LIGHTWEIGHT HORIZONTAL

BENDING MACHINE

FOR RAILS

MODEL J L P 75

NO 04014 / H68817

03/07

SUMMARY

CHAPTER 1 - SAFETY

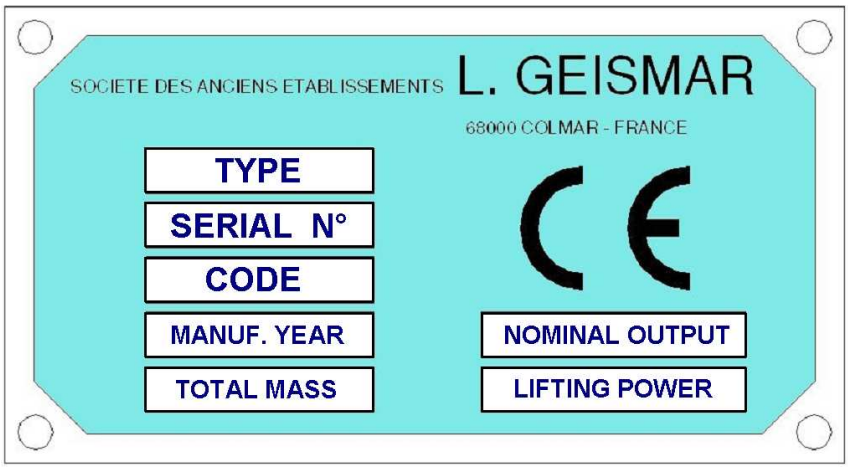
1.1. FOREWORD

This manual contains information about safety, usage and maintenance. It describes the broad principles of the basic operations, on the understanding that techniques can change as the operator acquires more knowledge about his machine and / or equipment and its capabilities.

The notes and illustrations in this manual may show details and accessories that are different from your equipment, because while the basic performances of the equipment remain the same, improvements are being made continually and may give rise to some modifications.

If you have a question about your equipment or this manual, please contact our company to obtain the latest information.

To order spare parts or make requests, when you call or write to our Company about your equipment, please give the model reference and serial number. This information can be found on the company plate attached to the equipment



1.2. SAFETY AND GENERAL USAGE INSTRUCTIONS

Most accidents concerning usage, running maintenance and repair are due to failure to observe basic safety rules and precautions. Therefore, they can be avoided by recognizing the risks to which you are exposed, and by taking the corresponding preventive measures. It is important to be aware of the potential dangers. You should also have the training, expertise and tooling required for using, maintaining and repairing this equipment.

The Company is not able to anticipate all hazardous situations. Therefore the safety rules and instructions in this documentation and on the appliance are not exhaustive. Anyone who uses a method or a tool that is not appropriate for the situation must therefore ensure that he does not place himself or other people in danger, and that the usage, maintenance or repair method is not likely to damage the appliance or endanger safety. In addition, the operator must pay attention to environment-related rules, regardless of the area in which the appliance is operating.

Before using the equipment, or before performing an operation or maintenance, you should be familiar with the instruction manual and its appendixes, and with safety requirements applicable in the workplace. Failure to obey these instructions, or usage that runs contrary to them can be hazardous, and the manufacturer declines any responsibility.

This documentation is intended for people authorized to use the equipment, and for people undertaking maintenance on it. For preventive maintenance and repairs, make sure you are familiar with the equipment, and with the location of its various parts, and with the special aspects of its usage or maintenance.

The yield and satisfactory operation of this equipment mainly depend on its correct use, satisfactory maintenance and constant supervision. We draw your attention to the fact that it is important to read this documentation before taking control for the first time, and to refer to it during operation or maintenance work.

IMPORTANT!

Every user of the equipment must comply with applicable workplace regulations.

1.3. GENERAL SAFETY REQUIREMENTS

- The safety of personnel demands that you obey the instructions stated in this documentation.
- The equipment is an effective working tool that must be properly operated and properly maintained.
- You will find safety instructions in this manual, and marked on the equipment or accompanying it. Make sure you read them and understand them properly. They warn you of potential dangers and tell you how to avoid them.
- Safety does not consist of just complying with recommendations when you are working on or with the equipment, you should also think of potential hazards and how to avoid them.
- Users of the equipment must have received complete training given by a qualified person, possibly followed by a period of practice.
- Do not start to work with the equipment until you are sure that you can do so in perfect safety for yourself and for other people. Don't work with the equipment until you are certain that you can control it properly.
- If something does not seem clear to you, whether regarding the equipment or the work to be done, seek information from a qualified person. Never make assumptions.
- Only use the equipment for the purposes for which it was designed.
- Never use the equipment for transporting people. The operator control posts are only for people actually running the equipment.
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WARNING!

The operator must make sure that nobody, including himself, is located within the field of action of the moving parts of the equipment when it is working.

The company declines any responsibility for modifications or repairs made without its agreement, especially if non-original parts not supplied by us are used.

- Do not touch moving parts if you are not certain that you can do so without risk.
- There are safety installations located on the equipment (emergency stop controls, circuit breaker, etc.) Make sure you know where they are and check that they work before starting the equipment up.
- To prevent any risk of accidents or injuries, it is essential to wear clothing and equipment that is compliant with safety standards applicable at the workplace.

Always wear:

- Reflective belt or jacket;
- Robust gloves (that aren't slippery);
- Safety trousers or trousers with protective reinforcements;
- Steel-tipped boots with non-slip soles.

- You must read the data plates affixed to the equipment, and comply with the information they provide. The capacities stated on the loading plates should never be exceeded.
- There are pictograms on the equipment; it is important to be familiar with them and to be able to read them. Make sure you clean them, or replace them if they are damaged, missing or illegible. If there is a pictogram on an old part replaced, a new pictogram should be present on the new replacement part. Contact our company for new pictograms.
- During maintenance on the equipment, or when lifting a load with it, check before starting that the operation can be performed without risk. Never move about or park in close proximity to a hanging load. Never leave a hanging load unattended.

  ⓘ For more information on safety of use or operation of parts of the equipment, please refer to append the manufacturer documentation for said items.

Transportation and storage

- Handle with care, avoid impacts, and use appropriate facilities (handles, rings, slings, hooks, yokes, lifting beams, etc).
- Never transport without stowing.
- Obey storage instructions, when such exist; in particular, never stack if there is a risk of distortion. Never store in an abnormal position; provide bracings during transportation.
- Protect against corrosion and outside attacks.
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Usage, maintenance and operation

- Establish an inspection program and record all maintenance operations.
- Replace any suspect or worn parts.
- Never modify the equipment or product without study by and authorization from the manufacturer.
- Never modify values and settings of safety systems without the manufacturer's agreement.
- Never neutralize preventive and limitation systems.
- Never fill the fuel tank when the engine is running.
- Always fill with fuel in a properly ventilated location. Never smoke or bring flames and sparks within close proximity when filling with fuel.
- Make sure you do not spill fuel (petrol or diesel) while filling the tank.

After prolonged shutdown or during a periodic check

- Check operation and adjustments, and -- in particular -- safety systems.
- If damage or abnormal wear is noticed, the parts in question must be replaced.
- Check the tightening and connections of assembled parts.

While working

- Be familiar with the working area and its particularities; only allow people necessary for the operation to be within proximity.
- Comply with general and special safety conditions applicable on the workplace, and make sure that you are constantly attentive to safety during all operations.
- Make sure that people are familiar with the steps to take in the event of accidents, and the preventive measures to be take during the various operations.
- Never block or remove travel limiters.
- Never use an appliance in bad condition (worn, distorted, etc.).
- Never cause brutal impacts against the appliance.
- Never use the appliance as a grounding point for welding operations.
- Never use the appliance for a purpose or at a location for which it is not designed.
- Never use the safety systems as means of measurement.
- In the event of abnormal performance, inform appropriately trained persons.

IMPORTANT

These safety and usage instructions do not constitute a waiver to official regulations in force in the country of use. It is up to the party responsible for use of the equipment or product to make sure that these instructions and the previously mentioned legislation correspond. Moreover, to improve information, the party responsible for "client" safety shall add all additional instructions considered necessary.

IMPORTANT

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

- **N°et année de fabrication de la machine**
- **N°de série**
- **Désignation et n°de code des pièces de rechange**

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IMPORTANT

To allow prompt and correct delivery of spare parts, always state :

- **Fabrication year and n°of the machine**
- **Serial number**
- **Order n°and description of spare parts**

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WICHTIG

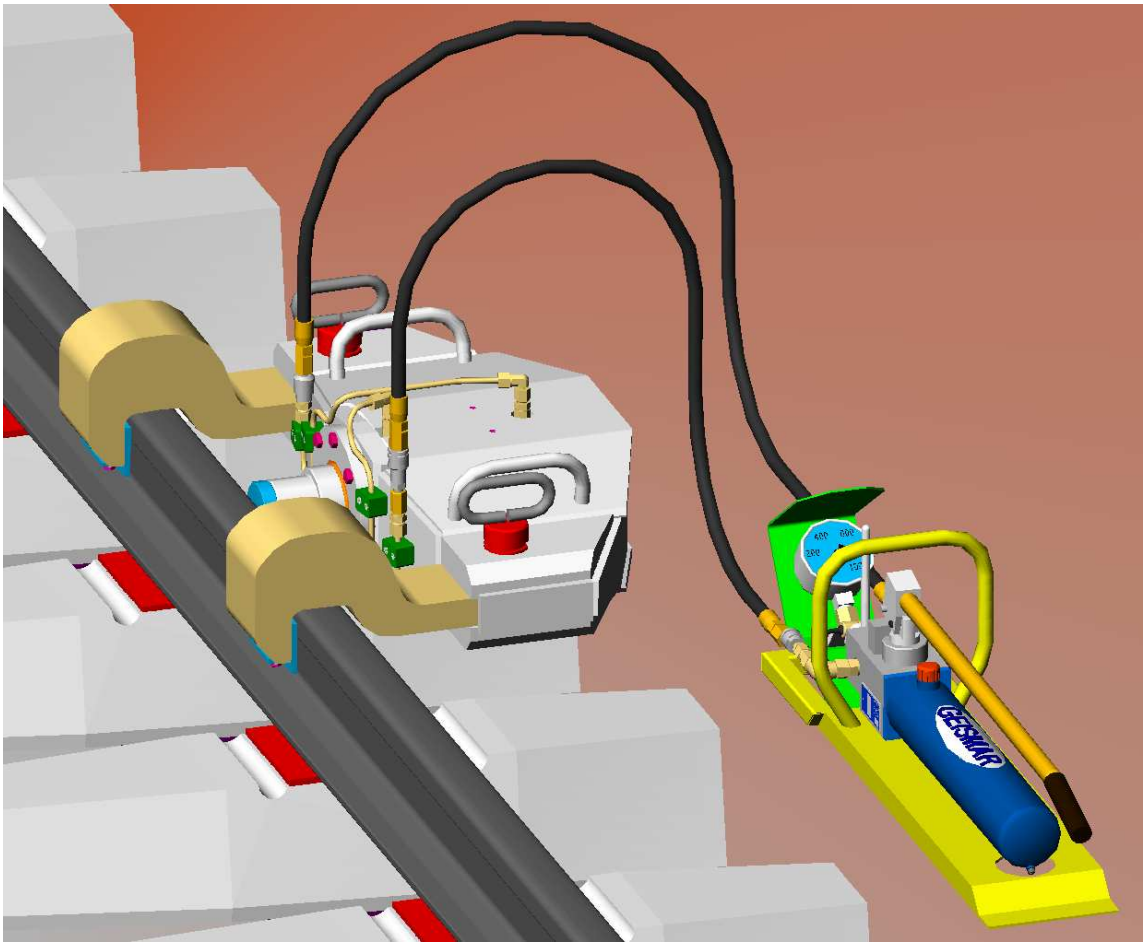
Um uns eine schnelle und fehlerlose Erledigung Ihres Ersatzteil-Auftrages zu erlauben, bitten wir Sie um folgende Angaben :

- **Seriennummer und Baujahr der Maschine**
- **Benennung und Bestellnummer der Ersatzteile**

CHAPTER 2 - DESCRIPTION

2.1. GENERAL

Manufacturer	:	Société des Anciens Etablissements L. GEISMAR 113 bis, av. Charles de Gaulle 92200 NEUILLY SUR SEINE (France)
Description of the equipment	:	Lightweight horizontal bending machine for rails
Model number	:	04014 / H68817
Serial number	:	/

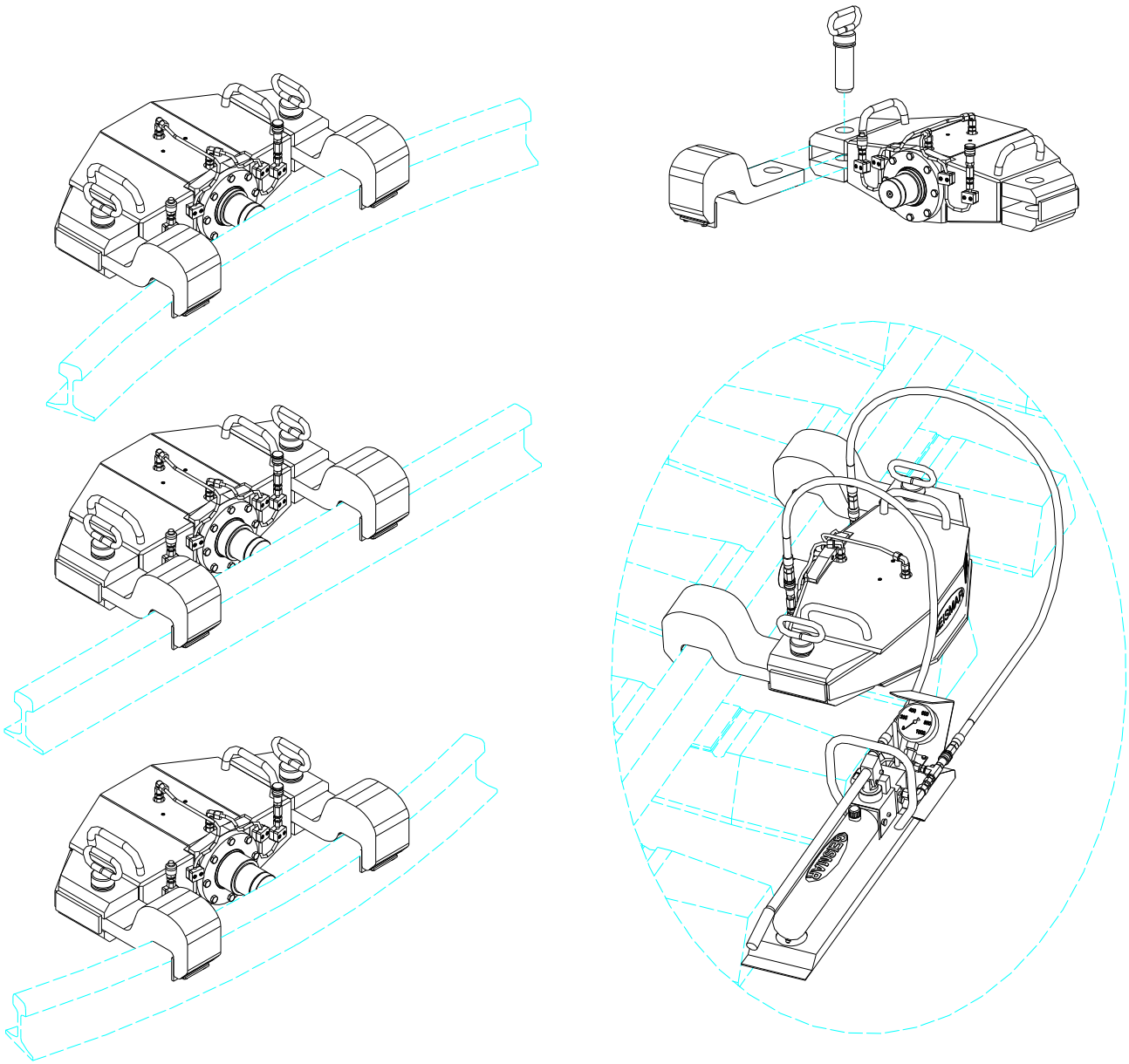


2.1.1. HORIZONTAL BENDING OF RAILS

The light-weight hydraulic bending machine for rails of model “Vignole – UIC 60” is designed for straightening or accentuating a curve in the horizontal direction.

The machine develops a force of 750 kN in the center between two bearing points 680mm apart.

Its lightweight design allows easy handling.



2.2. TECHNICAL DESCRIPTION

The J L P 75 bending machine is composed of:

- a frame,
- two hooks,
- one hydraulic jack,
- one hand-operated pump with control pressure for bending,
- two HP flexible hydraulic hoses.

2.2.1 THE FRAME

It is composed of a very rigid fabricated frame in the shape of a chevron with a small angle of opening. It is made of special high-strength aluminium.

Its shape has been designed to allow easy handling in compliance with loading constraints.

2.2.2. THE TWO HOOKS

The two hooks are of one-piece type and made of high-strength aluminium; they are connected to the frame via removable steel pins.

Replaceable steel wear plates come into contact with the rail.

2.2.3. THE HYDRAULIC JACK

This dual-action hydraulic jack is made of high-strength aluminium, and is mounted rigidly at the center of the frame. The piston rod incorporates a replaceable steel shoe that bears against the rail. The jack is powered from a hand-operated hydraulic pump with two high-pressure thresholds: 665 bars for the output and 50 bars for the inlet of the rod.

