Drill and Router Guides
Value From UNITED!

Pressure Foot Drilling Systems

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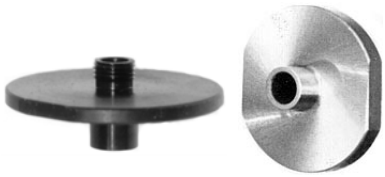
PRESSURE FOOT ADATPERS Page C8

PRESSURE FOOT ASSEMBLY Page C7



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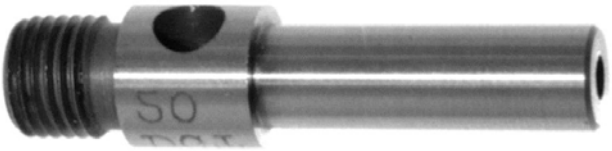
DRILL GUIDE TIP Page C23



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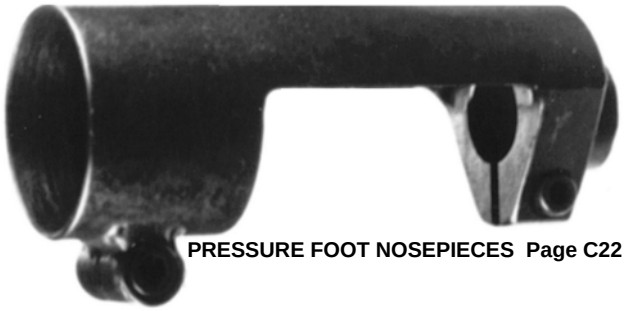

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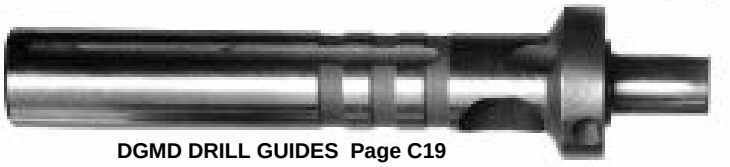
DRILL GUIDE BUSHING ADATPERS Page C9



