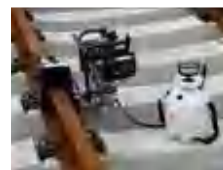


Rail Drilling Machine TFR 130 B



OPERATION AND MAINTENANCE MANUAL TFR 130 B

Dear Customer,

*we would like to take this opportunity to thank you for choosing an **Safetrack®** product. We are pleased to supply you this manual to allow you to obtain optimal use of our product..*

We invite you to read carefully the recommendations that follow and provide this manual to the personnel that will deal with the operation and the maintenance of the machine.

***Safetrack®** is at your beck and call for all the clarification you will need, both in the initial stage and during the use of the machine.*

*In case of extraordinary and ordinary repairs, **Safetrack®** provides its personnel to give you all the services and spare parts you will need.*

This document contains all the necessary information to start using the machine, according to safety guidelines and for maintenance of the machine.

We suggest to read it carefully and respect the instruction written here, and to store it in an accessible place for future reference.

We suggest to contact **Safetrack®** in case of spare parts, advice in choosing particular equipment and for all future eventualities.

We suggest the machine's owner to fill the lines below as they are essential data to request services and spare parts.

Machine's model:

Machine's serial number:

Engine serial number:

Year of construction:

Date of purchase:.....

Manual Code:M-TFR130B-00-00

Revision n.: 00

Document date:..... 10/09/2019

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1 PREFACE

1.1 MANUAL'S AIM

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

- To raise awareness of the operators on 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 safe way;
- To break up the machine in safe 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, having read carefully this manual and have to make the operators and the maintenance personnel read it for the parts that are up to them, to conductors and maintenance personnel in charge, for the parts that interest them.

The time spent doing this will be rewarded by the correct operation of the machine and by its safe use.

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 confidential and must not 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 author, only the update versions are present in the point in which the machine is used.

NOTE: It is forbidden to reproduce or translate in full or in part this manual without the authorization written by Safetrack®.

1.2 HOW TO READ THE MANUAL

This manual is divided in chapters, each one is referred to a specific operator (installation personnel, conductor and maintenance personnel), for which are be defined the necessary qualifications to operate on the machine in a safe manner.

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 International System (IS).

1.3 RETENTION OF THE MANUAL

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

The storage of the manual should be carried out with care, with clean hands and without putting it on a dirty surface.

You must not remove or modify any part. The manual must be filed in an environment without damp and heat and near to the machine. The author, under user's request, can give further copies of the manual.

1.4 MANUAL UPDATE METHOD

The author has the right to modify the project of the machine and improve it without communicating it to customers, and without updating the manual already given to the user.

In addition, in case of modifications in the machine installed, according with the author 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 manufacturer 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.

1.5 ADDRESSE

This manual is for the install personnel, 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 attended a training course, a specialisation course, etc., and are experienced in installation, operation and maintenance and machine's transport.

Addressee's qualification (see paragraph 1.6)

The machine is intended for industrial use, so its use could be entrusted to qualified personnel, in particular:

- Be of age;
- Physically and psychically able to do work that is particularly technical difficult;
- Adequately trained about the use and about machine's maintenance;
- Been judged able by the employer to execute the entrusted task;
- Able to understand and interpret the manual of the operator and the safety guidelines;
- Knowledge of the emergency procedures and their accomplishment;
- Able to put in action the specific type of equipment;
- Are confident with the specific guidelines;
- Have understood the operating procedures defined by the manufacturer of the machine.

1.6 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 personnel injury or injury to other workers;

DANGER AREA

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

EXPOSED PERSON

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

OPERATOR

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

RISK

Combination of probability and seriousness of a injury 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

A machine's use, different from that given in the manual.

OTHER DEFINITIONS

PERSONNEL - MACHINE INTERACTION

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

OPERATOR QUALIFICATION

Minimum level of ability that the operator has to have 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 author, 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 continues inspite of protection measures built into the machine.

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;
- ☐ Loss 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.



WARNING

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

SECURITY'S PICTOGRAMS

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

Safety sign	Meaning
	Warning sign “Hot surfaces”: indicates that the engine of the machine during operation and directly after operation can be hot and this can lead to skin burns.
	Mandatory sign “Wear hearing protection”: indicates that while working with the machine hearing protection must be worn by all persons near to the machine.
	Mandatory sign “Wear safety glasses”: indicates that while working the machine safety glasses must be worn by the operator.
	Mandatory sign “Wear protective shoes”: indicates that while working the machine protective shoes must be worn by the operator.
	Mandatory sign “Wear protective gloves”: indicates that while working the machine protective gloves must be worn by the operator.
	Mandatory sign “Wear protective clothing”: indicates that while working the machine protective clothing must be worn by the operator.



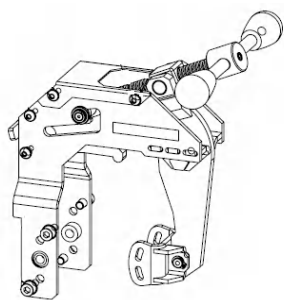
Mandatory sign "Read the operating manual": indicates that the operating manual must be read and fully understood before handling the machine.

SUPPLY

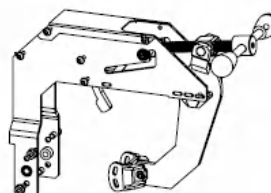
The following items are supplied from Safetrack® with the machine TFR 130 B:

- Rail drilling machine TFR 130 B;
- Wooden box for transporting and storing;
- Battery + battery charger;
- Harness;
- Short connecting cable;
- Long connecting cable;
- Coolant pin ejector;
- Rail profile templates;
- Coolant tube;
- Coolant tank;
- Clamping unit for Vignole or grooved rails (OPTIONAL);
- Drill bits in various sizes (OPTIONAL);
- Drill bit extension (OPTIONAL);
- Rail drilling templates (hole locators) - (OPTIONAL);
- Technical documentation:
 - o Operating and maintenance manual;
 - o Spare part list;
 - o Electric engine manual;
 - o Battery manual.

The machine is delivered assembled with the clamp according to the rail type chosen:



a) Clamp for Vignole rail



b) Clamp for Grooved rail

1.7 SAFETY DEVICES AND SYSTEMS

The method outlined to use the tool is thought to focus the attention on the safety of the worker.

The worker, to be able to drill, needs to do some actions as listed below:

1. Connect the battery to the rail drilling machine, using the connection cables;
2. Switch on the battery using the buttons on the back of the battery until you hear a “beep”;
3. Once switched on the battery, you can see the LEDs just under the “POWER” button turned on;
4. Now , the engine could be turned on by pressing the “DRILL” button.

When a button is illuminated means that the action described above is available by pressing it.

Pressing the “DRILL” button, the engine will start and pressing it again, the engine will stop in a short space of time.

The rail drilling machine has to be managed with both hands, one the handle and one to pull the feed-in lever to start drilling.

1.8 FIRE EXTINGUISHER

The operator must ensure that while working with the machine a functioning CO2 fire extinguisher is located close to the workplace.

1.9 CORRECT BEHAVIOUR IN THE EVENT OF AN EMERGENCY

If there is an emergency, the user should push the feed-in lever forward and turn the machine off through different ways, based on his decision how to proceed:

1. Push the “DRILL” button and disengage the clamp from the rail and go out from the work area. In this way, the rail drilling machine is still the “OPERATE” mode, that’s to say ready to drill;
2. Push the “POWER” button and disengage the clamp from the rail and go out from the work area. In this way, the rail drilling machine is in “OFF” state, and it nor ready to immediately start drilling;
3. In case of sudden arrival of a train, run away as fast as possible and don’t care about the machine, the connecting cable will be released whichever is your running away and how fast it is. Reach a safe area as quickly as possible.
4. In the event of injury to a person immediately initiate first-aid measures. In the event of a fire initiate the necessary fire fighting steps.

2 GENERAL INFORMATION

2.1 MANUFACTURES IDENTIFICATION DATA

MANUFACTURE:

Safetrack Baavhammar AB

REGISTERED OFFICE – ADDRESS:

Möllebergavägen 339-24, 245 93 Staffanstorp, Sweden

AFTER-SALE/SPARE PARTS' SERVICE

Phone number: +46 46 445300

E-mail: support@safetrack.se

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 manufacturer or with the service department you have always to quote them

MOD:	Rail drilling machine TFR 130 B	
S / N		
Max. capacity [kg]	/	
Weight [kg]	14	
Year of construction		

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. **ANNEX IV Directive 2006/42/CE** The machine isn't included in the mentioned in ALL.IV of the Directive 2006/42/CE.

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 ISO 13857	Machinery safety – Safety distance to prevent the reach of dangerous area with arms and legs
UNI EN 953	Machinery safety - Repairs – general requirements for design and construction of fix and mobile repairs
CEI EN 60204-1	Machinery safety – Machine electric equipment: Part I: General rules.

The observance of paragraphs concerning these harmonized standards allow remove or reduce risks as good as possible, during the normal functioning and during the adjustment and maintenance's operations, for all the machine's life.

The used components have been carefully chosen among those available on the market and the machine's constituent materials (and its accessories) are without risks for health and the integrity of persons. All the parts provided by third parties have the CE mark (when expected) and complied with the Directives. All the particulars have been strictly controlled according to qualitative standards prescribed by the rules in force.

The machine has also adopted necessary warning and protection measures for the residual risks.

2.5 WARRANTY AND TECHNICAL SUPPORT

The materials provided by Safetrack® enjoy of a 12-months warranty accrue from date of operation by the invoice given to the client.

Warranty application is regulated by Safetrack® terms of sale and use .

Safetrack® reserves to repair or substitute parts we retain defective during warranty period. With the substitution of the retire defective part, Safetrack® 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. The equipment not manufactured by Safetrack® are covered by their manufactures 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 Safetrack® non authorized equipment or if the machine has been modified or repaired without Safetrack® authorization
- If non original spare parts are used or the extraordinary maintenance interventions and/or repairs are not made by Safetrack® non authorized personnel;

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

Safetrack® doesn't reserve any responsibility for delays or failed interventions

Safetrack® is not responsible for break down or malfunctions due to technical interventions done on the machine by non authorized personnel.

2.6 RESPONSABILITA' RESPONSIBILITY

Safetrack® 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 condition, the transport, the use and the maintenance of the machine
- Violent actions or incorrect manoeuvre during the transport, use and maintenance of the machine
- Any modifications to the machine made without Safetrack® 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 dependent on owner/user of the machine.

ATTENTION



For the maintenance and repairs you have to use only original spare parts. Safetrack® 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.

Warranty is null if rules and instructions written in this manual haven't been obeyed.

3 SAFETY

3.1 GENERAL WARNINGS

The machine has been designed for drilling quickly and accurately various types of rails, both Vignole and Grooved, specially equipped with the appropriate rail profile templates. It is easily manoeuvrable and is equipped with an electric engine that drives through gears a tool holder spindle for the drilling the rails (drill bits).

The large coolant tank allows extended use of the cutter.

The fast fixing to the rail, the completely protected action of the tool and a balanced handle guarantee the minimum effort and maximum safety for the operator.

The laws, provisions, regulations, ordinances and directives in force for these machines have been observed.

The materials used and the machine components are warranted and quality checked to satisfy the maximum safety and reliability needs.

If you use the machine as specified in this manual, if you use it with the required care, if you execute a careful maintenance and revisions professional made, you can expect high performance and long life. Experience allows Safetrack® 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.

3.2 REQUIRED OPERATOR'S TRAINING

Every operator must read entirely with full attention this manual and respect what is written.

The Employer is obliged to verify that the operator owns all the abilities required for the operation of the machine and has carefully reviewed 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.

The medium level of acoustic pressure during the drilling operation is 79 dB (A).

3.4 EXPECTED USE

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 go ahead.

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 other railway vehicles. In case of use in the presence of the third rail, it is essential to make sure that the third rail is isolated otherwise do not work.

3.5 SAFETY WORK

Safetrack® 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 understood 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 placement and use are reserved only for personnel in charge.
3. Before starting the engine, make sure that the throttle of the engine is a little more than the minimum, and that the grindstone is in the fully raised position.
4. Before starting the movement you have to be assured 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 situation as an area where means or people pass.
6. Before performing maintenance operations, stop the engine.
7. Don't move the machine with on engine.
8. Lift the machine with care and only throughout the special prone handles.
9. 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: - 15°C
- Relative damp: 20% - 80% (without moisture)
- Storing temperature: <45°C
- Battery recharge temperature: 0°C to +45°C
- Battery protection grade: IP 54
- Maximum super-elevation from the sea level: 1500 m

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 or electric components.

3.8 PROHIBITED USES

- Use the machine for other purposes that are different from those it is designed for
- Not correctly or moved 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 allowable environmental conditions
- Use the machine with excluded or damaged safety devices
- Use the machine modified in any of its parts without a written Safetrack® 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 to traffic
- Use of the machine on track circuit
- Use the machine in presence of a third rails
- Leave the machine with the engine running
- Not under the influence of drugs or alcohol.

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 repairs, you have to move the machine in a place authorized by the team leader of the yard.

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

Stop the engine before every repair and maintenance work.

Execute check and maintenance work prescribed according to the maintenance table, as well as all the little repairs and check tightening of bolts.

The eventual lifting of the machine should be made only using the handles provided. 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, 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 manufacturer 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 required by law.



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 has been designed for the rapid and precise drilling of Vignola and Tram rails.