2.2.4. THE HAND-OPERATED HYDRAULIC PUMP

Maximum pressure 700 bars. The hydraulic assembly is mounted on a fabricated frame separate from the body of the bending machine. The pump is composed of:

➲ A tank with an effective capacity of 2 litres

➲ A 3-position rotary control valve:

rod extended,

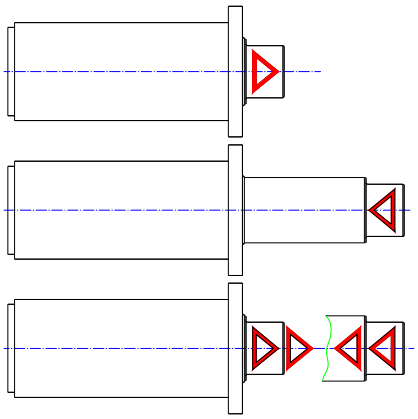
rod extracted,

circuit blocked,

➲ One 665 bar HP pressure limiter, - rod extended;

➲ One 50 bar HP pressure limiter, - rod extracted;

➲ One 50 bar LP pressure limiter, - general for high flow mode;



➲ One pressure gauge on 665 bar HP - rod extended line -

The hand-operated pump is a dual-flow model with automatic switching [L.P. 50 bar – 32,6 cm^3 per stroke] for the approach travel and [H.P. 665 bar – 6,6 cm^3 per stroke] for the working travel.

2.2.5. TWO HYDRAULIC FLEXIBLE HOSES

Flexible hose of high-pressure type with tightness high-speed unions of sufficient length to be able to position the pump in a convenient location in relation to the bending machine.

2.3. MECHANICAL AND HYDRAULIC CHARACTERISTICS

2.3.1. HAND-OPERATED PUMP

Maximum operating pressure		:	700 bar
L.P. operation		:	0 to 50 bar
H.P. operation	Output	:	50 to 665 bar
	Input	:	50 bar
L.P. throughput		:	32,6 cm^3/coup
H.P. throughput	:		6,6 cm^3/coup
Dry weight		:	21 kg
Working pressure		:	665 bar

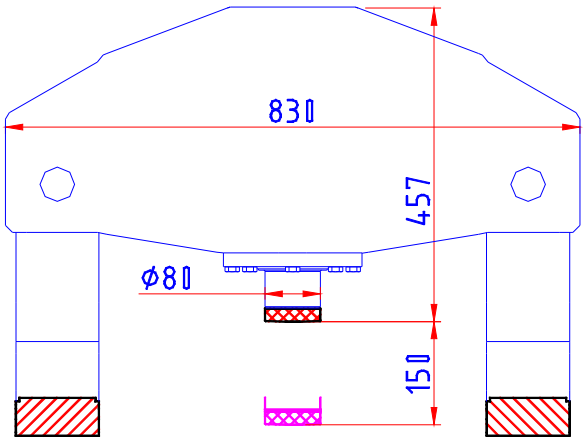
2.3.2. BENDING MACHINE

Center force	:	750 kN (≈ 76,5 T)
Rail type	:	"Vignole type UIC 60"
Weight bare body, jack mounted	:	45 kg
Hook weight	:	11 kg
Pin weight	:	3 kg

2.3.3. JACK

Dual effect
Calculated nominal force:

- When rod extended	:	750 kN to 665 bar (76,5 T)
- When rod retracted	:	17,5 kN to 50 bar
Unit weight	:	14 kg



CHAPTER 3 - DEPLOYMENT AND OPERATION

3.1. BEFORE POSITIONING THE BENDING MACHINE ON THE RAIL, CHECK:

➲ The rod of the jack is in the retracted position;

➲ The 2 bearing plates on hooks and one on the jack rod;

IMPORTANT !

For the transportation of the machine, the pump is equipped with a yellow plug to prevent any leakage of oil. When deploying the appliance, this yellow plug should be replaced with the orange filling plug, so as to enable the tank to be vented.

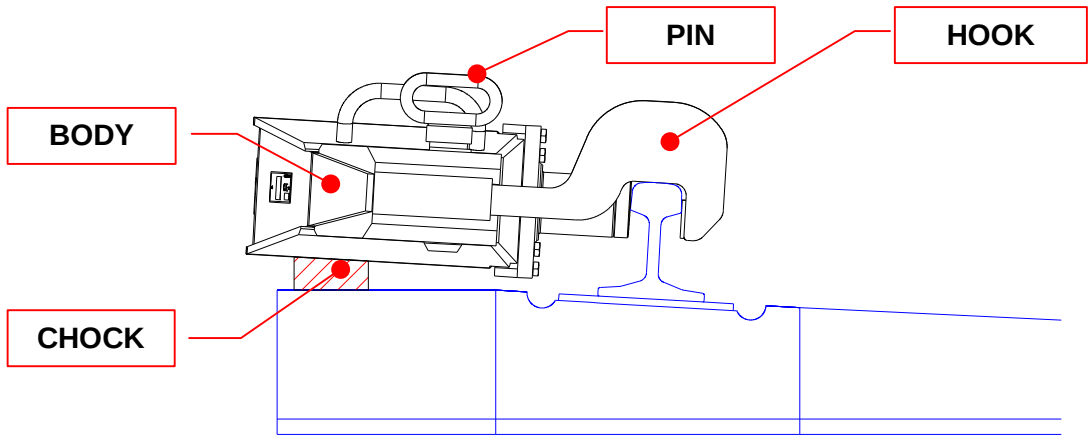
Failure to comply with this instruction can lead to misoperations of the pump, and can even damage the pump.

3.2. INSTALLING THE BENDING MACHINE

Fit the two hooks onto the frame and insert the 2 pins.

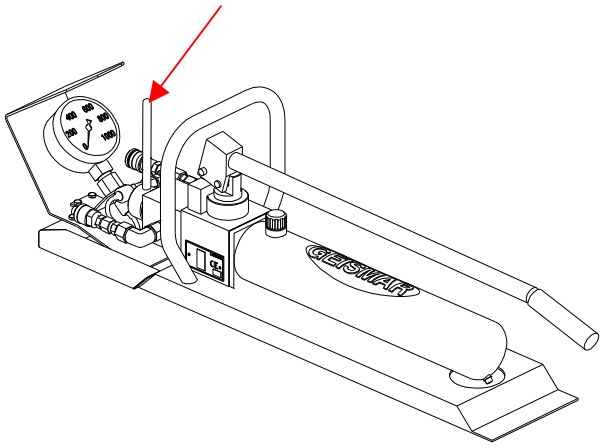
Position this assembly on the rail.

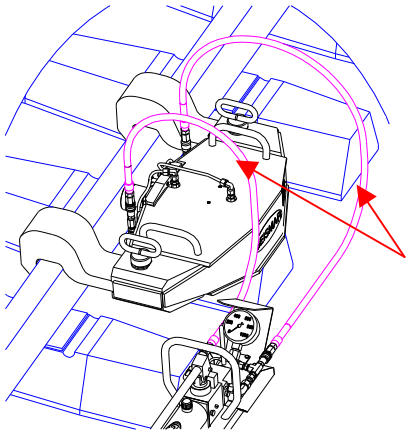
Set chocks underneath the aluminium body so that the centreline of bending is perpendicular to the core of the rail.



Position the hand-operated pump in a convenient place

The hand control valve must be in the vertical position

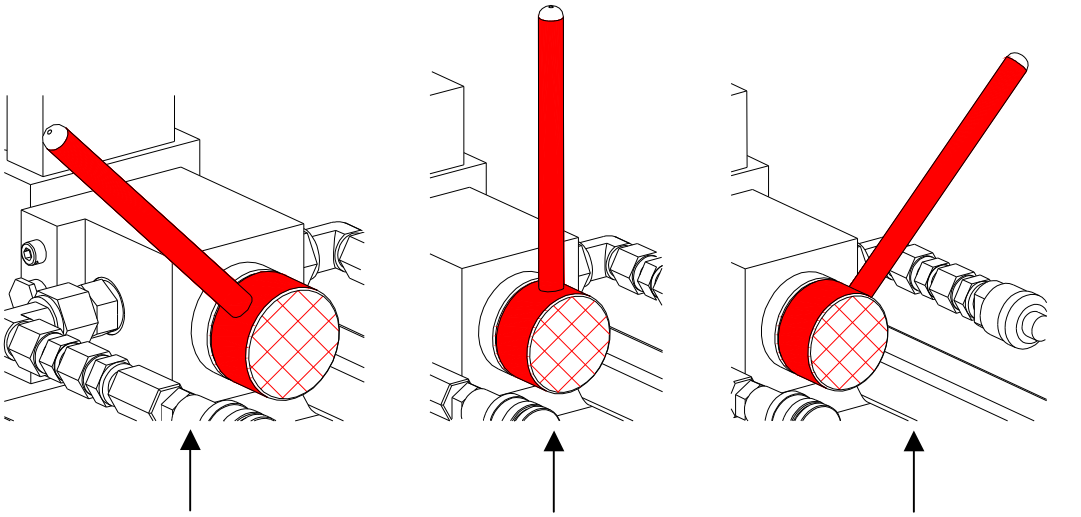




Connect the pump to the bending machine, by means of the 2 flexible hoses.

3.3. <u>THE ASSEMBLY IS READY TO OPERATE</u>

The orientation of the pump shows the direction of operation.



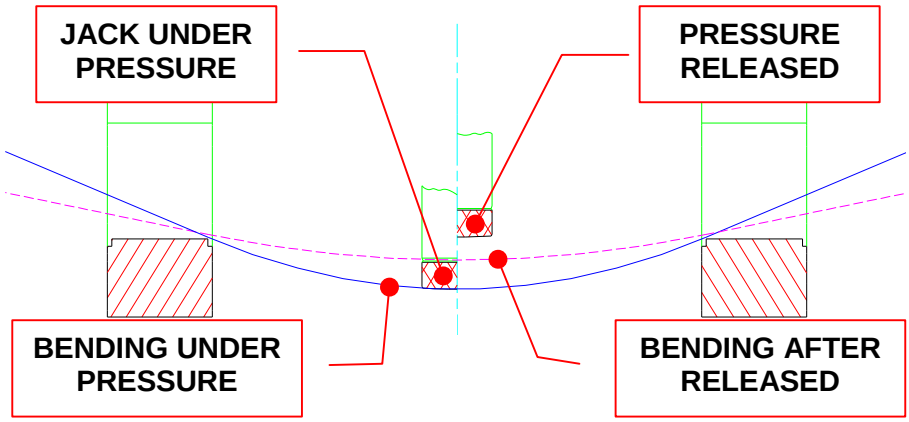
ROD EXTENDED NEUTRAL **ROD RETRACTED**

Once the rod extended position has been selected, acting on the pump lever powers the jack.

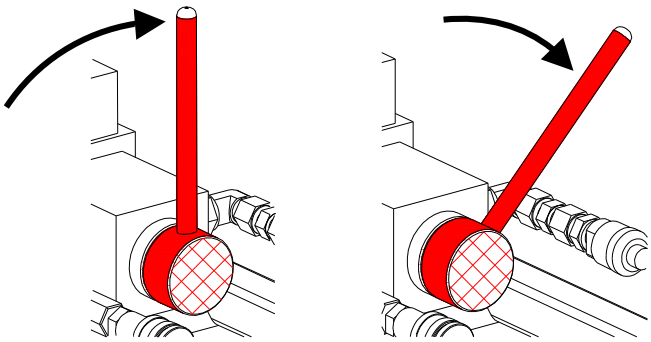
When the three bearing points (jack and hooks) are in contact with the rail, the straightening / bending phase can begin.

Control pressure during bending. You can reach similar pressure an other time on a same rail.

With the elasticity of the rail, when the jack rod is retracted, the rail returns to its original position. Therefore, you have to exceed the desired distortion.



Next, set the pump to the neutral position, and then the retracted position.



The pressure drops.

Execute two pumping actions to release the bending machine from the rail.

Check the bending obtained. Repeat the operation if necessary.

Proceed in successive steps.

Turn the bending machine around if you have to make good any excess distortion.

3.4. DISASSEMBLY

Before disconnecting the flexible hoses, you should relieve the pressure. Work the hand control valve of the hand-operated pump several times, and then place it in the neutral position. Then you can disconnect the flexible hoses.

IMPORTANT ! Always put the plugs and covers on the high-speed unions.

CHAPTER 4 - MAINTENANCE AND VERIFICATION

4.1. GENERAL MAINTENANCE

4.4.1. PERIODIC MAINTENANCE

➲ Grease the pin shafts. Use a hand oilier to oil the articulations of the pump lever.

4.1.2. EVERY YEAR

➲ Check the condition of the oil in the hydraulic tank (color, cleanliness, smell, etc.). Replace it if necessary.

4.1.3. EVERY 2 YEARS

➲ Always replace the hydraulic oil.

➲ Clean the tank and hydraulic lines.

➲ Check the subassemblies of the hydraulic circuit, the tightness of the pump, the hand control valve and the manometer.

4.2. SPECIAL MAINTENANCE

4.2.1. FLEXIBLE HYDRAULIC HOSES

Check the tightness and tightening of the unions.

Replace the flexible hoses whenever a hose is damaged or torn. The condition of these hoses is important for save usage. Make sure you keep them in very good condition.

4.2.2. JACK

Periodically check tightness, the general condition of the jack and the tightening of the hydraulic unions.

To verify tightness of cylinder seals without taking down used as follow:

Rod extension direction

➲ Extend the rod cylinder at the maximum stroke

➲ Disconnecting the flexible hose at the rod side

➲ Feed oil pressure at bottom side and verified if there is no oil flow at rode side where the flexible is disconnecting

Rod retraction direction

➲ Retract the rod cylinder at the minimum stroke

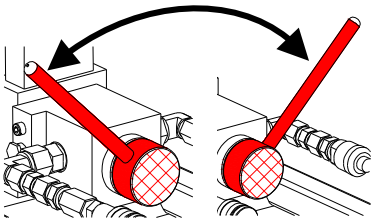
➲ Disconnecting the flexible hose at bottom side

➲ Feed oil pressure at rod side and verified if there is no oil flow at bottom side where the flexible is disconnecting

Check the movement of the jack rod. If the rod extends in an uneven manner, it means that there is air in the circuit.

Also check this after a work assignment on the jack requiring it's dismounting (seal replacement, etc.).

⇒ **Then bleed the jack.**



➲ Mount the assembly when no pressure is present

➲ Extend and retract the jack rod several times in order to bleed air

➲ Then top-up the oil in the tank, with the jack rod retracted if necessary

HUILE SHELL TELLUS T15

4.2.3. HAND-OPERATED PUMP

IMPORTANT !

We recommend that you take very great care when performing any operation on the component parts of the hand-operated pump.

Regularly check the level of the oil by unscrewing the filler plug fitted with a gauge before starting the use the appliance.

This operation must be performed with the jack rod completely retracted, and with the pump horizontal.

Replace the oil every two years with an oil of the quality below:

- Viscosity at 40°C DIN 51562 : 14,8 Cst
- Viscosity index DIN 2909 : 162
- Flow point : -54°C
- Capacity of the tank : 2 liters

NOTE: *The appliance was initially filled with SHELL TELLUS T15 oil*.

4.3. TABLE OF EQUIVALENCE OF HYDRAULIC OILS

MOBIL	BP	CASTROL	SHELL	TEXACO	ELF
MOBIL **DTE 11M**	BARTRAN **HV15**	CASTROL HYSPIN **AWH M15**	**TELLUS T 15**	RANDO OIL **HD Z-15**	VISGA **15**
MOBIL **DTE 13M**	BARTRAN **HV32**	CASTROL HYSPIN **AWH M32**	TELLUS **T 32**	RANDO OIL **HD Z-36**	VISGA **36**
MOBIL **DTE 15M**	BARTRAN **HV46**	CASTROL HYSPIN **AWH M46**	TELLUS **T 46**	RANDO OIL **HD Z-46**	VISGA **46**
MOBIL **DTE 16M**	BARTRAN **HV68**	CASTROL HYSPIN **AWH M68**	TELLUS **T 68**	RANDO OIL **HD Z-68**	VISGA **68**
MOBIL **DTE 18M**	BARTRAN **HV100**	CASTROL HYSPIN **AWH M100**	TELLUS **T 100**	RANDO OIL **HD Z-100**	VISGA **100**
MOBIL **DTE 19M**	BARTRAN **HV150**	CASTROL HYSPIN **AWH M150**	TELLUS **C 150**	RANDO OIL **HD Z-150**	VISGA **150**

4.4. LUBRICANTS EQUIVALENCE TABLE

Grease used : **IMPERATOR LC 3002** Multipurpose grease

SUPPLIER	GREASE
TOTAL	MULTIS COMPLEXE EP2
ELF	MULTIPLEX
BP	ENERGREASE LC 2
SHELL	ALBIDA HD 2
CASTROL	LM GREASE

4.5. PROCEDURES FOR WORKING ON THE HYDRAULIC COMPONENTS OF THE PUMP BODY OF THE D16776 HAND-OPEATED PUMP

*In **THE SPARE PARTS** see drawing **N°04014-2** and **AFTER** for reference.*

AVERTISSEMENT !

In the event of the failure, or a hydraulic leak from a component part of the pump body, *call-in specialized personnel*.

DESCRIBED BELOW ARE 5 POSSIBLE WORK ASSIGNMENTS. YOU SHOULD FOLLOW THE INSTRUCTIONS SCRUPULOUSLY.

