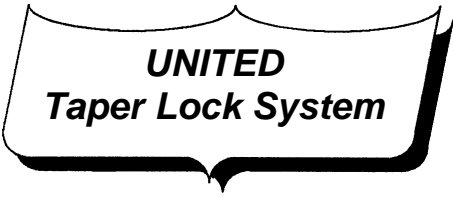




















# Taper Lock Cutters

FOR FREEHAND TOOLS and POSITIVE FEED EQUIPMENT  
FOR HOLE PRODUCTION and HOLE REWORK  
NEW and RETROFIT APPLICATIONS



<p>UCC-875073 - PILOTED CORE DRILLS</p>  <p>Pg R2-R3</p>	<p>UTLD-2030A - TL DRILL 10° HELIX - COOLANT - 100° FLUSH HEAD</p>  <p>Pg R4</p>
<p>UTLD-2030B - TL DRILL - 10° HELIX - COOLANT - PROTRUDING HEAD</p>  <p>Pg R5</p>	<p>UTLD-2030AR - TL DRILL REAMER - COOLANT- 10° HELIX 100° FLUSH HEAD</p>  <p>Pg R6-R7</p>
<p>UTLD-2030BR - TL DRILL REAMER -15° HELIX - COOLANT - PROTRUDING HD</p>  <p>Pg R8-R9</p>	<p>UTLD-2040A - TL DRILL - 35° HELIX - FLUSH HD FOR TL100/300</p>  <p>Pg R10</p>
<p>UTLD-2040B - 35° HELIX TL DRILL - FOR TL200/400 PROTRUDING HEAD</p>  <p>Pg R11</p>	<p>UTLD-2040AR - TL DRILL REAMER 20° HELIX FOR TL100/300 FLUSH HD</p>  <p>Pg R12-R13</p>
<p>UTLD-2040BR - TL DRILL REAMER 20° HELIX FOR TL200/400 PROTRUD. HD</p>  <p>Pg R14-R15</p>	<p>UTLD-2060AR - TL MACHINE REAMER STRAIGHT FLUTE 100° FLUSH HD</p>  <p>Pg R16-R17</p>
<p>UTLD-2060BR - SIX FLUTE STRAIGHT TL REAMER PROTRUD. HD FOR 16 RMS</p>  <p>Pg R18-R19</p>	<p>UTLR-254200 TAPER PIN REAMER - 5 LH HELICAL FLUTES RH CUT COBALT</p>  <p>Pg R20</p>
<p>UTLR-257200 CARBIDE TAPER PIN REAMER - STRAIGHT MULTIPLE FLUTES</p>  <p>Pg R22</p>	<p>UDB-975596 - PILOTED TAPER PIN REAMER STRAIGHT FLUTE RH CUT</p>  <p>Pg R23</p>
<p>UDB-975597 - MODIFIED TAPER PIN REAMER LH HELICAL FLUTES RH CUT</p>  <p>Pg R24</p>	<p>UDB-755750 - 'TAPER SCRAPER' - SINGLE FLUTE FINISHING REAMER</p>  <p>Pg R25</p>
<p>UDB-975923 - COUNTERSINK 60° THREADED SHANK - REMOVABLE PILOTS</p>  <p>Pg R26</p>	<p>UDB-975924 - COUNTERSINK 6 FLUTES 100° PILOTED - REMOVABLE PILOTS</p>  <p>Pg R27</p>

# UCC-875073 Series

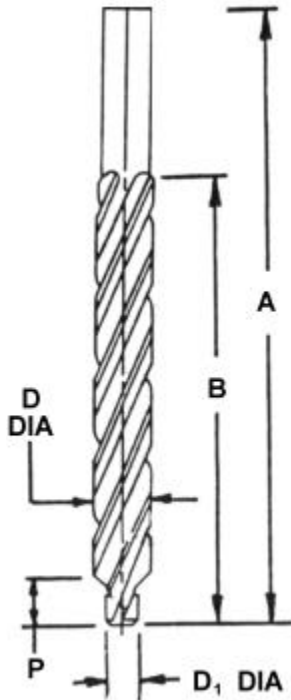
# Piloted Core Drills

.1205 thru .2450 Diameters

Used for Pre-Drilling Taper Lock Holes

- .1205 THRU - .1710A

- .1725 THRU - .2450



**UCC-875073 Series**  
**UCC-875073-.1205**  
**thru**  
**UCC-875073-.2450**

Practical and economical method for enlarging previously drilled or cored holes.

Core Drills give greater tolerance control and better guide support.

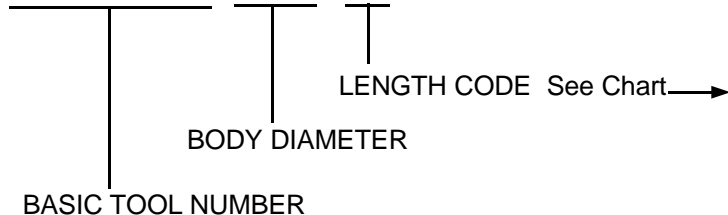
UNITED Core Drills with heavier cross sections provide stronger more rigid construction.

