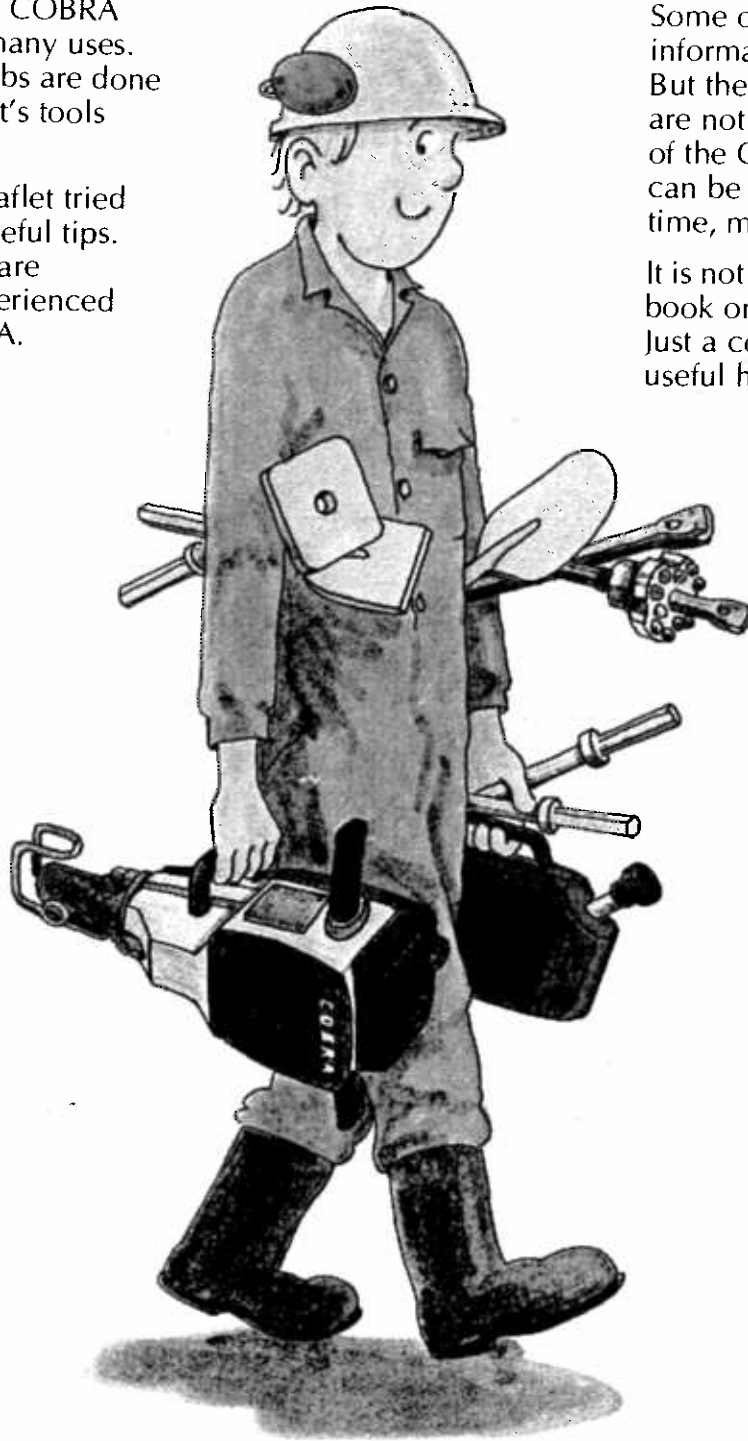


THE RIGHT TOOL FOR THE RIGHT JOB...

The self-contained COBRA drill/breaker has many uses. But 90 % of the jobs are done with just a few of it's tools and accessories.

We have in this leaflet tried to give you som useful tips. Many of the ideas are obtained from experienced users of the COBRA.



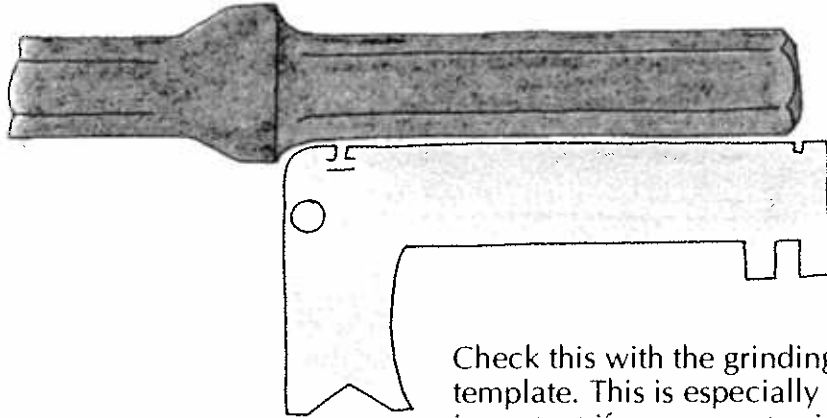
Some of you may find the information quite elementary. But there are still those who are not aware of ALL the uses of the COBRA. To them, this can be a simple guide to save time, money and effort.

It is not meant as an instruction book or technical manual. Just a collection of tips and useful hints.

...AND HOW TO USE THEM!

