

Locate & Hold - Pins, Cables & Accessories

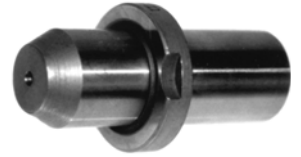
Wide Assortment of Round & Relieved Pins



EXPANDING DIAMETER PINS Pg D10



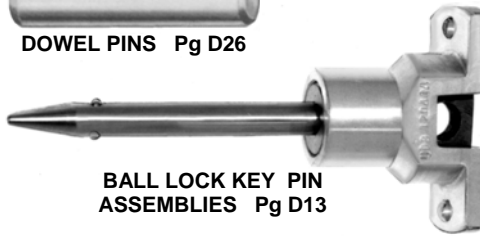
DOWEL PINS Pg D26



LOCK SCREW LOCATING PINS Pg D32



LOCK PIN ASSY Pg D7



BALL LOCK KEY PIN ASSEMBLIES Pg D13



PRESS FIT LOCATING PINS Pg D33



L-PINS Pg D5



CABLE ASSEMBLIES Pg D16



FERRULES Pg D15



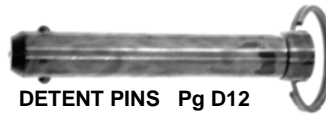
PLAIN ALIGNMENT PINS Pg D5



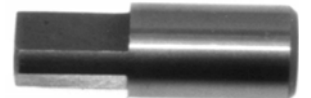
FLANGELESS LOCATING PINS Pg D31



FLOATING LOCATOR PIN BUSHINGS Pg D2



DETENT PINS Pg D12



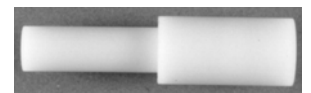
FLANGELESS BOEING LOCATING PINS Pg D37



SPLIT KEY/TAG RINGS Pg D12



JIG GAGE PINS Pg D4



PLASTIC STEP-DOWN PINS Pg D38



RADIUS NOSE PINS Pg D19



SAFETY PINS Pg D18



POSITIVE BALL LOCK FLANGE PINS Pg D17



TOOLING PADS Pg D42



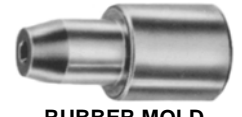
CONE PIN LOCATORS Pg D36



SPRING PLUNGERS Pg D25



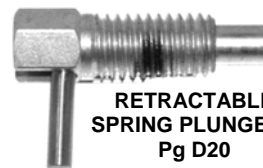
BULLET NOSE DOWELS Pg D36



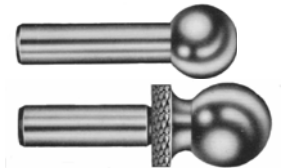
RUBBER MOLD PINS Pg D27



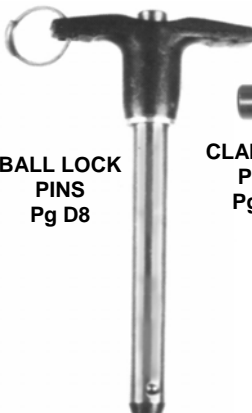
PULL RING PLUNGERS Pg D21



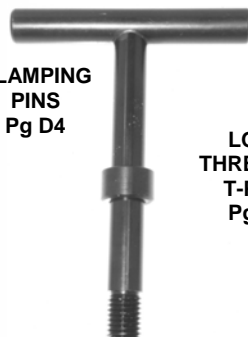
RETRACTABLE SPRING PLUNGERS Pg D20



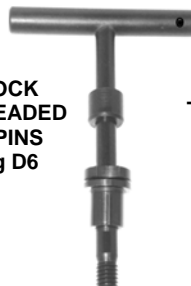
TOOLING BALLS Pg D40



BALL LOCK PINS Pg D8



CLAMPING PINS Pg D4



LOCK THREADED T-PINS Pg D6



T-PINS Pg D5



PREMIUM TOOLING BALLS Pg D43

