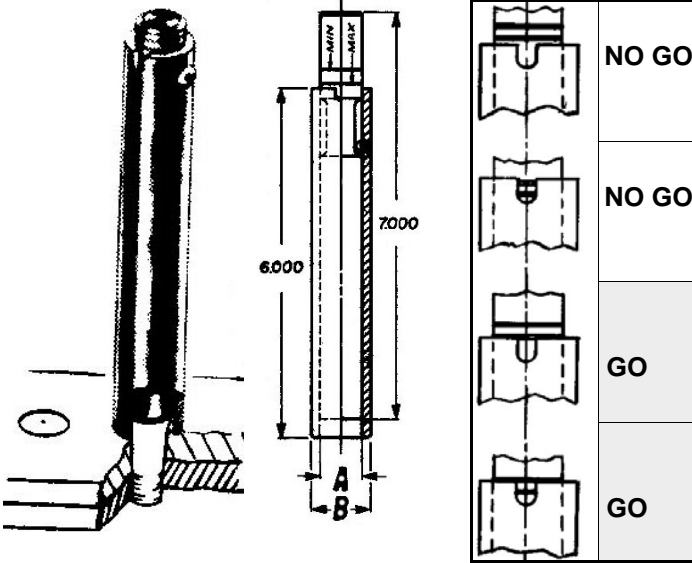


Taper & Helox® Protrusion Gauges

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.

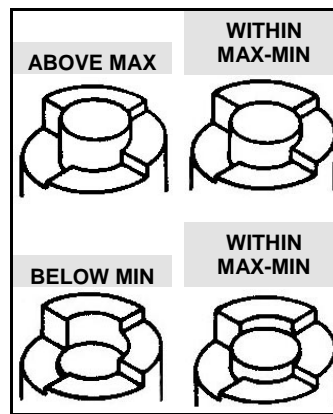
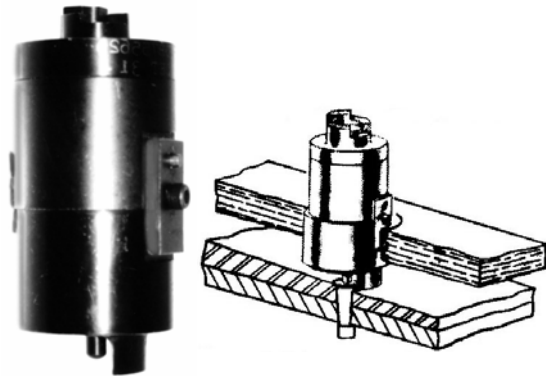
CHECK THE PROTRUSION OF YOUR BOLT AT INSTALLATION!

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.

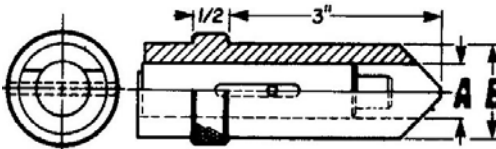
Select the Gauge that corresponds with the Shelox® Liner and Fastener being used.

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.

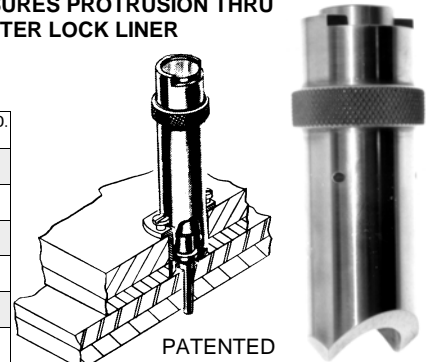


TAPER LOCK PROTRUSION GAUGES
MEASURES PROTRUSION THRU ADAPTER LOCK LINER

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.

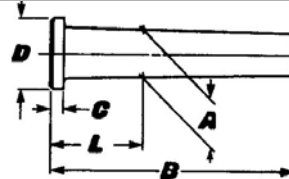
The TAPER LOCK PROTRUSION GAUGE IS USED FOR CHECKING BOTH FLUSH AND PROTRUDING HEAD BOLTS. It is best used with the Tapered Gauge Pins shown below, when a more critical check is needed.

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

PINS FOR FLUSH, SHEAR and PROTRUDING HEADS

PART NO.	FASTENER SIZE &	A	B	C +.000 -.003	D	L	PART NO.	FASTENER SIZE & GROUP	A	B	C +.000 -.003	D	L
UDB-755102	3/16 1	.2001	1.34	.056	5/16	.669	UDB-754101	5/32 1	.1724	1.18	.049	5/16	.572
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		3/8								
UDB-755104	1/4 1	.2624	1.53	.070	3/8	.709	UDB-754102	3/16 1	.2010	1.34	.056	5/16	.591
UDB-755204	1/4 2	.2754	2.15		7/16								
UDB-755304	1/4 3	.2884	2.78		7/16								
UDB-755404	1/4 4	.3014	2.78		1/2								
UDB-755504	1/4 5	.3144	2.78		1/2								
UDB-755604	1/4 6	.3274	2.78		1/2								
UDB-755105	5/16 1	.3260	1.65	.080	1/2	.749	UDB-754104	1/4 1	.2636	1.53	.070	3/8	.605
UDB-755205	5/16 2	.3403	2.34		1/2								
UDB-755305	5/16 3	.3547	3.03		1/2								
UDB-755405	5/16 4	.3690	3.03		9/16								
UDB-755505	5/16 5	.3833	3.03		9/16								
UDB-755605	5/16 6	.3976	3.03		9/16								
UDB-755106	3/8 1	.3897	1.75	.094	5/8	.791	UDB-754106	1/4 5	.3157	2.78	.080	7/16	.618
UDB-755206	3/8 2	.4053	2.50		5/8								
UDB-755306	3/8 3	.4209	3.25		5/8								
UDB-755406	3/8 4	.4365	3.25		5/8								
UDB-755506	3/8 5	.4521	3.25		11/16								
UDB-755606	3/8 6	.4678	3.25		11/16								
UDB-755107	7/16 1	.4544	1.96	.132	11/16	.861	UDB-754108	1/4 6	.3287	2.78	.094	5/8	.635
UDB-755207	7/16 2	.4726	2.84		11/16								
UDB-755307	7/16 3	.4908	3.71		3/4								
UDB-755407	7/16 4	.5091	3.71		3/4								
UDB-755507	7/16 5	.5273	3.71		3/4								
UDB-755607	7/16 6	.5455	3.71		13/16								
UDB-755108	1/2 1	.5192	2.12	.156	13/16	.912	UDB-754110	1/4 7	.3424	3.25	.132	11/16	.678
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		7/8								
UDB-755508	1/2 5	.6025	4.12		7/8								
UDB-755608	1/2 6	.6234	4.12		7/8								
							UDB-754112	1/2 8	.6255	4.12	.156	13/16	.702
							UDB-754114	1/2 9	.6513	4.12		13/16	
							UDB-754116	1/2 10	.6771	4.12		7/8	
							UDB-754118	1/2 11	.7029	4.12		7/8	