UNITED PART NO.	D DRILL DIA	D <sub>1</sub> PILOT DIA	P POINT LEN
UCC-875073-.1205	.1205	.1080	.37
UCC-875073-.1217	.1217	.1080	.37
UCC-875073-.1217A	.1217	.0970	.37
UCC-875073-.1235	.1235	.1080	.37
UCC-875073-.1237	.1237	.0970	.37
UCC-875073-.1240	.1240	.0970	.37
UCC-875073-.1245	.1245	.1080	.37
UCC-875073-.1245A	.1245	.0970	.37
UCC-875073-.1250	.1250	.1080	.37
UCC-875073-.1285	.1285	.0970	.37
UCC-875073-.1290	.1290	.0930	.37
UCC-875073-.1295	.1295	.1080	.37
UCC-875073-.1295A	.1295	.0970	.37
UCC-875073-.1360	.1360	.1270	.37
UCC-875073-.1375	.1375	.1275	.37
UCC-875073-.1375A	.1375	.1320	.37
UCC-875073-.1395	.1395	.1210	.37
UCC-875073-.1406	.1406	.1230	.37
UCC-875073-.1406A	.1406	.1270	.37
UCC-875073-.1416	.1416	.1230	.37
UCC-875073-.1440	.1440	.0930	.37
UCC-875073-.1440A	.1440	.0970	.37
UCC-875073-.1450	.1450	.1340	.37
UCC-875073-.1455	.1455	.1270	.37
UCC-875073-.1530	.1530	.1270	.37
UCC-875073-.1540	.1540	.1270	.37
UCC-875073-.1545	.1545	.1270	.37
UCC-875073-.1550	.1550	.1270	.37
UCC-875073-.1555	.1555	.1270	.37
UCC-875073-.1557	.1557	.1270	.37
UCC-875073-.1560	.1560	.1270	.37
UCC-875073-.1565	.1565	.1270	.37
UCC-875073-.1610	.1610	.0970	.37
UCC-875073-.1610A	.1610	.1460	.37
UCC-875073-.1610B	.1610	.1270	.37
UCC-875073-.1645	.1645	.1270	.37
UCC-875073-.1660	.1660	.1270	.37
UCC-875073-.1710	.1710	.1590	.37
UCC-875073-.1710A	.1710	.1270	.37

UNITED PART NO.	D DRILL DIA	D <sub>1</sub> PILOT DIA	P POINT LEN
UCC-875073-.1725	.1725	.1590	.37
UCC-875073-.1770	.1770	.1640	.37
UCC-875073-.1770A	.1770	.1660	.37
UCC-875073-.1780	.1780	.1590	.37
UCC-875073-.1850	.1850	.1590	.37
UCC-875073-.1852	.1852	.1680	.37
UCC-875073-.1875	.1875	.1590	.37
UCC-875073-.1895	.1895	.1560	.37
UCC-875073-.1895A	.1895	.1700	.37
UCC-875073-.1895B	.1895	.1590	.37
UCC-875073-.1900	.1900	.1275	.37
UCC-875073-.1905	.1905	.1700	.37
UCC-875073-.1910	.1910	.1700	.37
UCC-875073-.1920	.1920	.1510	.37
UCC-875073-.1920A	.1920	.1600	.37
UCC-875073-.1920B	.1920	.1270	.37
UCC-875073-.1970	.1970	.1590	.37
UCC-875073-.1990	.1990	.1600	.37
UCC-875073-.1990A	.1990	.1790	.37
UCC-875073-.2020	.2020	.1860	.37
UCC-875073-.2020A	.2020	.1900	.37
UCC-875073-.2030	.2030	.1900	.37
UCC-875073-.2040	.2040	.1960	.37
UCC-875073-.2050	.2050	.1510	.37
UCC-875073-.2050A	.2050	.1910	.37
UCC-875073-.2050B	.2050	.1960	.37
UCC-875073-.2165	.2165	.2000	.37
UCC-875073-.2190	.2190	.2020	.37
UCC-875073-.2210	.2210	.1980	.37
UCC-875073-.2210A	.2210	.2090	.37
UCC-875073-.2235	.2235	.1650	.37
UCC-875073-.2235A	.2235	.2120	.37
UCC-875073-.2240	.2240	.1910	.37
UCC-875073-.2240A	.2240	.1980	.37
UCC-875073-.2280	.2280	.1900	.37
UCC-875073-.2344	.2344	.1830	.37
UCC-875073-.2344A	.2344	.2167	.37
UCC-875073-.2344B	.2344	.1900	.37
UCC-875073-.2450	.2450	.1900	.37

TOOL CODE FORMAT:

