CEMBRE

HYDRAULIC TOOL

HTEPE.DET12 HTEPE.DET16

ENGLISH

OPERATION AND MAINTENANCE MANUAL
(Translation of the original instructions)

19M069E_0623_6261059

WARNINGS

1	– *Before using the tool, carefully read the instructions in this manual.*
2	– *When operating the tool, keep hands away from the danger zone.*
3	– *Always wear safety gloves when operating.*

HTEPE.DET12 system consists of:
- Pump unit
- Hydraulic head type **RHTEPE-S**
- Plunger type **OG 13.2T** (qty 2)
- GO / NO GO gauge type **CAL 22.23**
- Plastic case **VAL-P14**

HTEPE.DET16 system consists of:
- Pump unit
- Hydraulic head type **RHTEPE-S16**
- Plunger type **OG 16.2T** (qty 2)
- GO / NO GO gauge type **CAL 22.23**
- Plastic case **VAL-P14**

1. GENERAL CHARACTERISTICS

- **Application range:**
  HTEPE.DET12: suitable for installing rail web electrical connection system having M12 bolt (e.g. AR61, AR65, AR261, AR265).
  HTEPE.DET16: suitable for installing rail web electrical connection system having M16 bolt (e.g. AR6116, AR6516, AR26116, AR26516).

- **Installation force:** ..... 55 kN

- **Rated operating pressure:** ..... 700 bar (10000 psi)

- **Flexible hose:** length 900mm

- **Dimensions (pump body):** length ..... 285 mm
  width ..... 130 mm

- **Dimensions (head):** length RHTEPE-S ..... 116 mm
  length RHTEPE-S16 ..... 133 mm
  width ..... 67,5 mm
  diameter ..... 48 mm

- **Weight:** ..... 3,8 kg

- **Recommended oil:** ..... **ENI ARNICA ISO 32** *or equivalent*

- **Safety:** the tool is provided with a maximum pressure valve.

2. INSTRUCTIONS FOR USE

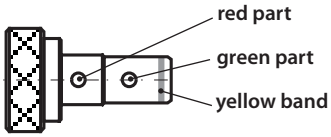
2.1) Setting

Connect the male coupler of the head to the female coupler on the tool hose; ensure that the couplers are securely fitted.

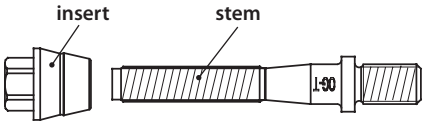
Before connecting or disconnecting the head and the hose, ensure that the ram of the head is fully retracted.

2.2) Installation procedure for AR61, AR65, AR6116, AR6516 rail web electrical connections

– Drill rail web or, **if already drilled, use a suitable reamer to clean the hole** (Fig. 1).
– Check the size of the hole with the **CAL 22.23** "GO/NO GO" gauge (Fig. 2a):
  - The hole size is correct **if only the green part enters the hole.**
  - **If the red part enters, the hole is too large**, in this case it is necessary to drill a new hole.
    Using the same gauge, check the rail thickness (Fig. 2b):
  - If the yellow band protrudes, use the **AR65...** series.
  - If the yellow band does not protrude, use the **AR61....** series.



– Insert the **AR...-1** copper bush into the rail web hole (Fig. 3).
– Ensure that the ram in the head is fully retracted and then firmly screw and tighten the stem of the plunger onto the tool head (Fig. 4).
– Introduce the stem of the plunger into the **AR...-1** copper bush from the unflanged side and screw and tighten the insert of the plunger **OG...** onto the stem (Fig. 5) using the recess in the gauge **CAL22.23**
Plungers OG13.2T and OG16.2T are composed of 2 separate items: insert and stem.
To rapidly execute subsequent extrusion operations, it is sufficient to unscrew the insert, leaving the stem firmly screwed onto the head.



– Operate the moveable handle of the tool (Fig. 6) to pull the plunger **OG... completely** through the bush and extrude the bush onto the surface of the hole.
– At the end of the operation, press the pressure release lever (20) to retract the ram (01).
– The bush will also extrude itself around the opposite side of the rail web (Fig. 7).

