

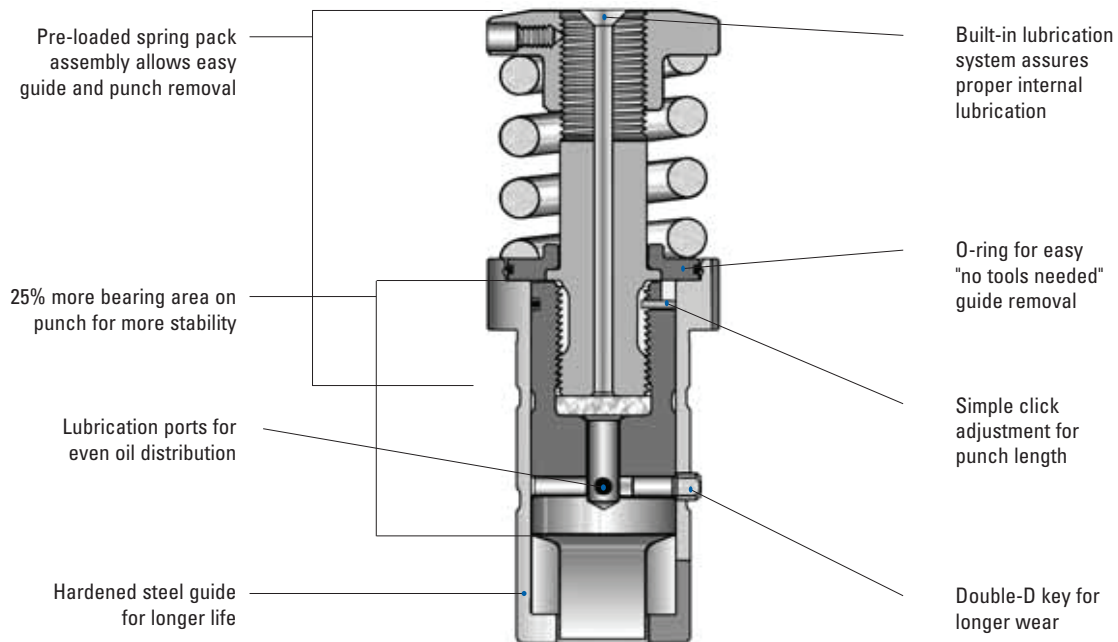
PREMIUM THIN TURRET TOOLING SYSTEM



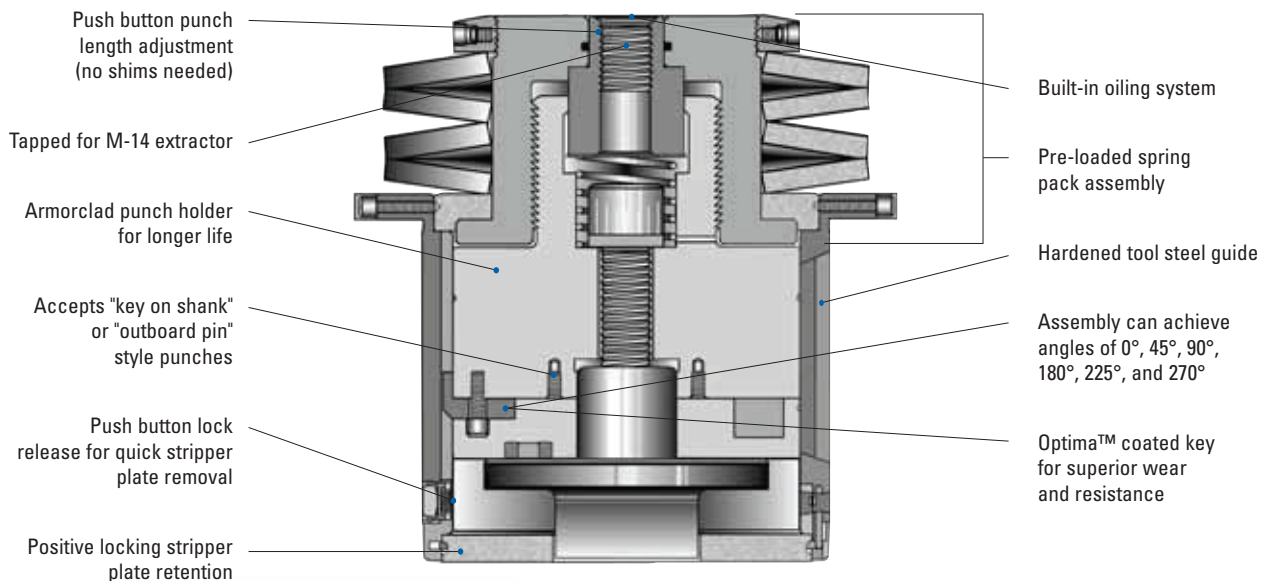
SOLUTIONS FOR PUNCH PRESS TOOLING

FEATURES AND BENEFITS

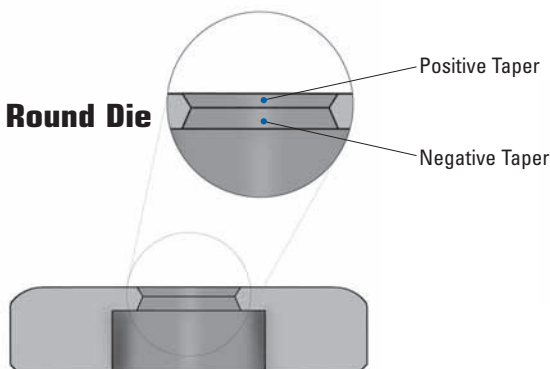
1-1/4" STATION



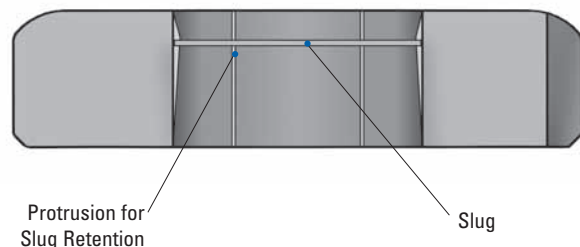
3-1/2" STATION



Standard Round Die



Slug Hugger 2® Die



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Terms and Conditions

ORDER Minimum order is \$50.00

CREDIT REQUIREMENTS All orders are subject to approval by our Credit Department. If you are a new account, please furnish us with your tax exempt status, a bank reference, three current supplier references and/or your current D&B rating with your first order. A credit limit will be imposed on new accounts until credit has been established.

PAYMENT TERMS Terms are net 10 days. Catalog prices are subject to change without notice.

FREIGHT Orders are shipped F.O.B. from our manufacturing facility.(International Shipments are Incoterms: Ex Works).

ORDER CANCELLATION In the event an order is cancelled, an additional charge will be assessed to cover the cost of labor and material.

RETURNED MATERIAL A handling/restocking fee will be applied to all standard products returned for credit. A return authorization number and shipping instructions must be obtained in advance before an item can be returned.

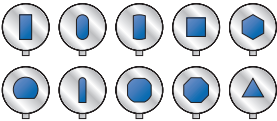
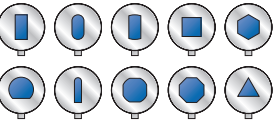
CLAIMS All claims or product shortages must be made within 30 days of the invoice date.

SNAP APART AND DROP IN [1/2" BODY]

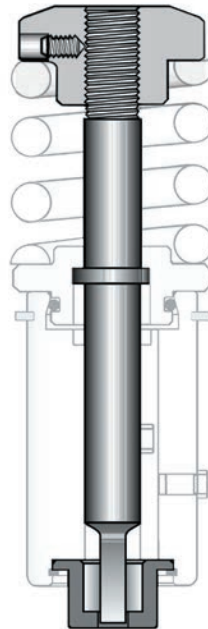
SNAP APART 1/2"		
DESCRIPTION	CAT. NO.	PRICE
PUNCHES		
Round	3003	
Shape	3016	
Optima® Coating	-	
STRIPPERS		
Round	478	
Shape	3018	
DIES		
Round Standard	3011	
Round Slug Hugger®	454	
Shape Positive	162	
Shape Negative	244	
Shape Slug Hugger® 2*	10373	
Adjustable Punch Head	101	
Flange Adapter	3117	

DROP IN 1/2"		
DESCRIPTION	CAT. NO.	PRICE
PUNCHES		
Round	451	
Shape	450	
Optima® Coating	-	
STRIPPERS		
Round	478	
Shape	3118	
DIES		
Round Standard	3011	
Round Slug Hugger®	454	
Shape Positive	162	
Shape Negative	244	
Shape Slug Hugger® 2*	10373	
TO FIT STRIPPIT'S HOLDER		
Punch Head - New Style	448	
Stripper - Round	474	
Stripper - Shape Fitted	473	

Radius or 45° Chamfer 4 Corners		
Punch	Radius or Chamfer Size	Price
	.001 - .062 (0.02 - 1.57mm)	
	.063 - .250 (1.58 - 6.35mm)	
	Greater than .250 (6.35mm)	
Die	Any Size	

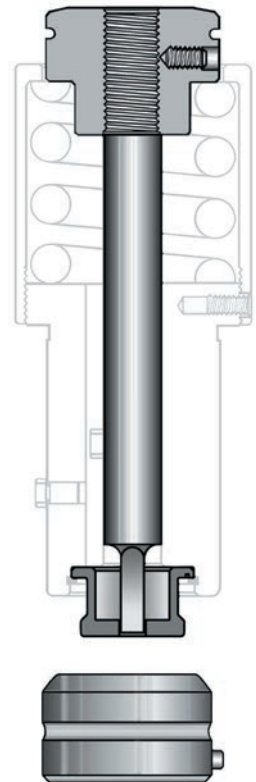
Standard Shapes & Key Locations	
	
Punch View	Die View

SNAP APART 1/2" BODY



Replacement punch, dies and strippers only.

