Ref. LD-8HN:
*basic drill without clamping device*

Ref. LD-8H:
*(LD-8HN + DBG-Y)*
*basic drill complete with railweb clamping device type DBG-Y*

**APPENDIX “A”**

Factors which influence the number of holes that can be made according to the tool used:
- Hardness of the element to be drilled.
- Thickness to be drilled.
- Stability of the drill clamping and correct assembly of the drilling tool.
- Suitable lubrocooling (*lubrication/cooling*) to keep the temperature of the tool low so as not to compromise the efficiency of the cutting edges, whilst at the same time facilitating the removal of the swarf.
- Contact time of the cutting edges of the tool with the material to be drilled; bear in mind that the faster the hole is made the greater the efficiency.
- Observance of these basic rules:
  1) Commence drilling by exerting light pressure on the advancing lever, progressively increasing and then relaxing it when the tool is in the exit phase.
  2) Avoid pressure surges and advance according to the diameter of the drilling diameter, to avoid scratching the material or damaging the cutting edges of the tool.
  3) Remember that a tool with efficient cutting edges requires a pressure lower than that to one which a certain number of holes have already been made.
  4) When holes are made close to raised lettering on the rails, commence drilling with very light pressure until the lettering disappears, to avoid possible breakage of the tool.
  5) Bear in mind that when operating on very hard rails, as in the case of quality 1100 steel, it is advisable to increase the lubrocoolant flow rate.

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</table>
1. GENERAL CHARACTERISTICS

- **Drilling capacity:** ............................................................ Ø 9/32" to 1 1/2"
  (with special twist drill bits: hole diameters of 9/32" to 1-1/8" on rails up to 3 1/2" thick)
  (with broach cutters: hole diameters of 3/4" to 1-1/2" on rails up to 2 3/4" thick)

- **Speed without load:** ............................................................. 200 rpm

- **Hydraulic Requirements:**
  - **Input flow:** .............................................................. 5 gpm
  - **Input pressure:** ......................................................... 2,000 psi

- **Weight:** ........................................................................ 38.5 lbs

- **Weight:** with "DBG-Y" clamping device .................................. 44 lbs

- **Oil bath gear reducer unit**

- **Recommended oil for gear reducer unit:** MOBIL DTE OIL LIGHT or ESSO TERESSO 32 or equivalent

---

**WARNING**

⚠️ Before using the drill read the instructions contained in this manual carefully.

⚠️ During drilling keep your hands outside the danger area.

⚠️ Always wear protective glasses and working gloves.

⚠️ Avoid wearing clothes which may present a risk to personal safety.

⚠️ Always disconnect hydraulic hoses when not in use, when changing the cutters and before servicing.
### 2. ACCESSORIES SUPPLIED WITH THE DRILL

#### 2.1) Pilot bits for controlling the cooling system:
- for use with short broach cutters (7/8" depth of cut)
  - 1 pc PPC 2
- for use with long broach cutters (2" depth of cut)
  - 1 pc PPL 2

#### 2.2) Spacer, type DPE, for use with spiral bits and APE adaptor for controlling the cooling system.

#### 2.3) Adaptor, type ARE, for external cooling, to be used with the SR5000 cooling unit.

#### 2.4) Grub screw, M8x10
- 4 pcs for clamping cutters or bits on spindle shaft.

#### 2.5) Socket head cap screws, M6x16
- 4 pcs for securing positioning shoes to front plate.

#### 2.6) Socket head cap screws, M6x25
- 4 pcs for securing special positioning shoes to front plate.

#### 2.7) Range of tools:
- 1 pc 5 mm allen key
- 1 pc 6 mm allen key
- 1 pc 4 mm allen key with handle
- 1 pc brush

#### 2.8) 4.7 fl oz (140 ml) oil tank for the gear reduction.

(Accessories from pos. 2.1 to pos. 2.8 are included in the “Kit of accessories for LD-8HN” having the code 6001909)

