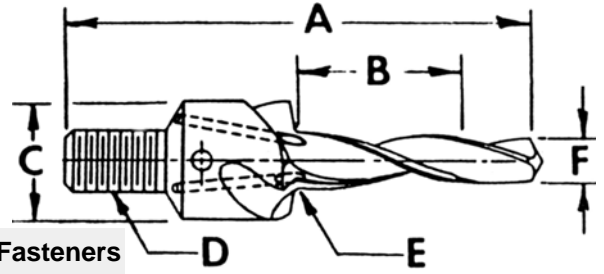


**UTLD-2030BR
Series-Groups 1-2-3**

Drill Reamers with Coolant Hole for Protruding Head and Standard Hole Fasteners

UTLD-2030BR SERIES



Taper Lock Drill Reamer With Coolant Hole for Protruding Head Fasteners

15° Helix. - For Reaming Titanium and Hard Alloys. - Coolant Ports provided. - For Protruding Head Taper Locks. - Pilot Holes required.

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-2030BR-1-04	1.625	.500	.490	1/4-28	.020	#30
5/32	UTLD-2030BR-1-05	1.687	.562	.490	1/4-28	.020	#23
3/16	UTLD-2030BR-1-3	2.062	.750	.490	1/4-28	.025	11/64
7/32	UTLD-2030BR-1-07	2.125	.812	.490	1/4-28	.025	13/64
1/4	UTLD-2030BR-1-4	2.687	.875	.677	7/16-20	.025	15/64
5/16	UTLD-2030BR-1-5	2.875	.937	.740	7/16-20	.030	19/64
3/8	UTLD-2030BR-1-6	3.062	1.000	.865	7/16-20	.030	23/64
7/16	UTLD-2030BR-1-7	3.500	1.125	.890	7/16-20	.040	27/64
1/2	UTLD-2030BR-1-8	3.687	1.250	1.115	7/16-20	.040	31/64
9/16	UTLD-2030BR-1-9	5.187	2.000	1.290	5/8-18	.073	17/32
5/8	UTLD-2030BR-1-10	5.500	2.125	1.290	5/8-18	.073	19/32
3/4	UTLD-2030BR-1-12	6.687	2.500	1.420	1"-14	.073	23/32
7/8	UTLD-2030BR-1-14	7.500	3.000	1.420	1"-14	.073	27/32
1"	UTLD-2030BR-1-16	8.062	3.250	1.600	1"-14	.073	31/32

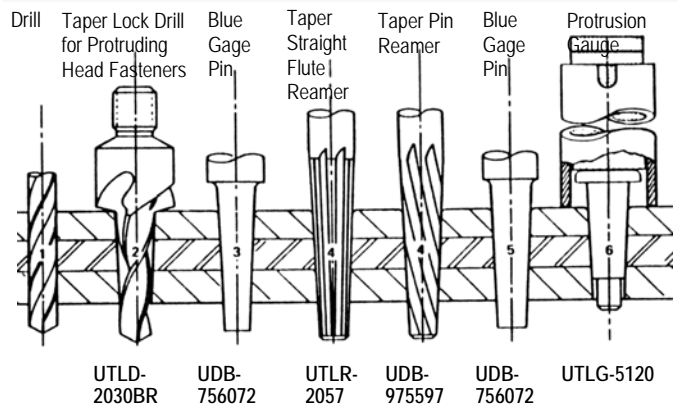
GROUP 2 & NOM FAST'R	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2030BR-2-04	1.937	.812	.490	1/4-28	.020	#30
5/32	UTLD-2030BR-2-05	2.062	.937	.490	1/4-28	.020	#23
3/16	UTLD-2030BR-2-3	2.562	1.250	.490	1/4-28	.025	11/64
7/32	UTLD-2030BR-2-07	2.687	1.375	.490	1/4-28	.025	13/64
1/4	UTLD-2030BR-2-4	3.312	1.500	.677	7/16-20	.025	15/64
5/16	UTLD-2030BR-2-5	3.562	1.625	.740	7/16-20	.030	19/64
3/8	UTLD-2030BR-2-6	3.818	1.750	.865	7/16-20	.030	23/64
7/16	UTLD-2030BR-2-7	4.375	2.000	.990	7/16-20	.040	27/64
1/2	UTLD-2030BR-2-8	4.687	2.250	1.115	7/16-20	.040	31/64
9/16	UTLD-2030BR-2-9	6.687	3.500	1.290	5/8-18	.073	17/32
5/8	UTLD-2030BR-2-10	7.125	3.750	1.290	5/8-18	.073	19/32
3/4	UTLD-2030BR-2-12	8.562	4.375	1.420	1"-14	.073	23/32
7/8	UTLD-2030BR-2-14	9.750	5.250	1.420	1"-14	.073	27/32
1"	UTLD-2030BR-2-16	10.562	5.750	1.600	1"-14	.073	31/32

SEQUENCE FOR TWO STEP DRILL/REAM USING POSITIVE FEED EQUIPMENT AND DRILL BAR; PROTRUDING 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. **BEARING PROBE:** Use UDB 756072 Series. See 'Bearing Check' section for applicable values, based on fastener size and group.
- STEP 4. **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 5. **BEARING PROBE:** See Step 3.
- STEP 6. **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 Gauge' 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-2030BR-3-04	2.250	1.125	.490	1/4-28	.020	#30
5/32	UTLD-2030BR-3-05	2.437	1.312	.490	1/4-28	.020	#23
3/16	UTLD-2030BR-3-3	3.062	1.750	.490	1/4-28	.025	11/64
7/32	UTLD-2030BR-3-07	3.250	1.937	.490	1/4-28	.025	13/64
1/4	UTLD-2030BR-3-4	3.937	2.125	.677	7/16-20	.025	15/64
5/16	UTLD-2030BR-3-5	4.250	2.312	.740	7/16-20	.030	19/64
3/8	UTLD-2030BR-3-6	4.562	2.500	.865	7/16-20	.030	23/64
7/16	UTLD-2030BR-3-7	5.250	2.875	.990	7/16-20	.040	27/64
1/2	UTLD-2030BR-3-8	5.687	3.250	1.115	7/16-20	.040	31/64
9/16	UTLD-2030BR-3-9	8.187	5.000	1.290	5/8-18	.073	17/32
5/8	UTLD-2030BR-3-10	8.750	5.375	1.290	5/8-18	.073	19/32
3/4	UTLD-2030BR-3-12	10.437	6.250	1.420	1"-14	.073	23/32
7/8	UTLD-2030BR-3-14	12.000	7.500	1.420	1"-14	.073	27/32
1"	UTLD-2030BR-3-16	13.062	8.250	1.600	1"-14	.073	31/32

