

Gauges Complete Taper Lock & Standard Types

Gauges—Standard
and Taper Lock



UNILOCK GAUGES
Pg S32



UNILOCK
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DIGITAL
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ANALOG
CHAMFER
GAUGES IN KITS
Pg S34



DIAL INDICATORS
Pg S24



GAUGE BLOCK
MASTERS Pg S25



GAUGE INSERTS
Pg S25



TAPER LOCK HOLE
GAUGE KITS Pg S2



CHECK
BLOCKS
Pg S24



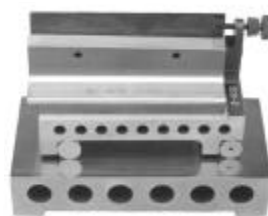
TL FASTENER GUIDE
HANDLES Pg S27



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GAUGES FOR HI-LOK
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TL ANGLE GAUGE PLATE
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COUNTERSINK DEPTH
GAUGES Pg S15

**Master Hole Gauge
Kit – 5/32" thru 7/16"**

Master TAPERLOCK Hole Gauge Kit Grp 1-2

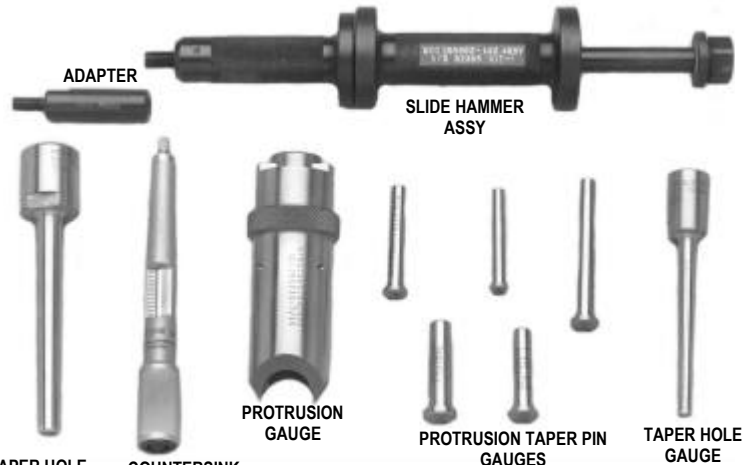
UTK-268002-27-1 KIT, GROUP 1-2

UNITED'S Master Taperlock Hole Gauge Kit contains all of the required gauges and tools to inspect Taperlock holes.

Kit contains all necessary gauging for Protrusion Check, Blueing Pin and Countersink Check for sizes 5/32", 3/16", 1/4", 5/16", 3/8" and 7/16", Group 1 & 2, for both Shear Head and Tension Head Fasteners.



Case UCC 268002-482 is
24" L x 24" W x 5" H Inside RIB 'I' STACK STYLE



CONTENTS

1	UCC 601001	Countersink Gauge, 100°
1	UCC 601001-19	'C' Sink Gauge Check Block
1	UCC 601001-20	Contour Gauge, 100°
1	UCC 601002	Countersink Gauge, 100°
1	UCC 601002-19	'C' Sink Gauge Check Block
1	UCC 601002-20	Contour Gauge, 100°
1	UCC 601003	Countersink Gauge, 100°
1	UCC 601003-19	'C' Sink Gauge Check Block
1	UCC 601003-20	Contour Gauge, 100°
4	UDB 754101	Pin, Protrusion Gauge, Shear Hd., 5/32", Grp. 1
2	UDB 754201	Pin, Protrusion Gauge, Shear Hd., 5/32", Grp. 2
2	UDB 754102	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 1
4	UDB 754202	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 2
6	UDB 754104	Pin, Protrusion Gauge, Shear Hd., 1/4", Grp. 1
3	UDB 754204	Pin, Protrusion Gauge, Shear Hd., 1/4", Grp. 2
3	UDB 754105	Pin, Protrusion Gauge, Shear Hd., 5/16", Grp. 1
2	UDB 754205	Pin, Protrusion Gauge, Shear Hd., 5/16", Grp. 2
3	UDB 754106	Pin, Protrusion Gauge, Shear Hd., 3/8", Grp. 1
2	UDB 754206	Pin, Protrusion Gauge, Shear Hd., 3/8", Grp. 2
2	UDB 754107	Pin, Protrusion Gauge, Shear Hd., 7/16", Grp. 1
4	UDB 755102	Pin, Protrusion Gauge, Tension Hd., 3/16", Grp. 1
4	UDB 755202	Pin, Protrusion Gauge, Tension Hd., 3/16", Grp. 2
6	UDB 755104	Pin, Protrusion Gauge, Tension Hd., 1/4", Grp. 1
3	UDB 755204	Pin, Protrusion Gauge, Tension Hd., 1/4", Grp. 2
3	UDB 755105	Pin, Protrusion Gauge, Tension Hd., 5/16", Grp. 1
2	UDB 755205	Pin, Protrusion Gauge, Tension Hd., 5/16", Grp. 2
1	UDB 755215	Gauge, Protrusion 5/32"
1	UDB 755216	Gauge, Protrusion 3/16"
1	UDB 755218	Gauge, Protrusion 1/4"
1	UDB 755230	Gauge, Protrusion 5/16"

TAPER HOLE
GAUGE

COUNTERSINK
GAUGE

1	UDB 755232	Gauge, Protrusion 3/8"
1	UDB 755234	Gauge, Protrusion 7/16"
2	UDB 756072	Gauge, Taper Hole 5/32"
4	UDB 756076	Gauge, Taper Hole 3/16"
2	UDB 756082	Gauge, Taper Hole 1/4"
2	UDB 756086	Gauge, Taper Hole 5/16"
2	UDB 756090	Gauge, Taper Hole 3/8"
2	UDB 756094	Gauge, Taper Hole 7/16"
1	UDB 755461	Slide Hammer Assembly
1	UDB 755365	Adapter, 9/16"-18 Thread
1	UDB 755366	Adapter, 5/16"-24 Thread
2	UDB 5120-100-1-05	Gauge, C'Sink, 100°, Shear Hd., 5/32", Grp. 1
2	UDB 5120-100-2-05	Gauge, C'Sink, 100°, Shear Hd., 5/32", Grp. 2
4	UDB 5120-100-1-3	Gauge, C'Sink, 100°, Shear Hd., 3/16", Grp. 1
3	UDB 5120-100-2-3	Gauge, C'Sink, 100°, Shear Hd., 3/16", Grp. 2
6	UDB 5120-100-1-4	Gauge, C'Sink, 100°, Shear Hd., 1/4", Grp. 1
3	UDB 5120-100-2-4	Gauge, C'Sink, 100°, Shear Hd., 1/4", Grp. 2
3	UDB 5120-100-1-5	Gauge, C'Sink, 100°, Shear Hd., 5/16", Grp. 1
2	UDB 5120-100-2-5	Gauge, C'Sink, 100°, Shear Hd., 5/16", Grp. 2
3	UDB 5120-100-1-6	Gauge, C'Sink, 100°, Shear Hd., 3/8", Grp. 1
2	UDB 5120-100-2-6	Gauge, C'Sink, 100°, Shear Hd., 3/8", Grp. 2
2	UDB 5120-100-1-7	Gauge, C'Sink, 100°, Shear Hd., 7/16", Grp. 1
4	UDB 5120-300-1-3	Gauge, C'Sink, 100°, Tension Hd., 3/16", Grp. 1
3	UDB 5120-300-2-3	Gauge, C'Sink, 100°, Tension Hd., 3/16", Grp. 2
6	UDB 5120-300-1-4	Gauge, C'Sink, 100°, Tension Hd., 1/4", Grp. 1
3	UDB 5120-300-2-4	Gauge, C'Sink, 100°, Tension Hd., 1/4", Grp. 2
3	UDB 5120-300-1-5	Gauge, C'Sink, 100°, Tension Hd., 5/16", Grp. 1
2	UDB 5120-300-2-5	Gauge, C'Sink, 100°, Tension Hd., 5/16", Grp. 2
1	UCC 268002-482	Rib-I Case, With Foam Inserts

TAPERLOCK Hole Gauge Kit Grp 2-3 and Grp 3-4

Master Hole Gauge
Kit Grp. 2-3 & 3-4

UTK-268002-27-2 KIT, GROUP 2-3

1	UCC 601001	Countersink Gauge, 100°
1	UCC 601001-19	'C' Sink Gauge Check Block
1	UCC 601001-20	Contour Gauge, 100°
1	UCC 601002	Countersink Gauge, 100°
1	UCC 601002-19	'C' Sink Gauge Check Block
1	UCC 601002-20	Contour Gauge, 100°
1	UCC 601003	Countersink Gauge, 100°
1	UCC 601003-19	'C' Sink Gauge Check Block
1	UCC 601003-20	Contour Gauge, 100°
2	UDB 754201	Pin, Protrusion Gauge, Shear Hd., 5/32", Grp. 2
3	UDB 754301	Pin, Protrusion Gauge, Shear Hd., 5/32", Grp. 3
4	UDB 754202	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 2
3	UDB 754302	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 3
3	UDB 754204	Pin, Protrusion Gauge, Shear Hd., 1/4", Grp. 2
3	UDB 754304	Pin, Protrusion Gauge, Shear Hd., 1/4", Grp. 3
2	UDB 754205	Pin, Protrusion Gauge, Shear Hd., 5/16", Grp. 2
2	UDB 754305	Pin, Protrusion Gauge, Shear Hd., 5/16", Grp. 3
2	UDB 754206	Pin, Protrusion Gauge, Shear Hd., 3/8", Grp. 2
2	UDB 754306	Pin, Protrusion Gauge, Shear Hd., 3/8", Grp. 3
2	UDB 754207	Pin, Protrusion Gauge, Shear Hd., 7/16", Grp. 2
3	UDB 755302	Pin, Protrusion Gauge, Tension Hd., 3/16", Grp. 2
3	UDB 755204	Pin, Protrusion Gauge, Tension Hd., 1/4", Grp. 2
3	UDB 755304	Pin, Protrusion Gauge, Tension Hd., 1/4", Grp. 3
2	UDB 755205	Pin, Protrusion Gauge, Tension Hd., 5/16", Grp. 2
2	UDB 755305	Pin, Protrusion Gauge, Tension Hd., 5/16", Grp. 3
1	UDB 755215	Gauge, Protrusion 5/32"
1	UDB 755216	Gauge, Protrusion 3/16"
1	UDB 755218	Gauge, Protrusion 1/4"
1	UDB 755230	Gauge, Protrusion 5/16"

CONTENTS

1	UDB 755232	Gauge, Protrusion 3/8"
1	UDB 755234	Gauge, Protrusion 7/16"
2	UDB 756072	Gauge, Taper Hole 5/32"
4	UDB 756076	Gauge, Taper Hole 3/16"
2	UDB 756082	Gauge, Taper Hole 1/4"
2	UDB 756086	Gauge, Taper Hole 5/16"
2	UDB 756090	Gauge, Taper Hole 3/8"
2	UDB 756094	Gauge, Taper Hole 7/16"
1	UDB 755461	Slide Hammer Assembly
1	UDB 755365	Adapter, 9/16"-18 Thread
1	UDB 755366	Adapter, 5/16"-24 Thread
2	UDB 5120-100-2-05	Gauge, C'Sink, 100°, Shear Hd., 5/32", Grp. 2
3	UDB 5120-100-3-05	Gauge, C'Sink, 100°, Shear Hd., 5/32", Grp. 3
3	UDB 5120-100-2-3	Gauge, C'Sink, 100°, Shear Hd., 3/16", Grp. 2
3	UDB 5120-100-3-3	Gauge, C'Sink, 100°, Shear Hd., 3/16", Grp. 3
3	UDB 5120-100-2-4	Gauge, C'Sink, 100°, Shear Hd., 1/4", Grp. 2
3	UDB 5120-100-3-4	Gauge, C'Sink, 100°, Shear Hd., 1/4", Grp. 3
2	UDB 5120-100-2-5	Gauge, C'Sink, 100°, Shear Hd., 5/16", Grp. 2
2	UDB 5120-100-3-5	Gauge, C'Sink, 100°, Shear Hd., 5/16", Grp. 3
2	UDB 5120-100-2-6	Gauge, C'Sink, 100°, Shear Hd., 3/8", Grp. 2
2	UDB 5120-100-3-6	Gauge, C'Sink, 100°, Shear Hd., 3/8", Grp. 3
2	UDB 5120-100-2-7	Gauge, C'Sink, 100°, Shear Hd., 7/16", Grp. 2
3	UDB 5120-300-2-3	Gauge, C'Sink, 100°, Tension Hd., 3/16", Grp. 2
3	UDB 5120-300-3-3	Gauge, C'Sink, 100°, Tension Hd., 3/16", Grp. 3
3	UDB 5120-300-2-4	Gauge, C'Sink, 100°, Tension Hd., 1/4", Grp. 2
3	UDB 5120-300-3-4	Gauge, C'Sink, 100°, Tension Hd., 1/4", Grp. 3
2	UDB 5120-300-2-5	Gauge, C'Sink, 100°, Tension Hd., 5/16", Grp. 2
2	UDB 5120-300-3-5	Gauge, C'Sink, 100°, Tension Hd., 5/16", Grp. 3
1	UCC 268002-535	Rib-I Case, Foam Inserts

UTK-268002-27-3 KIT, GROUP 3-4

1	UCC 601001	Countersink Gauge, 100°
1	UCC 601001-19	'C' Sink Gauge Check Block
1	UCC 601001-20	Contour Gauge, 100°
1	UCC 601002	Countersink Gauge, 100°
1	UCC 601002-19	'C' Sink Gauge Check Block
1	UCC 601002-20	Contour Gauge, 100°
1	UCC 601003	Countersink Gauge, 100°
1	UCC 601003-19	'C' Sink Gauge Check Block
1	UCC 601003-20	Contour Gauge, 100°
4	UDB 754202	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 2
3	UDB 754302	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 3
3	UDB 754402	Pin, Protrusion Gauge, Shear Hd., 3/16", Grp. 4
3	UDB 754304	Pin, Protrusion Gauge, Shear Hd., 1/4", Grp. 3
6	UDB 754404	Pin, Protrusion Gauge, Shear Hd., 1/4", Grp. 4
2	UDB 754305	Pin, Protrusion Gauge, Shear Hd., 5/16", Grp. 3
4	UDB 754405	Pin, Protrusion Gauge, Shear Hd., 5/16", Grp. 4
2	UDB 754306	Pin, Protrusion Gauge, Shear Hd., 3/8", Grp. 3
3	UDB 754406	Pin, Protrusion Gauge, Shear Hd., 3/8", Grp. 4
2	UDB 754307	Pin, Protrusion Gauge, Shear Hd., 7/16", Grp. 3
3	UDB 755302	Pin, Protrusion Gauge, Tension Hd., 3/16", Grp. 3
3	UDB 755402	Pin, Protrusion Gauge, Tension Hd., 3/16", Grp. 4
3	UDB 755304	Pin, Protrusion Gauge, Tension Hd., 1/4", Grp. 3
3	UDB 755404	Pin, Protrusion Gauge, Tension Hd., 1/4", Grp. 4
2	UDB 755305	Pin, Protrusion Gauge, Tension Hd., 5/16", Grp. 3
4	UDB 755405	Pin, Protrusion Gauge, Tension Hd., 5/16", Grp. 4
1	UDB 755215	Gauge, Protrusion 5/32"
1	UDB 755216	Gauge, Protrusion 3/16"
1	UDB 755218	Gauge, Protrusion 1/4"
1	UDB 755230	Gauge, Protrusion 5/16"

CONTENTS

1	UDB 755232	Gauge, Protrusion 3/8"
1	UDB 755234	Gauge, Protrusion 7/16"
2	UDB 756072	Gauge, Taper Hole 5/32"
4	UDB 756076	Gauge, Taper Hole 3/16"
2	UDB 756082	Gauge, Taper Hole 1/4"
2	UDB 756086	Gauge, Taper Hole 5/16"
2	UDB 756090	Gauge, Taper Hole 3/8"
2	UDB 756094	Gauge, Taper Hole 7/16"
1	UDB 755461	Slide Hammer Assembly
1	UDB 755365	Adapter, 9/16"-18 Thread
1	UDB 755366	Adapter, 5/16"-24 Thread
3	UDB 5120-100-3-05	Gauge, C'Sink, 100°, Shear Hd., 5/32", Grp. 3
4	UDB 5120-100-4-05	Gauge, C'Sink, 100°, Shear Hd., 5/32", Grp. 4
3	UDB 5120-100-3-3	Gauge, C'Sink, 100°, Shear Hd., 3/16", Grp. 3
3	UDB 5120-100-4-3	Gauge, C'Sink, 100°, Shear Hd., 3/16", Grp. 4
3	UDB 5120-100-3-4	Gauge, C'Sink, 100°, Shear Hd., 1/4", Grp. 3
3	UDB 5120-100-4-4	Gauge, C'Sink, 100°, Shear Hd., 1/4", Grp. 4
2	UDB 5120-100-3-5	Gauge, C'Sink, 100°, Shear Hd., 5/16", Grp. 3
4	UDB 5120-100-4-5	Gauge, C'Sink, 100°, Shear Hd., 5/16", Grp. 4
2	UDB 5120-100-3-6	Gauge, C'Sink, 100°, Shear Hd., 3/8", Grp. 3
3	UDB 5120-100-4-6	Gauge, C'Sink, 100°, Shear Hd., 3/8", Grp. 4
2	UDB 5120-100-3-7	Gauge, C'Sink, 100°, Shear Hd., 7/16", Grp. 3
3	UDB 5120-300-3-3	Gauge, C'Sink, 100°, Tension Hd., 3/16", Grp. 3
3	UDB 5120-300-4-3	Gauge, C'Sink, 100°, Tension Hd., 3/16", Grp. 4
3	UDB 5120-300-3-4	Gauge, C'Sink, 100°, Tension Hd., 1/4", Grp. 3
3	UDB 5120-300-4-4	Gauge, C'Sink, 100°, Tension Hd., 1/4", Grp. 4
2	UDB 5120-300-3-5	Gauge, C'Sink, 100°, Tension Hd., 5/16", Grp. 3
4	UDB 5120-300-4-5	Gauge, C'Sink, 100°, Tension Hd., 5/16", Grp. 4
1	UCC 268002-588	Rib-I Case, Foam Inserts

Master Taperlock Fastener Gauge Kit

Master TAPERLOCK Fastener Gauge Kit

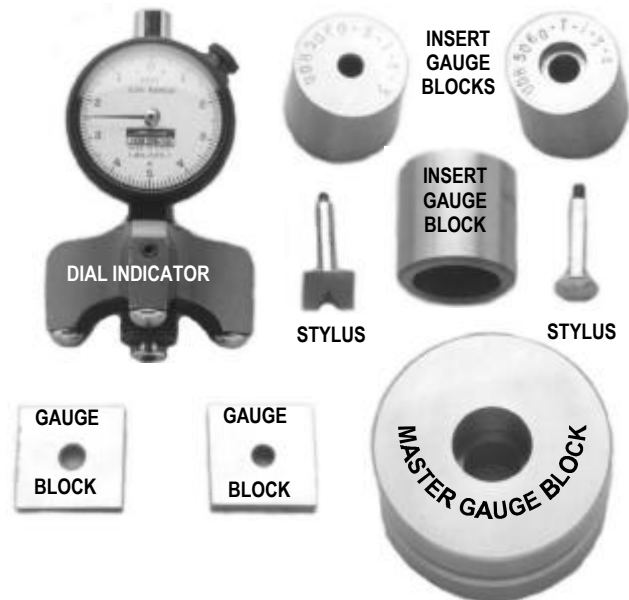
UTK-268002-27-4 KIT, Group 1 thru 4

UNITED'S Master Taperlock Fastener Gauge Kit contains all of the required gauges and tools to inspect Taperlock Fasteners.

Kit includes all necessary gauges to check sizes for 5/32", 3/16", 1/4", 5/16", 3/8" & 7/16" Groups 1 thru 4 for both Shear Head and Tension Head Fasteners.



CASE SIZE IS 24" L x 24" W x 5" HEIGHT
RIB-I STACKABLE STYLE



CONTENTS

2	UDB 5060-S-I-1-05	Insert, Gauge Block, Shear Hd., 5/32", Grp. 1	2	UDB 5060-T-I-4-3	Insert, Gauge Block, Tension Hd., 3/16", Grp. 4
2	UDB 5060-S-I-2-05	Insert, Gauge Block, Shear Hd., 5/32", Grp. 2	2	UDB 5060-T-I-1-4	Insert, Gauge Block, Tension Hd., 1/4", Grp. 1
2	UDB 5060-S-I-3-05	Insert, Gauge Block, Shear Hd., 5/32", Grp. 3	2	UDB 5060-T-I-2-4	Insert, Gauge Block, Tension Hd., 1/4", Grp. 2
2	UDB 5060-S-I-4-05	Insert, Gauge Block, Shear Hd., 5/32", Grp. 4	2	UDB 5060-T-I-3-4	Insert, Gauge Block, Tension Hd., 1/4", Grp. 3
2	UDB 5060-S-I-1-3	Insert, Gauge Block, Shear Hd., 3/16", Grp. 1	2	UDB 5060-T-I-4-4	Insert, Gauge Block, Tension Hd., 1/4", Grp. 4
2	UDB 5060-S-I-2-3	Insert, Gauge Block, Shear Hd., 3/16", Grp. 2	2	UDB 5060-T-I-1-5	Insert, Gauge Block, Tension Hd., 5/16", Grp. 1
2	UDB 5060-S-I-3-3	Insert, Gauge Block, Shear Hd., 3/16", Grp. 3	2	UDB 5060-T-I-2-5	Insert, Gauge Block, Tension Hd., 5/16", Grp. 2
2	UDB 5060-S-I-4-3	Insert, Gauge Block, Shear Hd., 3/16", Grp. 4	2	UDB 5060-T-I-3-5	Insert, Gauge Block, Tension Hd., 5/16", Grp. 3
2	UDB 5060-S-I-1-4	Insert, Gauge Block, Shear Hd., 1/4", Grp. 1	2	UDB 5060-T-I-4-5	Insert, Gauge Block, Tension Hd., 5/16", Grp. 4
2	UDB 5060-S-I-2-4	Insert, Gauge Block, Shear Hd., 1/4", Grp. 2	2	UDB 5060-1	Master Gauge Block
2	UDB 5060-S-I-3-4	Insert, Gauge Block, Shear Hd., 1/4", Grp. 3	1	UDB DI-105	Dial Indicator, .0001
2	UDB 5060-S-I-4-4	Insert, Gauge Block, Shear Hd., 1/4", Grp. 4	1	UDB DI-120	Dial Indicator, .0005
2	UDB 5060-S-I-1-5	Insert, Gauge Block, Shear Hd., 5/16", Grp. 1	1	UDB DIS-30	Stylus
2	UDB 5060-S-I-2-5	Insert, Gauge Block, Shear Hd., 5/16", Grp. 2	1	UDB DIS-40	Stylus
2	UDB 5060-S-I-3-5	Insert, Gauge Block, Shear Hd., 5/16", Grp. 3	1	UDB DIS-50	Stylus
2	UDB 5060-S-I-4-5	Insert, Gauge Block, Shear Hd., 5/16", Grp. 4	1	UTLG 5020-2M	Angle Plate Assembly
2	UDB 5060-S-I-1-6	Insert, Gauge Block, Shear Hd., 3/8", Grp. 1	1	UTLG 5121-1	Parallel Block Assembly
2	UDB 5060-S-I-2-6	Insert, Gauge Block, Shear Hd., 3/8", Grp. 2	1	UTLG 5121-2	Sine Plate Assembly
2	UDB 5060-S-I-3-6	Insert, Gauge Block, Shear Hd., 3/8", Grp. 3	1	UTLG 5015-05	Gauge Block, 5/32"
2	UDB 5060-S-I-4-6	Insert, Gauge Block, Shear Hd., 3/8", Grp. 4	1	UTLG 5015-3	Gauge Block, 3/16"
2	UDB 5060-S-I-1-7	Insert, Gauge Block, Shear Hd., 7/16", Grp. 1	1	UTLG 5015-4	Gauge Block, 1/4"
2	UDB 5060-S-I-2-7	Insert, Gauge Block, Shear Hd., 7/16", Grp. 2	1	UTLG 5015-5	Gauge Block, 5/16"
2	UDB 5060-S-I-3-7	Insert, Gauge Block, Shear Hd., 7/16", Grp. 3	1	UTLG 5015-6	Gauge Block, 3/8"
2	UDB 5060-T-I-1-3	Insert, Gauge Block, Tension Hd., 3/16", Grp. 1	1	UTLG 5015-7	Gauge Block, 7/16"
2	UDB 5060-T-I-2-3	Insert, Gauge Block, Tension Hd., 3/16", Grp. 2	1	UCC 268002-635	Rib-I Case, Foam Inserts
2	UDB 5060-T-I-3-3	Insert, Gauge Block, Tension Hd., 3/16", Grp. 3			

UTLG 5020 Series Taperlock Angle Gauge Plate Assembly

Taperlock Angle Gauge Plate Assy

UNITED'S Taperlock Angle Gauge Plate Assembly is designed to ensure the customer with the proper Taperlock Gauging Tooling. The correct inspection method is outlined in Taperlock Inspection Specifications and Procedures.

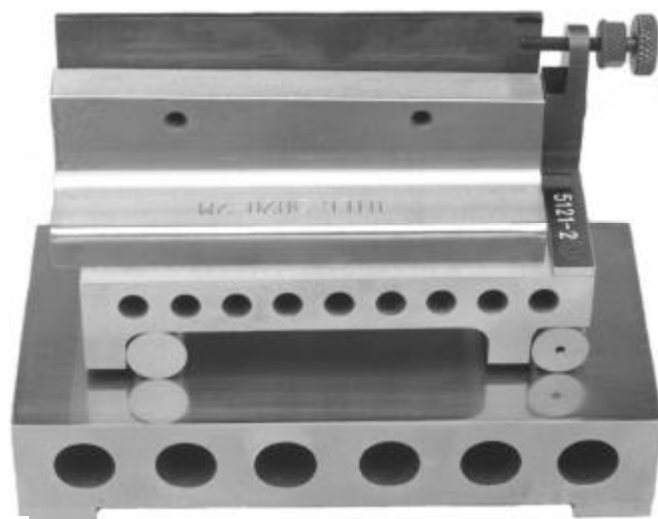
Taperlock Fastener Diameter Specifications require the use of a Angle Gauge Plate, Sine Plate, Parallel Block and various special angle taper pins.

