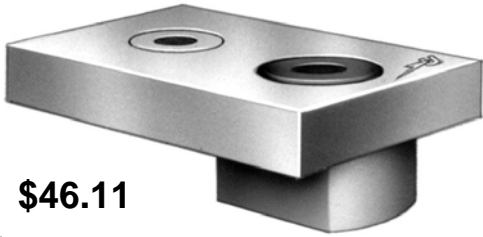


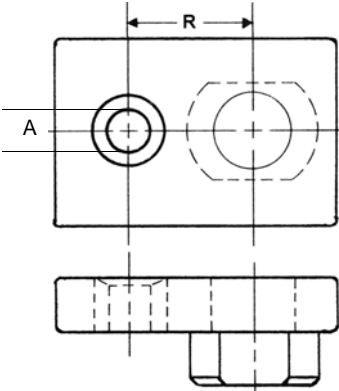
**LJ - LS - TLJ - HLS -
HTW - TW Lock Screws**

Lock Screw Locating Jigs for Lock Screws & Round Clamps



\$46.11

TLJ & LJ LOCK SCREW LOCATING JIGS

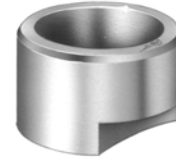


FOR CHART
DIMENSION
REFERENCE
AND
SF, SFX, SFTE,
SEE THIS
SECTION A..
ALL SIZES
\$46.11

To properly locate lock screws or round clamp attaching screws, select the correct **UNITED** Locating Jig.



**LS, HLS, HTW
LARGER TYPE
LOCATING LOCK
SCREWS**



**RC
ROUND
CLAMPS**
See Page A15.

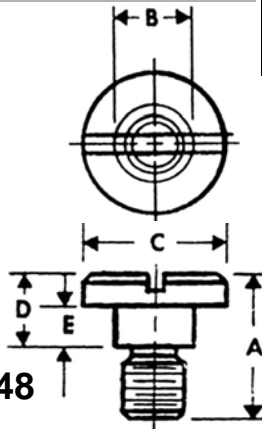
JIG NO.	A JIG LINER I.D.	F HEAD DIA	G HEAD THICKNESS	H LOCK STEP	J MILL DEPTH	L MILL ANGLE	X LOCATION FLAT CLAMP	R LOCATION LOCKSCREW	LOCK SCREWS	ROUND CLAMP	FLAT CLAMP
LJ-0	#29	5/16	3/16	3/32	3/32	55°		17/64	LS-0,HLS-0		
TLJ-1	#29	5/16	3/16	3/32	3/32	55°		17/64	LS-0,HLS-0		
TLJ-2	#21	7/16			9/64	30°		23/64	TW-2		
LJ-1	F	35/64			11/64	65°	5/8	1/2	LS-1,HLS-1		
TLJ-4	#21	5/8	1/4	1/8	15/64	30°	45/64	29/64	TW-2	RC-1	F-1
TLJ-5	#21	5/8			15/64	30°	47/64	29/64	TW-2		
LJ-2	F	51/64			19/64	65°	3/4	5/8	LS-1,HLS-1		
TLJ-6	#21	7/8			23/64	65°	51/64	37/64	TW-2		
TLJ-7	#21	7/8			23/64	30°	53/64	37/64	TW-2		
LJ-3	F	1-3/64			27/64	50°	57/64	3/4	LS-1,HLS-1		
TLJ-9	F	1-1/4			31/64	30°	1-1/64	53/64	TW-7		
LJ-4	F	1-27/64			19/32	35°	1-7/64	59/64	LS-2,HLS-2		
TLJ-11	F	1-1/2			39/64	30°	1-1/4	61/64	TW-7		
TLJ-12	F	1-5/8			43/64	30°	1-13/64	1-1/64		RC-2	F-2
LJ-5	F	1-51/64			25/32	30°	1-19/64	1-7/64	LS-2,HLS-2		
TLJ-14	F	1-7/8			51/64	30°	1-21/64	1-9/64			
LJ-6	5/16	2-19/64			1"	30°	1-41/64	1-25/64	LS-3,HLS-3	RC-3	F-3
LJ-7	5/16	2-51/64			1-1/4	25°	1-57/64	1-41/64			

**LOCK SCREWS
PROVIDE CLOSER
HOLE SPACING**

SLOTTED

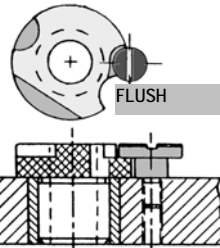


\$0.48

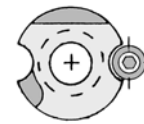


ANSI AND
THIN WALL
LOCK
SCREWS

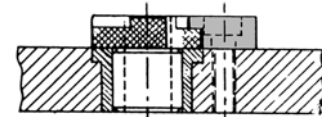
LOCK SCREW
WITH L
HEADLESS
LINER FOR
FLUSH
MOUNTING



L LINER WITH LS LOCK SCREW



Use ROUND
CLAMP with L
or HL Liners
Flush.



HL LINER WITH RC CLAMP

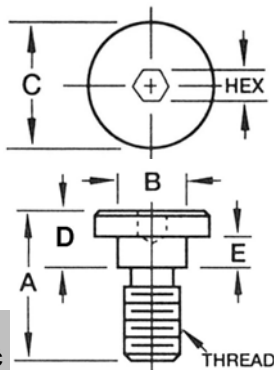
**LS LOCK SCREWS
TW (THIN WALL) LOCK SCREWS
LS-00 thru LS-5, TW-1 thru TW-7**

