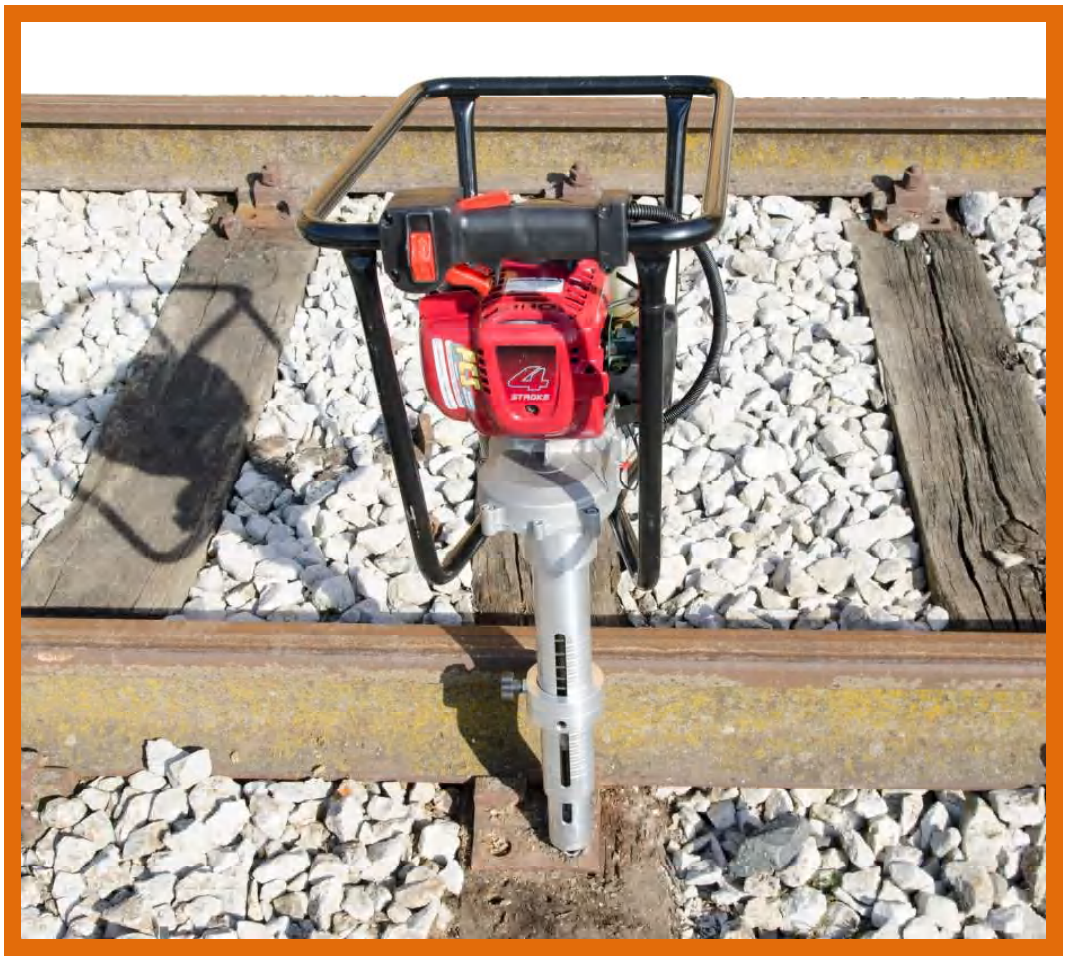
SLEEPERS DRILLING MACHINE FTP 950



CERT. N° IT05/0072

Dear Customer,

we would like to take this opportunity to thank you for choosing an ***FCS srl*** *product. We are pleased to give you this manual to permit you an optimal use of our product in order to obtain a better outcome of your work.*

We invite you to read carefully recommendation that follows and provide this manual to the personnel that will deal with the treatment and the maintenance of the machine.

FCS srl*. Is at your back and call for all the clarification you will need, both in the starter stage and in every moment of the use of the machine.*

In case of extraordinary and ordinary repairs, ***FCS srl*** *provides you, here and now, its personnel to give you all the services and spare parts you will need.*

This document contains all the necessary information for the set in motion, for the use according to safety guidelines and for the ordinary maintenance of the machine.
We suggest to carefully look up at it and to respect the instruction written here, and to set it in an accessible place for look up at it when necessary.
We suggest to contact ***FCS srl*** in case of spare parts, advices in choosing particular equipment and for all the eventualities.
We suggest the machine's owner to fill the lines below as they are essential data for request services and spare parts.

Machine's model: .....

Machine's serial number: .....

Engine serial number: .....

Year of construction: .....

Date of purchase:.....

Manual Code: ..... M-TFP 950-01-04

Revision n.: 07

Date of filling: 20/02/2018

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1. PREFACE

MANUAL'S AIM

This manual is an integral part of the machine and has the aim to give all the necessary information for:

- The correct raising awareness of the operators for safety issues.
- Machine's handling, packed and unpacked in safety conditions;
- Machine's correct installation;
- The depth knowledge of its work and of its limits;
- Its correct use in safety conditions;
- To do maintenance request interventions, in a correct and safety way;
- To break up the machine in safety conditions and according to guidelines for workers and environmental protection.

The responsible of the staff department, when this machine will be installed, according to guidelines, have to read carefully this manual and have to make the operators and the maintenance men read it for the parts that are up to them, to conductors and maintenance men in charge, for the parts that interest them.

The time you spend for this will be largely reward by the correct works of the machine and by its use in safety conditions.

This document presumes that, in the establishment in which the machine is designed for, are applied the safety and hygiene of the work guidelines.

The instructions, the pictures and the documents that are in this manual are of reserved technical nature, owner strictly possession and mustn't be reproduced in any way, both in full and in part.

The customer has also the responsibility to be sure that, if this document will be modified by the constructor, only the update versions are present in the point in which the machine is used.

NOTE: It is forbidden to reproduce o translate in full o in part this manual without the authorization written by FCS srl.

1.1 HOW TO READ THE MANUAL

This manual is divided in chapters, each one is referred to a specific operator (Install men, conductor and maintenance man), for which are be defined the necessary qualifications to operate on the machine in safety conditions.

The sequence of the chapters corresponds to the machine's life time logic.

To ease the immediate understanding of the text, we use terms, abbreviations and pictograms, which meaning is indicated at paragraph 1.6.

The manual has a cover, an index and a series of chapters (sections). In the initial page there are machine's and model's identification data, and eventually the serial number, the revision of the manual and a picture/design of the described machine, to ease the reader to identify the machine and its manual.

UNIT OF MEASUREMENT

The unit of measurement are those provided in the **I**nternational **S**ystem (**IS**).

1.2 RETENTION OF THE MANUAL

The manual has to be keep in safe and must be with the machine in each transfer of property that it would have during its life.

The retention have to be eased by handling with care, with clean hands and without putting it on dirty surface.

You mustn't pull out or modify any part. The manual must be file in an environment without damp and heat and near to the machines. The constructor, under user's request, can give further copies of the manual.

1.3 MANUAL UPDATE METHOD

The Constructor has the right to modify the project and improve it without communicate it to customers, and without update the manual already given to the user.

In addition, in case of modifications in the machine installed, according with the Constructor and that need the modification of one or more chapters of the manual, it will be up to the constructor to send manual's owner the chapters that have to be modified, with its new model of revision.

The user, according to the indications that are in the upgrade document, has to substitute in all the copies the old chapters, the initial page and the index with those of the new level of revision.

The constructor is responsible of the descriptions in the Italian version; some translations couldn't be verified at all, so if there is an inconsistency, you have to make reference to the Italian version and eventually call up our counting house that will do the appropriate modification.

1.4 ADRESSEE

This manual is for: the install man, the operator and the trained personnel for the machine's maintenance.

EXPOSED PERSON

Every person who is, completely or in part, in a dangerous area.

OPERATOR

The officer that has to install, operate, adjust, clean, repair and move a machine and has to do its maintenance.

TRAINED PERSONNEL – TRAINED OPERATOR

Who had attend a training course, a specialization course, etc., and are experienced in installation, operation and maintenance, reparation and machine's transport.

Adressee's qualification (see paragraph 1.6)

The machine is intended for industrial use, so not for a general use but for a professional one, so its use could be entrust to qualified figures, in particular:

- Be of age;
- Physical and psychically able to do work that are particularly technical difficult;
- Are adequately trained about the use and about machine's maintenance;
- Are been judge able by the employer to execute the entrusted task;
- Are able to understand and interpret the manual of the operator and the safety guidelines;
- Knowledge of the emergency procedures and their accomplishment;
- Are able to put in action the specific type of equipment;
- Are confident with the specific guidelines;

1.5 GLOSSARY AND PICTOGRAMS

In this paragraph are listed in non common terms or with a different from common meaning.

Here follows the abbreviations that are used and the meanings of the pictograms to indicate the qualification of the operator and the machine's status, its use allows to, rapidly and univocally, give necessary information for the correct use of the machine in safety conditions.

GLOSSARY (All. I p. 1.1.1 Dir. 2006/42/CE)

DANGER

A likely source of wound or a health damage;

DANGER AREA

Every area inside and/or near to a machine where the presence of a person is a risk for safety and health of this person;

EXPOSED PERSON

Every person that is totally or in part in a danger area;

OPERATOR

People entrust to install, operate, adjust, clean, repair and move the machine and do the maintenance;

RISK

Combination of probability and seriousness of a hurt or a damn for health that could arise in a dangerous situation;

SHELTER

Machine's element that is specifically used to guarantee the protection throughout a material crash barrier;

SECURITY DEVICE

Device (different from a shelter) that reduces the risk, alone or associated with a crash barrier;

EXPECTED USE

Machine's use according to information given in the manual;

INCORRECT USE RESONABLY EXPECTED

A machine's use, different from that given in the manual, that could be associated to human behaviour easily foreseeable.

