

TAYLOR TOOL TAP TROUBLE SHOOTER

Thread produced is too large



Possible Causes

- ❖ Incorrect tap, tap geometry not suitable for the application
- ❖ Tapping size hole is too small
- ❖ Alignment error of tapping size hole or position
- ❖ Machine spindle axially restricted
- ❖ Cold welding at the flank of the tap
- ❖ Lead of tap unsatisfactory due to insufficient thread depth
- ❖ Cutting speed too high
- ❖ Lubrication or coolant supply insufficient
- ❖ Tolerance specification on tap does not correspond to specifications on drawing and/or thread gauge.
- ❖ Spiral fluted taps, corresponding to our design are applied with too much pressure for initial tapping
- ❖ Initial tapping pressure too low for taps with spiral point corresponding to our form "B"

Solution

- Apply correct tap material to be machined
- Observe tapping size hole table in the technical solutions. Note different tapping size whole diameters for fluteless taps.
- Check for correct tool clamping
- Apply floating tap holder
- Check core drill
- Use mechanical feed
- Apply tension/compression tap chuck
- Apply new tap
- Apply coated tap
- Optimize lubrication
- Tap with forced feed
- Apply tap with modified lead
- Reduce cutting speed
- Improve lubrication
- Ensure sufficient and suitable coolant supply and check concentration

Apply correct tap for required tolerances

With spiral fluted taps only light pressure required for initial tapping. The tap should immediately be applied within the tension/compression range.

Taps with spiral point or left hand spiral require higher axial pressure. Ensure tap operates with the tension/compression range

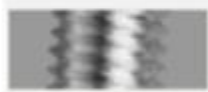
Apply correct tap for required tolerance

Apply correct tap for the material to be machined

Avoid strong axial forces during the cutting process

Apply tension /compression chuck

Thread axially miscut



Thread produced is too small



- ❖ Tolerance specifications on tap do not correspond to specifications on drawing and/or thread gauge
- ❖ Incorrect tap
- ❖ Tap does not cut accurately (thread plug gauge)
- ❖ Machine spindle is axially too rigid

Problem

**Thread
surface not
according to
requirements**



**Tool life
insufficient**

**Tool
breakage
during
advance or
return**



Possible Causes

- ❖ Cutting edge geometry not suitable for the application
- ❖ Cutting speed too high
- ❖ Insufficient coolant (concentration and supply)
- ❖ Chip congestion
- ❖ Tapping size hole too small
- ❖ With tough, hard materials loading on tool too much or pitch too steep
- ❖ Built up edge
- ❖ Cold welding
- ❖ Surface hardening of tapping size hole
- ❖ Reasons listed under "thread surface not according to requirements"
- ❖ Chip congestion
- ❖ Tapping size hole too small
- ❖ Teeth of chamfer lead overload
- ❖ Tap hits bottom of tapping size hole
- Lack of or incorrect chamfer of tapping size hole
- Positional or angle error of tapping size hole
- Tool hardness not suitable for the application
- Cutting edge geometry not suitable for the application

Solution

- Apply "correct" tap for the material to be machined
- reduce cutting speed
- optimize lubrication
- Ensure suitable coolant and sufficient volume
- Apply suitable tap type
- Observe tapping size hole diameter specifications to DIN 336 or respective standards. Observe table for fluteless taps
- Apply hand taps sets
- Apply coated taps
- Improve coolant supply
- check drill (cutting edge) for wear
- Heat or surface treatment following thread production
- Reasons listed under thread surface "not according to requirements"
- Apply correct tap
- Observe tapping size hole dia. Acc. To DIN 336 or respective standards
- longer chamfer lead (blind or through hole)
- increase no. of teeth of chamfer lead by increasing no. of flutes
- apply tap sets
- check hole depth
- apply tension/compression tap chuck
- Correct chamfer angle of tapping size hole
- ensure correct tool clamping
- apply floating tap holder
- check core drill
- Apply suitable tap for individual application