4.5.1. WORK ASSIGNMENT ON THE FLAP VALVE AND FILTER: KIT E

a) Empty the oil tank

b) Remove the cover (ref. 1) of the hand control valve (ref. 49) (4 screws ref. 50)

c) Dismount the base (ref. 2) of the hand control valve with the secondary limiter (ref. 63) (4 screws ref. 51)

d) Dismount the pump body (4 screws ref. 46)

e) Remove the seal ref. 18 (OR 80 x 3)

f) Remove the two filters ref. 47 (these filters are bonded to the union ref. 8)

g) Unscrew the plugs ref. 8 with the seals ref. 37

h) Remove the ball ref. 24 and the spring ref. 34 (use a magnet)

i) Carefully clean the housings and then refit new parts (important: do not allow impurities to enter the intake chambers accommodating the balls). Always use new seals ref. 37. Properly tighten the unions. Fit new filters ref. 47 (bond with Loctite ref. SuperCyano n°495). Allow to dry for at least one hour before remounting the tank (replace seal ref.18).

j) After cleaning the various component parts of the pump, remount the components in the reverse order of disassembly, making sure that you properly fit the O-rings that provide the seal between the contact faces of the disassembled parts.

4.5.2. WORK ASSIGNMENT ON THE EJECTION FLAP VALVE: KIT G

a) Dismount the plug ref. 9 and its seal ref. 37. (They are accessible without having to dismount the pump from its mounting)

b) Remove the spring ref. 35

c) Remove the flap valve ref. 23

d) Use compressed air to carefully clean the housing of the flap valve; wash the components in trichloroethylene

e) Replace the flap valve ref. 23, the spring ref. 35 and the seal ref. 37

f) Carefully reassemble the parts, and properly tighten the plug ref. 9.

4.5.3. WORK ASSIGNMENT ON THE LOW PRESSURE LIMITER AND THE HP/LP BYPASS: KIT D

a) Dismount the pump body (same procedure as for Kit E in **§ 4.3.1** steps: a -b -c -d –e)

b) Unscrew the plug ref. 32 (R 1/2")

c) Extract the pilot with its seal ref. 12 and 20 (use an articulated magnet)

d) Unscrew the plug ref. 29 (important: this plug has been secured in position by striking it with a punch)

e) Extract the ball guide ref. 13 with the spring ref. 27 and the ball ref. 22

f) Clean the housing entering the pump body, using compressed air. Check the seating of the ball.

g) Replace components ref. 12 - 13 - 20 - 22 - 27 and 29 with new parts

h) Fit the new parts in the order of dismounting, as shown in the drawing. Take particular care with the fitting of the pilot ref. 12 (the seal ref. 20 was fitted at the factory)

i) Make sure that the spring (ref. 27) is properly

j) Plug ref. 29 (new component) must be locked in position after fitting (outside face flush with the face of the pump body) by striking it with a punch

k) Plug ref. 32. When the plug is mounted, it should be slightly withdrawn in relation to the face of the pump body, in order to ensure proper mounting of the hand control valve (tightness between parts)

4.5.4. WORK ASSIGNMENT ON THE HIGH PRESSURE (665 BAR) LIMITER: KIT F

a) Remove the lead seal

b) Unscrew the limiter adjustment screw ref. 10 with its seal ref. 21

c) Extract the spring ref. 28, and the needle valve ref. 11

d) Unscrew the plug from the limiter ref. 30

e) Extract the valve seat rep. 26 and the seal ref. 38

f) Carefully clean the housing

g) Fit new parts in the reverse order of disassembly. Make sure you properly tighten the plug ref. 30

h) Calibration should be performed after fitting the various parts, using the pressure gauge on rod extended line: Ps = 665 bar

i) For safety reasons, fit a lead seal after calibration. If this is not possible, prevent rotation by using an appropriate locking wire.

IMPORTANT ! The "H.P. OUTPUT" pressure limiter incorporated in the hand-operated hydraulic pump is calibrated for 665 bars**. We will not be held liable if you adjust this component to another setting.**

IMPORTANT ! Exceeding this pressure con destroy the machine.

4.5.5. WORK ASSIGNMENT ON THE SECONDARY LIMITER: KIT M

a) Remove the lead seal

b) Unscrew the limiter adjustment screw ref. 64 with its seal ref. 21

c) Extract the spring ref. 28 and the needle-valve ref. 11

d) Unscrew the plug from the limiter ref. 30

e) Extract the valve seat ref. 26 and the seal ref. 38

f) Carefully clean the housing

g) Fit new parts in the reverse order of disassembly. Make sure you properly tighten the plug ref. 30

h) After mounting the various components, calibrate the assembly with a pressure gauge mounted on rod extracted line: Pe = 50 bar for safety reasons, fit a lead seal after calibration. If this is not possible, prevent rotation by fitting an appropriate locking wire.

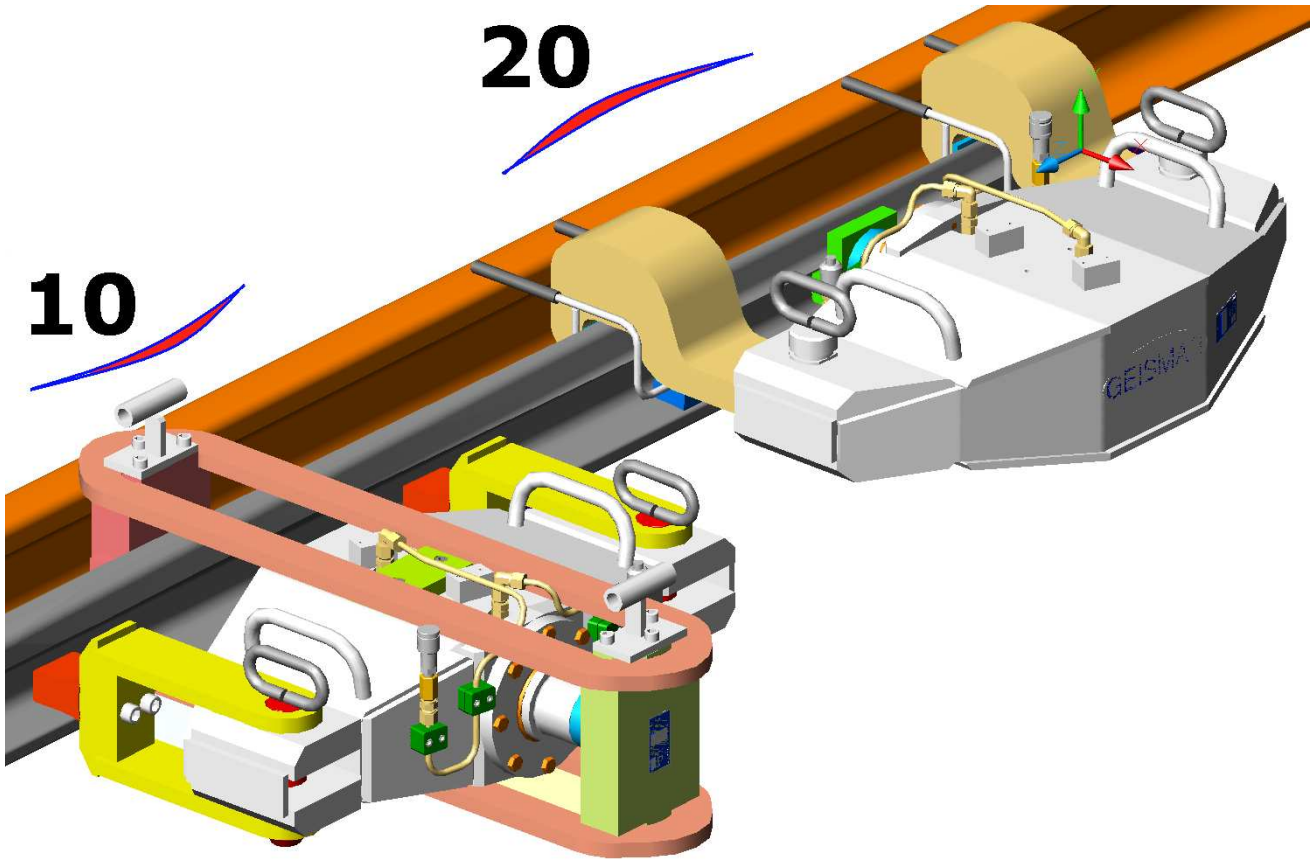
IMPORTANT ! The "H.P. INPUT" pressure limiter incorporated in the hand-operated hydraulic pump is calibrated for 50 bar**. We will not be held liable if you adjust this component to another setting.**

IMPORTANT ! Exceeding this pressure can destroy the machine.

CHAPTER 5 – OPTIONNAL EQUIPMENT

5.1. GENERAL

Manufacturer	: Société des Anciens Etablissements L. GEISMAR 113 bis, av. Charles de Gaulle 92200 NEUILLY SUR SEINE (France)
Description of the equipment	: Lightweight horizontal equipment for switch rails on bending machine JLP 75
Model number	: 05253 / H78760
Serial number	: /

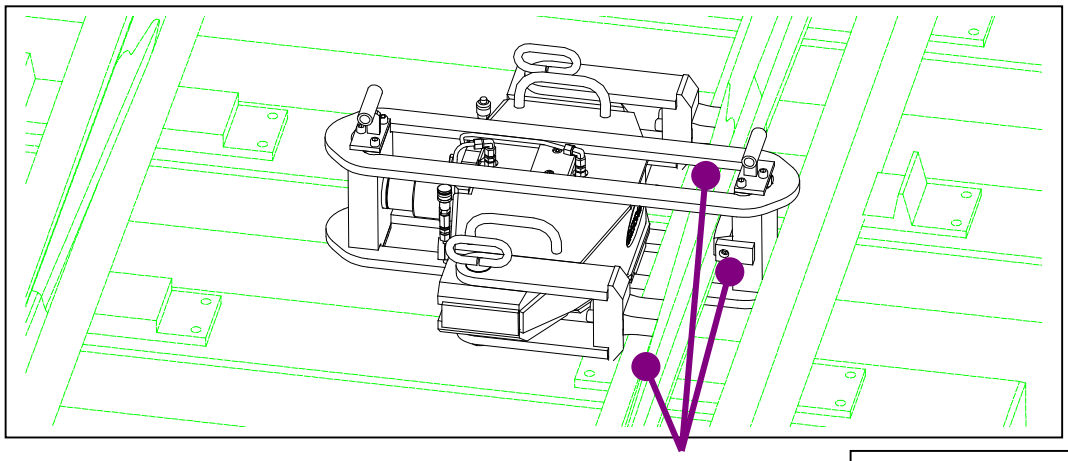


5.1.1. HORIZONTAL BENDING OF SWITCH RAILS

On a switch unit, the JLP75 cannot work correctly without special equipment.

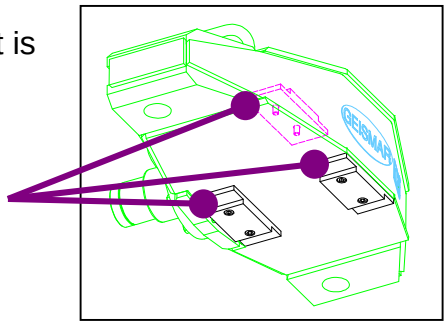
To protect the switch rail head, we push under this part with the optional equipment for straightening or accentuating a curve in the horizontal direction.

5.2. THE BENDING MACHINE for SWITCH RAIL (Rep 10)

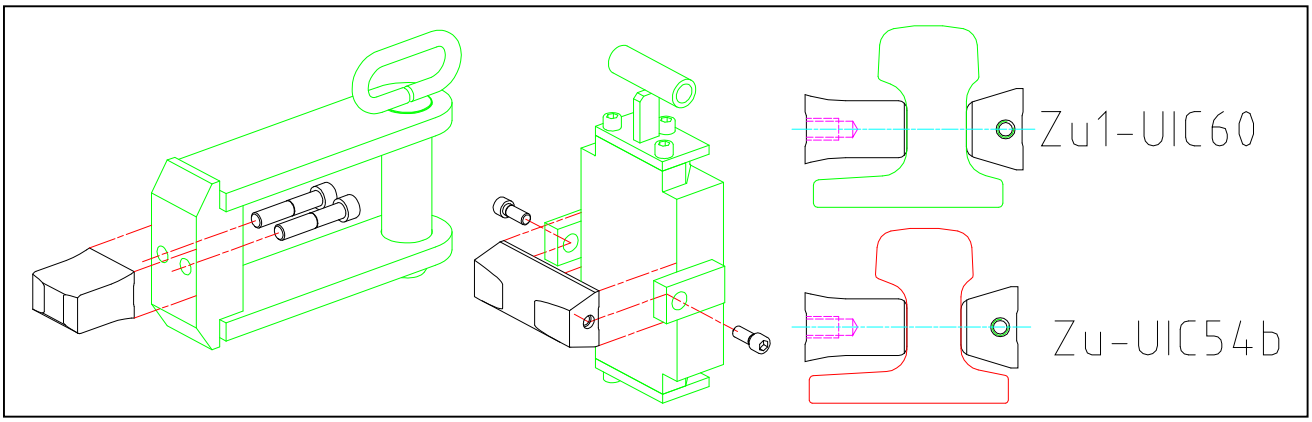


This equipment need jaws well marked on the rail type. It is also possible to bend a stock rail.

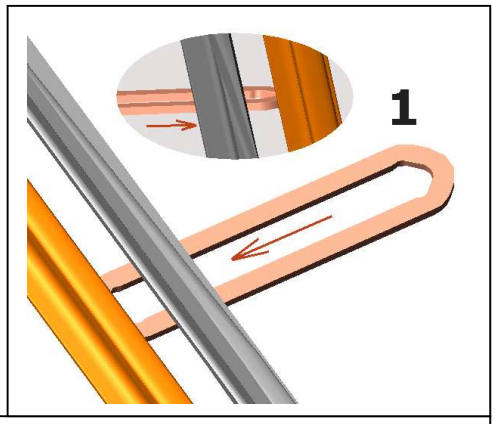
In first place the tree guides insted the 6 hexagon socket screw



5.2.1. THE JAWS (for example Zu1-UIC 60 / Zu-UIC 54b / Zu2-S49)



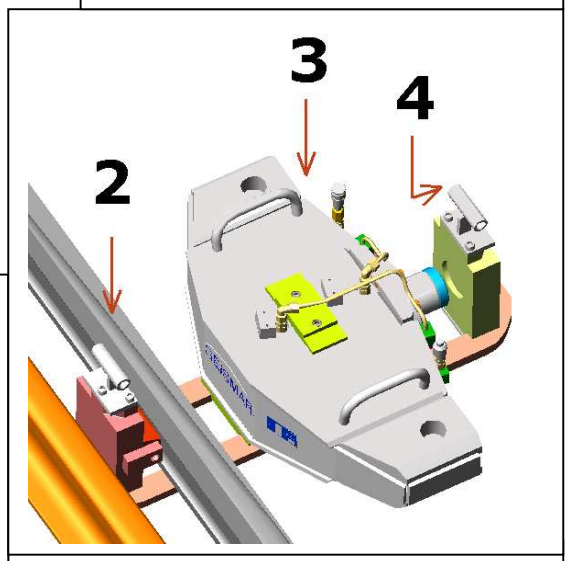
5.2.2. INSTALLING



Rep.**1:** Put a brace under the switch and the stock rail. Clamp it for horizontality.

This position is as near as rail's deformation .

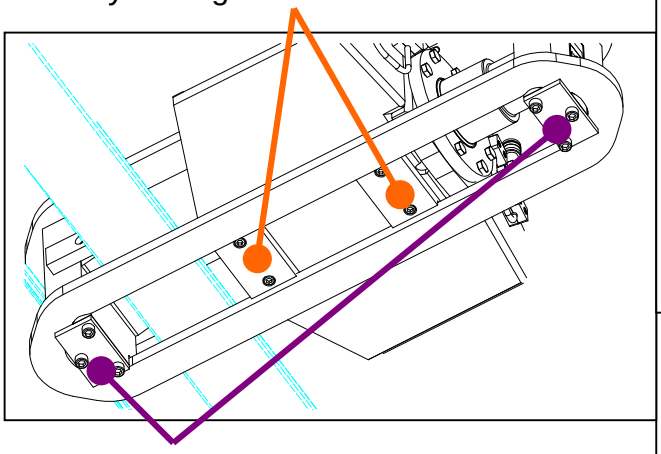
Rep.**2:** Lay, between the rails, the block with rest on the brace



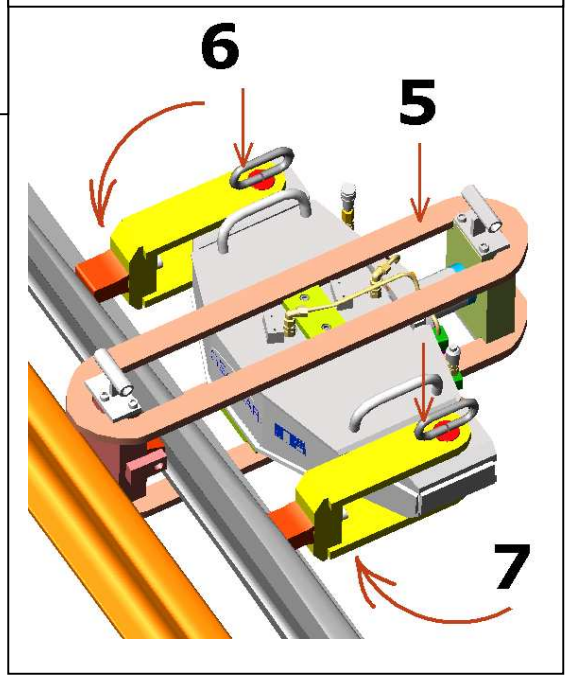
Rep.**3/4:** Lay the body and the second block. Put the jack noze in the block hole

IMPORTANT

The body have guides for braces

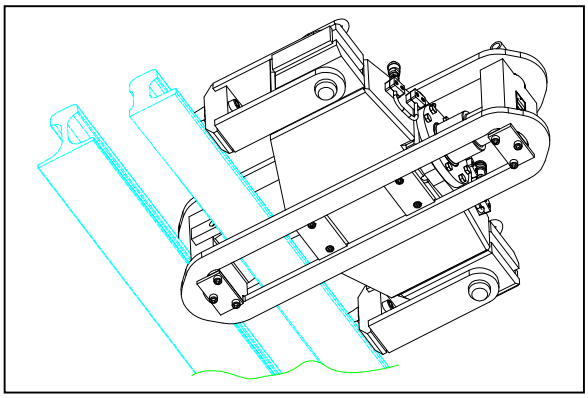


The brace fit in blocks

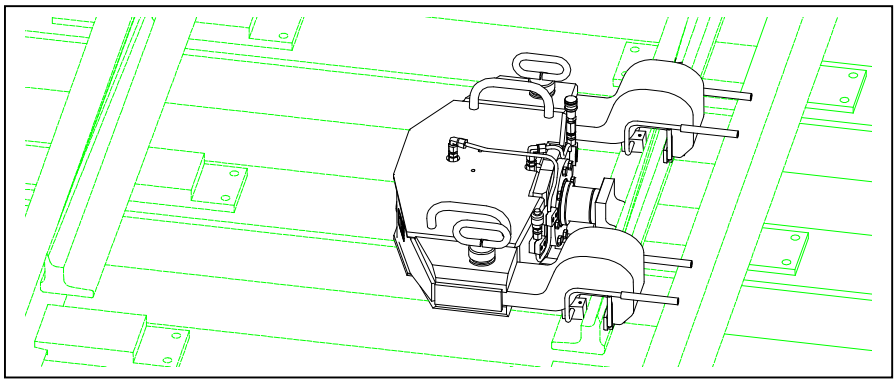


Rep.**5:** Lay the second brace. Fit it in blocks.