OTHER DEFINITIONS

MAN-MACHINE INTERACTION

Any situation in which the operator interact with the machine in any operative stage in any moment of its life;

OPERATOR QUALIFICATION

Minimum level of ability that the operator have to own to execute the described operation;

NUMBER OF OPERATORS

Number of operators adequate to execute in an optimal way the described operation and results from a careful analysis made by the constructor, so a use made by a different number of operators could obstacle the expected result or could endanger personnel involved;

MACHINE'S STATUS

Machine's status involves operation modalities, for example automatic gear, maintained action control (jog), stop, etc., the conditions of Securities present in the machine as protections included, except protections, pressed emergency stop, type of thermal insulation etc.

RESIDUAL RISK:

Risk that continue inspite of are been adopted protection measures integrated in the project of the machine and inspite of the adopted complementary protection measures.

SECURITY COMPONENT PART

Component part:

- Designed for execute a security function;
- Its break down and/or malfunctioning, endanger people (ex: lifting equipment; fixed protector; mobile, adjustable, etc, electronic and electric device, optical pneumatic, hydraulic, that interstops a protector, etc.)

PICTOGRAMS

Descriptions anticipated by this symbol have: very important information/prescription, in particularly about safety.

The failed respect could carry:

- Dangers for operators safety;
- Lose of contractual warranty;
- Discharge of constructor's duty.

Its functions is to give relevance to particular information as:

DANGER

It refers to dangers dealing with the described activity. When there is "DANGER" we refer to activities that could occur while using the machine and could endanger people.

ATTENTION

It refers to dangers dealing with the described activity. When there is “ATTENTION” we refer to activities that could occur while using the machine and could endanger the machine.

WARNNG

We refer to integrations or suggestions for a correct use of the machine and to illustrate basic characteristics.

SAFETY’S PICTOGRAMS

- **Pictograms inside a triangle indicate DANGER .**
- **Pictograms inside a circle impose a PROHIBITION/OBLIGATION.**

Pictograms	Description
	Danger electric tension.
	Arms crushing.
	Hitching on.
	Dragging.
	Generic danger.
	No entry for not authorized personnel.

	Don’t remove security devices.
	Don’t clean, oil, grease, repair or adjust working parts by hand.
	Don’t execute works before remove tension.
	Obligatory protection gloves.
	Obligatory safety footwear.
	Obligatory safety helmet.

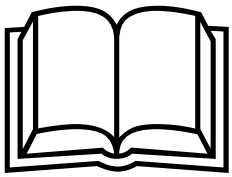
UNIFIED SYMBOLS ON THE MACHINE

Unified symbols that follows indicate danger operation or situations that could occur while using the machine.

ATTENTION

If the sticky tags (illustrated above) aren’t still readable, you have to substitute them with new ones.

This symbol indicates that you have to consult the manual.



This symbol indicates burn danger due to high temperature near thermic engine (muffler, manifold, etc.).

2 GENERAL INFORMATION

2.1 CONSTRUCTOR'S IDENTIFICATION DATA

CONSTRUCTOR:

FCS srl

REGISTERED OFFICE – PREFECTURE:

Via Enzo Ferrari, 30 - 45038 Polesella (RO) - Italy

AFTER-SALE/SPARE PARTS' SERVICE

Phone number: *+39 0425* 947707

Fax:+39 0425 30132

E-mail: fcsrail@fcsrail.com

2.2 IDENTIFICATION DATA AND MACHINE'S PLATE

Every machine is identified by a CE plate on which are written, in a permanent way, its data.

While communicating with the constructor or with the service department you have always to quote them.

Via E. Ferrari n° 30 45038 Polesella ROVIGO - ITALY

Phone: +39 0425 947707 Fax: +39 0425 30132

www.fcsrail.com

MOD:	Sleepers drilling machineFTP 950
S / N	……
N	/
kg	14
kw	…….

CE

2.3 DECLARATIONS

The machine is realized according to the main requirements envisaged by the EU directives, that could be applied when put on the market. **ALLEGATO IV Direttiva 2006/42/CE** The machine isn't included in the mentioned in ALL.IV of the Direttiva 2006/42/CE.

DECLARATION OF CONFORMITY CE

(All. IIA DIR. 2006/42/CE)

THE MANUFACTURER

The company FCS srl, located in Via Enzo Ferrari 30, cap 45038, Polesella (RO) Italy

I IS HEREBY CERTIFIED THAT THE MACHINE

Machine **Sleepers drilling machine** Model **FTP 950**

Serial Number **.....** Year of manufacture **.....**

Commercial Name **Sleepers drilling machine** Destination **Railway**

IS COMFORMABLE TO INSTRUCTIONS

Directive 2006/42/CE of European Parliament and of the Council of 17 May 2006 for the machines and amendment the directive 95/16/CE.

Directive 2014/30/UE of European Parliament and of the Council, about the reapproaching of the regulations of the members countries about to electromagnetic compatibility.

The machine is conformable at legislative decree 81/2008 and next modification of integrations.

.

AND AUTHORIZE

Mr. **Fabio Coltro**

Address **Via Enzo Ferrari, 30** Post Code **45038**

City **Polesella (RO)** Country **Italy**

TO KEEP THE TECHNICAL FILE

Polesella, 05/01/2012

Fabio Coltro

President

FAC SIMILE

2.4 APPLIED COPYRIGHT LAW

UNI EN ISO 12100-1	Machinery safety – Fundamental concepts, general principles of design – Part 1: basic terminology, methodology
UNI EN ISO 12100-2	Machinery safety - Fundamental concepts, general principles of design - Part 2: Technical principles

UNI EN ISO 14121-1	Machinery safety – risk evaluation- Parte1: Principles
UNI EN 894-1	Machinery safety – Ergonomic requirements for the design of information and command devices- General principles for the interaction of man with information and command devices.
UNI EN 953	Machinery safety - Shelters – General requirements for the design and the construction of fixed and mobile shelters
UNI EN ISO 13857	Machinery safety – Safety distance to prevent the reach of dangerous area with arms and legs

2.5 WARRANTY AND TECHNICAL SUPPORT

The materials provided by FCS srl enjoy of a 12-months warranty accrue from put on work, established by the bill given to the client.

Warranty application is regulated by FCS srl's terms of sale and use .

FCS srl reserves to repair or substitute parts we retain defective during warranty period. With the substitution od the retire defective part, FCS srl reserve free from any expenditure made by the Dealer or by the Client of the Dealer as presumed break down, present or future, ex. failed gain, conventional penalty, etc.

Ordinary and extraordinary maintenance have to happen according to manual's instructions. Warranty doesn't cover parts that are prone to normal wear and tear and declension. The equipment not build by FCS srl are prone to their constructor's warranty. Warranty will cease :

- If the Client doesn't obey to the payment contract;
- If the machine is used in a non conventional way instead of Sign's indications (machine's alteration, manoeuvre errors, overloaded, fuel use, hydraulic oil, improper lubricating or cooling water, non-observance of maintenance's rules also for non utilization periods, etc.);
- If the failure is due to the installation made by FCS srl's non authorized equipment or if the machine has been modified o repaired without FCS srl's authorization
- If are used non original spare parts or the extraordinary maintenance interventions and/or reparations are not made by FCS srl's non authorized personnel;

For all non included cases and for all kind of service we recommend to directly call FCS srl by recorded delivery or by fax, in case of phone arrangements.

FCS srl doesn't reserve any responsibility for delays or failed interventions

FCS srl is not responsible for breaks down or malfunctions due to technical interventions done on the machine by non authorized personnel.

2.6 RESPONSABILITA' RESPONSIBILITY

FCS srl is dispensed from any responsibility and obligations about any kind of accident to people and things, that could occur for::

- Failed observance of the instructions written in this manual concerning the conduction, the transport, the use and the maintenance of the machine

- Violent actions or incorrect manoeuvre during the transport, use and maintenance of the machine
- Made modifications to the machine without FCS srl authorization
- Events that doesn't deal with the normal and correct use of the machine

Anyway, if the user would attribute the accident to a machine's fault, would have to demonstrate that the occurred damage was a main and direct consequence of this "fault".

The responsibility of the formation, education, training and retraining of the personnel that uses the machine described in this manual, is exclusively depend on owner/user of the machine.

ATTENTIION

For the maintenance's reparations you have to use only original spare parts.. FCS srl declines all the responsibility for damages that could occur for non-fulfilment for what said before.

The machine is guaranteed according to contract stipulated during the sales.

Anyway, warranty decades if rules and instructions written in this manual haven't been obeyed.

3 SAFETY

3.1 GENERAL WORNING

The machine has been designed to drill rapidly and precise wooden rail sleepers, in the maximum safety for the operator.
The handle ergonomic rubber pads, designed to have low vibration to the arm, are the commands of the machine that provide accuracy and speed of work, all in maximum safety for the operator.

We observe rules, dispositions, prescriptions, ordinances, guidelines in force for this kind of machine.

The materials used and the equipment's parts, and the production processes, too, are warranty of quality and check, satisfy the maximum safety and reliability needs.

If you use the machine for the specified aims in this manual, if you manoeuvre it with the required carefulness, if you execute a careful maintenance and revisions professional made, you can expect high performances, long and continue life availability of the machine.

Experience allows FCS srl to have, for its products, high safety during the work. Nevertheless, these security conditions during the work can't be completely realized without the help of the operators and their assistant that had to always keep in mind general safety rules, here follows the main ones.

The machine could be used on rails with a maximum banking of 200 mm, and a maximum slope of 40%. If you lean to the ground this machine, it remains bridled avoiding run a way movements.

3.2 REQUIRED OPERATOR'S TRAINING

Every operators have to read entirely with maximum attention this manual and respect what is written.

The Employer is obliged to verify that the operator owns all the abilities required for the conduction of the machine and has carefully look over the manual and has to give to machine's user devices for personal protection (gloves, shoes, clothes, etc.) according to rules in force.

3.3 NOISE

The level of pressure and acoustic power that follows have been done with the machine's engine at the maximum speed.

Level of acoustic power continue under loan is 104 dB (A).

3.4 EXPECTED USE

The machine has been designed to drill rapidly and precise wooden rail sleepers, in the maximum safety for the operator.
The handle ergonomic rubber pads, designed to have low vibration to the arm, are the commands of the machine that provide accuracy and speed of work, all in maximum safety for the operator.