Taper Lock Inspection Tooling

Taper Lock Inspection Tooling

TAPERED CYLINDRICAL GAUGE SET PINS

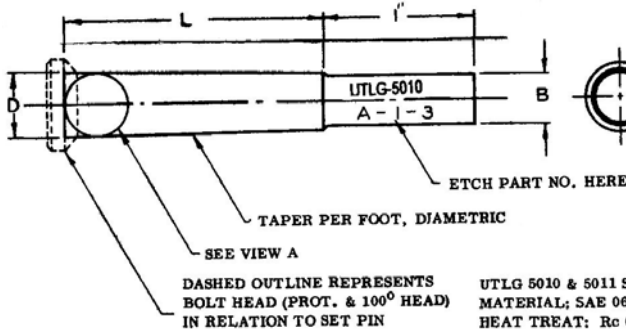


UTLG-5010

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.

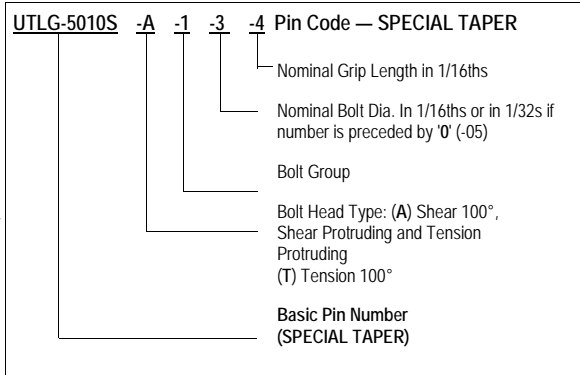
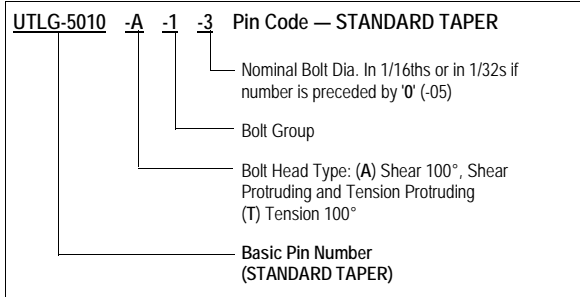


UTLG-5010 and UTLG-5011 SET PIN

UTLG-5011 SET PIN NOMINAL Bolt diameter and nominal grip length Dash Numbers are in 1/32s.

DASHED OUTLINE REPRESENTS BOLT HEAD (PROT. & 100° HEAD) IN RELATION TO SET PIN

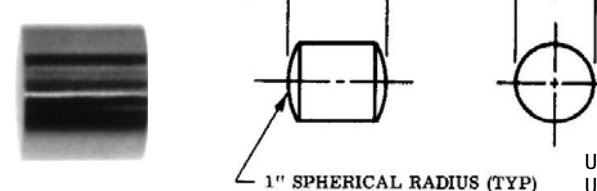
UTLG 5010 & 5011 SET PIN MATERIAL: SAE 06 OR 440 C STAINLESS HEAT TREAT: Rc 60-63



STANDARD CYLINDRICAL GAUGES

Dimensions are on pages S13 and S14.

UTLG-5012



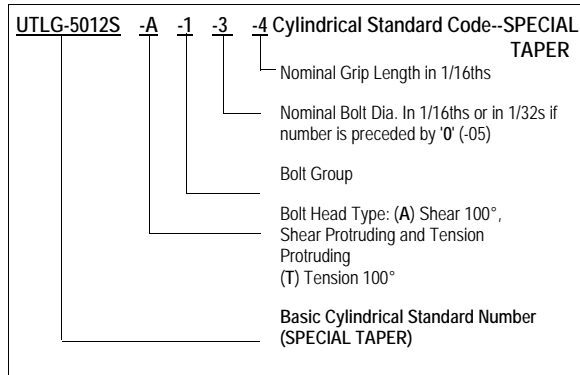
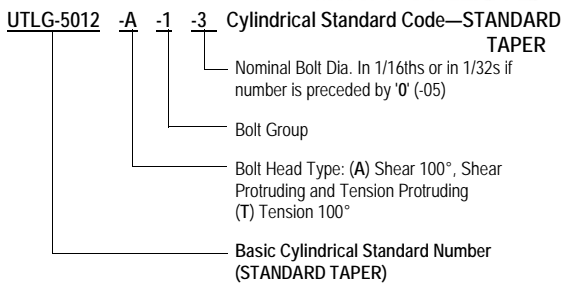
1" SPHERICAL RADIUS (TYP)

UTLG-5012 and UTLG-5013 CYLINDRICAL STANDARD

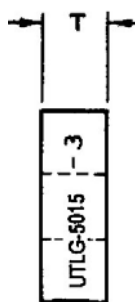
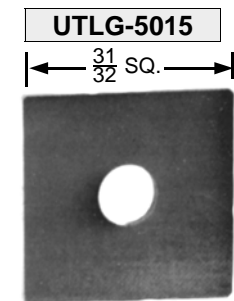
UTLG-5013 CYLINDRICAL STANDARD NOMINAL Bolt diameter and nominal grip length Dash Numbers are in 1/32s.

