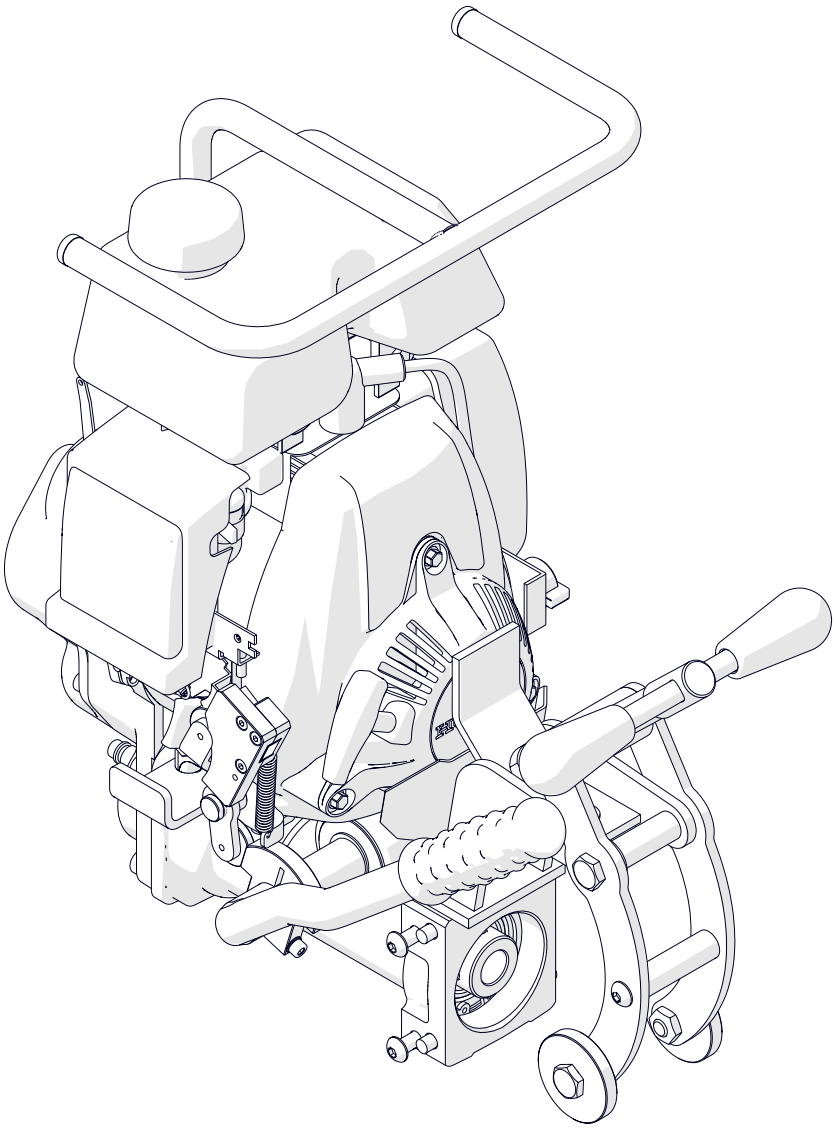
JE DRILLING AND CUTTING SOLUTIONS

OPERATOR'S MANUAL

RAILBEAST RDP-36

PETROL RAIL DRILLING MACHINE



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Contents

1. GENERAL INFORMATION

1.1. Application

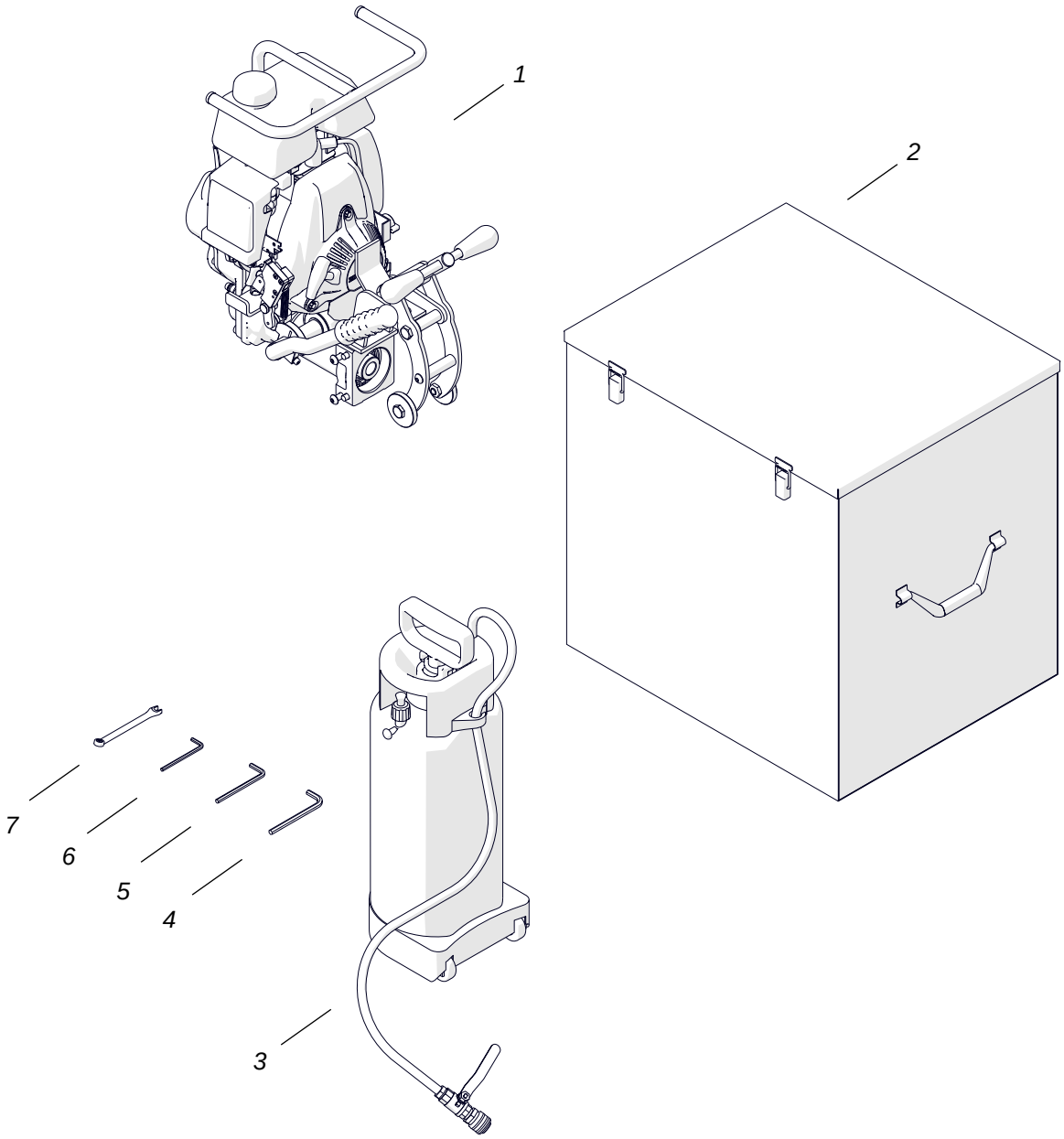
The RAILBEAST RDP-36 is a drilling machine designed to drill holes in rails of UIC54, UIC60, P50, P65, S49, or any other standard. The machine can drill holes with diameters of up to 36 mm (1-7/16'') by using annular cutters or with diameters of up to 16 mm (5/8'') by using twist drill bits. Thanks to the use of a petrol engine, the machine does not require electrical supply.

Ordered separately rail profile templates allow the machine to be clamped onto a rail, and hole center positioners allow you to obtain the proper span between holes.

1.2. Technical data

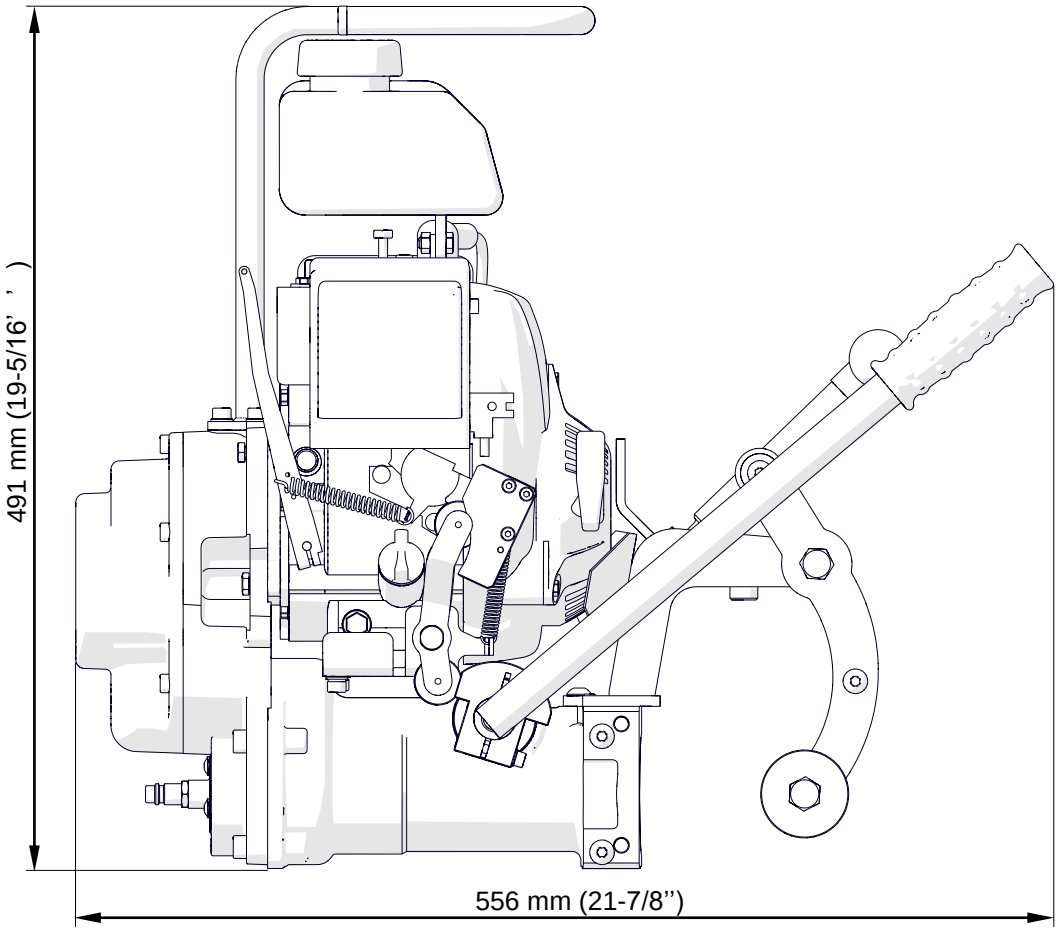
Engine	Honda GXH50
Displacement	49.4 cm^3 (3.01 cu in)
Power	1500 W
Tool holder	19 mm (3/4'') Weldon
Maximum drilling diameter with annular cutter	36 mm (1-7/16'')
Maximum drilling diameter with twist drill bit	16 mm (5/8'')
Maximum drilling depth	30 mm (1-3/16'')
Stroke	39 mm (1-9/16'')
Rotational speed without load	120–280 rpm
Rotational speed with load	225 rpm
Required ambient temperature	From –5°C to 40°C (23–104°F)
Weight	18.7 kg (41 lbs)