Rep.**6/7:** Place the 2 arms by rotation and fix them with the long pin.



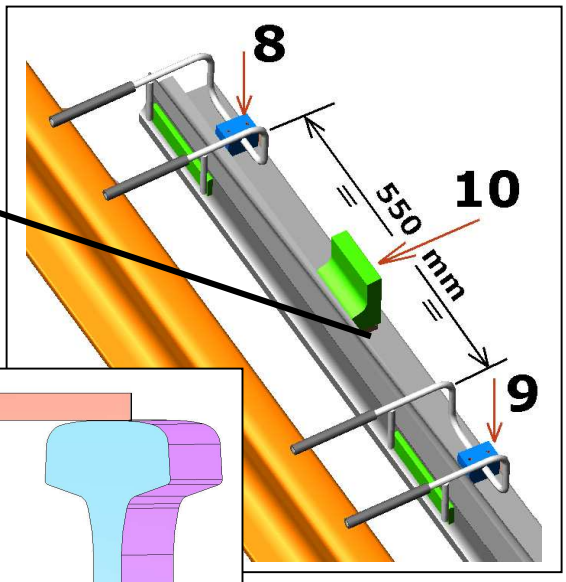
5.3. THE BENDING MACHINE for SWITCH RAIL ON THE TOE AREA(Rep 20)



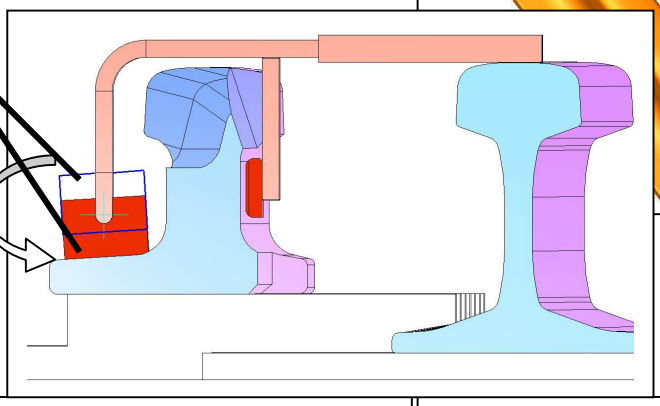
5.3.1. INSTALLING

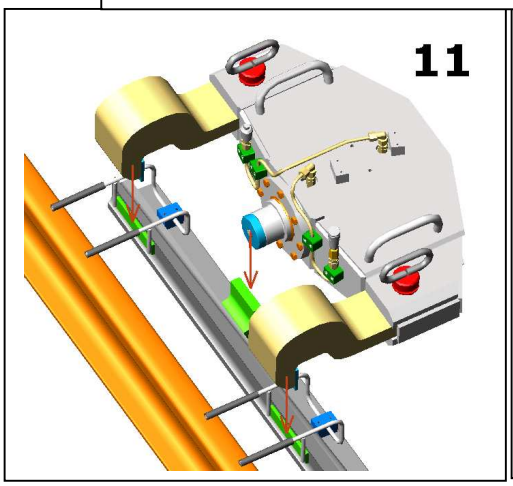
Rep.**10:** Lay the center block on the switch rail foot (Zu1-UIC60 /Zu UIC54b) Remove the underplate for other switch rail as Zu-s49.

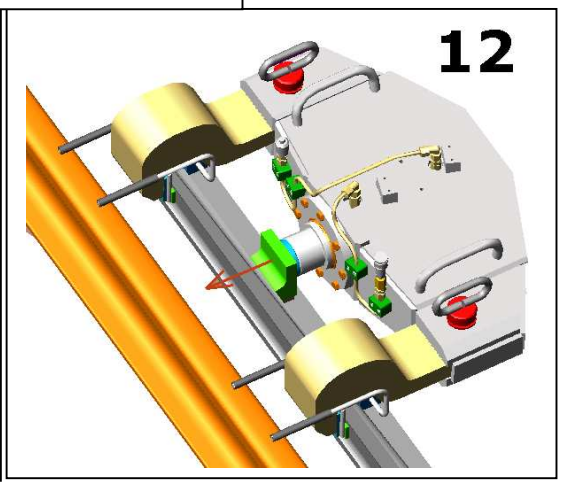
Rep.**8/9:** Place the rest for the 2 arms Those positions are 550mm aroud rail's deformation



There are 2 positions with the little block around the bended axel, depend on the switch rail







Rep.**11/12** Take the JLP75 in standard configuration and place it onto the part kit as lawer as possible. Put the jack noze in the block hole

5.4. OPERATE BENDING ON SWITCH RAIL

After installation, connect the pump to the bending machine, by means of the 2 flexible hoses. **See § 3.2**

Operate with pump. **See § 3.3** .

Work the same way as a JLP75 standard.

5.5. GENERAL MAINTENANCE

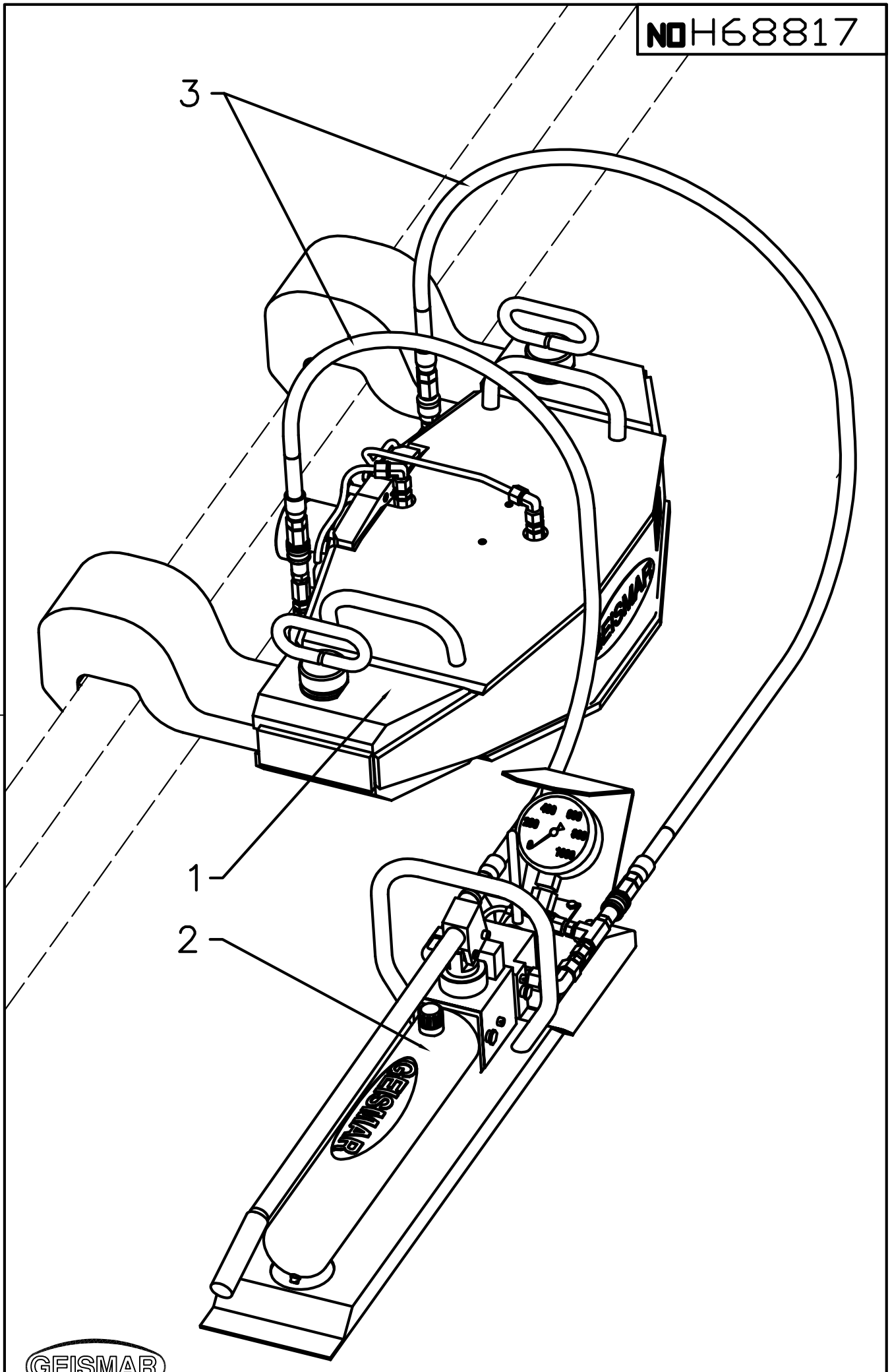
5.5.1. PERIODIC MAINTENANCE

Grease the pin shafts and the jaws.

CHAPTER 6 - SPARE PARTS

Item	Qty	Description	Code N°	Drawing N°
	1	LIGHT-WEIGHT HORIZONTAL BENDING MACHINE FOR RAILS MODEL JLP 75, COMPLETE	H68817	NO 04014
1	1	LIGHT-WEIGHT HORIZONTAL BENDING MACHINE	H72141	NO 03017
2	1	HYDRAULIC POWER PACK	H72479	NO 04014-2
3	2	HYDRAULIC FLEXIBLE HOSE WITH COUPLERS	H72481	NO 04014-3
-	1	HYDRAULIC DIAGRAM		NO 04014-4
-	1	OPTIONNAL KIT FOR SWITCH RAIL	H78760	NO 05253

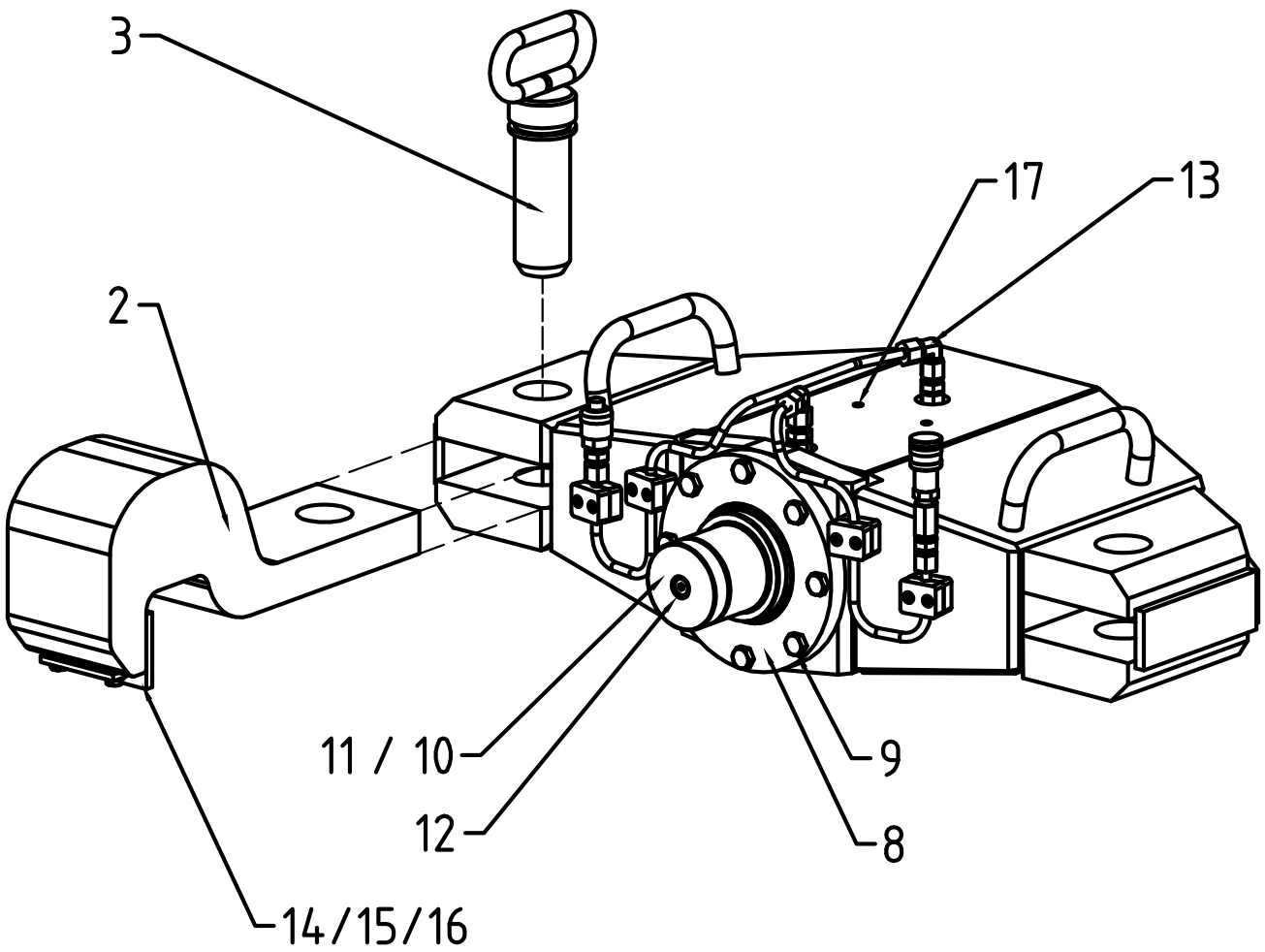
NOH68817



GEISMAR COLMAR

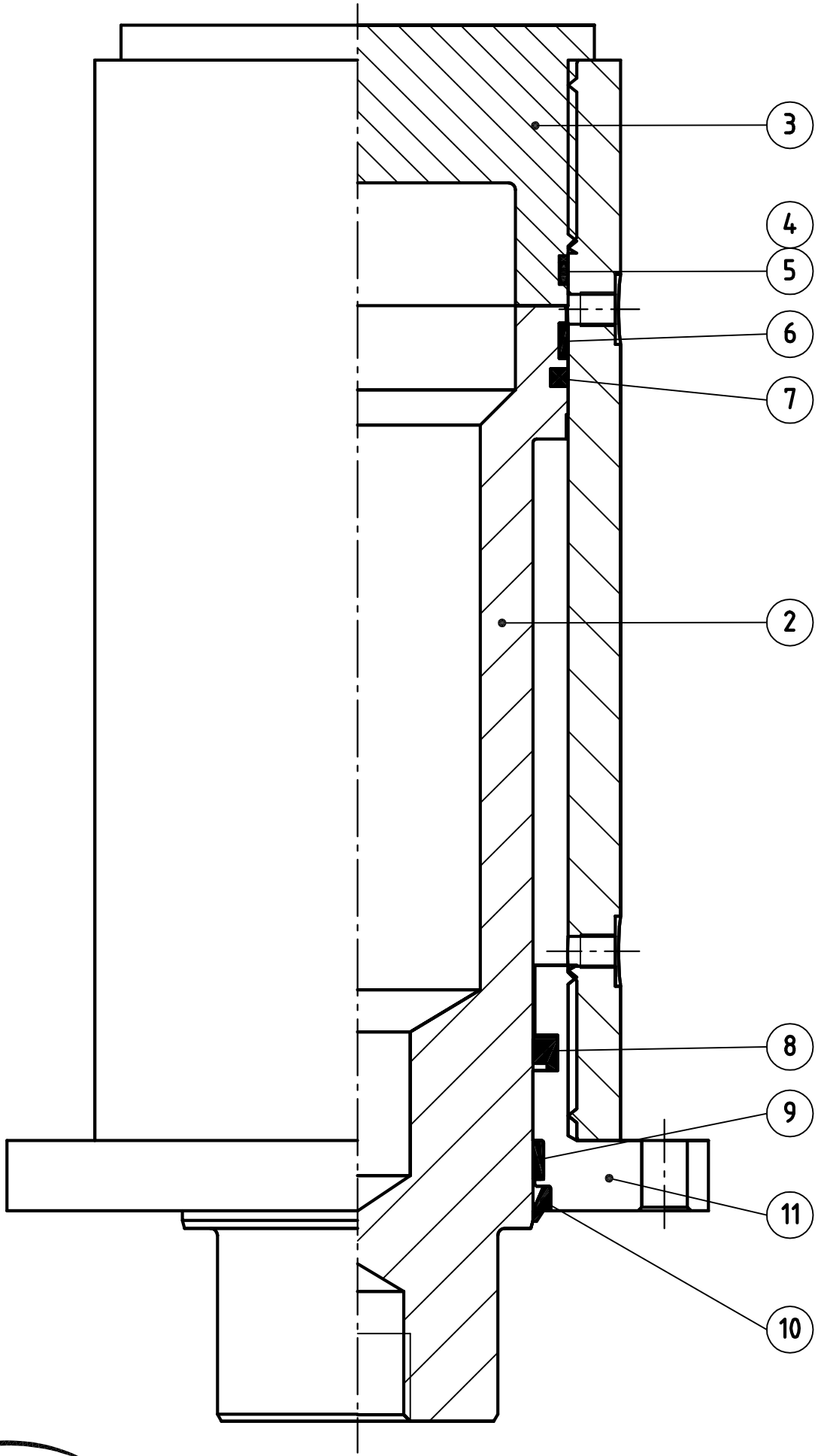
NOi 04014 c

Item	Qty	Description	Code N°	Drawing N°
	1	LIGHT-WEIGHT HORIZONTAL BENDING MACHINE, COMPLETE	H72141	NO 03017
2	2	CRAMP IRON HOOK	H68814	
3	2	PIN	H68836	
8	1	HYDRAULIC JACK	D16499	NO 03017-8
9	8	HEXAGON SCREW	C02315	
10	1	INSERT	H71801	
11	1	REST JACK	H71802	
12	1	HEXAGON SOCKET HEAD CAP SCREW	C00712	
13	1	HYDRAULIC COUPLING CIRCUIT	H68854	NO 03017-13
14	2	REST PLATE	H78781	
15	4	HEXAGON SCREW	C00341	
16	4	CONICAL WASHER	C01811	
17	6	HEXAGON SOCKET SCREW	C00750	



