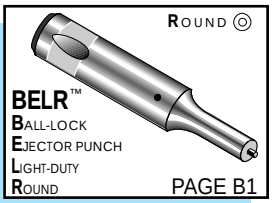
Ball-Lock

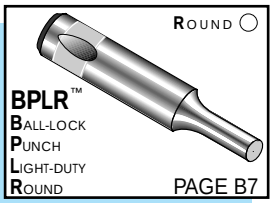
TABLE OF CONTENTS

Lane® PUNCH CORPORATION



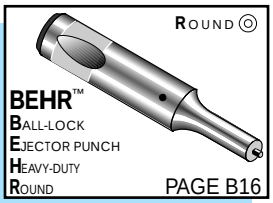
ROUND

BELR™
BALL-LOCK
EJECTOR PUNCH
LIGHT-DUTY
ROUND
PAGE B1



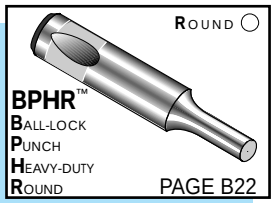
ROUND

BPLR™
BALL-LOCK
PUNCH
LIGHT-DUTY
ROUND
PAGE B7



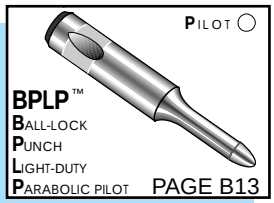
ROUND

BEHR™
BALL-LOCK
EJECTOR PUNCH
HEAVY-DUTY
ROUND
PAGE B16



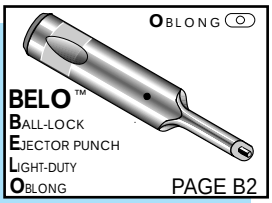
ROUND

BPHR™
BALL-LOCK
PUNCH
HEAVY-DUTY
ROUND
PAGE B22



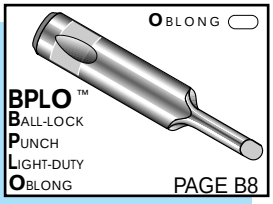
PILOT

BPLP™
BALL-LOCK
PUNCH
LIGHT-DUTY
PARABOLIC PILOT
PAGE B13



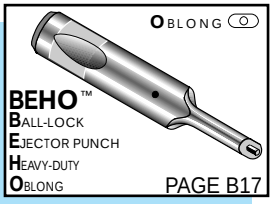
OBLONG

BELO™
BALL-LOCK
EJECTOR PUNCH
LIGHT-DUTY
OBLONG
PAGE B2



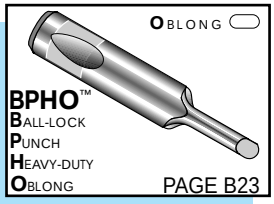
OBLONG

BPLO™
BALL-LOCK
PUNCH
LIGHT-DUTY
OBLONG
PAGE B8



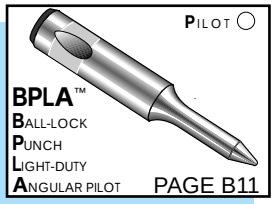
OBLONG

BEHO™
BALL-LOCK
EJECTOR PUNCH
HEAVY-DUTY
OBLONG
PAGE B17



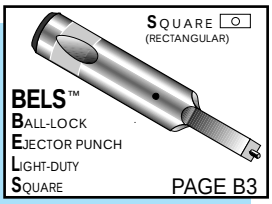
OBLONG

BPHO™
BALL-LOCK
PUNCH
HEAVY-DUTY
OBLONG
PAGE B23



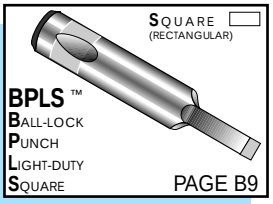
PILOT

BPLA™
BALL-LOCK
PUNCH
LIGHT-DUTY
ANGULAR PILOT
PAGE B11



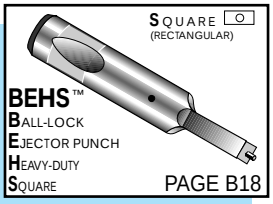
SQUARE (RECTANGULAR)

BELS™
BALL-LOCK
EJECTOR PUNCH
LIGHT-DUTY
SQUARE
PAGE B3



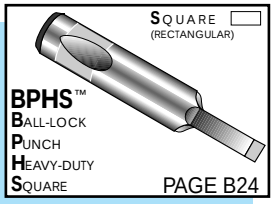
SQUARE (RECTANGULAR)

BPLS™
BALL-LOCK
PUNCH
LIGHT-DUTY
SQUARE
PAGE B9



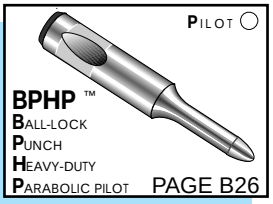
SQUARE (RECTANGULAR)

BEHS™
BALL-LOCK
EJECTOR PUNCH
HEAVY-DUTY
SQUARE
PAGE B18



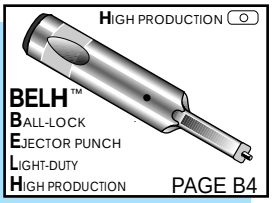
SQUARE (RECTANGULAR)

BPHS™
BALL-LOCK
PUNCH
HEAVY-DUTY
SQUARE
PAGE B24



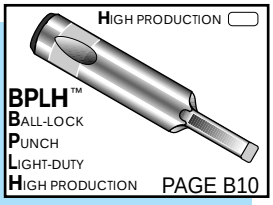
PILOT

BPHP™
BALL-LOCK
PUNCH
HEAVY-DUTY
PARABOLIC PILOT
PAGE B26



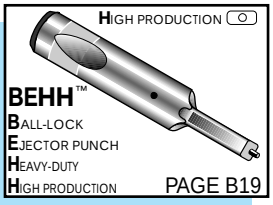
HIGH PRODUCTION

BELH™
BALL-LOCK
EJECTOR PUNCH
LIGHT-DUTY
HIGH PRODUCTION
PAGE B4



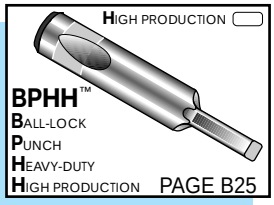
HIGH PRODUCTION

BPLH™
BALL-LOCK
PUNCH
LIGHT-DUTY
HIGH PRODUCTION
PAGE B10



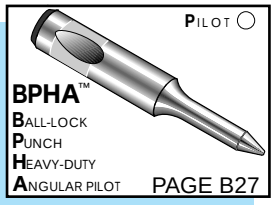
HIGH PRODUCTION

BEHH™
BALL-LOCK
EJECTOR PUNCH
HEAVY-DUTY
HIGH PRODUCTION
PAGE B19



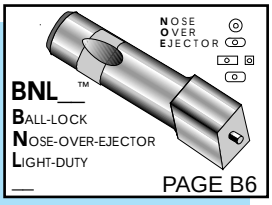
HIGH PRODUCTION

BPHH™
BALL-LOCK
PUNCH
HEAVY-DUTY
HIGH PRODUCTION
PAGE B25



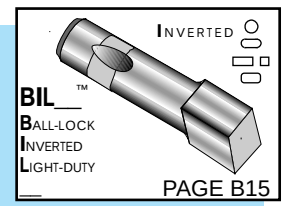
PILOT

BPHA™
BALL-LOCK
PUNCH
HEAVY-DUTY
ANGULAR PILOT
PAGE B27



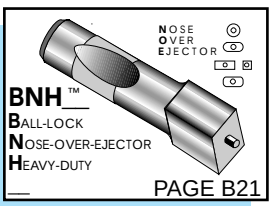
NOSE OVER EJECTOR

BNL__™
BALL-LOCK
NOSE-OVER-EJECTOR
LIGHT-DUTY
__
PAGE B6



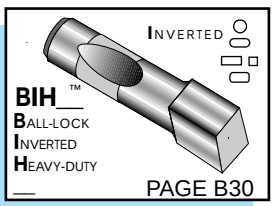
INVERTED

BIL__™
BALL-LOCK
INVERTED
LIGHT-DUTY
__
PAGE B15



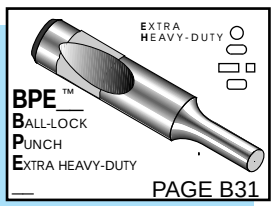
NOSE OVER EJECTOR

BNH__™
BALL-LOCK
NOSE-OVER-EJECTOR
HEAVY-DUTY
__
PAGE B21



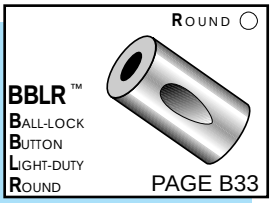
INVERTED

BIH__™
BALL-LOCK
INVERTED
HEAVY-DUTY
__
PAGE B30



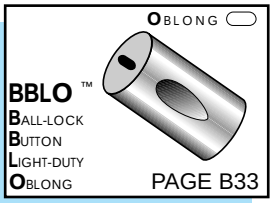
EXTRA HEAVY-DUTY

BPE__™
BALL-LOCK
PUNCH
EXTRA HEAVY-DUTY
__
PAGE B31



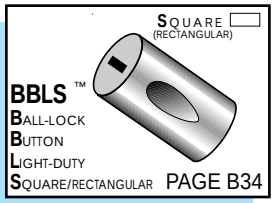
ROUND

BBLR™
BALL-LOCK
BUTTON
LIGHT-DUTY
ROUND
PAGE B33



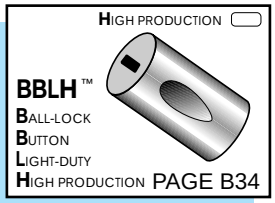
OBLONG

BBLO™
BALL-LOCK
BUTTON
LIGHT-DUTY
OBLONG
PAGE B33



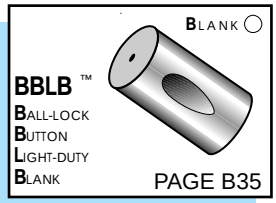
SQUARE (RECTANGULAR)

BBLS™
BALL-LOCK
BUTTON
LIGHT-DUTY
SQUARE/RECTANGULAR
PAGE B34



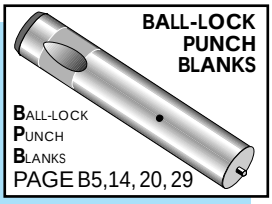
HIGH PRODUCTION

BBLH™
BALL-LOCK
BUTTON
LIGHT-DUTY
HIGH PRODUCTION
PAGE B34



BLANK

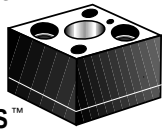
BBLB™
BALL-LOCK
BUTTON
LIGHT-DUTY
BLANK
PAGE B35



BALL-LOCK PUNCH BLANKS
BALL-LOCK
PUNCH
BLANKS
PAGE B5,14, 20, 29

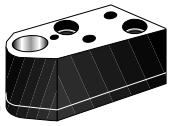
TRU-LOCK®

BRLT™
BRHT™
PAGE SR1-2



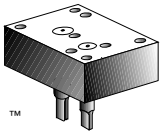
SQUARE RETAINERS

BRLS™
BRHS™
PAGE SR5



END RETAINERS

BRLE™
BRHE™
PAGE SR3-4

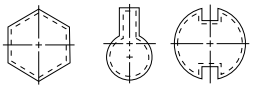


MULTI-HOLE RETAINERS

BRLM™
BRHM™
PAGE R3-6

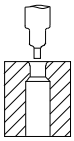
EXTRA HEAVY DUTY RETAINERS

BRES™
PAGE SR6



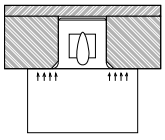
CLASSIFIED SHAPES

PAGE T5-7



DRAWING/EXTRUDING PUNCHES & DIE BUTTONS

PAGE T3-4



Z-BOTTOMING PUNCH

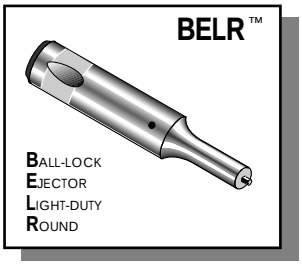
PAGE B32

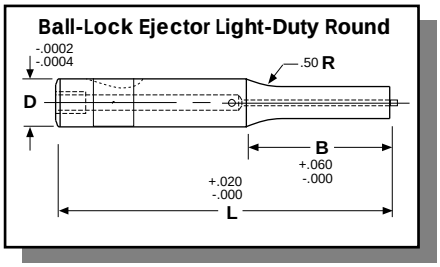
BALL-LOCK ACCESSORIES

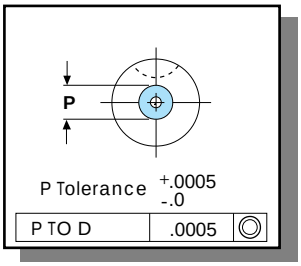
PAGE SR11-13

Lane® PUNCH CORPORATION

Ball-Lock Ejector Light-Duty Round™







A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(12) BELR 625-S300 M2 P.600

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. POINT P	OVERALL LENGTH "L"									EJECTOR SIZE E**
				2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
.50	BELR 250	.250	.075	S200	S225	S250	S275	S300	S325	S350			E2A
.62	BELR 375	.375	.115	S200	S225	S250	S275	S300	S325	S350	S375	S400	E4
.75	BELR 500	.500	.158	S200	S225	S250	S275	S300	S325	S350	S375	S400	E6
.88	BELR 625	.625	.158		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELR 750	.750	.235		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELR 875	.875	.300		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELR 1000	1.000	.349		S225	S250	S275	S300	S325	S350	S375	S400	E9

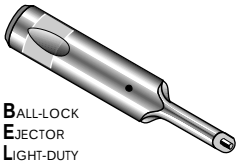
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. POINT P	OVERALL LENGTH "L"								EJECTOR SIZE E**
					2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
B .75	BELR 250	.250	.075		B225	B250	B275	B300	B325	B350			E2A
	BELR 375	.375	.115		B225	B250	B275	B300	B325	B350	B375	B400	E4
	BELR 500	.500	.158		B225	B250	B275	B300	B325	B350	B375	B400	E6
	BELR 625	.625	.158		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELR 750	.750	.235		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELR 875	.875	.300		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELR 1000	1.000	.349		B225	B250	B275	B300	B325	B350	B375	B400	E9
C 1.00	BELR 375	.375	.115		C225	C250	C275	C300	C325	C350	C375	C400	E4
	BELR 500	.500	.158		C225	C250	C275	C300	C325	C350	C375	C400	E6
	BELR 625	.625	.158		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELR 750	.750	.235		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELR 875	.875	.300		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELR 1000	1.000	.349		C225	C250	C275	C300	C325	C350	C375	C400	E9
D 1.25	BELR 500	.500	.158			D250	D275	D300	D325	D350	D375	D400	E6
	BELR 625	.625	.158			D250	D275	D300	D325	D350	D375	D400	E9
	BELR 750	.750	.235			D250	D275	D300	D325	D350	D375	D400	E9
	BELR 875	.875	.300			D250	D275	D300	D325	D350	D375	D400	E9
	BELR 1000	1.000	.349			D250	D275	D300	D325	D350	D375	D400	E9

** Replacement Ejector Components are detailed in Technical Section.

Ball-Lock Ejector Light-Duty Oblong™

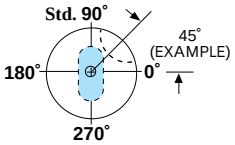
Lane® PUNCH CORPORATION

BELO™



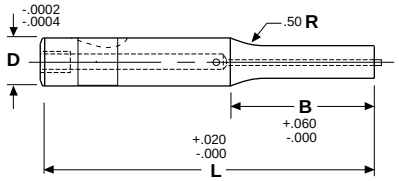
BALL-LOCK
EJECTOR
LIGHT-DUTY
OBLONG

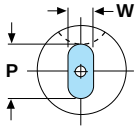
Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Ejector Light-Duty Oblong





P & W Tolerance +.0005 -.0005

P & W TO D	.001	◎

A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(12) BELO 750-C300 M2 P.719 W.375 BS-90°

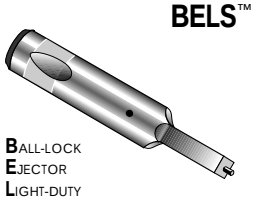
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX. P	OVERALL LENGTH "L"									EJECTOR SIZE E**
					2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
.50	BELO 250	.250	.075	.249	S200	S225	S250	S275	S300	S325	S350			E2A
.62	BELO 375	.375	.115	.374	S200	S225	S250	S275	S300	S325	S350	S375	S400	E4
.75	BELO 500	.500	.157	.499	S200	S225	S250	S275	S300	S325	S350	S375	S400	E6
.88	BELO 625	.625	.157	.624		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELO 750	.750	.235	.749		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELO 875	.875	.300	.874		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELO 1000	1.000	.349	.999		S225	S250	S275	S300	S325	S350	S375	S400	E9