2.3) Conductor assembly

– Crimp the lug onto the conductor.
– Assemble all pieces as shown in Fig. 8.
– Fit the self-locking nut (Fig. 9) and tighten to the torque setting indicated.

FIG. 1

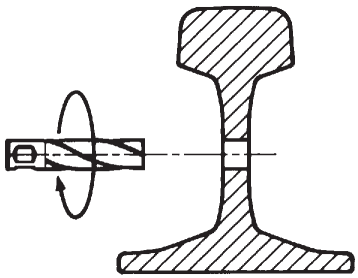


FIG. 2a

NO

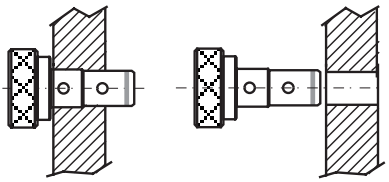
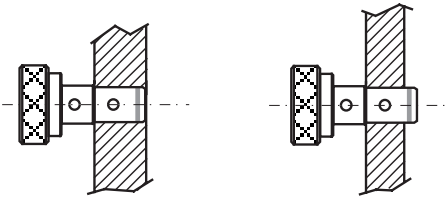


FIG. 2b

YES



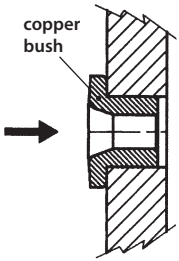


FIG. 3

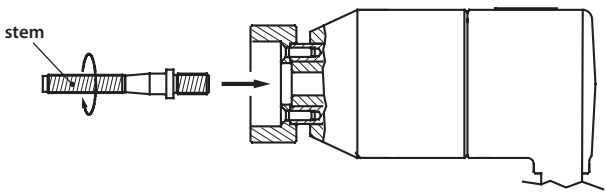


FIG. 4

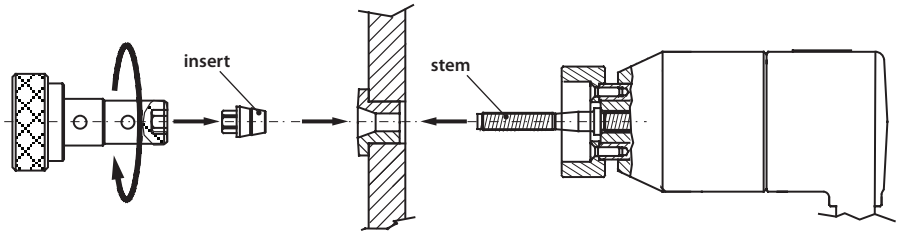


FIG. 5

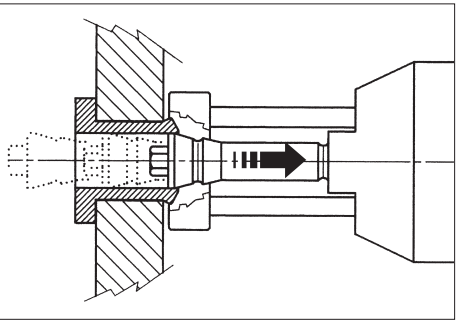


FIG. 6

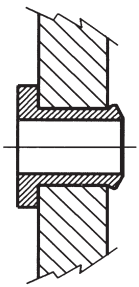


FIG. 7

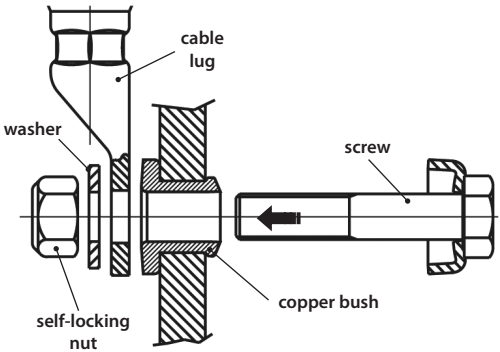


FIG. 8

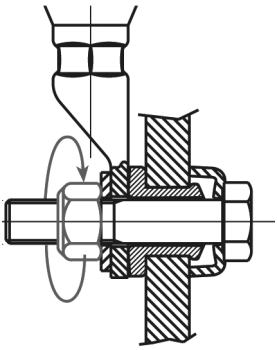


FIG. 9

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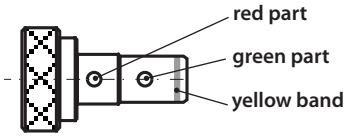
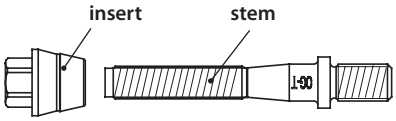
2.4) Installation procedure for AR261, AR265, AR26116, AR26516 rail web electrical connections

– Drill rail web or, **if already drilled, use a suitable reamer to clean the hole** (Fig. 1).
– Check the size of the hole with the **CAL 22.23** "GO/NO GO" gauge (Fig. 2a):
  - The hole size is correct **only if the green part enters the hole.**
  - **If the red part enters, the hole is too large**, in this case it is necessary to drill a new hole.



  Using the same gauge, check the rail thickness (Fig. 2b):
  - If the yellow band protrudes, use the **AR 265...** series.
