

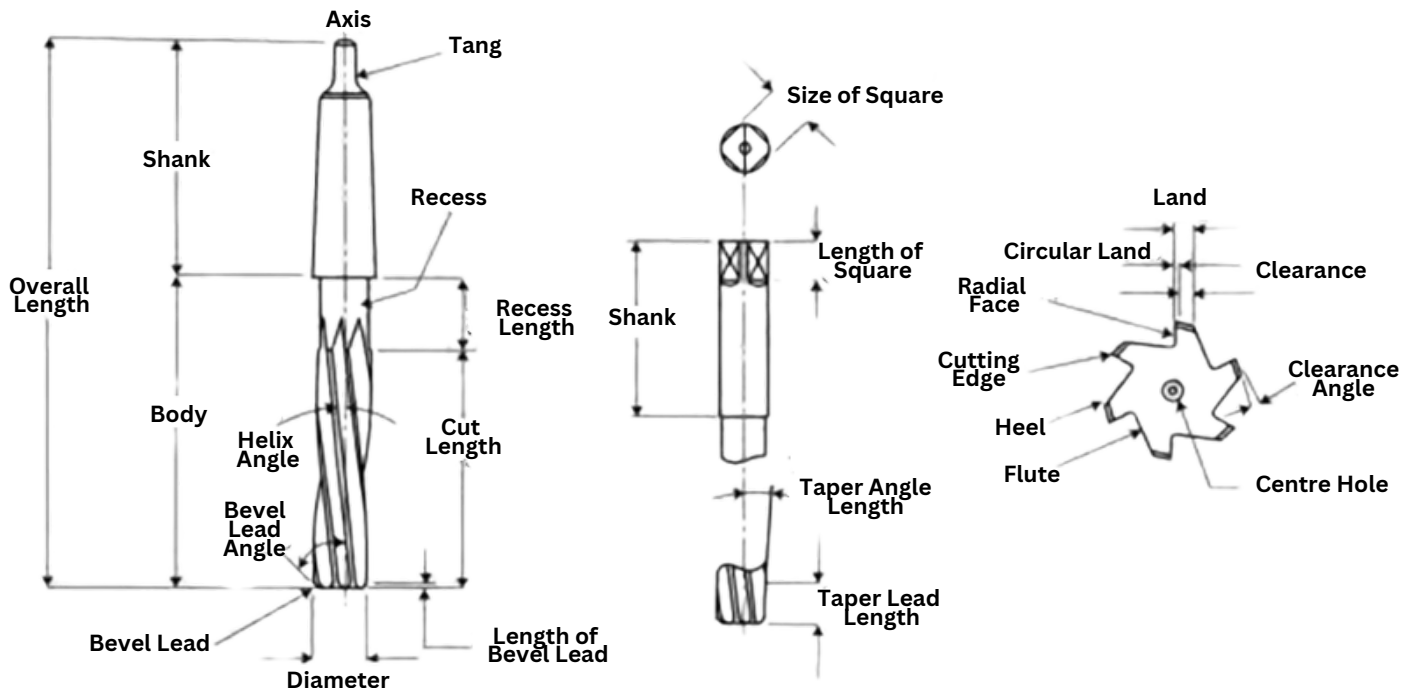


Reamers



Technical Information

Drill Service is the supplier and stockiest of the most expansive range of Reamers in the UK including ranges that have been manufactured in house for over 60 years.



Reamers are available for Hand or Machine use.

Hand Reamers

Hand Reamers are turned in the hole by using a tap wrench which is mounted on the square. The feeding action is produced manually. To ensure a proper guidance in the hole the taper lead length of the hand reamers is made considerably longer than that of a machine reamer.

A basic rule for reaming by hand – Turn the tool only in the cutting direction. Never reverse the tool as the cutting edges will become immediately blunt.

Machine Reamers

Machine Reamers are designed for use on machines.

They are available with straight, taper shanks or special design shanks



Reamer Geometry



There are many different types of reamer but the standard geometries are:

Straight Flute

Suitable for the machining of blind holes – with no chip space at the bottom of the hole the swarf is evacuated up the reamer flutes.

Left hand flutes

Left hand spiral flutes are suitable for most other machining tasks – particularly interrupted holes. Chip removal is always in the direction of the feed and so the flute geometry is used for through holes.

Right hand flutes

Right hand spiral flutes are used for blind holes particularly on ductile materials. They produce a chip flow up the flutes similar to a twist drill.

A Reamer always follows the direction of the predrilled hole and does not correct any alignment error of a predrilled hole.

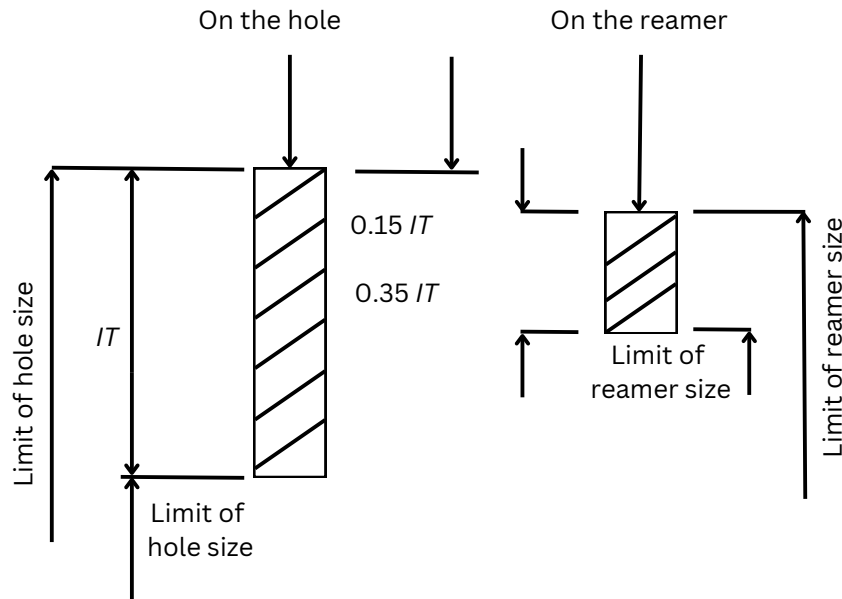
Practical tips for Reaming

Always use:

- Low cutting speeds
- High feed rates
- Good and sufficient coolant
- Floating holders to eliminate alignment errors of drilled hole and spindle axis
- Reamers can be resharpened.



Calculating Reamer Tolerances



When it is necessary to define the dimensions of a special reamer, which is intended to cut to a specific tolerance – for example D8 this guide is very helpful:

Example of a 10mm hole with a D8 tolerance

Maximum diameter of the hole =10.062

Minimum diameter of hole =10.040

Hole Tolerance (T8) = 0.022

The maximum limit for the reamer is the maximum limit of the hole size reduced by 0.15 times the tolerance of the hole. The value is rounded up to the next higher multiple of 0.001mm

0.15 x hole tolerance (T8) =0.0033

Rounded to =0.004

The minimum limit for the reamer is the maximum limit of the reamer reduced by 0.35 times the tolerance of the hole. The value is rounded rounded up to the next higher multiple of 0.001mm

0.35 x hole tolerance (T8) =10.062-0.004 = 0.0077

Rounded to =10.058-0.008 =0.008

Maximum limit for reamer =10.058

Minimum limit for reamer =10.050