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX. P	OVERALL LENGTH "L"								EJECTOR SIZE E**
						2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
B .75	BELO 250	.250	.075	.249		B225	B250	B275	B300	B325	B350			E2A
	BELO 375	.375	.115	.374		B225	B250	B275	B300	B325	B350	B375	B400	E4
	BELO 500	.500	.157	.499		B225	B250	B275	B300	B325	B350	B375	B400	E6
	BELO 625	.625	.157	.624		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELO 750	.750	.235	.749		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELO 875	.875	.300	.874		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELO 1000	1.000	.349	.999		B225	B250	B275	B300	B325	B350	B375	B400	E9
C 1.00	BELO 375	.375	.115	.374		C225	C250	C275	C300	C325	C350	C375	C400	E4
	BELO 500	.500	.157	.499		C225	C250	C275	C300	C325	C350	C375	C400	E6
	BELO 625	.625	.157	.624		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELO 750	.750	.235	.749		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELO 875	.875	.300	.874		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELO 1000	1.000	.349	.999		C225	C250	C275	C300	C325	C350	C375	C400	E9
D 1.25	BELO 500	.500	.157	.499			D250	D275	D300	D325	D350	D375	D400	E6
	BELO 625	.625	.157	.624			D250	D275	D300	D325	D350	D375	D400	E9
	BELO 750	.750	.235	.749			D250	D275	D300	D325	D350	D375	D400	E9
	BELO 875	.875	.300	.874			D250	D275	D300	D325	D350	D375	D400	E9
	BELO 1000	1.000	.349	.999			D250	D275	D300	D325	D350	D375	D400	E9

** Replacement Ejector Components are detailed in Technical Section.

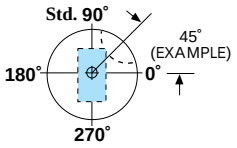
Lane® PUNCH CORPORATION — Ball-Lock Ejector Light-Duty Square/Rectangular™

BELS™



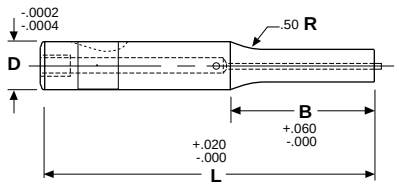
BALL-LOCK
EJECTOR
LIGHT-DUTY
SQUARE/RECTANGULAR

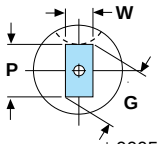
Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Ejector Light-Duty Square/Rectangular





P & W Tolerance +.0005 -.0005

P & W TO D	.001

A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(12) BELS 500-C325 M2 P.375 W.187 BS-45°

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

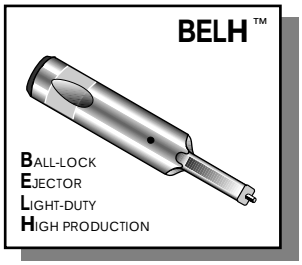
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX. G	OVERALL LENGTH "L"									EJECTOR SIZE E**
					2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
.50	BELS 250	.250	.075	.249	S200	S225	S250	S275	S300	S325	S350			E2A
.62	BELS 375	.375	.115	.374	S200	S225	S250	S275	S300	S325	S350	S375	S400	E4
.75	BELS 500	.500	.157	.499	S200	S225	S250	S275	S300	S325	S350	S375	S400	E6
.88	BELS 625	.625	.157	.624		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELS 750	.750	.235	.749		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELS 875	.875	.300	.874		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELS 1000	1.000	.349	.999		S225	S250	S275	S300	S325	S350	S375	S400	E9

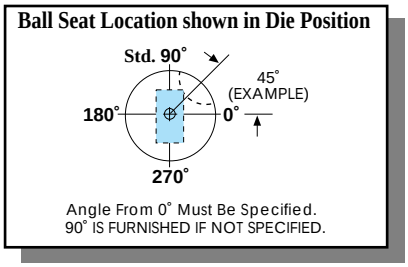
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX. G	OVERALL LENGTH "L"								EJECTOR SIZE E**
						2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
B .75	BELS 250	.250	.075	.249		B225	B250	B275	B300	B325	B350			E2A
	BELS 375	.375	.115	.374		B225	B250	B275	B300	B325	B350	B375	B400	E4
	BELS 500	.500	.157	.499		B225	B250	B275	B300	B325	B350	B375	B400	E6
	BELS 625	.625	.157	.624		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELS 750	.750	.235	.749		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELS 875	.875	.300	.874		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELS 1000	1.000	.349	.999		B225	B250	B275	B300	B325	B350	B375	B400	E9
C 1.00	BELS 375	.375	.115	.374		C225	C250	C275	C300	C325	C350	C375	C400	E4
	BELS 500	.500	.157	.499		C225	C250	C275	C300	C325	C350	C375	C400	E6
	BELS 625	.625	.157	.624		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELS 750	.750	.235	.749		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELS 875	.875	.300	.874		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELS 1000	1.000	.349	.999		C225	C250	C275	C300	C325	C350	C375	C400	E9
D 1.25	BELS 500	.500	.157	.499			D250	D275	D300	D325	D350	D375	D400	E6
	BELS 625	.625	.157	.624			D250	D275	D300	D325	D350	D375	D400	E9
	BELS 750	.750	.235	.749			D250	D275	D300	D325	D350	D375	D400	E9
	BELS 875	.875	.300	.874			D250	D275	D300	D325	D350	D375	D400	E9
	BELS 1000	1.000	.349	.999			D250	D275	D300	D325	D350	D375	D400	E9

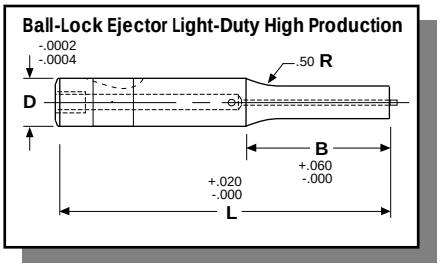
** Replacement Ejector Components are detailed in Technical Section.

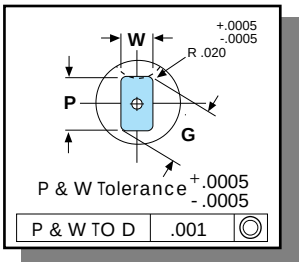
Ball-Lock Ejector Light-Duty High Production™

Lane® PUNCH CORPORATION









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(12) BELH 500-B250 M2 P.406 W.187 BS-0°

The Lane "H" High Production punch and die will outproduce any sharp cornered rectangle or square, same steel, same clearance, punch to die.

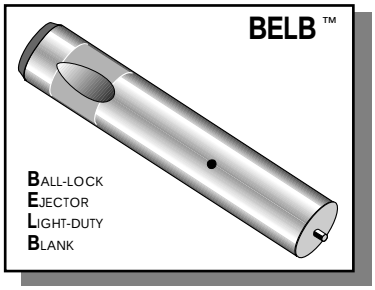
$$G = \left[\sqrt{(P-.040)^2 + (W-.040)^2}\right] + .040$$

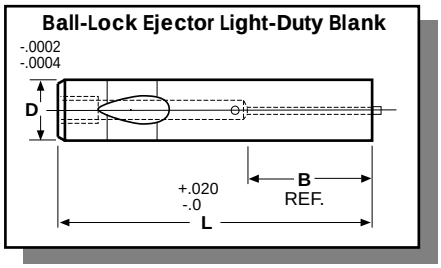
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX. G	OVERALL LENGTH "L" 2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	EJECTOR SIZE E**
.50	BELH 250	.250	.075	.249	S200	S225	S250	S275	S300	S325	S350			E2A
.62	BELH 375	.375	.115	.374	S200	S225	S250	S275	S300	S325	S350	S375	S400	E4
.75	BELH 500	.500	.157	.499	S200	S225	S250	S275	S300	S325	S350	S375	S400	E6
.88	BELH 625	.625	.157	.624		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELH 750	.750	.235	.749		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELH 875	.875	.300	.874		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELH 1000	1.000	.349	.999		S225	S250	S275	S300	S325	S350	S375	S400	E9

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX. G	OVERALL LENGTH "L" 2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	EJECTOR SIZE E**
B .75	BELH 250	.250	.075	.249	B225	B250	B275	B300	B325	B350			E2A
	BELH 375	.375	.115	.374	B225	B250	B275	B300	B325	B350	B375	B400	E4
	BELH 500	.500	.157	.499	B225	B250	B275	B300	B325	B350	B375	B400	E6
	BELH 625	.625	.157	.624	B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELH 750	.750	.235	.749	B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELH 875	.875	.240	.874	B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELH 1000	1.000	.240	.999	B225	B250	B275	B300	B325	B350	B375	B400	E9
C 1.00	BELH 375	.375	.115	.374	C225	C250	C275	C300	C325	C350	C375	C400	E4
	BELH 500	.500	.157	.499	C225	C250	C275	C300	C325	C350	C375	C400	E6
	BELH 625	.625	.157	.624	C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELH 750	.750	.235	.749	C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELH 875	.875	.300	.874	C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELH 1000	1.000	.349	.999	C225	C250	C275	C300	C325	C350	C375	C400	E9
D 1.25	BELH 500	.500	.157	.499		D250	D275	D300	D325	D350	D375	D400	E6
	BELH 625	.625	.157	.624		D250	D275	D300	D325	D350	D375	D400	E9
	BELH 750	.750	.235	.749		D250	D275	D300	D325	D350	D375	D400	E9
	BELH 875	.875	.300	.874		D250	D275	D300	D325	D350	D375	D400	E9
	BELH 1000	1.000	.349	.999		D250	D275	D300	D325	D350	D375	D400	E9

** Replacement Ejector Components are detailed in Technical Section.

Lane® PUNCH CORPORATION — Ball-Lock Ejector Light-Duty Blank™





A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

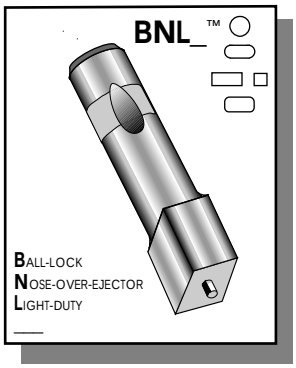
Ordering Example:
(10) BELB 625-C400 M2

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	OVERALL LENGTH "L"									EJECTOR SIZE**
			2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
.50	BELB 250	.250	S200	S225	S250	S275	S300	S325	S350			E2A
.62	BELB 375	.375	S200	S225	S250	S275	S300	S325	S350	S375	S400	E4
.75	BELB 500	.500	S200	S225	S250	S275	S300	S325	S350	S375	S400	E6
.88	BELB 625	.625		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELB 750	.750		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELB 875	.875		S225	S250	S275	S300	S325	S350	S375	S400	E9
.94	BELB 1000	1.000		S225	S250	S275	S300	S325	S350	S375	S400	E9

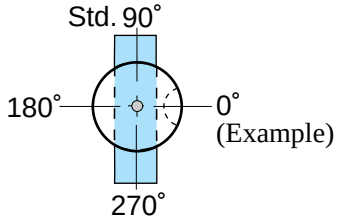
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	OVERALL LENGTH "L"									EJECTOR SIZE**
				2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	
B .75	BELB 250	.250		B225	B250	B275	B300	B325	B350			E2A
	BELB 375	.375		B225	B250	B275	B300	B325	B350	B375	B400	E4
	BELB 500	.500		B225	B250	B275	B300	B325	B350	B375	B400	E6
	BELB 625	.625		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELB 750	.750		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELB 875	.875		B225	B250	B275	B300	B325	B350	B375	B400	E9
	BELB 1000	1.000		B225	B250	B275	B300	B325	B350	B375	B400	E9
C 1.00	BELB 375	.375		C225	C250	C275	C300	C325	C350	C375	C400	E6
	BELB 500	.500		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELB 625	.625		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELB 750	.750		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELB 875	.875		C225	C250	C275	C300	C325	C350	C375	C400	E9
	BELB 1000	1.000		C225	C250	C275	C300	C325	C350	C375	C400	E9
D 1.25	BELB 500	.500			D250	D275	D300	D325	D350	D375	D400	E6
	BELB 625	.625			D250	D275	D300	D325	D350	D375	D400	E9
	BELB 750	.750			D250	D275	D300	D325	D350	D375	D400	E9
	BELB 875	.875			D250	D275	D300	D325	D350	D375	D400	E9
	BELB 1000	1.000			D250	D275	D300	D325	D350	D375	D400	E9

** Replacement Ejector Components are detailed in Technical Section.

Ball-Lock Nose-Over-Ejector Light Duty

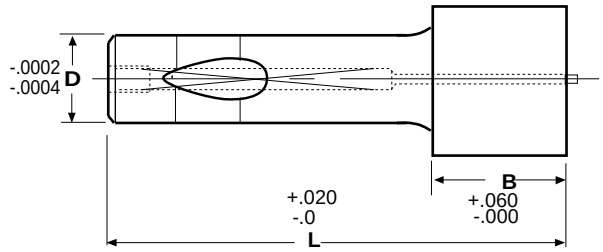


Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Nose-Over-Ejector Light Duty



P & W TO D .001 Ⓜ

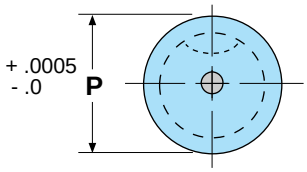
BNLS $G=\sqrt{P^2+W^2}$

BNLH $G=\left[\sqrt{(P-.040)^2+(W-.040)^2}\right]+.040$

M2, R/c 61-63 triple tempered

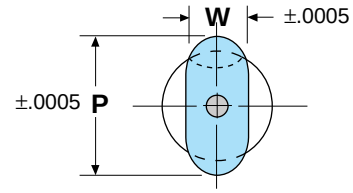
Ordering Example:
(6) BNLR 1000-350 M2 P1.750

BNLR ROUND



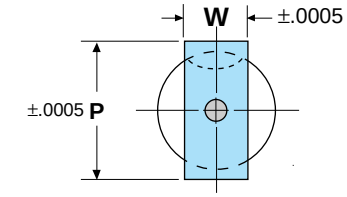
Catalog No.	Shank Dia. "D"	Point Range Min. "P"	Point Range Max. "P"	Point Length "B"	Overall Length "L" 2.50	3.00	3.50	4.00	EJECTOR SIZE E**
BNLR 375	.375	.376	.875	.625	250	300	350		E4
BNLR 500	.500	.501	1.250	.750	250	300	350	400	E6
BNLR 625	.625	.626	1.500	.875	250	300	350	400	E9
BNLR 750	.750	.751	1.500	.937	250	300	350	400	E9
BNLR 875	.875	.876	1.750	.937	250	300	350	400	E9
BNLR 1000	1.000	1.001	1.750	.937	250	300	350	400	E9

BNLO OBLONG



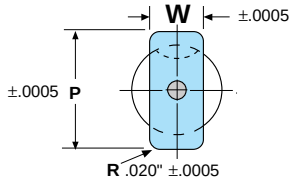
Catalog No.	"D"	Min. "W"	Max. "P"	"B"	2.50	3.00	3.50	4.00	EJECTOR E**
BNLO 375	.375	.125	.875	.625	250	300	350		E4
BNLO 500	.500	.187	1.250	.750	250	300	350	400	E6
BNLO 625	.625	.250	1.500	.875	250	300	350	400	E9
BNLO 750	.750	.312	1.500	.937	250	300	350	400	E9
BNLO 875	.875	.375	1.750	.937	250	300	350	400	E9
BNLO 1000	1.000	.437	1.750	.937	250	300	350	400	E9

BNLS SQUARE / RECT.



Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00	EJECTOR E**
BNLS 375	.375	.125	.875	.625	250	300	350		E4
BNLS 500	.500	.187	1.250	.750	250	300	350	400	E6
BNLS 625	.625	.250	1.500	.875	250	300	350	400	E9
BNLS 750	.750	.312	1.500	.937	250	300	350	400	E9
BNLS 875	.875	.375	1.750	.937	250	300	350	400	E9
BNLS 1000	1.000	.437	1.750	.937	250	300	350	400	E9

BNLH HIGH PRODUCTION

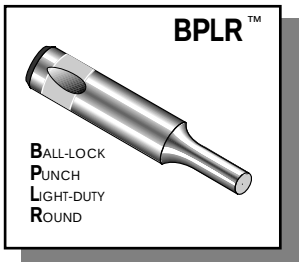


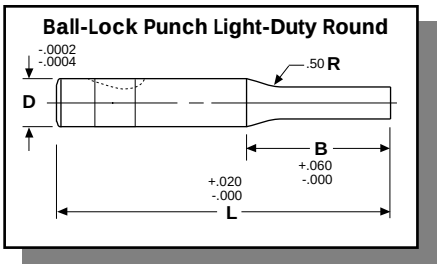
Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00	EJECTOR E**
BNLH 375	.375	.125	.875	.625	250	300	350		E4
BNLH 500	.500	.187	1.250	.750	250	300	350	400	E6
BNLH 625	.625	.250	1.500	.875	250	300	350	400	E9
BNLH 750	.750	.312	1.500	.937	250	300	350	400	E9
BNLH 875	.875	.375	1.750	.937	250	300	350	400	E9
BNLH 1000	1.000	.437	1.750	.937	250	300	350	400	E9

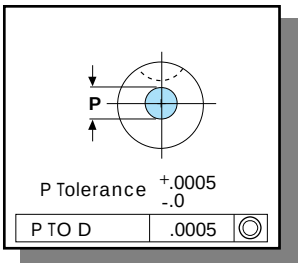
** Replacement Ejector Components are detailed in Technical Section.