Floating Locator Pin Bushings

Locator Pin Bushings

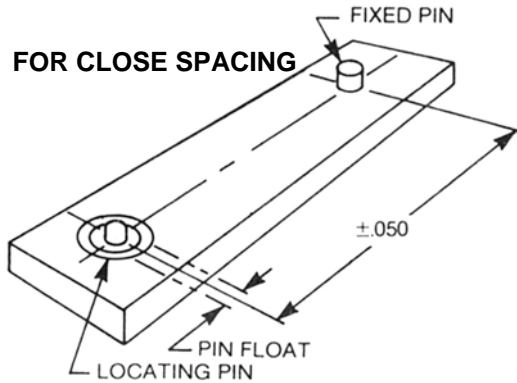
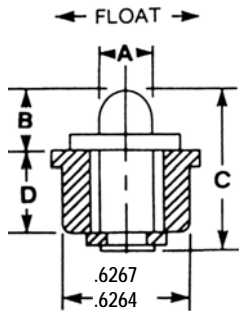


FLOATING LOCATOR PIN BUSHINGS — TYPE I

UNITED FLOATING LOCATOR PINS DESIGNED TO:

- Hold fixture locations with $\pm .050$
- Ideal for master tool coordination
- Used in place of diamond relieved locating pins
- Eliminate jig boring
- Numerical control tooling

FOR CLOSE SPACING

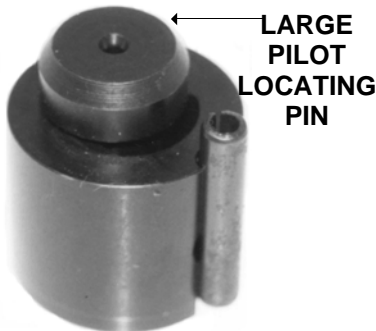


TYPE I 5/8" O.D.

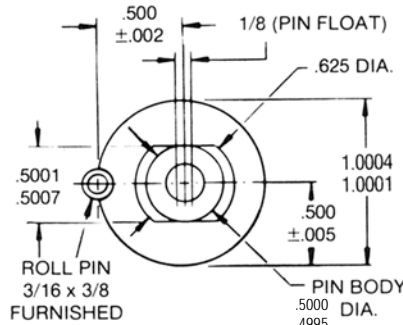
BOEING (MACAIR)		TYPE I		5/8" O.D.	
TYPE I PART NO.	A +.0000 - .0005	B	C	D	
UDB-974904	.2495	9/32	47/64	3/8	
UDB-974905	.3120	9/32	47/64	3/8	
UDB-974906	.3745	5/16	49/64	3/8	
UDB-974908	.4995	7/16	57/64	3/8	
UDB-974909	.5620	7/16	57/64	3/8	
UDB-974910	.6245	1/2	57/64	3/8	
UDB-975004	.2495	9/32	1-11/32	1"	
UDB-975005	.3120	9/32	1-11/32	1"	
UDB-975006	.3745	5/16	1-3/8	1"	
UDB-975008	.4995	7/16	1-1/2	1"	
UDB-975009	.5620	7/16	1-1/2	1"	
UDB-975010	.6245	1/2	1-9/16	1"	

FLOATING LOCATOR PIN BUSHINGS — TYPE II

USE WITH DOWEL PIN OR OTHER ROLL PINS



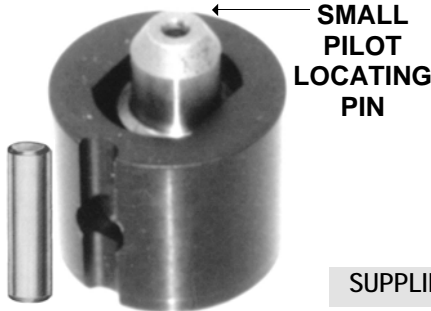
LARGE PILOT LOCATING PIN



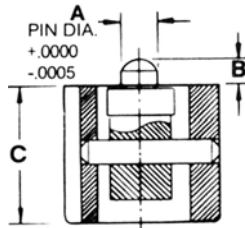
May be used with common dowel pin of appropriate diameter to serve as a fixed master locating pin. Replaces Diamond Pins in metal fixtures. Drill 3/16 hole for Roll Pin. Allow $+.0003$ to $+.0005$ for press fit. See below.

Special floating pin diameters can be supplied upon request.

