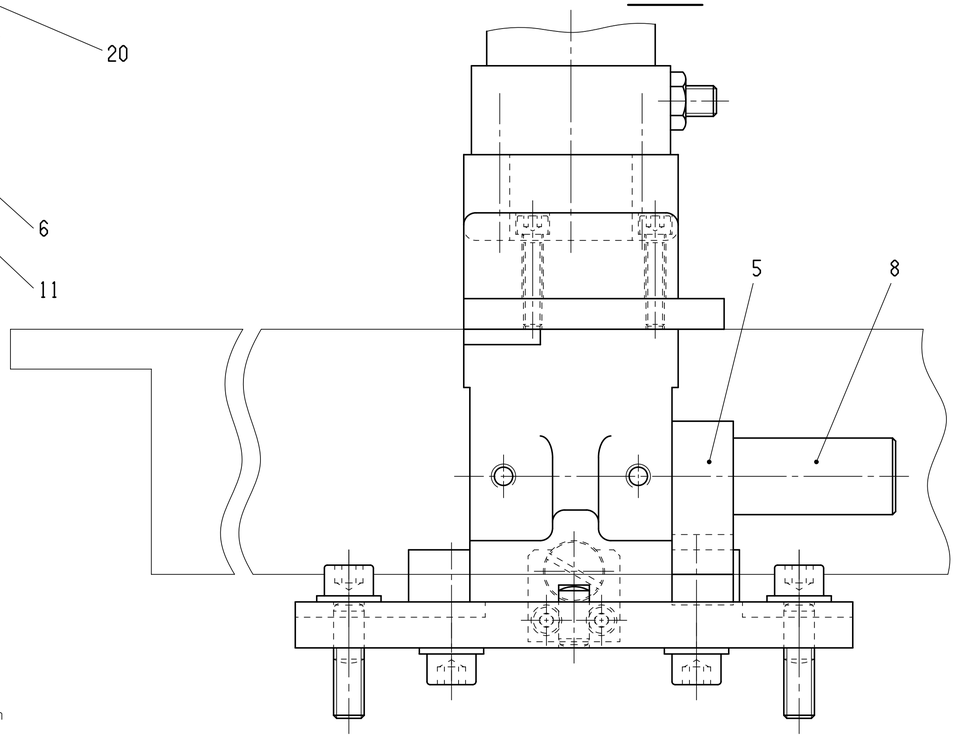
40" hinten POST.



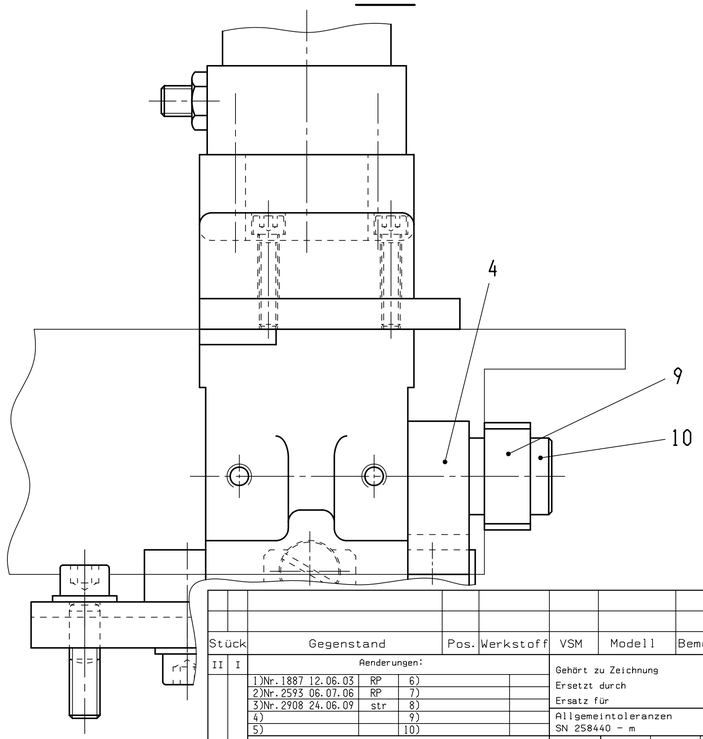
40" vorn ANT.



60" hinten POST.



60" vorn ANT.



Stückliste siehe Zeichnung 30-4-1508 / LISTA PARTICOLARI 30-4-1508

Pneumatik siehe Zeichnung 30-4-1360 / LISTA PNEUMATICA 30-4-1360

für SSI KU12 Deckelanschlag 30-3-353 bei Aufspannvorrichtung vorn montieren
PER SSI-KU12 FERMO A DIS. 30-3-353 DA MONTARE SU SUPPORTO ANTERIORE

Stück	Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung
II I						

Aenderungen:

1)Nr.1887 12.06.03	RP	6)	
2)Nr.2593 06.07.06	RP	7)	
3)Nr.2908 24.06.09	str	8)	
4)		9)	
5)		10)	

Gehört zu Zeichnung
Ersetzt durch
Ersatz für
Allgemeintoleranzen SN 258440 - m

Aufspannvorrichtung
DKF für alle Deckeltypen 40" und 60"

Massstab 1:1

Gezeichnet	23.09.02	RP
Geprüft	26.06.09	np

Graf + Cie AG, Rapperswil

30-1-228, 3

Stueck		Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung
7	7	U-Sch	30	M10	125A		27100010
1	1	Gew-Sti In-6kt	29	M8x12	913		27300812
			28				
2	2	Zyl-Schr In-6kt	27	M5x12	912		27020512
2	2	Zyl-Schr In-6kt	26	M6x30	912		27020630
1	-	Zyl-Schr In-6kt	25	M8x16	912		27020816
4	4	Zyl-Schr In-6kt	24	M8x35	912		27020835
3	3	Zyl-Schr In-6kt	23	M10x30	912		27021030
4	4	Zyl-Schr In-6kt	22	M10x40	912		27031040
2	2	Dichtring	21	0-1/4		FESTO	25299090
1	1	Zugfeder	20	210420		KUBO	27420001
2	2	Schnellverschraubung	19	CK-1/4-PK-6-KU		FESTO	25293402
1	1	Doppeltwirkender Zylinder	18	DSBC-50-25-PPVA-N3		FESTO	25900058
			17				
			16				
1	1	Hakenschraube	15	Nr. 902			00SCH1-902
			14				
1	1	Druckbolzen	13	Zeichnung von GRIT			Nr. 3937
-	1	Deckelanschlag SSI vorn	12	auf KA			30-3-353
1	1	Halter	11				30-4-1181
-	1	Bolzen	10				30-4-1510
1	-	Deckelanschlag	9				30-4-1166
1	-	Bolzen	8				30-4-1167
1	1	Auflageplatte	7				30-4-682
1	1	Stellschraube	6				30-4-93
1	-	Spannhebel hinten	5	auf KA			30-3-...
-	1	Spannhebel vorn	4	auf KA			30-3-...
1	1	Auflage	3				30-2-281
			2				
1	1	Klemmbock	1				30-2-285

II

Aenderungen:

1) Nr. 1887	12.06.03	RP	6)	
2) Nr. 2593	07.07.06	RP	7)	
3) Nr. 2908	24.06.09	str	8)	
4) Nr. 3445	14.02.13	RP	9)	
5)			10)	

Gehoert zu Zeichnung 30-1-228

Ersetzt durch

Ersatz fuer

Blatt 1/1

hinten

vorn

Aufspannvorrichtung

DKF fuer alle Kardentypen 40" und 60"

