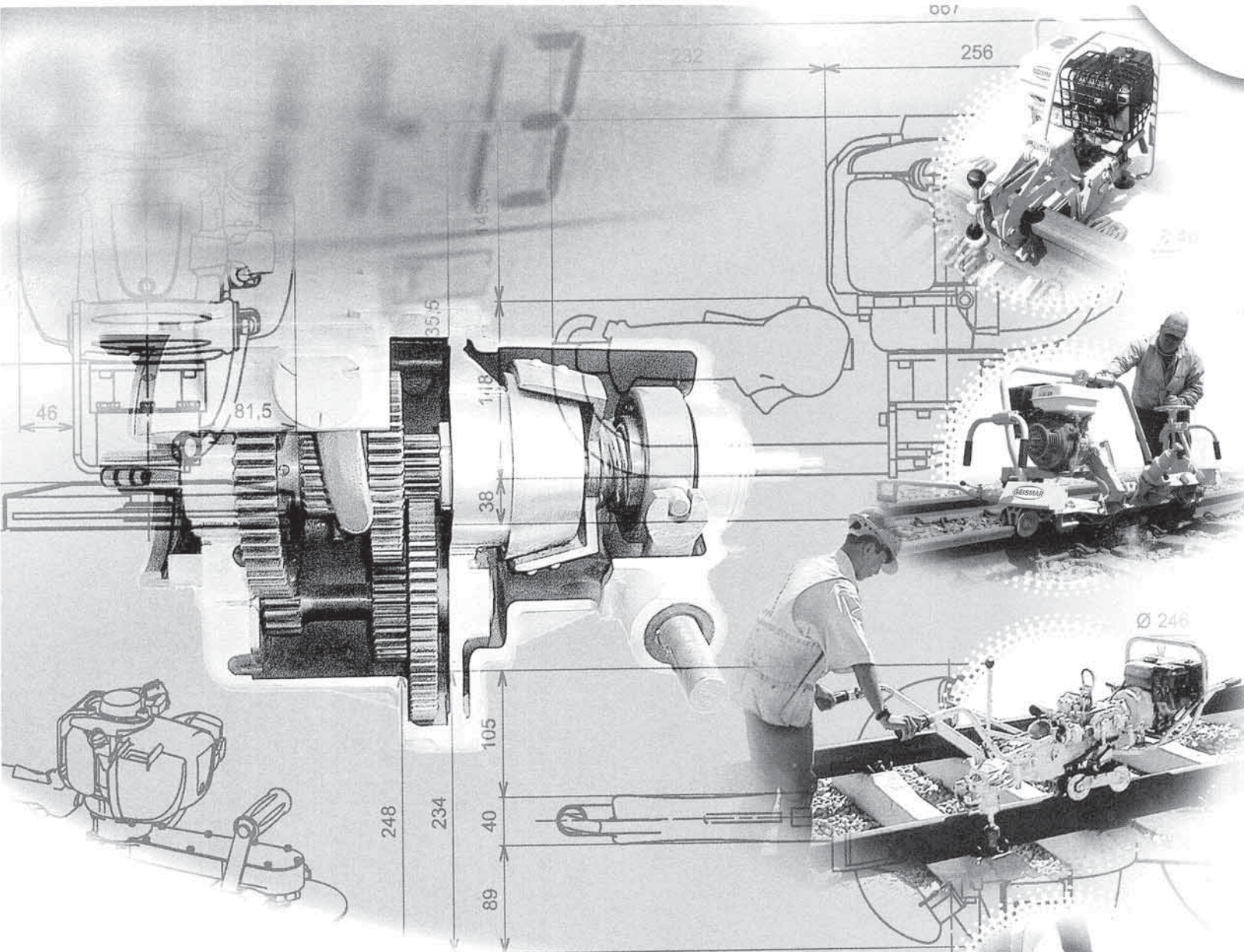


# FISHING SURFACE GRINDING MACHINE

Type  
**MS9**



## SOCIÉTÉ DES ANCIENS ÉTABLISSEMENTS L. GEISMAR

113 bis, avenue Charles-de-Gaulle  
92200 Neuilly sur Seine - France

- Tel.: +33 (0)1 41 43 40 40
- Fax: +33 (0)1 46 40 71 70
- E-mail: geismar@geismar.com

5, rue d'Altkirch  
68006 Colmar cedex - France

- Tel.: +33 (0)3 89 80 22 11
- Fax: +33 (0)3 89 79 78 45
- E-mail: colmar@geismar.com

## SOCIÉTÉ TURRIPINOISE DE MÉCANIQUE

38110 La Tour du Pin  
France

- Tel.: +33 (0)4 74 97 24 88
- Fax: +33 (0)4 74 97 30 76

# GEISMAR

STUMEC

www.geismar.com







GEISMAR, the quality choice !

You have just acquired a machine for laying and servicing railway lines. We thank you for choosing equipment developed and constructed by GEISMAR / STUMEC, the fruit of over eighty years' experience.

Every day since 1924, the GEISMAR Group has been investing in research and state-of-the-art construction to offer you the quality and reliability so essential to the requirements of the world of railways.

This machine, built entirely in France from design through to delivery, has been subjected to continuous, extremely strict controls. Formed of different mechanical elements assembled by highly qualified fitters, your machine has been tested, calibrated and controlled at every stage of its production.

We are convinced that it will give you every satisfaction and are, of course, at your service to offer you any recommendations you may require for its use or its maintenance.

We thank you for the confidence you have shown in us and, in the hope that we will remain one of your privileged partners, we would like to confirm that we are totally available for any comments or recommendations you may care to make.

## CHAPTER 1 – SAFETY

### 1.1 Foreword

The following set of rules has been drawn up to ensure the application of precautionary principles that help to preserve the safety of persons and property when the machine is in use. Any failure to comply with these rules can have serious repercussions (bodily injury, etc.), and can even be fatal, so we must draw your attention to the fact that all persons involved in the use, maintenance, storage or custody of the machine covered by the present manual must be familiar with these rules.

Any users who cause an accident through failure to comply with these rules will be held personally responsible for the results of their actions.

### 1.2 Instructions for safety and general use

All persons using, servicing or repairing this equipment must have undergone the training, possess the skills, and have at their disposal the tools necessary to carry out any such operations.

Before using the equipment, even in a maintenance context, it is necessary to read the corresponding instruction manual, together with its appendices, and the safety rules in force in the workplace.

Comply carefully with the general safety instructions drawn up for the site by the person in charge of the site, especially if the work is carried out without stopping or diverting traffic.

The equipment can only be used, serviced or repaired by competent personnel who have undergone thorough specialized training beforehand. The technical documentation and the instructions are useful in completing the knowledge acquired during the training courses, but they can in no way replace theoretical and practical qualifying training, provided in accordance with good professional practice.

If the operating company is not in a position to carry out the necessary training for its staff, at a satisfactory level, the GEISMAR/STUMEC Company is able to provide advice concerning the training programme to be implemented.

The training must include an explanation of the various equipment functions, the instructions for use and maintenance, and the safety rules applicable, together with practical exercises.

