Ref: 450180 FRGB

MTZ

FRANÇAIS / ANGLAIS

Français - Notice originale

TRONÇONNEUSE DE RAILS ULTRA LEGERE

LIGHTWEIGHT RAIL CUTTING MACHINE

Type MTZ

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R1 | 27/06/2023

GEISMAR®

GEISMAR

Déclaration de conformité originale

1		CE	DECLARATION DE CONFORMITE

2	**a**	Mandataire :	Fabricant :
		GEISMAR ALPES **199 route de Lyon** **38110 Saint Didier De La Tour, France**	
	b	Déclarent que la machine désignée ci-après est conforme à la directive « Machines » 2006/42/CE et à la norme NF EN 13977.	EN 13977

3	**a**	**IDENTIFICATION DE LA MACHINE**	
	b	Désignation / Fonction :	TRONCONNEUSE DE RAILS ULTRA LEGERE
	c	Type :	MTZ
	d	Modèle :	350 AS / 400 AS
	e	Numéro de série :	2201 0000 → 3001 250000

4	**a**	Fait à :	Saint Didier De La Tour
	b	Le :	03/01/2022
	c	Nom :	Mickael CAMPOURCY
	d	Statut :	Directeur Général
	e	**GEISMAR ALPES** seule personne autorisée à constituer le dossier technique	

5		⚠	Toute modification de la machine sans l'accord écrit préalable du constructeur, entraîne la nullité de cette déclaration.

Anglais / English

Translation from the original version of declaration of conformity

1		DECLARATION OF CONFORMITY	
2	a	Mandatory Manufacturer:	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Certify that the machine mentioned below is conform to the «Machines» 2006/42/CE directive and norm NF EN 13977.	
3	a	**MACHINE IDENTIFICATION**	
	b	Description / Function:	LIGHTWEIGHT RAIL CUTTING MACHINE
	c	Type:	MTZ
	d	Model:	350 AS / 400 AS
	e	Serial number:	2201 0000 → 3001 250000
4	a	Done at:	Saint Didier De La Tour
	b	The:	03/01/2022
	c	Name:	Mickael CAMPOURCY
	d	Status:	General manager
	e	**GEISMAR ALPES** the only person authorized to compile the technical file	
5		Any modification of the machine without the previous written agreement of the manufacturer will cause the cancellation of this declaration.	

Allemand / Deutsch

Übersetzung der original Maschinen-Konformitätserklärung

1		KONFORMITÄTSERKLÄRUNG	
2	a	Auftragnehmer : Hersteller :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Erklärt, daß die nachfolgend aufgeführte Maschine der Maschinenrichtinie 2006/42/EG entspricht und Norm NF EN 13977.	
3	a	**MASCHINENIDENTIFIZIERUNG**	
	b	Bezeichnung / Funktion :	ULTRALEICHTE SCHIENEN-TRENNSCHLEIFMASCHINE
	c	Typ :	MTZ
	d	Modell :	350 AS / 400 AS
	e	Seriennummer :	2201 0000 → 3001 250000
4	a	Ausgestellt in:	Saint Didier De La Tour
	b	Datum:	03/01/2022
	c	Name :	Mickael CAMPOURCY
	d	Status:	Generaldirektor
	e	**GEISMAR ALPES** als allein zuständiger für die Ausstellung des technischen Erklärung.	
5		Jegliche Änderung an der Maschine ohne schriftliche Zustimmung des Herstellers zieht eine Annulierung der vorliegenden Erklärung nach sich.	

Italien / Italiano

Traduzione della dichiarazione di conformità originale

1		DICHIARAZIONE DI CONFORMITA	
2	a	Mandatario : Costruttore :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Dichiarano que la macchina più avanti definita è conforme alla direttiva «Macchine» 2006/42/CE e norma NF EN 13977.	
3	a	**IDENTIFICAZIONE DELLA MACCHINA**	
	b	Descrizione / Funzione :	TRONCATRICE DI ROTAIE ULTRA LEGGERA
	c	Tipo :	MTZ
	d	Modello :	350 AS / 400 AS
	e	Numero di serie :	2201 0000 → 3001 250000
4	a	Fatto a :	Saint Didier De La Tour
	b	Il :	03/01/2022
	c	Nome :	Mickael CAMPOURCY
	d	Stato :	Direttore Generale
	e	**GEISMAR ALPES** pesona autorizzata alla compilazione della scheda tecnica.	
5		Ogni modifica della macchina senza l'accordo preliminare del costruttore, costituisce l'annullamento di questa dichiarazione.	

Espagnol / Español

Traducción de la declaración de conformidad original

1		DECLARACION DE CONFORMIDAD	
2	a	Mandatario : Fabricante :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Declara que la máquina abajo mencionada está conforme a la directiva «Máquinas» 2006/42/CE y la norma NF EN 13977.	
3	a	**IDENTIFICACION DE LA MAQUINA**	
	b	Descripción / Función :	CORTADORA DE RIELES ULTRALIGERA
	c	Tipo :	MTZ
	d	Modelo :	350 AS / 400 AS
	e	Numero de serie :	2201 0000 → 3001 250000
4	a	Hecho en :	Saint Didier De La Tour
	b	El :	03/01/2022
	c	Nombre :	Mickael CAMPOURCY
	d	Estatus :	Director general
	e	**GEISMAR ALPES** unica persona autorizada a constituir el expediente técnico.	
5		Cualquiera modificación de la máquina sin previo acuerdo escrito del constructor será causa de anulación de esta declaración.	

Portugais / Português

Tradução da declaração de conformidade original

1		DECLARAÇÃO DE CONFORMIDADE	
2	a	Mandatário : Fabricante :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Declaram que a máquina abaixo designada está conforme à directiva «Máquinas» 2006/42/CE e NF EN 13977 norma.	
3	a	**IDENTIFICAÇÃO DA MAQUINA**	
	b	Descripção / Função :	TRAÇADOR DE CARRIS ULTRA LIGEIRO
	c	Tipo :	MTZ
	d	Modelo :	350 AS / 400 AS
	e	Número de serie :	2201 0000 → 3001 250000
4	a	Feito em :	Saint Didier De La Tour
	b	A :	03/01/2022
	c	Nome :	Mickael CAMPOURCY
	d	Status :	Diretor Geral
	e	**GEISMAR ALPES** unica pessoa autorizada a constituir dossier técnico	
5		Qualquer modificação da máquina sem o prévio acordo escrito do construtor, implica a nulidade desta declaração.	

Néerlandais / Nederlander

Vertaling van de conformiteitsverklaring voor algemene

1		VERKLARING VAN OVEREENSTEMMING	
2	a	Gevolmachtigde : Fabrikant :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Verklaart dat onderstaand machine voldoet aan de machinerichtlijn 2006/42/EC directive en norm NF EN 13977.	
3	a	**MACHINE IDENTIFICATIE**	
	b	Omschrijving / Functie :	ULTRALICHTE DOORSLIJPMACHINE VOOR RAILS
	c	Type :	MTZ
	d	Model :	350 AS / 400 AS
	e	Serie nummer :	2201 0000 → 3001 250000
4	a	Plaats :	Saint Didier De La Tour
	b	Datum :	03/01/2022
	c	Naam :	Mickael CAMPOURCY
	d	Toestand :	Directeur-generaal
	e	**GEISMAR ALPES** de enige bevoegde persoon tot samenstelling van de technische gegevens	
5		Iedere verandering of aanpassing aan de machine zonder geschreven toestemming van de fabrikant zal deze verklaring nietig maken	

Polonais / Polak

Tłumaczenie deklaracji zgodności WE dla maszyn oryginalnej

1		DEKLARACJA ZGODNOŚCI	
2	a	Zleceniobiorca : Producent :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Deklarują,że wymieniona niżej maszyna jest zgodna z dyrektywą 2006/42/EC "Maszyny" i normą NF EN 13977.	
3	a	**IDENTYFIKACJA MASZYNY**	
	b	Opis / Funkcja :	LEKKA MASZYNA DO CIĘCIA SZYN
	c	Typ :	MTZ
	d	Model :	350 AS / 400 AS
	e	Nr seryjny :	2201 0000 → 3001 250000
4	a	Wykonana w :	Saint Didier De La Tour
	b	Data :	03/01/2022
	c	Nazwa :	Mickael CAMPOURCY
	d	Status :	Dyrektor Generalny
	e	**GEISMAR ALPES** jedyna osoba uprawniona do stworzenia dokumentacji	
5		Każda modyfikacja maszyny bez uprzedniej pisemnej zgody konstruktora spowoduje anulowanie niniejszej deklaracji.	

Danois / Danmark

Oversættelse fra den originale overensstemmelseserklæringen

1		OVERENSSTEMMELSESERKLÆRING	
2	a	Befuldmægtiget : Producent :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Erklærer at denne maskine er i overensstemmelse med Maskindirektivet 2006/42/CE og norm NF EN 13977.	
3	a	**MASKINIDENTIFIKATION**	
	b	Beskrivelse / Funktion :	LETVÆGTS-SKINNESKÆRE-MASKINE
	c	Type :	MTZ
	d	Model :	350 AS / 400 AS
	e	Serienummer :	2201 0000 → 3001 250000
4	a	Udfærdiget den :	Saint Didier De La Tour
	b	Dato :	03/01/2022
	c	Navn :	Mickael CAMPOURCY
	d	Status :	Generaldirektør
	e	**GEISMAR ALPES** eneste autoriserede person	
5		Enhver modifikation uden forudgående skriftlig tilladelse fra producenten resulterer i annullering af denne erklæring.	

Lituanien / Lietuvos

Atitikties deklaracijos vertimas originalas

1		CE ATITIKTIES DEKLARACIJA	
2	a	Įgaliotas atstovas : Gamintojas :	**GEISMAR ALPES** **199 route de Lyon** **38110 Saint Didier De La Tour, France**
	b	Šiuo dokumentu deklaruojama, kad nurodyta mašina atitinka Mašinų direktyvą 2006/42/CE ir norma NF EN 13977.	
3	a	**MAŠINOS APRAŠYMAS**	
	b	Pavadinimas / Funkcija :	L. LENGVOS BĖGIŲ PJOVIMO STAKLĖS
	c	Tipas :	MTZ
	d	Modelis :	350 AS / 400 AS
	e	Serijos numeris :	2201 0000 → 3001 250000
4	a	Vieta :	Saint Didier De La Tour
	b	Data :	03/01/2022
	c	Vardas, pavardė :	Mickael CAMPOURCY
	d	Statusas	Generalinis direktorius
	e	**GEISMAR ALPES** nurodytas įgaliotas asmuo sudarė techninę dokumentaciją	
5		Jei mašina modifikuojama be išankstinio raštiško gamintojo leidimo, ši deklaracija nebegalioja	

GEISMAR, the quality choice !

You have just purchased a machine designed for track laying and maintenance. We would like to thank you for choosing equipment from the GEISMAR ALPES design offices and manufacturing workshops, the result of considerable experience in the railway sector.

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.

Table of contents

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 ALPES 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 ALPES 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

- <u>The operator and the working environment</u>

  ⇨ 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, at least 50 lx, and make sure you comply with the recommendations of EN1837) 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.

  ⇨ Do not work near a conductor rail.

  ⇨ 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

  - ⇨ The use of the machine is strictly prohibited for people with a pacemaker. 
  - ⇨ 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 (except when weld grinding).
  - ⇨ 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.
  - ⇨ When using a lifting device, the lifting operations of the machine must be done only using the lifting points indicated on the instruction manual.
  - ⇨ When possible, the lifting of the machine is to be done only when the machine needs to be set in or out of the track. If the machine has to stay lifted (for a maintenance operation for example), the hazardous area must be signaled/marked, so that no one can stay below the machine or walk close by.

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.

  ⇨ The factory setting of engine corresponds to the conditions of the production site (fuel, temperature, altitude, etc...), verify at receipt of the machine the rotational speed of the engine and correct if necessary.

  ⇨ Check the engine rotation speed at regular intervals, and especially after fitting tools or reassembling the machine. Adjust if necessary.

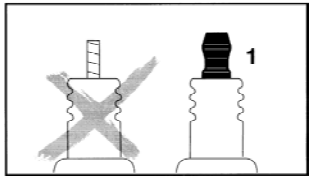
  ⇨ Never exceed the speed shown in the technical specifications.

  ⇨ 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.

1.4 Special safety instructions

1.4.1 Possible risks incurred when using an “MTZ” type rail-cutting machine

The main risks to users and other persons in the vicinity, liable to be caused by using ‘MTZ” type rail-cutting machines are :

- ➟ Fires caused by handling fuel
- ➟ Fires caused by sparks touching inflammable material.
- ➟ Abrasive discs disintegrating due to use under non-compliant conditions (shocks, poor work conditions, faulty or unsuitable discs, etc.).
- ➟ Injuries caused by flying sparks (specially protect eyes) or even broken discs being projected.
- ➟ Severe burns caused by contact between a part of the body and the disc when in rotation.
- ➟ Inhalation of grinding particles.
- ➟ <u>The disc jamming and the machine jerking upwards</u>

If the disc jams during the cutting operation, this may make the disc disintegrate and the machine jerk upwards.

If the front of the disc jams (especially in the top quarter), the whole rail-cutting machine may be projected upwards and backwards in an extremely violent rotating movement towards the operator, which can be **lethal** ➟ REARING-UP

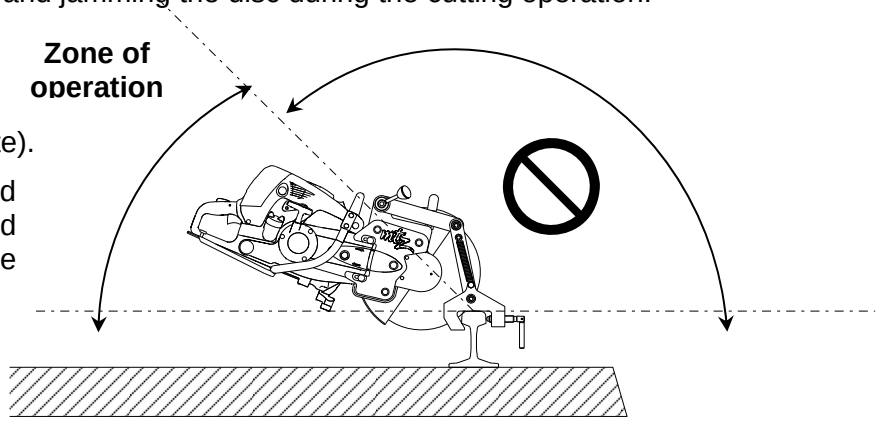
To avoid the disc jamming:

1) Always hold the machine with two hand when it is running, one hand firmly holding the rear handle to keep the machine under control at all times, the other on the front tubular –shaped handle. Put your thumbs around the other side of the handle to hold it properly.
2) Carry out the cutting operation without stopping (if possible). Only continue a cut that has already been started on condition that the guiding vice has not been moved and that the SAME machine is used with the same disc. Be extremely carefully when continuing a cut that has already been started.
3) Take all necessary precautions for avoiding the cut sections of rail coming together and jamming the disc during the cutting operation.
4) Always cut at full power.