UTLG 5020-2M ANGLE GAUGE PLATE WITH ADJUSTABLE MICROMETER HEAD

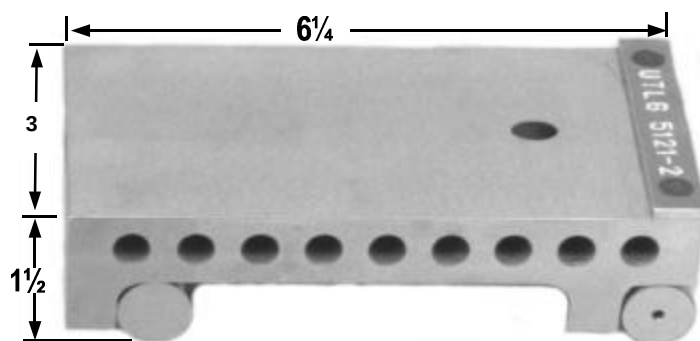


GAUGE NUMBER	W – WIDTH	L – LENGTH
UTLG 5020-1	2.0	4.0
UTLG 5020-2	3.0	6.0

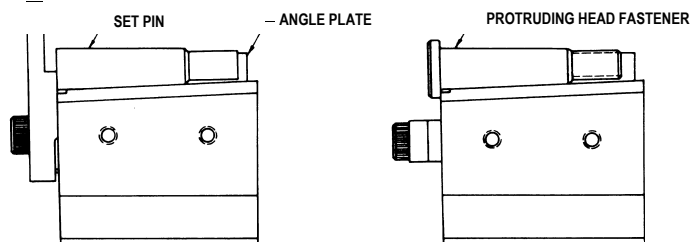
ADD THE LETTER 'M' TO TOOL NUMBER FOR ADJUSTABLE MICROMETER HEAD STYLE AS SHOWN ABOVE



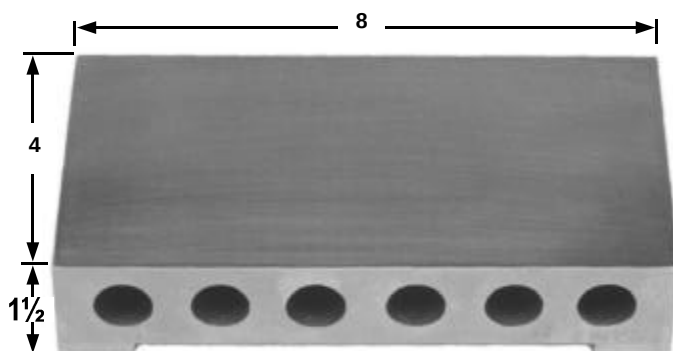
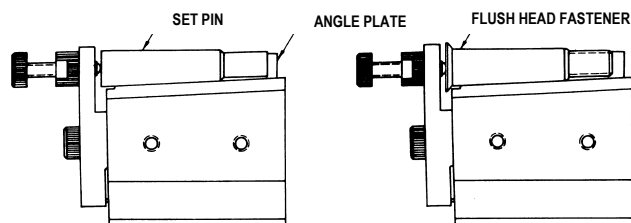
UTLG 5020-2 ANGLE GAUGE PLATE WITH ADJUSTABLE BOLT HEAD STOP



UTLG 5121-1 PARALLEL GAUGE BLOCK



UTLG 5121-2 SINE PLATE



Taper Hole Gauges

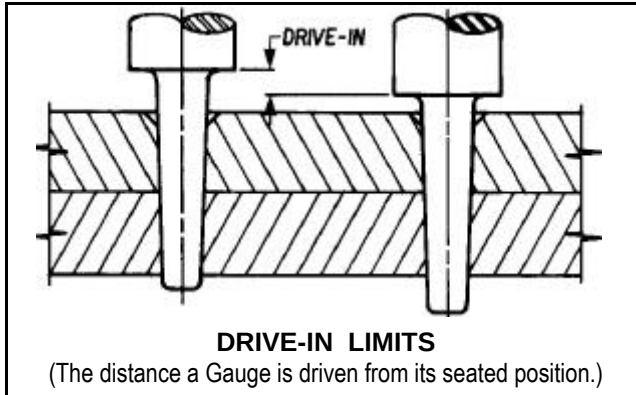
Taper Hole Gauges

UNITED TAPER HOLE GAUGES

A TAPERED HOLE CANNOT BE MEASURED WITH BALL GAGES AND MICROMETERS!



NECESSARY GAUGE!



USE UNITED'S TAPER HOLE GAUGE TO INSPECT THE CONDITION OF THE TAPERED HOLE AND INDICATE PROPER BEARING.

INDICATIONS:

Out of round, bell-shaped or rifled holes reduce the bearing area and must be detected.

TECHNIQUE:

Apply a thin coat of blue dye to the Shank of the Checking Gauge. Apply blue dye to a pad of cheese cloth and rotate Gauge on dyed cloth until shank bearing area is coated.

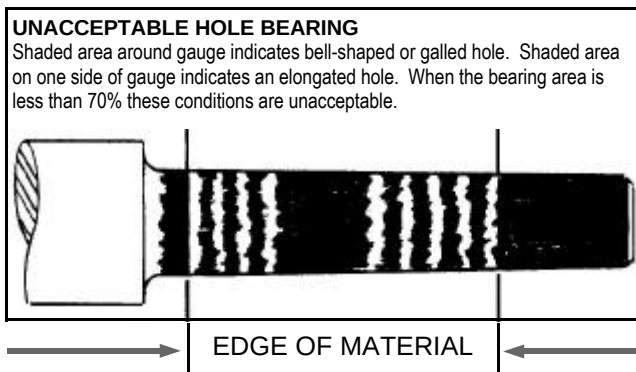
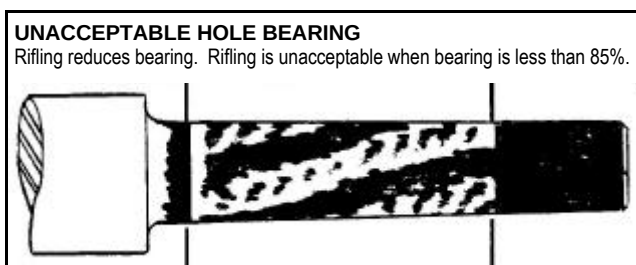
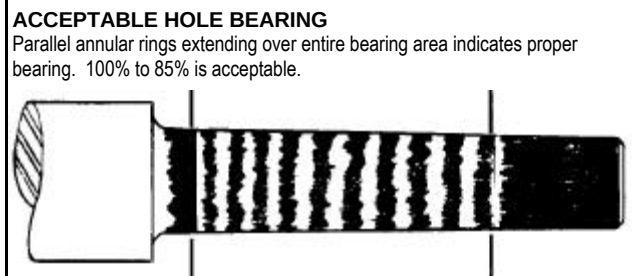
Smooth out light dye coating by rubbing in longitudinal direction with light finger pressure.

Excessive dye will cover hole discrepancies.

Insert dyed Gauge into hole until seated. Drive the Gauge into the hole with the hammer tool. Three or four solid strokes are normally sufficient.

Be careful not to rotate the tool during installation.

Then remove and read. Remove the Gauge by reversing the direction of the impact hammer.



NOMINAL FASTENER SIZE	DRIVE-IN LIMIT	
	MIN	MAX
5/32 3/16 1/4	1/64	3/64
5/16 3/8 7/16	1/32	1/16
1/2	3/64	5/64
9/16	3/64	3/32
5/8	1/16	3/32
3/4	1/16	3/32
7/8 1"	5/64	1/4

These are approximate values. Maximum value applies to initial hole preparation. Minimum value applies to holes which have been reworked by hand reaming or burnishing.

The minimum bearing for acceptable holes is 85%.

Assure Full Bearing Fastener Holes

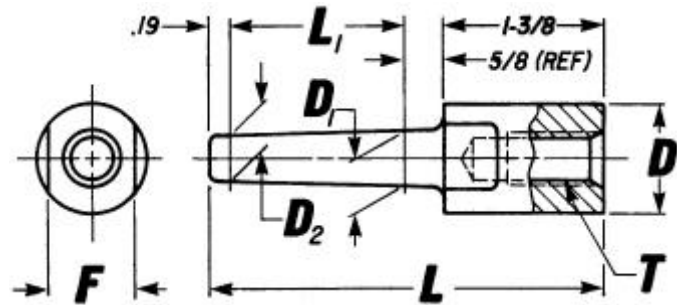
Taper Hole Gauge Selection

SELECT THE PROPER TAPER HOLE GAUGE TO
CORRESPOND WITH THE FASTENER YOU ARE
INSTALLING.

SELECT THE GAUGE IMPACT TOOL FROM THE NEXT
PAGE WHICH FITS THE TAPER HOLE GAUGE.

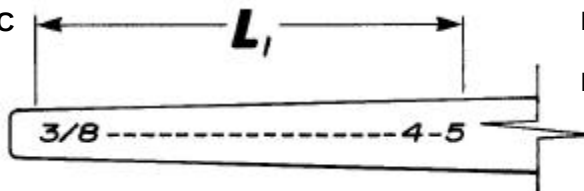
INSPECTED to .000080 PER INCH
.2500 ±.001 INCLUDED TAPER PER FOOT (±.200833
PER INCH. TANGENT OF INCLUDED ANGLE .000083)

UNITED TAPER HOLE GAUGES



The Finest Ground Taper Finish Available!

AUTOMATIC
WEAR
CHECK



RETURN TO
UNITED TO
REFURBISH

UNITED TAPER HOLE GAUGES provide you with an automatic wear check.
The Fastener Size and Group number are etched on the Shank of the Gauge to
a depth of .0001 to .0002.

When the marking wears and becomes faint, the Gauge is out of size.

When the marking has faded completely, the Gauge has been worn .0002 or
more and should be replaced or returned to UNITED and refurbished.

#8 RMS
FINISH



PATENTED

PART NO. *	FASTENER SIZE and GROUP	D	D ₁	D ₂	L ₁	L	F	T THREAD
UDB-756072	5/32 1-3	9/16	.188	.163	1.200	3.5	1/2	5/16 - 24
UDB-756074	5/32 4-5	9/16	.204	.171	1.584	3.5	1/2	5/16 - 24
UDB-756076	3/16 1-3	9/16	.220	.189	1.488	3.7	1/2	5/16 - 24
UDB-756078	3/16 4-5	9/16	.241	.200	1.968	4.2	1/2	5/16 - 24
UDB-756080	1/4 1-3	45/64	.288	.249	1.872	4.1	5/8	7/16 - 20
UDB-756082	1/4 4-5	45/64	.314	.262	2.496	4.7	5/8	7/16 - 20
UDB-756084	5/16 1-3	29/32	.354	.311	2.064	4.3	3/4	7/16 - 20
UDB-756086	5/16 4-5	29/32	.382	.325	2.736	4.9	3/4	7/16 - 20
UDB-756088	3/8 1-3	29/32	.420	.373	2.256	4.4	3/4	7/16 - 20
UDB-756090	3/8 4-5	29/32	.451	.388	3.024	5.2	3/4	7/16 - 20
UDB-756092	7/16 1-3	1-3/16	.490	.435	2.640	4.8	1"	9/16 - 18
UDB-756094	7/16 4-5	1-3/16	.526	.453	3.504	5.7	1"	9/16 - 18
UDB-756096	1/2 1-3	1-3/16	.560	.497	3.024	5.2	1"	9/16 - 18
UDB-756098	1/2 4-5	1-3/16	.602	.518	4.179	6.4	1"	9/16 - 18
UDB-756100	9/16 1-3	1-3/16	.651	.560	4.368	6.6	1"	9/16 - 18
UDB-756102	9/16 4-5	1-3/16	.713	.591	5.856	8.0	1"	9/16 - 18
UDB-756104	5/8 1-3	1-3/16	.721	.622	4.752	6.9	1"	9/16 - 18
UDB-756106	5/8 4-5	1-3/16	.790	.656	6.432	8.6	1"	9/16 - 18
UDB-756108	3/4 1-3	1-3/16	.862	.747	5.520	7.7	1"	9/16 - 18
UDB-756110	3/4 4-5	1-3/16	.940	.786	7.392	9.6	1"	9/16 - 18
UDB-756112	7/8 1-3	1-5/16	1.015	.877	6.640	8.8	1-3/16	9/16 - 18
UDB-756114	7/8 4-5	1-5/16	1.109	.971	6.640	8.8	1-3/16	9/16 - 18
UDB-756116	1" 1-3	1-5/16	1.157	1.003	7.400	9.6	1-3/16	9/16 - 18
UDB-756118	1" 4-5	1-5/16	1.260	1.106	7.400	9.6	1-3/16	9/16 - 18

* FOR HARD CHROME FINISH ADD 'HC' TO PART NO.

1-1/8 AND 1-1/4 FASTENER SIZE GAUGES ARE AVAILABLE.

Taper Gauge Impact Tools

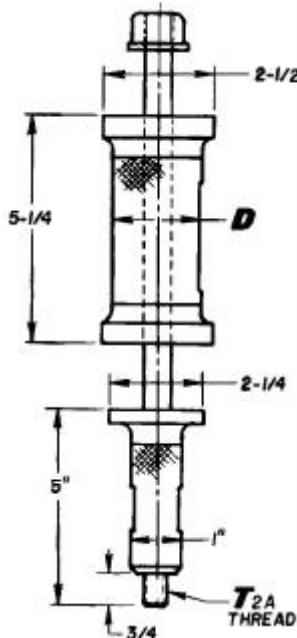
UNITED TAPER GAUGE IMPACT TOOLS



FOR USE WITH THE
TAPER HOLE GAUGE



Keep fingers away
from impact area!



USE **UNITED'S** TAPER GAUGE IMPACT TOOL
WITH THE TAPER HOLE GAUGE SHOWN ON
THE PREVIOUS PAGE.

THE GAUGE IMPACT TOOL DELIVERS

STRAIGHT
UNIFORM
PRESSURE
WITH
EACH
BLOW

PROVIDING CONSISTENT GAUGE READINGS.

REMOVE THE GAUGE FROM THE HOLE BY
REVERSING THE DIRECTION OF IMPACT.

Keep fingers away from impact area!

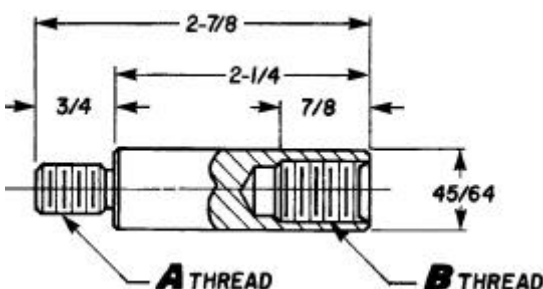
PART NO.	D	T 2A THD	USE WITH GAUGE NO.
UDB-755460	1-1/4	5/16 - 24	UDB-756072 THRU UDB-756078
UDB-755461	1-1/4	7/16 - 20	UDB-756080 THRU UDB-756090
UDB-755462	2-1/16	9/16 - 18	UDB-756092 THRU UDB-756118

Available in two weights, one for the smaller gauges and a heavier model for the larger gauges.

UDB-755460 has an aluminum impact handle.

PATENTED

UNITED THREADED ADAPTER



UNITED offers this Threaded Adapter to allow the
Impact Tool to be used with **ALL** Groups of Taper
Hole Gauges.

PART NO.	A THREAD	B THREAD
UDB-755364	7/16 - 20	9/16 - 18
UDB-755365	9/16 - 18	7/16 - 20
UDB-755366	5/16 - 24	7/16 - 20

Taper Countersink Gauge

The Scratch Test!

UNITED TAPER COUNTERSINK GAUGES

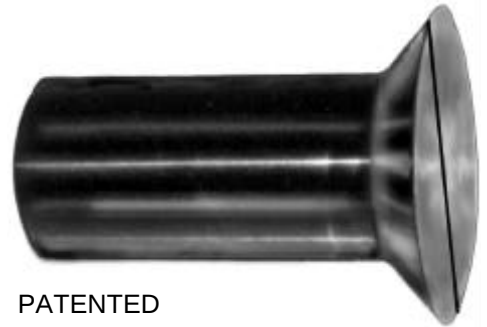
UNITED'S TAPER COUNTERSINK GAUGE CHECKS THE COUNTERSINK OF TAPERED FASTENER HOLES.

IT IS USED ON INCLINED SURFACES.

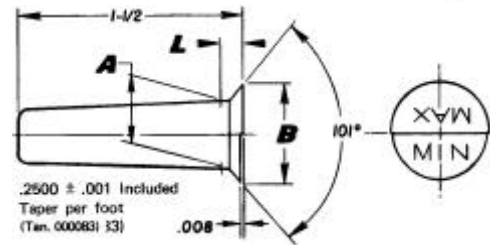
The two varying surfaces on the head are for the high and low tolerances. Always check on the lowest point of any incline so there will be no protrusion of the head after fastener installation.

Made of tough Heat Treated Stainless Steel
Finished Ground with a Protective Coating.

Taper Countersink Gauges are available for nominal Fastener Sizes From 1/4 thru 5/8 diameter and Fastener Groups 1 thru 5.

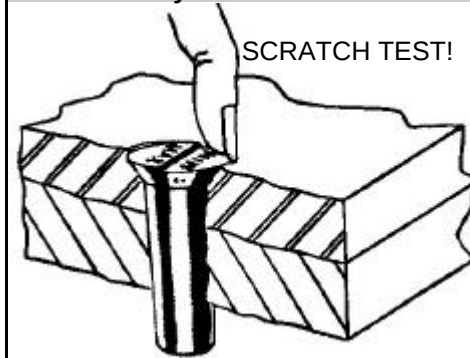


PATENTED



PART NO.	FASTENER SIZE & GROUP	A	B	L
UDB-756340	1/4 1	.256	.433	.123
UDB-756342	1/4 2	.269	.446	.123
UDB-756344	1/4 3	.282	.459	.123
UDB-756346	1/4 4	.295	.472	.123
UDB-756348	1/4 5	.309	.485	.126
UDB-756350	5/16 1	.319	.514	.132
UDB-756352	5/16 2	.334	.528	.132
UDB-756354	5/16 3	.348	.542	.132
UDB-756356	5/16 4	.362	.557	.132
UDB-756358	5/16 5	.377	.572	.133
UDB-756360	3/8 1	.383	.603	.145
UDB-756362	3/8 2	.398	.618	.145
UDB-756364	3/8 3	.414	.633	.145
UDB-756366	3/8 4	.429	.650	.145
UDB-756368	3/8 5	.446	.667	.146
UDB-756370	7/16 1	.447	.713	.168
UDB-756372	7/16 2	.465	.731	.168
UDB-756374	7/16 3	.483	.749	.168
UDB-756376	7/16 4	.501	.768	.168
UDB-756378	7/16 5	.520	.787	.167
UDB-756380	1/2 1	.511	.802	.177
UDB-756382	1/2 2	.532	.823	.177
UDB-756384	1/2 3	.553	.844	.177
UDB-756386	1/2 4	.574	.865	.177
UDB-756388	1/2 5	.594	.886	.173
UDB-756390	9/16 1	.583	.945	.224
UDB-756392	9/16 2	.614	.976	.224
UDB-756394	9/16 3	.645	1.007	.223
UDB-756396	9/16 4	.676	1.038	.223
UDB-756398	9/16 5	.708	1.069	.224
UDB-756400	5/8 1	.648	1.046	.224
UDB-756402	5/8 2	.682	1.080	.224
UDB-756404	5/8 3	.716	1.114	.224
UDB-756406	5/8 4	.750	1.148	.223
UDB-756408	5/8 5	.783	1.182	.225

Check by feel or with scale.



The two varying surfaces on the head are for the high and low tolerances.

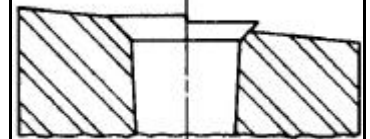
Always check on the lowest point of any incline so there will be no protrusion of the head after fastener installation.

TAPER COUNTERSINK GAUGES IN A KIT!

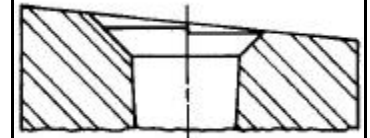
Taper Countersink Gauges may be purchased in sets containing the **FIVE GROUP SIZES FOR EACH FRACTIONAL SIZE FASTENER** Provided in a sturdy protective handy Kit.



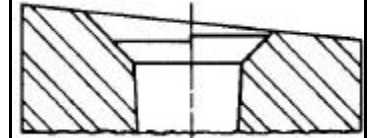
NO GO



GO



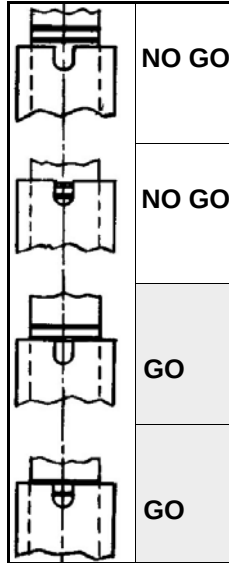
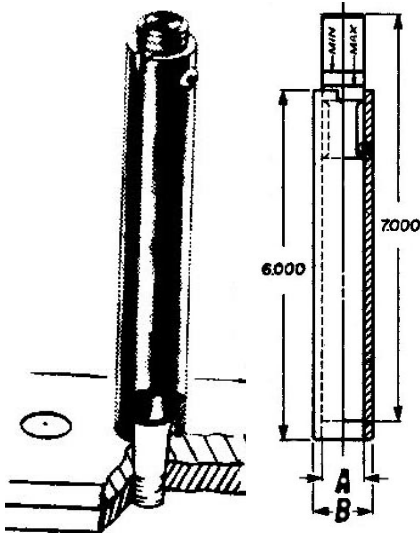
NO GO



Taper & Helox® Protrusion Gauges

Taper and Helox® Protrusion Gauges

UNITED TAPER PROTRUSION GAUGES



When Taper Lock Fasteners are to be installed, it is necessary to confirm that the tapered hole that is drilled is of the correct size. One of the fastest methods is to
CHECK THE PROTRUSION OF THE BOLT AT INSTALLATION.

The **UNITED PROTRUSION GAUGE** shown here is designed to check this protrusion:

1. Insert the Tapered Bolt in the part with finger tip pressure.
2. Put the Protrusion Gauge on top of it.
3. The Pin at the Top of the Gauge will indicate whether or not the Fastener is protruding an acceptable amount. Refer to the GO-NO GO illustration.

**CHECK THE PROTRUSION OF YOUR BOLT
AT INSTALLATION!**

USE INDISPENSABLE UNITED PROTRUSION GAUGES.

PART NO.	TAPER LOCK BOLT SIZE	A	B
UDB-755820	5/32	.375	.600
UDB-755822	3/16	.375	.600
UDB-755824	1/4	.470	.747
UDB-755826	5/16	.578	.873
UDB-755828	3/8	.689	.997
UDB-755832	7/16	.790	1.123

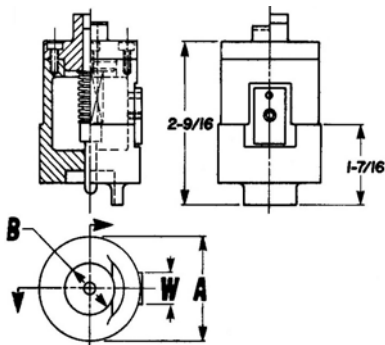
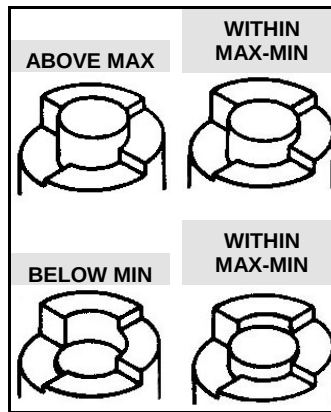
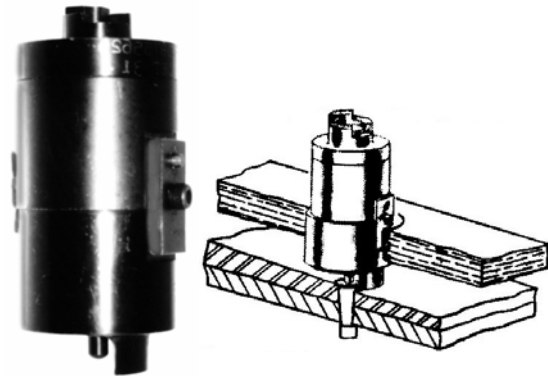
UNITED HELOX® PROTRUSION GAUGES

The **UNITED HELOX® PROTRUSION GAUGE** is for TL100 and TL200 SERIES SHEAR HEAD FASTENERS, the same as used above, and is designed FOR USE WITH

SHELOX® LINERS through which the taper hole is prepared.

A MALE INDEXING EAR corresponds with the wide locking slot of the Shelox® Liner. This enables the PROTRUSION READING TO ALWAYS BE TAKEN ON THE LOW SIDE OF THE INCLINE. See illustration.

Select the Gauge that corresponds with the Shelox® Liner and Fastener being used.

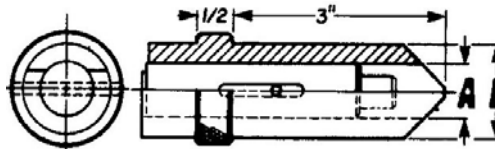


PART NO.	TAPER LOCK BOLT SIZE	A	B	W	FITS SHELOX®
UDB-755624	1/4	1.040	.492	7/16	521154 OR 521354
UDB-755625	5/16	1.167	.577	7/16	521155 OR 521355
UDB-755626	3/8	1.395	.670	9/16	521156 OR 521356
UDB-755627	7/16	1.605	.788	9/16	521157 OR 521357
UDB-755628	1/2	1.817	.885	11/16	521158 OR 521358
UDB-755629	9/16	2.086	1.058	11/16	521159 OR 521359
UDB-755630	5/8	2.296	1.168	11/16	521160 OR 521360

Taper Lock Protrusion Gauges and Pins

Protrusion Gauges and Gauge Pins

THE TAPER LOCK PROTRUSION GAUGE is used when the drilling of the Taper Lock Hole was accomplished with the use of Standard Adapter Tip Lock Liners.



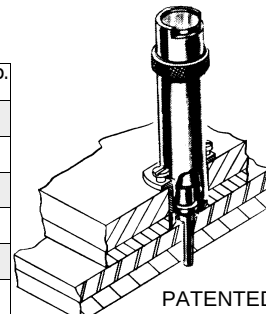
TAPER LOCK PROTRUSION GAUGES

MEASURES PROTRUSION THRU ADAPTER LOCK LINER

They are manufactured to fit inside the Lock Liners with an I.D. matching that of the Protrusion Gauge O.D. Find the Gauge that fits the Lock Liner used from the Taper Lock Bolt being installed.

The TAPER LOCK PROTRUSION GAUGE IS USED FOR CHECKING BOTH FLUSH AND PROTRUDING HEAD BOLTS. It is best used with the Tapered Gauge Pins shown below, when a more critical check is needed.

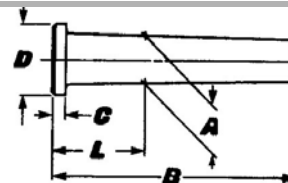
Part No.	Taper Lock Bolt Size	A	B	Liner I.D. Size
UDB-755215	5/32	.5000	.8730	7/8
UDB-755216	3/16	.5000	.8730	7/8
UDB-755218	1/4	.7500	1.2480	1-1/4
UDB-755230	5/16	.7500	1.2480	1-1/4
UDB-755232	3/8	.7500	1.2480	1-1/4
UDB-755234	7/16	1.000	1.4980	1-1/2



PATENTED



THE TAPER LOCK GAUGE PIN is recommended to check the protrusion when the Fastener is in a critical location. You will be checking against a known gauge value instead of checking the fastener. This gives uniformity.