**IMPORTANT! All persons using the machine must comply with the labour regulations in force**



**The GEISMAR/STUMEC Company cannot be held responsible for any modifications made without its written approval, or for any assembly work not in conformity with its recommendations, especially in the case of use of parts other than original manufacturer's parts.**



## 1.3 General safety instructions

- The operator and the working environment

- ⇒ To avoid all risks of accident or injury, it is essential to wear:
  - Sturdy, non-flammable clothing that is suitably close-fitting
  - Strong, non-slip gloves
  - Safety shoes
  - Protective eyewear
  - Safety helmet
  - All other equipment necessary on the site or when using the machine
- ⇒ In the case of use of ear defenders, the safety instructions in force on the site must be complied with at all times.
- ⇒ Make sure that the machine vibrations do not lead to a loss of sensitivity in the hands. Adapt the working periods to the level of vibration caused by the machine, which is shown within the framework of normal use.
- ⇒ Do not work with the machine if you are not sure that you can control it correctly. Do not start working with the machine until you are sure that you can do so in full safety, for yourself (good conditions of visibility and lighting) and for other people (work calmly and carefully). Take care to ensure you have a firm, stable footing; all unstable working positions must be prohibited.
- ⇒ The user must be in a physical and mental condition enabling work to be carried out without danger.
- ⇒ The work area must be free of all obstacles. The work area (and the surrounding areas) must be free of all flammable substances.
- ⇒ If anything does not seem clear to you, whether it concerns the machine or the work to be carried out, ask a qualified person for information. Do not base your work on assumptions.
- ⇒ For underground use (tunnel or gallery), or in a closed area, make sure there is sufficient ventilation or extraction to avoid the risks generated by inhaling exhaust gases or by their build-up.
- ⇒ This equipment must not be used in an explosive atmosphere.
- ⇒ Avoid working positions in which exhaust gases could come into contact with parts of the body, whether protected or not.
- ⇒ In a general way, take all necessary precautions to prevent flammable products from coming into contact with fire hazards.
- ⇒ The operator must ensure that no one else is within the working area. In particular, it is necessary to make sure that in the direction in which the machine is travelling, no one can be hit. If someone is nonetheless in the path of the machine, the operator must stop and warn the person of his passage.
- ⇒ When the machine is installed on the track, it must be handled only by the number of operators strictly necessary for its normal use.
- ⇒ As the overall size of the machines does not enable extinguishers to be carried on them, we strongly recommend placing extinguishers of an appropriate type to deal with the fire hazards close to the machine.
- ⇒ The user must comply with all the regulatory environmental instructions applicable to the machine in use.

- The operator and the machine

- ⇒ Before putting the machine into service each time, check that its condition and its operation are in compliance with the instructions. In particular, make sure that the controls are free and in good working order, and that they are in the “stop” or “neutral” position. Never make any modifications that could affect correct operation of the control systems.
- ⇒ All the protective elements must be kept carefully in place and in good condition.
- ⇒ Always keep the machine clean and remove any accumulated dust, especially if it could absorb flammable products.
- ⇒ Always move forwards when working.
- ⇒ When working, always hold the machine with both hands to ensure control at all times, and to be able to use it in full safety.
- ⇒ Never bring a machine close to a flame or a source of heat.
- ⇒ The machine must never be positioned close to hot or protruding elements that could damage some parts (tanks, exhaust, housings...).
- ⇒ Never move away from a machine while the engine is running, even when it is idling. Stop the engine immediately if the machine is not in use. After stopping the engine, wait until all moving parts have come to a complete stop.
- ⇒ Work on the electrical installations on the machine can only be carried out by suitably qualified persons.
- ⇒ Read and make sure you fully understand all the signs placed on the machine, and always comply with all the instructions.
- ⇒ The signs placed on the machine include pictograms, manufacturer’s plates, and instruction labels. Make sure they are kept clean and replaced if they have been damaged, or if they are missing or illegible. If one of these elements is on a part that is to be replaced, a new element must be present on the replacement part. Please contact us on this subject.

**THE MACHINE MUST NEVER BE USED FOR A PURPOSE OTHER THAN THAT FOR WHICH IT IS INTENDED**

**NEVER TOUCH A MOVING PART WITH A TOOL, OR WITH THE HAND, OR WITH ANY OTHER PART OF THE BODY**



**IT IS ESSENTIAL TO STOP THE ENGINE AND SET THE CONTROL TO THE STOP POSITION BEFORE CARRYING OUT :**

- ANY HANDLING WORK
- ANY WORK TO CHANGE TOOLS OR SOCKETS
- ANY WORK INVOLVING FUEL OR OIL (FILLING, TOPPING UP, CHECKING LEVELS, ETC.)
- ANY REPAIR, MAINTENANCE OR CLEANING WORK



- Using and handling fuel and oil

- ⇒ It is essential to stop the engine and set the control to the stop position before carrying out any work involving fuel (filling up, checking the level, draining, etc.).
- ⇒ Always keep suitable extinguishers ready for use in all areas where fuel is handled (storage, filling up, etc.).
- ⇒ Always store fuel and oil in separate cans specially designed for the purpose and bearing the labels required by regulations. They must be stored in a safe place, well away from all types of fire hazard.
- ⇒ Each time a machine is started up, and while it is running, make sure that there are no fuel leaks from any part of the machine. If a leak is suspected, stop the engine immediately and do not restart the machine until the leak has been repaired.
- ⇒ Never carry out any work on a fuel tank or handle fuel to fill a tank, or for any other reason, in an area where there could be a fire hazard (such as a burning cigarette, a blowtorch, sparks, etc.) or substances that are incandescent or at a high temperature (such as welding spatters, slag, clinker, etc.). All such work must always be carried out outdoors or in a well-ventilated area.
- ⇒ Always turn all mobile phones off while filling a tank with fuel or handling fuel.
- ⇒ Carefully tighten the fuel filler cap each time, and check that no fuel leaks from it.
- ⇒ Always remove a filler cap slowly, to enable any internal pressure to be released without spraying any fuel out. Take special care if the surrounding temperature is high.
- ⇒ When putting fuel in a machine that has heated up, never fill the tank completely. Do not put in more than three-quarters of the tank capacity.
- ⇒ If fuel starts to boil in the tank when putting fuel in a machine that has heated up, screw the cap on again immediately and leave the machine to cool down.
- ⇒ Make sure the fuel used is suitable for the type of engine on the machine. See the user manual for the engine.
- ⇒ Do not inhale fuel vapour.
- ⇒ If it is necessary to drain the fuel tank, pour the fuel into a container designed for the purpose and bearing the labels required by regulations. Always close them tightly, even if they only contain a small quantity. Never use a glass container.
- ⇒ Never use fuel for cleaning work. Use only non-flammable, non-toxic products that are harmless for the user, the equipment and environment.
- ⇒ If fuel has been spilt near the filling area for any reason, clean it up immediately. Clean straightaway any spillage of fuel on the skin. Make sure no fuel has been spilt on your clothes; otherwise, change clothes immediately. Remove all rags or other materials used to wipe fuel, and store them in a safe place well away from all sources of heat or combustion. Move the machine well clear of any spilt fuel before starting it up (at least 6 metres away), and do not move any closer to the area while the engine is running.

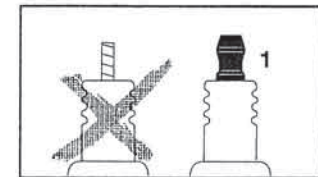
**IN CERTAIN CASES HANDLING OIL CAN GIVE RISE TO THE SAME TYPE OF RISKS AS HANDLING FUEL. IT IS THEN ESSENTIAL TO TAKE THE SAME PRECAUTIONS WITH OIL AS THOSE SET OUT ABOVE FOR FUEL.**

- Tools to be used on the machine

- ⇒ Use only the types of tools intended for normal use of the machine.
- ⇒ Measure the speed of all rotating tools at regular intervals.
- ⇒ Never use tools at speeds greater than the maximum speed for which they have been designed and approved.
- ⇒ Never use damaged tools or tools that have reached their maximum level of wear.