Material: SAE 06 Heat Treat: Rc 60-63

The **UNITED MASTER CYLINDRICAL GAUGE CHECKS** the DIAMETER of TAPER LOCK SET PINS.



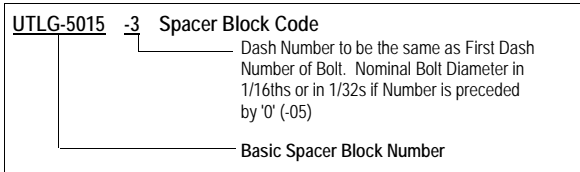
SPACER BLOCKS



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.



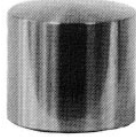
Set Pin and Cylindrical Standard Dimensions

**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		.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	.437			.093	.2500	.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	.437		.093	.2500	.02083333			
-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	.437	.093			.2500	.02083333	
-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	.507007	.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		.437	.156	.2500	.02083333			
-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	.437	.156			.2500	.02083333	
-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			.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						
	-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	.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								
-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			.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							
-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	.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								
-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		.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							
-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	.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

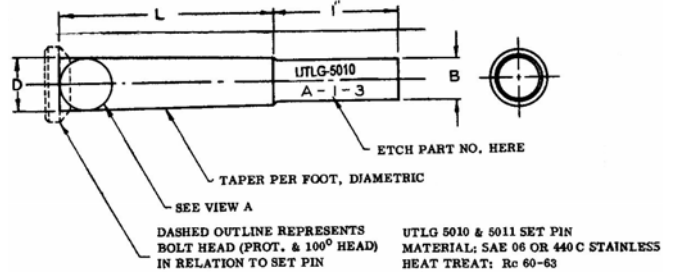
TAPERED CYLINDRICAL GAUGE SET PINS

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.



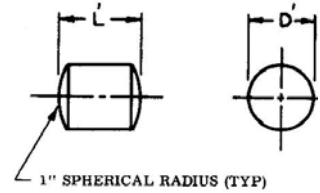
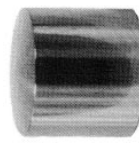
UTLG-5011 SET PIN and UTLG-5013 CYLINDRICAL STANDARD DIM.

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

G #	DASH NO.	D ± .00005 DIAMETER	D' ± .000010 DIAMETER	L ± .010 LENGTH	L' ± .031 LENGTH	B ± .016 DIAMETER	TAPER PER FT. ± .0003	ANGULAR TANGENT
SPECIAL TAPER	S-A-1-4-3	.14812	.145915	1.000	.437	.109	.3600	.03000000
	S-A-1-4-4	.14808	.145875					
	S-A-1-4-5	.14775	.145882					
	S-A-1-5-3	.17412	.171528					
	S-A-1-5-4	.17408	.171488					
	S-A-1-5-5	.17375	.171553					
	S-A-1-6-3	.20312	.200096					
	S-A-1-6-4	.20308	.200057					
	S-A-1-6-5	.20278	.200114					
	S-A-1-7-5	.23278	.229720					
	S-A-1-8-5	.26548	.261990					
	S-A-2-4-3	.15462	.152318					
	S-A-2-4-4	.15458	.152279					
	S-A-2-4-5	.15425	.152299					
	S-A-2-5-3	.18192	.179212					
	S-A-2-5-4	.18188	.179172					
	S-A-2-5-5	.18155	.179254					
	S-A-2-6-3	.21252	.209356					
	S-A-2-6-5	.21318	.210377					

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.	D ± .00005 DIAMETER	D' ± .000010 DIAMETER	L ± .010 LENGTH	L' ± .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					
	S-A-13-3	.20268	.199898					
	S-A-1-3-4	.20228	.199998					
	S-A-1-4-3	.26557	.261685					
	S-A-1-4-4	.26491	.261900					
	S-A-1-5-3	.32963	.324533					
	S-A-1-5-4	.32873	.324985					
	S-A-1-6-4	.39283	.388172					
	S-A-2-04-2	.15438	.152082					
	S-A-2-05-2	.18168	.178975					
	S-A-2-3-3	.21308	.210156					
	S-A-2-3-4	.21268	.210280					
	S-A-2-4-3	.27857	.274495					
	S-A-2-4-4	.27791	.274752					
	S-A-2-5-3	.34393	.338612					
S-A-2-5-4	.34303	.339122						
S-A-2-6-4	.40842	.403587						