- ➟ <u>Tilting the machine</u>

When cutting, it is formally FORBIDDEN to tilt the machine over 45° (See diagram opposite).

Above this angle, the operator is no longer capable of holding the machine correctly and sufficiently firmly. This may result in the machine jumping out of the slot being cut and jerking up violently towards the operator. If this occurs, the rotating disc may hit the operator and cause serious, even mortal injury.



A tilt end prevention device eliminates the risk of tilt end and pitching (if fitted). See 4.4.4.

1.4.2 Quality of abrasive discs and recommendations for use

- **The engine must be stopped before any disc is changed**.

- Only use discs that have been formally recommended for use with this type of machine and whose technical characteristics (maximum no-load speed, type and dimensions), compulsorily marked on the disc by its manufacturer, comply with §2.5 "Technical characteristics / Abrasive disc" and the instruction plate riveted onto the abrasive disc guard.

  The operator is RESPONSIBLE for any accident that occurs when non-compliant discs are used.

- NEVER use an abrasive disc that is cracked, chipped or un-flat.
  Get rid of faulty discs immediately and replace them with discs in perfect condition.

- NEVER use a taper sleeve on the abrasive disc centre bore.

- **The outside diameter of the tightening flange must always be the same size as that of the motor drive-flange**.

- Rotate any new or refitted disc for thirty seconds under no-load conditions, keeping all personnel at a distance during the test, except for the operator, who must hold the machine in such a way that he is outside the disc's rotation plane and on the closed side of the disc guard.

- NEVER touch a disc that is rotating with your hand or any other part of the body.

- **Check that the disc cannot come into contact with any obstacle, especially sleepers or ballast**.

- Do not hit or jam the disc when it is running, as this may cause it to disintegrate and have very serious consequences.

- Do not put any side-load on the disc. Only use the outside cutting edge of the disc.

- Before starting, always check that the disc is of sufficiently large diameter to carry out the complete cut.

- For safety reasons, never go over the maximum no-load rotation speed on the disc. Disc speed must be regularly checked for this reason.

- Regularly check the maximum disc speed under NO-LOAD conditions, especially after the machine has been re-assembled. Never check the maximum speed when the disc is under load, as there is a very high accident risk under these conditions. To avoid any risk of accident, we recommend using a no-contact electronic tachometer for this operation.

- Store abrasive discs in a dry place, protected from frost, sunlight and extreme heat. Position them so that they are not stored under any load liable to warp them. Never use any abrasive disc after the "use before" date indicated by the manufacturer.

1.4.3 Personal protection equipment

- Personnel using this equipment must wear the clothing listed under paragraph §1.3 “General safety instructions / The operator and his environment”. He must also wear equipment to protect him against sparks, such as a mask or glasses, a solid non-slip apron and gloves of similar type, gaiters or boots in fireproof material.

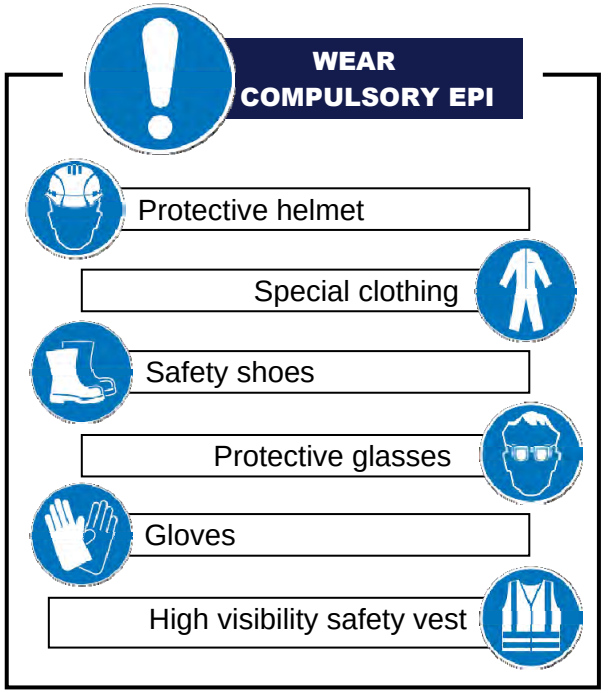
- He must wear a helmet and safety boots with non-slip soles and steel-reinforced toecaps.

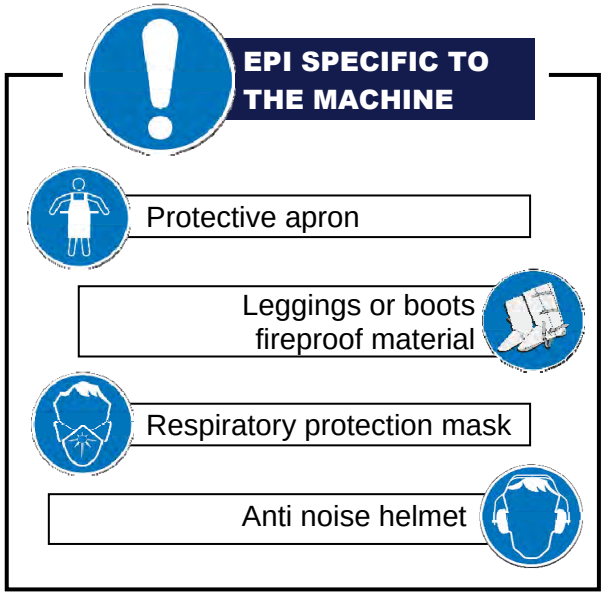
- We also recommend use of a mask to avoid inhaling grinding dust with a minimum level of P2 under normal conditions of use.

- Ear protectors are also recommended (**however, railway regulations in force must be referred to, for knowing whether this type of protection is allowed or not)**

1.4.4 Instructions for the training programme

- General security instructions, as well as specific instructions
- Reading of the instruction notice
- Testing of the machine on the field
- Training of first level maintenance





1.4.5 Handling fuel

- Clean the area around the filler hole, to make sure that no impurities can enter the fuel tank or damage the seal on the tank cap.
- Open the tank cap carefully to allow any excessive inside pressure (if any) to escape slowly without any fuel being spattered outside.
- Never open the bayonet lock using a tool. The cap may be damaged, and fuel may escape.
- As petrol is highly inflammable, move the machine at least 6m from its filling point before starting up.
- Use a type of gasoline and a gasoline-oil mixture dosed exactly as recommended in § 3.2.1 "Preparation of the mixture", in order to minimize carbon deposits that can cause sparks in the exhaust pipe.
- Regularly check that the fuel cap is liquid tight. Check the condition of the ‘O’ ring on the cap. Replace it immediately if you see any fuel leaking.

1.4.6 Transport - Handling

- Never transport lightweight rail cutting machine with the engine running, even at idling speed.
- Carry the rail cutting machine only by the tubular handle, with the disc facing towards the rear.
- Never transport the machine in a vehicle with a disc mounted in position. Attach the complete unit firmly in position during transport.

1.4.7 Operating

- The rail-cutting machine must only be used by a single authorised operator.
- The rail-cutting machine must **ALWAYS BE USED WITH ITS OWN GUIDING VICE**. This must be fixed on the rail in the right position for the cutting operation.
- If works are being carried out on a double-track, pay special attention to any traffic running on the track still in use. In any case, the rail-cutting machine must only be used in compliance with railway authority instructions applying to its place of operation.
- **This machine has been designed and built solely for cutting railway rails**. Any other use different from those described in this manual will be considered "*non-compliant*" and will release the constructor from any liability whatsoever, this being totally borne by the user.

  "*Compliant use*" implies observation of all the recommendations inherent to the use and maintenance of the machine described in this manual. All instructions recommended and described for preventing any occupational accidents must also be followed, whilst taking account of all general regulations in force in terms of safety, occupational medicine and legislation, at the same time.
- Before starting the machine, check that the disc and belt guards are in good condition and that they are correctly fixed in place. Never modify them.
- Install a new guard every time an abrasive disc breaks up or when the guard appears to be in poor condition.
- Never use ether or any similar product to help start the engine.
- Do not operate the machine using the forced acceleration device. This should only be used when starting up.
- Never leave a rail-cutting machine by itself when the engine is idling. Stop the engine as soon as the machine is no longer in use. Before putting the machine down, wait until the disc has completely stopped turning.
- The engine must ALWAYS be stopped before carrying out any repair or maintenance operation. If the engine has to be run (for setting the carburettor or checking maximum no-load speed), make sure that the work area is correctly ventilated.
- Never use a rail-cutting machine with a faulty exhaust system (risk of fire and damage to hearing).
- Make sure that there is no-one present in the machine's area of action. As particles may be thrown over long distances, sufficient space must be left between the axis of the rail-cutting machine and any persons close-by. If this is not possible, try to direct the spark flow in a direction where there is no danger (either directly or by rebound). Otherwise, install a fireproof screen for catching any sparks.
- During cutting, projection of incandescent sparks creates a risk of fire. If necessary, place a screen in position for intercepting the flow of sparks before they can reach any inflammable matter (danger of brush fires in summer).

- As soon as the engine starts running, it gives off toxic exhaust gasses. These gasses may be odourless and invisible. Never use the machine in confined or poorly ventilated spaces. When working in ditches, dips in the ground or enclosed areas, always make sure that there is adequate ventilation. **Danger of intoxication**.

- Perfect idling speed adjustment is particularly important for preventing the disc from turning when the accelerator trigger is released (please see §5.1.4 "Carburettor" if any adjustment is required). NB: Even when the accelerator trigger has been released, the disc will continue to rotate for a short moment.
- If compressed air is used for cleaning, protective and a mask or glasses must be worn. Air pressure must be under 2 bars at the outlet nozzle.

1.4.8 Pictograms and safety instructions

Pictograms and safety instructions are compulsory on the rail-cutting machine and must be placed at the position indicated.
If any of them be missing or damaged, a new label must be ordered immediately and be installed in the position provided for.
If any part holding a label has been replaced, make sure that a new label has been put in place on the replacement part.

WARNING !
When working with the disc cutter, special safety precautions must be observed, because the cutting disc rotates at a very high speed.

Please read this instruction manual thoroughly before using it for the first time. Keep it in a safe place so that you can read it again for future use. Observe the regulations for the prevention of accidents published by the social insurance fund!

For your personal protection, you must wear regular safety clothing and equipment.
Safety helmet with visor protecting the face.
Also wear protective glasses
And personal noise protection

DANGER OF DEATH FROM INTOXICATION!
As soon as the engine is in operation, it emits toxic exhaust gases. These gases can be odorless and invisible and contain unburned hydrocarbons and benzene. Never work with this machine in enclosed or poorly ventilated rooms

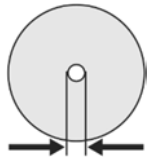
RISK OF ACCIDENT!
Regularly check the cutting disc - the Replace immediately if cracks or other damage (eg traces of overheating) occur as it may break

FIRE HAZARD !
At the cutting of steel, the projection of incandescent particles presents a risk of fire!

RISK OF FATAL INJURIES !
Never use circular saws, carbide insert tools, rescue tools or tools for sawing wood, or any other toothed tool Unlike rotating discs that regularly rotate by removing particles, the teeth of a rotating circular saw can snap into the material to be cut. This is manifested by a jerky cut and can cause uncontrolled reactions of the machine, generating extremely dangerous reaction forces (rebound).

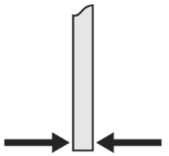
DANGER IN CASE OF REBOUND !
Rebound can cause fatal injuries. In case of rebound, the cutter is abruptly projected towards the user who can no longer control the machine.
A rebound occurs, for example, when the disc becomes jammed, especially in the upper quarter, or is strongly braked by rubbing against a solid object.

Maximum permissible speed of the cutting disc



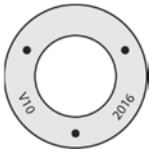
Diameter of bore for spindle

Maximum permissible cutting speed



Thickness Of the disc to cut

External Diameter of Disc



Deadline for use is indicated by a stamped mark on the metal ring

CHAPTER 2 – MACHINE DESCRIPTION

2.1 General

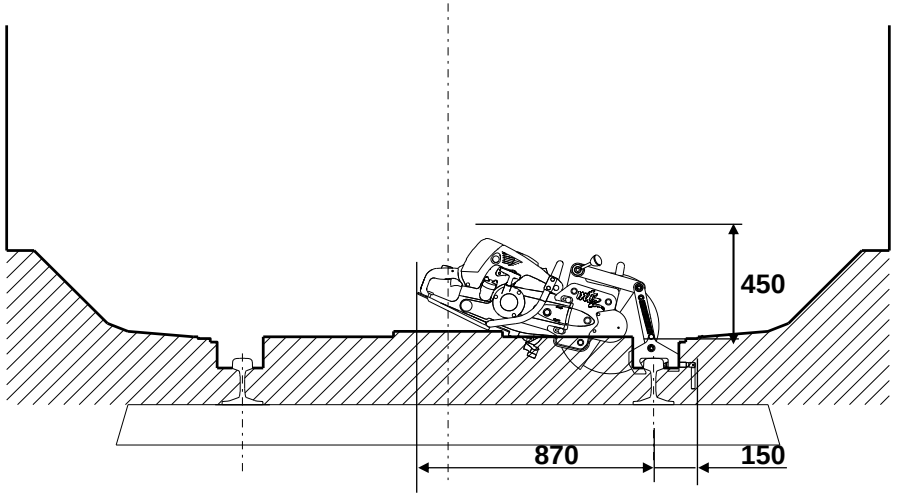
Constructor:	**GEISMAR ALPES** 199 Route de Lyon 38110 Saint-Didier-De-La-Tour **FRANCE**
Name of equipment:	Lightweight rail cutting machine
Type:	MTZ 350AS MTZ 400AS

The new reference in rail cutting, the lightweight railsaw MTZ, comes from a partnership between Geismar and Stihl. It includes several new technologies and patents:

- Exeptional cutting performances:
  - One of the ***shortest cutting time of the market*** ;
  - And accuracy that comply with the most severe standards for high-speed railway lines.
- An exceptional comfort:
  - With a ***patented Comfort Cushion™ system*** that gets rid of the rail cutting vibrations;
  - A reduced sound level thanks to a new muffler.
  - And a reduced weight that makes it one of the ***lightest machine of the market***.
- Important savings for the user:
  - Extended lifespan of the disc (up to 20%).
  - A patented air filter system with a cyclonic pre-filtration demanding ***twice less maintenance*** than most railsaws.