There must be carefully respected safety prescriptions passed from Railway Administrations for works on rails and near them. You have to start working only after the officials in charge for safety have given their acceptance.

You have quickly and carefully execute the guidelines conveyed by the Site Manager or the safety responsible. Always leave devices and material in a way that these ones can't collide with others railway vehicles. Don't use if there is a third rail.

3.5 SAFETY WORK

FCS srl doesn't answer for accidents, working's anomalies and/or damages during the machine's use, due to user's non observance of laws, prescriptions, dispositions and rules in force.

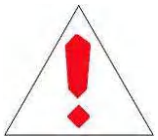
The use of the machine is allowed only at the trained personnel. Only authorized people can stay near the machine. You have always to stay by safety distances from mobile parts and check that during its work normal safety prescriptions are respected. You always have to assure that advertisement given to other people are understand and executed.

Dangers that couldn't be deleted from safety measures adopted by the constructor couldn't be caused by an incorrect use of the machine or by a failed respect, due to the user, of the rules described in this manual.

3.6 BASIC SAFETY INSTRUCTIONS

BASIC SAFETY INSTRUCTIONS FOR THE USE OF THE MACHINE

1. The operator and all the personnel that interact with the machine must be equipped of specific individual protection's devices (DPI).
2. Machine's manoeuvre and use are reserved only for in charge personnel.
3. Before starting the engine you have to assure that driving seats are in a neutral position.
4. Before starting the manoeuvres you have to assure that in the sphere of activity of the machine there aren't people. If you need, signal the start of the operation.
5. You constantly have to check the working area to identify dangerous points a san area where means or people pass.
6. Before execute maintenance operations, stop the engine
7. Execute fuelling only with with off engine
8. Don't use the machine in a room or close place to avoid inhale poison gases
9. Don't move the machine with on engine
10. Lift the machine with care and only throughout the special prone handles
11. Adequately light the working area



ATTENTION

It is impossible to list all the possible safety rules, so we entrust operator good sense, who, if he works with care and caution, guarantees the best safety against every kind of accident.

3.7 ENVIRONMENTAL CONDITIONS FOR WHICH THE MACHINE HAS BEEN DESIGNED FOR

The machine in standard configuration is designed to be used in these environmental conditions:

- Work temperature: + 25°C
- Max temperature: + 40°C
- Min temperature: – 20°C
- Relative dump: 20% - 80% (without moisture)

The machine in standard configuration has to work only in these environmental conditions.

ATTENTION

It is forbidden the use of the machine in standard execution in areas that are different from the listed above. The eventual use of the machine in non suitable places can cause the malfunctioning or the breaking of the machine's hydraulic components.

3.8 NOT ALLOWED USES

- Use the machine for aims that are different from those it is designed for
- Not handled machine, manoeuvre and started according to its safety/service rules
- Carelessness and/or absence of maintenance as prescribed or use of non original spare parts
- Use of the machine out of allow environmental conditions
- Use the machine with excluded or damaged safety devices
- Use the machine modified in any of its parts without a written FCS srl authorization
- Use of the machine on rails without respect the rules of the railway body owner of the railway
- Use of the machine on rails open traffic
- Use of the machine on track circuit
- Use the machine in presence of a third rails
- Use the machine in presence of inclination superior or equal to 40%
- Go away during its normal working

3.9 ALLOWED USES

- Use the machine built only with the compatible equipment, in specific working conditions.
- Use the machine only on non open traffic rails.

3.10 CARE AND MAINTENANCE

To execute maintenance and reparation works, you have to move the machine in a place authorized by the responsible of the yard

To maintain the machine clean, never use liquids easy flammable and corrosive products.

Stop the engine before every reparation, maintenance and fuelling work. After fuelling screw on the top of the tank. Avoid fuelling with hot engine. If necessary leave the maximum level at ¾ of its capacity.

If the fuel leaks don't start the engine but clean the area tainted by the fuel. Periodically verify that there aren't leaks of fuel. In case of any anomaly or bad functioning stop the machine and repair when the engine is cold.

Observe the normal fire rules and fuelling with off engine, always keeping in mind tank's capacity to avoid leaks of fuel, in particular with hot engine.

Execute check and maintenance work prescribed according to the engine's maintenance table, as well as all the little reparation and check of tightening of bolts.

For the eventual lifting of the machine you have to respect the indicated lifting points defined compared to the barycentre.. For the maintenance is fundamental the use of suitable tools.

ATTENTION

It is impossible to list all the possible safety rules, so we entrust operator good sense, who, if he works with care and caution, guarantees the best safety against every kind of accident

3.11 RESIDUAL RISK

Dangers that couldn't be deleted from safety measures adopted by the constructor couldn't be caused by an incorrect use of the machine or by a failed respect, due to the user, of the rules described in this manual.

The personnel in charge of the machine must be equipped of specific individual protection's devices.

DANGER

During every kind of work pay attention of high voltage line, if you are next to them could cause DEATH.

4 MACHINE'S DESCRIPTION

4.1 GENERAL

The machine is easily operated drill can quickly, accurately and with maximum safety to the operator, wooden railway sleepers.
It is equipped of:

- 4-stroke Honda engine with overhead valves and special lubrication to work at 360 °
- Speed reducer gears with high strength lubricated with special grease TK3 that guarantees excellent lubrication and long life
- Ergonomic handle with the imbedded security lock and throttle motor
- Security system with centrifugal clutch
- Housing for insertion lever able to rotate the tip in the event of locking
- Spindle with engagement / release of the tip
- Security tip with spring return and control drilling depth (optional)

4.2 TECHNICAL CHATACTERISTICS

ENGINE	FTP 950 P	FTP 950 M
Cycle	Honda GX50	Kawasaki
Cylinder number	4 strokes	2 strokes
bore x run	1	1
Capacity	43 x 33 mm	44 x 35 mm
Max power	47,9 cc	53,2 cc
Max torque	1,47Kw(2,0 Cv)@7000rpm	2.0 kW (2.68 hp) / 8500 rpm
Cooling	2,2 Nm@5000rpm	3.0 Nm (2.21 ft.lbs) / 5000 rpm
Air filter	Air cooling	Air cooling
Fuel	Dry	Dry
Fuel tank's capacity	Unleaded	Unleaded + 2% oil
Hour waste	0,63 litre	1,1 litre
Number of revolution at minimum	0,97 l/h @ 7000rpm	360 g/cv h
Cycle	2700rpm±250	2800 rpm±250
Ignition	Manual	Manual
Speed of bit rotation	950 rpm	950 rpm
attack points	Rapid	Rapid
Maximum diameter of the tip	22 mm	22 mm
Dimensions (length x width x Height)	760x430x530 mm	760x430x530 mm
Weight	14 kg	13 kg
Lwa	104dBa	106 dBa

5 INSTALLATION

5.1 TRANSPORT AND MOVEMENT

The lifting of the machine can be done only by using highlighted devices' grips that are on the machine and identified by special pictograms.

ATTENTION

Lifting operations have to be done at off engine.

We recommend to use expected personal safety devices as: gloves, safety footwear with steel tip and overalls.

DANGER

Bump and crushing danger. During the lifting and moving you have to operate carefully.

5.2 PUT ON USE

5.2.1 FIRST START

At the first start of the machine you have to execute checks that follow:

1. Verify that the machine has:
   - Declaration of conformity CE
   - Use and Maintenance's manual
   - Engine use and Maintenance's manual
2. General visual check of the machine
3. Check and verification of the presence of identification's plate and of safety labels
4. Check and verification of the level of:
   a. Fuel
   b. Engine oil
5. Check and verify of oil lacks from the engine
6. Check and verification of the level of:
   - Fuel
   - Engine oil
7. Verify electric cables's status (check the eventual presence of scratches, weakens, spelled wires or shealts,etc.)
8. Check the functionality of safety and emergency devices
9. Check commands and indicators' efficiency
10. Varnishing's check
11. Execute a functioning's test to idle in every expected operative conditions
12. After executing tests verify if there are lacks
13. Operate with the machine after an adequate warming-up period

ATTENTION

Before starting the machine the operator in charge has to read completely this manual

4.2.1 CHECKS AT THE BEGINNIG OF EVERY WORKING DAY

Before the start of every working day you have to check:

1. General check of the machine in particular verify if there are liquids' lacks (oil, fuel etc.)
2. Verify the electric cables (check the eventual presence of scratches, weakens, spelled wires or shealts,etc.)
3. Check commands and indicators' efficiency
4. Varnishing's check
5. Verify fuel level

If one or more described points above happen, don't use the machine and provide for re-establish the machine in efficiency conditions.

If there are any anomalies that the operator couldn't solve, contact FCS srl.

5.3 PROTECTION AND STORING

When it is expected that the machine has to remain idle for a quite long period, it is necessary to take precautions to preserve machine's functionality.

5.3.1 IN PREPARATION FOR A BRIEF INACTIVITY

1. Put the machine in a way that can guarantee the adequate safety

4.2.2 5.3.2 STORING AND PREPARATION FOR A LONG INACTIVITY

As above, also:

1. Remove the fuel and start the engine until the fuel inside is consumed
2. remove the plug and inject engine oil in the cylinder and then withdraw the ignition handle to move the cylinder and distribute the oil
3. Clean the air filter
4. Protect the muffler to avoid that foreign bodies could enter
5. Squirt protective oil on all the machine
6. If possible store the machine in a cover place, air, dry and non dusty, or protect the machine with a plastic sheet to avoid storm damages

4.2.3 RECLAMATION AFTER A LONG INACTIVY

1. Carefully clean the machine
2. Remove the protection on the muffler
3. Verify fuel's level, engine oil,
4. Start the engine and idle it for some minutes
5. Check the functionality of safety and emergency devices
6. Check commands and indicators' efficiency

5.4 MACHINE'S LIFTING

Lift the machine by hands at off engine and with the muffler away from the body after a adequate time of engine cooling.

If possible empty the tank and fix the tool before pack the machine away. Assure that the switch of the engine is off during the transport.

ATTENTION

Lifting operations must be done at off engine.