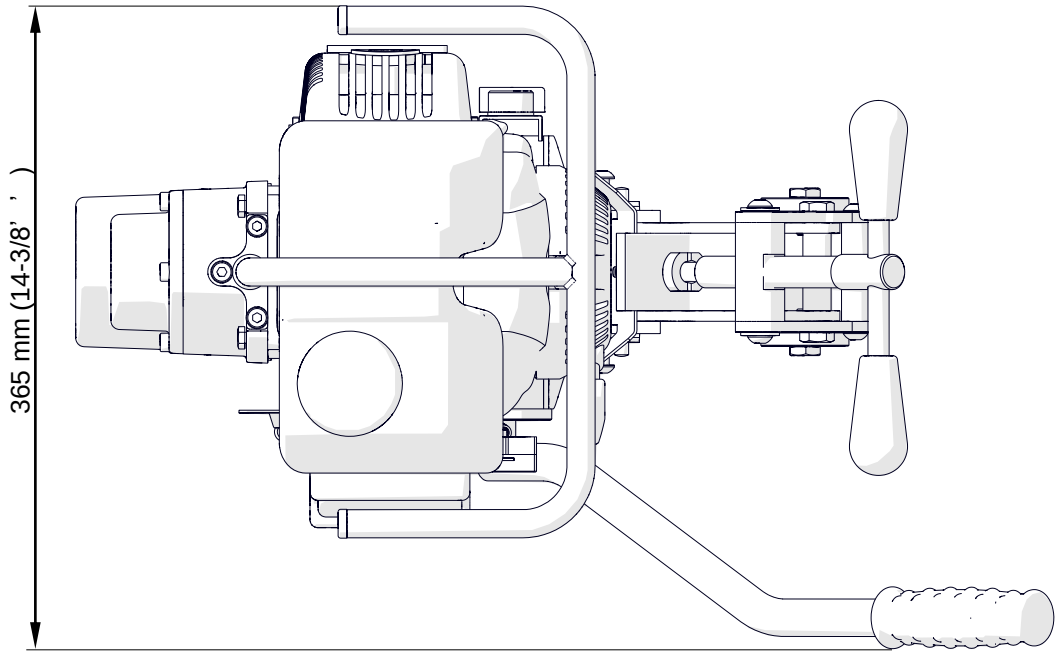
1.3. Equipment included



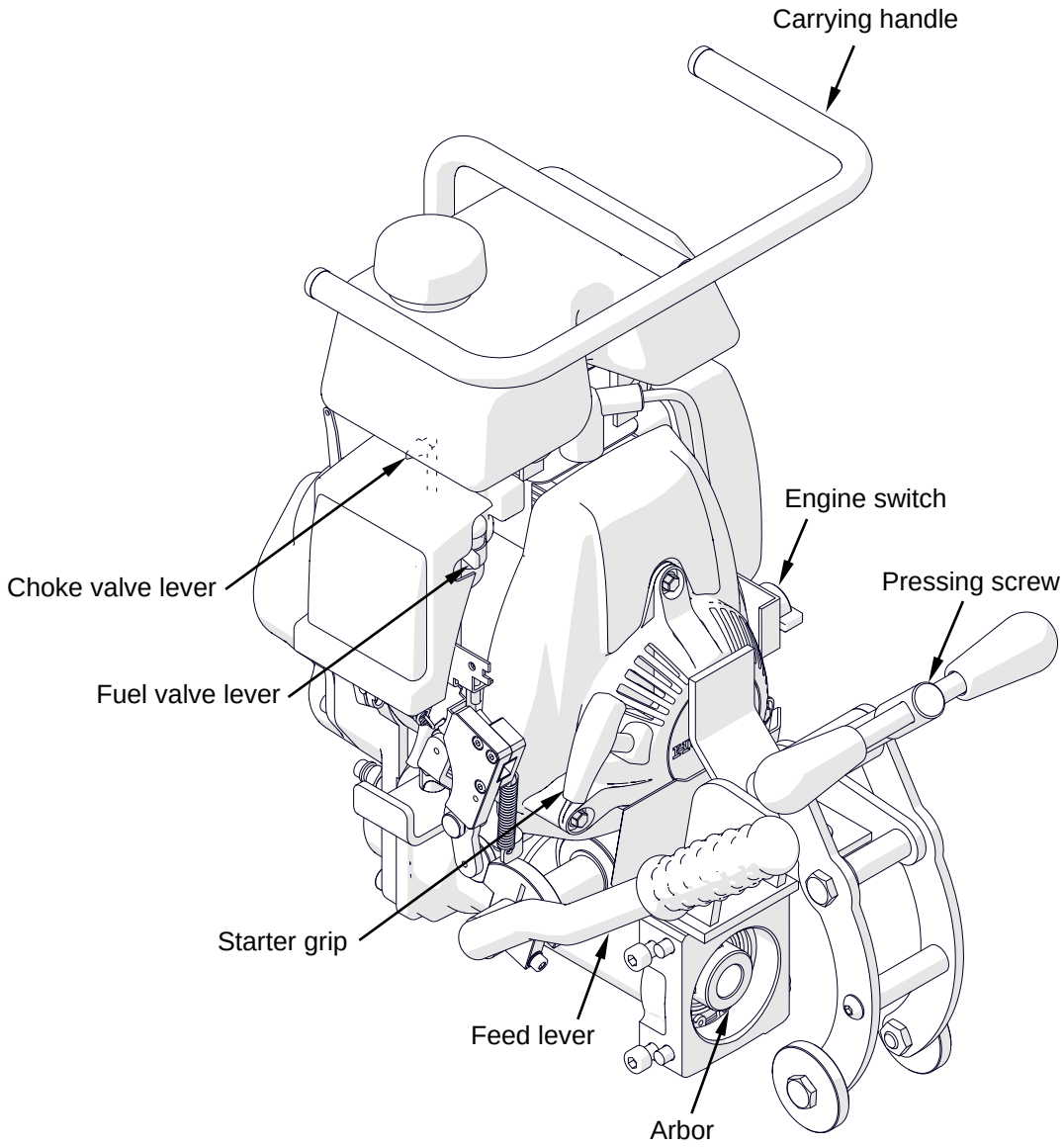
1	RAILBEAST RDP-36 drilling machine	1 unit
2	Metal box	1 unit
3	Pressure cooling system 5 L	1 unit
4	6 mm hex wrench	1 unit
5	5 mm hex wrench	1 unit
6	4 mm hex wrench	1 unit
7	8 mm combination wrench	1 unit
–	RAILBEAST RDP-36 Operator’s Manual	1 unit
–	Honda GXH50 Owner’s Manual	1 unit

1.4. Dimensions





1.5. Design



2. SAFETY PRECAUTIONS

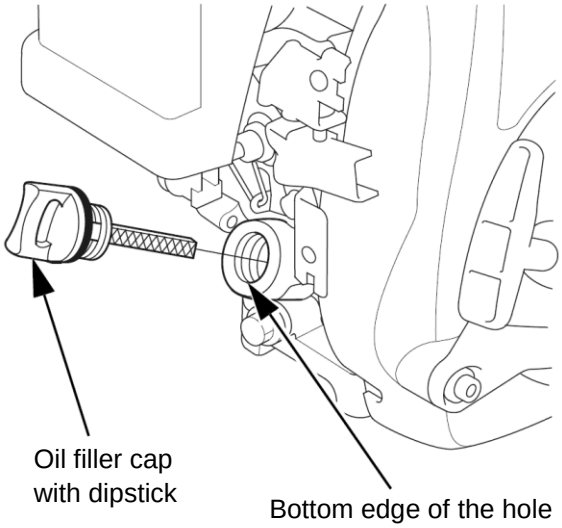
1. Before starting, read the included manuals and complete proper occupational safety and health training.
2. Use the machine only in applications specified in this Operator's Manual.
3. The machine must be complete and all parts must be genuine and fully functional.
4. Transport and position the machine by using the carrying handle.
5. The machine must always be placed in vertical position.
6. Untrained bystanders must not be present near the machine.
7. Install the tools securely by tightening the set screws. Remove wrenches from the work area before starting.
8. Never use tools that are dull or damaged.
9. Never use annular cutters without a pilot pin.
10. Install and remove tools by using protective gloves and only when the engine switch is set to OFF.
11. Before starting, make sure that the rail profile templates installed are consistent with the rail standard.
12. Do not make holes which diameter or depth differ from those specified in the technical data.
13. Never use near flammable liquids or gases, or in explosive environments.
14. Before every use, inspect the machine to ensure it is not damaged. Check whether any part is cracked or improperly fitted. Make sure to maintain proper conditions that may affect the operation of the machine.
15. Use the cutting fluid consistent with the ambient temperature.
16. Always use eye and hearing protection and protective clothing during work. Do not wear loose clothing.
17. Before starting the engine, set the feed lever as far to the front as possible.
18. Do not touch chips or moving parts. Prevent anything from being caught in moving parts.
19. After every use, remove chips and excess coolant from the machine and tool. Do not remove chips with bare hands.
20. Cover steel parts with a thin anti-corrosion coating to protect the machine from rust when not in use for any extended period.

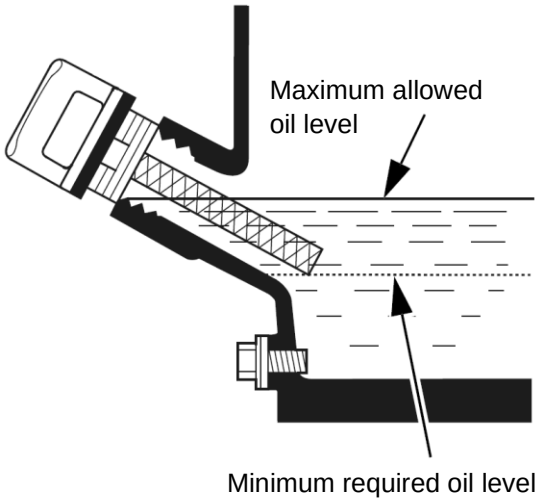
21. Maintain the machine and install/remove parts and tools only when the engine switch is set to OFF.
22. Maintain the engine as described in its manual.
23. Repair only in a service center appointed by the seller.
24. If the machine falls from any height or has any other damage that could affect the technical state of the machine, stop the work and promptly send the machine to the service center for inspection and repair.
25. Never leave the machine unattended during work.
26. Remove from the worksite and store in a secure and dry place when not in use, previously removing the tool from the holder.

3. STARTUP AND OPERATION

3.1. Checking the oil level

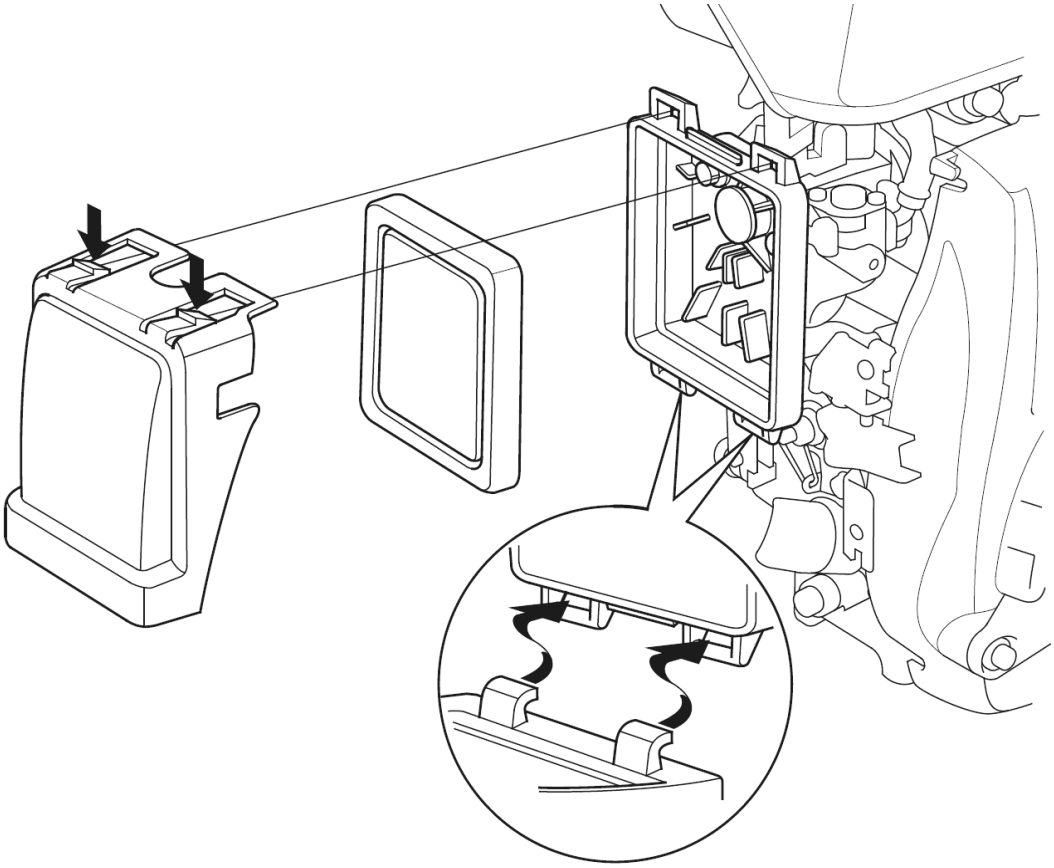
Before starting, check the oil level with the engine stopped and on a level surface. To do this, unscrew the oil filler cap, wipe its dipstick clean, reinsert the cap into the neck as shown, but do not screw the cap in, and then remove it again. If the oil level marked on the dipstick is below the minimum required, fill the oil to the bottom edge of the hole, and then reinstall the cap. The recommended oil is SAE 10W-30 or different specified in the Honda GXH50 Owner's Manual. Always fill with oil of the same grade and manufacturer.





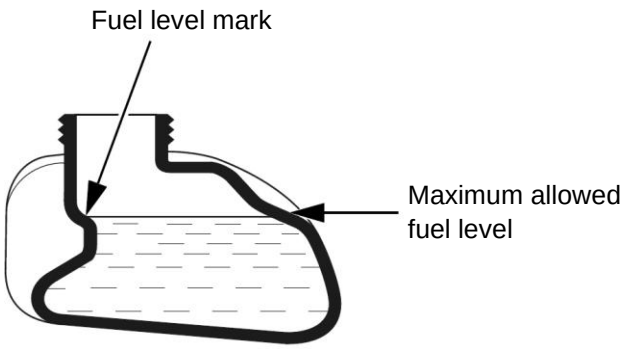
3.2. Checking the air filter

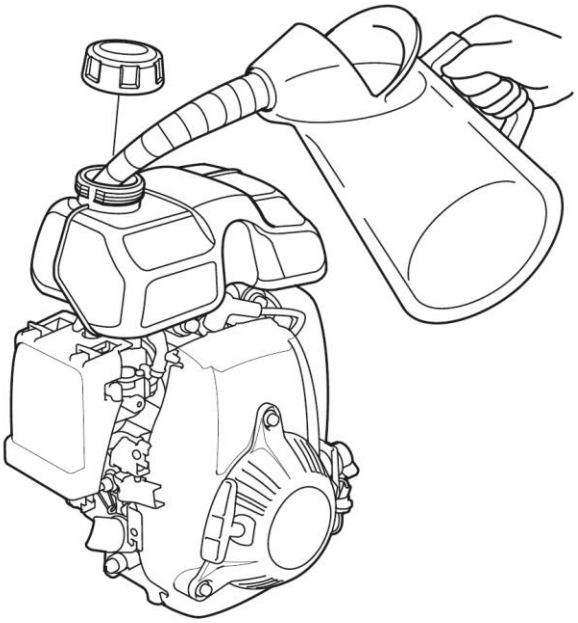
Remove the air filter cover and then the filter. If the filter is dirty, clean it as described in the Honda GXH50 Owner's Manual or replace with a new one, and then reinsert it and reinstall the cover. Never start the engine without an air filter installed.