2.2 Positioning the machine in its guiding vice

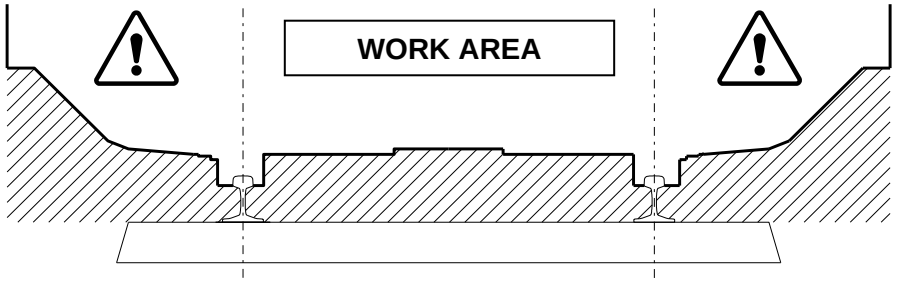
The following diagram shows the machine's dimensions in relation to low-level guiding vice UIC 505-1 (track with a nominal gauge of 1435).



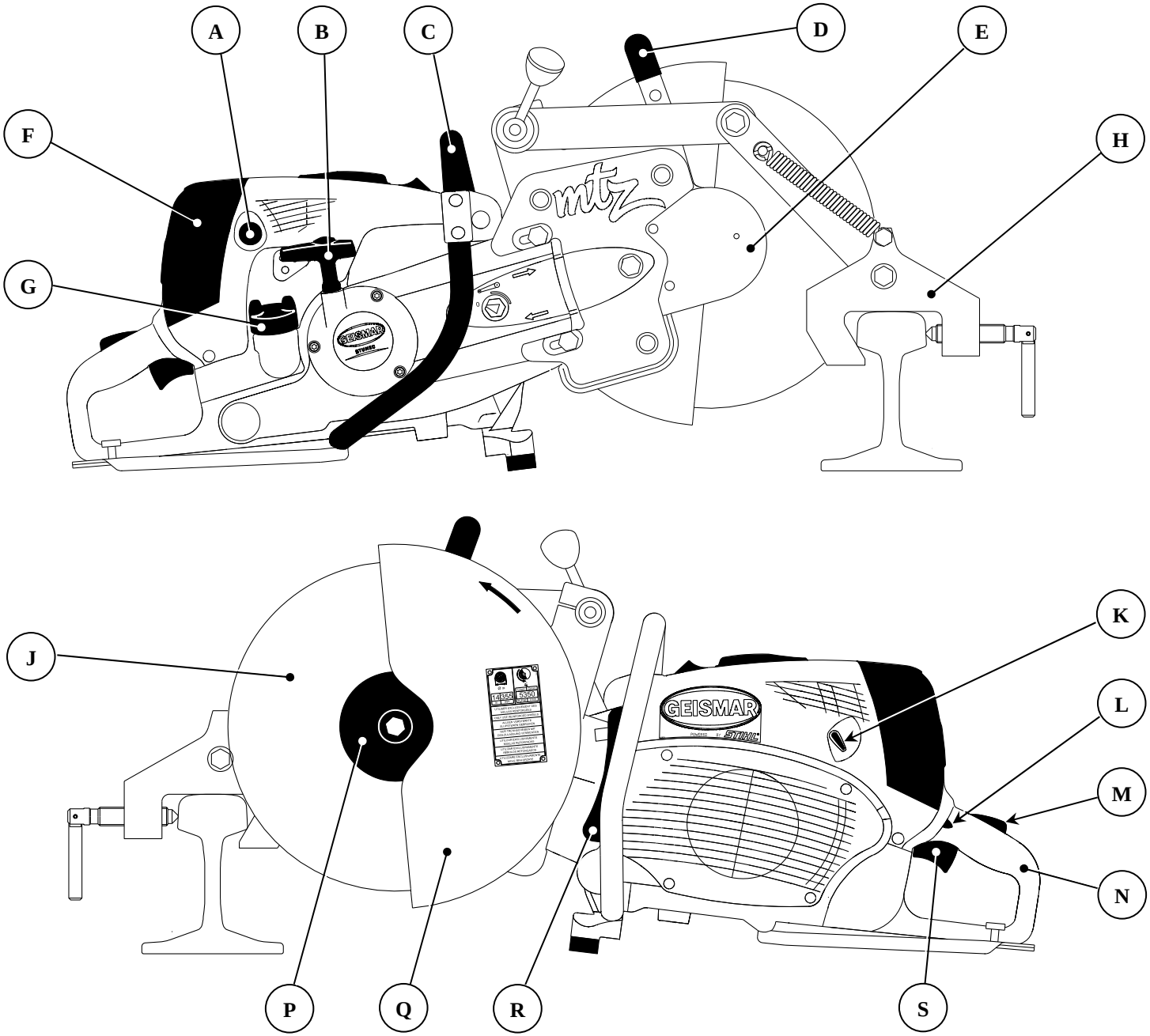
2.3 Operator's work area

In normal operating conditions, the area available to the operator for running the machine is between the two rails on a same track.

⚠ Should the cutting operation have to be made the other way round, carefully check safety conditions, especially if there is traffic still running on the other track.



2.4 General view



Ref.	Name
A	Priming pump
B	Starter handle
C	Tubular front handle
D	Disc guard orientating handle
E	Belt guard
F	Air filter cover
G	Fuel tank cap
H	Guiding vice
J	Abrasive disc
K	Choke lever
L	Combined action lever
M	Accelerator trigger lock
N	Rear handle
P	Disc tightening plate
Q	Disc guard
R	Exhaust muffler
S	Accelerator trigger

2.5 Technical details

		MTZ **350 S**	MTZ **400 S**
Average cutting time (UIC60 rail)…		1'15''	1'15''
Machine dimensions			
Length / width / height (without disc)….	mm	760/315/430	770/315/455
Weight			
Machine (empty)	kg	16,5	17
Machine (in operating condition)...	kg	18,2	19,1
Guiding vice….	kg	6,9	
Noise *			
Acoustic pressure level (when cutting) (La_{eq}) (1)	dB (A)	102 (±2)	102 (±2)
Acoustic power level (Lwa) (2)	dB (A)	113,3 (±2)	113,3 (±2)
Vibrations *			
Vibration level (accelerator handle) (Aeq) (3).	ms^{-2}	6,2 (±2%)	8 (±2%)
Vibration level (tubular front handle) (Aeq) (3)	ms^{-2}	7,1 (±2%)	8,2 (±2%)
Estimate of vibration levels for one hour's use over an 8-hour working day (Aeq) (3).	ms^{-2}	2,5 (±2%)	2,8 (±2%)
Machine			
Electronically adjusted maximum speed *	rpm	9800	
Disc rotation speed (maximum without load) *.	rpm	4520	4150
Idling speed *……	rpm	2200	
Belt tension …	……..	Semi-automatic	
Protective guard…	……..	Adjustable in reinforced aluminium	
Safety device preventing the machine from being used without its "guiding vice"	…….	Available on models MTZ 350AS and MTZ 400AS	
Maximum disc diameter	mm	355 (14")	406 (16")
Fixing flange …….	……..	With elasticity compensation	
Stability of machine on the ground ……..	……..	Feet	
Fixing system between the engine chassis and the one-piece disk support unit….	……..	Patented with vibration absorption : *Comfort Cushion*™	

		MTZ **350 S**	MTZ **400 S**
Disc			
Maximum outside diameter	mm	355 (14")	406 (16")
Maximum thickness	mm	4 (5/32")	4 (5/32")
Centre bore.	mm	25,4 (1") or 22,2 (7/8")	
Maximum disc rotation speed.	rpm	5350	4700
Type of disc ….	……..	Fabric insert reinforced resinoid bond	
Number of cuts per disc.	……..	4 to 7	5 to 8
Engine			
Power (at 9000 RPM)…….....	kW	5 (= 6,8 HP)	
Cylinder bore…	mm	56	
Piston movement	mm	40	
Carburettor.	……..	Double membrane chamber	
Operating cycle.	……..	2-stroke with double air flow	
Cooling	……..	Air	
Ignition.. ….	……..	Electronic with high capacity sparking	
Resistor-type sparkplug	……..	Bosch WSR 6, or NGK BPMR 7 A Gap between electrodes 0.5	
Filtration system	……..	Triple filtration with cyclonic pre-filtration	
Filter replacement times (approximate)…	h	14	
Fuel tank capacity..	liter	1,2	
Fuel consumption.	l/h	1,7	
Fuel (variable mix depending on oil used 1 :25 or 1 :50)..	……..	Mix (oil – unleaded petrol)	
Starting system….	……..	Hand-starter with automatic return and Elastostart system	

* These values are average for a machine in good running order, but may vary from one machine to another.
(1) Measurements done according to NF EN ISO 11204 while machine working.
(2) Measurements done according to NF EN ISO 3746 while machine working.
(3) Measurements done according to NF EN ISO 5349 while machine working.
→ MTZ 350 AS - SNCF approved under the number MTP 17053

CHAPTER 3 – INSTALLATION – START-UP

3.1 Abrasive disc

3.1.1 Selecting the right disc.

The disc to be used must be marked as having a working speed higher or equal to the speed shown on the machine information plate. Never go beyond the speed given on the disc.

The disc's technical characteristics must correspond to those stipulated in § 2.5 "Technical characteristics / disc".

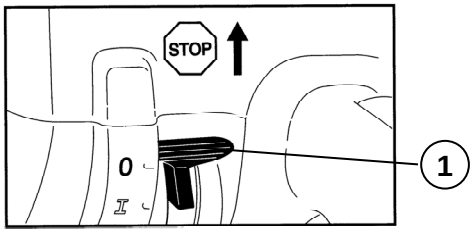
The disc centre bore MUST ALWAYS correspond to the centre diameter on the engine drive plate.

Never use a disc that is cracked, chipped or deformed (non-flat). Never use a disc that is damaged. Do not use any disc that has been dropped.

Inspect all discs systematically before fitting them to the machine.

3.1.2 Fitting / replacing the disc.

ONLY fit or replace the disc with the motor stopped and the combined action lever Ref.① in position « **0** ».



❶ Hold the shaft in position by inserting rod Ref.④ through the hole in the pulley, the hole in the belt guard Ref.⑤ and the front bearing housing Ref.②.

❷ Using the multi-purpose spanner, unscrew the retaining screw Ref.⑧.

❸ Remove flange Ref.⑦ and the disc Ref.⑥ to be replaced (if necessary).

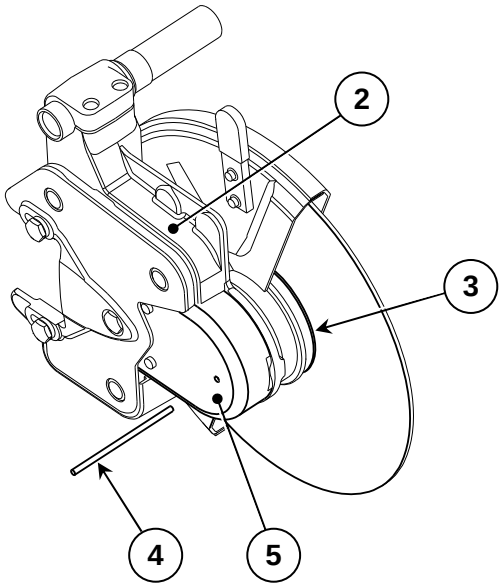
❹ Install the disc and put the flange back in position (the pins on the flange must be in line with the slots on the shaft).

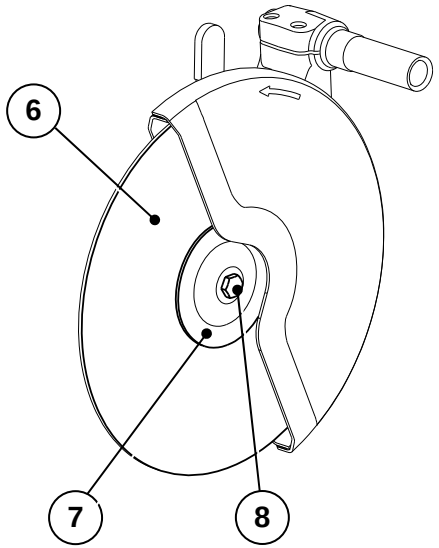
⚠ **Never use a taper sleeve on the disc centre bore.**

⚠ **The outside diameter of fixing flange Ref.⑦ must be systematically the same diameter as the motor end flange Ref.③.**

❺ Screw in the lock screw and tighten firmly with the multi-purpose spanner (the tightening torque should be about 30Nm).

❻ Pull out the rod from the belt guard.





3.2 Fuel

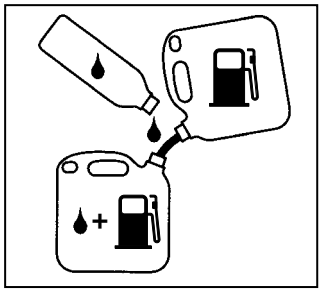
3.2.1 Preparing the mix

The two-stroke engine on the rail-cutting machine runs on a petrol and motor oil mix. The quality of these elements and the mix ratio have a decisive influence on the way the engine runs and the length of its service life.

- *Petrol* ➥ Only use unleaded petrol with an octane level of at least 90 RON.
  - METHANOL and ALCOHOL are FORBIDDEN.
  - ETHANOL or BIOETHANOL are accepted according to the regulations of the country concerned and the compatibility of the engine (refer to the engine manufacturer's manual).
  - E10 containing up to 10 % bioethanol.
  - E5 containing up to 5 % bioethanol.
  - Use of these products increases the risk of fire or explosion, which could result in serious injury or death to the user or others around the user.
  - *Motor oil* ➥ Only use good-quality oil intended for air-cooled two-stroke engines. Preferably, STIHL 2-stroke oil should be used. It is specially designed for STIHL engines and guarantees the longest possible service life. Do not use oil designed for water-cooled engines, or oil for 4-stroke engines.