BOEING (MACAIR)		TYPE II		1" O.D.	
TYPE II PART NO.	A PILOT +.0000 - .0005	B PILOT HEIGHT	C LENGTH		
UDB-984904	.2500	.200	.400		
UDB-984905	.3125	.200	.400		
UDB-984906	.3750	.220	.400		
UDB-984908	.5000	.250	.400		
UDB-984910	.6250	.250	.400		
UDB-985004	.2500	.200	.900		
UDB-985005	.3125	.200	.900		
UDB-985006	.3750	.220	.900		
UDB-985008	.5000	.250	.900		
UDB-985010	.6250	.250	.900		



SMALL PILOT LOCATING PIN



ALL 1" O.D.

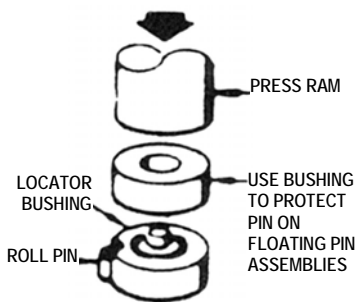
HARDENED STEEL RC-58-62 PRECISION GROUND

SUPPLIED WITH ROLL PIN.

EASY TO INSTALL

1. Drill ream 3/16 hole for roll pin.
2. Bore installation hole to provide a light press fit for Locator Bushing. $.0003$ to $.0005$ should suffice.
3. Start Locator and Roll Pin (furnished with assembly) as shown and press assembly flush with top of plate.

TYPE II ALL 1" O.D.



Roll Pin establishes precise alignment between slotted hole and layout axis.

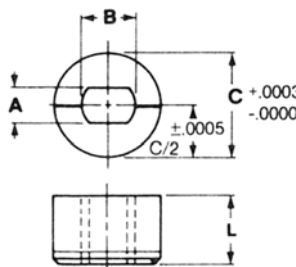
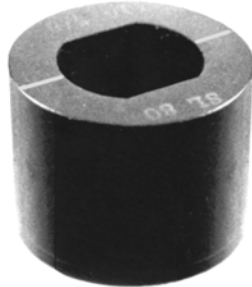
Locations are Simplified

PRESS FIT SLOT LOCATOR BUSHINGS FOR METAL TOOLING

Slot Locator Bushings

UNITED PART NO.	A	B	C ^{+0.003} -0.0000	L
SL-24-8-1/8	.1251 .1257	.250	.3751	1/2
SL-28-8-#30	.1286 .1291	.250	.4375	1/2
SL-28-12-#30	.1286 .1291	.250	.4376	3/4
SL-32-8-#20	.1611 .1617	.250	.5001	1/2
SL-32-8-#20	.1611 .1617	.312	.5001	1/2
SL-36-8-#20	.1611 .1617	.375	.5626	1/2
SL-32-8-3/16	.1876 .1882	.375	.5001	1/2
SL-32-8-#10	.1936 .1941	.375	.5001	1/2
SL-48-8-3/16	.1876 .1882	.375	.7501	1/2
SL-48-8-1/4	.2501 .2507	.375	.7501	1/2
SL-48-8-F	.2571 .2577	.375	.7501	1/2
SL-48-8-5/16	.3126 .3132	.437	.7501	1/2
SL-64-8-1/4	.2501 .2507	.375	1.0001	1/2
SL-64-8-5/16	.3126 .3132	.437	1.0001	1/2
SL-64-8-3/8	.3751 .3757	.500	1.0001	1/2
SL-64-8-1/2	.5001 .5007	.625	1.0001	1/2
SL-64-16-1/2	.5001 .5007	.625	1.0001	1"
SL-80-16-5/8	.6251 .6257	.750	1.2501	1"
SL-96-16-3/4	.7501 .7510	.875	1.5001	1"
SL-96-16-7/8	.8751 .8760	1.000	1.5001	1"
SL-96-16-1"	1.0001 1.0010	1.0625	1.5001	1"

SL Without Roll Pin

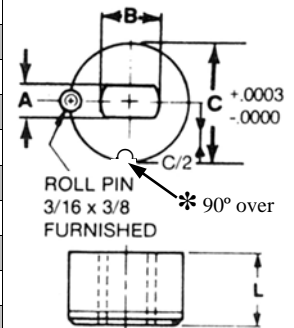
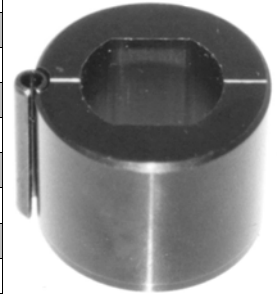


Face is Scribed to Align.