3.3. Filling the fuel tank

With the engine stopped, cold, and on a level surface, unscrew the fuel filler cap. Maintaining the requirements specified in the Honda GXH50 Owner's Manual, fill the tank with unleaded fuel with octane rating of at least 95, and then reinstall the cap. Never exceed the maximum fuel level allowed.

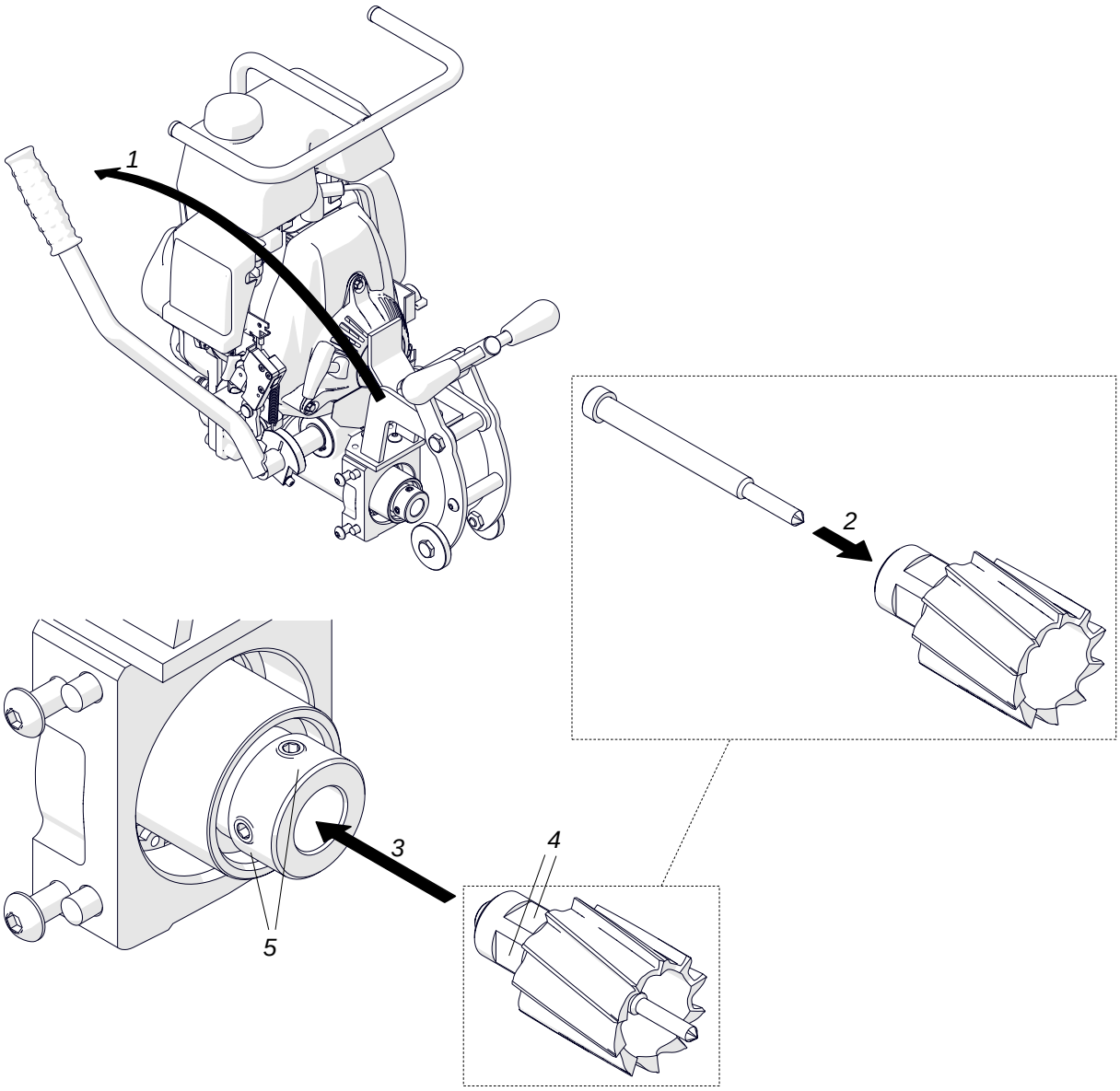




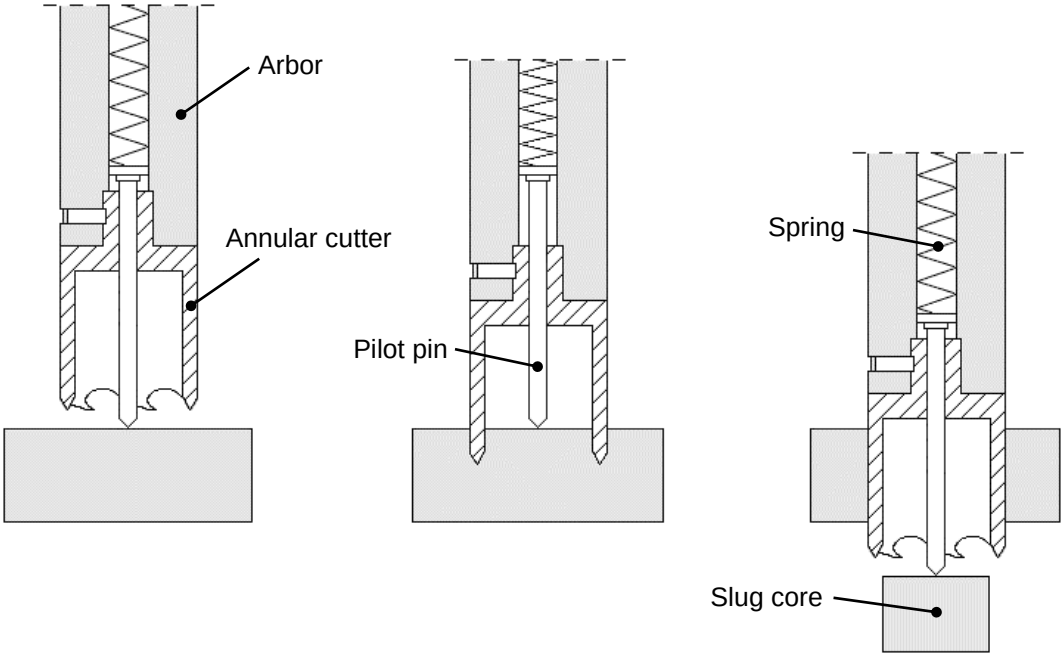
3.4. Installing, removing, and operating the annular cutter

With the engine stopped, move back the feed lever as far as possible (*1*) to move out the arbor. Wear protective gloves, insert the proper pilot pin into the annular cutter (*2*), and then use a clean and dry cloth to wipe the arbor and cutter. Next, place the cutter into the arbor (*3*) so that the flats *4* are aligned with the set screws *5*, and then use the 4 mm hex wrench to tighten the set screws.

To remove the cutter, loosen the screws *5* with the 4 mm hex wrench.



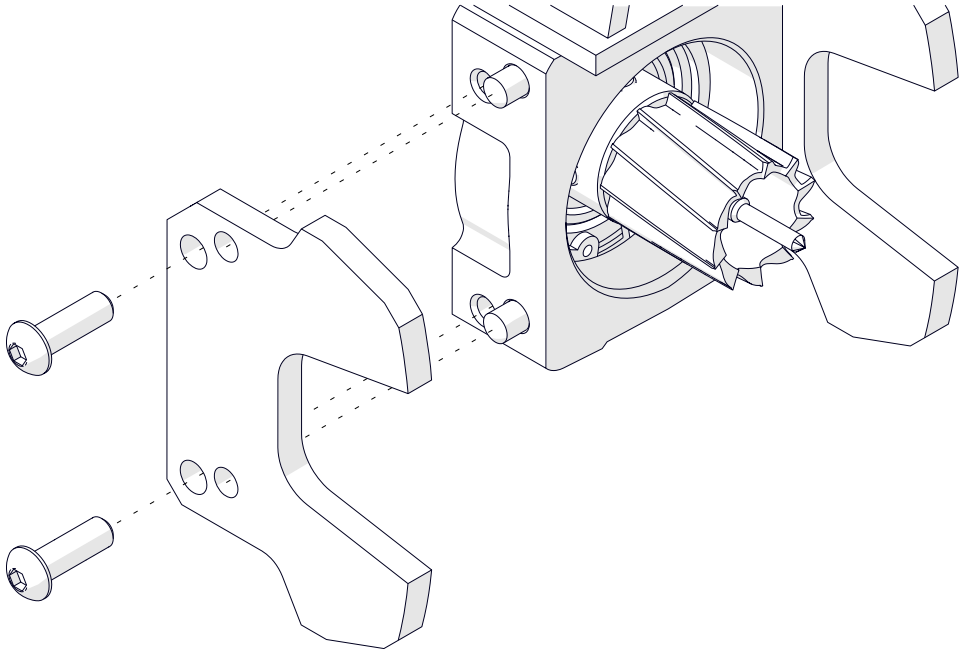
The following figure shows how annular cutters work. As the cutter drills into the workpiece, the pilot pin retracts and tightens the spring. As a result, after the cutter drills through the material, the slug core is expelled from the cutter. Also, when pressed, the pilot pin allows application of coolant to the inside of the cutter.



3.5. Installing and removing the rail profile templates

Select rail profile templates (not included) consistent with rail standard, place them on the pins, and then tighten with the screws and the 6 mm hex wrench.

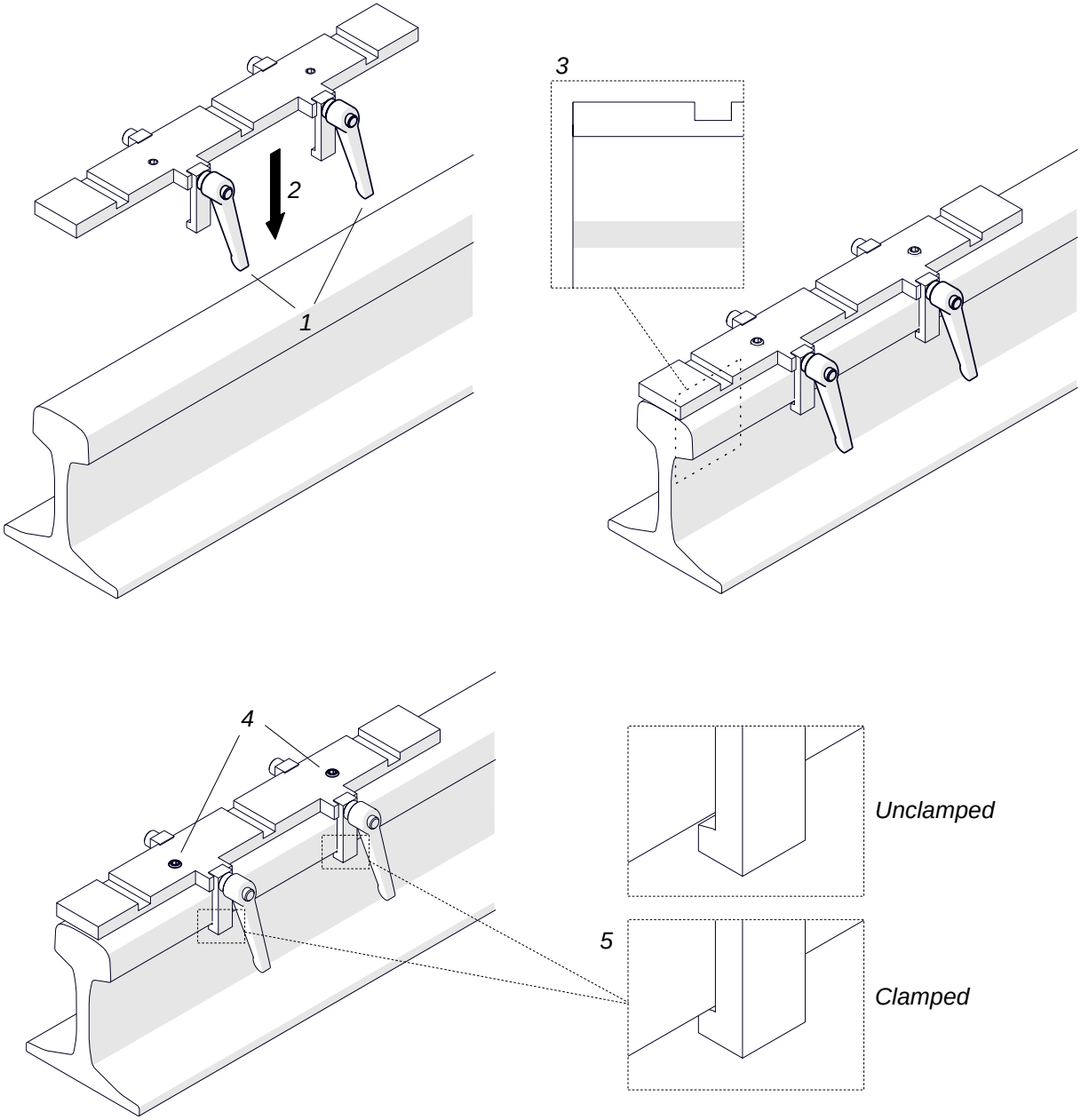
To remove the templates, unscrew them with the 6 mm hex wrench.