LS 48¢

HEX



\$0.64



**HLS HEX LOCK SCREWS
HLS-0 thru HLS-5
HTW-1 thru HTW-7**

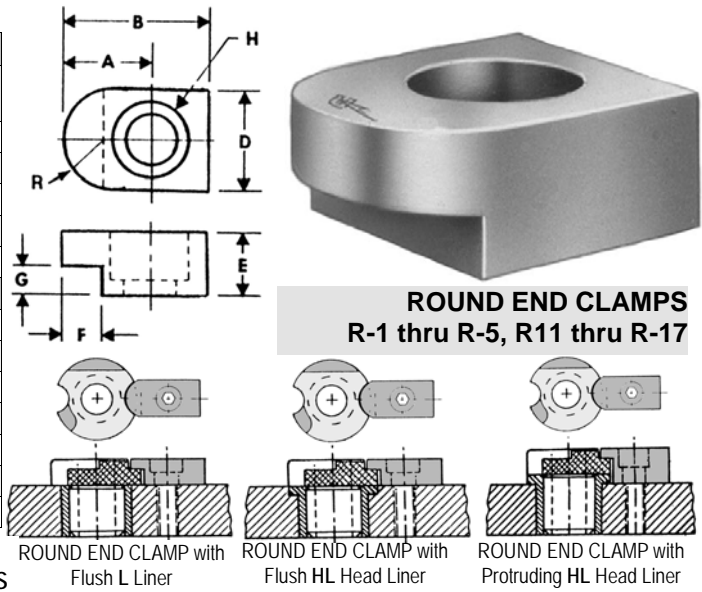
64¢

TW	HEX	LS	A	B	C	D	E	THD	HEX	O.D. SF
		LS-00	5/16	1/8	1/4	1/8	.063	4-40		5/32 Discontinued
		HLS-0	LS-0	7/16	3/16	5/16	.100	8-32	3/32	3/16
TW-1	HTW-1		7/16	3/16	5/16	3/16	.100	8-32	3/32	
TW-2	HTW-2		1/2	1/4	3/8	1/4	.138	10-32	1/8	1/4 - 3/8 - 7/16
TW-3	HTW-3		11/16	1/4	7/16	3/8	.200	10-32	1/8	
		HLS-1	LS-1	5/8	3/8	5/8	.138	5/16-18	3/16	1/2 - 3/4
TW-7	HTW-7		3/4	3/8	5/8	3/8	.200	5/16-18	3/16	7/8 - 1-1/4
TW-4	HTW-4		7/8	3/8	9/16	1/2	.263	5/16-18	3/16	
TW-5	HTW-5		1"	3/8	5/8	5/8	.325	5/16-18	3/16	
		HLS-2	LS-2	7/8	3/8	5/8	.200	5/16-18	3/16	1" - 1-3/8
		HLS-3	LS-3	1"	7/16	3/4	.200	3/8-16	7/32	1-3/4 - 2-1/4
		HLS-4	LS-4	1-1/16	7/16	3/4	.231	3/8-16	7/32	
		HLS-5	LS-5	1-1/8	7/16	3/4	.263	3/8-16	7/32	

Secure Clamping for Renewable Bushings

Round End Clamps,
Flat & Round Clamps

ROUND END CLAMPS For Flush Mounting of Liners									
PART NO.	A	B	D	E	F	G	H	R	PRICE
R-1	7/16	3/4	5/8	5/16	3/16	1/8	1/4 S.H. CAP SCREW	5/16	2.55
R-2	1/2	3/4	5/8	3/8	1/4	3/16	1/4 S.H. CAP SCREW	5/16	2.55
R-3	5/8	1"	3/4	3/8	5/16	3/16	5/16 S.H. CAP SCREW	3/8	2.55
R-4	11/64	1-1/8	3/4	7/16	5/16	7/32	3/8 S.H. CAP SCREW	3/8	2.60
R-5	11/64	1-1/8	3/4	1/2	5/16	1/4	3/8 S.H. CAP SCREW	3/8	2.60
ROUND END CLAMPS For Projected Mounting of Shoulder Liners									
R-11	7/16	3/4	5/8	3/8	3/16	1/4	1/4 S.H. CAP SCREW	5/16	2.60
R-12	1/2	3/4	5/8	1/2	1/4	5/16	1/4 S.H. CAP SCREW	5/16	2.60
R-13	1/2	3/4	5/8	1/2	1/4	3/8	5/16 S.H. CAP SCREW	3/8	2.60
R-14	5/8	1"	3/4	1/2	5/16	3/8	3/8 S.H. CAP SCREW	3/8	2.72
R-15	11/16	1-1/8	3/4	5/8	5/16	13/32	3/8 S.H. CAP SCREW	3/8	2.72
R-16	11/16	1-1/8	3/4	5/8	5/16	7/16	3/8 S.H. CAP SCREW	3/8	2.72
R-17	11/16	1-1/8	3/4	3/4	5/16	15/32	3/8 S.H. CAP SCREW	3/8	2.72

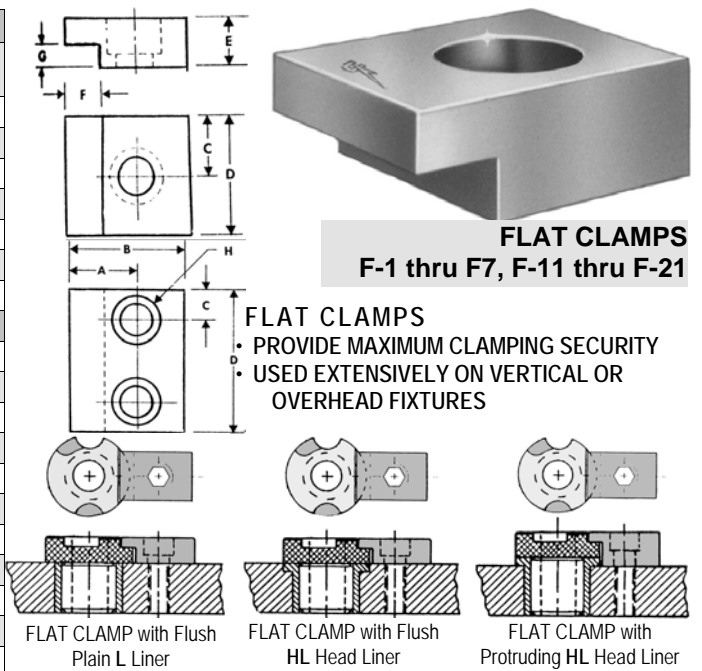


ROUND END CLAMPS
R-1 thru R-5, R11 thru R-17

ROUND END CLAMPS

- LARGER BEARING SURFACE THAN ROUND CLAMPS OR LOCK SCREWS

FLAT CLAMPS For Flush Mounting of Liners										
PART NO.	NO. HOLES	A	B	C	D	E	F	G	H	PRICE
F-1	1	1/2	7/8	5/16	5/8	5/16	3/16	1/8	1/4 S.H. CAP SCREW	2.55
F-2	1	5/8	1"	1/2	1"	3/8	1/4	3/16	5/16 S.H. CAP SCREW	2.55
F-3	1	5/8	1-1/8	1/2	1"	3/8	5/16	3/16	5/16 S.H. CAP SCREW	2.55
F-4	1	51/64	1-11/64	5/8	1-1/4	3/8	27/64	7/32	3/8 S.H. CAP SCREW	2.83
F-5	2	51/64	1-11/64	3/8	1-3/4	3/8	27/64	7/32	3/8 S.H. CAP SCREW	2.83
F-6	1	51/64	1-11/64	5/8	1-1/4	1/2	27/64	1/4	3/8 S.H. CAP SCREW	2.83
F-7	2	51/64	1-11/64	3/8	1-3/4	1/2	27/64	1/4	3/8 S.H. CAP SCREW	2.83
FLAT CLAMPS For Projected Mounting of Shoulder Liners										
F-11	1	1/2	7/8	5/16	5/8	3/8	3/16	1/4	1/4 S.H. CAP SCREW	2.60
F-12	1	5/8	1"	1/2	1"	1/2	1/4	5/16	5/16 S.H. CAP SCREW	2.60
F-13	1	5/8	1"	1/2	1"	1/2	1/4	3/8	5/16 S.H. CAP SCREW	2.60
F-14	1	5/8	1-1/8	5/8	1-1/4	1/2	5/16	3/8	3/8 S.H. CAP SCREW	2.60
F-15	2	5/8	1-1/8	3/8	1-3/4	1/2	5/16	3/8	3/8 S.H. CAP SCREW	2.83
F-16	1	51/64	1-11/64	5/8	1-1/4	5/8	27/64	13/32	3/8 S.H. CAP SCREW	2.83
F-17	2	51/64	1-11/64	3/8	1-3/4	5/8	27/64	13/32	3/8 S.H. CAP SCREW	2.83
F-18	1	51/64	1-11/64	5/8	1-1/4	5/8	27/64	7/16	3/8 S.H. CAP SCREW	2.83
F-19	2	51/64	1-11/64	3/8	1-3/4	5/8	27/64	7/16	3/8 S.H. CAP SCREW	2.83
F-20	1	51/64	1-11/64	5/8	1-1/4	3/4	27/64	15/32	3/8 S.H. CAP SCREW	2.83
F-21	2	51/64	1-11/64	3/8	1-3/4	3/4	27/64	15/32	3/8 S.H. CAP SCREW	2.83