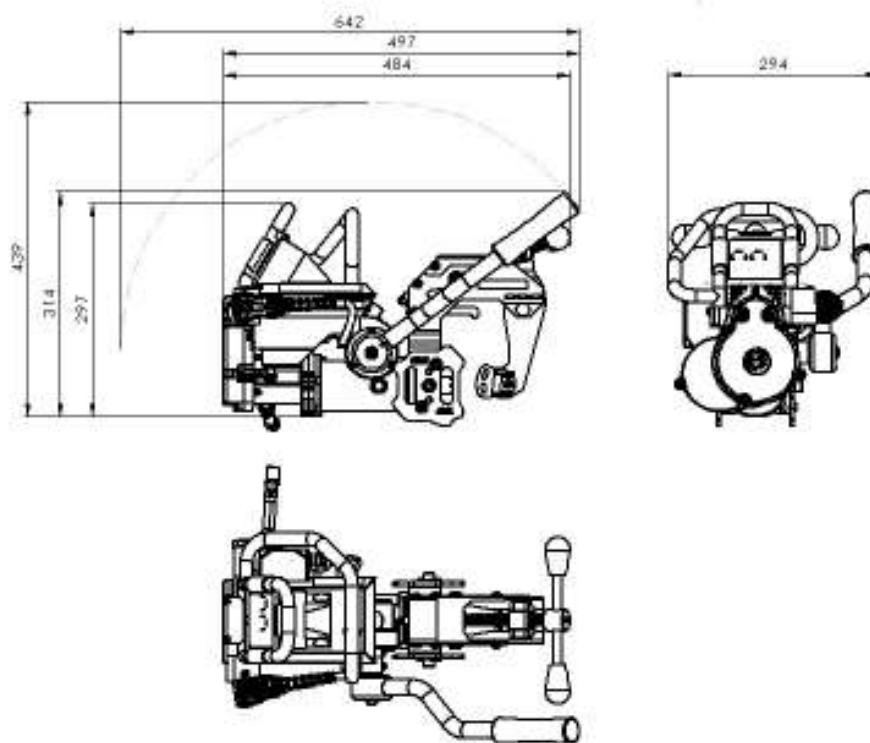
The clamp with a rapid rail approach system, an ergonomic handle to guarantee the minimum vibrations to the operator, the action of the fully protected tool and a single couple of rail profile templates for two different rail profiles, make this rail drilling machine unique in its kind.

4.2 TECHNICAL CHARACTERISTICS

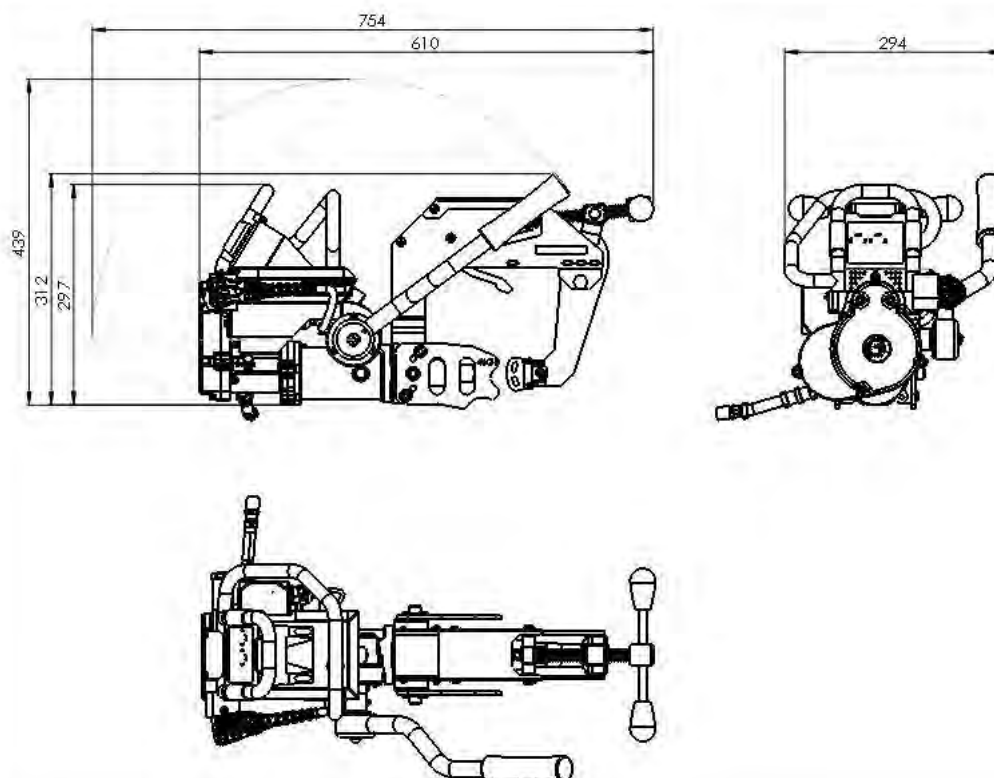
Technical data	Value for Vignole rails	Value For Grooved Rails
Dry weight in kg	14,0	15.6
Max weight ready to drill (32mm hole on 60E1 / 57R1 rail) [kg]	14.9	17.0
Lenght [mm]	498	610
Width [mm]	294	294
Height [mm]	314	314
Max height of the feed-in lever in [mm]	439	439
Engine type	Brushless	Brushless
Rated power [kW]	1.6	1.6
Engine speed (no load) [rpm]	6000	6000
Rotational speed drill bit [rpm]	285	285
Hole diameter [mm]	6–40	6–40
A-weighted LPA emission sound pressure level at the workplace [dBA]	79	79
A-weighted LWA sound power level at the workplace [dBA]	91	91
Vibration level [m/s ²]	0.48	0.48
Drilling stroke [mm]	48	48
Maximum thickness of the rail web [mm]	33	33
Number of holes per battery [1200Wh]	> 100 holes (32mm)	> 100 holes (32mm)

BATTERY SET	
BATTERY	Value
Weight of the battery [kg]	6,4
Height [mm]	350
Width [mm]	230
Length [mm]	110
Max voltage [V]	50
Max current [A]	40
Energy [Wh]	1200
Capacity [Ah]	24
Charging time @3,4A [h]	6
HARNESS	Value
Weight of the harness [kg]	1.8
CONNECTION CABLES	Value
Length of the short cable [m]	0.6
Length of the long cable [m]	1.7
Weight of the cables [kg]	0.3
BATTERY CHARGER	Value
Weight [kg]	1,1
Power [W]	175
Supply voltage [V]	230
Supply frequency [Hz]	50/60
Max output current [A]	3.75
Max output voltage [V]	50.2

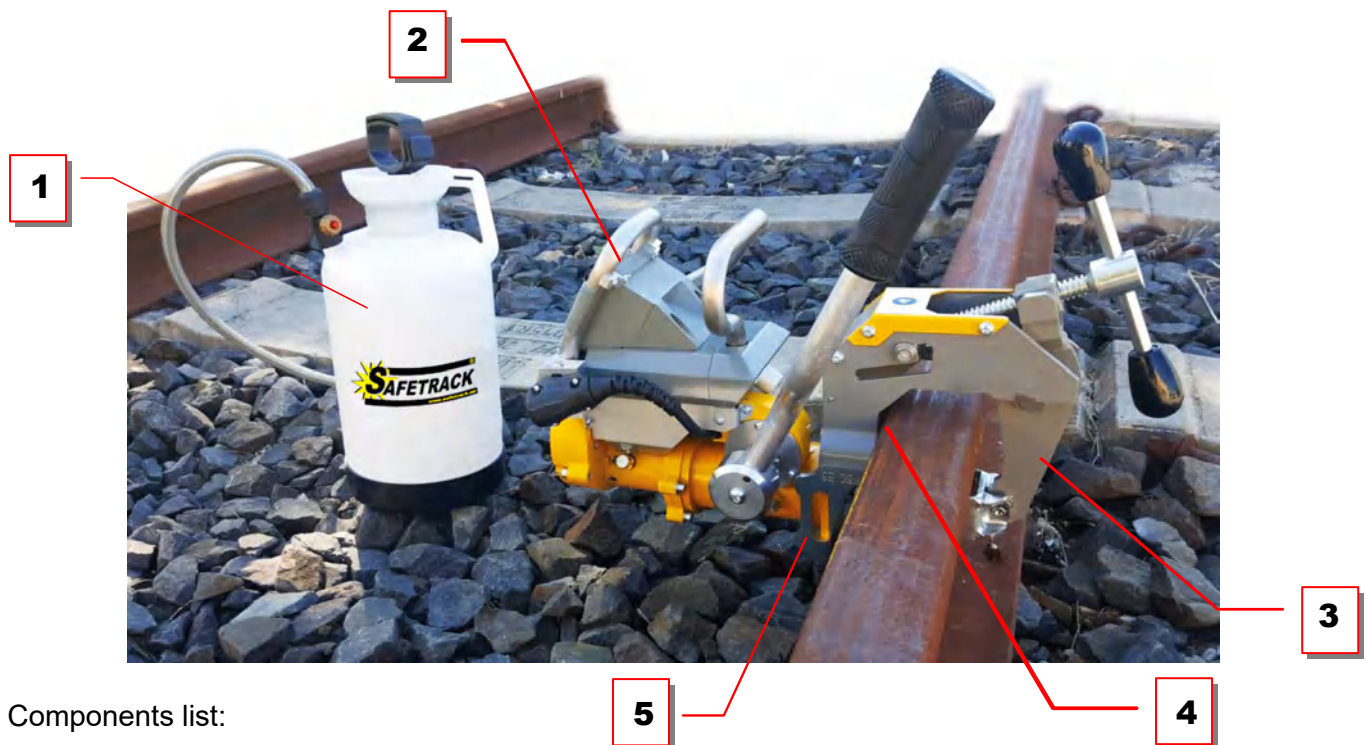
DIMENSIONS OF THE RAIL DRILLING MACHINE IN VIGNOLE CONFIGURATION



DIMENSIONS OF THE RAIL DRILLING MACHINE IN GROOVED RAIL CONFIGURATION



4.3 CONTROL AND ADJUSTMENT COMPONENTS



Components list:

- I. Cooling tank
- II. Rail drilling machine TFR130P
- III. Clamp
- IV. Centering viewfinder
- V. Drilling template

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.

ATTENTION



Lifting operations have to be done with engine off.

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

DANGER



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

5.2 PUT TO USE

5.2.1 FIRST START UP

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 manual
 - Engine Use and Maintenance manual
 - Battery Use and Maintenance 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:
 - a. Battery charge
5. Verify electric cables's status (check the eventual presence of scratches, weakens, spelled wires or shealts,etc.)
6. Check the functionality of safety and emergency devices
7. Check commands and indicators' efficiency
8. Varnishing's check
9. Execute a functioning's test to idle in every expected operative conditions



ATTENTION

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



5.2.2 CHECKS AT THE BEGINNIG OF EVERY WORKING DAY

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

1. Verify the electric cables (check the eventual presence of scratches, weakens, spelled wires or shealts,etc.)
2. Check the functionality of safety and emergency devices
3. Check commands and indicators' efficiency
4. Varnishing's check

If one or more described points are damaged, 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 Safetrack®.

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

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

5.3.2 STORING AND PREPARATION FOR A LONG INACTIVITY

As above, also:

1. If possible store the machine in a covered place, dry and non dusty, or protect the machine with a plastic sheet to avoid storm damages.

5.3.3 RECLAMATION AFTER A LONG INACTIVITY

1. Carefully clean the machine
2. Check the functionality of safety and emergency devices
3. Check commands and indicators' efficiency.

5.4 MACHINE'S LIFTING

Lift the machine by hand with the engine stopped and the muffler away from the body, after an adequate engine cooling time, using the appropriate lifting handles.

If possible, empty the fuel tank, and secure the unit before storing the machine. Make sure that the engine switch is turned off during transport.





ATTENTION

Lifting operations must be carried out not using the 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

This chapter includes all the procedures for starting the machine and ensuring its correct operation. Carefully read and follow all instructions on the operation to ensure a long life of the machine. Please also refer to the following dedicated documents:

- Battery operation and maintenance manual.

6.1 IGNITION OF THE ENGINE

To start the engine proceed as follows:

1. Battery start-up:

- 1.1. Check the integrity of the battery, which shows no damage or breakage, press the green button on the back and make sure that it is turned on using the display.
- 1.2. Make sure that the state of charge of the battery is sufficient to do the work, otherwise connect the battery to the battery charger until it reaches the state of sufficient charge.
- 1.3. Place the battery on the harness and make sure the quick coupling system is working properly.
- 1.4. Connect the short power cable to the swivel fixing element located on the front of the harness.
- 1.5. Wear the harness and securely fasten the safety belts according to the manufacturer's instructions.
- 1.6. Connect the long power cable to the short one already fixed near the right shoulder.

2. Starting the machine

- 2.1. With the engine off, carry out a general check on the free movement of the feed-in lever and on the escaping of the coolant.
- 2.2. Connect the long power cable to the connector on the right side of the drilling machine.
- 2.3. Press the green button behind the battery until you hear a "beep".

3. Drilling

- 3.1. Press the POWER button on the touch panel and both the LED next to the button and the LED that lights up the work area will light up.

3.2. When you are ready, press the DRILL button and the engine will be started to start the tool.

3.3. Activate the feed-in lever to start drilling.

The machine is now ready to work.





DANGER

Once the engine is running, never leave the machine.

6.2 SWITCHING OFF THE ENGINE

Move the tool advancing lever to the rest position in order to move the tool away from the rail, press the DRILL button to stop the engine and consequently the tool, press the POWER button to switch off the engine.

6.3 COOLING LIQUID

The cooling fluid is contained in manually dispenser tank and is specifically formulated to significantly improve the performance and durability of the cutting tool, and improve the quality and the surface finish of the hole.

The refrigerant liquid is introduced into the system through the dispenser of the pressurized cooling fluid. Connect the cooling tank to the machine and then pressurize sever times the bottle using the upper handle. Use the valve for adjusting the fluid. Usually is sufficient regulate the valve one-quarter.