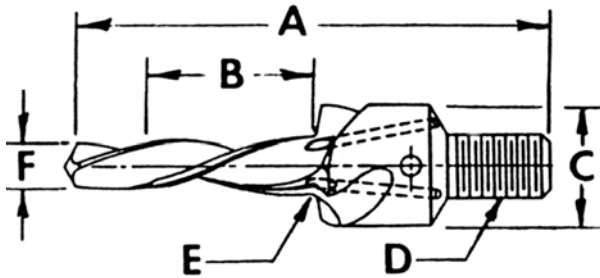
TAPER LOCK HOLE PREPARATION



Drill Reamer for Protruding Head Angle and Slant Hole Taper Lock Fastener

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

**UTLD-2030BR
SERIES**



Taper Lock Drill Reamer for Protruding Head 100° Angle Fasteners

Has 15° Helix Angle. — Designed with Coolant Hole.

Predrilled hole is required to suit 'F' Pilot Diameter — Protruding (Button) Head for drilling/reaming Titanium and Hard Metals.

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-2030BR-4-04	2.250	1.125	.490	1/4-28	.025	#30
5/32	UTLD-2030BR-4-05	2.437	1.312	.490	1/4-28	.025	#23
3/16	UTLD-2030BR-4-3	3.062	1.750	.490	1/4-28	.025	3/16
7/32	UTLD-2030BR-4-07	3.250	1.937	.490	1/4-28	.030	13/64
1/4	UTLD-2030BR-4-4	3.937	2.125	.677	7/16-20	.030	15/64
5/16	UTLD-2030BR-4-5	4.250	2.312	.740	7/16-20	.030	19/64
3/8	UTLD-2030BR-4-6	4.562	2.500	.865	7/16-20	.030	23/64
7/16	UTLD-2030BR-4-7	5.250	2.875	.990	7/16-20	.040	27/64
1/2	UTLD-2030BR-4-8	5.687	3.250	1.115	7/16-20	.040	31/64
9/16	UTLD-2030BR-4-9	8.187	5.000	1.290	5/8-18	.073	9/16
5/8	UTLD-2030BR-4-10	8.750	5.375	1.290	5/8-18	.073	5/8
3/4	UTLD-2030BR-4-12	10.437	6.250	1.420	1"-14	.073	3/4
7/8	UTLD-2030BR-4-14	12.000	7.500	1.420	1"-14	.073	7/8
1"	UTLD-2030BR-4-16	13.062	8.250	1.600	1"-14	.073	1"

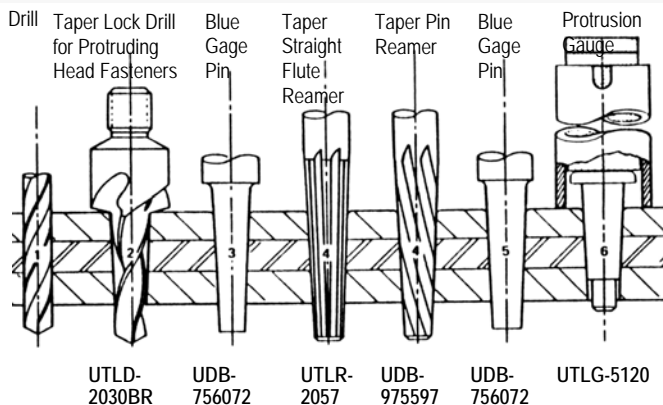
GROUP 5 & NOM FAST'R	UNITED PART NO. GROUP 5	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
3/16	UTLD-2030BR-5-3	3.062	1.750	.553	1/4-28	.025	3/16
1/4	UTLD-2030BR-5-4	3.937	2.125	.677	7/16-20	.025	1/4
5/16	UTLD-2030BR-5-5	4.250	2.312	.740	7/16-20	.030	21/64
3/8	UTLD-2030BR-5-6	4.562	2.500	.865	7/16-20	.030	25/64
7/16	UTLD-2030BR-5-7	5.250	2.875	.990	7/16-20	.040	27/64
1/2	UTLD-2030BR-5-8	5.687	3.250	1.115	7/16-20	.040	33/64
9/16	UTLD-2030BR-5-9	8.187	5.000	1.290	5/8-18	.073	19/32
5/8	UTLD-2030BR-5-10	8.750	5.375	1.290	5/8-18	.073	21/32
3/4	UTLD-2030BR-5-12	10.437	6.250	1.420	1"-14	.073	51/64
7/8	UTLD-2030BR-5-14	12.000	7.500	1.420	1"-14	.073	59/64
1"	UTLD-2030BR-5-16	13.062	8.250	1.600	1"-14	.073	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-2030BR-6-3	3.062	1.750	.553	1/4-28	.025	3/16
1/4	UTLD-2030BR-6-4	3.937	2.125	.677	7/16-20	.025	1/4
5/16	UTLD-2030BR-6-5	4.250	2.312	.740	7/16-20	.030	21/64
3/8	UTLD-2030BR-6-6	4.562	2.500	.865	7/16-20	.030	25/64
7/16	UTLD-2030BR-6-7	5.250	2.875	.990	7/16-20	.040	27/64
1/2	UTLD-2030BR-6-8	5.687	3.250	1.115	7/16-20	.040	33/64
9/16	UTLD-2030BR-6-9	8.187	5.000	1.290	5/8-18	.073	5/8
5/8	UTLD-2030BR-6-10	8.750	5.375	1.290	5/8-18	.073	11/16
3/4	UTLD-2030BR-6-12	10.437	6.250	1.420	1"-14	.073	53/64
7/8	UTLD-2030BR-6-14	12.000	7.500	1.420	1"-14	.073	31/32
1"	UTLD-2030BR-6-16	13.062	8.250	1.600	1"-14	.073	1-1/8

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

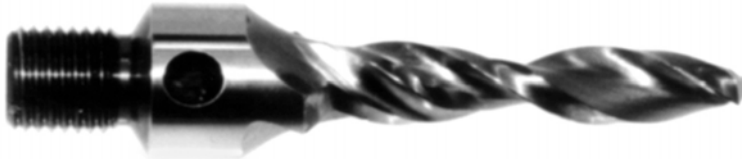
- STEP 1. PRE-DRILL:** Select drill size from 'Pre-Drill' section.
- STEP 2. TAPER REAM AND COUNTERSINK:** See 'Taper Lock Equipment' in this section for cutter selection.
- STEP 3. BEARING PROBE:** Use UDB 756072 Series. See 'Bearing Check' section for applicable values, based on fastener size and group.
- STEP 4. 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 5. BEARING PROBE:** See Step 3.
- STEP 6. 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.