Massstab	Gezeichnet	17.06.02	RP
%	Geprueft	14.02.13	mas

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1508,4

			30				
			29				
			28				
			27				
			26				
			25				
			24				
			23				
			22				
			21				
			20				
			19				
			18				
			17				
			16				
			15				
			14				
			13				
			12				
			11				
			10				
			9				
	1	Schlauchbride ABA	8	40.532		HAUS	27951617
	5m	HD-Luftschlauch	7	40.501		HAUS	27954008
	1	Stecknippel	6	40.626		HAUS	27950008
	2	Dichtring	5	0-1/4		FESTO	25299090
	6m	Kunststoffschlauch	4	PUN-8x1.25-BL		FESTO	25295950
	2	Verteilerstueck	3	FCK-3-PK-6-KU		FESTO	25295251
	2	Schnellverschraubung	2	CK-1/4-PK-6-KU		FESTO	25293402
	1	5/2-Wege Fussventil mit Schutzhaube	1	FP-5-1/4-B + FPH-121		FESTO	25300010
Stueck		Gegenstand	Pos.	Werkstoff	VSM	Modell	Bemerkung

II	I	Aenderungen:					
		1) Nr. 2908 24.06.09	str	6)			
		2) Nr. 3679 25.04.14	RP	7)			
		3)		8)			
		4)		9)			
		5)		10)			