For Prompt Quotation on Specials, Fax : (Mi.)1-800-253-6731 or (NC) 1-800-227-6725

Lane® PUNCH CORPORATION — Ball-Lock Punch Light-Duty Round™







A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

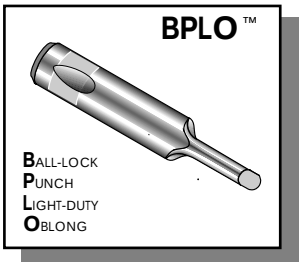
Ordering Example:
(12) BPLR 750-C325 M2 P.734

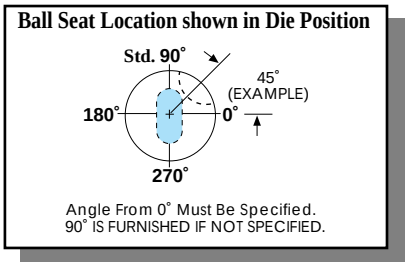
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	OVERALL LENGTH "L"								
				2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
.50	BPLR 250	.250	.040	S200	S225	S250	S275	S300	S325	S350		
.62	BPLR 375	.375	.050	S200	S225	S250	S275	S300	S325	S350	S375	S400
.75	BPLR 500	.500	.093	S200	S225	S250	S275	S300	S325	S350	S375	S400
.88	BPLR 625	.625	.125		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLR 750	.750	.234		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLR 875	.875	.300		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLR 1000	1.000	.349		S225	S250	S275	S300	S325	S350	S375	S400

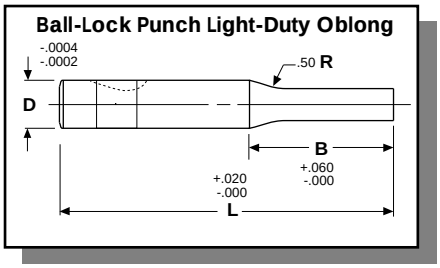
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	OVERALL LENGTH "L"								
					2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
B .75	BPLR 250	.250	.040		B225	B250	B275	B300	B325	B350		
	BPLR 375	.375	.050		B225	B250	B275	B300	B325	B350	B375	B400
	BPLR 500	.500	.093		B225	B250	B275	B300	B325	B350	B375	B400
	BPLR 625	.625	.125		B225	B250	B275	B300	B325	B350	B375	B400
	BPLR 750	.750	.234		B225	B250	B275	B300	B325	B350	B375	B400
	BPLR 875	.875	.300		B225	B250	B275	B300	B325	B350	B375	B400
	BPLR 1000	1.000	.349		B225	B250	B275	B300	B325	B350	B375	B400
C 1.00	BPLR 375	.375	.080		C225	C250	C275	C300	C325	C350	C375	C400
	BPLR 500	.500	.093		C225	C250	C275	C300	C325	C350	C375	C400
	BPLR 625	.625	.125		C225	C250	C275	C300	C325	C350	C375	C400
	BPLR 750	.750	.234		C225	C250	C275	C300	C325	C350	C375	C400
	BPLR 875	.875	.300		C225	C250	C275	C300	C325	C350	C375	C400
	BPLR 1000	1.000	.349		C225	C250	C275	C300	C325	C350	C375	C400
D 1.25	BPLR 500	.500	.125			D250	D275	D300	D325	D350	D375	D400
	BPLR 625	.625	.158			D250	D275	D300	D325	D350	D375	D400
	BPLR 750	.750	.234			D250	D275	D300	D325	D350	D375	D400
	BPLR 875	.875	.300			D250	D275	D300	D325	D350	D375	D400
	BPLR 1000	1.000	.349			D250	D275	D300	D325	D350	D375	D400

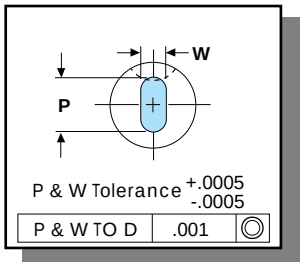
Ball-Lock Punch Light-Duty Oblong™

Lane® PUNCH CORPORATION









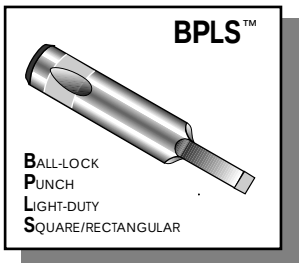
A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

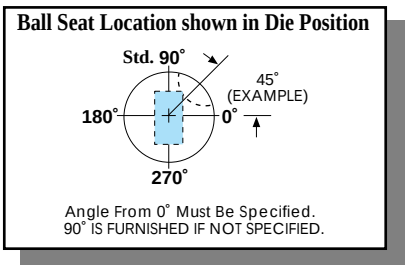
Ordering Example:
(10) BPLO 500-C300 M2 P.375 W.125 BS-90°

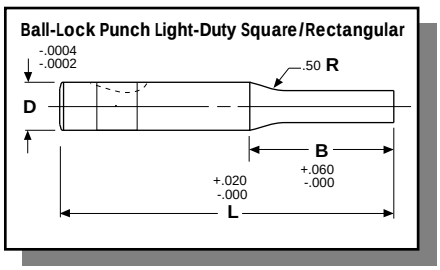
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX P	OVERALL LENGTH "L"								
					2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
.50	BPLO 250	.250	.040	.249	S200	S225	S250	S275	S300	S325	S350		
.62	BPLO 375	.375	.050	.374	S200	S225	S250	S275	S300	S325	S350	S375	S400
.75	BPLO 500	.500	.093	.499	S200	S225	S250	S275	S300	S325	S350	S375	S400
.88	BPLO 625	.625	.125	.624		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLO 750	.750	.234	.749		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLO 875	.875	.234	.874		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLO 1000	1.000	.234	.999		S225	S250	S275	S300	S325	S350	S375	S400

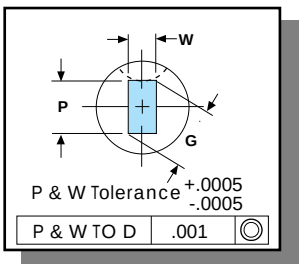
ALT. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX P	OVERALL LENGTH "L"							
					2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
B .75	BPLO 250	.250	.040	.249	B225	B250	B275	B300	B325	B350		
	BPLO 375	.375	.050	.374	B225	B250	B275	B300	B325	B350	B375	B400
	BPLO 500	.500	.093	.499	B225	B250	B275	B300	B325	B350	B375	B400
	BPLO 625	.625	.125	.624	B225	B250	B275	B300	B325	B350	B375	B400
	BPLO 750	.750	.234	.749	B225	B250	B275	B300	B325	B350	B375	B400
	BPLO 875	.875	.234	.874	B225	B250	B275	B300	B325	B350	B375	B400
	BPLO 1000	1.000	.234	.999	B225	B250	B275	B300	B325	B350	B375	B400
C 1.00	BPLO 375	.375	.081	.374	C225	C250	C275	C300	C325	C350	C375	C400
	BPLO 500	.500	.093	.499	C225	C250	C275	C300	C325	C350	C375	C400
	BPLO 625	.625	.125	.624	C225	C250	C275	C300	C325	C350	C375	C400
	BPLO 750	.750	.234	.749	C225	C250	C275	C300	C325	C350	C375	C400
	BPLO 875	.875	.234	.874	C225	C250	C275	C300	C325	C350	C375	C400
	BPLO 1000	1.000	.234	.999	C225	C250	C275	C300	C325	C350	C375	C400
D 1.25	BPLO 500	.500	.125	.499		D250	D275	D300	D325	D350	D375	D400
	BPLO 625	.625	.157	.624		D250	D275	D300	D325	D350	D375	D400
	BPLO 750	.750	.234	.749		D250	D275	D300	D325	D350	D375	D400
	BPLO 875	.875	.234	.874		D250	D275	D300	D325	D350	D375	D400
	BPLO 1000	1.000	.234	.999		D250	D275	D300	D325	D350	D375	D400

Lane® PUNCH CORPORATION — Ball-Lock Punch Light-Duty Square / Rectangular™









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(10) BPLS 625-C300 M2 P.500 W.187 BS-45°

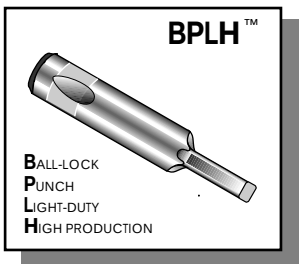
$$G=\sqrt{P^2 + W^2}$$

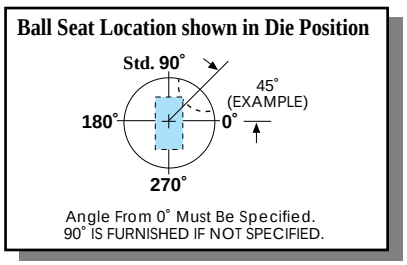
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L"								
					2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
.50	BPLS 250	.250	.040	.249	S200	S225	S250	S275	S300	S325	S350		
.62	BPLS 375	.375	.050	.374	S200	S225	S250	S275	S300	S325	S350	S375	S400
.75	BPLS 500	.500	.093	.499	S200	S225	S250	S275	S300	S325	S350	S375	S400
.88	BPLS 625	.625	.125	.624		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLS 750	.750	.234	.749		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLS 875	.875	.234	.874		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLS1000	1.000	.234	.999		S225	S250	S275	S300	S325	S350	S375	S400

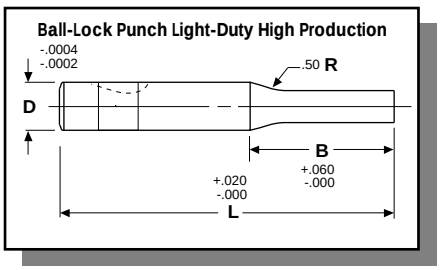
ALT. PT. LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L"							
					2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
B .75	BPLS 250	.250	.040	.249	B225	B250	B275	B300	B325	B350		
	BPLS 375	.375	.050	.374	B225	B250	B275	B300	B325	B350	B375	B400
	BPLS 500	.500	.093	.499	B225	B250	B275	B300	B325	B350	B375	B400
	BPLS 625	.625	.125	.624	B225	B250	B275	B300	B325	B350	B375	B400
	BPLS 750	.750	.234	.749	B225	B250	B275	B300	B325	B350	B375	B400
	BPLS 875	.875	.234	.874	B225	B250	B275	B300	B325	B350	B375	B400
	BPLS1000	1.000	.234	.999	B225	B250	B275	B300	B325	B350	B375	B400
C 1.00	BPLS 375	.375	.081	.374	C225	C250	C275	C300	C325	C350	C375	C400
	BPLS 500	.500	.093	.499	C225	C250	C275	C300	C325	C350	C375	C400
	BPLS 625	.625	.125	.624	C225	C250	C275	C300	C325	C350	C375	C400
	BPLS 750	.750	.234	.749	C225	C250	C275	C300	C325	C350	C375	C400
	BPLS 875	.875	.234	.874	C225	C250	C275	C300	C325	C350	C375	C400
	BPLS1000	1.000	.234	.999	C225	C250	C275	C300	C325	C350	C375	C400
D 1.25	BPLS 500	.500	.125	.499		D250	D275	D300	D325	D350	D375	D400
	BPLS 625	.625	.157	.624		D250	D275	D300	D325	D350	D375	D400
	BPLS 750	.750	.234	.749		D250	D275	D300	D325	D350	D375	D400
	BPLS 875	.875	.234	.874		D250	D275	D300	D325	D350	D375	D400
	BPLS1000	1.000	.234	.999		D250	D275	D300	D325	D350	D375	D400

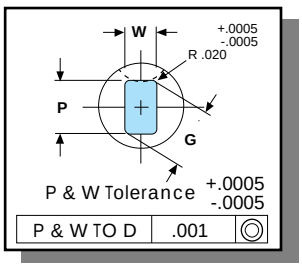
Ball-Lock Punch Light-Duty High Production™

Lane® PUNCH CORPORATION









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

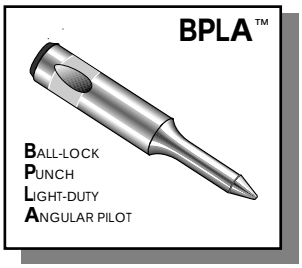
Ordering Example:
(10) BPLH 625-B400 M2 P.500 W.187 BS-45°

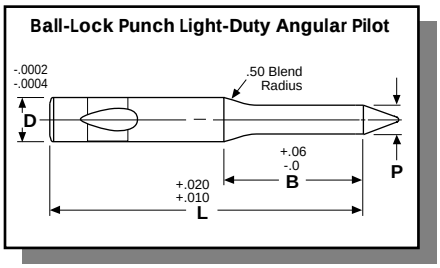
The Lane "H" High Production punch and die will outproduce any sharp cornered rectangle or square, same steel, same clearance, punch to die.

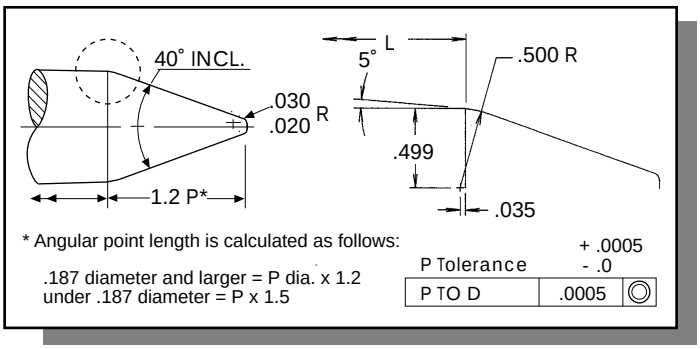
$$G = \left[\sqrt{(P-.040)^2 + (W-.040)^2}\right] + .040$$

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L"								
					2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
.50	BPLH 250	.250	.040	.249	S200	S225	S250	S275	S300	S325	S350		
.62	BPLH 375	.375	.050	.374	S200	S225	S250	S275	S300	S325	S350	S375	S400
.75	BPLH 500	.500	.093	.499	S200	S225	S250	S275	S300	S325	S350	S375	S400
.88	BPLH 625	.625	.125	.624		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLH 750	.750	.234	.749		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLH 875	.875	.234	.874		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLH 1000	1.000	.234	.999		S225	S250	S275	S300	S325	S350	S375	S400

ALT. PT. LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L"							
					2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
B .75	BPLH 250	.250	.040	.249	B225	B250	B275	B300	B325	B350		
	BPLH 375	.375	.050	.374	B225	B250	B275	B300	B325	B350	B375	B400
	BPLH 500	.500	.093	.499	B225	B250	B275	B300	B325	B350	B375	B400
	BPLH 625	.625	.125	.624	B225	B250	B275	B300	B325	B350	B375	B400
	BPLH 750	.750	.234	.749	B225	B250	B275	B300	B325	B350	B375	B400
	BPLH 875	.875	.234	.874	B225	B250	B275	B300	B325	B350	B375	B400
	BPLH 1000	1.000	.234	.999	B225	B250	B275	B300	B325	B350	B375	B400
C 1.00	BPLH 375	.375	.081	.374	C225	C250	C275	C300	C325	C350	C375	C400
	BPLH 500	.500	.093	.499	C225	C250	C275	C300	C325	C350	C375	C400
	BPLH 625	.625	.125	.624	C225	C250	C275	C300	C325	C350	C375	C400
	BPLH 750	.750	.234	.749	C225	C250	C275	C300	C325	C350	C375	C400
	BPLH 875	.875	.234	.874	C225	C250	C275	C300	C325	C350	C375	C400
	BPLH 1000	1.000	.234	.999	C225	C250	C275	C300	C325	C350	C375	C400
D 1.25	BPLH 500	.500	.125	.499		D250	D275	D300	D325	D350	D375	D400
	BPLH 625	.625	.157	.624		D250	D275	D300	D325	D350	D375	D400
	BPLH 750	.750	.234	.749		D250	D275	D300	D325	D350	D375	D400
	BPLH 875	.875	.234	.874		D250	D275	D300	D325	D350	D375	D400
	BPLH 1000	1.000	.234	.999		D250	D275	D300	D325	D350	D375	D400