1/2" DROP IN



Stubby Style 1/2" Body

Note: Must use stubby style die and stripper with stubby style punch. Use Standard Punch and Die price plus:

	Description	Price
Punch	Round (.090/2.3mm max dia)	
	Shape	
Die	Round	
	Shape	

NOTES:

*Slug Hugger® dies must be ordered punch size plus clearance. Size restrictions apply.

Additional charges may apply to non-standard features.

DIE SHIMS

Station	Qty.	Cat. No.	Price
.010 Thick [.25mm]			
1-1/4"	1	2097	
1-1/4"	25	2209	
.030 Thick [.76mm]			
1-1/4"	1	2723	
1-1/4"	25	2724	
.060 Thick [1.5mm]			
1-1/4"	1	2100	
1-1/4"	25	2173	



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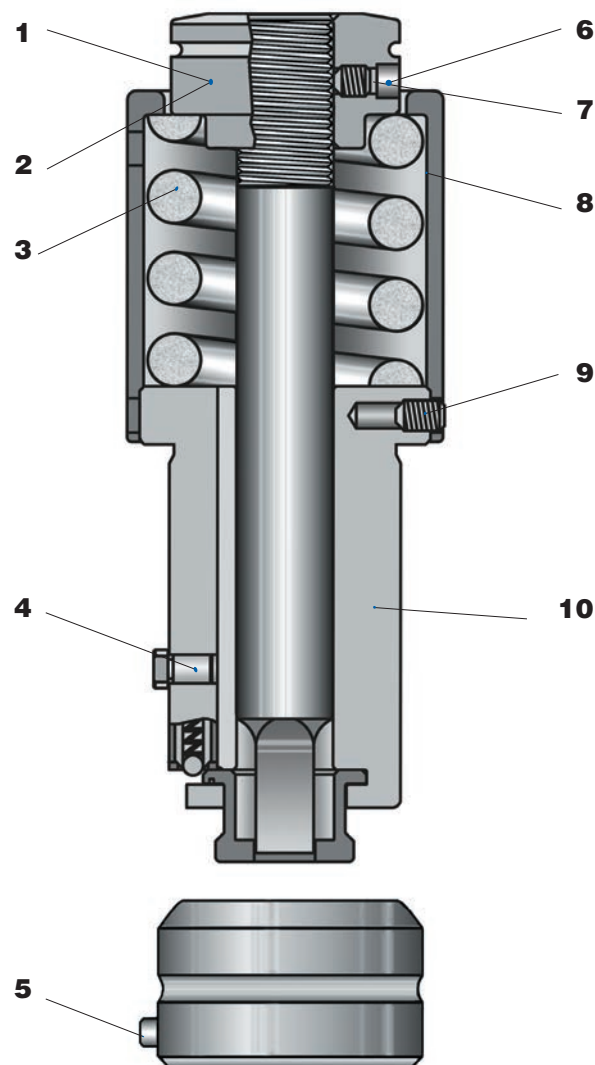
DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY Round closed RD stripper plate w/.500 (12.7mm) dia.	476	
PUNCH Round Shape Optima® Coating	445 446 -	
STRIPPER Round Shape Fitted	478 479	
DIE Round Slug Hugger® Round Standard Shape Slug Hugger® 2* Shape Positive Shape Negative	454 133 10373 162 244	
TO FIT STRIPPIT'S HOLDER Punch Head - Old Style Punch Head - New Style Stripper - Round Stripper - Shape Fitted	444 475 474 473	

Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
.031 - .061 (0.79 - 1.56mm)			N/C
.062 - .092 (1.57 - 2.34mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)		N/C	
Clearance < .004 (.10mm)			N/C

Add \$____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

Radius or 45° Chamfer 4 Corners		
Punch	Radius or Chamfer Size	Price
	.001 - .062 (0.02 - 1.57mm)	
	.063 - .250 (1.58 - 6.35mm)	
	Greater than .250 (6.35mm)	
Die	Any Size	

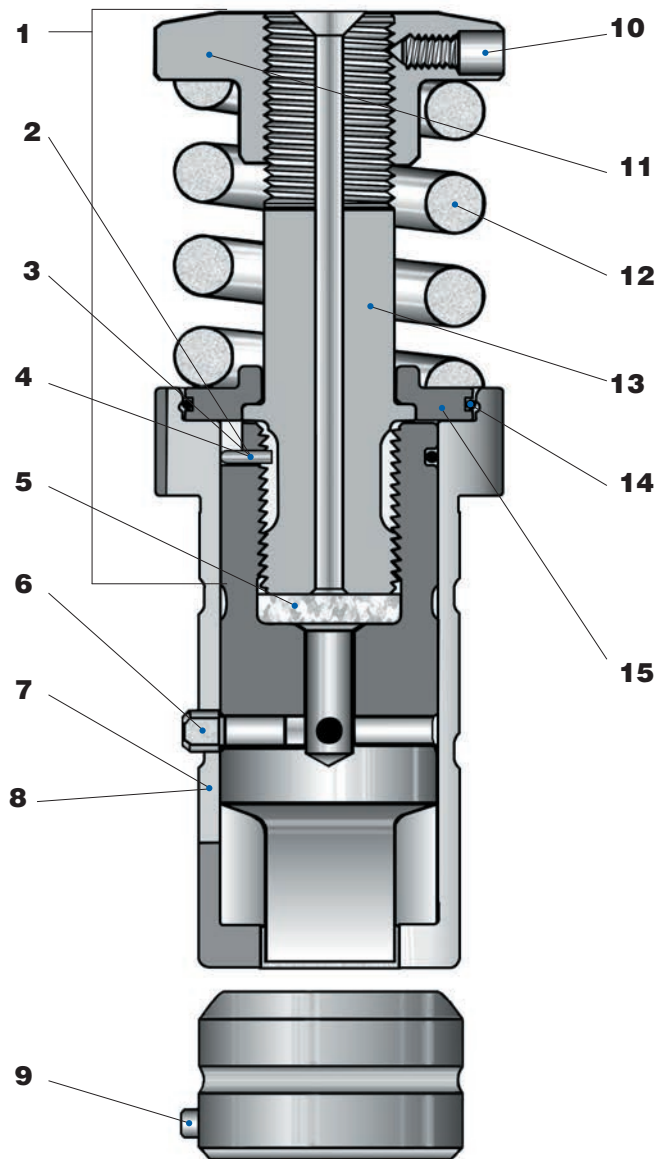
Stubby Style 5/8" Body		
Note: Must use stubby style die and stripper with stubby style punch. Use Standard Punch and Die price plus:		
Punch	Description	Price
	Round (.090/2.3mm max dia)	
	Shape	
Die	Round	
	Shape	



	DESCRIPTION	CAT. NO.	PRICE
1	ADJ. PUNCH HEAD	475	
2	ADJ. PUNCH HEAD (Old style Strippit design- not shown)	444	
3	SPRING	125	
4	DOWEL PIN (3/16 x .375) (Replacement - round only)	2150	
5	DOWEL PIN (3/16 x .345)	6431	
6	SOCKET HEAD SET SCREW (Cone Pt. M5-.8 x 8mm)	6268	
7	SOCKET HEAD SET SCREW (Cone Pt. 10-32 x 1/4)	6072	
8	SPRING CANISTER	453	
9	SOCKET SET SCREW (M5 X 8mm)	6372	
10	GUIDE	477	

Standard Shapes & Key Locations															
Punch View								Die View							

SERIES 90® 1-1/4" STATION



	DESCRIPTION	CAT. NO.	PRICE
1	DRIVER ASSEMBLY	10156	
2	RETAINING RING -Ball-Lock Design	2803	
3	INDEX PIN (.187 DIA)	6873	
4	RING CLIP	10044	
5	FELT FILTER	10155	
6	DOWEL PIN (3/16 x .595)	6015	
7	GUIDE - ROUND	10144	
8	GUIDE - SHAPE	10139	
9	DOWEL PIN (3/16 x .345)	6431	
10	SOCKET HEAD SET SCREW (Cone Pt. M5-.8 x 8mm)	6268	
11	PUNCH HEAD	145	
12	SPRING	125	
13	DRIVER	10141	
14	O-RING	6562	
15	SPRING SUPPORT W/O-RING	10142	

DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY		
Round closed RD guide	10143	
Shape w/Fitted Guide	10145	
Optima® Coating	-	
PUNCH		
Round	10137	
Shape	10136	
Optima® Coating	-	
DIE		
Round Slug Hugger®	454	
Round Standard	3011	
Shape Slug Hugger® 2*	10373	
Shape Positive	3039	
Shape Negative	3040	
Shape (0° & 45°) Slug Hugger® 2*	10376	
Shape (0° & 45°) Positive	485	
Shape (0° & 45°) Negative	486	

Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
.031 - .061 (0.79 - 1.56mm)			N/C
.062 - .092 (1.57 - 2.34mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)		N/C	
Clearance < .004 (.10mm)			N/C

Add \$____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

Stubby Style 1-1/4" Body		
Note: Must use stubby style die and stripper with stubby style punch. Use Standard Punch and Die price plus:		
Punch	Description	Price
	Round (.090/2.3mm max dia)	
	Shape	
Die	Round	
	Shape	



Notes:

* Slug Hugger® dies must be ordered punch size plus clearance, .098 (2.49mm) min. dia. on rounds, .060 (1.53mm) min. width on shapes, .006 (0.15mm) min. clearance (patented).

†* 'A' Dimension = longest distance across shape.

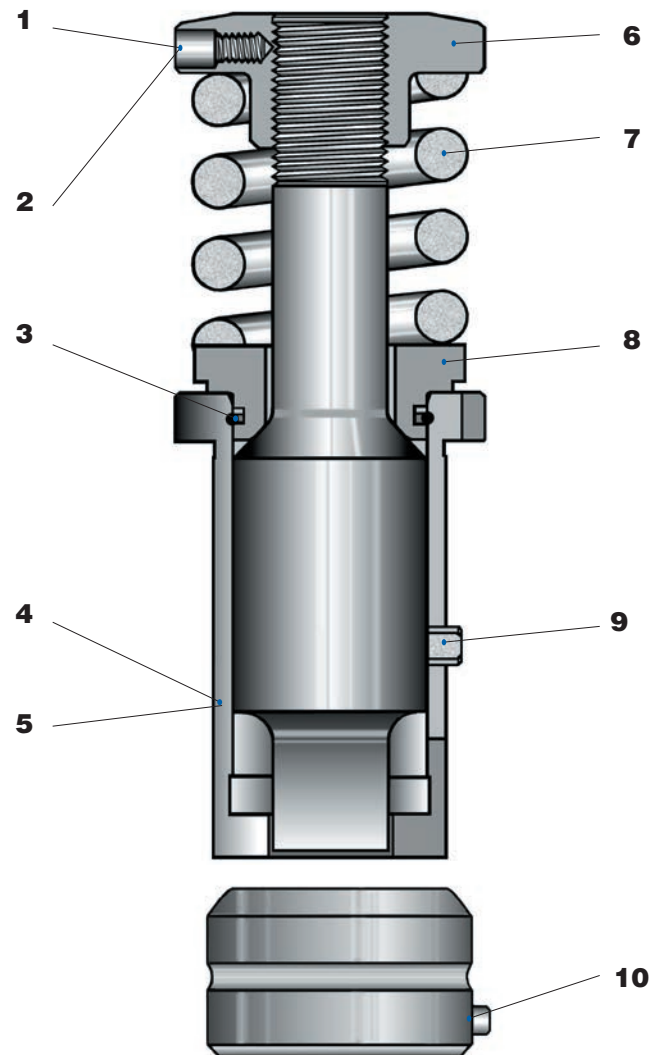
DESCRIPTION	CAT. NO.	PRICE
PUNCH & GUIDE ASSEMBLY		
Round closed RD guide	3041	
Shape w/Fitted Guide	3024	
Optima® Coating	-	
PUNCH		
Round	3043	
Shape	3030	
Optima® Coating	-	
DIE		
Round Slug Hugger®	454	
Round Standard	3011	
Shape Slug Hugger® 2*	10373	
Shape Positive	3039	
Shape Negative	3040	
Shape (0° & 45°) Slug Hugger® 2*	10376	
Shape (0° & 45°) Positive	485	
Shape (0° & 45°) Negative	486	

Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
.031 - .061 (0.79 - 1.56mm)			N/C
.062 - .092 (1.57 - 2.34mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)		N/C	
Clearance < .004 (.10mm)			N/C

Add \$____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

Radius or 45° Chamfer 4 Corners		
Punch	Radius or Chamfer Size	Price
	.001 - .062 (0.02 - 1.57mm)	
	.063 - .250 (1.58 - 6.35mm)	
	Greater than .250 (6.35mm)	
Die	Any Size	

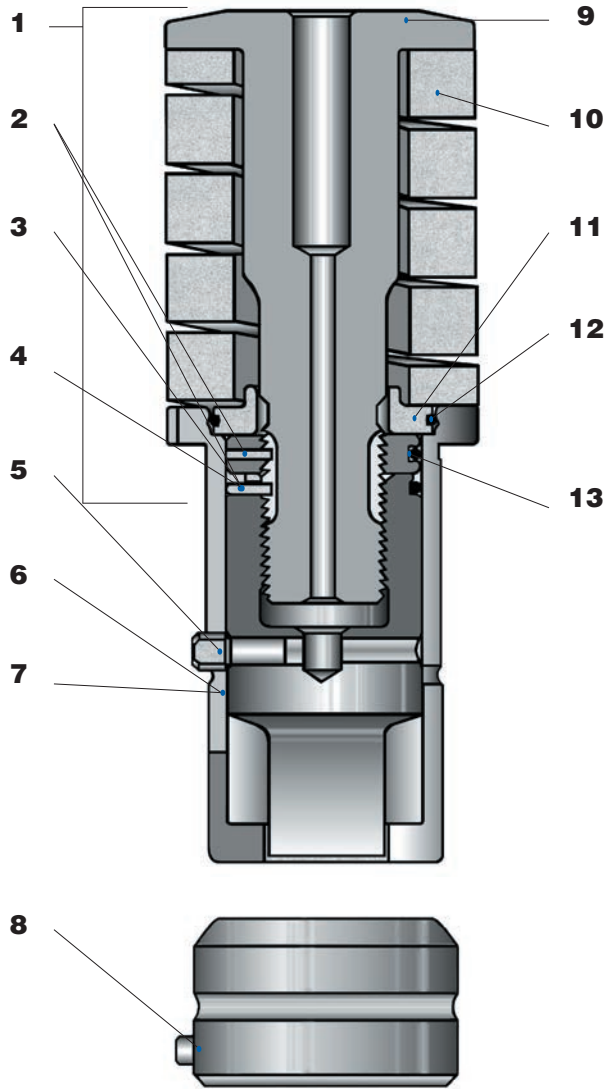
Stubby Style 1-1/4" Body		
Note: Must use stubby style die and stripper with stubby style punch. Use Standard Punch and Die price plus:		
Punch	Description	Price
	Round (.090/2.3mm max dia)	
	Shape	
Die	Round	
	Shape	



	DESCRIPTION	CAT. NO.	PRICE
1	SOCKET HEAD SET SCREW (Cone Pt. M5-.8 x 8mm)	6268	
2	SOCKET HEAD SET SCREW (Cone Pt. 10-32 x 1/4)	6072	
3	O-RING	466	
4	GUIDE - ROUND	3044	
5	GUIDE - SHAPE	3037	
6	ADJ. PUNCH HEAD	145	
7	SPRING	125	
8	GUIDE COLLAR WITH O-RING	146	
9	DOWEL PIN (3/16 x .595)	6015	
10	DOWEL PIN (3/16 x .345)	6431	

Standard Shapes & Key Locations											
Punch View						Die View					

SERIES 90® HEAVY DUTY



	DESCRIPTION	CAT. NO.	PRICE
1	DRIVER ASSEMBLY	10055	
2	RING CLIP	10044	
3	RETAINING RING (Ball-Lock Design)	2803	
4	INDEX PIN (.187 dia.)	6874	
5	DOWEL PIN (3/16 x .595)	6015	
6	GUIDE - ROUND	10027	
7	GUIDE - SHAPE	10020	
8	DOWEL PIN (3/16 x .345)	6431	
9	DRIVER	10042	
10	SPRING	30	
11	SPRING SUPPORT W/O-RING	10047	
12	O-RING	10035	
13	THREADED SPRING RETAINER W/ RING CLIP	10043	

DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY		
Round closed RD Guide	10039	
Shape w/Fitted Guide	10040	
Optima® Coating	-	
PUNCH		
Round	10046	
Shape	10045	
Optima® Coating	-	
DIE		
Round Slug Hugger®	454	
Round Standard	3011	
Shape Slug Hugger® 2*	10373	
Shape Positive	3039	
Shape Negative	3040	
Shape (0° & 45°) Slug Hugger® 2*	10376	
Shape (0° & 45°) Positive	485	
Shape (0° & 45°) Negative	486	

Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
.031 - .061 (0.79 - 1.56mm)			N/C
.062 - .092 (1.57 - 2.34mm)		N/C	N/C
.093 - .249 (2.36 - 6.32mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)		N/C	
'A' Dim <.437 (11.10mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C

Add \$____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

NOTES
Series 90® Heavy Duty Note: Spherical concave shear & Optima™ standard on 1" (25.4mm), 25mm, and 1.250" (31.75mm) diameters.
Maximum material thickness .375" (9.5mm) mild steel.
Full Size (1-1/4" Body) Notes: Urethane spring assemblies available upon request.
Maximum punching force - 15 tons (13.6 metric).
* Slug Hugger® dies must be ordered punch size plus clearance, .060 (1.53mm) min. width on shapes, .006 (0.15mm) min. total clearance (patented).
† 'A' Dimension = longest distance across shape.

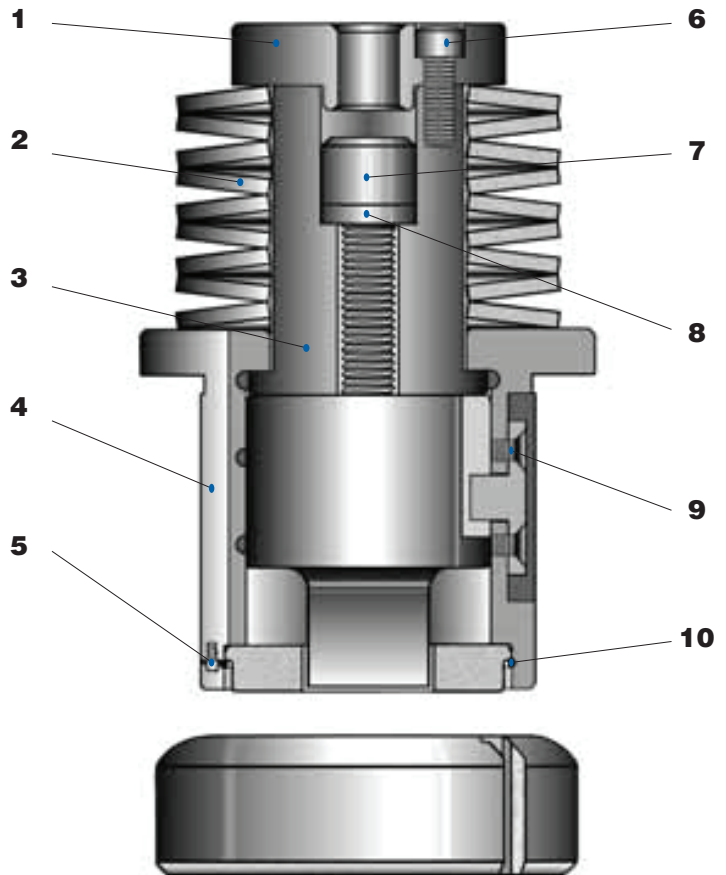
DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY Keyed for shapes at 0° & 90°	3175	
PUNCH Round (M-12 Thread) Shape (M-12 Thread) Optima® Coating	3162 3163 -	
STRIPPER Round Shape	1848 1854	
DIE Round Slug Hugger® Round Standard Shape Slug Hugger® 2* Shape Positive Shape Negative	2196 1850 12964 1855 1856	

Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
<1.000 (25.4mm)		N/C	N/C
1.000 - 1.249 (25.4 - 31.72mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)			
Small 'A' Dimension			
<1.150 (29.21mm)		N/C	N/C
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C

Add \$_____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

Radius or 45° Chamfer 4 Corners		
Punch	Radius or Chamfer Size	Price
	.001 - .062 (0.02 - 1.57mm)	
	.063 - .250 (1.58 - 6.35mm)	
	Greater than .250 (6.35mm)	
Die	Any Size	

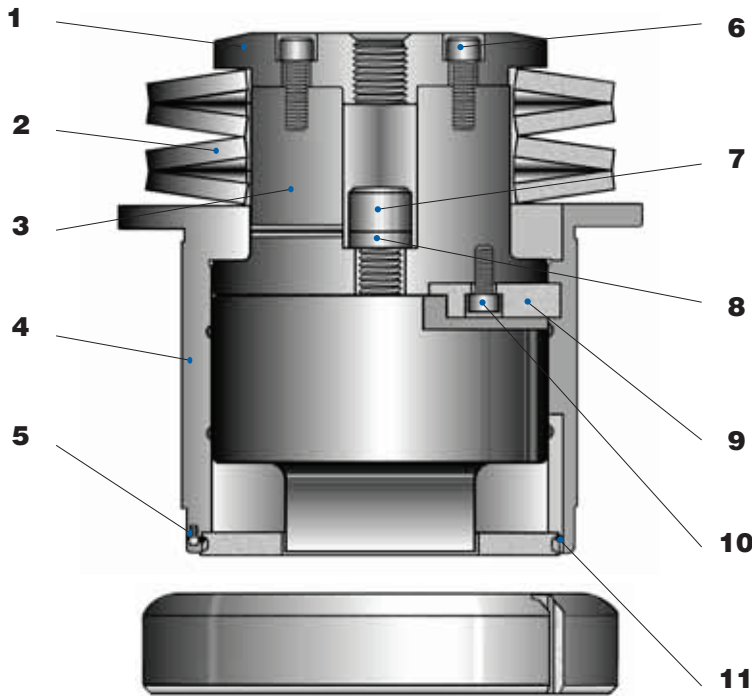
NOTES
All punches will be shipped with no shear unless specified.
Square dies are keyed for shape at 0° and 45°; all other shaped dies are keyed for shape at 0° and 90°.
* Slug Hugger® dies must be ordered punch size plus clearance, .060 (1.53mm) min. width on shapes, .006 (0.15mm) min. total clearance (patented).
† 'A' Dimension = longest distance across shape.



	DESCRIPTION	CAT. NO.	PRICE
1	PUNCH HEAD	3176	
2	DISC SPRINGS (9 Required)	3177	
3	PUNCH DRIVER	3178	
4	GUIDE	3179	
5	SOCKET HEAD CAPS SCREW (Special 5-40 Flat Head)	429	
6	SOCKET HEAD CAPS SCREW (1/4-28 x 3/4)	6304	
7	SOCKET HEAD CAP SCREW (M-12 - 1.75 x 57mm)	6026	
8	LOCK WASHER (High Collar)	432	
9	KEY	1834	
10	SNAP LOCK RING	5035	

Standard Shapes & Key Locations															
Punch View								Die View							

3-1/2" STATION - FULL BODY



	DESCRIPTION	CAT. NO.	PRICE
1	PUNCH HEAD	3232	
2	DISC SPRINGS (4 Required)	3125	
3	PUNCH DRIVER	3233	
4	GUIDE	3230	
5	SOCKET HEAD CAPS SCREW (Special 5-40 Flat Head)	429	
6	SOCKET HEAD CAP SCREW (M-6 - 1 x 20mm)	6111	
7	SOCKET HEAD CAP SCREW (M-12 - 1.75 x 35mm)	6112	
8	LOCK WASHER (High Collar)	432	
9	KEY	3234	
10	SOCKET HEAD CAP SCREW (M5-.8 - 12mm)	6110	
11	SNAP LOCK RING	3143	

DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY Keyed for shapes at 0° & 90°	3231	
PUNCH Round Shape Optima® Coating	3183 3184 -	
STRIPPER Round Shape	3116 3115	
DIE Round Slug Hugger® Round Standard Shape Slug Hugger® 2* Shape Positive Shape Negative	2198 1865 12965 1870 1871	