**UCC-875073-.1710-110**



2ND DASH NUMBER	A OVERALL LENGTH	B FLUTE LENGTH
106	6.0	4.0
108	8.0	6.0
110	10.0	6.0
112	12.0	6.0
114	14.0	6.0

# Piloted Core Drills

**.2450A thru .9602 Diameters**  
**Used for Pre-Drilling Taper Lock Holes**

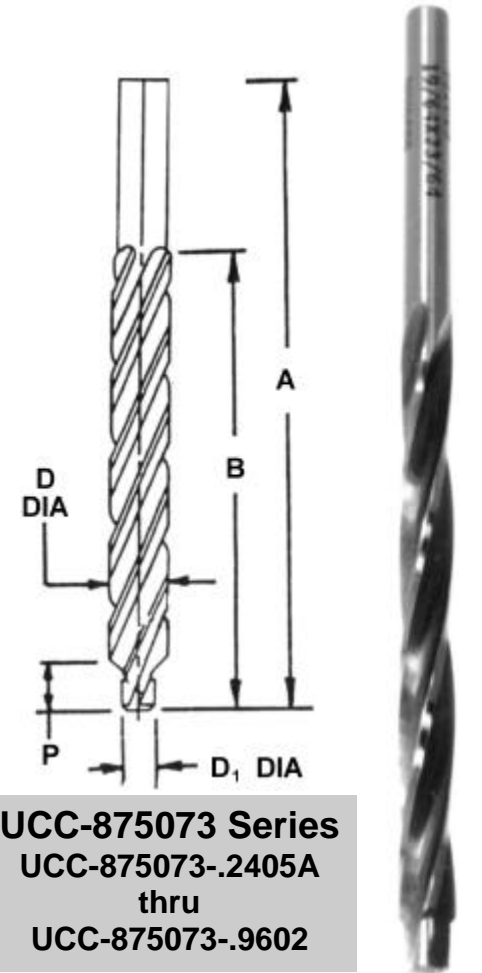
**UCC-875073 Series**

- .2450A THRU - .3320

- .3415 THRU - .9602

UNITED PART NO.	D DRILL DIA	D <sub>1</sub> PILOT DIA	P POINT LEN
UCC-875073-.2450A	.2450	.2260	.37
UCC-875073-.2452	.2452	.2270	.37
UCC-875073-.2475	.2475	.1900	.37
UCC-875073-.2490	.2490	.1900	.37
UCC-875073-.2495	.2495	.2320	.37
UCC-875073-.2500	.2500	.1900	.50
UCC-875073-.2500A	.2500	.2045	.50
UCC-875073-.2500B	.2500	.2175	.50
UCC-875073-.2500C	.2500	.2270	.50
UCC-875073-.2550	.2550	.1900	.50
UCC-875073-.2570	.2570	.1900	.50
UCC-875073-.2600	.2600	.2450	.50
UCC-875073-.2640	.2640	.2460	.50
UCC-875073-.2650	.2650	.1900	.50
UCC-875073-.2660	.2660	.2570	.50
UCC-875073-.2710	.2710	.2640	.50
UCC-875073-.2795	.2795	.2630	.50
UCC-875073-.2810	.2810	.2650	.50
UCC-875073-.2855	.2855	.2560	.50
UCC-875073-.2860	.2860	.2540	.50
UCC-875073-.2860A	.2860	.2630	.50
UCC-875073-.2940	.2940	.2485	.50
UCC-875073-.2969	.2969	.1830	.50
UCC-875073-.2969A	.2969	.2485	.50
UCC-875073-.3080	.3080	.2790	.50
UCC-875073-.3080A	.3080	.2880	.50
UCC-875073-.3095	.3095	.2485	.50
UCC-875073-.3120	.3120	.2790	.50
UCC-875073-.3120A	.3120	.2485	.50
UCC-875073-.3120B	.3120	.2890	.50
UCC-875073-.3125	.3125	.2800	.50
UCC-875073-.3125A	.3125	.2890	.50
UCC-875073-.3150	.3150	.2485	.50
UCC-875073-.3170	.3170	.3010	.50
UCC-875073-.3260	.3260	.3080	.50
UCC-875073-.3290	.3290	.3120	.50
UCC-875073-.3320	.3320	.2890	.50

UNITED PART NO.	D DRILL DIA	D <sub>1</sub> PILOT DIA	P POINT LEN
UCC-875073-.3415	.3415	.3250	.50
UCC-875073-.3490	.3490	.3160	.50
UCC-875073-.3594	.3594	.2500	.50
UCC-875073-.3594A	.3594	.2940	.50
UCC-875073-.3594B	.3594	.3110	.50
UCC-875073-.3594C	.3594	.3427	.50
UCC-875073-.3712	.3712	.3427	.50
UCC-875073-.3730	.3730	.3110	.50
UCC-875073-.3740	.3740	.3110	.50
UCC-875073-.3750	.3750	.2485	.50
UCC-875073-.3750A	.3750	.3425	.50
UCC-875073-.3810	.3810	.3425	.50
UCC-875073-.3895	.3895	.3710	.50
UCC-875073-.3910	.3910	.3110	.50
UCC-875073-.4060	.4060	.3885	.50
UCC-875073-.4110	.4110	.3790	.50
UCC-875073-.4140	.4140	.3890	.50
UCC-875073-.4219	.4219	.3740	.50
UCC-875073-.4370	.4370	.3740	.50
UCC-875073-.4375	.4375	.3740	.50
UCC-875073-.4688	.4688	.4365	.50
UCC-875073-.4720	.4720	.4365	.50
UCC-875073-.4843	.4843	.4670	.50
UCC-875073-.4900	.4900	.3890	.50
UCC-875073-.5000	.5000	.4365	.62
UCC-875073-.5312	.5312	.4990	.62
UCC-875073-.5350	.5350	.4990	.62
UCC-875073-.5460	.5460	.5100	.62
UCC-875073-.5625	.5625	.4990	.62
UCC-875073-.5938	.5938	.5615	.62
UCC-875073-.6250	.6250	.5610	.62
UCC-875073-.6562	.6562	.6235	.62
UCC-875073-.7180	.7180	.6865	.62
UCC-875073-.7187	.7187	.6865	.62
UCC-875073-.7812	.7812	.7490	.75
UCC-875073-.8437	.8437	.8115	.75
UCC-875073-.9062	.9062	.8740	.75



**UCC-875073 Series**  
**UCC-875073-.2405A**  
**thru**  
**UCC-875073-.9602**

**Core Drills have greater chip capacity.**

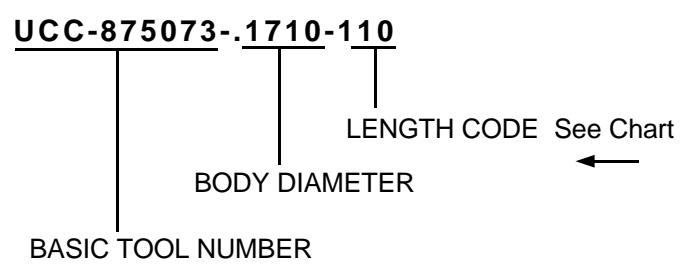
Core Drills are ideal when non-critical tolerances exist.