  - If the yellow band does not protrude, use the **AR 261...** series.
– Insert the **AR2...-1** copper bush into the rail web hole and position the **AR2...-2** copper washer on the opposite web side (Fig. 3).
– Ensure that the ram in the head is fully retracted and then firmly screw and tighten the stem of the plunger onto the tool head (Fig. 4).
– Introduce the stem of the plunger into the **AR2...-2** copper washer and tighten the insert of the plunger **OG...** onto the stem (Fig. 5) using the recess in the gauge **CAL22.23.**
  Plungers OG13.2T and OG16.2T are composed of 2 separate items: insert and stem.
  To rapidly execute subsequent extrusion operations, it is sufficient to unscrew the insert, leaving the stem firmly screwed onto the head.



– Operate the moveable handle of the tool (Fig. 6) to pull the plunger **OG... completely** through the bush and extrude the bush onto the surface of the hole.
  At the end of the operation, press the pressure release lever (20) to retract the ram (01).
– The bush will also extrude itself around the opposite side of the rail web (Fig. 7).

2.5) Conductor assembly

– Crimp the two lugs onto the conductors.
– Assemble all pieces as shown in Fig. 8.
– Fit the self-locking nut (Fig. 9) and tighten to the torque setting indicated.

FIG. 1

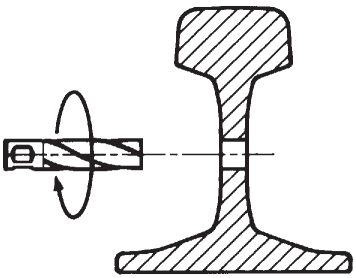


FIG. 2a

NO

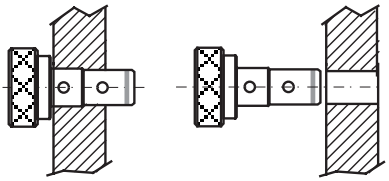
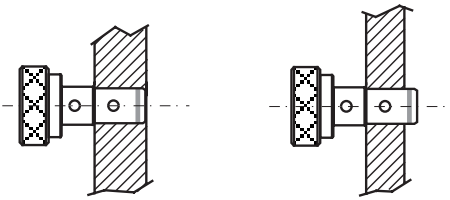