- The engine on the machine

- ⇒ Never touch the hot parts of the engine, and especially the exhaust pipe. If it is necessary to work on the engine, wait until it has cooled down.
- ⇒ Check the engine rotation speed at regular intervals, and especially after fitting tools or reassembling the machine. Adjust if necessary.
- ⇒ Never exceed the speed shown in the technical specifications.
- ⇒ After starting with the choke, remember to return the choke to the normal running position.
- ⇒ Never wind the starter rope around your hand, and never release it suddenly.
- ⇒ If the machine does not operate correctly after the engine has been started, stop the engine and inform the head of maintenance.
- ⇒ For petrol engines, use only spark plugs whose tops are as shown in drawing 1 opposite. If the plug is fitted with a screw top, make sure the top is fully tightened. After fitting the spark plug, make sure that the plug cap is in good condition and that it stays firmly on the plug. Carefully check the fastening system to make sure that no sparks can be formed.



- Using trolleys (If applicable)

- ⇒ A machine designed to work on a trolley must not be used without the trolley. The trolley is thus an integral part of the machine. The machine and the trolley must not be used separately.
- ⇒ Trolleys whose use is dedicated to a machine must never be used to transport equipment or personnel, or attached to a vehicle.
- ⇒ Before fitting the machine on its trolley, it must be placed correctly on the track to ensure that it can run freely. If it is on a sloping section of track, make sure the trolley is kept immobile while the machine is being put on the track or taken off it.
- ⇒ Attention, the trolley takes up the full width of the track and can cause injuries to the legs if it hits someone.



## RISKS PARTICULAR TO THE MS. 9 FISHING SURFACE GRINDING MACHINE

The main risks involved in this machine for the operator and the environment are :

- Fire resulting from fuel handling.
- Fire caused by sparks in contact with inflammable material.
- Splitting of grindstone used in abnormal conditions.
- Injuries caused by sparks or eventually by grinding fragments (the eyes must be specially protected)
- Severe burns if part of the body comes in contact with the rotating grindstone.

## INSTRUCTIONS

- In addition to clothing mentioned in paragraph 1°, the operators using this machine must wear :  
    . mask or goggles, helmet, apron, gaiters or fireproofed boots.

It is also recommended to use a protective mask to avoid breathing grinding dust.

- For machine set on a 4-wheel traversing trolley, lock the transferer before any work.
- For machine set on a 3-wheel single trolley, the pin must be inserted as soon as the outrigger is fixed to the trolley.
- The engine must be started and stopped only when the machine is in working position, both guards being lowered and laid on a plane surface without pebbles or other objects (clean sleeper). Those precautions enable the operators to avoid getting accidentally in contact with the moving grindstone and to also destroying the grindstone and throwing off pebbles.
- Stop the engine before any removal of the machine.
- If the engine stalls, do not restart the engine with grindstone in contact with the rail. Apply instructions of the preceding paragraph.
- As soon as the work does not require the guard to be raised on one or the other side, it must be lowered by means of the adequate lever and the guards must be raised only for the required work. Raise only one guard at the same time, do not impair the safety device which prevents the simultaneous raising of both guards, and see that in any circumstances the moving grindstone be enclosed between the rail being ground and that of both guards to be lowered.
- Never use the damaged grindstone of showing cracks or splits.
- Tighten bracket or nut + washer without excess but enough to hold the grindstone firmly.
- Store grindstones in a dry place, shielded from frost, sun and heat. Place them to prevent buckling. the stocking period must not exceed 2 years maximum.

- Have any new or refitted grindstone running idle during 30 seconds, the staff being kept away during this test, except for the operator who must have the machine under control of the grindstone rotating plane with both guards lowered.
- During the grinding operation do not stand within the scope of the grinding sparks. If necessary, use a screen to intercept the shower of sparks before it reaches dangerous places (fire danger).
- The machine's user must handle his work so as the flow of sparks always goes away and never towards him. This is carried out whenever the stone is on the right side of the rail. When the other side of the same rail is to be done, it is then necessary to revolve all the machine half a turn.
- Do not knock the grindstone during grinding as splitting may occur.
- Before starting the engine, check the good condition and fixing of the guards. Fit new guards after any grindstone splitting or at any time if their resistance seems to be reduced. Never modify them.
- See that the grindstone be never in contact with a sleeper or ballast or any inadequate objects.
- Never carry a machine in a vehicle without securing the machine carefully against motion and never without turning down the guards, even if there is no grindstone on the machine.
- For a long storing period, empty the fuel tank. Never store the machine with a fitted grindstone.
- Check the rotating speed at regular intervals and particularly after refitting the grindstone and correct speed if necessary.
- Only use a proofed grindstone with regard to the dimensions and structure.
- Never use grindstones showing speeds above the maximum one recommended by the manufacturer which must be labelled on the grindstone.
- Handle the machine with care and only when the engine is stopped. Take weight of machine into account to guarantee safe handling particularly if access to place of work is difficult.



## **ATTENTION**

### **N'UTILISER QUE DES MEULES :**

- Dont la vitesse maxi d'utilisation soit supérieure à la vitesse maxi de l'arbre porte-meule, qui est indiquée sur la machine.
- Dont le diamètre extérieur est inférieur ou égal au diamètre maximum autorisé qui est indiqué sur la machine.
- Autorisées par la réglementation en vigueur pour ce type de machine.

## **CAUTION**

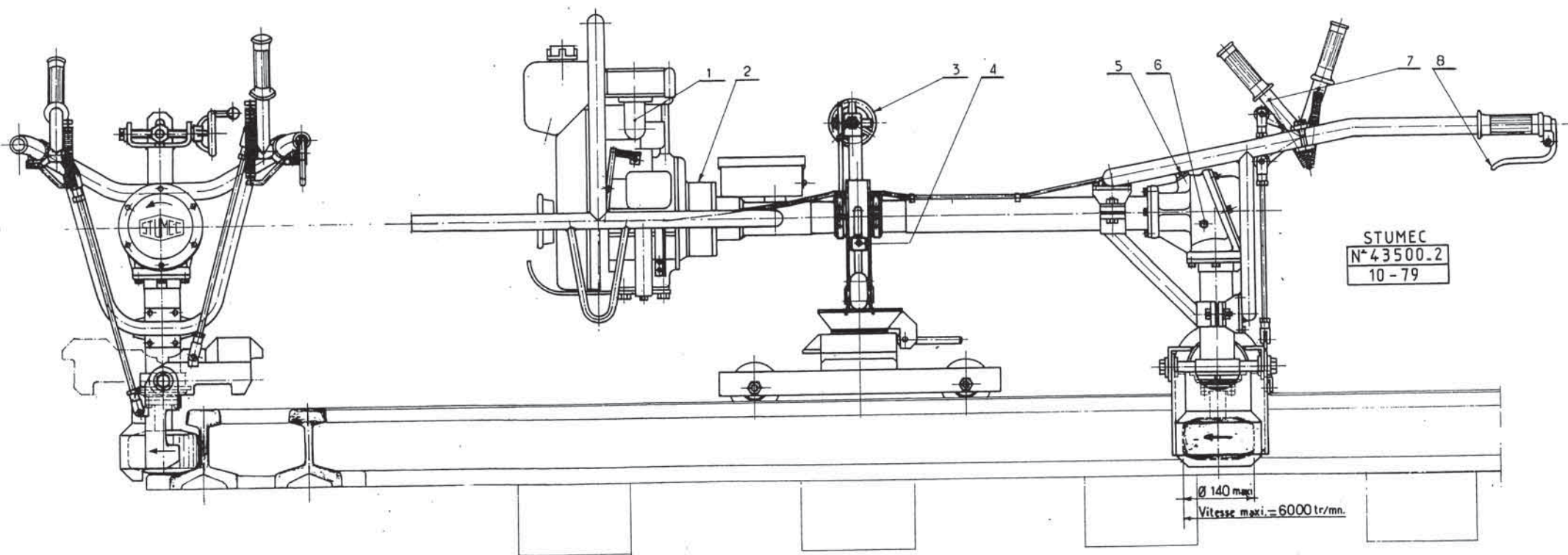
### **ONLY USE GRINDINGSTONES WHICH :**

- Have a maximum operating speed higher than the speed of the stone-spindle which is labelled on the machine.
- External diameter is less than or equal to the maximum authorized diameter which is labelled on the machine.
- Are authorised by Regulations and Safety codes in force for that kind of work.