TAPER LOCK HOLE PREPARATION



**UTLD-2040A
Series-Groups 1-2**

**UTLD-2040A
SERIES**

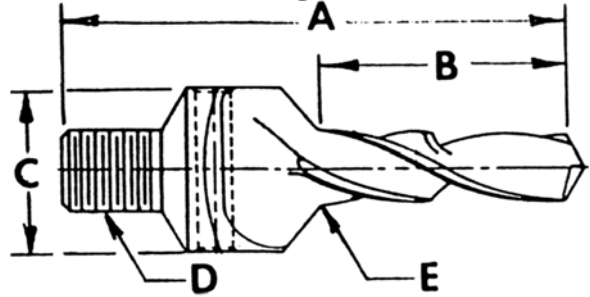


Taper Lock for drilling Aluminum and Soft Materials

**For drilling Flush Head Fasteners.
"Envelop Dimensions Only" charted.
.250" Taper per foot.
"One Shot" Application.
No Pilot Holes required.**

**For TL100 and TL300 angle head flush Taper Locks.
For Drilling Aluminum Alloys**

Drill for Installation of TL100 & TL300 Flush Head for Holes in Aluminum 35° Helix Angle



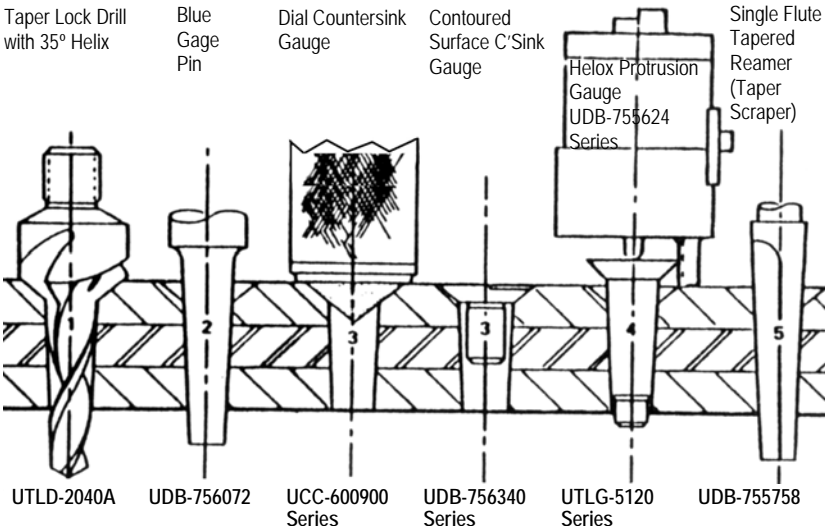
**Material is M-7 HS Tool Steel.
Does not have coolant holes.**

**Used with Positive Feed Drill Units, Drivematic
Drill Presses and Countersink Micro Stops.
Use with UDB-122023 - 122018 Series Micro
Countersink Super Stops.
35° Helix Angle**

GROUP 1 & NOM FAST'R	UNITED PART NO. GROUP 1	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS
1/8	UTLD-2040A-1-04	1.593	.718	.365	1/4-28	.025
5/32	UTLD-2040A-1-05	1.605	.731	.365	1/4-28	.025
3/16	UTLD-2040A-1-3	1.781	.906	.490	1/4-28	.030
7/32	UTLD-2040A-1-07	1.906	1.031	.490	1/4-28	.030
1/4	UTLD-2040A-1-4	2.000	1.125	.553	1/4-28	.030
5/16	UTLD-2040A-1-5	2.562	1.250	.740	7/16-20	.040
3/8	UTLD-2040A-1-6	2.625	1.312	.865	7/16-20	.040
7/16	UTLD-2040A-1-7	3.250	1.750	.990	7/16-20	.050
1/2	UTLD-2040A-1-8	3.500	2.000	1.115	7/16-20	.050
9/16	UTLD-2040A-1-9	5.062	2.812	1.290	5/8-18	.070
5/8	UTLD-2040A-1-10	5.437	3.062	1.420	5/8-18	.070
3/4	UTLD-2040A-1-12	6.500	3.500	1.600	1"-14	.080
7/8	UTLD-2040A-1-14	7.187	4.062	1.850	1"-14	.080
1"	UTLD-2040A-1-16	7.875	4.625	2.100	1"-14	.080

GROUP 2 & NOM FAST'R	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS
1/8	UTLD-2040A-2-04	1.968	1.093	.365	1/4-28	.025
5/32	UTLD-2040A-2-05	1.980	1.106	.365	1/4-28	.025
3/16	UTLD-2040A-2-3	2.250	1.375	.490	1/4-28	.030
7/32	UTLD-2040A-2-07	2.467	1.593	.490	1/4-28	.030
1/4	UTLD-2040A-2-4	3.000	1.687	.615	7/16-20	.030
5/16	UTLD-2040A-2-5	3.187	1.875	.740	7/16-20	.040
3/8	UTLD-2040A-2-6	3.375	2.062	.865	7/16-20	.040
7/16	UTLD-2040A-2-7	4.125	2.625	.990	7/16-20	.050
1/2	UTLD-2040A-2-8	4.500	3.000	1.115	7/16-20	.050
9/16	UTLD-2040A-2-9	6.687	4.437	1.290	5/8-18	.070
5/8	UTLD-2040A-2-10	7.250	4.875	1.420	5/8-18	.070
3/4	UTLD-2040A-2-12	8.562	5.562	1.600	1"-14	.080
7/8	UTLD-2040A-2-14	9.812	6.687	1.850	1"-14	.080
1"	UTLD-2040A-2-16	10.625	7.375	2.100	1"-14	.080