#### 2.9) Type SR5000 cooling unit.

---

<table>
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<tr>
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<th>Item</th>
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<td>22</td>
<td>Level gauge</td>
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<td>21</td>
<td>Crankcase Cap</td>
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<td>20</td>
<td>Cap</td>
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<td>Front plate</td>
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<td>Tube L=210 mm</td>
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<td>Tube L=150 mm</td>
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<td>Male coupling FN38-12</td>
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<td>09</td>
<td>Spindle advancing lever</td>
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<td>08</td>
<td>Handle grip</td>
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<td>Complete handgrip</td>
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<td>Knob valve button</td>
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<td>05</td>
<td>Washer ø 8</td>
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<td>03</td>
<td>Lever release pawl</td>
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<tr>
<td>6001428</td>
<td>02</td>
<td>Complete cooling connection</td>
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</tr>
<tr>
<td>6001909</td>
<td>01</td>
<td>Complete air valve</td>
<td>1</td>
</tr>
</tbody>
</table>

(Accessories from pos. 2.1 to pos. 2.8 are included in the “Kit of accessories for LD-8HN” having the code 6001909)
3. OPTIONAL ACCESSORIES (to be ordered separately)

3.1) "DBG-Y" device (*) with moving arm for clamping the drill to the rail web and track fittings, complete with the TDB 6 termination.

(*) Always supplied with drilling machine ref. LD-3PY

3.1.1) "DBG-LY" device specific for clamping the drill to the girder rails (for example 128 GR or GGR 118). With the specific shoes allows the positioning on both sides of the rails, complete with the TDB 3 termination.

3.1.2) "DBG-GR" device (*) for clamping the drill in correspondence of guard rail.

3.1.3) "DBSN" device for clamping the drill to flange rails, for use in conjunction with the MPAF rail shoes. Using this device the rail drill can remain clamped in the drilling position even when trains pass over it.

(*) Always supplied with drilling machine ref. LD-3PYGR

Guarantee conditions cease upon usage of non original spare parts.

When ordering spare parts always give the following information:

- spare part code
- spare part description
- drilling machine model
- drilling machine serial number

FIG. 26 – LD-8HN DRILL ASSEMBLY
3.2) "TST 50" two stage template
(to be used with specific DBG-AY clamp)
This device enables the drilling of 150 lb and
aluminium composite contact rails from one side.
Restart of work stroke: 1.97"
Typical application:
– Aluminium composite rail.
– 150 lbs contact rail.

3.3) “VAL LD-8H” steel carrying case
for accommodating the complete drill with the
clamping device.
22 1/2" (L) x 13 1/2" (W) x 17 1/2" (H)

3.4) “VAL MPA” suitable for storage of rail shoes,
cutters and accessories
• 15 1/2" (L) x 13 3/4" (W) x 2 1/4" (H)

3.5) "MPAU" universal rail shoe
for rail or for special
applications such as drilling #20 high speed switch points
(positioning not automatic).

3.5.1) "MPAU-10" universal SHORT rail shoe
for rail or for special applications (positioning not auto-
matic).

13. WARNINGS

13.1) Regularly check for correct tightening (torque) of the fixing screws of the drilling tools
and the positioning jigs.

13.2) Avoid pressure jolts on the advancing lever during drilling.

13.3) Always make sure that the drilling swarf is properly removed before starting to drill
a new hole.

13.4) Incomplete clamping of the drill on the rail to be drilled may lead to the breakage or
accelerated wear of the drilling tool and damage to the spindle shaft bearings.

13.5) If it is necessary to operate the drill without the cutter inserted, remove the locking
grub screws from the spindle shaft.

13.6) Avoid leaving the SR5000 tank under pressure and exposed to sunlight for long
periods of time.

13.7) Should the DBG-Y clamping device be removed, make sure that by reassembling
it, the two blocking screws are firmly fastened.

The pressure valve is factory
adjusted:
DO NOT CHANGE OR MODIFY CALIBRATION.

14. RETURN TO Cembre FOR OVERHAUL

In the case of a breakdown contact our Company 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, if no other references are available, indicate the approximate purchase
date and the tool serial number.
12.1.2) Removal of metal residues from the crankcase
When the drill is positioned as shown in Fig. 23 unscrew the appropriate cap with magnetic insert on which any metal residues present in the oil will have collected. Carefully clean the magnetic insert with a clean rag and screw it up again in the appropriate housing.

**FIG. 23 – REMOVAL OF THE METALLIC WASTE**

Every 50 hours of operating

12.1.3) Checking of screws.
Check and re-tighten all screws where necessary.

