

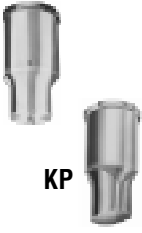

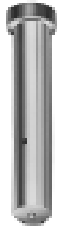
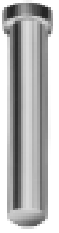










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Punches



						
KJ_	KP_	KJ KP	KPG	KJB & KPB	KUX	KWX KCX
Jektole® Punch	Regular Punch	Extended Range Punches	Countersink Punches	Punch Blanks	Straight Punches	Closepace Punches
2	2	4	4	5	5	5

Punches

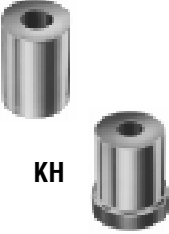

Standard Shapes

X	
L	
R	
K	
O	
J	
H	

Pilots

	
KPA	KPT
Positive Pick-up Pilot	Press Fit Pilots
6	6


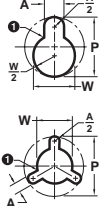

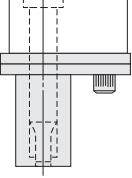
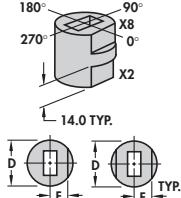
Matrixes

	
KD KL KH	KHU KDU
EDM Matrix Blanks	EDM Matrix Blanks
8	8

Retainers


PRT
True Location Headed Punch Retainers
7

Miscellaneous

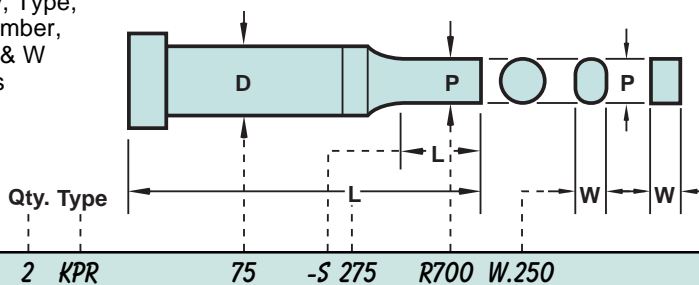
				
Eliminate Slug Pulling	Classified Shapes	Jektole® Data	Urethane Strippers & Stripping Units	Locking Devices
9	10	12	12	13

Catalog Ordering System

The Catalog Designation completely defines the product, including shape, dimensions, tolerances and concentricity.

How to Order

Specify Qty, Type, Catalog Number, and P or P & W Dimensions



Example:

Line K for Kommercial
Product P for Punch (Regular)
Shape R for Rectangle

75 Shank Dia.

S Point Length -S

275 Overall Length L

2	KPR	75	-S	275	R700	W.250	KPR	75	-S	275	R700	W.250
						Type	Catalog Number	Dimensions as Specified				

All Trilateral Designators are a Trademark of Dayton Progress Corporation.

Punches

FDS
FIRM DELIVERY SCHEDULE
Round 1 Day, Shape 3 Days

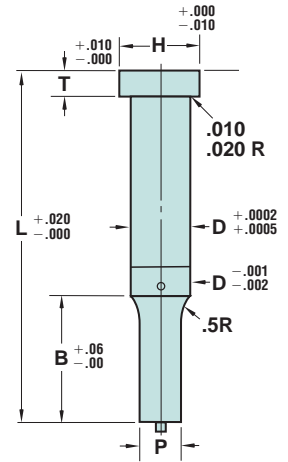
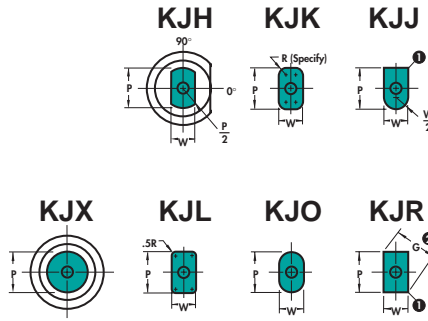
Jektole® Punches

Manufactured to ANSI B94.14

Steel: A2, M2 Rc 60-63
Heads Rc 40-55



Type **KJ**



Round P $\pm \begin{matrix} .0005 \\ -.0000 \end{matrix}$ \odot .0005 P to D
Shape P,W $\pm .0005$ \odot .001 P to D

Shank		Head Dim.		Point Length B				Round		Shape			L					
D	Code	H	T	ANSI STD.	Alternate				Min. XP	Range P	Min. XW	Min. W	Max. P/G	Code	1.50	1.75	2.00	2.25
					B	C	D	E										
.1875	18	.312	.125	.43	.75				.050	.062-.1874	.062	.062-.1875	18	150	175	200	225	
.2500	25	.375	.125	.50	.75				.080	.093-.2499	.080	.093-.2500	25	150	175	200	225	
.3125	31	.438	.125	.56	.75	1.00*			.115	.125-.3124	.115	.125-.3125	31	150	175	200	225	
.3750	37	.500	.188	.62	.75	1.00			.158	.187-.3749	.158	.187-.3750	37	150	175	200	225	
.5000	50	.625	.188	.81		1.00			.158	.250-.4999	.158	.187-.5000	50	150	175	200	225	
.6250	62	.750	.250	.93			1.25		.235	.375-.6249	.235	.250-.6250	62	150	175	200	225	
.7500	75	.875	.250	1.06			1.25		.300	.500-.7499	.235	.312-.7500	75	150	175	200	225	
1.0000	100	1.125	.250	1.25			1.50		.400	.687-.9999	.235	.375-1.0000	100	150	175	200	225	

* Not available on 1.50 overall length.

1 Sharp corners are typical. To assure proper clearance, Dayton will provide standard broken corners if matrix is ordered with punch to eliminate interference with matrix fillet when total clearance is .003 or less.

2 Check your P&W dimensions to be sure the diagonal G does not exceed the max. shown.

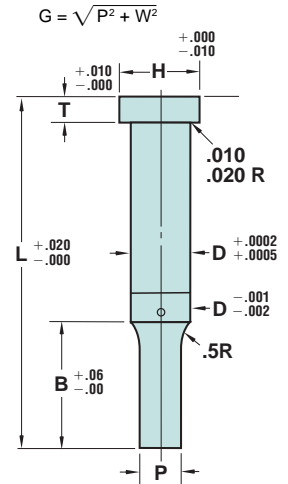
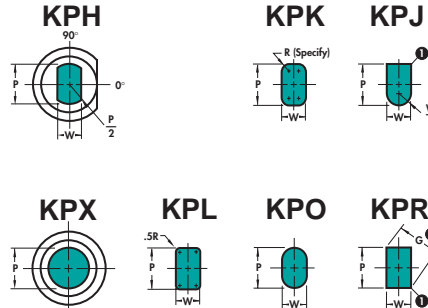
Regular Punches

Manufactured to ANSI B94.14

Steel: A2, M2 Rc 60-63
Heads R 40-55



Type **KP**



Round P $\pm \begin{matrix} .0005 \\ -.0000 \end{matrix}$ \odot .0005 P to D
Shape P,W $\pm .0005$ \odot .001 P to D

Shank		Head Dim.		Point Length B				Round		Shape			L					
D	Code	H	T	ANSI STD.	Alternate				Min. XP	Range P	Min. XW	Min. W	Max. P/G	Code	1.50	1.75	2.00	2.25
					B	C	D	E										
.1875	18	.312	.125	.43	.75				.042	.062-.1874	.062	.062-.1875	18	150	175	200	225	
.2500	25	.375	.125	.50	.75				.062	.062-.2499	.062	.062-.2500	25	150	175	200	225	
.3125	31	.438	.125	.56	.75	1.00*			.062	.093-.3124	.062	.093-.3125	31	150	175	200	225	
.3750	37	.500	.188	.62	.75	1.00	1.25**		.062	.125-.3749	.080	.125-.3750	37	150	175	200	225	
.5000	50	.625	.188	.81		1.00	1.25		.125	.187-.4999	.125	.187-.5000	50	150	175	200	225	
.6250	62	.750	.250	.93			1.25	1.50***	.235	.375-.6249	.235	.250-.6250	62	150	175	200	225	
.7500	75	.875	.250	1.06			1.25	1.50	.300	.500-.7499	.235	.312-.7500	75	150	175	200	225	
1.0000	100	1.125	.250	1.25			1.50	1.50	.400	.687-.9999	.235	.375-1.0000	100	150	175	200	225	

* Not available on 1.50 overall length.

