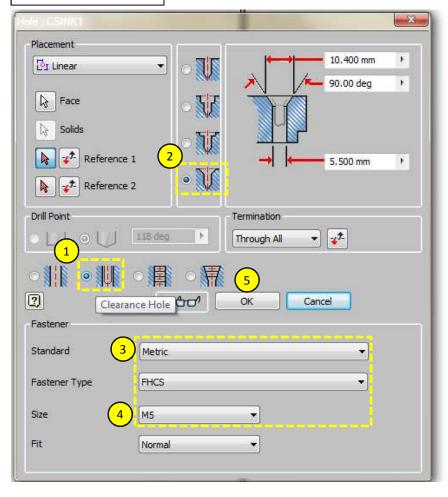
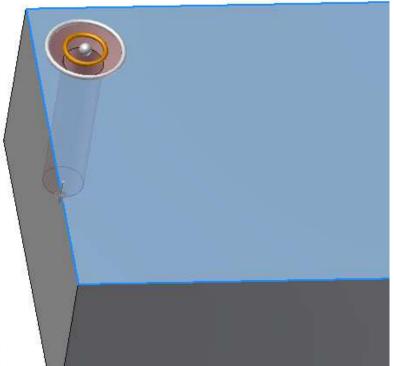
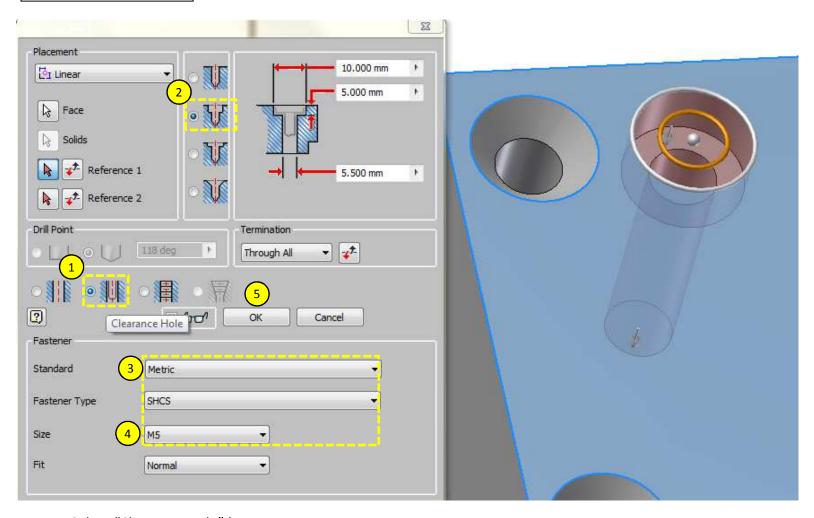
Flat Head Cap Screw





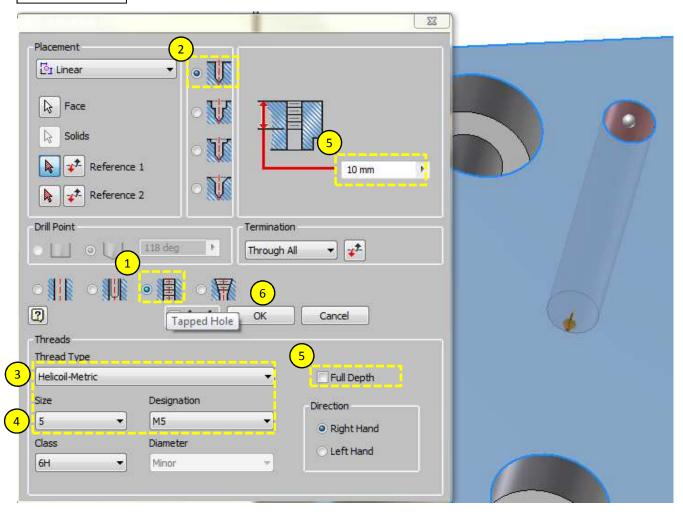
- 1. Select "Clearance Hole" button
- 2. Select "Countersink" button
- 3. Select "Metric" or "Inch" fastener standard
- 4. Select "Size"
- 5. Click "OK"