Ordering Example:

(3) BPLA 375-B400 M2 P.349

A2, R/c 59-61 double tempered M2, R/c 61-63 triple tempered

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L"							
						2.50	2.75	3.00	3.25	3.50	3.75	4.00
.50	BPLA 250	.250	.040			S250	S275	S300	S325	S350		
.62	BPLA 375	.375	.083			S250	S275	S300	S325	S350	S375	S400
.75	BPLA 500	.500	.092			S250	S275	S300	S325	S350	S375	S400
.88	BPLA 625	.625	.124			S250	S275	S300	S325	S350	S375	S400
.94	BPLA 750	.750	.234			S250	S275	S300	S325	S350	S375	S400
.94	BPLA 875	.875	.298			S250	S275	S300	S325	S350	S375	S400
.94	BPLA 1000	1.000	.349			S250	S275	S300	S325	S350	S375	S400

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L"							
						2.50	2.75	3.00	3.25	3.50	3.75	4.00
B .75	BPLA 250	.250	.040			B250	B275	B300	B325	B350		
	BPLA 375	.375	.083			B250	B275	B300	B325	B350	B375	B400
	BPLA 500	.500	.092			B250	B275	B300	B325	B350	B375	B400
	BPLA 625	.625	.124			B250	B275	B300	B325	B350	B375	B400
	BPLA 750	.750	.234			B250	B275	B300	B325	B350	B375	B400
	BPLA 875	.875	.298			B250	B275	B300	B325	B350	B375	B400
	BPLA 1000	1.000	.349			B250	B275	B300	B325	B350	B375	B400
C 1.00	BPLA 375	.375	.083			C250	C275	C300	C325	C350	C375	C400
	BPLA 500	.500	.092			C250	C275	C300	C325	C350	C375	C400
	BPLA 625	.625	.124			C250	C275	C300	C325	C350	C375	C400
	BPLA 750	.750	.234			C250	C275	C300	C325	C350	C375	C400
	BPLA 875	.875	.298				C275	C300	C325	C350	C375	C400
	BPLA 1000	1.000	.349				C275	C300	C325	C350	C375	C400
D 1.25	BPLA 500	.500	.124				D275	D300	D325	D350	D375	D400
	BPLA 625	.625	.157				D275	D300	D325	D350	D375	D400
	BPLA 750	.750	.234				D275	D300	D325	D350	D375	D400
	BPLA 875	.875	.298				D275	D300	D325	D350	D375	D400
	BPLA 1000	1.000	.349				D275	D300	D325	D350	D375	D400

SLUG-FREE-MAX-MOVE PILOT

Angular Pilot Benefits:

Lane's Angular Pilot is better known among users as the "slug free pilot". Misfeeds / bad hits when using old style conventional pilots cause an accumulation of slugs in lower die steels that can lead to cracked lower steels, broken pilots, shut-down by tonnage monitors, or scrap.

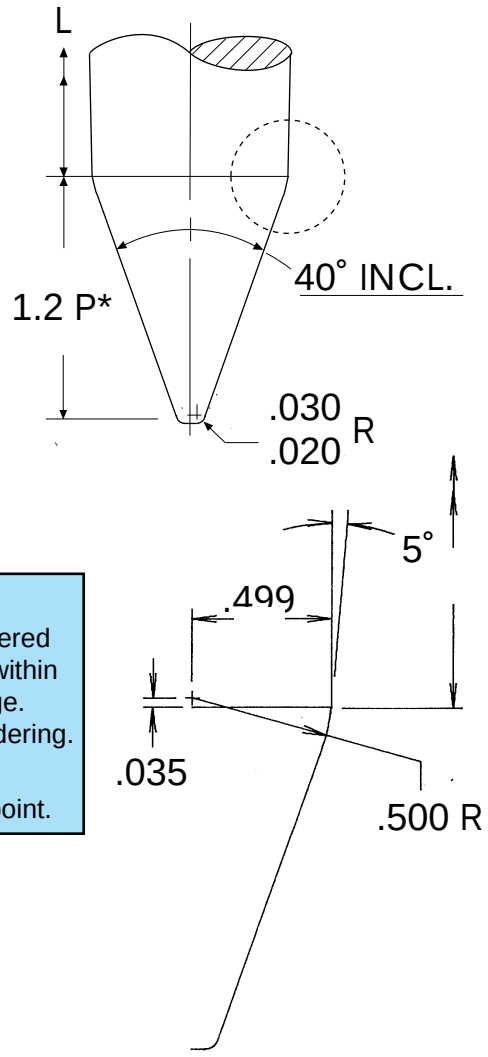
Go "Slug Free" and boost your up-time!

Polished angular points provide maximum movement of stock with lowest coefficient of friction. Least distortion of strip provides better quality stampings and longer production runs.

LENGTH "L"					
4.25	**4.50**	**4.75**	**5.00**	**5.25**	**5.50**
S425	S450	S475	S500	S525	S550
S425	S450	S475	S500	S525	S550
S425	S450	S475	S500	S525	S550
S425	S450	S475	S500	S525	S550
S425	S450	S475	S500	S525	S550

LENGTH "L"					
4.25	**4.50**	**4.75**	**5.00**	**5.25**	**5.50**
B425	B450	B475	B500	B525	B550
B425	B450	B475	B500	B525	B550
B425	B450	B475	B500	B525	B550
B425	B450	B475	B500	B525	B550
B425	B450	B475	B500	B525	B550
C425	C450	C475	C500	C525	C550
C425	C450	C475	C500	C525	C550
C425	C450	C475	C500	C525	C550
C425	C450	C475	C500	C525	C550
C425	C450	C475	C500	C525	C550
D425	D450	D475	D500	D525	D550
D425	D450	D475	D500	D525	D550
D425	D450	D475	D500	D525	D550
D425	D450	D475	D500	D525	D550
D425	D450	D475	D500	D525	D550

ANGULAR PILOT POINT CONFIGURATION



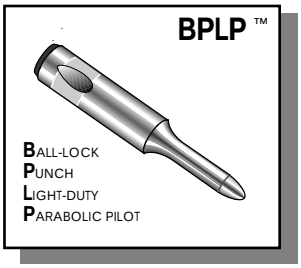
Altered Length, (AL)

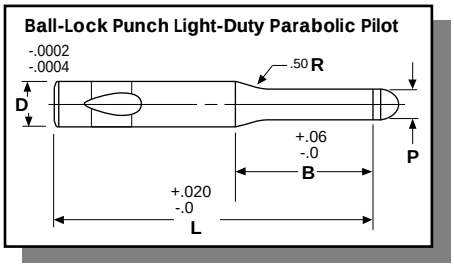
Length (L) may be altered at no additional cost within standard catalog range. Specify (AL) when ordering.

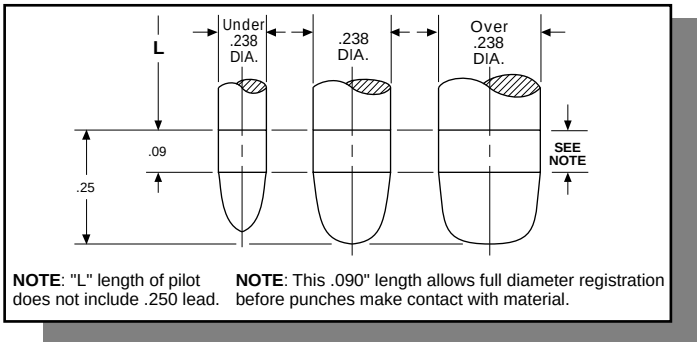
See View:
(L) does not include point.

ALSO AVAILABLE IN GOLD POINT TO RESIST WEAR AND PROLONG ACCURATE REGISTRATION OF POSITION. SEE PAGE T25-26 TECHNICAL SECTION.

Lane® PUNCH CORPORATION — Ball-Lock Punch Light-Duty Parabolic Pilot™







NOTE: "L" length of pilot does not include .250 lead.

NOTE: This .090" length allows full diameter registration before punches make contact with material.

A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

Ordering Example:
(12) BPLP 875-C400 M2 P.781

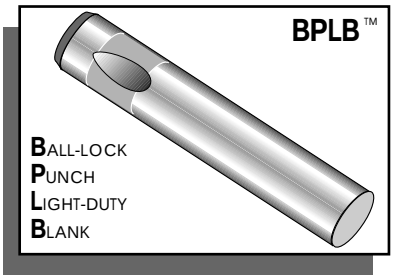
P Tolerance +.0005 -.0000

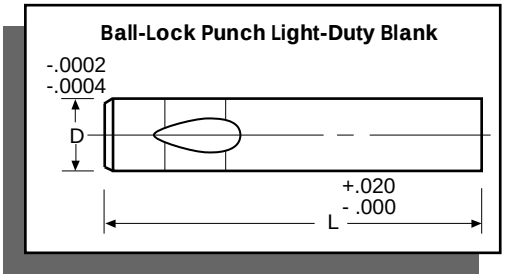
P TO D	.0005

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L"								
				2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
.50	BPLP 250	.250	.050	S200	S225	S250	S275	S300	S325	S350		
.62	BPLP 375	.375	.061	S200	S225	S250	S275	S300	S325	S350	S375	S400
.75	BPLP 500	.500	.092	S200	S225	S250	S275	S300	S325	S350	S375	S400
.88	BPLP 625	.625	.124		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLP 750	.750	.233		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLP 875	.875	.299		S225	S250	S275	S300	S325	S350	S375	S400
.94	BPLP 1000	1.000	.348		S225	S250	S275	S300	S325	S350	S375	S400

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L"							
				2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
B .75	BPLP 250	.250	.050	B225	B250	B275	B300	B325	B350		
	BPLP 375	.375	.061	B225	B250	B275	B300	B325	B350	B375	B400
	BPLP 500	.500	.092	B225	B250	B275	B300	B325	B350	B375	B400
	BPLP 625	.625	.124	B225	B250	B275	B300	B325	B350	B375	B400
	BPLP 750	.750	.233	B225	B250	B275	B300	B325	B350	B375	B400
	BPLP 875	.875	.299	B225	B250	B275	B300	B325	B350	B375	B400
	BPLP 1000	1.000	.348	B225	B250	B275	B300	B325	B350	B375	B400
C 1.00	BPLP 375	.375	.079	C225	C250	C275	C300	C325	C350	C375	C400
	BPLP 500	.500	.092	C225	C250	C275	C300	C325	C350	C375	C400
	BPLP 625	.625	.124	C225	C250	C275	C300	C325	C350	C375	C400
	BPLP 750	.750	.233	C225	C250	C275	C300	C325	C350	C375	C400
	BPLP 875	.875	.299	C225	C250	C275	C300	C325	C350	C375	C400
	BPLP 1000	1.000	.349	C225	C250	C275	C300	C325	C350	C375	C400
D 1.25	BPLP 500	.500	.124		D250	D275	D300	D325	D350	D375	D400
	BPLP 625	.625	.157		D250	D275	D300	D325	D350	D375	D400
	BPLP 750	.750	.233		D250	D275	D300	D325	D350	D375	D400
	BPLP 875	.875	.299		D250	D275	D300	D325	D350	D375	D400
	BPLP 1000	1.000	.348		D250	D275	D300	D325	D350	D375	D400

Ball-Lock Punch Light-Duty Blank™



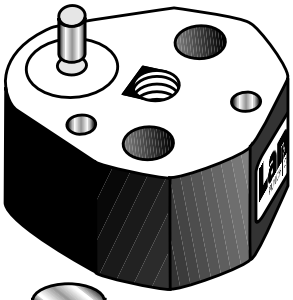


A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

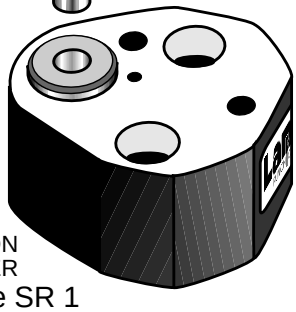
Ordering Example:
(10) BPLB 1000-600 M2

CATALOG NUMBER	SHANK DIA. D	OVERALL LENGTH "L"																				
		2.00	2.25	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	5.75	6.00	6.25	6.50	6.75	7.00
BPLB 250	.250	200	225	250	275	300	325	350	375	400												
BPLB 375	.375	200	225	250	275	300	325	350	375	400	425	450										
BPLB 500	.500	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625			
BPLB 625	.625		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625			
BPLB 750	.750		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650		
BPLB 875	.875		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	
BPLB 1000	1.000		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	700

SEE STANDARD RETAINER SECTION FOR ITEMS BELOW.

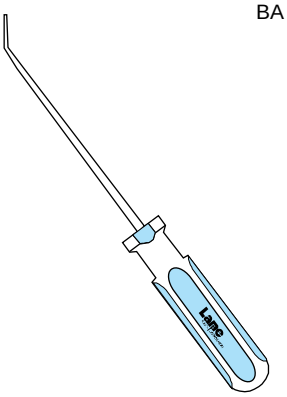


BRLT shown as PUNCH RETAINER

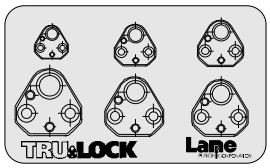


BRLT shown inverted as DIE BUTTON RETAINER

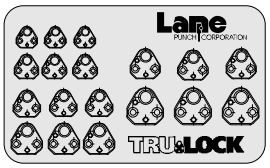
See Page SR 1



RTA RELEASE TOOL ANGULAR
Page SR 11.

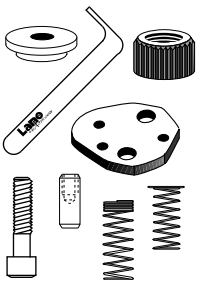


Full scale design template:
BA 70 Page SR 13



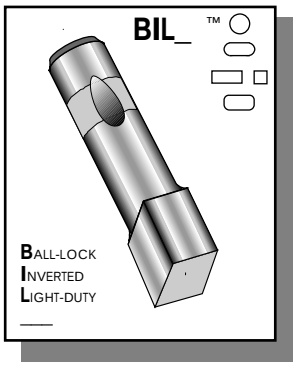
Reduced scale design template:
1/2 1/3 1/4 scale
BA 71 Page SR 13

Retainer Accessories

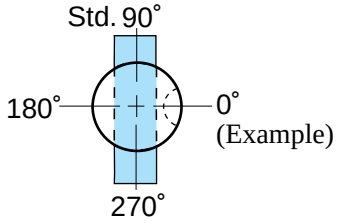


Screws
Retainer Nuts
Dowels
Springs
Backing plugs
Release tools
Pages SR 11-13

Lane® PUNCH CORPORATION — Ball-Lock Inverted Light Duty

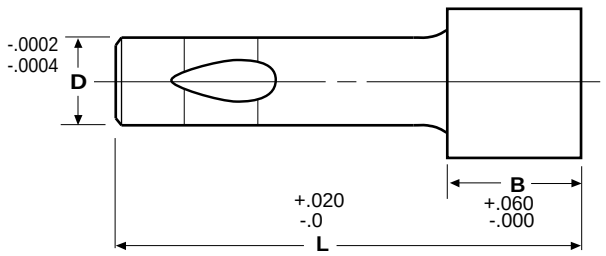


Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Inverted Light Duty



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

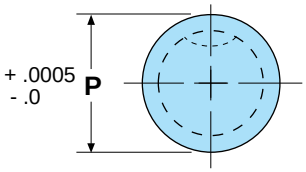
BILH $G = \left[\sqrt{(P-.040)^2 + (W-.040)^2}\right] + .040$

Ordering Example:
(6) BILO 750-400 M2 P.700 W.375 BS-0°

P & W TO D .001 Ⓜ

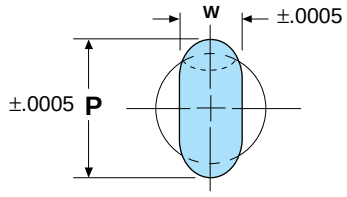
M2, R/c 61-63 triple tempered

BILR ROUND



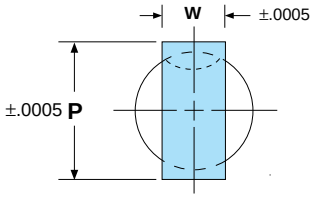
Catalog No.	Shank Dia. "D"	Point Range Min. "P"	Point Range Max. "P"	Point Length "B"	Overall Length "L" 2.50	3.00	3.50	4.00
BILR 375	.375	.376	.875	.625	250	300	350	
BILR 500	.500	.501	1.250	.750	250	300	350	400
BILR 625	.625	.626	1.500	.875	250	300	350	400
BILR 750	.750	.751	1.500	.937	250	300	350	400
BILR 875	.875	.876	1.750	.937	250	300	350	400
BILR 1000	1.000	1.001	1.750	.937	250	300	350	400

BILO OBLONG



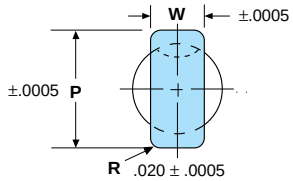
Catalog No.	"D"	Min. "W"	Max. "P"	"B"	2.50	3.00	3.50	4.00
BILO 375	.375	.125	.875	.625	250	300	350	
BILO 500	.500	.187	1.250	.750	250	300	350	400
BILO 625	.625	.250	1.500	.875	250	300	350	400
BILO 750	.750	.312	1.500	.937	250	300	350	400
BILO 875	.875	.375	1.750	.937	250	300	350	400
BILO 1000	1.000	.437	1.750	.937	250	300	350	400

BILS SQUARE / RECT.



Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00
BILS 375	.375	.125	.875	.625	250	300	350	
BILS 500	.500	.187	1.250	.750	250	300	350	400
BILS 625	.625	.250	1.500	.875	250	300	350	400
BILS 750	.750	.312	1.500	.937	250	300	350	400
BILS 875	.875	.375	1.750	.937	250	300	350	400
BILS 1000	1.000	.437	1.750	.937	250	300	350	400

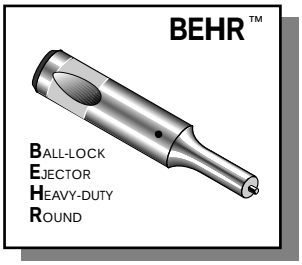
BILH HIGH PRODUCTION

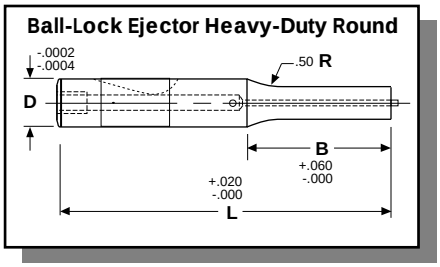


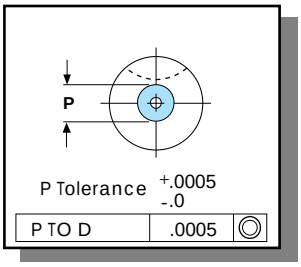
Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00
BILH 375	.375	.125	.875	.625	250	300	350	
BILH 500	.500	.187	1.250	.750	250	300	350	400
BILH 625	.625	.250	1.500	.875	250	300	350	400
BILH 750	.750	.312	1.500	.937	250	300	350	400
BILH 875	.875	.375	1.750	.937	250	300	350	400
BILH 1000	1.000	.437	1.750	.937	250	300	350	400

Ball-Lock Ejector Heavy-Duty Round™

Lane® PUNCH CORPORATION







A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

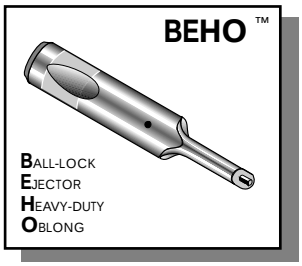
Ordering Example:
(12) BEHR 625 B300 M2 P.532

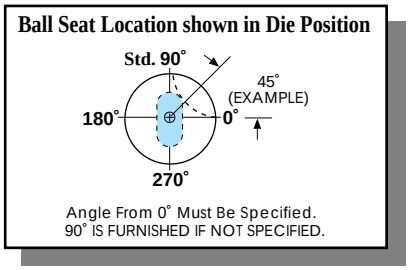
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. POINT P	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	EJECTOR SIZE E**
.62	BEHR 375	.375	.075	S250	S275	S300	S325	S350	S375	S400			E4
.81	BEHR 500	.500	.158	S250	S275	S300	S325	S350	S375	S400	S450	S500	E6
.94	BEHR 625	.625	.158	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.06	BEHR 750	.750	.234	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.19	BEHR 875	.875	.300		S275	S300	S325	S350	S375	S400	S450	S500	E9
1.25	BEHR 1000	1.000	.350			S300	S325	S350	S375	S400	S450	S500	E9
1.44	BEHR 1250	1.250	.450			S300	S325	S350	S375	S400	S450	S500	E12

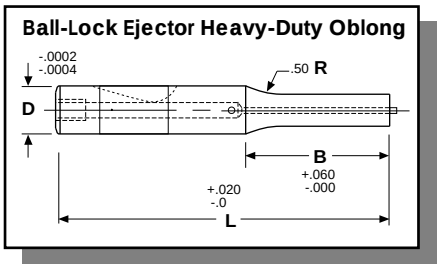
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. POINT P	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	EJECTOR SIZE E**
B .75	BEHR 375	.375	.075	B250	B275	B300	B325	B350	B375	B400			E4
	BEHR 500	.500	.158	B250	B275	B300	B325	B350	B375	B400	B450	B500	E6
	BEHR 625	.625	.158	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHR 750	.750	.234	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHR 875	.875	.300		B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHR 1000	1.000	.350			B300	B325	B350	B375	B400	B450	B500	E9
	BEHR 1250	1.250	.450			B300	B325	B350	B375	B400	B450	B500	E9
C 1.00	BEHR 375	.375	.081	C250	C275	C300	C325	C350	C375	C400			E4
	BEHR 500	.500	.158	C250	C275	C300	C325	C350	C375	C400	C450	C500	E6
	BEHR 625	.625	.158	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHR 750	.750	.234	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHR 875	.875	.300		C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHR 1000	1.000	.350			C300	C325	C350	C375	C400	C450	C500	E9
	BEHR 1250	1.250	.450			C300	C325	C350	C375	C400	C450	C500	E9
D 1.25	BEHR 500	.500	.158		D275	D300	D325	D350	D375	D400	D450	D500	E6
	BEHR 625	.625	.158		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHR 750	.750	.235		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHR 875	.875	.300		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHR 1000	1.000	.350			D300	D325	D350	D375	D400	D450	D500	E9
	BEHR 1250	1.250	.450			D300	D325	D350	D375	D400	D450	D500	E9

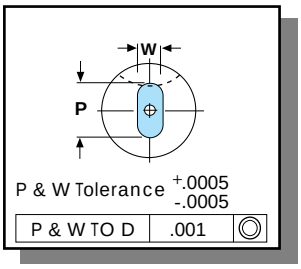
** Replacement Ejector Components are detailed in Technical Section.

Lane® PUNCH CORPORATION — Ball-Lock Ejector Heavy-Duty Oblong™









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(12) BEHO 750-S400 M2 P.687 W.375 BS-30°

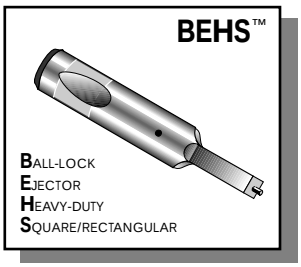
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX P	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	EJECTOR SIZE E**
.62	BEHO 375	.375	.075	.374	S250	S275	S300	S325	S350	S375	S400			E4
.81	BEHO 500	.500	.158	.499	S250	S275	S300	S325	S350	S375	S400	S450	S500	E6
.94	BEHO 625	.625	.158	.624	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.06	BEHO 750	.750	.234	.749	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.19	BEHO 875	.875	.234	.874		S275	S300	S325	S350	S375	S400	S450	S500	E9
1.25	BEHO 1000	1.000	.234	.999			S300	S325	S350	S375	S400	S450	S500	E9
1.44	BEHO 1250	1.250	.234	1.249			S300	S325	S350	S375	S400	S450	S500	E12

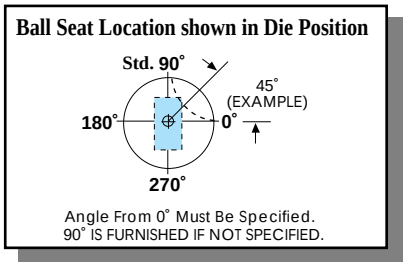
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX P	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	EJECTOR SIZE E**
B .75	BEHO 375	.375	.075	.374	B250	B275	B300	B325	B350	B375	B400			E4
	BEHO 500	.500	.158	.499	B250	B275	B300	B325	B350	B375	B400	B450	B500	E6
	BEHO 625	.625	.158	.624	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHO 750	.750	.234	.749	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHO 875	.875	.234	.874		B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHO 1000	1.000	.234	.999			B300	B325	B350	B375	B400	B450	B500	E9
	BEHO 1250	1.250	.234	1.249			B300	B325	B350	B375	B400	B450	B500	E12
C 1.00	BEHO 375	.375	.081	.374	C250	C275	C300	C325	C350	C375	C400			E4
	BEHO 500	.500	.158	.499	C250	C275	C300	C325	C350	C375	C400	C450	C500	E6
	BEHO 625	.625	.158	.624	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHO 750	.750	.234	.749	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHO 875	.875	.234	.874		C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHO 1000	1.000	.234	.999			C300	C325	C350	C375	C400	C450	C500	E9
	BEHO 1250	1.250	.234	1.249			C300	C325	C350	C375	C400	C450	C500	E12
D 1.25	BEHO 500	.500	.158	.499		D275	D300	D325	D350	D375	D400	D450	D500	E6
	BEHO 625	.625	.158	.624		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHO 750	.750	.234	.749		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHO 875	.875	.234	.874		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHO 1000	1.000	.234	.999			D300	D325	D350	D375	D400	D450	D500	E9
	BEHO 1250	1.250	.234	1.249			D300	D325	D350	D375	D400	D450	D500	E12

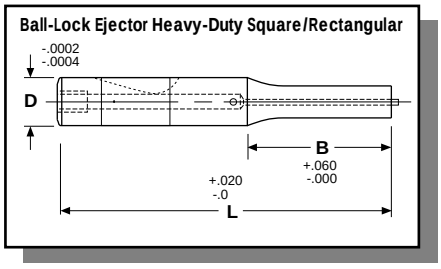
** Replacement Ejector Components are detailed in Technical Section.

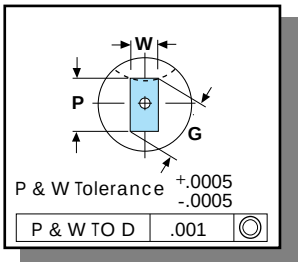
Ball-Lock Ejector Heavy-Duty Square Rectangular™

Lane® PUNCH CORPORATION









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

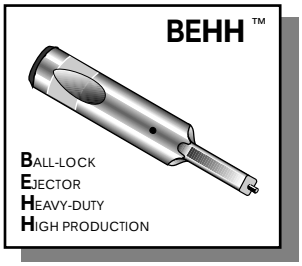
Ordering Example:
(5) BEHS 1250-S350 M2 P1.1062 W.250 BS-0°

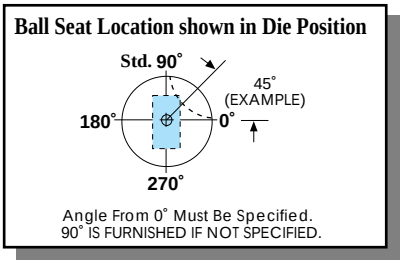
DIAGONAL "G"= $\sqrt{P^2 + W^2}$

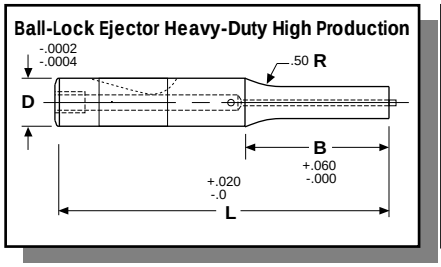
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L"									EJECTOR SIZE E**
					2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	
.62	BEHS 375	.375	.075	.374	S250	S275	S300	S325	S350	S375	S400			E4
.81	BEHS 500	.500	.158	.499	S250	S275	S300	S325	S350	S375	S400	S450	S500	E6
.94	BEHS 625	.625	.158	.624	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.06	BEHS 750	.750	.234	.749	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.19	BEHS 875	.875	.234	.874		S275	S300	S325	S350	S375	S400	S450	S500	E9
1.25	BEHS 1000	1.000	.234	.999			S300	S325	S350	S375	S400	S450	S500	E9
1.44	BEHS 1250	1.250	.234	1.249			S300	S325	S350	S375	S400	S450	S500	E12

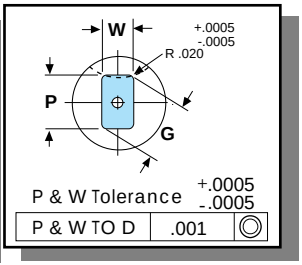
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L"									EJECTOR SIZE E**
					2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	
B .75	BEHS 375	.375	.075	.374	B250	B275	B300	B325	B350	B375	B400			E4
	BEHS 500	.500	.158	.499	B250	B275	B300	B325	B350	B375	B400	B450	B500	E6
	BEHS 625	.625	.158	.624	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHS 750	.750	.234	.749	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHS 875	.875	.234	.874		B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHS 1000	1.000	.234	.999			B300	B325	B350	B375	B400	B450	B500	E9
	BEHS 1250	1.250	.234	1.249			B300	B325	B350	B375	B400	B450	B500	E12
C 1.00	BEHS 375	.375	.081	.374	C250	C275	C300	C325	C350	C375	C400			E4
	BEHS 500	.500	.158	.499	C250	C275	C300	C325	C350	C375	C400	C450	C500	E6
	BEHS 625	.625	.158	.624	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHS 750	.750	.234	.749	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHS 875	.875	.234	.874		C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHS 1000	1.000	.234	.999			C300	C325	C350	C375	C400	C450	C500	E9
	BEHS 1250	1.250	.234	1.249			C300	C325	C350	C375	C400	C450	C500	E12
D 1.25	BEHS 500	.500	.158	.499		D275	D300	D325	D350	D375	D400	D450	D500	E6
	BEHS 625	.625	.158	.624		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHS 750	.750	.234	.749		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHS 875	.875	.234	.874		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHS 1000	1.000	.234	.999			D300	D325	D350	D375	D400	D450	D500	E9
	BEHS 1250	1.250	.234	1.249			D300	D325	D350	D375	D400	D450	D500	E12

** Replacement Ejector Components are detailed in Technical Section.









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(6) BEHH 1250-C300 M2 P1.125 W.225 BS-90°

The Lane "H" High Production punch and die will outproduce any sharp cornered rectangle or square, same steel, same clearance, punch to die.

$$G=\left[\sqrt{(P-.040)^2+(W-.040)^2}\right]+.040$$

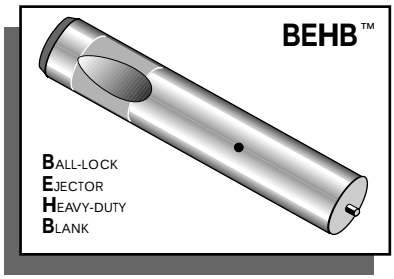
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	EJECTOR SIZE E**
.62	BEHH 375	.375	.075	.374	S250	S275	S300	S325	S350	S375	S400			E4
.81	BEHH 500	.500	.158	.499	S250	S275	S300	S325	S350	S375	S400	S450	S500	E6
.94	BEHH 625	.625	.158	.624	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.06	BEHH 750	.750	.234	.749	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.19	BEHH 875	.875	.234	.874		S275	S300	S325	S350	S375	S400	S450	S500	E9
1.25	BEHH 1000	1.000	.234	.999			S300	S325	S350	S375	S400	S450	S500	E9
1.44	BEHH 1250	1.250	.234	1.249			S300	S325	S350	S375	S400	S450	S500	E12

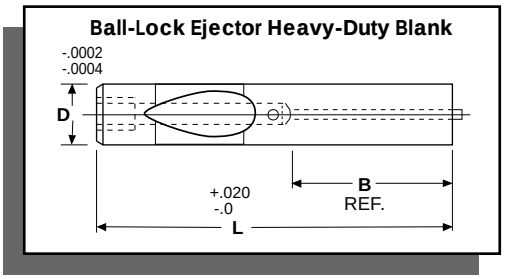
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX G	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	EJECTOR SIZE E**
B .75	BEHH 375	.375	.075	.374	B250	B275	B300	B325	B350	B375	B400			E4
	BEHH 500	.500	.158	.499	B250	B275	B300	B325	B350	B375	B400	B450	B500	E6
	BEHH 625	.625	.158	.624	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHH 750	.750	.234	.749	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHH 875	.875	.234	.874		B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHH 1000	1.000	.234	.999			B300	B325	B350	B375	B400	B450	B500	E9
	BEHH 1250	1.250	.234	1.249			B300	B325	B350	B375	B400	B450	B500	E12
C 1.00	BEHH 375	.375	.081	.374	C250	C275	C300	C325	C350	C375	C400			E4
	BEHH 500	.500	.158	.499	C250	C275	C300	C325	C350	C375	C400	C450	C500	E6
	BEHH 625	.625	.158	.624	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHH 750	.750	.234	.749	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHH 875	.875	.234	.874		C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHH 1000	1.000	.234	.999			C300	C325	C350	C375	C400	C450	C500	E9
	BEHH 1250	1.250	.234	1.249			C300	C325	C350	C375	C400	C450	C500	E12
D 1.25	BEHH 500	.500	.158	.499		D275	D300	D325	D350	D375	D400	D450	D500	E6
	BEHH 625	.625	.158	.624		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHH 750	.750	.234	.749		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHH 875	.875	.234	.874		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHH 1000	1.000	.234	.999			D300	D325	D350	D375	D400	D450	D500	E9
	BEHH 1250	1.250	.234	1.249			D300	D325	D350	D375	D400	D450	D500	E12