CHECK YOUR TOOLS

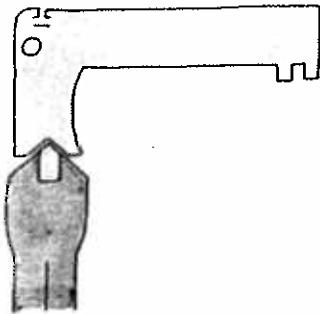
Whether drilling or breaking, to get full effect the tool shank must have the correct length ($108 \text{ mm} \pm 0.5 \text{ mm}$).



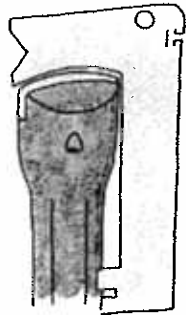
Check this with the grinding template. This is especially important if you are not using original tools.

The shank should be re-ground to specified length when wear exceeds $\pm 0.5 \text{ mm}$.

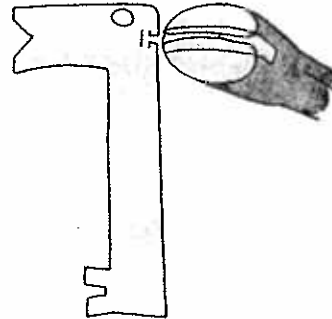
The template can also be used to check:



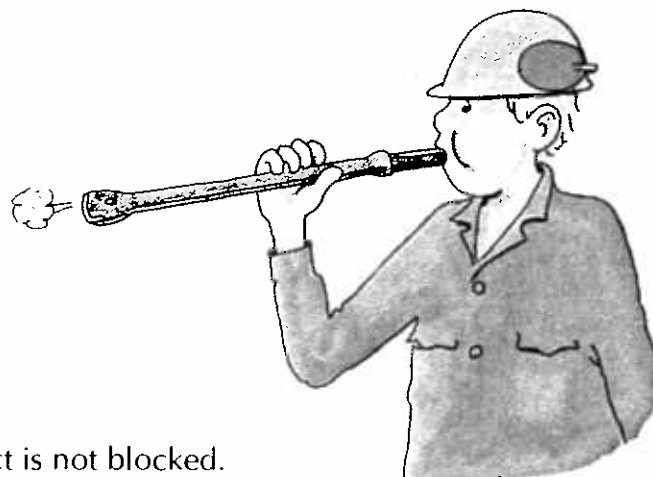
Cutting edge angle = 110°



Radius = 80 mm

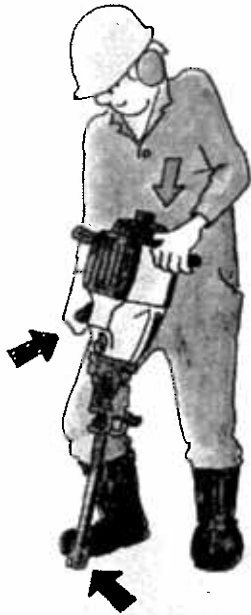


Cutting edge wear = $< 2 \text{ mm}$



Check that the air duct is not blocked.

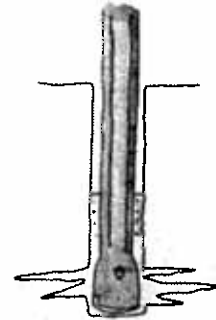
SOME TIPS ON DRILLING



1. To collar a hole, reduce engine speed. Use the side handle and guide the drill with your foot.



4. ...or the drill keeps sticking; ease the pressure on the machine.



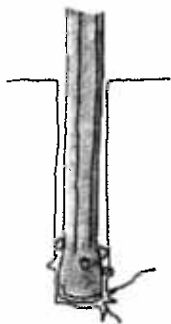
6. Drill dust in damp rock often causes the drill to stick. Pouring more water into the hole can dissolve the sludge and free the drill.



2. Keep the drill centered so that it rotates freely in the hole.



5. If the drill gets stuck, stop the machine immediately and try to free the drill with a drill wrench or a spanner.

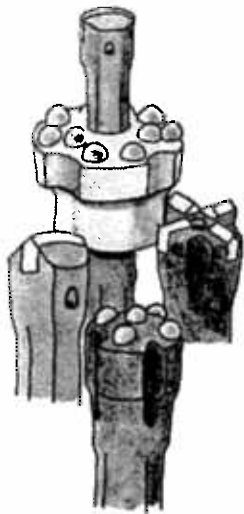


3. If rotation gets sluggish due to a crack...

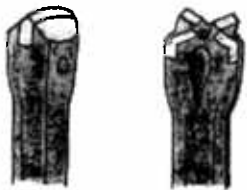


7. Drills can be kept in perfect order even on remote work sites by using the portable grinder driven from the power take-off

CHOOSE THE RIGHT DRILL FOR THE JOB



1. There are many types of drills available to suit different materials and jobs. Most common are integral drill steels for hard materials and multi-edged drills or button bits for soft materials.



2. Integral drill steels
These are grouped in a series. When drilling a deep hole, start with a short and wide drill and continue successively with the next in the series. (This allows easy extraction and avoids jamming).



