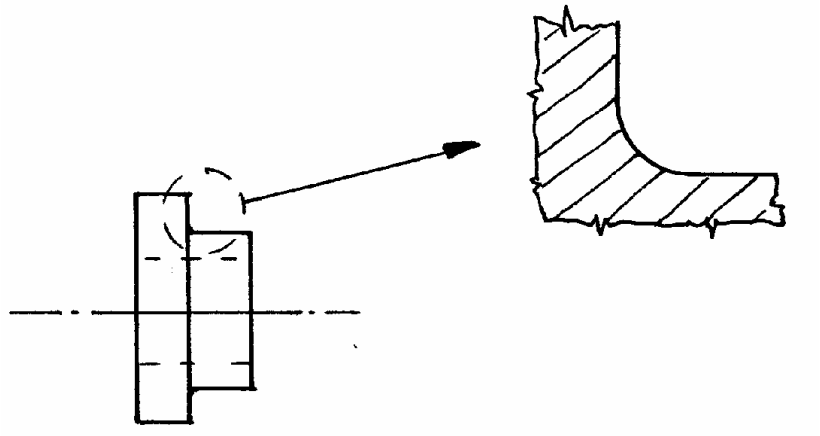
Workshop Wangles

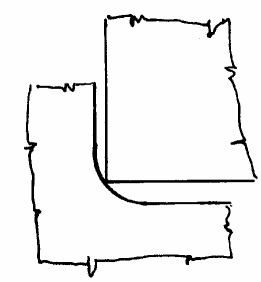
Chamfers.

The chamfer is an essential artifice to enable parts to fit well.

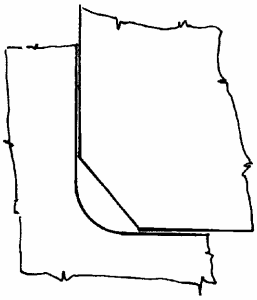
Axle bearings have, as part of the manufacturing process a small radius between the smaller outside diameter and the flange.



This will prevent the bearing sitting correctly against the frame.



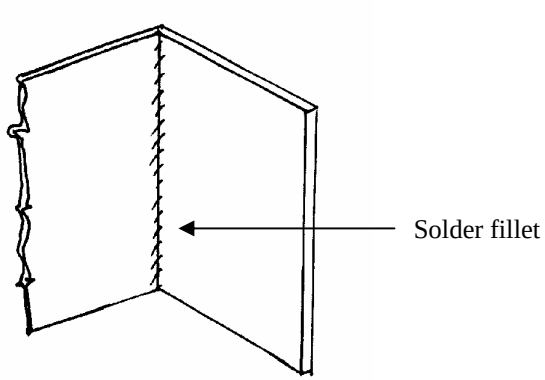
By removing the corner of the bearing hole in the frame by creating a chamfer the bearing will sit against the frame.



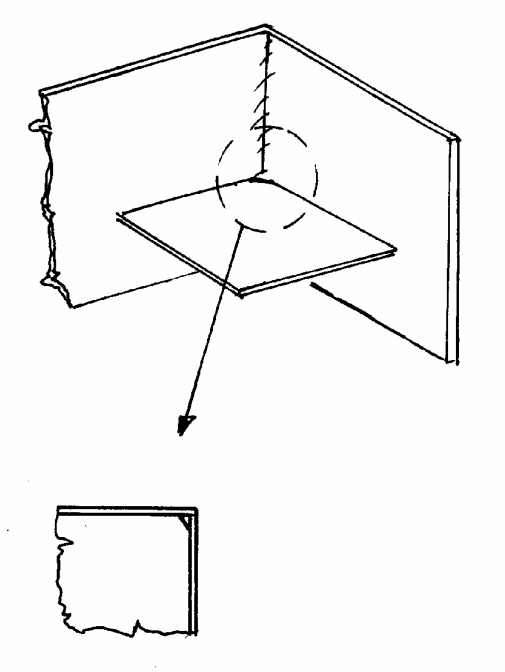
Small castings require their locating holes treated in the same manner to enable them to seat properly. When drilling out holes for fittings the drill will often throw up a burr that prevents the part seating. This MUST be removed. A little cleaning up around the casting spigot may be needed too.
Removal is simple. Use a drill about 3x the size of the hole and spin it in the fingers cutting off the burr and the corner edge. It is unwise to use the drill in a power toll as

it can dig in and start to cut a larger hole. For axle bearing holes investing in a countersinking bit will be worthwhile

The sheet metal components will also benefit from chamfers in appropriate places. The inside corner is a case in point. The fillet of solder joining the parts can interfere with fitting a subsequent part.



By breaking the corner of the part that has to fit into the corner a better fit can be achieved. Only a small amount of material needs to be removed from the corner. It will not show once the joint is made, as a solder fillet will fill it.



An edge may benefit from a chamfer to enable a better fit too.