We recommend to use expected personal safety devices as: gloves, safety footwear with steel tip and overalls.

DANGER

Bump and crushing danger. During the lifting and moving you have to operate carefully.

6 MACHINE'S USE

6.1 MACHINE'S ASSEMBLING

Connecting the handlebar grip

Attach the motor-reducer unit to the handlebar with the proper screws 3.

Connect throttle cable:

in order to better perform the operations of assembly of the throttle cable, it is advisable to remove the headset from the air filter on the carburetor.

The throttle cable coming out of the throttle has a record on the final threaded nut screwed onto the register and, leaving the register, the accelerator cable steel

Hold the throttle cable and insert the end, the pawl rotating the throttle valve of the carburetor.

Then place the register on the appropriate location of the threaded cylinder cover by passing the steel cable in its place.

Screw the log on the cover cylinder of the engine by adjusting with the nut so as to eliminate any play between the cable and sheath, in order to have a correct and progressive acceleration.

This registry is a safety and prevents accidental acceleration of the car if the cable were in error, at work, caught.

Now connect the cable eyelet terminal to an electrical ground of the three screws securing the cover to the gear handle and the grafted female connector with the male connector from the coil from the engine.

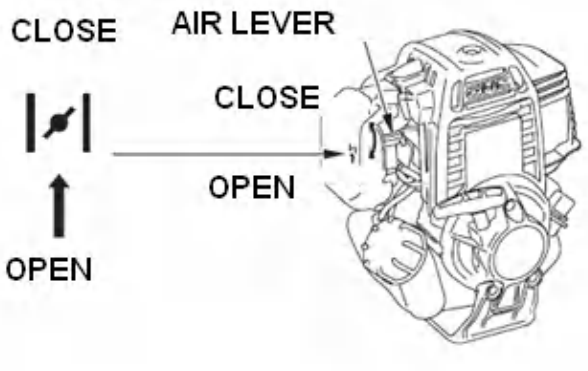
6.2 IGNITION OF THE ENGINE

To start the engine proceed as follows:

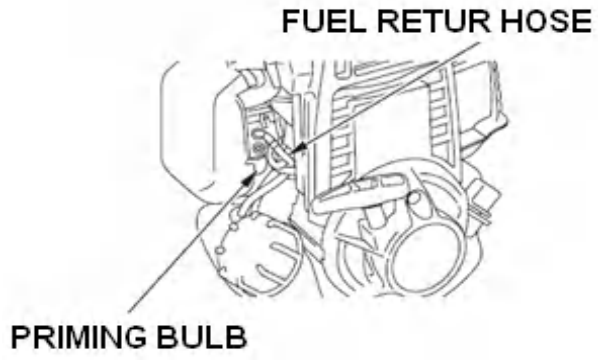
Place the machine on a stable support or on a consistent ground

To start a cold engine, move the choke lever to the CLOSED position.

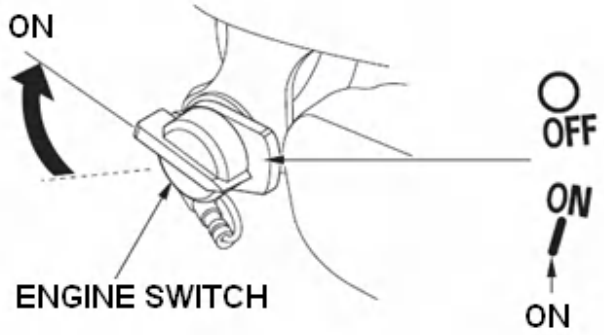
To restart a warm engine, leave the choke lever to the OPEN position.



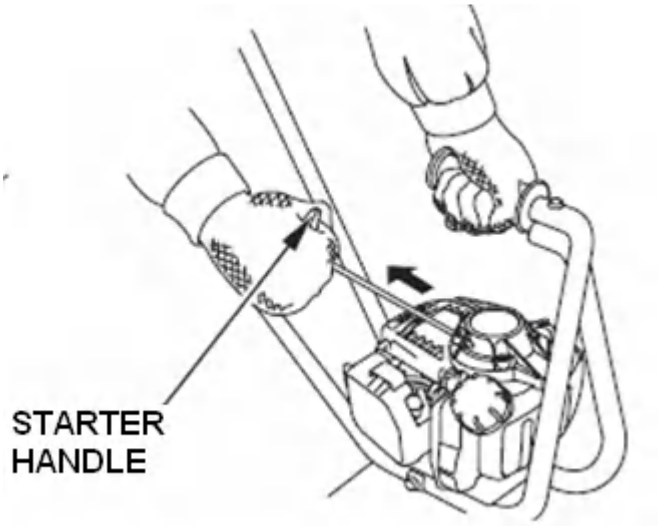
Press the priming bulb repeatedly until you can see fuel in the fuel return hose in transparent plastic.



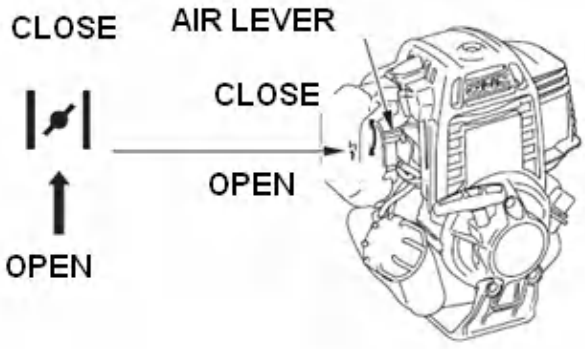
Turn the engine switch to the ON position on the equipment.



Pull the starter handle until you feel resistance, then pull hard. Carefully return the starter grip position.



If the control lever has been placed in the CLOSED position to start the engine, gradually move in the OPEN position As the engine warms



If the engine fails to ignite, repeat the procedure from the beginning.

WARNING

Do not let the starter grip to go pound on the engine. Bring it gently into position to prevent damage to the starter.

DANGER

Once the engine is running never abandon the machine and maintain it in a well fixed position.

6.3 RESTART AT WARM ENGINE

If the engine is operated at high ambient temperatures, then is turned off and allowed to stand for a short time, may not restart at the first tear.

If necessary, proceed as follows:

1. Turn the engine switch to the OFF position on the equipment.
2. Move the choke lever to the OPEN position.
3. Hold the control lever of the gas on the equipment on the position of speed MAX.
4. Pull the starter grip 3 to 5 times.

DANGER

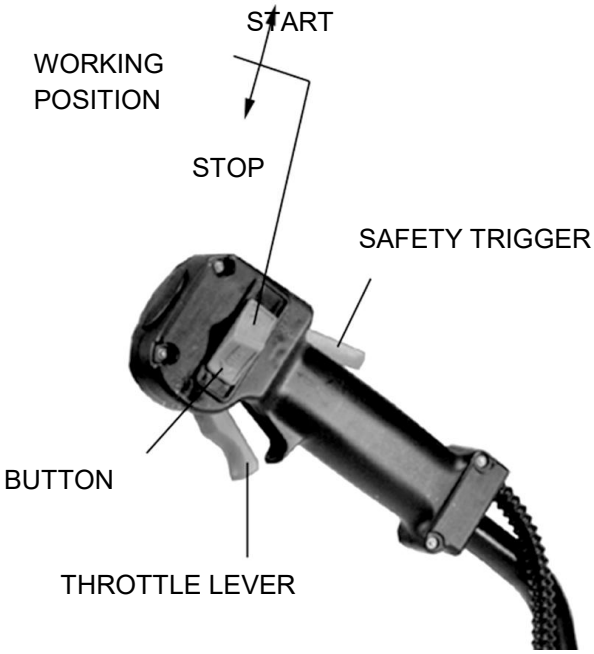
Turn the engine switch to the OFF position before performing the following procedure. This will prevent the engine from starting and speed to full speed when the throttle is on the MAX position. This could cause personal injury.

6.4 SETTING THE ENGINE SPEED

Place the control lever of the gas according to the desired speed for the motor.

The control lever of the gas of the engine is connected to the lever on the handle of the machine.

The functions of the control lever of the gas are described in the image.



6.5 STOP THE ENGINE

To stop the engine in an emergency, simply turn the engine switch to the OFF position on the equipment.

Under normal conditions, use the following procedure:

1. Move the control lever of the gas on the MIN position.
2. Turn the engine switch to the OFF position on the equipment.

6.6 HOW TO USE THE MACHINE

The drilling machine is used exclusively for railway sleepers of wood with holes having a maximum diameter of 22 mm.

Firm grasp on the handlebars and position itself in a position of equilibrium, very stable and secure on the feet.

Start the machine as described in the preceding paragraphs and let the engine idle for 2-3 minutes.

Speeding up a few times in vacuum (with the tip raised by the railway sleeper) but never to the maximum, making sure everything works properly.

Place the tip on the railway sleeper wood, then turn the gas control lever knob accelerating gradually. The tip will start to rotate, piercing the crossbar. When the hole has been made releasing the accelerator in order to bring the engine idle speed and pull the bit from the hole

DANGER

Use extreme caution throughout the drilling operation, to avoid any danger.

If the toe during the drilling operation meets nodules of wood or some particularly hard vein may suddenly stop the tip causing loss of control of the machine and the balance.

DANGER

A user who does not follow the instructions in the manual, is exposed to situations of potential danger.

ATTENTION

We recommend to use expected personal safety devices as: gloves, safety footwear with steel tip and overalls.

ATTENTION

FCS S.R.L. is not responsible for damages that could occur to people or things because of an incorrect use of the machine that doesn't follows the indications that are in the manual.

6.7 CHANGING THE TIP

To mount the tip, lift the knurled part of the mandrel and housing the tip foratraverse so that the same is blocked when it is lowered the knurled portion of the mandrel with the shot spring. The machine can be equipped with a protection system of the tip, in this case before mounting the tip necessary to remove the protection system by unscrewing. Once installed you can reassemble the tip of the toe protection system. The protection system tip is equipped with an internal spring that allows, As we proceed with the drilling, the protection system to pull away so as not to obstruct the operation and at the same time protect the operator against accidental contact with the tip foratraverse moving.