Gehoert zu Zeichnung 30-1-212/213/214/215

Ersetzt durch

Ersatz fuer 30-4-1241

Blatt 1/1

Pneumatikteile vorn + hinten

DKF Aufspannvorrichtung

Massstab			
%	Gezeichnet	21.10.98	RP
	Geprueft	05.05.14	av

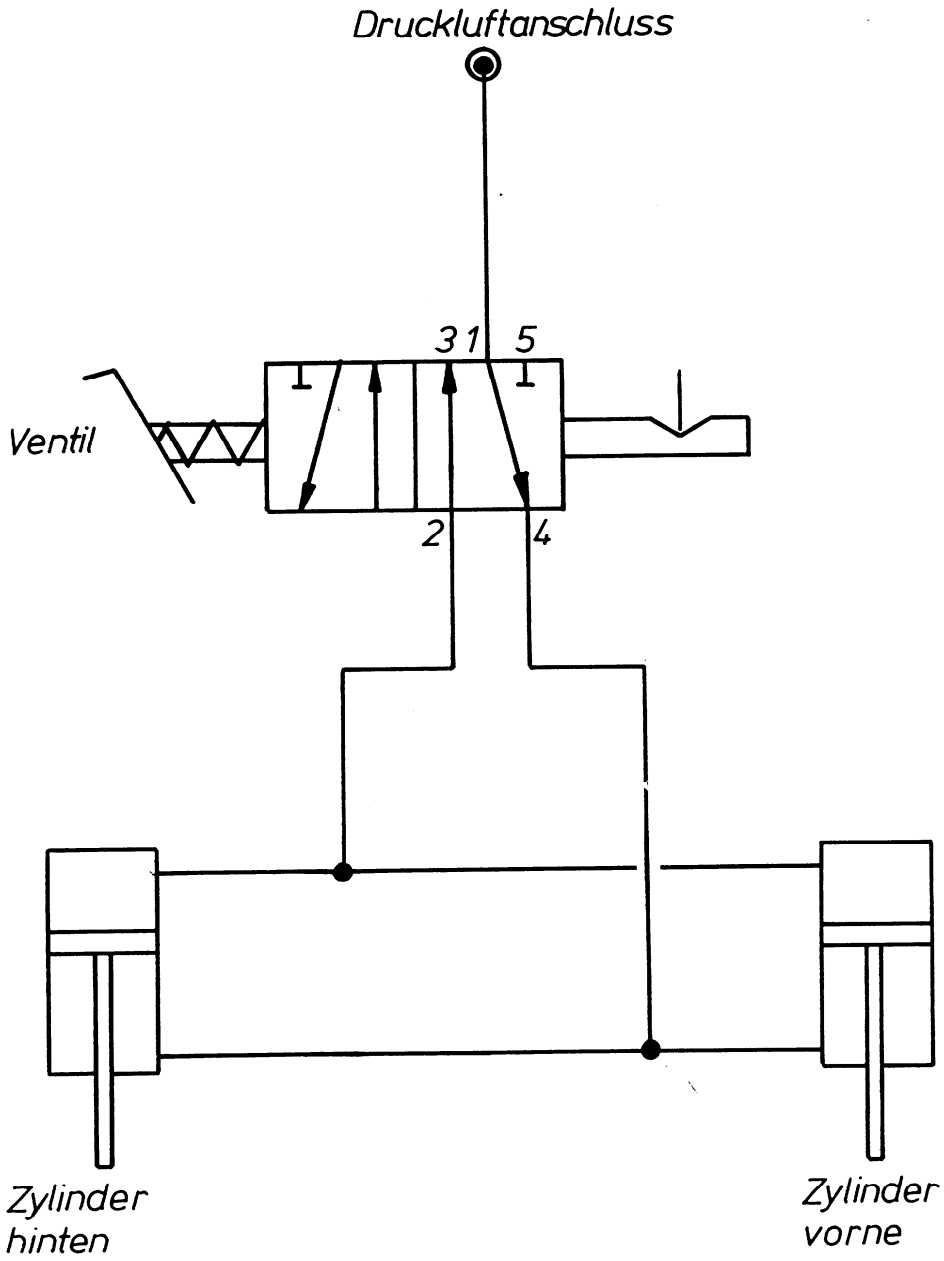
Graf + Cie AG,Rapperswil

30-4-1360,2

Pneumatiksteuerung

DKF Aufspannvorrichtung

Z4-4-175 1

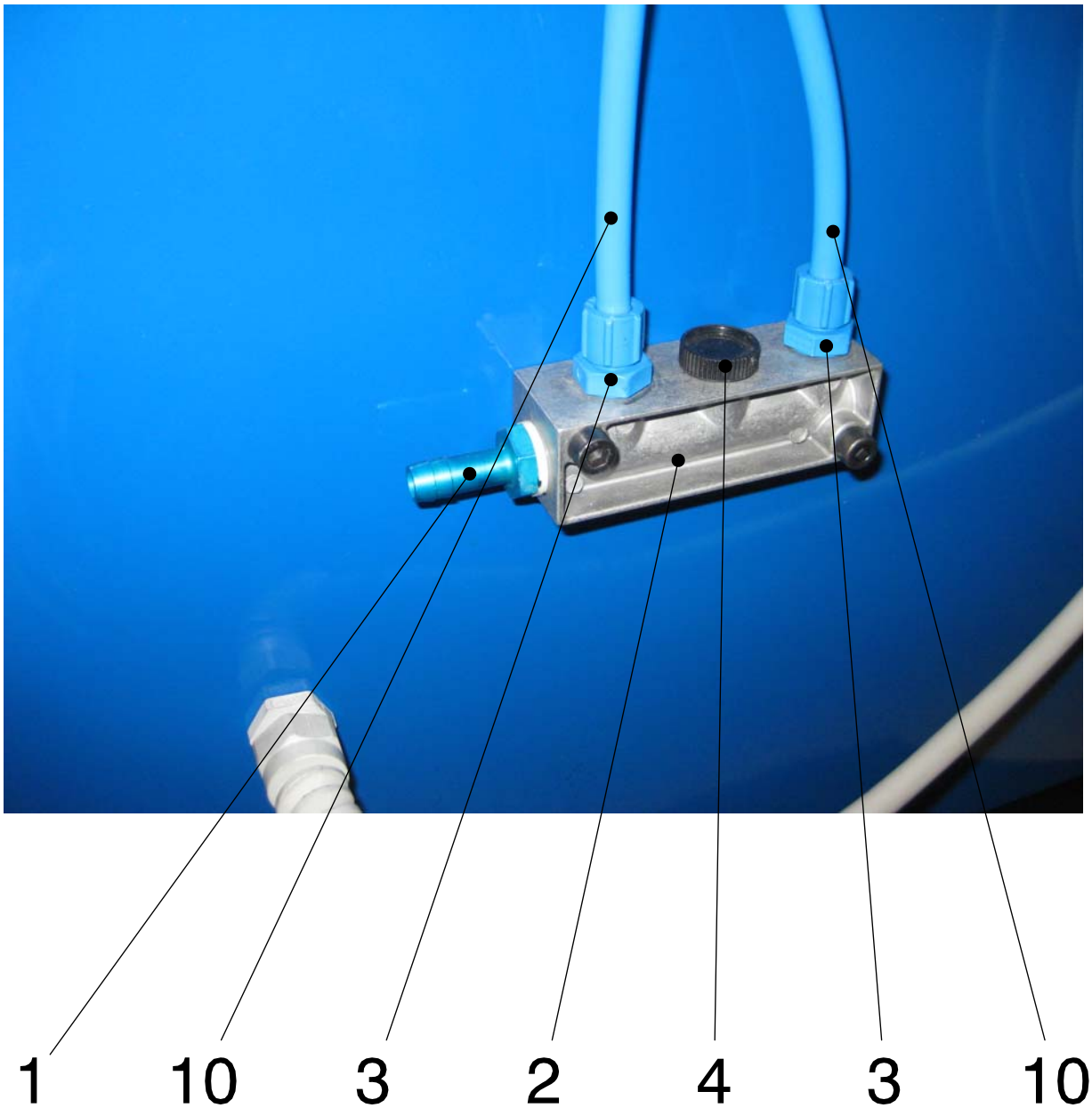


gehört zu Zchng. 30-4-1241/30-1-150

Ersatz für gl. Nummer

Aenderungen:

Ausgegeben: 11.4.90 CM



Änderungen:			
1)		6)	
2)		7)	
3)		8)	
4)		9)	
5)		10)	

Gehört zu Zeichnung -
Ersetzt durch -
Ersatz für -

Allgemeintoleranzen nach ISO 2768 - mK

Luftkühlung

DKF

Blatt	Gezeichnet	30.04.14	str
1/3	Geprüft	01.05.14	av

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1581,0

Änderungen:			
1)		6)	
2)		7)	
3)		8)	
4)		9)	
5)		10)	

Gehört zu Zeichnung -
Ersetzt durch -
Ersatz für -

Allgemeintoleranzen nach ISO 2768 - mK

Luftkühlung

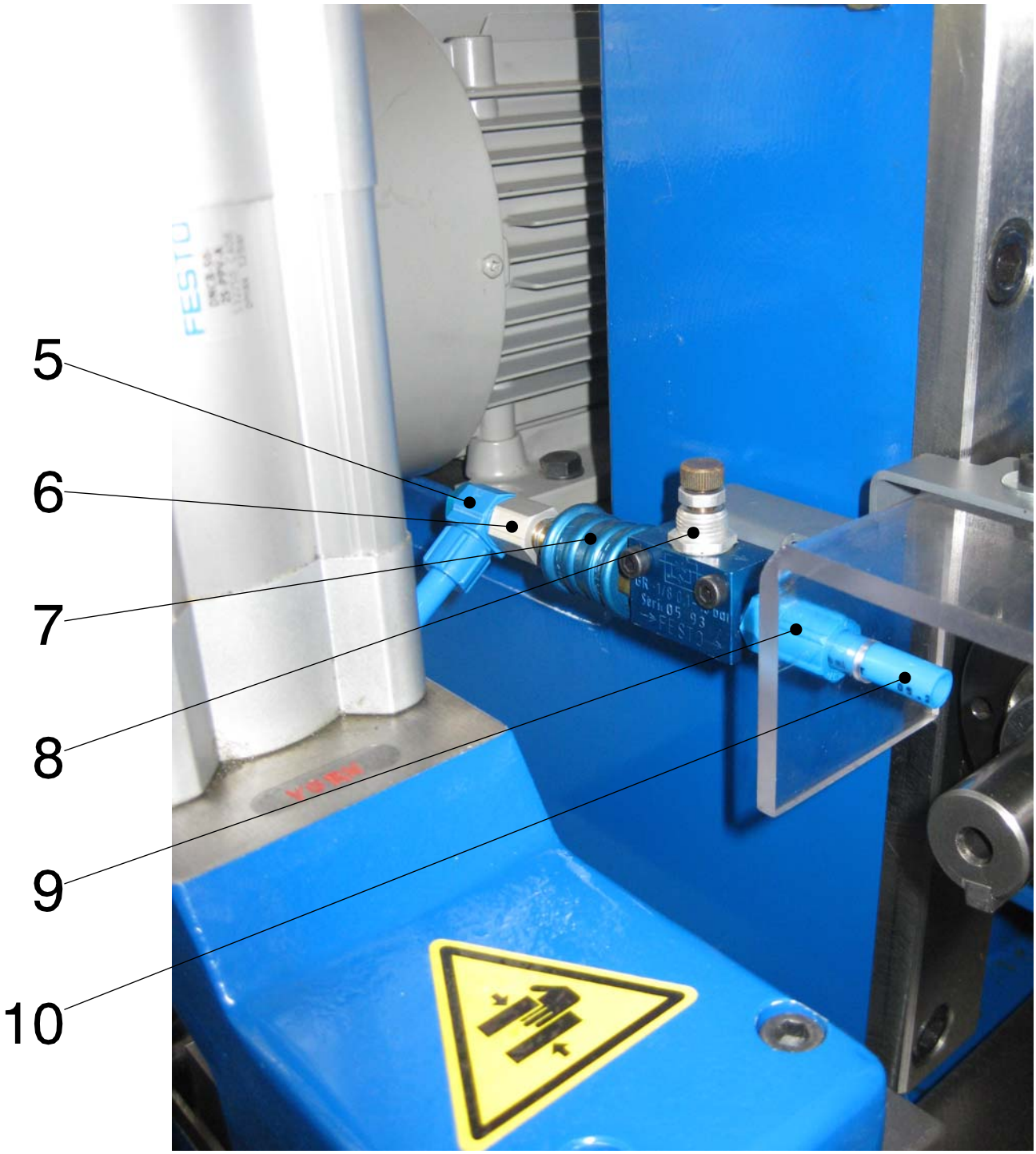
DKF

Blatt	Gezeichnet	30.04.14	str
2/3	Geprüft	01.05.14	av

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1581,0



Änderungen:			
1)		6)	
2)		7)	
3)		8)	
4)		9)	
5)		10)	

Gehört zu Zeichnung -
Ersetzt durch -
Ersatz für -

Allgemeintoleranzen nach ISO 2768 - mK

Luftkühlung

DKF

Blatt	Gezeichnet	30.04.14	str
3/3	Geprüft	01.05.14	av

Graf + Cie AG
CH-8640 Rapperswil

Schutzvermerk:
ISO 16016 beachten
(Refer to ISO 16016)

30-4-1581,0

(9S) Baukastenstückliste - 003041581 LUFTKÜHLUNG

Standort: CH Schweiz Überarb: Alt.: - (alle Datensätze)

Menge pro	ME Lg	Bezeichnung	Pos.	Drawing no	Komponente	Status
1.000	EA	SCHLAUCHTÜLLE N-1/4-P-9	0010		25821002	10
1.000	EA	VERTEILERBLOCK FR-4-1/4-C	0020		25295242	10
3.000	EA	SCHNELLVERSCHR. CK-1/4-PK-6KU	0030	NR.6257	25293402	10
1.000	EA	BLINDSTOPFEN B-1/4	0040		81P800098	10
1.000	EA	L-SCHNELLVERS. LCK-1/8-PK-6KU	0050		25295142	10
1.000	EA	MUFFE QM-1/8-1/8	0060		25295220	10
1.000	EA	HANDSCHIEBEVENTIL W-36-1/8	0070		25295221	10
1.000	EA	DROSSEL-RÜCKSCH. GR-1/8-B	0080		25293225	10
1.000	EA	SCHNELLVERSCHR. CK-1/8-PK-6-KU	0090		25293401	10
3.000	M	KUNSTSTOFFSCHL. PUN-8X1,25-BL	0100		25295950	10

