

12.1 Welding Pores



(fig. 12.1)

7 ms | 20 %

- 1 Depending on the size of pores, there are several methods by which they can be eliminated. An important requirement is that the pore or spot to be welded is clean, therefore free from all dirt, polish or investment material.

The small "needle point" shaped pores can often be closed quickly and easily. For this use a freshly sharpened and "sharp" electrode and a lower Power setting. Hold the hand piece vertically to the surface of the work piece and place the electrode precisely into the pore.

(fig. 12.1)

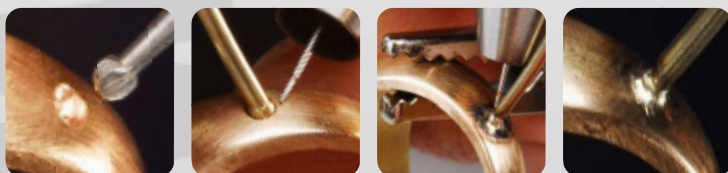
- 2 Caution is called for when working with pores in soldered joints. The solder can evaporate suddenly when welded (because of its low melting temperature), this creates an even larger pore. For this reason you should always choose to work with a lower Power setting and a shorter welding time.

With larger pores that cannot be closed by using the above method, you should proceed as follows:

Drill out the pore (with a drill bit slightly larger than the pore itself), and bevel the rim of the hole slightly with a scraper or moulding cutter. Then insert a tightly fitting pin into this drilled hole. Next shorten the pin so that it protrudes about 0,5mm on the hole. Now PUK-weld around the area where the bevelled surface and the pin join each other.

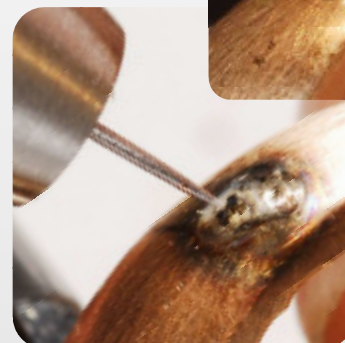
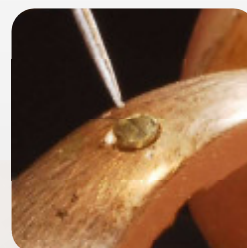
(fig. 12.2.1 + fig. 12.2.2)

- 3 In order to improve the homogeneity of the freshly melted metal, apply our compacting tool "compactor" to the surface or alternatively forge it slightly.



(fig. 12.3)

(fig. 12.2.1)



Sometimes it is necessary to mill a depression into the surface with a round moulding cutter (cherry), so that a ball can then be welded in place. To do this, place a welding spot vertically on the end of a wire; the melting process of the weld will form a ball. The "melted" ball should be slightly smaller in diameter than the routed out depression

(fig. 12.3)

7 ms | 40 %

12.1 Welding Pores

- 4** When confronted with larger areas of porosity, it is wise to remove the entire upper layer of the metal with a moulding tool and then refill with fresh metal (welding wire). (Please see workshop 2.1 and 2.2 for further information).

If the porosity is too deep to be able to get rid of it by "removing the entire upper layer," you should (before re-filling) place several welding spots to the area. Do this without adding welding wire; the porous area will be compacted by this melting of the surface.

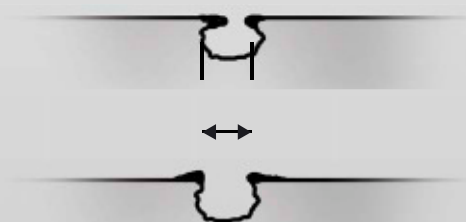
(fig. 12.4)

- 5** During welding you should always hold the tip of the electrode so that it glides across the depression. This way you will draw the material to be added (welding wire) into the depression.

As a rule the molten metal will always flow to where the electrode tip was placed! If the electrode (hand piece) is held at a lower angle, the metal will flow from the touching point, in the direction that the electrode is moved.

(fig. 12.5)

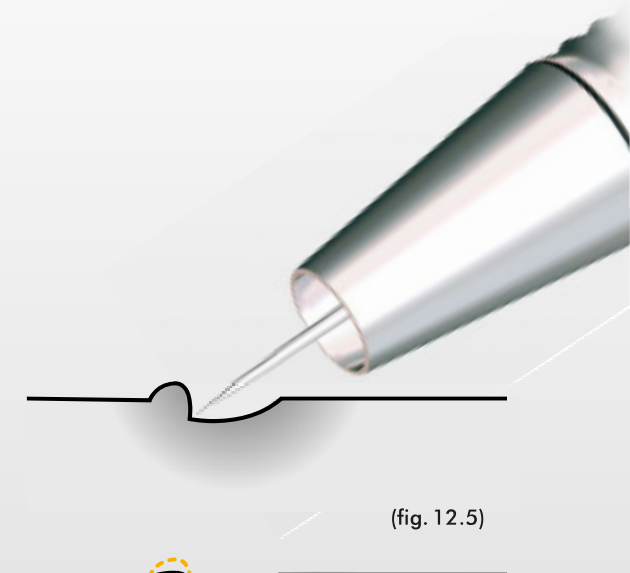
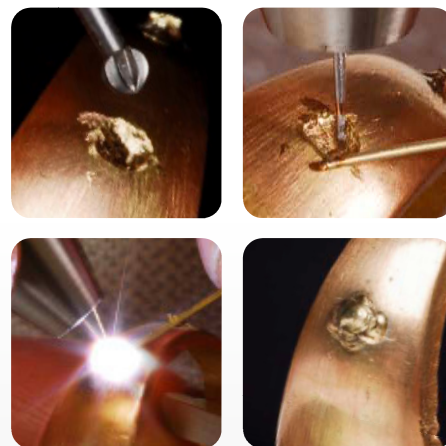
Deep lying pores with steep sides can be welded with a longer impulse time. Place a welding spot at the deepest point; this will make the pore "flatter" and wider and enable you to refill the pores easier, here the "Gap-Mode" can be of help.



(fig. 12.-6)



(fig. 12.4)



(fig. 12.5)

- 6** Especially annoying are holes that are larger underneath, than they appear on the surface. The thin rim of the opening melts away when welding; the result is that the hole becomes larger rather than smaller.

In this case it is a good idea to mill out the hole and refill it with metal.

(fig. 12.6)