TAPER LOCK GAUGE PINS

PINS FOR TENSION HEAD FASTENERS

PART NO.	FASTENER SIZE &	A	B	C +.000 --.003	D	L
UDB-755102	3/16 1	.2001	1.34	.056	5/16	.669
UDB-755202	3/16 2	.2105	1.84		5/16	
UDB-755302	3/16 3	.2209	2.34		5/16	
UDB-755402	3/16 4	.2313	2.34		3/8	
UDB-755502	3/16 5	.2417	2.34		3/8	
UDB-755602	3/16 6	.2522	2.34	.070	3/8	.709
UDB-755104	1/4 1	.2624	1.53		7/16	
UDB-755204	1/4 2	.2754	2.15		7/16	
UDB-755304	1/4 3	.2884	2.78		1/2	
UDB-755404	1/4 4	.3014	2.78		1/2	
UDB-755504	1/4 5	.3144	2.78	.080	1/2	.749
UDB-755604	1/4 6	.3274	2.78		9/16	
UDB-755105	5/16 1	.3260	1.65		9/16	
UDB-755205	5/16 2	.3403	2.34		9/16	
UDB-755305	5/16 3	.3547	3.03		5/8	.791
UDB-755405	5/16 4	.3690	3.03	.094	5/8	
UDB-755505	5/16 5	.3833	3.03		11/16	
UDB-755605	5/16 6	.3976	3.03		11/16	
UDB-755106	3/8 1	.3897	1.75		13/16	.861
UDB-755206	3/8 2	.4053	2.50	.132	13/16	
UDB-755306	3/8 3	.4209	3.25		13/16	
UDB-755406	3/8 4	.4365	3.25		7/8	
UDB-755506	3/8 5	.4521	3.25		7/8	
UDB-755606	3/8 6	.4678	3.25	.156	7/8	.912
UDB-755107	7/16 1	.4544	1.96		13/16	
UDB-755207	7/16 2	.4726	2.84		13/16	
UDB-755307	7/16 3	.4908	3.71		13/16	
UDB-755407	7/16 4	.5091	3.71		13/16	
UDB-755507	7/16 5	.5273	3.71	.156	13/16	.702
UDB-755607	7/16 6	.5455	3.71		13/16	
UDB-755108	1/2 1	.5192	2.12		13/16	
UDB-755208	1/2 2	.5400	3.12		13/16	
UDB-755308	1/2 3	.5609	4.12		13/16	
UDB-755408	1/2 4	.5817	4.12	.156	13/16	.702
UDB-755508	1/2 5	.6025	4.12		13/16	
UDB-755608	1/2 6	.6234	4.12		13/16	

PINS FOR FLUSH, SHEAR and PROTRUDING HEADS

PART NO.	FASTENER SIZE & GROUP	A	B	C +.000 --.003	D	L
UDB-754101	5/32 1	.1724	1.18	.049	5/16	.572
UDB-754201	5/32 2	.1803	1.56		5/16	
UDB-754301	5/32 3	.1881	1.94		5/16	
UDB-754401	5/32 4	.1959	1.94		5/16	
UDB-754102	3/16 1	.2010	1.34	.056	5/16	.591
UDB-754202	3/16 2	.2114	1.84		3/8	
UDB-754302	3/16 3	.2218	2.34		3/8	
UDB-754402	3/16 4	.2322	2.34		3/8	
UDB-754502	3/16 5	.2426	2.34		3/8	
UDB-754602	3/16 6	.2530	2.34	.070	3/8	.605
UDB-754104	1/4 1	.2636	1.53		7/16	
UDB-754204	1/4 2	.2766	2.15		7/16	
UDB-754304	1/4 3	.2896	2.78		7/16	
UDB-754404	1/4 4	.3027	2.78		7/16	
UDB-754504	1/4 5	.3157	2.78	.080	7/16	.618
UDB-754604	1/4 6	.3287	2.78		7/16	
UDB-754105	5/16 1	.3273	1.65		9/16	
UDB-754205	5/16 2	.3417	2.34		9/16	
UDB-754305	5/16 3	.3560	3.03		9/16	
UDB-754405	5/16 4	.3703	3.03	.094	9/16	.635
UDB-754505	5/16 5	.3846	3.03		11/16	
UDB-754605	5/16 6	.3990	3.03		11/16	
UDB-754106	3/8 1	.3912	1.75		13/16	
UDB-754206	3/8 2	.4068	2.50	.132	13/16	.678
UDB-754306	3/8 3	.4224	3.25		13/16	
UDB-754406	3/8 4	.4381	3.25		13/16	
UDB-754506	3/8 5	.4537	3.25		13/16	
UDB-754606	3/8 6	.4693	3.25	.156	13/16	.702
UDB-754107	7/16 1	.4563	1.96		13/16	
UDB-754207	7/16 2	.4745	2.84		13/16	
UDB-754307	7/16 3	.4927	3.70		13/16	
UDB-754407	7/16 4	.5110	3.70	.156	13/16	.702
UDB-754507	7/16 5	.5292	3.70		13/16	
UDB-754607	7/16 6	.5474	3.70		13/16	
UDB-754108	1/2 1	.5213	2.12		13/16	
UDB-754208	1/2 2	.5421	3.12	.156	13/16	.702
UDB-754308	1/2 3	.5630	4.12		13/16	
UDB-754408	1/2 4	.5838	4.12		13/16	
UDB-754508	1/2 5	.6046	4.12		13/16	
UDB-754608	1/2 6	.6255	4.12		13/16	

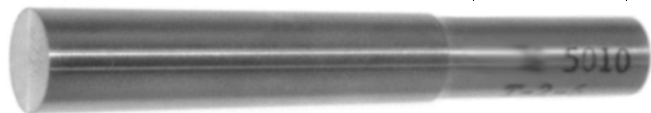
Taper Lock Inspection Tooling

Taper Lock Inspection Tooling

TAPERED CYLINDRICAL GAUGE SET PINS

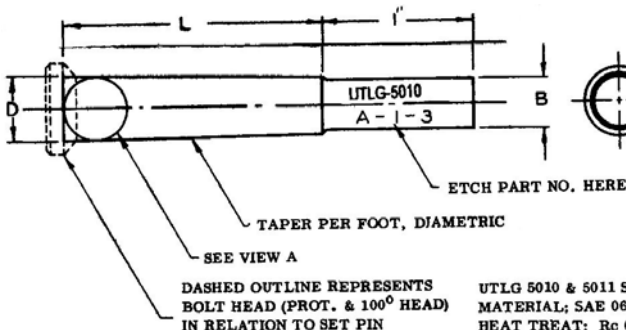
UTLG-5010

See Pages S13 and S14 for dimensions of UTLG-5010, 5011, 5012, 5013 in Standard and Special Tapers.



The **UNITED MASTER TAPERED CYLINDRICAL GAUGE SET PIN CHECKS** the TAPER of STANDARD TAPER LOCK PINS.

UTLG-5010 and UTLG-5011 Series Taper Lock Set Pins are Ground and Ring lapped to a diameter corresponding to the mean diameter of the applicable Taper Lock Bolt.



UTLG-5010 -A -1 -3 Pin Code — STANDARD TAPER

- Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05)
- Bolt Group
- Bolt Head Type: (A) Shear 100°, Shear Protruding and Tension Protruding (T) Tension 100°
- Basic Pin Number (STANDARD TAPER)

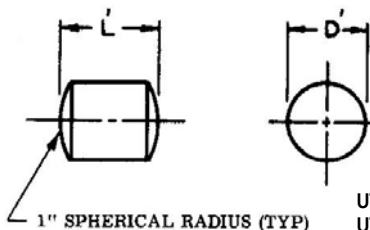
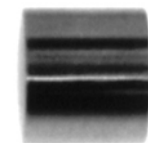
UTLG-5010S -A -1 -3 -4 Pin Code — SPECIAL TAPER

- Nominal Grip Length in 1/16ths
- Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05)
- Bolt Group
- Bolt Head Type: (A) Shear 100°, Shear Protruding and Tension Protruding (T) Tension 100°
- Basic Pin Number (SPECIAL TAPER)

STANDARD CYLINDRICAL GAUGES

Dimensions are on pages S13 and S14.

UTLG-5012



UTLG-5012 -A -1 -3 Cylindrical Standard Code—STANDARD TAPER

- Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05)
- Bolt Group
- Bolt Head Type: (A) Shear 100°, Shear Protruding and Tension Protruding (T) Tension 100°
- Basic Cylindrical Standard Number (STANDARD TAPER)

UTLG-5012 and UTLG-5013 CYLINDRICAL STANDARD

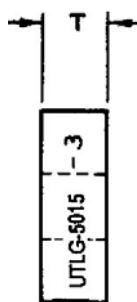
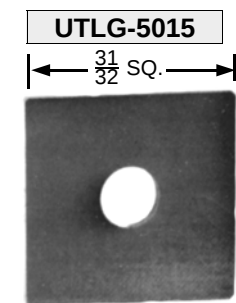
UTLG-5013 CYLINDRICAL STANDARD NOMINAL Bolt diameter and nominal grip length Dash Numbers are in 1/32s.

Material: SAE 06
Heat Treat: Rc 60-63

UTLG-5012S -A -1 -3 -4 Cylindrical Standard Code--SPECIAL TAPER

- Nominal Grip Length in 1/16ths
- Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05)
- Bolt Group
- Bolt Head Type: (A) Shear 100°, Shear Protruding and Tension Protruding (T) Tension 100°
- Basic Cylindrical Standard Number (SPECIAL TAPER)

SPACER BLOCKS



DASH NO.	T ±.0001 THICKNESS
-04	.0672
-05	.0816
- 3	.0912
- 4	.1200
- 5	.1296
- 6	.1440
- 7	.1584
- 8	.1680
- 9	.1776
-10	.1872
-12	.2160
-14	.2400
-16	.2592

SPACER BLOCKS are USED IN SETTING UP the UTLG-5020 ANGLE PLATE ASSEMBLY WITH the UTLG-5010 SET PIN WHEN CHECKING the TAPERED SHANK.

MATERIAL: SAE 52100 — HEAT TREAT: Rc 64 min.

UTLG-5015 -3 Spacer Block Code

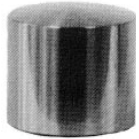
- Dash Number to be the same as First Dash Number of Bolt. Nominal Bolt Diameter in 1/16ths or in 1/32s if Number is preceded by '0' (-05)
- Basic Spacer Block Number

Set Pin and Cylindrical Standard Dimensions

Taper Lock Inspection Tooling

STANDARD CYLINDRICAL GAUGES

UTLG-5012



UTLG-5010 SET PINS ARE USED AS MASTER SET PINS TO INSPECT THE TAPERED SHANK ON TAPER LOCK FASTENERS. These pins are inspected per BPS 221. Refer to Briles Process Specifications 221, 225 and 226 for Inspection Procedures for these Gauges and their relative Taper Lock Fasteners. Sampling of parts procedure should be at random in accordance with Mil-STD-105 for an acceptable quality level (AQL) of 2% defective.

TAPERED CYLINDRICAL GAUGE SET PINS

UTLG-5010



Details of parts and part numbers for ordering are on page S12.

G #	DASH NO.	D ±.00005 DIAMETER	D' ±.000010 DIAMETER	L ±.010 LENGTH	L' ±.031 LENGTH	B ±.016 DIAMETER	TAPER PER FT. ±.0003	ANGULAR TANGENT
GROUP 1	-A-1-04	.14733	.145803	1.750	.437	.093	.2500	.02083333
	-A-1-05	.17333	.171534			.125		
	-A-1-3	.20214	.200045			.156		
	-A-1-4	.26474	.261997			.219		
	-A-1-5	.32854	.325136			.281		
	-A-1-6	.39244	.388373			.344		
	-A-1-7	.45765	.452908			.406		
	-A-1-8	.52265	.517234			.469		
	-A-1-9	.59617	.589992		.625	.531		
	-A-1-10	.66187	.655011			.594		
	-A-1-12	.79328	.785060			.719		
	-A-1-14	.92729	.917681			.844		
	-A-1-16	1.05870	1.047729			.969		
	-A-2-04	.15384	.152246		1.750	.093		.02083333
	-A-2-05	.18114	.179263			.125		
	-A-2-3	.21255	.210347			.156		
	-A-2-4	.27776	.274882			.219		
	-A-2-5	.34286	.339307			.281		
	-A-2-6	.40807	.403841			.344		
	-A-2-7	.47588	.470949			.406		
	-A-2-8	.54349	.537858			.469		
	-A-2-9	.62742	.620918			.531		
	-A-2-10	.69573	.688521			.594		
	-A-2-12	.83234	.823715			.719		
	-A-2-14	.97417	.964075			.844		
	-A-2-16	1.11079	1.099280			.969		
	-A-3-04	.16035	.158688		1.750	.093		.02083333
GROUP 3	-A-3-05	.18896	.187002			.125		
	-A-3-3	.22297	.220660			.156		
	-A-3-4	.29078	.287767			.219		
	-A-3-5	.35719	.353489			.281		
	-A-3-6	.42369	.419300			.344		
	-A-3-7	.49411	.488990			.406		
	-A-3-8	.56432	.558472			.469		
	-A-3-9	.65867	.651845			.531		
	-A-3-10	.72958	.722020			.594		
	-A-3-12	.87141	.862380			.719		
	-A-3-14	1.02104	1.010460			.844		
	-A-3-16	1.16287	1.150820			.969		
	-A-4-04	.16685	.165121		1.750	.093		.02083333
GROUP 4	-A-4-05	.19676	.194721			.125		
	-A-4-3	.23337	.230952			.156		
	-A-4-4	.30378	.300632			.219		
	-A-4-5	.37149	.367640			.281		
	-A-4-6	.43929	.434738			.344		
	-A-4-7	.51231	.507001			.406		
	-A-4-8	.58512	.579057			.469		
	-A-4-9	.68987	.682721			.531		
	-A-4-10	.76348	.755569			.594		
	-A-4-12	.91051	.901075			.719		
	-A-4-14	1.06794	1.056874			.844		
	-A-4-16	1.21497	1.202380			.969		
	-A-5-3	.24377	.241244		1.750	.156		.02083333
GROUP 5	-A-5-4	.31678	.313497			.219		
	-A-5-5	.38579	.381792			.281		
	-A-5-6	.45499	.450275			.344		
	-A-5-7	.53061	.525112			.406		
	-A-5-8	.60602	.599740			.469		
	-A-5-9	.72117	.713697			.531		
	-A-5-10	.79728	.789018			.594		
	-A-5-12	.94951	.939671			.719		
	-A-5-14	1.11474	1.103189			.844		
	-A-5-16	1.26707	1.256018			.969		
	-A-6-3	.25417	.251536		1.750	.156		.02083333
GROUP 6	-A-6-4	.32988	.326462			.219		
	-A-6-5	.40019	.396043			.281		
	-A-6-6	.47059	.465714			.344		
	-A-6-7	.54881	.543123			.406		
	-A-6-8	.62682	.620325			.469		
	-A-6-9	.75237	.744574			.531		
	-A-6-10	.83118	.822567			.594		
	-A-6-12	.98861	.978366			.719		
	-A-6-14	1.16164	1.149603			.844		
	-A-6-16	1.31907	1.305401			.969		

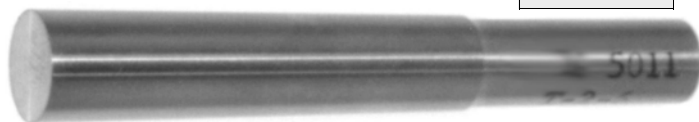
G #	DASH NO.	D ± .00005 DIAMETER	D' ± .000010 DIAMETER	L ± .010 LENGTH	L' ± .031 LENGTH	B ± .016 DIAMETER	TAPER PER FT. ± .0003	ANGULAR TANGENT
GROUP 1	-T -1- 3	.20284	.200738	1.750	.437	.156	.2500	.02083333
	-T -1- 4	.26564	.262887			.219		
	-T -1- 5	.32994	.326521			.281		
	-T -1- 6	.39414	.390056			.344		
	-T -1- 7	.45955	.454788			.406		
	-T -1- 8	.52495	.519510		.625	.469		
	-T -1- 9	.59827	.592071			.531		
	-T -1- 10	.66397	.657090			.594		
	-T -1- 12	.79538	.787138			.719		
	-T -1- 14	.92939	.919759			.844		
-T -1- 16	1.06080	1.049808	.969					
GROUP 2	-T -2- 3	.21325	.211040	1.750	.437	.156	.2500	.02083333
	-T -2- 4	.27866	.275772			.219		
	-T -2- 5	.34426	.340693			.281		
	-T -2- 6	.40977	.405524			.344		
	-T -2- 7	.47778	.472829			.406		
	-T -2- 8	.54579	.540134		.625	.469		
	-T -2- 9	.62952	.622997			.531		
	-T -2- 10	.69783	.690599			.594		
	-T -2- 12	.83444	.825793			.719		
	-T -2- 14	.97627	.966154			.844		
-T -2- 16	1.11289	1.101358	.969					
GROUP 3	-T -3- 3	.22365	.221332	1.750	.437	.156	.2500	.02083333
	-T -3- 4	.29168	.288658			.219		
	-T -3- 5	.35859	.354874			.281		
	-T -3- 6	.42539	.420982			.344		
	-T -3- 7	.49601	.490870			.406		
	-T -3- 8	.56662	.560748		.625	.469		
	-T -3- 9	.66077	.653923			.531		
	-T -3- 10	.73168	.724098			.594		
	-T -3- 12	.87351	.864458			.719		
	-T -3- 14	1.02314	1.012538			.844		
-T -3- 16	1.16497	1.152898	.969					
GROUP 4	-T -4- 3	.23407	.231644	1.750	.437	.156	.2500	.02083333
	-T -4- 4	.30468	.301523			.219		
	-T -4- 5	.37289	.369026			.281		
	-T -4- 6	.44099	.436420			.344		
	-T -4- 7	.51421	.508882			.406		
	-T -4- 8	.58742	.581333		.625	.469		
	-T -4- 9	.69197	.684800			.531		
	-T -4- 10	.76558	.757647			.594		
	-T -4- 12	.91261	.903153			.719		
	-T -4- 14	1.07004	1.058952			.844		
-T -4- 16	1.21707	1.204458	.969					
GROUP 5	-T -5- 3	.24447	.241937	1.750	.437	.156	.2500	.02083333
	-T -5- 4	.31768	.314388			.219		
	-T -5- 5	.38719	.383178			.281		
	-T -5- 6	.45659	.451859			.344		
	-T -5- 7	.53251	.526992			.406		
	-T -5- 8	.60832	.602016		.625	.469		
	-T -5- 9	.72327	.715775			.531		
	-T -5- 10	.79938	.791097			.594		
	-T -5- 12	.95161	.941749			.719		
	-T -5- 14	1.11684	1.105267			.844		
-T -5- 16	1.26917	1.256018	.969					
GROUP 6	-T -6- 3	.25487	.252229	1.750	.437	.156	.2500	.02083333
	-T -6- 4	.33078	.327352			.219		
	-T -6- 5	.40159	.397429			.281		
	-T -6- 6	.47229	.467396			.344		
	-T -6- 7	.55071	.545003			.406		
	-T -6- 8	.62912	.622601		.625	.469		
	-T -6- 9	.75447	.746652			.531		
	-T -6- 10	.83328	.824645			.594		
	-T -6- 12	.99071	.980444			.719		
	-T -6- 14	1.16374	1.151681			.844		
-T -6- 16	1.32117	1.307480	.969					

Taper Lock Inspection Tooling

Set Pin and Cylindrical Special Dimensions

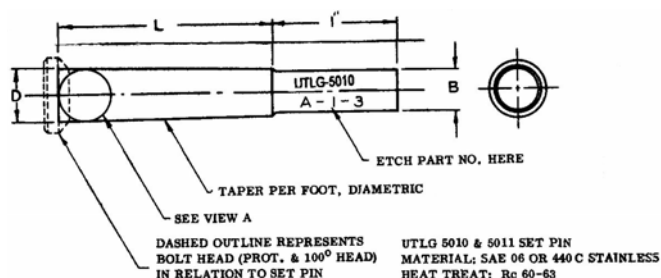
TAPERED CYLINDRICAL GAUGE SET PINS

UTLG-5011



Details of parts and part numbers for ordering are on page S12.

UTLG-5010 and UTLG-5012 Cylindrical Standard Dimensions are on page S13.



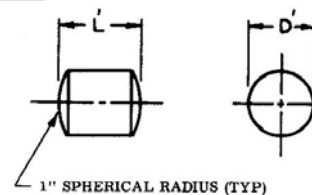
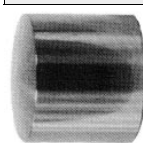
UTLG-5011 SET PIN and UTLG-5013 CYLINDRICAL STANDARD DIM.

G #	DASH NO.	± .00005 DIAMETER	± .000010 DIAMETER	± .010 LENGTH	± .031 LENGTH	B ± .016 DIAMETER	TAPER PER FT. ± .0003	ANGULAR TANGENT
GROUP 1	-A-1- 4	.14742	.145892	1.000	.437	.109	.2500	.02083333
	-A-1- 5	.17343	.171633			.125		
	-A-1- 6	.20224	.200144			.156		
	-A-1- 7	.23223	.229824			.187		
	-A-1- 8	.26484	.262096			.218		
	-A-1-10	.32864	.325235			.250		
GROUP 2	-A-1-12	.39254	.388472			.343		
	-A-2- 4	.15394	.152345	1.000	.437	.109	.2500	.02083333
	-A-2- 5	.18124	.179362			.140		
	-A-2- 6	.21265	.210446			.156		
	-A-2- 7	.24395	.241422			.187		
	-A-2- 8	.27786	.274981			.218		
	-A-2-10	.34296	.339406			.281		
GROUP 3	-A-2-12	.40817	.403940			.343		
	-A-3- 4	.16045	.158787	1.000	.437	.109	.2500	.02083333
	-A-3- 5	.18905	.187091			.125		
	-A-3- 6	.22306	.220749			.156		
	-A-3- 7	.25567	.253021			.187		
	-A-3- 8	.29088	.287866			.218		
	-A-3-10	.35728	.353578			.250		
GROUP 4	-A-3-12	.42379	.419399			.343		
	-A-4- 4	.16695	.165220	1.000	.437	.109	.2500	.02083333
	-A-4- 5	.19685	.194810			.125		
	-A-4- 6	.23346	.231041			.156		
	-A-4- 7	.26737	.264599			.187		
	-A-4- 8	.30388	.300731			.218		
	-A-4-10	.37158	.367730			.250		
GROUP 5	-A-4-12	.43939	.434837			.343		

SPECIAL TAPER	S-A-1-4-3	.14812	.145915	1.000	.437	.109	.3600	.03000000
	S-A-1-4-4	.14808	.145875			.109	.3600	.03000000
	S-A-1-4-5	.14775	.145882			.109	.3055	.02545454
	S-A-1-5-3	.17412	.171528			.125	.3600	.03000000
	S-A-1-5-4	.17408	.171488			.125	.3600	.03000000
	S-A-1-5-5	.17375	.171553			.125	.3055	.02545454
	S-A-1-6-3	.20312	.200096			.140	.3600	.03000000
	S-A-1-6-4	.20308	.200057			.140	.3600	.03000000
	S-A-1-6-5	.20278	.200114			.156	.3176	.02647059
	S-A-1-7-5	.23278	.229720			.156	.3176	.02647059
	S-A-1-8-5	.26548	.261990			.187	.3176	.02647059
	S-A-2-4-3	.15462	.152318			.109	.3600	.03000000
	S-A-2-4-4	.15458	.152279			.109	.3055	.02545454
	S-A-2-4-5	.15425	.152299			.109	.3600	.03000000
	S-A-2-5-3	.18192	.179212			.140	.3600	.03000000
	S-A-2-5-4	.18188	.179172			.140	.3600	.03000000
	S-A-2-5-5	.18155	.179254			.140	.3055	.02545454
	S-A-2-6-3	.21252	.209356			.140	.3600	.03000000
	S-A-2-6-5	.21318	.210377			.156	.3176	.02647059

CYLINDRICAL GAUGES

UTLG-5013



UTLG-5010 SET PINS ARE USED AS MASTER SET PINS TO INSPECT THE TAPERED SHANK ON TAPER LOCK FASTENERS.

These pins are inspected per BPS 221. Refer to Briles Process Specifications 221, 225 and 226 for Inspection Procedures for these Gauges and their relative Taper Lock Fasteners. Sampling of parts procedure should be at random in accordance with Mil-STD-105 for an acceptable quality level (AQL) of 2% defective.