## **ACHTUNG**

### **ES SIND NUR SCHLEIFRINGE ZU VERWENDEN :**

- Deren zugelassene Höchstumdrehungsgeschwindigkeit über der maximalen Drehgeschwindigkeit der Schleifwelle liegt (Die maximale Drehgeschwindigkeit der Schleifwelle ist auf der Maschine angegeben).
- Deren Aussendurchmesser nicht grösser ist als der maximal zulässige, auf der Maschine angegebene Schleifringdurchmesser.
- Die für diesen Maschinentyp zugelassen wurden.





## FISHING SURFACE GRINDING MACHINE - MS.9

Ref.	Description	Ref.	Description
1	Engine	5	Oil filling
2	Centrifugal clutch	6	Oil level
3	Inclination adjustment	7	Protector operation
4	Height adjustment	8	Engine acceleration

### MAINTENANCE

- Fill up head casing with oil-viscosity : 8 ENGLER at 50° C-AFNOR B9 - such as :
  - TOTAL CORTIS 100
  - ELF COURLIS 88
  - ESSO ESSTIC 78
  - SHELL VITREA OIL 69
 through plug 5 until the oil leaks out of level-plug 6 (capacity about ½ l)
- Check oil level every week and top-up if necessary. Drain after every 300 hours of work an refill.
- Strictly adhere to engine manufacturer's instructions.

### OPERATION

#### **1. Fitting of grindstone :**

- Fit specified grindstone suitable for the rail profile to be ground considering that the grindstone outside diameter must not exceed 140 mm. Before starting :
  - Check grindstone to verify that it has not been damaged during transport ; it must be free from chips, cracks or marks from contact with other items.
  - Make sure that the grindstone surfaces which will come into contact with the spindle and flanges are thoroughly clean : (no foreign material or abrasive must be present on bore or flange location areas).
  - No grindstone is to be used at a rotational speed exceeding the maximum speed in rpm as specified by the grindstone manufacturer.
  - A new or refitted grindstone must be allowed to rotate unladen for 30 seconds with no personnel standing in the proximity of the machine before use.
  - The grindstone must fit easily on the spindle, but without any play and the fixing screw on the spindle must not be overtightened. Tightening must be by means of the spanner provided and never using any extension or with the aid of a hammer.
  - Before starting check by hand that grindstone runs freely without being out of round or out of true and that no part of the guard or other part of the machine interferes with its free rotation.
  - When not in use, do not allow grindstone to rest on any surface without first lowering both protective shells by means of levers 7.
  - Raise either or both protective shells according to the grinding task to be performed.

**IMPORTANT** - To enable the grinding machines to work under good safety conditions, it is absolutely necessary that any operators receive adequate training by a person qualified to do so.

**2. Height adjustment :**

- Adjust height of machine support resting on the trolley by means of bolt 4 in order to obtain frame parallelism with rail.

**3. Inclination adjustment :**

- The 1/20 angle of the machine is provided by the sloped ends of the trolley. Any other inclination, up to 11° on either side, can be obtained by means of hand wheel 3.

**4. Starting :**

- With petrol engine :
  - Refer to manufacturer's instructions to start the engine ; starting when the engine is cold is made easier by a centrifugal clutch device 2.
  - A safety device slows down the engine and another device called "locked sector" cancels any action on the speed control lever.
  - Press lever 8 on right-hand handle of machine to obtain engine acceleration and running of grindstone at the maximum speed of 6000 rpm.
- With electric motor :
  - Connect motor so that it runs in the direction shown by the arrow (anti-clockwise when looking at the motor shaft end).
  - Press button "ON" of circuit-breaker to switch on power ; the motor runs when lever 8 on right hand handle of machine is pressed and stops when lever is released.
- To switch off power, press "OFF" button of circuit breaker.

**N.B** : Indicate clearly in your orders the ref. and quantity of parts as well as the type and serial number of the machine (nameplate on the frame).

**ATTENTION** : FOR SAFETY REASONS, ANY STONE WITH MAX. SPEED LESS THAN 6000 RPM IS STRICTLY FORBIDDEN.

**AUTHORIZED STONES**

- Spécial shaped-stone according to the size of the rail. DIA 140 mm maxi - 6000 RPM
- or - Plain wheel Ø 8" x 1" x 1" - 6000 RPM compulsorily REINFORCED



## IMPORTANT

Afin que votre commande de pièces de rechange soit suivie d'une livraison prompte et correcte, bien indiquer :

- Le rep., le nombre et la désignation des pièces de rechange
- Le type et le n° de série de la machine (plaque sur le châssis)

\*\*\*\*\*

## IMPORTANT

To ensure that you are delivered promptly and correctly after placing an order for spare parts please state:

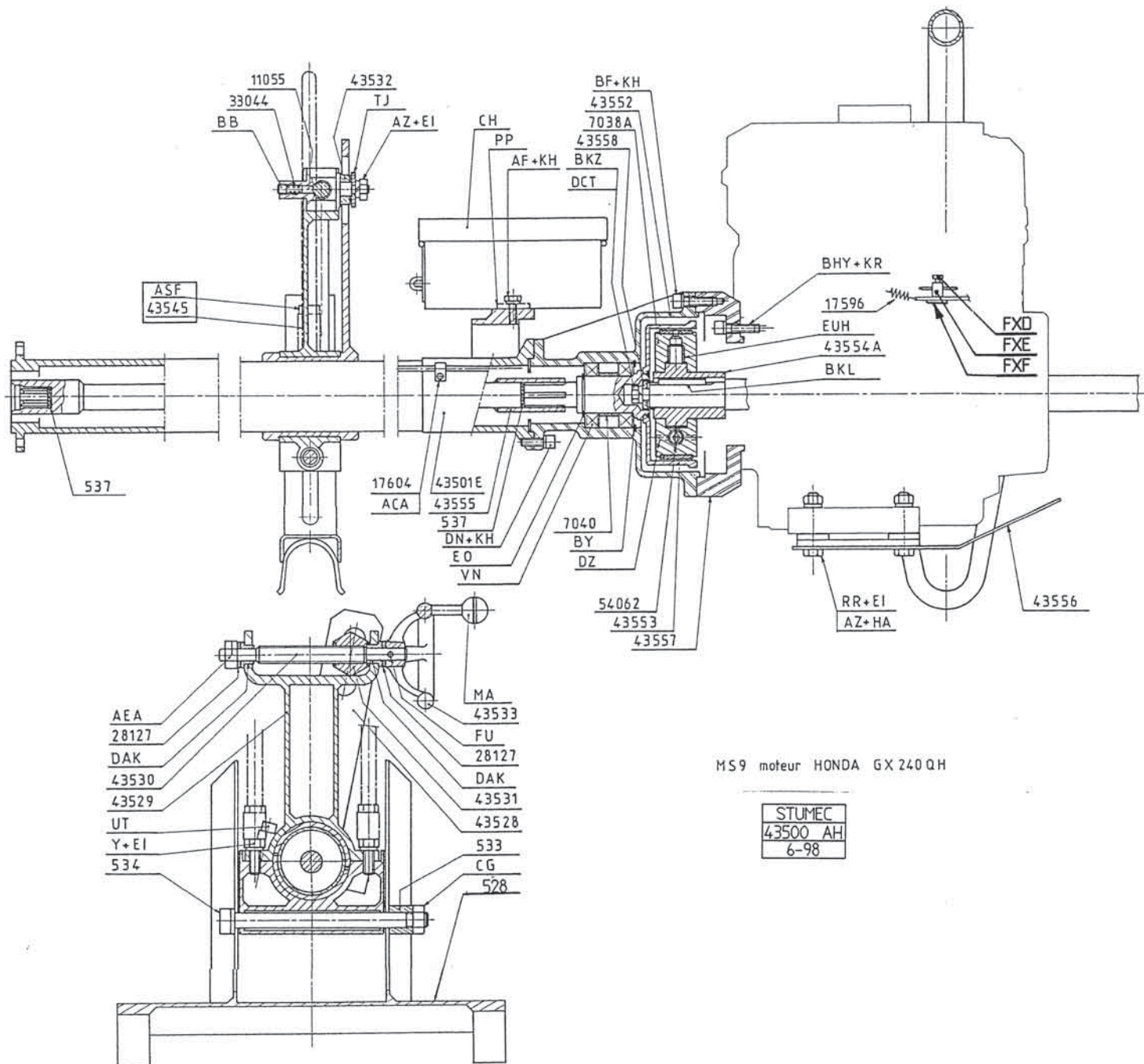
- the Reference, number and description of the spare parts
- the type and serial number of the machine (to locate this number, look at the plate on the chassis)

