

Tips for Successful Reaming

- Ensure workpiece is firmly and securely fastened. Bending and moving may break reamer.
- When using taper shank reamers ensure all taper sleeves are clean and in good condition.
- Reamers must be kept sharp. As reamers only cut on the bevel lead, only the bevel, and the taper lead in the case of hand reamers, require regrinding. A blunt reamer wears on the outer corners on the bevel lead, resulting in a poor finish, undersized holes and increased torque.
- When reaming, ensure that swarf is not allowed to build up in the flutes.
- Adequate lubricant must be directed to the cutting area. When reaming high tensile materials, an improved finish can be achieved by using chlorinated or sulphurised oils.
- The correct amount of stock must be left in the hole after drilling or coring to obtain the required hole size and finish, and eliminate excessive reamer wear. If too little stock is left for removal by reaming the reamer will rub in the hole giving rise to premature wear and loss of size. The table below shows approximate amounts of stock to be removed by reaming. This is a guide only, as the amount of stock to be left depends greatly on the type of material being reamed:

Machine Reamers

Size of Reamed Hole (mm)		Pre Drilled	Pre-core Drilled
Above	Up To	(mm)	(mm)
	1.5	0.3	0.20
1.5	3.0	0.3	0.20
3.0	6.0	0.3	0.20
6.0	16	0.4	0.25
13.0	25	0.5	0.3

Hand Reamers

Allowance for hand reaming should be approximately two thirds of the machine reaming allowance.

Reaming Problems

POOR SURFACE FINISH

- Cause: Incorrect speed and/or feed.
Reamer is worn.
Insufficient or wrong lubricant.
Damaged cutting edges.
- Solution: Use the recommended speed/feed.
Do not allow reamer to become too blunt. See above.
Direct adequate supply of lubricant to the cutting area.
Use a reamer that is in good condition.

REAMER CHATTERING

- Cause: Workpiece not secured properly.
Set up not rigid.
Speed too high or feed to low.
- Solution: Secure workpiece.
Only use equipment that is in good condition.
Use correct speed and feed rates.

Oversized holes

- Cause: Excessive run-out on the machine collet/chuck.
- Solution: Only use equipment that is in good condition.

REAMER WEARING RAPIDLY

- Cause: Too little stock in the hole for reaming, causing it to rub, not cut.
Speed too high or feed to low.
- Solution: Ensure enough reaming stock is available. See above.
Use correct speed and feed rates.

TAPERED OR BELL-MOUTHED HOLES

- Cause: Machine spindles and/or bearings are worn.
Reamer and hole misaligned.
- Solution: Only use equipment that is in good condition.
Align the reamer and the hole.

REAMER RUBBING AND NOT CUTTING

- Cause: Too little stock in the hole for reaming.
Reamer has been resharpened with too little relief on the bevel lead.
- Solution: Ensure enough reaming stock is available. See above.
Regrind the bevel lead to a 6° - 8° relief.