UTLG-5010 SET PIN and UTLG-5012 CYLINDRICAL STANDARD DIMENSIONS, SPECIAL TAPER

G #	DASH NO.	± .00005 DIAMETER	± .000010 DIAMETER	± .010 LENGTH	± .031 LENGTH	B ± .016 DIAMETER	TAPER PER FT. ± .0003	ANGULAR TANGENT
SPECIAL TAPER	S-A-1-04-2	.14788	.145678	1.000	.437	.093	.3600	.03000000
	S-A-1-05-2	.17388	.171291			.125	.3600	.03000000
	S-A-1-13-3	.20268	.199898			.156	.3317	.02764228
	S-A-1-13-4	.20228	.199998			.156	.2723	.02268908
	S-A-1-4-3	.26557	.261685			.219	.3537	.02947368
	S-A-1-4-4	.26491	.261900			.219	.2743	.02285714
	S-A-1-5-3	.32963	.324533			.281	.3740	.03116883
	S-A-1-5-4	.32873	.324985			.281	.2750	.02291667
	S-A-1-6-4	.39283	.388172			.344	.2857	.02380952
	S-A-2-04-2	.15438	.152082			.093	.3600	.03000000
	S-A-2-05-2	.18168	.178975			.125	.3600	.03000000
	S-A-2-3-3	.21308	.210156			.156	.3317	.02764228
	S-A-2-3-4	.21268	.210280			.156	.2723	.02268908
	S-A-2-4-3	.27857	.274495			.219	.3537	.02947368
	S-A-2-4-4	.27791	.274752			.219	.2743	.02285714
	S-A-2-5-3	.34393	.338612			.281	.3740	.03116883
	S-A-2-5-4	.34303	.339122			.281	.2750	.02291667
	S-A-2-6-4	.40842	.403587			.344	.2857	.02380952
SPECIAL TAPER	S-T-1-3-3	.20381	.200867	1.000	.437	.156	.3491	.02909091
	S-T-1-3-4	.20301	.200758			.156	.2682	.02235294
	S-T-1-4-4	.26584	.262927			.219	.2644	.02203390
	S-T-1-5-4	.33049	.326523			.281	.2897	.02413793
	S-T-2-3-3	.21421	.211117			.156	.3491	.02909091
	S-T-2-3-4	.21341	.211043			.156	.2682	.02235294
	S-T-2-4-3	.27971	.275671			.187	.3491	.02909091
	S-T-2-4-4	.27884	.275785			.219	.2644	.02203390
	S-T-2-5-4	.34479	.340651			.281	.2897	.02413793
	S-T-3-3-3	.22461	.221367			.156	.3491	.02909091
	S-T-3-3-4	.22381	.221327			.156	.2682	.02235294
	S-T-3-4-4	.29184	.288642			.219	.2644	.02203390
	S-T-3-5-4	.35919	.354878			.281	.2897	.02413793
	S-T-4-3-3	.23501	.231617			.156	.3491	.02909091
	S-T-4-3-4	.23421	.231612			.156	.2682	.02235294
	S-T-4-4-4	.30484	.301500			.219	.2644	.02203390
	S-T-4-5-4	.37349	.369007			.219	.2897	.02413793

TL Countersink Depth Gauge

**UTLG-5120
Countersink Gauge**

SHEAR SERIES

G #	DASH NO.	D MIN	C +.0002 — .0000	F ± .0004	G
GROUP 1	100-1-04	.190	.1836	.0145	.437
	100-1-05	.236	.2216	.0182	.500
	100-1-3	.269	.2438	.0279	.625
	100-1-07	.320	.2938	.0298	.687
	100-1-4	.364	.3312	.0313	.750
	100-1-5	.444	.4045	.0343	.812
	100-1-6	.531	.4852	.0373	.875
	100-1-7	.623	.5696	.0477	1.000
	100-1-8	.710	.6498	.0512	1.125
	100-1-9	.849	.7782	.0574	1.500
	100-1-10	.945	.8900	.0529	1.625
	100-1-12	1.134	1.1122	.0435	1.875
	100-1-14	1.307	1.2894	.0464	2.250
	100-1-16	1.486	1.4680	.0512	2.500
	100-2-04	.198	.1836	.0175	.437
	100-2-05	.244	.2216	.0216	.500
GROUP 2	100-2-3	.280	.2438	.0323	.625
	100-2-07	.333	.2938	.0342	.687
	100-2-4	.377	.3312	.0367	.750
	100-2-5	.458	.4045	.0402	.812
	100-2-6	.546	.4852	.0437	.875
	100-2-7	.640	.5696	.0552	1.000
	100-2-8	.731	.6498	.0598	1.125
	100-2-9	.879	.7782	.0705	1.500
	100-2-10	.978	.8900	.0671	1.625
	100-2-12	1.172	1.1122	.0599	1.875
	100-2-14	1.353	1.2894	.0660	2.250
	100-2-16	1.537	1.4680	.0731	2.500
GROUP 3	100-3-04	.206	.1836	.0205	.437
	100-3-05	.252	.2216	.0250	.500
	100-3-3	.290	.2438	.0365	.625
	100-3-07	.346	.2938	.0386	.687
	100-3-4	.389	.3312	.0421	.750
	100-3-5	.472	.4045	.0462	.812
	100-3-6	.561	.4852	.0502	.875
	100-3-7	.658	.5696	.0628	1.000
	100-3-8	.751	.6498	.0685	1.125
	100-3-9	.909	.7782	.0836	1.500
	100-3-10	1.011	.8900	.0813	1.625
	100-3-12	1.210	1.1122	.0763	1.875
	100-3-14	1.399	1.2894	.0856	2.250
	100-3-16	1.588	1.4680	.0950	2.500
GROUP 4	100-4-04	.214	.1836	.0235	.437
	100-4-05	.260	.2216	.0284	.500
	100-4-3	.300	.2438	.0407	.625
	100-4-07	.359	.2938	.0430	.687
	100-4-4	.402	.3312	.0475	.750
	100-4-5	.486	.4045	.0522	.812
	100-4-6	.577	.4852	.0568	.875
	100-4-7	.676	.5696	.0704	1.000
	100-4-8	.771	.6498	.0772	1.125
	100-4-9	.939	.7782	.0967	1.500
	100-4-10	1.044	.8900	.0955	1.625
	100-4-12	1.248	1.1122	.0927	1.875
	100-4-14	1.445	1.2894	.1052	2.250
	100-4-16	1.639	1.4680	.1169	2.500
GROUP 5	100-5-3	.310	.2808	.0296	.625
	100-5-4	.415	.3770	.0336	.750
	100-5-5	.500	.4582	.0357	.812
	100-5-6	.594	.5462	.0378	.875
	100-5-7	.695	.6597	.0442	1.000
	100-5-8	.791	.7524	.0437	1.125
	100-5-9	.970	.8900	.0620	1.500
	100-5-10	1.077	.9900	.0670	1.625
	100-5-12	1.284	1.1800	.0789	1.875
	100-5-14	1.488	1.3600	.0936	2.250
	100-5-16	1.687	1.5500	.1018	2.500
GROUP 6	100-6-3	.320	.2808	.0339	.625
	100-6-4	.428	.3770	.0390	.750
	100-6-5	.514	.4582	.0397	.812
	100-6-6	.611	.5462	.0444	.875
	100-6-7	.714	.6597	.0478	1.000
	100-6-8	.801	.7524	.0504	1.125
	100-6-9	1.000	.8900	.0747	1.500
	100-6-10	1.109	.9900	.0810	1.625
	100-6-12	1.321	1.1800	.0949	1.875
	100-6-14	1.533	1.3600	.1130	2.250
	100-6-16	1.737	1.5500	.1232	2.500

SIMPLE, POSITIVE CHECK

TENSION SERIES

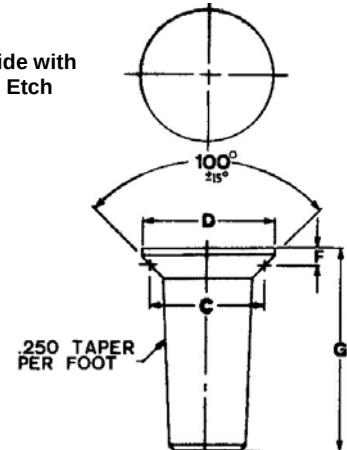
G #	DASH NO.	D MIN	C +.0002 — .0000	F ± .0004	G
GROUP 1	300-1-3	.349	.3270	.0272	.625
	300-1-4	.468	.4318	.0357	.750
	300-1-5	.588	.5449	.0422	.812
	300-1-6	.711	.6580	.0487	.875
	300-1-7	.834	.7782	.0532	1.000
	300-1-8	.957	.8900	.0602	1.125
	300-1-9	1.069	1.0026	.0629	1.500
	300-1-10	1.163	1.1122	.0596	1.625
	300-1-12	1.343	1.2894	.0654	1.875
	300-1-14	1.526	1.4680	.0713	2.250
	300-1-16	1.703	1.5730	.1065	2.500
GROUP 2	300-2-3	.359	.3270	.0316	.625
	300-2-4	.481	.4318	.0412	.750
	300-2-5	.603	.5449	.0483	.812
	300-2-6	.727	.6580	.0553	.875
	300-2-7	.852	.7782	.0608	1.000
	300-2-8	.977	.8900	.0689	1.125
	300-2-9	1.099	1.0026	.0760	1.500
	300-2-10	1.199	1.1122	.0738	1.625
	300-2-12	1.381	1.2894	.0818	1.875
	300-2-14	1.572	1.4680	.0909	2.250
	300-2-16	1.754	1.5730	.1284	2.500
GROUP 3	300-3-3	.369	.3270	.0359	.625
	300-3-4	.493	.4318	.0467	.750
	300-3-5	.617	.5449	.0543	.812
	300-3-6	.742	.6580	.0618	.875
	300-3-7	.870	.7782	.0685	1.000
	300-3-8	.998	.8900	.0776	1.125
	300-3-9	1.129	1.0026	.0776	1.500
	300-3-10	1.132	1.1122	.0891	1.625
	300-3-12	1.419	1.2894	.0880	1.875
	300-3-14	1.618	1.4680	.0982	2.250
	300-3-16	1.805	1.5730	.1503	2.500
GROUP 4	300-4-3	.379	.3270	.0402	.625
	300-4-4	.506	.4318	.0521	.750
	300-4-5	.631	.5449	.0603	.812
	300-4-6	.756	.6580	.0684	.875
	300-4-7	.888	.7782	.0761	1.000
	300-4-8	1.018	.8900	.0864	1.125
	300-4-9	1.159	1.0026	.1022	1.500
	300-4-10	1.265	1.1122	.1022	1.625
	300-4-12	1.457	1.2894	.1146	1.875
	300-4-14	1.664	1.4680	.1301	2.250
	300-4-16	1.856	1.5730	.1722	2.500
GROUP 5	300-5-3	.388	.3312	.0423	.625
	300-5-4	.520	.4582	.0469	.750
	300-5-5	.647	.5696	.0567	.812
	300-5-6	.773	.6580	.0750	.875
	300-5-7	.906	.7782	.0837	1.000
	300-5-8	1.039	.8900	.0952	1.125
	300-5-9	1.192	1.0600	.0904	1.500
	300-5-10	1.295	1.1122	.1164	1.625
	300-5-12	1.494	1.3438	.1066	1.875
	300-5-14	1.708	1.5730	.1046	2.250
	300-5-16	1.904	1.7166	.1312	2.500
GROUP 6	300-6-3	.398	.3312	.0464	.625
	300-6-4	.532	.4582	.0520	.750
	300-6-5	.661	.5696	.0627	.812
	300-6-6	.788	.6580	.0815	.875
	300-6-7	.923	.7782	.0910	1.000
	300-6-8	1.060	.8900	.1040	1.125
	300-6-9	1.222	1.0600	.1029	1.500
	300-6-10	1.325	1.1122	.1306	1.625
	300-6-12	1.530	1.3438	.1220	1.875
	300-6-14	1.752	1.5730	.1234	2.250
	300-6-16	1.954	1.7166	.1524	2.500

COUNTERSINK DEPTH GAUGE



UTLG-5120

Black Oxide with
Chemical Etch



TAPER LOCK COUNTERSINK DEPTH GAUGES are for tool room and shop use in setting up drilling equipment to the proper countersink depth. They also provide an easy means of checking the countersink depth of production drilled holes.

Diameter ground for Slip Fit in mating Taper Lock hole.

The Head Protrusion of each Gauge is ground to very close tolerance.

COUNTERSINK DEPTH is CHECKED by simply PLACING GAUGE in DRILLED HOLE and CHECKING FLUSHNESS OF GAUGE HEAD TO TOP of COUNTERSINK.

UTLG-5120	-100	-1	-3	P/N Code — COUNTERSINK GAUGE
				Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05) = 5/32
				Bolt Group
				Bolt Head Type: (100 & 10) Shear or (300) Tension
				Basic Gauge Number

Taper Lock Gauge Assemblies

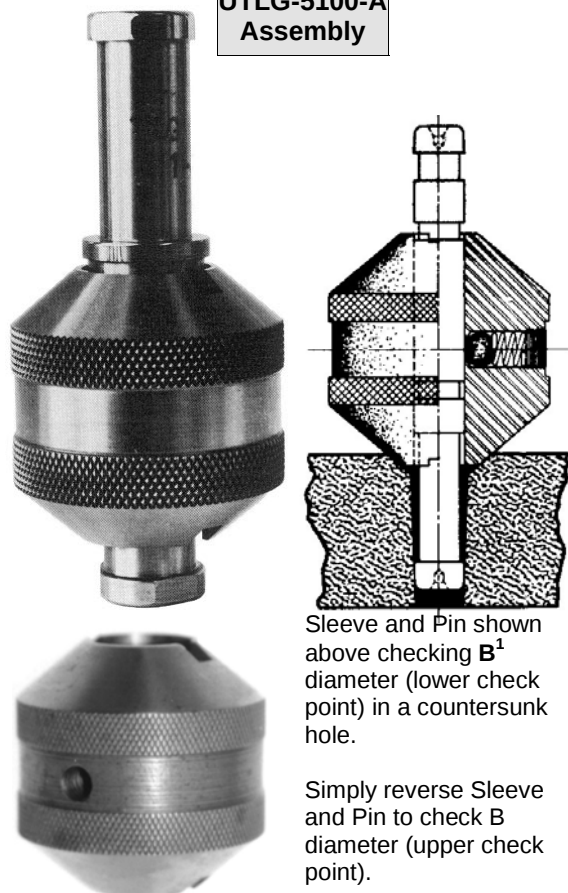
Taper Lock Hole Gauge and Sleeve Assemblies

HOLE GAUGE ASSEMBLIES

Details of parts, dimensions and part numbers for ordering are on page S17.

For FLUSH HEAD FASTENERS

UTLG-5100-A Assembly



Sleeve and Pin shown above checking **B¹** diameter (lower check point) in a countersunk hole.

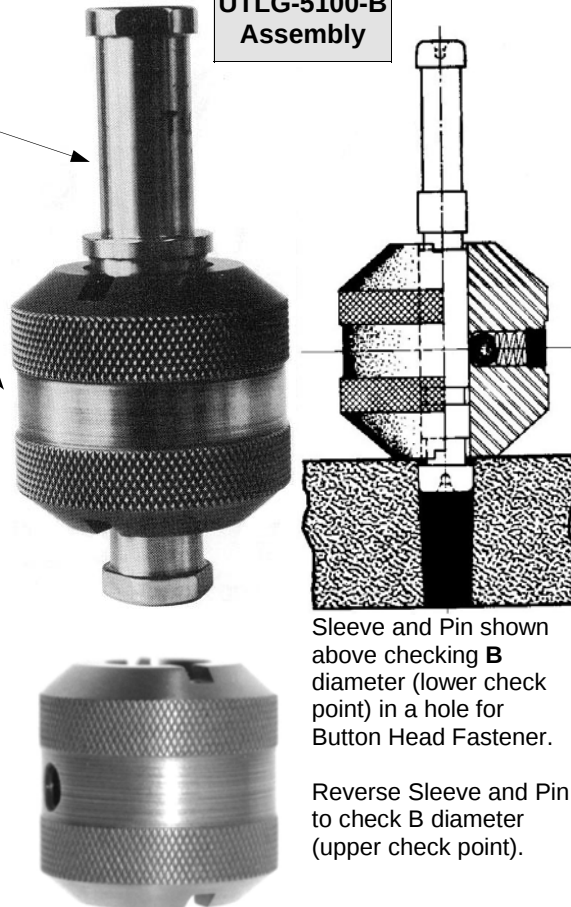
Simply reverse Sleeve and Pin to check **B** diameter (upper check point).

For PROTRUDING HEAD FASTENERS

UTLG-5100-B Assembly

UTLG-5101 PIN

UTLG-5102 SLEEVE



Sleeve and Pin shown above checking **B** diameter (lower check point) in a hole for Button Head Fastener.

Reverse Sleeve and Pin to check **B** diameter (upper check point).

UTLG-5100 Series Assemblies: UTLG-5100-A (Flush Head) and UTLG-5100-B (Protruding Head) See next page.

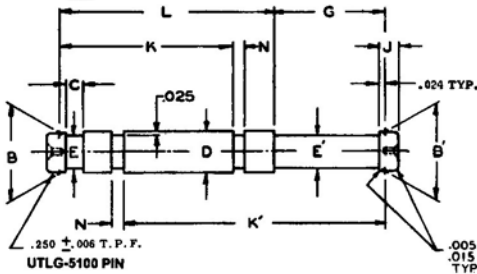
UNITED's Notch-Limit Pin Gauge Assemblies, UTLG-5100 series, are a fast, simple and accurate method of Taper Lock Hole Inspection. The Gauge Assembly consists of a Sleeve and Sliding Pin. For checking 100° countersunk head type bolts, the Sleeve ends are ground 100° on each end so they will fit into the countersink of the hole.

The Pin has, on each end, a short tapered portion of the exact required hole diameter at two different points at each end of the hole. The hole is checked by placing the Pin thru the Sleeve and into the hole as far as it will go with light hand pressure. The Sleeve is held snugly against the drilled structure or into the countersink in the case of a countersunk hole.

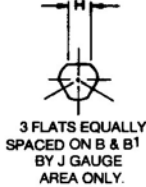
If the end of the hole being checked is within tolerance, the top surface of the Sleeve (opposite end being checked) will fall within the notch of the Pin. If the point being checked is too small, the notch will be entirely exposed beyond the surface of the Sleeve. If the point being checked is too large, the notch will be hidden within the Sleeve.

TL Pins And Sleeves

UTLG-5101



UTLG-5100 PIN
MATERIAL: 440C STAINLESS
HEAT TREATMENT: Rc 58-62



UNITED'S
Hole Gauge
Assemblies
UTLG-5100
are for tool
room use.

These
Gauges are
used for
checking
drilled hole
for Taper
Lock Drill
acceptance.

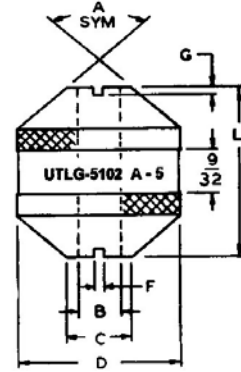
UTLG-5102 -B -2 -5 P/N Code — SLEEVE
Nominal Bolt Dia. In 1/16ths or in 1/32s if
number is preceded by '0' (-05) = 5/32
Bolt Group (BUTTON HEAD SLEEVES ONLY)
Head (A) Button Head Shear & Tension
(B) Angle Head Shear and Tension
BASIC SLEEVE NUMBER

UTLG-5101 -1 -3 P/N Code — PIN
Nominal Bolt Dia. In 1/16ths or in 1/32s if
number is preceded by '0' (-05) = 5/32
Bolt Group
BASIC PIN NUMBER

Taper Lock Pin and Sleeve

TAPER LOCK PINS AND SLEEVES

UTLG-5102



TLG 5102 SLEEVE
MATERIAL:
440C STAINLESS
HEAT TREATED

PIN PART NO.	B ± .0002	B' ± .0002	K ± .0030	K30 ± .0030	G ± .016	E ± .010	E' ± .010	D+0.0000 -0.0005	N ± .0015	L ± .016	H ± .015	C ± .016	J ± .005	UTLG-5102A-14 UTLG-5102A-16	2.000 2.250	1.2894 1.4680	1.0783 1.2183	2.000 2.250	.187 .187	.125 .125	.99° .99°
UTLG-5101-1-04	1432	1416	1.0580	1.1354	234	.093	.090							UTLG-5102B-1-04	9855	.370					
UTLG-5101-2-04	1497	1416	1.0550	1.4449	543	.098	.090	.1686	.0576	1.186	.050	.141	.070	UTLG-5102B-2-04	9825	.370	.1690	.875	.062	.046	100°
UTLG-5101-3-04	1562	1416	1.0520	1.7544	854	.106	.090							UTLG-5102B-3-04	9795	.370					
UTLG-5101-4-04	1627	1481	1.0490	1.7514	854	.113	.096							UTLG-5102B-4-04	9765	.370					
UTLG-5101-1-05	1689	1662	1.0543	1.1846	297	.118	.115							UTLG-5102B-1-05	9818	.400					
UTLG-5101-2-05	1767	1662	1.0509	1.5562	688	.126	.115	.2026	.0672	1.190	.060	.156	.070	UTLG-5102B-2-05	9784	.400	.2030	.875	.062	.046	100°
UTLG-5101-3-05	1845	1662	1.0475	1.9278	1040	.135	.115							UTLG-5102B-3-05	9750	.400					
UTLG-5101-4-05	1923	1740	1.0441	1.9244	1040	.142	.123							UTLG-5102B-4-05	9716	.400					
UTLG-5101-1-3	1969	1919	1.0706	1.3097	422	.147	.142							UTLG-5102B-1-3	9721	.475					
UTLG-5101-2-3	2073	1919	1.0662	1.8053	922	.157	.142	.2246	.0624	1.203	.075	.172	.070	UTLG-5102B-2-3	9677	.480	.2250	1.000	.062	.046	100°
UTLG-5101-3-3	2177	1919	1.0620	2.3011	1422	.168	.142							UTLG-5102B-3-3	9635	.485					
UTLG-5101-4-3	2281	2023	1.0578	2.2968	1422	.179	.152							UTLG-5102B-4-3	9593	.490					
UTLG-5101-1-07	2264	2207	1.0777	1.3509	448	.175	.169							UTLG-5102B-1-07	9702	.510					
UTLG-5101-2-07	2381	2207	1.0733	1.9090	1043	.186	.169	.2696	.0768	1.224	.090	.187	.070	UTLG-5102B-2-07	9658	.510	.2700	.875	.062	.046	100°
UTLG-5101-3-07	2498	2207	1.0689	2.4671	1592	.200	.169							UTLG-5102B-3-07	9614	.510					
UTLG-5101-4-07	2615	2324	1.0645	2.4627	1592	.212	.180							UTLG-5102B-4-07	9570	.510					
UTLG-5101-1-4	2586	2516	1.0812	1.4169	547	.201	.194							UTLG-5102B-1-4	9687	.540					
UTLG-5101-2-4	2716	2516	1.0758	2.0365	1172	.214	.194	.3046	.0768	1.234	.100	.203	.070	UTLG-5102B-2-4	9633	.546	.3050	1.000	.062	.046	100°
UTLG-5101-3-4	2846	2516	1.0704	2.6561	1797	.227	.194							UTLG-5102B-3-4	9579	.552					
UTLG-5101-4-4	2976	2646	1.0650	2.6507	1797	.240	.207							UTLG-5102B-4-4	9525	.558					
UTLG-5101-1-5	3216	3138	1.0872	1.4620	609	.260	.252							UTLG-5102B-1-5	9657	.610					
UTLG-5101-2-5	3359	3138	1.0813	2.1436	1297	.274	.252	.3746	.0912	1.265	.125	.234	.085	UTLG-5102B-2-5	9598	.617	.3750	1.000	.093	.046	100°
UTLG-5101-3-5	3503	3138	1.0753	2.8251	1984	.288	.252							UTLG-5102B-3-5	9538	.624					
UTLG-5101-4-5	3646	3281	1.0693	2.8191	1984	.303	.266							UTLG-5102B-4-5	9478	.631					
UTLG-5101-1-6	3849	3761	1.0962	1.5071	672	.317	.308							UTLG-5102B-1-6	9627	.680					
UTLG-5101-2-6	4003	3761	1.0898	2.2507	1422	.332	.308	.4446	.1056	1.296	.160	.250	.100	UTLG-5102B-2-6	9563	.688	.4450	1.000	.093	.046	100°
UTLG-5101-3-6	4159	3761	1.0833	2.9942	2172	.348	.308							UTLG-5102B-3-6	9498	.696					
UTLG-5101-4-6	4315	3917	1.0767	2.9876	2172	.364	.324							UTLG-5102B-4-6	9432	.704					
UTLG-5101-1-7	4488	4384	1.3588	1.8573	797	.375	.364							UTLG-5102B-1-7	1.2023	.750					
UTLG-5101-2-7	4670	4384	1.3513	2.7248	1672	.393	.364	.5146	.1200	1.546	.185	.281	.115	UTLG-5102B-2-7	1.1948	.759	.5150	1.250	.125	.046	100°
UTLG-5101-3-7	4852	4384	1.3437	3.5922	2547	.411	.364							UTLG-5102B-3-7	1.1872	.768					
UTLG-5101-4-7	5035	4566	1.3361	3.5845	2547	.430	.383							UTLG-5102B-4-7	1.1796	.777					
UTLG-5101-1-8	5130	5005	1.3643	1.9644	922	.433	.421							UTLG-5102B-1-8	1.1988	.820					
UTLG-5101-2-8	5338	5005	1.3557	2.9558	1922	.454	.421	.5846	.1344	1.578	.220	.297	.130	UTLG-5102B-2-8	1.1902	.830	.5850	1.250	.125	.046	100°
UTLG-5101-3-8	5547	5005	1.3470	3.9471	2922	.475	.421							UTLG-5102B-3-8	1.1815	.840					
UTLG-5101-4-8	5755	5213	1.3383	3.9384	2922	.496	.441							UTLG-5102B-4-8	1.1728	.850					
UTLG-5101-1-9	5849	5633	1.6551	2.6938	1450	.498	.477							UTLG-5102B-1-9	1.4426	.847					
UTLG-5101-2-9	6162	5633	1.6420	4.1807	2950	.530	.477	.6896	.1488	1.937	.240	.390	.187	UTLG-5102B-2-9	1.4295	.863	.6903	1.500	.125	.046	100°
UTLG-5101-3-9	6474	5633	1.6289	5.6676	4450	.562	.477							UTLG-5102B-3-9	1.4164	.878					
UTLG-5101-4-9	6786	5946	1.6158	5.6545	4450	.593	.509							UTLG-5102B-4-9	1.4033	.894					
UTLG-5101-1-10	6500	6261	1.6596	2.8089	1565	.558	.534							UTLG-5102B-1-10	1.4471	.953					
UTLG-5101-2-10	6839	6261	1.6454	4.1973	1990	.592	.534	.7656	.1632	1.937	.270	.406	.187	UTLG-5102B-2-10	1.4329	.970	.7663	1.500	.125	.046	100°
UTLG-5101-3-10	7178	6261	1.6312	6.0305	4815	.626	.534							UTLG-5102B-3-10	1.4187	.987					
UTLG-5101-4-10	7517	6600	1.6170	6.0158	4815	.660	.558							UTLG-5102B-4-10	1.4045	1.004					
UTLG-5101-1-12	7790	7517	2.2315	5.3951	1815	.675	.648							UTLG-5102B-1-12	1.9565	1.164					
UTLG-5101-2-12	8180	7517	2.2151	5.3981	3690	.714	.648	.9216	.1920	2.546	.320	.500	.250	UTLG-5102B-2-12	1.9401	1.184	.9223	2.000	.187	.125	100°
UTLG-5101-3-12	8571	7517	2.1987	7.2567	5565	.753	.648							UTLG-5102B-3-12	1.9237	1.203					
UTLG-5101-4-12	8962	7908	2.1823	7.2403	5565	.792	.687							UTLG-5102B-4-12	1.9073	1.223					
UTLG-5101-1-14	9118	8773	2.2286	3.8828	2190	.796	.761							UTLG-5102B-1-14	1.9536	1.345					
UTLG-5101-2-14	9586	8773	2.2090	6.1132	4440	.843	.761	1.0776	.2208	2.562	.380	.531	.250	UTLG-5102B-2-14	1.9340	1.367	1.0783	2.000	.187	.125	100°
UTLG-5101-3-14	1.0055	8773	2.1894	8.3436	6690	.890	.761							UTLG-5102B-3-14	1.9144	1.391					
UTLG-5101-4-14	1.0524	9242	2.1698	8.3240	6690	.946	.808							UTLG-5102B-4-14	1.8948	1.415					
UTLG-5101-1-16	1.0420	10029	2.4738	1.7662	4440	.908	.875							UTLG-5102B-1-16	2.1988	1.529					
UTLG-5101-2-16	1.0941	10029	2.4519	6.8273	4940	.966	.875	1.2176	.2496	2.843	.440	.562	.250	UTLG-5102B-2-16	2.1769	1.555	1.2183	2.250	.187	.125	100°
UTLG-5101-3-16	1.1461	10029	2.4300	9.3057	4440	1.018	.875							UTLG-5102B-3-16	2.1550	1.581					
UTLG-5101-4-16	1.1982	10550	2.4081	9.2835	7440	1.070	.927							UTLG-5102B-4-16	2.1331	1.607					

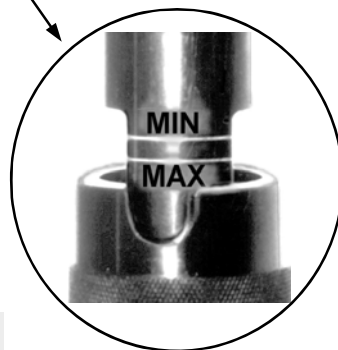
4-Way Protrusion Gauge Sets

Taper Lock Four-Way Protrusion Gauge Sets

4-WAY PROTRUSION GAUGE SETS



1. CHECKS FLUSH HEAD BOLTS
2. CHECKS PROTRUDING HEAD BOLTS



Special Sets can be customized to your requirements.