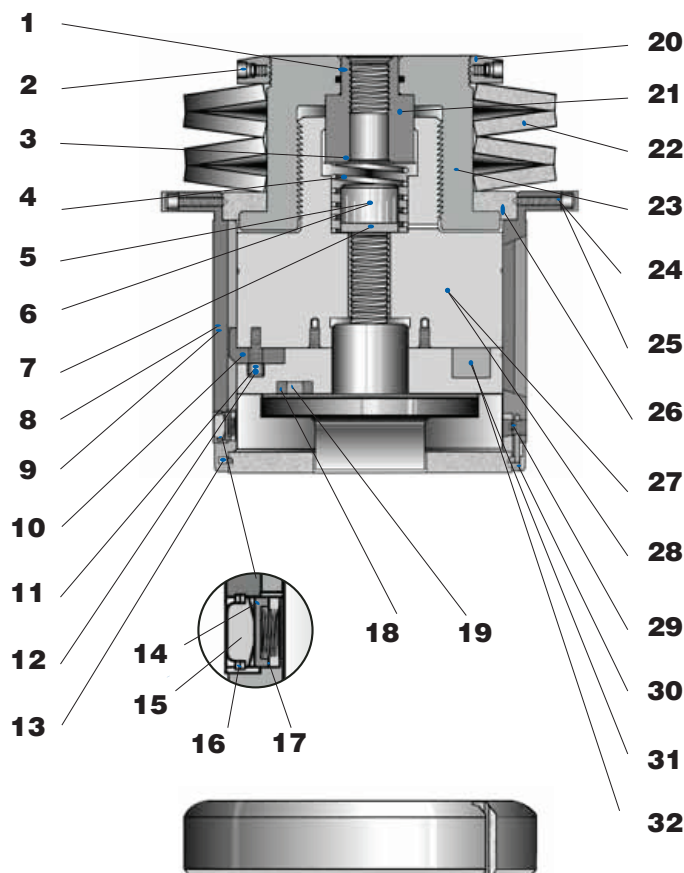
Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
<1.150 (29.21mm)		N/C	N/C
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)			
Small 'A' Dimension			
<1.150 (29.21mm)		N/C	N/C
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C

Add \$____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

NOTES
- All punches will be shipped with no shear unless specified. - Square dies are keyed for shape at 0° and 45°; all other shaped dies are keyed for shape at 0° and 90°. * Slug Hugger® dies must be ordered punch size plus clearance, .060 (1.53mm) min. width on shapes, .006 (0.15mm) min. total clearance (patented). † 'A' Dimension = longest distance across shape.

SERIES 90® 3-1/2" STATION

DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY (.512")/13mm Keyslot	3257	
PUNCH Round 1.250-1.562 (31.75-39.67mm) Dia. 1.563-2.250 (39.70-57.15mm) Dia. 2.251-2.875 (57.17-73.02mm) Dia. 2.876-3.500 (73.05-88.90mm) Dia. Punch Retainer Shape 1.250-1.500 (31.75-38.10mm) Dia. 1.501-2.500 (38.12-63.50mm) Dia. 2.501-3.500 (63.52-88.90mm) Dia. Optima® Coating	3048 3050 3051 3052 182 3045 3046 3047 -	
STRIPPER Round Shape	3116 3115	
DIE Round Slug Hugger® Round Standard Shape Slug Hugger® 2* Shape Positive Shape Negative	2198 1865 12965 1870 1871	



	DESCRIPTION	CAT. NO.	PRICE
1	O-RING	6170	
2	SOCKET HEAD CAP SCREW (M-6 - 1 x 20mm)	6239	
3	DOUBLE D WASHER	6166	
4	COIL SPRING	6167	
5	SOCKET HEAD CAP SCREW (1/2"-13X2-1/8" lg)	2116	
6	SOCKET HEAD CAP SCREW (M-12 x 54mm lg)	6171	
7	LOCKWASHER (1/2" High Collar)	6327	
8	GUIDE UNIT ASSEMBLY	3262	
9	GUIDE UNIT (Not complete)	3267	
10	KEY	3263	
11	SOCKET HEAD CAP SCREW (M-3 x 12mm)	6326	
12	LOCKWASHER (M-3 x 12mm)	6327	
13	WIRE LOCK RING	3265	
14	SPRING	6601	
15	LOCKING BUTTON	3268	
16	LOCKING PIN	3270	
17	RETAINING RING (2 Req)	3269	
18	DOWEL PIN ADAPTER BUSING	6032	
19	DOWEL PIN (2 Req)	6004	
20	SPRING RETAINING NUT	230	
21	ADJUSTING PUSH BUTTON	10074	
22	DISC SPRING (4 Req)	3125	
23	PUNCH DRIVER	3254	
24	SOCKET HEAD CAP SCREW (Special M4 Cone Pt.)	3261	
25	LOCKWASHER (For M4)	2117	
26	SPRING SUPPORT	3124	
27	PUNCH HOLDER (w/.250"/13mm keyslot)	3253	
28	PUNCH HOLDER (w/.250"/6.35mm keyslot)	3256	
29	LINEAR EXPANDER	3266	
30	STRIPPER RING	3264	
31	URETHANE (1/4" X 1/2" lg)	6101	
32	URETHANE (1/4" X 1" lg)	6103	

Add On			
Add on for Round			
Small Diameter	Punch	Die	Stripper
<1.150 (29.21mm)		N/C	N/C
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C
Add on for Shape			
Small Width	Punch	Die	Stripper
.031 - .039 (0.79 - 1.0mm)			
.040 - .092 (1.01 - 2.34mm)			
Small 'A' Dimension			
<1.150 (29.21mm)		N/C	N/C
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C
Clearance < .004 (.10mm)			N/C

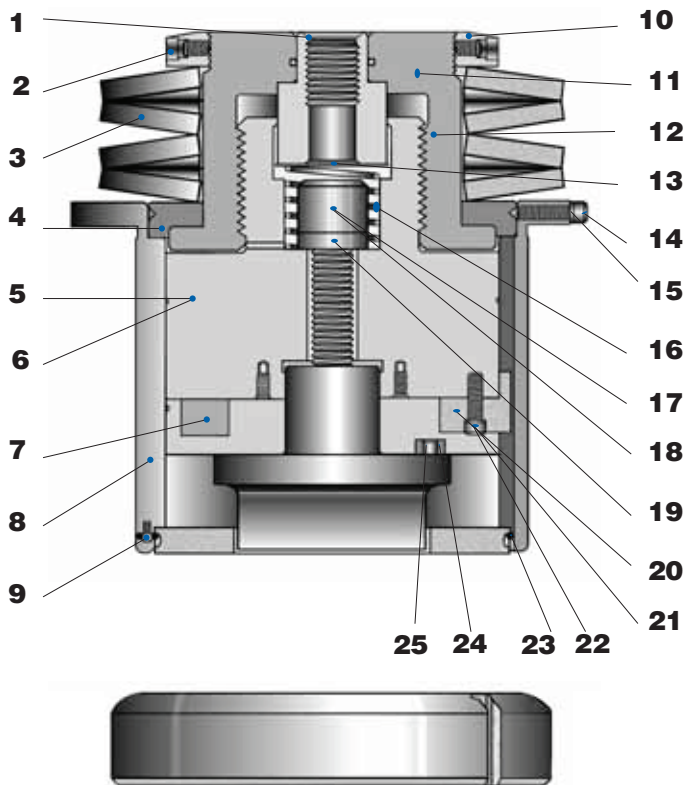
Add \$____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

Radius or 45° Chamfer 4 Corners		
Punch	Radius or Chamfer Size	Price
	.001 - .062 (0.02 - 1.57mm)	
	.063 - .250 (1.58 - 6.35mm)	
	Greater than .250 (6.35mm)	
Die	Any Size	

To convert Amada manufactured 3-1/2" station shank style holders to use standard thread punches, a special bolt (1/2" - 13") Cat No. 3164 (\$7.25), must be substituted with the M-12 already in the holder. Also, the M-6 x 16mm Long Cap Screw which holds the key must be substituted with a Button Head Cap Screw Cat No. 3156 (\$1.50).

To convert Amada manufactured 3-1/2" station shank style holders to accept standard stripper plates, the existing rigid clips on the guide must be substituted with Rigid Clips Cat No. 3161 (4) required (\$18.75).

NOTES
Note: Series 80® Plus and Series 90® Guide Assemblies are keyed for shapes at 0°, 45°, 90°, 180°, 225°, 270°.
1/32" (0.79mm) Rooftop shear is given to all punches with 'A' dimension† greater than 2.000 (50.8mm), and width greater than .250 (6.35mm), at no extra charge.
All punches .250 (6.35mm) and under in width will be shipped with no shear unless specified.
Square dies are keyed for shape at 0° and 45°; all other shaped dies are keyed for shape at 0° and 90°.
Slug Hugger® dies must be ordered punch size plus clearance, .060 (1.53mm) min. width on shapes, .006 (0.15mm) min. total clearance (patented).
† 'A' Dimension = longest distance across shape.



DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY (.512")/13mm Keyslot	3252	
PUNCH Round 1.250-1.562 (31.75-39.67mm) Dia. 1.563-2.250 (39.70-57.15mm) Dia. 2.251-2.875 (57.17-73.02mm) Dia. 2.876-3.500 (73.05-88.90mm) Dia. Punch Retainer Shape 1.250-1.500 (31.75-38.10mm) Dia. 1.501-2.500 (38.12-63.50mm) Dia. 2.501-3.500 (63.52-88.90mm) Dia. Optima® Coating	3048 3050 3051 3052 182 3045 3046 3047 -	
STRIPPER Round Shape	3116 3115	
DIE Round Slug Hugger® Round Standard Shape Slug Hugger® 2* Shape Positive Shape Negative	2198 1865 12965 1870 1871	

	DESCRIPTION	CAT. NO.	PRICE
1	ADJUSTING PUSH BUTTON	10074	
2	SOCKET HEAD CAP SCREW (Cone Pt. M-5-.8 x 6mm)	6239	
3	DISC SPRING (4 Req)	3125	
4	SPRING SUPPORT	3124	
5	PUNCH HOLDER- STD. (.512"/13mm keyway)	3253	
6	PUNCH HOLDER- NON-STD. (.250"/6.35mm keyway)	3256	
7	URETHANE (1/4" X 1/2" lg)	6101	
8	GUIDE	3118	
9	SOCKET HEAD CAP SCREW (Special 5-40 Flat Head)	429	
10	SPRING RETAINING NUT	230	
11	O-RING	6170	
12	PUNCH DRIVER	3254	
13	DOUBLE D WASHER	6166	
14	SOCKET HEAD (Special 8-32 x 3/4)	3142	
15	LOCKWASHER (For 8-32)	2117	
16	SPRING	6167	
17	SOCKET HEAD CAP SCREW (1/2"-13x2-1/8" lg)	2116	
18	SOCKET HEAD CAP SCREW (M12-1.75 x 54mm)	6171	
19	LOCKWASHER (High Collar)	432	
20	KEY	428	
21	SNAP LOCK RING	3143	
22	SOCKET HEAD CAP SCREW (M-3-.5 x 12mm)	6326	
23	LOCKWASHER (For M3)	6327	
24	OUTBOARD PIN ADAPTER RING (.512/13mm O.D.)	6032	
25	DOWEL PIN (1/4x .450)	6004	

Add On				Radius or 45° Chamfer 4 Corners		
Add on for Round				Punch	Radius or Chamfer Size	Price
Small Diameter	Punch	Die	Stripper		.001 - .062 (0.02 - 1.57mm)	
<1.150 (29.21mm)		N/C	N/C		.063 - .250 (1.58 - 6.35mm)	
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C	Die	Greater than .250 (6.35mm)	
Clearance < .004 (.10mm)			N/C		Any Size	
Add on for Shape						
Small Width	Punch	Die	Stripper			
.031 - .039 (0.79 - 1.0mm)						
.040 - .092 (1.01 - 2.34mm)						
Small 'A' Dimension	Punch	Die	Stripper			
<1.150 (29.21mm)		N/C	N/C			
1.150 - 1.249 (29.21 - 31.72mm)		N/C	N/C			
Clearance < .004 (.10mm)			N/C			

Add \$_____ to round or shape punch for extra straight before radius, extra back taper, or no back taper.

NOTES

Note: Series 80® Plus and Series 90® Guide Assemblies are keyed for shapes at 0°, 45°, 90°, 180°, 225°, 270°.

• 1/32" (0.79mm) Rooftop shear is given to all punches with 'A' dimension† greater than 2.000 (50.8mm), and width greater than .250 (6.35mm), at no extra charge.

• All punches .250 (6.35mm) and under in width will be shipped with no shear unless specified.

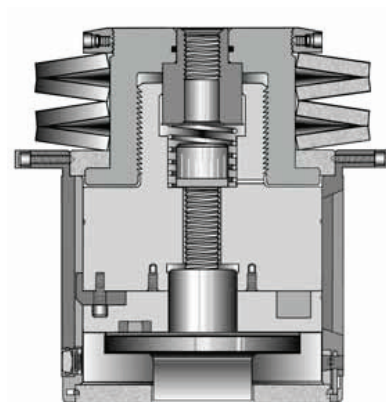
• Square dies are keyed for shape at 0° and 45°; all other shaped dies are keyed for shape at 0° and 90°.

* Slug Hugger® dies must be ordered punch size plus clearance, .060 (1.53mm) min. width on shapes, .006 (0.15mm) min. total clearance (patented).

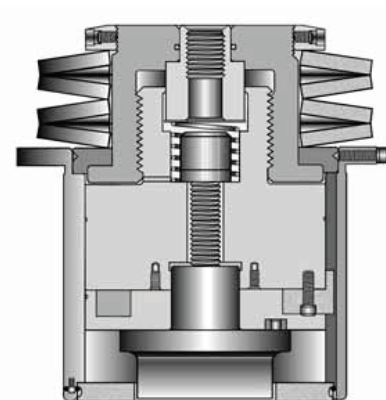
† 'A' Dimension = longest distance across shape.

NOT STANDARD TO NORTH AMERICAN MARKET

DESCRIPTION	CAT. No.	PRICE
GUIDE ASSEMBLIES		
• Series 90® (.250"/6.35mm Keyslot) 1/2 x 13 Bolt	3258	
• Series 90® (.250"/6.35mm Keyslot) M-12 Bolt	3358	
• Series 80 Plus® (.250"/6.35mm Keyslot) 1/2 x 13 Bolt	3255	
PUNCHES - SOLID SHANK		
• Round 1.250-3.500 (31.75-88.90mm) Dim. 1/2-13 thread	10001	
• Shape		
1.250" - 1.500 (31.75-38.10mm) Dia.	3045	
1.501" - 2.500 (38.12-63.50mm) Dia.	3046	
2.501" - 3.500 (63.52-88.90mm) Dia.	3047	
• Optima™ Add On	—	
• Bolt	2116	



Series 90®

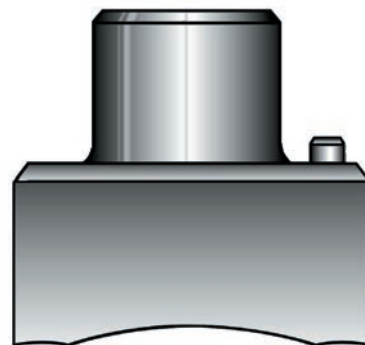


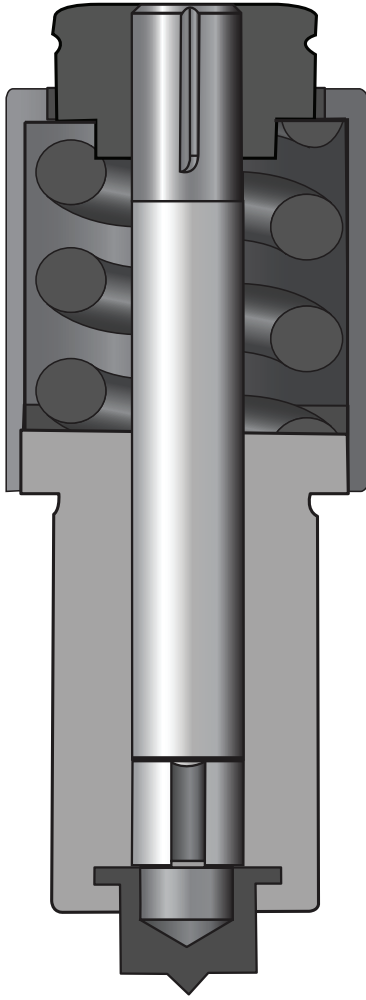
Series 80 Plus®

3-1/2" STATION NOTCHER

(FOR SERIES 80 PLUS® AND SERIES 90® GUIDE ASSEMBLIES)

DESCRIPTION	CAT. No.	PRICE
PUNCH		
• Square 2" (50.8mm) or 50mm w/ 1/16" (1.6mm) dbl. concave shear	3155	



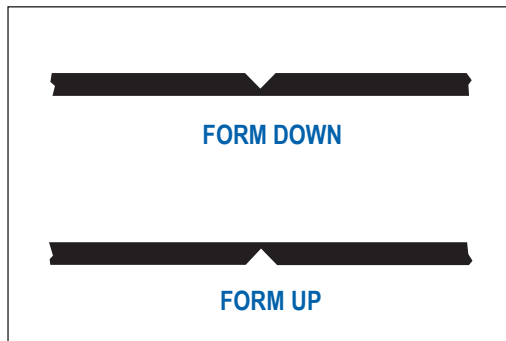


Benefits

- Cuts your cost by eliminating or reducing set-up time.
- Form down tool indents most material thicknesses with no adjustment necessary.
- Form down tool offers a light duty spring for the special applications requiring a lighter indent.
- Replacement components are available at reasonable cost.

Applications

- Allows using the speed and accuracy of the press to center punch locations for secondary drilling operations.
- Center punched indents can be used as gauging marks for secondary operations such as bending, shearing and spot welding.
- By programming special alphabets, the indents are used to make letters and numbers for part identification.