G #	DASH NO.	D ± .00005 DIAMETER	D' ± .000010 DIAMETER	L ± .010 LENGTH	L' ± .031 LENGTH	B ± .016 DIAMETER	TAPER PER FT. ± .0003	ANGULAR TANGENT
SPECIAL TAPER	S-T-1-3-3	.20381	.200867	1.000	.437	.156	.3491	.02909091
	S-T-1-3-4	.20301	.200758					
	S-T-1-4-4	.26584	.262927					
	S-T-1-5-4	.33049	.326523					
	S-T-2-3-3	.21421	.211117					
	S-T-2-3-4	.21341	.211043					
	S-T-2-4-3	.27971	.275671					
	S-T-2-4-4	.27884	.275785					
	S-T-2-5-4	.34479	.340651					
	S-T-3-3-3	.22461	.221367					
	S-T-3-3-4	.22381	.221327					
	S-T-3-4-4	.29184	.288642					
	S-T-3-5-4	.35919	.354878					
	S-T-4-3-3	.23501	.231617					
	S-T-4-3-4	.23421	.231612					
	S-T-4-4-4	.30484	.301500					
S-T-4-5-4	.37349	.369007						

TL Countersink Depth Gauge

**UTLG-5120
Countersink Gauge**

COUNTERSINK DEPTH 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	
	GROUP 2	100-2-04	.198	.1836	.0175	.437
		100-2-05	.244	.2216	.0216	.500
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	

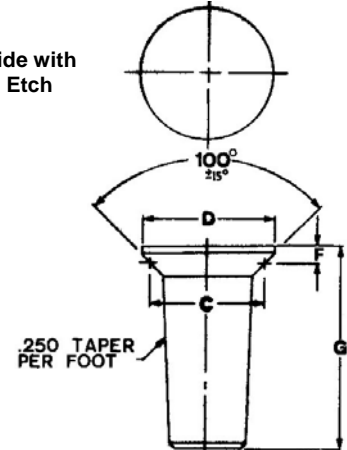
SIMPLE, POSITIVE CHECK

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	



UTLG-5120

Black Oxide with
Chemical Etch

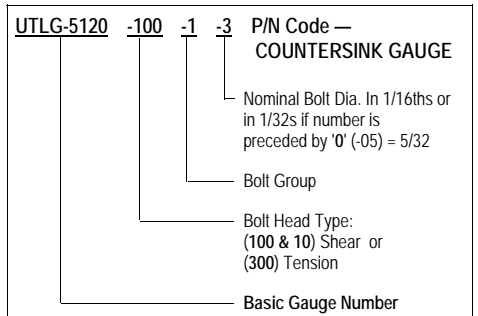


TAPER LOCK COUNTERSINK DEPTH GAUGES are for tool room and shop use in setting up drilling equipment to the proper countersink depth. They also provide an easy means of checking the countersink depth of production drilled holes.

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.



Taper Lock Gauge Assemblies

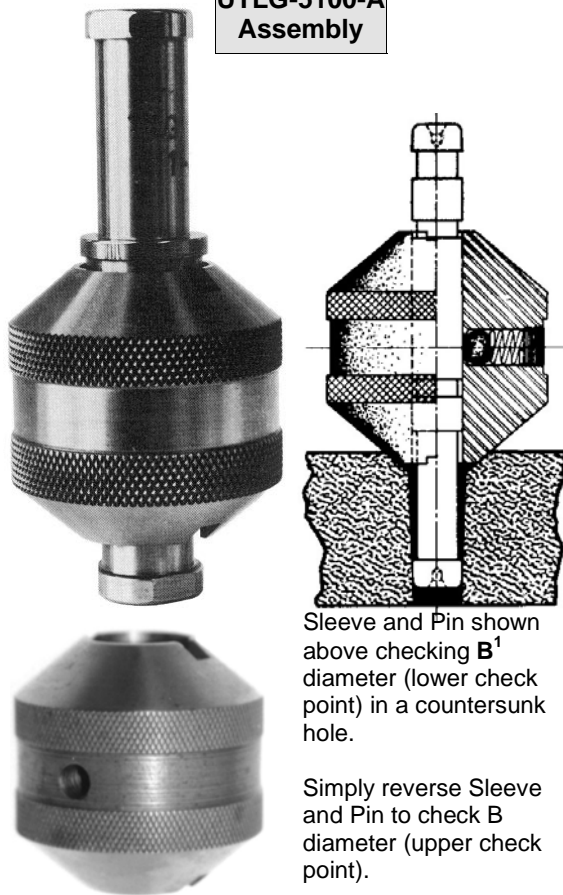
Taper Lock Hole Gauge and Sleeve Assemblies