12.1.4) Lubrication (Ref. to Fig. 24)
Lubricate the spindle support housing by means of the appropriate lubricator and the screw of the DBG-Y clamping device.

**FIG. 24 – LUBRICATION**

12.1.5) Refrigeration filter cleaning (Ref. to Fig. 25)
The refrigeration circuit of the drilling machine is provided with anti-impurity filter; should an evident decrease of the flow of refrigeration be verified, it could be necessary to clean it in the following way:
– Using a 14 mm key, unscrew the refrigeration coupling (02).
– Extract the filter and clean it carefully.
– Reassemble the filter into the coupling (02) as shown in the figure 25, fully tighten the coupling.

**FIG. 25 – REFRIGERATION FILTER CLEANING**
12. MAINTENANCE

All maintenance operations must be performed with the drill disconnected from the hydraulic source.

After the first 10 operating hours, proceed with oil sump change, as follows:
(Ref. to Figs 22 and 23)
With the drill in horizontal position:
– Remove the cap with the magnetic insert (see § 12.1.2).
– Remove the oil filling cap (08).
– Make sure that all the oil comes out by bending slightly the drilling machine in order to make the operation easier.
– Clean up the cap (see § 12.1.2).
– Reassemble the cap again.
– Fill up the oil sump till the level indicator (see § 12.1.1) using the oil supplied with the drilling machine; it will be necessary to use about 4.7 fl oz (140 ml) oil.
– Put back the oil filling cap.

12.1) Ordinary maintenance of the drill

Every 20 hours of operation

12.1.1) Topping up oil (Ref. to Fig. 22)
With the drill switched off and placed on a flat surface, check the oil level in the crankcase by looking through the appropriate level indicator cover. 

The level must be approximately half way up the indicator cover; if the level is low top up the oil by unscrewing the oil filling cap and add the quantity of oil required.

Only use the oil grade recommended in § 1. Never use regenerated or used oil. The oil must be clean.

FIG. 22 – TOPPING UP THE OIL

MRF Y10: suitable for drilling the following rails 100 ARA-B, 115 and 119 LB RE
MRF Y11: suitable for drilling the following rails 100 ARA-B, 105 DL&W
MRF Y12: suitable for drilling the following rails 115, 119, 132, 136, 140 LB RE, 130 and 155 PS
MRF Y13: suitable for drilling the following rails 80, 90 LB ASCE and 100 ARA-A
MRF Y14: suitable for drilling the 85 LB ASCE rail
MRF Y15: suitable for drilling the 130 LB RE and 136 LE.VAL rails
MRF Y: universal positioning gauge for all rail sizes

• Note: other positioning gauge sizes available upon request.
11. STORAGE THE DRILL

When the work has been completed, put away the drill by proceeding as follows:

11.1) Depressurise the tank of the SR5000 cooling unit (see § 4), close the tap (02) on the tube from the tank, and disconnect the quick-coupling (03).

11.2) Carefully clean the drill, particularly in the spindle area, removing machining waste (swarf, etc.) and any deposits of lubricating coolant.

11.3) Fully withdraw the spindle.

11.4) Place the drill and the SR5000 cooling unit in a sealed place free from dust, moisture and the risk of accidental impact.

For better protection Cembre recommends the use of the VAL LD-8H metal case designed for this purpose (see § 3.5), which enables the drill to be deposited in it, thanks to the DBG-Y moving arm device, and to be locked in the case.

3.7) Broach cutters

These cutters rapidly produce high quality, accurate holes in a single pass. The automatic lubrocooling system reduces friction and eliminates heat build up during the drilling operation. Under standard conditions a broach cutter can drill 40-50 holes, depending on the hardness of the rail.

<table>
<thead>
<tr>
<th>HOLE DIAMETER (inches)</th>
<th>BROACH CUTTER</th>
<th>PILOT BIT</th>
<th>MAX. DEPTH OF CUT (inches)</th>
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<td>15128</td>
<td>Ref. PPC 2</td>
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<td>3-10528</td>
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</tbody>
</table>

All the broach cutters allow automatic cooling by means of the SR5000 unit supplied with the drills.
3.8) Special spiral twist bits
Using these bits guarantees optimum performance during the drilling operations. As a rule, under normal conditions, a spiral bit can drill 70-100 holes, depending on the hardness of the rail.