DESCRIPTION	CAT. NO.	PRICE
FORM DOWN 5/8"		
Complete Form-Down Assembly Including Die	10677	
Replacement Center Punch Tip	400	
5/8" Replacement Punch Body	10666	
Blank Die	498	
Light Spring Kit	10668	
FORM UP		
Complete Form-Up Assembly (Upper and Lower)	3387	
Upper Punch Assembly	-	
Lower Die Assembly	-	
Replacement Die Insert .375" (9.53mm)	-	

3-1/2" Station - Series 80 Plus® Relieved Guide Assembly For Punching Close to Clamps		
DESCRIPTION	CAT. NO.	PRICE
GUIDE ASSEMBLY	3248	
GUIDE ONLY	3249	
PUNCHES	3250	
STRIPPERS		
Relieved - both sides	3245	
Relieved - one side only	N/A	
DIES		
• Slug Hugger® 2* (relief 2 sides, shp at 90°)	5499	
• Slug Hugger® 2* (relief 2 sides, shp at 0°-90°)	5500	
• Slug Hugger® 2* (relief 1 side, shp at 90°)	12966	
• Slug Hugger® 2* (relief 1 side, shp 0°-90°)	5501	
• Positive (relief 2 sides, shp at 90°)	5101	
• Positive (relief 2 sides, shp at 0°-90°)	5328	
• Positive (relief 1 side, shp at 90°)	2462	
• Positive (relief 1 side, shp at 0°-90°)	5331	
• Negative (relief 2 sides, shp at 90°)	5156	
• Negative (relief 2 sides, shp at 0°-90°)	5329	
• Negative (relief 1 side, shp at 90°)	2463	
• Negative (relief 1 side, shp at 0°-90°)	5332	



REPLACEABLE INSERT ASSEMBLY

FOR 3-1/2" STATION FULL BODY HOLDER

DESCRIPTION	CAT. NO.	PRICE	CAT. NO.	PRICE	CAT. NO.	PRICE
STATION	BODY (M-12)		PUNCH INSERT		SET (M-12)	
3-1/2" Full Body	3192		3193		3191	
DESCRIPTION					CAT. NO.	PRICE
Socket Head Cap Screw - 3/8" - 16" x 1" long					6019	
High Collar Lock Washer for 3/8" screw					2129	
Dowel Pin - 1/4" Dia. x .450" long					6004	



Note:

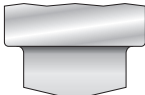
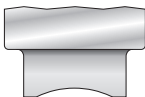
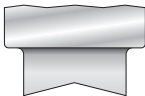
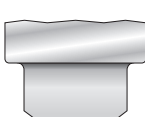
- Optima™ is standard on punch inserts
- Blade insert punches under .375" (9.53mm) in width will be shipped with no shear unless specified
- Double Valley Shear is recommended for widths of .187" (4.75mm) through .375" (9.53mm) and minimum lengths of 2.000" (50.8mm) when used for nibbling
SEE SHEAR CHART PAGE 18
- For widths less than .093" (2.36mm), consult the sales desk.
- Maximum width .750" (19mm)
- Inserts are available as obround to be used with rectangle dies, to eliminate "Saw Tooth Effect"

ALIGNING TOOLS

DESCRIPTION	CAT. NO.	PRICE
1-1/4" Station		
Upper Unit	494	
Lower Unit	495	
2" Station		
Upper Unit	3350	
Lower Unit	1841	
3-1/2" Station		
Upper Unit	3251	
Lower Unit	1948	



SHEAR OPTIONS

Type of Shear	Benefit	Limitation
 Rooftop	Best shear for punching at maximum tonnages.	When nibbling, bite must be 75% of punch dimension or excessive side loading will result.
 Concave or Double Concave	Best shear for nibbling because it inverts stresses.	The punch is less resistant to breakage when punching at high tonnages because of inverted stresses.
 Inverted Rooftop	Also good shear for nibbling because it inverts stresses.	More susceptible to breakage because of a sharp focal point for stresses—use great care.
 Double Valley Shear	Best shear for nibbling when shape is long and narrow.	The punch is less resistant to breakage when punching at high tonnages because of inverted stresses.
 JK Shear	A special punch tip shear that allows you to punch high strength materials with a reduced risk of breakage.	Can only be used on punches up to 1.000" (25.4mm) diameter or 'A' dimension†.

SPECIAL SHEARS					
Station	'A' Dimensions†	Inverted Rooftop Single Concave		Double Valley Double Concave	
		1/16" Shear [1.6mm]	3/32" Shear [2.4mm]	1/16" Shear [1.6mm]	1/8" Shear [3.2mm]
1-1/4"	Within 1.250" [31.75mm]				N/A
2"	Within 2.000" [50.8mm]				N/A
3-1/2"	Within 3.500" [88.9mm]				N/A

1/32" (.79mm) rooftop shear is given to all punches with 'A' dimension† greater than 2.000" (50.8mm) and width greater than .250" (6.35mm) at no extra charge.
All punches .250" (6.35mm) and under in width will be shipped with no shear unless specified.

† 'A' Dimension = Longest distance across shape.

NOTE: In some instances, inverted rooftop is substituted for single and double concave shears.

JK Shear	
Shape	Add On Price
Round	
Rectangle, Square, Hexagon, Single 'D', Double 'D'	
OB Round	
NOTE: If specified: 1/16" (1.6mm) maximum rooftop shear can be given at N/C for any round or shape in 2", 3-1/2", or 5" stations. For rooftop shear on any round or shape in 1-1/4" stations, add \$18.00.	

DIE CLEARANCE SELECTION INFORMATION			
Total Clearance			
Material	Minimum	Best	Maximum
Copper, 1/2 Hard	8 %	12 %	16 %
Brass, 1/2 Hard	6 %	11 %	16 %
Mild Steel	10 %	15 %	20 %
Steel 0.50C	12 %	18 %	24 %
Aluminum, Soft	5 %	10 %	15 %
Stainless Steel	15 %	20 %	25 %
% x Material Thickness = Total Clearance			

Punch Shims .060 Thick (1.5mm)						
	Individual			Package		
STATION	CAT. No.	QTY	PRICE	CAT. No.	QTY.	PRICE
1/2"	100	1		99	25	
1-1/4"	152	1		98	25	
2" Full Body	2096	1		2169	10	
3-1/2" Full Body	2088	1		2170	5	

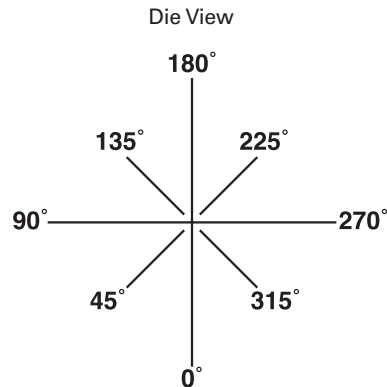
Die Shims .010 Thick (0.25mm)						
	Individual			Package		
STATION	Cat. No.	Qty.	PRICE	Cat. No.	QTY	PRICE
1-1/4"	2097	1		2209	25	
2"	2089	1		2210	10	
3-1/2"	2081	1		2211	5	

Die Shims .030 Thick (0.75mm)						
	Individual			Package		
STATION	Cat. No.	Qty.	PRICE	Cat. No.	QTY	PRICE
1-1/4"	2723	1		2724	25	
2"	2725	1		2726	10	
3-1/2"	2727	1		2728	5	

Die Shims .060 Thick (1.5mm)						
	Individual			Package		
STATION	Cat. No.	Qty.	PRICE	Cat. No.	QTY	PRICE
1-1/4"	2100	1		2173	25	
2"	2092	1		2174	10	
3-1/2"	2084	1		2175	5	

NON STANDARD KEYING

When ordering shapes at non-standard angles, use the diagram below.

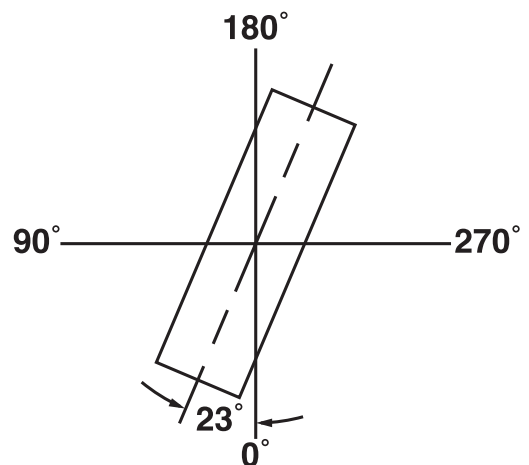


Front of Machine

Wilson Tool's keying diagram.