3.6. Installing and removing the hole center positioner

Select a hole center positioner (not included) consistent with rail standard, and loosen the levers *1*. Place the positioner onto the rail (*2*) so that the positioner face is aligned with the rail face (*3*). Then, lock the levers in this position. Next, use the 6 mm hex wrench to tighten the screws *4* so that the positioner is clamped onto the rail (*5*).

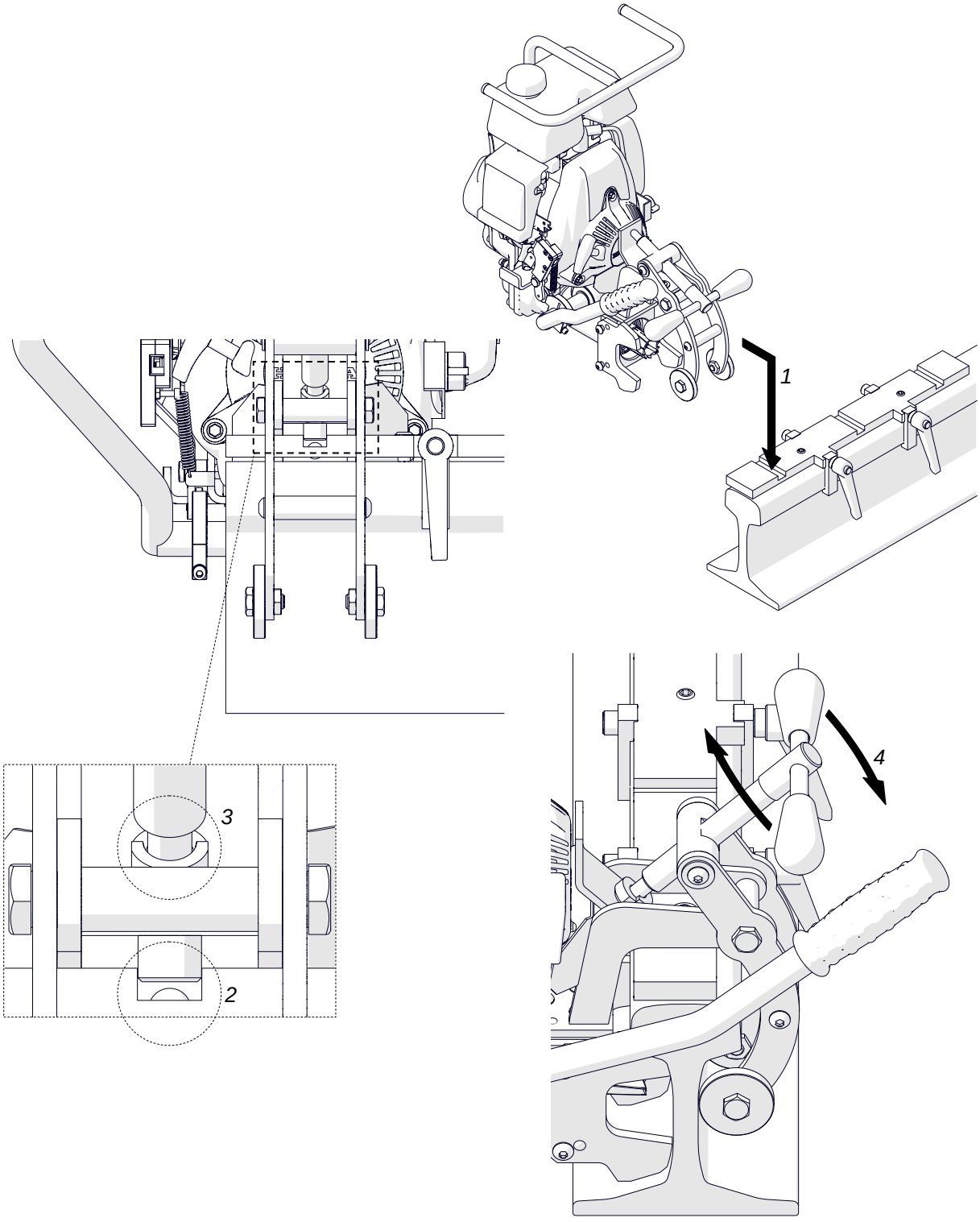
To remove the positioner, loosen the screws *4* and levers *1*.



3.7. Clamping the machine onto the rail and unclamping

Place the machine onto the rail (*1*) so that the locating pin comes into the first groove of the hole center positioner (*2*) and the pressing screw comes into the resisting socket (*3*). Then, tighten the screw (*4*) to clamp the machine onto the rail.

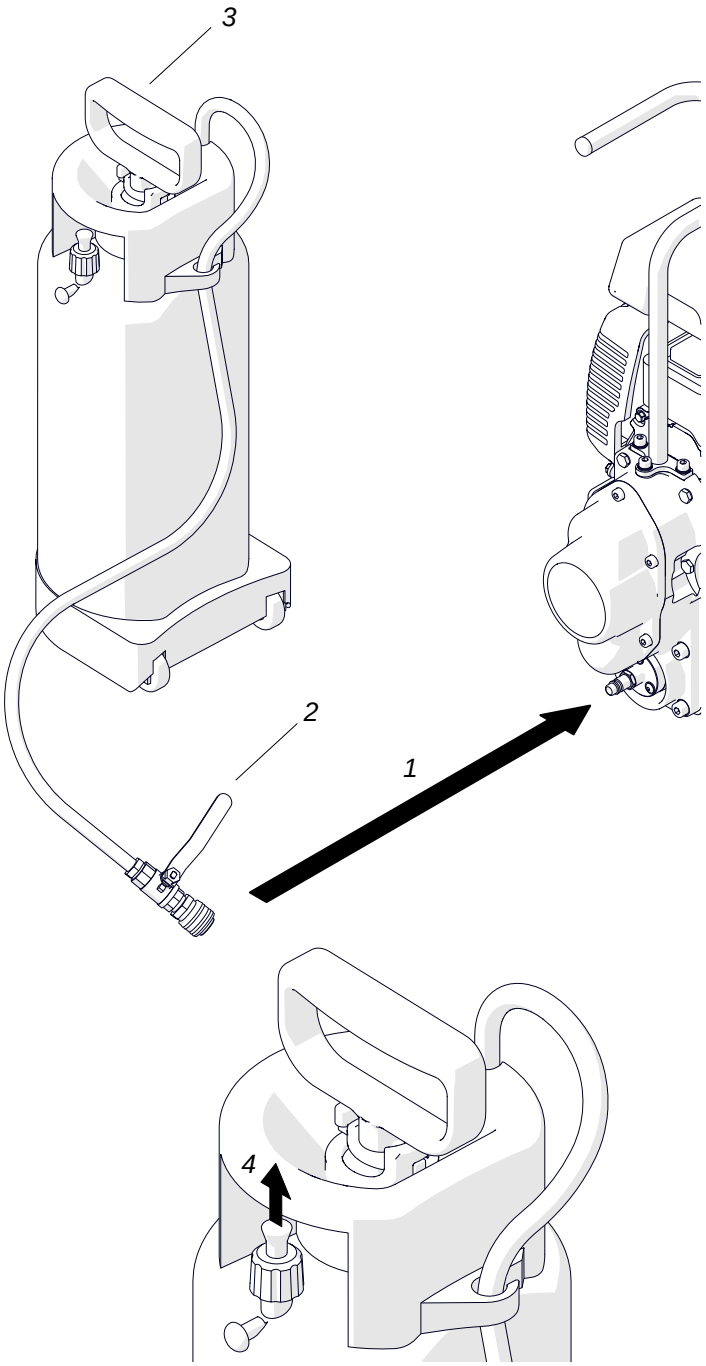
To unclamp the machine, loosen the pressing screw.



3.8. Connecting and disconnecting the cooling system

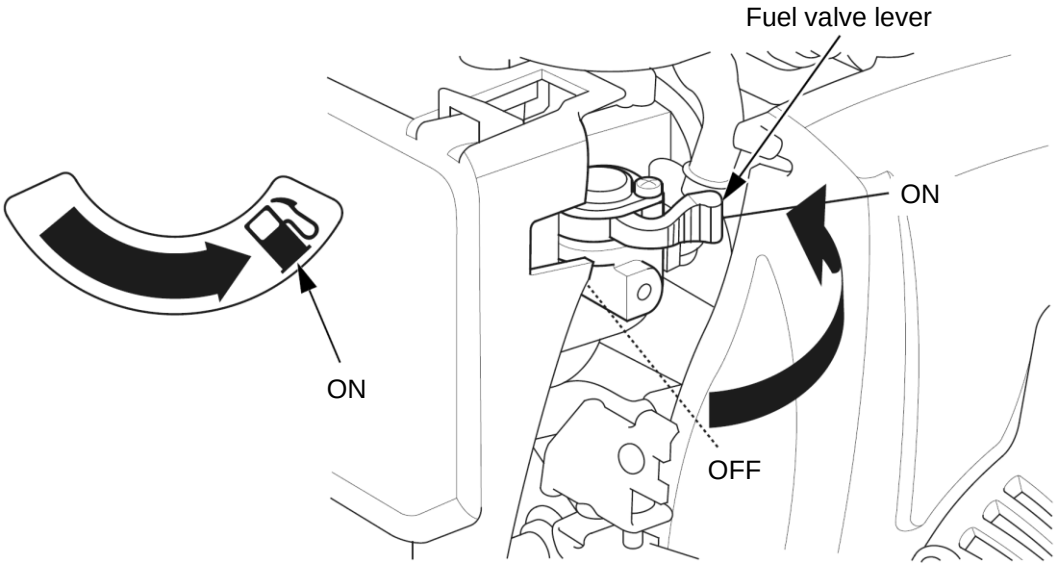
When using an annular cutter, attach the cooling system to the fitting (*1*), and then fill the bottle with a coolant. Do not use only water as the coolant. However, using emulsions formed from drilling oil and water is adequate. Next, open the valve *2*, and then rotate the handle *3* and move it up-down several times to build a pressure inside the bottle.

To disconnect, close the valve *2*, pull up the release valve (*4*) to release excess pressure, and then detach the cooling system from the fitting.

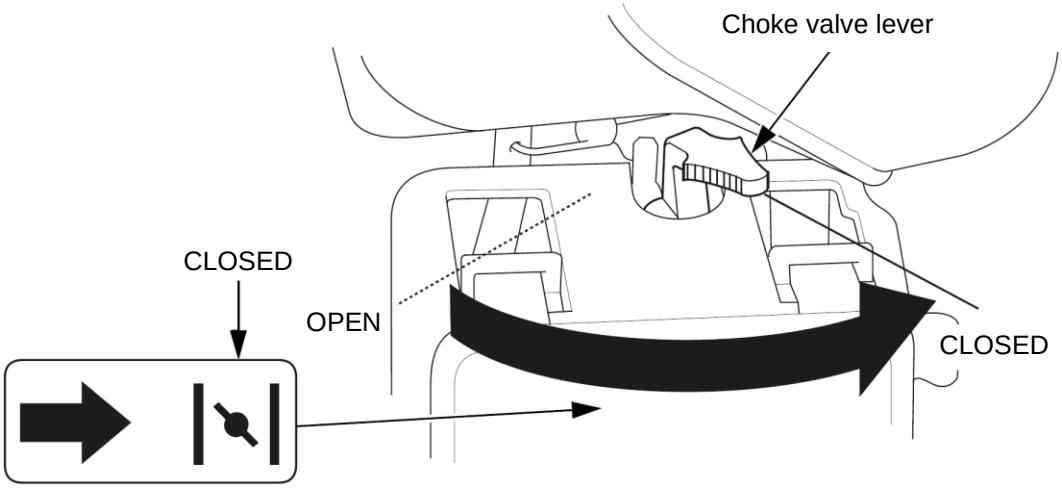


3.9. Drilling

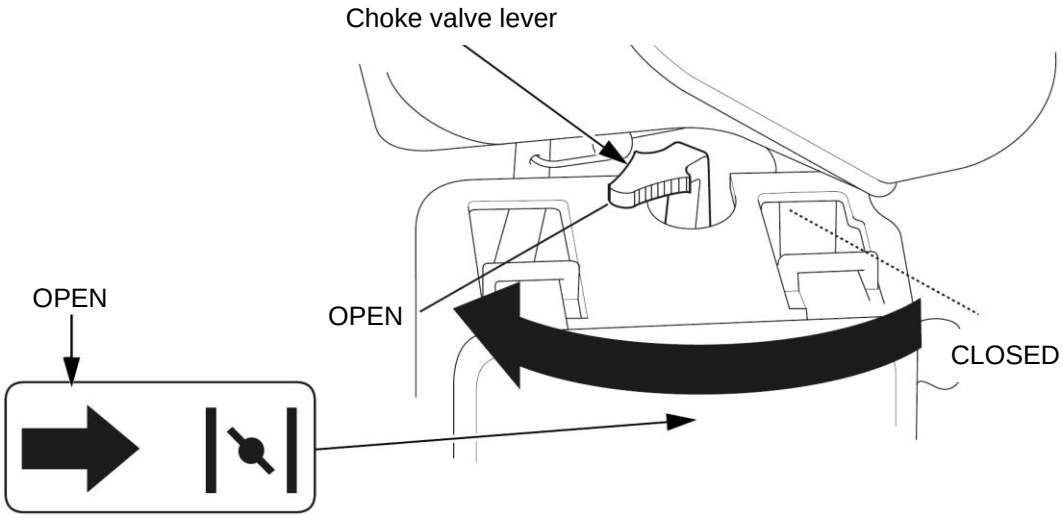
Set the fuel valve lever to ON.