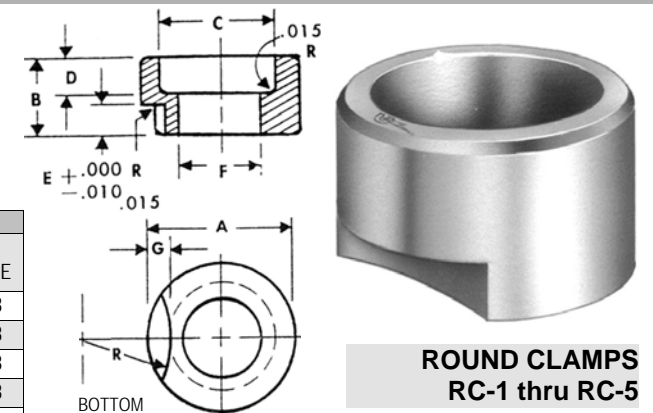
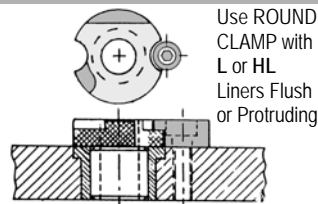


FLAT CLAMPS
F-1 thru F7, F-11 thru F-21

- FLAT CLAMPS**
- PROVIDE MAXIMUM CLAMPING SECURITY
 - USED EXTENSIVELY ON VERTICAL OR OVERHEAD FIXTURES

ROUND CLAMPS

- GREATER SECURITY THAN LOCK SCREWS
- A PRACTICAL STRONGER CLAMP THAN LOCK SCREWS
- SAME SPACING
- SIMPLE INSTALLATION



ROUND CLAMPS
RC-1 thru RC-5

ROUND CLAMPS											
PART NO.	A	B	C	D	E	F	G	R	SOCKET SCREW SIZE	REPLACES LOCK SCREW	PRICE
RC-1	5/8	5/16	31/64	5/32	1/8	21/64	.109	35/64	5/16-18	LS-1	1.98
RC-2	5/8	7/16	31/64	7/32	3/16	21/64	.125	59/64	5/16-18	LS-2	1.98
RC-3	3/4	1/2	37/64	9/32	.1875	25/64	.156	1-13/32	3/8-16	LS-3	1.98
RC-4	3/4	17/32	37/64	1/4	.2187	25/64	.156	2-1/2	3/8-16	LS-4	1.98
RC-5	3/4	9/16	37/64	1/4	.2500	25/64	.156	2-1/2	3/8-16	LS-5	1.98

Sets of Slip Fit Drill & Reamer Bushings

Economical Slip Fit Bushings in SETS!



UTK-SF-13 SET **13** **SMALL SHOP SET**
Drill or Reamer Bushings 1/16 to 1/4 by 64ths

Set includes THIRTEEN SF Bushings all 1/2" long:
1 each
SF-20-8- 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16
SF-32-8- 13/64, 7/32, 15/64, 1/4

Order as:
UTK-SFD-13 DRILL BUSHINGS SET
UTK-SFD-13-DB DRILL BUSHINGS WITH 1 DRILL BAR-5/16"-1/2"
UTK-SFR-13 REAMER BUSHINGS SET
UTK-SFR-13-DB REAMER BUSHINGS WITH 1 DRILL BAR-5/16"-1/2"
UTK-SFDR-26-DB ALL Drill & Reamer Bushings above with 1 DRILL BAR-5/16"-1/2"

UNITED's SF Drill & Reamer Bushings available in Sets!

Preferred by:
• Mechanics
• Machinists
• Retrofitters
•

Toolmakers
• Specialists

UNITED Sets satisfy the requirements of any metalworking shop.

All Sets provided in attractive and distinctive black molded cases 2 to 3" thick—fits in tool box.



UTK-SF-15 SET **15** **TOOL MAKERS SET**
Drill or Reamer Bushings 1/16 to 1/2 by 32nds

Set includes FIFTEEN SF Bushings all 1/2" long:
1 each
SF-20-8- 1/16, 3/32, 1/8, 5/32, 3/16
SF-32-8- 7/32, 1/4, 9/32, 5/16, 11/32
SF-48-8- 3/8, 13/32, 7/16, 15/32, 1/2

Order as:
UTK-SFD-15 DRILL BUSHINGS SET
UTK-SFD-15-DB DRILL BUSHINGS & 2 DRILL BARS-5/16"-1/2"-3/4"
UTK-SFR-15 REAMER BUSHINGS SET
UTK-SFR-15-DB REAMER BUSHINGS & 2 DRILL BARS-5/16"-1/2"-3/4"
UTK-SFDR-30-DB ALL Drill & Reamer Bushings above & 2 DRILL BARS-5/16"-1/2"-3/4"



UTK-SF-21 SET **21** **MID-RANGE SET**
Drill or Reamer Bushings 1/16 to 3/8 by 64ths

Set includes TWENTY-ONE SF Bushings all 1/2" long:
1 each
SF-20-8- 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16
SF-32-8- 13/64, 7/32, 15/64, 1/4, 17/64, 9/32, 19/64, 5/16, 21/64
SF-48-8- 11/32, 23/64, 3/8

Order as:
UTK-SFD-21 DRILL BUSHINGS SET
UTK-SFD-21-DB DRILL BUSHINGS WITH 2 DRILL BARS-5/16"-1/2"-3/4"
UTK-SFR-21 REAMER BUSHINGS SET
UTK-SFR-21-DB REAMER BUSHINGS & 2 DRILL BARS-5/16"-1/2"-3/4"
UTK-SFDR-42-DB ALL Drill & Reamer Bushings above & 2 DRILL BARS-5/16"-1/2"-3/4"

UNITED SF DRILL & REAMER BUSHINGS in Sets of the most popular sizes!

Sets available in **Drill Bushings (D)**, **Reamer Bushings (R)** and you can add a compact **Drill Bar (DB)**.

Specify **UTK-SF D, R** or add **DB** to Part No.

For All items, specify **UTK-SFDR- # -DB**.