DGMD DRILL GUIDES Page C19

DGI DRILL GUIDES Page C14

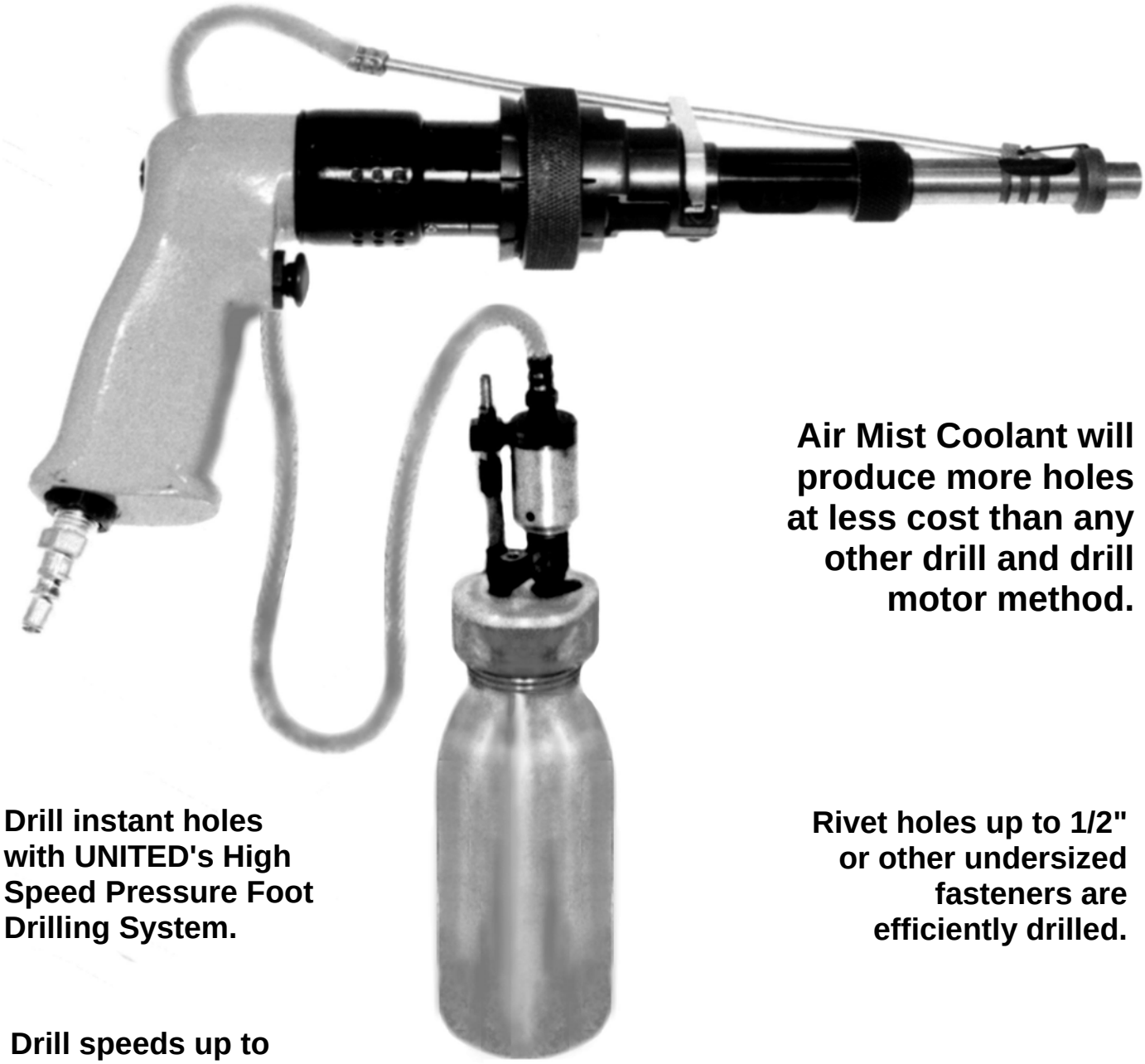
DGMK DRILL GUIDES Page C20

DGMC DRILL GUIDES Page C15

12200 WOODRUFF AVE. • DOWNEY, CA 90241-5608 • TELEPHONE (562) 803-1521 / (800) 421-3466 IN CA / (800) 486-3466 • FAX (562) 803-6898 / (800) 486-3465
EMAIL united@ucc-udb.com WEBSITE www.ucc-udb.com

Pressure Foot System With Drill Guide Bushings

Drill Details on the next 26 pages will increase your speed and decrease your costs.



Air Mist Coolant will produce more holes at less cost than any other drill and drill motor method.

Drill instant holes with UNITED's High Speed Pressure Foot Drilling System.

Rivet holes up to 1/2" or other undersized fasteners are efficiently drilled.

Drill speeds up to 22,000 RPM or more are all available.

FASTER — BETTER AT LOWER COST!

Enjoy Pressure Foot Economy!

Quick— Cool And Critical

Pressure Foot Drilling Application

APPLICATION

***UNITED's* Pressure Foot Drilling System should be used for all tooling applications where hand drilling operations are performed.**

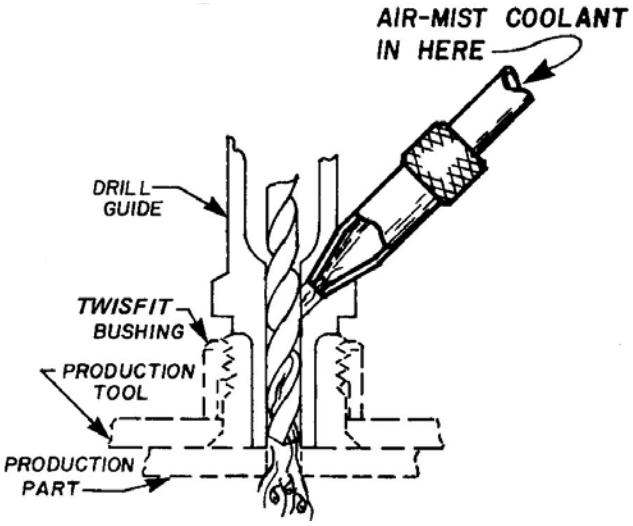
Drill or assembly fixtures of either plastic or metal are ideal for *UNITED's* Pressure Foot Drilling System.

Holes from #58 (.0420) thru 23/64 (.3595) are drilled through *UNITED's* Drill Guides. Pressure foot drilling equipment permits drilling and reaming up through one inch thick material.

Drilling Speeds up to 22,000 rpm or more are attainable using hi-speed air driven motors with built-in cooling features. With hi-speed drilling an air and liquid mist coolant and lubricating unit directs coolant onto the drill or reamer.

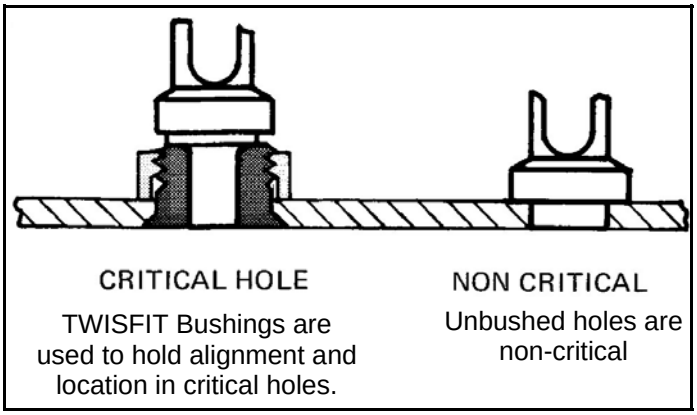
High speed air motors with spray units properly used will produce more holes at less cost than any other drill and drill motor method.

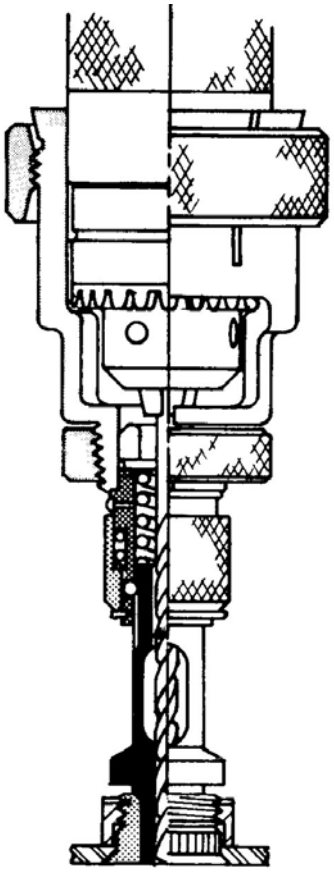
Rivet holes up to 1/2 inch or undersized holes for other types of fasteners are efficiently drilled.