GEISMAR COLMAR

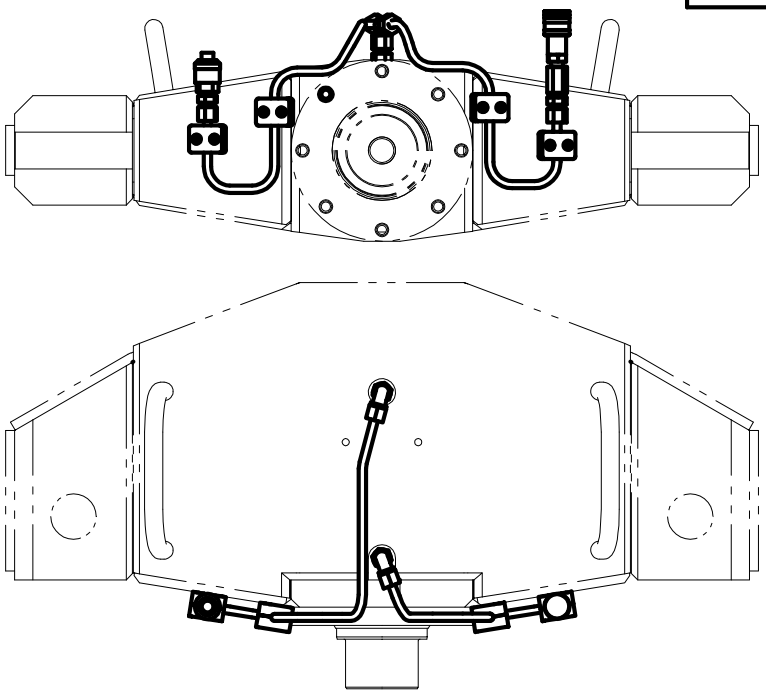
Item	Qty	Description		Code N°	Drawing N°
	1	HYDRAULIC JACK, COMPLETE		D16499	NO 03017-8
2	1	PISTON ROD		D16756	
3	1	COVER		D16757	
4	1	ANTIEXTRUSION BUSH			
5	1	O-RING			
6	1	SEAL	SET OF	D16755	
7	1	PISTON SEAL	SEALS		
8	1	ROD SEAL			
9	1	SEAL			
10	1	SCRAPER			
11	1	GUIDING BUSH		D16967	

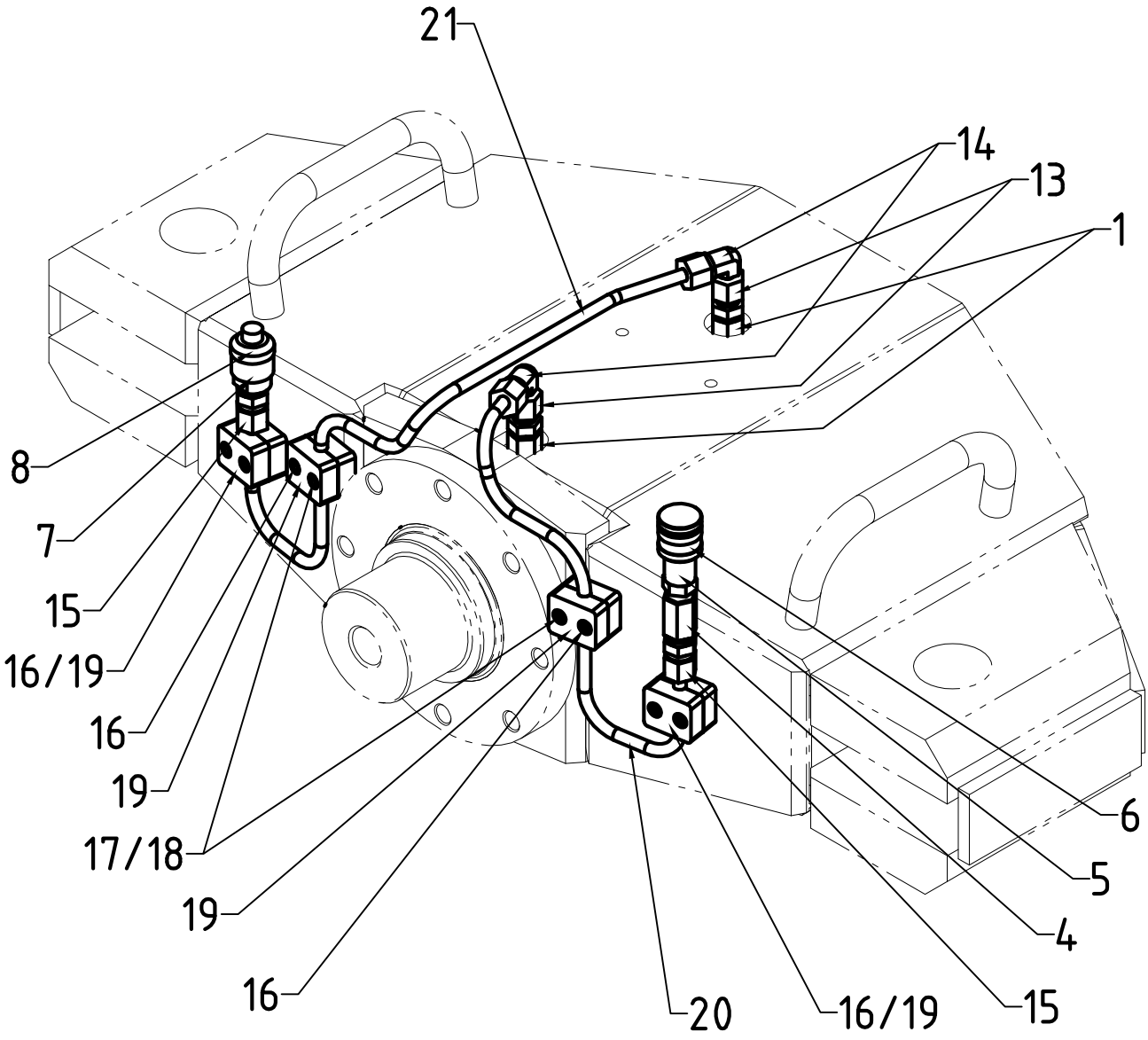


GEISMAR COLMAR

Item	Qty	Description	Code N°	Drawing N°
	1	HYDRAULIC COUPLING CIRCUIT, COMPLETE	H68854	NO 03017-13
1	2	REDUCTION	D13934	
4	1	ADAPTER	D00458	
5	1	FEMALE HALF COUPLING	D00472	
6	1	PROTECTING PLUG	D00486	
7	1	MALE HALF COUPLING	D00470	
8	1	PROTECTING CAP	D00492	
13	2	MALE STUD COUPLING	D00168	
14	2	ADJUSTABLE MALE STUD ELBOW COUPLING	D00112	
15	2	MALE STUD COUPLING	D00171	
16	4	COLLAR	D07968	
17	2	HEXAGON SOCKET HEAD CAP SCREW	C00508	
18	2	HEXAGON NUT	C01501	
19	6	HEXAGON SOCKET HEAD CAP SCREW	C00510	
20	1	HYDRAULIC TUBE	H78790	
21	1	HYDRAULIC TUBE	H78787	

NO H68854



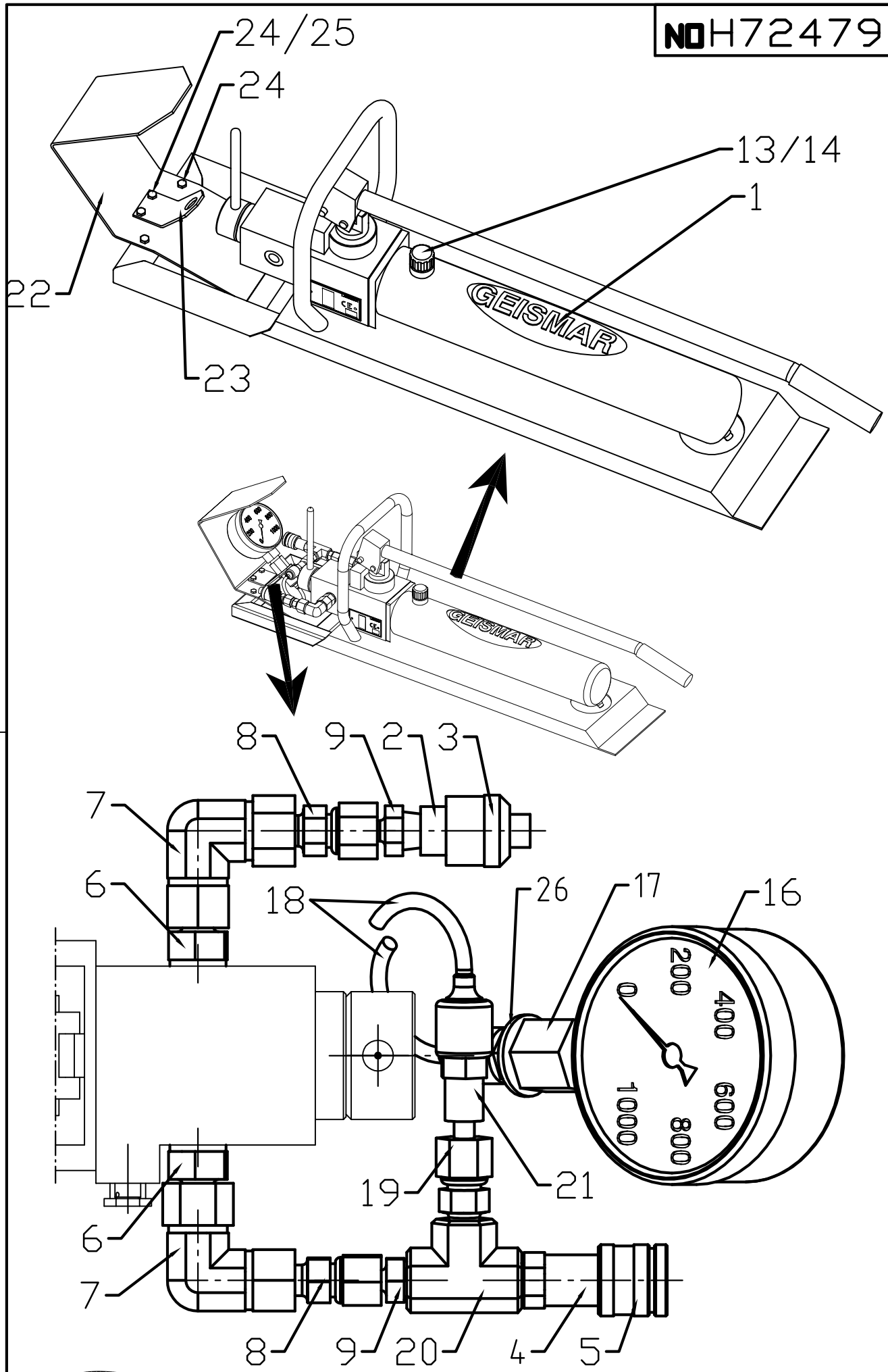


GEISMAR COLMAR

NO i 03017-13 b

Item	Qty	Description	Code N°	Drawing N°
	1	HYDRAULIC POWER PACK, COMPLETE	H72479	NO 04014-2
1	1	HAND PUMP	D16776	NO 04014-2-1
2	1	MALE HALF COUPLING	D00470	
3	1	PROTECTING CAP	D00492	
4	1	FEMALE HALF COUPLING	D00472	
5	1	PROTECTING PLUG	D00486	
6	2	ORIENTATION COUPLING	D00061	
7	2	ELBOW	D00319	
8	2	REDUCTION	D00266	
9	2	ORIENTATION COUPLING	D00057	
13	1	PLUG) FOR	D00986	
14	1	O-RING) TRANSPORT	D03709	
16	1	PRESSURE GAUGE	D06994	
17	1	PRESSURE GAUGE COUPLING	D11603	
18	1	PRESSURE GAUGE FLEXIBLE	D00669	
19	1	MALE STUD COUPLING	D00171	
20	1	TEE COUPLING	D00452	
21	1	MALE STUD COUPLING	D00422	
22	1	PROTECTION SHEET	H78785	
23	1	SUPPORT SHEET	H78786	
24	4	HEXAGON SCREW	C00331	
25	2	HEXAGON NUT	C00141	
26	1	PLAIN WASHER	C01040	

NOH72479

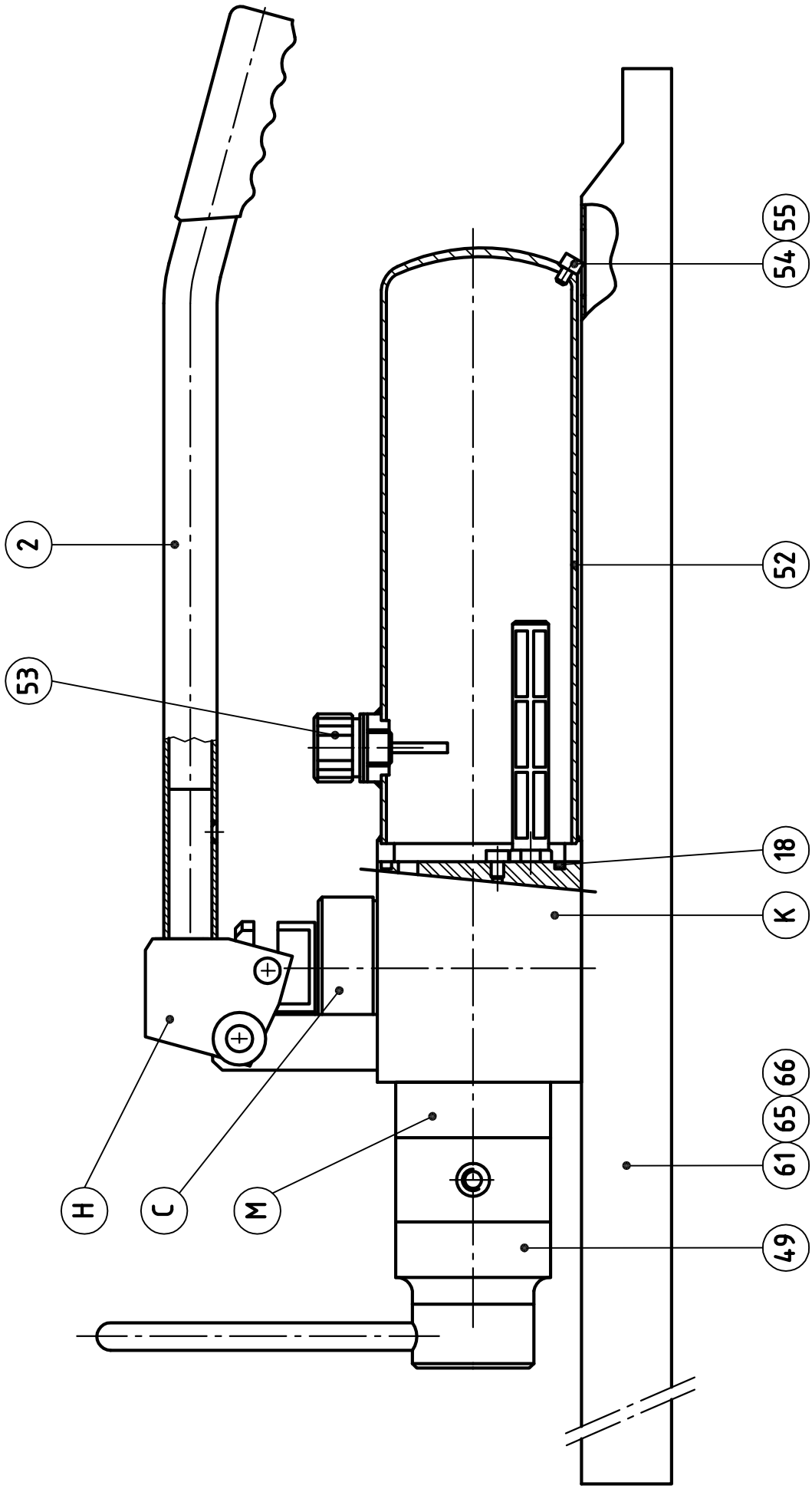


GEISMAR COLMAR

NOi 04014-2 a

Item	Qty	Description	Code N°	Drawing N°
	1	HAND PUMP, COMPLETE	D16776	NO 04014-2-1
C	1	PUMP PISTON KIT	D06712	NO 84106-3-300
H	1	ARTICULATION KIT	D06713	NO 84106-3-300
K	1	PUMP BODY KIT	D16847	NO 04014-3-200
M	1	SECONDARY LIMITER KIT	D16845	NO 04014-3-200
2	1	LEVER	D02556	
18	1	O-RING	D06708	
49	1	HAND CONTROL VALVE	D16848	NO 04014-2-1-49
52	1	TANK	D06805	
53	1	FILLING VALVE	D04293	
54	1	HEXAGON SOCKET HEAD CAP SCREW	C01617	
55	1	SEAL WASHER	D06784	
61	1	SUPPORT	H73172	
65	4	HEXAGON SOCKET HEAD CAP SCREW	C00519	
66	4	WASHER	C01089	
(*)	1	SET OF SEALS FOR PUMP	D04862	
(x)	1	SET OF SEALS FOR CONTROL VALVE	D05269	