<table>
<thead>
<tr>
<th>HOLE DIAMETER (inches)</th>
<th>SPIRAL BIT</th>
<th>ADAPTER</th>
<th>SPACER</th>
<th>ADDITIONAL ACCESSORIES</th>
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<td>APED135/165</td>
<td>included in the APED 135/165</td>
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<td>without adapter</td>
<td>DPE</td>
<td>not required</td>
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<td>PE220</td>
<td>without adapter</td>
<td>DPE</td>
<td>not required</td>
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<td>TST50 + DBG-AY</td>
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<td>without adapter</td>
<td>DPE</td>
<td>TST50 + DBG-AY</td>
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<td>PE1”-L1-AR</td>
<td>without adapter</td>
<td>DPE</td>
<td>TST50 + DBG-AY</td>
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<td>DPE</td>
<td>TST50 + DBG-AY</td>
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<td>DPE</td>
<td>TST50 + DBG-AY</td>
</tr>
</tbody>
</table>

For tools of other types, check the dimensional compatibility (particularly the size of the attachment and the length).

3.9) "LR2" lubrocooler concentrate, 1 or 5 gallons for optimum operation of both the broach cutters and the spiral bits. This product of vegetable origin, to be watered down in the percentage 95% water, 5% oil, will provide a white colour mixture very effective for the drilling operations resulting in no heating at the rail or the drilling machines.

3.10) "LR3" antifreeze concentrate of 1 or 5 gallons added to the lubrocooling mixture with the right percentage will maintain the lubrocooling mixture fluid in negative temperature conditions.

9. EXAMPLE OF OTHER RAIL DRILLING MACHINE APPLICATIONS

- Use on girder rail (for example 128 GR or GGR 118)

- Use on running rails (narrow passage of the articulated arm)

10. SPECIAL APPLICATIONS FOR CEMBRE RAIL DRILLS

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>CLAMP</th>
<th>TEMPLATE</th>
<th>CUTTERS</th>
<th>EXTENSION</th>
<th>PILOT BIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum-Rail</td>
<td>TST 50 + DBG-AY</td>
<td>MPAF 56 CS</td>
<td>MPAF 56 CS</td>
<td>PE 1 1/2&quot;</td>
<td>F1</td>
</tr>
<tr>
<td>Aluminum-Composite</td>
<td>TST 50 + DBG-AY</td>
<td>MPAF 84 CS</td>
<td>MPAF 84 CS</td>
<td>PE 1 1/2&quot;</td>
<td>F1</td>
</tr>
</tbody>
</table>

*= Application developed for narrow chairs
1 = For drilling 56 lb aluminium bar manufactured by FOSTER
2 = For drilling 84 lb aluminium bar manufactured by FOSTER
3 = For drilling 84 lb aluminium bar manufactured by PORTER
The type SR5000 cooling unit consists of a tank complete with tube and maximum pressure valve (01), fitted with a pump device for pressurisation, which must be connected to the attachment (35) on the drill by means of its quick-coupling (03).

The delivery and shutoff of the lubrocoolant are controlled automatically, when drilling with a broach cutter, from the position of the guide bit; when drilling with the spiral bit, the delivery and shutoff of the fluid must be effected manually by operating the tap (02). The use of the lubrocoolant supplied by Cembre, in the recommended concentrations, guarantees optimum use of the drilling tools.

The consumption of the lubrocoolant depends both on the variable degree of opening of the tap (02) and the inner pressure of the tank: it is therefore advisable to open the tap a little when the tank is at maximum pressure, whilst it must be fully opened when the pressure in the tank is low.

When using the cooling system pay careful attention to the instructions on the tank label.

Warning:

- When the tank is not under pressure, check that the bush on the maximum pressure valve is screwed right down.

- To fill tank with lubrocoolant, turn handle anticlockwise approximately 2 turns to release handle locking mechanism. Remove handle/piston assembly from tank.

4. Type SR5000 COOLING UNIT (Ref. to Fig. 3)

8.3) Drill fitted with special spiral bit

Follow the sequence described in § 8.1, taking care to position the drill on the rail by keeping the spindle fully withdrawn. Bear in mind that the cooling circuit, instead of being automatically opened and closed by the guide bit, is kept open at all times by the DPE spacer fitted on the spigot of the spiral bit; it must therefore be activated, by opening the tap (02), before starting to drill, then switched off after drilling by closing the tap.