To enlarge holes prior to reaming, choose *UNITED* Core Drills.

When stock removal or cavity depth is excessive, Core Drill construction should be considered.

2ND DASH NUMBER	A OVERALL LENGTH	B FLUTE LENGTH
106	6.0	4.0
108	8.0	6.0
110	10.0	6.0
112	12.0	6.0
114	14.0	6.0

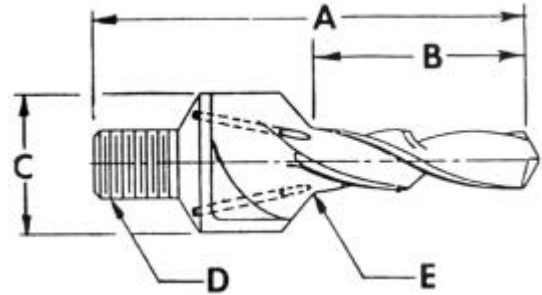
TOOL CODE FORMAT:



**UTLD-2030A  
Series-Groups 1-2**

# Taper Lock Drill for 100° Flush Head One Shot Application

## UTLD-2030A SERIES



### Taper Lock Drill 10° Helix with Coolant Holes

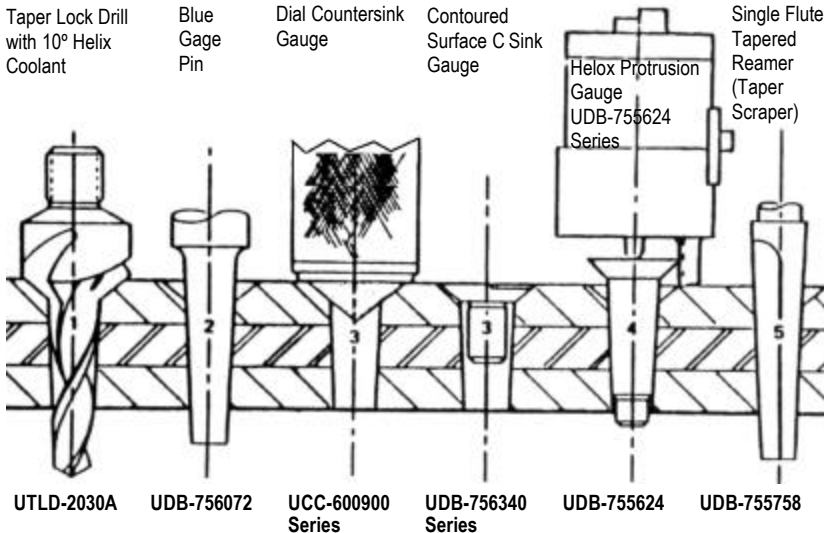
UTLD-2030A was designed with a special 10° Helix for installation of 100° flush head Taper Lock bolts intended for drilling titanium, heat treated and hard alloys. A finished standard Taper Lock hole is produced. Does not require a pilot hole. Coolant holes are provided in durable high speed cutters.

Produces a finished Taper Lock hole and does not require a pilot hole.

Use with power positive feed drill motors, including Spacematic, Quackenbush, Rockwell and Drivematic.

GROUP 1 & NOM FAST R SIZE	UNITED PART NO. GROUP 1	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THREAD	E FILLET RADIUS	GROUP 2 & NOM FAST R SIZE	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THREAD	E FILLET RADIUS
1/8	UTLD-2030A-1-04	1.625	.750	.490	1/4-28	.025	1/8	UTLD-2030A-2-04	1.937	1.062	.490	1/4-28	.025
5/32	UTLD-2030A-1-05	1.718	.843	.490	1/4-28	.025	5/32	UTLD-2030A-2-05	2.093	1.218	.490	1/4-28	.025
3/16	UTLD-2030A-1-3	1.843	.968	.490	1/4-28	.030	3/16	UTLD-2030A-2-3	2.312	1.437	.490	1/4-28	.030
7/32	UTLD-2030A-1-07	1.968	1.093	.490	1/4-28	.030	7/32	UTLD-2030A-2-07	2.531	1.656	.490	1/4-28	.030
1/4	UTLD-2030A-1-4	2.500	1.187	.677	7/16-20	.030	1/4	UTLD-2030A-2-4	3.062	1.750	.677	7/16-20	.030
5/16	UTLD-2030A-1-5	2.625	1.312	.740	7/16-20	.040	5/16	UTLD-2030A-2-5	3.250	1.937	.740	7/16-20	.040
3/8	UTLD-2030A-1-6	2.687	1.375	.865	7/16-20	.040	3/8	UTLD-2030A-2-6	3.437	2.125	.865	7/16-20	.040
7/16	UTLD-2030A-1-7	3.250	1.750	.990	7/16-20	.050	7/16	UTLD-2030A-2-7	4.125	2.625	.990	7/16-20	.050
1/2	UTLD-2030A-1-8	3.500	2.000	1.115	7/16-20	.050	1/2	UTLD-2030A-2-8	4.500	3.000	1.115	7/16-20	.050
9/16	UTLD-2030A-1-9	5.062	2.812	1.290	5/8-18	.070	9/16	UTLD-2030A-2-9	6.687	4.437	1.290	5/8-18	.070
5/8	UTLD-2030A-1-10	5.437	3.062	1.420	5/8-18	.070	5/8	UTLD-2030A-2-10	7.250	4.875	1.420	5/8-18	.070
3/4	UTLD-2030A-1-12	6.500	3.500	1.600	1"-14	.080	3/4	UTLD-2030A-2-12	8.562	5.562	1.600	1"-14	.080
7/8	UTLD-2030A-1-14	7.187	4.062	1.850	1"-14	.080	7/8	UTLD-2030A-2-14	9.812	6.687	1.850	1"-14	.080
1"	UTLD-2030A-1-16	7.875	4.625	2.100	1"-14	.080	1"	UTLD-2030A-2-16	10.625	7.375	2.100	1"-14	.080