Socket Head Cap Screw



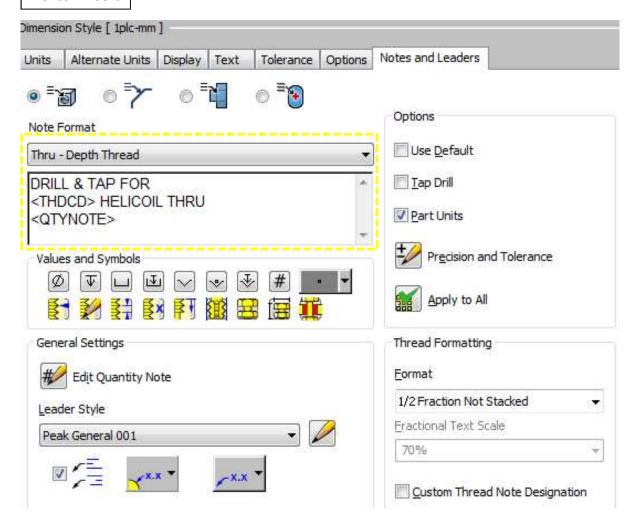
- 1. Select "Clearance Hole" button
- 2. Select "Counterbore" button
- 3. Select "Metric" or "Inch" standard
- 4. Select "Size"
- 5. Click "OK"

Helicoil Insert



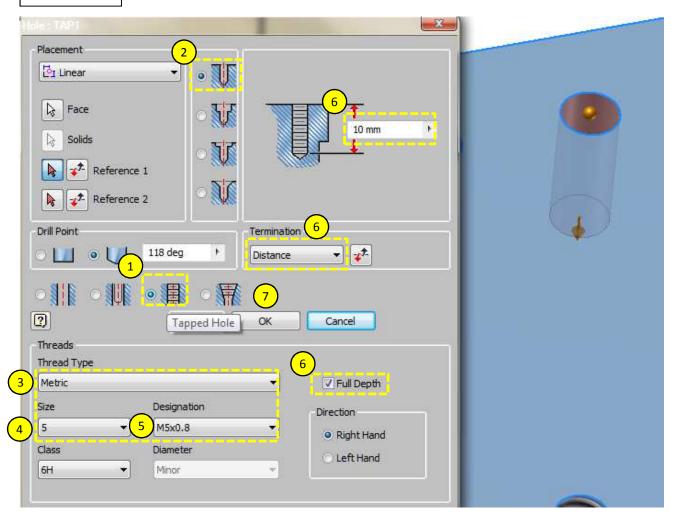
- 1. Select "Tapped Hole" button
- 2. Select "Drilled" button
- 3. Select "Helicoil-Metric" or "Helicoil-Inch" thread type
- 4. Select "Size"
- 5. Uncheck "Full Depth" option & input any thread length (incl. drilled hole length)
- 6. Click "OK"

Helicoil Insert



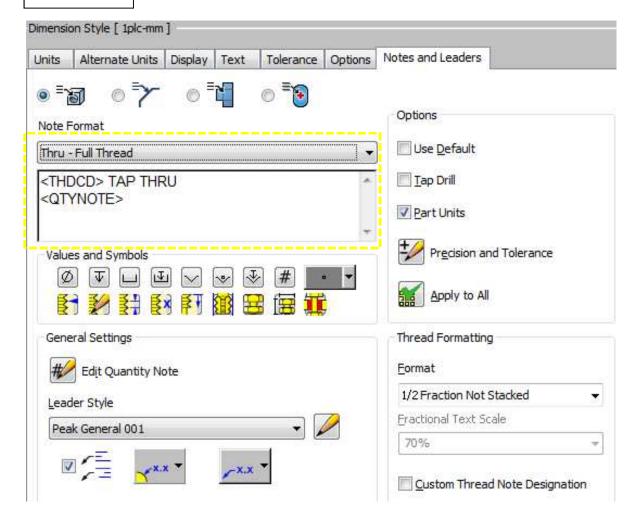
Using the "Helicoil" thread type, the "Thru-Depth Thread" note will display the desired hole callout on the drawing.

Tapped Hole



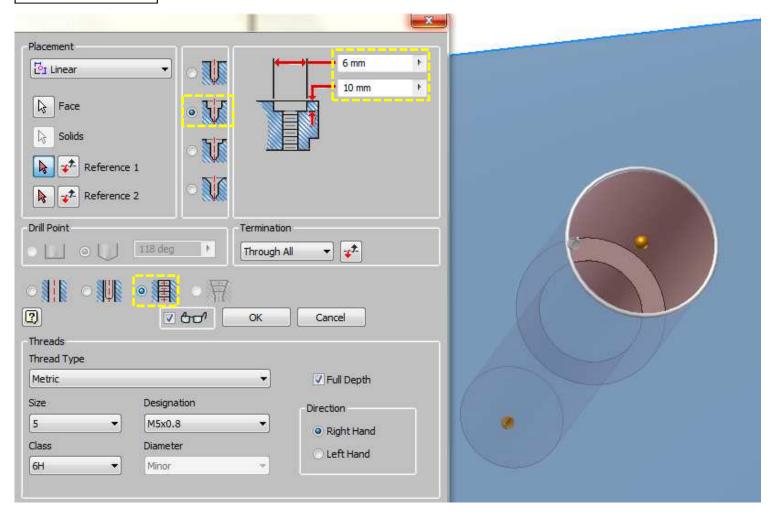
- 1. Select "Tapped Hole" button
- 2. Select "Drilled" button
- 3. Select "Metric" or "Inch" thread type
- 4. Select "Size"
- 5. Select "Designation" (Inch only)
- 6. Check "Full Depth" option & Select "Through All" or input thread depth
- 7. Click "OK"