TAPER LOCK HOLE PREPARATION



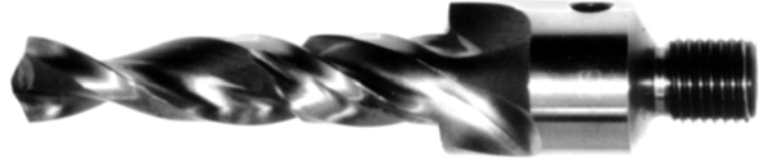
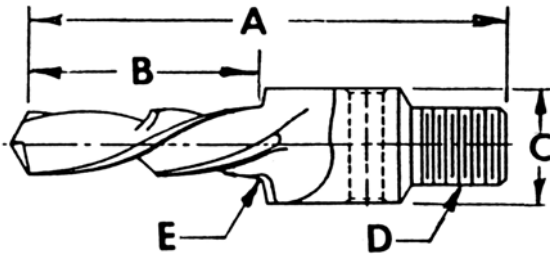
SEQUENCE FOR USING ONE SHOT POSITIVE FEED EQUIPMENT AND DRILL BARS—for FLUSH HEAD TAPER LOCKS:

- STEP 1. **DRILL/COUNTERSINK:** Select proper tools from 'Taper Lock Equipment' in this 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 Lock Equipment' and countersink diameters.
- STEP 4. **PROTRUSION CHECK:** For TL100 Series, use UDB 755624 Series for inclined surfaces or values listed in 'Protrusion Gage' 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.

Drill for Installation of TL200 & TL400 Protruding Head Bolts

**UTLD-2040B
Series-Groups 1-2**

**UTLD-2040B
SERIES**



For drilling Protruding (Button) Head Fasteners.

"Envelop Dimensions Only" charted.

.250" Taper per foot.

"One Shot" Application.

No Pilot Holes required.

For TL200 and TL400 angle protruding head Taper Locks.

For Drilling Aluminum Alloys.

Material is M-7 HS Tool Steel.

Does not have coolant holes.

Used with Positive Feed Drill Units, Drivematic Drill parts, Drill Presses and Countersink Micro Stops.

Use with UDB-122023 - 122018 Series Micro

Countersink Super Stops.

35° Helix Angle.

GROUP 1 & NOM FAST'R SIZE	UNITED PART NO. GROUP 1	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS
1/8	UTLD-2040B-1-04	1.593	.718	.365	1/4-28	.020
5/32	UTLD-2040B-1-05	1.605	.731	.365	1/4-28	.020
3/16	UTLD-2040B-1-3	1.812	.937	.490	1/4-28	.025
7/32	UTLD-2040B-1-07	1.906	1.031	.490	1/4-28	.025
1/4	UTLD-2040B-1-4	2.000	1.125	.553	1/4-28	.025
5/16	UTLD-2040B-1-5	2.562	1.250	.615	7/16-20	.030
3/8	UTLD-2040B-1-6	2.625	1.312	.615	7/16-20	.030
7/16	UTLD-2040B-1-7	3.250	1.750	.615	7/16-20	.040
1/2	UTLD-2040B-1-8	3.500	2.000	.678	7/16-20	.040
9/16	UTLD-2040B-1-9	5.062	2.812	.980	5/8-18	.073
5/8	UTLD-2040B-1-10	5.437	3.062	1.100	5/8-18	.073
3/4	UTLD-2040B-1-12	6.500	3.500	1.420	1"-14	.073
7/8	UTLD-2040B-1-14	7.187	4.062	1.420	1"-14	.073
1"	UTLD-2040B-1-16	7.875	4.625	1.600	1"-14	.073

GROUP 2 & NOM FAST'R SIZE	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS
1/8	UTLD-2040B-2-04	1.968	1.093	.365	1/4-28	.020
5/32	UTLD-2040B-2-05	1.980	1.106	.365	1/4-28	.020
3/16	UTLD-2040B-2-3	2.250	1.375	.490	1/4-28	.025
7/32	UTLD-2040B-2-07	2.467	1.593	.490	1/4-28	.025
1/4	UTLD-2040B-2-4	3.000	1.687	.553	1/4-28	.025
5/16	UTLD-2040B-2-5	3.187	1.875	.615	7/16-20	.030
3/8	UTLD-2040B-2-6	3.375	2.062	.615	7/16-20	.030
7/16	UTLD-2040B-2-7	4.125	2.625	.615	7/16-20	.040
1/2	UTLD-2040B-2-8	4.500	3.000	.678	7/16-20	.040
9/16	UTLD-2040B-2-9	6.687	4.437	.980	5/8-18	.073
5/8	UTLD-2040B-2-10	7.250	4.875	1.100	5/8-18	.073
3/4	UTLD-2040B-2-12	8.562	5.562	1.420	1"-14	.073
7/8	UTLD-2040B-2-14	9.812	6.687	1.420	1"-14	.073
1"	UTLD-2040B-2-16	10.625	7.375	1.600	1"-14	.073

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' in this section.

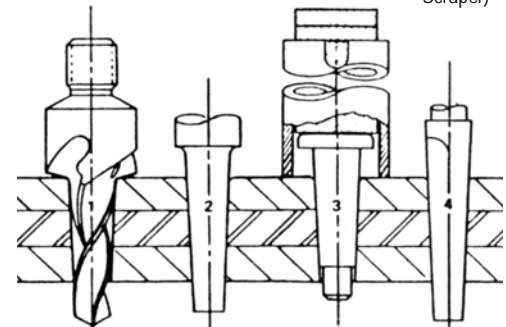
STEP 2. **BEARING PROBE:** Use UDB 756072 Series. See 'Gage' section for applicable probe, based on fastener size and group.

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 (Taper Scraper)

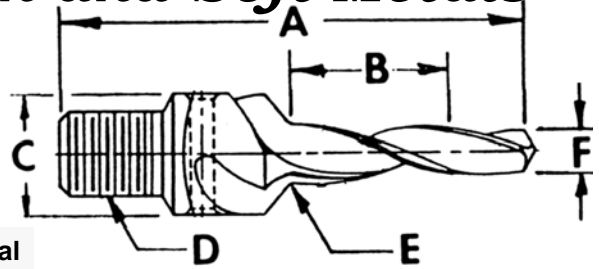


UTLD-2040B UDB-756072 UDB-755820 UDB-755758

**UTLD-2040AR
Series-Groups 1-2-3**

Drill Reamer for Installation of TL100 & TL300 Flush Angle Head for Holes in Aluminum and Soft Metals

UTLD-2040AR SERIES



Taper Lock Drill Reamer for Flush Head Fasteners in Soft Material

Produces a finer finish than UTLD-2040A. Pilot hole required. 20° Helix Angle. Mfg'd from M-7 High Speed Tool Steel. Has no oil holes.