#### TAPER LOCK HOLE PREPARATION



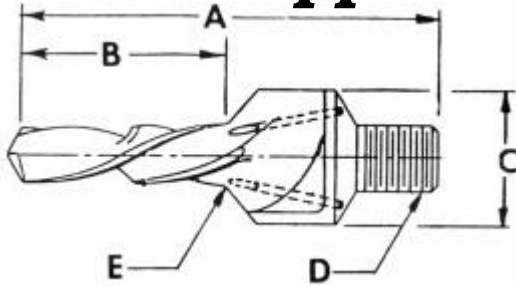
#### SEQUENCE FOR USING ONE SHOT POSITIVE FEED EQUIPMENT AND DRILL BARS for FLUSH HEAD TAPER LOCKS:

- STEP 1. DRILL/COUNTERSINK:** Select proper tools from Taper Lock Equipment pictorial page section.
- STEP 2. BEARING/PROBE:** Use UDB 756072 Series. See Bearing Check section for applicable probe.
- STEP 3. COUNTERSINK DIAMETER CHECK:** For normal surfaces use Uni-Lock Countersink Gauge, and for normal or inclined surfaces, use UDB 756340 Series. See Gage Selection chart for appropriate Taper Ream Equipment and countersink diameters.
- STEP 4. PROTRUSION CHECK:** For TL100 Series, use UDB 755624 Series for inclined surfaces or values listed in Protrusion Gauge section.
- STEP 5. TAPER SCRAPE HOLE:** If necessary, use UDB 755758 Series. See Re-Work of Straight Holes for appropriate Taper Scraper. Protrusion and bearing check must be made after this operation.

# Taper Lock Drill for Protruding Head With Coolant One Shot Drilling Application

UTLD-2030B  
Series-Groups 1-2

UTLD-2030B  
SERIES



Taper Lock Drill 10° Helix with Coolant Holes

## Taper Lock Features

- Intended for drilling Titanium, Heat Treated Hard Alloys.
- Does not require a pilot hole.
- Designed for easy installation on Protruding Head Fasteners.
- Manufactured from Cobalt for High Speed Tool Steel.
- Cutter contains oil holes providing cutter fluid.
- Has a special 10° helix for 100° Fastener Bolts.

GROUP 1 & NOM FAST R SIZE	UNITED PART NO. GROUP 1	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THREAD	E FILLET RADIUS
1/8	UTLD-2030B-1-04	1.625	.750	.490	1/4-28	.025
5/32	UTLD-2030B-1-05	1.718	.843	.490	1/4-28	.025
3/16	UTLD-2030B-1-3	1.843	.968	.490	1/4-28	.030
7/32	UTLD-2030B-1-07	1.968	1.093	.490	1/4-28	.030
1/4	UTLD-2030B-1-4	2.500	1.187	.677	7/16-20	.030
5/16	UTLD-2030B-1-5	2.625	1.312	.740	7/16-20	.040
3/8	UTLD-2030B-1-6	2.687	1.375	.865	7/16-20	.040
7/16	UTLD-2030B-1-7	3.250	1.750	.990	7/16-20	.050
1/2	UTLD-2030B-1-8	3.500	2.000	1.115	7/16-20	.050
9/16	UTLD-2030B-1-9	5.062	2.812	1.290	5/8-18	.070
5/8	UTLD-2030B-1-10	5.437	3.062	1.420	5/8-18	.070
3/4	UTLD-2030B-1-12	6.500	3.500	1.600	1"-14	.080
7/8	UTLD-2030B-1-14	7.187	4.062	1.850	1"-14	.080
1"	UTLD-2030B-1-16	7.875	4.625	2.100	1"-14	.080