See also Kits, Page T19.

Gauge Pins available individually.

See Page S19 for details.

TWO GAUGE SIZES PER HANDLE.

GAUGE ENDS are PARALLEL.

I.D. and O.D. are CONCENTRIC.

4-Way SETS

SETS CONTAIN:

ONE TWO-WAY GAUGE HANDLE HOLDER and
EIGHT GAUGE PINS
In a DURABLE CARRYING CASE
WITH PROTECTION FOR GAUGES.

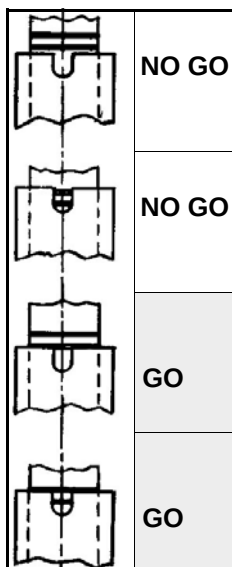
Also available individually.

SIMPLE — FAST

The utilization of the 4-way Protrusion Gauge is a simple and rapid method of accurately checking the protrusion of a tapered hole prior to fastener installation.

The Protrusion Gauge shown is designed to inspect the protrusion by simply inserting the gauge insert, an integral part of the gauge assembly, into the part with finger tip pressure. The pin at the top of the gauge will indicate whether or not the fastener is protruding an acceptable amount. Please refer to the Go and No Go illustrations.

Each gauge will check 20 sizes of Taper Lock bolt holes for TL100 and TL200 fasteners, Groups 1 thru 4 of the specified size. See the Taper Hole Gauge Selection Chart on page S7.



Inspect the protrusion by simply inserting the gauge insert, an integral part of the gauge assembly, into the part with finger tip pressure.

The pin at the top of the gauge will indicate whether or not the fastener is protruding an acceptable amount.

Please refer to the Go and No Go illustrations.

GAUGE HANDLE NO.	SIZES GAUGE WILL CHECK	SET NUMBER
UDB-755860	5/32 GROUPS 1 THRU 4 3/16 GROUPS 1 THRU 4	← UDB-755880 CONTAINS
UDB-755862	1/4 GROUPS 1 THRU 4 5/16 GROUPS 1 THRU 4	← UDB-755882 CONTAINS
UDB-755864	3/8 GROUPS 1 THRU 4 7/16 GROUPS 1 THRU 4	← UDB-755884 CONTAINS
UDB-755866	1/2 GROUPS 1 THRU 4 9/16 GROUPS 1 THRU 4	← UDB-755886 CONTAINS
UDB-755868	5/8 GROUPS 1 THRU 4 3/4 GROUPS 1 THRU 4	← UDB-755888 CONTAINS
UDB-755870	7/8 GROUPS 1 THRU 4 1" GROUPS 1 THRU 4	← UDB-755890 CONTAINS

Details next page S19.

4-Way Protrusion Gauges

3. CHECKS ONE SIZE FROM TOP

4. CHECKS SECOND SIZE FROM BOTTOM

4-Way Protrusion Gauges

TAPER LOCK PROTRUSION GAUGE PINS

See previous page S18.

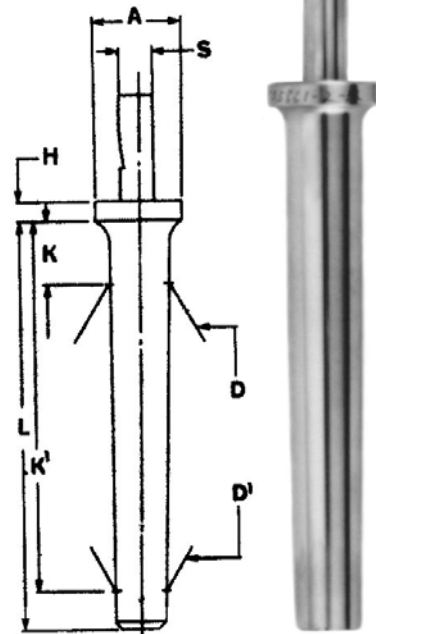
UNITED's Taper Lock Protrusion Gauge Pins can be used for checking both Flush and Protruding Head Bolts. They are best used with the Tapered Gauge Pins shown below, when a more critical check is needed.

When the fastener to be installed is going to be in a very critical location, it is recommended that a Gauge Pin be used to check the protrusion instead of the fastener itself.

When Gauge Pins are used you are then checking against a known value. This will then provide you with uniform installation of all the fasteners in a given production part.

GAUGE PIN PART NO.	GRP. NO.	NOM. DIA.	A	D	D'	H	K	K'	L	S
UDB-755861-1-05	1	5/32	.264	.1724	.1663	.125	.5225	.8175	1.135	.1557
UDB-755861-2-05	2	5/32	.272	.1803	.1663	.125	.5225	1.1925	1.510	.1557
UDB-755861-3-05	3	5/32	.280	.1881	.1663	.125	.5225	1.5675	1.885	.1557
UDB-755861-1-3	1	3/16	.302	.2010	.1925	.125	.5355	.9425	1.280	.1557
UDB-755861-2-3	2	3/16	.312	.2114	.1925	.125	.5355	1.4425	1.780	.1557
UDB-755861-3-3	3	3/16	.328	.2218	.1925	.125	.5355	1.9425	2.280	.1557
UDB-755861-1-4	1	1/4	.379	.2636	.2525	.125	.5355	1.0675	1.457	.1900
UDB-755861-2-4	2	1/4	.392	.2766	.2525	.125	.5355	1.6925	2.082	.1900
UDB-755861-3-4	3	1/4	.411	.2896	.2525	.125	.5355	2.3175	2.707	.1900
UDB-755861-1-5	1	5/16	.475	.3273	.3150	.125	.5375	1.1300	1.568	.2182
UDB-755861-2-5	2	5/16	.490	.3417	.3150	.125	.5375	1.8175	2.256	.2182
UDB-755861-3-5	3	5/16	.512	.3560	.3150	.125	.5375	2.5050	2.943	.2182
UDB-755861-1-6	1	3/8	.567	.3912	.3776	.125	.5405	1.1925	1.656	.2495
UDB-755861-2-6	2	3/8	.582	.4068	.3776	.125	.5405	1.9425	2.406	.2495
UDB-755861-3-6	3	3/8	.605	.4224	.3776	.125	.5405	2.6925	3.156	.2495
UDB-755861-1-7	1	7/16	.669	.4563	.4402	.156	.5455	1.3175	1.828	.2807
UDB-755861-2-7	2	7/16	.687	.4745	.4402	.156	.5455	2.1925	2.703	.2807
UDB-755861-3-7	3	7/16	.714	.4927	.4402	.156	.5455	3.0675	3.578	.2807
UDB-755861-1-8	1	1/2	.751	.5213	.5026	.156	.5455	1.4425	1.985	.3120
UDB-755861-2-8	2	1/2	.772	.5412	.5026	.156	.5455	2.4425	2.985	.3120
UDB-755861-3-8	3	1/2	.793	.5630	.5026	.156	.5455	3.4425	3.985	.3120
UDB-755861-1-9	1	9/16	.869	.5917	.5657	.156	.9425	2.1925	2.835	.3745
UDB-755861-2-9	2	9/16	.899	.6230	.5657	.156	.9425	3.6925	4.335	.3745
UDB-755861-3-9	3	9/16	.929	.6542	.5657	.156	.9425	5.1925	5.835	.3745
UDB-755861-1-10	1	5/8	.995	.6574	.6288	.250	1.0050	2.3175	3.005	.4057
UDB-755861-2-10	2	5/8	1.028	.6913	.6288	.250	1.0050	3.9425	4.630	.4057
UDB-755861-3-10	3	5/8	1.061	.7252	.6288	.250	1.0050	5.5675	6.255	.4057
UDB-755861-1-12	1	3/4	1.117	.7876	.7550	.250	1.0050	2.5675	3.350	.4370
UDB-755861-2-12	2	3/4	1.155	.8266	.7550	.250	1.0050	4.4425	5.225	.4370
UDB-755861-3-12	3	3/4	1.193	.8657	.7550	.250	1.0050	6.3175	7.100	.4370
UDB-755861-1-14	1	7/8	1.242	.9216	.8812	.250	1.0050	2.9425	3.830	.4995
UDB-755861-2-14	2	7/8	1.288	.9684	.8812	.250	1.0050	5.1925	6.080	.4995
UDB-755861-3-14	3	7/8	1.334	1.0153	.8812	.250	1.0050	7.4425	8.330	.4995
UDB-755861-1-16	1	1"	1.429	1.0530	1.0074	.250	1.0050	3.1925	4.180	.6245
UDB-755861-2-16	2	1"	1.480	1.1051	1.0074	.250	1.0050	5.6925	6.620	.6245
UDB-755861-3-16	3	1"	1.531	1.1571	1.0074	.250	1.0050	8.1925	9.180	.6245
UDB-755861-1-18	1	1-1/8	1.552	1.1853	1.1319	.250	1.0050	3.567	4.656	.7495
UDB-755861-2-18	2	1-1/8	1.612	1.2452	1.1319	.250	1.0050	6.442	7.531	.7495
UDB-755861-3-18	3	1-1/8	1.672	1.3051	1.1319	.250	1.0050	9.317	10.406	.7495
UDB-755861-4-05	4	5/32	.300	.1959	.1741	.125	.5225	1.5675	1.885	.1557
UDB-755861-4-3	4	3/16	.350	.2322	.2029	.125	.5355	1.9425	2.280	.1557
UDB-755861-4-4	4	1/4	.450	.3027	.2656	.125	.5335	2.1375	2.707	.1900
UDB-755861-4-5	4	5/16	.540	.3703	.3293	.125	.5375	2.5050	2.943	.2182
UDB-755861-4-6	4	3/8	.650	.4381	.3932	.125	.5405	2.6925	3.156	.2495
UDB-755861-4-7	4	7/16	.740	.5110	.4584	.156	.5455	3.0675	3.578	.2807
UDB-755861-4-8	4	1/2	.840	.5838	.5234	.156	.5455	3.4425	3.985	.3120
UDB-755861-4-9	4	9/16	.970	.6854	.5969	.156	.9425	5.1925	5.835	.3745
UDB-755861-4-10	4	5/8	1.125	.7591	.6627	.250	1.0050	5.5675	6.255	.4057
UDB-755861-4-12	4	3/4	1.240	.9048	.7941	.250	1.0050	6.3175	7.100	.4370
UDB-755861-4-14	4	7/8	1.400	1.0622	.9281	.250	1.0050	7.4425	8.330	.4995
UDB-755861-4-16	4	1"	1.590	1.2092	1.0595	.250	1.0050	8.1925	9.180	.6245
UDB-755861-4-18	4	1-1/3	1.740	1.3611	1.1879	.250	1.0050	9.137	10.406	.7495

PATENTED



FOR FLUSH, SHEAR AND PROTRUDING HEAD TAPER LOCKS

HANDLE
HOLDER

Specify
Handle
required as
listed on
page S18.

Select the
appropriate
set.

GAUGE
PIN

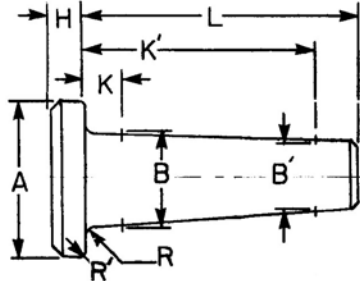


Blueing Gauges

Taper Lock Blueing Gauge Pins

UNITED TAPER LOCK BLUEING GAUGE PINS

UTLG-5160



UTLG-5160 -1 -5 P/N Code — BLUEING GAUGE PIN
Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05) = 5/32
Bolt Group
BASIC BLUEING PIN NUMBER

MATERIAL: H-11 STEEL ALLOY PER AMS 5485 OR AMS 6487
HEAT TREAT: 280-300 KSI TENSILE
FINISH: CADMIUM PLATE PER QQ-416 TYPE II CLASS 3 ON SIDE AND TOP OF HEAD ONLY. HYDROGEN RELIEVE FOR 23 HOURS AT 375° F.

To check hole acceptance by the blueing method, a Master Tapered Pin UTLG-5160 is used with a coating of Prussian Blue paint pigment, as the inspection medium.

Insert Pin into hole with finger pressure, tap pin into hole until pin has been driven in 25% of measured protrusion value.

Body of the pin must have a radial pattern and 90% to 100% bearing in all layers of sheet thickness for tool certification.

The pattern for production assembly drilling must be maintained at a minimum of 80% bearing in all sheets.

CAUTION: When removing the master pin, be very careful that it is not allowed to rotate in the hole.

See Pages S6 and S7.

Blueing Pin can be used with Impact Tool.
See Page S8.

G #	SEC-OND DASH #	A DIA. MAX. MIN.	H MAX. MIN.	C MAX.	R +.010 --.000	R' +.010 --.000	K +.020 --.000	B	K' +.020 --.000	B'	L ±.020
GROUP 1	- 04	.240 .230	.042 .032	.015	.010	.005	.5225	.1464	.7550	.1416	1.052
	- 05	.274 .264	.049 .039	.015	.010	.005	.5225	.1724	.8175	.1663	1.135
	- 3	.312 .302	.056 .044	.020	.015	.010	.5355	.2010	.9425	.1925	1.280
	- 4	.389 .379	.070 .058	.031	.015	.010	.5355	.2636	1.0675	.2525	1.457
	- 5	.487 .475	.080 .068	.031	.020	.015	.5375	.3273	1.1300	.3150	1.568
	- 6	.581 .567	.094 .082	.041	.020	.020	.5405	.3912	1.1925	.3776	1.656
	- 7	.685 .669	.132 .120	.047	.030	.020	.5455	.4563	1.3175	.4402	1.828
	- 8	.767 .751	.156 .144	.047	.030	.020	.5455	.5213	1.4425	.5026	1.985
	- 9	.885 .869	.180 .168	.060	.063	.030	.9425	.5917	2.1925	.5657	2.835
	- 10	1.011 .995	.204 .192	.060	.063	.030	.9425	.6574	2.3175	.6288	3.005
	- 12	1.133 1.117	.252 .238	.070	.063	.030	1.0050	.7876	2.5675	.7550	3.350
	- 14	1.258 1.242	.300 .284	.080	.063	.040	1.0050	.9216	2.9425	.8812	3.830
	- 16	1.445 1.429	.348 .332	.090	.063	.040	1.0050	1.0530	3.1925	1.0074	4.180

G #	SEC-OND DASH #	A DIA. MAX. MIN.	H MAX. MIN.	C MAX.	R +.010 --.000	R' +.010 --.000	K +.020 --.000	B	K' +.020 --.000	B'	L ±.020
GROUP 2	- 04	.248 .238	.042 .032	.015	.010	.005	.5225	.1530	1.0675	.1416	1.365
	- 05	.282 .272	.049 .039	.015	.010	.005	.5225	.1803	1.1925	.1663	1.510
	- 3	.323 .312	.056 .044	.020	.015	.010	.5355	.2114	1.4425	.1925	1.780
	- 4	.403 .392	.070 .058	.031	.015	.010	.5355	.2766	1.6925	.2525	2.082
	- 5	.502 .490	.080 .068	.031	.020	.015	.5375	.3417	1.8175	.3150	2.256
	- 6	.596 .582	.094 .082	.041	.020	.020	.5405	.4068	1.9425	.3776	2.406
	- 7	.703 .687	.132 .120	.047	.030	.020	.5455	.4745	2.1925	.4402	2.703
	- 8	.788 .772	.156 .144	.047	.030	.020	.5455	.5421	2.4425	.5026	2.985
	- 9	.915 .899	.180 .168	.060	.063	.030	.9425	.6230	3.6925	.5657	4.335
	- 10	1.044 1.028	.204 .192	.060	.063	.030	.9425	.6913	3.9425	.6288	4.630
	- 12	1.171 1.155	.252 .238	.070	.063	.030	1.0050	.8266	4.4425	.7550	5.225
	- 14	1.304 1.288	.300 .284	.080	.063	.040	1.0050	.9684	5.1925	.8812	6.080
	- 16	1.496 1.480	.348 .332	.090	.063	.040	1.0050	1.1051	5.6925	1.0074	6.680

G #	SEC-OND DASH #	A DIA. MAX. MIN.	H MAX. MIN.	C MAX.	R +.010 --.000	R' +.010 --.000	K +.020 --.000	B	K' +.020 --.000	B'	L ±.020
GROUP 3	- 04	.256 .246	.042 .032	.015	.010	.005	.5225	.1595	1.3800	.1416	1.677
	- 05	.290 .280	.049 .039	.015	.010	.005	.5225	.1881	1.5675	.1663	1.885
	- 3	.339 .328	.056 .044	.020	.015	.010	.5355	.2218	1.9425	.1925	2.280
	- 4	.421 .411	.070 .058	.031	.015	.010	.5355	.2896	2.3175	.2525	2.707
	- 5	.524 .512	.080 .068	.031	.020	.015	.5375	.3560	2.5050	.3150	2.943
	- 6	.619 .605	.094 .082	.041	.020	.020	.5405	.4224	2.6925	.3776	3.156
	- 7	.730 .714	.132 .120	.047	.030	.020	.5455	.4927	3.0675	.4402	3.578
	- 8	.809 .793	.156 .144	.047	.030	.020	.5455	.5630	3.4425	.5026	3.985
	- 9	.945 .929	.180 .168	.060	.063	.030	.9425	.6542	5.1925	.5657	5.835
	- 10	1.077 1.061	.204 .192	.060	.063	.030	.9425	.7252	5.5675	.6288	6.255
	- 12	1.209 1.193	.252 .238	.070	.063	.030	1.0050	.8657	6.3175	.7550	7.100
	- 14	1.350 1.334	.300 .284	.080	.063	.040	1.0050	1.0152	7.4425	.8812	8.330
	- 16	1.547 1.531	.348 .332	.090	.063	.040	1.0050	1.1571	8.1925	1.0074	9.180

G #	SEC-OND DASH #	A DIA. MAX. MIN.	H MAX. MIN.	C MAX.	R +.010 --.000	R' +.010 --.000	K +.020 --.000	B	K' +.020 --.000	B'	L ±.020
GROUP 4	- 04	.264 .254	.042 .032	.015	.010	.005	.5225	.1660	1.3800	.1481	1.677
	- 05	.298 .288	.049 .039	.015	.010	.005	.5225	.1959	1.5675	.1741	1.885
	- 3	.352 .340	.056 .044	.020	.015	.010	.5355	.2322	1.9425	.2029	2.280
	- 4	.440 .430	.070 .058	.031	.015	.010	.5355	.3027	2.3175	.2655	2.707
	- 5	.544 .533	.080 .068	.031	.020	.015	.5375	.3703	2.5050	.3293	2.943
	- 6	.642 .628	.094 .082	.041	.020	.020	.5405	.4381	2.6925	.3932	3.156
	- 7	.757 .741	.132 .120	.047	.030	.020	.5455	.5110	3.0675	.4584	3.578
	- 8	.848 .832	.156 .144	.047	.030	.020	.5455	.5838	3.4425	.5234	3.985
	- 9	.975 .959	.180 .168	.060	.063	.030	.9425	.6854	5.1925	.5969	5.835
	- 10	1.110 1.094	.204 .192	.060	.063	.030	.9425	.7591	5.5675	.6627	6.255
	- 12	1.247 1.231	.252 .238	.070	.063	.030	1.0050	.9048	6.3175	.7941	7.100
	- 14	1.396 1.380	.300 .284	.080	.063	.040	1.0050	1.0622	7.4425	.9281	8.330
	- 16	1.598 1.582	.348 .332	.090	.063	.040	1.0050	1.2092	8.1925	1.0595	9.180

G #	SEC-OND DASH #	A DIA. MAX. MIN.	H MAX. MIN.	C MAX.	R +.010 --.000	R' +.010 --.000	K +.020 --.000	B	K' +.020 --.000	B'	L ±.020
GROUP 5	- 04										
	- 05										
	- 3	.356 .352	.056 .044	.020	.015	.010	.5355	.2426	1.9425	.2133	2.280
	- 4	.453 .443	.070 .058	.031	.015	.010	.5355	.3157	2.3175	.2785	2.707
	- 5	.560 .548	.080 .068	.031	.020	.015	.5375	.3846	2.5050	.3436	2.943
	- 6	.665 .651	.094 .082	.041	.020	.020	.5405	.4537	2.6925	.4089	3.156
	- 7	.784 .768	.132 .120	.047	.030	.020	.5455	.5292	3.0675	.4767	3.578
	- 8	.869 .853	.156 .144	.047	.030	.020	.5455	.6046	3.4425	.5443	3.985
	- 9	1.005 .989	.180 .168	.060	.063	.030	.9425	.7167	5.1925	.6282	5.835
	- 10	1.143 1.127	.204 .192	.060	.063	.030	.9425	.7929	5.5675	.6965	6.255
	- 12	1.285 1.269	.252 .238	.070	.063	.030	1.0050	.9438	6.3175	.8331	7.100
	- 14	1.442 1.426	.300 .284	.080	.063	.040	1.0050	1.1091	7.4425	.9749	8.330
	- 16	1.649 1.633	.348 .332	.090	.063	.040	1.0050	1.2613	8.1925	1.1116	9.180

G #	SEC-OND DASH #	A DIA. MAX. MIN.	H MAX. MIN.	C MAX.	R +.010 --.000	R' +.010 --.000	K +.020 --.000	B	K' +.020 --.000	B'	L ±.020
GROUP 6	- 04										
	- 05										
	- 3	.378 .364	.056 .044	.020	.015	.010	.5355	.2530	1.9425	.2133	2.280
	- 4	.468 .456	.070 .058	.031	.015	.010	.5355	.3287	2.3175	.2785	2.707
	- 5	.575 .563	.080 .068	.031	.020	.015	.5375	.3990	2.5050	.3436	2.943
	- 6	.689 .674	.094 .082	.041	.020	.020	.5405	.4693	2.6925	.4089	3.156
	- 7	.812 .795	.132 .120	.047	.030	.020	.5455	.5474	3.0675	.4767	3.578
	- 8	.890 .874	.156 .144	.047	.030	.020	.5455	.6255	3.4425	.5443	3.985
	- 9	1.035 1.019	.180 .168	.060	.063	.030	.9425	.7480	5.1925	.6282	5.835
	- 10	1.176 1.160	.204 .192	.060	.063	.030	.9425	.8267	5.5675	.6965	6.255
	- 12	1.323 1.307	.252 .238	.070	.063	.030	1.0050	.9829	6.3175	.8331	7.100
	- 14	1.488 1.472	.300 .284	.080	.063	.040	1.0050	1.1559	7.4425	.9749	8.330
	- 16	1.700 1.684	.348 .332	.090	.063	.040	1.0050	1.3134	8.1925	1.1116	9.180

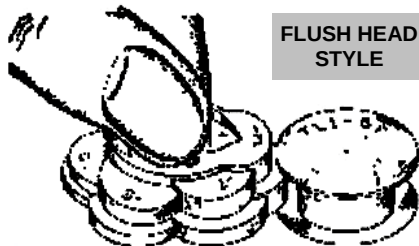
UTLG 5130 & 5131 Series Protrusion Gauges

UNITED'S UTLG 5130 and 5131 Series Protrusion Gauges provide a simple means of checking acceptable fastener protrusion and interference limits on the assembly line.

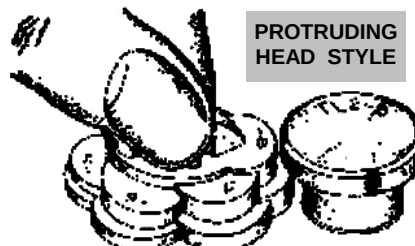
Turn the dial knob to the proper dash number of the hole. Install bolt into hole with hand pressure of 5 to 15 pounds. Place the base of the gauge flat against the structure. Slide the gauge up to the fasteners head.

Flush-head fastener hole is acceptable if the top surface of the head falls between the lower and upper steps of the gauge.

Protruding-head fastener hole is acceptable if the bottom edge of the fastener head falls within the lower and upper steps of the gauge.