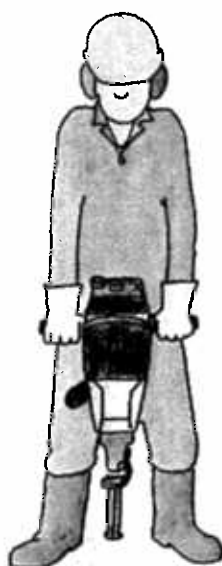
3. Example of a drill series:
400 mm long × 34 mm Ø
800 mm long × 33 mm Ø
1200 mm long × 32 mm Ø
1600 mm long × 31 mm Ø



4. The profile of a deep hole should look like this if you use the drill series correctly.



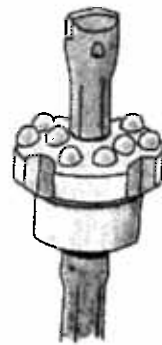
5. The standard cutting edge angle is 110°. To get better results in loose rock, it can be re-ground up to 130°.



6. Regulate the feed pressure according to the material you work in. If the drill tends to jam, ease the pressure. But never let the drill jump freely on the shank.

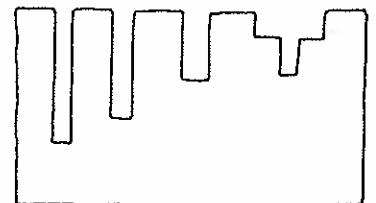


7. Button bits
Most suitable for drilling large holes in concrete or soft rock.



8. The pilot drill is useful for an accurate start and for shallow holes.

The pilot drill is designed for making shallow holes with large Ø, up to 89 mm.

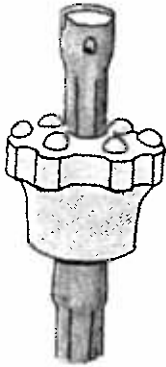


9. Drilling rate in medium to hard granite using a sharp drill:

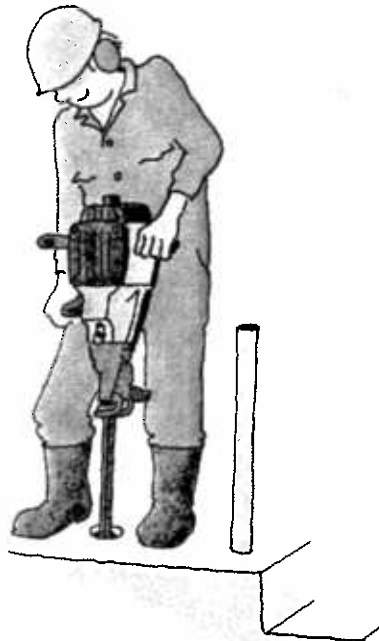
- Ø 29 mm = 350 mm/min
- Ø 34 mm = 300 mm/min
- Ø 40 mm = 250 mm/min

Avoid making a wider hole than necessary. Choosing the right drill will save both time and energy.

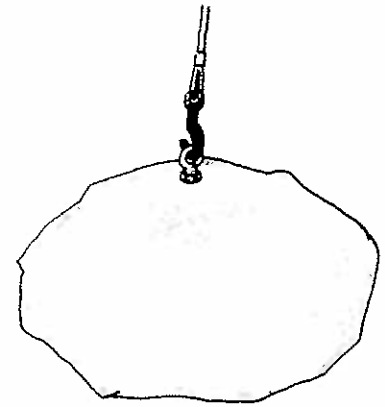
DRILLING



1. Use the button bit with pilot drill when drilling large holes, in walls,...



3. ...or guard-rails, railings etc.



3. It can also be used to lift a rock or concrete slab.

4. Special earth anchors are available for different loads.

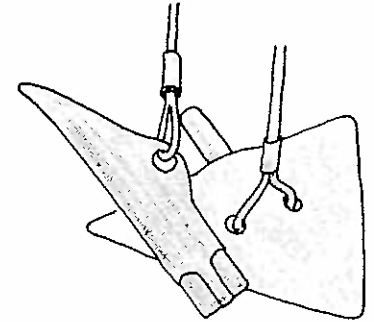


2. ...in concrete for setting up sign-posts, meters...

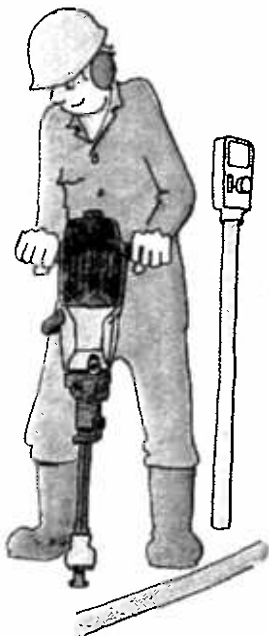
ANCHORING



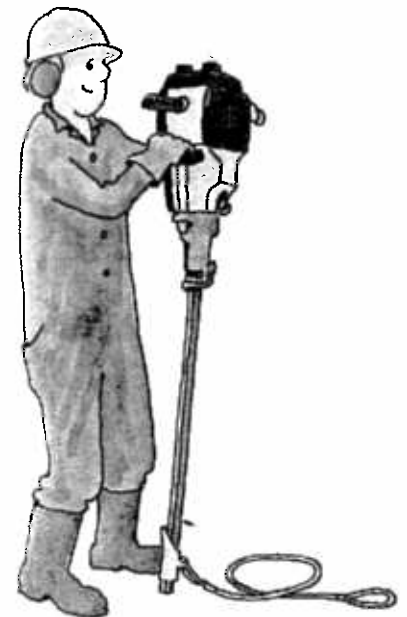
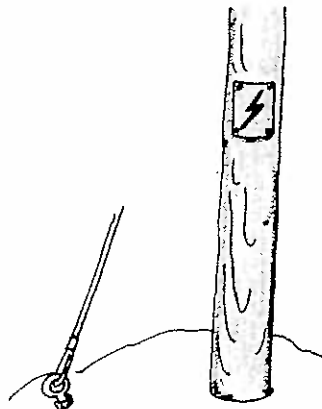
1. The expander bolt is best for anchoring in rock or concrete...