FIG. 2b

YES



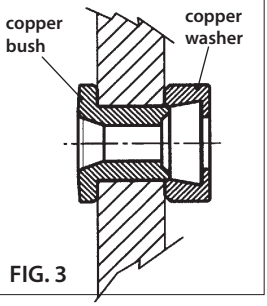


FIG. 3

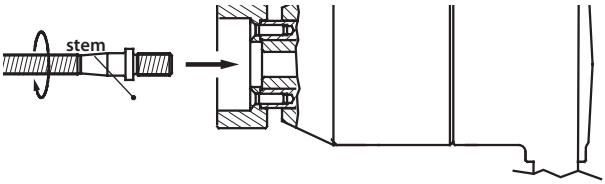


FIG. 4

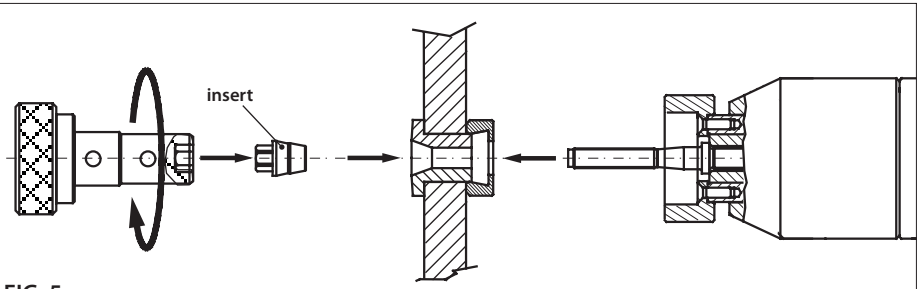


FIG. 5

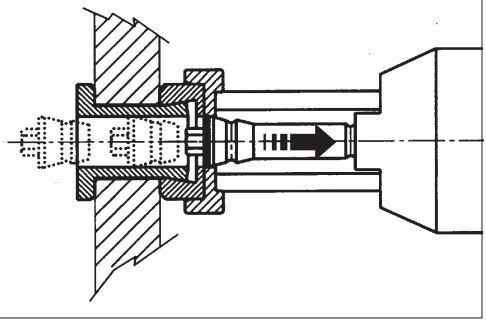


FIG. 6

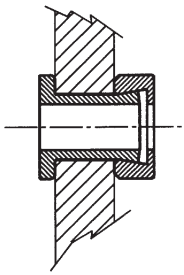
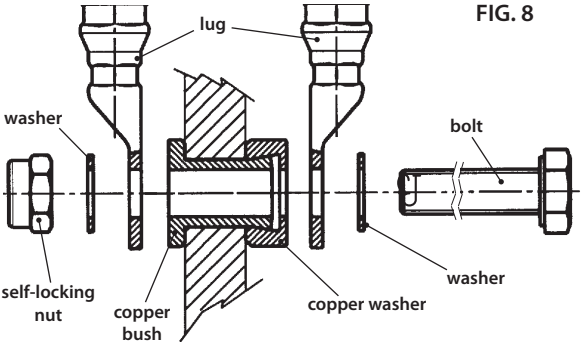


FIG. 7

FIG. 8



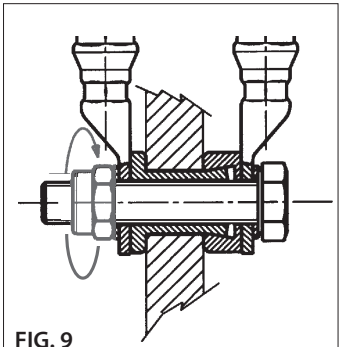


FIG. 9

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3. WARNING

The tool is robust and requires very little daily maintenance.
Compliance with the following points should help to maintain the optimum performance of the tool:

3.1) Thorough cleaning

Dust, sand and dirt are a danger for any hydraulic device.
Every day, after use, the tool must be wiped with a clean cloth taking care to remove any residual particles, especially around the moveable parts and the flexible hose.

3.2) Flexible hose

Operate the tool with the hose uncoiled. **Do not bend, twist, kink, knot or squash the hose.** Before operation, check the hose for any sign of damage.
When storing the tool, coil the hose in large loops.

High pressure flexible hoses are subject to a natural ageing process which can result in a reduction in performance potentially affecting safety of the operator. As a result their life span is limited. In order to ensure safe use of their units,* CEMBRE *recommends replacing the hose within 10 years from the date printed on the fittings.

Before using the pump always check the integrity of the flexible hose and the quick couplers making sure there are no abrasions, cuts, deformations or swellings.