HOLE GAUGE ASSEMBLIES

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

For FLUSH HEAD FASTENERS

UTLG-5100-A
Assembly

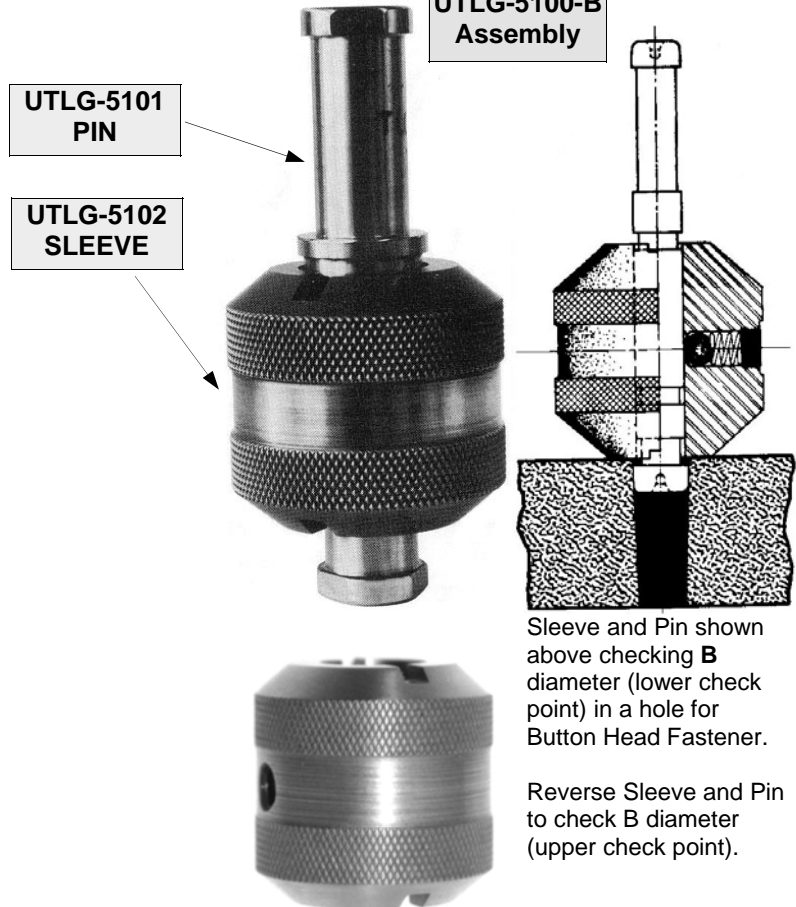


Sleeve and Pin shown above checking B^1 diameter (lower check point) in a countersunk hole.

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

For PROTRUDING HEAD FASTENERS

UTLG-5100-B
Assembly



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.

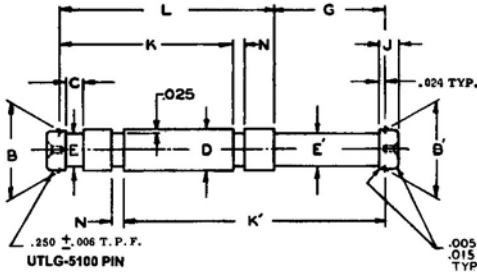
UNITED's Notch-Limit Pin Gauge Assemblies, UTLG-5100 series, are a fast, simple and accurate method of Taper Lock Hole Inspection. The Gauge Assembly consists of a Sleeve and Sliding Pin. For checking 100° countersunk head type bolts, the Sleeve ends are ground 100° on each end so they will fit into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



MATERIAL: 440C STAINLESS
HEAT TREATMENT: Rc 58-62



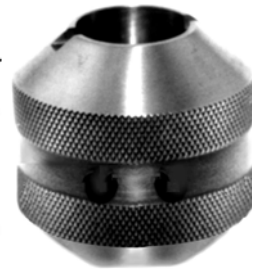
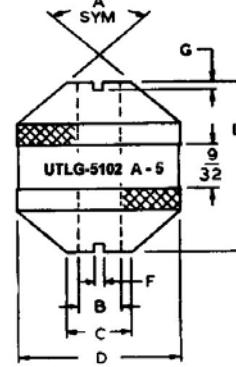
UNITED's Hole Gauge Assemblies UTLG-5100 are for tool room use.

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

Taper Lock Pin and Sleeve

TAPER LOCK PINS AND SLEEVES

UTLG-5102



TLG 5102 SLEEVE
MATERIAL:
440C STAINLESS
HEAT TREATED

UTLG-5102		P/N Code — SLEEVE	
B	-2	5	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		P/N Code — PIN	
-1	-3		Nominal Bolt Dia. In 1/16ths or in 1/32s if number is preceded by '0' (-05) = 5/32
			Bolt Group
BASIC PIN NUMBER			

SLEEVE PART NO.	L ± .002	C ± .0006	B ± .0004	D ± .016	F ± .010	G ± .010	A ± 30'
UTLG-5102A-04	1.000	.1836	.1690	.875	.062	.046	.99°
UTLG-5102A-05	1.000	.2216	.2030	.875	.062	.046	.99°
UTLG-5102A-3	1.000	.2438	.2250	1.000	.062	.046	.99°
UTLG-5102A-07	1.000	.2938	.2700	.875	.062	.046	.99°
UTLG-5102A-4	1.000	.3312	.3050	1.000	.062	.046	.99°
UTLG-5102A-5	1.000	.4045	.3750	1.000	.093	.062	.99°
UTLG-5102A-6	1.000	.4852	.4450	1.000	.093	.062	.99°
UTLG-5102A-7	1.250	.5696	.5150	1.250	.125	.093	.99°
UTLG-5102A-8	1.250	.6498	.5850	1.250	.125	.093	.99°
UTLG-5102A-9	1.500	.7785	.6903	1.500	.125	.093	.99°
UTLG-5102A-10	1.500	.8900	.7663	1.500	.125	.093	.99°
UTLG-5102A-12	2.000	1.1122	.9223	2.000	.187	.125	.99°
UTLG-5102A-14	2.000	1.2894	1.0783	2.000	.187	.125	.99°
UTLG-5102A-16	2.250	1.4680	1.2183	2.250	.187	.125	.99°