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-2040AR-1-04	1.625	.500	.365	1/4-28	.025	#30
5/32	UTLD-2040AR-1-05	1.687	.562	.365	1/4-28	.025	#23
3/16	UTLD-2040AR-1-3	2.062	.750	.490	1/4-28	.030	11/64
7/32	UTLD-2040AR-1-07	2.125	.812	.490	1/4-28	.030	13/64
1/4	UTLD-2040AR-1-4	2.250	.875	.553	1/4-28	.030	15/64
5/16	UTLD-2040AR-1-5	2.875	.937	.740	7/16-20	.040	19/64
3/8	UTLD-2040AR-1-6	3.062	1.000	.865	7/16-20	.040	23/64
7/16	UTLD-2040AR-1-7	3.500	1.125	.990	7/16-20	.050	27/64
1/2	UTLD-2040AR-1-8	3.687	1.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2040AR-1-9	4.937	1.750	1.290	5/8-18	.070	35/64
5/8	UTLD-2040AR-1-10	5.250	1.875	1.420	5/8-18	.070	39/64
3/4	UTLD-2040AR-1-12	6.312	2.125	1.600	1"-14	.080	47/64
7/8	UTLD-2040AR-1-14	7.000	2.500	1.850	1"-14	.080	55/64
1"	UTLD-2040AR-1-16	7.562	2.750	2.100	1"-14	.080	63/64

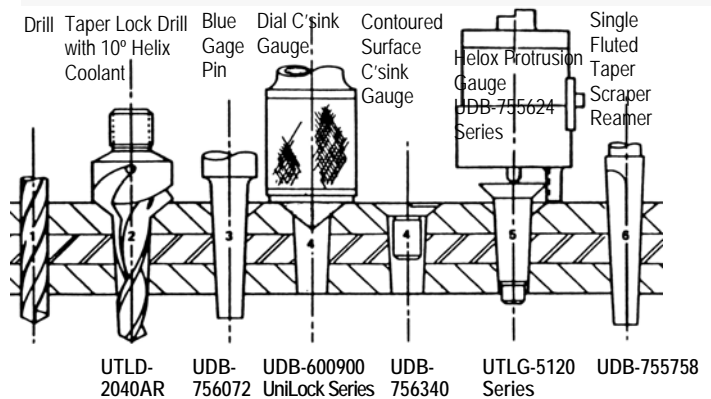
GROUP 2 & NOM FAST'R	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2040AR-2-04	1.937	.812	.365	1/4-28	.025	#30
5/32	UTLD-2040AR-2-05	2.062	.937	.365	1/4-28	.025	#23
3/16	UTLD-2040AR-2-3	2.562	1.250	.490	1/4-28	.030	11/64
7/32	UTLD-2040AR-2-07	2.687	1.375	.490	1/4-28	.030	13/64
1/4	UTLD-2040AR-2-4	3.312	1.500	.615	7/16-20	.030	15/64
5/16	UTLD-2040AR-2-5	3.562	1.625	.740	7/16-20	.040	19/64
3/8	UTLD-2040AR-2-6	3.812	1.750	.865	7/16-20	.040	23/64
7/16	UTLD-2040AR-2-7	4.375	2.000	.990	7/16-20	.050	27/64
1/2	UTLD-2040AR-2-8	4.687	2.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2040AR-2-9	6.437	3.250	1.290	5/8-18	.070	35/64
5/8	UTLD-2040AR-2-10	6.875	3.500	1.420	5/8-18	.070	39/64
3/4	UTLD-2040AR-2-12	8.187	4.000	1.600	1"-14	.080	47/64
7/8	UTLD-2040AR-2-14	9.250	4.750	1.850	1"-14	.080	55/64
1"	UTLD-2040AR-2-16	10.062	5.250	2.100	1"-14	.080	63/64

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

- STEP 1. **PRE-DRILL:** Select drill size from 'Pre-Drill' section.
- STEP 2. **TAPER REAM:** See 'Taper Lock Equipment' in this section for cutter selection.
- STEP 3. **BEARING PROBE:** See 'Bearing Check' section for applicable probe.
- STEP 4. **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 proper gage. See 'Taper Lock Equipment' section for countersink diameters.
- STEP 5. **PROTRUSION CHECK:** For TL100 Series, use UDB 755624 Series for inclined surfaces, or scale according to values listed in 'Protrusion Gage' section.
- STEP 6. **TAPER SCRAPE HOLE:** If necessary, use UDB 755758 Series. See section for 'Re-Work of Straight Holes to Taper Lock' for appropriate Taper Scraper. Protrusion and bearing check must be made after this operation.

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-2040AR-3-04	2.250	1.125	.365	1/4-28	.025	#30
5/32	UTLD-2040AR-3-05	2.437	1.312	.365	1/4-28	.025	#23
3/16	UTLD-2040AR-3-3	3.062	1.750	.490	1/4-28	.030	11/64
7/32	UTLD-2040AR-3-07	3.250	1.937	.490	1/4-28	.030	13/64
1/4	UTLD-2040AR-3-4	3.937	2.125	.615	7/16-20	.030	15/64
5/16	UTLD-2040AR-3-5	4.250	2.312	.740	7/16-20	.040	19/64
3/8	UTLD-2040AR-3-6	4.562	2.500	.865	7/16-20	.040	23/64
7/16	UTLD-2040AR-3-7	5.250	2.875	.990	7/16-20	.050	27/64
1/2	UTLD-2040AR-3-8	5.687	3.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2040AR-3-9	7.937	4.750	1.290	5/8-18	.070	35/64
5/8	UTLD-2040AR-3-10	8.500	5.125	1.420	5/8-18	.070	39/64
3/4	UTLD-2040AR-3-12	10.062	5.875	1.600	1"-14	.080	47/64
7/8	UTLD-2040AR-3-14	11.500	7.000	1.850	1"-14	.080	55/64
1"	UTLD-2040AR-3-16	12.562	7.750	2.100	1"-14	.080	63/64