3.3) Storage

When not in use, the tool and accessoires should be stored and transported in the plastic case, to prevent damage.
Plastic case: type **"VAL-P14"**, size 496x370x137 mm, weight 2,7 kg.
The case will also store the "GO / NO GO" gauge, and the two plungers.

4. MAINTENANCE

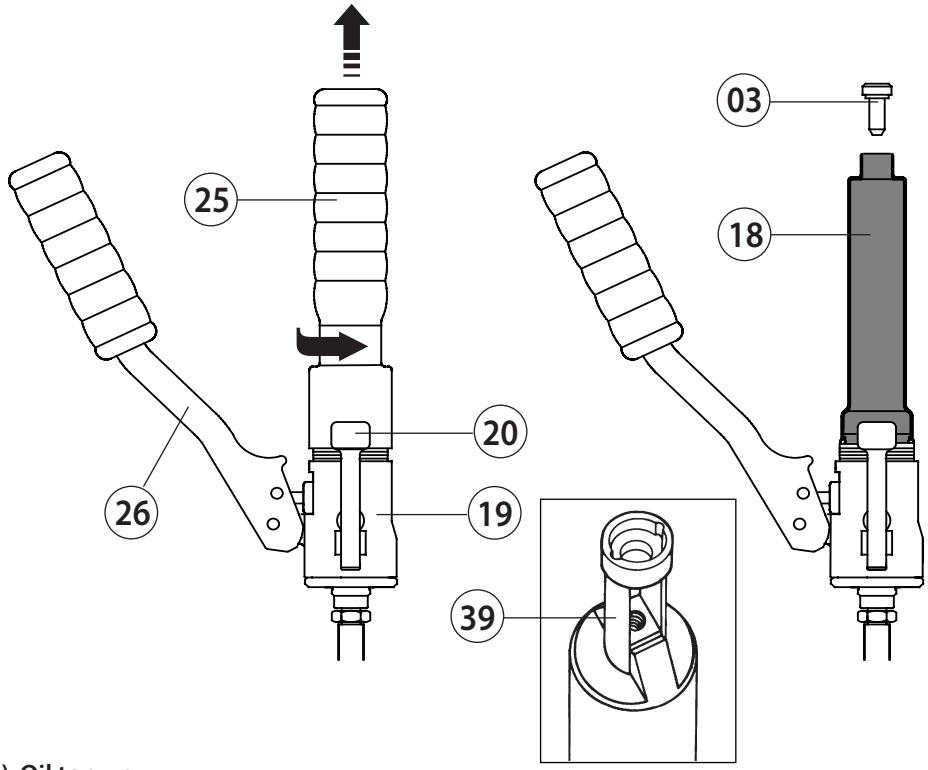
Air in the hydraulic circuit may affect the performance of the tool; e.g. no ram die advancement, slow advancement of the ram; ram pulsating.
In this case proceed as follows:

4.1) To purge air bubbles from hydraulic circuit

a – Hold tool upright in a vice with handles open (see Figure).
b – Unscrew the main handle (25) from the body (19) to expose the rubber oil reservoir (18).

c – Remove reservoir cap (03).
d – Operate moveable handle (26) several times, in order to advance the ram (01).
e – Press the pressure release lever (20) to retract the ram, discharge oil pressure from the circuit and return all oil to the reservoir.
f – Repeat points (**d** - **e**) five times, to ensure all air bubbles in the hydraulic circuit are purged into the reservoir.
g – If the oil level is low, top up as directed in **paragraph 4.2.**
h – Remove all air from reservoir and fit cap (03).
i – Assemble main handle (25) to tool body.

If the tool continues to malfunction, return the tool for service/repair as detailed in § **7**.



4.2) Oil top up

Every six months check the oil level in the reservoir. If necessary, to up the oil level to the upper lip of the reservoir and remove all air from the reservoir, see **4.1**, points **a**, **b**, **c**, and **e**, finally, complete with operations **h** and **i**.

Always use clean recommended oil, see § 1.
Do not use old or recycled oil.
Do not use hydraulic brake fluid.

Ensure that disposal of used oil is in accordance with current legislation.