** Replacement Ejector Components are detailed in Technical Section.

Ball-Lock Ejector Heavy-Duty Blank™

Lane® PUNCH CORPORATION





A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

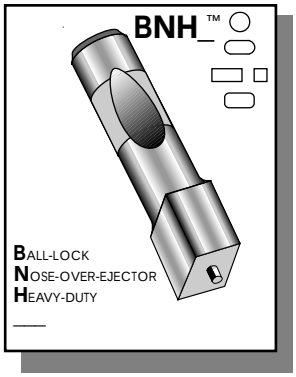
Ordering Example:
(10) BEHB 1000-C450 M2

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	OVERALL LENGTH "L"									EJECTOR SIZE E**
			2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	
.62	BEHB 375	.375	S250	S275	S300	S325	S350	S375	S400			E4
.81	BEHB 500	.500	S250	S275	S300	S325	S350	S375	S400	S450	S500	E6
.94	BEHB 625	.625	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.06	BEHB 750	.750	S250	S275	S300	S325	S350	S375	S400	S450	S500	E9
1.19	BEHB 875	.875		S275	S300	S325	S350	S375	S400	S450	S500	E9
1.25	BEHB 1000	1.000			S300	S325	S350	S375	S400	S450	S500	E9
1.44	BEHB 1250	1.250			S300	S325	S350	S375	S400	S450	S500	E12

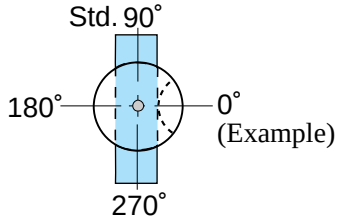
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	OVERALL LENGTH "L"									EJECTOR SIZE E**
			2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	
B .75	BEHB 375	.375	B250	B275	B300	B325	B350	B375	B400			E4
	BEHB 500	.500	B250	B275	B300	B325	B350	B375	B400	B450	B500	E6
	BEHB 625	.625	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHB 750	.750	B250	B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHB 875	.875		B275	B300	B325	B350	B375	B400	B450	B500	E9
	BEHB 1000	1.000			B300	B325	B350	B375	B400	B450	B500	E9
	BEHB 1250	1.250			B300	B325	B350	B375	B400	B450	B500	E12
C 1.00	BEHB 375	.375	C250	C275	C300	C325	C350	C375	C400			E4
	BEHB 500	.500	C250	C275	C300	C325	C350	C375	C400	C450	C500	E6
	BEHB 625	.625	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHB 750	.750	C250	C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHB 875	.875		C275	C300	C325	C350	C375	C400	C450	C500	E9
	BEHB 1000	1.000			C300	C325	C350	C375	C400	C450	C500	E9
	BEHB 1250	1.250			C300	C325	C350	C375	C400	C450	C500	E12
D 1.25	BEHB 500	.500		D275	D300	D325	D350	D375	D400	D450	D500	E6
	BEHB 625	.625		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHB 750	.750		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHB 875	.875		D275	D300	D325	D350	D375	D400	D450	D500	E9
	BEHB 1000	1.000			D300	D325	D350	D375	D400	D450	D500	E9
	BEHB 1250	1.250			D300	D325	D350	D375	D400	D450	D500	E12

** Replacement Ejector Components are detailed in Technical Section.

Lape® PUNCH CORPORATION — Ball-Lock Nose-Over-Ejector Heavy Duty

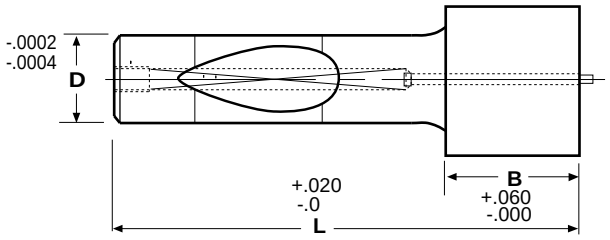


Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Nose-Over-Ejector Heavy Duty



P & W TO D .001 Ⓜ

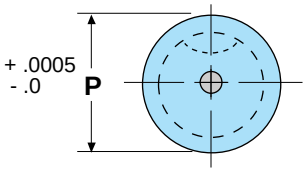
BNLS G= $\sqrt{P^2 + W^2}$

BNLH G= $\left[\sqrt{(P-.040)^2 + (W-.040)^2}\right] + .040$

M2, R/c 61-63 triple tempered

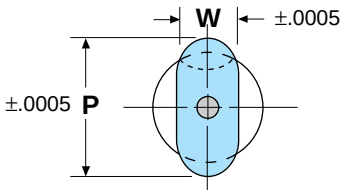
Ordering Example:
(3) BNHR 1000-350 M2 P1.750

BNHR ROUND



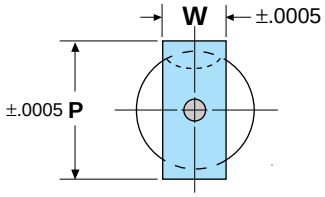
Catalog No.	Shank Dia. "D"	Point Range Min. "P"	Point Range Max. "P"	Point Length "B"	Overall Length "L" 2.50	3.00	3.50	4.00	EJECTOR SIZE E**
BNHR 375	.375	.376	.875	.625	250	300	350		E4
BNHR 500	.500	.501	1.250	.750	250	300	350	400	E6
BNHR 625	.625	.626	1.500	.875	250	300	350	400	E9
BNHR 750	.750	.751	1.500	.937	250	300	350	400	E9
BNHR 875	.875	.876	1.750	.937	250	300	350	400	E9
BNHR 1000	1.000	1.001	1.750	.937	250	300	350	400	E9
BNHR 1250	1.250	1.251	2.000	1.062		300	350	400	E12

BNHO OBLONG



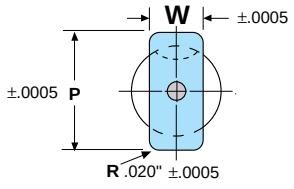
Catalog No.	"D"	Min. "W"	Max. "P"	"B"	2.50	3.00	3.50	4.00	EJECTOR E**
BNHO 375	.375	.125	.875	.625	250	300	350		E4
BNHO 500	.500	.187	1.250	.750	250	300	350	400	E6
BNHO 625	.625	.250	1.500	.875	250	300	350	400	E9
BNHO 750	.750	.312	1.500	.937	250	300	350	400	E9
BNHO 875	.875	.375	1.750	.937	250	300	350	400	E9
BNHO 1000	1.000	.437	1.750	.937	250	300	350	400	E9
BNHO 1250	1.250	.500	2.000	1.062		300	350	400	E12

BNHS SQUARE / RECT.



Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00	EJECTOR E**
BNHS 375	.375	.125	.875	.625	250	300	350		E4
BNHS 500	.500	.187	1.250	.750	250	300	350	400	E6
BNHS 625	.625	.250	1.500	.875	250	300	350	400	E9
BNHS 750	.750	.312	1.500	.937	250	300	350	400	E9
BNHS 875	.875	.375	1.750	.937	250	300	350	400	E9
BNHS 1000	1.000	.437	1.750	.937	250	300	350	400	E9
BNHS 1250	1.250	.500	2.000	1.062		300	350	400	E12

BNHH HIGH PRODUCTION



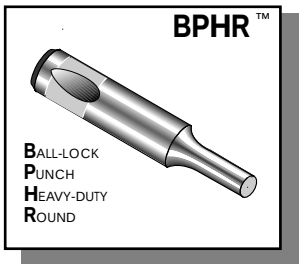
Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00	EJECTOR E**
BNHH 375	.375	.125	.875	.625	250	300	350		E4
BNHH 500	.500	.187	1.250	.750	250	300	350	400	E6
BNHH 625	.625	.250	1.500	.875	250	300	350	400	E9
BNHH 750	.750	.312	1.500	.937	250	300	350	400	E9
BNHH 875	.875	.375	1.750	.937	250	300	350	400	E9
BNHH 1000	1.000	.437	1.750	.937	250	300	350	400	E9
BNHH 1250	1.250	.500	2.000	1.062		300	350	400	E12

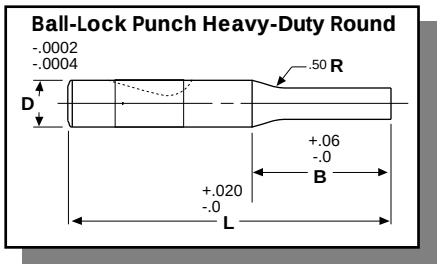
** Replacement Ejector Components are detailed in Technical Section, page T8.

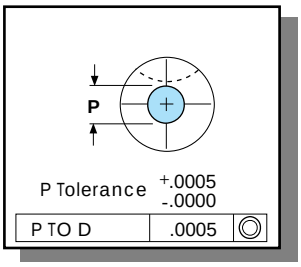
For Prompt Quotation on Specials, Fax : (Mi.)1-800-253-6731 or (NC) 1-800-227-6725

Ball-Lock Punch Heavy-Duty Round™

Lane® PUNCH CORPORATION







A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

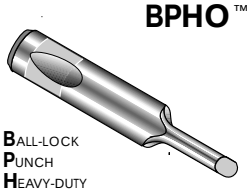
Ordering Example:
(12) BPHR 750-S350 M2 P.625

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	OVERALL LENGTH "L"								
				2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
.62	BPHR 375	.375	.050	S250	S275	S300	S325	S350	S375	S400		
.81	BPHR 500	.500	.093	S250	S275	S300	S325	S350	S375	S400	S450	S500
.94	BPHR 625	.625	.125	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.06	BPHR 750	.750	.234	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.19	BPHR 875	.875	.300		S275	S300	S325	S350	S375	S400	S450	S500
1.25	BPHR 1000	1.000	.350			S300	S325	S350	S375	S400	S450	S500
1.44	BPHR 1250	1.250	.449			S300	S325	S350	S375	S400	S450	S500

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	OVERALL LENGTH "L"								
				2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
B .75	BPHR 375	.375	.050	B250	B275	B300	B325	B350	B375	B400		
	BPHR 500	.500	.093	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHR 625	.625	.125	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHR 750	.750	.234	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHR 875	.875	.300		B275	B300	B325	B350	B375	B400	B450	B500
	BPHR 1000	1.000	.350			B300	B325	B350	B375	B400	B450	B500
	BPHR 1250	1.250	.449			B300	B325	B350	B375	B400	B450	B500
C 1.00	BPHR 375	.375	.080	C250	C275	C300	C325	C350	C375	C400		
	BPHR 500	.500	.093	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHR 625	.625	.125	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHR 750	.750	.234	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHR 875	.875	.300		C275	C300	C325	C350	C375	C400	C450	C500
	BPHR 1000	1.000	.350			C300	C325	C350	C375	C400	C450	C500
	BPHR 1250	1.250	.449			C300	C325	C350	C375	C400	C450	C500
D 1.25	BPHR 500	.500	.125		D275	D300	D325	D350	D375	D400	D450	D500
	BPHR 625	.625	.156		D275	D300	D325	D350	D375	D400	D450	D500
	BPHR 750	.750	.234		D275	D300	D325	D350	D375	D400	D450	D500
	BPHR 875	.875	.300		D275	D300	D325	D350	D375	D400	D450	D500
	BPHR 1000	1.000	.350			D300	D325	D350	D375	D400	D450	D500
	BPHR 1250	1.250	.449			D300	D325	D350	D375	D400	D450	D500

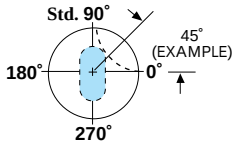
Lane® PUNCH CORPORATION — Ball-Lock Punch Heavy-Duty Oblong™

BPHO™



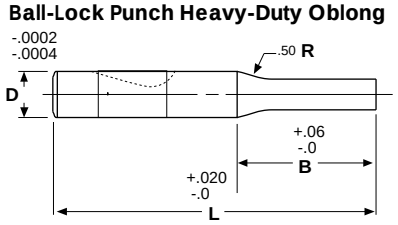
BALL-LOCK
PUNCH
HEAVY-DUTY
OBLONG

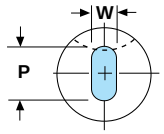
Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Punch Heavy-Duty Oblong





P&W Tolerance +.0005 -.0005

P & W TO D	.001

A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(10) BPHO 500-C300 M2 P.437 W.125 BS-30°

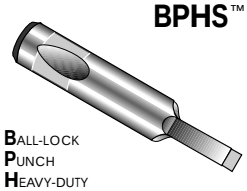
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX P	OVERALL LENGTH "L"								
					2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
.62	BPHO 375	.375	.050	.374	S250	S275	S300	S325	S350	S375	S400		
.81	BPHO 500	.500	.093	.499	S250	S275	S300	S325	S350	S375	S400	S450	S500
.94	BPHO 625	.625	.125	.624	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.06	BPHO 750	.750	.234	.749	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.19	BPHO 875	.875	.234	.874		S275	S300	S325	S350	S375	S400	S450	S500
1.25	BPHO 1000	1.000	.234	.999			S300	S325	S350	S375	S400	S450	S500
1.44	BPHO 1250	1.250	.234	1.249			S300	S325	S350	S375	S400	S450	S500

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX P	OVERALL LENGTH "L"								
					2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
B .75	BPHO 375	.375	.050	.374	B250	B275	B300	B325	B350	B375	B400		
	BPHO 500	.500	.093	.499	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHO 625	.625	.125	.624	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHO 750	.750	.234	.749	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHO 875	.875	.234	.874		B275	B300	B325	B350	B375	B400	B450	B500
	BPHO 1000	1.000	.234	.999			B300	B325	B350	B375	B400	B450	B500
	BPHO 1250	1.250	.234	1.249			B300	B325	B350	B375	B400	B450	B500
C 1.00	BPHO 375	.375	.080	.374	C250	C275	C300	C325	C350	C375	C400		
	BPHO 500	.500	.093	.499	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHO 625	.625	.125	.624	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHO 750	.750	.234	.749	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHO 875	.875	.234	.874		C275	C300	C325	C350	C375	C400	C450	C500
	BPHO 1000	1.000	.234	.999			C300	C325	C350	C375	C400	C450	C500
	BPHO 1250	1.250	.234	1.249			C300	C325	C350	C375	C400	C450	C500
D 1.25	BPHO 500	.500	.125	.499		D275	D300	D325	D350	D375	D400	D450	D500
	BPHO 625	.625	.156	.624		D275	D300	D325	D350	D375	D400	D450	D500
	BPHO 750	.750	.234	.749		D275	D300	D325	D350	D375	D400	D450	D500
	BPHO 875	.875	.234	.874		D275	D300	D325	D350	D375	D400	D450	D500
	BPHO 1000	1.000	.234	.999			D300	D325	D350	D375	D400	D450	D500
	BPHO 1250	1.250	.234	1.249			D300	D325	D350	D375	D400	D450	D500

Ball-Lock Punch Heavy-Duty Square / Rectangular™

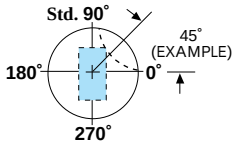
Lane® PUNCH CORPORATION

BPHS™



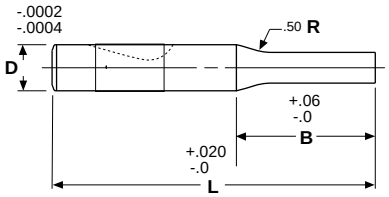
BALL-LOCK
PUNCH
HEAVY-DUTY
SQUARE/RECTANGULAR

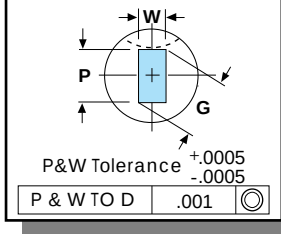
Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Punch Heavy-Duty Square/Rectangular





A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

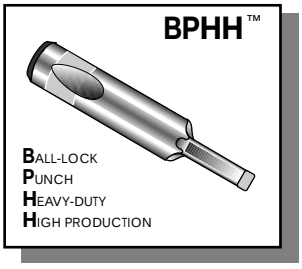
Ordering Example:
(10) BPHS 1000-350 M2, P.625 W.375 BS-90°