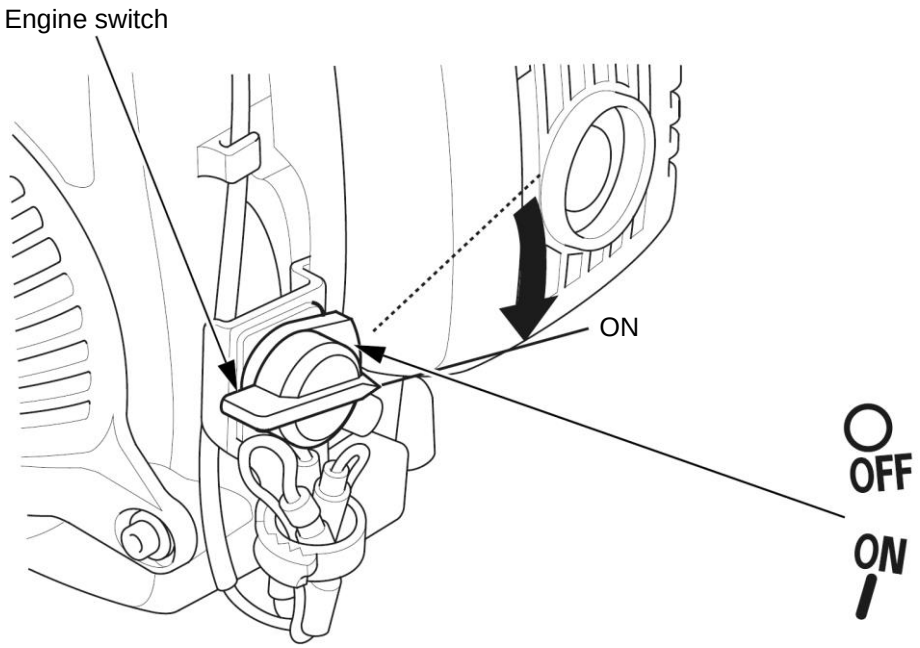
To start a cold engine, set the choke valve lever to CLOSED.



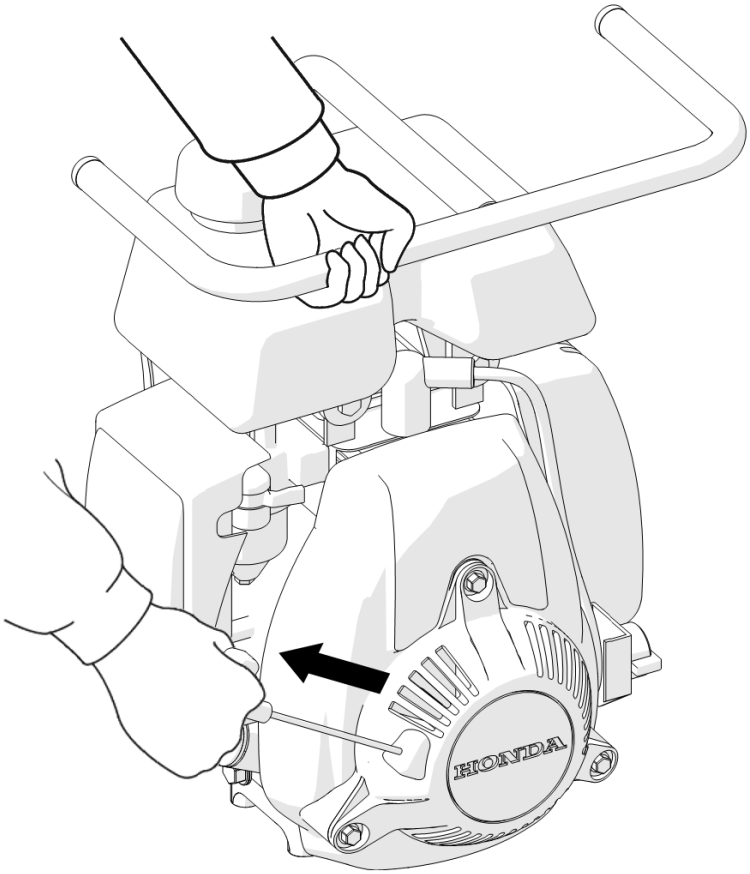
To start a warm engine, set the choke valve lever to OPEN.



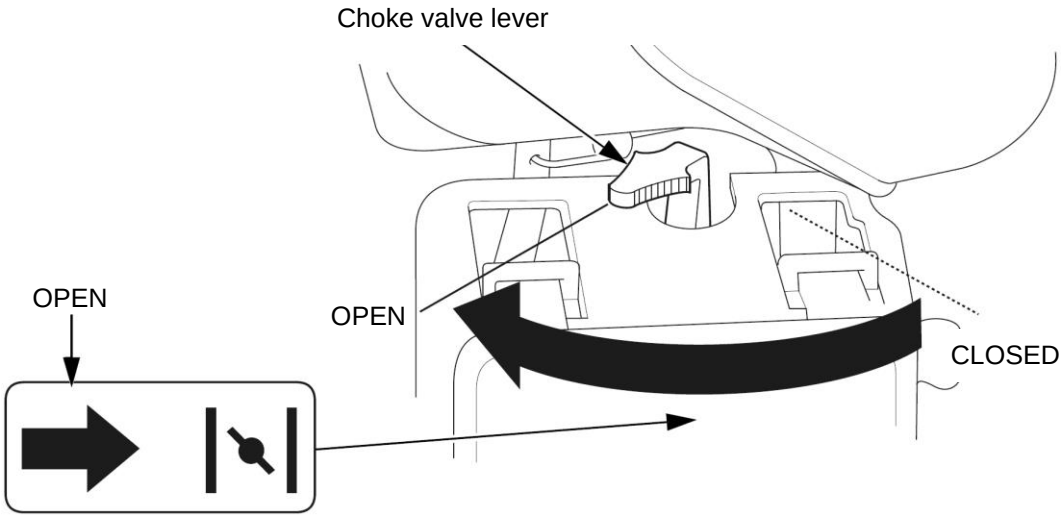
Set the engine switch to ON.



Hold the carrying handle with one hand and lightly pull the starter grip in the direction of the arrow until you feel resistance, and then pull briskly. After the engine is started, gently return the starter grip.

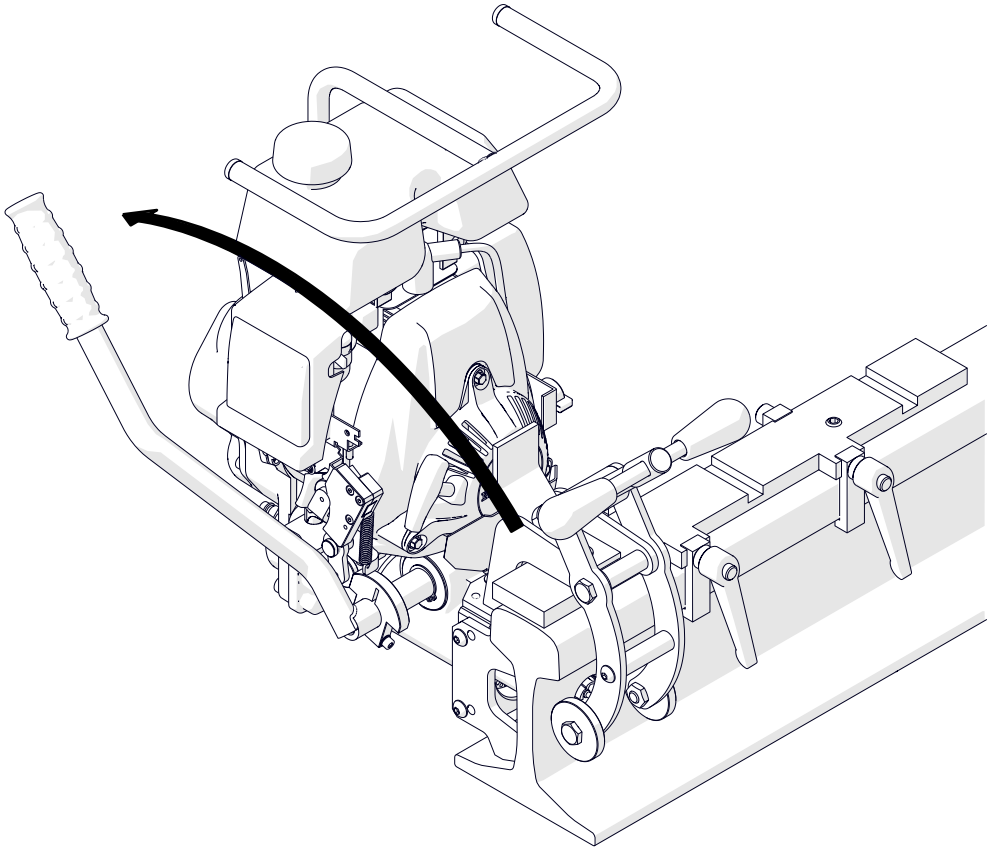


If the choke valve was closed, open it.

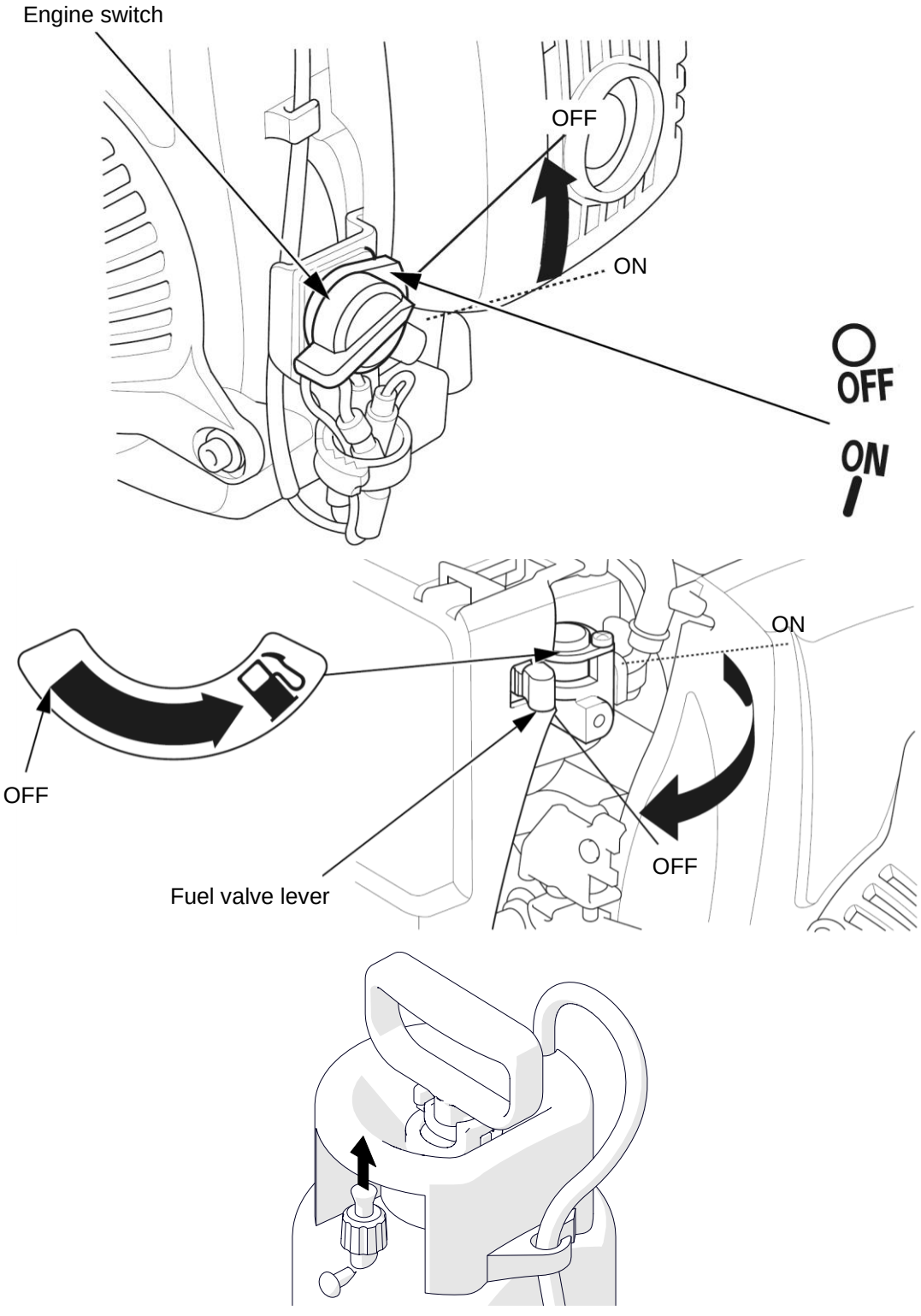


Slowly move back the feed lever to move out the cutter and start drilling until the lever is retracted as far as possible.