ATTENTION

The change of the tip should be at a standstill.

It is recommended to wear personal protective equipment provided such as gloves, safety shoes with steel toe cap and overalls.

6.8 LIGHTNING

Use the machine just in a well lighted place.

6.9 INSTRUCTION FOR EMERGENCY SITUATIONS

In case on emergency you can switch off the machine using the standard procedure, so by releasing the accelerator lever and pressing the switching off button.

ATTENTION

Don't use the emergency button to switch off the engine instead of the normal switching off procedure.

6.10 REFUELLINGS

Always consult the engine use manual to identify the correct fuel to use.

Engine tank have always to be filled throughout the socket indicated on the tank and indicated on the machine by the special label (see paragraph "UNIFIED SYMBOLS ON THE MACHINE").

After fuelling close the tap of the fuel's tank. Avoid fuelling with hot engine. If necessary leave the maximum level at ¾ of its capacity.

If the fuel leaks don't start the engine but clean the area tainted by the fuel. Periodically verify that there aren't leaks of fuel. In case of any anomaly or bad functioning stop the machine and repair when the engine is cold.

Observe the normal fire rules and fuelling with off engine, always keeping in mind tank's capacity to avoid leaks of fuel, in particular with hot engine.

DANGER

Petrol is extremely inflammable and explosive. A fire or an explosion could burn you and others.

Fill the tank in open space, at cold engine, and clean the accidental lacks..

Do not handle petrol near to free flames or sparks.

ATTENTION

The structure of this kind of machine needs a particular care during fuelling operation.

7 . SEARCH FOR BREAK DOWN

BREAK DOWN	POSSIBLE CAUSES	REMEDIATION
The engine won't start	– Lack of fuel	– Fill the fuel tank
	– Plug wet by excessive fuel	– Remove the plug – Pull the power retractable handle for 5 – 6 times – Install the plug – Place the choke lever open pull the power retractable handle
	– Fuel channel bent or disconnected	– Verify the integrity of the channel
	– Malfunction of carburetor	– Lack of air in the carburettor – Incorrect adjustment of the carburettor – Diagram of the carburettor wrong – carburettor's valve incorrectly adjusted
	– Switch in the stop position	– Turn the switch on
	– Spark not present	– Incorrect connection starting coilIn – Incorrect amount of air – Failed starter coil
	– Short circuit stop switch	– Repair or substitute
	– Dirty plug	– Clean or substitue the plug
	– Wrong distance candle	– Adjust the play correct at 0,6 mm
	– Faulty connection cable plug	– Verify the connection
	– failed coil injection	– Substitute
The engine stalls after start	– Lack of fuel	– Fill the fuel tank
	– Power handle in close position	– Open the power valve
	– Air enters in the feeding system	– Verify the connections
	– Malfunctioning of the carrburettor	– Lack of air in the carburettor – Incorrect adjustment of the carburettor – Diagram of the carburettor wrong – Carburettor's valve incorrectly adjusted
	– Plug doesn't work	– Substitute the plug
	– Failed coil injection	– Substituite
	– Wrong plug	– Substitute the plug
	– Dirty cylinder	– Clean the cylinder
	– Dirty cooling channel	– Clean the cooling channel
Motor shaft does not rotate	– Clutch consumed	– Substitute
Reduced output power	– Dirty air filter	– Clean the air filter
	– Clogged silencer or clogged cylinder flue pipe	– Clean
	– Loss of pressure in the cylinder	– Replace seal rings or the cylinder
	– Motor shaft consumed	– Substitute
	– Clutch consumed	– Substitute

8 MAINTENANCE

ATTENTION

Maintenance operations have to de executed only by FCS srl's Customer Service or by qualified personnel

8.1 PREFACE

In order to obtain best performances and to assure all the elements the maximum life, is necessary that use and maintenance's rules are carefully followed by the operators in charge. For this we suggest to Customenrs, in their interest, to carefully read these notes and to consult the manual every time they need suggestions to avoid eventual inconvenients.

As the machine normally works closet o water, sand, ground, etc, a rational lubrication is necessary, that assumes a vital importance for the long use of the machine and to contain its exercise's cost.

For further clarifications call up our customer care:

- All the maintenance's operations have to be executed at off engine.
- Ordinary maintenance includes all the necessary information for the good functioning and preservation of the machine.
- We suggest to let the same operator do maintenance's operations, who knows by heart how the machine works and has to know what it's here in the manual.
- Check of lubricant's levels must be done at cold machine and set on a plane place. Before checking levels, carefully clean areas to inspect to avoid foreign bodies enter. In case of re-establishment, use clean bins and assure that foreign bodies don't enter in the lubricant.
- Hydraulic oil, engine oil, grease, cooling liquid and any other liquid use for the good working of the machine, must be of good quality, without contaminations and brand-new.
- The substitution of engine oil must be done at hot machine to ease the lack.
- Some maintenance's interventions to the engine must be researched in the specific manual.
- During the disassembling and re-assembling you always have to use the extractor, keys and suitable equipments to avoid deteriorate parts.
- To unlock parts solidly adherent, use copper's hammer or wooden mallet.
- Separate clearly elements of various groups and screw back the nut in part on its pins or studs. Clean the pieces with a slice or rags, and then clean with de-grease putting off the residuals with compressed air.
- After gringing process or remarchining with abrasive bodies , carefully clean the parts or pass them with compressed air assuring the complete asportation of the abrasive dusty.
- During the re-assembling of various parts, assure that they are clean and then carefully lubricate.
- Pay the maximum attention on safety rings and to the cotter pins: if they have damages traces immediately substitute them.

Ordinary maintenance's operations indicated on the table that follows must have the same frequency of the machine's working hours indicated on the column at the right, under period.

8.2 MAINTENANCE TABLE

Nº	OPERATION	PERIOD
1	Checking the status of the tip	daily control
2	Check all threaded connections and make sure they are tight	daily control
3	Check fuel level and top up when you clean up any spilled fuel	daily control
4	Check the oil level and top up if necessary	daily control
5	Check the air filter	daily control
6	Check the starter and in particular the rope and the return spring	monthly Maintenance or every 10 hour
7	Check engine oil condition	Every 3 months or 25 working hours
8	Replacing fat reducer	Maintenance quarterly or every 25 hours
9	Clean the air filter	Maintenance quarterly or every 25 hours (if the machine is used to intervene more often in dusty conditions)
10	Replace the engine oil	Maintenance every six months or every 50 hours
11	Checking the spark plug	Annual maintenance or every 100 hours
12	Cleaning the spark arrester	Annual maintenance or every 100 hours
13	Clean the fuel filter	Annual maintenance or every 100 hours
14	Cleaning the Fuel Tank	Annual maintenance or every 100 hours

Nº	OPERATIONE	PERIOD
15	Check / adjust the idle speed (by Honda specialist workshop)	Annual maintenance or every 100 hours
16	Checking / adjusting valve clearances (by Honda specialist workshop)	Annual maintenance or every 100 hours
17	Clean the cooling fins of the engine	Annual maintenance or every 100 hours
18	Replacing the spark plug	Maintenance every 2 years or 300 hours
19	Check / replace fuel lines (by Honda specialist workshop)	Maintenance every 2 years or 300 hours
20	Check / replace oil pipe (edited by Honda specialist workshop)	Maintenance every 2 years or 300 hours
21	Cleaning the combustion chamber (by Honda specialist workshop)	Maintenance every 2 years or 300 hours

DANGER

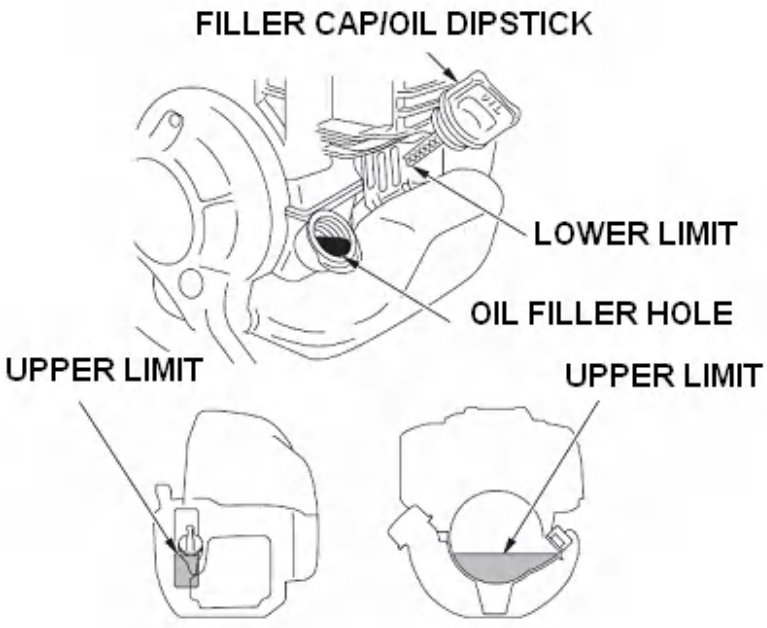
To start, use and perform the maintenance of the engine, always refer to the manual of the engine supplied.

8.3 ENGINE OIL CHECK

Check the engine oil level before each use or every 10 hours if the operation is continuous.

Check the engine oil level with the engine off and on a level surface.

- Remove the oil filler cap / dipstick and wipe the dipstick.
- Insert and remove the filler cap / dipstick without screwing into the filler neck, then remove it to check the oil level indicated on the dipstick.
- If the oil level is near or below the lower limit mark on the dipstick, add oil to the lower edge of the oil filler hole with the recommended oil. To avoid filling up too much or too little, make sure that during filling the engine is in a level position.
- Reinstall the oil filler cap / dipstick and tighten firmly.