Example

Shape at 23°

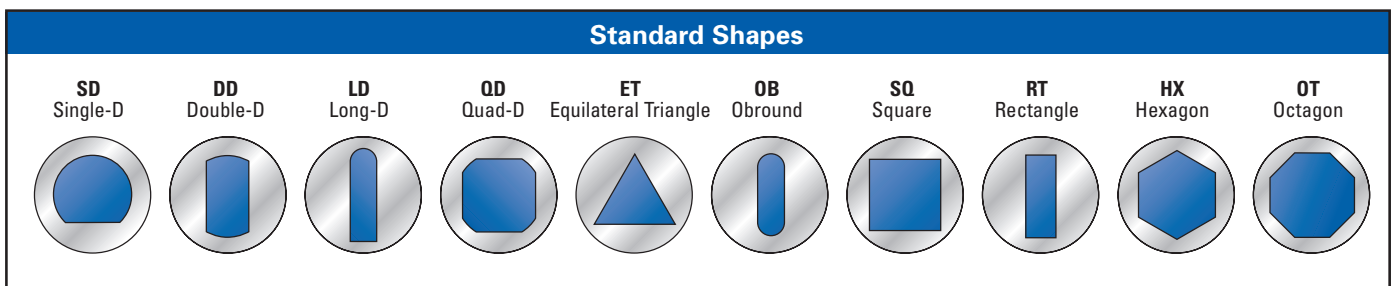
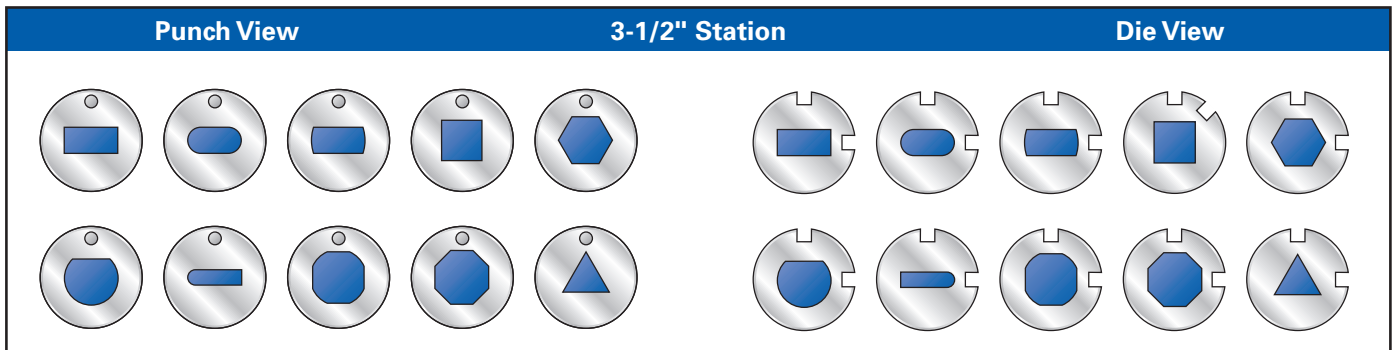
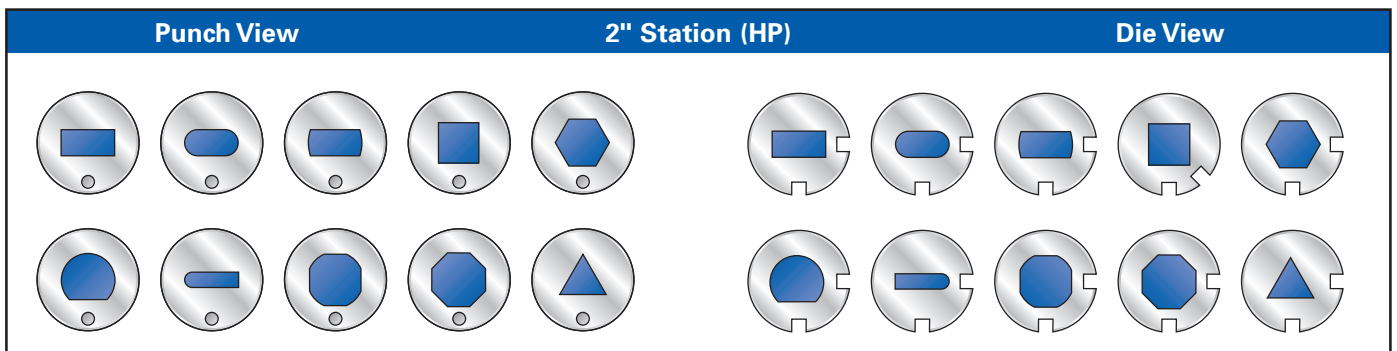
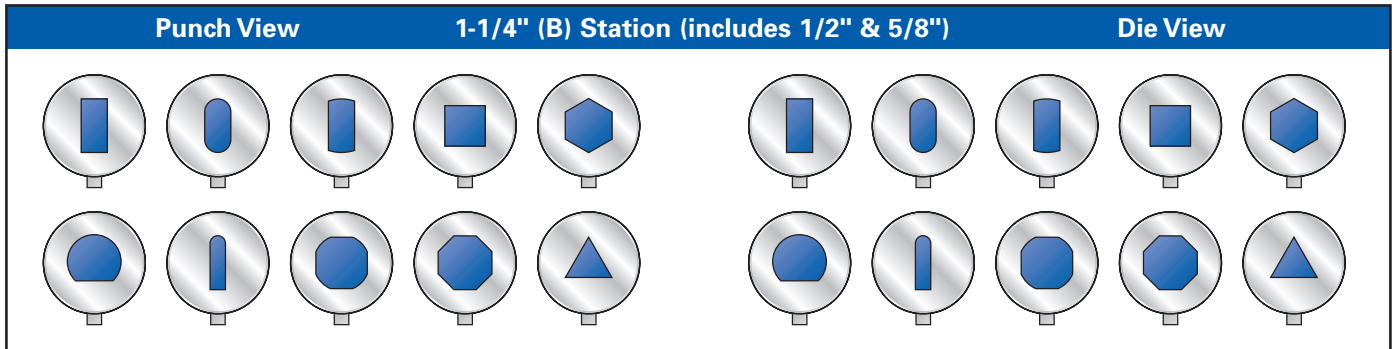


SHAPE at single angles other than standard			
Station	Punches	Dies	Guides or Strippers
1/2", 5/8" 1-1/4" 2" 3-1/2"	No Charge		No Charge Not Applicable Not Applicable Not Applicable
NOTE: No additional charge on 1-1/4" stations for shape at 45° increments)			

STANDARD keying, plus extra pins or keys for shapes at other than 45° increments			
Station	Punches	Dies	Guides or Strippers
1/2", 5/8"	Not Available	Not Available	Not Available
1-1/4"	Not Available	Not Available	Not Available
2"	\$___ per pin	\$___ per key	Not Available
3-1/2"	\$___ per pin	\$___ per key	Not Available

STANDARD keying, plus extra pins or keys for shapes at 45° increments					
Station	Punches		Dies		Guides or Strippers
	Available Options	Add On Price	Available Options	Add On Price	
1-1/4"	0° & 45°		0° & 45°		Closed round guide or 2 fitted guides required
1-1/4"	0° & 180°		0° & 180°		
2"	45° increments		45° increments		Not Available
3-1/2"	45° increments		45° increments		Not Available

STANDARD SHAPES & KEYING LOCATIONS



WILSON TOOL INTERNATIONAL

WORLD HEADQUARTERS

Wilson Tool International - United States

Tel (Free): 800-328-9646 | Tel: 651-286-6001
Fax (Free): 800-222-0002 | Fax: 651-286-5959
Email: sales@wilsontool.com

NORTH AMERICA

Wilson Tool - Canada

Punching and Stamping Division
Tel: 800-268-5573 | Fax: 800-668-9314
Email: punching@wilsontoolcanada.com

Wilson Tool - Canada

Press Brake Division
Tel: 800-268-4180 | Fax: 905-840-1032
Email: bending@wilsontoolcanada.com

Wilson Tool - Mexico

Tel: 52 (81) 8865-4820 | Fax: 52 (81) 8865-4599
Email: americalatina@wilsontool.com

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Wilson Tool - Argentina

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Email: ventasargentina@wilsontool.com

Milling Ferramentas - Brazil

Tel/Fax: 55 11 5621-2100
Email: vendas@milling.com.br

CHINA / PACIFIC RIM

Wilson Tool - China

Tel: +86 21 51089638 | Fax: +86 21 64422195
Email: sales@wilsontool.cn

EUROPE / MIDEAST / AFRICA

Wilson Tool - United Kingdom

Tel (Free): 0800-373748 | Tel: +44 1793 831818
Fax (Free): 0800-373758 | Fax: +44 1793 831945 or 46
Email: sales@wilsontool.eu.com

Wilson Tool - Germany

Tel (Free): 00800-9457668665 | Tel: +49 5723 747 0
Fax (Free): 00800-945766329 | Fax: +49 5723 747 10
Email: verkauf@wilsontool.eu.com

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Email: sales@wilsontool.dk

Wilson Tool - France

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Email: ventes@wilsontool.eu.com

Toolspress - Italy

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Email: info@toolspress.com