UNITED CRITICAL HOLE STANDARD

1. A hole in a production part is considered critical when the hole has a **tolerance of .010 inch or less**.
2. When the allowable **angularity is 6 degrees or less**, the hole is critical.
3. Pilot size holes drilled through **material thicker than 1/8 (.1250) inch** are considered critical.
4. **All tooling holes** are considered critical.
5. All **critical guide holes should be bushed** with *UNITED's* Instant Twisfit or a more expensive but equally accurate Press or Renewable Bushing.



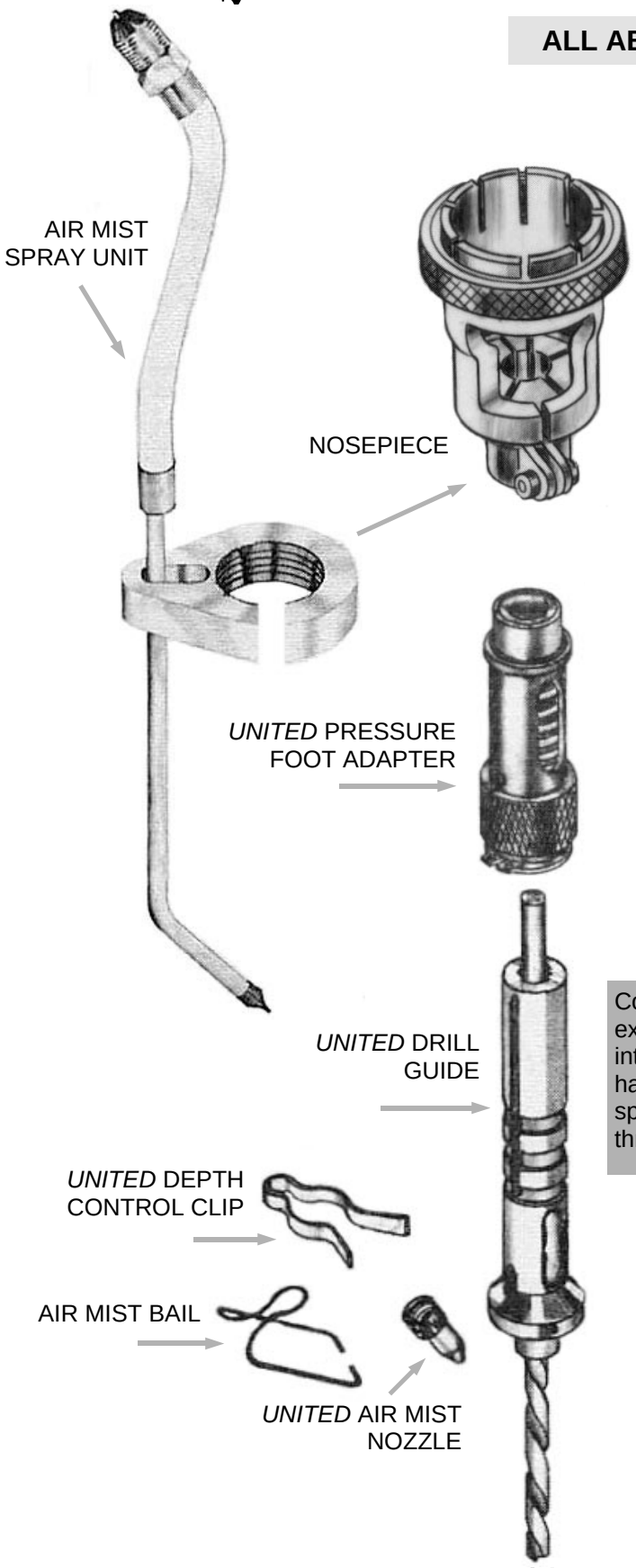


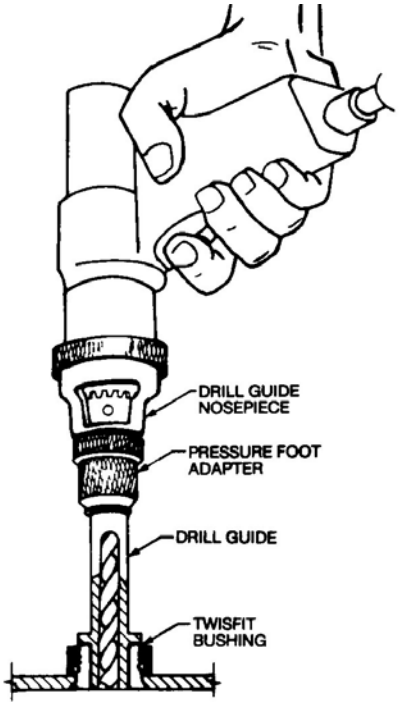
Our Pressure Foot Drilling System

ALL ABOUT PRESSURE FOOT DRILLING

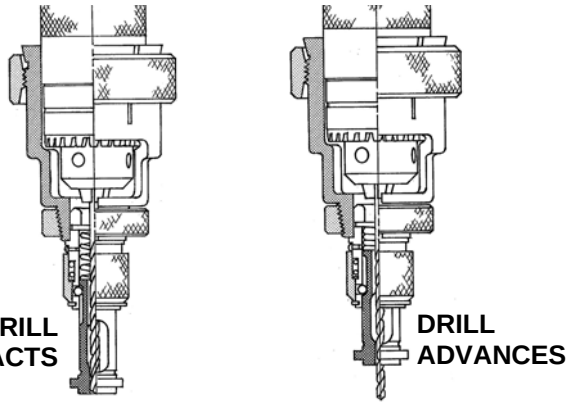
Pressure Foot Drilling eliminates drill bushing wear in production tooling. Bushing life is extended considerably.