TOLERANCES ON INSIDE DIAMETERS

For REAMER BUSHINGS		For DRILL BUSHINGS	
I. D. RANGE	TOLERANCE OVER NOM.	I. D. RANGE	TOLERANCE OVER NOM.
Up to .2500	+ .0005 to + .0008	Up to .2500	+ .0001 to + .0004
Over .2500 to 1.0000	+ .0006 to + .0010	Over .2500 to .7500	+ .0001 to + .0005
Over 1.0000	+ .0008 to + .0012	Over .7500 to 1.5000	+ .0002 to + .0006
		Over 1.5000 to 1.8750	+ .0003 to + .0007

Molded Custom Cases With Matching Drill Bars

Sets of SF Bushings
with Drill Bars Added

Simplify
your
location and
fixturing!

ADD
Double End
DRILL BARS
to your SF
Drill or
Reamer
Bushings
Set.

Drill Bars
provide
accurate
location and
alignment of
drilled
holes.

You get
UNITED'S
Best Bars!

UTK-SF-22 SET **22** **MINI-WIRE SET**
Drill or Reamer Bushings #80 to #61

Set includes TWENTY-TWO SF Bushings all 1/2" long:
1 each
SF-20-8- #80, 79, 1/64, 78, 77, 76, 75, 74, 73, 72, 71,
70, 69, 68, 1/32, 67, 66, 65, 64, 63, 62, 61

Order as:
UTK-SFD-22 DRILL BUSHINGS SET
UTK-SFD-22-DB DRILL BUSHINGS WITH 1 DRILL BAR-1/2"-3/4"
UTK-SFR-22 REAMER BUSHINGS SET
UTK-SFR-22-DB REAMER BUSHINGS WITH 1 DRILL BAR-1/2"-3/4"
UTK-SFDR-44-DB ALL Drill & Reamer Bushings above with 1 DRILL BAR-1/2"-3/4"



UTK-SFM-25 SET **25** **METRIC SET**
MM Drill or Reamer Bushings (.0394 THRU .5118) 1mm to 13mm METRIC

Set includes TWENTY-FIVE SFM Bushings all 1/2" long:
1 each
SFM-20-8- 1.00mm, 1.50mm, 2.00mm, 2.50mm, 3.00mm,
3.50mm, 4.00mm, 4.50mm, 5.00mm (.0394 thru .1968)
SFM-32-8- 5.50mm, 6.00mm, 6.50mm, 7.00mm, 7.50mm,
8.00mm, 8.50mm (.2165 thru .3346)
SFM-48-8- 9.00mm, 9.50mm, 10.00mm, 10.50mm,
11.00mm, 11.50mm, 12.00mm, 12.50mm, 13.00mm
(.3543 thru .5188)

Order as:
UTK-SFMD-25 DRILL BUSHINGS SET
UTK-SFMD-25-DB DRILL BUSHINGS & 2 DRILL BARS-5/16-1/2-3/4"
UTK-SFMR-25 REAMER BUSHINGS SET
UTK-SFMR-25-DB REAMER BUSHINGS & 2 DRILL BARS-5/16-1/2-3/4"
UTK-SFMDR-50-DB ALL Drill & Reamer Bushings above & 2 DRILL BARS-5/16-1/2-3/4"



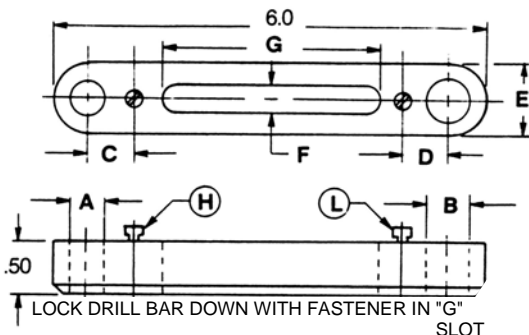
DOUBLE END DRILL BARS

Long Wear SF Drill & Reamer Bushings Sets!

- Premium Steel
- Durable
- Clearly labeled sizes for easy selection
- In quality custom molded cases only 2" to 3" thick
- Fits your tool box, rollaway, crib or shelf
- Organized
- Useful

UNITED Sets provide the most efficient way to keep your tools!

To get **UNITED'S** best in matching size Drill Bars,
Simply add 'DB' to Part No. and we will do the rest!



DOUBLE END DRILL BARS

UNITED PART NO.	A +.0005 -.0000	B +.0005 -.0000	C	D	E	F	G Travel	Lockscrews included		Use with Bushings
								H	L	
DBL-20-32	.3126	.5003	.500	.625	3/4	3/8	3-1/8	LS-1	LS-1	SF20-8 / SF32-8
DBL-32-48	.5003	.7503	.625	.578	1-1/8	3/8	2-5/8	LS-1	LS-1	SF32-8 / SF48-8

Sets of Slip Fit Drill & Reamer Bushings

A Variety of Slip Fit Bushings in SETS!



UTK-SF-26 SET **26** **LETTER SET**
 Drill or Reamer Bushings **A thru Z**

Set includes TWENTY-SIX SF Bushings all 1/2" long:
 1 each
SF-32-8- A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R
SF-48-8- S, T, U, V, W, X, Y, Z

Order as:
 UTK-SFD-26 DRILL BUSHINGS SET
 UTK-SFD-26-DB DRILL BUSHINGS WITH 1 DRILL BAR-1/2"-3/4"
 UTK-SFR-26 REAMER BUSHINGS SET
 UTK-SFR-26-DB REAMER BUSHINGS WITH 1 DRILL BAR-1/2"-3/4"
 UTK-SFDR-52-DB ALL Drill & Reamer Bushings above with 1 DRILL BAR-1/2"-3/4"



UTK-SF-29 SET **29** **COMPREHENSIVE SET**
 Drill or Reamer Bushings **1/16 to 1/2 by 64ths**

Set includes TWENTY-NINE SF Bushings all 1/2" long:
 1 each
SF-20-8- 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16
SF-32-8- 13/64, 7/32, 15/64, 1/4, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32
SF-48-8- 23/64, 3/8, 25/64, 13/32, 27/64, 7/16, 29/64, 5/32, 31/64, 1/2

Order as:
 UTK-SFD-29 DRILL BUSHINGS SET
 UTK-SFD-29-DB DRILL BUSHINGS & 2 DRILL BARS-5/16-1/2-3/4"
 UTK-SFR-29 REAMER BUSHINGS SET
 UTK-SFR-29-DB REAMER BUSHINGS & 2 DRILL BARS-5/16-1/2-3/4"
 UTK-SFDR-58-DB ALL Drill & Reamer Bushings above & 2 DRILL BARS-5/16-1/2-3/4"



UTK-SF-60 SET **60** **LARGE WIRE SET**
 Drill or Reamer Bushings **#60 to #1**

Set includes SIXTY SF Bushings all 1/2" long:
 1 each
SF-20-8- #60, 59, 58, 57, 56, 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21
SF-32-8- 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1

Order as:
 UTK-SFD-60 DRILL BUSHINGS SET
 UTK-SFD-60-DB DRILL BUSHINGS WITH 1 DRILL BAR-5/16"-1/2"
 UTK-SFR-60 REAMER BUSHINGS SET
 UTK-SFR-60-DB REAMER BUSHINGS WITH 1 DRILL BAR-5/16"-1/2"
 UTK-SFDR-120-DB ALL Drill & Reamer Bushings above with 1 DRILL BAR-5/16"-1/2"

ADD UNITED's Double End DRILL BARS to your SF Drill or Reamer Bushings Set.