ROLL PIN NOT REQUIRED

NEW PART NO.	OLD PART NO.	A	B	C ^{+0.0003} -0.0000	L
UDB-974924	SLR-28-8-#30	.1286 .1292	.250	.4376	.5 *
UDB-974926	SLR-28-8-#30	.1286 .1292	.250	.4371	.5 *
UDB-974930	SLR-32-8-#20	.1611 .1617	.250	.5001	.5 *
UDB-974932	SLR-32-8-#20	.1611 .1617	.312	.5001	.5 *
UDB-974934	SLR-36-8-#20	.1611 .1617	.375	.5626	.5 *
UDB-974942	3/16	.1876 .1882	.312	.7501	.4
UDB-974942B	SLR-48-8-3/16	.1876 .1882	.312	.7501	.5
UDB-974943	1/4	.2501 .2507	.375	.7501	.4
UDB-974943B	SLR-48-8-1/4	.2501 .2507	.375	.7501	.5
UDB-974943C	SLR-48-8-F	.2571 .2577	.375	.7501	.5
UDB-974944	1/4	.2501 .2507	.375	1.0001	.4
UDB-974944B	SLR-64-8-1/4	.2501 .2507	.375	1.0001	.5
UDB-974944C	SLR-64-8-F	.2571 .2577	.375	1.0001	.5
UDB-974945	5/16	.3126 .3132	.437	1.0001	.4
UDB-974945B	SLR-64-8-5/16	.3126 .3132	.500	1.0001	.5
UDB-974946	3/8	.3751 .3757	.500	1.0001	.4
UDB-974946B	SLR-64-8-3/8	.3751 .3757	.500	1.0001	.5
UDB-974948	1/2	.5001 .5007	.625	1.0001	.4
UDB-974948B	SLR-64-8-1/2	.5001 .5007	.625	1.0001	.5
UDB-975048	1/2	.5001 .5007	.625	1.0001	.9
UDB-975048B	SLR-64-16-1/2	.5001 .5007	.625	1.0001	1"
UDB-975054	5/8	.6251 .6257	.750	1.2501	.9
UDB-975054B	SLR-80-16-5/8	.6251 .6257	.750	1.2501	1"
UDB-975056	SLR-96-16-3/4	.7501 .7510	.812	1.5001	1"
UDB-975064	SLR-96-16-7/8	.8751 .8760	1.000	1.5001	1"
UDB-975068	SLR-96-16-1"	1.0001 1.0010	1.062	1.5001	1"

SLR With Roll Pin



Roll Pins align with Scribe Lines EXCEPT on

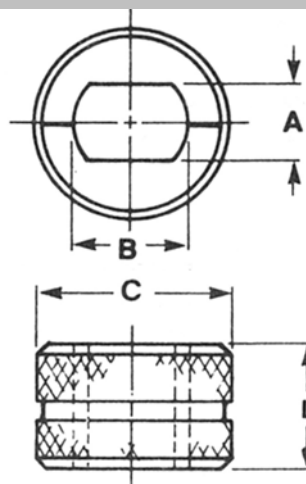
* UDB-974924 THRU UDB-974934 where Pins are Perpendicular.

UNITED's Slot Locator Bushings provide precision part location while only having to maintain a $\pm .050$ tooling tolerance.

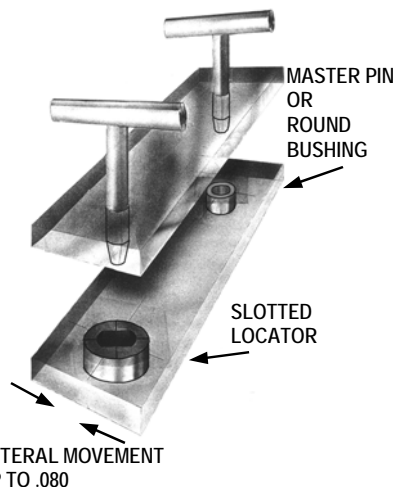
* ROLL PINS 90° from Scribe Line.