For intensive use of the rail-cutting machine, use imperatively engine oil STIHL HP Super or equivalent class.

- *Preparing the mix* ➥ Always make the mix in a clean recipient approved for the fuel used.
  - ❶ Start by pouring in half the petrol to be mixed
  - ❷ Pour in all the oil.
  - ❸ Mix by shaking the recipient.
  - ❹ Pour in the remaining petrol.
  - ❺ Mix the fuel together again before filling the machine tank.



1 DOSE
oil the 100 ml
=
5 L. the mixture.

*Repère **PLC** ..... (gradued vessel - 100 ml)*
*Repère **PLD** ..... (oil dose 2 T - 100 ml)*

Proportions:

- STIHL oil for two-stroke engines
  ➥ 1:50 = 1 volume of oil + 50 volumes of petrol.
- Other good quality oil for two-stroke engines
  ➥ 1:25 = 1 volume of oil + 25 volumes of petrol.

Petrol	STIHL two-stroke oil 1:50 (2%)	Other quality two-stroke oils 1:25 (4%)
1	0,02	0,04
5	0,10	0,20
10	0,20	0,40
15	0,30	0,60
20	0,40	0,80
25	0,50	1,00

Unit = liters

❖ *Storing the mix* ➥ Mixes made of unleaded petrol do not remain stable for a long time. So, they must NOT be prepared in advance, but as and when required

3.2.2 Filling up with fuel

Shake the can containing the mix vigorously before filling up the tank. ⚠ There may be a pressure build-up in the can. Open carefully.

Before filling, clean the cap and its vicinity carefully to prevent any foreign matter from getting into the tank.

Position the machine so that the filler cap faces upwards.

Never fill up with the engine running.

Never fill up with the machine mounted on its guiding vice.

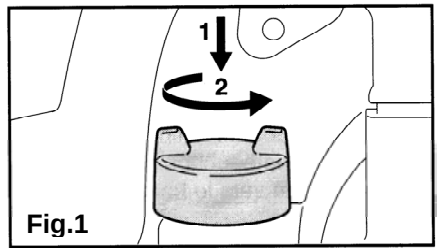


Fig.1

- Opening the cap (Fig.1): Push the cap downwards to the stop position by hand, turn anti-clockwise (about 1/8 of a turn) and remove the cap.

  ⚠ Open the tank filler cap with care so that any excessive inside pressure can escape slowly without spraying any fuel outside the tank.

  ⚠ Never use a tool for opening the bayonet-locking cap. This could damage the cap and lead to fuel escaping.

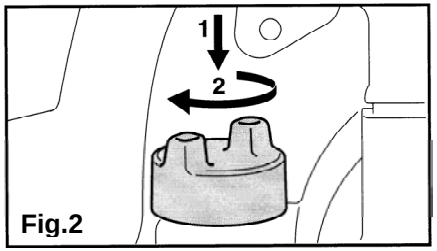


Fig.2

- Fill up the tank in a well-ventilated area and never close to any possible sources of ignition, such as blowlamps, sparks or welding residue.

  When filling, take care not to spill the fuel and never fill the tank completely. Only add enough fuel for filling up the tank to ¾ of its maximum capacity.

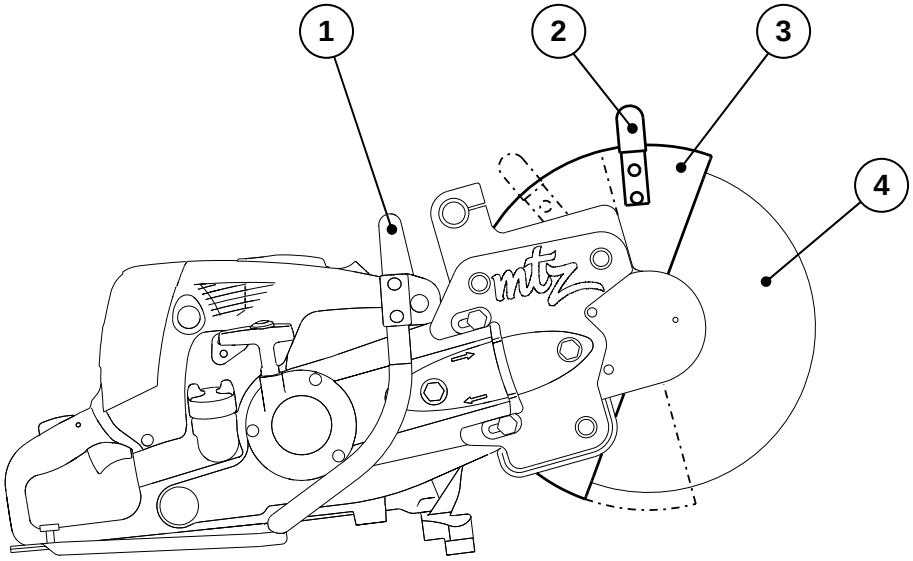
- Closing the cap (Fig.2): Put the cap into position and rotate it until it slips into the bayonet slots. Push the cap down by hand to the stop and rotate it clockwise (about 1/8 of a turn) until it is engaged in position.
- Carry the machine at least 6m away from the filling point before starting it up.

3.3 Adjusting the disc guard

The position of the disc guard Ref.③ can be adjusted to suit the operator and the position in which the cutting operation is to be carried out.

Its position must be adjusted not only to avoid it being a hindrance during the cutting operation, but also to direct the sparks as far away from the operator's feet as possible.

With the machine standing on the ground and the engine at a standstill, take a firm hold on the front handle Ref.① with one hand and adjust the position of the disc guard with the other hand, using handle Ref.②. The disc guard can be moved over an angle of up to 35°.



3.4 Machine inspection

Before using the machine, a visual check must be carried out by a competent, authorised person to discover any possible problems.
This inspection mainly includes visual and functional checks.

This inspection phase is carried out to ensure that the different elements are in good condition and have not suffered from any damage during transport or storage.

- *Check on protective guards and moulded units* (this check is made with the engine at a standstill)

  Carry out a visual check to make sure that there are no external defects, deformations, superficial cracks, marks, wear or corrosion.

- *Check the fuel level* (this check is made with the engine at a standstill)

  Check the fuel level and add fuel if required (⚠: See §1.3 “General safety instructions” / “Using and handling fuel” and 3.2.2 “Filling up with fuel”).

- *Check operational elements* (these checks are made with the engine at a standstill)

  - Check that the following elements operate correctly: the accelerator trigger, the accelerator trigger lock and the combined action lever. All these devices must move freely and not have undergone any modifications.
  - Check that the disc rotates freely.

- *Check safety devices*

  - Make sure that the handles are clean and dry.
  - Start the engine (⚠: See §4.3 “Starting up the machine”) and check that it stops when the combined action lever is turned to the ‘0’ position.
  - Make sure that the disc does not rotate when the accelerator trigger is released (See §5.1.4 "Carburettor" if any adjustments are required)
  - On models MTZ 350AS and MTZ 400AS, check that the safety system works correctly for preventing the rail-cutting machine being used without its guiding vice. To do this, start up the engine (⚠: see §4.3 “Starting up the machine”) and check that it stops when the unit is separated from its guiding vice.

SHOULD ANY ANOMALY BE REVEALED DURING THE INSPECTION PHASE OR DURING USE, THE MACHINE MUST SYSTEMATICALLY BE REPAIRED AND BE REMADE COMPLIANT BY SKILLED PERSONNEL OR THE CONSTRUCTOR BEFORE IT IS RE-USED.

CHAPTER 4 – OPERATION

4.1 Marking the cutting line and setting up the guiding vice

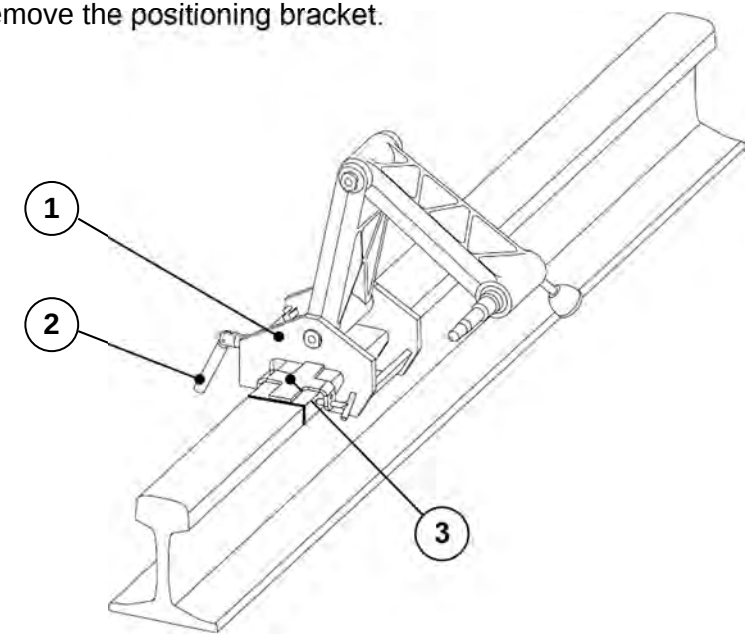
❶ Mark the line of the cut to be made on the rail.

❷ Put the positioning bracket Ref.③ into position. The positioning bracket gives the exact distance of the vice flange in relation to the end of the rail that will remain after cutting.

❸ Place the guiding vice Ref.① on the rail with the clamping bar on the same side as the cutting guiding vice. Then bring the locking lever Ref.② into contact with the railhead.

❹ Clamp the vice firmly in place on the rail, by hand without using any extension.

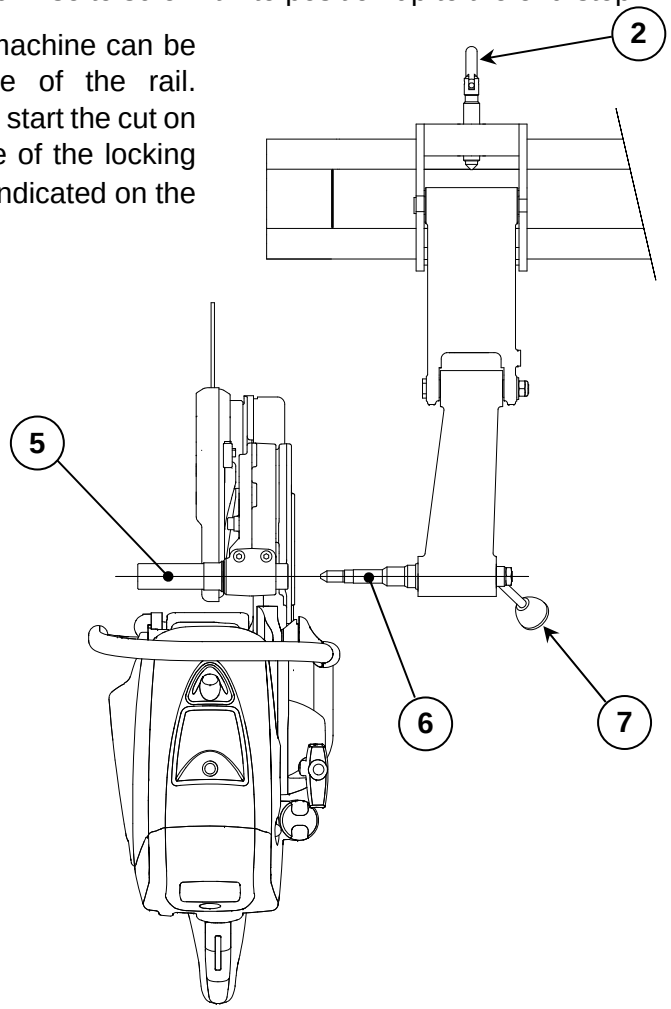
❺ Remove the positioning bracket.



4.2 Fitting to the rail – Fitting the rail-cutting machine onto the guiding vice

Fit the rail-cutting machine onto the guiding vice by inserting the threaded shaft Ref.⑥ into the pivoting sleeve Ref.⑤. Turn the ball-wheel Ref.⑦ clockwise to screw it into position up to the end-stop.

The rail-cutting machine can be fitted either side of the rail. However, always start the cut on the opposite side of the locking lever Ref.②, as indicated on the sketch below.

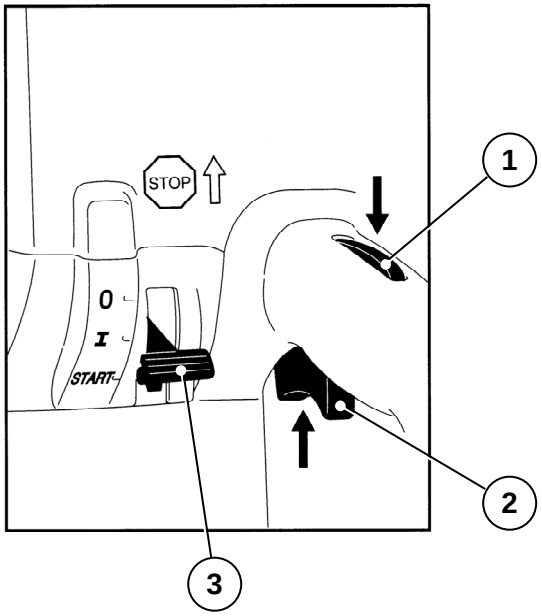


4.3 Starting up the machine

Do not start up the engine until the machine has been fitted to its guiding vice, which must already have been fixed to the rail in the correct position for the cut.

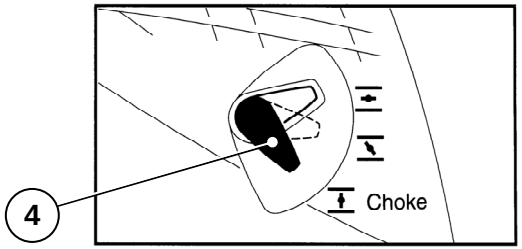
➔ Starting :

❶ Press the accelerator trigger lock Ref.① and the accelerator trigger Ref.② at the same time. With these two units pushed in, push the combined action lever Ref.③ to the **START** position. Then successively release the accelerator trigger, the combined action lever and the accelerator trigger lock.