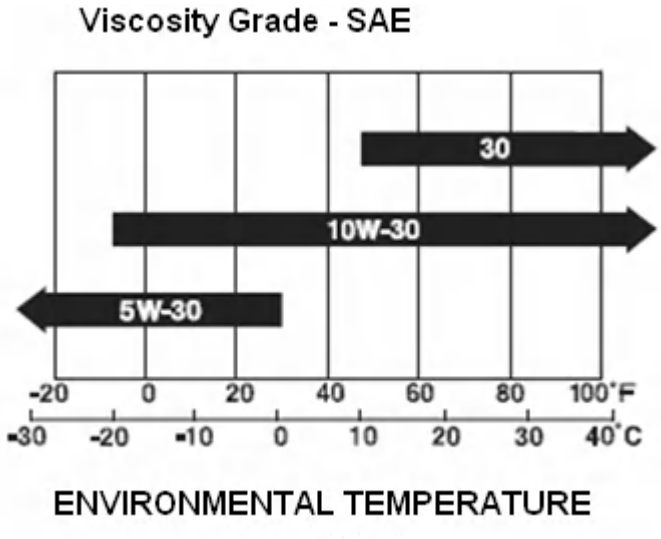


ATTENTION

Operating the engine with a low oil level can be damaged

8.3.1 RECOMMENDED OIL

Use 4-stroke engine oil that meets the minimum requirements for the API classification SJ, SL or equivalent. Always check the label on the container API oil to make sure that the letters SJ, SL or equivalent. In general, we recommend the use of SAE 10W-30. You can use other viscosity values shown in the table below when the local average temperature within the range indicated.



8.3.2 OIL CHANGE

Drain the oil when the engine is warm. Warm oil flows more quickly and completely.

- Check that the fuel filler cap is tightened.
- Place a suitable container under the engine to collect the used oil.

- Remove the oil filler cap / dipstick and drain the oil into a container by tilting the engine toward the oil filler neck.
- With the engine in a level position, fill to the lower edge of the oil filler hole with the recommended oil (see page).
- Reinstall the oil filler cap securely / dipstick. If oil is spilled, remove it with a cloth.

Dispose of used engine oil into the environment. Suggest bringing the oil in a container suitably sealed to a local center of recycling or to a service station. Do not litter by throwing it in the trash, pouring it on the ground or dumping into the sewage system.

8.4 AIR FILTER

A dirty air filter will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dusty areas, clean the filter more often than specified in the table maintenance.

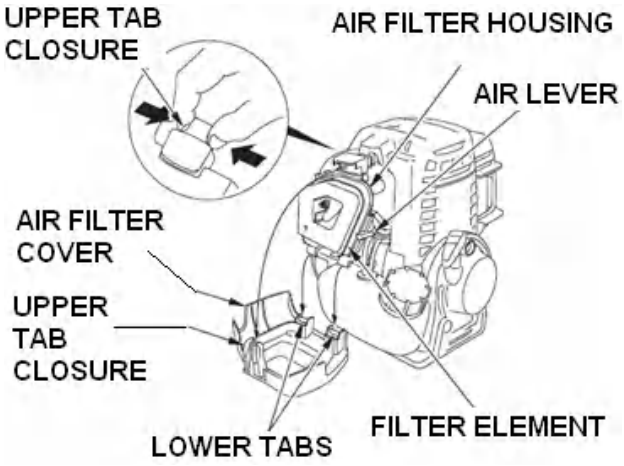
ATTENTION

Operating the engine without an air filter element, or with a filter element is damaged, it will allow dirt to enter the engine and accelerate wear of the engine itself. This type of damage is not covered by the limited warranty distributor.

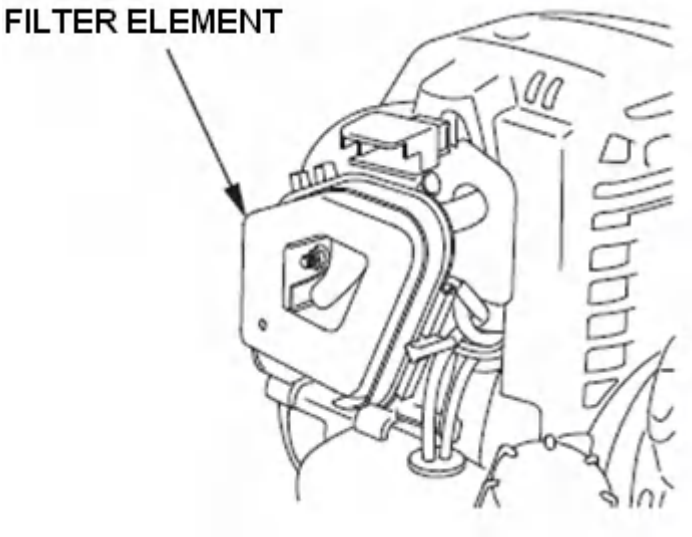
8.4.1 AIR FILTER CHECK

Press the locking tab on the top of the air filter cover and remove the cover. Inspect the filter element. The dirty filter elements are cleaned or replaced. The filter elements are always replaced damaged.

Reinstall the filter element and air cleaner cover.



8.4.2 CLEAN OF THE AIR FILTER



- Clean the filter element in warm soapy water, rinse and allow to dry thoroughly. Or clean in nonflammable solvent and allow to dry.
- Immerse the element in clean engine oil, then squeeze to expel excess oil. If too much oil is left in the foam, will be lit when the engine will smoke.
- Wipe dirt from the air cleaner body and cover with a damp cloth. Be careful to prevent dirt from entering the carburetor.
- Reinstall the filter element firmly and air filter cover.

8.5 PLUG

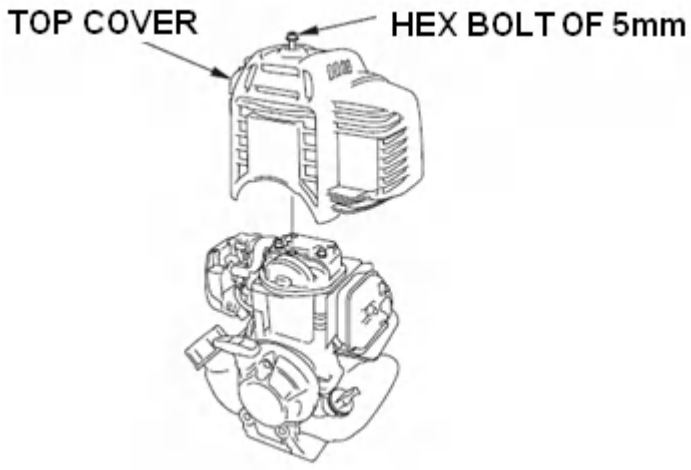
Suggested plug: CM5H (NGK) CMR5H (NGK)

The recommended spark plug has the correct heat range for normal engine operating temperatures.

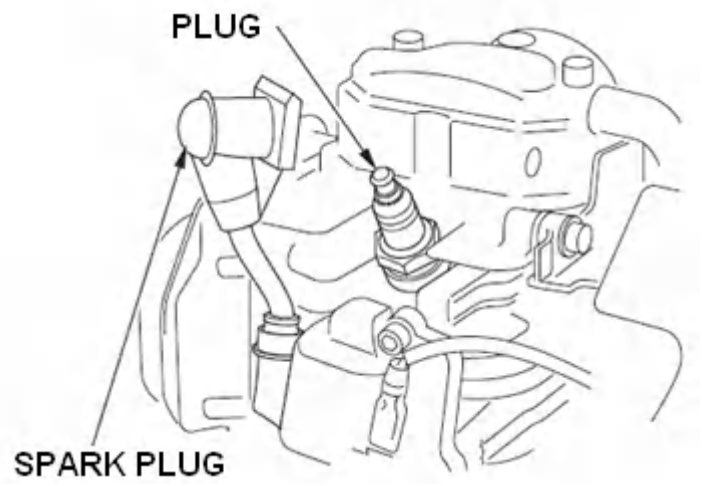
ATTENTION

A candle wrong can damage the engine.

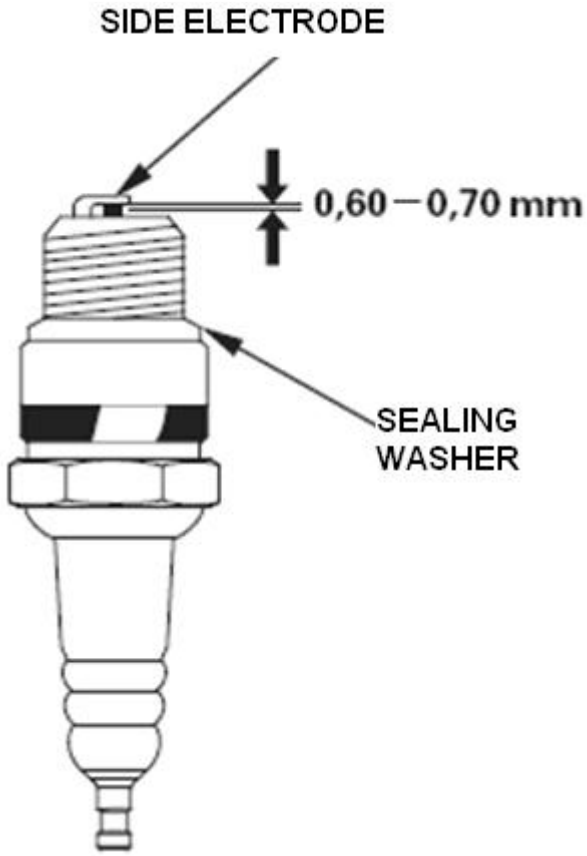
For good performance, the spark plug must have the correct distance between the electrodes and be free of deposits.



- Remove the top cover. Loosen the bolt with a 5 mm hex wrench, then remove the top cover



- Disconnect the spark plug cap and remove the dirt all around the area of the candle.
- Remove the spark plug with a spark plug wrench, 5/8 of an inch.



- Inspect the spark plug. Replace if damaged or very smeared, if the sealing washer is in poor condition or if the electrode is worn.
- Measure the distance between the electrodes of the spark plug with a wire feeler gauge. Adjust gap as necessary, carefully bending the side electrode. The distance between the electrodes should be: 0.6 to 0.7 mm
- Install the spark plug carefully, by hand, to avoid screwing it wrong.
- Once seated spark plug, tighten with a spark plug wrench, 5/8 inch to compress the sealing washer.
- When installing a new spark plug, tighten 1/2 turn once housed the candle to compress the washer.
- When reinstalling the original spark plug, tighten 1/8 1/4 of a turn once housed the candle to compress the washer.
- Attach the cap on the spark plug.
- Install the top cover and tighten the bolt with a 5 mm hex wrench.