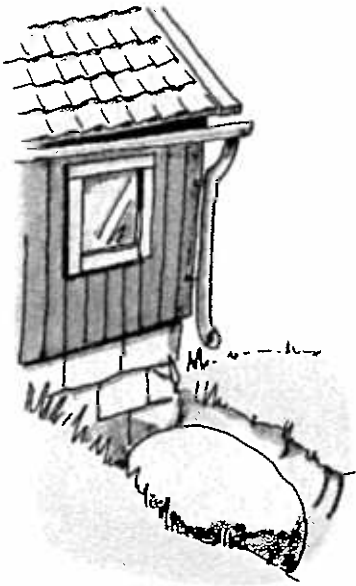
5. They are driven by rods down to 1.5 m or more (see special earth anchor brochure).



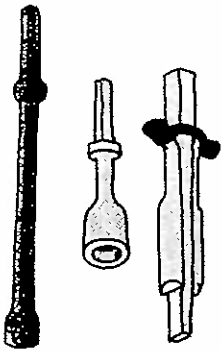
2. ...telephones poles, masts, etc.



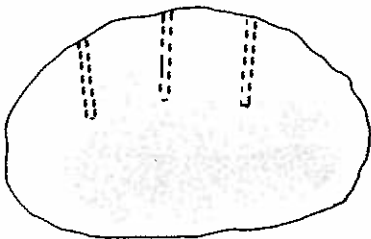
ROCK SPLITTING



1. The rock must be cleared from at least 2 sides.



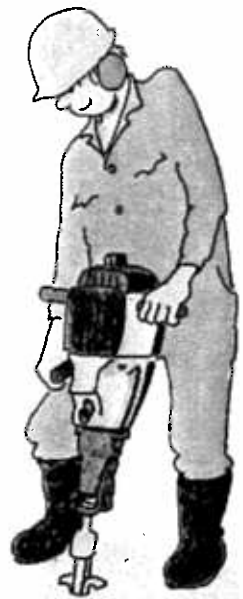
2. A drill, hammer, and wedge and feather sets are all you need. 29 mm and 34 mm Ø sets are available.



3. Number of holes depends on size of rock, but they should be in a straight line and 30–40 cm apart.



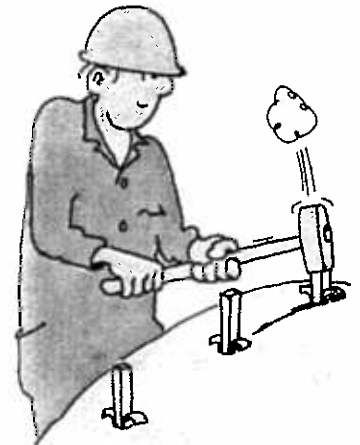
4. Make the hole at least 40 cm deep or more in a large rock.



7. Switch from drilling to breaking and drive down the wedges a little at a time.



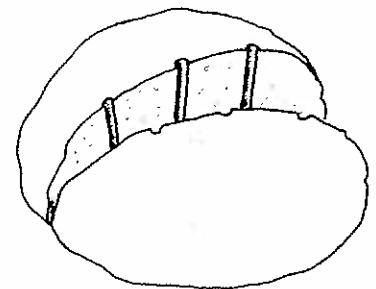
5. A little grease on the wedge will ease the job.