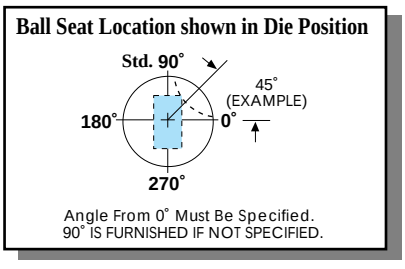
DIAGONAL $G = \sqrt{P^2 + W^2}$

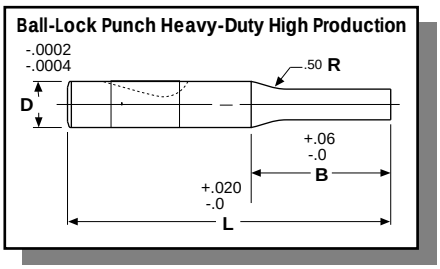
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX DIAGONAL G	OVERALL LENGTH "L"								
					2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
.62	BPHS 375	.375	.050	.374	S250	S275	S300	S325	S350	S375	S400		
.81	BPHS 500	.500	.093	.499	S250	S275	S300	S325	S350	S375	S400	S450	S500
.94	BPHS 625	.625	.125	.624	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.06	BPHS 750	.750	.234	.749	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.19	BPHS 875	.875	.234	.874		S275	S300	S325	S350	S375	S400	S450	S500
1.25	BPHS 1000	1.000	.234	.999			S300	S325	S350	S375	S400	S450	S500
1.44	BPHS 1250	1.250	.234	1.249			S300	S325	S350	S375	S400	S450	S500

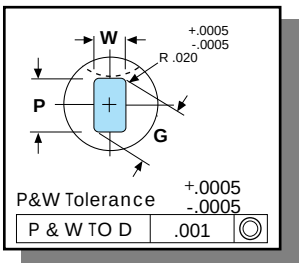
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX DIAGONAL G	OVERALL LENGTH "L"								
					2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
B .75	BPHS 375	.375	.050	.374	B250	B275	B300	B325	B350	B375	B400		
	BPHS 500	.500	.093	.499	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHS 625	.625	.125	.624	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHS 750	.750	.234	.749	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHS 875	.875	.234	.874		B275	B300	B325	B350	B375	B400	B450	B500
	BPHS 1000	1.000	.234	.999			B300	B325	B350	B375	B400	B450	B500
	BPHS 1250	1.250	.234	1.249			B300	B325	B350	B375	B400	B450	B500
C 1.00	BPHS 375	.375	.080	.374	C250	C275	C300	C325	C350	C375	C400		
	BPHS 500	.500	.093	.499	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHS 625	.625	.125	.624	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHS 750	.750	.234	.749	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHS 875	.875	.234	.874		C275	C300	C325	C350	C375	C400	C450	C500
	BPHS 1000	1.000	.234	.999			C300	C325	C350	C375	C400	C450	C500
	BPHS 1250	1.250	.234	1.249			C300	C325	C350	C375	C400	C450	C500
D 1.25	BPHS 500	.500	.125	.499		D275	D300	D325	D350	D375	D400	D450	D500
	BPHS 625	.625	.156	.624		D275	D300	D325	D350	D375	D400	D450	D500
	BPHS 750	.750	.234	.749		D275	D300	D325	D350	D375	D400	D450	D500
	BPHS 875	.875	.234	.874		D275	D300	D325	D350	D375	D400	D450	D500
	BPHS 1000	1.000	.234	.999			D300	D325	D350	D375	D400	D450	D500
	BPHS 1250	1.250	.234	1.249			D300	D325	D350	D375	D400	D450	D500

Lane® PUNCH CORPORATION — Ball-Lock Punch Heavy-Duty High Production™









A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(10) BPHH 1250-C400 M2 P1.000 W.500 BS-45°

The Lane "H" High Production punch and die will outproduce any sharp cornered rectangle or square, same steel, same clearance, punch to die.

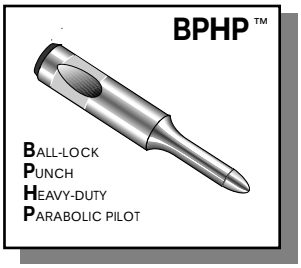
$$G=\left[\sqrt{(P-.040)^2+(W-.040)^2}\right]+.040$$

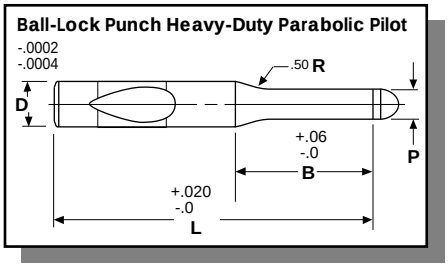
ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX DIAGONAL G	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
.62	BPHH 375	.375	.050	.374	S250	S275	S300	S325	S350	S375	S400		
.81	BPHH 500	.500	.093	.499	S250	S275	S300	S325	S350	S375	S400	S450	S500
.94	BPHH 625	.625	.125	.624	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.06	BPHH 750	.750	.234	.749	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.19	BPHH 875	.875	.234	.874		S275	S300	S325	S350	S375	S400	S450	S500
1.25	BPHH 1000	1.000	.234	.999			S300	S325	S350	S375	S400	S450	S500
1.44	BPHH 1250	1.250	.234	1.249			S300	S325	S350	S375	S400	S450	S500

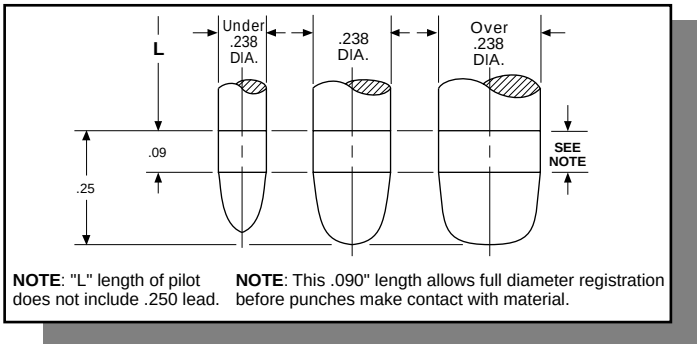
ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. W	MAX DIAGONAL G	OVERALL LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
B .75	BPHH 375	.375	.050	.374	B250	B275	B300	B325	B350	B375	B400		
	BPHH 500	.500	.093	.499	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHH 625	.625	.125	.624	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHH 750	.750	.234	.749	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHH 875	.875	.234	.874		B275	B300	B325	B350	B375	B400	B450	B500
	BPHH 1000	1.000	.234	.999			B300	B325	B350	B375	B400	B450	B500
	BPHH 1250	1.250	.234	1.249			B300	B325	B350	B375	B400	B450	B500
C 1.00	BPHH 375	.375	.080	.374	C250	C275	C300	C325	C350	C375	C400		
	BPHH 500	.500	.093	.499	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHH 625	.625	.125	.624	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHH 750	.750	.234	.749	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHH 875	.875	.234	.874		C275	C300	C325	C350	C375	C400	C450	C500
	BPHH 1000	1.000	.234	.999			C300	C325	C350	C375	C400	C450	C500
	BPHH 1250	1.250	.234	1.249			C300	C325	C350	C375	C400	C450	C500
D 1.25	BPHH 500	.500	.125	.499		D275	D300	D325	D350	D375	D400	D450	D500
	BPHH 625	.625	.156	.624		D275	D300	D325	D350	D375	D400	D450	D500
	BPHH 750	.750	.234	.749		D275	D300	D325	D350	D375	D400	D450	D500
	BPHH 875	.875	.234	.874		D275	D300	D325	D350	D375	D400	D450	D500
	BPHH 1000	1.000	.234	.999			D300	D325	D350	D375	D400	D450	D500
	BPHH 1250	1.250	.234	1.249			D300	D325	D350	D375	D400	D450	D500

Ball-Lock Punch Heavy-Duty Parabolic Pilot™

Lane® PUNCH CORPORATION







NOTE: "L" length of pilot does not include .250 lead.

NOTE: This .090" length allows full diameter registration before punches make contact with material.

A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(12) BPHP 875-C450 M2 P.781

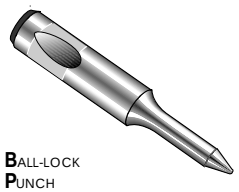
P Tolerance +.0005 -.0000 | P to D | .0005 Ⓜ

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
.62	BPHP 375	.375	.061	S250	S275	S300	S325	S350	S375	S400		
.81	BPHP 500	.500	.090	S250	S275	S300	S325	S350	S375	S400	S450	S500
.94	BPHP 625	.625	.124	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.06	BPHP 750	.750	.234	S250	S275	S300	S325	S350	S375	S400	S450	S500
1.19	BPHP 875	.875	.298		S275	S300	S325	S350	S375	S400	S450	S500
1.25	BPHP 1000	1.000	.349			S300	S325	S350	S375	S400	S450	S500
1.44	BPHP 1250	1.250	.448			S300	S325	S350	S375	S400	S450	S500

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00
B .75	BPHP 375	.375	.061	B250	B275	B300	B325	B350	B375	B400		
	BPHP 500	.500	.090	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHP 625	.625	.124	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHP 750	.750	.234	B250	B275	B300	B325	B350	B375	B400	B450	B500
	BPHP 875	.875	.298		B275	B300	B325	B350	B375	B400	B450	B500
	BPHP 1000	1.000	.349			B300	B325	B350	B375	B400	B450	B500
	BPHP 1250	1.250	.448			B300	B325	B350	B375	B400	B450	B500
C 1.00	BPHP 375	.375	.080	C250	C275	C300	C325	C350	C375	C400		
	BPHP 500	.500	.090	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHP 625	.625	.124	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHP 750	.750	.234	C250	C275	C300	C325	C350	C375	C400	C450	C500
	BPHP 875	.875	.299		C275	C300	C325	C350	C375	C400	C450	C500
	BPHP 1000	1.000	.349			C300	C325	C350	C375	C400	C450	C500
	BPHP 1250	1.250	.448			C300	C325	C350	C375	C400	C450	C500
D 1.25	BPHP 500	.500	.124		D275	D300	D325	D350	D375	D400	D450	D500
	BPHP 625	.625	.156		D275	D300	D325	D350	D375	D400	D450	D500
	BPHP 750	.750	.234		D275	D300	D325	D350	D375	D400	D450	D500
	BPHP 875	.875	.299		D275	D300	D325	D350	D375	D400	D450	D500
	BPHP 1000	1.000	.349			D300	D325	D350	D375	D400	D450	D500
	BPHP 1250	1.250	.448			D300	D325	D350	D375	D400	D450	D500

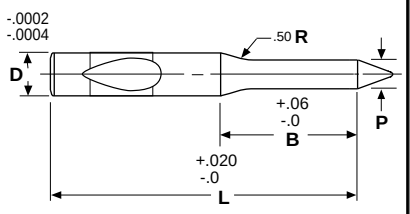
Lane® PUNCH CORPORATION — Ball-Lock Punch Heavy-Duty Angular Pilot™

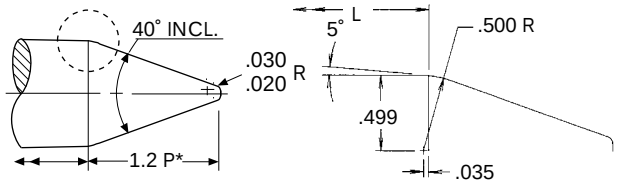
BPHA™



BALL-LOCK
PUNCH
HEAVY-DUTY
ANGULAR PILOT

Ball-Lock Punch Heavy-Duty Angular Pilot





* Angular point length is calculated as follows:

.187 diameter and larger = P dia. x 1.2
under .187 diameter = P x 1.5

P Tolerance	+ .0005 - .0
P TO D	.0005

Ordering Example:
(12) BPHA 750-D400 M2 P.700

A-2 R/c 59-61 double tempered
M-2 R/c 61-63 triple tempered

ANSI STD. POINT LENGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50
.62	BPHA 375	.375	.083	S250	S275	S300	S325	S350	S375	S400		
.81	BPHA 500	.500	.090	S250	S275	S300	S325	S350	S375	S400	S425	S450
.94	BPHA 625	.625	.124	S250	S275	S300	S325	S350	S375	S400	S425	S450
1.06	BPHA 750	.750	.234	S250	S275	S300	S325	S350	S375	S400	S425	S450
1.19	BPHA 875	.875	.299		S275	S300	S325	S350	S375	S400	S425	S450
1.25	BPHA 1000	1.000	.349			S300	S325	S350	S375	S400	S425	S450
1.44	BPHA 1250	1.250	.448			S300	S325	S350	S375	S400	S425	S450

ALT. POINT LGTH B	CATALOG NUMBER	SHANK DIA. D	MIN. P	LENGTH "L" 2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50
B .75	BPHA 375	.375	.083	B250	B275	B300	B325	B350	B375	B400		
	BPHA 500	.500	.090	B250	B275	B300	B325	B350	B375	B400	B425	B450
	BPHA 625	.625	.124	B250	B275	B300	B325	B350	B375	B400	B425	B450
	BPHA 750	.750	.234	B250	B275	B300	B325	B350	B375	B400	B425	B450
	BPHA 875	.875	.299		B275	B300	B325	B350	B375	B400	B425	B450
	BPHA 1000	1.000	.349			B300	B325	B350	B375	B400	B425	B450
	BPHA 1250	1.250	.448			B300	B325	B350	B375	B400	B425	B450
C 1.00	BPHA 375	.375	.083	C250	C275	C300	C325	C350	C375	C400		
	BPHA 500	.500	.090	C250	C275	C300	C325	C350	C375	C400	C425	C450
	BPHA 625	.625	.124	C250	C275	C300	C325	C350	C375	C400	C425	C450
	BPHA 750	.750	.234	C250	C275	C300	C325	C350	C375	C400	C425	C450
	BPHA 875	.875	.299		C275	C300	C325	C350	C375	C400	C425	C450
	BPHA 1000	1.000	.349			C300	C325	C350	C375	C400	C425	C450
	BPHA 1250	1.250	.448			C300	C325	C350	C375	C400	C425	C450
D 1.25	BPHA 500	.500	.124		D275	D300	D325	D350	D375	D400	D425	D450
	BPHA 625	.625	.156		D275	D300	D325	D350	D375	D400	D425	D450
	BPHA 750	.750	.234		D275	D300	D325	D350	D375	D400	D425	D450
	BPHA 875	.875	.299		D275	D300	D325	D350	D375	D400	D425	D450
	BPHA 1000	1.000	.349			D300	D325	D350	D375	D400	D425	D450
	BPHA 1250	1.250	.448			D300	D325	D350	D375	D400	D425	D450

SLUG-FREE-MAX-MOVE PILOT

Angular Pilot Benefits:

Lane's Angular Pilot is better known among users as the "slug free pilot". Misfeeds / bad hits when using old style conventional pilots cause an accumulation of slugs in lower die steels that can lead to cracked lower steels, broken pilots, shut-down by tonnage monitors, or scrap.

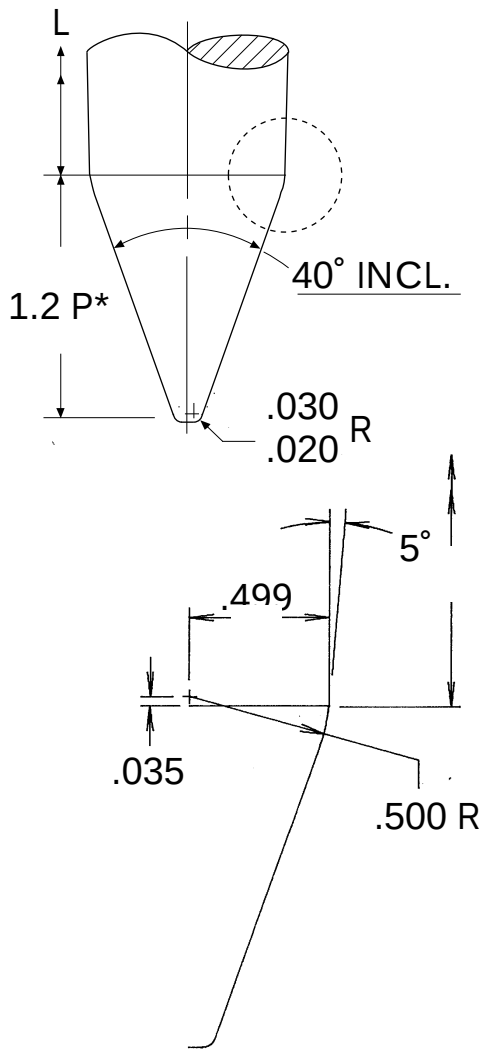
Go "Slug Free" and boost your up-time!

Polished angular points provide maximum movement of stock with lowest coefficient of friction. Least distortion of strip provides better quality stampings and longer production runs.