DANGER

Do not operate the engine when it is free of the top cover.

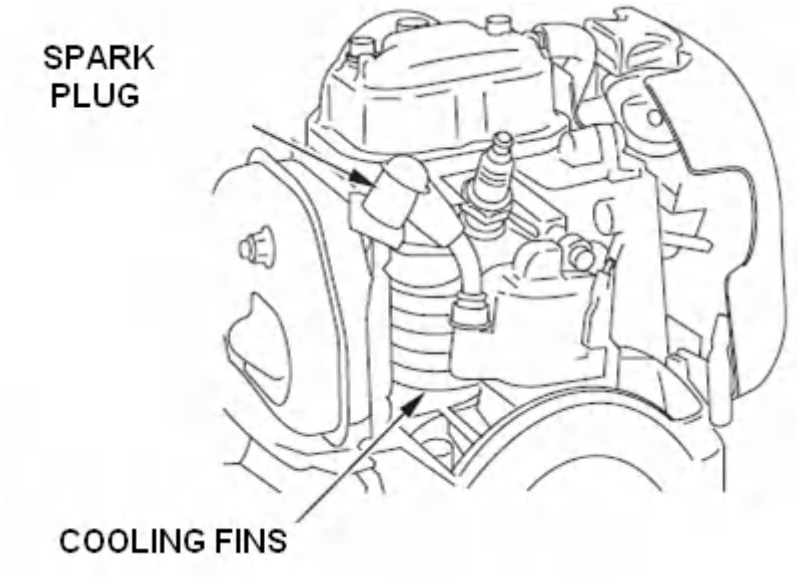
Do not pull the starter handle when the motor is self-winding without the top cover.

You could damage due to rotating parts or burns due to the muffler.

ATTENTION

A loose spark plug can overheat and damage the engine. If the candle is too tight can damage the threads in the cylinder head.

8.6 COOLING FINS



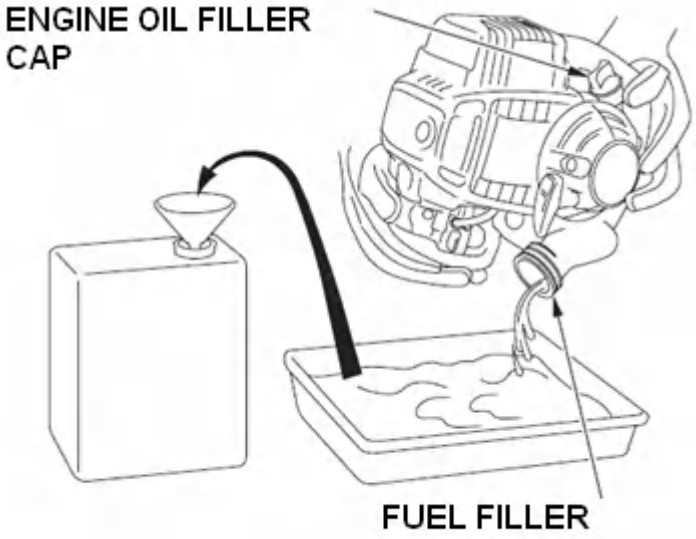
- Loosen the 5 mm hex, then remove the top cover.
- Disconnect the spark plug.
- Inspect cooling fins of the engine and remove any debris.
- Reconnect the spark plug.
- Install the top cover and tighten the hex bolt 5 mm.

8.7 FUEL FILTER AND FUEL TANK

DANGER

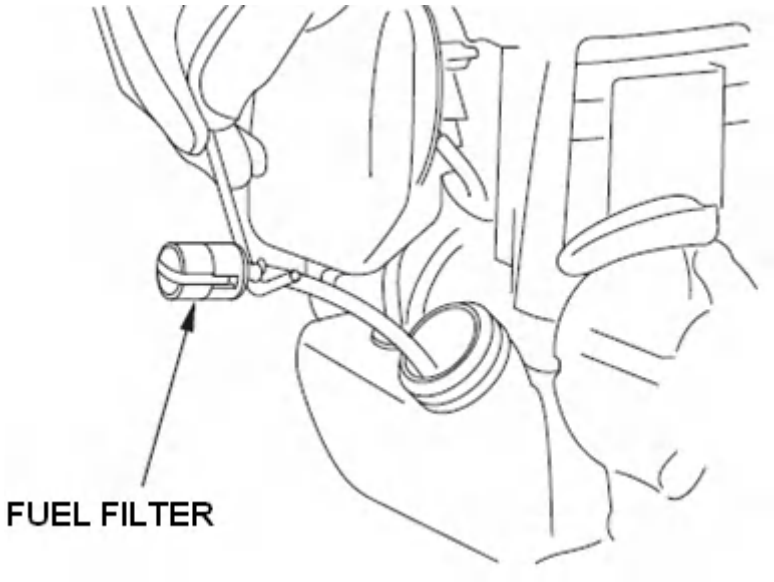
Gasoline is highly flammable and explosive, and when handling gasoline at risk of serious injury or burns.

- Turn off the engine and don't bring heat, sparks and flames.
- Handle fuel only outdoors.
- Wipe up spills immediately.



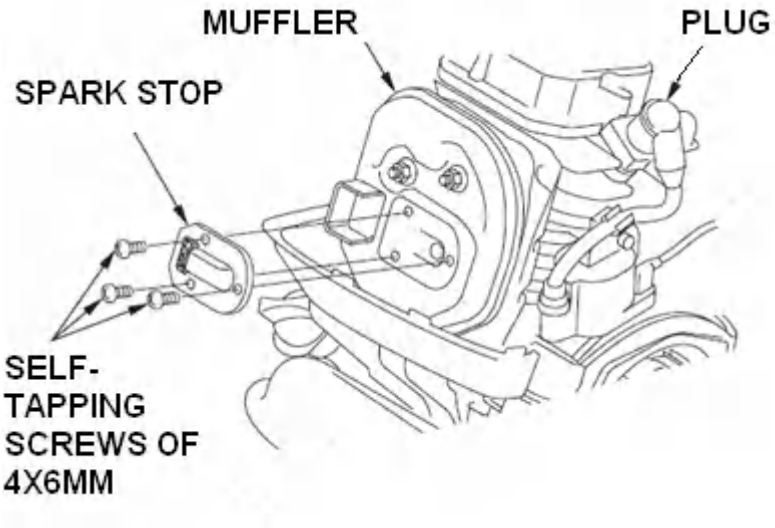
- Check the engine oil filler cap is tightened.
- Remove the fuel filler cap and drain the fuel into a container approved for gasoline by tilting the engine toward the fuel filler neck.

- Remove the fuel filter through the filler neck, hooking the black fuel hose with a piece of iron, such as a straightened paper clip in part.
- Remove the fuel filter through the filler neck, hooking the black fuel hose with a piece of iron, such as a straightened paper clip in part.
- Remove water and dirt in the fuel tank and rinse the inside with a non-flammable solvent or high flash point.
- Insert the fuel filter in fuel tank and tighten the fuel filler cap.

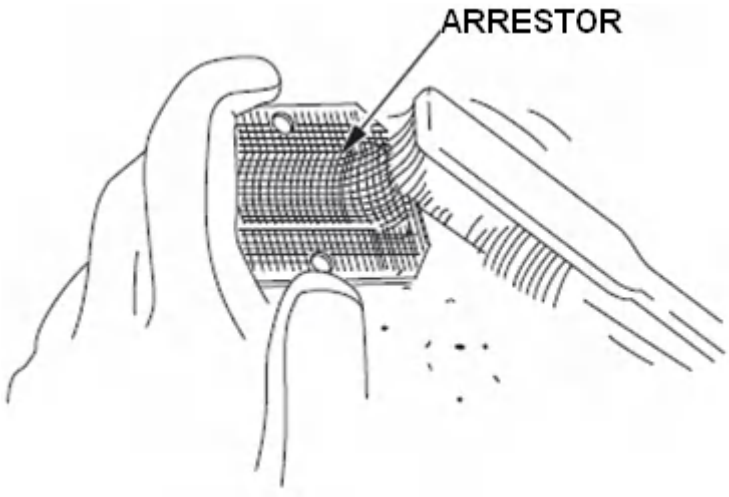


8.8 REMOVAL OF THE FIREWALL

- Loosen the 5 mm hex, then remove the top cover
- Remove the screws from 4x6 mm from the flame and remove the baffle from the muffler.



- Use a brush to remove carbon deposits from the spark arrester screen. Be careful not to damage the screen. The spark arrester must be free of gaps or holes. Replace the spark arrester is damaged.
- Install the drain filter and the spark arrester in the reverse order of removal. When you install the firewall, its output should be directed to the opposite side of the candle.
- Install the top cover and tighten the hex bolt from 5 mm



9 FIRE

In case of start of a fire, use a CO2 extinguisher (not supplied) according to guidelines in force.