** Not available on 1.75 overall length.

*** Not available on 2.00 overall length.

Min. XP, XW applies to S point length.

1 Sharp corners are typical. To assure proper clearance, Dayton will provide standard broken corners if matrix is ordered with punch to eliminate interference with matrix fillet when total clearance is .003 or less.

2 Check your P&W dimensions to be sure the diagonal G does not exceed the max. shown.

$$G = \sqrt{P^2 + W^2}$$

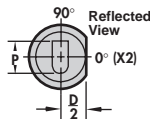
How to Order:

Qty Type D L P
6 KJX 37 C225 P.204

Key Flats

The standard location for a key flat is parallel to the P dimension.

See page 13 for more information.



L								Jektrole Group
2.50	2.75	3.00	3.25	3.50	3.75	4.00		
250								J2
250								J3
250	275	300						J4
250	275	300						J6
250	275	300	325	350				J6
250	275	300	325	350				J9
250	275	300	325	350	375	400		J9
250	275	300	325	350	375	400		J9

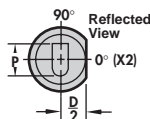
How to Order:

Qty Type D L P W Key Flat Steel
9 KPL 100 E350 P.872 W.401 X2 M2

Key Flats

The standard location for a key flat is parallel to the P dimension.

See page 13 for more information.



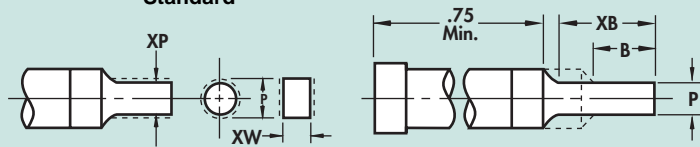
L							
2.50	2.75	3.00	3.25	3.50	3.75	4.00	
250							
250							
250	275	300					
250	275	300					
250	275	300	325	350			
250	275	300	325	350			
250	275	300	325	350	375	400	
250	275	300	325	350	375	400	

Standard Alterations

Standard alterations are the ranges beyond those sizes listed in the catalog which can be manufactured for a slight additional charge.

XP, XW P & W Dimensions Smaller than Standard

XB Point Length Longer than Standard



Point Length	.500-.750	.751-1.000	1.001-1.250	1.251-1.500	1.501-1.625	.500-.750	.751-1.000	1.001-1.250	1.251-1.500	1.501-1.625
Code	Type	Min. P (Rounds)				Min. W (Shapes)				
18	KJ_ KP_	.050 .042	.058 .058	.075 .075	.093 .093	.062 .062	.093 .062	.093 .093	.125 .125	
25	KJ_ KP_	.080 .062	.080 .062	.080 .093	.093 .093	.080 .062	.093 .062	.093 .093	.125 .125	
31	KJ_ KP_	.115 .062	.115 .062	.115 .093	.125 .125	.115 .062	.115 .093	.125 .093	.172 .125	.195 .195
37	KJ_ KP_	.158 .062	.158 .062	.158 .093	.158 .125	.158 .080	.158 .109	.158 .125	.172 .125	.195 .195
50	KJ_ KP_		.158 .125	.158 .125	.158 .125		.158 .125	.158 .141	.172 .172	.195 .195
62	KJ_ KP_		.235 .235	.235 .235	.235 .235		.235 .235	.235 .235	.235 .235	.235 .235
75	KJ_ KP_		.300 .300	.300 .300	.300 .300		.235 .235	.235 .235	.235 .235	.235 .235
100	KJ_ KP_		.400 .400	.400 .400	.400 .400		.235 .235	.235 .235	.235 .235	.235 .235

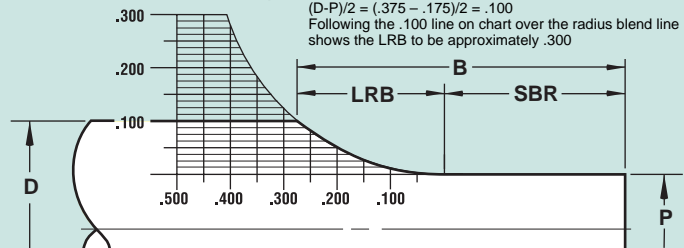
SBR

Straight Before Radius

To determine Length of Radius Blend (LRB)

1. Calculate (D-P)/2
2. Find (D-P)/2 value on left side of chart
3. Follow line over to intersection point on radius blend line
4. Read LRB value on bottom of chart

Example: D = .375 P = .175
(D-P)/2 = (.375 - .175)/2 = .100
Following the .100 line on chart over the radius blend line shows the LRB to be approximately .300



XL Overall Length Shortened (1.00 min.)

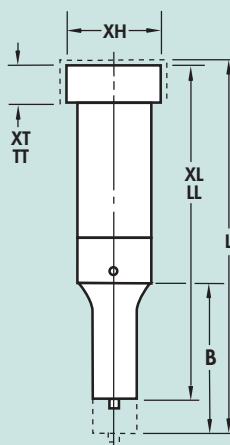
Stock removal from point end which shortens B length.

LL Precision Overall Length
Same as XL except overall length is held to ± .001.

XT Thinner Head than Standard
Stock removal from head end which shortens overall length.

TT Precision Head Thickness
Same as XT except head thickness tolerance is held to ± .0005.

XH Reduced Head Diameter
Minimum head diameter equals D + .000 - .001.



XN DayTride® A unique wear-resistant surface treatment for M2 only.

XNT DAYTiN® Titanium Nitride coating for extra wear. For M2 only.

XK No Side Hole
For air ejection. No cost.

XJ Smaller Jektrole Components. See page 12.

Extended Range Punches

Steel: M2 Rc 60-63



How to Order:

Specify: Quantity
Type
Shank & Length Codes
P or P&W Dimensions
Steel

3 KPR 150-E250 P1.206, W.582 M2

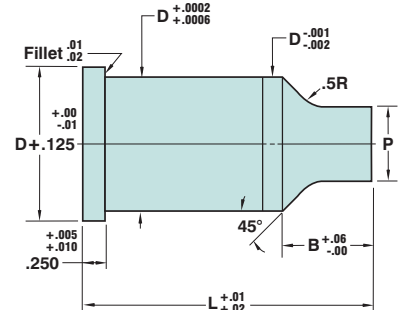
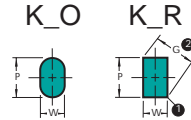
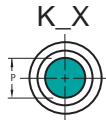
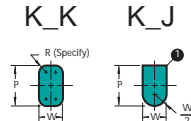
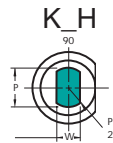


Type
KJ_



Type
KP_

Shown with optional Key Flat.



A step may exist to maintain shank length.

Round P $\pm .0005$ P to D
Shape P,W $\pm .0005$ P to D

Shank		Point Length B	Round Range P	Shape Min. W Max. P/G	L									
D	Code				2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00		
1.250	125	(STD.) 1.25	.625-1.2499	.282-1.2500										
1.500	150		.750-1.4999	.300-1.5000										
1.750	175		1.000-1.7499	.350-1.7500	225	250	275	300	325	350	375	400		
2.000	200		1.187-1.9999	.400-2.0000										
2.250	225		1.375-2.2499	.450-2.2500										
2.500	250		1.625-2.4999	.500-2.5000										
1.250	125	(ALT.) E 1.50	.625-1.2499	.282-1.2500										
1.500	150		.750-1.4999	.300-1.5000										
1.750	175		1.000-1.7499	.350-1.7500										
2.000	200		1.187-1.9999	.400-2.0000										
2.250	225		1.375-2.2499	.450-2.2500		250	275	300	325	350	375	400		
2.500	250		1.625-2.4999	.500-2.5000										

See Page 3 for Standard Alterations

1 Sharp corners are typical. To assure proper clearance, Dayton will provide standard broken corners if matrix is ordered with punch to eliminate interference with matrix fillet when total clearance is .003 or less.