When the cutter goes through the workpiece, the slug core is expelled from the cutter with a substantial force.



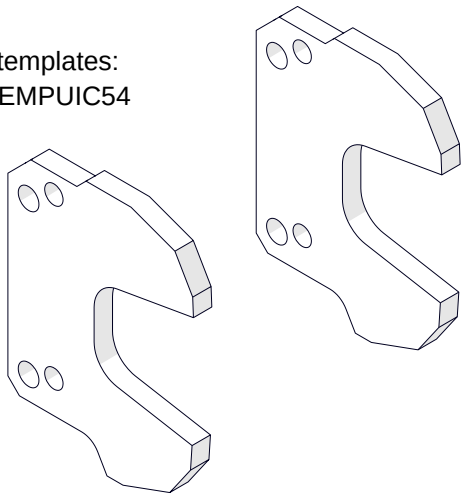
After the first hole is made, move the feed lever to the front as far as possible to retract the cutter, and then unclamp the machine as described before. Next, clamp the machine onto the rail in the next groove of the hole center positioner, and make a next hole. Proceed as described until all holes are made. After the work is finished, stop the engine, close the fuel valve, and then pull up the release valve to release excess pressure.



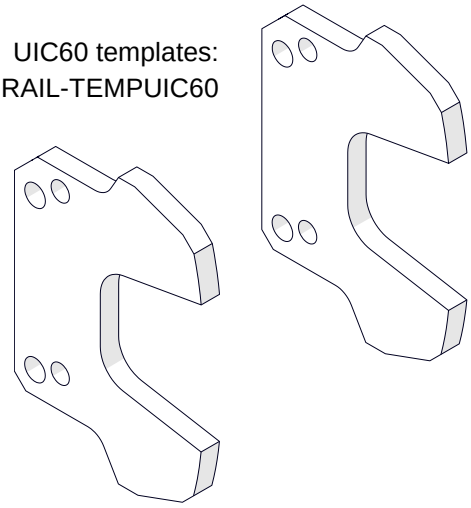
4. ACCESSORIES

4.1. Rail profile templates

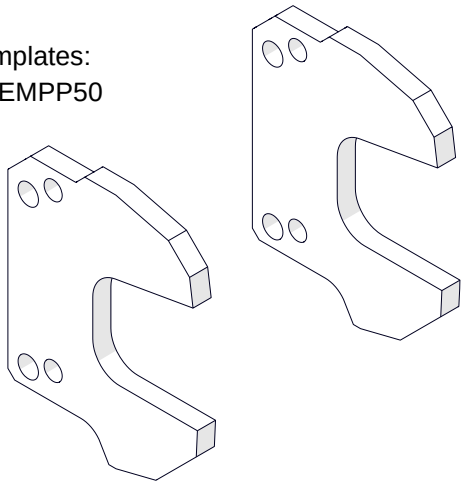
UIC54 templates:
RAIL-TEMPUIC54



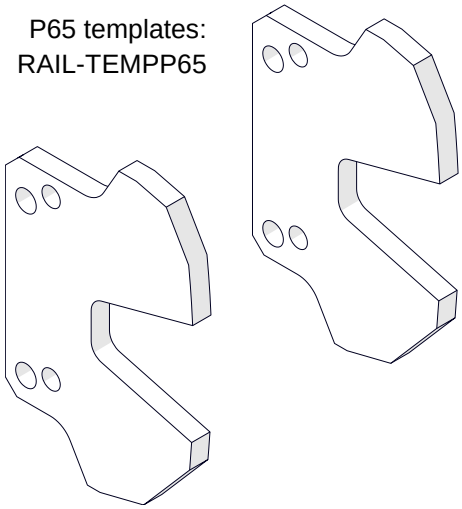
UIC60 templates:
RAIL-TEMPUIC60



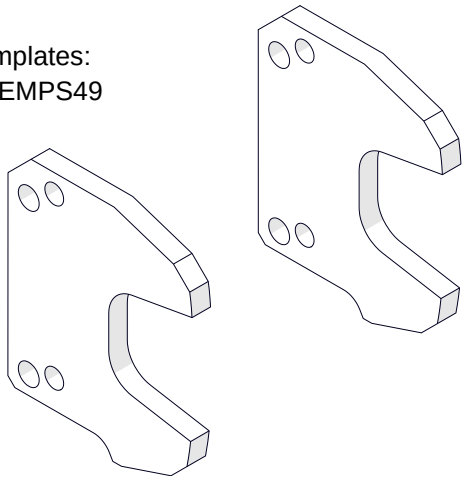
P50 templates:
RAIL-TEMPP50



P65 templates:
RAIL-TEMPP65

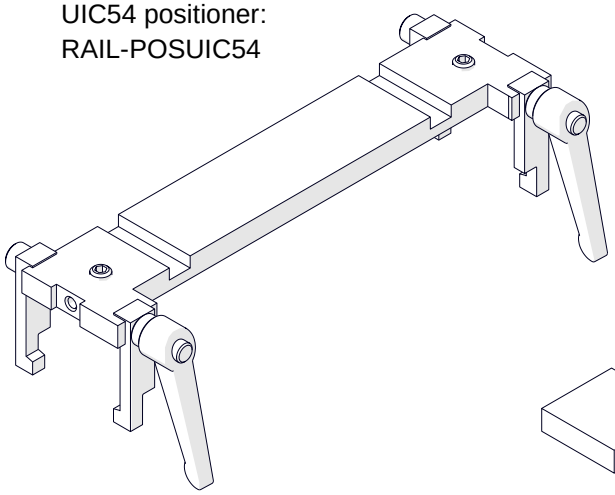


S49 templates:
RAIL-TEMPS49

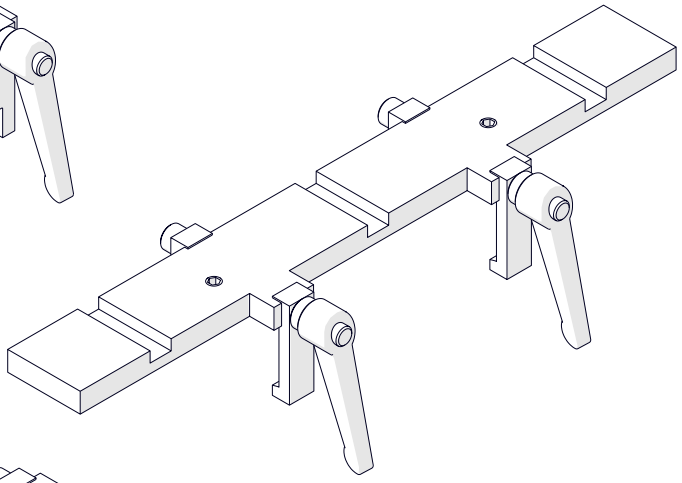


4.2. Hole center positioners

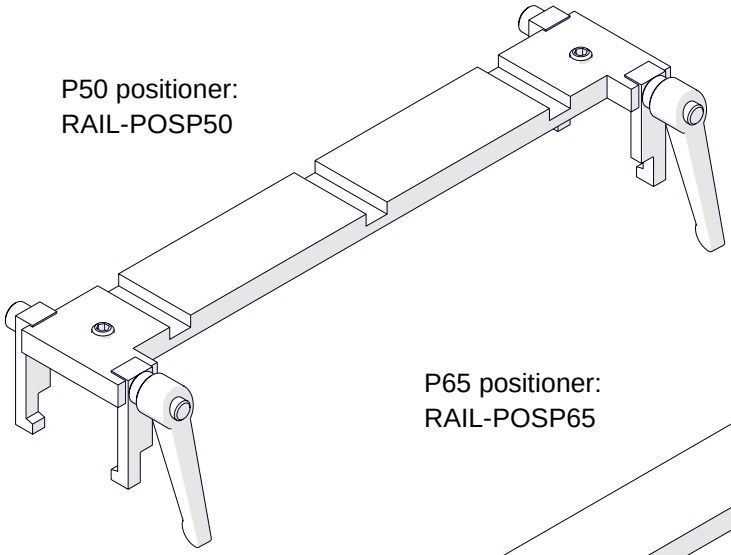
UIC54 positioner:
RAIL-POSUIC54



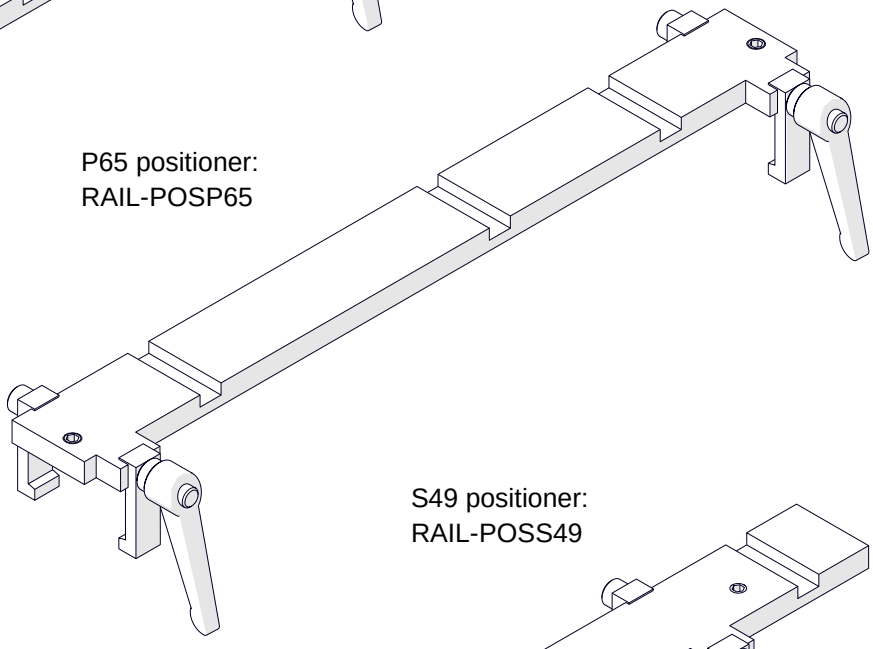
UIC60 positioner:
RAIL-POSUIC60



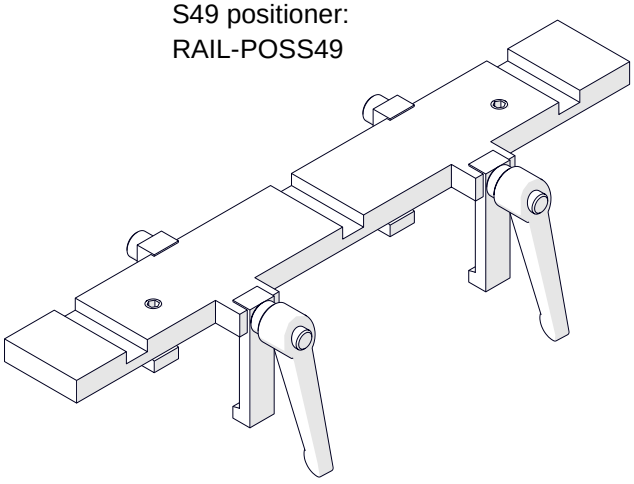
P50 positioner:
RAIL-POSP50



P65 positioner:
RAIL-POSP65



S49 positioner:
RAIL-POSS49

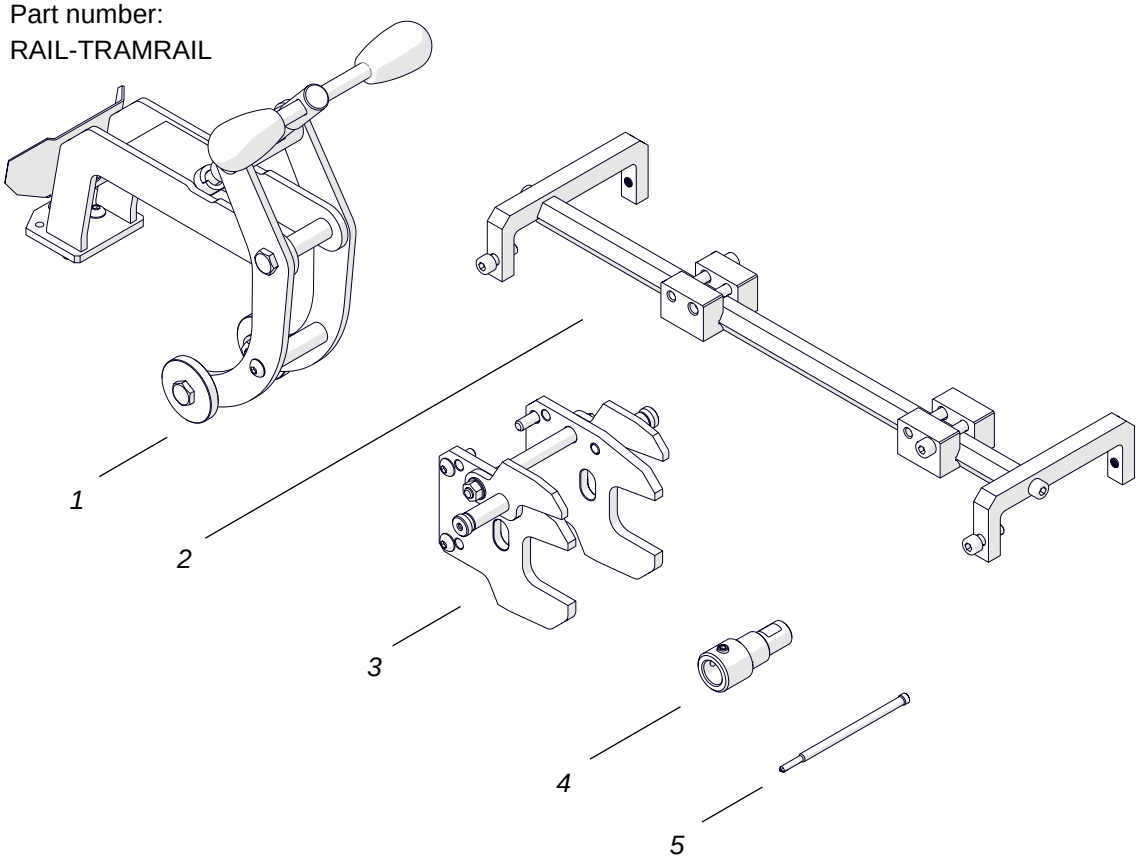


4.3. Attachment for tram rails

4.3.1. General information

The attachment allows drilling holes in 60R2-73 tram rails.