The drill guide is a rigid, integral part of the drill motor. Drilling accuracy is inherent to pressure foot drilling. Twisfit Bushings, used with United Pressure Foot Drill Guides, control drilling normal to the contour or surface.





Conventional hand drill motors with standard jobber or extension length drills are used. The drill guide is inserted into the bushing or guide hole in the production tool. Normal hand drilling pressure is applied. The drill retracts into the spring loaded adapter. Thereafter, the drill advances through the bushing into the part.



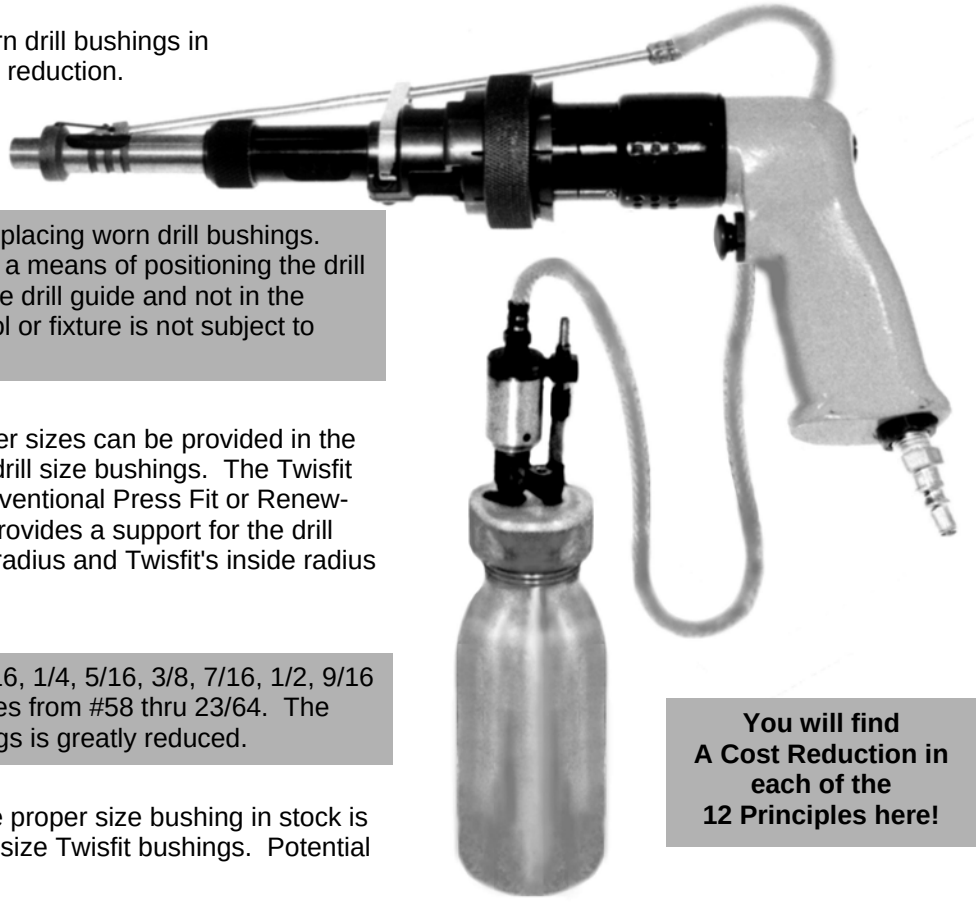
UNITED Guides You on Guides For Your Job!

Pressure Foot Profits

Pressure Foot Drilling

UNITED's Twelve Profitable Pressure Foot Principles For a Definite Cost Reduction

1. No lost or down time due to worn drill bushings in production tooling — a definite cost reduction.



2. No tool maintenance cost for replacing worn drill bushings. The production tool is used only as a means of positioning the drill guide. The drill bit rotates inside the drill guide and not in the production tool. The production tool or fixture is not subject to wear.

3. *UNITED's* Twisfit Bushing in liner sizes can be provided in the critical production tool, eliminating drill size bushings. The Twisfit Bushing is less expensive than conventional Press Fit or Renewable types. The top of the Twisfit provides a support for the drill guide, and the drill guide's outside radius and Twisfit's inside radius are compatible.

4. Twisfit liner size bushings of 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16 and 5/8 are provided for drilling holes from #58 thru 23/64. The number of conventional drill bushings is greatly reduced.

5. The possibility of not having the proper size bushing in stock is reduced by standardization of liner size Twisfit bushings. Potential lost or down time is reduced.

You will find A Cost Reduction in each of the 12 Principles here!

6. The liner size of Twisfit bushings can be purchased in larger quantities at a lower cost.

7. Special tooling pins are not necessary when standard liner sized Twisfit inside diameter are used.

8. Production part hole sizes can be changed by using a different size drill guide. Tooling rework is unnecessary.

9. Drill breakage from misalignment in a drill bushing is eliminated.

10. The 'straight-in-line' restriction of the drill to the production part produces more accurately drilled holes. Part rejection for inaccuracy is eliminated.

11. Pressure Foot Drilling reduces friction heat, generated by the drill, through better alignment of the drill advancing through the guide into the production part. Heat buildup destroys the cutting tools and causes bushing misalignment in plastic tooling fixtures.