2 Check your P&W dimensions to be sure the diagonal G does not exceed the max. shown.

$$G = \sqrt{P^2 + W^2}$$

Punches

Countersink Punches

Precision Countersink Punches have an accurate ($\pm .001$ ") length from under the head to the bottom of the countersink for precise timing of the die.



Steel: A2, M2 Rc 60-63
Heads Rc 40-55

Round P $\pm .0005$ P to D

How to Order:

Qty Type D L P S
6 KPG 75 300 P.275 S.450



Type
KPG

Shank		Head Dim.		S	Range P	L									
D	Code	H	T			1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50	4.00	
.2500	25	.375	.125	Specify in .001" increments	.050-.125	150	175	200	225	250					
.3125	31	.438	.125		.076-.140	150	175	200	225	250	275				
.3750	37	.500	.188		.090-.187		175	200	225	250	275	300			
.5000	50	.625	.188		.141-.250			200	225	250	275	300	350		
.6250	62	.750	.250		.200-.281			200	225	250	275	300	350		
.7500	75	.875	.250		.264-.395				225	250	275	300	350	400	
1.0000	100	1.125	.250		.374-.500					250	275	300	350	400	

Punch Blanks

Jektole®/Regular



Steel: A2, M2 Rc 60-63
Heads Rc 40-55



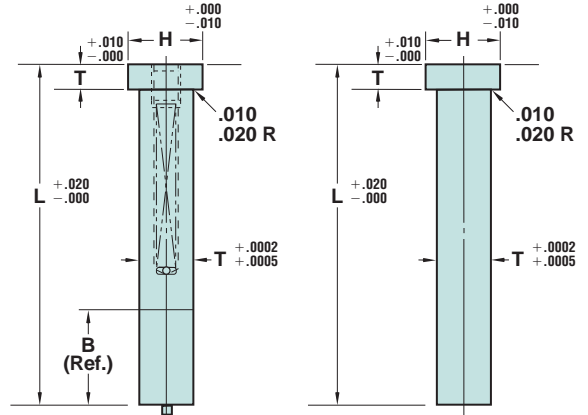
Type **KJB**



Type **KPB**

How to Order:

Qty	Type	D	L
9	KJB	37	8200



	Shank		Head Dim.		Point Length B				L								Jektole Group		
	D	Code	H	T	ANSI STD.	Alternate				1.50	1.75	2.00	2.25	2.50	2.75	3.00		3.50	4.00
						B	C	D	E										
KJB	.1875	18	.312	.125	.43	.75				150	175	200	225	250					J2
	.2500	25	.375	.125	.50	.75				150	175	200	225	250					J3
	.3125	31	.438	.125	.56	.75	1.00*			150	175	200	225	250	275	300			J4
	.3750	37	.500	.188	.62	.75	1.00				175	200	225	250	275	300			J6
	.5000	50	.625	.188	.81		1.00					200	225	250	275	300	350		J6
	.6250	62	.750	.250	.93		1.25				200	225	250	275	300	350		J9	
	.7500	75	.875	.250	1.06		1.25					225	250	275	300	350	400	J9	
	1.0000	100	1.125	.250	1.25		1.50						250	275	300	350	400	J9	
KPB	.1875	18	.312	.125						150	175	200	225	250					NA
	.2500	25	.375	.125						150	175	200	225	250					
	.3125	31	.438	.125						150	175	200	225	250	275	300			
	.3750	37	.500	.188							175	200	225	250	275	300			
	.5000	50	.625	.188								200	225	250	275	300	350		
	.6250	62	.750	.250							200	225	250	275	300	350			
	.7500	75	.875	.250								225	250	275	300	350	400		
	1.0000	100	1.125	.250									250	275	300	350	400		

*Not available on 1.50 overall length.

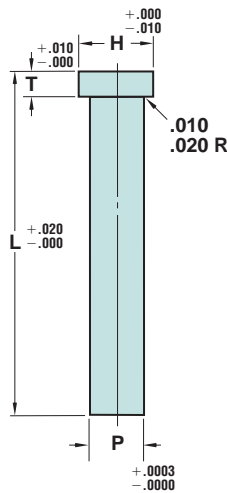
See Page 3 for Standard Alterations

Straight Punches

Steel: A2, M2 Rc 60-63
Heads Rc 40-55



Type **KUX**



How to Order:

Qty	Type	L	P
18	KUX	150	P.272

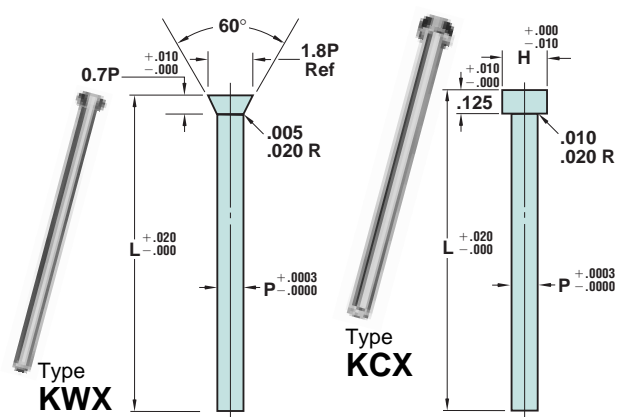
Head Dim.		Range P	Overall Length L						
H	T		1.50	1.75	2.00	2.25	2.50	2.75	3.00
.312	.125	.1250-.1880	150	175	200	225	250		
.375	.125	.1881-.2500	150	175	200	225	250		
.438	.125	.2501-.3130	150	175	200	225	250	275	300
.500	.188	.3131-.3750		175	200	225	250	275	300

CloSPACE Punches

Steel: M2 Rc 60-63
Heads Rc 40-55 (KCX)

How to Order:

Qty	Type	L	P
25	KCX	175	P.120



KCX Head H	Range P	Overall Length L				
		1.50	1.75	2.00	2.25	2.50
.125	.0400-.0630	150	175	200	225	250
.156	.0631-.0940	150	175	200	225	250
.188	.0941-.1250	150	175	200	225	250
.219	.1251-.1570	150	175	200	225	250
.250	.1571-.1880	150	175	200	225	250
.281	.1881-.2190	150	175	200	225	250
.312	.2191-.2500	150	175	200	225	250

How to Order:

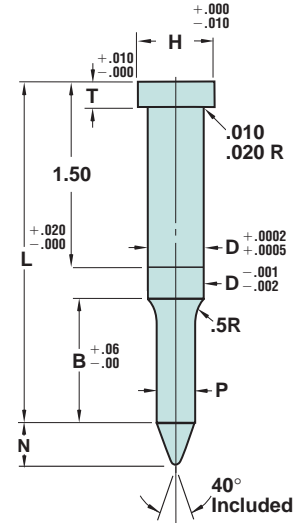
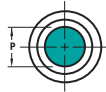
Qty	Type	D	L	P	XL	Steel
4	KPA	100	525	P.875	5.100	M2

Positive Pick-Up Pilots

Order any length from 2.50 through 5.50

Steel: A2, M2 Rc 60-63
Heads Rc 40-55

Type
KPA



Round P $\begin{matrix} +.0005 \\ -.0000 \end{matrix}$ P to D

Shank		Head Dim.		Std. B	Round			Length L													
D	Code	H	T		Min. XP	Range P	N	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	
.3750	37	.500	.188	.62	.092	.186- .375	.37	250	275	300	325	350	375	400							
.5000	50	.625	.188	.81	.124	.249- .500	.50	250	275	300	325	350	375	400	425	450	475	500	525	550	
.6250	62	.750	.250	.94	.234	.311- .625	.62	250	275	300	325	350	375	400	425	450	475	500	525	550	
.7500	75	.875	.250	1.06	.299	.436- .750	.75	250	275	300	325	350	375	400	425	450	475	500	525	550	
1.0000	100	1.125	.250	1.25	.399	.749- 1.000	1.00			300	325	350	375	400	425	450	475	500	525	550	

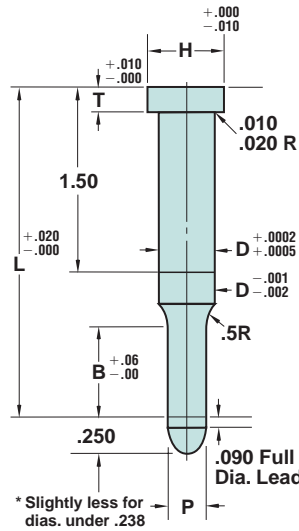
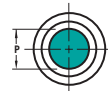
XL available at no charge within catalog range.
Standard B length maintained.