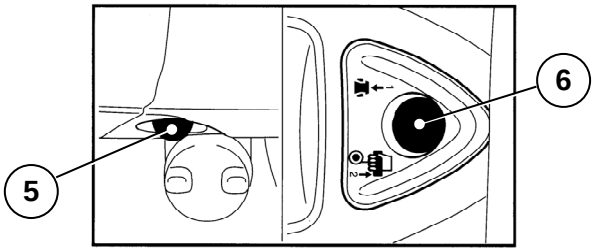
❷ Set the position of the choke Ref.④ to ambient temperature and to engine temperature:

- If the engine is **cold**, put the choke lever to the position.
- If the engine is **hot** (also if the engine has already been running, but is still cold or even if a hot engine has been stopped for less than five minutes), put the choke lever in the position
- If the engine is **very hot** (if a very hot engine has been stopped for over five minutes), put the choke lever in the position.



❸ To make starting easier, press the decompression valve button Ref.⑥ (This button must be pressed every time you try to start the machine).

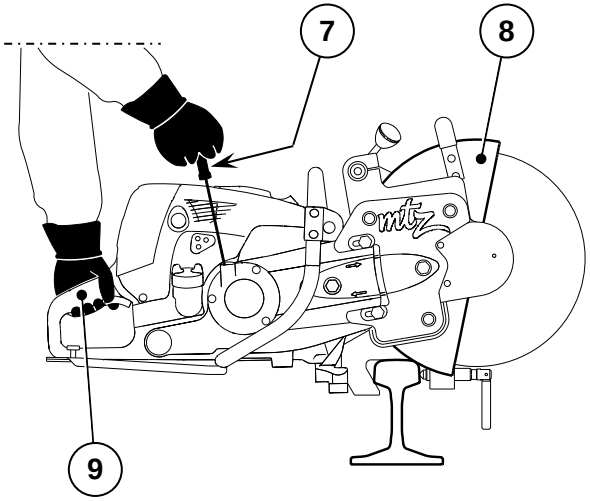
❹ Push in the priming pump diaphragm Ref.⑤ 7 to 10 times (even if it is full of fuel).



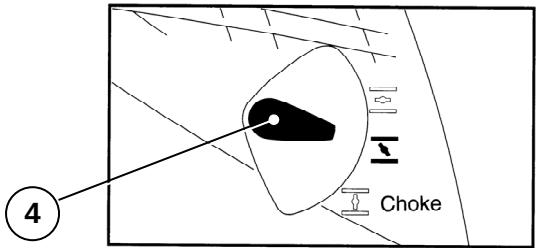
❺ To make starting easier and avoid any risks of accident, the lower part of the disc guard Ref.⑧ must be laid on the railhead as shown in the photograph below.

Grip the rear handle Ref.⑨ of the rail-cutting machine firmly in one hand. With the other, pull the starting cord handle Ref.⑦ gently upwards until you feel the compression. Then pull sharply.

Do not pull the cord out completely. Do not release the handle to let the cord wind itself up without any control, but accompany the return movement gently by hand to let the cord re-wind itself in position correctly. Never wind the starting cord around your hand.

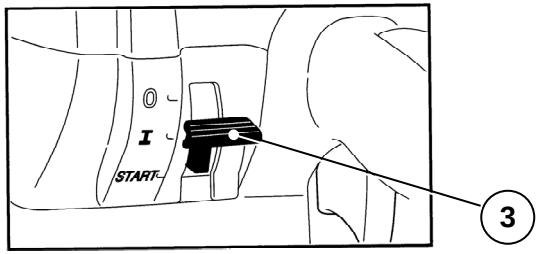


❻ After the first pull :
Put the choke lever Ref.④ in position



Before every new effort to start the engine, press the decompression valve button and then continue to restart the engine.

❼ Once the engine starts running, press the accelerator trigger lightly so that lever Ref.③ returns to its normal operating position **I**.



Accelerate gently to warm up the engine. After the warming-up phase, put the choke lever in position

⚠ **At idling speed, the cutting disc should not be rotating.**

Let the machine run at idling speed for 30 seconds before using it.

❖ *If the engine won't start* :

➡ It may be that, after the first pull to start the engine, the choke lever Ref.④ has not been pushed back to position

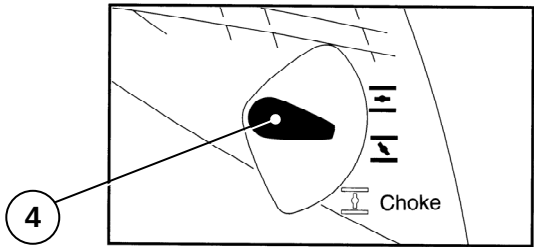
➥ and therefore, the engine is flooded.

❶ Place lever Ref.③ in **START position**.

❷ Place the choke lever in the position = hot start (even if the engine is cold).

❸ Pull the starting cord 10 to 20 times to ventilate the combustion chamber.

❹ Try to restart the engine.

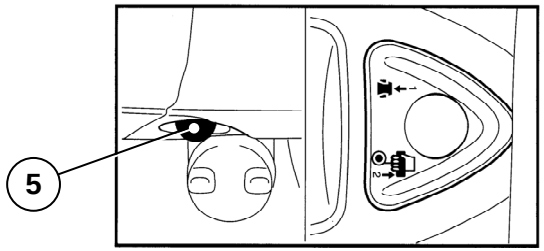


➡ Check that the rail-cutting machine is mounted correctly on the guiding vice.

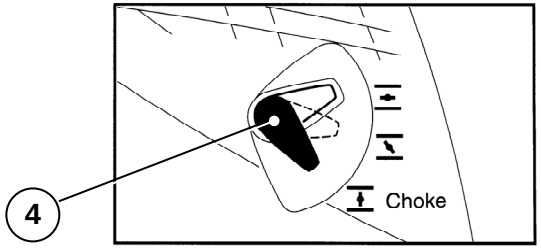
➡ Check that there is fuel in the tank.

❖ *If the tank is refilled after running out of petrol* :

❶ After refilling, push in the priming pump diaphragm Ref.⑤, 7 to 10 times even if the diaphragm is full of fuel.



❷ Adjust the position of the choke lever Ref.④ depending on the ambient temperature and, above all, on engine temperature.



❸ Restart the engine.

When the engine is very hot, during heavy use and it does not restart, press several times the bellows of the pump priming (even if the bellows is filled with fuel).

4.4 Methods of cutting

4.4.1 General instructions for carrying out a cutting operation

Here is a number of recommendations and basic rules to ensure that the cutting operation takes place under the best possible conditions and guarantee the longest possible service life for the equipment. In all cases, refer to the methods of cutting in force on the worksite.

- **Maximum engine power** must be used throughout the cutting operation, which takes place in three phases :

  ❶ ***The cut-starting phase*** >> Cut the rail beginning on the side of the railhead to have the best possible angle of attack.

  ❷ ***The cutting phase*** >> During this phase, the disc must be made to cut cleanly using all the engine power available, but without overloading it. A cut where the disc has not entered the rail cleanly enough, will lead to deterioration in the disc's cutting power, to it overheating and possibly to it disintegrating.

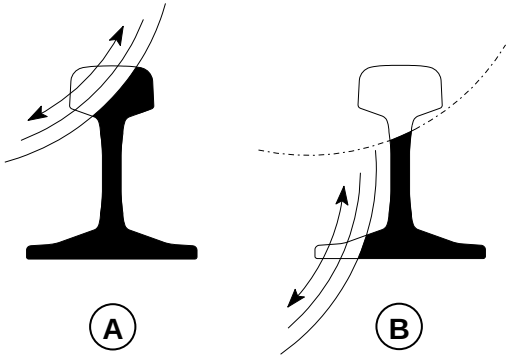
  Wherever possible, carry out the operation without stopping. ONLY re-enter a cut that has already been started if the guiding vice has not been moved and the same machine and the same disc are used.

IT IS EXTREMELY IMPORTANT THAT THE MACHINE IS GIVEN A PERMANENT BACK-AND-FORTH MOVEMENT DURING CUTTING

Whatever type of cut is being carried out (either a through-cut or a turn-around cut), it must always be done in the two following phases :

Ⓐ Cut the railhead

Ⓑ Cut the rail web and flange



❸ ***The end of cutting phase*** >> Reduce the pressure at the end of the cut so that, when the disc passes through the rail, it does not throw the operator off-balance or hit any foreign object.

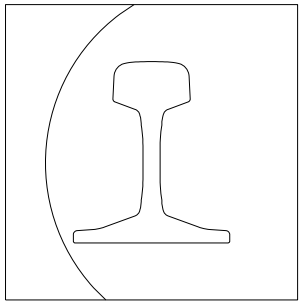
⚠ Do not work with the forced acceleration unit that should only be used on starting up.

⚠ Before starting, always check that the disc is large enough to cut through the entire rail.

4.4.2 Cutting straight through

This type of cut consists of cutting through the whole rail without turning the machine round.

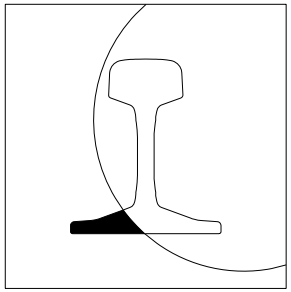
A new disc must always be used for doing this type of operation.



4.4.3 Two-phase turn-around cutting.

When making the cut, it is strictly FORBIDDEN to finish the cut by tilting the machine (upside down)

❶ Working from the same side, first cut the complete railhead and part of the flange.



❷ After slowing the engine down to idling speed and waiting for the disc to come to a complete halt, stop the rail-cutting machine.

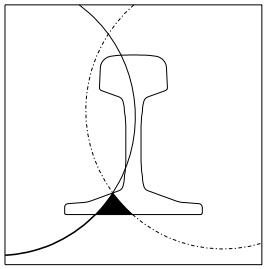
❸ Then remove the machine from the guiding vice and turn it round by going over to the other side of the rail.

⚠ : Read §2.3 “Operator’s work area” carefully.

❹ Turn the end of the hinged arm over 180° and remount the rail-cutting machine onto the guiding vice.

❺ Re-start the cutting operation.

❻ Finish off the cutting operation.



A tilt end prevention device eliminates the risk of tilt end and pitching (if fitted). See 4.4.4.

NB: If there is a difference between the two cutting lines when the machine is turned round, reset the unit as described in §5.1.15 "Resetting for perfect alignment on turn-around".

4.4.4 Tilt end prevention device (if fitted)

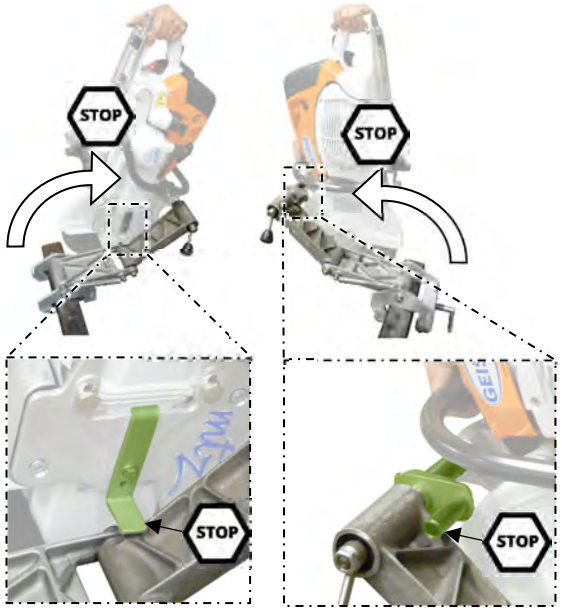
A system of stops fixed on the machine combined with a special vise allows to eliminate the risk of finishing a cut by tilting the machine.

This system also prevents the pitching of the machine, thus protecting the operator.

This device works in both cutting directions.

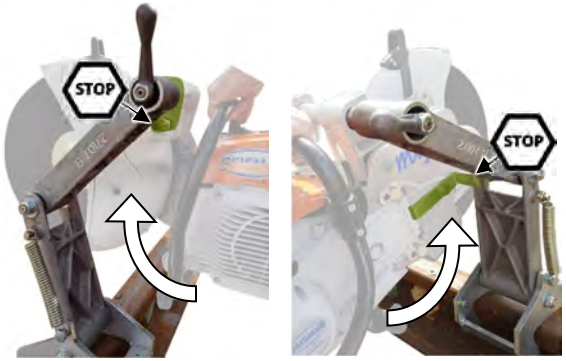
Anti-tilt:

The stop prevents the disc from accessing the portion of the guide that could not be cut.



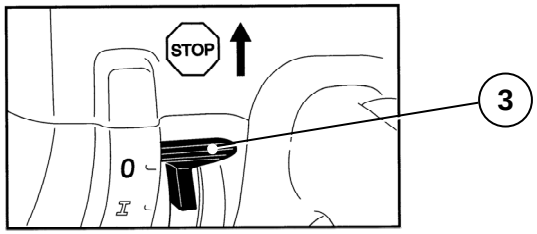
Anti-clogging:

The stop prevents the machine from coming back violently towards the operator.



4.5 Stopping the machine

The engine is stopped by turning the combined action lever Ref.③ to position « **0** ».



4.6 Case of a rail cut under compression

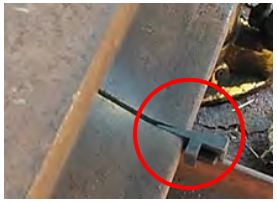
In the case of a cut under compression, the cutting sequence presented above (see 4.4.1 - General cutting instructions) does not apply.

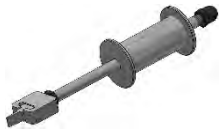
It is necessary to have the corners ref. 83032 - kit code 400181.

1- Start by cutting the base and then the web of the rail on one side.

2- Rotate the machine.

3- Insert a corner into the cut using a hammer or the insertion/extraction tool.

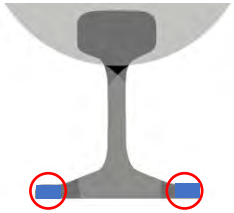




4- Cut the opposite side of the base.

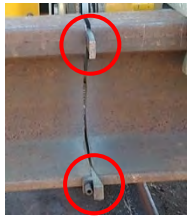
5- Insert a second corner into the second cutting zone.

6- Cut the rail's head from the top until the disc is blocked.

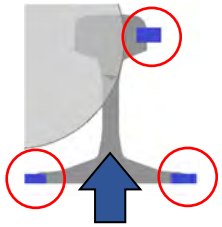


7- Lift the rail using a jack (or a rail lifter) as close to the cut as possible.