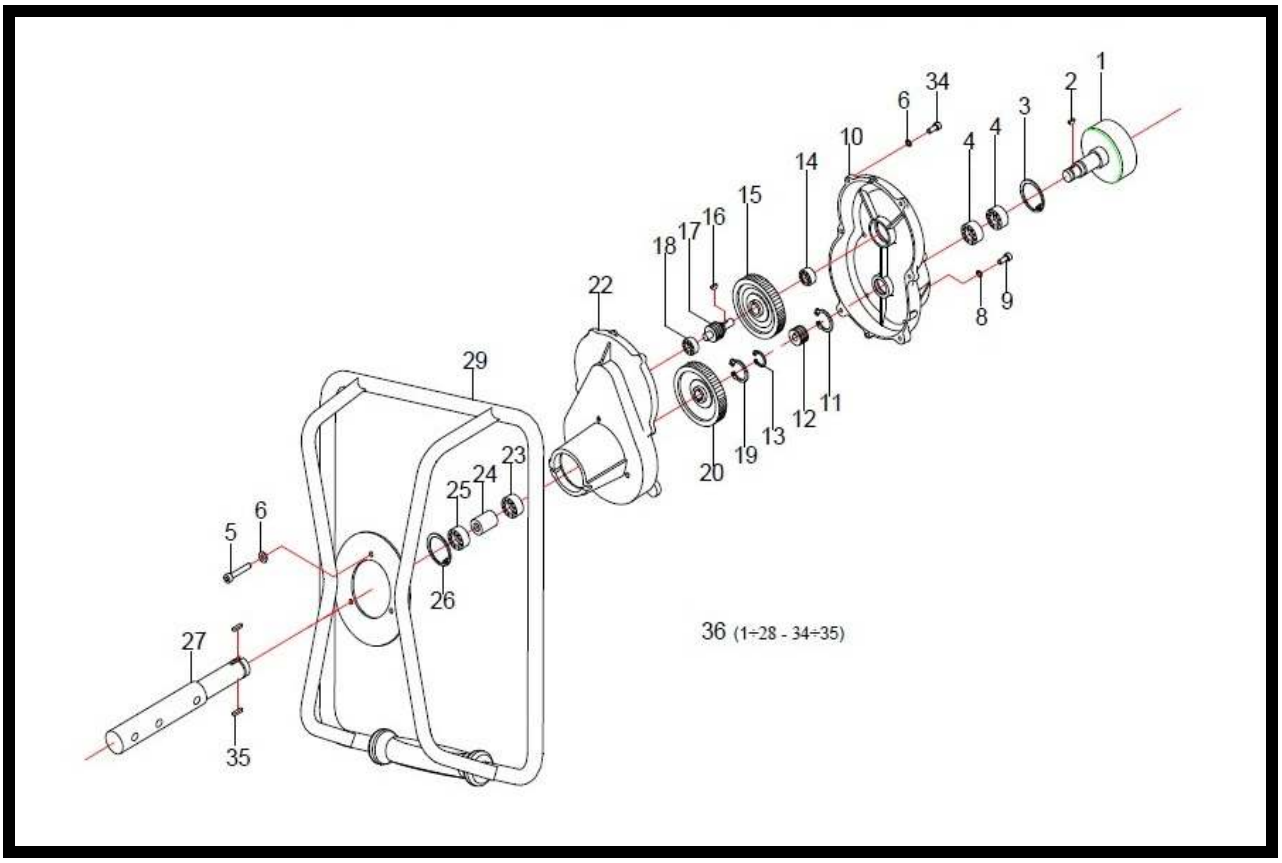
In case of machine's fire or if the machine is near a fire, give the alarm in the yard and call up the firemen.

10 BREAKING UP AND DISPOSAL

At the end of machine's life, remember that the owner of the mean must provide for the breaking up and for the machine's disposal according to guidelines in force and throughout authorized disposer for each component of the machine.

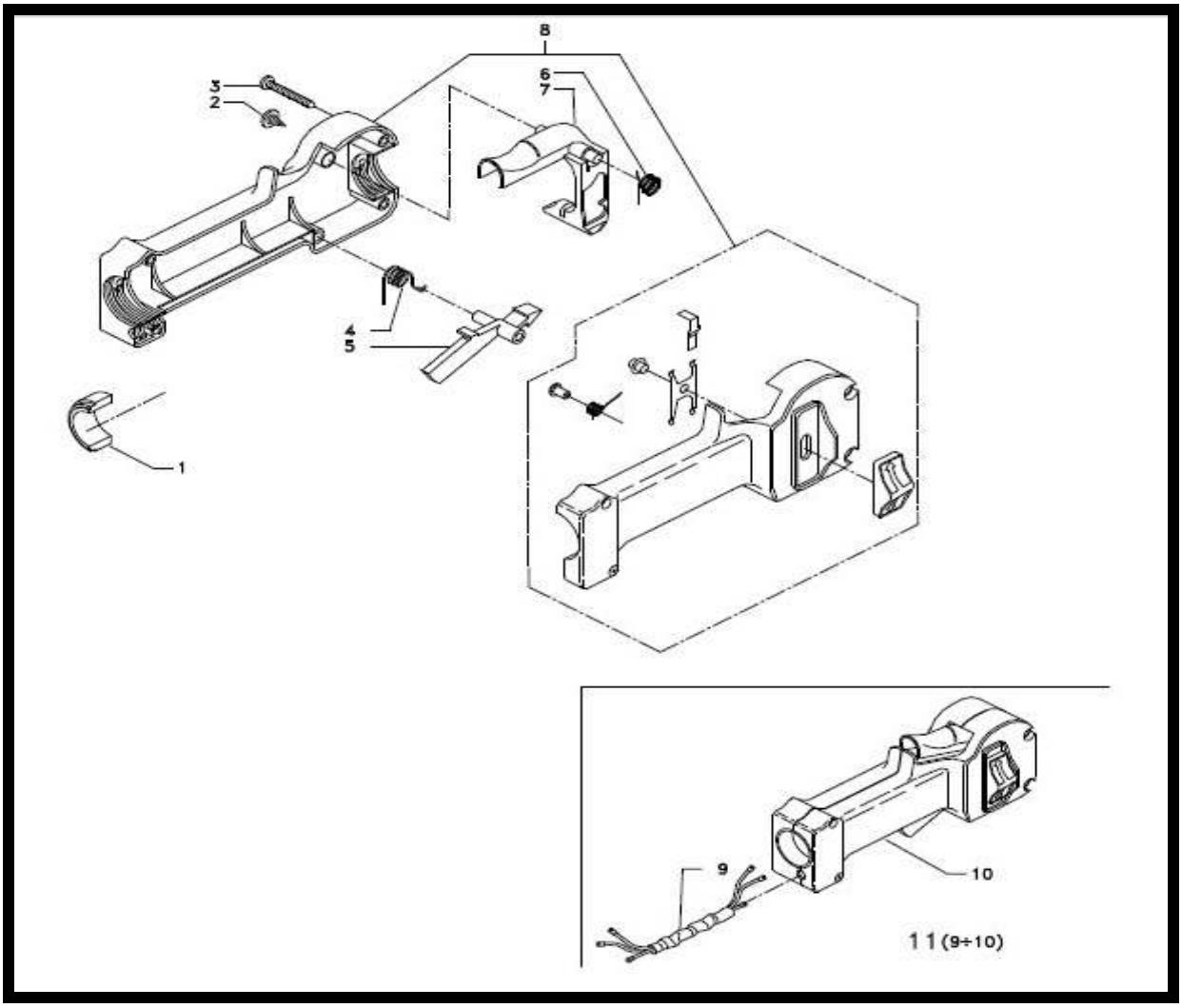
Remember that every time that you substitute oil, hose and every machine's detail prone to different disposal, you always need to make reference to rules in force and to authorized disposals

11 SPARE PARTS FTP 950



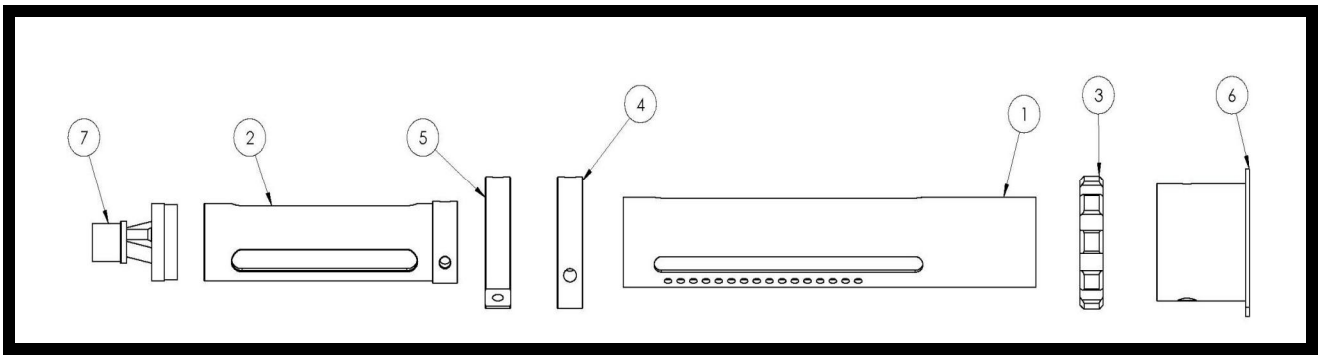
POSITION	COD. PART	QUANTITY	
		FTP 950 P	FTP 950 M
1	1578	1	1
2	1951	1	1
3	1968	1	1
4	1930	2	2
5	V0013016	3	3
6	R0013006	9	9
8	4011	4	4
9	V0013038	4	4
10	4012	1	1
11	S0013016	1	1
12	1210	1	1
13	S0013017	1	1
14	1970	1	1
15	1209	1	1
16	2502	1	1
17	2503	1	1
18	1971	1	1

POSITION	COD. PART	QUANTITY	
		FTP 950 P	FTP 950 M
19	S0013009	1	1
20	1929	1	1
22	4013	1	1
23	4014	1	1
24	4015	1	1
25	2468	1	1
26	S0013018	1	1
27	4016	1	1
29	3521	1	1
34	V0013006	6	6
35	4017	2	2



POSITION	COD. PART	QUANTITY	
		FTP 950 P	FTP 950 M
1	4074	4	4
2	V0013043	1	1
3	4075	4	4
4	4076	1	1
5	4077	1	1
6	4078	1	1
7	4079	1	1
8	4080	1	1
9	4081	NO	1
	4082	1	NO
10	4083	1	1
11	4092	NO	1
	4084	1	NO

POSITION	COD. PART	QUANTITY	
		FTP 950 P	FTP 950 M
37	1489	1	1
38	2793	2	2
39	1206	1	1
40	---	---	---



POSITION	COD. PART	QUANTITY'	
		FTP 950 P	FTP 950 M
1	5189	1	1
2	5187	1	1
3	5191	1	1
4	5192	1	1
5	5193	1	1
6	5190	1	1
7	5186	1	1