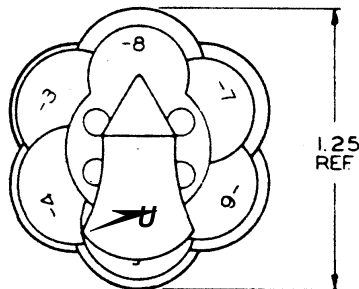


FLUSH HEAD
STYLE

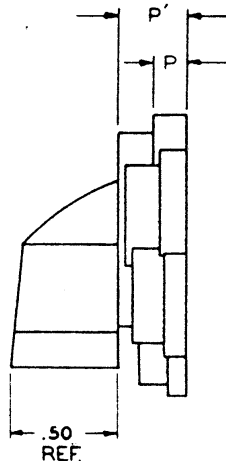


PROTRUDING
HEAD STYLE

MATERIAL: UTLG 5130 SERIES - BLUE PLASTIC
UTLG 5131 SERIES - ALUMINUM BLUE ANODIZED



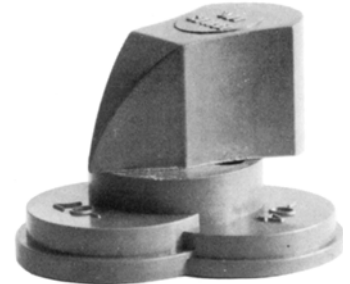
UTLG 5130-1
ILLUSTRATED



Protrusion Gauges

UTLG 5130-3

For Checking Hole Diameter 1/8" thru 7/32"



UTLG 5130-1

For Checking Hole Diameter 3/16" thru 1/2"



UTLG 5130-2

For Checking Hole Diameter 9/16" thru 1"



GAUGE NUMBER	DASH NUMBER	BOLT DIAMETER	PROTRUSION		GAUGE NUMBER	DASH NUMBER	BOLT DIAMETER	PROTRUSION	
			P ± .002	P' ± .002				P ± .002	P' ± .002
UTLG 5130-3	04	1/8"	0.058	0.144	UTLG 5131-1	3	3/16"	0.097	0.173
	05	5/32"	0.062	0.158		4	1/4"	0.115	0.202
	07	7/32"	0.082	0.187		5	5/16"	0.133	0.230
UTLG 5130-1	3	3/16"	0.072	0.173		6	3/8"	0.151	0.259
	4	1/4"	0.086	0.202		7	7/16"	0.170	0.288
	5	5/16"	0.101	0.230		8	1/2"	0.187	0.317
	6	3/8"	0.115	0.259	UTLG 5131-2	9	9/16"	0.205	0.346
	7	7/16"	0.130	0.288		10	5/8"	0.223	0.371
UTLG 5130-2	8	1/2"	0.111	0.317		12	3/4"	0.260	0.432
	9	9/16"	0.158	0.346					
	10	5/8"	0.173	0.371					
	12	3/4"	0.202	0.432					
	14	7/8"	0.230	0.490					
	16	1"	0.259	0.547					

UTLG 5123 Series Countersink Gauge

Taperlock Shear Series Countersink Depth Gauge

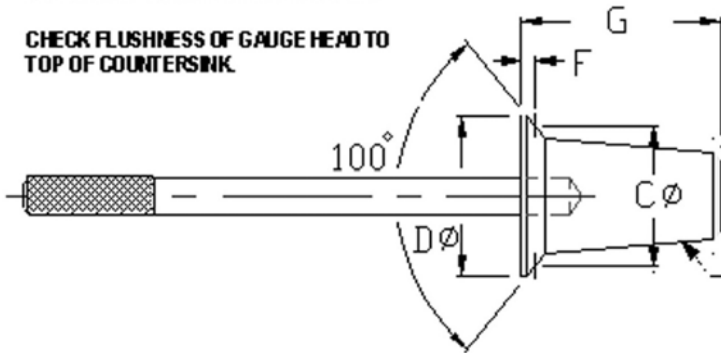
UTLG 5123-100



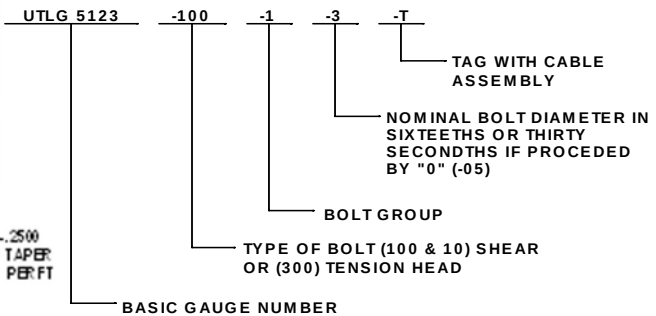
UNITED'S UTLG 5123-100 Shear Series Countersink Depth Gauges are ground for slip fit in mating Taperlock Holes. Taperlock countersink depth gauges are for tool room and shop use. They setup drilling equipment to proper countersink depth. They are an easy means of checking the countersink depth of production drilled holes. The head protrusion of each gauge is ground to very close tolerances. Countersink depth is check by simply placing gauge in drilled hole, then checking the flushness of gauge head to top of countersink. Use the handle and remove the gauge easily from the hole. When specified UNITED will provide a tag for identification. Add the letter 'T' to the end of the tool number.

PLACE GAUGE IN COUNTERSINK HOLE.

CHECK FLUSHNESS OF GAUGE HEAD TO
TOP OF COUNTERSINK.



PART CODE:



DASH NUMBER	FASTENER SIZE	D MIN.	C +.0002 -.0000	F ±.0004	G
GROUP 1 SHEAR SERIES					
-100-1-04	1/8"	0.190	0.1836	0.0145	0.437
-100-1-05	5/32	0.236	0.2216	0.0182	0.500
-100-1-3	3/16"	0.269	0.2438	0.0279	0.625
-100-1-07	7/32"	0.320	0.2988	0.0298	0.687
-100-1-4	1/4"	0.364	0.3312	0.0313	0.750
-100-1-5	5/16"	0.444	0.4045	0.0343	0.812
-100-1-6	3/8"	0.531	0.4852	0.0373	0.875
-100-1-7	7/16"	0.623	0.5696	0.0477	1.000
-100-1-8	1/2"	0.710	0.6498	0.0512	1.125
-100-1-9	9/16"	0.849	0.7782	0.0574	1.500
-100-1-10	5/8"	0.945	0.8900	0.0529	1.625
-100-1-12	3/4"	1.134	1.1122	0.0435	1.875
-100-1-14	7/8"	1.307	1.2894	0.0464	2.250
-100-1-16	1"	1.486	1.4680	0.0512	2.500
GROUP 2					
-100-2-04	1/8"	0.198	0.1836	0.0175	0.437
-100-2-05	5/32	0.244	0.2216	0.0216	0.500
-100-2-3	3/16"	0.280	0.2438	0.0323	0.625
-100-2-07	7/32"	0.333	0.2988	0.0342	0.687
-100-2-4	1/4"	0.377	0.3312	0.0367	0.750
-100-2-5	5/16"	0.458	0.4045	0.0402	0.812
-100-2-6	3/8"	0.546	0.4852	0.0437	0.875
-100-2-7	7/16"	0.640	0.5696	0.0552	1.000
-100-2-8	1/2"	0.731	0.6498	0.0598	1.125
-100-2-9	9/16"	0.879	0.7782	0.0705	1.500
-100-2-10	5/8"	0.978	0.8900	0.0671	1.625
-100-2-12	3/4"	1.172	1.1122	0.0599	1.875
-100-2-14	7/8"	1.353	1.2894	0.0660	2.250
-100-2-16	1"	1.537	1.4680	0.0731	2.500

DASH NUMBER	FASTENER SIZE	D MIN.	C +.0002 -.0000	F ±.0004	G
GROUP 3					
-100-3-04	1/8"	0.206	0.1836	0.0205	0.437
-100-3-05	5/32	0.252	0.2216	0.0250	0.500
-100-3-3	3/16"	0.290	0.2438	0.0365	0.625
-100-3-07	7/32"	0.346	0.2988	0.0386	0.687
-100-3-4	1/4"	0.389	0.3312	0.0421	0.750
-100-3-5	5/16"	0.472	0.4045	0.0462	0.812
-100-3-6	3/8"	0.561	0.4852	0.0502	0.875
-100-3-7	7/16"	0.658	0.5696	0.0628	1.000
-100-3-8	1/2"	0.751	0.6498	0.0685	1.125
-100-3-9	9/16"	0.909	0.7782	0.0836	1.500
-100-3-10	5/8"	1.011	0.8900	0.0813	1.625
-100-3-12	3/4"	1.210	1.1122	0.0763	1.875
-100-3-14	7/8"	1.399	1.2894	0.0856	2.250
-100-3-16	1"	1.588	1.4680	0.0950	2.500
GROUP 4					
-100-4-04	1/8"	0.214	0.1836	0.0235	0.437
-100-4-05	5/32	0.260	0.2216	0.0284	0.500
-100-4-3	3/16"	0.300	0.2438	0.0407	0.625
-100-4-07	7/32"	0.359	0.2988	0.0430	0.687
-100-4-4	1/4"	0.402	0.3312	0.0475	0.750
-100-4-5	5/16"	0.486	0.4045	0.0522	0.812
-100-4-6	3/8"	0.577	0.4852	0.0568	0.875
-100-4-7	7/16"	0.676	0.5696	0.0704	1.000
-100-4-8	1/2"	0.771	0.6498	0.0772	1.125
-100-4-9	9/16"	0.939	0.7782	0.0967	1.500
-100-4-10	5/8"	1.044	0.8900	0.0955	1.625
-100-4-12	3/4"	1.248	1.1122	0.0927	1.875
-100-4-14	7/8"	1.445	1.2894	0.1052	2.250
-100-4-16	1"	1.639	1.4680	0.1169	2.500

MAT'L: ALLOY STEEL HARDENED AND GROUND

FINISH: BLACK OXIDE WITH CHEMICAL ETCH

DASH NUMBER	FASTENER SIZE	D MIN.	C +.0002 -.0000	F ±.0004	G
GROUP 5					
-100-5-3	3/16"	0.310	0.2808	0.0296	0.625
-100-5-4	1/4"	0.415	0.3770	0.0336	0.750
-100-5-5	5/16"	0.500	0.4582	0.0357	0.812
-100-5-6	3/8"	0.594	0.5462	0.0378	0.875
-100-5-7	7/16"	0.695	0.6597	0.0442	1.000
-100-5-8	1/2"	0.791	0.7524	0.0437	1.125
-100-5-9	9/16"	0.970	0.8900	0.0620	1.500
-100-5-10	5/8"	1.077	0.9900	0.0670	1.625
-100-5-12	3/4"	1.284	1.1800	0.0789	1.875
-100-5-14	7/8"	1.488	1.3600	0.0936	2.250
-100-5-16	1"	1.687	1.5500	0.1018	2.500
GROUP 6					
-100-6-3	3/16"	0.320	0.2808	0.0339	0.625
-100-6-4	1/4"	0.428	0.3770	0.0390	0.750
-100-6-5	5/16"	0.514	0.4582	0.0397	0.812
-100-6-6	3/8"	0.611	0.5462	0.0444	0.875
-100-6-7	7/16"	0.714	0.6597	0.0478	1.000
-100-6-8	1/2"	0.801	0.7524	0.0504	1.125
-100-6-9	9/16"	1.000	0.8900	0.0747	1.500
-100-6-10	5/8"	1.109	0.9900	0.0810	1.625
-100-6-12	3/4"	1.321	1.1800	0.0949	1.875
-100-6-14	7/8"	1.533	1.3600	0.1130	2.250
-100-6-16	1"	1.737	1.5500	0.1232	2.500

Taperlock Tension Series Countersink Depth Gauge

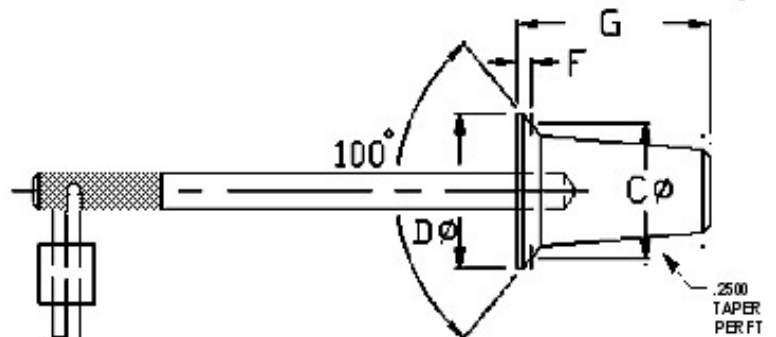
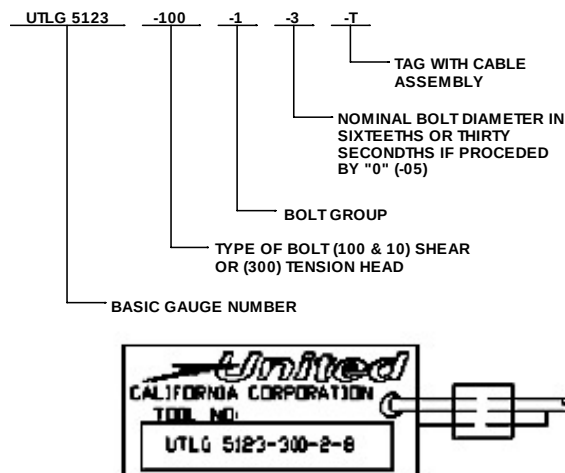
UTLG 5123 Series
Countersink Gauge

UNITED'S UTLG 5123-300 Tension Series Countersink Depth Gauges are ground for slip fit in mating Taperlock Hole.

UTLG 5123-300

- ①. For Tool Room and Production Use.
- ②. Use to Setup Drill to Correct Depth.
- ③. Place Gauge in Countersunk Hole.
- ④. Check Flushness of Countersink to Gauge.
- ⑤. If Countersink is within Tolerance

PART CODE:



MAT'L: ALLOY STEEL HARDENED AND GROUND

FINISH: BLACK OXIDE WITH CHEMICAL ETCH

DASH NUMBER	FASTENER SIZE	D MIN.	C +.0002 -.0000	F ±.0004	G
GROUP 1 TENSION SERIES					
-300-1-3	3/16"	0.349	0.3270	0.0272	0.625
-300-1-4	1/4"	0.468	0.4318	0.0357	0.750
-300-1-5	5/16"	0.588	0.5449	0.0422	0.812
-300-1-6	3/8"	0.711	0.6580	0.0487	0.875
-300-1-7	7/16"	0.834	0.7782	0.0532	1.000
-300-1-8	1/2"	0.957	0.8900	0.0602	1.125
-300-1-9	9/16"	1.069	1.0026	0.0629	1.500
-300-1-10	5/8"	1.163	1.1122	0.0596	1.625
-300-1-12	3/4"	1.343	1.2894	0.0654	1.875
-300-1-14	7/8"	1.526	1.4680	0.0713	2.250
-300-1-16	1"	1.703	1.5730	0.1065	2.500
GROUP 2					
-300-2-3	3/16"	0.359	0.3270	0.0316	0.625
-300-2-4	1/4"	0.481	0.4318	0.0412	0.750
-300-2-5	5/16"	0.603	0.5449	0.0483	0.812
-300-2-6	3/8"	0.727	0.6580	0.0553	0.875
-300-2-7	7/16"	0.852	0.7782	0.0608	1.000
-300-2-8	1/2"	0.977	0.8900	0.0689	1.125
-300-2-9	9/16"	1.099	1.0026	0.0760	1.500
-300-2-10	5/8"	1.199	1.1122	0.0738	1.625
-300-2-12	3/4"	1.381	1.2894	0.0818	1.875
-300-2-14	7/8"	1.572	1.4680	0.0909	2.250
-300-2-16	1"	1.754	1.5730	0.1284	2.500

DASH NUMBER	FASTENER SIZE	D MIN.	C +.0002 -.0000	F ±.0004	G
GROUP 3					
-300-3-3	3/16"	0.369	0.3270	0.0359	0.625
-300-3-4	1/4"	0.493	0.4318	0.0467	0.750
-300-3-5	5/16"	0.617	0.5449	0.0543	0.812
-300-3-6	3/8"	0.742	0.6580	0.0618	0.875
-300-3-7	7/16"	0.870	0.7782	0.0685	1.000
-300-3-8	1/2"	0.998	0.8900	0.0776	1.125
-300-3-9	9/16"	1.129	1.0026	0.0891	1.500
-300-3-10	5/8"	1.132	1.1122	0.0880	1.625
-300-3-12	3/4"	1.419	1.2894	0.0982	1.875
-300-3-14	7/8"	1.618	1.4680	0.1105	2.250
-300-3-16	1"	1.805	1.5730	0.1503	2.500
GROUP 4					
-300-4-3	3/16"	0.379	0.3270	0.0402	0.625
-300-4-4	1/4"	0.506	0.4318	0.0521	0.750
-300-4-5	5/16"	0.631	0.5449	0.0603	0.812
-300-4-6	3/8"	0.756	0.6580	0.0684	0.875
-300-4-7	7/16"	0.888	0.7782	0.0761	1.000
-300-4-8	1/2"	1.018	0.8900	0.0864	1.125
-300-4-9	9/16"	1.159	1.0026	0.1022	1.500
-300-4-10	5/8"	1.265	1.1122	0.1022	1.625
-300-4-12	3/4"	1.457	1.2894	0.1146	1.875
-300-4-14	7/8"	1.664	1.4680	0.1301	2.250
-300-4-16	1"	1.856	1.5730	0.1722	2.500

DASH NUMBER	FASTENER SIZE	D MIN.	C +.0002 -.0000	F ±.0004	G
GROUP 5					
-300-5-3	3/16"	0.388	0.3312	0.0423	0.625
-300-5-4	1/4"	0.520	0.4582	0.0469	0.750
-300-5-5	5/16"	0.647	0.5696	0.0567	0.812
-300-5-6	3/8"	0.773	0.6580	0.0750	0.875
-300-5-7	7/16"	0.906	0.7782	0.0837	1.000
-300-5-8	1/2"	1.039	0.8900	0.0952	1.125
-300-5-9	9/16"	1.192	1.0600	0.0904	1.500
-300-5-10	5/8"	1.295	1.1122	0.1164	1.625
-300-5-12	3/4"	1.494	1.3438	0.1066	1.875
-300-5-14	7/8"	1.708	1.5730	0.1046	2.250
-300-5-16	1"	1.904	1.7166	0.1312	2.500
GROUP 6					
-300-6-3	3/16"	0.398	0.3312	0.0464	0.625
-300-6-4	1/4"	0.532	0.4582	0.0520	0.750
-300-6-5	5/16"	0.661	0.5696	0.0627	0.812
-300-6-6	3/8"	0.788	0.6580	0.0815	0.875
-300-6-7	7/16"	0.923	0.7782	0.0910	1.000
-300-6-8	1/2"	1.060	0.8900	0.1040	1.125
-300-6-9	9/16"	1.222	1.0600	0.1029	1.500
-300-6-10	5/8"	1.325	1.1122	0.1306	1.625
-300-6-12	3/4"	1.530	1.3438	0.1220	1.875
-300-6-14	7/8"	1.752	1.5730	0.1234	2.250
-300-6-16	1"	1.954	1.7166	0.1524	2.500

**Kit UDB-756200
For Hi-Lok & Hi-Tigue**

Countersink Flushness Gauge Kit



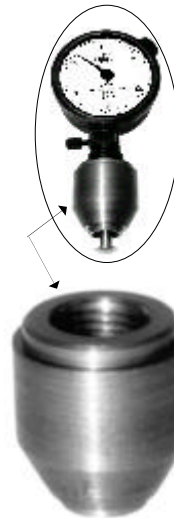
**UDB-756200 COUNTERSINK
FLUSHNESS GAUGE COMPLETE KIT**



**UDB-756253
BROAD TRIPOD
BASE**

**UDB-756251
DIAL
INDICATOR**

**UDB-756250 GAUGE ASSEMBLY
.0005 WITH BROAD BASE
INDICATOR & STYLUS**



**UDB-756255 NARROW
INDICATOR BASE ONLY**



**HANDLES
(NINE)**



**UDB-10905
HEX KEY
3/32 SHORT**

**UDB-10903
HEX KEY
1/16 LONG**

**UNITED KIT
FOR INSPECTION
OF CLOSE
TOLERANCES
ON FLUSH HEAD
FASTENERS**

**UDB-756249 SET OF NINE COUNTERSINK GAUGES FOR
HI-LOK and HI-TIGUE FASTENER HOLES.**



**UDB-
756236
(HLT23-6)**

**UDB-
756204
(HLT114-4)**

**UDB-
756205
(HLT115-5)**

**UDB-
756206
(HLT115-6)**

**UDB-
756208
(HLT115-8)**

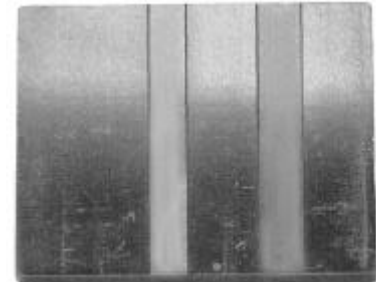
**UDB-
756210
(HLT115-10)**

**UDB-
756212
(HLT115-12)**

**UDB-
756214
(HLT115-14)**

**UDB-
756216
(HLT115-16)**

UDB-756259 CHECK BLOCK



CHECK BLOCK SETS ALL NINE GAUGES

DIAL INDICATOR

Tripod Base has contact points 2-1/4" apart. Base is counterbored 1-1/4 dia.

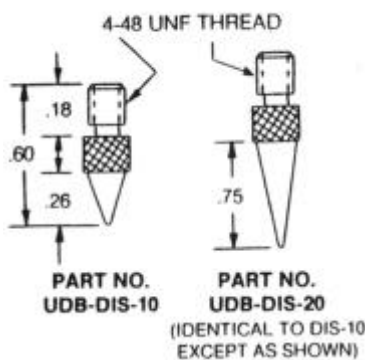


**UDB-756251
Indicator
Only**

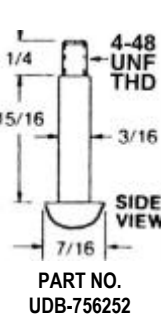
**UDB-756253
Tripod Base
Only**

**PLAIN SPHERICAL STYLUS
ONLY**

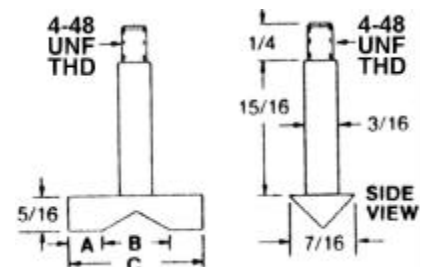
DIAL INDICATOR STYLUS



GROUP 1 PART NO.	MINIMUM GRADUATION	TOTAL RANGE
UDB-DI-105	.0001	0.025
UDB-DI-120	.0005	0.075
UDB-DI-135	.001	0.125



**MEASURES
to .0001
INCH**



PART NO.	A	B	C
UDB-DIS-30	.047	.095	.190
UDB-DIS-40	.075	.150	.300
UDB-DIS-50	.125	.250	.500
UDB-DIS-60	.200	.400	.800
UDB-DIS-70	.250	.500	1.000

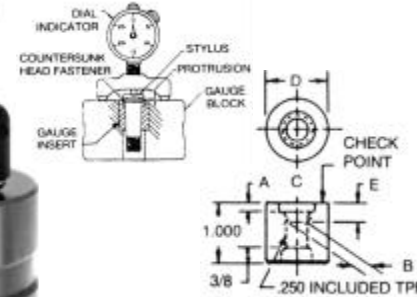
Surface Flushness Gauge

Master Gauge Block and Inserts

SIMPLE- FAST - EASY STEPS

1. Adjust Dial Indicator to Zero on Gauge Blocks totaling the Nominal Protrusion Values as specified.
2. Insure proper seating of Fastener into Insert Gauge Bore.
3. Place Stylus on Head of Fastener and/or Gauge Pin. Avoid coming in contact with head markings or any center recess.
4. INSPECT RECORD READINGS!

UDB-UTLG-5060	S	-1	-1	-10	P/N Code	INSERT GAUGE
						Nominal Bolt Dia. In 1/16th
						Bolt Group
						Use (I) Inspection
						Bolt Type: (S) Shear (T) Tension 100°
						Basic GAUGE Number



UDB-UTLG-5060 GAUGE INSERTS

SAE 2340 OR 4620 CASE HARDEND .040 DEEP RC 60 MIN.
Gauge Insert O.D.s are 1" - 1-1/2" - 2". Select Master Gauge Blocks with internal dimensions to accommodate Gauge Insert. See bottom of page.

Close Tolerances on Head Dimensions of Flush Fasteners demand an efficient Inspection Method. **UNITED's MASTER BLOCKS, INSERT GAUGES and DIAL INDICATORS are EASY to USE, MAINTAIN, and YOU GET a SIMPLE ACCURATE MEASUREMENT!** The Dial Indicator must be capable of measuring .0001 inch, though an Indicator which measures in .0005 inch increments is used and acceptable. The method outlined here was mandated for Inspection of Head Protrusion Values and the Final Acceptance Authority. . Acceptance and Rejection is based on the use of this Inspection Method and primarily on the products on actual Head Protrusion Values. (Refer B.P.S. 253.)

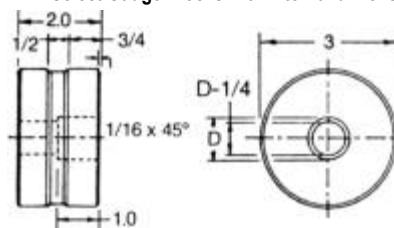
SHEAR GAUGE INSERTS										Cases provided for Sets.			
G #	TENSION DASH NO.	A +.010 -.000	B +.002 -.000	C NOM.	D ±.002	E ±.001	USE STYLUS DASH NO.	GAUGE BLOCK DASH NO.					
GROUP 1	S-1-1-3	.065	.199	.2438	1.000	.187	30	1					
	S-1-1-4	.080	.261	.3312	1.000	.187	40	1					
	S-1-1-5	.085	.325	.4045	1.000	.187	40	1					
	S-1-1-6	.100	.389	.4852	1.000	.187	50	1					
	S-1-1-7	.110	.454	.5696	1.000	.187	50	1					
	S-1-1-8	.115	.519	.6498	1.000	.187	50	1					
	S-1-1-9	.125	.593	.7782	1.500	.312	60	2					
	S-1-1-10	.145	.660	.8900	1.500	.312	60	2					
	S-1-1-12	.176	.790	1.1122	1.500	.312	70	2					
	S-1-1-14	.200	.924	1.2894	2.000	.312	70	3					
GROUP 2	S-1-2-3	.065	.209	.2438	1.000	.187	30	1					
	S-1-2-4	.080	.274	.3312	1.000	.187	40	1					
	S-1-2-5	.085	.339	.4045	1.000	.187	40	1					
	S-1-2-6	.100	.404	.4852	1.000	.187	50	1					
	S-1-2-7	.110	.472	.5696	1.000	.187	50	1					
	S-1-2-8	.115	.539	.6498	1.000	.187	50	1					
	S-1-2-9	.125	.624	.7782	1.500	.312	60	2					
	S-1-2-10	.145	.693	.8900	1.500	.312	60	2					
	S-1-2-12	.176	.829	1.1122	1.500	.312	70	2					
	S-1-2-14	.200	.971	1.2894	2.000	.312	70	3					
GROUP 3	S-1-3-3	.065	.219	.2438	1.000	.187	30	1					
	S-1-3-4	.080	.287	.3312	1.000	.187	40	1					
	S-1-3-5	.085	.353	.4045	1.000	.187	40	1					
	S-1-3-6	.100	.420	.4852	1.000	.187	50	1					
	S-1-3-7	.110	.490	.5696	1.000	.187	50	1					
	S-1-3-8	.115	.560	.6498	1.000	.187	50	1					
	S-1-3-9	.125	.655	.7782	1.500	.312	60	2					
	S-1-3-10	.145	.727	.8900	1.500	.312	60	2					
	S-1-3-12	.176	.868	1.1122	1.500	.312	70	2					
	S-1-3-14	.200	1.017	1.2894	2.000	.312	70	3					
GROUP 4	S-1-4-4	.080	.300	.3312	1.000	.187	40	1					
	S-1-4-5	.085	.368	.4045	1.000	.187	40	1					
	S-1-4-6	.100	.435	.4852	1.000	.187	50	1					
	S-1-4-7	.110	.508	.5696	1.000	.187	50	1					
	S-1-4-8	.115	.581	.6498	1.000	.187	50	1					
	S-1-4-9	.125	.686	.7782	1.500	.312	60	2					
	S-1-4-10	.145	.759	.8900	1.500	.312	60	2					
	S-1-4-12	.176	.907	1.1122	1.500	.312	70	2					
	S-1-4-14	.200	1.064	1.2894	2.000	.312	70	3					
	S-1-4-16	.218	1.211	1.4680	2.000	.312	70	3					

TENSION GAUGE INSERTS										Cases provided for Sets.			
G #	TENSION DASH NO.	A +.010 -.000	B +.002 -.000	C NOM.	D ±.002	E ±.001	USE STYLUS DASH NO.	GAUGE BLOCK DASH NO.					
GROUP 1	T-1-1-3	.080	.199	.3270	1.000	.187	40	1					
	T-1-1-4	.105	.261	.4318	1.000	.187	40	1					
	T-1-1-5	.140	.324	.5449	1.000	.187	50	1					
	T-1-1-6	.160	.389	.6580	1.000	.187	50	1					
	T-1-1-7	.165	.454	.7782	1.000	.187	50	1					
	T-1-1-8	.180	.519	.8900	1.000	.187	60	1					
	T-1-1-9	.220	.595	1.0026	1.500	.312	60	2					
	T-1-1-10	.240	.661	1.1122	1.500	.312	70	2					
	T-1-1-12	.255	.792	1.2894	1.500	.312	70	2					
	T-1-1-14	.275	.926	1.4680	2.000	.312	70	3					
GROUP 2	T-1-2-3	.080	.210	.3270	1.000	.187	40	1					
	T-1-2-4	.105	.275	.4318	1.000	.187	40	1					
	T-1-2-5	.140	.340	.5449	1.000	.187	50	1					
	T-1-2-6	.160	.406	.6580	1.000	.187	50	1					
	T-1-2-7	.165	.474	.7782	1.000	.187	50	1					
	T-1-2-8	.180	.542	.8900	1.000	.187	60	1					
	T-1-2-9	.220	.626	1.0026	1.500	.312	60	2					
	T-1-2-10	.240	.694	1.1122	1.500	.312	70	2					
	T-1-2-12	.255	.831	1.2894	1.500	.312	70	2					
	T-1-2-14	.275	.972	1.4680	2.000	.312	70	3					
GROUP 3	T-1-3-3	.080	.220	.3270	1.000	.187	40	1					
	T-1-3-4	.105	.288	.4318	1.000	.187	40	1					
	T-1-3-5	.140	.355	.5449	1.000	.187	50	1					
	T-1-3-6	.160	.421	.6580	1.000	.187	50	1					
	T-1-3-7	.165	.492	.7782	1.000	.187	50	1					
	T-1-3-8	.180	.562	.8900	1.000	.187	60	1					
	T-1-3-9	.220	.657	1.0026	1.500	.312	60	2					
	T-1-3-10	.240	.728	1.1122	1.500	.312	70	2					
	T-1-3-12	.255	.869	1.2894	1.500	.312	70	2					
	T-1-3-14	.275	1.019	1.4680	2.000	.312	70	3					
GROUP 4	T-1-4-4	.105	.301	.4318	1.000	.187	40	1					
	T-1-4-5	.140	.369	.5449	1.000	.187	50	1					
	T-1-4-6	.160	.437	.6580	1.000	.187	50	1					
	T-1-4-7	.165	.510	.7782	1.000	.187	50	1					
	T-1-4-8	.180	.583	.8900	1.000	.187	60	1					
	T-1-4-9	.220	.688	1.0026	1.500	.312	60	2					
	T-1-4-10	.240	.761	1.1122	1.500	.312	70	2					
	T-1-4-12	.255	.908	1.2894	1.500	.312	70	2					
	T-1-4-14	.275	1.065	1.4680	2.000	.312	70	3					
	T-1-4-16	.275	1.211	1.5730	2.000	.312	70	3					

NOTE: 'C' Dimensions on UNITED GAUGES are .0020 below the specified dimensions to allow for wear.