Always use the coolant liquid during drilling operation, in order to obtain a long durability of the drill bit. The EMULSOIL refrigerant is a mixture of oil and water for cutting. Always mix the oil with pure water according to the following dilution table:

Resistance on the material	% of oil to be diluted in water
<900 MPa	5 %
>900 MPa	10 % vol



6.4 HOW TO USE THE MACHINE

- Keep the advance lever of the tool in retracted position, so as to keep the tool away from the rail.
- Pressurize the tank of the cooling fluid by pumping the handle for 5-10 times.
- With the pressurized coolant and the dispenser connected to the machine through the feed tube, the liquid refrigerant exits automatically at the time of contact between the cutting tool and the rail.
- To ensure that the coolant correctly exits, slowly move the advance lever, so as to bring into contact the tool and the rail. Adjust the flow using the cooling fluid valve.
- While the cutting tool approaches the rail, the throttle valve automatically increase the speed of revolutions of the engine to ensure the maximum speed before cutting the hole. Once the hole has been made, retract the advance lever, so as to return at the minimum speed.



DANGER

Do not leave the machine running, when the machine is not used for drilling.

- Fix the machine to the rail taking care of the correct positioning of the clamp on the rail.

Remove any solid impurities present on the rail that you want to drill.

Check that the rail profile templates (1) and the support (2) are in perfect contact with the track web.

Also check that the drilling axis (3) must be horizontal.

- When starting to make a hole, apply light pressure until the cutting tool penetrates the rail. The pressure can then be increased a little, while making the hole. Excessive pressure is useless as it can damage the tool, thus reducing its life, or even causing its breakage. A light indicator placed on the touch panel will provide in real time the pressure that is being applied to the tool and will indicate the range within which to work correctly.



DANGER

User that doesn't follow the instruction in the manual is exposed to potential danger situations.



ATTENTION

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



ATTENTION

Safetrack® declines all the responsibility for damages that could occur for non-fulfilment for what said before.

6.5 REPLACEMENT OF THE CLAMP (VIGNOLE – GROOVED)

The machine is supplied in standard configuration with rail clamp for Vignola rails (UNI 60, UNI 50, S 49 etc.).

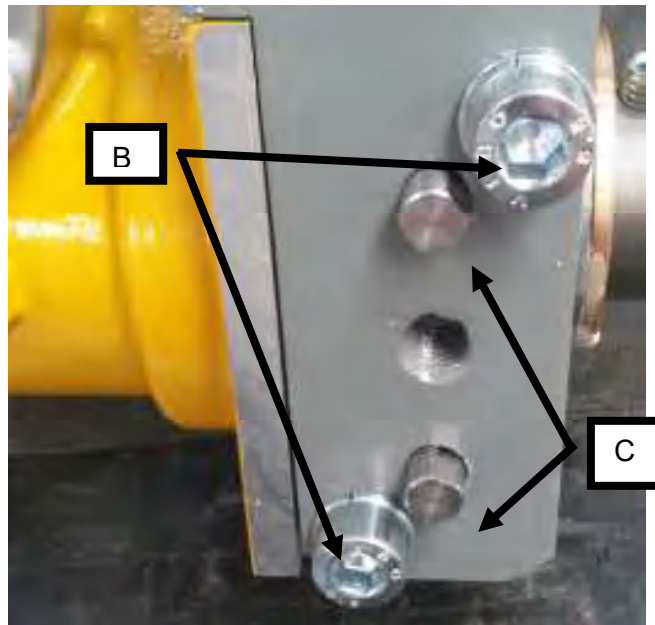
However, the machine can also drill tram rails. To do this, it is necessary to replace the clamp as follows:

- Remove the masks unscrewing the 2 screws with a suitable wrench of 8 mm (position A)



- Unscrew 4 screws (B) with a suitable wrench of 6 mm.

- Unscrew 4 screws (C) with a suitable wrench of 7 mm.



- Remove the clamp sliding it toward the opposite side of the mandrel.
- Insert the new clamp and reassemble it following the operations just performed with the reverse order.

At the end of the aforementioned operations, check that the screws have been correctly tightened and carry out a drilling test on a piece of rail to ensure that the clamp change has taken place correctly.

6.6 EXCHANGE OF THE CUTTING TOOL (CUTTER)

Select the drill bit on the base of the diameter of the hole to execute and insert it on the mandrel, then align it with the engine shaft and fix it with the allen screws.

The cutter is stopped in the mandrel thanks to two nuts without head.
To replace and/or assemble the cutter, please follow these instructions:

1. Remove the two headless screws with an allen wrench of 4 mm;
2. Remove the previous drill bit;
3. Insert the pin which controls the refrigerant liquid in the cutter;
4. Add the new cutter into the mandrel, making sure that everything is clean and free of impurities;
5. Tighten the two allen screws (A) for securing the cutter in the mandrel of the drilling machine.



What to check after replacing the cutter:

- Place the drilling machine on the track, pull the advance lever so as to verify the correct functioning of the pin. It is sufficient to bring the pin into contact with a minimum pressure in the advance lever, to verify the correct opening / closing of the refrigerant liquid valve placed inside the mandrel. Check the cooling liquid capacity without drilling the rail. If the cooling liquid exits, you can proceed to drill the rail. Otherwise, it is necessary to stop, determine the cause of the problem and resolve it. Drilling without cooling liquid causes an overheating of the cutter, damaging it irreparably.



ATTENTION

The breaking of the cutting tool is usually caused by a incorrect positioning.



ATTENTION

The change of the cutting tool (cutter) has to be done with engine off.

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

6.7 LIGHTNING

Use the machine just in a well lighted place.

The work area, when the drill receives voltage from the battery, is illuminated by a LED fixed to the cover casing.

6.8 INSTRUCTION FOR EMERGENCY SITUATIONS

In case on emergency. It is possible to switch off the machine by disconnecting the power cable directly.

7 SEARCH FOR BREAK DOWN

BREAK DOWN	POSSIBLE CAUSES	SOLUTIONS
The engine does not start	– Cables not connected	– Connect the cables correctly
	– Low battery	– Check the charge status from the display – In case of low battery, recharge using the battery charger
	– Touch panel failure	– Check the integrity of the touch panel
	– Battery button not active	– Check that the battery has been turned on using the green button on the back
	– Engine failed	– If the previous causes are not verified and there is the possibility of an engine failure, request the intervention of Safetrack®
The lubricant comes out from the coupled flanges	– Loose tightening screws	– Check the tightening of the screws
The cutter does not come out of the mandrel, when I want to replace it	– Unscrewed nuts	– Check the tightening of the nuts – With a rubber hammer, hit the mandrel easily and try to extract the tip
The coolant does not come out of the mandrel	– Check the liquid in the tank	– Add coolant
	– Check the opening of the liquid tap	– Move the tap to the open position
The hole made does not appear to be at the desired height	– The right rail profile templates are not installed on the rail drilling machine	– Assemble the rail profile templates suitable for the type of rail you want to drill

8 MAINTENANCE



ATTENTION

Maintenance operations have to be executed only by Safetrack® Customer Service or by qualified personnel

8.1 PREFACE

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

For further clarifications call up our customer care:

- All the maintenance's operations have to be performed with engine shut off.
- 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 operations, he is familiar with the machine how it works and has to know what is in the manual.
- Check of lubricant's levels must be done at cold machine and set on a level 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 when hot to assist the flow.
- 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 equipment to avoid deteriorate parts.
- To unlock parts solidly adherent, use copper's hammer or suitable tools.
- Separate clearly elements of various groups and screw back the nut in part on its pins or studs. Clean the parts with a rag and then clean with de-grease blowing off residuals with compressed air.
- After grinding process or remachining with abrasive bodies, carefully clean the parts or blow them with compressed air assuring the complete aspiration of the abrasive dust.
- During the re-assembling of various parts, assure that they are clean and then carefully lubricate.

8.2 LUBRICATION OF THE MACHINE

The machine has a part to lubricate according to the maintenance table.

- The gearbox

8.2.1 LUBRICATION OF THE GEARBOX

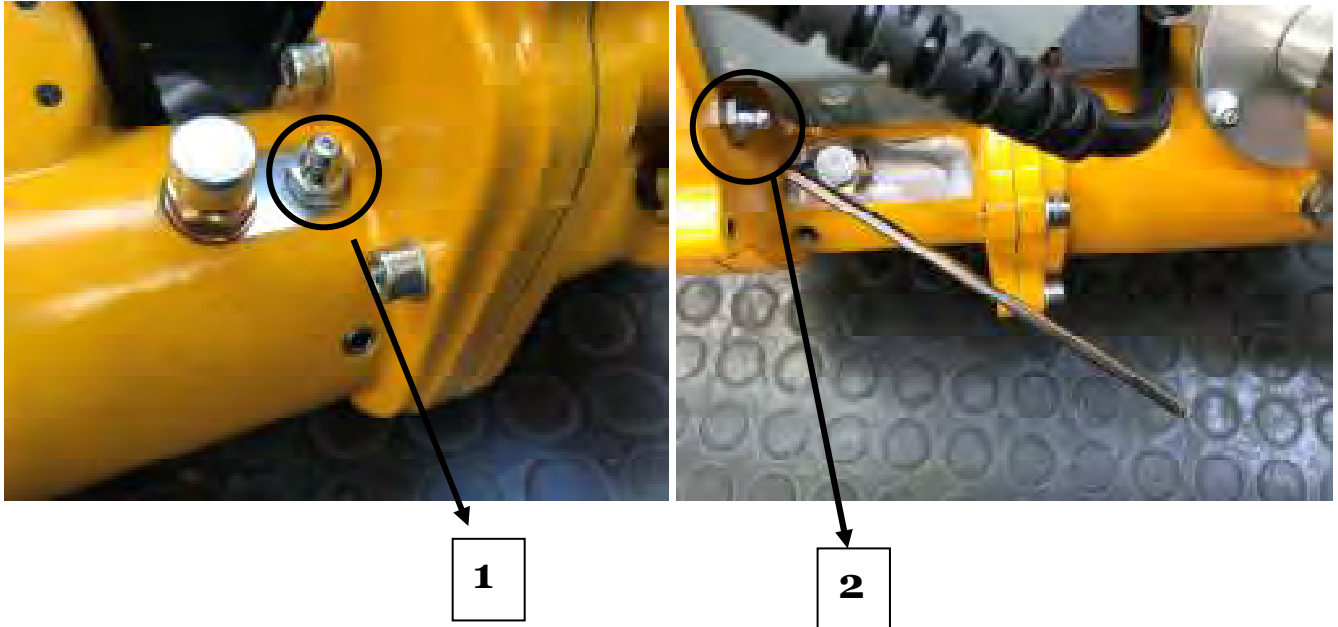
The lubricant has to be introduced through a lubricator on the sides of the machine (shown in position 1 and 2).

The refilling of the grease should be done every 100 working hours (about 4000 holes).

The complete replacement of the grease should be done every year or every 500 working hours (20000 holes).

If the grease has to be replaced, remove the posterior cap to allow the escape of all the grease and clean inside the gearbox.

The figures below show how to fill and clean the gearbox.



The greasing operations have to be performed with engine off proceeding as indicated above.

In the pictures below you can see how to proceed with the replacement of grease. You can see the disassembly and the gearbox after cleaning. Before inserting the new grease close the box proceeding to the assembly of the parts with the reverse order of assembly.



9 CLEANING

After each use, clean the machine and, in particular, the chippings drill bit as follow:

- If you are using a water jet or high-pressure cleaner not wash the engine;
- Do not use any combustible or easily flammable cleansers;
- Do not leave paper or tatters used for cleaning on the engine and the machine.

10 FIRE

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

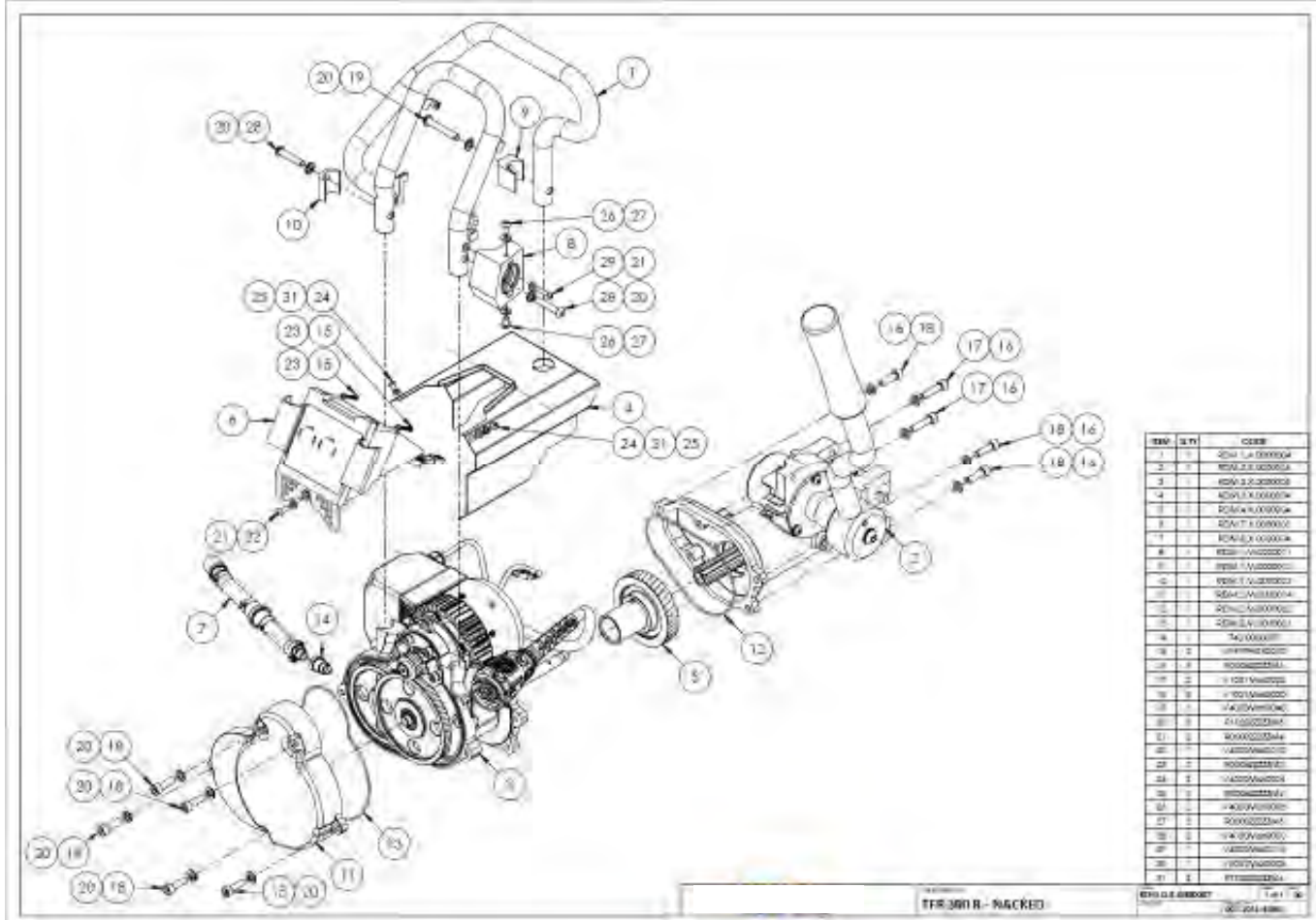
In case of machine's fire or if the machine is near a fire, give the alarm in the yard and call the fire brigade.