\*\*\*\*\*

## WICHTIG

Um uns eine schnelle und fehlerlose Erledigung Ihres Ersatzteil-Auftrages zu erlauben, bitten wir Sie um folgende Angaben :

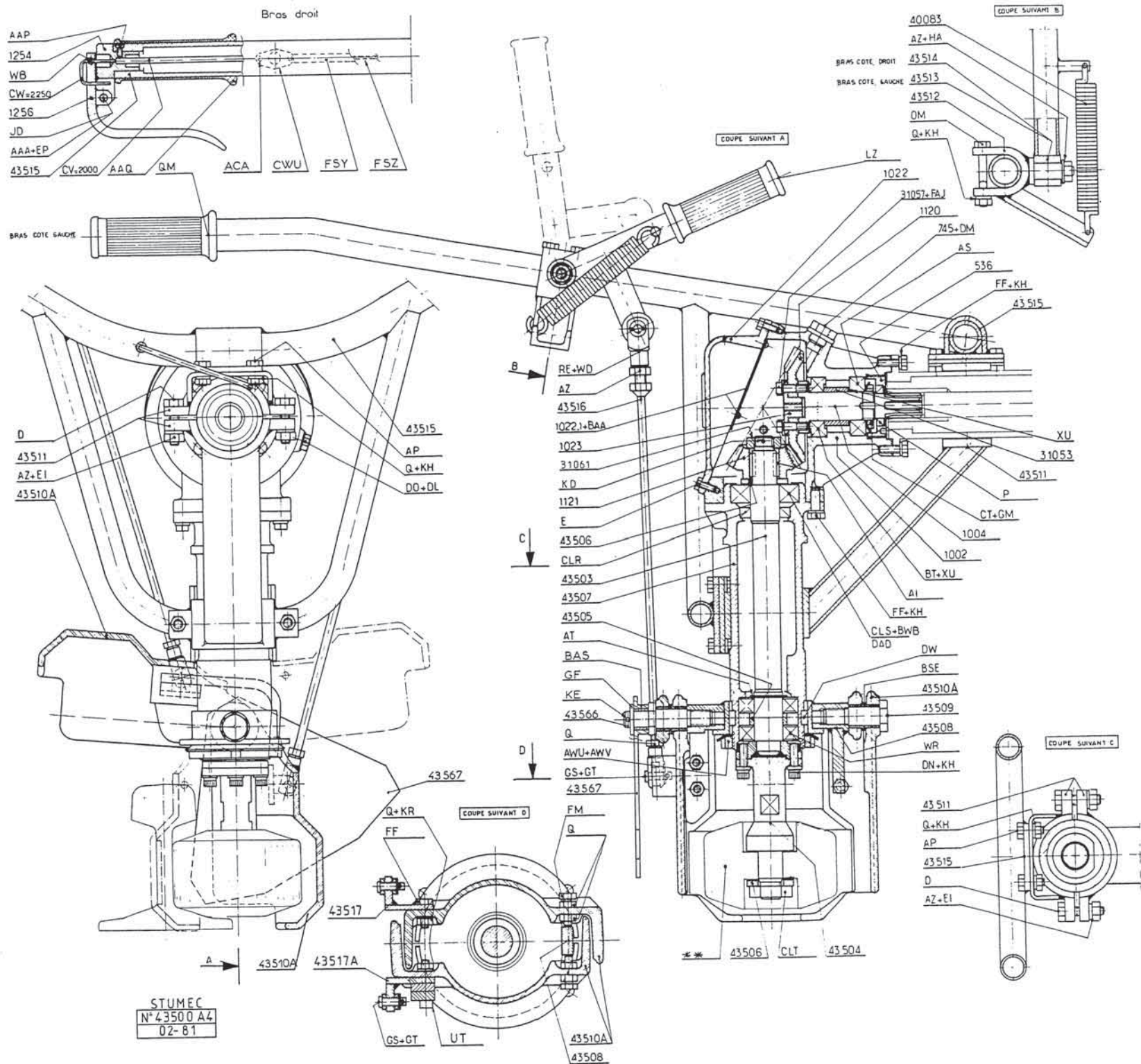
- Seriennummer und Baujahr der maschine
- Benennung und Bestellnummer der Ersatzteile





Ref.	Qty	Description
528	1	Inclinaison support
533	1	Thickness washer
534	1	Lock screw
537	2	Rubber washer
7 038 A	3*	Speed clutching mass with stuck lining
7 040	1	Spacer
11 055	1	Brake pad
17 596	1	Spring level-control (on engine)
17 604	3	Fixing flange
28 127	2	Washer Ø 12,2 x 22 x 3
33 044	1	Spring
43 501 E	1	Frame
43 528	1	Fixed inclination support
43 529	1	Movable inclination support
43 530	1	Inclination adjusting screw
43 531	1	Inclination adjusting nut
43 532	1	Nut ring
43 533	1	Inclination adjusting hand-wheel
43 552	1	Clutch casing
43 553	1	Clutch drum
43 554 A	1	Speed masses holder
43 555	1	Transmission
43 556	1	Engine protector
43 557	1	Connecting flange
43 558	1	Tightening ring
54 062	3	Clutching mass spring
	*	The clutch-masses are not sold separately but only a set of 3 masses.
<b>ON REQUEST</b>		
43 545	1	Transportation hook
ASF	2	Screw H 10 x 60

Ref.	Qty	Description
Y	2	Screw H 10 x 25
AF	2	Screw H 8 x 16
AZ	5	Nut H 10
BB	1	Screw ST 10 x 10 , sharp end
BF	6	Screw Chc 8 x 30
BY	1	Circlips 62 i
CG	1	Nut H 14
CH	1	Tool box
DN	4	Screw Chc M 8 x 25
DZ	6	Elastic pin 6 x 40
EI	7	Washer W 10
EO	1	Circlips 35 e
FU	1	Elastic pin 5 x 20
HA	4	Washer MU 10
KH	12	Washer W 8
KR	4	Washer DE 8
MA	1	Bakelite knob Ø 25
PP	2	Washer Ø 9 x 30 x 3
RR	4	Screw H 10 x 45
TJ	1	Washer LL 10
UT	4	Screw Chc 8 x 40
VN	2	Bearing n° 6007 EE
ACA	3	Screw PARKER A6
AEA	1	Stop nut H 12
BHY	4	Screw Chc 5/16" - 24 UNF x 25,4
BKL	1	Key 6,3 x 6,3 x 40
BKZ	1	Screw H 7/16" - 20 UNF x 31,75
DAK	2	Self lubricating ring C 12 x 17 x 12
DCT	1	Washer W 7/16
EUH	3	Ring PAP 12-15 P 10
FXD	1	Tightening screw
FXE	1	Support
FXF	1	Circlips