Regular Pilots

Manufactured to ANSI B94.14

Steel: A2, M2 Rc 60-63
Heads Rc 40-55

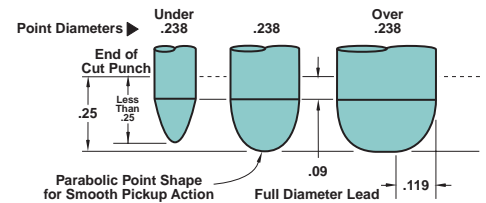
Type
KPT



* Slightly less for dias. under .238

How to Order:

Qty	Type	D	L	P	Steel
2	KPT	50	C250	P.390	M2



Shank		Head Dim.		Point Length B				Round		Length L												
D	Code	H	T	ANSI STD	Alternate				Min. XP	Range P	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
					B	C	D	E														
.1875	18	.312	.125	.43	.75				.041	.061- .1875	150	175	200	225	250							
.2500	25	.375	.125	.50	.75				.051	.092- .2500	150	175	200	225	250							
.3125	31	.438	.125	.56	.75	1.00*			.061	.092- .3125	150	175	200	225	250	275	300					
.3750	37	.500	.188	.62	.75	1.00	1.25**		.061	.124- .3750		175	200	225	250	275	300					
.5000	50	.625	.188	.81		1.00	1.25		.124	.186- .5000			200	225	250	275	300		350			
.6250	62	.750	.250	.93		1.25	1.50***		.234	.374- .6250			200	225	250	275	300		350			
.7500	75	.875	.250	1.06		1.25	1.50		.299	.499- .7500				225	250	275	300		350		400	
1.0000	100	1.125	.250	1.25		1.50	1.50		.399	.686- 1.0000					250	275	300		350		400	

* Not available on 1.50 overall length.
** Not available on 1.75 overall length.
*** Not available on 2.00 overall length.

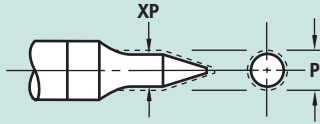
Min. XP applies to S point average

Standard Alterations

Standard alterations are the ranges beyond those sizes listed in the catalog which can be manufactured for a slight additional charge.

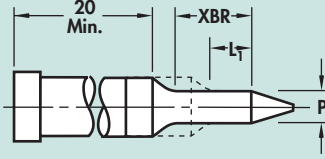
All alterations shown on this page apply equally to both Positive Pick-Up and regular pilots.

XP, XW P & W Dimensions Smaller than Standard



Point Length		.500-.750	.751-1.000	1.001-1.251	1.251-1.501	1.501-1.625
Code	Type	Min. P (Rounds)				
18	KPT	.041	.057	.074	.092	
25	KPT	.061	.061	.079	.092	
31	KPT	.061	.061	.092	.092	.124
37	KPT	.061	.061	.092	.124	.124
50	KPT		.124	.124	.124	.124
62	KPT		.234	.234	.234	.234
75	KPT		.299	.299	.299	.299
100	KPT		.399	.399	.399	.399

XB Point Length Longer than Standard



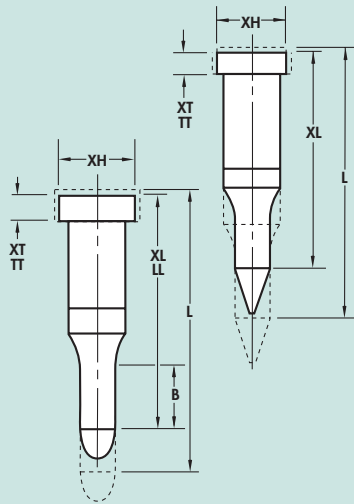
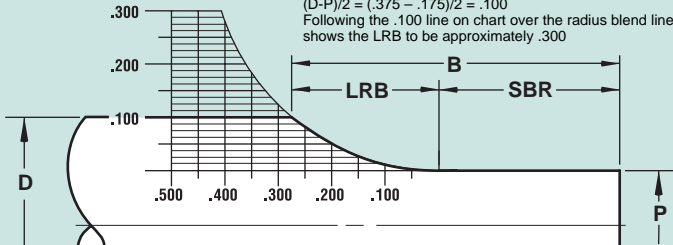
Point Length		.500-.750	.751-1.001	1.001-1.251	1.251-1.501	1.501-1.625	1.626-2.000	2.001-2.501	2.501-3.000
Code	Type	Min. P (Rounds)							
37	KPA	.061	.061	.092	.124	.124	.186	.249	.311
50	KPA		.124	.124	.124	.124	.186	.249	.311
62	KPA		.234	.234	.234	.234	.234	.311	.374
75	KPA		.299	.299	.299	.299	.299	.342	.405
100	KPA		.399	.399	.399	.399	.399	.399	.436

SBR

Straight Before Radius

- To determine Length of Radius Blend (LRB)
1. Calculate (D-P)/2
 2. Find (D-P)/2 value on left side of chart
 3. Follow line over to intersection point on radius blend line
 4. Read LRB value on bottom of chart

Example: D = .375 P = .175
 $(D-P)/2 = (.375 - .175)/2 = .100$
 Following the .100 line on chart over the radius blend line shows the LRB to be approximately .300



XL Overall Length Shortened (1.00 min.)

For KPT, stock removal from point end which shortens B length.

For KPA, stock removal from point end, standard B length maintained.

XT Thinner Head than Standard

Stock removal from head end which shortens overall length.

TT Precision Head Thickness

Same as XT except head thickness tolerance is held to $\pm .0005$.

XH Reduced Head Diameter

Minimum head diameter equals $D + .000 - .001$.

XN DayTride® A unique wear-resistant surface treatment for M2 only.

XNT DAYTiN® Titanium Nitride coating for extra wear. For M2 only.

TRUE LOCATION™ Retainers

Retainer for Pilots

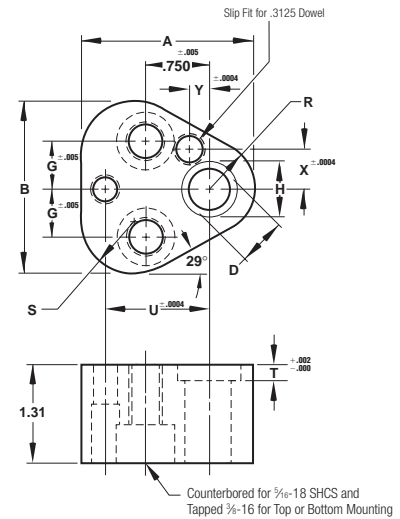
Pilots are a critical element in determining the quality of a stamping. They are the principle locating device. As such, pilots need to be mounted to avoid deflection. PRT Retainers are thicker than other retainers, giving more support, resulting in accurate location of the strip.

Off-the-shelf delivery and ready to mount, the Dayton PRT Retainer saves time and money over building your own retainers. Build your next die with standard Dayton PRT Retainers.