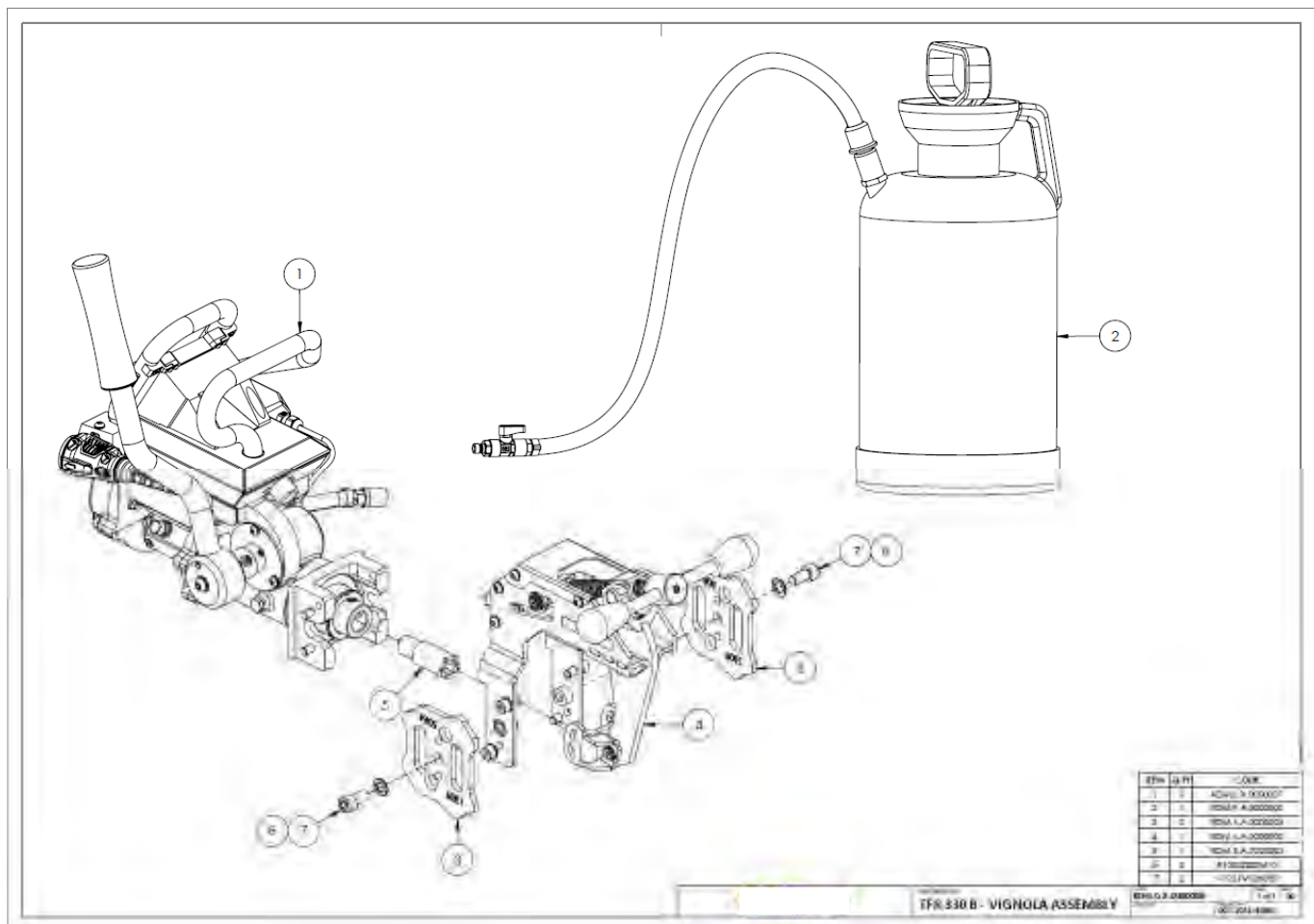
11 BREAKING UP AND DISPOSAL

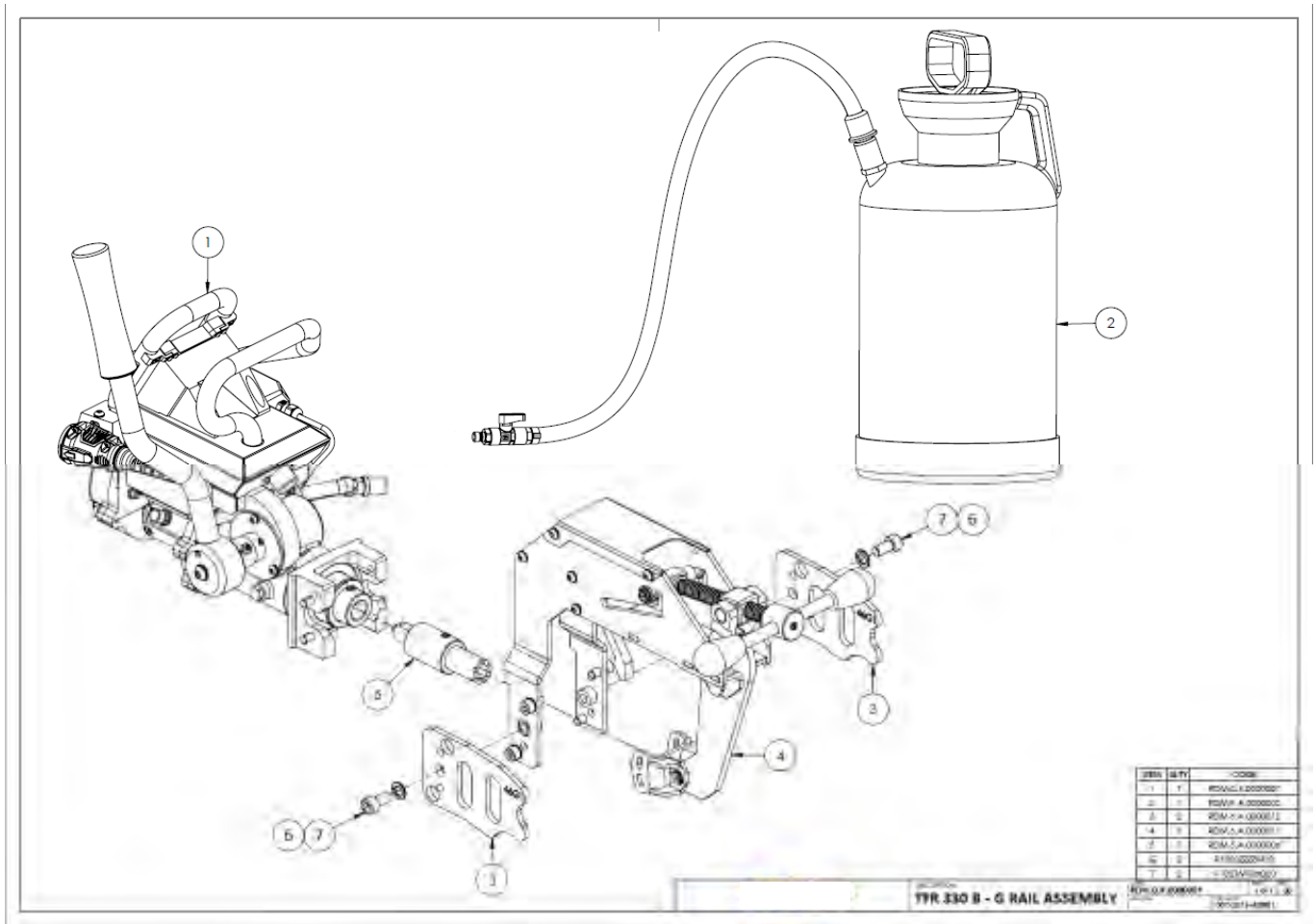
At the end of machine's life, remember that the owner of the machine must provide for its dismantling for the machine disposer according to guidelines in force.

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.

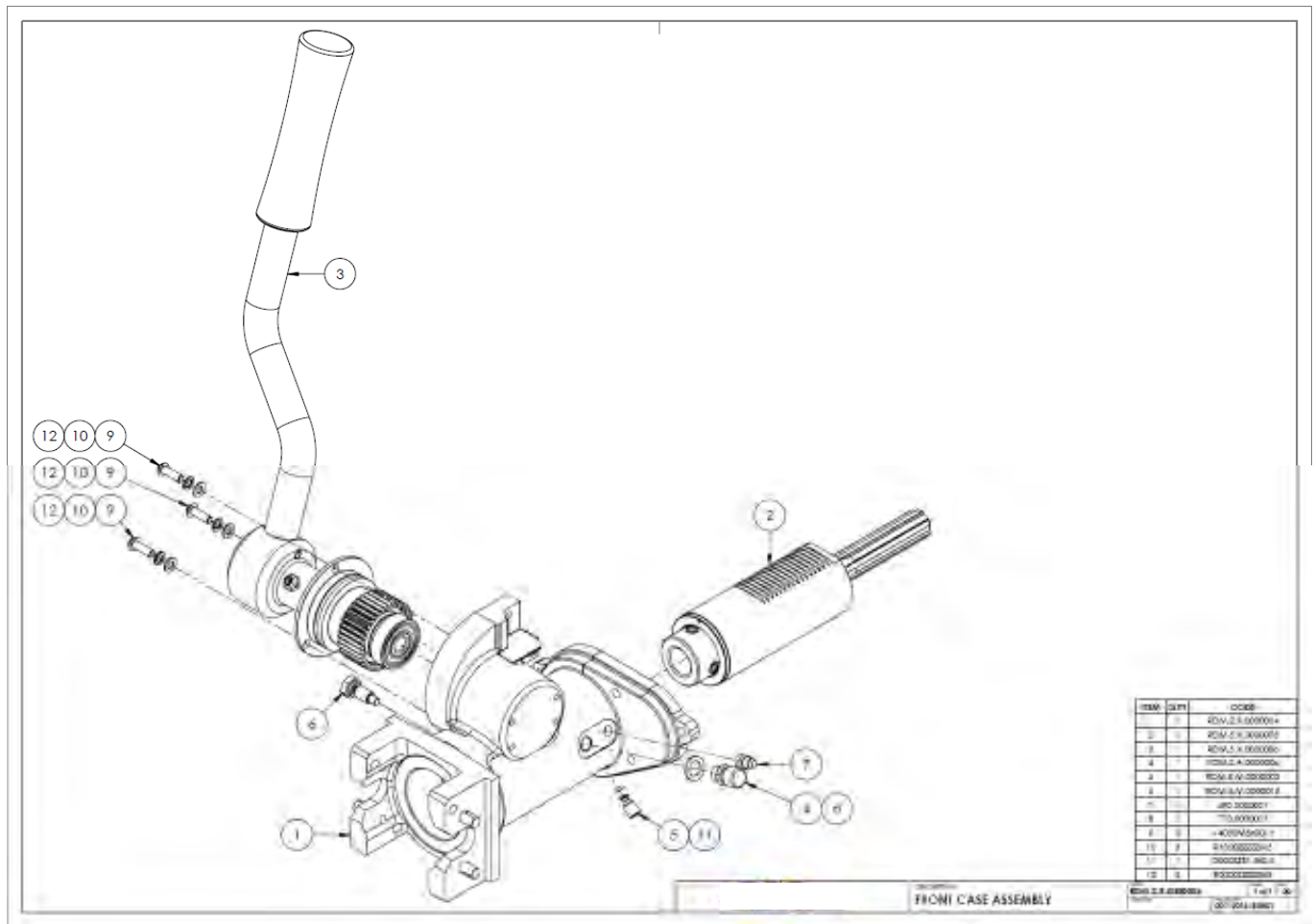
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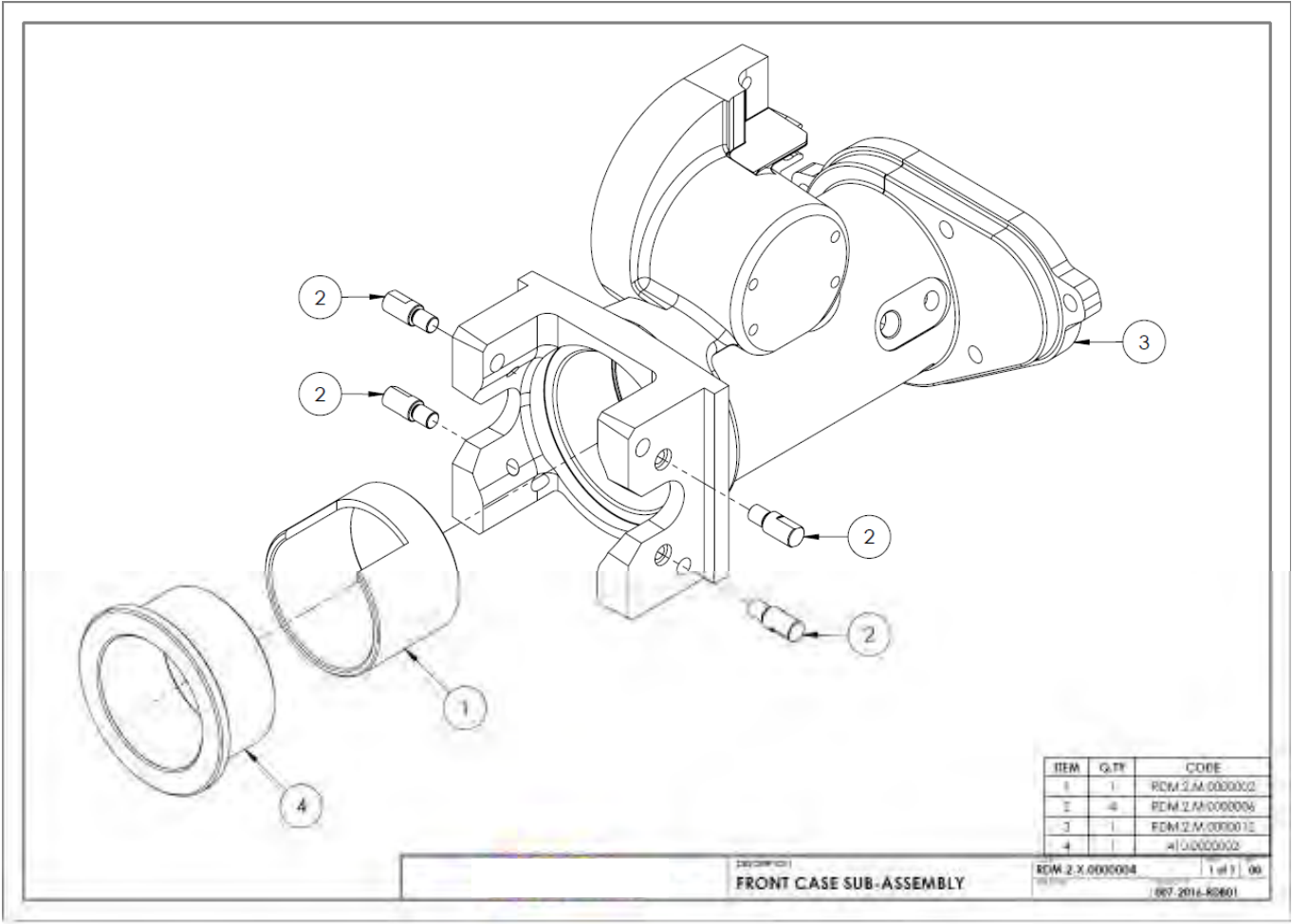