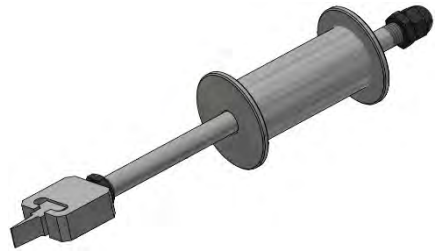
If lifting the rail does not allow the completion of the cut, place a third corner on the side of the rail head.



8- Finish the cut.
Lift the rail further if the disc becomes blocked.



9- At the end of the cut, remove the corners using the STE83000B extraction tool.



4.7 Removing from tracks – Dismantling the rail-cutting machine from its guiding vice

❶ Put the engine at idling speed and wait until the disc has completely stopped rotating.

❷ Stop the machine.

❸ Separate the rail-cutting machine from the guiding vice.

❹ Unclamp and remove the vice from the rail.

4.8 Storage

4.8.1 General instructions for storage

When the equipment is not being used, it is essential for it to be stored away correctly in order to remain in good working order. Poorly stored equipment will show signs of deterioration when it is put back into service. Therefore, it is important that personnel in charge of storage operations take the greatest care in carrying out this operation and that they scrupulously comply with the instructions provided.

⇨ Protection systems during storage

The choice of protection systems to be used during storage depends on two main factors:

- The duration of storage.
- Conditions of storage: “outside” storage (exposure to weather conditions) and “inside” storage (building, closed or open shed, shelter, etc.).

Equipment should only be stored away after running in. Measures should be taken so that access to the equipment is easy for servicing operations.

⇨ Storage premises

Generally speaking, premises intended for storage should provide the best possible protection against:

- Dust, exhaust gasses, dampness
- Direct sunlight
- Rapid changes in temperature

⇨ Storing

The equipment’s condition when it is put back into service after a period of storage depends on the way it has been prepared and protected before being put into storage:

- Cleaning (after cleaning, protect all moving parts with a coat of grease).
- Technical visit to check on any possible anomalies.

4.8.2 Special instructions for storage

⇨ If the machine is to be stored away for a long time, empty the fuel tank.

⇨ Never store the machine away with a disc fitted in position.

⇨ Store abrasive discs in a dry place, protected from frost, sunlight and extreme heat. Position them so that they are not stored under any load liable to warp them. They should NOT be stored for more than 2 years at the most.

CHAPTER 5 – SERVICING / MAINTENANCE

5.1 Servicing

This equipment may only be serviced and repaired by skilled personnel with a thorough knowledge in general mechanics.
Training and specific tooling are required for servicing and repairing this equipment correctly.

⚠ Before carrying out any servicing or repair operation, stop the engine (leave the control in the stop position) and wait for it to cool down. If the engine needs to run (for setting the carburettor and the maximum no-load speed), make sure that the work area is correctly ventilated.

⚠ Safety in use of this machine relies largely on correct servicing.

⚠ Waste resulting from servicing and maintenance operations (fluids, filters, used cloths, etc.) must be processed as per regulations in force and directives for environmental protection.

⚠ Any part that is worn, damaged or missing must be changed or repaired immediately, whenever there is a risk in terms of safety.

5.1.1 List of equipment and accessories required for servicing

The following tooling is required for carrying out all the servicing and maintenance operations correctly :

Refer to plans and nomenclatures

This list of tooling does not exclude the need for normal necessary equipment such as: cloths, brushes, grease, etc.

5.1.2 Cleaning

Make sure that the machine is kept as clean as possible. Care in cleaning the machine will lead to longer service life and improved performance.

Clean the machine carefully with a clean cloth or an airgun, taking special care to remove all dirt that has accumulated on it, especially close to any moving parts. As a precautionary measure, always wear gloves to avoid injury or burning hands. Do not use fuel for cleaning operations. Only use non-inflammable, non-toxic products that are inoffensive for both the operator and the machine.

5.1.3 Tightening

After a running-in period of about 10 hours, check the position and tightness of all accessible nuts and screws (This does not apply to carburettor setting screws).

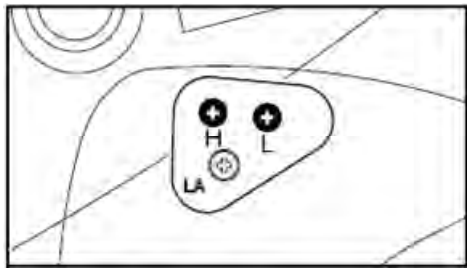
5.1.4 Carburettor

On leaving our works, the carburettor has been adjusted for optimal performance under the weather and barometric conditions present at the manufacturing site at the time.

Only rotate the carburettor adjustment screws in small increments and with the utmost care, as the slightest movement can lead to significant changes in the way the engine runs.

Over and above normal servicing operations during use, we recommend that any possible carburettor repairs or adjustments be carried out by members of the GEISMAR / STIHL sales or repair network.

❖ ***Standard setting*** :



❶ Stop the engine.

❷ Check the air filter (replace if required ➙ see §5.1.11).

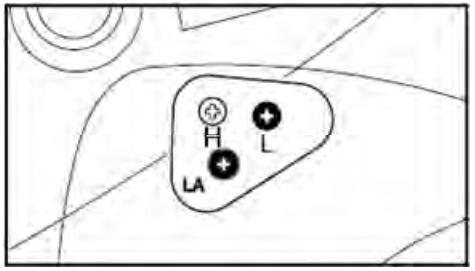
❸ Check the spark-arrester grid in the silencer (clean or replace if required) >> see §5.1.5.

❹ Taking the utmost care:

→ Turn the high-speed fuel-air ratio screw Ref. **H** anti-clockwise down to the stop (¾ of a turn at the most).

→ Turn the idling-speed fuel-air ratio screw Ref. **L** clockwise down to the stop and then turn it by ¾ turn anti-clockwise.

❖ ***Idling speed adjustment*** :



➥ *If the engine stalls at idling speed:*

- Carry out the standard setting procedure as described above.
- Turn the idling speed adjustment stop-screw, Ref.**LA,** clockwise until the disc starts rotating and then turn the screw 1 turn backwards.

➥ *If the disc rotates at idling speed:*

- Carry out the standard setting procedure as described above.
- Turn the idling speed adjustment stop-screw, Ref. **LA,** anti-clockwise until the disc stops rotating and then turn the screw 1 more turn in the same direction.

➥ *If idling speed is irregular and acceleration unsatisfactory:*

The idling speed mix is too poor (in the event of a drop in ambient temperature).

- Turn the idling-speed fuel-air ratio screw, Ref. **L** about ¼ of a turn anti-clockwise until the engine runs smoothly and accelerates correctly.

➥ *If the idling speed cannot be increased sufficiently with adjustment screw Ref. **LA**, if the engine stalls during the transition phase between partial load and idling speed:*

- Turn the idling-speed fuel-air ratio screw Ref. **L** about ¼ of a turn clockwise.

❖ ***Correcting carburettor settings for use at high altitude***:

Should the engine not run satisfactorily, a number of slight adjustments may be required.

❶ Check the standard settings.

❷ Let the engine warm up.

❸ Adjust the idling speed correctly.

❹ Turn the high-speed fuel-air ratio screw Ref. **H** clockwise (for making the mix slightly poorer).

⚠ Making the fuel-air mix too poor is liable to damage the engine due to lack of lubrication or overheating.

NB: All the carburettor settings can be made with the flat-headed screwdriver provided as standard tooling for the machine.

5.1.5 Silencer spark-arrester grid*

If the engine has lost power, check the spark-arrester grid on the silencer.

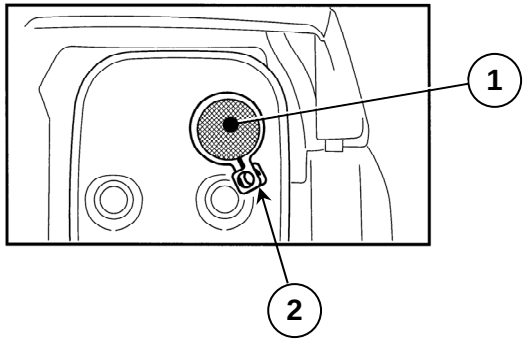
⚠ Wait until the engine has cooled down completely before carrying out this operation.

❶ Using an appropriate tool, nip the ends of fastener Ref.② and remove.

❷ Extract the spark-arrester Ref.① from the silencer :

- If the spark arrester is dirty, *clean it*.
- If it is damaged or heavily scaled, *replace it*.

❸ Re-fit the spark-arrester by proceeding as above in the reverse order.

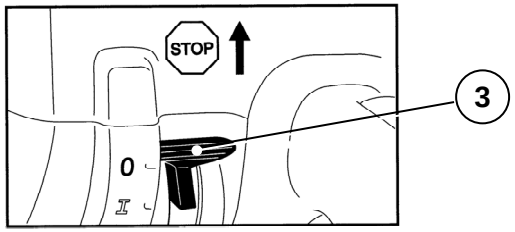


* Only for specially equipped rail cutting machines (USA, CANADA and AUSTRALIA)

5.1.6 Sparkplug

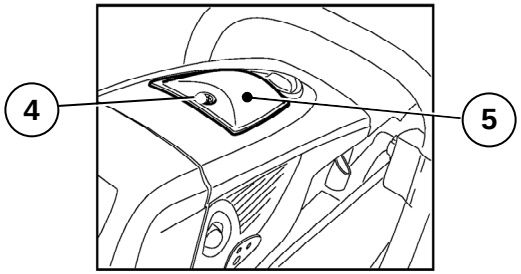
Should the engine lack power or be difficult to start up or the idling speed not be smooth, systematically check the condition of the sparkplug.

❶ Place the combined action lever Ref.③ on position « **0** » (multi-purpose spanner).



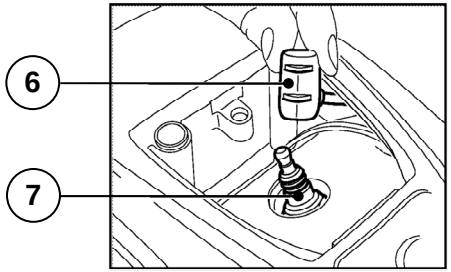
❷ Unscrew the sparkplug cover screw Ref.④ (multi-purpose spanner).

❸ Remove spark plug cover Ref.⑤.



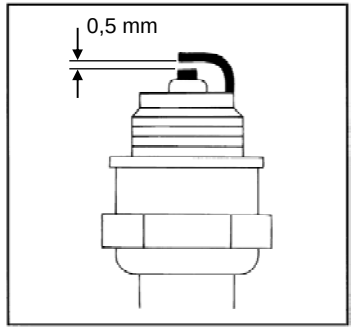
❹ Remove the plug contact Ref.⑥.

❺ Unscrew sparkplug Ref.⑦ (multi-purpose spanner).



❻ <u>Check the condition of the sparkplug</u> :

- If the plug is dirty, *clean it* with a fine metal bristle brush. Then check that the distance between the electrodes is 0,5 mm. Adjust if required.



- If the plug electrodes are extremely worn, *replace the plug*.

⚠ ONLY use resistor-type spark plugs (See §2.5 "Technical characteristics"). Other sparkplugs are liable to damage the piston or the cylinder.

❼ Refit the plug.

❽ Fit the plug contact firmly onto the sparkplug.

After cleaning the sparkplug and before restarting the machine, eliminate any causes liable to dirty up the sparkplug:

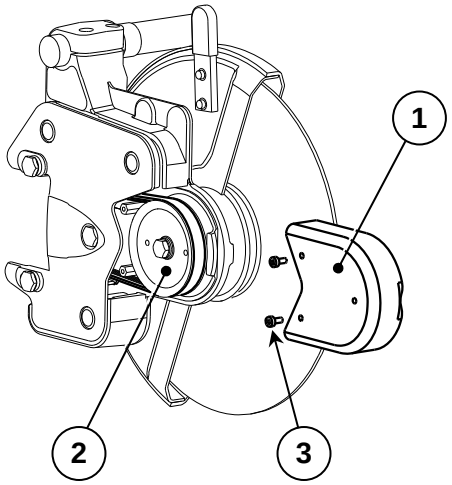
- Dirty air-filter (See §5.1.11)
- Poorly adjusted carburettor (See §5.1.4)
- Too much oil in the mix (See §3.2.1)

5.1.7 Belt

➥ Checking the belt's condition

❶ Unscrew the 2 screws Ref.③ (multi-purpose spanner).

❷ Remove the belt guard Ref.①.

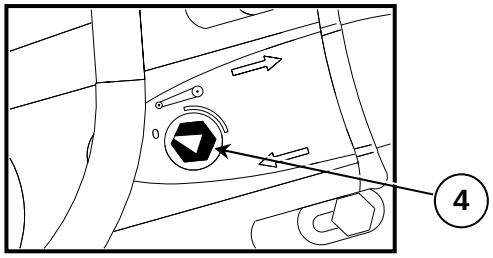


❸ By turning the driven pulley Ref.② by hand, check that the belt is in good condition (no splits or cracks or gaps in the flutes).

❹ If the belt is in good condition, refit the guard, if not, replace the belt.

➥ Replacing and tensioning the belt

❶ Turn the tension nut Ref.④ to position "**0**" (multi-purpose spanner).



❷ Loosen the 2 screws Ref.⑪ and screw Ref.⑫ (multi-purpose spanner), and then tilt the cutting unit backwards to slacken the belt.

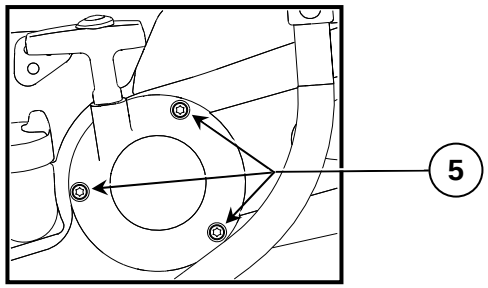
❸ Unscrew the 3 screws Ref.⑥ (8mm Allen-head screwdriver).