Warning:

- When the tank is not under pressure, check that the bush on the maximum pressure valve is screwed right down.

- To fill tank with lubrocoolant, turn handle anticlockwise approximately 2 turns to release handle locking mechanism. Remove handle/piston assembly from tank.
The rail drill is equipped with the cooling attachment valve (35) and a vent valve (17) which are located as shown (Fig. 3). If under certain operating circumstances they need to be interchanged, proceed as follows:

- with a 17 mm hexagonal spanner unscrew the vent valve from its seating.
- using the 4 mm Allen key provided with the drill, remove the appropriate cooling valve from its seat and fit into the vent valve seat.
- Fit the vent valve into the removed coolant valve seating.

When temperatures fall below 32° F (0° C) the lubrocoolant may freeze which could cause damage to the seals contained in the drill cooling system. It is therefore advisable, when storing the drilling machine, to empty the lubrocoolant system completely. Proceed as follows (Fig. 4):

- Disconnect the quick coupling (03) from the coolant attachment (35) on the drilling machine.
- Tilt the machine so that the coolant attachment is at its lowest point - allowing for natural drainage.
- Operate the advancing lever (36) to advance and retract the drilling spindle.
- Gently shake the machine to establish expulsion of all fluid.

### 4.1) ARE adapter
For use with type SR5000 cooling unit. The ARE adapter is inserted in the quick-coupling of the tank tube (ref. to Fig. 5). It may be used to provide manual external cooling when cutters are used to enlarge existing holes, or when using spiral bits not designed for automatic cooling.

If necessary the ARE adapter can also be used to clean various parts of the drill, by means of the lubrocoolant pressure jet, e.g. parts such as the tool clamping seat in the spindle shaft, seats for the jig fixing screws, etc.

8.1.4) Connect hoses couplers to hydraulic generator. To start drill motor pull valve button (06).

8.1.5) Proceed to drill by initially applying light pressure on the lever (36), increasing the pressure progressively, avoiding jolts, and finally relieving the pressure in the exit phase. When drilling close to raised letters on the rail the initial pressure must be extremely light until the lettering disappears, otherwise the cutter may be damaged.

8.1.6) The guide bit will enable the lubrocoolant to be discharged throughout the drilling process.

8.1.7) When the drilling has been completed, fully retract the spindle, stop the motor by positioning the valve button (06) to "OFF" position, and make sure that the drilling swarf is removed before recommencing drilling.

8.1.8) After drilling it is advisable to remove all swarf from the tool and spindle area (we suggest to disconnect hoses from generator when carrying out this operation).

8.2) Drill fitted with "long" type broach cutter (depth of cut 2").

Follow the sequence described in § 8.1, taking care to position the drill on the rail by keeping the spindle fully withdrawn.
8. DRILLING (Ref. to Figs. 17-18)

N.B.: switch on the cooling system before starting the drill (§ 4)

8.1) Drill fitted with “short” type broach cutter (depth of cut 7/8”). The drilling sequence may be started with the drill fitted with the broach cutter (§ 6.1), positioning jig (§ 7.2), the drill being clamped to the rail (§ 7.3), as follows:

8.1.1) Connect the female quick-coupling of the SR5000 cooling system to the male attachment (35) on the drill.
8.1.2) Open the tap (02) fitted on the tank tube.
8.1.3) Using the lever (36) bring the guide bit almost in contact with the rail (Fig. 17a); keeping the release pawl (39) pressed, release the lever from its cup and return it to the initial position (Fig. 17b), which will enable the travel of the lever (36) to be used in the most advantageous way.

5. SPINDLE ADVANCE LEVER (Ref. to Fig. 6)

The spindle is advanced by moving the lever (36) (See Fig. 6 a). The lever is fitted with a release pawl (39) which, when pressed, renders it independent of the hub and hence the spindle; the operator can therefore easily vary the angular position of the lever without movement of the spindle (Fig. 6).