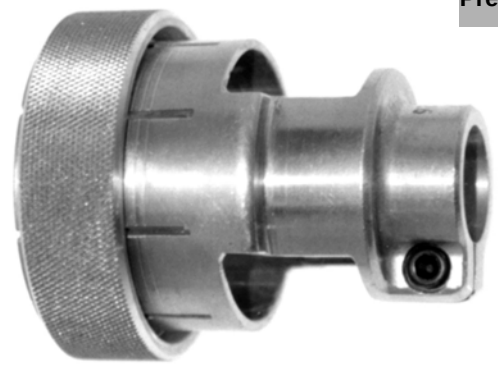
12. Pressure Foot Drilling properly applied will produce more holes at less cost than any other standard drill and drill motor method.

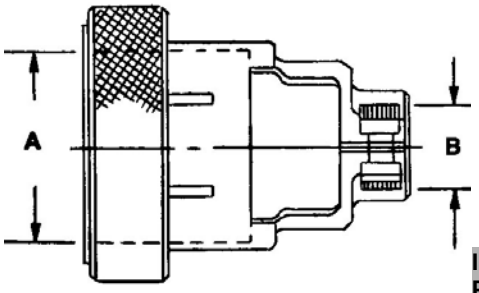
Pressure Foot Drilling

Instructional Procedure

DRILL GUIDE NOSEPIECE

Drill Guide Nosepieces are hand installed rapidly to the drill motor. Then insert the **Pressure Foot Adapter (PFA)** into the nosepiece and tighten the socket head screw.





11/16 or 3/4

Ref SP12607 **DRILL GUIDE NOSEPIECES** **Ref SP12675**

FOR 1/2 OD DRILL GUIDES			FOR 5/8 OD DRILL GUIDES		
PART NUMBER	A +.003 −.000	B	PART NUMBER	A +.003 −.000	B
DGNP-32-10	1.370	.687	DGNP-40-10	1.370	.750
DGNP-32-12	1.435	.687	DGNP-40-12	1.435	.750
DGNP-32-14	1.452	.687	DGNP-40-14	1.452	.750
DGNP-32-16	1.465	.687	DGNP-40-16	1.465	.750
DGNP-32-18	1.475	.687	DGNP-40-18	1.475	.750
DGNP-32-20	1.503	.687	DGNP-40-20	1.503	.750
DGNP-32-21	1.515	.687	DGNP-40-21	1.515	.750
DGNP-32-22	1.554	.687	DGNP-40-22	1.554	.750
DGNP-32-24	1.562	.687	DGNP-40-24	1.562	.750
DGNP-32-26	1.628	.687	DGNP-40-26	1.628	.750
DGNP-32-27	1.675	.687	DGNP-40-27	1.675	.750
DGNP-32-28	1.687	.687	DGNP-40-28	1.687	.750
DGNP-32-30	1.750	.687	DGNP-40-30	1.750	.750
USE PFA-32 ADAPTERS			USE PFA-40 ADAPTERS		

Insert the drill guide by lining up the drill guide groove with the drive pin on the PFA. Sliding the PFA collar towards the motor, insert the drill guide in the barrel and release the collar. The drill guide is now secured. To lock the drill guide in position, ratate the collar in either direction. To release the drill guide, again line up the groove with the drive pin and slide the collar towards the motor. The drill guide is then released.

There are many advantages to this inexpensive quick change production method:

- Drill templates may be used with or without bushings.
- The drill guide acts as a support for the drill.

SP12607 Ref = DGNP-32-10 THRU 30.

SP12675 Ref = DGNP-40-10 THRU 30.

- Drill breakage is nearly eliminated. It is mandatory for the safety of the operator to have the drill guarded at all times. The quick-change pressure foot adapter covers the location of the hole to be drilled and provides safety for the operator.

To order, measure diameter of bearing retainer collar or chuck guard on the drill motor, then select the proper nosepiece. Determine travel required and select pressure foot adapter and size of drill guide to complete the assembly for pressure foot drilling.

UNITED DRILL GUIDE NOSEPIECES FIT THE FOLLOWING DRILL MOTORS

Measure the drill motor chuck guard or bearing retainer collar. Select corresponding 'A' diameter of DGNP.

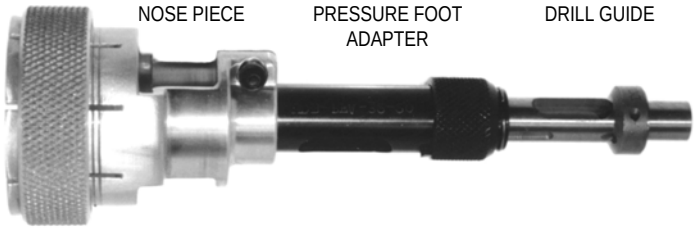
MFG.	MODEL	CHUCK DIA.	NOSEPIECE DASH NO.
Skill	No. 75 (47)	1.500	—20
	No. 161 (45)	1.500	—20
Black & Decker	Holegun -		
	Without Chuck Guard	1.450	—14
	With Chuck Guard	1.500	—20
Aro	No. 7027	1.625	—26
	No. 7364	1.500	—20
	No. 7512	1.370	—10
Thor	No. 6639	1.687	—28
	No. 7324	1.625	—26
	No. 2P2700	1.450	—14

MFG.	MODEL	CHUCK DIA.	NOSEPIECE DASH NO.
Chicago Pneumatic	No. 815	1.625	—26
	No. 830	1.625	—26
	No. 806	1.500	—20
	No. 301	1.554	—22
	No. 3017	1.625	—26
	No. 3008	1.500	—20
Sioux	No. 1453	1.675	—27
Cleco	No. 9DBW28-A	1.625	—26
Jiffy	No. 2700 DI	1.500	—20
Rockwell	No. 31 D	1.500	—20
	No. 41 D	1.625	—26

UNITED Guides You on Guides For Your Job!