Spare and wear parts DKF 10

Pos.	Qty	Item description	Item No	Qty per machine
		Kopierschablone siehe Zeichnung 30-1-193 **Copying plate see drawing 30-1-193**		
72	1	Kopierschablone 0°50' Copying template 0° 50'	00302205	1
72	1	Kopierschablone 1°22' Copying template 1°22'	00302207	1
72	1	Kopierschablone 1°1'30" Copying template 1°1'30"	00302212	1
72	1	Kopierschablone 1° Rieter Copying template 1° Rieter	00302288	1
72	1	Kopierschablone 0.7° Copying template 0.7°	00302319	1
72	1	Kopierschablone 1° Saurer Copying template 1° Saurer	00302317	1
72	1	Kopierschablone 0°40' Copying template 0°40'	00302316	1
		Fräser siehe Zeichnung 30-1-188 **Milling cutter see drawing 30-1-188**		
-	1	HSS Walzenfräser für Gussdeckel HSS milling cutter for cast iron flats	00304338	1
-	1	Hartmetall Walzenfräser Carbide milling cutter	00304847	1
-	1	HSS Scheibenfräser ø53/ ø22 x 1.5 HSS side milling cutter ø53/ ø22 x 1.5	003041092	1
-	1	Hartmetall-Scheibenfräser ø53 / ø22 x 4 Carbide side milling cutter ø53 / ø22 x 4	003041207	1
-	1	HSS Walzenfräser für Kunststoff HSS milling cutter for plastic	00303694	1
		Spannhebel siehe Zeichnung 30-1-228 **Tensioning lever see drawing 30-1-228**		
5	1	Spannhebel links für diverse Karden Tensioning lever left for various cards	00303361	1
5	1	Spannhebel links für Rieter C4-C51 Tensioning lever left for Rieter C4-C51	00303635	1
4	1	Spannhebel rechts für Rieter C4 - C50 Tensioning lever right for Rieter C4-C51	00303494	1
4	1	Spannhebel rechts für diverse Karden verstellbar Tensioning lever on the right adjustable for various cards	00303582	1
4 / 5	1	Spannhebel links und rechts mit Anschlag für Rieter 60" Tensioning lever left and right with stop for Rieter 60"	003041537	1
4 / 5	1	Spannhebel für Lakshmi 40" Tensioning lever for Lakshmi 40"	003041565	2
4 / 5	1	Spannhebel links und rechts mit Anschlag für Lakshmi 60" Tensioning lever left and right with stop for Lakshmi 60"	003041566	1

Diverses siehe Zeichnung 30-1-188 / 30-1-0228 / 30-1-165
Various see drawing 30-1-188 / 30-1-0228 / 30-1-165

117	1	Stützrolle Copying roller	26STO8	1
-	1	Umbau Kunsstoff fräsen 50 Hz Conversion to milling plastic at 50 Hz	003041583	1
-	1	Umbau Kunsstoff fräsen 60Hz Conversion to milling plastic at 60 Hz	003041582	1
5	1	Kontrolluhr Analog gauge	25130003	1
3	1	Messteller Measuring plate	003041561	1
-	1	Einstell-Lehre Setting gauge	00303668	1
-	1	Aufspannvorrichtung pneumatisch Pneumatic clamping device	003041509	1
115	1	Zylinderrollenlager NN3009K Cylindrical roller bearing NN3009K	26NN3009K	1
113	1	Schrägkugellager 7206 BG Inclined ball bearing 7206 BG	267206BG	2