PIN PART NO.	B ± .0002	B' ± .0002	K ± .0030	K' ± .0030	G ± .016	E ± .010	E' ± .010	D ± .0000	N ± .0015	L ± .016	H ± .015	C ± .016	J ± .005
UTLG-5101-1-04	1.432	1.416	1.0580	1.1354	.234	.093	.090						
UTLG-5101-2-04	1.437	1.416	1.0550	1.4449	.543	.098	.090	.1686	.0576	1.186	.050	.141	.070
UTLG-5101-3-04	1.562	1.416	1.0520	1.7544	.854	.106	.090						
UTLG-5101-4-04	1.627	1.481	1.0490	1.7514	.854	.113	.096						
UTLG-5101-1-05	1.689	1.662	1.0543	1.1846	.297	.118	.115						
UTLG-5101-2-05	1.767	1.662	1.0509	1.5562	.688	.126	.115	.2026	.0672	1.190	.060	.156	.070
UTLG-5101-3-05	1.845	1.662	1.0475	1.9278	1.040	.135	.115						
UTLG-5101-4-05	1.923	1.740	1.0441	1.9244	1.040	.142	.123						
UTLG-5101-1-3	1.969	1.919	1.0706	1.3097	.422	.147	.142						
UTLG-5101-2-3	2.073	1.919	1.0662	1.8053	.922	.157	.142	.2246	.0624	1.203	.075	.172	.070
UTLG-5101-3-3	2.177	1.919	1.0620	2.3011	1.422	.168	.142						
UTLG-5101-4-3	2.281	2.023	1.0578	2.2968	1.422	.179	.152						
UTLG-5101-1-07	2.264	2.207	1.0777	1.3509	.448	.175	.169						
UTLG-5101-2-07	2.381	2.207	1.0733	1.9090	1.043	.186	.169	.2696	.0768	1.224	.090	.187	.070
UTLG-5101-3-07	2.498	2.207	1.0689	2.4671	1.592	.200	.169						
UTLG-5101-4-07	2.615	2.324	1.0645	2.4627	1.592	.212	.180						
UTLG-5101-1-4	2.586	2.516	1.0812	1.4169	.547	.201	.194						
UTLG-5101-2-4	2.716	2.516	1.0758	2.0365	1.172	.214	.194	.3046	.0768	1.234	.100	.203	.070
UTLG-5101-3-4	2.846	2.516	1.0704	2.6561	1.797	.227	.194						
UTLG-5101-4-4	2.976	2.646	1.0650	2.6507	1.797	.240	.207						
UTLG-5101-1-5	3.216	3.138	1.0872	1.4620	.609	.260	.252						
UTLG-5101-2-5	3.359	3.138	1.0813	2.1436	1.297	.274	.252	.3746	.0912	1.265	.125	.234	.085
UTLG-5101-3-5	3.503	3.138	1.0753	2.8251	1.984	.288	.252						
UTLG-5101-4-5	3.646	3.281	1.0693	2.8191	1.984	.303	.266						
UTLG-5101-1-6	3.849	3.761	1.0962	1.5071	.672	.317	.308						
UTLG-5101-2-6	4.003	3.761	1.0898	2.2507	1.422	.332	.308	.4446	.1056	1.296	.160	.250	.100
UTLG-5101-3-6	4.159	3.761	1.0833	2.9942	2.172	.348	.308						
UTLG-5101-4-6	4.315	3.917	1.0767	2.9876	2.172	.364	.324						
UTLG-5101-1-7	4.488	4.384	1.3588	1.8573	.797	.375	.364						
UTLG-5101-2-7	4.670	4.384	1.3513	2.7248	1.672	.393	.364	.5146	.1200	1.546	.185	.281	.115
UTLG-5101-3-7	4.852	4.384	1.3437	3.5922	2.547	.411	.364						
UTLG-5101-4-7	5.035	4.566	1.3361	3.5845	2.547	.430	.383						
UTLG-5101-1-8	5.130	5.005	1.3643	1.9644	.922	.433	.421						
UTLG-5101-2-8	5.338	5.005	1.3557	2.9558	1.922	.454	.421	.5846	.1344	1.578	.220	.297	.130
UTLG-5101-3-8	5.547	5.005	1.3470	3.9471	2.922	.475	.421						
UTLG-5101-4-8	5.755	5.213	1.3383	3.9384	2.922	.496	.441						
UTLG-5101-1-9	5.849	5.633	1.6551	2.6988	1.450	.498	.477						
UTLG-5101-2-9	6.162	5.633	1.6420	4.1807	2.950	.530	.477	.6896	.1488	1.937	.240	.390	.187
UTLG-5101-3-9	6.474	5.633	1.6289	5.6676	4.450	.562	.477						
UTLG-5101-4-9	6.786	5.946	1.6158	5.6545	4.450	.593	.509						
UTLG-5101-1-10	6.900	6.261	1.6596	2.8089	1.565	.558	.534						
UTLG-5101-2-10	6.839	6.261	1.6454	4.4197	3.190	.592	.534	.7656	.1632	1.937	.270	.406	.187
UTLG-5101-3-10	7.178	6.261	1.6312	6.0305	4.815	.626	.534						
UTLG-5101-4-10	7.517	6.600	1.6170	6.0158	4.815	.660	.558						
UTLG-5101-1-12	7.790	7.517	2.2315	3.3951	1.815	.675	.648						
UTLG-5101-2-12	8.180	7.517	2.2151	5.3981	3.690	.714	.648	.9216	.1920	2.546	.320	.500	.250
UTLG-5101-3-12	8.571	7.517	2.1987	7.2567	5.565	.753	.648						
UTLG-5101-4-12	8.962	7.908	2.1823	7.2403	5.565	.792	.687						
UTLG-5101-1-14	9.118	8.773	2.2286	3.8282	2.190	.796	.761						
UTLG-5101-2-14	9.586	8.773	2.2090	6.1132	4.440	.843	.761	1.0776	.2208	2.562	.380	.531	.250
UTLG-5101-3-14	1.0055	8.773	2.1894	8.3436	6.690	.890	.761						
UTLG-5101-4-14	1.0524	9.242	2.1698	8.3240	6.690	.946	.808						
UTLG-5101-1-16	1.0420	1.0029	2.4738	4.1766	2.440	.908	.875						
UTLG-5101-2-16	1.0941	1.0029	2.4519	6.8273	4.940	.966	.875	1.2176	.2496	2.843	.440	.562	.250
UTLG-5101-3-16	1.1461	1.0029	2.4390	9.3057	4.440	1.018	.875						
UTLG-5101-4-16	1.1982	1.0550	2.4081	9.2835	7.440	1.070	.927						