8. You can also use a sledge hammer for this job.

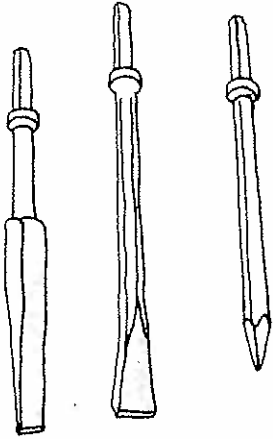


6. Position the feathers across the splitting line.

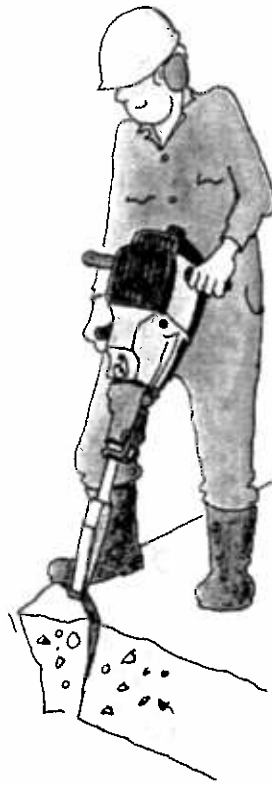


9. The rock is split safely and accurately.

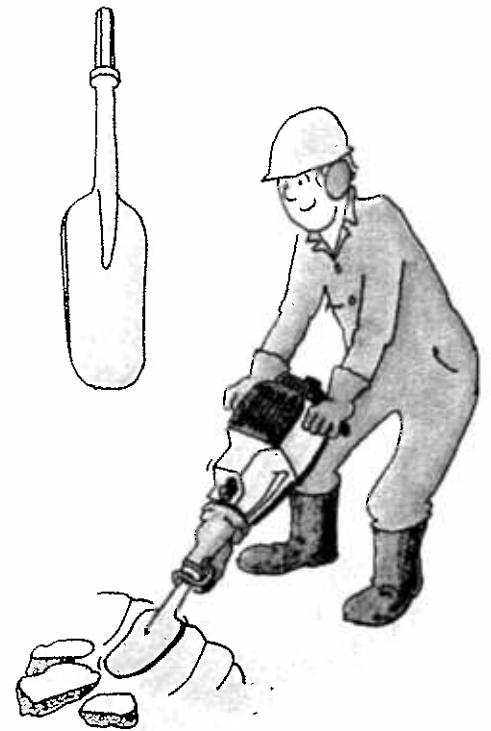
CONCRETE BREAKING



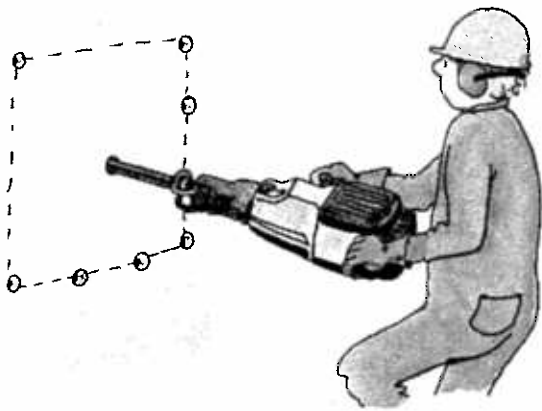
1. These tools are for use in hard material.



4. Always, start from the edge when breaking concrete. Use as wide a tool as the material allows. This will make the job quicker.



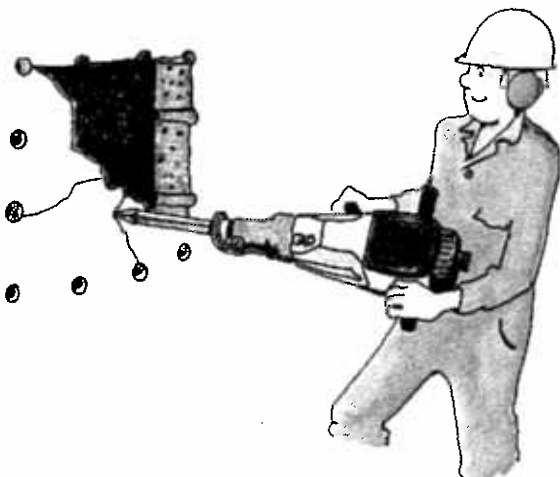
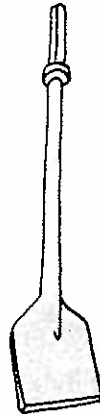
2. In hard or frozen ground use the round spade.



2. To make an opening in a concrete wall, it is always easier if you drill a few holes first...

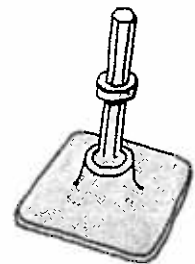
DIGGING

1. This tool is for digging post holes.



3. ...then break out the material.

COMPACTING

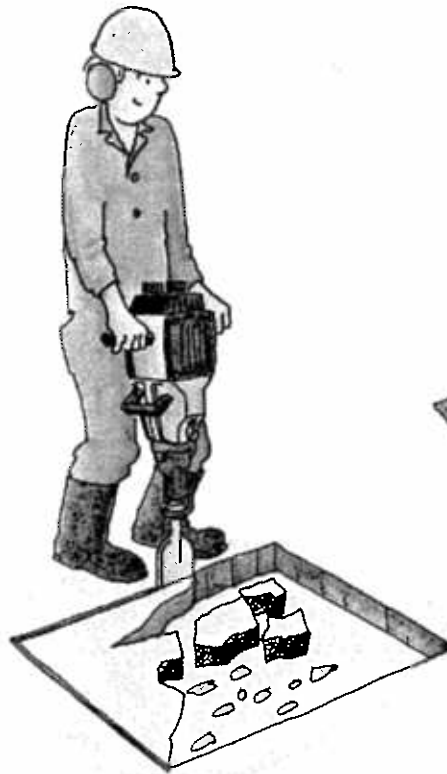
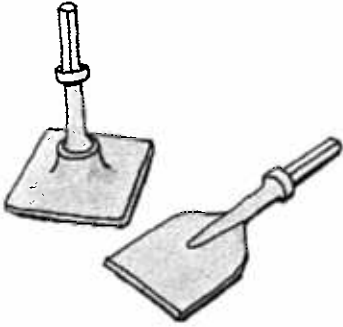


Pack the refill with a tamper.