4.2) Replacement of the automatic coupler

To replace the automatic coupler of the hose or head, proceed as follows:

– Remove the old coupler.
– Carefully clean the thread to remove old sealant.
– Apply Teflon tape to the thread.
– Fit the new automatic coupler and tighten to **30 Nm (22 lbf ft)**.

5. PARTS LIST (PUMP UNIT) (Ref. to Fig. 10)

Code N°	Item	DESCRIPTION	Qty
6620104	01	PUMPING RAM	1
6900641	02	PRESSURE RELEASE SCREW	1
6800040	03	RESERVOIR CAP	1
6890036	04	FLEXIBLE HOSE	1
6650095	05	JUNCTION	1
6520280	06	SPRING	1
6600100	07	BALL POSITIONING DOWEL	1
6641020	08	M6 WASHER	1
6520160	09	SUCTION SPRING	1
6520200	10	SPRING	1
6340590	11	PIN	1
6560262	12	MOVEABLE HANDLE PIN	2
6380200	13	HANDLE GRIP	1
6520520	11	SPRING	1
6600020	15	SPRING LOADED PIN	1
6800020	16	PRESSURE TESTING CAP	1
6090060	17	HANDLE LATCH	1
6720050	18	RESERVOIR	1
6160070	19	BODY	1

Code N°	Item	DESCRIPTION	Qty
6440085	20	PRESSURE RELEASE LEVER	1
6060060	21	CAP	1
6520401	22	SPRING	1
6040160	23	BACK-UP RING	1
6900601	24	COMPLETE SUCTION SCREW	1
6480055	25	MAIN HANDLE ASSY	1
6480910	26	MOVEABLE HANDLE	1
6895046	27	COMPLETE VALVE	1
6700060	29	CIRCLIP	4
6060122	30	Q14-F COUPLER	1
6360240	31	O-RING	1
6360250	32	O-RING	1
6360268	33	O-RING	1
6360022	34	O-RING	1
6232001	35	TG0350 LABEL	1
6040422	36	Ø 20 CIRCLIP	1
6760100	37	Ø 3x16 SPLIT PIN	1
6740100	38	5/32" BALL	1
6760120	39	7/32"BALL	2

The guarantee is void if parts used are not* CEMBRE *original spares.

When ordering spare parts always specify the following:
- **code number of item**
- **name of item**
- **type of tool**
- **tool serial number**