SLEEVE PART NO.	L ± .002	C ± .0006	B ± .0004	D ± .016	F ± .010	G ± .010	A ± 30'
UTLG-5102B-1-04	.9855	.370					
UTLG-5102B-2-04	.9825	.370	.1690	.875	.062	.046	100°
UTLG-5102B-3-04	.9795	.370					
UTLG-5102B-4-04	.9765	.370					
UTLG-5102B-1-05	.9818	.400					
UTLG-5102B-2-05	.9784	.400	.2030	.875	.062	.046	100°
UTLG-5102B-3-05	.9750	.400					
UTLG-5102B-4-05	.9716	.400					
UTLG-5102B-1-3	.9721	.475					
UTLG-5102B-2-3	.9677	.480	.2250	1.000	.062	.046	100°
UTLG-5102B-3-3	.9635	.485					
UTLG-5102B-4-3	.9593	.490					
UTLG-5102B-1-07	.9702	.510					
UTLG-5102B-2-07	.9658	.510	.2700	.875	.062	.046	100°
UTLG-5102B-3-07	.9614	.510					
UTLG-5102B-4-07	.9570	.510					
UTLG-5102B-1-4	.9687	.540					
UTLG-5102B-2-4	.9633	.546	.3050	1.000	.062	.046	100°
UTLG-5102B-3-4	.9579	.552					
UTLG-5102B-4-4	.9525	.558					
UTLG-5102B-1-5	.9657	.610					
UTLG-5102B-2-5	.9598	.617	.3750	1.000	.093	.046	100°
UTLG-5102B-3-5	.9538	.624					
UTLG-5102B-4-5	.9478	.631					
UTLG-5102B-1-6	.9627	.680					
UTLG-5102B-2-6	.9563	.688	.4450	1.000	.093	.046	100°
UTLG-5102B-3-6	.9498	.696					
UTLG-5102B-4-6	.9432	.704					
UTLG-5102B-1-7	1.2023	.750					
UTLG-5102B-2-7	1.1948	.759	.5150	1.250	.125	.046	100°
UTLG-5102B-3-7	1.1872	.768					
UTLG-5102B-4-7	1.1796	.777					
UTLG-5102B-1-8	1.1988	.820					
UTLG-5102B-2-8	1.1902	.830	.5850	1.250	.125	.046	100°
UTLG-5102B-3-8	1.1815	.840					
UTLG-5102B-4-8	1.1728	.850					
UTLG-5102B-1-9	1.4426	.847					
UTLG-5102B-2-9	1.4295	.863	.6903	1.500	.125	.046	100°
UTLG-5102B-3-9	1.4164	.878					
UTLG-5102B-4-9	1.4033	.894					

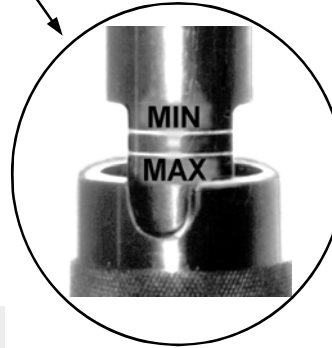
4-Way Protrusion Gauge Sets

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.

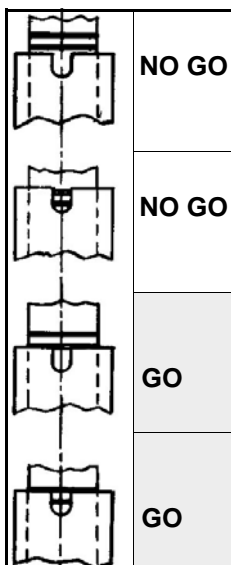
Also available individually.

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

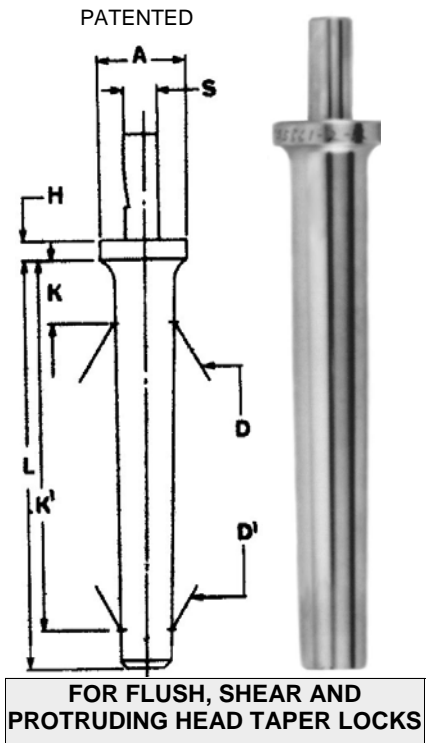
TAPER LOCK PROTRUSION GAUGE PINS

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.



FOR FLUSH, SHEAR AND PROTRUDING HEAD TAPER LOCKS

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

HANDLE HOLDER

Specify Handle required as listed on page S18.

Select the appropriate set.

GAUGE PIN

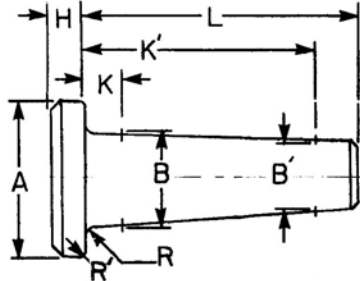


Blueing Gauges

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.		H		C	R	R'	K	B	K'	B'	L
		MAX.	MIN.	MAX.	MIN.								
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.		H		C	R	R'	K	B	K'	B'	L
		MAX.	MIN.	MAX.	MIN.								
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.		H		C	R	R'	K	B	K'	B'	L
		MAX.	MIN.	MAX.	MIN.								
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	6.880

G #	SEC-OND DASH #	A DIA.		H		C	R	R'	K	B	K'	B'	L
		MAX.	MIN.	MAX.	MIN.								
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.		H		C	R	R'	K	B	K'	B'	L
		MAX.	MIN.	MAX.	MIN.								
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.		H		C	R	R'	K	B	K'	B'	L
		MAX.	MIN.	MAX.	MIN.								
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.