Drill Guides

Pressure Foot Assemblies

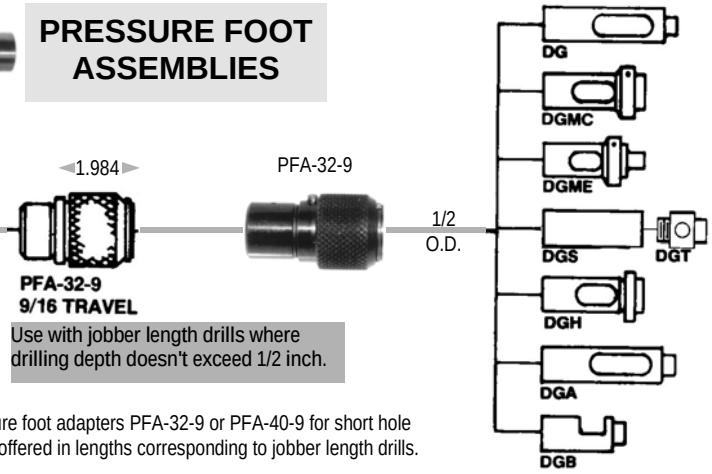


PRESSURE FOOT ASSEMBLIES

DGNP-32-XX NOSEPIECE CAN ALSO BE USED WITH THE PRESSURE FOOT

UNITED's Pressure Foot Drilling System is comprised of a Pressure Foot Nose Piece, a Pressure Foot Adapter and twenty three Drill Guide styles. We also have depth control clips for the longer travel guides and an air mist unit for hi-speed drilling.

The 'Unitedized' Pressure Foot Drilling components are offered in three ranges to cover varying hole depths.



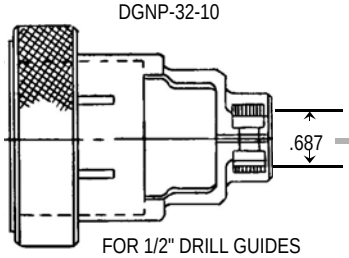
Ref SP12605-1
Ref SP12605-2

PFA-32-9 9/16 TRAVEL

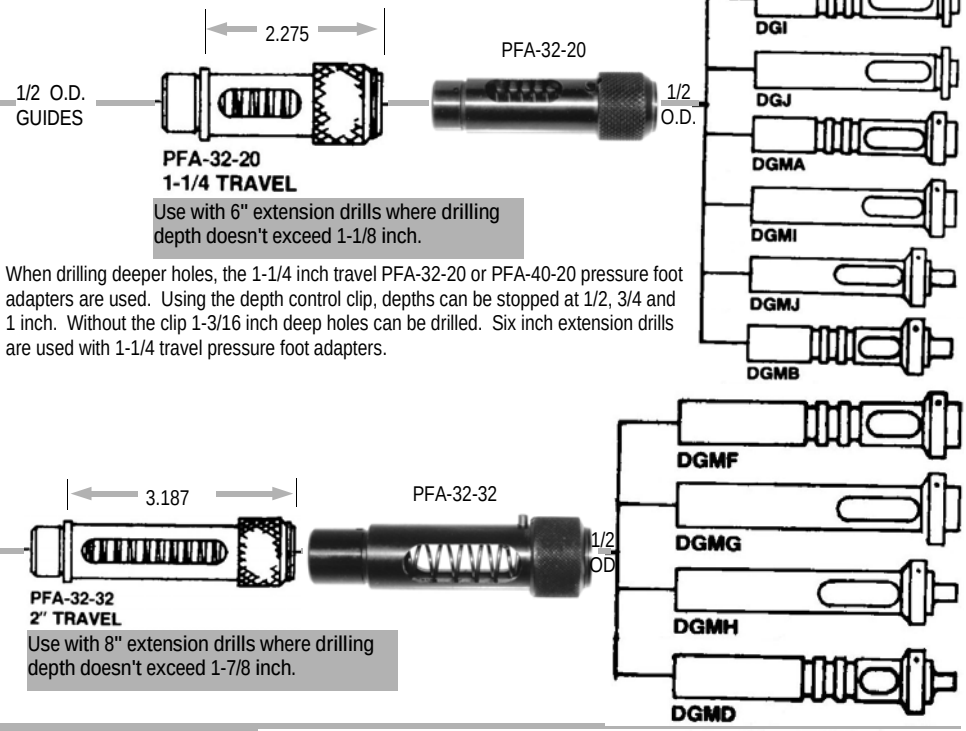
Use with jobber length drills where drilling depth doesn't exceed 1/2 inch.

Use the 9/16 inch travel pressure foot adapters PFA-32-9 or PFA-40-9 for short hole drilling. These drill guides are offered in lengths corresponding to jobber length drills.

DGNP-32-XX FOR 1/2" O.D. DRILL GUIDES



When hi-speed or deep holes are needed, use an air-mist unit in any of the three lengths of drilling systems.



Ref SP12605-5
Ref SP12605-6
Ref SP12605-8

PFA-32-20 1-1/4 TRAVEL

Use with 6" extension drills where drilling depth doesn't exceed 1-1/8 inch.

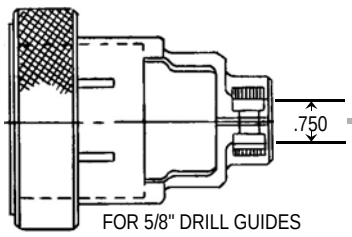
When drilling deeper holes, the 1-1/4 inch travel PFA-32-20 or PFA-40-20 pressure foot adapters are used. Using the depth control clip, depths can be stopped at 1/2, 3/4 and 1 inch. Without the clip 1-3/16 inch deep holes can be drilled. Six inch extension drills are used with 1-1/4 travel pressure foot adapters.