UNITED PART NO.	A	B	C	L
SLN-24-8-1/8	.1251 .1261	.250	.375	1/2
SLN-28-8-#30	.1286 .1296	.250	.437	1/2
SLN-28-12-#30	.1286 .1296	.250	.437	3/4
SLN-32-8-#20	.1611 .1621	.250	.515	1/2
SLN-32-8-#20	.1611 .1621	.312	.515	1/2
SLN-36-8-#20	.1611 .1621	.375	.565	1/2
SLN-36-8-3/16	.1876 .1886	.375	.565	1/2
SLN-36-8-#10	.1936 .1946	.375	.515	1/2
SLN-40-8-1/4	.2501 .2511	.375	.640	1/2
SLN-48-8-F	.2571 .2577	.375	.765	1/2
SLN-48-8-5/16	.3126 .3136	.437	.765	1/2
SLN-56-8-3/8	.3751 .3761	.500	.890	1/2
SLN-64-8-1/2	.5001 .5011	.625	1.015	1/2
SLN-64-16-1/2	.5001 .5011	.625	1.015	1"
SLN-80-16-5/8	.6251 .6261	.750	1.265	1"
SLN-96-16-3/4	.7501 .7511	.875	1.515	1"
SLN-96-16-7/8	.8751 .8761	1.000	1.515	1"
SLN-96-16-1"	1.0001 1.0011	1.0625	1.515	1"

NURLOCK SLOT LOCATOR BUSHINGS FOR PLASTIC TOOLING

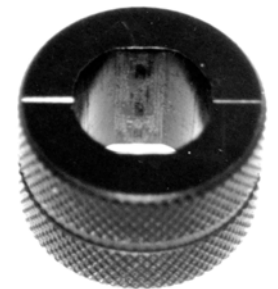


Dowels, "L" or "T" Pins may be used to locate.



UNITED's SLN Slot Locator Bushing serves the same purpose as the Press Fit Locators above, except in Plastic Tooling Applications.

SLN



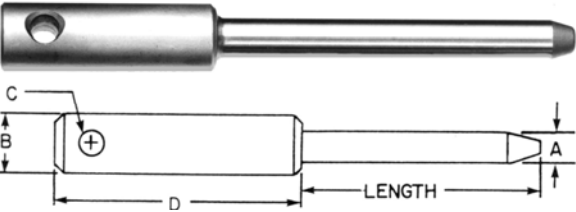
Line is Scribed on Face to Align.

SLN used in PLASTIC TOOLING APPLICATIONS

Jig Gauge, Clamping & Sliding Handle Pins

Quality Pins

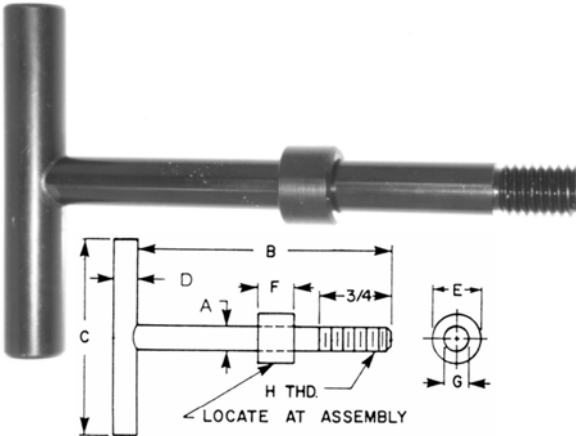
JIG GAUGE PIN



- Strong Solid One Piece Construction
- All Sizes and Location Requirements
- Easily Removable Jig Gauge Pin
- Can be ordered with Optional Cable installed for connection to your fixture—See Index for Cables.
- Hardened and precisely ground

UNITED PART NO.			A O.D. +.0000 -.0005		B	C	D
LENGTH = 2	LENGTH = 4	LENGTH = 6	NOMINAL	DECIMAL	O.D. SIZE	HOLE DIA	
UDB-574121	UDB-574123	UDB-574125	#13	.1850	1/2	5/16	3-1/2
UDB-574127	UDB-574129	UDB-574131	3/16	.1875	1/2	5/16	3-1/2
UDB-574139	UDB-574141	UDB-574143	#11	.1910	1/2	5/16	3-1/2
UDB-574145	UDB-574147	UDB-574149	#10	.1935	1/2	5/16	3-1/2
UDB-574241	UDB-574243	UDB-574245	D	.2460	1/2	5/16	3-1/2
UDB-575001	UDB-575003	UDB-575005	1/4	.2500	5/8	5/16	3-1/2
UDB-575079	UDB-575081	UDB-575083	5/16	.3125	5/8	5/16	3-1/2
UDB-575145	UDB-575147	UDB-575149	3/8	.3750	5/8	5/16	3-1/2
UDB-575199	UDB-575201	UDB-575203	7/16	.4375	5/8	5/16	3-1/2
UDB-575223	UDB-575225	UDB-575227	1/2	.5000	5/8	5/16	3-1/2
LENGTH = 4	LENGTH = 6	LENGTH = 8					
UDB-576043	UDB-576045	UDB-576047	5/8	.6250	7/8	3/8	3-1/2
UDB-576091	UDB-576093	UDB-576095	3/4	.7500	7/8	3/8	3-1/2
UDB-576139	UDB-576141	UDB-576143	7/8	.8750	1-1/4	3/8	3-1/2
UDB-576187	UDB-576189	UDB-576191	1	1.0000	1-1/4	3/8	3-1/2