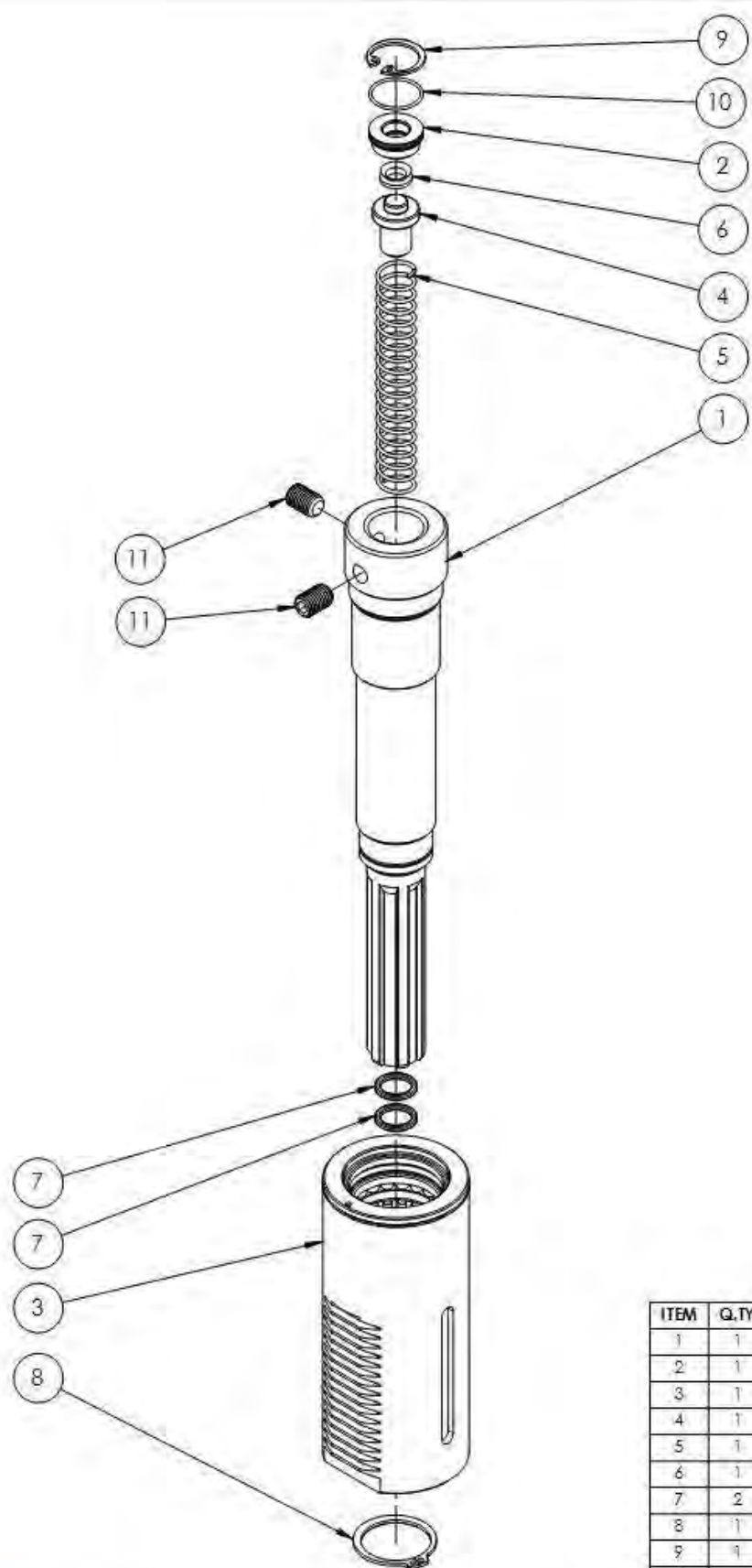




OPERATION AND MAINTENANCE MANUAL TFR 130 B



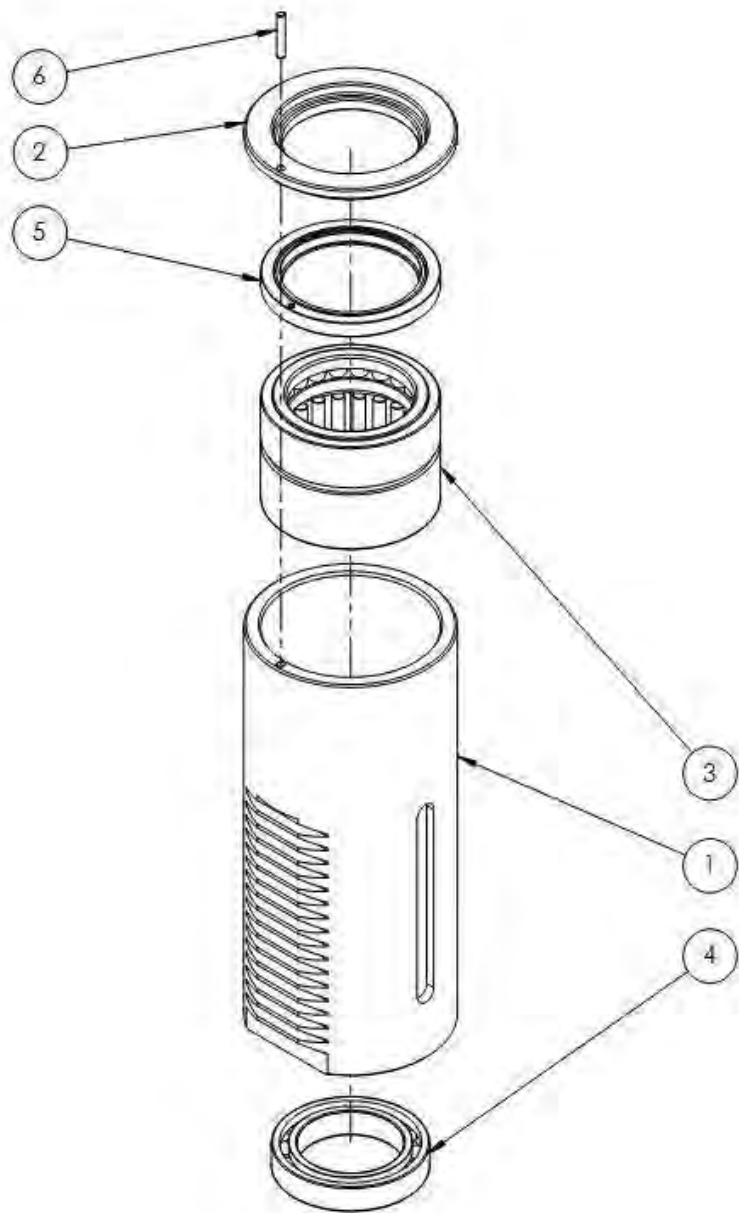




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DESCRIPTION
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CODE
RDM.5.X.0000003
PAGE
1 of 1
REV. 0000
003-2015-RDM01



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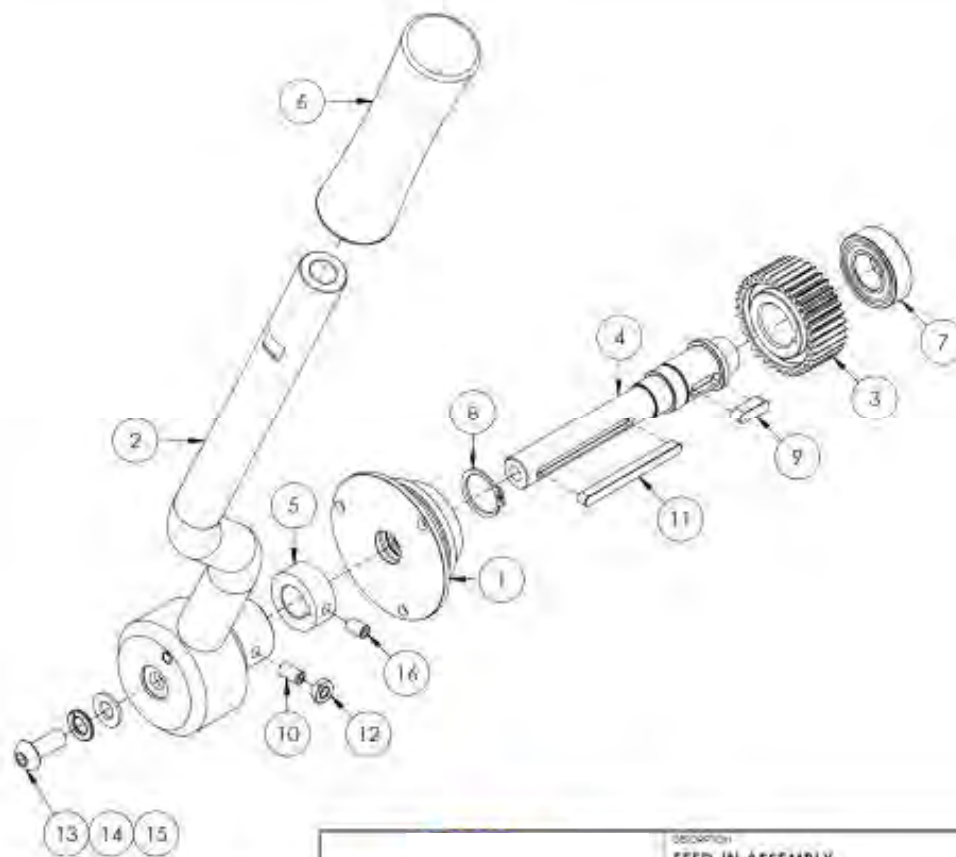
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CODE
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REV. 0001
003-2015-RDM01