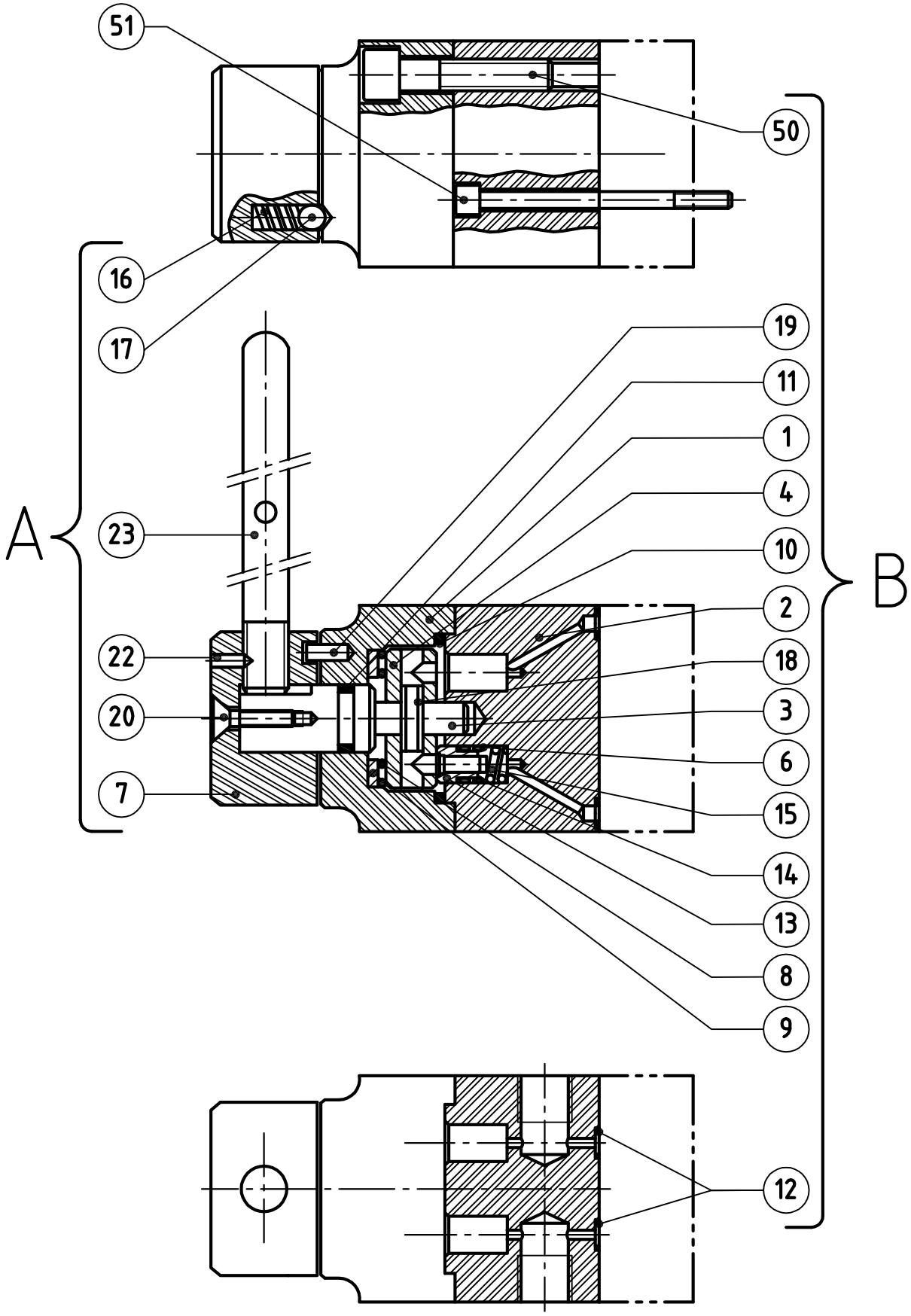
NO



GEISMAR COLMAR

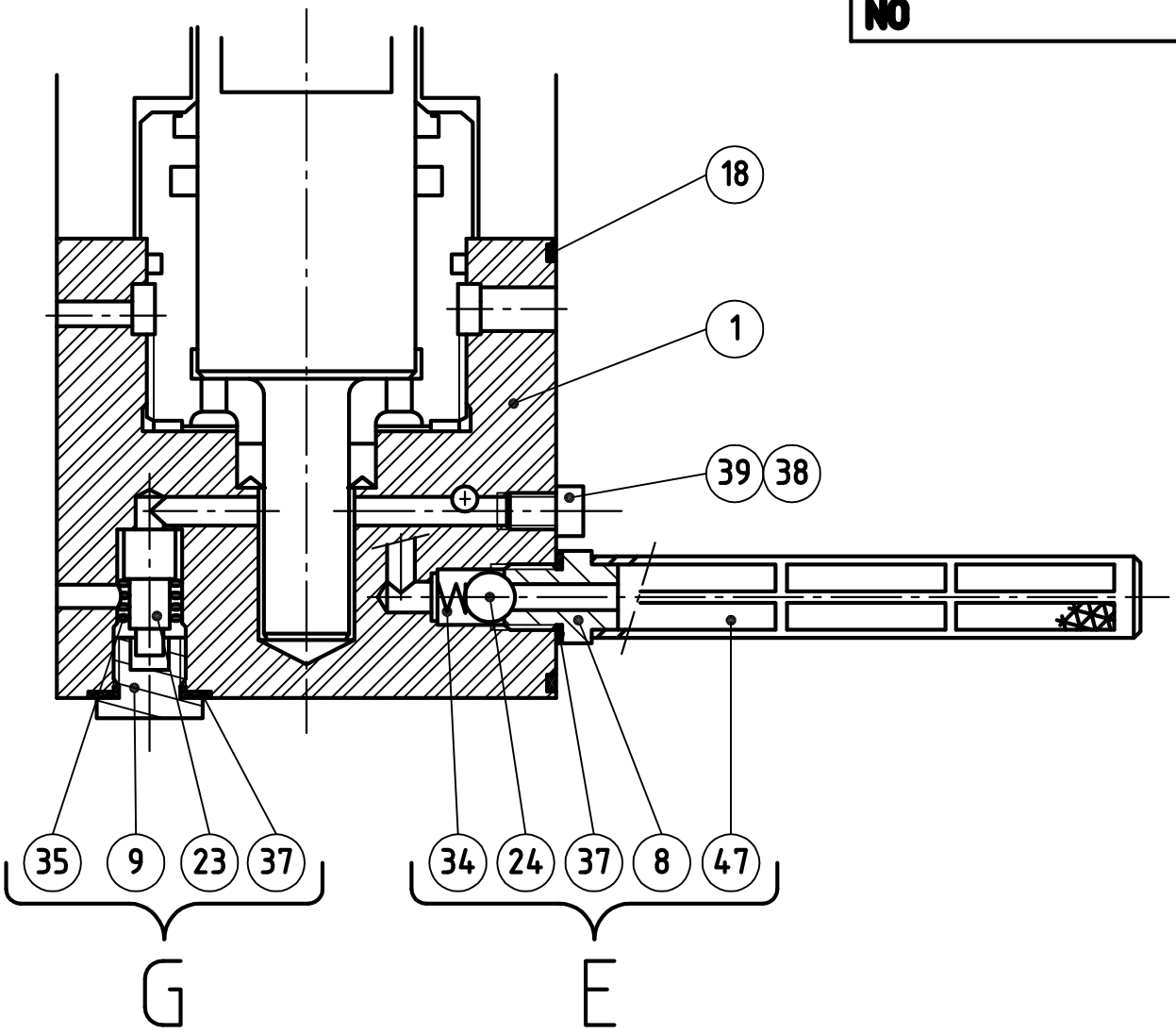
NO 04014-2-1

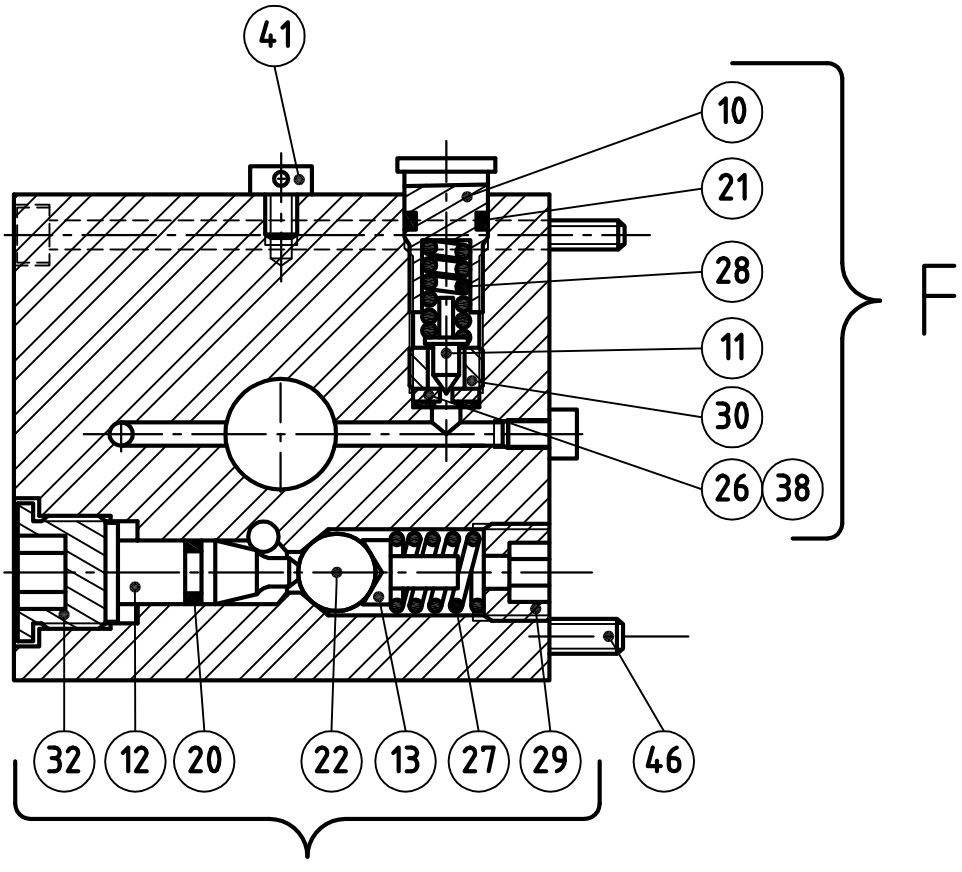
Item	Qty	Description	Code N°	Drawing N°
	1	HAND CONTROL VALVE, COMPLET	D16848	NO 04014-2-1-49
51	4	HEXAGON SOCKET HEAD CAP SCREW	C01775	
A	1	CONTROL LEVER KIT INCLUSED :	D06715	
7	1	HEAD		
16	1	SPRING		
17	1	BALL		
20	1	SCREW		
22	1	SCREW		
23	1	LEVER		
B	1	CONTROL VALVE KIT INCLUSED :	D16846	
1	1	COVER		
2	1	BARE E5		
3	1	OPERATING ROD		
4	1	BARREL		
5	3	PISTON		
6	3	PISTON WASHER		
8	1	THRUST NEEDLE BEARING		
9	1	THRUST WASHER		
(x) 10	1	O-RING		
(x) 11	1	O-RING		
(x) 12	4	O-RING		
(x) 13	3	O-RING		
14	6	SEAL		
15	3	SPRING		
18	1	PIN		
19	2	PIN		
50	4	SCREW		



GEISMAR COLMAR

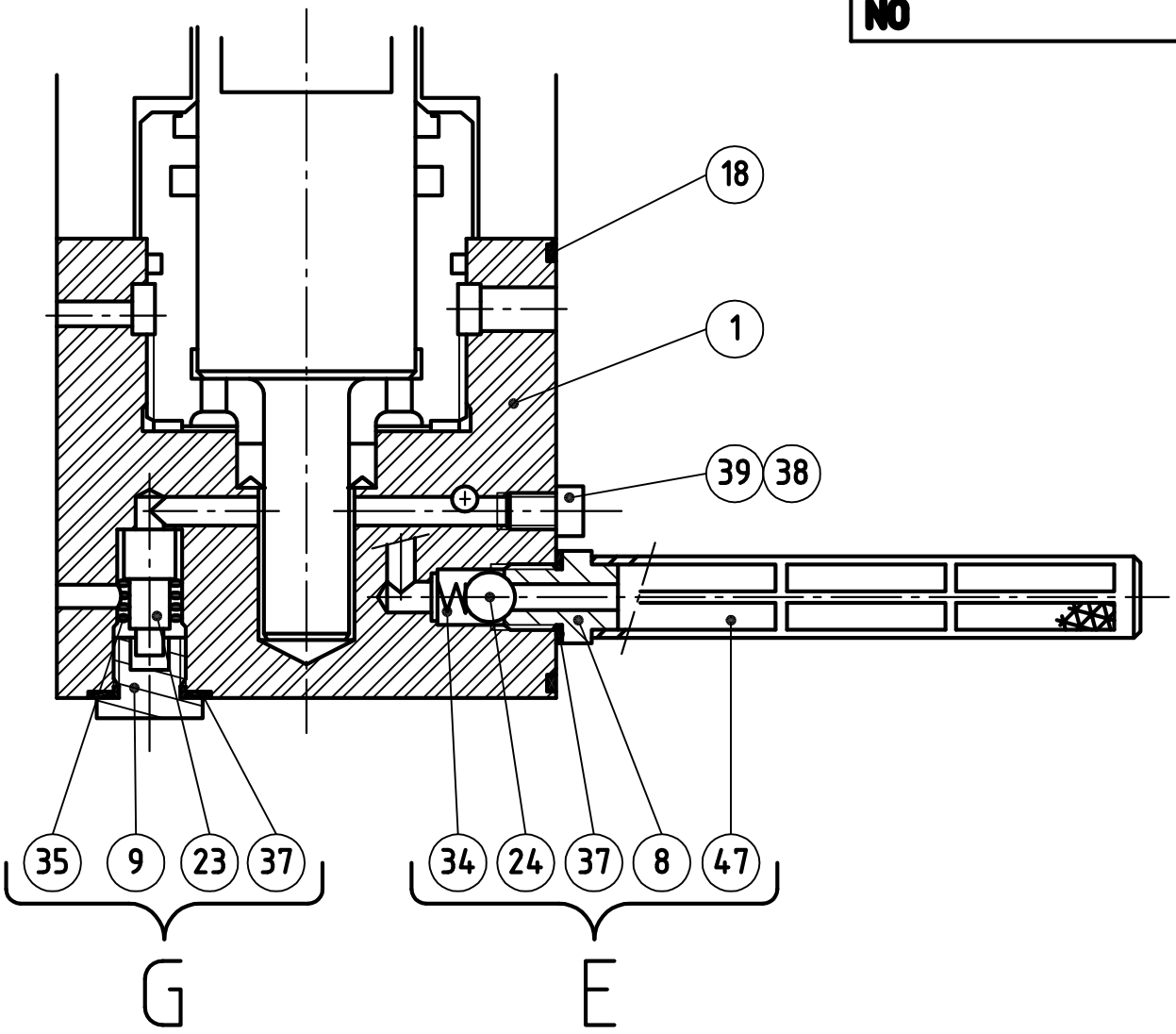
Item	Qty	Description	Code N°	Drawing N°
K	1	PUMP BODY KIT, COMPLETE (1+18+38+39+41+46+D+E+F+G+M)	D16847	NO 04014-3-200
1	1	BARE PUMP BODY	D05233	
(x) 18	1	RESERVOIR SEAL	D06708	
(x) 38	1	SEAL WASHER	D05574	
39	2	PLUG	D05235	
41	2	SCREW	D06737	
46	4	ATTACHING SCREW	C01576	
D	1	LOW PRESSURE LIMITER AND HP/LP BYPASS KIT INCLUSED :	D06738	
12	1	PILOT		
13	1	BALL GUIDE		
(x) 20	1	O-RING		
22	1	BALL		
27	1	SPRING		
29	1	PLUG		
32	1	PLUG		
E	2	INTAKE, FLAP VALVE AND FILTER KIT INCLUSED :		D06741
8	1	PLUG		
24	1	BALL		
35	1	SPRING		
(x) 37	1	SEAL WASHER		
47	1	FILTER		

