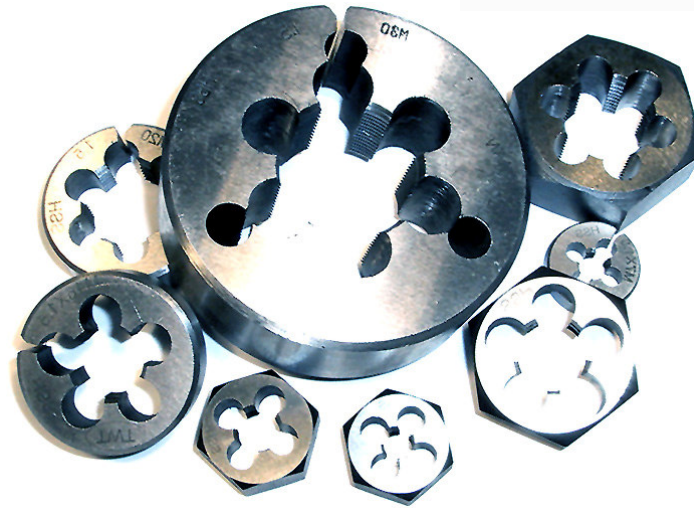
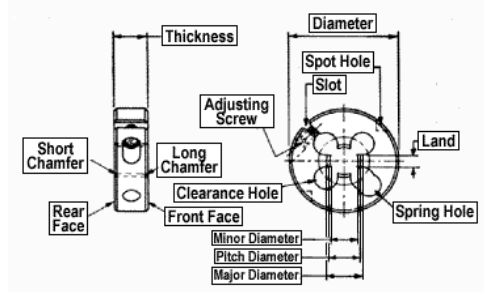
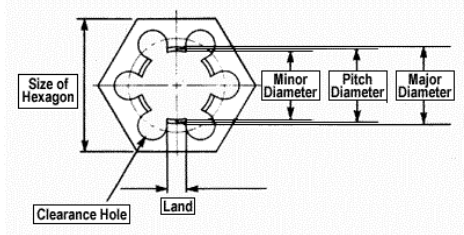


# DIES & DIE NUTS

**DIES** are usually round and are used for cutting external threads. They can be held in a Die Stock for hand operation or in a Die Holder for use by machine. Dies are usually split which enables adjustment for precision, and also to extend the life of the die as it wears. They can also be solid which makes them fixed. Taper thread dies (NPT, BSPT) are usually solid. The lead at the front (etched) face is normally 3 pitches, for standard threading, and 2 pitches at the back face for closer threading, or soft materials.

**DIE NUTS** are hexagonal, for turning with a wrench or spanner, and are usually used for repairing damaged threads.



Many of the practices employed in tapping also apply to threading with dies. If you do encounter problems the following may help:-

## TROUBLESHOOTING

### DIE BREAKS

WORK PIECE DIAMETER TOO BIG  
SPEED TOO HIGH  
DIE MISALIGNED  
WORK PIECE NOT CHAMFERED  
DIE OVER-ADJUSTED

### COLD WELDING

WORK PIECE DIAMETER TOO BIG  
SPEED TOO LOW  
INCORRECT OR LACK OF LUBRICANT  
WRONG RAKE ANGLE FOR MATERIAL  
CLEARANCE HOLES BLOCKED

### DIE WEARS QUICKLY

WRONG RAKE ANGLE FOR MATERIAL  
SPEED TOO HIGH  
INCORRECT FEED RATE

### THREAD UNDERSIZE

DIE MISALIGNED  
SPEED TOO LOW  
INCORRECT OR LACK OF LUBRICANT

### POOR FINISH (ONE FLANK)

INCORRECT FEED RATE

### THREAD OVERSIZE

PULLING OFF TOO HARD

### POOR FINISH (BOTH FLANKS)

CLEARANCE HOLES BLOCKED  
BAR DIAMETER TOO BIG  
SPEED TOO LOW  
WORK PIECE NOT CHAMFERED  
INCORRECT OR LACK OF LUBRICANT  
WRONG RAKE ANGLE FOR MATERIAL

### DIE CHIPPING

CLEARANCE HOLES BLOCKED  
WORK PIECE NOT CHAMFERED  
BAR DIAMETER TOO BIG  
SPEED TOO HIGH