Type **PRT**
FOR ROUND PILOTS
Thicker for more stability

RETAINER INCLUDES:
• 2 Dowels
• 2 Screws



How to Order:

Quantity 3 Catalog No. PRT62

Catalog Number = PRT+Code

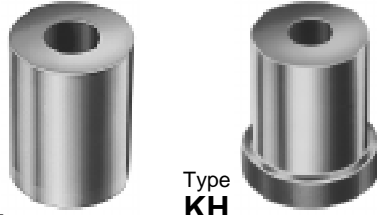
CODE	D	A	B	G	H	R	S	T	U	X	Y
50	.5000	2.00	1.97	.562	.66	.50	.60	.188	1.18	.472	.256
62	.6250	2.12	2.09	.625	.78	.56	.66	.250	1.25	.532	.236
75	.7500	2.37	2.34	.688	.91	.69	.79	.250	1.32	.650	.197

Matrixes

Headless/Headed

FDS[®] 3 Days (Up to 1.500 Dia.)
 FIRM DELIVERY SCHEDULE 5 Days (1.750 and up)

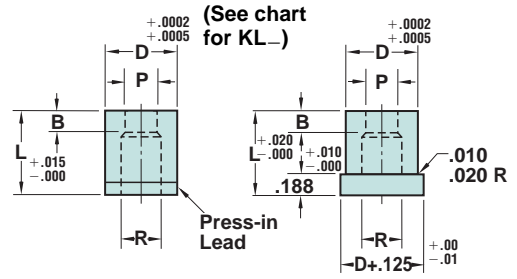
Manufactured to ANSI B94.28
 Steel: A2, M2 Rc 60-63



D ≅ 1.75 ^{+0.002}/_{+0.006}
 Round P ^{+0.005}/_{+0.000} © .0005 P to D
 Shape P,W ^{+0.001}/_{+0.000} © .001 P to D

Type **KD_**
 KL_ (A2 only)
 (Headless)

Type **KH_**
 (Headed)



Body		KL Only Tol. D	Code	Round		Shape		Min. Max. P/G		Overall Length L							
Type	Dia.			Min. B	Max. R	Range P	Min. W	Max. P/G	.75	.87	.93**	1.00	1.12	1.25	1.37	1.50	
KD_	.2500	+0.0005 +0.0008	25	.156	.156	.064-	.135	—	—	75	87	93	100	112	125	137	
KL_	.3100		31	.156	.191	.064-	.171	.048-	.171	75	87	93	100	112	125	137	
KH_	.3750		37	.156	.228	.064-	.195	.048-	.195	75	87	93	100	112	125	137	150
	.4300		43	.156	.281	.064-	.250	.048-	.250	75	87	93	100	112	125	137	150
	.5000		50	.156	.312	.064-	.285	.064-	.285	75	87	93	100	112	125	137	150
	.6250	+0.0010 +0.0014	62	.187	.391	.136-	.365	.095-	.365	75	87	93	100	112	125	137	150
	.7500		75	.187	.468	.136-	.435	.118-	.435	75	87	93	100	112	125	137	150
	.8750		87	.187	.578	.276-	.545	.127-	.545	75	87	93	100	112	125	137	150
	1.0000		100	.250	.703	.356-	.675	.158-	.675	75	87	93	100	112	125	137	150
	1.2500	+0.0015	125	.250	.828	.500-	.800	.189-	.800	75	87	93	100	112	125	137	150
	1.5000	+0.0020	150	.250	1.094	.616-	1.050	.252-	1.050	75	87	93	100	112	125	137	150
KD_	.7500		175	.312	1.430	.750-	1.400	.190-	1.400	75	87	93	100	112	125	137	150
	2.0000		200	.312	1.630	.875-	1.600	.252-	1.600	75	87	93	100	112	125	137	150
	2.2500		225	.312	1.830	.000-	1.800	.314-	1.800	75	87	93	100	112	125	137	150
	2.5000		250	.312	2.030	.125-	2.000	.377-	2.000	75	87	93	100	112	125	137	150
	2.7500		275	.312	2.230	.250-	2.200	.439-	2.200	75	87	93	100	112	125	137	150

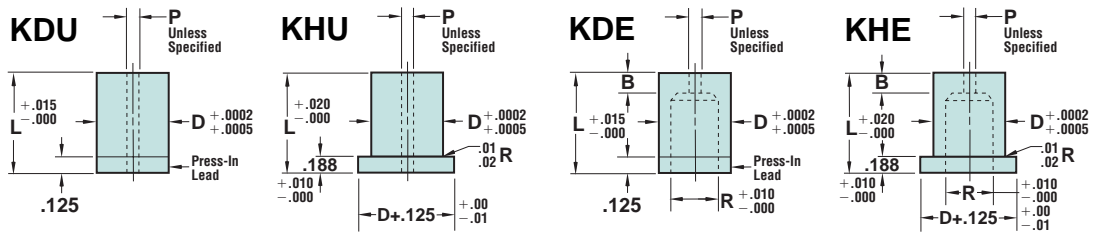
**Headless Only

EDM Matrix Blanks

FDS[®] 1 Day (Std. P)
 FIRM DELIVERY SCHEDULE 3 Days (Larger P)
 5 Days (Larger Dias.) 1.750 and — any P



D ≅ 1.75 ^{+0.002}/_{+0.006}
 Round P ± .005 © .005 P to D



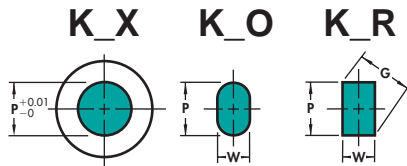
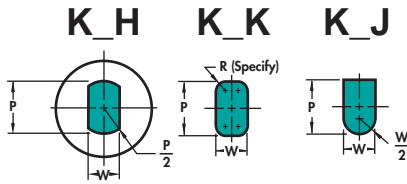
Body		K_U			K_E			Overall Length L							
Dia.	Code	Std. P	Optional P		Std. P	Max. B	R	.75	.87	.93*	1.00	1.12	1.25	1.37	1.50
.2500	25	.031	.020	—	—	—	—	75	87	93	100	112	125	137	
.3125	31	.031	.020	—	.032	.25	.191	75	87	93	100	112	125	137	
.3750	37	.031	.020	—	.032	.25	.228	75	87	93	100	112	125	137	150
.4375	43	.031	.020	—	.032	.25	.281	75	87	93	100	112	125	137	150
.5000	50	.062	.020	.031	.032	.25	.312	75	87	93	100	112	125	137	150
.6250	62	.062	.020	.031	.093	.25	.391	75	87	93	100	112	125	137	150
.7500	75	.062	.020	.031	.093	.31	.468	75	87	93	100	112	125	137	150
.8750	87	.062	.020	.031	.093	.31	.578	75	87	93	100	112	125	137	150
1.0000	100	.062	.020	.031	.093	.31	.703	75	87	93	100	112	125	137	150
1.2500	125	.062	.020	.031	.125	.37	.828	75	87	93	100	112	125	137	150
1.5000	150	.062	.020	.031	.125	.37	1.094	75	87	93	100	112	125	137	150
1.7500	175	.125	—	—	.125	.37	1.430	75	87	93	100	112	125	137	150
2.0000	200	.125	—	—	.125	.37	1.630	75	87	93	100	112	125	137	150
2.2500	225	.125	—	—	.125	.37	1.830	75	87	93	100	112	125	137	150
2.5000	250	.125	—	—	.125	.37	2.030	75	87	93	100	112	125	137	150
2.7500	275	.125	—	—	.125	.37	2.230	75	87	93	100	112	125	137	150

Standard "P" will be provided unless otherwise specified.

*Headless Only

How to Order:

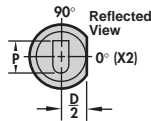
Qty	Type	D	L	P	W	Key Flat	Steel
5	KDR	87	100	P.394	W.209	X2	A2
3	KHX	37	125	P.175			M2



Key Flats

The standard location for a key flat is parallel to the P dimension.

See page 13 for more information.



*Dayton Slug Control is Easy to Order

Dayton Slug Control is as easy as specifying a catalog number. Add the information that is unique to your application to the matrix catalog number.

See the example below:

You must specify **XSC** for alteration, **material thickness** and **clearance per side** as a percent.