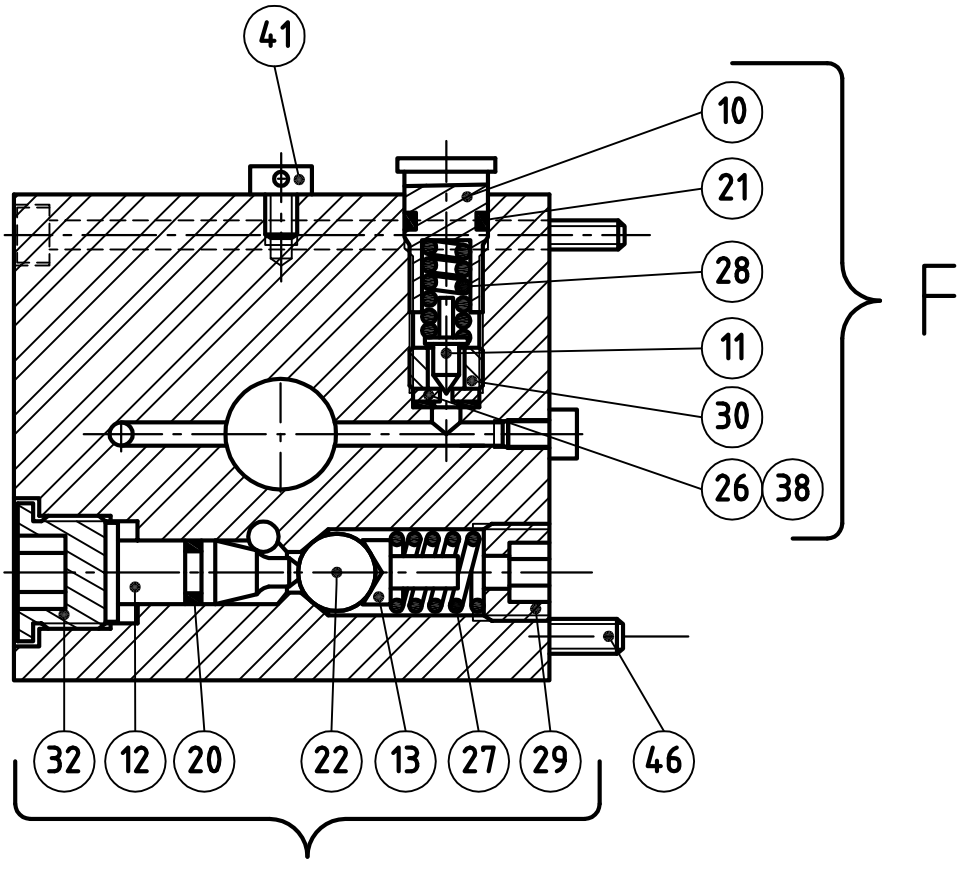




GEISMAR COLMAR

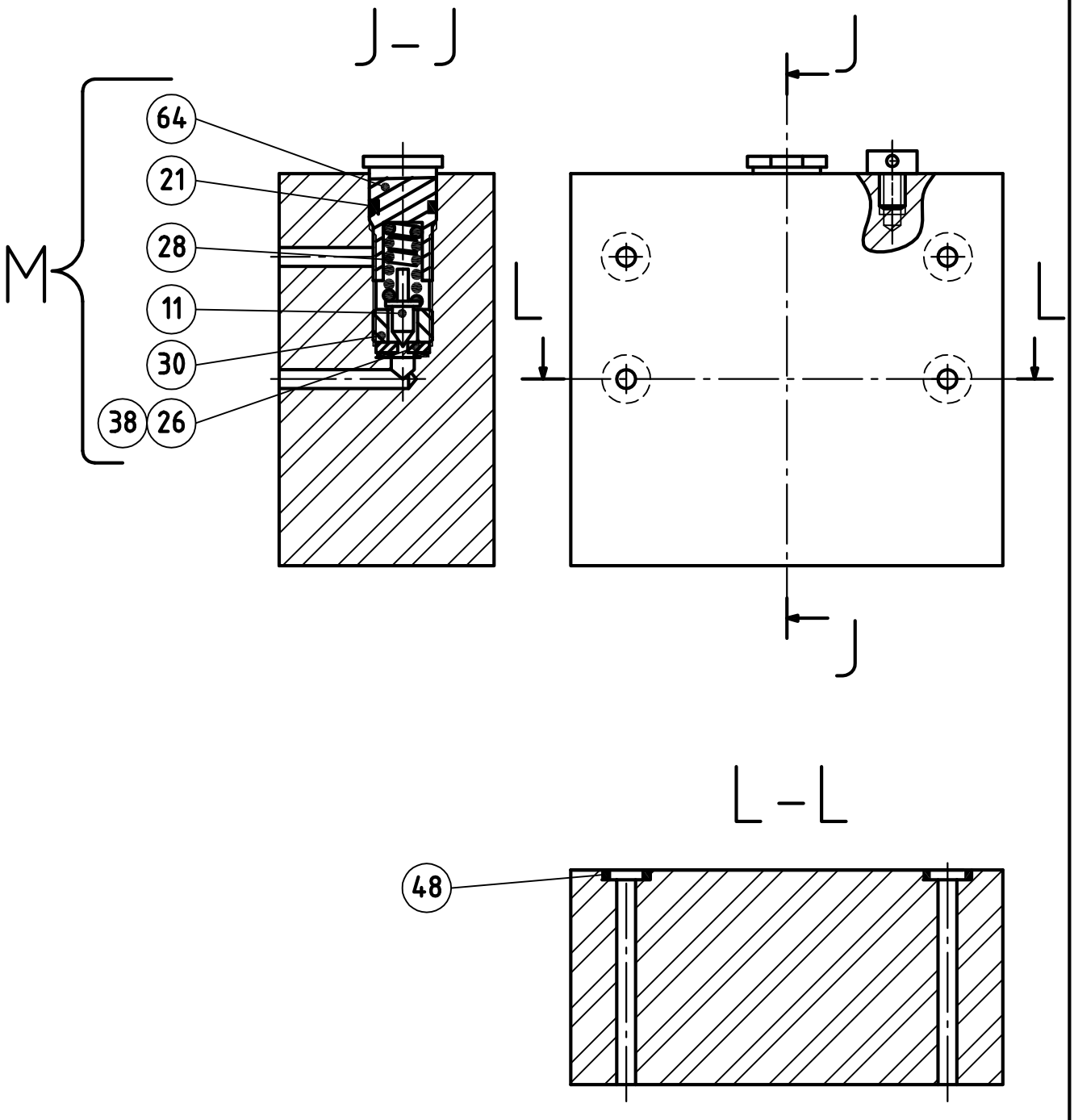
	Item	Qty	Description	Code N°	Drawing N°
	F	1	HIGH PRESSURE (665 BAR) LIMITER KIT, INCLUSED :	D06743	NO 04014-3-200
	10	1	ADJUSTING SCREW		
	11	1	NEEDLE-VALVE		
(x)	21	1	O-RING		
	26	1	VALVE SEAT		
	28	1	SPRING		
	30	1	PLUG		
	38	1	SEAL WASHER		
	G	1	EJECTION FLAP-VALVE KIT INCLUSED :	D06744	NO 04014-3-200
	9	1	PLUG		
	23	1	FLAP-VALVE		
	35	1	SPRING		
(x)	37	1	SEAL WASHER		



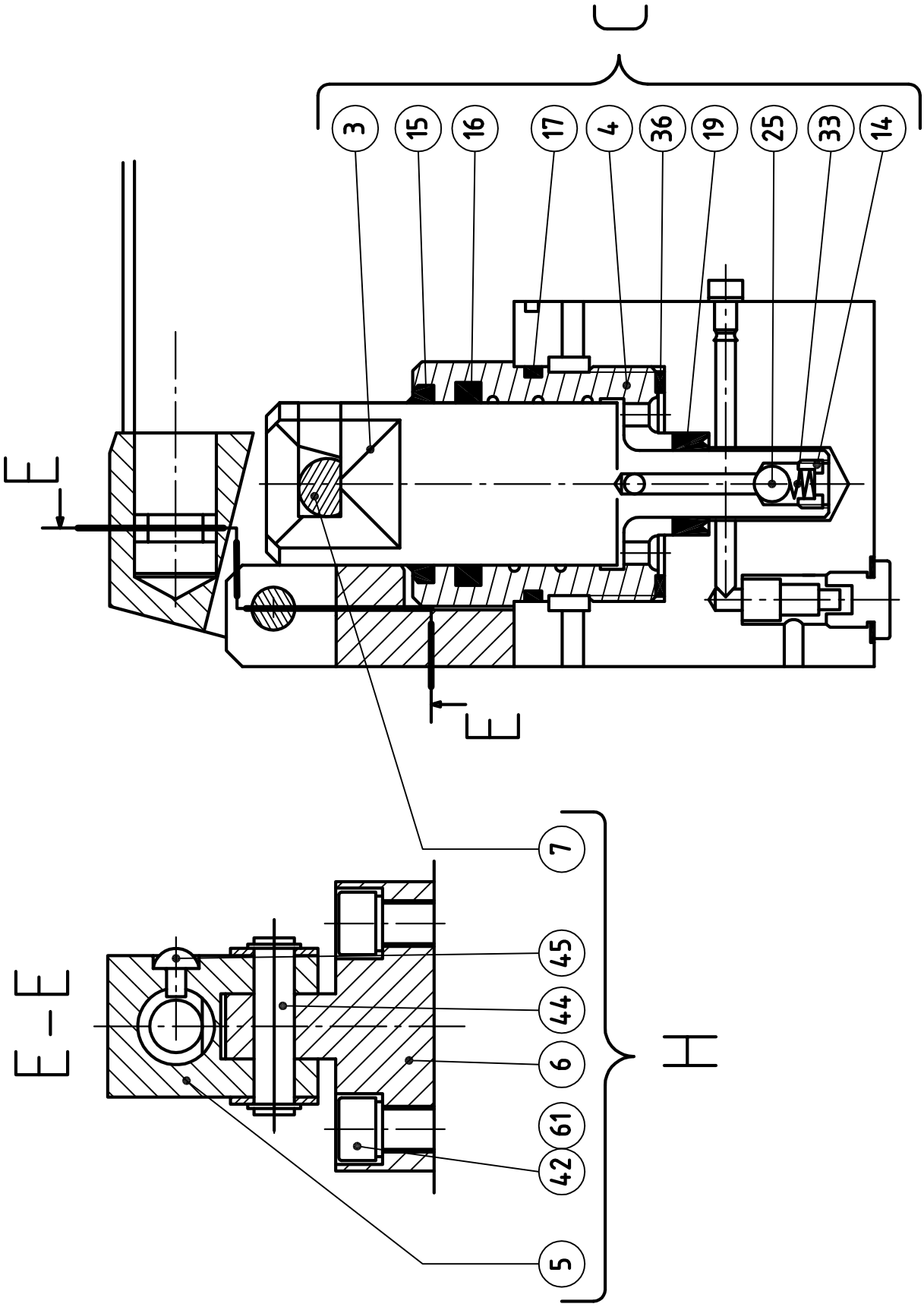


GEISMAR COLMAR

Item	Qty	Description	Code N°	Drawing N°
48	2	O-RING	D03705	
M	1	SECONDARY LIMITER KIT INCLUSED:	D16845	NO 04014-3-200
11	1	NEEDLE-VALVE		
(x)21	1	O-RING		
26	1	VALVE SEAT		
28	1	SPRING		
30	1	PLUG		
38	1	SEAL WASHER		
64	1	ADJUSTING SCREW		


J – J
64
21
28
11
30
38
26
M
J
L
L
J
L – L
48

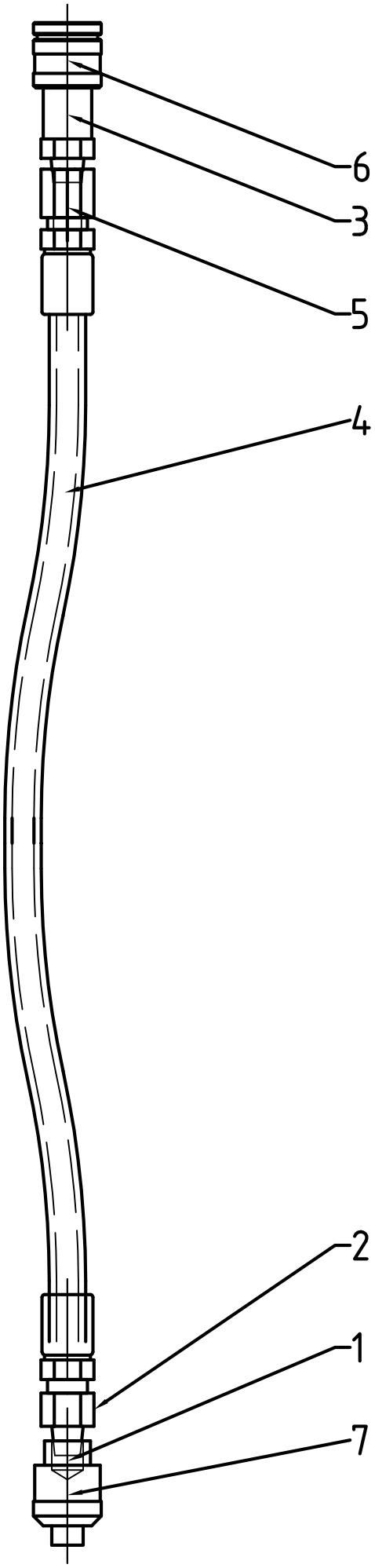
Item	Qty	Description	Code N°	Drawing N°
C	1	PUMP PISTON KIT INCLUSED:	D06712	NO 84106-3-300
3	1	PISTON		
4	1	PISTON GUIDE		
14	1	PLUG		
(x)15	1	SCRAPER		
(x) 16	1	SEAL		
(x) 17	1	O-RING		
(x) 19	1	LIP SEAL		
25	1	BALL		
33	1	SPRING		
(x)36	1	COPPER SEAL		
H	1	ARTICULATION KIT INCLUSED:	D06713	NO 84106-3-300
5	1	STREEP		
6	1	FORK		
7	1	SHAFT		
42	1	SCREW		
44	1	SHAFT WITH WASHER AND CIRCLIPS		
45	1	BOILER-NAIL		
61	2	WASHER		



GEISMAR COLMAR

Item	Qty	Description	Code N°	Drawing N°
	1	HYDRAULIC FLEXIBLE HOSE WITH COUPLERS, COMPLETE	H72481	NO 04014-3
1	1	MALE HALF COUPLING	D00470	
2	1	MALE STUD COUPLING	D00179	
3	1	FEMALE HALF COUPLING	D00472	
4	1	HYDRAULIC FLEXIBLE HOSE WITH END PIECES	D16783	
5	1	FEMALE STUD COUPLING	D13722	
6	1	PROTECTING PLUG	D00486	
7	2	PROTECTING CAP	D00492	