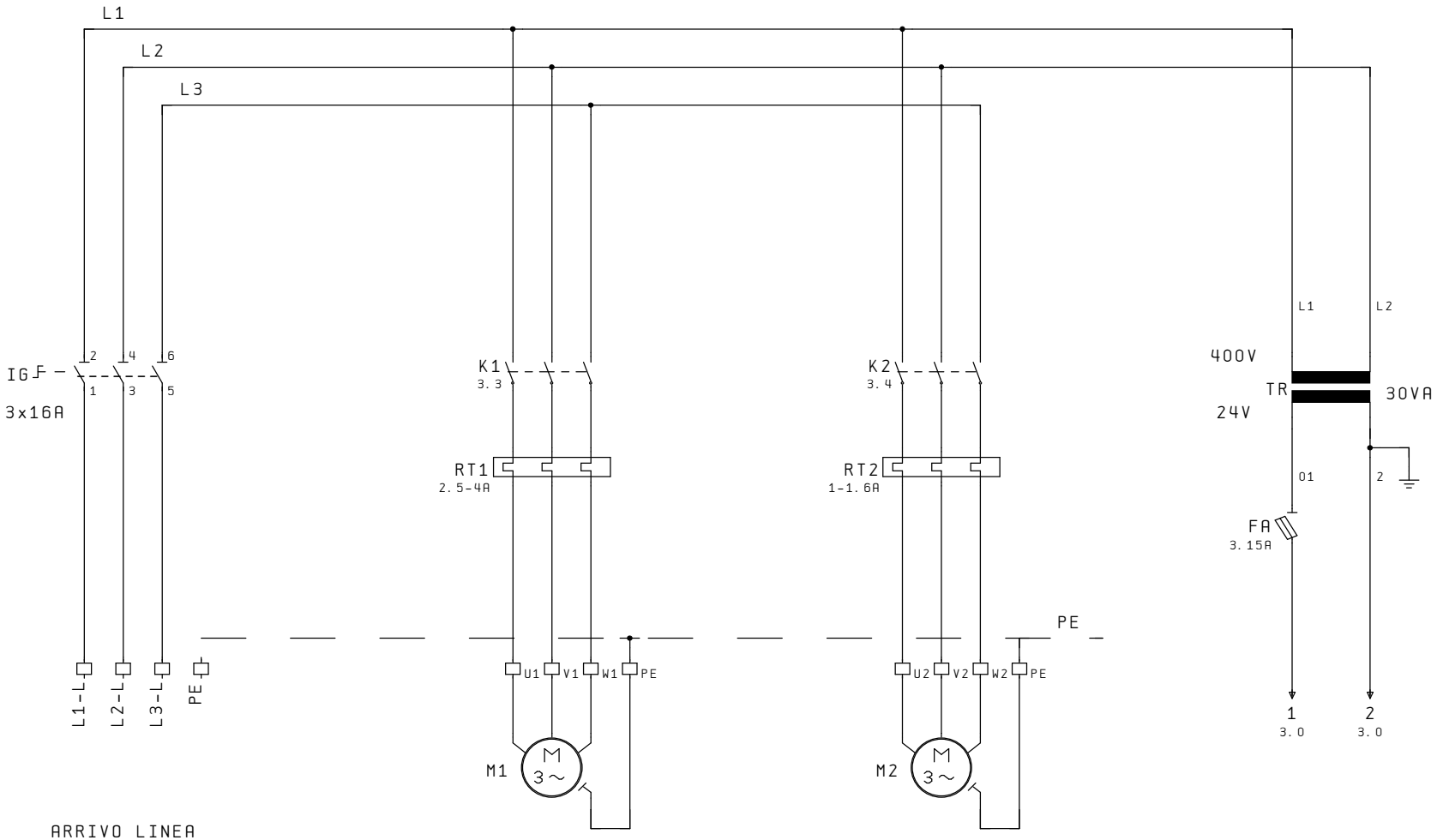
SCHEMA QUADRO MACCHINA DKF

BOARD DIAGRAM MACHINE DKF

GRAF ITALIA

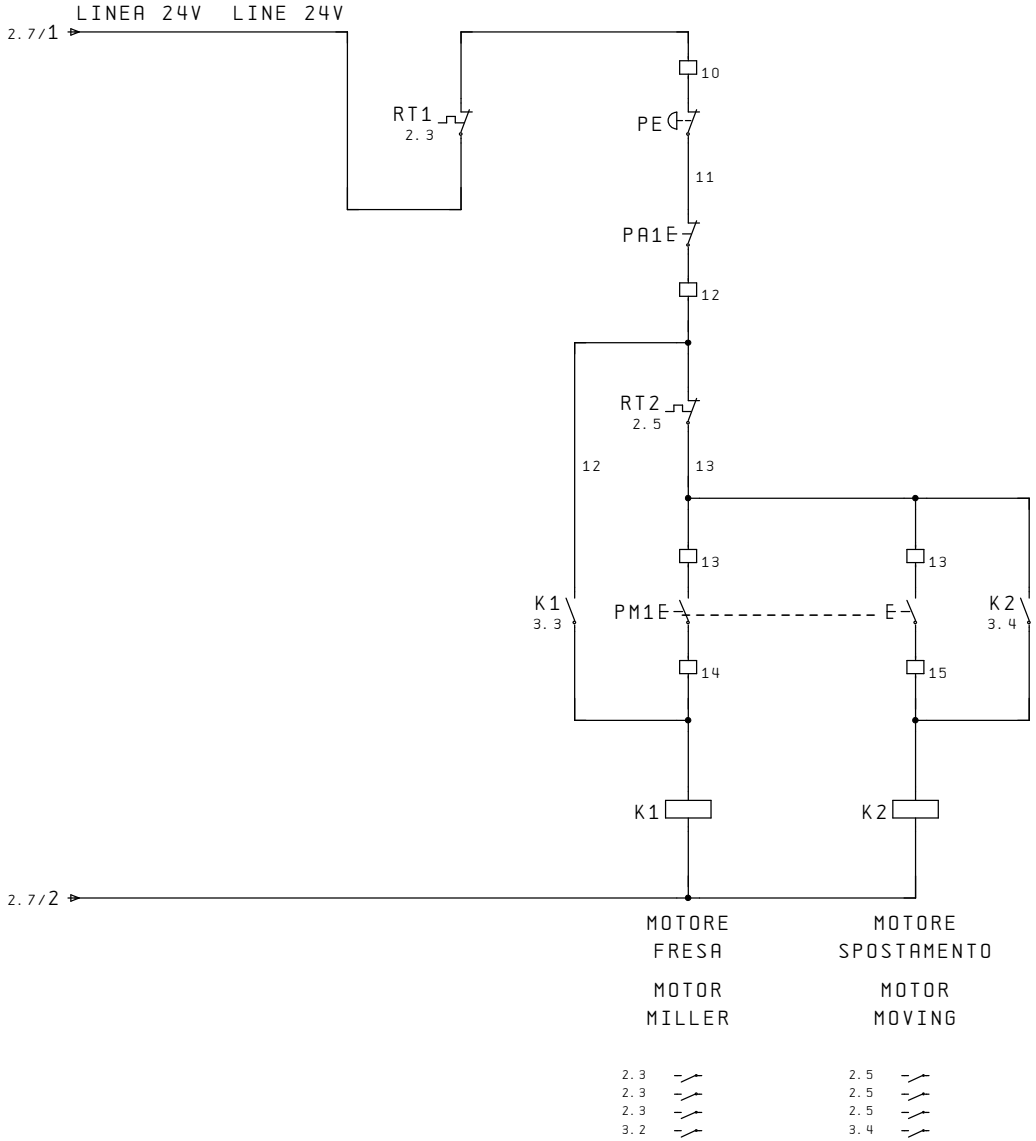
			Data		QUADRO COMANDO MACCHINA DKF	GRAF ITALIA	SCHEMA QUADRO	GI001A12
			Diseg.					
			Plot.	10. Apr. 2012				Z4-4-266,2
Modifiche	Data	Nome	Norm.					