Catalog Number				Your Specs			
Inch	KDX	62-100	P.250	XSC	MT.0125	CS 5	
	Type	D	L	P	Alt. Code	Mat'l Th'kness (inches)	Clear Per Side (%)

This information will be entered into our computer to generate a program to alter the land of the matrix and end your slug pulling problems forever! Call us or contact your Dayton distributor for more information.

There are two types of round EDM matrix Blanks to choose from:

1. Type KDU and KHU blanks are provided with a small straight through hole. Commonly used for wire and vertical EDM operations, there are basically two advantages to this type of blank: 1. In wirecutting, a taper relief can be cut instead of a round straight relief. 2. In conventional EDM applications you can "tailor" the size of the relief to the shape you are cutting.

2. Type KDE and KHE blanks are for use with conventional (vertical) EDM machines. The hole (P) is to introduce dielectric to the spark gap for flushing away eroded particles of steel.

Relief hole (R) provides sufficient clearance for slug removal during the stamping process in both types.

Any Size Start or Flush Hole

For one day delivery use the standard or optional "P" dimensions shown in the chart. If no "P" dimension is specified the standard (Std.) will be provided. If a larger hole is needed simply specify "XP" and give the hole size.

See How To Order example.

Standard Alterations

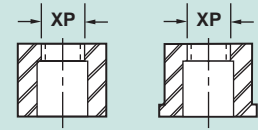
Standard alterations are the ranges beyond those sizes listed in the catalog which can be manufactured for a slight additional charge. Does not add to delivery unless noted.

XP P Dimension Larger than Standard

How to Order:

KDO 50-125 X P.300 XW.070

KHX 50-125 X P.343



Body D	25	31	37	43	50	62	75	87	100	125	150
Max. P/G	.171	.206	.250	.293	.344	.453	.562	.656	.750	.935	1.202

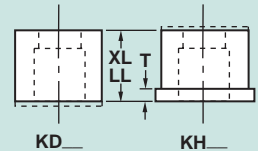
XL Overall Length Shortened

Stock removal does not alter land length on KD_ or head thickness on KH_

Minimum overall length:

Headless = .25

Head type = .25+T



LL Precision Overall Length

Same as XL except overall length is held to $\pm .001$.

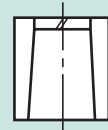
How to Order:

KDX 62-87 P.312 XL .825

KHX 62-125 P.250 LL 1.230

XSC Slug Control eliminates slug pulling

(See order example at left.)

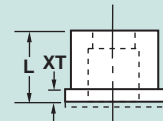


XT Reduced Head Thickness

Stock removal from head end which shortens overall length (L).

How to Order:

KHX 62-100 P.275 XT .175

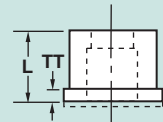


TT Precision Head Thickness

Same as XT except that head thickness is held to $\pm .0005$.

How to Order:

KHX 75-125 P.371 TT .165

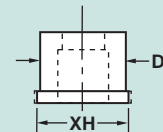


XH Reduced Head Diameter

Minimum head diameter equals $D + .000 - .001$.

How to Order:

KHX 50-100 P.125 XH .600



XN DayTride® A unique wear-resistant surface treatment for M2 only.

How to Order:

KDX 62-112 P.295 M2 XN

XNT DAYTiN® Titanium Nitride coating for extra wear.

For M2 only.

How to Order:

KHX 62-112 P.295 M2 XNT

Classified Shapes

Orientation & Locking

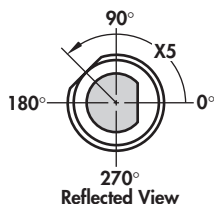
The Locking Device orientation is standard at 0°.

X2 Standard Location:

Standard location of key flat is at 0°. Alternate locations of 90°, 180° or 270° can be specified at no extra cost.

X5 Custom Location:

Custom Location of key flat can be specified as X5 and degrees from 0°.



Views

Views are: reflected view of punch and plan view of matrix.

Corner Dimensions

Dimensions should be to the theoretical sharp corners for C22, C24, C25, C34, C61 and C88. Some reduction of these dimensions will result from fitting the punch and matrix under conditions where clearance is .0015 or less per side.

Fillets matched with sharp corners reduces the clearance per side (Δ). If the clearance is $.0015\Delta$ or less, DAYTON will break sharp corners when the punches and matrixes are ordered together. This reduces assembly time and the risk of the edge breaking during operation. All back-holes are counterbored.

Shape centers

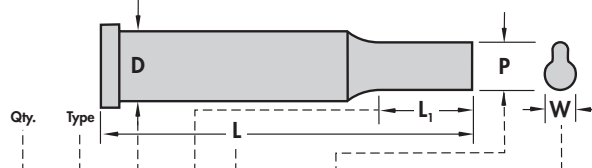
Shapes are centered on punch shanks as shown. Shaped in matrixes are also centered as shown with the exception of shapes C22 and C34. Due to the clearance, the P dimension on these shapes will not be centered.

Simplified Specifications...

83 Common Shapes — No Detailing Required

How to Order:

Specify: Quantity
Catalog Number
Classified Shape Code
Length
Point or Hole Dimensions



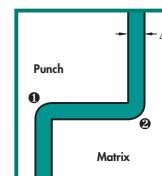
10 KPC 37-S 250 C10 P.350, W.200

Example: Matrixes

10 KHC 62-87 C10, P.350, W.200 Δ .005

Clearance

To assure proper relationship with punches, it is necessary to specify punch dimensions and clearance per side (Δ) when ordering matrixes.



DAYTON will assure the proper clearance of matrixes to the punch when ordered in this manner.

Notes 1 and 2 — Fillets and Sharp Corners

Normal Grinding methods produce:

- 1 .007 max fillet on the punch...matching corner sharp on the matrix.
- 2 .007 max fillet on the matrix...matching corner sharp on the punch.

90°

Flatted Rounds

C10**

C11**

C33

C52

Mono Lobes

C13

C53

C54

C55

C14

C56

C57

C58

Miscellaneous

C40

C41

C42*

C43*

C93

C64*

C65*

C27

C28**

C29

C16

C34*

Triangles/Trapezoids

C22*

C23

C24*

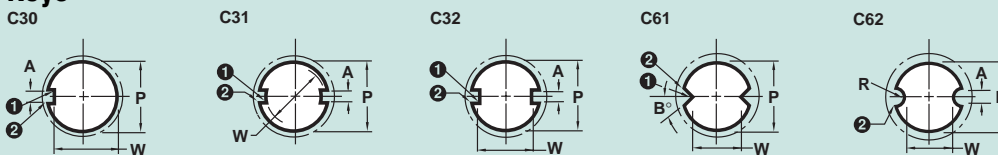
C25*

C26

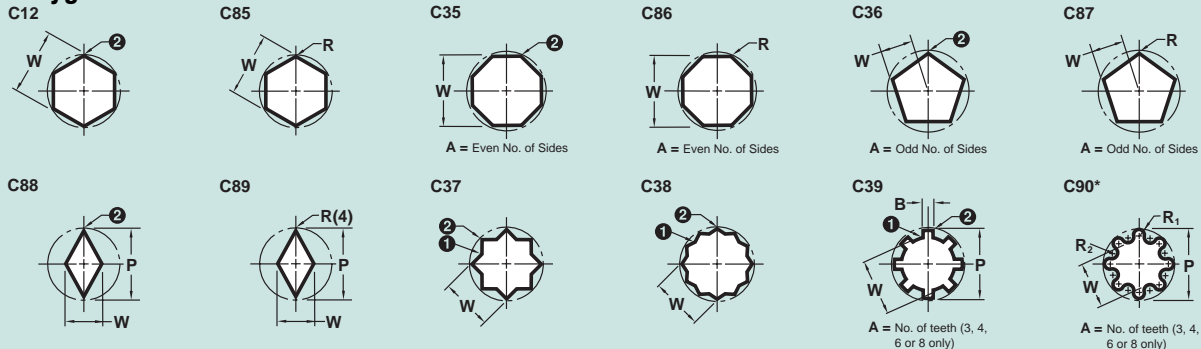
** Now a standard shape. See product pages.