Simplify your location and fixturing!

Drill Bars provide accurate location and alignment of drilled holes.

You get UNITED's Best Bars!

UNITED Sets satisfy the requirements of any metalworking shop.

UNITED SF DRILL & REAMER BUSHINGS in Sets of the most popular sizes! Sets available in **Drill Bushings (D)**, **Reamer Bushings (R)** and you can add a compact **Drill Bar (DB)**. Specify **UTK-SF D, R** or add **DB** to Part No. For All items, specify **UTK-SFDR- # -DB**.

TOLERANCES ON INSIDE DIAMETERS

For REAMER BUSHINGS			For DRILL BUSHINGS		
I. D. RANGE	TOLERANCE OVER NOM.		I. D. RANGE	TOLERANCE OVER NOM.	
Up to .2500	+ .0005 to	+ .0008	Up to .2500	+ .0001 to	+ .0004
Over .2500 to 1.0000	+ .0006 to	+ .0010	Over .2500 to .7500	+ .0001 to	+ .0005
Over 1.0000	+ .0008 to	+ .0012	Over .7500 to 1.5000	+ .0002 to	+ .0006
			Over 1.5000 to 1.8750	+ .0003 to	+ .0007

With UNITED You are Locked In With the Best!

Molded Custom Cases With Matching Drill Bars

Sets of SF Bushings
with Drill Bars Added

UTK-SF-
162
SET

162
Drill or Reamer
Bushings

COMPLETE SET
#80 thru 13MM

Set includes ONE HUNDRED SIXTY-TWO SF Bushings all 1/2" long:

1 each:

SF-20-8- #80, 79, 1/64, 78, 77, 76, 75, 74, 73, 72, 71, 70, 69, 68, 1/32, 67, 66, 65, 64, 63, 62, 61, 1.00mm, #60, 59, 58, 57, 56, 55, 54, 1.50mm, 53, 1/16, 52, 51, 50, 49, 48, 5/64, 47, 2.00mm, 46, 45, 44, 43, 42, 3/32, 41, 40, 2.50mm, 39, 38, 37, 36, 7/64, 35, 34, 33, 32, 3.00mm, 31, 1/8, 30, 29, 3.50mm, 28, 9/64, 27, 26, 25, 24, 23, 5/32, 22, 4.00mm, 21, 20, 19, 18, 11/64

SF-32-8- 17, 16, 4.50mm, 15, 14, 13, 3/16, 12, 11, 10, 9, 5.00mm, 8, 7, 13/64, 6, 5, 4, 3, 5.50mm, 7/32, 2, 1, A, 15/64, 6.00mm, B, C, D, E, 1/4, 6.50mm, F, G, 17/64, H, I, 7.00mm, J, K, 9/32, L, M, 7.50mm, 19/64, N, 5/16, 8.00mm, O, P, 21/64, Q, 8.50mm, R, 11/32

SF-48-8- S, 9.00mm, T, 23/64, U, 9.50mm, 3/8, V, W, 25/64, 10.00mm, X, Y, 13/32, Z, 10.50mm, 27/64, 11.00mm, 7/16, 11.50mm, 29/64, 15/32, 12.00mm, 31/64, 12.50mm, 1/2, 13.00mm

Order as:

UTK-SFD-162 DRILL BUSHINGS SET

UTK-SFD-162-DB DRILL BUSHINGS & 2 DRILL BARS 5/16"-1/2"-3/4"

UTK-SFR-162 REAMER BUSHINGS SET

UTK-SFR-162-DB REAMER BUSHINGS & 2 DRILL BARS 5/16"-1/2"-3/4"

UTK-SFDR-324-DB ALL Drill & Reamer Bushings above and 2 DRILL BARS 5/16"-1/2"-3/4"



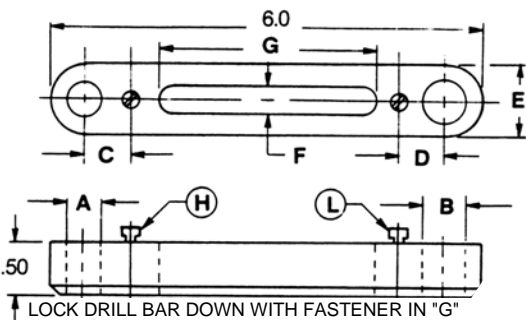
EVERY BUSHING YOU NEED IN A COMPACT
CUSTOM MOLDED CASE WITH
MATCHING DRILL BARS FROM **UNITED!**

Long Wear SF Drill & Reamer Bushings Sets!

- Premium Steel
- Durable
- Clearly labeled sizes for easy selection
- In quality custom molded cases only 2" to 3" thick
- Fits your tool box, rollaway, crib or shelf
- Organized
- Useful

UNITED Sets provide the most efficient way to keep your tools!

To get **UNITED's** best in matching size Drill Bars,
Simply add 'DB' to Part No. and we will do the rest!



DOUBLE END DRILL BARS

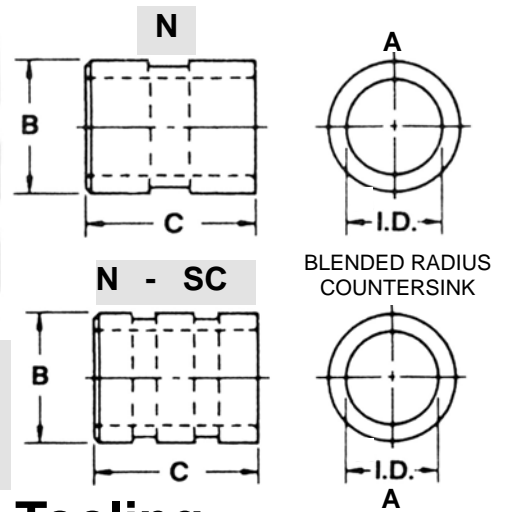


UNITED PART NO.	A +.0005 -.0000	B +.0005 -.0000	C	D	E	F	G Travel	Lockscrews included		Use with Bushings
								H	L	
DBL-20-32	.3126	.5003	.500	.625	3/4	3/8	3-1/8	LS-1	LS-1	SF20-8 / SF32-8
DBL-32-48	.5003	.7503	.625	.578	1-1/8	3/8	2-5/8	LS-1	LS-1	SF32-8 / SF48-8

Nurlock & Ser-Cast Bushings for Plastic

For Plastic Tooling

A.N.S.I. Standard N and SC Bushings For Potting or Cast Tooling Installation



N NURLOCK

- 1 Groove: 1/4 thru 1/2 long
- 2 Grooves: 3/4 thru 1-1/2 long
- 3 Grooves: 1-3/4 thru 3" long

SC SER-CAST

N and SC Bushings For Plastic Tooling

For Potted or Cast installation. The Nurlock Diamond Knurls provide superior holding strength. They resist rotational and axial force.

UNITED's special Ser-Cast serrations allow pressing into soft materials or plastic fixtures while providing excellent holding strength.