PAGE
1 of 1

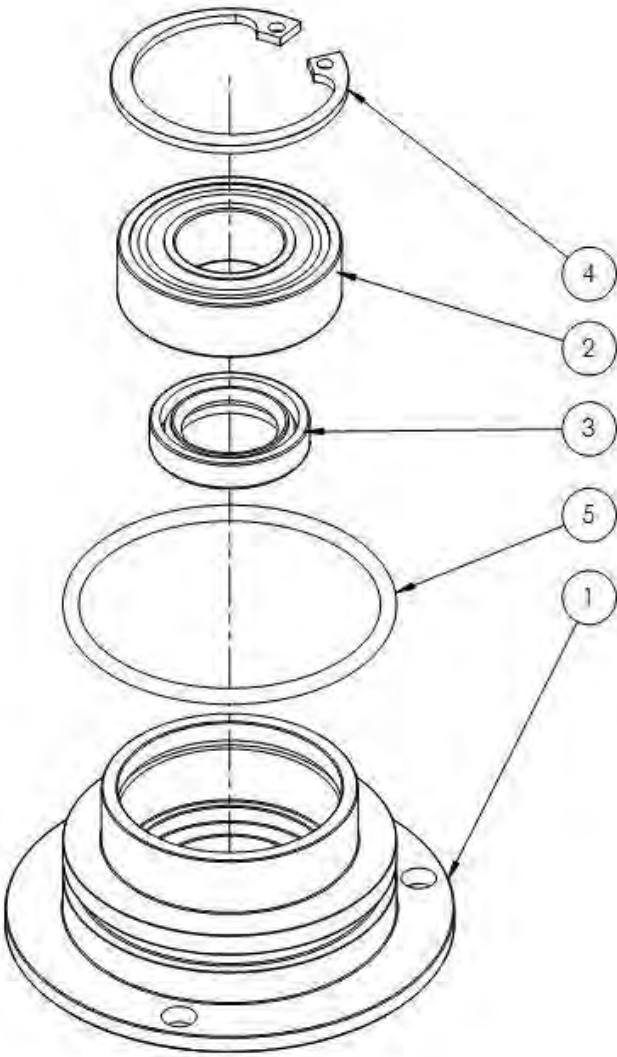
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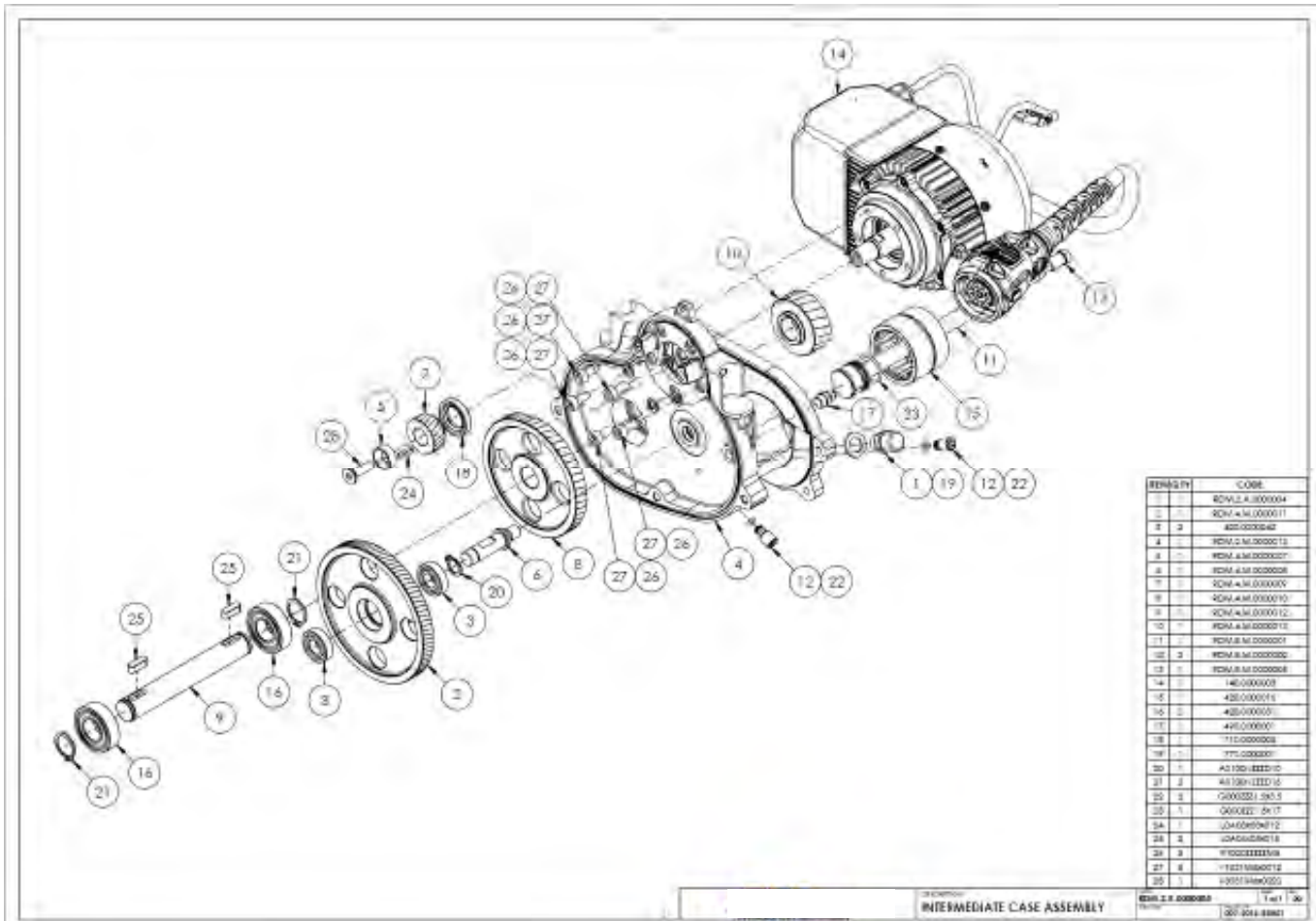
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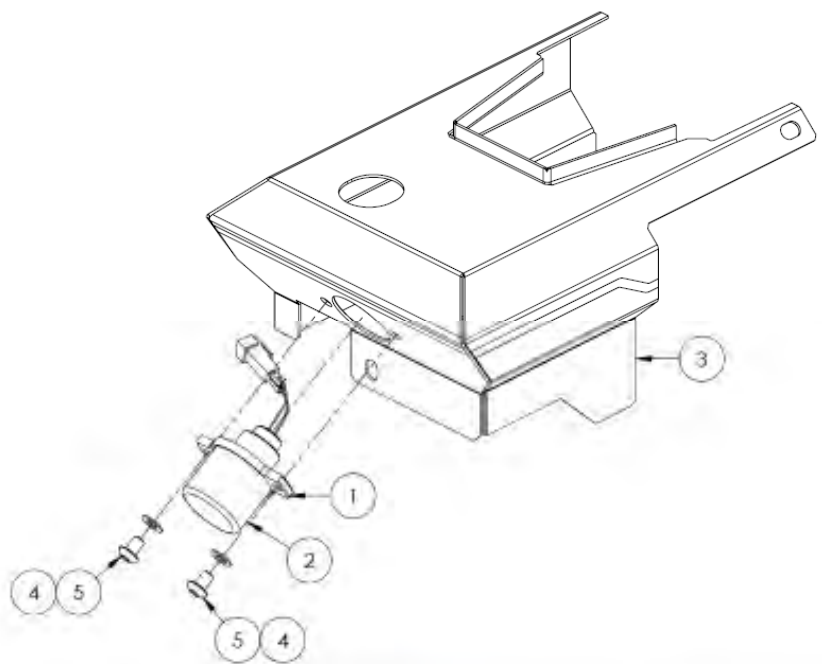
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FEED-IN PLUG ASSEMBLY		003-2015-RDM01		