270°

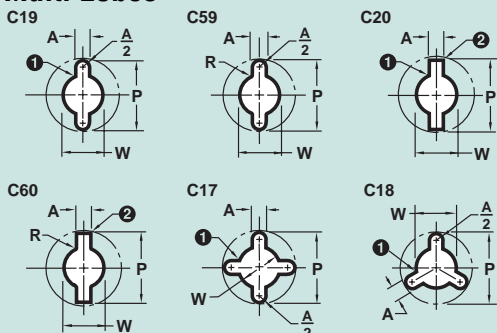
Keys



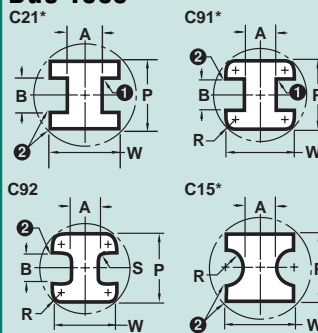
Polygons



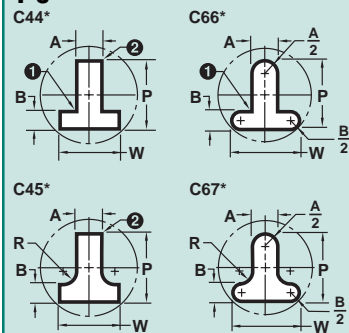
Multi Lobes



Duo Tees



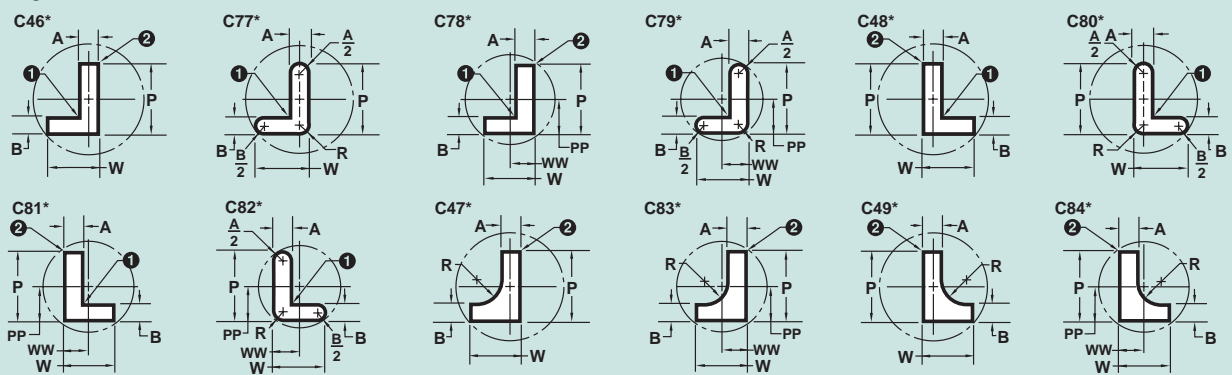
T's



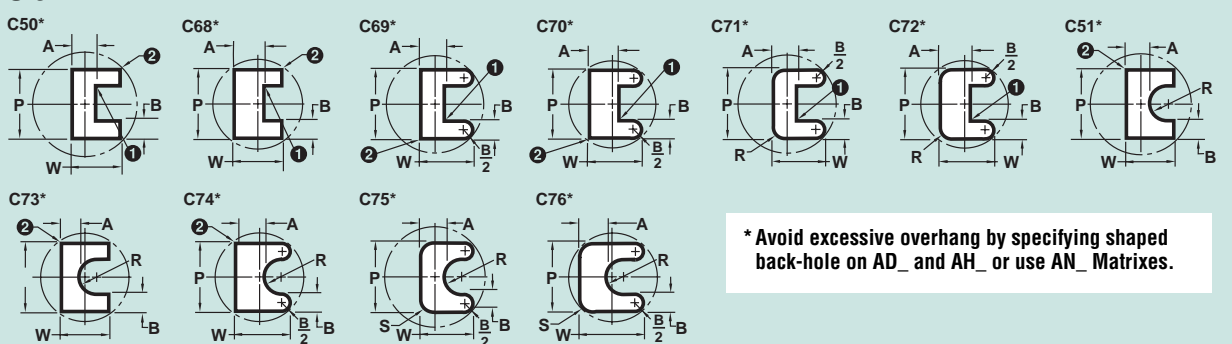
180°

0°

L's



U's

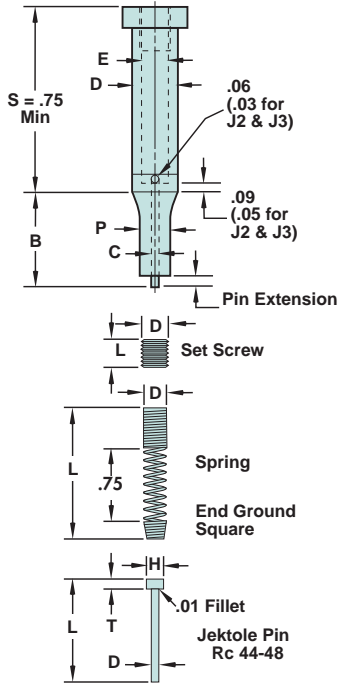


* Avoid excessive overhang by specifying shaped back-hole on AD_ and AH_ or use AN_ Matrixes.

Jektol[®] Clearance

The Key to Increased Productivity

JEKTOLE[®] Components



Standard Jektol Data

DIMENSION	J2	J3	J4	J6	J9
Std. Shank Dia. D	.1875	.2500	.3125	.3750	.6250
Point Hole Dia. C	.020	.032	.046	.063	.094
Shank Hole Dia. E	.086	.109	.141	.172	.221
Pin Extension	.03	.03	.06	.06	.06

Jektol Design Limits

DIMENSION	J2	J3	J4	J6	J9
Min. Shank Dia. D	.172	.218	.282	.344	.422
Min. Point Dia. P	.050	.080	.115	.158	.235
Max. Point Lgth. B	1.00	1.25	1.62	1.62	1.62
Max. Shank Lgth. S	3.00	3.00	3.00	3.25	3.25

JEKTOLE[®] In Production

- requires less press tonnage
- reduces pressure required to strip the punch...which in turn reduces punch wear
- produces minimal burr
- doubles (and often triples) piece output per grind
- reduces total punch costs

JEKTOLE[®] In Maintenance

- Keeper Key—holds pin in retracted position
- eliminates the need for disassembly before grinding
- maintains proper pin extension
- reduces downtime for re-grinding

Universal Jektol Components

EJECTOR PINS	J2	J3	J4	J6	J9
Overall Length L	1.11	1.38	1.94	1.94	2.22
Pin Diameter D	.017	.027	.041	.058	.089
Head Diameter H	.048	.073	.094	.120	.156
Head Thickness T	.031	.047	.062	.062	.094

SPRINGS	J2	J3	J4	J6	J9
Outside Dia. D	.081	.104	.136	.167	.216
Free Length L	2.38	2.38	3.19	3.00	3.03
Pressure (.12" Pre-load) Lbs.	.5	.75	1#	1.5	2#

SCREWS	J2	J3	J4	J6	J9
Screw Size D	#3-48	#5-40	#8-32	#10-32	1/4-28
Screw Length L	.19	.19	.19	.19	.25

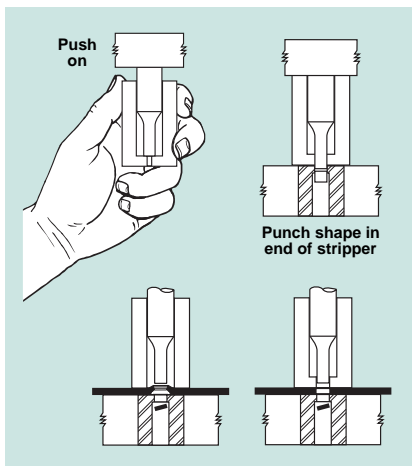
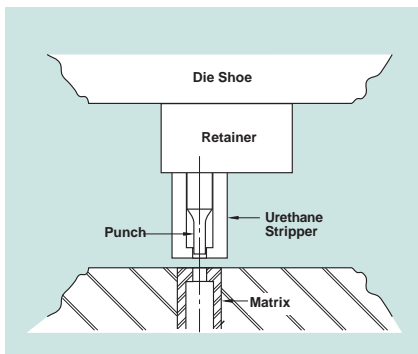
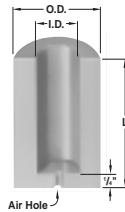
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Urethane Strippers

Strip-Shape Urethane Strippers assure positive stripping and at the same time dampen punch vibration by gripping around the punch point. Vibration can lead to premature punch failure. The closed end feature holds thin stock flat during the stripping cycle, eliminating the potential for rejected parts.