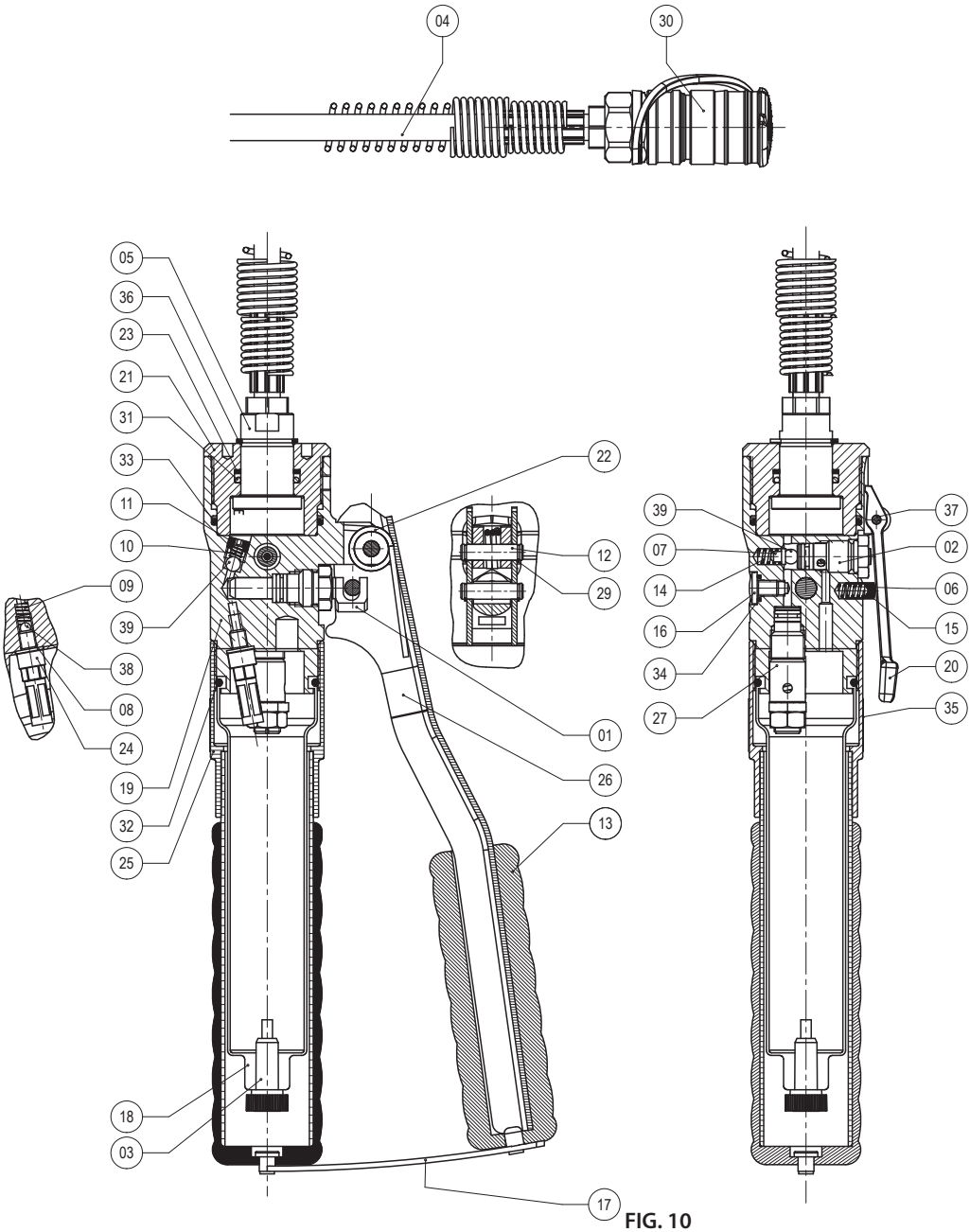


FIG. 10
LONGITUDINAL SECTION

6. PARTS LIST (TOOL HEAD) (Ref. to Fig. 11)

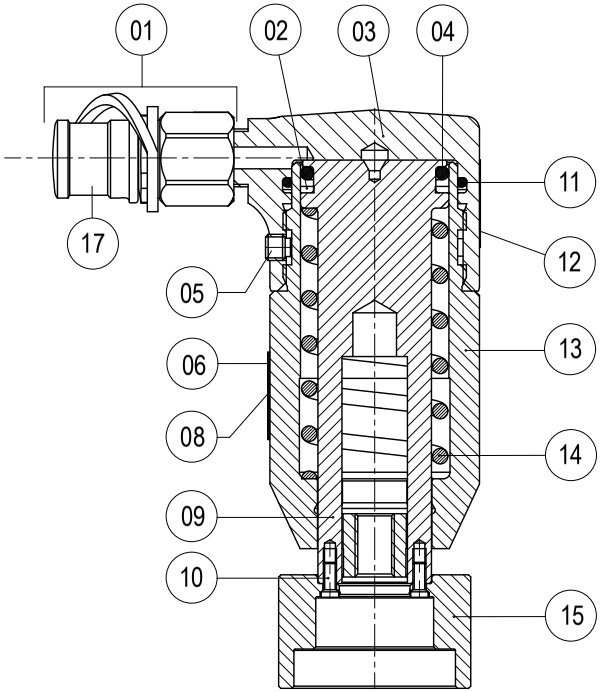
Code N°	Item	DESCRIPTION	Qty
6060120	01	Q14-MS COUPLER	1
6040240	★ 02	BACK-UP RING	1
6840070	03	CUP	1
6360320	★ 04	O-RING	1
6340060	05	M 6x6 GRUB SCREW	1
6232337	06	(TG.0537) METAL LABEL	1
6232247	07	(TG.0447) METAL LABEL	1
6650118	08	ø 2,5x3,5 RIVET	2
6620225	09	RAM	1
6900670	10	SCREW	2
6360268	★ 11	O-RING	1
6232001	12	(TG.0350) WARNING LABEL	1
6120171	13	CYLINDER	1
6520430	14	RAM RETURN SPRING	1
6641038	15	RHTEPE-S16 WASHER	1
6641046	16	RHTEPE-S12 WASHER	1
6800156	17	PROTECTION CAP	1

The items (★) are those CEMBRE recommend replacing if the head is disassembled.