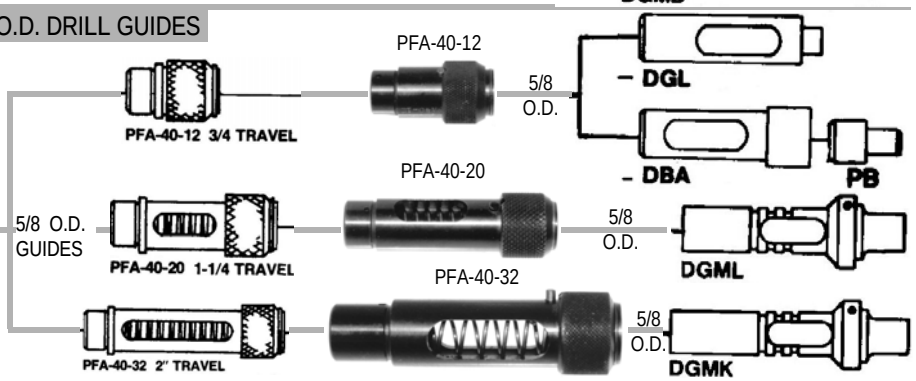
The 2 inch travel PFA-32-32 or PFA-40-32 pressure foot adapters are used with 8 inch extension drills. Depths can be stopped at 1-1/4, 1-1/2 or 1-3/4 inches with the use of the control clip.

PFA-32-32 2" TRAVEL

Use with 8" extension drills where drilling depth doesn't exceed 1-7/8 inch.

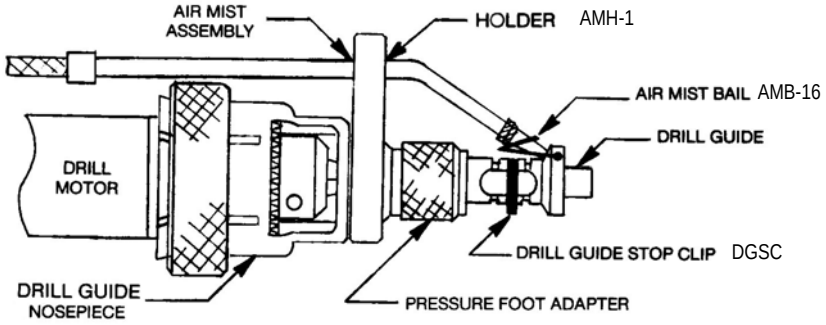
DGNP-40-XX FOR 5/8" O.D. DRILL GUIDES



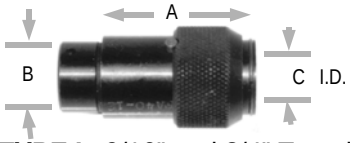


Pressure Foot Accessories

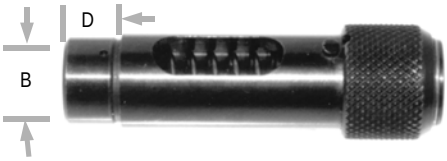
PART RELATIONSHIPS



PRESSURE FOOT ADAPTERS



TYPE I 9/16" and 3/4" Travel



TYPE II 1-1/4" and 2" Travel

PART NO.	A *	B	C	D	TYPE	TRAVEL	FITS NOSEPIECE
PFA-32-9 REF SP-12605-1	.984	.687	1/2	.450	I	9/16	DGNP-32-XX
PFA-32-20 REF SP-12605-2	2.275	.687	1/2	.450	II	1-1/4	DGNP-32-XX
PFA-32-32	3.187	.687	1/2	.450	II	2	DGNP-32-XX
PFA-40-12 REF SP-13607-D	1.550	.750	5/8	.450	I	3/4	DGNP-40-XX
PFA-40-20 REF SP-13607-4	2.275	.750	5/8	.450	II	1-1/4	DGNP-40-XX
PFA-40-32	3.187	.750	5/8	.450	II	2	DGNP-40-XX

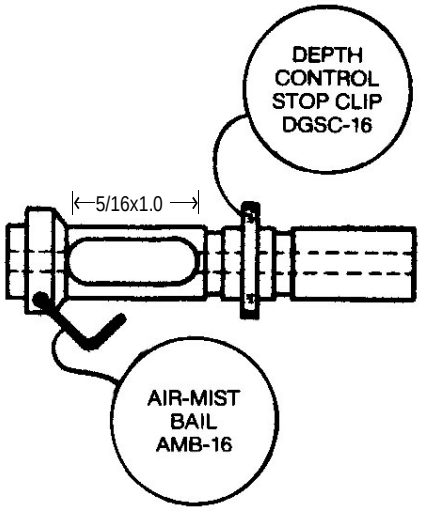
* The 5/16" spacer may be removed on all Type II units. This will decrease the 'A' dimension, thereby increasing the effective length of the drill bit as re-sharpening is required.

CLIPS and BAILS

STOP CLIP REF SP-12403

DGSC-20 FOR 5/8 O.D. GUIDES
DGSC-16 FOR 1/2 O.D. GUIDES

DRILL GUIDE STOP CLIP
The depth control clip is used to give varying depths of drilled holes on the 1-1/4" and 2" travel guides.