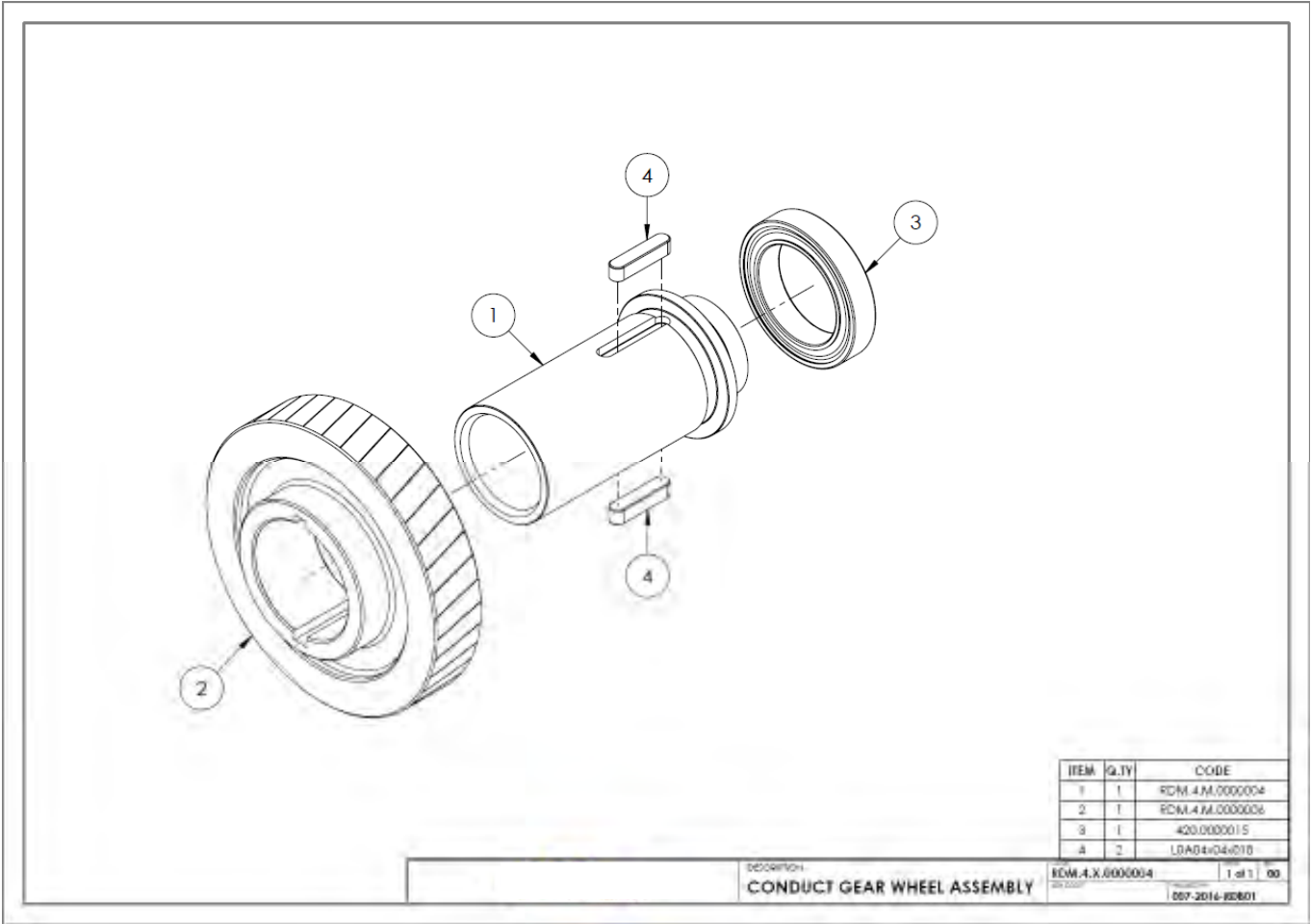


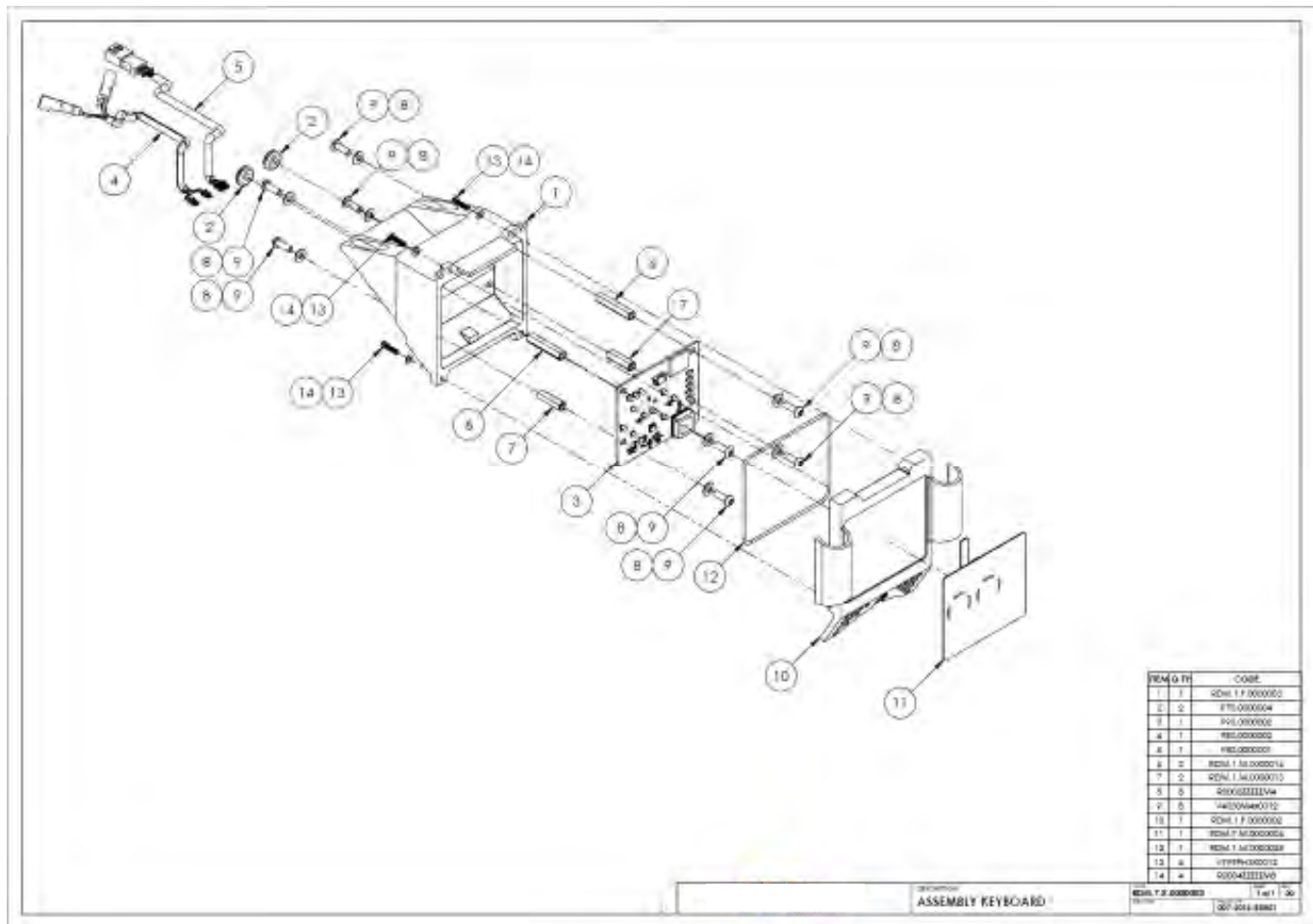


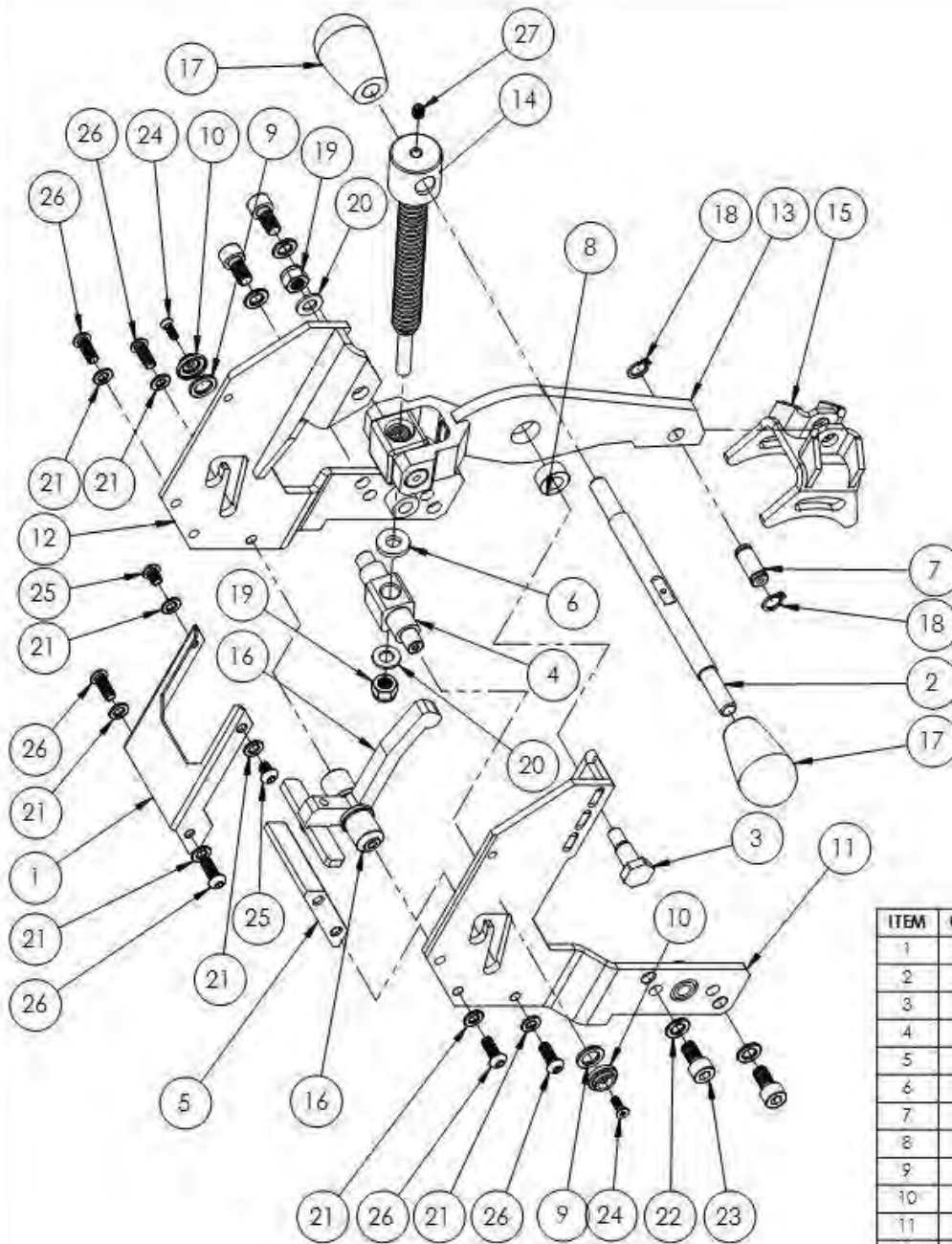
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DESCRIPTION
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RDW.3.X.0000004
REV. 0001
1 of 1
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007-2016-RD801







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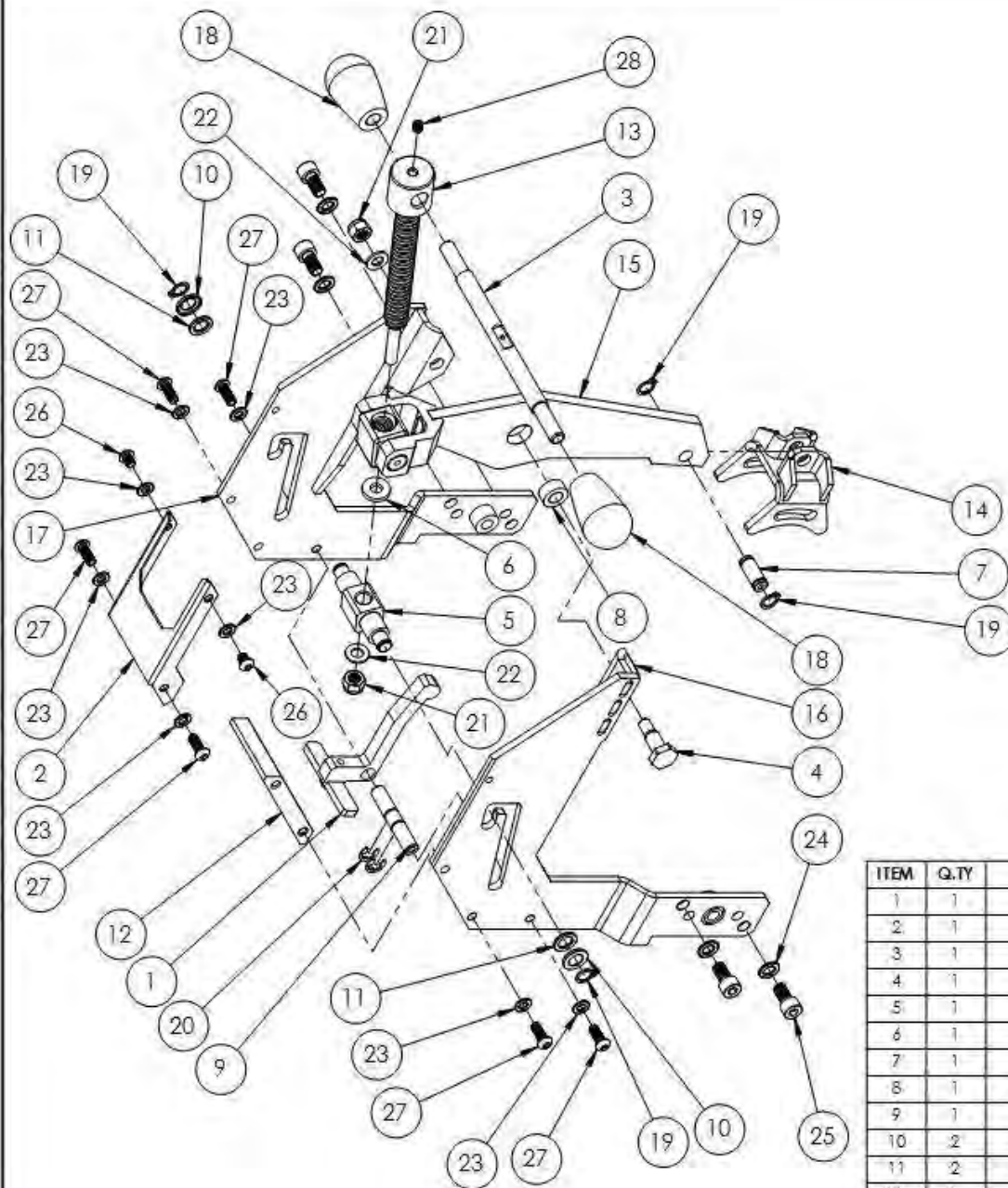
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RDM 6.X.0000003

1 of 1 00

728-5559

003-2015-RDM01



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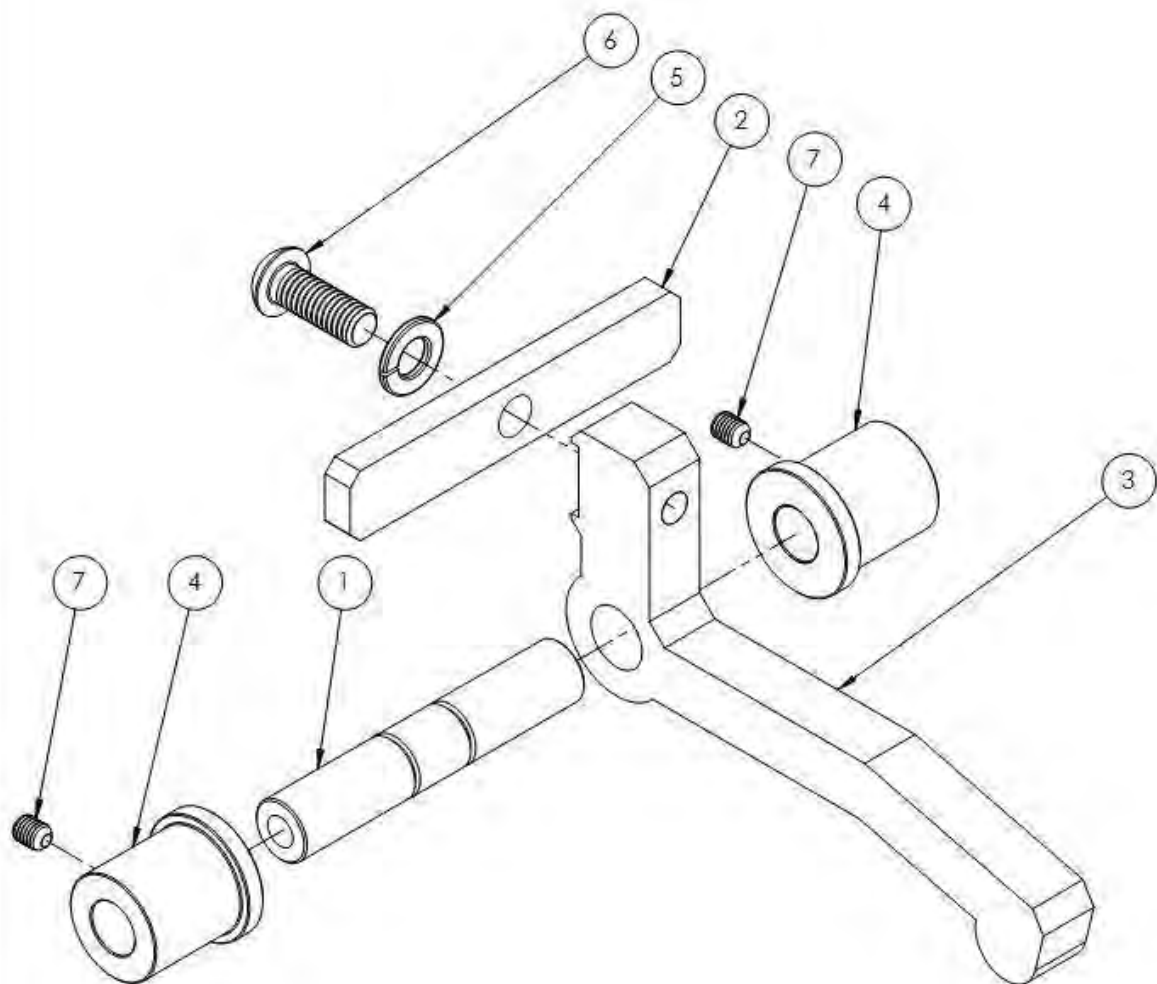
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GROOVED CLAMPING UNIT