The guarantee is void if parts used are not* CEMBRE *original spares.

When ordering spare parts always specify the following:
- **code number of item**
- **name of item**
- **type of tool**
- **tool serial number**

RHTEPE-S16



RHTEPE-S12

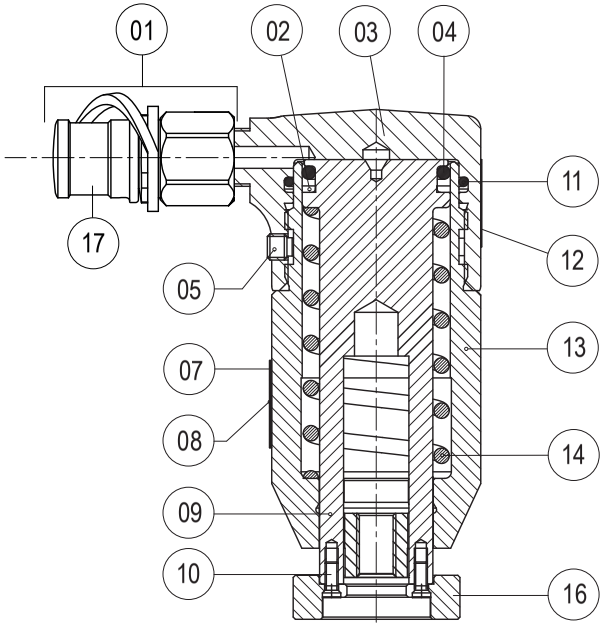


FIG. 11 LONGITUDINAL SECTION

7. RETURN TO CEMBRE FOR OVERHAUL

In the case of a breakdown contact our Area Agent who will advise you on the problem and give you the necessary instructions on how to dispatch the tool to our nearest service Centre; if possible, attach a copy of the Test Certificate supplied by CEMBRE together with the tool or fill in and attach the form available in the "ASSISTANCE" section of the CEMBRE website.

NOTES

NOTES

CEMBRE

www.cembre.com

CEMBRE S.p.A.
via Serenissima, 9
25135 Brescia
Italy
Ph +39 030 36921
ufficio.vendite@cembre.com
sales@cembre.com

CEMBRE Ltd.
Dunton Park,
Kingsbury Road,
Curdworth, Sutton Coldfield
West Midlands, B76 9EB
United Kingdom
Ph +44 01675 470440
sales@cembre.co.uk

CEMBRE S.a.r.l.
22 Avenue Ferdinand
de Lesseps
91420 Morangis Cedex
France
Ph +33 01 60 49 11 90
info@cembre.fr

CEMBRE España S.L.U.
Calle Verano 6 y 8
Pl Las Monjas
28850 Torrejón de Ardoz
Madrid - Spain
Ph +34 91 4852580
comercial@cembre.com

CEMBRE GmbH
Geschäftsbereich
Energie- und Bahntechnik
Heidemannstr. 166
80939 München
Germany
Ph + 49 89-3580676
info@cembre.de

CEMBRE GmbH
Geschäftsbereich
Industrie und Handel
Boschstraße 7
71384 Weinstadt
Germany
Ph +49 7151-20536-60
info-w@cembre.de

CEMBRE Inc.
Raritan Center Business Park
300 Columbus Circle-S.F,
Edison, NJ 08837 USA
Ph +1 (732) 225-7415
sales.us@cembre.com
Midwest Office
1051 Perimeter Dr. #470
Schaumburg, IL 60173