Ref.	Qty	Description
536	1	Upper joint holder
745	1	Oil plug
1 002	1	Angle casing
1 004	1	Pinion hub
1 022	1	Angle casing cover
1 022-1	1	Cover deflector
1 023	1	Centering washer
1 120	1	Driving conical pinion 40 t.
1 121	1	Receiving conical pinion 24 t.
1 254	1	Handle bearing
1 256	1	Handle
12 392	1	Instruction plate (DIA and speed of wheel)
12 412	1	Arrow-plate (showing revolving direction)
31 053	1	Crosspiece
31 057	6	Driving conical pinion screw
31 061	1	Nut
40 083	2	Return spring
43 503	1	Main shaft

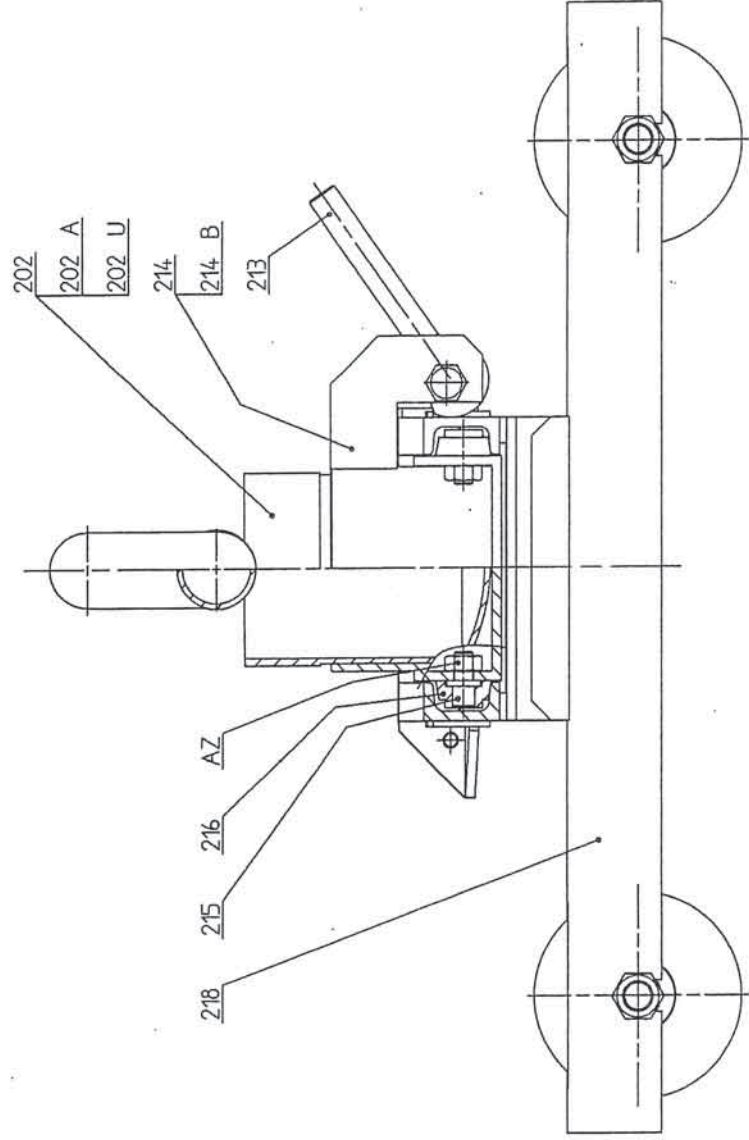
Ref.	Qty	Description
43 504	1	Grindstone spindle
43 505	1	Crosspiece
43 506	2	Crosspiece
43 507	1	Lower casing
43 508	1	Grindstone guard support
43 509	1	Grindstone guard axle
43 510 A	2	Grindstone guard
43 511	1	Frame reinforcing piece
43 512	2	Guard lever support
43 513	1	Left guard lever
43 514	1	Right guard lever
43 515	1	Operating arm
43 516	2	Operating rod
43 517	1	Guard bracket
43 517 A	1	Guard thrust bracket
43 566	1	Guard axle
43 567	1	Guard

Ref.	Qty	Description
D	4	Screw H 10 x 40
E	6	Screw H 6 x 15
P	1	Tightness joint 25 x 42 x 8
Q	22	Nut H 8
AI	2	Key 6 x 6 x 25 - BR
AP	8	Screw H 8 x 20
AS	1	Bearing 6206
AT	1	Circlips 30 e
AZ	8	Nut H 10
BT	1	Bearing 30206
CT	1	Brake washer MB 6
CV	1	Cable sheath Ø 2 - long. 2000
CW	1	Cable Ø 2 - long. 2250
DL	1	Metalloplastic washer 8 mm dia.
DM	1	Metalloplastic washer 17 mm dia.
DN	4	Screw Chc 8 x 25
DO	1	Screw H 8 x 10
DQ	2	Screw C, M 4 x 16
DW	2	Key 5 x 5 x 15 - BR
EI	4	Washer W 10
EP	1	Washer M 6
FF	14	Screw H 8 x 25
FM	2	Screw H 8 x 30
GF	1	Washer M 16 U
GL	2	Washer DE Ø 4
GM	1	Tightening nut KM 6
GS	2	Cover BNA 8
GT	2	Cover axle 8 with washer and pin
HA	2	Washer M 10
JD	1	Screw H 6 x 25