GAUGE BLOCK MASTER PART NO.	D DIA. +.010 -.000
UTLG-5060-1	1.000
UTLG-5060-2	1.500
UTLG-5060-3	2.000
UTLG-5060-123	SET OF THREE ABOVE PROVIDED IN A CASE.

Select Gauge Blocks with internal dimensions to accommodate Gauge Insert.



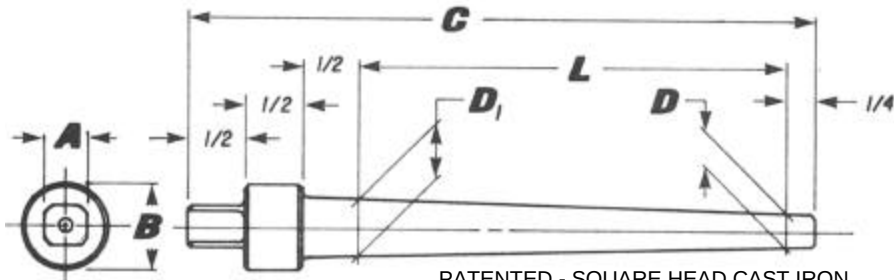
UDB-UTLG-5060 GAUGE BLOCK MASTERS

GAUGE BLOCK
SAE D2 STEEL RC 62-64

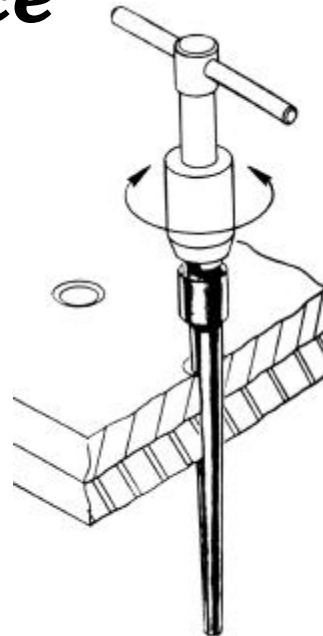


Tapered Laps

Lap to Finish Excellence



PATENTED - SQUARE HEAD CAST IRON
.2500 ±.001 INCLUDED TAPER PER FOOT



LAP FOR A FINE FINISH IN TAPERED HOLES!

Even deep holes in high tensile material lap to an excellent finish. After lapping recheck the hole with *UNITED*'s Taper Hole Gauge to see that the hole is on size. Always clean hole thoroughly after lapping and before gauging. *UNITED* will regrind worn Taper Laps. Prices on quotation.

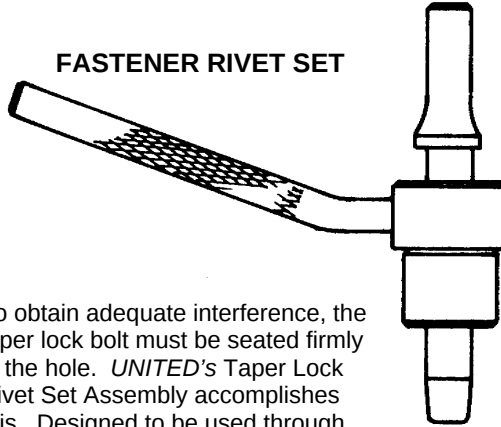
Use **UNITED LAPPING TOOLS** For Excellence of Finish!

UNITED	TAPER LOCK		DIMENSIONS					
PART NO.	SIZE	AND GROUP	A	B	C	D	D ₁	L
UDB-601500	5/32	GROUP 1 - 5	1/4	3/8	3.72	.163	.204	1.971
UDB-601501	3/16	GROUP 1 - 5	1/4	3/8	4.29	.189	.242	2.543
UDB-601502	1/4	GROUP 1 - 5	1/4	3/8	4.96	.248	.315	3.215
UDB-601503	5/16	GROUP 1 - 5	1/4	3/8	5.25	.310	.383	3.503
UDB-601504	3/8	GROUP 1 - 4	3/8	1/2	4.82	.372	.436	3.071
UDB-601505	3/8	GROUP 5	3/8	1/2	4.05	.404	.452	2.303
UDB-601506	7/16	GROUP 1 - 4	3/8	1/2	5.35	.434	.509	3.599
UDB-601507	7/16	GROUP 5	3/8	1/2	4.44	.471	.527	2.687
UDB-601508	1/2	GROUP 1 - 4	1/2	3/4	5.88	.496	.582	4.127
UDB-601509	1/2	GROUP 5	1/2	3/4	4.82	.538	.602	3.071
UDB-601510	9/16	GROUP 1 - 3	1/2	3/4	6.40	.559	.656	4.655
UDB-601511	9/16	GROUP 4	1/2	3/4	6.40	.590	.687	4.655
UDB-601512	9/16	GROUP 5	1/2	3/4	6.40	.621	.718	4.655
UDB-601513	5/8	GROUP 1 - 3	5/8	7/8	6.79	.621	.726	5.039
UDB-601514	5/8	GROUP 4	5/8	7/8	6.79	.655	.760	5.039
UDB-601515	5/8	GROUP 5	5/8	7/8	6.79	.688	.793	5.039
UDB-601516	3/4	GROUP 1 - 3	5/8	7/8	7.51	.746	.866	5.758
UDB-601517	3/4	GROUP 4	5/8	7/8	7.51	.786	.906	5.758
UDB-601518	3/4	GROUP 5	5/8	7/8	7.51	.825	.945	5.758
UDB-601519	7/8	GROUP 1 - 3	5/8	1-1/4	8.45	.875	1.014	6.700
UDB-601520	7/8	GROUP 4	5/8	1-1/4	6.25	.968	1.061	4.500
UDB-601521	7/8	GROUP 5	5/8	1-1/4	8.45	.968	1.108	6.700
UDB-601522	1"	GROUP 1 - 3	5/8	1-3/8	8.45	1.003	1.143	6.700
UDB-601523	1"	GROUP 4	5/8	1-3/8	6.75	1.110	1.214	5.000
UDB-601524	1"	GROUP 5	5/8	1-3/8	9.25	1.110	1.266	7.500

Taper Lock Rivet Sets

TL Rivet Sets

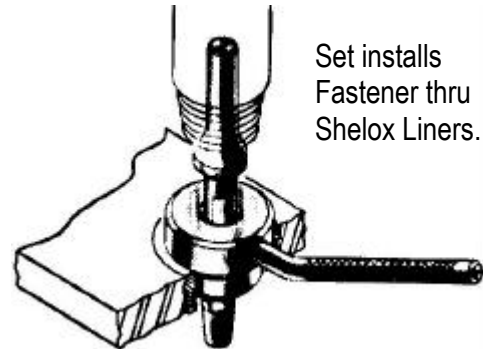
FASTENER RIVET SET



To obtain adequate interference, the taper lock bolt must be seated firmly in the hole. UNITED's Taper Lock Rivet Set Assembly accomplishes this. Designed to be used through the SHELOX Liner. This Set will easily adapt to most pneumatic rivet guns and will secure them before the nut is torqued.

UNITED TAPER LOCK RIVET SET ASSEMBLIES

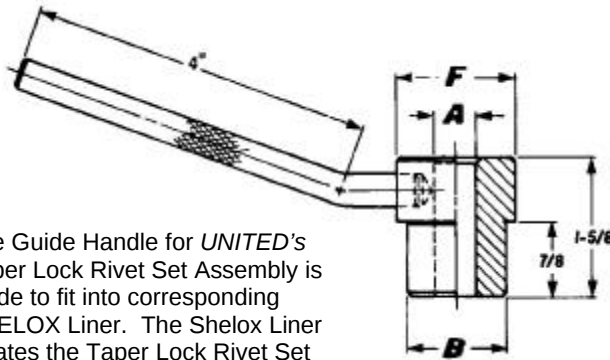
ASSEMBLY PART NO.	TAPER LOCK BOLT SIZE	FITS SHELOX
UDB-755444	1/4	521154 OR 521354
UDB-755445	5/16	521155 OR 521355
UDB-755446	3/8	521156 OR 521356
UDB-755447	7/16	521157 OR 521357
UDB-755448	1/2	521158 OR 521358
UDB-755449	9/16	521158 OR 521358
UDB-755450	5/8	521160 OR 521360



Set installs Fastener thru Shelox Liners.



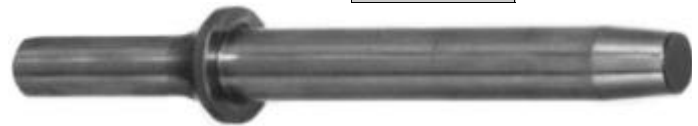
FASTENER GUIDE HANDLE ONLY



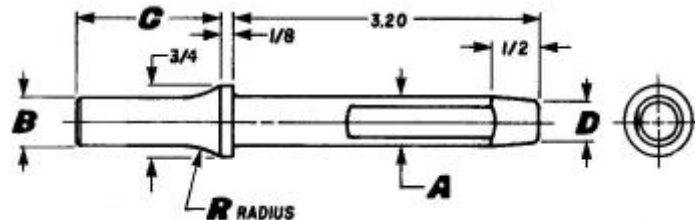
The Guide Handle for UNITED's Taper Lock Rivet Set Assembly is made to fit into corresponding SHELOX Liner. The Shelox Liner locates the Taper Lock Rivet Set precisely over the Head of the Fastener, then drives it squarely into place.

HANDLE PART NO.	TAPER LOCK BOLT SIZE	A	B	F	FITS SHELOX
UDB-755484	1/4	.4685 .4695	1.040 1.039	1-1/2	521154 OR 521354
UDB-755485	5/16	.4685 .4695	1.167 1.166	1-17/32	521155 OR 521355
UDB-755486	3/8	.4685 .4695	1.395 1.394	1-3/4	521156 OR 521356
UDB-755487	7/16	.5625 .5635	1.604 1.603	1-15/16	521157 OR 521357
UDB-755488	1/2	.6405 .6415	1.816 1.815	2-3/16	521158 OR 521358
UDB-755489	9/16	.7815 .7825	2.085 2.084	2-7/16	521158 OR 521358
UDB-755490	5/8	.8755 .8765	2.295 2.294	2-21/32	521160 OR 521360

ANVIL ONLY



Taper Only on:
UDB-755464 and
UDB-755465.



UNITED's Taper Lock Rivet Sets are manufactured from tough alloy steel selected to resist fracturing.

Sets can be used until shortened by .187 at which time they must be replaced.

ANVIL PART NO.	FITS HANDLE	A	B	C	D	R
UDB-755464	UDB-755484	.4680 .4670	.402 .400	1.53	.300 TAPERED	1/2
UDB-755465	UDB-755485	.4680 .4670	.402 .400	1.53	.384 TAPERED	1/2
UDB-755466	UDB-755486	.4680 .4670	.402 .400	1.53	.468	1/2
UDB-755467	UDB-755487	.5620 .5610	.498 .496	1.50	.562	3/4
UDB-755468	UDB-755488	.6400 .6390	.498 .496	1.50	.640	3/4
UDB-755469	UDB-755489	.7810 .7800	.498 .496	1.50	.781	3/4
UDB-755470	UDB-755490	.8750 .8740	.498 .496	1.50	.875	3/4

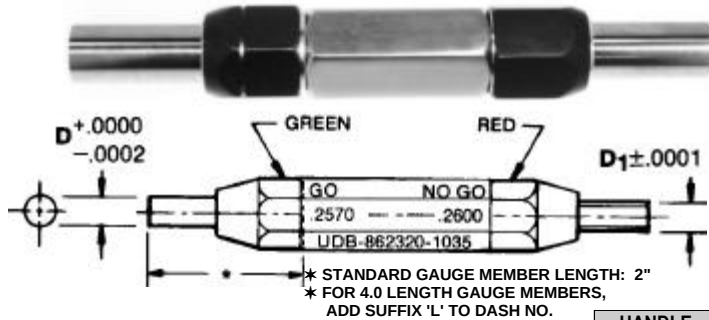
**'Go'-'No Go'
Plug Gauges**

Uni-Check Cylindrical Plug Gauges-'Go-No Go'

CYLINDRICAL PLUG GAUGES—'GO' and 'NO GO'

DIMENSIONS CONTINUE ON
PAGES S29 AND S30.

UDB-862320 (plus Dash No.)



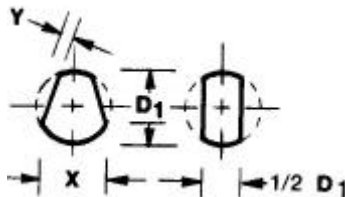
**To order, specify Part No. plus Dash No.
Example: UDB-862320—1035**

GAUGES ARE
AVAILABLE IN .001
INCREMENTS.

ADDITIONAL GAUGE MEMBERS ARE AVAILABLE WITH THE FOLLOWING TOLERANCES:	1 +.0000 - .0002
	2 +.0002 - .0000
	3 +.0001 - .0001

Special
NO-GO
Designs

VIEWS
ENLARGED



NOTE: $X = .95 D_1$ $Y = .10 X$

**RELIEVED
STYLE**

(SPECIAL)

**STANDARD 'NO GO' DESIGN
ADD SUFFIX 'R' TO DASH NO.**

**BLADE
STYLE**

(SPECIAL)

**'NO GO' DESIGN UP TO .760
ADD SUFFIX 'B' TO DASH NO.**

HANDLE PART NO.	BUSHING PART NO. (ADD DASH NO.)	GAUGE MIN	RANGE THRU	MAX	HEX	LENGTH
UDB-862321H	UDB-862321B (PLUS DASH NO.)	.061	THRU	.075	1/4	2"
UDB-862322H	UDB-862322B- (PLUS DASH NO.)	.075	THRU	.180	3/8	2-1/2
UDB-862323H	UDB-862323B- (PLUS DASH NO.)	.181	THRU	.281	9/16	3"
UDB-862324H	UDB-862324B- (PLUS DASH NO.)	.282	THRU	.406	11/16	3-1/2
UDB-862325H	UDB-862325B- (PLUS DASH NO.)	.407	THRU	.510	13/16	4"
UDB-862326H	UDB-862326B- (PLUS DASH NO.)	.511	THRU	.635	15/16	4-17/32
UDB-862327H	UDB-862327B- (PLUS DASH NO.)	.636	THRU	.760	1-1/16	4-21/32
UDB-862328H	'TRI-LOK' TYPE	.761	THRU	1.010	1-1/4	5-1/4
UDB-862329H	'TRI-LOK' TYPE	1.011	THRU	1.5015	1-1/4	5-1/4

SPECIAL SIZES available on request.
GAUGE SETS are available on request.

DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.
0200	.0940	.1010	0320	.1370	.1410	0430	.1700	.1730	0520	.1890	.1930
0205	.0960	.1030	0325	.1440	.1470	0435	.1710	.1730	0525	.1895	.1905
0210	.0970	.1040	0330	.1440	.1500	0440	.1710	.1740	0530	.1895	.1912
0215	.0980	.1020	0335	.1450	.1500	0445	.1720	.1750	0535	.1895	.1915
0220	.0980	.1030	0340	.1540	.1560	0450	.1760	.1790	0540	.1895	.1920
0225	.0980	.1060	0345	.1540	.1570	0453	.1770	.1787	0545	.1900	.1920
0230	.0980	.1120	0350	.1590	.1610	0455	.1770	.1810	0550	.1900	.1922
0235	.0990	.1060	0355	.1590	.1620	0457	.1770	.1820	0555	.1900	.1930
0240	.1040	.1110	0360	.1590	.1650	0460	.1800	.1820	0560	.1900	.1940
0245	.1070	.1140	0365	.1590	.1720	0462	.1800	.1830	0565	.1900	.1960
0250	.1090	.1160	0370	.1600	.1640	0465	.1820	.1840	0570	.1900	.1980
0255	.1110	.1180	0375	.1605	.1625	0470	.1830	.1850	0575	.1904	.1914
0260	.1140	.1210	0380	.1610	.1620	0475	.1850	.1870	0580	.1905	.1925
0265	.1180	.1250	0385	.1610	.1635	0480	.1850	.1880	0585	.1910	.1940
0270	.1230	.1260	0390	.1610	.1660	0482	.1860	.1865	0590	.1910	.1970
0275	.1245	.1265	0392	.1615	.1635	0483	.1860	.1880	0595	.1920	.1960
0280	.1245	.1270	0394	.1635	.1652	0485	.1865	.1875	0600	.1920	.1980
0285	.1250	.1300	0395	.1635	.1657	0490	.1865	.1885	0605	.1930	.1950
0290	.1270	.1290	0400	.1640	.1662	0493	.1870	.1890	0610	.1930	.1970
0295	.1280	.1320	0405	.1640	.1680	0495	.1875	.1897	0615	.1950	.1970
0300	.1280	.1420	0410	.1645	.1675	0500	.1875	.1905	0620	.1955	.1965
0305	.1285	.1320	0415	.1650	.1670	0505	.1880	.1890	0625	.1955	.1975
0310	.1285	.1340	0420	.1650	.1680	0510	.1880	.1910	0630	.1955	.2025
0315	.1290	.1320	0425	.1660	.1720	0515	.1890	.1920	0635	.1960	.1970

CONTINUED ON PAGES S29 AND S30 . . .

Uni-Check Cylindrical Plug Gauges-'Go-No Go'

'Go'-'No Go'
Plug Gauges

DIMENSIONS CONTINUE ON PAGE S30. SEE PAGE S28.

DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.
0640	.1960	.1990	0891	.2460	.2480	1175	.2765	.2785	1450	.3235	.3255
0645	.1970	.2010	0895	.2460	.2600	1180	.2770	.2780	1455	.3240	.3250
0650	.1975	.1995	0900	.2470	.2480	1181	.2770	.2790	1460	.3245	.3265
0655	.1985	.2005	0905	.2470	.2490	1185	.2775	.2795	1465	.3255	.3275
0659	.1990	.2010	0910	.2475	.2485	1190	.2780	.2790	1470	.3270	.3290
0665	.1995	.2015	0915	.2475	.2505	1191	.2780	.2800	1475	.3275	.3285
0670	.2000	.2020	0920	.2480	.2500	1195	.2785	.2795	1480	.3275	.3295
0675	.2005	.2025	0925	.2480	.2510	1200	.2785	.2805	1485	.3276	.3293
0680	.2010	.2040	0930	.2490	.2500	1205	.2795	.2825	1489	.3280	.3297
0685	.2020	.2040	0935	.2490	.2580	1210	.2800	.2850	1490	.3280	.3320
0690	.2025	.2035	0940	.2495	.2505	1215	.2805	.2815	1495	.3280	.3340
0695	.2025	.2045	0945	.2495	.2512	1220	.2805	.2825	1500	.3281	.3303
0697	.2026	.2043	0950	.2495	.2515	1222	.2807	.2824	1502	.3291	.3308
0700	.2030	.2070	0955	.2495	.2520	1225	.2808	.2825	1505	.3320	.3360
0705	.2040	.2080	0960	.2495	.2525	1230	.2810	.2830	1510	.3320	.3380
0707	.2041	.2058	0964	.2500	.2517	1235	.2810	.2850	1515	.3360	.3380
0710	.2050	.2060	0965	.2500	.2522	1240	.2810	.2870	1520	.3365	.3375
0715	.2050	.2090	0970	.2500	.2530	1245	.2812	.2834	1525	.3380	.3390
0720	.2051	.2068	0975	.2500	.2540	1247	.2822	.2839	1530	.3380	.3400
0725	.2055	.2075	0980	.2500	.2560	1250	.2830	.2850	1535	.3390	.3410
0727	.2055	.2095	0985	.2502	.2512	1255	.2850	.2870	1540	.3390	.3450
0730	.2056	.2078	0990	.2515	.2535	1260	.2860	.2910	1545	.3400	.3410
0735	.2105	.2125	0995	.2530	.2560	1265	.2885	.2905	1550	.3400	.3420
0740	.2110	.2120	1000	.2540	.2560	1270	.2890	.2950	1555	.3415	.3435
0745	.2120	.2130	1005	.2550	.2620	1275	.2900	.2910	1560	.3420	.3440
0750	.2130	.2150	1010	.2550	.2630	1280	.2910	.2930	1565	.3430	.3440
0755	.2140	.2160	1015	.2560	.2610	1285	.2930	.2950	1570	.3430	.3450
0757	.2145	.2160	1020	.2565	.2585	1290	.2940	.2960	1572	.3432	.3444
0760	.2150	.2160	1025	.2570	.2580	1295	.2940	.3000	1575	.3433	.3450
0765	.2150	.2170	1030	.2570	.2590	1300	.2950	.2990	1580	.3435	.3455
0767	.2150	.2180	1035	.2570	.2600	1305	.2965	.2985	1585	.3435	.3475
0769	.2152	.2196	1040	.2570	.2610	1310	.3050	.3070	1590	.3437	.3459
0770	.2155	.2175	1045	.2570	.2630	1315	.3065	.3085	1595	.3440	.3470
0775	.2160	.2180	1050	.2575	.2695	1320	.3070	.3090	1600	.3515	.3535
0780	.2165	.2195	1055	.2580	.2640	1325	.3075	.3095	1605	.3535	.3555
0785	.2180	.2190	1060	.2585	.2595	1330	.3075	.3105	1610	.3555	.3575
0790	.2180	.2200	1065	.2595	.2615	1335	.3080	.3105	1615	.3570	.3590
0792	.2182	.2199	1070	.2600	.2620	1337	.3085	.3105	1620	.3590	.3610
0795	.2185	.2205	1075	.2600	.2630	1340	.3090	.3100	1625	.3665	.3685
0800	.2185	.2225	1080	.2610	.2620	1345	.3090	.3110	1630	.3670	.3690
0805	.2190	.2220	1085	.2610	.2630	1350	.3110	.3130	1635	.3680	.3700
0810	.2190	.2230	1087	.2615	.2635	1355	.3115	.3145	1640	.3690	.3710
0812	.2197	.2214	1090	.2620	.2640	1360	.3120	.3130	1645	.3700	.3720
0815	.2208	.2225	1095	.2625	.2635	1365	.3120	.3137	1650	.3700	.3730
0820	.2210	.2240	1100	.2625	.2645	1370	.3120	.3140	1655	.3710	.3720
0822	.2210	.2250	1105	.2630	.2640	1375	.3120	.3142	1660	.3710	.3730
0825	.2210	.2260	1110	.2640	.2670	1380	.3120	.3150	1665	.3730	.3750
0830	.2212	.2234	1115	.2645	.2665	1385	.3120	.3160	1670	.3740	.3760
0835	.2240	.2290	1120	.2650	.2660	1390	.3125	.3147	1675	.3745	.3755
0840	.2260	.2280	1125	.2650	.2670	1395	.3125	.3155	1680	.3745	.3762
0845	.2285	.2305	1130	.2651	.2668	1400	.3125	.3165	1685	.3745	.3765
0850	.2305	.2325	1131	.2651	.2671	1402	.3127	.3144	1690	.3745	.3767
0855	.2315	.2335	1135	.2655	.2695	1405	.3130	.3190	1695	.3745	.3785
0860	.2340	.2360	1140	.2656	.2678	1410	.3150	.3180	1700	.3750	.3772
0865	.2420	.2440	1145	.2730	.2750	1415	.3160	.3230	1705	.3750	.3780
0870	.2425	.2445	1150	.2740	.2750	1420	.3170	.3220	1710	.3750	.3790
0875	.2440	.2460	1155	.2740	.2760	1425	.3170	.3230	1715	.3780	.3810
0880	.2450	.2470	1160	.2745	.2765	1430	.3205	.3225	1720	.3800	.3850
0885	.2450	.2480	1165	.2755	.2775	1435	.3210	.3220	1725	.3800	.3870
0890	.2460	.2470	1170	.2760	.2780	1440	.3225	.3245	1730	.3820	.3840
			1171	.2760	.2790	1445	.3230	.3270	1735	.3825	.3835

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8-25-00

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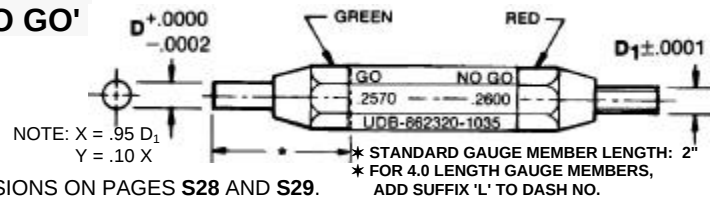
S29

**'Go'-'No Go'
Plug Gauges**

Uni-Check Cylindrical Plug Gauges-'Go-No Go'

CYLINDRICAL PLUG GAUGES—'GO' and 'NO GO'

UDB-862320 (plus Dash No.)