POTHOLE PATCHING

1. The asphalt chisel and tamper are all you need.



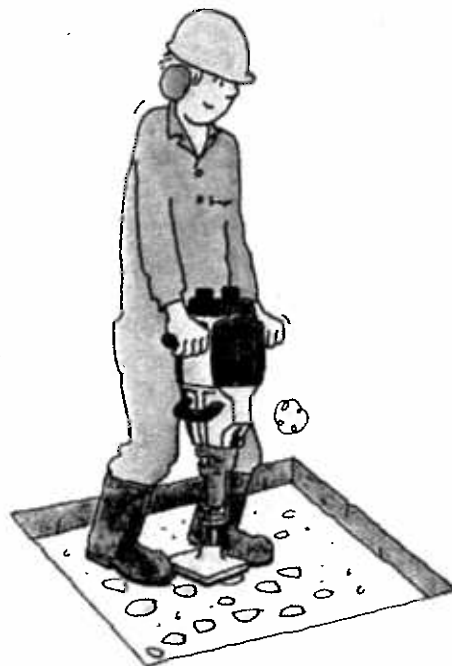
5. When packing the new material, start at the edge. This will give a lasting seal.

2. Start by making a clean cut around the damaged section:



Reduce RPM and make a score by holding the machine at an angle.

3. Break the asphalt keeping edge straight and angled slightly inwards.

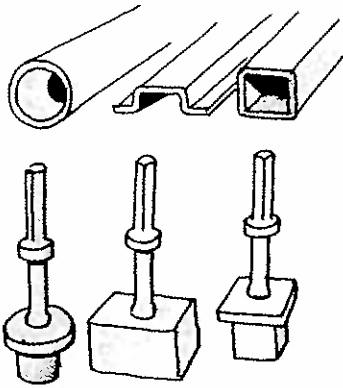


4. Compact the base thoroughly.

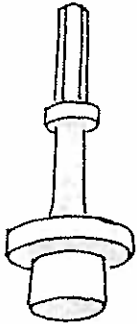


6. Compact the rest of the material and level. A little oil will prevent the asphalt from sticking to the tamper.

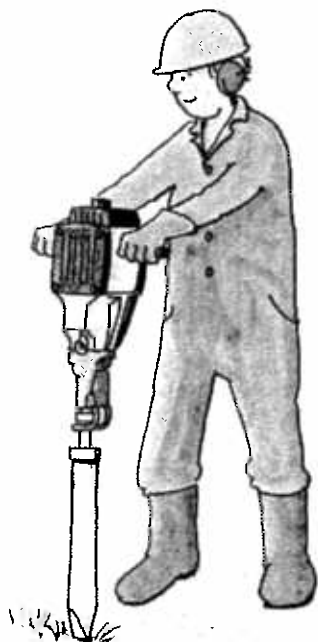
POST DRIVING



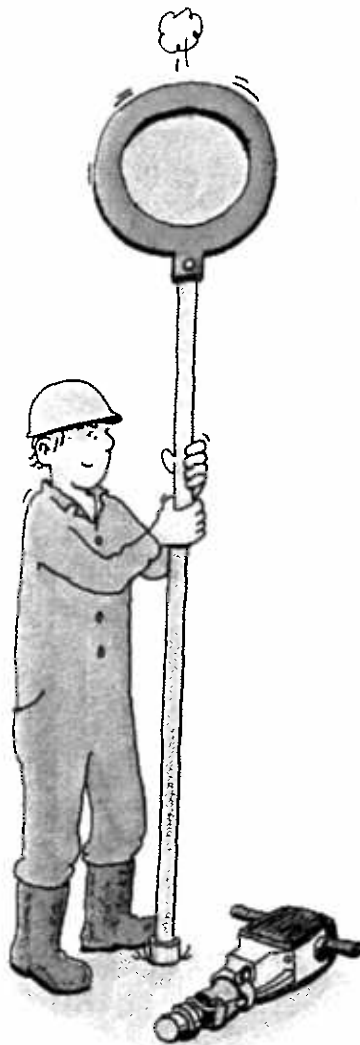
1. Hammers for different profiles and tubes are available.



2. Commonly used for pipe-driving this hammer is available in different diameters.



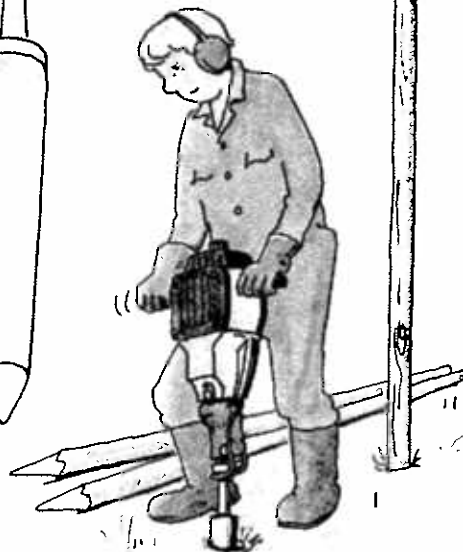
3. To set up a traffic sign start by driving in a short pipe.