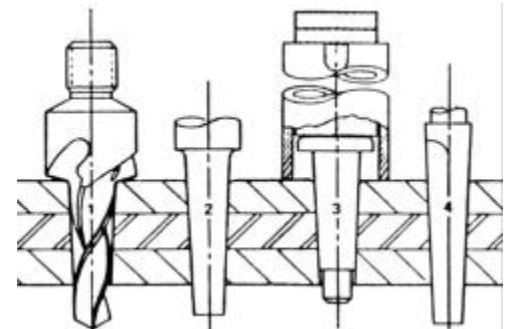
GROUP 2 & NOM FAST R SIZE	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THREAD	E FILLET RADIUS
1/8	UTLD-2030B-2-04	1.937	1.062	.490	1/4-28	.025
5/32	UTLD-2030B-2-05	2.093	1.218	.490	1/4-28	.025
3/16	UTLD-2030B-2-3	2.312	1.437	.490	1/4-28	.030
7/32	UTLD-2030B-2-07	2.531	1.656	.490	1/4-28	.030
1/4	UTLD-2030B-2-4	3.062	1.750	.677	7/16-20	.030
5/16	UTLD-2030B-2-5	3.250	1.937	.740	7/16-20	.040
3/8	UTLD-2030B-2-6	3.437	2.125	.865	7/16-20	.040
7/16	UTLD-2030B-2-7	4.125	2.625	.990	7/16-20	.050
1/2	UTLD-2030B-2-8	4.500	3.000	1.115	7/16-20	.050
9/16	UTLD-2030B-2-9	6.687	4.437	1.290	5/8-18	.070
5/8	UTLD-2030B-2-10	7.250	4.875	1.420	5/8-18	.070
3/4	UTLD-2030B-2-12	8.562	5.562	1.600	1"-14	.080
7/8	UTLD-2030B-2-14	9.812	6.687	1.850	1"-14	.080
1"	UTLD-2030B-2-16	10.625	7.375	2.100	1"-14	.080

### SEQUENCE FOR ONE SHOT TAPER DRILL USING POSITIVE FEED EQUIPMENT AND DRILL BARS; PROTRUDING FASTENER

- STEP 1. **TAPER DRILL:** Select proper equipment from Taper Lock Equipment pictorial page section.
- STEP 2. **BEARING PROBE:** Use UDB 756072 Series. See Gage section for applicable probe, based on fastener size and group.
- STEP 3. **PROTRUSION CHECK:** For TL200 Series, use UDB 755620 Series for inclined surface. For normal surface, use UDB 755820 Series, or scale using values listed in Protrusion Gage section.
- STEP 4. **TAPER SCRAPE HOLE:** If necessary, use UDB 755758 Series single flute scraper. Protrusion and bearing check must be made after this operation.

### TAPER LOCK HOLE PREPARATION

Taper Lock Cutter for Protruding Head for TL200-TL400 Fasteners      Blue Gage Pin      Protrusion Gauge UDB-755820 Series for TL200-400      Single Flute Tapered Reamer

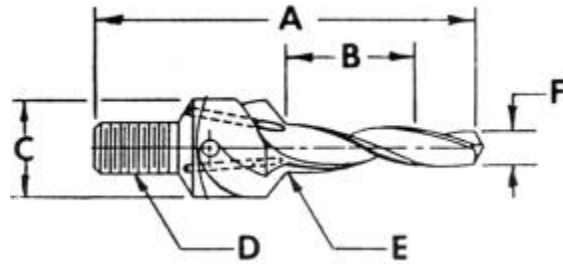


UTLD-2030B      UDB-756072 Series      UDB-755820 GAGE      UDB-755758

**UTLD-2030AR  
Series-Groups 1-2-3**

# Drill Reamers with Coolant Holes for 100° Angle Flush Head in Titanium and Hard Materials

## UTLD-2030AR SERIES



### Taper Lock Flush Head Drill Reamer with 10° Helix Angle

For 100° Angle Head Flush Taper Locks. .250 Taper per foot.  
Special 10° Helix angle. Predrilled hole required for 'F' Pilot Diameter.

Manufactured from High Speed Cobalt.  
Similar to 110C213 and TFIM is 25.0042.

GROUP 1 & NOM FAST R	UNITED PART NO. GROUP 1	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2030AR-1-04	1.625	.500	.490	1/4-28	.025	#30
5/32	UTLD-2030AR-1-05	1.687	.562	.490	1/4-28	.025	#23
3/16	UTLD-2030AR-1-3	2.062	.750	.490	1/4-28	.030	11/64
7/32	UTLD-2030AR-1-07	2.125	.812	.490	1/4-28	.030	13/64
1/4	UTLD-2030AR-1-4	2.687	.875	.677	7/16-20	.030	15/64
5/16	UTLD-2030AR-1-5	2.875	.937	.740	7/16-20	.040	19/64
3/8	UTLD-2030AR-1-6	3.062	1.000	.865	7/16-20	.040	23/64
7/16	UTLD-2030AR-1-7	3.500	1.125	.990	7/16-20	.050	27/64
1/2	UTLD-2030AR-1-8	3.687	1.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2030AR-1-9	5.187	2.000	1.290	5/8-18	.070	17/32
5/8	UTLD-2030AR-1-10	5.500	2.125	1.420	5/8-18	.070	19/32
3/4	UTLD-2030AR-1-12	6.687	2.500	1.600	1"-14	.080	23/32
7/8	UTLD-2030AR-1-14	7.500	3.000	1.850	1"-14	.080	27/32
1"	UTLD-2030AR-1-16	8.062	3.250	2.100	1"-14	.080	31/32