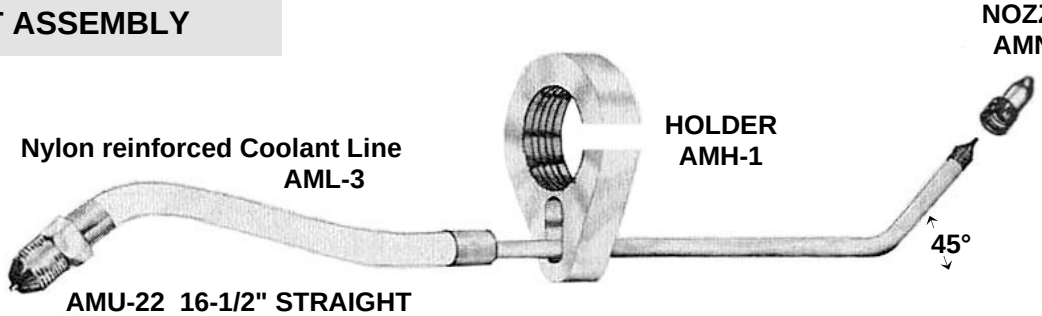


REF SP-13303

AMB-16

AIR MIST BAIL
Needed to secure the spray mist nozzle to the drill guide.

AIR MIST ASSEMBLY



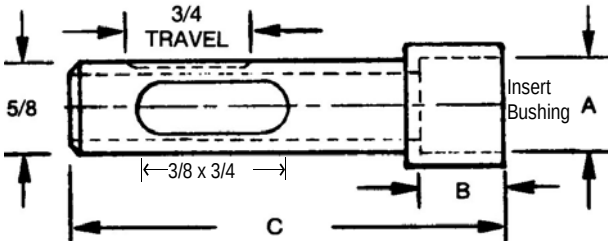
AMU-22 16-1/2" STRAIGHT
AMU-23 18" STRAIGHT
AMU-24 21" 45°

Coolant Line is supplied with Nozzle. Order Holder separately.

UNITED Guides You on Guides For Your Job!

Drill Guide Assemblies

DRILL GUIDE BUSHING ADAPTERS



Use with PFA-40-12. → Chip Slot ←

ORDERING EXAMPLE

DBA - 40 - 42 - 24

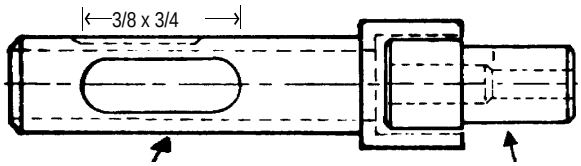
BASIC PART NO.
PILOT O.D. IN 64ths
C LENGTH IN 16ths
A I.D. SIZE IN 64ths

PART NO.	A I.D.	B Bore Depth	C OAL	USE BUSHING INSERT
DBA-40-32-24	.375	.375	2.00	PB-24-20
DBA-40-32-32	.500	.500	2.00	PB-32-22
DBA-40-32-40	.625	.625	2.00	PB-40-22
DBA-40-42-24	.375	.375	2.62	PB-24-20
DBA-40-42-32	.500	.500	2.62	PB-32-22
DBA-40-42-40	.625	.625	2.62	PB-40-22

REF SP-13608
REF SP-13612

Cost reductions can be achieved through *UNITED's* Interchangeable Drill Guide Assemblies using Pilot Bushings manufactured to ANSI specifications. Replace the PB pilot bushing quickly at lower costs when it wears beyond the tolerances needed for Class 'A' Tooling. ANSI bushings can quickly be converted to fit *UNITED's* DBA Guide Bushing Adapters. Down-time is eliminated.

ASSEMBLY



PRECISION BUSHING INSERTS PERMIT PRECISION PARTS PRODUCED BY OFF-HAND DRILLING.

LOW COST QUALITY GUIDES

Drill Guide Bushing Adapter — Pilot Bushing

TELESCOPIC PRESSURE FOOT ASSEMBLY

DRILL GUIDE PILOT BUSHING

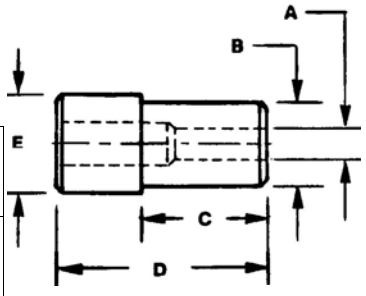
'C' Custom Shank Lengths can be ordered from *UNITED*.

REF SP-13609

DRILL GUIDE PILOT BUSHING

PART NO.	A I.D.	B * Shank	C Length	D OAL	E * O.D.	FITS ADAPTER
#40 PB-24-14-thru #9	#40 (.098) Thru #9 (.196)	.3750	.87	1.250	.3750	DBA-40-32-24 DBA-40-42-24
#8 PB-32-14-thru 5/16	#8 (.199) Thru 5/16 (.312)	.5000	.87	1.375	.5000	DBA-40-32-32 DBA-40-42-32
'O' PB-40-14-thru 13/32	'O' (.316) Thru 13/32 (.406)	.6250	.87	1.500	.6250	DBA-40-32-40 DBA-40-42-40

* E DIAMETER IS .0002 TO .0004 GREATER THAN B DIAMETER.



PILOT INSERT — INSERT SHANK

ORDERING EXAMPLE

PB - 24 - 14 - #40

Pilot Bushing Shank O.D. — **BASIC PART NO.**
B O.D. IN 64ths
Shank Length — **C LENGTH IN 16ths**
Shank I.D. — **A I.D. SIZE IN 64ths**