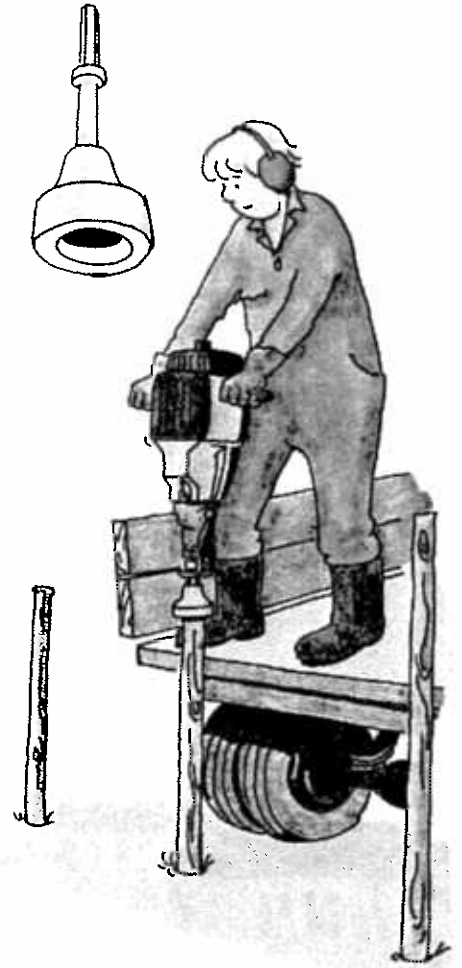
4. The sign is then placed in the pipe and secured.



5. There is a special post-hole tool for making fence post holes...



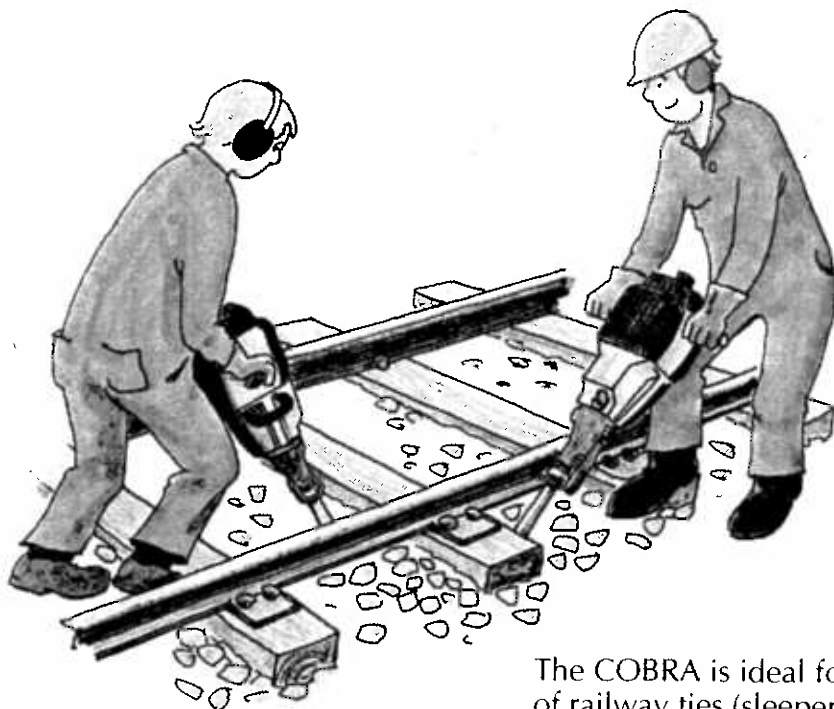
6. ...and a hammer for driving in the posts.



7. Special equipment for survey, ground investigation, etc., is also available. (See separate brochure).



RAILWAY APPLICATIONS

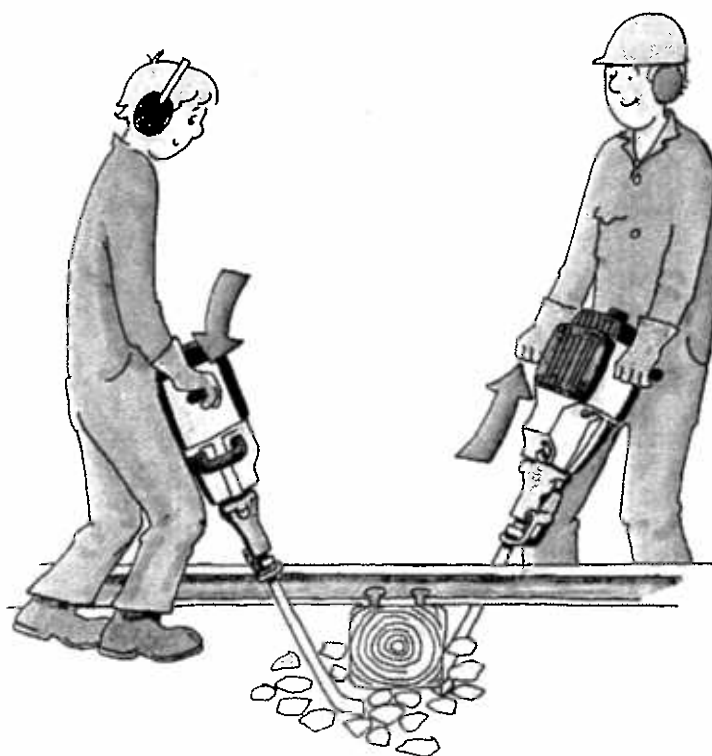


The COBRA is ideal for tamping of railway ties (sleepers). Equipped with an "elbow" tamping tool, the COBRA effectively packs the ballast under the bearing surface of the tie. Ideal around switches and turnouts.