CODE
RDM.6.X.0000004

1 of 1 02

REV. 0004

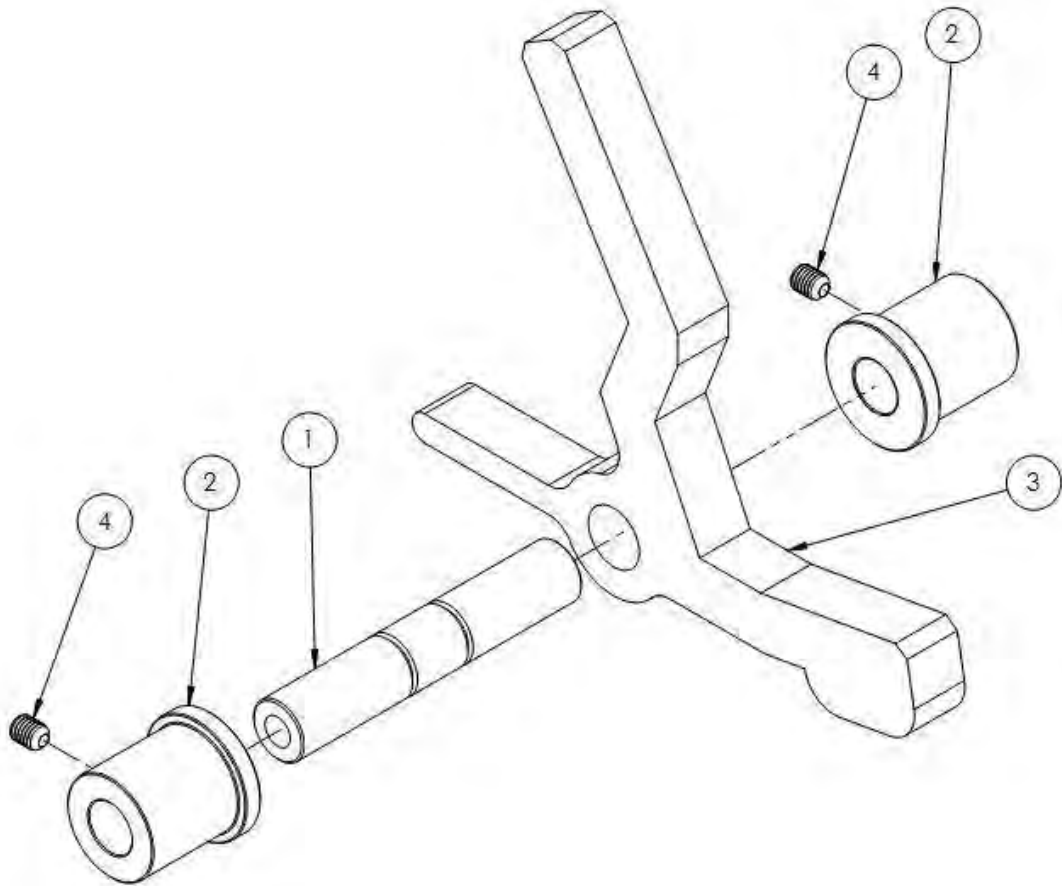
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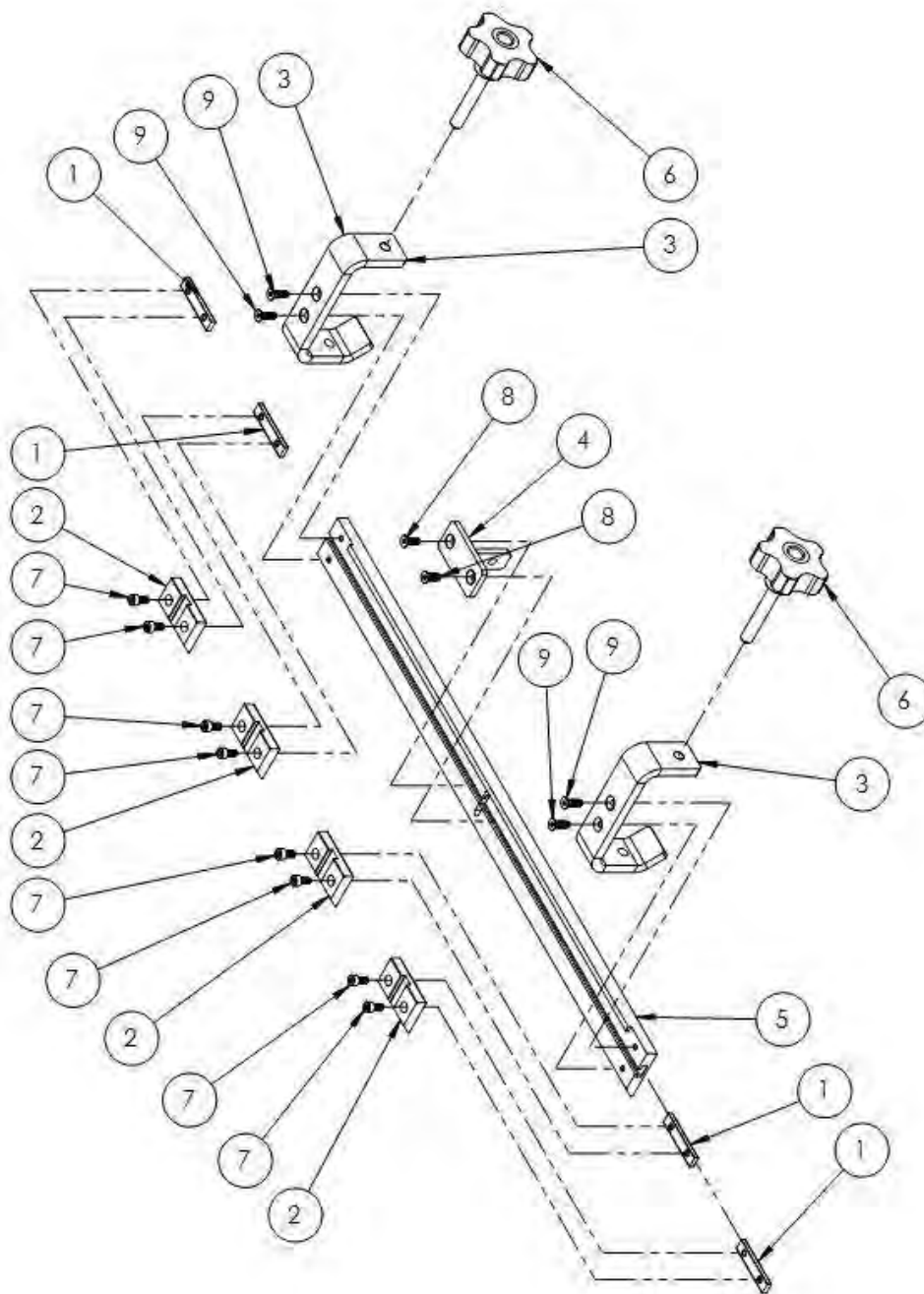
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VIEWFINDER

MODEL RDM.6.X.0000002	REVISION 1 of 1	DATE 00
DOC. 0000	003-2015-RDM01	



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VIEWFINDER G-RAIL		RDM.6.X.0000005	1 of 1	00
		003-2015-RDM01		



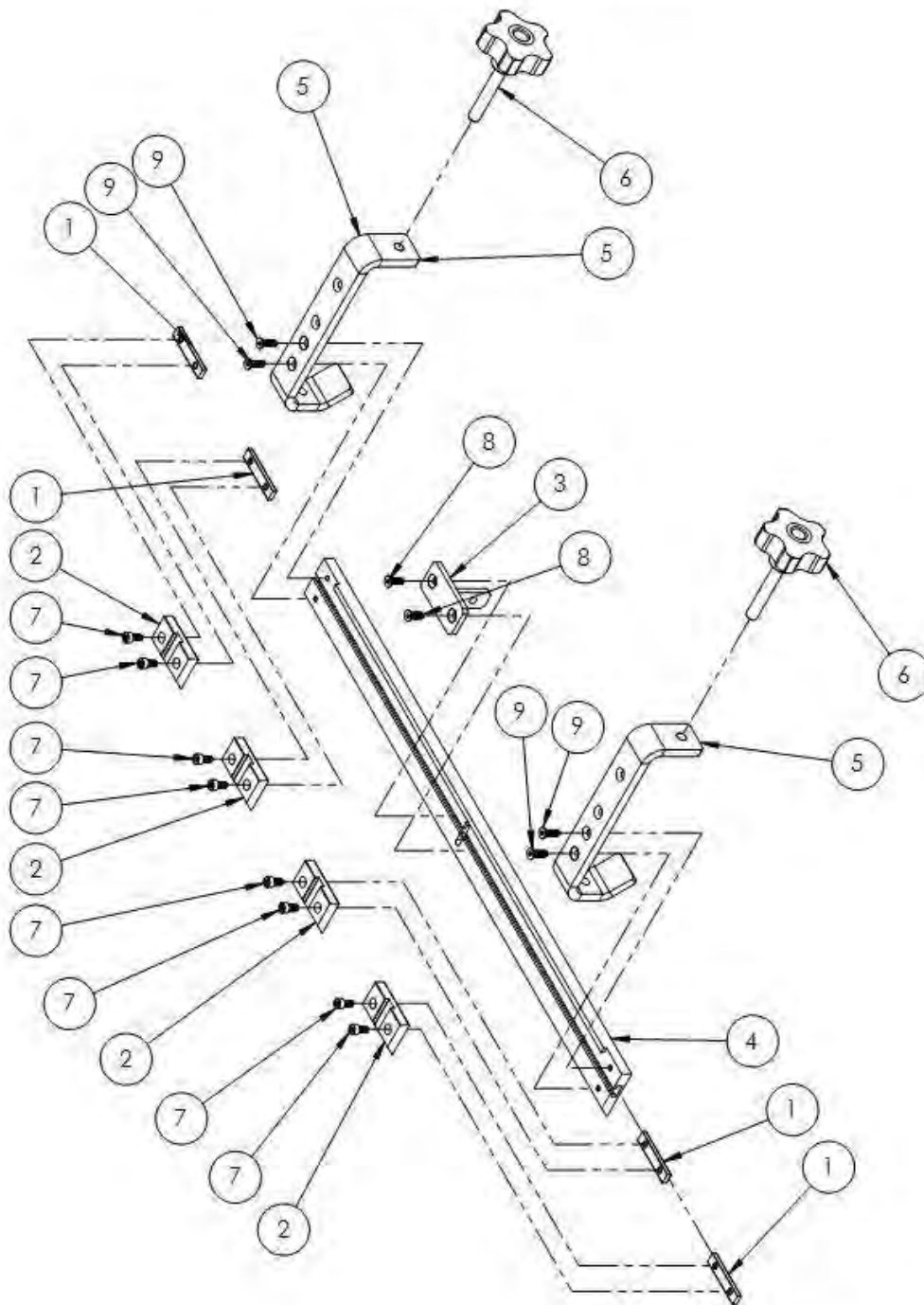
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DESCRIPTION
VIGNOLE RAILS HOLES LOCATOR

RDM.6.X.0000006

1 of 1 00

003-2015-RDM01



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DESCRIPTION

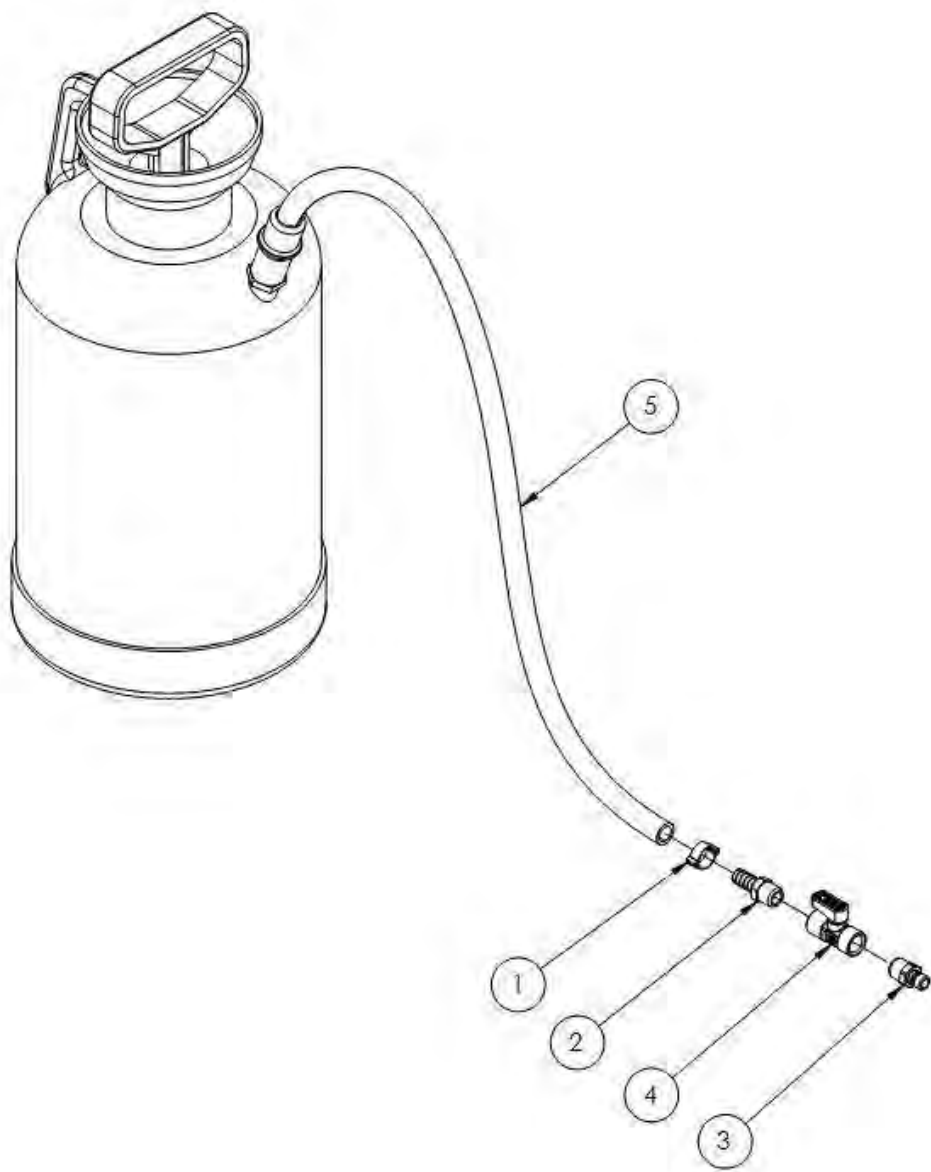
GROOVED RAILS HOLES LOCATOR

RDM.6.X.0000007

708-0000

1 of 1 00

003-2015-RDM01



ITEM	Q.TY	CODE
1	1	TFF05266
2	1	TFF05267
3	1	TFF05275
4	1	TFF05274
5	1	TFF04950

DESCRIPTION
COOLANT BOTTLE ASSEMBLY

RD09 RDM.9.X.0000002	1 of 1	00
003-2015-RDM01		