Helicoil Insert



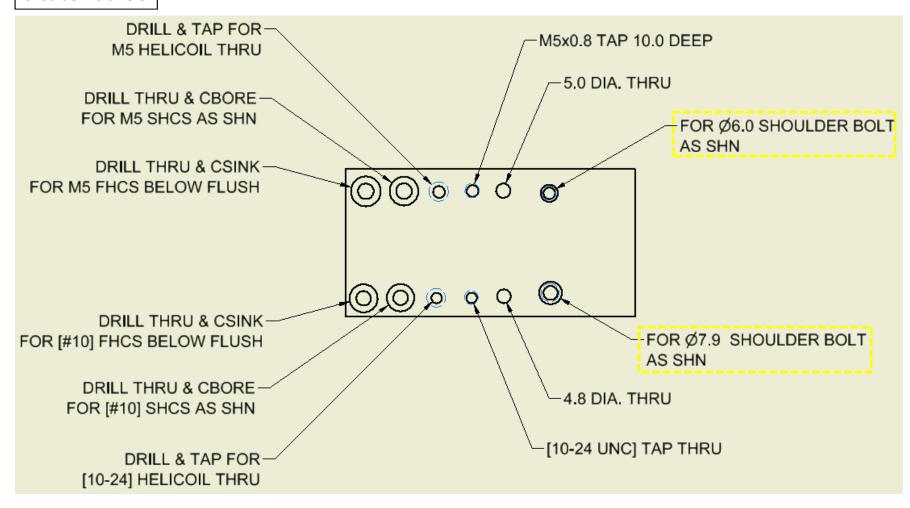
Using the "Metric" or "Inch" thread type, the "Thru-Full Thread" note will display the desired hole callout on the drawing.

Shoulder Bolt Hole



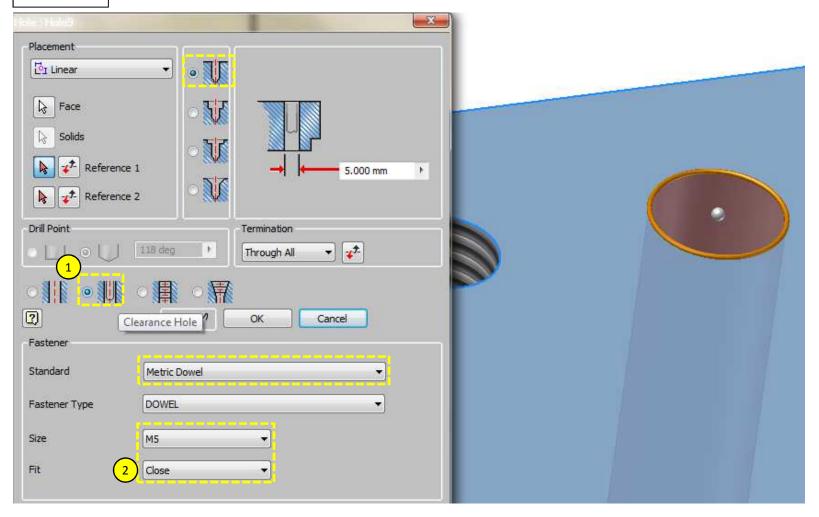
- 1. A "Shoulder Bolt" choice should be added to the "Clearance Hole" function that would prompt for thread type & size. This example shows the only available method to accomplish this currently which is fully manual.
- 2. Input of shoulder diameter should be dictated by the "Thread Type" & "Size" selection as standard shoulder bolt have diameters that correspond to specific thread designations which can easily be added to either the "Clearance" or "Thread" excel file.
- 3. By making this option available, the "Counterbore-Full Thread" note can be utilized to automate the hole callout on the drawing.