CLAMPING PIN



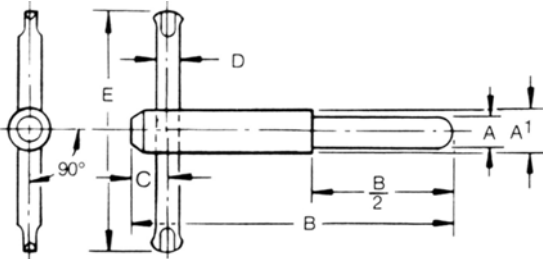
- Used for clamping various thicknesses of material by adjusting the Collar or Bushing and brazing it in position.
- Will hold multiple layers of material.
- Hardened and precisely ground — Black Oxide finish

UNITED PART NO.	A +.000 - .003	B +.06	C ± .06	D ± .025	E ± .025	F ± .062	G +.002 - .000	H THD
UDB-579200	.193	3.0	1.50	1/4	3/8	1/2	.203	10-24
UDB-579201	.249	4.0	2.5	3/8	1/2	1/2	.252	1/4-20
UDB-579203	.312	4.0	3.0	7/16	9/16	1/2	.315	5/16-18
UDB-579205	.374	4.5	3.5	1/2	5/8	1/2	.378	3/8-16
UDB-579207	.499	5.0	3.5	5/8	3/4	1/2	.503	1/2-13
UDB-579209	.499	7.0	3.5	5/8	3/4	1/2	.503	1/2-13
UDB-579210	.624	5.5	3.5	7/8	7/8	1/2	.628	5/8-11
UDB-579212	.749	6.0	3.5	7/8	1	1/2	.753	3/4-10

SLIDING HANDLE T- PIN



T-PINS UDB-703645 thru UDB-703690 are straight, so A' = A.



UNITED PART NO.	A +.0000 - .0010	A'	B ± 1/16	C ± 1/16	D ± .007	E ± 1/16
UDB-703601	.1562	.3750	3-1/2	3/8	3/16	2
UDB-703605	.1875	.3750	4	3/8	3/16	2
UDB-703610	.1875	.3750	6	3/8	3/16	2
UDB-703615	.1910	.3750	4	3/8	3/16	2
UDB-703620	.1910	.3750	6	3/8	3/16	2
UDB-703625	.2500	.3750	4	3/8	3/16	2-1/2
UDB-703630	.2500	.3750	6	3/8	3/16	2-1/2
UDB-703635	.3125	.3750	4	3/8	3/16	3
UDB-703640	.3125	.3750	6	3/8	3/16	3
UDB-703645	.3750	.3750	5	3/8	3/16	3
UDB-703647	.3750	.3750	6	3/8	3/16	3
UDB-703650	.3750	.3750	7	3/8	3/16	3
UDB-703655	.4375	.4375	5	3/8	7/32	3
UDB-703660	.4375	.4375	7	3/8	7/32	3
UDB-703664	.5000	.5000	6	3/8	1/4	3
UDB-703665	.5000	.5000	7	3/8	1/4	3
UDB-703670	.5000	.5000	9	3/8	1/4	3
UDB-703680	.6250	.6250	8	1/2	3/8	3
UDB-703689	.7500	.7500	6	1/2	7/16	3
UDB-703690	.7500	.7500	8	1/2	7/16	3