5.1) Adjustment of the advance lever

The movement of the lever must never be loose, for adjustment proceed to tighten it by loading the cup springs by means of the associated self-locking nut, after removing the protective cap (see Fig. 7).
6. PREPARING THE DRILL

6.1) Assembling the cutters (Ref. to Figs. 8-11).
6.1.1) Insert the pilot bit in the cutter from the side of the spigot.
6.1.2) Using the lever (36), position the spindle shaft (07) so that both grub screws (18) become accessible and sufficient space is provided to insert the cutter; if necessary rotate the spindle shaft manually and sufficiently by inserting the 4 mm male hexagon key in the appropriate intermediate gear housing (33) in the crankcase of the drill (see Fig. 11).
6.1.3) Insert the cutter in the spindle shaft so that the two engaging dogs on the cutter spigot line up with the grub screws (18).
6.1.4) Clamp the cutter by fully tightening the grub screws by means of the 4 mm allen key.
6.1.5) Check that the guide bit slides freely by applying slight pressure on it.

6.2) Assembling the special spiral bits (Ref. to Figs. 9 - 11)
6.2.1) Using the advance lever, position the spindle shaft so that both grub screws become accessible and sufficient space is provided to insert the spiral bit; if necessary rotate the spindle shaft manually and sufficiently by inserting the 4 mm male hexagon key in the appropriate intermediate gear housing (33) in the crank-case of the drill corresponding to the feed handle (see Fig. 11).

7.4) Clamping to the rail web (Ref. to Fig. 16)
The special shape of the positioning shoes, each corresponding to the type of rail, enables the drill to be positioned quickly, accurately and safely on the element to be drilled.
To position the drill, complete with the clamping termination (§ 7.1) and the positioning template (§ 7.3) suitable for the type of rail to be drilled, proceed as follows:

7.4.1) Withdraw the spindle shaft (07) completely by means of the lever (36).
7.4.2) Bring the moving arm (03) of the clamping device into the fully open position by means of the handwheel (11).
7.4.3) Place the drill on the rail at the point where the drilling is to be carried out, and clamp it by tightening the handwheel (11) right down: the positioning shoe will automatically position the cutter or spiral bit in line with the desired axis; if accurate positioning relative to the longitudinal axis of the rail is required, use the reference rod (18).
6.2.2) Insert into the spindle shaft the DPE spacer required to activate the cooling device. If necessary to use APE... adapter (see pag. 8) the bit must first of all be fitted in the corresponding APE adapter, and locked with the appropriate grub screw and then the DPE spacer inserted.  

*Note: Adapters type APED... (e.g. APED 3/8Y) do not require use of DPE spacer.*

6.2.3) Insert the bit-spacer unit in the spindle shaft so that the two engaging dogs on the bit spigot line up with the grub screws. Press the bit-spacer unit home against the inner seat of the spindle: this will enable the DPE spacer to open the cooling circuit (see Fig. 10).

6.2.4) Clamp the bit by fully tightening the two grub screws (18) using the 4 mm male allen key.

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7.3) Assembly of the positioning shoes (Ref. to Fig. 15)

7.3.1) The type MPAF... and MPAU positioning shoes are secured to the front plate (04) of the drill by means of the two socket head cap screws M 6x16 supplied.

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*use only for APE... do not required for APED...*
7. DRILL TYPE LD-8H

The reference LD-8H relates to the entire LD-8HN drill complete with the clamping device DBG-Y for clamping it to the rail web and the track fittings (Ref. to Fig. 12).

The DBG-Y device consists of:
- Clamping unit
- Type TDB 6 termination
- Socket head cap screws M8x25 (2 pcs)
- Spring washers (4 pcs)
- Reference pin

7.1) Assembling of the termination of the DBG-Y device with moving arm for clamping the drill to the rail web and track fittings.

The termination TDB 6 of the DBG-Y device, with moving arm, have been designed for adaptation to the different operating conditions on the rails and track fittings; their assembly is shown in Fig. 13.

- When disassembling the TDB 6 termination, please bear in mind that after removing the pivot, it is necessary to slide the complete assembly away downwards, do not act on the holding plate.

7.2) Assembly of the DBG-Y clamping device on the drill

The DBG-Y clamping device is fitted to the front plate of the drill, centred by means of the reference pin supplied and secured with the two socket head cap screws M8x25 (35) also supplied. The assembly is illustrated in Fig. 14.

FIG. 13 – ASSEMBLY OF THE TERMINATION

FIG. 12 – DRILL TYPE LD-8H