Pag. 1 / 12

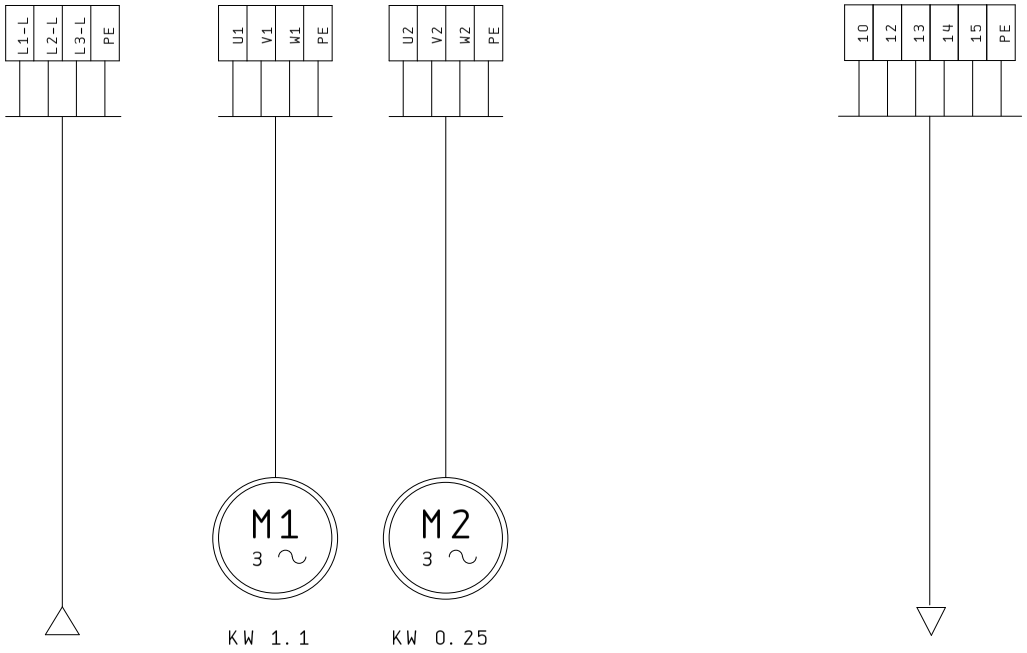


1 3

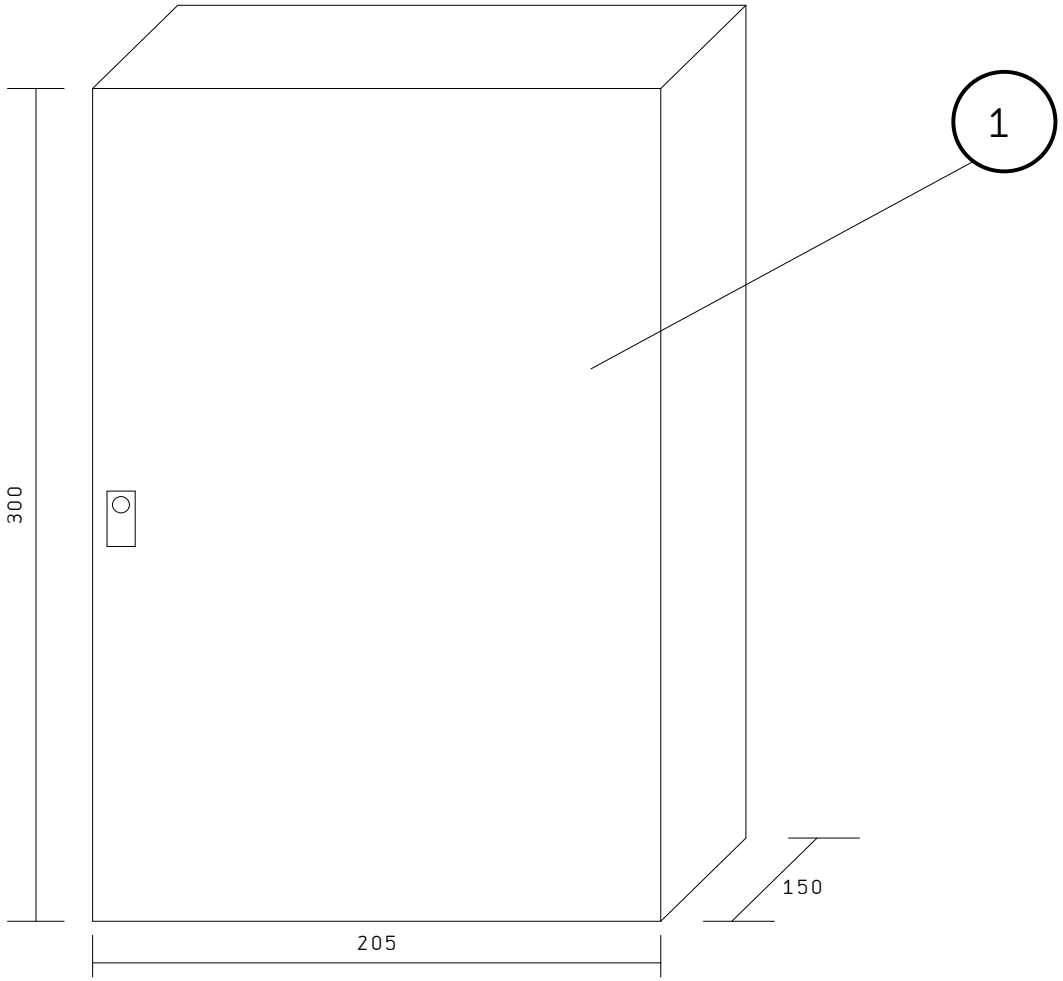
			Data		QUADRO COMANDO MACCHINA	GRAF ITALIA	CIRCUITO POTENZA POWER CIRCUIT	GI001A12
			Diseg.		DKF			
			Plot.	10. Apr. 2012				Z4-4-266,2
Modifiche	Data	Nome	Norm.					Pag. 2 12



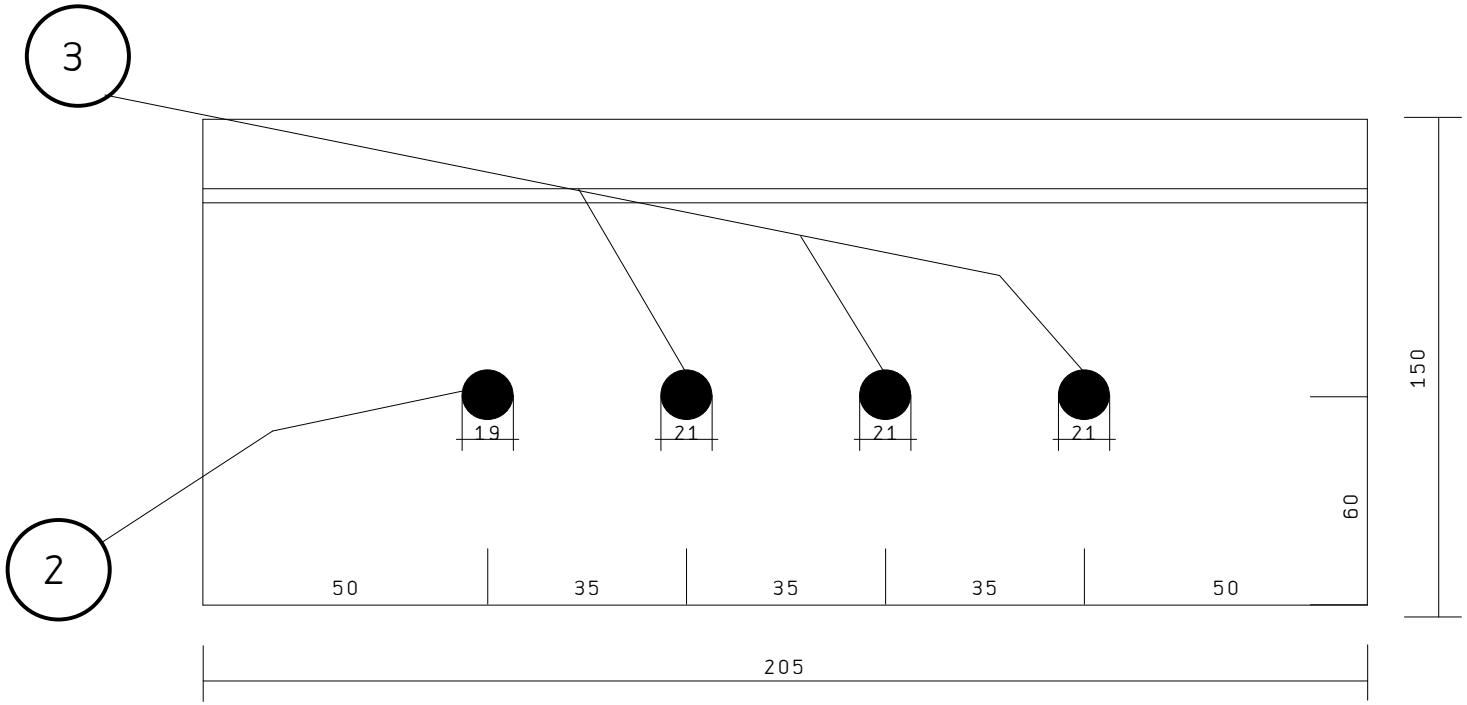
			Data		QUADRO COMANDO MACCHINA DKF	GRAF ITALIA	CIRCUITO AUSILIARIO AUXILIARY CIRCUIT	GI001A12	= +
			Diseg.						
			Plot.	10. Apr. 2012				Z4-4-266,2	Pag. 3 12
Modifiche	Data	Nome	Norm.						



			Data		QUADRO COMANDO MACCHINA	GRAF ITALIA	MORSETTIERE	GI001A12	=
			Diseg.		DKF		TERMINAL BLOCK		+
			Plot.	10. Apr. 2012				Z4-4-266,2	Pag. 4
Modifiche	Data	Nome	Norm.						12