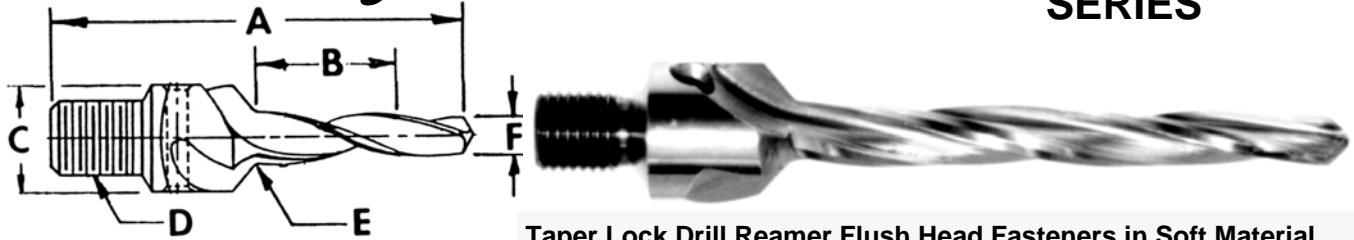
TAPER LOCK HOLE PREPARATION



Drill Reamer for Installation on TL100 & TL300 Flush Head for Holes in Aluminum and Soft Metals

**UTLD-2040AR
Series-Groups 4-5-6**

**UTLD-2040AR
SERIES**



Taper Lock Drill Reamer Flush Head Fasteners in Soft Material

Produces a finer finish than UTLD-2040A. Tool has a 20° Helix Angle. Pilot hole required and a standard finished Taper Lock hole is produced. Manufactured from M-7 High Speed Tool Steel. Does not have oil holes.

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-2040AR-4-04	2.250	1.125	.365	1/4-28	.025	#30
5/32	UTLD-2040AR-4-05	2.437	1.312	.365	1/4-28	.025	#23
3/16	UTLD-2040AR-4-3	3.062	1.750	.490	1/4-28	.030	3/16
7/32	UTLD-2040AR-4-07	3.250	1.937	.490	1/4-28	.030	13/64
1/4	UTLD-2040AR-4-4	3.937	2.125	.615	7/16-20	.030	15/64
5/16	UTLD-2040AR-4-5	4.250	2.312	.740	7/16-20	.040	19/64
3/8	UTLD-2040AR-4-6	4.562	2.500	.865	7/16-20	.040	23/64
7/16	UTLD-2040AR-4-7	5.250	2.875	.990	7/16-20	.050	27/64
1/2	UTLD-2040AR-4-8	5.687	3.250	1.115	7/16-20	.050	31/64
9/16	UTLD-2040AR-4-9	7.937	4.750	1.290	5/8-18	.070	9/16
5/8	UTLD-2040AR-4-10	8.500	5.125	1.420	5/8-18	.070	41/64
3/4	UTLD-2040AR-4-12	10.062	5.875	1.600	1"-14	.080	43/64
7/8	UTLD-2040AR-4-14	11.500	7.000	1.850	1"-14	.080	29/32
1"	UTLD-2040AR-4-16	12.562	7.750	2.100	1"-14	.080	1-1/32

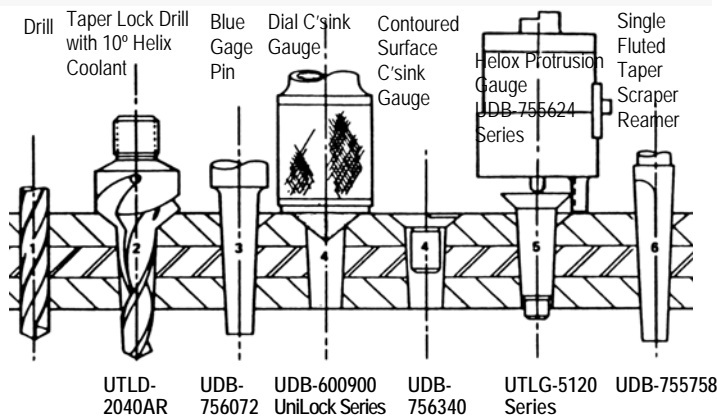
GROUP 5 & NOM FAST'R	UNITED PART NO. GROUP 5	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
3/16	UTLD-2040AR-5-3	3.500	1.750	.615	7/16-20	.030	3/16
1/4	UTLD-2040AR-5-4	3.937	2.125	.615	7/16-20	.030	1/4
5/16	UTLD-2040AR-5-5	4.250	2.312	.740	7/16-20	.040	21/64
3/8	UTLD-2040AR-5-6	4.562	2.500	.865	7/16-20	.040	25/64
7/16	UTLD-2040AR-5-7	5.250	2.875	1.050	7/16-20	.050	27/64
1/2	UTLD-2040AR-5-8	5.687	3.250	1.150	7/16-20	.050	33/64
9/16	UTLD-2040AR-5-9	7.937	4.750	1.375	5/8-18	.070	39/64
5/8	UTLD-2040AR-5-10	8.500	5.125	1.500	5/8-18	.070	43/64
3/4	UTLD-2040AR-5-12	10.062	5.875	1.715	1"-14	.080	51/64
7/8	UTLD-2040AR-5-14	11.500	7.000	1.950	1"-14	.080	15/16
1"	UTLD-2040AR-5-16	12.562	7.750	2.160	1"-14	.080	1-5/64

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-2040AR-6-3	3.500	1.750	.615	7/16-20	.030	3/16
1/4	UTLD-2040AR-6-4	3.937	2.125	.615	7/16-20	.030	1/4
5/16	UTLD-2040AR-6-5	4.250	2.312	.740	7/16-20	.040	21/64
3/8	UTLD-2040AR-6-6	4.562	2.500	.865	7/16-20	.040	25/64
7/16	UTLD-2040AR-6-7	5.250	2.875	1.050	7/16-20	.050	27/64
1/2	UTLD-2040AR-6-8	5.687	3.250	1.150	7/16-20	.050	33/64
9/16	UTLD-2040AR-6-9	7.937	4.750	1.375	5/8-18	.070	41/64
5/8	UTLD-2040AR-6-10	8.500	5.125	1.500	5/8-18	.070	45/64
3/4	UTLD-2040AR-6-12	10.062	5.875	1.715	1"-14	.080	27/32
7/8	UTLD-2040AR-6-14	11.500	7.000	1.950	1"-14	.080	63/64
1"	UTLD-2040AR-6-16	12.562	7.750	2.160	1"-14	.080	1-1/8