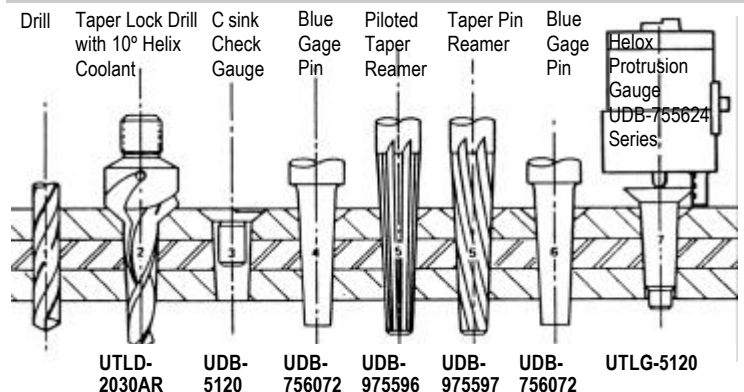
GROUP 2 & NOM FAST R	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2030AR-2-04	1.937	.812	.490	1/4-28	.025	#30
5/32	UTLD-2030AR-2-05	2.062	.937	.490	1/4-28	.025	#23
3/16	UTLD-2030AR-2-3	2.562	1.250	.490	1/4-28	.030	11/64
7/32	UTLD-2030AR-2-07	2.687	1.375	.490	1/4-28	.030	13/64
1/4	UTLD-2030AR-2-4	3.312	1.500	.677	7/16-20	.030	15/64
5/16	UTLD-2030AR-2-5	3.562	1.625	.740	7/16-20	.040	19/64
3/8	UTLD-2030AR-2-6	3.818	1.750	.865	7/16-20	.040	23/64
7/16	UTLD-2030AR-2-7	4.375	2.000	.990	7/16-20	.050	27/64
1/2	UTLD-2030AR-2-8	4.687	2.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2030AR-2-9	6.687	3.500	1.290	5/8-18	.070	17/32
5/8	UTLD-2030AR-2-10	7.125	3.750	1.420	5/8-18	.070	19/32
3/4	UTLD-2030AR-2-12	8.562	4.375	1.600	1"-14	.080	23/32
7/8	UTLD-2030AR-2-14	9.750	5.250	1.850	1"-14	.080	27/32
1"	UTLD-2030AR-2-16	10.562	5.750	2.100	1"-14	.080	31/32

### SEQUENCE FOR TWO STEP DRILL/REAM USING POSITIVE FEED EQUIPMENT AND DRILL BAR IN TITANIUM FOR FLUSH FASTENERS.

- STEP 1. PRE-DRILL:** Select drill size from Pre-Drill section.
- STEP 2. TAPER REAM AND COUNTERSINK:** See Taper Lock Equipment pictorial page for cutter selection.
- STEP 3. COUNTERSINK DIAMETER CHECK:** For normal surfaces, use Uni-Lock Countersink Gage, and for normal or inclined surfaces, use UDB 756340 Series. See Gage Selection chart for gage. See appropriate Taper Ream Equipment section for countersink diameters.
- STEP 4. BEARING PROBE:** Use UDB 756072 Series. See Bearing Check section for applicable values, based on fastener size and group.
- STEP 5. HAND REAMING:** Finish ream tapered holes by hand reaming with multi-fluted tapered reamer. When hand reaming, alternate straight and spiral fluted reamers to prevent rifling.
- STEP 6. BEARING PROBE:** See Step 4.
- STEP 7. PROTRUSION CHECK:** For TL100 Series, use UDB 755624 Series for inclined surfaces, or scale according to values listed in Protrusion Gage section.

GROUP 3 & NOM FAST R	UNITED PART NO. GROUP 3	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2030AR-3-04	2.250	1.125	.490	1/4-28	.025	#30
5/32	UTLD-2030AR-3-05	2.437	1.312	.490	1/4-28	.025	#23
3/16	UTLD-2030AR-3-3	3.062	1.750	.490	1/4-28	.030	11/64
7/32	UTLD-2030AR-3-07	3.250	1.937	.490	1/4-28	.030	13/64
1/4	UTLD-2030AR-3-4	3.937	2.125	.677	7/16-20	.030	15/64
5/16	UTLD-2030AR-3-5	4.250	2.312	.740	7/16-20	.040	19/64
3/8	UTLD-2030AR-3-6	4.562	2.500	.865	7/16-20	.040	23/64
7/16	UTLD-2030AR-3-7	5.250	2.875	.990	7/16-20	.050	27/64
1/2	UTLD-2030AR-3-8	5.687	3.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2030AR-3-9	8.187	5.000	1.290	5/8-18	.070	17/32
5/8	UTLD-2030AR-3-10	8.750	5.375	1.420	5/8-18	.070	19/32
3/4	UTLD-2030AR-3-12	10.437	6.250	1.600	1"-14	.080	23/32
7/8	UTLD-2030AR-3-14	12.000	7.500	1.850	1"-14	.080	27/32
1"	UTLD-2030AR-3-16	13.062	8.250	2.100	1"-14	.080	31/32

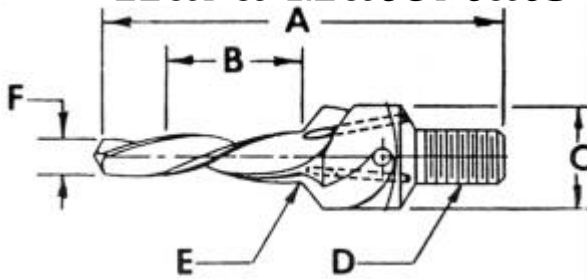
### TAPER LOCK HOLE PREPARATION



# Drill Reamers with Coolant Holes for 100° Angle Flush Head in Titanium and Hard Materials

**UTLD-2030AR  
Series-Groups 4-5-6**

## UTLD-2030AR SERIES



**Taper Lock Flush Head Drill Reamer**

Manufactured from High Speed Cobalt. Similar to 110C213 and TFIM is 25.0042.