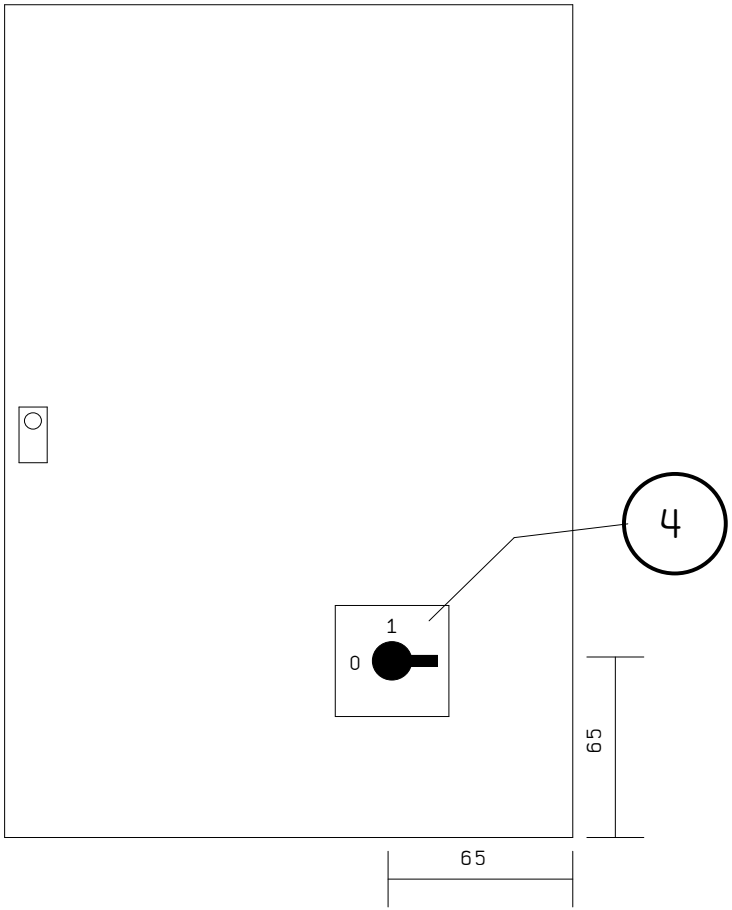


			Data		QUADRO COMANDO MACCHINA DKF	GRAF ITALIA	MORSETTIERE TERMINAL BLOCK	GI001A12
			Diseg.	BAT				
			Plot.	10. Apr. 2012				Z4-4-266,2
Modifiche	Data	Nome	Norm.					Pag. 5 / 12



VISTA DA SOTTO

			Data		QUADRO COMANDO MACCHINA DKF	GRAF ITALIA	MORSETTIERE TERMINAL BLOCK	GI001A12	= +
			Diseg.	BAT					
			Plot.	10. Apr. 2012				Z4-4-266,2	Pag. 6 / 12
Modifiche	Data	Nome	Norm.						



			Data		QUADRO COMANDO MACCHINA	GRAF ITALIA	MORSETTIERE	GI001A12
			Diseg.	BAT	DKF		TERMINAL BLOCK	
			Plot.	10. Apr. 2012				Z4-4-266,2
Modifiche	Data	Nome	Norm.					Pag. 7 / 12

POS.	SIGLE	DENOMINATION	MAKE	TYPE
1		METALLIC BOX CASSA METALLICA	ZANARDO	D93/1
2		CABLEPRESSER PG11 + NUT PRESSACAVO PG11 + DADO	CEMBRE	1900.11 11420.11
3		LINKAGE PG13.5 ∅ 12 + NUT RACCORDO PG13.5 ∅ 12 + DADO	LEGRAND	81266G 386564
4		BREAKER INTERRUTTORE	SCHNEIDER	K1C003H KCC1LH

Modifiche | Data | Nome

Data | Diseg. BAT | Plot. 10.Apr.2012 | Norm.