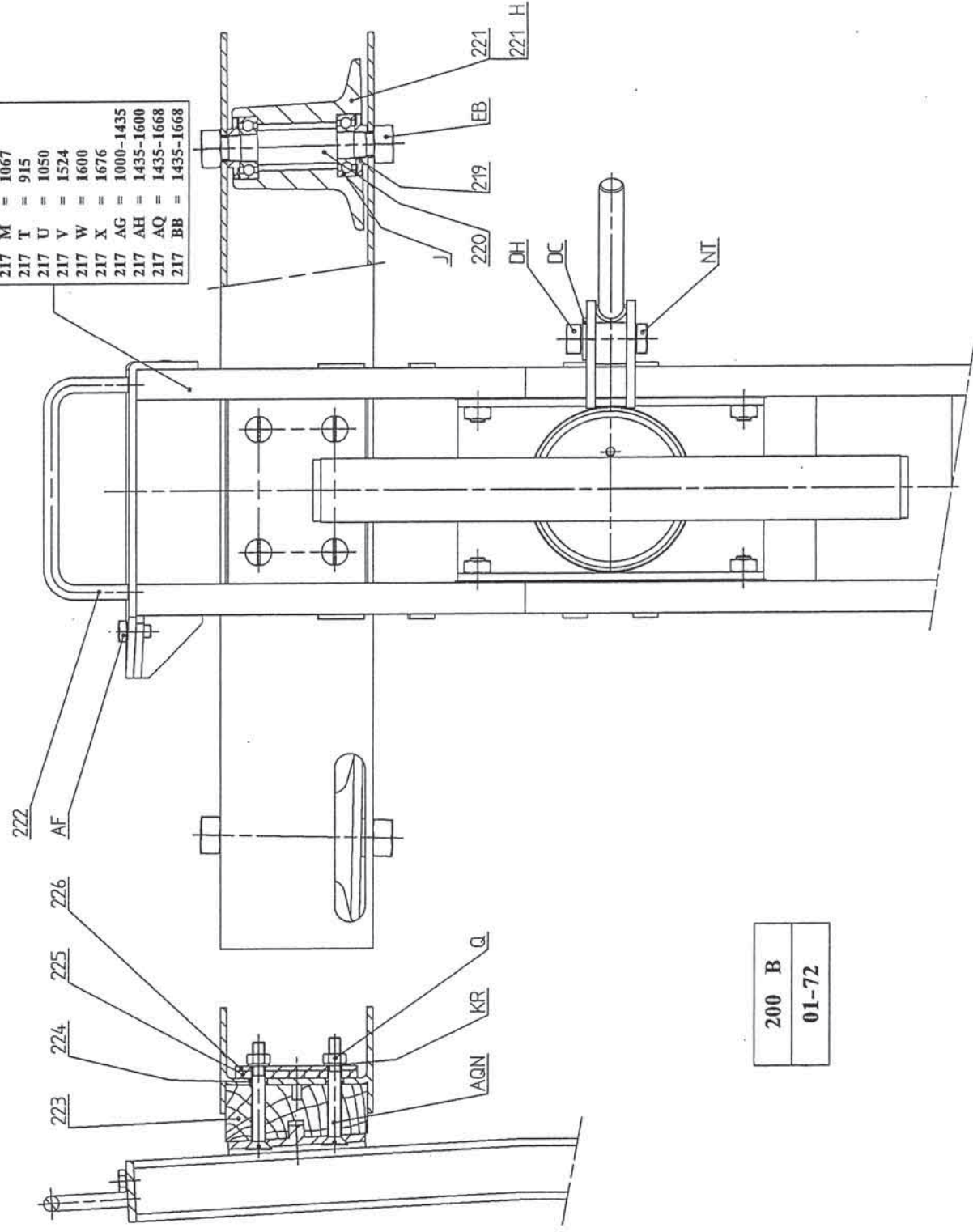
Ref.	Qty	Description
KD	1	Elastic pin Ø 4 x 35
KE	1	Elastic pin Ø 4 x 25
KH	28	Washer W 8
KR	4	Washer DE 8
LZ	2	Rubber handle 27 mm dia. closed
OM	4	Screw H 8 x 60
QM	1	Rubber handle 34 mm dia. closed
RE	2	Cover BNA 10
UT	2	Screw Chc 8 x 40
WB	1	Screw H 4 x 8
WD	2	Cover axle 10 with washer and pin
WR	2	Bearing 6206 EE
XU	-	Lock washer Ø 30,5/39,5 mm dia.
AAA	1	Split brake nut H 6
AAP	1	Screw F 5 x 12
AAQ	1	Rubber handle 34 mm dia. open
AWU	1	Tightening nut KM.15
AWV	1	Brake washer MB 15
BAA	4	Screw PARKER Model Z n° 4 - L = 10
BAS	1	Self lubricating ring Ø 16 x 22 Lg. 16
BSE	4	Self lubricating ring C 20 x 24 x 16
BWB	-	Lock washer 33/43 mm dia.
CLR	1	Tightness joint 30 x 52 x 7
CLS	1	Bearing 6306
CLT	1	Nut Hm 22
DAD	-	Lock washer 25/35 mm dia.
FAJ	6	Screw lock Ø 8
FSY	1	Sheath
FSZ	1	Electric cable
HBE	1	Knob

\*\* Grindstone MS.9 typ (depending on rail profile)  
(Ø 140 mm max- 6000 r.p.m)





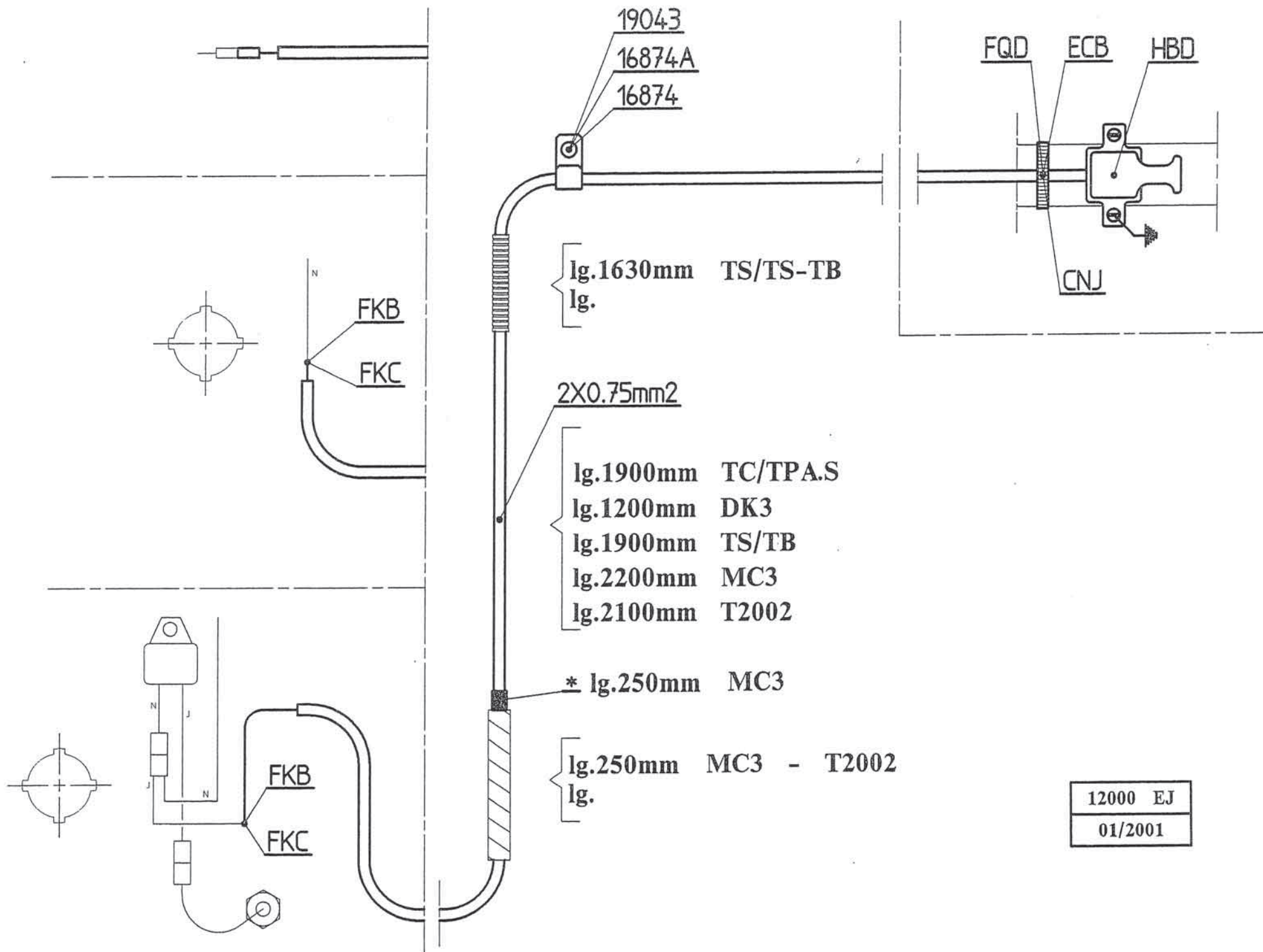
217	=	1435
217	E	= 1668
217	J	= 1000
217	M	= 1067
217	T	= 915
217	U	= 1050
217	V	= 1524
217	W	= 1600
217	X	= 1676
217	AG	= 1000-1435
217	AH	= 1435-1600
217	AQ	= 1435-1668
217	BB	= 1435-1668