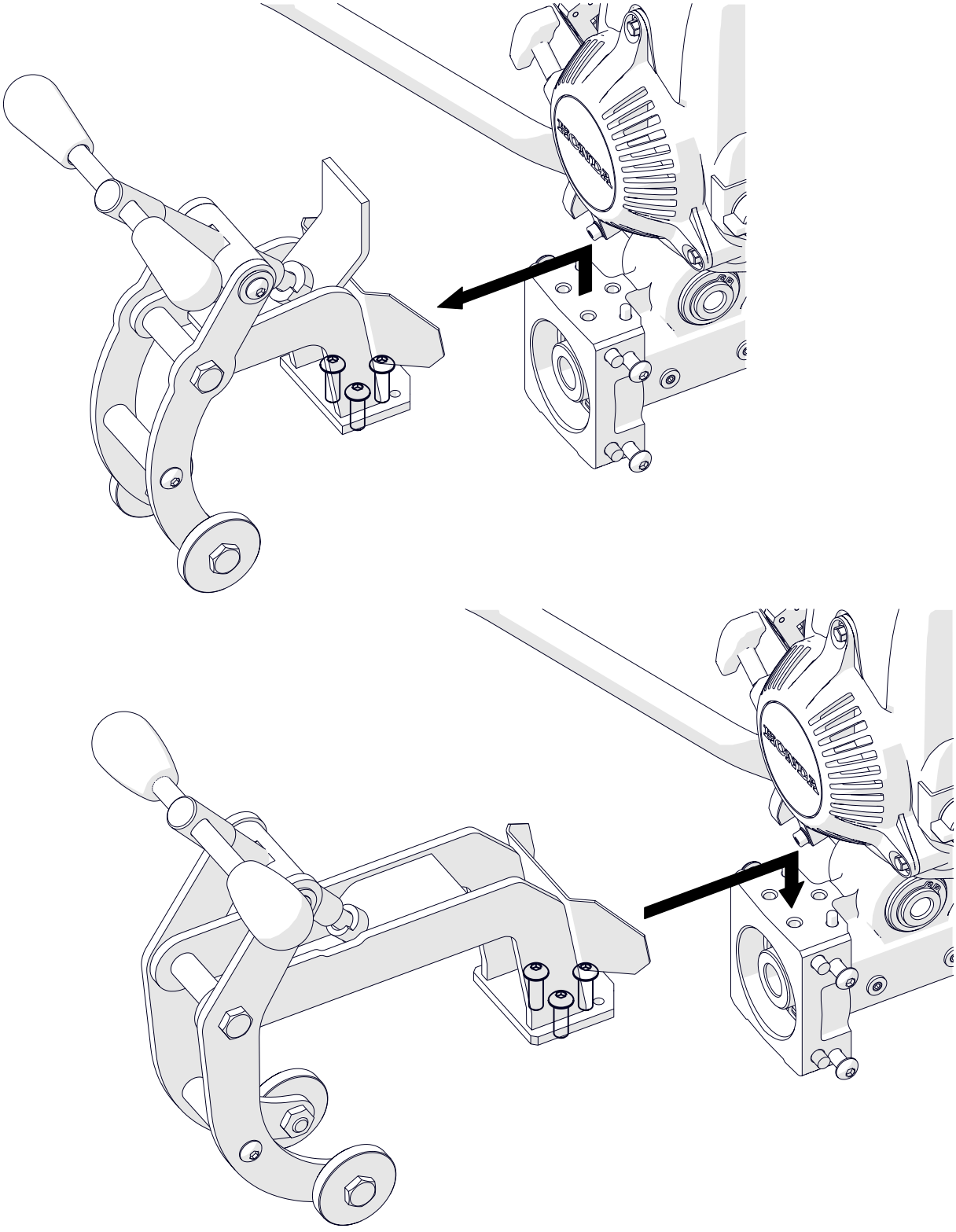
Part number:
RAIL-TRAMRAIL



1	Clamping unit	1 unit
2	Hole center positioner	1 unit
3	Set of templates	1 unit
4	Annular cutter extension	1 unit
5	Pilot pin	1 unit

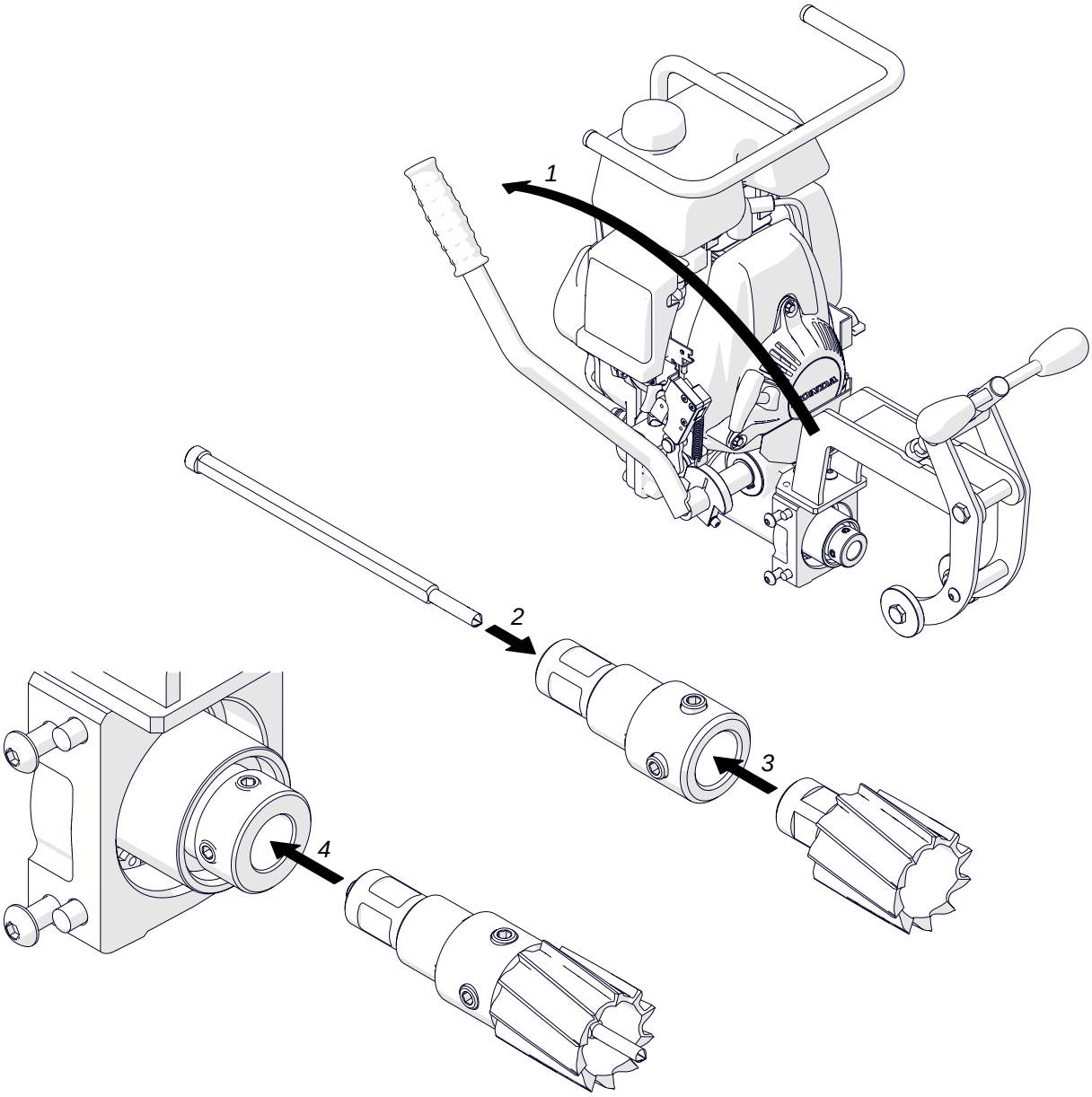
4.3.2. Installing the clamping unit

Use the 5 mm hex wrench to remove the standard clamping unit and then in the same place install the clamping unit of the attachment.



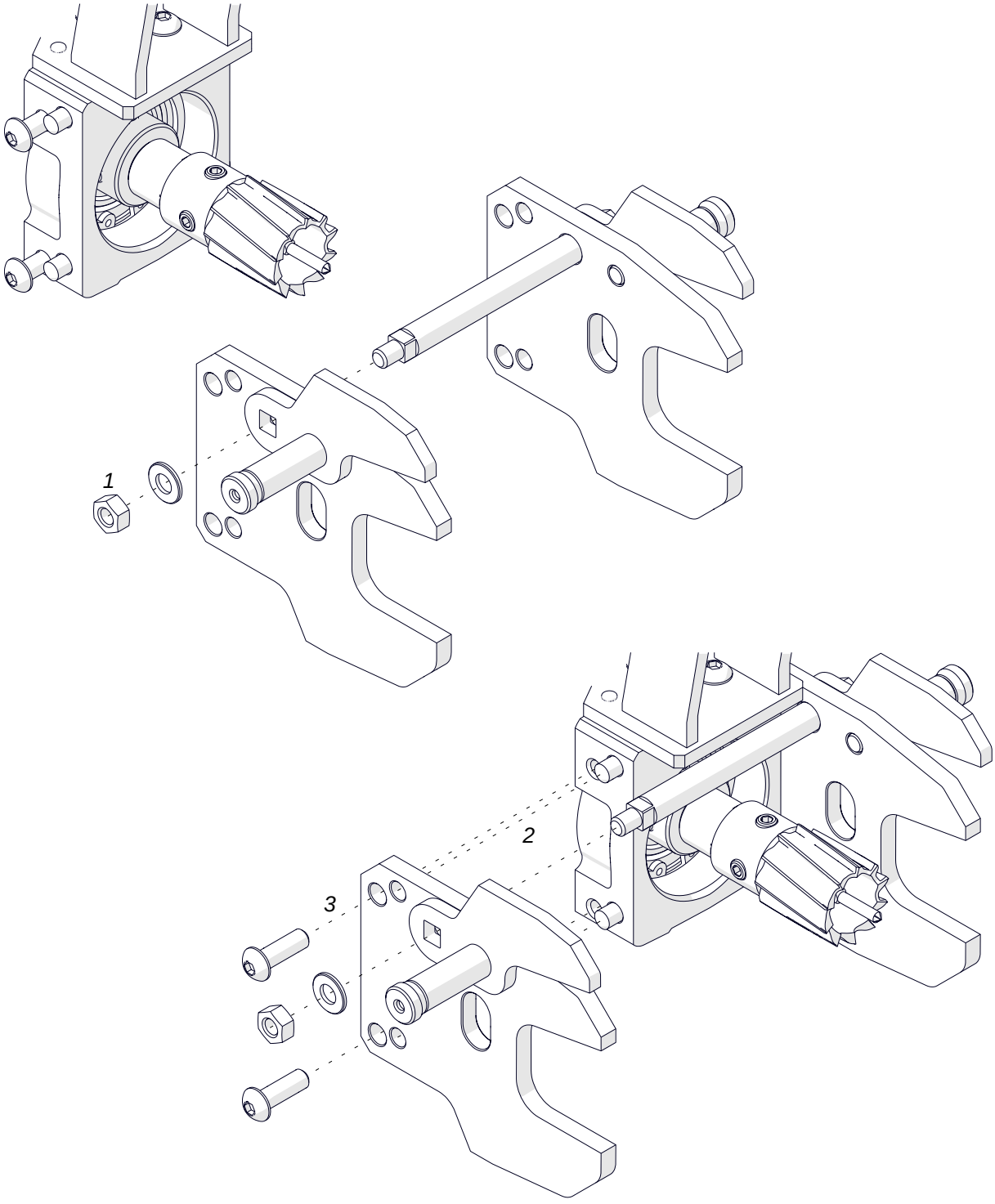
4.3.3. Installing the annular cutter

Move back the feed lever as far as possible (*1*) to move out the arbor. Wear protective gloves, and place the proper pilot pin into the extension (*2*). Then, use a clean and dry cloth to wipe the arbor, extension, and cutter. Next, place the cutter into the extension (*3*) so that the flats are aligned with the set screws, and then use the 4 mm hex wrench to tighten the set screws. Place the extension into the arbor and tighten.