**For 100° Angle Head Flush Taper Locks. .250 Taper per foot. Special 10° Helix angle. Predrilled hole required for 'F' Pilot Diameter. Coolant Ports provided. Produces excellent finish!**

GROUP 4 & NOM FAST R	UNITED PART NO. GROUP 4	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2030AR-4-04	2.250	1.125	.490	1/4-28	.025	#30
5/32	UTLD-2030AR-4-05	2.437	1.312	.490	1/4-28	.025	#23
3/16	UTLD-2030AR-4-3	3.062	1.750	.490	1/4-28	.030	3/16
7/32	UTLD-2030AR-4-07	3.250	1.937	.490	1/4-28	.030	13/64
1/4	UTLD-2030AR-4-4	3.937	2.125	.677	7/16-20	.030	15/64
5/16	UTLD-2030AR-4-5	4.250	2.312	.740	7/16-20	.040	19/64
3/8	UTLD-2030AR-4-6	4.562	2.500	.865	7/16-20	.040	23/64
7/16	UTLD-2030AR-4-7	5.250	2.875	.990	7/16-20	.050	27/64
1/2	UTLD-2030AR-4-8	5.687	3.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2030AR-4-9	8.187	5.000	1.290	5/8-18	.070	9/16
5/8	UTLD-2030AR-4-10	8.750	5.375	1.420	5/8-18	.070	5/8
3/4	UTLD-2030AR-4-12	10.437	6.250	1.600	1"-14	.080	3/4
7/8	UTLD-2030AR-4-14	12.000	7.500	1.850	1"-14	.080	7/8
1"	UTLD-2030AR-4-16	13.062	8.250	2.100	1"-14	.080	1"

GROUP 5 & NOM FAST R	UNITED PART NO. GROUP 5	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
3/16	UTLD-2030AR-5-3	3.062	1.750	.490	1/4-28	.030	3/16
1/4	UTLD-2030AR-5-4	3.937	2.125	.677	7/16-20	.030	1/4
5/16	UTLD-2030AR-5-5	4.250	2.312	.740	7/16-20	.040	21/64
3/8	UTLD-2030AR-5-6	4.562	2.500	.865	7/16-20	.040	25/64
7/16	UTLD-2030AR-5-7	5.250	2.875	.990	7/16-20	.050	27/64
1/2	UTLD-2030AR-5-8	5.687	3.250	1.115	7/16-20	.050	33/64
9/16	UTLD-2030AR-5-9	8.187	5.000	1.290	5/8-18	.070	19/32
5/8	UTLD-2030AR-5-10	8.750	5.375	1.420	5/8-18	.070	21/32
3/4	UTLD-2030AR-5-12	10.437	6.250	1.600	1"-14	.080	51/64
7/8	UTLD-2030AR-5-14	12.000	7.500	1.850	1"-14	.080	59/64
1"	UTLD-2030AR-5-16	13.062	8.250	2.100	1"-14	.080	1-1/16

GROUP 6 & NOM FAST R	UNITED PART NO. GROUP 6	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
3/16	UTLD-2030AR-6-3	3.062	1.750	.490	1/4-28	.030	3/16
1/4	UTLD-2030AR-6-4	3.937	2.125	.677	7/16-20	.030	1/4
5/16	UTLD-2030AR-6-5	4.250	2.312	.740	7/16-20	.040	21/64
3/8	UTLD-2030AR-6-6	4.562	2.500	.865	7/16-20	.040	25/64
7/16	UTLD-2030AR-6-7	5.250	2.875	.990	7/16-20	.050	27/64
1/2	UTLD-2030AR-6-8	5.687	3.250	1.115	7/16-20	.050	33/64
9/16	UTLD-2030AR-6-9	8.187	5.000	1.290	5/8-18	.070	5/8
5/8	UTLD-2030AR-6-10	8.750	5.375	1.420	5/8-18	.070	11/16
3/4	UTLD-2030AR-6-12	10.437	6.250	1.600	1"-14	.080	53/64
7/8	UTLD-2030AR-6-14	12.000	7.500	1.850	1"-14	.080	31/32
1"	UTLD-2030AR-6-16	13.062	8.250	2.100	1"-14	.080	1-1/8

**SEQUENCE FOR TWO STEP DRILL/REAM USING POSITIVE FEED EQUIPMENT AND DRILL BAR; FLUSH FASTENER, TITANIUM OR ALUMINUM/TITANIUM STRUCTURE**

- STEP 1. **PRE-DRILL:** Select drill size from Pre-Drill section.
- STEP 2. **TAPER REAM AND COUNTERSINK:** See Taper Lock Equipment in this section for cutter selection.
- STEP 3. **COUNTERSINK DIAMETER CHECK:** For normal surfaces, use Uni-Lock Countersink Gage, and for normal or inclined surfaces, use UDB 756340 Series. See Gage Selection chart for gage. See appropriate Taper Lock Equipment in this section for countersink diameters.
- STEP 4. **BEARING PROBE:** Use UDB 756072 Series. See Bearing Check section for applicable values, based on fastener size and group.
- STEP 5. **HAND REAMING:** Finish ream tapered holes by hand reaming with multi-fluted tapered reamer. When hand reaming, alternate straight and spiral fluted reamers to prevent rifling.
- STEP 6. **BEARING PROBE:** See Step 4.
- STEP 7. **PROTRUSION CHECK:** For TL100 Series, use UDB 755624 Series for inclined surfaces, or scale according to values listed in Protrusion Gage section.

**TAPER LOCK HOLE PREPARATION**