QUADRO COMANDO MACCHINA
DKF

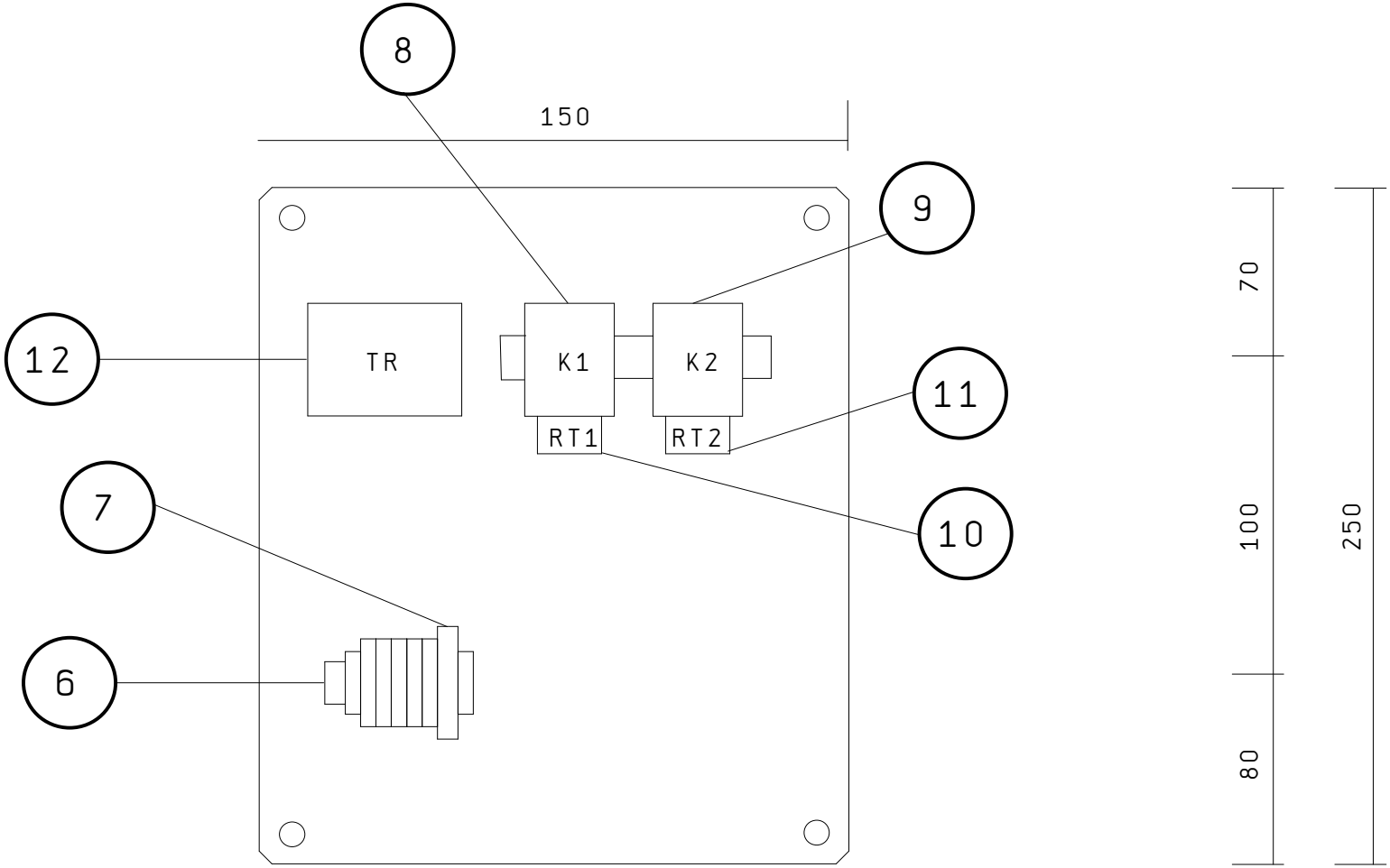
GRAF ITALIA

MORSETTIERE
TERMINAL BLOCK

GI001A12

Z4-4-266,2

Pag. 8
12



8 10

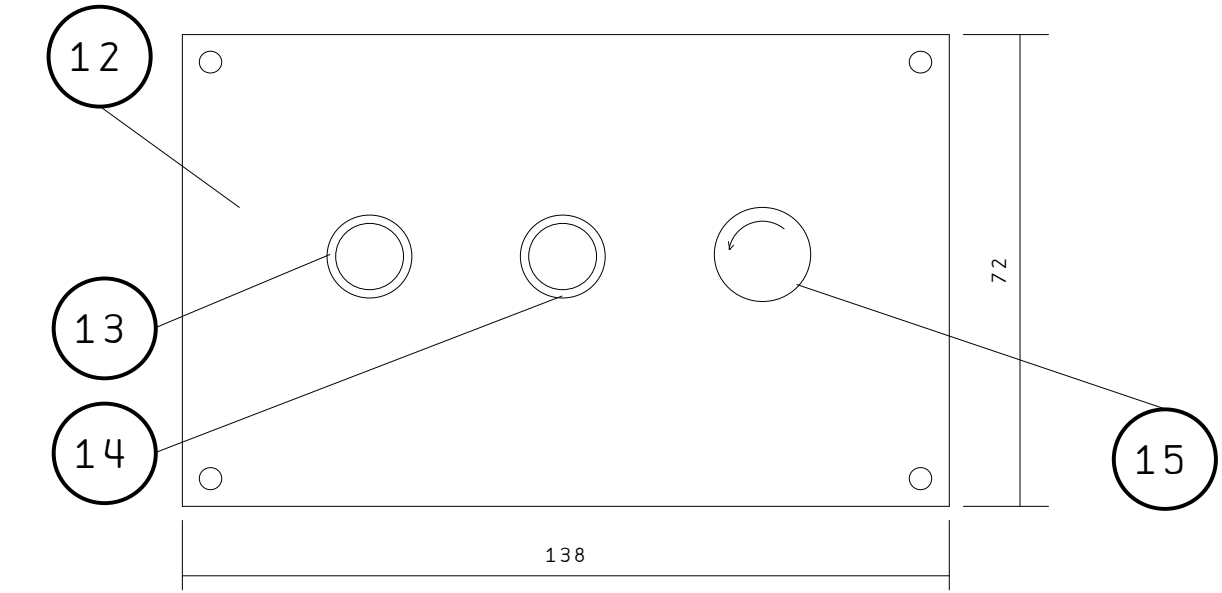
			Data		QUADRO COMANDO MACCHINA DKF	GRAF ITALIA	MORSETTIERE TERMINAL BLOCK	GI001A12	=
			Diseg.	BAT					+
			Plot.	10. Apr. 2012				Z4-4-266,2	Pag. 9 12
Modifiche	Data	Nome	Norm.						

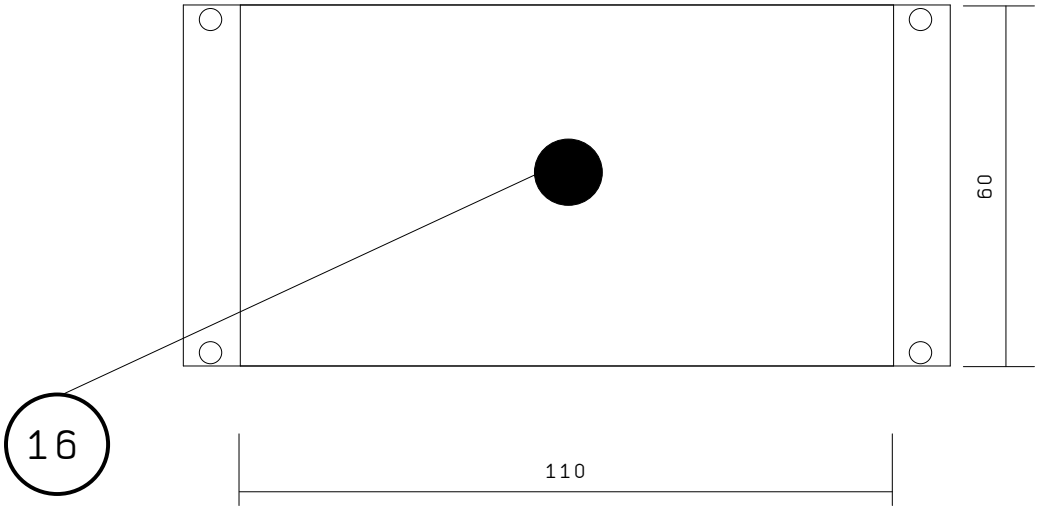
POS.	SIGLE	DENOMINATION	MAKE	TYPE
6		AUXILIARY TERMINAL BLOCK	PHOENIX	UT 2.5
		MORSETTI AUSILIARI		
7	FA	TERMINAL BLOCK + FUSE	PHOENIX	UK Si
		MORSETTI + FUSIBILE		
8	K1	CONTACTOR	TELEMECANIQUE	LC1-D09B7 24V
		CONTATTORE		
9	K2	CONTACTOR	TELEMECANIQUE	LC1-D09B7 24V
		CONTATTORE		
10	RT1	THERMIC RELAY	TELEMECANIQUE	LR-D08 2.5-4A
		RELE' TERMICO		
11	RT2	THERMIC RELAY	TELEMECANIQUE	LR-D06 1-1.6A
		RELE' TERMICO		
12	TR	TRANSFORMATOR	ERC	400V/24V 30VA
		TRASFORMATORE		

9

11

			Data		QUADRO COMANDO MACCHINA	GRAF ITALIA	MORSETTIERE	GI001A12
			Diseg.	BAT	DKF		TERMINAL BLOCK	
			Plot.	10. Apr. 2012				Z4-4-266,2
Modifiche	Data	Nome	Norm.					Pag. 10 / 12





			Data		QUADRO COMANDO MACCHINA DKF	GRAF ITALIA	MORSETTIERE TERMINAL BLOCK	GI001A12 = +
			Diseg.	BAT				
			Plot.	10. Apr. 2012				Z4-4-266,2 Pag. 11 12
Modifiche	Data	Nome	Norm.					

POS.	SIGLE	DENOMINATION	MAKE	TYPE
12		PUSH BUTTON PANEL PULSANTIERA	TELEMECANIQUE	XAP-E303 XAP-E903
13		PUSH BUTTON GREEN PULSANTE VERDE	TELEMECANIQUE	ZB5-AA3 ZB5-AZ103
14		PUSH BUTTON RED PULSANTE ROSSO	TELEMECANIQUE	ZB5-AA4 ZB5-AZ102
15		MUSHROOM PUSH BUTTON RED PULSANTE A FUNGO ROSSO	TELEMECANIQUE	ZB5-AS44 ZB5-AZ102
16		LINKAGE PG13.5 ∅ 12 + NUT RACCORDO PG13.5 ∅ 12 + DADO	LEGRAND	81266G 386564

Modifiche | Data | Nome | Norm. | Plot. | Diseg. | Data
10.Apr.2012 | BAT

DKF

QUADRO COMANDO MACCHINA

GRAF ITALIA

MORSETTIERE
TERMINAL BLOCK

GI001A12

Z4-4-266,2

Pag. 12
12

11

0 1 2 3 4 5 6 7 8 9

Graf Companies

AGRCH	Graf + Cie AG Bildaustrasse 6 Postfach 1540 **8640 Rapperswil** Switzerland Head office	Phone Fax Mail Internet	+41 55 221 71 11 +41 55 221 72 33 info@graf-companies.com www.graf-companies.com
AGRBR	Rieter Brasil Comércio e Representação de Máquinas e Sistemas Texteis Ltd. Alameda Rio Preto, no. 165 Centro Empresarial Tambore **06460-050 Barueri-SP** Brazil	Phone Fax Mail Internet	+55 11 4166 4977 +55 11 4195 3840 info.br@graf-companies.com www.grafbr.com.br
AGRHK	Graf Cardservice Far East Ltd. 20/Fl. Pearl Oriental House 60 Stanley Street, Central **Hong Kong**	Phone Fax Mail	+852 2810 09 55 / 56 +852 2845 29 64 info.hk@graf-companies.com
AGRNL	Graf Holland B.V. Lonnekerbrugstraat 130 Postbus 2201 **7500 CE Enschede** Netherland	Phone Fax Mail Internet	+31 53 488 95 88 +31 53 488 95 71 info.nl@graf-companies.com www.graf.nl
AGRUS	Graf Metallic of America, LLC 104 Belton Drive P.O. Box 1370 **Spartanburg, S.C. 29301 / 29304** United States of America	Phone Fax Mail Internet	+1 864 576 74 50 +1 864 576 74 54 info.us@graf-companies.com www.graf-companies.com

For more adresses see homepage!