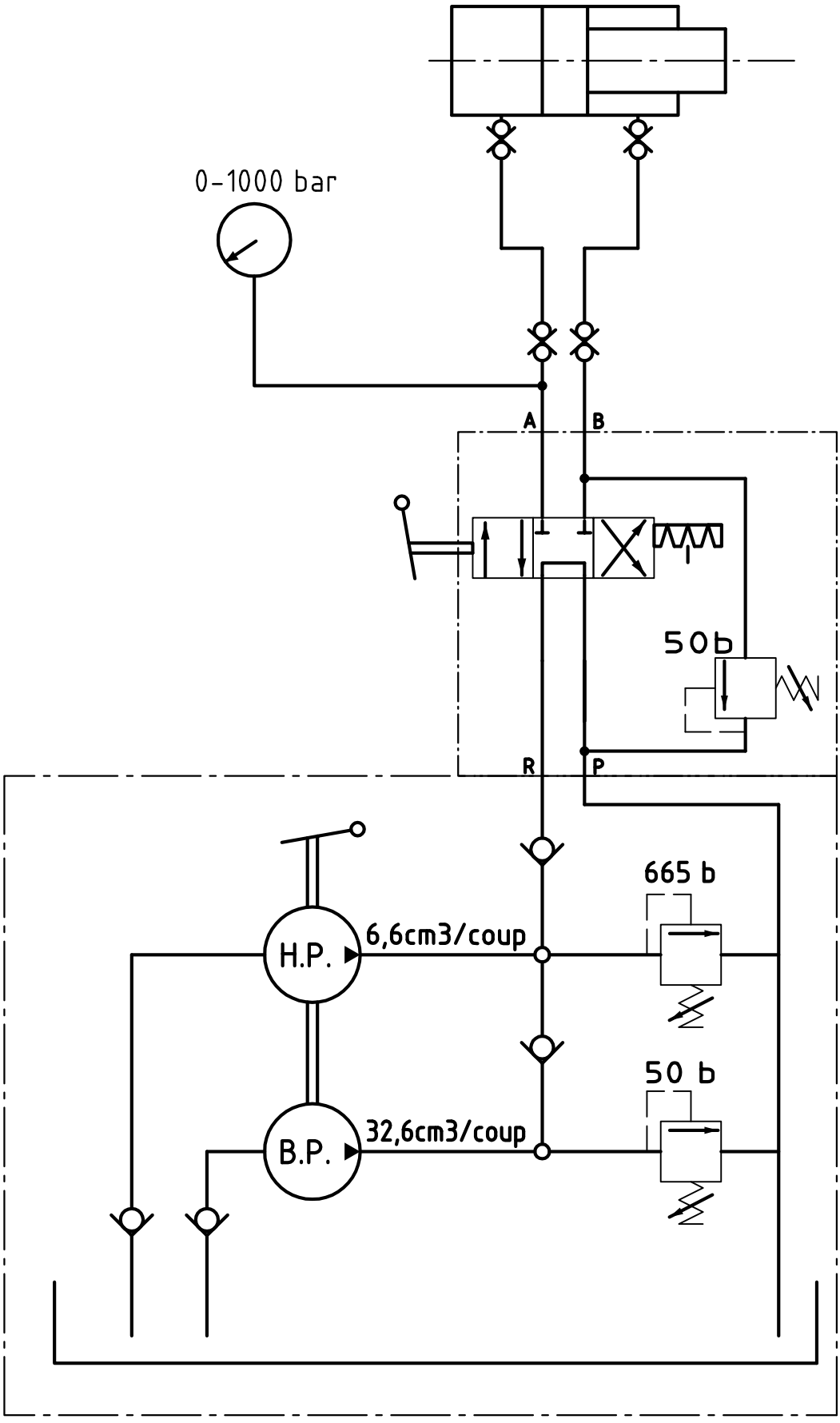
NO H72481



GEISMAR COLMAR

NO i 04014-3

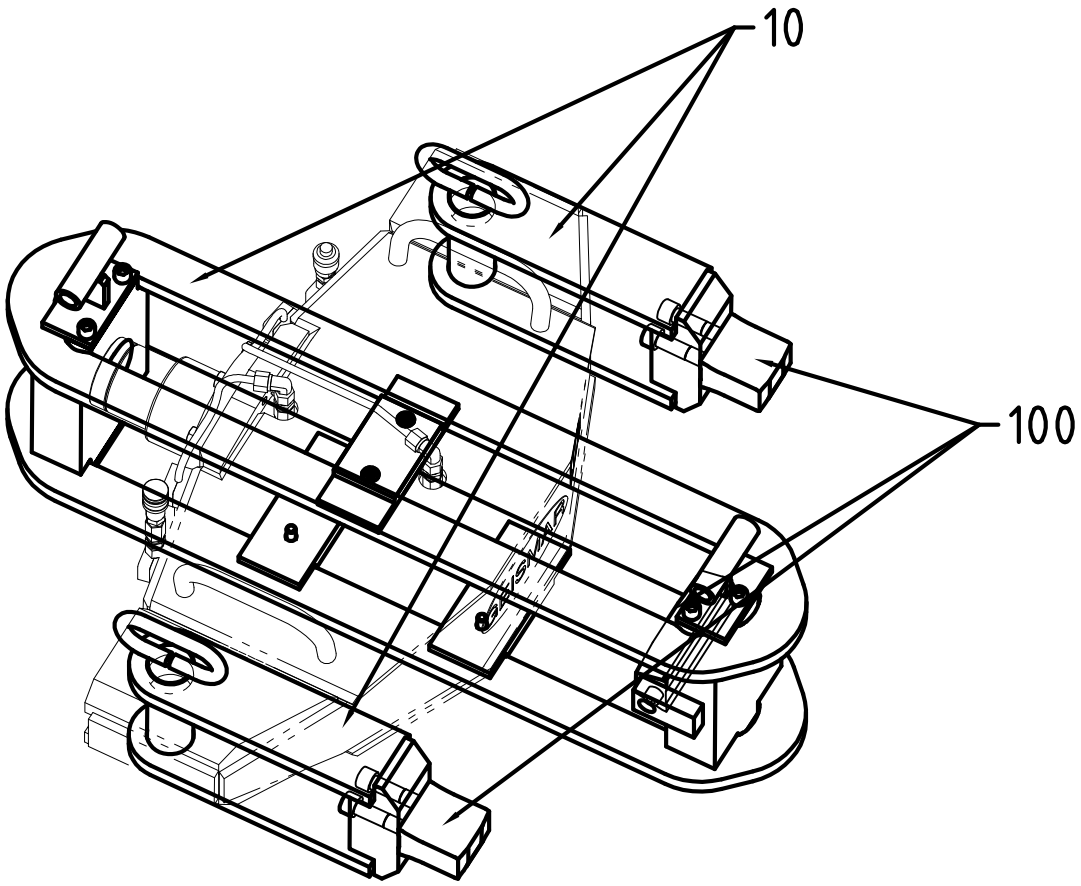
NO H68851

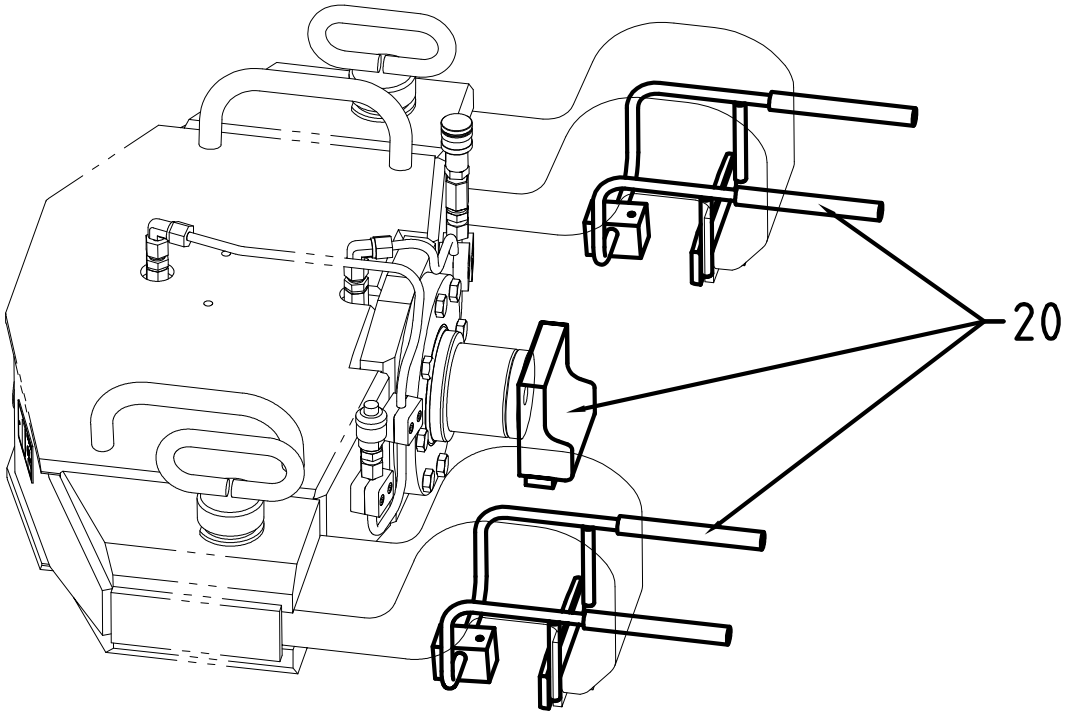


GEISMAR COLMAR

NO i 04014-4

Item	Qty	Description	Code N°	Drawing N°
	1	OPTIONNAL KIT FOR SWITCH RAIL ON LIGHTWEIGHT HORIZONTAL BENDING MACHINE MODEL JLP 75	H78760	NO 05253
10	1	KIT FOR STRAIGHTENING A CURVE ON SWITCH RAIL	H78788	NO 05253-10
20	1	KIT FOR ACCENTUATING A CURVE ON SWITCH RAIL	H78789	NO 05253-20
100	1	JAW KIT FOR SWITCH RAIL Zu1-UIC60 / Zu-UIC54b FOR STRAIGHTENING KIT	H78758	NO 05253-100





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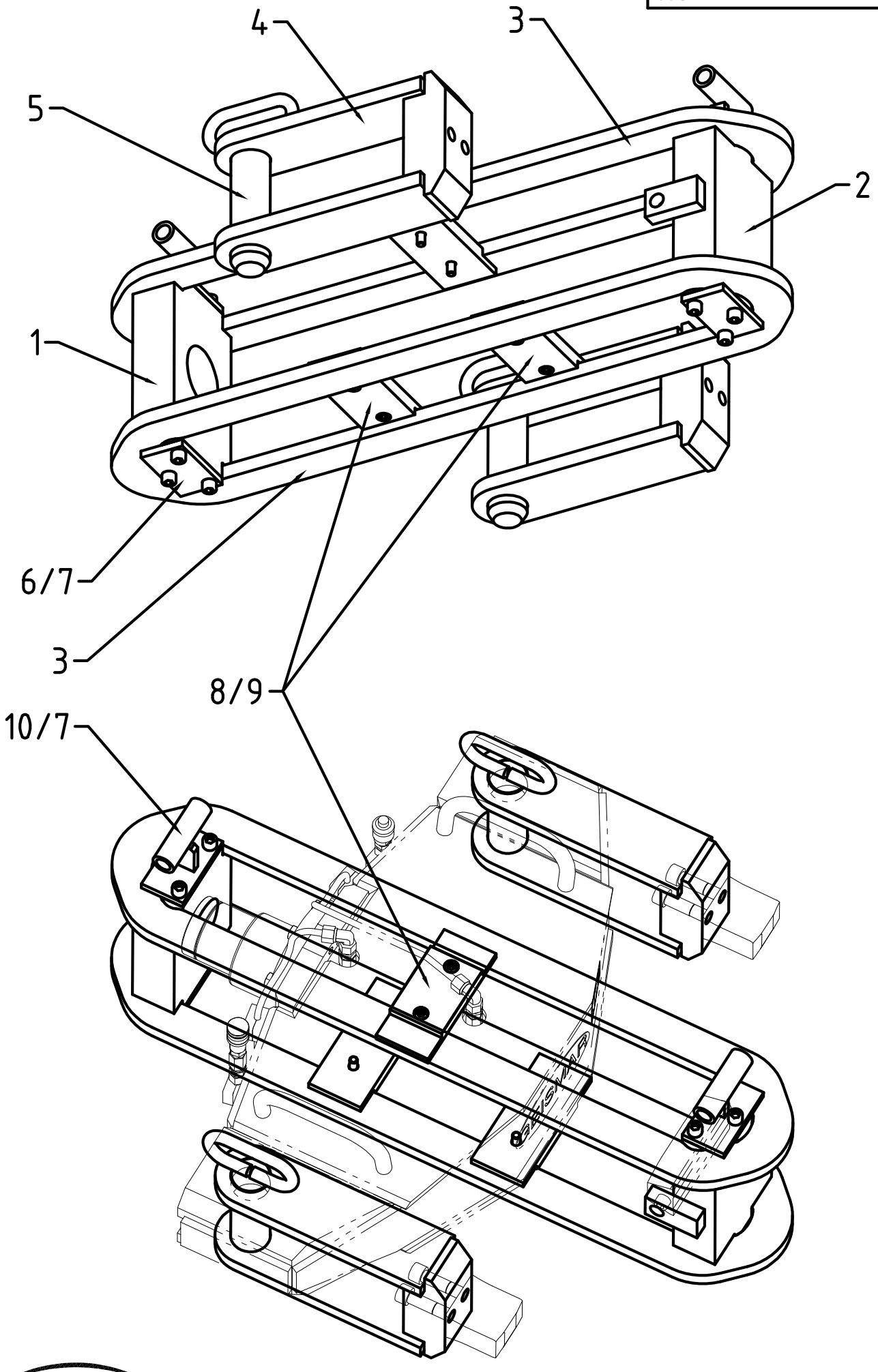
Item	Qty	Description	Code N°	Drawing N°
	1	KIT FOR STRAIGHTENING A CURVE ON SWITCH RAIL	H78788	NO 05253-10
1	1	REST FOR HYDRAULIC JACK NOSE	H78761	
2	1	REST FOR SWITCH RAIL	H78762	
3	2	ARM JUNCTION	H78763	
4	2	LATERAL REST	H78764	
5	2	PIN	H78765	
6	2	PLATE	H78765	
7	12	HEXAGON SOCKET HEAD CAP SCREW	C00554	
8	2	GUIDE	H78766	
9	6	HEXAGON SOCKET HEAD CAP SCREW	C00537	
10	2	PLATE WITH HANDLE	H78791	

NO H78788



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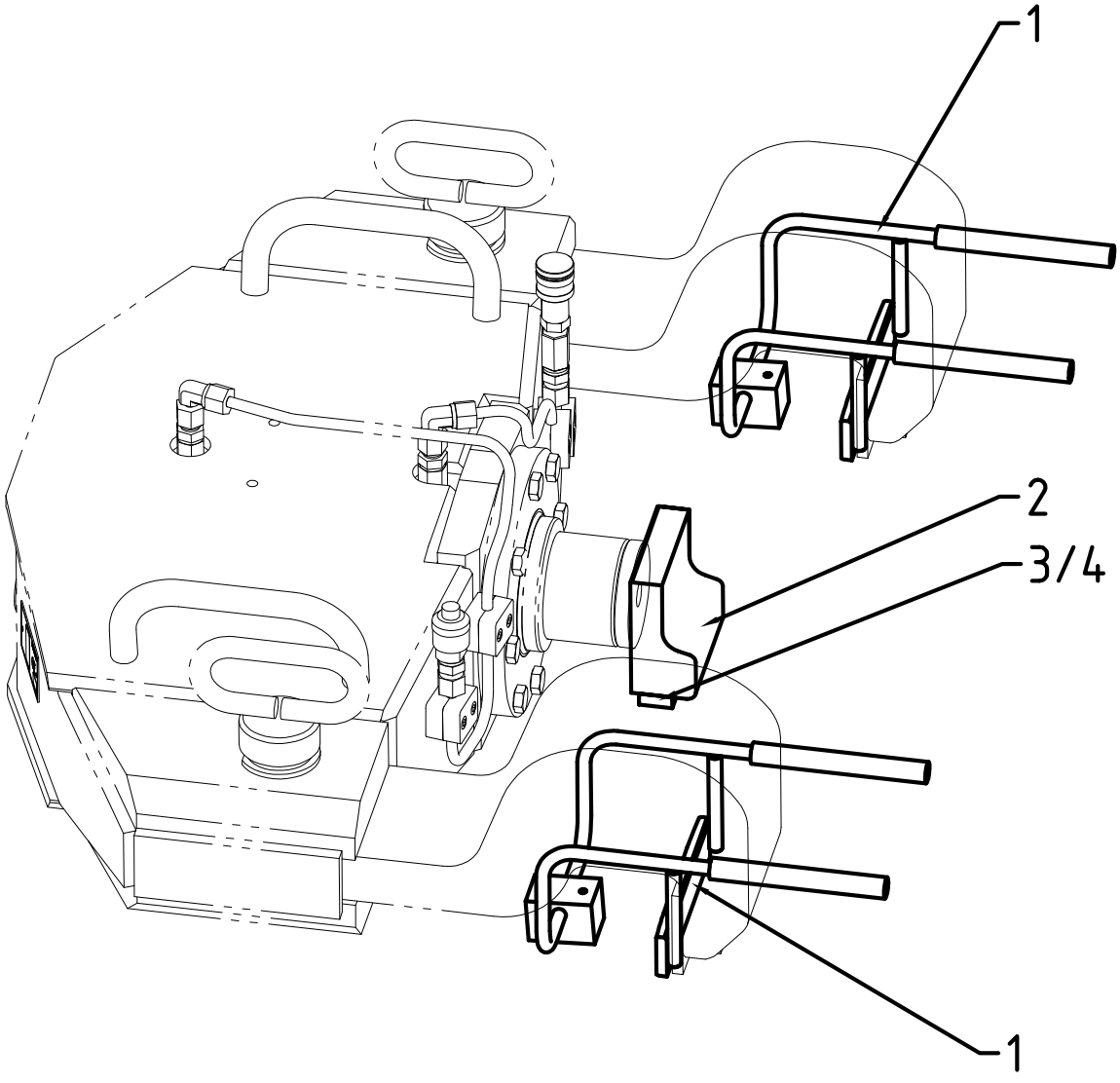
NO i 05253-10

Item	Qty	Description	Code N°	Drawing N°
	1	KIT FOR ACCENTUATING A CURVE ON SWITCH RAIL	H78789	NO 05253-20
1	1	LATERAL REST	H78810	
2	2	REST FOR HYDRAULIC JACK NOSE	H78811	
3	2	HEXAGON SOCKET HEAD CAP SCREW	C01625	
4	1	PLATE FOR Zu1-UIC60 / Zu-UIC54b	H79813	



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Nous nous réservons le droit d'apporter toute modification aux caractéristiques du matériel ainsi qu'à sa mise en œuvre, son mode d'entretien et sa liste de pièces détachées.

We reserve the right to make any alteration or improvement to the specification, operating and maintenance instructions as well as to spare parts list.

Die von uns durch technischen Fortschritt bedingten Änderungen und Verbesserungen an der Ausführung, Wartungsart und Ersatzteilliste, werden vorbehalten.

SOCIÉTÉ DES ANCIENS ÉTABLISSEMENTS

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