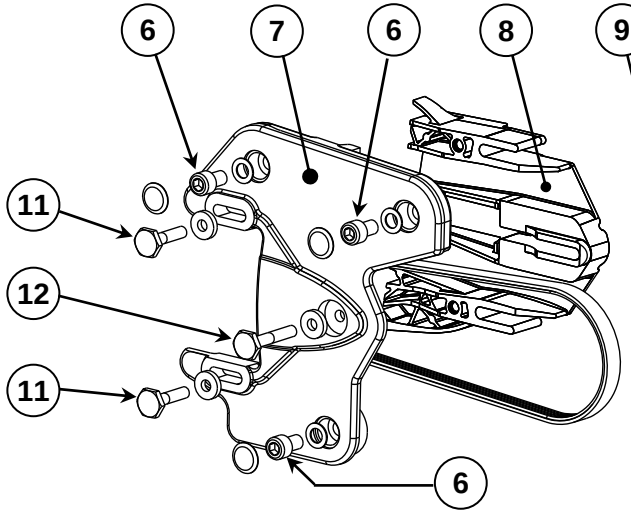
❹ Remove the sub-assembly formed by the front plate Ref.⑬, disk guard Ref.⑩ and driven pulley Ref.②.

❺ Completely unscrew the 2 screws Ref.⑪ and screw Ref.⑫ (multi-purpose spanner).

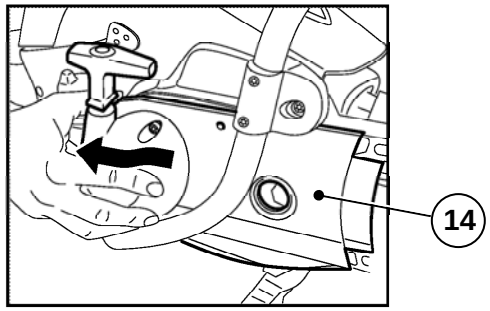
❻ Remove support plate Ref.⑦.

❼ Unscrew the 3 screws Ref.⑤ (multi-purpose spanner).



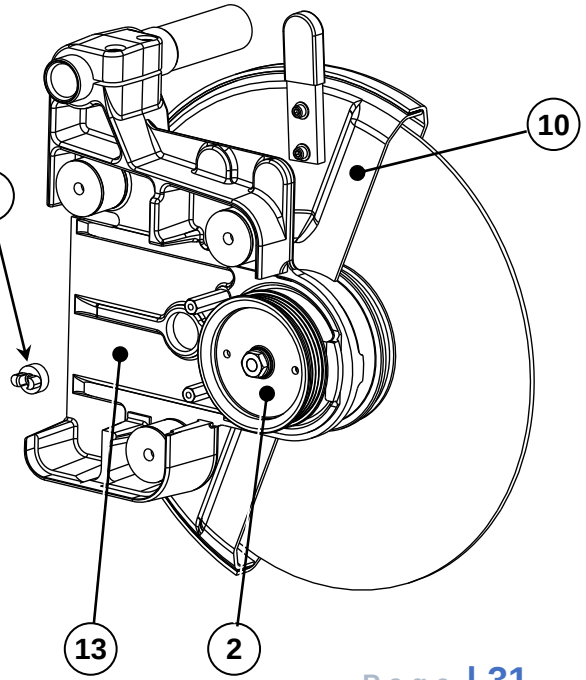


❽ Remove the starter cover Ref.⑭.



❾ Remove the faulty belt from the machine housing.

❿ Proceeding with care, place the new belt in the housing and in place in the grooves of the drive pulley.



⓫ Re-fit the support plate Ref.⑦ after inserting the two screws Ref.⑪ in the corresponding holes in the engine chassis Ref.⑧, insert the flat of special bolt Ref.⑨ in the groove in the engine chassis and tighten screw Ref.⑫. Screw in the three screws by hand without tightening them

⓬ Re-fit the “front-plate, disk housing and driven pulley” sub-assembly on the main support plate, and firmly tighten the 3 screws Ref.⑥. When re-assembling, check that the flutes on the belt are in line with the grooves in the driven pulley.

Tighten the belt by turning the tension screw about 1/8 of a turn clockwise. The spring will then act on the tension screw and hold it against its stop.

⚠ Hold the multi-purpose spanner firmly.

⚠ Do not turn the multi-purpose spanner by forcing it.

In this position, the belt is tensioned ***automatically*** by the strength of the spring.

⓭ Firmly tighten the 2 screws Ref.⑪ and screw Ref.⑫ (multi-purpose spanner).

IMPORTANT: The tension must be adjusted on a new belt after two fuel fill-ups, by proceeding as follows.

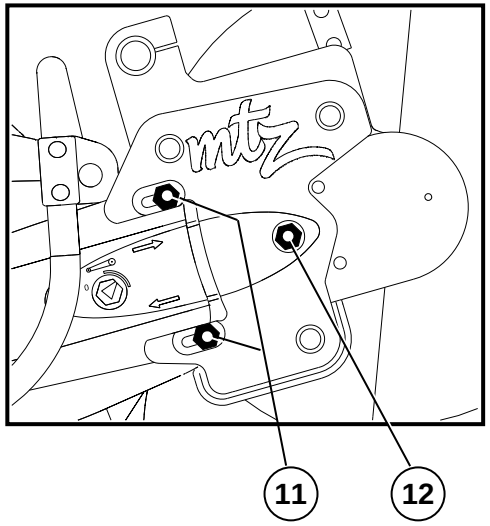
➡ <u>Adjusting belt tension</u>

The tension screw does not require to be moved for adjusting belt tension.

❶ Unscrew the 2 screws Ref.⑪ and screw Ref.⑫ (multi-purpose spanner)

❷ The belt is tensioned automatically by the force of the spring.

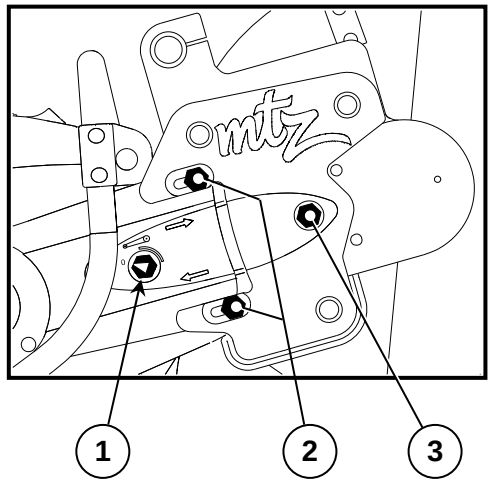
❸ Retighten the 2 screws Ref.⑪ and screw Ref.⑫.



5.1.8 Replacing the starter cord

❶ Turn tension screw Ref.① to position "**0**" (multi-purpose spanner).

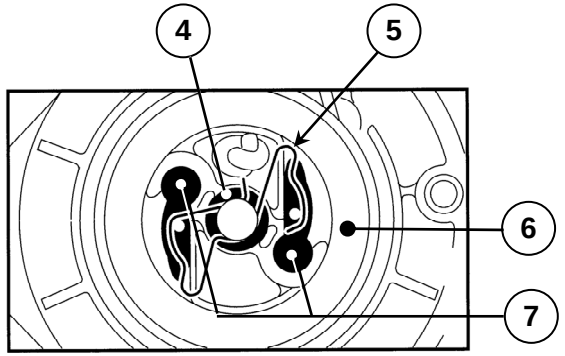
❷ Unscrew the 2 screws Ref.② and screw Ref.③ by five turns (multi-purpose spanner).



❸ Remove the starter cover as per instructions 7) and 8) described above.

❹ Remove the snap-ring Ref.⑤ (use a screwdriver or a suitable pair of pliers).

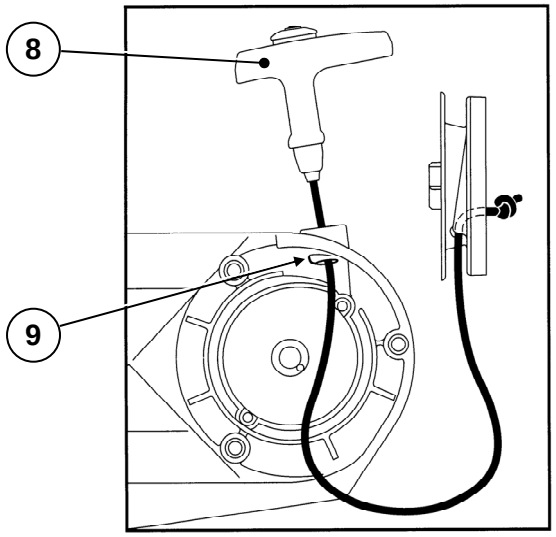
❺ Extract cable pulley Ref.⑥ with washer Ref.④ and the two pawls Ref.⑦.



❻ Force the end of the cord out of the hole in the starter handle Ref.⑧ using a screwdriver.

❼ Remove the rest of the cable from the pulley and the starter handle.

❽ Insert the new starter cord from the top through the starter handle and the cord guiding sleeve Ref.⑨.



❾ Push the cord through the pulley and hold it in position with a simple knot.

❿ Slide the pulley onto the shaft. Move it back and forth until the return spring eyelet clicks into position.

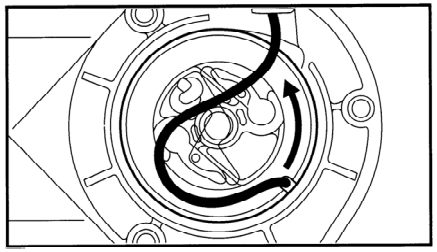
⓫ Put the pawls back in place on the pulley.

⓬ Slide the washer on the shaft.

⓭ Push the snap-ring back in position on the shaft over the pins on the pawls. The ring must be fitted so that it is facing anti-clockwise.

5.1.9 Tensioning the return spring.

❶ Form a loop with the unwound part of the starter cord and using the loop rotate the pulley by six turns in the direction shown by the arrow.



❷ Holding the pulley in position, pull the twisted cord outside the housing and let it untwist.

❸ Release the pulley and gently let go of the cord so that it can wind itself round the pulley.

❹ <u>Checking cord tension</u>:

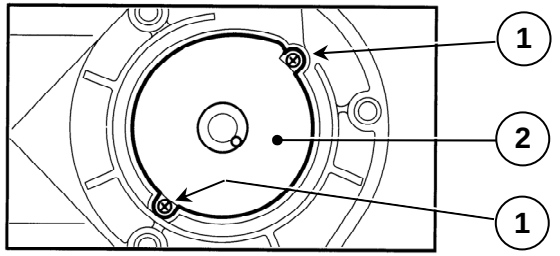
- If the starter unit handle drops to the side once it has been released, this means that *there is not enough tension* on the cord.
  - ➥ Tension the spring by putting an extra turn on the pulley.
- If another half-turn cannot be made on the pulley after the cord has been pulled right out, this means that *there is too much tension* on the cord.
  - ➥ Remove one turn of cord on the pulley.

❺ Put the cover back in place on the starter unit.

5.1.10 Replacing the return spring.

❶ Dismantle the starter cord pulley by following instructions n°1 to n°5 described in §5.1.8 "Replacing the starter cord".

❷ Remove the 2 screws Ref.① (multi-purpose spanner).



❸ Remove the spring box Ref.② and any broken pieces of spring.

❹ Put the new spring box in position bottom upwards.

❺ Re-tighten the two screws Ref.①.

❻ Refit the cable pulley, carrying out operations 10 to 13 described in §5.1.8 "Replacing the starter cord".

❼ Re-tension the return spring (See §5.1.9).

NB : if the spring has escaped from its box, put it back in place by coiling it anti-clockwise from the outside to the inside.

5.1.11 Filtration system

A dirty filtration system may lead to the following problems occurring :

- High fuel consumption
- Problems in starting the engine
- A drop in engine power
- Premature engine wear

❖ <u>At the end of every day's work</u> :

❶ Unscrew the locking screw on the filter-cover Ref.① (multi-purpose spanner).

❷ Remove the filter cover Ref.②.

❸ Clean inside and around the filter box, as well as the inside surface of the filter cover. Carry out this operation using compressed air, taking care not to aim the air directly at the main filter body.

❖ <u>The two filter elements must be replaced if they are clogged or damaged</u>.

To avoid any dirt particles entering the admission side of the engine, this operation MUST be carried out in a clean area such as a depot or a maintenance shop.

❶ Unscrew the four screws Ref.③ (multi-purpose spanner).

❷ Take out the filter box Ref.④.

❸ Remove the main filter Ref.⑤ from the filter box.

❹ Put the choke lever in position 

❺ Remove the extra filter Ref.⑥ from the base of filter Ref.⑦. Make sure no foreign bodies enter the engine through the inlet orifice.

❻ Clean the filter chamber.

❼ Re-assemble all the filter system elements in reverse order to the dismantling procedure.

Given the exceptional conditions under which a rail-cutting machine operates (great amounts of dust created and a high dynamic load), the quality of the filter elements used is of paramount importance.

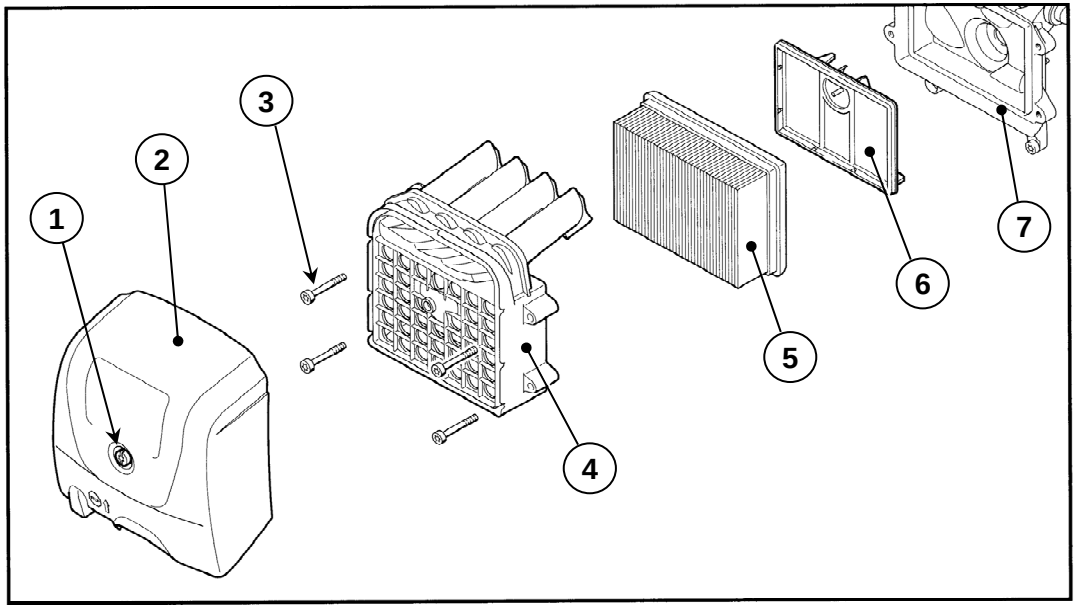
The air filters we recommend have been specially designed for use on abrasive disk cutters and, as such, meet special requirements concerning their production and quality of manufacture as well as the materials used :

- Extremely regular pore-size, fold forming and very solid filter paper.
- High precision filter cartridges, with high-pressure resistance capacity.