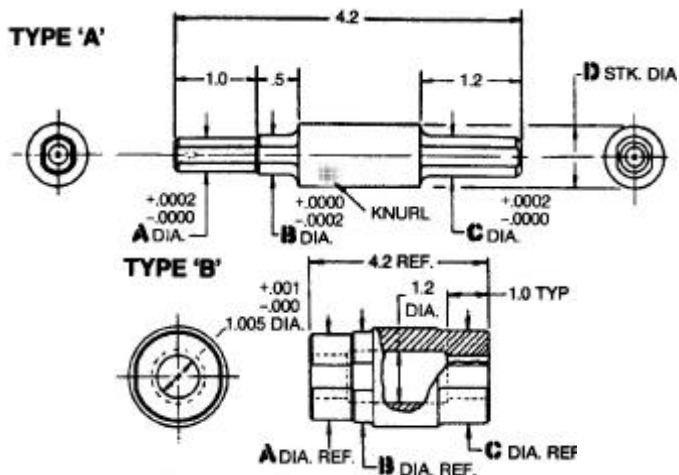


MORE DIMENSIONS ON PAGES S28 AND S29.

DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.	DASH NO.	D DIA.	D ₁ DIA.
1740	.3830	.3850	1970	.4375	.4405	2200	.5180	.5200	2432	.6280	.6300
1745	.3835	.3855	1975	.4375	.4425	2205	.5220	.5240	2435	.6375	.6395
1750	.3840	.3860	1980	.4460	.4480	2210	.5235	.5255	2440	.6400	.6420
1755	.3850	.3870	1985	.4485	.4505	2215	.5265	.5285	2445	.6401	.6423
1760	.3860	.3880	1990	.4490	.4500	2220	.5275	.5295	2450	.6405	.6455
1765	.3860	.3890	1995	.4490	.4510	2225	.5280	.5300	2455	.6540	.6560
1770	.3860	.3900	2000	.4495	.4515	2230	.5290	.5305	2460	.6555	.6575
1775	.3865	.3885	2005	.4505	.4525	2235	.5290	.5310	2465	.6557	.6579
1780	.3870	.3890	2010	.4525	.4535	2240	.5305	.5325	2470	.6560	.6610
1785	.3885	.3905	2015	.4525	.4545	2245	.5310	.5330	2475	.6850	.6900
1790	.3900	.3910	2019	.4530	.4570	2250	.5310	.5360	2480	.7470	.7480
1795	.3900	.3920	2020	.4530	.4580	2255	.5310	.5390	2485	.7495	.7505
1797	.3901	.3918	2025	.4531	.4553	2260	.5312	.5334	2490	.7495	.7515
1800	.3905	.3945	2030	.4615	.4635	2265	.5320	.5340	2495	.7495	.7517
1805	.3906	.3928	2035	.4640	.4660	2270	.5390	.5410	2500	.7505	.7515
1810	.3910	.3970	2040	.4650	.4660	2275	.5420	.5440	2505	.7651	.7673
1815	.3975	.3995	2045	.4650	.4670	2280	.5430	.5450	2507	.7660	.7730
1820	.3980	.3990	2050	.4665	.4685	2285	.5435	.5455	2510	.7807	.7829
1825	.4000	.4020	2055	.4680	.4690	2290	.5460	.5510	2515	.8070	.8090
1830	.4005	.4025	2060	.4680	.4700	2295	.5465	.5485	2520	.8120	.8130
1835	.4015	.4035	2065	.4685	.4705	2300	.5600	.5620	2525	.8710	.8720
1840	.4020	.4030	2070	.4685	.4735	2305	.5610	.5630	2530	.8730	.8780
1845	.4025	.4045	2075	.4687	.4709	2310	.5620	.5630	2534	.8745	.8755
1850	.4030	.4050	2080	.4690	.4770	2315	.5620	.5640	2535	.8745	.8765
1855	.4055	.4065	2085	.4770	.4790	2320	.5620	.5642	2540	.8745	.8767
1860	.4055	.4075	2090	.4795	.4815	2325	.5625	.5647	2545	.8890	.8910
1865	.4057	.4067	2095	.4805	.4825	2330	.5625	.5675	2550	.8901	.8923
1866	.4057	.4074	2100	.4839	.4849	2332	.5655	.5675	2555	.8910	.8980
1870	.4060	.4080	2105	.4840	.4860	2335	.5750	.5770	2560	.9057	.9079
1875	.4060	.4100	2110	.4950	.4970	2340	.5755	.5775	2565	.9335	.9345
1880	.4072	.4084	2115	.4950	.4980	2345	.5775	.5795	2570	.9370	.9380
1885	.4130	.4150	2120	.4960	.4970	2350	.5776	.5798	2575	.9660	.9710
1890	.4130	.4180	2125	.4960	.4980	2355	.5780	.5830	2580	.9980	.9990
1895	.4160	.4180	2130	.4985	.5005	2360	.5820	.5840	2582	.9990	.9995
1900	.4180	.4200	2135	.4995	.5005	2365	.5840	.5860	2585	.9995	1.0017
1905	.4185	.4205	2140	.4995	.5015	2370	.5910	.5930	2590	1.0000	1.0020
1910	.4200	.4210	2145	.4995	.5027	2375	.5910	.5960	2595	1.0000	1.0030
1915	.4215	.4235	2150	.5000	.5022	2380	.5930	.5950	2600	1.0151	1.0173
1920	.4305	.4315	2155	.5000	.5050	2385	.5932	.5954	2610	1.0165	1.0180
1925	.4325	.4345	2160	.5080	.5100	2390	.5935	.5985	2620	1.0307	1.0329
1930	.4325	.4355	2165	.5110	.5130	2395	.6210	.6220	2630	1.0580	1.0590
1935	.4335	.4355	2170	.5120	.5130	2400	.6210	.6230	2640	1.0620	1.0635
1940	.4340	.4350	2175	.5120	.5140	2405	.6240	.6290	2650	1.1250	1.1350
1945	.4360	.4370	2180	.5150	.5170	2410	.6245	.6255	2660	1.1260	1.1270
1950	.4370	.4380	2185	.5150	.5210	2415	.6245	.6265	2670	1.1290	1.1300
1955	.4370	.4390	2190	.5155	.5205	2420	.6245	.6267	2680	1.4940	1.4950
1960	.4370	.4392	2195	.5156	.5178	2425	.6250	.6365	2690	1.4995	1.5015
1965	.4375	.4397				2430	.6250	.6300			

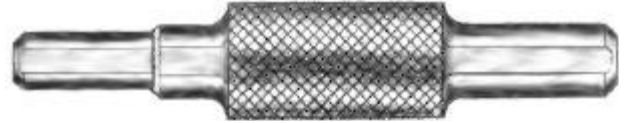
Solid Gauge for Fastener Holes

Cold Work Plug Gauges



UNITED COLD WORK PLUG GAUGES

UDB-216005



To order, specify above Part No. plus Dash No. below.
Example: UDB-216005-0615 = 3/8 (1st O.S.)

DASH NO.	NOMINAL FINAL HOLE SIZE	A GO	B NO GO	C GO	D DIA.	TYPE
0500	1/8	.1125	.1145	.1155	1/2	A
0505	5/32	.1430	.1460	.1470	3/8	A
0510	5/32 1st O.S.	.1590	.1620	.1630	3/8	A
0515	3/16	.1770	.1800	.1810	1/2	A
0520	3/16	.1795	.1821	.1825	1/2	A
0525	3/16 1st O.S.	.1926	.1956	.1966	1/2	A
0530	13/64	.1948	.1974	.1978	1/2	A
0535	3/16 2nd O.S.	.2082	.2112	.2122	1/2	A
0540	7/32	.2100	.2126	.2130	1/2	A
0545	1/4	.2350	.2380	.2400	1/2	A
0550	1/4	.2376	.2402	.2406	3/4	A
0555	1/4 1st O.S.	.2510	.2540	.2560	1/2	A
0560	17/64	.2531	.2557	.2563	3/4	A
0565	1/4 2nd O.S.	.2667	.2697	.2717	1/2	A
0570	9/32	.2686	.2712	.2722	3/4	A
0575	5/16	.2970	.3000	.3020	1/2	A
0580	5/16	.3006	.3032	.3039	3/4	A
0585	5/16 1st O.S.	.3131	.3161	.3181	1/2	A
0590	21/64	.3161	.3187	.3195	3/4	A
0595	5/16 2nd O.S.	.3293	.3323	.3343	1/2	A
0600	11/32	.3321	.3347	.3354	3/4	A
0605	3/8	.3590	.3620	.3640	1/2	A
0610	3/8	.3636	.3662	.3671	3/4	A
0615	3/8 1st O.S.	.3751	.3781	.3801	1/2	A
0620	25/64	.3791	.3817	.3827	3/4	A
0625	3/8 2nd O.S.	.3917	.3947	.3967	1/2	A
0630	13/32	.3951	.3977	.3986	3/4	A
0635	7/16	.4125	.4155	.4175	3/4	A
0640	7/16	.4210	.4240	.4260	1/2	A
0645	7/16 1st O.S.	.4371	.4401	.4421	1/2	A
0650	7/16 2nd O.S.	.4512	.4542	.4562	3/4	A
0655	1/2	.4719	.4749	.4769	3/4	A
0660	1/2	.4745	.4775	.4795	3/4	A
0665	1/2	.4811	.4838	.4846	3/4	A
0670	1/2 1st O.S.	.4901	.4931	.4951	3/4	A
0680	33/64	.4964	.4991	.4999	3/4	A
0690	3/8	.5015	.5038	.5030	3/4	A
0700	1/2 2nd O.S.	.5062	.5092	.5112	3/4	A

DASH NO.	NOMINAL FINAL HOLE SIZE	A GO	B NO GO	C GO	D DIA.	TYPE
0710	17/32	.5122	.5149	.5157	3/4	A
0730	9/16	.5370	.5400	.5420	3/4	A
0740	9/16 1st O.S.	.5526	.5556	.5576	3/4	A
0750	9/16 2nd O.S.	.5687	.5717	.5737	3/4	A
0770	5/8	.5975	.6005	.6025	3/4	A
0780	5/8 1st O.S.	.6131	.6161	.6181	3/4	A
0790	1/2	.6250	.6273	.4800	3/4	A
0800	5/8 2nd O.S.	.6317	.6347	.6367	3/4	A
0805	3/4	.7131	.7161	.7181	3/4	A
0815	3/4 1st O.S.	.7341	.7371	.7391	3/4	A
0820	13/16	.7745	.7775	.7795	1	A
0822	7/8	.8368	.8398	.8418	1	A
0824	29/32	.8740	.8760	.8790	1	A
0826	29/32 1st O.S.	.8896	.8916	.8946	1	A
0828	29/32 2nd O.S.	.9052	.9072	.9102	1	A
0830	15/16	.9062	.9092	.9112	1-1/4	A
0840	1	.9530	.9560	.9580	1-1/8	A
0842	1-1/16	1.0219	1.0249	1.0279	1-1/4	A
0844	1-1/8	1.0937	1.0967	1.1007	1-1/4	A
0850	1-3/16	1.1412	1.1442	1.1472	1-1/2	A
0851	1-3/16	1.1492	1.1522	1.1552	1-1/2	A
0852	1-3/8	1.3370	1.3390	1.3430	1-1/2	A
0853	1-3/8 1st O.S.	1.3526	1.3546	1.3586	1-1/2	A
0854	1-3/8 2nd O.S.	1.3682	1.3702	1.3742	1-1/2	A
0855	1-7/16	1.3957	1.3987	1.4017	1-1/2	A
0856	1-9/16	1.5156	1.5186	1.5216	1-3/4	A
0860	1-11/16	1.6563	1.6593	1.6623	2	A
0870	1-3/4	1.7109	1.7139	1.7169	2	A
0880	1-3/4 1st O.S.	1.7265	1.7295	1.7325	2	A
0890	1-3/4 2nd O.S.	1.7421	1.7451	1.7481	2	A
9000	2	1.9620	1.9650	1.9680	2	A
9010	2 1st O.S.	1.9776	1.9806	1.9836	2-1/8	A
9020	2 2nd O.S.	1.9932	1.9962	1.9992	2-1/8	A
9030	2-1/8	2.0625	2.0655	2.0685	2-1/4	B
9032	2-1/8	2.1093	2.1123	2.1173	2-1/2	B
9034	2-1/8	2.1466	2.1496	2.1546	2-1/2	B
9040	2-1/4	2.3750	2.3771	2.2170	3	A
9050	2-7/16	2.3906	2.3936	2.3966	2-1/2	B
9052	2-7/16	2.4320	2.4350	2.4400	2-3/4	B
9054	2-7/16	2.4690	2.4720	2.4770	2-3/4	B
9060	2-1/2	2.6250	2.6271	2.4700	3	A

UNILOCK Countersink Gauge

New & Improved

UNITED'S UNILOCK

Countersink Gauges and Kits

UNITED's New UNILOCK Countersink Gauge displays accurate direct countersink depth diameter with high precision. The UNILOCK Gauge is a precision instrument which specifically measures the Top major Countersink Diameter.

The UNILOCK Gauge reads the print dimension fast and accurately on the shop floor or gauge room. Press the spring loaded precise exact angle countersink plunger into the countersink. Read the dial directly in 0.002 inch or 0.05mm diameter increments in the dial face.

Even the inexperienced will find it virtually foolproof with its repeatable reliable results. The UNILOCK accuracy is plus or minus 0.0005 inch or plus or minus 0.015mm.

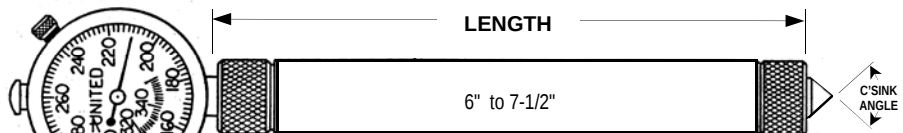
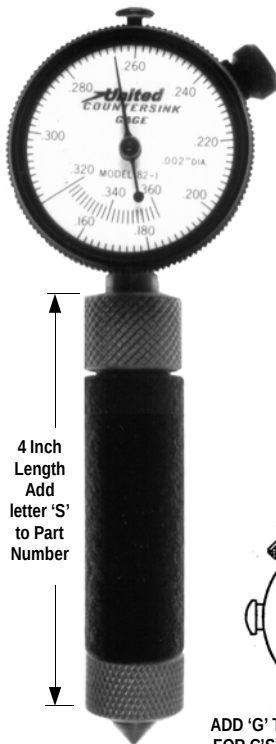
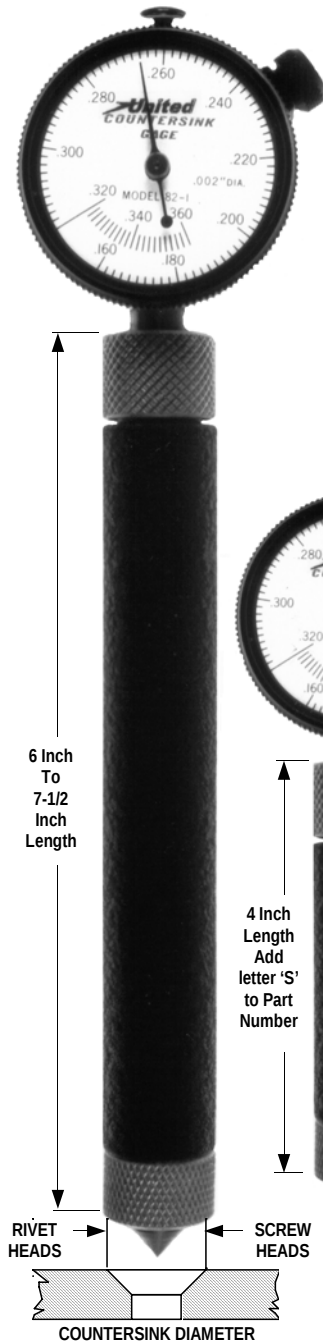
IDEAL APPLICATIONS:

- * Countersinks in Aircraft & Automotive Skin
- * Countersinks in Sheet Metal & Stampings
- * Automotive & Aircraft Assembly
- * Quality Control / Gauge Room
- * Screw Machine Components
- * Model Shop & Prototypes
- * Production Machining
- * Receiving Inspection
- * Thin Sheet of Metal
- * Rivets Holes

ADD 'G' TO FOR COUNTER-SINK GAUGE ONLY

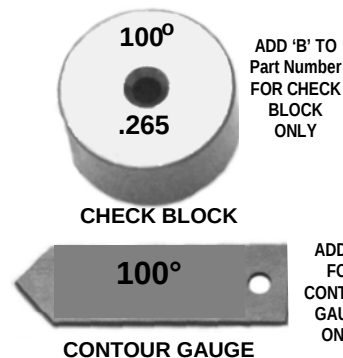
ADD 'B' TO FOR CHECK BLOCK ONLY

ADD 'C' FOR CONTOUR GAUGE ONLY



EACH KIT CONTAINS ONE UNILOCK COUNTERSINK GAUGE, ONE CHECK BLOCK AND ONE CONTOUR GAUGE SUPPLIED IN RUGGED BLACK PLASTIC CASE.

ADD 'G' TO PART NUMBER FOR C'SINK GAUGE ONLY



KIT PART NUMBER							
C'SINK ANGLE	DIAMETER RANGE						
	.020 - .170	.160 - .360	.360 - .560	.560 - 760	.780 - 1.000	1.000 - 1.335	1.000 - 1.500
82°	UCC-610820	UCC-610821	UCC-610822	UCC-610823	UCC-610824	UCC-610825	UCC-610826
90°	UCC-610900	UCC-610901	UCC-610902	UCC-610903	UCC-610904	UCC-610905	UCC-610906
100°	UCC-611000	UCC-611001	UCC-611002	UCC-611003	UCC-611004	UCC-611005	UCC-611006
110°	UCC-611100	UCC-611101	UCC-611102	UCC-611103	UCC-611104	UCC-611105	UCC-611106
120°	UCC-611200	UCC-611201	UCC-611202	UCC-611203	UCC-611204	UCC-611205	UCC-611206
LENGTH	6"	6"	6"	6"	6"	7-1/2"	7-1/2"

CHECK THE HOLES OR PRINTS WITH THE UNILOCK CONTOUR GAUGE. BE CERTAIN YOU HAVE A MATCH. KEEP GAUGE CLEAN AND IN CASE WHEN NOT IN USE.

1. PRESS CONICAL GAUGE FIRMLY INTO HOLE.
2. REST THE GAUGE BODY FIRMLY ON SURFACE AROUND COUNTERSINK.
3. READ THE DIAL DIRECTLY AND RECORD YOUR READING.

UNITED'S Electronic Digital Countersink Gauges & Kits

UNILOCK Electronic Countersink Gauges

UNITED'S New UNILOCK ELECTRONIC COUNTERSINK GAUGE displays accurate direct countersink depth diameter with high precision.

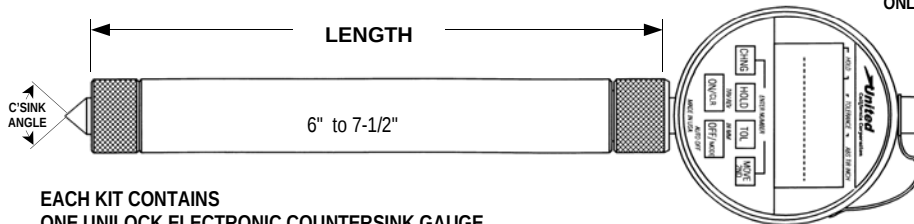
The Unilock Electronic Gauge is a precision instrument which specifically measures the Top major Countersink Diameter.

The Unilock Electronic Gauge reads the print dimension fast and accurately on the shop floor or gauge room. Press the spring loaded precise exact angle countersink plunger into the countersink. Read the electronic measurement directly in inches or millimeters on the gauge face.

Even the inexperienced will find it virtually foolproof with its repeatable reliable results. The UNILOCK accuracy is plus or minus 0.0005 inch or plus or minus 0.015mm.

IDEAL APPLICATIONS:

- * Countersinks in Aircraft & Automotive Skin
- * Countersinks in Sheet Metal & Stamping
- * Automotive & Aircraft Assembly
- * Quality Control / Gauge Room
- * Screw Machine Components
- * Model Shop & Prototypes
- * Production Machining
- * Receiving Inspection
- * Thin Sheet of Metal

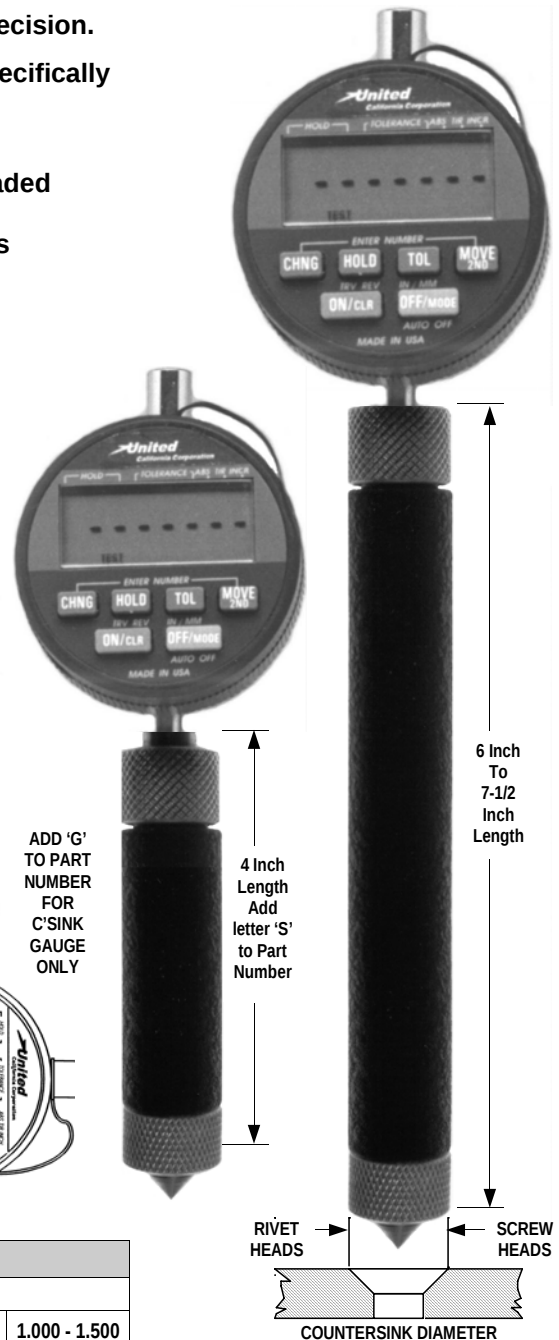


EACH KIT CONTAINS
ONE UNILOCK ELECTRONIC COUNTERSINK GAUGE
SUPPLIED IN RUGGED BLACK PLASTIC CASE.

KIT PART NUMBER							
C'SINK	DIAMETER RANGE						
ANGLE	.020 - .170	.160 - .360	.360 - .560	.560 - .760	.780 - 1.000	1.000 - 1.335	1.000 - 1.500
82°	UCC-620820	UCC-620821	UCC-620822	UCC-620823	UCC-620824	UCC-620825	UCC-620826
90°	UCC-620900	UCC-620901	UCC-620902	UCC-620903	UCC-620904	UCC-620905	UCC-620906
100°	UCC-621000	UCC-621001	UCC-621002	UCC-621003	UCC-621004	UCC-621005	UCC-621006
110°	UCC-621100	UCC-621101	UCC-621102	UCC-621103	UCC-621104	UCC-621105	UCC-621106
120°	UCC-621200	UCC-621201	UCC-621202	UCC-621203	UCC-621204	UCC-621205	UCC-621206
LENGTH	6"	6"	6"	6"	6"	7-1/2"	7-1/2"

CHECK THE HOLES OR PRINTS WITH THE UNILOCK CONTOUR GAUGE. BE CERTAIN YOU HAVE A MATCH.

KEEP GAUGE CLEAN AND IN CASE WHEN NOT IN USE.



1. PRESS CONICAL GAUGE FIRMLY INTO HOLE.
2. REST THE GAUGE BODY FIRMLY ON SURFACE AROUND COUNTERSINK.
3. READ THE GAUGE FACE DIRECTLY AND RECORD YOUR READING.

UNILOCK Chamfer Gauges

UNITED'S NEW UNILOCK Chamfer Gauges

UNILOCK CHAMFER GAUGES ANALOG STYLE



CHAMFER GAUGES ARE FOR INSTANT MEASURE OF TAPERED HOLES.

Precisely designed to measure the top major diameter of a chamfer, countersink or tapered hole.

Press the conically ground, spring loaded, precision 3-blade Gauging Plunger into the chamfer or countersink to read the dial instantly in .001" or .01mm/.02mm diameter increments.

Does not require setting or look-up charts!

To zero the Gauge or check setting, press the base of the Gauge against your flat surface and adjust the dial to read the 'Set To' number stamped on backside of the gauge.

Available in two angular ranges:

0° - 90° for angles of 90° or less,

90° - 127° for angles greater than 90° but less than 127°.

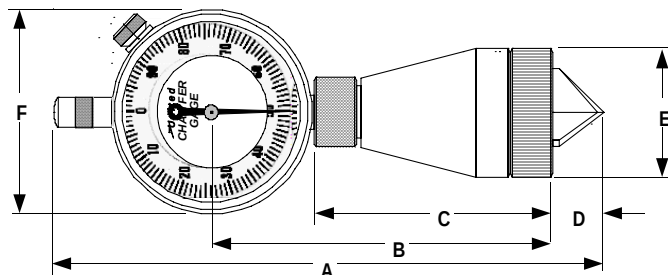
UNILOCK CHAMFER GAUGES DIGITAL STYLE



UNITED'S UNILOCK CHAMFER GAUGES ARE KNOWN FOR THEIR ACCURACY AND EASE OF USE IN PRECISION MEASURING.

THEY ARE MADE OF THE
FINEST MATERIALS AND COME IN A PROTECTIVE CASE.

HARDENED PREMIUM TOOL STEEL PLUNGER OR SOLID CARBIDE FOR A LIFETIME HEAD.
OTHER OPTIONS AVAILABLE INCLUDE .0001" SUPER READING CHAMFER GAUGES.



GAGE NO.	A	B	C	D	E	F
UCC-621090	6.30	4.00	2.80	.60	1.45	2.25
UCC-622090	6.30	4.00	2.80	.60	2.50	2.25
UCC-623090	6.30	4.00	2.80	.60	3.50	2.25
UCC-624090	6.30	4.00	2.80	.60	4.50	2.25
UCC-625090	6.30	4.00	2.80	.38	1.18	2.25

DIGITAL READOUT ELECTRONIC CHAMFER GAUGES are precision instruments similar in appearance and use to the above analog mechanical Gauges. They are completely self-contained and portable with no cables or attachments.

The indicator's special 360° rotational bezel allows you to read in any position with a high contrast LCD digital display. Equipped with re-chargeable long-life batteries.