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

- STEP 1. **PRE-DRILL:** Select drill size from 'Pre-Drill' section.
- STEP 2. **TAPER REAM:** See 'Taper Lock Equipment' in this section for cutter selection.
- STEP 3. **BEARING PROBE:** See 'Bearing Check' section for applicable probe.
- STEP 4. **COUNTERSINK DIAMETER CHECK:** For normal surfaces, use UniLock Countersink Gage, and for normal or inclined surfaces, use UDB 756340 Series. See 'Gage Selection' chart for proper gage. See 'Taper Lock Equipment' section for countersink diameters.
- STEP 5. **PROTRUSION CHECK:** For TL100 Series, use UDB 755624 Series for inclined surfaces, or scale according to values listed in 'Protrusion Gage' section.
- STEP 6. **TAPER SCRAPE HOLE:** If necessary, use UDB 755758 Series. See section for 'Re-Work of Straight Holes to Taper Lock' for appropriate Taper Scraper. Protrusion and bearing check must be made after this operation.

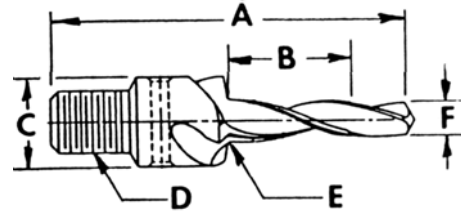
TAPER LOCK HOLE PREPARATION



**UTLD-2040BR
Series-Groups 1-2-3**

Drill Reamer for Installation of TL200 & TL400 Protruding Head for Holes in Aluminum and Soft Metals

**UTLD-2040BR
SERIES**



Taper Lock Drill Reamer for Protruding Head Fasteners in Soft Material

Produces a finer finish than UTLD-2040B. Pilot hole required. — 20° Helix Angle. — Manufactured from M-7 High Speed Tool Steel.

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-2040BR-1-04	1.625	.500	.365	1/4-28	.020	#30
5/32	UTLD-2040BR-1-05	1.687	.562	.365	1/4-28	.020	#23
3/16	UTLD-2040BR-1-3	2.062	.750	.490	1/4-28	.025	11/64
7/32	UTLD-2040BR-1-07	2.125	.812	.490	1/4-28	.025	13/64
1/4	UTLD-2040BR-1-4	2.250	.875	.553	1/4-28	.025	15/64
5/16	UTLD-2040BR-1-5	2.875	.937	.615	7/16-20	.030	19/64
3/8	UTLD-2040BR-1-6	3.062	1.000	.615	7/16-20	.030	23/64
7/16	UTLD-2040BR-1-7	3.500	1.125	.615	7/16-20	.040	27/64
1/2	UTLD-2040BR-1-8	3.687	1.250	.678	7/16-20	.040	31/64
9/16	UTLD-2040BR-1-9	4.937	1.750	.980	5/8-18	.073	35/64
5/8	UTLD-2040BR-1-10	5.250	1.875	1.100	5/8-18	.073	39/64
3/4	UTLD-2040BR-1-12	6.312	2.125	1.420	1"-14	.073	47/64
7/8	UTLD-2040BR-1-14	7.000	2.500	1.420	1"-14	.073	55/64
1"	UTLD-2040BR-1-16	7.562	2.750	1.600	1"-14	.073	63/64

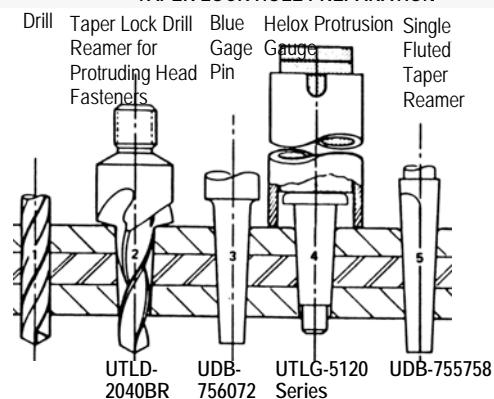
GROUP 2 & NOM FAST'R	UNITED PART NO. GROUP 2	A OVERALL LENGTH	B FLUTE LENGTH	C BODY DIA	D THD	E FILLET RADIUS	F PILOT DIA
1/8	UTLD-2040BR-2-04	1.937	.812	.365	1/4-28	.020	#30
5/32	UTLD-2040BR-2-05	2.062	.937	.365	1/4-28	.020	#23
3/16	UTLD-2040BR-2-3	2.562	1.250	.490	1/4-28	.025	11/64
7/32	UTLD-2040BR-2-07	2.687	1.375	.490	1/4-28	.025	13/64
1/4	UTLD-2040BR-2-4	3.312	1.500	.615	7/16-20	.025	15/64
5/16	UTLD-2040BR-2-5	3.562	1.625	.615	7/16-20	.030	19/64
3/8	UTLD-2040BR-2-6	3.812	1.750	.615	7/16-20	.030	23/64
7/16	UTLD-2040BR-2-7	4.375	2.000	.615	7/16-20	.040	27/64
1/2	UTLD-2040BR-2-8	4.687	2.250	.678	7/16-20	.040	31/64
9/16	UTLD-2040BR-2-9	6.437	3.250	.980	5/8-18	.073	35/64
5/8	UTLD-2040BR-2-10	6.875	3.500	1.100	5/8-18	.073	39/64
3/4	UTLD-2040BR-2-12	8.187	4.000	1.420	1"-14	.073	47/64
7/8	UTLD-2040BR-2-14	9.250	4.750	1.420	1"-14	.073	55/64
1"	UTLD-2040BR-2-16	10.062	5.250	1.600	1"-14	.073	63/64

SEQUENCE FOR TWO STEP DRILL/REAM USING POSITIVE FEED EQUIPMENT AND DRILL BAR; PROTRUDING FASTENER, ALUMINUM STRUCTURE

- STEP 1. PRE-DRILL:** Select drill size from 'Pre-Drill' section.
- STEP 2. TAPER REAM:** See 'Taper Lock Equipment' in this section for cutter selection.
- STEP 3. BEARING PROBE:** Use UDB 756072 Series, or select applicable tool from 'Gage' section, based on fastener size and group.
- STEP 4. 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 5. TAPER SCRAPE HOLE:** If necessary, use UDB 755758 Series single flute scraper. Protrusion and bearing check must be made after this operation.