UTLG 5130-3

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



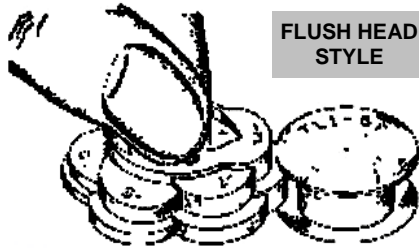
UTLG 5130-1

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

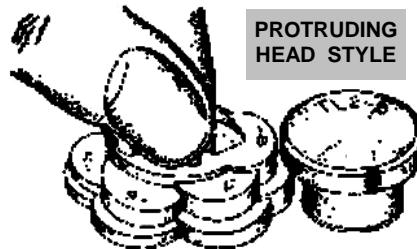


UTLG 5130-2

For Checking Hole Diameter 9/16" thru 1"

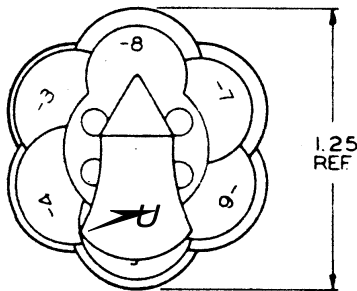


FLUSH HEAD STYLE

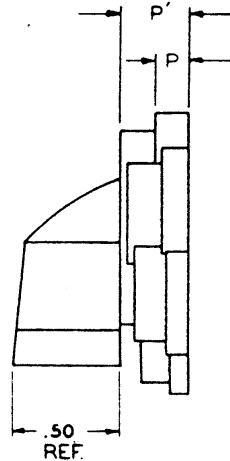


PROTRUDING HEAD STYLE

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



UTLG 5130-1
ILLUSTRATED



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
8	1/2"	0.111	0.317	12	3/4"		0.260	0.432		
UTLG 5130-2	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

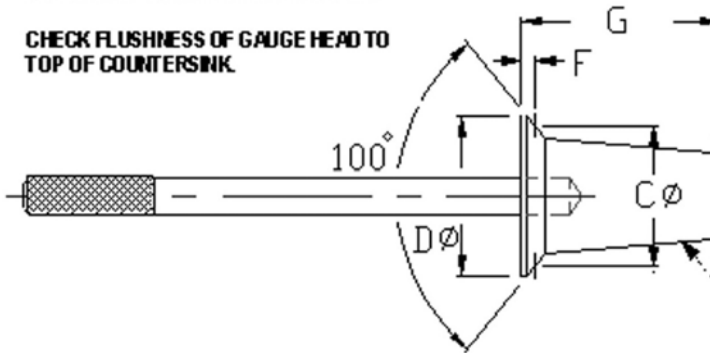
UTLG 5123-100

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.

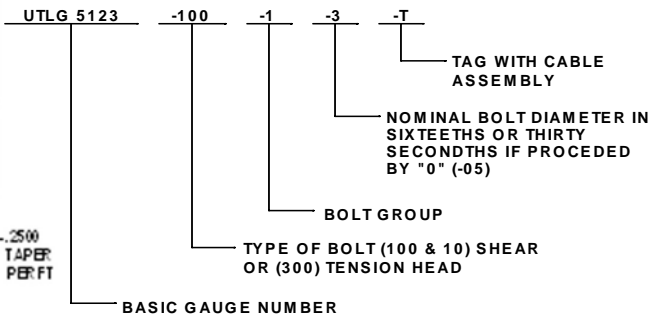


PLACE GAUGE IN COUNTERSINK HOLE.

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**

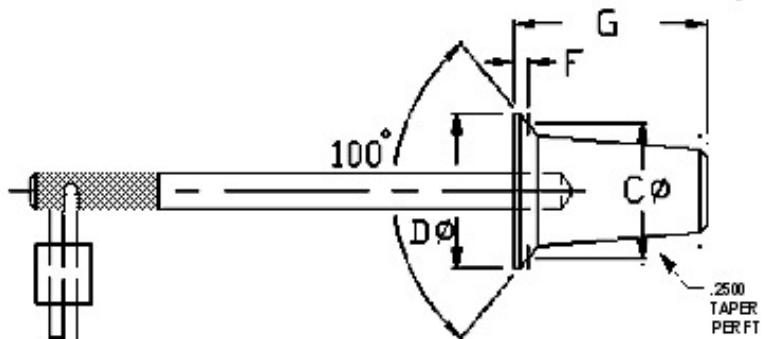
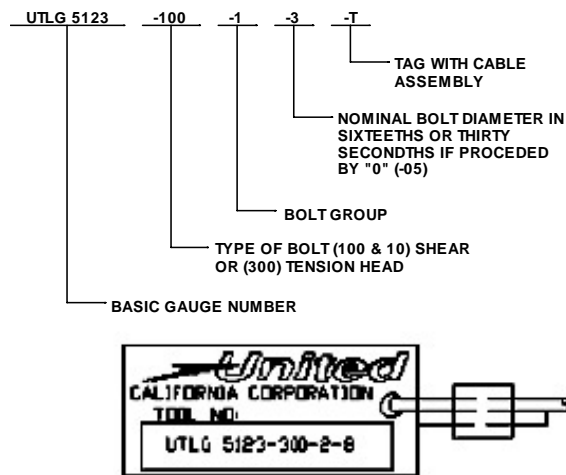
UNITED'S UTLG 5123-300 Tension Series Countersink Depth Gauges are ground for slip fit in mating Taperlock Hole.

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