And that's not all...

Because of a unique curing agent, Strip-Shape Urethane Strippers develop more load-bearing capacity than similar urethanes. The curing agent also contributes to consistent pressure ratings from lot to lot.



Air Hole	I.D.
1/16	3/16-3/4
3/32	5/16
1/8	3/8-1

How to Order:

Qty	Type	I.D.	L
12	USE	37	125

I.D.	O.D.	L	Cat. No.	Pressure at Deflection of		
				1/4	1/4	3/8
3/16	1 1/16	1 1/4	USE18-125	250	400	—
		1 1/2	USE18-150	230	350	—
1/4	3/4	1 1/4	USE25-125	280	475	—
		1 1/2	USE25-150	275	465	—
		1 3/4	USE25-175	220	375	490
5/16	1 3/16	1 1/4	USE31-125	320	500	—
		1 1/2	USE31-150	300	450	—
		1 3/4	USE31-175	270	400	575
		2	USE31-200	240	370	600
3/8	7/8	1 1/4	USE37-125	420	695	—
		1 1/2	USE37-150	385	625	—
		1 3/4	USE37-175	355	575	760
		2	USE37-200	310	515	670
1/2	1"	1 1/4	USE50-125	520	790	—
		1 1/2	USE50-150	450	725	—
		1 3/4	USE50-175	435	680	875
		2	USE50-200	315	510	650
		2 1/4	USE50-225	275	475	600
5/8	1 1/8	1 1/4	USE62-125	600	925	—
		1 1/2	USE62-150	520	835	—
		1 3/4	USE62-175	480	775	1000
		2	USE62-200	440	730	935
3/4	1 1/2	1 1/4	USE75-175	500	800	1200
		2	USE75-200	400	700	1100
		2 1/4	USE75-225	350	650	1000
		2 1/2	USE75-250	325	600	900
		2 3/4	USE75-275	300	550	800
7/8	1 3/4	1 1/4	USE87-175	1500	2200	3400
		2	USE87-200	1200	1900	2800
		2 1/4	USE87-225	1150	1850	2400
		2 1/2	USE87-250	900	1450	1900
		2 3/4	USE87-275	850	1350	1800
1"	2"	1 1/4	USE100-175	2000	3000	3500
		2	USE100-200	1600	2600	3400
		2 1/4	USE100-225	1400	2300	3200
		2 1/2	USE100-250	1200	2000	3000
		2 3/4	USE100-275	1000	1800	2800

Locking Devices

How to Specify

This page shows the most common locking devices, Flat, Double Flat and Dowel. Select the type then add the code to the component description.

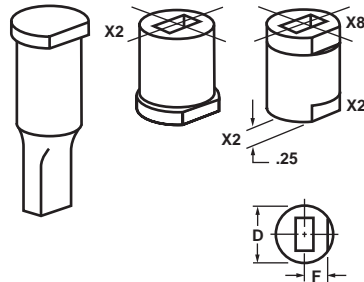
Single Flats X2, X5, X8, X9

Standard key flat locking device is at 0°. Specify **X2** for punches or **X2** (bottom) or **X8** (top) for matrixes.

Alternate locations of 90°, 180° or 270° may be specified at no additional cost. Specify **X2** or **X8** and degree required. Example: **X2—90°**.

Custom Location

Specify **X5** for punches or **X5** (bottom) or **X9** (top) and degree required counterclockwise from 0°. Example: **X5—135°**.



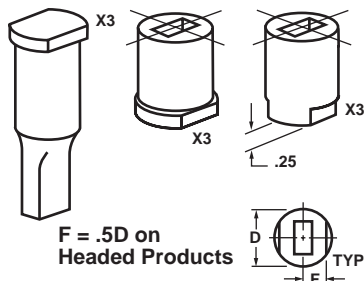
Double Flats X3, X6

Double key flat locking device is at 0°. Specify **X3** for punches or matrixes.

Alternate locations of 90°, 180° or 270° may be specified at no additional cost. Specify **X3** and degree required. Example: **X3—90°**.

Custom Location

Specify **X6** for punches or matrixes and degree required counterclockwise from 0°. Example: **X6—135°**.



F Dimension for Flats for Press-Fit Matrixes

Body Dia.	25	31	37	43	50	62	75	87	100
F	.110	.135	.165	.190	.220	.270	.325	.380	.435
Body Dia.	125	150	175	200	225	250	275		
F	.540	.650	.775	.900	1.025	1.150	1.275		

Location Tolerance

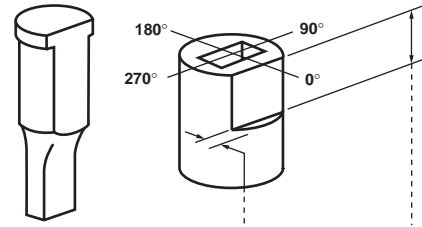
Flat		Dowel	
F	Radial	F	Radial
+ .0005	.001/	+ .0005	0°-4'
-.0000	inch	-.0000	

How to Order

5 KPL 50-S300, P.384, W.199, X2, A2

5 KDR 87-100, P.394, W.209, X8, A2

Additional Flats For Headless Matrixes



	Code	Depth	Length
Standard Location	X81	.060	.500
	X82	.060	.625
	X83	.060	.750
	X84	.060	Full Length
	X85	.093	.500
	X86	.093	.625
	X87	.093	.750
	X88*	.093	Full Length
	X89*		Specify Dimensions
	Custom Location	X91	.060
X92		.060	.625
X93		.060	.750
X94		.060	Full Length
X95		.093	.500
X96		.093	.625
X97		.093	.750
X98*		.093	Full Length
X99*			Specify Dimensions

*X88, X89, X98 and X99 are also available on punches.

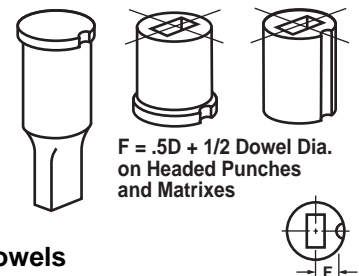
Dowel Slots X0, X1, X4, X7, X41, X71

Standard dowel locking device is at 0°. Specify **X4** (.125 Dowel) or **X41** (.1875 Dowel) for punches or matrixes. **X0** (F=.5D) for matrixes only.

Alternate locations of 90°, 180° or 270° may be specified at no additional cost. Specify **X0**, **X4** or **X41** and degree required. Example: **X4—90°**.

Custom Location

Specify **X7** (.125 Dowel) or **X71** (.1875 Dowel) for punches or matrixes. **X1** (F=.5D) for matrixes only. Specify **X1**, **X7** or **X71** and degree required counterclockwise from 0°. Example: **X71—135°**.



F Dimension for Dowels for Press-Fit Matrixes

Body Dia.	25	31	37	43	50	62-275
X0, X1	.1250	.1562	.1875	.2188	.2500	D/2
X4, X7	.1625	.1875	.2125	.2375	.2625	D/2
X41, X71	.1938	.2188	.2438	.2688	.2938	D/2

X0, X1, X4 & X7 — .125 Dowel X41 & X71 — .1875 Dowel