With Alignment

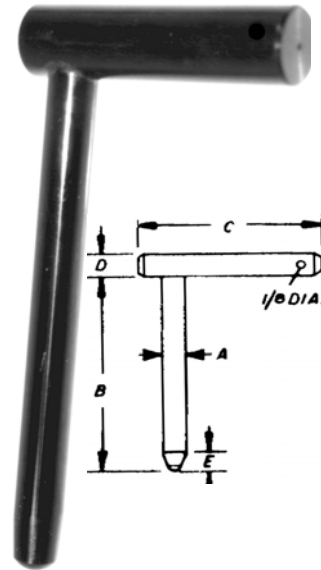


L and T Pins

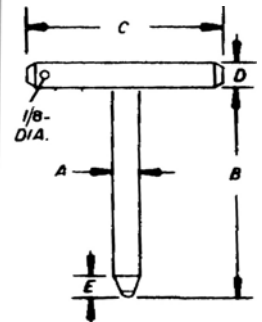
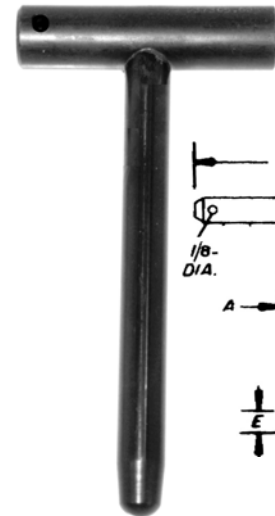
UNITED's L and T Pins align precisely and remove easily in jigs and fixtures. Determine your working area and select the appropriate L or T Pin. Order an optional cable installed to connect your Pin to the jig or fixture. Special Pin diameters available to 2-1/2 inches. Plain Pin available for use where handle is an obstruction. Heat Treated Steel — Black Oxide Finish. Refer to Pages D14-D16 for cables.