The spring-loaded anti-vibration handles reduce operator fatigue.

The operators should work in pairs or fours, diagonally across the sleeper, to ensure solid packing of the ballast.

Sliding the COBRA up and down the thigh takes the load off the operator's back.



TOOLS

These tools and different drill steels are the ones most commonly used for the jobs shown in this leaflet. They are available in different sizes

and dimensions. For more information on them and on other tools, please refer to Berema's Tools & Accessories leaflet.



Moil point



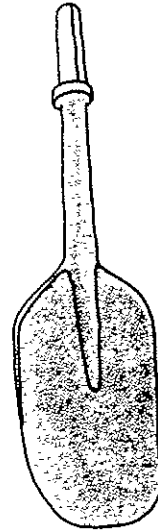
Narrow chisel



Wedge



Asphalt chisel



Spade



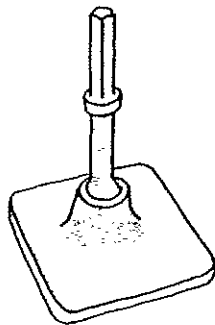
Wedge hammer



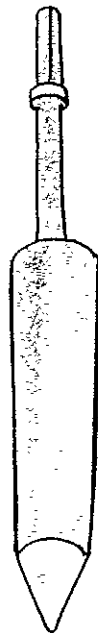
Shaft



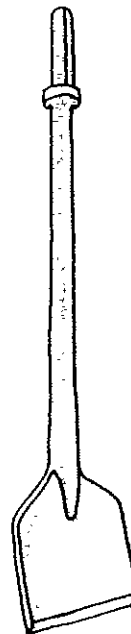
Wedge and feathers



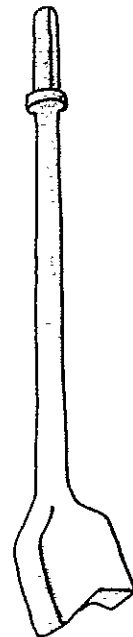
Tamper



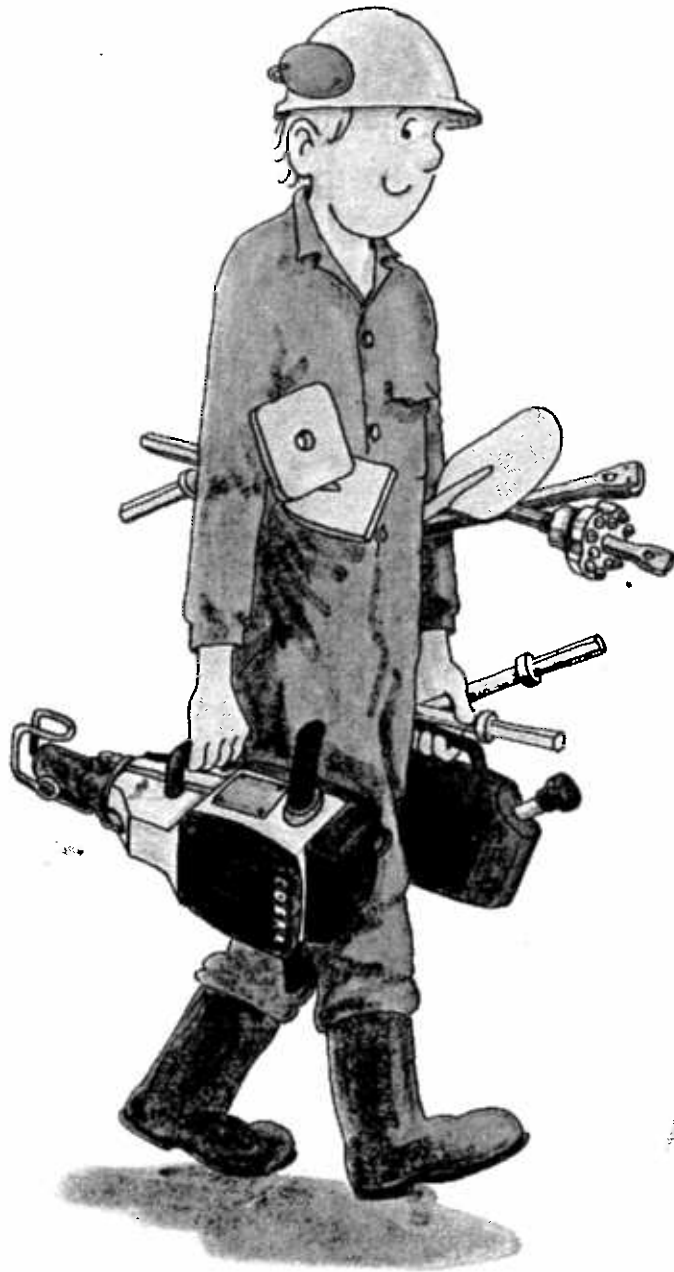
Post hole tool



Digging bar



Tie-tamper



COBRA

The COBRA® drill/breaker is manufactured by
Berema AB, Box 1286, S-171 25 Solna, Sweden
(A company within the Atlas Copco Group)

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