MILLIMETER DRILL SIZES HAVE BEEN ADDED TO I.D. RANGE. RC-61-65 IN THE HOLE

SPECIFY 'N' FOR NURLOCK.

SPECIFY 'SC' FOR SER-CAST

ALL UNITED STANDARD BUSHINGS ARE MANUFACTURED TO UNITED AND ANSI STANDARDS.

For greatest accuracy, align and locate by I.D.

For Quantity Discount Pricing, see below.

A I.D. DRILL RANGE		B O.D. SIZE		PICK ANSI SYMBOL	C OVERALL LENGTH / ANSI LENGTH SYMBOL BY 16ths													
INCH / METRIC NOMINAL	U.S.A. INCH DECIMAL	U.S.A. INCH NOM.	U.S.A. INCH ACTUAL		1/4 -4	5/16 -5	3/8 -6	1/2 -8	3/4 -12	1" -16	1-3/8 -22	1-1/2 -24	1-3/4 -28	2-1/8 -34	2-1/2 -40	3" -48		
#55 - 1/16 1.30 - 1.60MM	.0520 - .0625 .0512 - .0630	13/64	.218 - .213	N-13 SC-13	8.71	9.23	9.76	9.99										
#52 - #39 1.65 - 2.50MM	.0635 - .0995 .0650 - .0984	13/64	.218 - .213	N-13 SC-13	8.71	9.23	9.76	9.99										
#40 - 9/64 2.35 - 4.90MM	.0980 - .1406 .0925 - .1929	1/4	.265 - .260	N-16 SC-16	6.24	6.43	6.94	7.16	8.94									
1/8 - #10 3.10 - 4.90MM	.1250 - .1935 .1220 - .1929	5/16	.327 - .322	N-20 SC-20	4.98	5.40	5.82	5.90	6.94	8.10								
5/32 - F 3.90 - 6.50MM	.1562 - .2570 .1535 - .2559	13/32	.421 - .416	N-26 SC-26	4.48	4.98	5.09	5.51	5.90	6.94								
5/32 - O 3.90 - 8.00MM	.1562 - .3160 .1535 - .3150	1/2	.515 - .510	N-32 SC-32		4.98	5.09	5.51	5.90	6.94								
5/16 - 7/16 8.80 - 11.00MM	.3125 - .4375 .3465 - .4331	5/8	.640 - .635	N-40 SC-40			4.48	4.48	5.40	5.82	6.94							
5/16 - 17/32 8.80 - 13.00MM	.3125 - .5312 .3465 - .5118	3/4	.765 - .760	N-48 SC-48			4.98	4.98	5.40	5.82	7.91							
1/2 - 21/32 12.50 - 16.50MM	.5000 - .6562 .4921 - .6496	7/8	.890 - .885	N-56 SC-56				7.53	6.64	6.94	7.16	7.78	8.94	9.86				
1/2 - 49/64 12.50 - 19.50MM	.5000 - .7656 .4921 - .7677	1"	1.015 - 1.010	N-64 SC-64					6.94	6.94	7.59	8.20	8.94	9.86				
1/2 - 1-1/32 12.50 - 26.00MM	.5000 - 1.0312 .4921 - 1.0236	1-3/8	1.390 - 1.385	N-88 SC-88						11.11	11.11	11.11	12.67	13.72	14.76	16.95	19.02	25.33
I. D. RANGES		O. D. SIZES		ANSI SYMBOL	1/4 -4	5/16 -5	3/8 -6	1/2 -8	3/4 -12	1" -16	1-3/8 -22	1-1/2 -24	1-3/4 -28	2-1/8 -34	2-1/2 -40	3" -48		
NUMBER OF GROOVES					1	1	1	1	2	2	2	2	3	3	3	3		

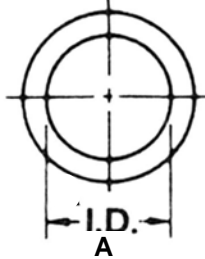
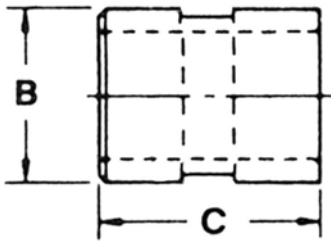
QTY DISCOUNT	1-2 LIST	3-5 -6%	6-11 -23%	12-23 -30%	24-49 -35%	50-99 -42%	100-199 -47%	200-499 -51%	500-999 -53%	1000 & UP -56%
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NL Nurlock Liners for Plastic Tooling

A.N.S.I. Standards

NL Nurlock Liners

Nurlock Liners' Diamond Grooves provide excellent holding strength!



FOR POTTED OR CAST IN FIXTURES

When drilling, locate the I.D. accurately on a gauge pin before potting or casting for the best in locations.



NURLOCK LINER FOR PLASTIC NL

HARDNESS — Rockwell RC-61-65 in the hole.

1 Groove: 1/4 thru 1/2 long

RADIUS COUNTERSINK — All Bushings feature a radius countersink on the drill entrance end.

2 Grooves: 5/8 thru 1-1/2 long

3 Grooves: 1-3/4 thru 3" long

MILLIMETER DRILL SIZES HAVE BEEN ADDED TO I.D. RANGE.

For Quantity Discount Pricing, see below.