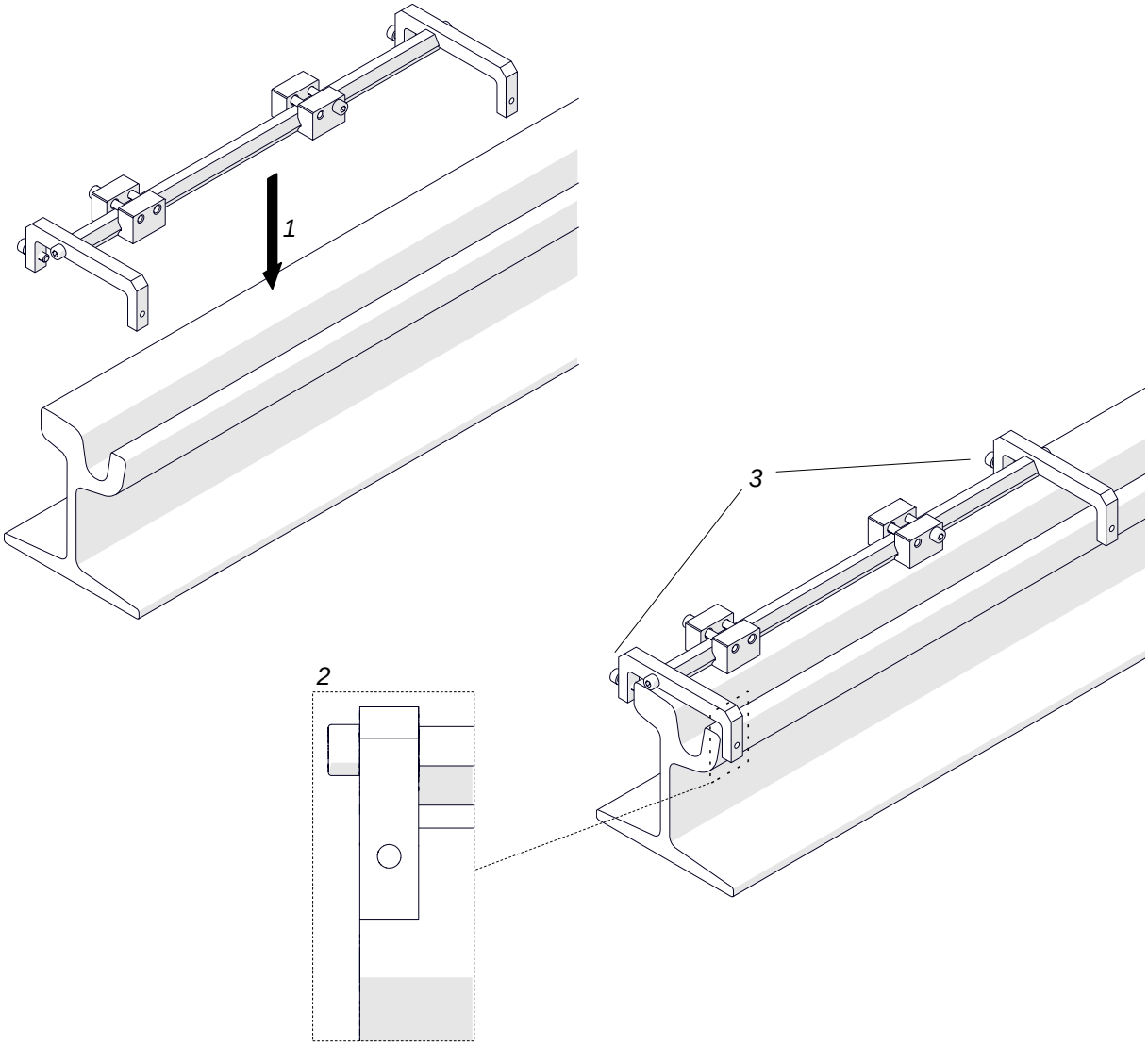
4.3.4. Installing the rail profile templates

Use the 13 mm flat wrench (not included) to unscrew the nut (*1*) to separate the templates, and then place them on the pins (*2*). Use the 5 mm hex wrench (*3*) to tighten the templates, and then tighten the nut.



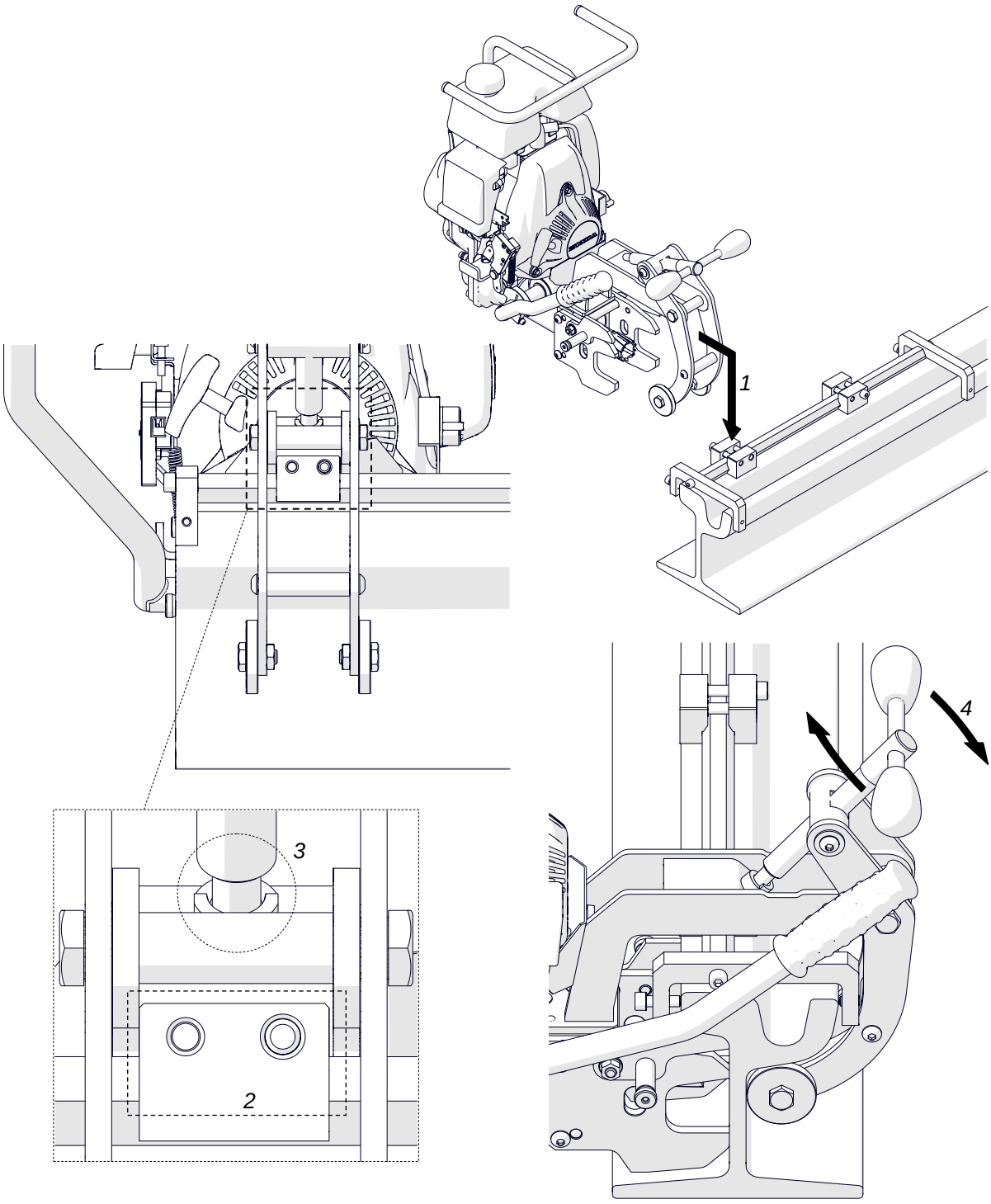
4.3.5. Installing the hole center positioner

Place the hole center positioner onto the rail (*1*) so that the positioner face is aligned with the rail face (*2*). Then, use the 6 mm hex wrench to tighten the screws (*3*).



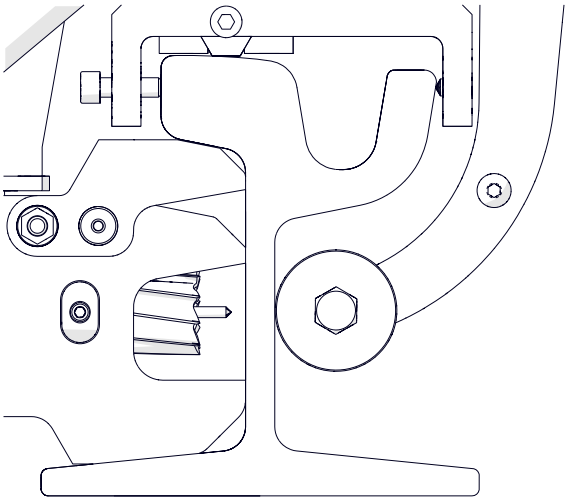
4.3.6. Clamping the machine onto the rail

Place the machine onto the rail (*1*) so that the block comes between the arms (*2*) and the pressing screw comes into the resisting socket (*3*). Then, tighten the screw (*4*) to clamp the machine onto the rail.

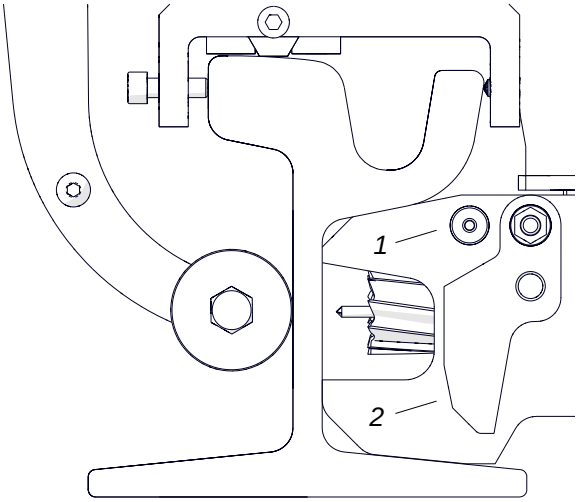


Before placing the machine on the right-hand side of the rail, in both templates pull the lock *1* and rotate the bracket *2*.

Machine on the left-hand side



Machine on the right-hand side



5. DECLARATION OF CONFORMITY

EC Declaration of Conformity

We

JEI DRILLING & CUTTING SOLUTIONS LTD
UNIT 21 EMPIRE BUSINESS
ENTERPRISE WAY
BURNLEY, LANCASHIRE, BB12 6LT

declare with full responsibility that:

RAILBEAST RDP-36 Petrol Rail Drilling Machine

is manufactured in accordance with the following standards:

- EN ISO 12100:2012

and satisfies safety regulations of the guideline 2006/42/WE.

Person authorized to compile the technical file:
David McFadden, Unit 21 Empire Business Park, Burnley

Burnley, 12th February 2020

David McFadden
Managing Director

6. QUALITY CONTROL

Machine control card

RAILBEAST RDP-36 Petrol Rail Drilling Machine

Serial number .....

Date of test .....

Test results:

Test 1	Spindle rotational speed with feed lever in the initial position (n ≤ 130 rpm)			
	Spindle moved out by $l_1 \leq 10 \pm 2$ [mm]	l_1 = ... [mm]	Spindle rotational speed	n = ... [rpm]
Test 2	Spindle rotational speed with feed lever in the load position (n_{max} = 280 ±15 rpm)			
	Spindle moved out by $l_2 \geq 16 \pm 2$ [mm]	l_2 = ... [mm]	Spindle rotational speed	n_{max} = ... [rpm]

Name of tester .....

Quality control .....

7. WARRANTY CARD

WARRANTY CARD No.....

..... in the name of Manufacturer warrants the RAILBEAST RDP-36 Petrol Rail Drilling Machine to be free of defects in material and workmanship under normal use for a period of 12 months from the date of sale.

This warranty does not cover tools, Honda GXH50 engine, and damage or wear that arise from misuse, accident, tempering or any other causes not related to defects in workmanship or material.

Date of production .....

Serial number .....

Date of sale .....

Signature of seller.....

1.02 / 15 November 2017

WE RESERVE THE RIGHT TO MAKE CHANGES IN THIS MANUAL WITHOUT NOTICE