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-2040BR-3-04	2.250	1.125	.365	1/4-28	.020	#30
5/32	UTLD-2040BR-3-05	2.437	1.312	.365	1/4-28	.020	#23
3/16	UTLD-2040BR-3-3	3.062	1.750	.490	1/4-28	.025	11/64
7/32	UTLD-2040BR-3-07	3.250	1.937	.490	1/4-28	.025	13/64
1/4	UTLD-2040BR-3-4	3.937	2.125	.615	7/16-20	.025	15/64
5/16	UTLD-2040BR-3-5	4.250	2.312	.615	7/16-20	.030	19/64
3/8	UTLD-2040BR-3-6	4.562	2.500	.615	7/16-20	.030	23/64
7/16	UTLD-2040BR-3-7	5.250	2.875	.615	7/16-20	.040	27/64
1/2	UTLD-2040BR-3-8	5.687	3.250	.678	7/16-20	.040	31/64
9/16	UTLD-2040BR-3-9	7.937	4.750	.980	5/8-18	.073	35/64
5/8	UTLD-2040BR-3-10	8.500	5.125	1.100	5/8-18	.073	39/64
3/4	UTLD-2040BR-3-12	10.062	5.875	1.420	1"-14	.073	47/64
7/8	UTLD-2040BR-3-14	11.500	7.000	1.420	1"-14	.073	55/64
1"	UTLD-2040BR-3-16	12.562	7.750	1.600	1"-14	.073	63/64

TAPER LOCK HOLE PREPARATION



Drill Reamer for Installation on TL200 & TL400 Protruding Head for Holes in Aluminum and Soft Metals

**UTLD-2040BR
Series-Groups 4-5-6**

**UTLD-2040BR
SERIES**



Taper Lock Drill Reamer for Protruding Head Fasteners in Soft Material

**Produces a finer finish than UTLD-2040B. Tool has a 20° Helix Angle.
Pilot hole required and a standard finished Taper Lock hole is produced.
Manufactured from M-7 High Speed Tool Steel. .250 Taper per foot.**

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-2040BR-4-04	2.250	1.125	.365	1/4-28	.020	#30
5/32	UTLD-2040BR-4-05	2.437	1.312	.365	1/4-28	.020	#23
3/16	UTLD-2040BR-4-3	3.062	1.750	.490	1/4-28	.025	3/16
7/32	UTLD-2040BR-4-07	3.250	1.937	.490	1/4-28	.025	13/64
1/4	UTLD-2040BR-4-4	3.937	2.125	.553	7/16-20	.025	15/64
5/16	UTLD-2040BR-4-5	4.250	2.312	.615	7/16-20	.030	19/64
3/8	UTLD-2040BR-4-6	4.562	2.500	.615	7/16-20	.030	23/64
7/16	UTLD-2040BR-4-7	5.250	2.875	.615	7/16-20	.040	27/64
1/2	UTLD-2040BR-4-8	5.687	3.250	.678	7/16-20	.040	31/64
9/16	UTLD-2040BR-4-9	7.937	4.750	.980	5/8-18	.073	9/16
5/8	UTLD-2040BR-4-10	8.500	5.125	1.100	5/8-18	.073	41/64
3/4	UTLD-2040BR-4-12	10.062	5.875	1.420	1"-14	.073	49/64
7/8	UTLD-2040BR-4-14	11.500	7.000	1.420	1"-14	.073	29/32
1"	UTLD-2040BR-4-16	12.562	7.750	1.600	1"-14	.073	1-1/32

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-2040BR-5-3	3.500	1.750	.615	7/16-20	.025	3/16
1/4	UTLD-2040BR-5-4	3.937	2.125	.615	7/16-20	.025	1/4
5/16	UTLD-2040BR-5-5	4.250	2.312	.615	7/16-20	.030	21/64
3/8	UTLD-2040BR-5-6	4.562	2.500	.615	7/16-20	.030	25/64
7/16	UTLD-2040BR-5-7	5.250	2.875	.615	7/16-20	.040	27/64
1/2	UTLD-2040BR-5-8	5.687	3.250	.678	7/16-20	.040	33/64
9/16	UTLD-2040BR-5-9	7.937	4.750	1.100	5/8-18	.073	39/64
5/8	UTLD-2040BR-5-10	8.500	5.125	1.420	5/8-18	.073	43/64
3/4	UTLD-2040BR-5-12	10.062	5.875	1.600	1"-14	.073	51/64
7/8	UTLD-2040BR-5-14	11.500	7.000	1.600	1"-14	.073	15/16
1"	UTLD-2040BR-5-16	12.562	7.750	1.850	1"-14	.073	1-5/64

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-2040BR-6-3	3.500	1.750	.615	7/16-20	.025	3/16
1/4	UTLD-2040BR-6-4	3.937	2.125	.615	7/16-20	.025	1/4
5/16	UTLD-2040BR-6-5	4.250	2.312	.615	7/16-20	.030	21/64
3/8	UTLD-2040BR-6-6	4.562	2.500	.615	7/16-20	.030	25/64
7/16	UTLD-2040BR-6-7	5.250	2.875	.615	7/16-20	.040	27/64
1/2	UTLD-2040BR-6-8	5.687	3.250	.678	7/16-20	.040	33/64
9/16	UTLD-2040BR-6-9	7.937	4.750	1.100	5/8-18	.073	41/64
5/8	UTLD-2040BR-6-10	8.500	5.125	1.420	5/8-18	.073	45/64
3/4	UTLD-2040BR-6-12	10.062	5.875	1.600	1"-14	.073	27/32
7/8	UTLD-2040BR-6-14	11.500	7.000	1.600	1"-14	.073	63/64
1"	UTLD-2040BR-6-16	12.562	7.750	1.850	1"-14	.073	1-1/8

SEQUENCE FOR TWO STEP DRILL/REAM USING POSITIVE FEED EQUIPMENT AND DRILL BAR; PROTRUDING FASTENER, ALUMINUM STRUCTURE

- STEP 1. PRE-DRILL:** Select drill size from 'Pre-Drill' section.
- STEP 2. TAPER REAM:** See 'Taper Lock Equipment' in this section for cutter selection.
- STEP 3. BEARING PROBE:** Use UDB 756072 Series, or select applicable tool from 'Gage' section, based on fastener size and group.
- STEP 4. 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 5. 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