A I.D. DRILL RANGE		B O.D. SIZE		ANSI SYMBOL	C NL LENGTH OVERALL / ANSI LENGTH SYMBOL BY 16ths															
INCH/METRIC NOMINAL	U.S.A INCH. DECIMAL	U.S.A. INCH NOM.	DECIMAL		1/4 -4	5/16 -5	3/8 -6	1/2 -8	5/8 -10	3/4 -12	1" -16	1-1/4 -20	1-3/8 -22	1-1/2 -24	1-3/4 -28	2" -32	2-1/8 -34	2-1/4 -36	2-1/2 -40	3" -48
3/32	.0938 - .0941	7/32	.233 - .228	NL-14	23.37	24.42	24.73	25.13	26.50	27.33										
1/8	.1251 - .1254	1/4	.265 - .260	NL-16	6.64	6.94	7.35	7.78	9.67	10.90	10.90									
5/32 4.00MM	.1563 - .1566 .1575	9/32	.296 - .291	NL-18	15.59	16.41	16.64	16.95	17.86	18.70	22.13									
3/16 5.00MM	.1876 - .1879 .1969	5/16	.327 - .322	NL-20	5.19	6.02	5.90	6.64	7.16	8.62	8.62	9.14	10.27							
5/16 6.00MM	.3126 - .3129 .2362	1/2	.515 - .510	NL-32	5.09	5.09	5.71	5.90	6.64	6.64	7.35	8.62	8.62	10.07	11.32					
5/16 8.00MM	.3126 - .3129 .3150	9/16	.577 - .572	NL-36	5.71	4.98	4.98	4.98	5.71	5.71	7.35	7.35	7.35	8.62	10.07					
3/8 10.00MM	.3751 - .3754 .3937	5/8	.640 - .635	NL-40	5.90	4.98	4.98	4.98	5.90	5.90	7.35	7.35	7.35	8.62	10.07	11.73	11.73			
7/16 12.00MM	.4377 - .4380 .4724	5/8	.640 - .635	NL-40	5.90	4.98	4.98	4.98	5.90	5.90	7.35	7.35	7.35	8.62	10.07	11.73	11.73			
1/2 12.00MM	.5002 - .5005 .4724	3/4	.765 - .760	NL-48	6.02	4.98	5.90	5.90	6.02	6.02	6.64	8.62	8.62	9.36	10.17	11.96	11.96	22.02	22.02	
9/16 15.00MM	.5627 - .5630 .5906	7/8	.890 - .885	NL-56	7.78	7.78	8.20	7.16	7.28	7.28	7.78	8.52	8.52	9.43	10.48	12.15	12.15	14.14	14.14	22.65
5/8 15.00MM	.6252 - .6255 .5906	7/8	.890 - .885	NL-56		7.78	8.20	7.16	7.28	7.28	7.78	8.52	8.52	9.55	10.48	12.15	12.15	14.14	14.14	22.65
3/4 18.00MM	.7503 - .7506 .7087	1"	1.015 - 1.010	NL-64		7.59	7.16	7.16	7.35	7.35	8.10	8.62	8.62	9.67	10.58	12.15	12.15	14.14	14.14	22.65
7/8 22.00MM	.8754 - .8757 .8661	1-1/4	1.265 - 1.260	NL-80			11.42	11.42	11.83	9.76	11.42	13.08	13.08	14.02	15.38	17.86	17.86	20.45	20.45	27.02
1" 26.00MM	1.0004 - 1.0007 1.0236	1-3/8	1.390 - 1.385	NL-88			11.42	11.42	9.76	11.42	13.08	13.08	14.02	15.38	17.86	17.86	20.45	20.45	27.02	
1-1/8 30.00MM	1.1255 - 1.1259 1.1811	1-1/2	1.515 - 1.510	NL-96			11.73	11.73	10.71	11.73	13.19	13.19	14.54	15.59	18.18	18.18	20.56	20.56	28.37	
1-1/4 30.00MM	1.2505 - 1.2509 1.1811	1-5/8	1.640 - 1.635	NL-104				11.73	10.71	11.73	13.19	13.19	14.54	15.59	18.18	18.18	20.45	20.45	28.37	
1-3/8 35.00MM	1.3756 - 1.3760 1.3780	1-3/4	1.765 - 1.760	NL-112				12.15	11.63	12.15	13.50	13.50	15.25	15.59	18.18	18.18	20.56	20.56	30.88	
1-1/2 35.00MM	1.5006 - 1.5010 1.3780	1-7/8	1.890 - 1.885	NL-120					11.63	12.15	13.50	13.50	15.25	15.59	18.18	18.18	20.56	20.56	30.88	
1-3/4 42.00MM	1.7508 - 1.7512 1.6535	2-1/4	2.265 - 2.260	NL-144						15.90	14.76	16.41	16.41	17.66	19.63	19.63	22.13	22.13	32.80	
2-1/4 55.00MM	2.2510 - 2.2515 2.1654	2-3/4	2.765 - 2.760	NL-176							19.63	17.66	20.25	20.25	21.28	21.28	24.10	24.10	27.02	36.34
I. D. RANGES		O. D. SIZES		ANSI SYMBOL	1/4 -4	5/16 -5	3/8 -6	1/2 -8	5/8 -10	3/4 -12	1" -16	1-1/4 -20	1-3/8 -22	1-1/2 -24	1-3/4 -28	2" -32	2-1/8 -34	2-1/4 -36	2-1/2 -40	3" -48
NUMBER OF GROOVES					1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3
QTY DISCOUNT					1-2 LIST	3-5 -6%	6-11 -23%	12-23 -30%	24-49 -35%	50-99 -42%	100-199 -47%	200-499 -51%	500-999 -53%	1000 & UP -56%						

2-15-06

**HG and FG
Bushings for Plastic**

Plastic Tooling Specials

A.N.S.I. Standard HG and FG Bushings



**HEXGRIP
ELIMINATES
MOST SPIN OUT**

BLENDED RADIUS

ALL UNITED STANDARD BUSHINGS
ARE MANUFACTURED TO UNITED
AND ANSI STANDARDS.

RC-61-65 in the hole



**FLANGE
GROOVE
HAS
SUPERIOR
HOLD**

**HG
HEXGRIP
HAS ONLY
ONE FLANGE**

**FG FLANGE GROOVE
HAS ONE TO FOUR GROOVES**

MILLIMETER DRILL SIZES HAVE
BEEN ADDED TO I.D. RANGE.

3/8" LENGTH HAS 1 3/32" GROOVE

1/2" LENGTH HAS 1 1/8" GROOVE

3/4" LENGTH HAS 2 1/8" GROOVE

1" LENGTH HAS 3 1/8" GROOVE

1-3/8" LENGTH HAS 4 1/8" GROOVE

SPECIFY 'HG' FOR HEX GRIP

For Quantity Discount Pricing,
see below.

SPECIFY 'FG' FOR FLANGE GROOVE

A I.D. DRILL RANGE		B O.D. SIZE		HEX SIZE	SELECT APPROPRIATE ANSI SYMBOL	C OVERALL LENGTH ANSI LENGTH SYMBOL BY 16ths				
INCH / METRIC NOMINAL	U.S.A. INCH DECIMAL	U.S.A. INCH				3/8	1/2	3/4	1"	1-3/8
		NOM.	ACTUAL							
#55 - 1/16 1.30 - 1.60MM	.0520 - .0625 .0512 - .0630	9/32	.290 - .270	5/16	HG-18 FG-18	18.70	16.95	21.19	24.93	29.17
#52 - #39 1.65 - 2.50MM	.0635 - .0995 .0650 - .0984	9/32	.290 - .270	5/16	HG-18 FG-18	9.14	9.43	10.58	11.73	0.00
#38 - 9/64 2.55MM - 4.90MM	.1015 - .1406 .1004 - .1929	9/32	.290 - .270	5/16	HG-18 FG-18	7.78	9.43	10.58	11.32	0.00
#29 - #10 3.40MM - 4.90MM	.1360 - .1935 .1339 - .1929	7/16	.447 - .427	1/2	HG-28 FG-28	6.64	6.64	7.35	8.94	12.15
#9 - F 4.90MM - 6.50MM	.1960 - .2570 .1929 - .2559	7/16	.447 - .427	1/2	HG-28 FG-28	5.90	6.02	6.64	7.78	8.94
F - 5/16 6.50MM - 8.80	.2570 - .3125 .2559 - .3465	1/2	.510 - .490	5/8	HG-32 FG-32	5.90	6.02	6.64	7.78	8.94
G - 11/32 6.60MM - 8.70MM	.2610 - .3437 .2598 - .3425	5/8	.635 - .615	3/4	HG-40 FG-40	5.90	6.02	6.64	7.78	8.94
Q - 21/32 8.40MM - 16.50MM	.3320 - .6562 .3307 - .6496	7/8	.885 - .865	1"	HG-56 FG-56	8.31	7.35	6.94	7.78	8.62
41/64 - 49/64 16.00MM - 19.50MM	.6406 - .7656 .6299 - .7677	1-1/16	1.072 - 1.052	1-3/8	HG-68 FG-68		6.94	7.78	8.10	8.94
3/4 - 1-1/32 19.00MM - 26.00MM	.7500 - 1.0312 .7480 - 1.0236	1-3/8	1.385 - 1.365	1-3/4	HG-88 FG-88		11.73	10.07	11.73	13.29
I. D. RANGES		O. D. SIZES			ANSI SYMBOL	3/8 -6	1/2 -8	3/4 -12	1" -16	1-3/8 -22