The filtration capacity and permeability to air of all the filter elements on this rail-cutting machine are perfectly matched.

For this reason, ONLY use recommended air filters (references provided in § 5.2.2). The high quality of these parts and carrying out the recommended servicing and maintenance operations will guarantee trouble-free use and a long service life for your engine.

IMPORTANT: Should other makes of filter be fitted, even if they appear to be the right size, optimal protection of the engine unit against incursion by impurities cannot be guaranteed. In the event of excessive wear on engine parts or deterioration of the engine unit resulting from the use of non-approved filters, no requests for repair under the terms of the guarantee may be accepted.



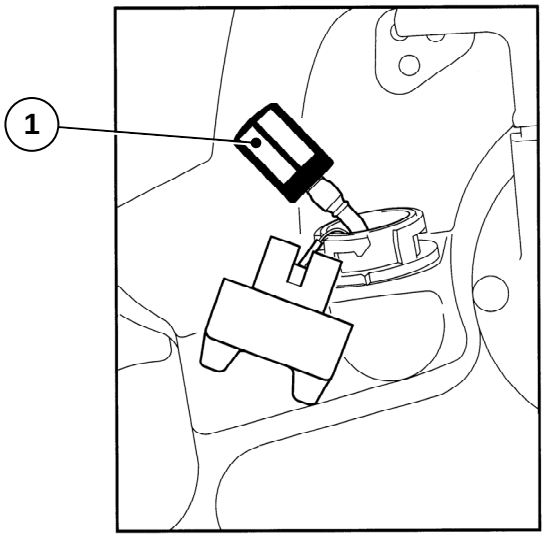
5.1.12 Suction strainer

The suction strainer is inside the fuel tank.

The suction strainer must replaced when clogged and at least once a year.

❶ Empty the fuel tank.

❷ Remove the suction strainer Ref.① from the tank using a hook and pull it off the end of the flexible tube.



❸ Insert a new suction strainer inside the tube.

❹ Put the suction strainer back in the tank.

To avoid the strainer from becoming clogged, protect the fuel tank from foreign bodies when filling.

5.1.13 Cooling system

A cooling system is included to maintain the cutting machine's operating temperature as low as possible to avoid damaging the cylinder or piston.

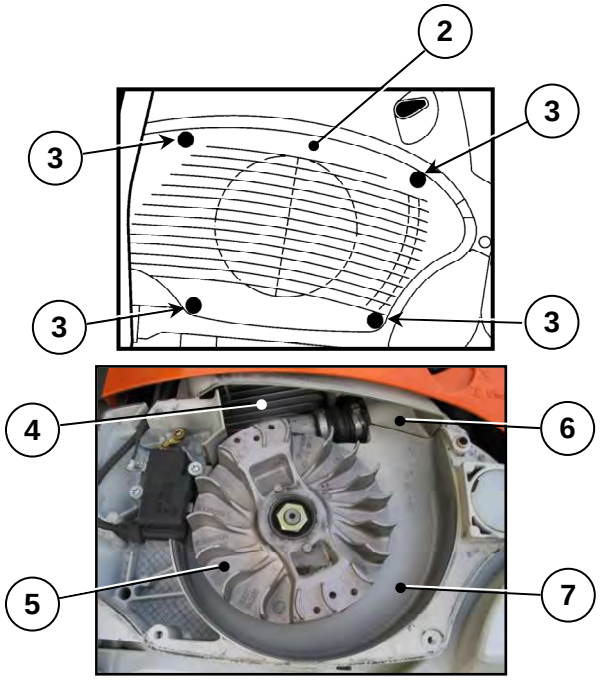
To maintain all its efficiency, the system must be cleaned with compressed air once a week.

❶ Unscrew the four screws Ref.③ (multi-purpose spanner).

❷ Remove the cover from the ventilator Ref.②.

❸ Clean the fins and the inside surface of the ventilator cover, the ventilator fins on the rotor Ref.⑤, the half-case Ref.⑦, the inside of the air directing housing Ref.⑥ and the cooling fins on the cylinder Ref.④.

❹ Re-tighten the four screws Ref.③.



5.1.14 Replacing the rubber stops

When the belt is replaced, it is advisable to check the condition of the two rubber stops Ref.⑧ on the support plate Ref.⑨.

<u>To replace a stop</u> :

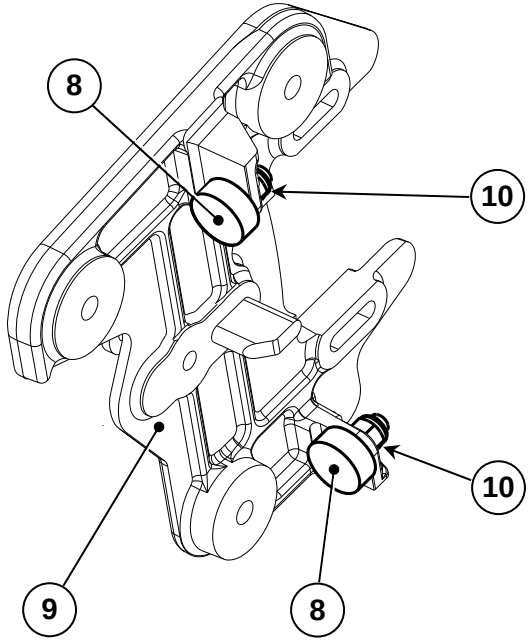
❶ Hold the stop in position with multi-grip pliers.

❷ Unscrew nut Ref.⑩ completely.

❸ Replace rubber stop Ref.⑧.

❹ Re-tighten lock Ref.⑩ and lock in position

NB: Both rubber stops must always be replaced at the same time.



5.1.15 Setting for perfect alignment when the machine is turned round

Symmetry of cut is factory set using a calibrated disc and without any paper shims.

Use of paper or cardboard shims by the customer may lead to an offset cut when the machine is turned round.

This fault can be corrected by adding or removing set-rings Ref.① (depending on the offset observed).

In the case shown in the figure below, set-rings with a thickness equal to e/2 must be added. If the situation is the reverse, then rings must be removed.

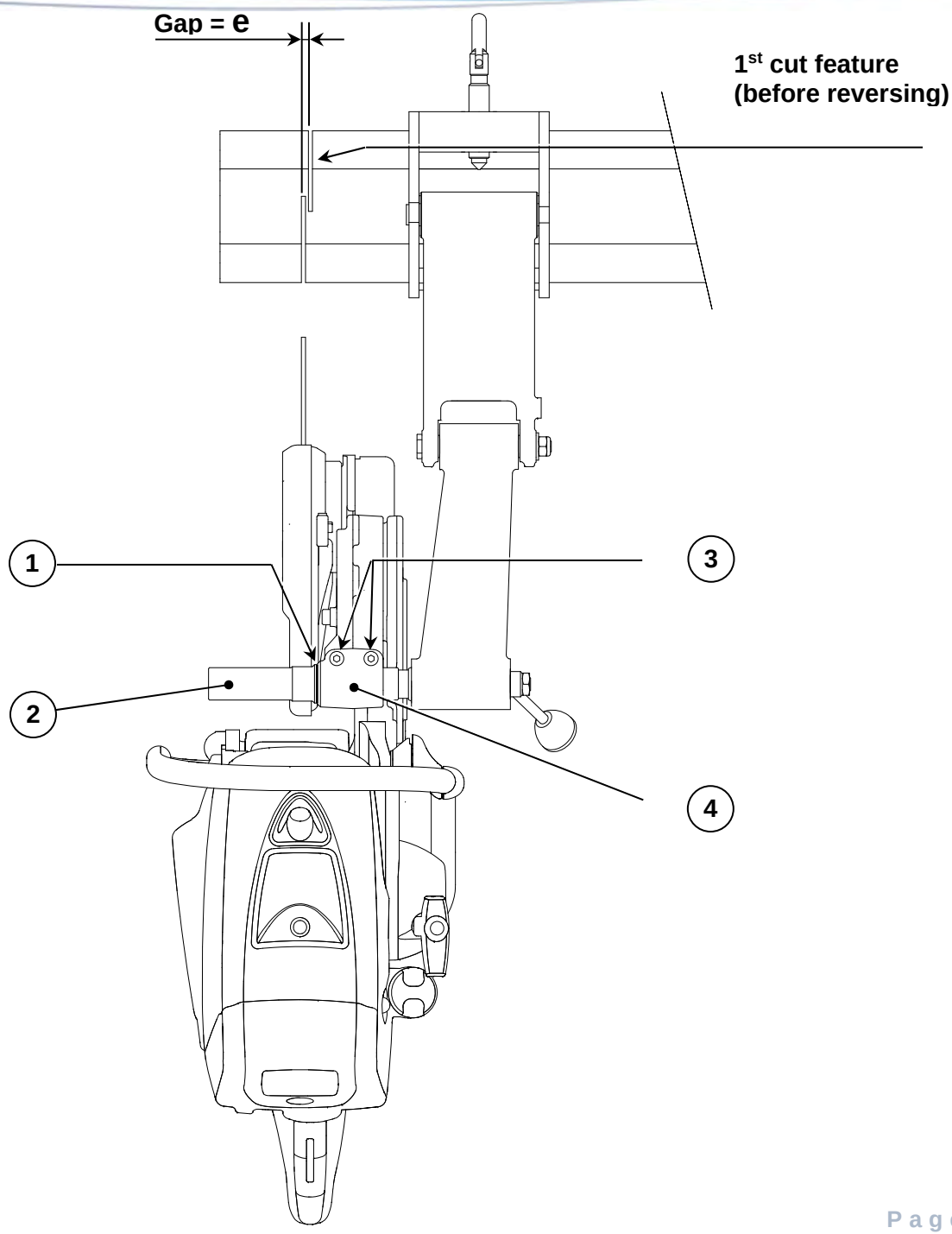
<u>To change the offset</u> :

❶ Unscrew the two screws Ref.③ and remove the turn-around sleeve Ref.② from the machine.

❷ Add or remove set-rings.

❸ Put the turn-around sleeve back in place, tapping it firmly into contact with the front bearing Ref.④ with a few blows with a wooden hammer (after slightly tightening the two screws Ref.③).

❹ Firmly tighten the two screws Ref.③ at a torque of 3 daN.m.



5.2 Maintenance

5.2.1 Preventive maintenance schedule

ELEMENTS	TYPE OF OPERATION	FREQUENCY									See :
		Before every use	After every use	Once a week	Once a month	Every 6 months	Once a year	In case of breakdown	In case of deterioration	When required	
Complete machine	Machine inspection	X									Chap.3 - § 4
	Clean the whole machine with a clean cloth or an airgun for removing any dirt that may have accumulated on the machine		X								Chap.5 § 1.2
	Replace damaged items								X		
Control elements	Check operation	X									Chap.3 § 4
Accessible nuts and screws (except for setting screws)	Re-tighten									X	Chap.5 § 1.3
Carburettor	Check that the disc does not rotate at idling speed	X									Chap.5 § 1.4
	Adjust									X	
Silencer spark-arresting grid (if fitted)	Clean			X							Chap.5 § 1.5
	Replace									X	
Sparkplug	Adjust the gap between the electrodes							X			Chap.5 § 1.6
	Replace					X			X	X	
Belt	Check the condition				X						Chap.5 § 1.7
	Adjust tension				X						
	Replace						X		X	X	

ELEMENTS	TYPE OF OPERATION	FREQUENCY										See :
		Before every use	After every use	Once a week	Once a month	Every 3 months	Every 6 months	Once a year	In case of breakdown	In case of deterioration	When required	
Starter cord	Replace									X		Chap.5 § 1.8
Return spring	Replace									X		Chap.5 § 1.10
Filtration system	Clean the filter box and surrounding parts		X									Chap.5 § 1.11
	Replace air filter					X				X	X	
	Replace additional air filter						X			X	X	
Suction strainer	Clean								X			Chap.5 § 1.12
	Replace							X		X	X	
Cooling system	Clean			X								Chap.5 § 1.13
Rubber stops	Replace									X		Chap.5 § 1.14
Fuel tank	Check for sealing	X										Chap.1 § 4.4
	Clean				X							
Abrasive disc (wheel)	Check	X										Chap.1 § 4.2
	Replace									X	X	Chap.3 § 1.2
Maximum disc speed with NO LOAD	Check			X								Chap.1 § 4.2
The machine must be periodically overhauled												

NB: These recommendations are not limitative. Permanent checks on the machine and well-organised preventive maintenance will always extend the machine's service life.

Indications given on the preventive maintenance schedule are given for machines used under normal conditions. In more difficult working conditions and longer working days the frequency of maintenance operations must be shortened accordingly.

5.2.2 List of normal wear parts

This is a list of normal wear parts on the machine together with the conditions under which they should be replaced.
Nevertheless, any part that is worn, damaged or missing must be changed or repaired immediately, whenever there is a risk in terms of safety.

N05563 :

Kit	Designation
KEMTZTS8001A	MTZ maintenance kit - 1 year - TS800 engine
KUMTZ-01	MTZ wear kit - 01

N05684 / N05612 / N06405 / N08025:

NAME	N°	REPLACEMENT CONDITIONS
Tightening plate	1	Deterioration or loss
Spark-plug	1	Spark-plug electrodes excessively worn
Main air-filter	1	Clogging
Additional air-filter	1	Clogging
Starter cord handle	1	Deterioration
Starter cord	1	Breakage
Multipurpose spanner	1	Deterioration or loss
Locking screw	1	Deterioration or loss
Belt	1	Wear or breakage
Rubber stop	2	Deterioration
Engine drive plate	1	Deterioration
Elastic stop	3	Deterioration
Lower protective housing	1	Deterioration
Housing clamp	1	Deterioration or loss
Disk housing	1	Deterioration
Belt housing	1	Deterioration
Rubber washer	2	The disk housing no longer stays in position
Pushbutton *	1	Failure or broken switch
Cap*	1	Wear or breakage
Spark-arrester grid **	1	Clogging

* Only on rail-cutting machines, Models 350AS or 400AS
** Only for specially equipped rail cutting machines (USA, CANADA and AUSTRALIA)