Shoulder Bolt Hole



- 1. By having a Shoulder Bolt selection in the hole wizard, the "Counterbore-Through Thread" callout could easily be customized for a proper designation on the drawing. For this example, the metric shoulder bolt callout would state "for M6 shoulder bolt as shn" and the inch would state "for [1/4"] shoulder bolt as shn".
- 2. Using the manual method results in a generic callout without regard to the metric/inch standard.

Dowel Hole



- 1. Shown having added "Dowel" (metric & inch) to "Clearance" excel file. By selecting this option, the user only needs to select the desired "Standard", "Size" and "Fit". The issue is that there is no
- 2. "Fit" designation should be customizable on the excel sheet and thus would be reflected in the "Fastener Fit Value" in the hole callout on the drawing. For the example shown, there are 2 types of fit that pertain to dowel holes: "Press-Fit" or "P.F." and "Slip-Fit" or "S.F.".

Dowel Hole

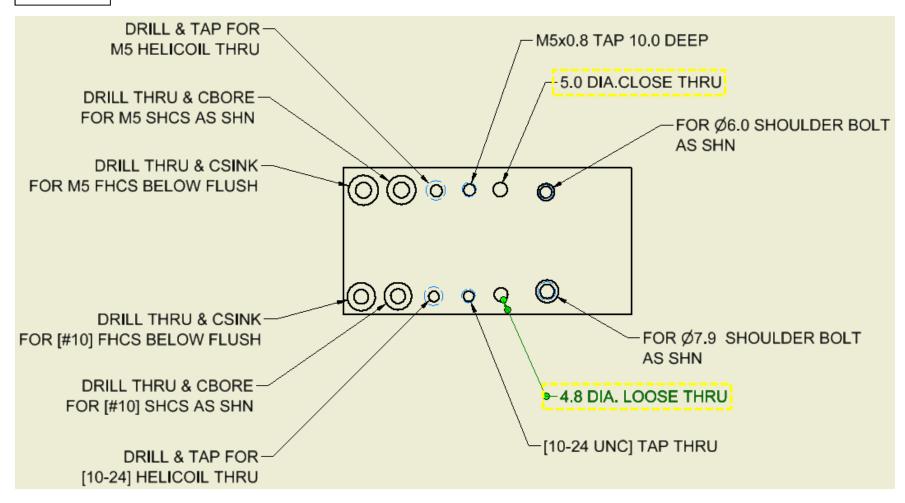
Note Format

Thru Thru Thru Counterbore Thru Countersink Thru Spotface Blind Blind Counterbore Blind Countersink Blind Spotface Thru - Full Thread Thru Counterbore - Full Thread Thru Countersink - Full Thread Thru Spotface - Full Thread Blind - Full Thread Blind Counterbore - Full Thread Blind Countersink - Full Thread Blind Spotface - Full Thread Thru - Full Thread Tap Drill Thru Counterbore - Full Thread Tap Drill Thru Countersink - Full Thread Tap Drill Thru Spotface - Full Thread Tap Drill Blind - Full Thread Tap Drill Blind Counterbore - Full Thread Tap Drill Blind Countersink - Full Thread Tap Drill Blind Spotface - Full Thread Tap Drill Thru - Depth Thread Thru Counterbore - Depth Thread Thru Countersink - Depth Thread Thru Spotface - Depth Thread Blind - Depth Thread Blind Counterbore - Depth Thread Blind Countersink - Depth Thread Blind Spotface - Depth Thread Thru - Depth Thread Tap Drill Thru Counterbore - Depth Thread Tap Drill Thru Countersink - Depth Thread Tap Drill Thru Spotface - Depth Thread Tap Drill Blind - Depth Thread Tap Drill Blind Counterbore - Depth Thread Tap Drill Blind Countersink - Depth Thread Tap Drill Blind Spotface - Depth Thread Tap Drill Thru - Taper Depth Thread Thru Countersink - Taper Depth Thread Thru Spotface - Taper Depth Thread Blind - Taper Depth Thread Blind Countersink - Taper Depth Thread Blind Spotface - Taper Depth Thread Thru - Taper Depth Thread Tap Drill Thru Countersink - Taper Depth Thread Tap Drill Thru Spotface - Taper Depth Thread Tap Drill Blind - Taper Depth Thread Tap Drill Blind Countersink - Taper Depth Thread Tap Drill

Blind Spotface - Taper Depth Thread Tap Drill

- 1. This shows the available "Note Format" options that can be used with the hole callout on a drawing.
- Being able to add a custom hole designation with parameters regarding type of hole, naming convention, etc should eliminate the issues surrounding specific fasteners.

Dowel Hole



1. Using the manual method results in a generic callout without regard to the metric/inch standard or proper fit callout.