QTY DISCOUNT	1-2 LIST	3-5 -6%	6-11 -23%	12-23 -30%	24-49 -35%	50-99 -42%	100-199 -47%	200-499 -51%	500-999 -53%	1000 & UP -56%
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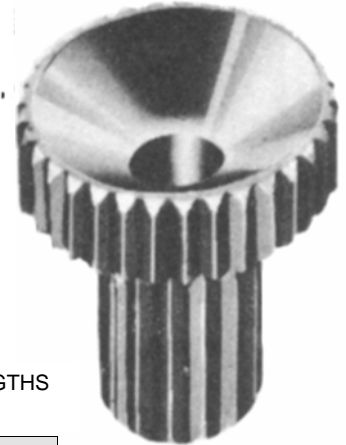
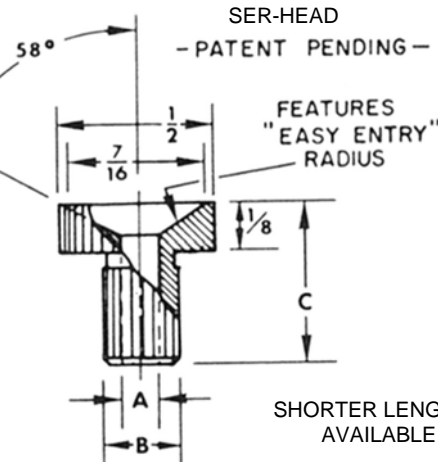
With **UNITED** You are Locked In With the Best!

Plastic Tooling Specials

A.N.S.I. Standard SH and SP Bushings

SH—SP
Bushings for Plastic

SER-HEAD with Easy Entry Radius —
Radius —
Designed to prevent spin out or push out.
Great for template tooling.
“Can’t Miss”
Easy Entry Radius!



For Quantity Discount Pricing on both styles, see below.

SPECIFY 'SH' FOR SER-HEAD

RC-61-65

SHORTER LENGTHS AVAILABLE

A I. D. DRILL RANGE		B O. D. SIZE		ANSI SYMBOL	C OVERALL LENGTH / ANSI LENGTH 16ths				
INCH / METRIC NOMINAL	U.S.A. INCH DECIMAL	NOM.	ACTUAL		1/2	3/4	1"	1-3/8	1-3/4
#55 - 1.30 1.30 - 1.60MM	1/16 .0512 - .0625	13/64	.218 - .213	SH-13	16.64	18.37	20.81		
#52 - 1.65 1.65 - 2.50MM	#39 .0635 - .0984	13/64	.218 - .213	SH-13	10.17	11.42	13.60		
#40 - 2.45 2.45 - 3.50MM	9/64 .0980 - .1406	1/4	.265 - .260	SH-16	9.23	11.00	13.50		
1/8 - 3.10 3.10 - 4.90MM	#10 .1250 - .1929	5/16	.327 - .322	SH-20	9.03	10.39	12.47	13.59	
5/32 - 3.90 3.90 - 6.50MM	F .1562 - .2570	13/32	.421 - .416	SH-26	8.52	9.86	11.11	12.15	13.08
I. D. RANGES		O. D. SIZES		ANSI SYMBOL	1/2	3/4	1"	1-3/8	1-3/4

SH
SER-HEAD



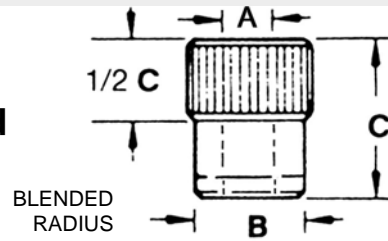
SP
SER-PRESS

SER-PRESS prevents spin out
EASY PRESS IN — Used on steel,
aluminum, magnesium, masonite wood

Serrated diameter is .014 to .020 larger than ground body diameter. Ground diameter concentric .0005" T.I.R.

SPECIFY 'SP' FOR SER-PRESS

RC-61-65



A I. D. DRILL RANGE		B O. D. SIZE		SELECT ANSI SYMBOL	C OVERALL LENGTH / ANSI LENGTH SYMBOL BY 16ths						
INCH / METRIC NOMINAL	U.S.A. INCH DECIMAL	NOM.	ACTUAL		1/4	5/16	3/8	1/2	3/4	1"	1-3/8
#55 - 1.30 1.30 - 1.60MM	1/16 .0512 - .0625	13/64	.2031 - .2029	SP-13	10.48	11.96	12.35	13.08			
#52 - 1.65 1.65 - 2.50MM	#39 .0635 - .0984	13/64	.2031 - .2029	SP-13	10.48	11.96	12.35	12.93			
#40 - 2.45 2.45 - 3.50MM	9/64 .0980 - .1406	1/4	.2500 - .2498	SP-16	8.20	8.82	9.43	9.99			
1/8 - 3.10 3.10 - 4.90MM	#10 .1250 - .1929	5/16	.3125 - .3123	SP-20		7.16	7.59	7.91	8.62		
5/32 - 3.90 3.90 - 6.50MM	F .1562 - .2570	13/32	.4062 - .4060	SP-26	6.02	6.13	6.64	6.94	7.59	8.82	
5/32 - 3.90 3.90 - 8.00MM	O .1562 - .3150	1/2	.5000 - .4998	SP-32		6.13	6.64	6.94	7.59	8.82	
5/16 - 7.90 7.90 - 11.00MM	7/16 .3125 - .4331	5/8	.6250 - .6248	SP-40			6.34	6.34	7.59	7.91	
5/16 - 7.90 7.90 - 13.00MM	17/32 .3125 - .5118	3/4	.7500 - .7498	SP-48			6.94	6.94	7.16	7.91	
1/2 - 12.50 12.50 - 16.50MM	21/32 .5000 - .6496	7/8	.8750 - .8748	SP-56			9.23	8.20	8.62	8.94	
1/2 - 12.50 12.50 - 19.00MM	49/64 .5000 - .7480	1"	1.0000 - .9998	SP-64				8.62	8.62	9.14	9.67
I. D. RANGES		O. D. SIZES		ANSI SYMBOL	1/4	5/16	3/8	1/2	3/4	1"	1-3/8

QTY DISCOUNT	1-2 LIST	3-5 -6%	6-11 -23%	12-23 -30%	24-49 -35%	50-99 -42%	100-199 -47%	200-499 -51%	500-999 -53%	1000 & UP -56%
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7-25-06

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