200	B
01	-72

Rep.	Nb	Désignation	Description	Bezeichnung
202	1	Rotule haute (pour machines types : TS - TB - BS)	Swivel (model : TS - TB - BS)	Gelenkteil (maschine typ : TS - TB - BS)
202 A	1	Rotule (pour machines types : PT.8 - PT.L - TPA - AC.I - DN - CC.3 - MS.9 - AS - MEB - AP. 21 - TC - AP 11 - TPH)	Swivel (model : PT.8 - PT.L - TPA - AC.I - DN - CC.3 - MS.9 - AS - MEB - AP. 21 - TC - AP 11 - TPH)	Gelenkteil (maschine typ : PT.8 - PT.L - TPA - AC.I - DN - CC.3 - MS.9 - AS - MEB - AP. 21 - TC - AP 11 - TPH)
202 U	1	Rotule ( pour machine type : T 2000)	Swivel (model : T 2000)	Gelenkteil (maschine typ : T 2000)
213	1	Came de serrage	Tightening cam of transferer	Blockierungshebel
214	1	Support transbordeur (pour machines types : TS - TB - BS - TPA - AC.I - CC.3 - AS - MEB - AP. 21 TC - AP 11)	Transferer-support (model : TS - TB - BS - TPA - AC.I - CC.3 - AS - MEB - AP. 21 - TC - AP 11)	Stütze für Blockierungshebel (maschine typ : TS - TB - BS TPA - AC.I - CC.3 - AS - MEB - AP. 21 - TC - AP 11)
214 B	1	Support transbordeur (pour machines types : PT.8 - PT.L - DN - MS.9)	Transferer-support (model : PT.8 - PT.L - DN - MS.9)	Stütze für Blockierungshebel (maschine typ : PT.8 - PT.L - DN - MS.9)
215	4	Axe de galet de transbordeur	Roller axle of transferer	Achse für Verschieberolle
216	4	Galet de transbordeur	Transferer roller	Verschieberolle
217	1	Corps de chariot (voie de 1435)	Trolley body (1435 track gauge)	Fahrgestellkörper (Spur 1435)
217 E	1	" " " (voie de 1668)	" " (1668 track gauge)	" (Spur 1668)
217 J	1	" " " (voie de 1000)	" " (1000 track gauge)	" (Spur 1000)
217 M	1	" " " (voie de 1067)	" " (1067 track gauge)	" (Spur 1067)
217 T	1	" " " (voie de 915)	" " ( 915 track gauge)	" (Spur 915)
217 U	1	" " " (voie de 1050)	" " (1050 track gauge)	" (Spur 1050)
217 V	1	" " " (voie de 1524)	" " (1524 track gauge)	" (Spur 1524)
217 W	1	" " " (voie de 1600)	" " (1600 track gauge)	" (Spur 1600)
217 X	1	" " " (voie de 1676)	" " (1676 track gauge)	" (Spur 1676)
217 AG	1	" " " (voie de 1000 - 1435)	" " (1000 - 1435 track gauge)	" (Spur 1000 - 1435)
217 AH	1	" " " (voie de 1435 - 1600)	" " (1435 - 1600 track gauge)	" (Spur 1435 - 1600)
217 AQ	1	" " " (voie de 1435 - 1668)	" " (1435 - 1668 track gauge)	" (Spur 1435 - 1668)
217 BB	1	" " " (voie de 1435 - 1668)	" " (1435 - 1668 track gauge)	" (Spur 1435 - 1668)
218	2	Support de galet 1 lèvre	Roller support	Rahmen der Laufrollen
219	8	Obturateur	Locking device	Abschlusscheibe
220	4	Axe de galet à 1 lèvre	Roller axle	Laufrollen achse
221	4	Galet à 1 lèvre acier	One flanged roller	Laufrollen mit 1 Spurkranz
221 H	4	Galet à 1 lèvre isolant	One flange insulating roller	Isolierungs Laufrollen mit 1 Spurk
222	1	Arrêt de transbordeur	Transferer stop	Anschlag
223	2	Socle isolant	Insulating base	Isolierungssockel
224	8	Tube isolant	Insulating tube	Isolierrohr
225	4	Plaque isolante	Insulating plate	Isolierplatte
226	4	Plaque de serrage	Tightening plate	Arretierungsplatte
J	8	Roulement n° 6203	Bearing n° 6203	Kugellager Nr 6203
Q	8	Ecrou H 8	Nut H 8	Mutter H 8
AF	1	Vis H 8 x 15	Screw H 8 x 15	Schraube H 8 x 15
AZ	4	Ecrou H 10	Nut H 10	Mutter H 10
DC	1	Rondelle M 12 U	Washer M 12 U	Scheibe M 12 U
DH	1	Ecrou H 12	Nut H 12	Mutter H 12
EB	8	Ecrou H 16	Nut H 16	Mutter H 16
KR	8	Rondelle DE 8	Washer DE 8	Scheibe DE 8
NT	1	Vis H 12 x 45	Screw H 12 x 45	Schraube H 12 x 45
AQN	8	Vis F 8 x 70	Screw F 8 x 70	Schraube F 8 x 70





12 000 EJ

## DK.3

Ref.	Qty	Description
16 874	1	Fixing lug Ø 6,5
CNJ	6	Collar - lg. 185
FKB	1	Red plug Ø 4
FKC	1	Red socket Ø 4
HBD	1	Switch
	1	Electric cable 2 x 0,75 mm <sup>2</sup> - lg. 1200

## TS/TB

Ref.	Qty	Description
CNJ	2	Collar - lg. 185
ECB	1	Collar - lg. 180
FKB	1	Red plug Ø 4
FKC	1	Red socket Ø 4
FQD	5	Collar - lg. 180
HBD	1	Switch
	1	Electric cable 2 x 0,75 mm <sup>2</sup> - lg. 1900

## TPA.S

Ref.	Qty	Description
16 874 A	2	Fixing lug Ø 8
19 043	1	Fixing lug
ECB	4	Collar - lg. 180
FKB	1	Red plug Ø 4
FKC	1	Red socket Ø 4
HBD	1	Switch
	1	Electric cable 2 x 0,75 mm <sup>2</sup> - lg. 1900

## MC.3

Ref.	Qty	Description
16 874 A	1	Fixing lug Ø 8
CNJ	6	Collar - lg. 185
ECB	1	Collar - lg. 180
FKB	1	Red plug Ø 4
FKC	1	Red socket Ø 4
FQD	2	Collar - lg. 350
HBD	1	Switch
	1	Electric cable 2 x 0,75 mm <sup>2</sup> - lg. 2200
*	1	Sheath Ø 5 - lg. 250
	1	Spiral cover Ø 12 - lg. 250

## TC

Ref.	Qty	Description
16 874	3	Fixing lug Ø 6,5
ECB	2	Collar - lg. 180
FKB	1	Red plug Ø 4
FKC	1	Red socket Ø 4
HBD	1	Switch
	1	Electric cable 2 x 0,75 mm <sup>2</sup> - lg. 1900

## T 2002

Ref.	Qty	Description
CNJ	4	Collar - lg. 185
FKB	1	Red plug Ø 4
FKC	1	Red socket Ø 4
HBD	1	Switch
-	1	Electric cable 2 x 0,75 mm <sup>2</sup> - lg. 2100
-	1	Spiral cover Ø 12 - lg. 250