L-PINS

L-PIN PART NO.	T-PIN PART NO.	PLAIN PIN PART NO.	A +0000 -0005	B	C	D	E	NOMINAL SIZE
UDB-937010	UDB-937210	UDB-937410	.1250	2-1/2	1-1/2	1/4	1/4	1/8
UDB-937012	UDB-937212	UDB-937412	.1562	3-1/2	2-1/2	5/16	1/4	5/32
UDB-937012A			.1855	4	2-1/2	5/16	1/4	#13
UDB-937013		UDB-937413	.1860	2-1/2	2-1/2	5/16	1/4	#13
UDB-937014		UDB-937414	.1860	5	2-1/2	5/16	1/4	#13
UDB-937015	UDB-937215	UDB-937415	.1875	3	2-1/2	5/16	1/4	3/16
UDB-937017	UDB-937217	UDB-937417	.1875	4	2-1/2	5/16	1/4	3/16
UDB-937020	UDB-937220	UDB-937420	.1875	6	2-1/2	5/16	1/4	3/16
UDB-937022		UDB-937422	.1895	2-1/2	2-1/2	5/16	1/4	#12
UDB-937021			.1890	4	2-1/2	5/16	1/4	#12
UDB-937023		UDB-937423	.1895	5	2-1/2	5/16	1/4	#12
UDB-937025	UDB-937225	UDB-937425	.1910	3	2-1/2	5/16	1/4	#11
UDB-937027	UDB-937227	UDB-937427	.1910	4	2-1/2	5/16	1/4	#11
UDB-937030	UDB-937230	UDB-937430	.1910	6	2-1/2	5/16	1/4	#11
UDB-937032	UDB-937232	UDB-937432	.1925	3	2-1/2	5/16	1/4	#10
UDB-937035	UDB-937235	UDB-937435	.1960	3	2-1/2	5/16	1/4	#9
UDB-937036			.2480	4	2-1/2	3/8	3/8	1/4
UDB-937037		UDB-937437	.2485	2-1/2	2-1/2	3/8	3/8	1/4
UDB-937038		UDB-937438	.2485	5	2-1/2	3/8	3/8	1/4
UDB-937039	UDB-937239	UDB-937439	.2500	2	2-1/2	3/8	3/8	1/4
UDB-937040	UDB-937240	UDB-937440	.2500	3	2-1/2	3/8	3/8	1/4
UDB-937041	UDB-937241	UDB-937441	.2500	4	2-1/2	3/8	3/8	1/4
UDB-937045	UDB-937245	UDB-937445	.2500	6	2-1/2	3/8	3/8	1/4
UDB-937047			.2550	4	2-1/2	3/8	3/8	F
UDB-937050	UDB-937250	UDB-937450	.2570	3	2-1/2	3/8	3/8	F
UDB-937051	UDB-937251	UDB-937451	.2570	4	2-1/2	3/8	3/8	F
UDB-937051A			.2750	4	2-1/2	3/8	3/8	J
UDB-937051B			.3105	4	2-1/2	3/8	3/8	5/16
UDB-937052		UDB-937452	.3110	2-1/2	2-1/2	3/8	3/8	5/16
UDB-937053		UDB-937453	.3110	5	2-1/2	3/8	3/8	5/16
UDB-937054	UDB-937254	UDB-937454	.3125	2	3	7/16	1/2	5/16
UDB-937055	UDB-937255	UDB-937455	.3125	3-1/2	3	7/16	1/2	5/16
UDB-937057	UDB-937257	UDB-937457	.3125	4	3	7/16	1/2	5/16
UDB-937060	UDB-937260	UDB-937460	.3125	6	3	7/16	1/2	5/16
UDB-937061A			.3730	4	3-1/2	1/2	1/2	3/8
UDB-937061		UDB-937461	.3735	3	3-1/2	1/2	1/2	3/8
UDB-937062		UDB-937462	.3735	5	3-1/2	1/2	1/2	3/8
UDB-937063	UDB-937263	UDB-937463	.3750	3	3-1/2	1/2	1/2	3/8
UDB-937065	UDB-937265	UDB-937465	.3750	4	3-1/2	1/2	1/2	3/8
UDB-937067	UDB-937267	UDB-937267	.3750	5	3-1/2	1/2	1/2	3/8
UDB-937070	UDB-937270	UDB-937470	.3750	6	3-1/2	1/2	1/2	3/8
UDB-937071	UDB-937271	UDB-937471	.3750	7	3-1/2	1/2	1/2	3/8
UDB-937072			.4355	4	3-1/2	9/16	1/2	7/16
UDB-937073		UDB-937473	.4360	5	3-1/2	9/16	1/2	7/16
UDB-937075	UDB-937275	UDB-937475	.4375	4	3-1/2	9/16	1/2	7/16
UDB-937077	UDB-937277	UDB-937477	.4375	5	3-1/2	9/16	1/2	7/16
UDB-937080	UDB-937280	UDB-937480	.4375	6	3-1/2	9/16	1/2	7/16
UDB-937081	UDB-937281	UDB-937481	.4375	7	3-1/2	9/16	1/2	7/16
UDB-937082			.4980	4	3-1/2	5/8	5/8	1/2
UDB-937083		UDB-937483	.4985	4-1/2	3-1/2	5/8	5/8	1/2
UDB-937084		UDB-937484	.4985	7	3-1/2	5/8	5/8	1/2
UDB-937085	UDB-937285	UDB-937485	.5000	4	3-1/2	5/8	5/8	1/2
UDB-937090	UDB-937290	UDB-937490	.5000	6	3-1/2	5/8	5/8	1/2
UDB-937091	UDB-937291	UDB-937491	.5000	7	3-1/2	5/8	5/8	1/2
UDB-937093	UDB-937293	UDB-937493	.5000	9	3-1/2	5/8	5/8	1/2
UDB-937095	UDB-937295	UDB-937495	.5625	4	3-1/2	5/8	5/8	9/16
UDB-937100	UDB-937300	UDB-937500	.5625	6	3-1/2	5/8	5/8	9/16
UDB-937103		UDB-937503	.6235	5	3-1/2	7/8	3/4	5/8
UDB-937103A			.6230	6	3-1/2	7/8	3/4	5/8
UDB-937104		UDB-937504	.6235	7	3-1/2	7/8	3/4	5/8
UDB-937105	UDB-937305	UDB-937505	.6250	6	3-1/2	7/8	3/4	5/8
UDB-937107	UDB-937307	UDB-937507	.6250	8	3-1/2	7/8	3/4	5/8
UDB-937108			.7480	6	3-1/2	7/8	3/4	3/4
UDB-937109		UDB-937509	.7485	8	3-1/2	7/8	3/4	3/4
UDB-937110	UDB-937310	UDB-937510	.7500	6	3-1/2	7/8	3/4	3/4
UDB-937113	UDB-937313	UDB-937513	.7500	8	3-1/2	7/8	3/4	3/4



T-PINS



PLAIN PINS (ALIGNMENT)