LENGTH "L"			
4.75	**5.00**	**5.25**	**5.50**
S475	S500	S525	S550
S475	S500	S525	S550
S475	S500	S525	S550
S475	S500	S525	S550
S475	S500	S525	S550
S475	S500	S525	S550

LENGTH "L"			
4.75	**5.00**	**5.25**	**5.50**
B475	B500	B525	B550
B475	B500	B525	B550
B475	B500	B525	B550
B475	B500	B525	B550
B475	B500	B525	B550
B475	B500	B525	B550
C475	C500	C525	C550
C475	C500	C525	C550
C475	C500	C525	C550
C475	C500	C525	C550
C475	C500	C525	C550
C475	C500	C525	C550
D475	D500	D525	D550
D475	D500	D525	D550
D475	D500	D525	D550
D475	D500	D525	D550
D475	D500	D525	D550
D475	D500	D525	D550

ANGULAR PILOT POINT CONFIGURATION



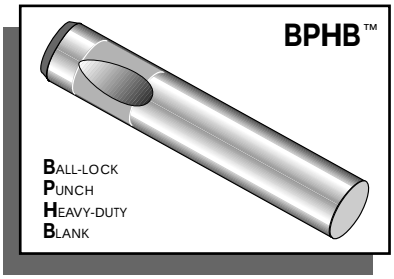
Altered Length, (AL)

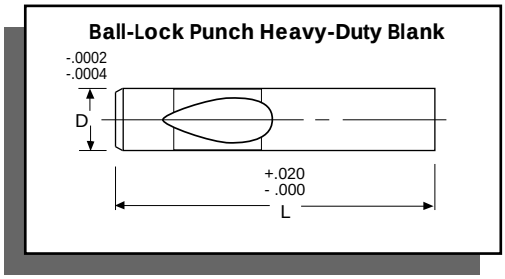
Length (L) may be altered at no additional cost within standard catalog range. Specify (AL) when ordering.

See View:
(L) does not include point.

ALSO AVAILABLE IN GOLD POINT TO RESIST WEAR AND PROLONG ACCURATE REGISTRATION OF POSITION. SEE PAGE T25-26 TECHNICAL SECTION.

Ball-Lock Punch Heavy-Duty Blank™





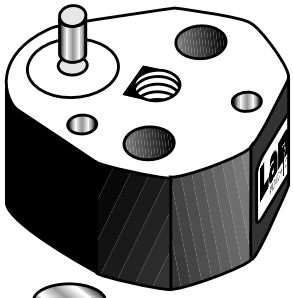
A2, R/c 59-61 double tempered
M2,R/c 61-63 triple tempered

Ordering Example:
(10) BPHB 1000-600 M2

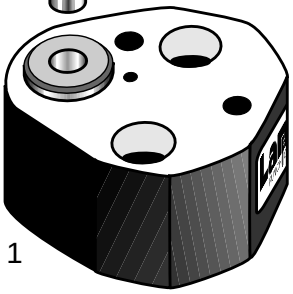
CATALOG NUMBER	SHANK DIA. D	OVERALL LENGTH "L"																	
		2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00
BPHB 375	.375	250	275	300	325	350	375	400	425	450										
BPHB 500	.500	250	275	300	325	350	375	400	425	450										
BPHB 625	.625	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625			
BPHB 750	.750	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625			
BPHB 875	.875		275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650		
BPHB1000	1.000			300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	
BPHB1250	1.250			300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	700

SEE STANDARD RETAINER SECTION FOR ITEMS BELOW.

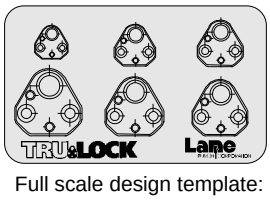
BRLT shown as PUNCH RETAINER



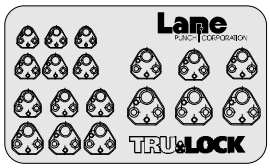
BRLT shown inverted as DIE BUTTON RETAINER



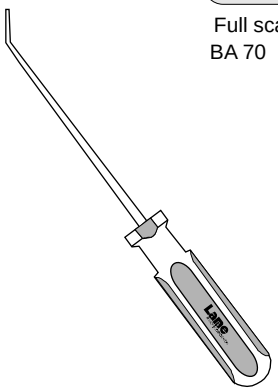
See Pg. SR 1



Full scale design template:
BA 70 Page SR 13



Reduced scale design template:
1/2 1/3 1/4 scale
BA 71 Page SR 13



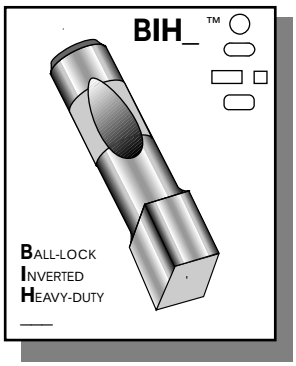
RTA RELEASE TOOL ANGULAR Pg. SR 11.

Retainer Accessories

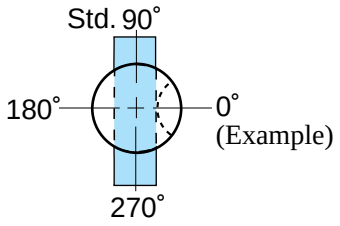
Screws
Retainer Nuts
Dowels
Springs
Backing plugs
Release tools
Pages SR 11-13

Ball-Lock Inverted Heavy Duty

Lane® PUNCH CORPORATION

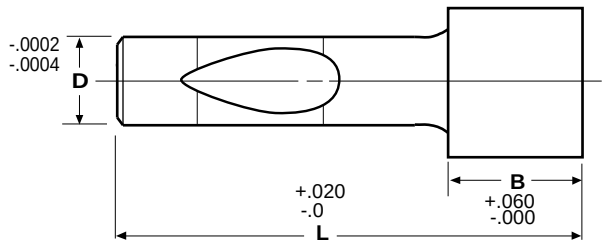


Ball Seat Location shown in Die Position



Angle From 0° Must Be Specified.
90° IS FURNISHED IF NOT SPECIFIED.

Ball-Lock Inverted Heavy Duty



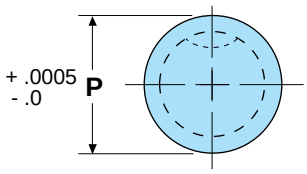
BIHS $G=\sqrt{P^2 + W^2}$

BIHH $G=\left[\sqrt{(P-.040)^2+ (W-.040)^2}\right] + .040$

M2, R/c 61-63 triple tempered

Ordering Example:
(3) BIHR 1000-350 M2 P 1.750

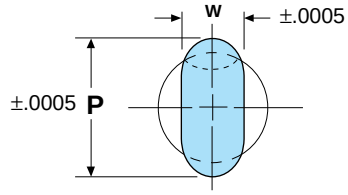
BIHR ROUND



P TO D .0005 Ⓜ

Catalog No.	Shank Dia. "D"	Point Range Min. "P"	Point Range Max. "P"	Point Length "B"	Overall Length "L" 2.50	3.00	3.50	4.00
BIHR 375	.375	.376	.875	.625	250	300	350	
BIHR 500	.500	.501	1.250	.750	250	300	350	400
BIHR 625	.625	.626	1.500	.875	250	300	350	400
BIHR 750	.750	.751	1.500	.937	250	300	350	400
BIHR 875	.875	.876	1.750	.937	250	300	350	400
BIHR 1000	1.000	1.001	1.750	.937	250	300	350	400
BIHR 1250	1.250	1.251	2.000	1.062		300	350	400

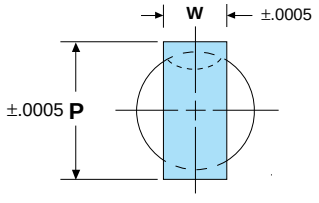
BIHO OBLONG



P & W TO D .001 Ⓜ

Catalog No.	"D"	Min. "W"	Max. "P"	"B"	2.50	3.00	3.50	4.00
BIHO 375	.375	.125	.875	.625	250	300	350	
BIHO 500	.500	.187	1.250	.750	250	300	350	400
BIHO 625	.625	.250	1.500	.875	250	300	350	400
BIHO 750	.750	.312	1.500	.937	250	300	350	400
BIHO 875	.875	.375	1.750	.937	250	300	350	400
BIHO 1000	1.000	.437	1.750	.937	250	300	350	400
BIHO 1250	1.250	.500	2.000	1.062		300	350	400

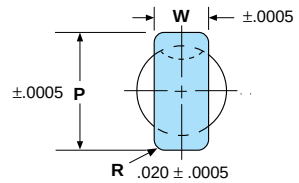
BIHS SQUARE / RECT.



P & W TO D .001 Ⓜ

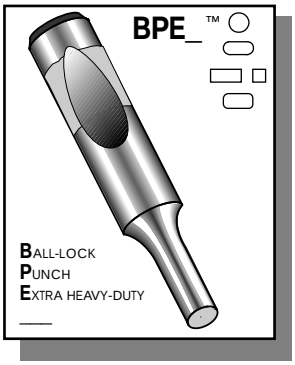
Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00
BIHS 375	.375	.125	.875	.625	250	300	350	
BIHS 500	.500	.187	1.250	.750	250	300	350	400
BIHS 625	.625	.250	1.500	.875	250	300	350	400
BIHS 750	.750	.312	1.500	.937	250	300	350	400
BIHS 875	.875	.375	1.750	.937	250	300	350	400
BIHS 1000	1.000	.437	1.750	.937	250	300	350	400
BIHS 1250	1.250	.500	2.000	1.062		300	350	400

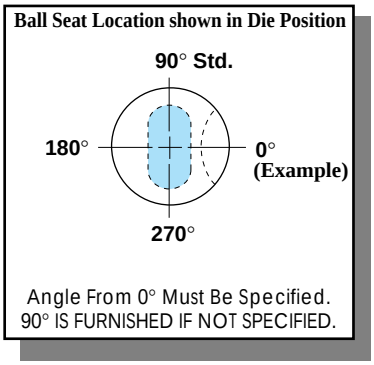
BIHH HIGH PRODUCTION

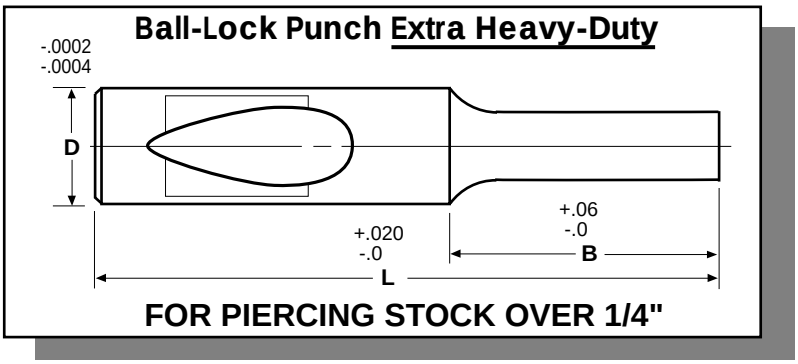


P & W TO D .001 Ⓜ

Catalog No.	"D"	Min. "W"	Max. "G"	"B"	2.50	3.00	3.50	4.00
BIHH 375	.375	.125	.875	.625	250	300	350	
BIHH 500	.500	.187	1.250	.750	250	300	350	400
BIHH 625	.625	.250	1.500	.875	250	300	350	400
BIHH 750	.750	.312	1.500	.937	250	300	350	400
BIHH 875	.875	.375	1.750	.937	250	300	350	400
BIHH 1000	1.000	.437	1.750	.937	250	300	350	400
BIHH 1250	1.250	.500	2.000	1.062		300	350	400







P & W TO D .001 Ⓜ

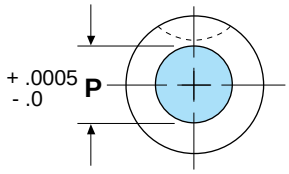
BPES $G = \sqrt{P^2 + W^2}$

BPEH $G = \left[\sqrt{(P-.040)^2 + (W-.040)^2}\right] + .040$

M2, R/c 61-63 triple tempered

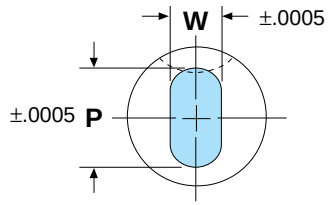
Ordering Example:
(6) BPER 2250-450 M2 P 2.000

BPER ROUND



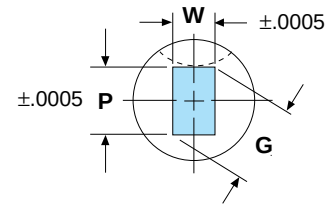
Catalog No.	Shank Dia. "D"	Point Range Min. "P"	Point Range Max. "P"	Point Length "B"	Overall Length "L" 4.00	4.50	5.00	5.50
BPER 1000	1.000	.625	1.000	1.312	400	450	500	550
BPER 1250	1.250	.875	1.250	1.625	400	450	500	550
BPER 1500	1.500	1.125	1.500	1.625	400	450	500	550
BPER 1750	1.750	1.375	1.750	1.625	400	450	500	550
BPER 2000	2.000	1.625	2.000	1.625	400	450	500	550
BPER 2250	2.250	1.875	2.250	1.875		450	500	550
BPER 2500	2.500	2.125	2.500	1.875		450	500	550

BPEO OBLONG



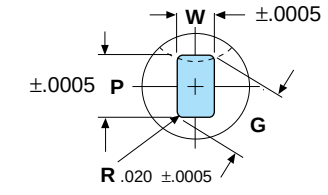
Catalog No.	"D"	Min. "W"	Max. "P"	"B"	4.00	4.50	5.00	5.50
BPEO 1000	1.000	.375	1.000	1.312	400	450	500	550
BPEO 1250	1.250	.500	1.250	1.625	400	450	500	550
BPEO 1500	1.500	.625	1.500	1.625	400	450	500	550
BPEO 1750	1.750	.750	1.750	1.625	400	450	500	550
BPEO 2000	2.000	.875	2.000	1.625	400	450	500	550
BPEO 2250	2.250	1.000	2.250	1.875		450	500	550
BPEO 2500	2.500	1.125	2.500	1.875		450	500	550

BPES SQUARE / RECT.



Catalog No.	"D"	Min. "W"	Max. "G"	"B"	4.00	4.50	5.00	5.50
BPES 1000	1.000	.375	1.000	1.312	400	450	500	550
BPES 1250	1.250	.500	1.250	1.625	400	450	500	550
BPES 1500	1.500	.625	1.500	1.625	400	450	500	550
BPES 1750	1.750	.750	1.750	1.625	400	450	500	550
BPES 2000	2.000	.875	2.000	1.625	400	450	500	550
BPES 2250	2.250	1.000	2.250	1.875		450	500	550
BPES 2500	2.500	1.125	2.500	1.875		450	500	550

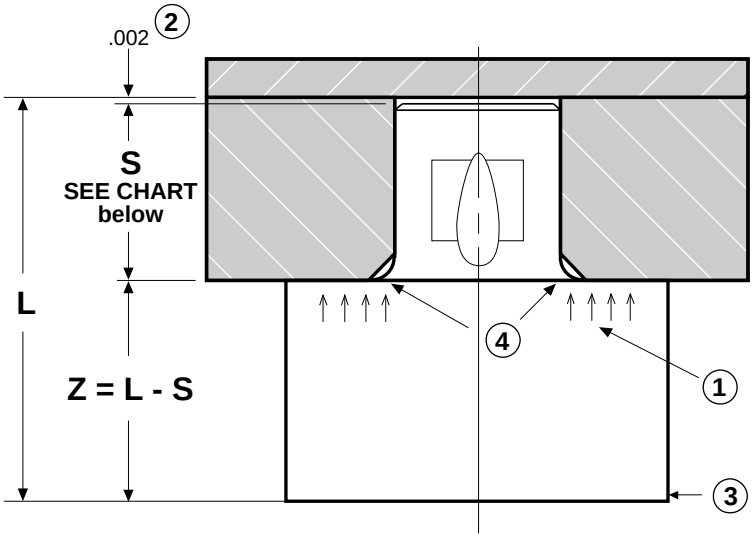
BPEH HIGH PRODUCTION



Catalog No.	"D"	Min. "W"	Max. "G"	"B"	4.00	4.50	5.00	5.50
BPEH 1000	1.000	.375	1.000	1.312	400	450	500	550
BPEH 1250	1.250	.500	1.250	1.625	400	450	500	550
BPEH 1500	1.500	.625	1.500	1.625	400	450	500	550
BPEH 1750	1.750	.750	1.750	1.625	400	450	500	550
BPEH 2000	2.000	.875	2.000	1.625	400	450	500	550
BPEH 2250	2.250	1.000	2.250	1.875		450	500	550
BPEH 2500	2.500	1.125	2.500	1.875		450	500	550

NEW! NEW! NEW! Z-BOTTOMING PUNCHES

Lane® PUNCH CORPORATION



1 Z-Engineered Point Support:
— Resists *deflection.*
— Absorbs impact *shock.*
— Permits off-center design.
— Greater point *rigidity.*
— Longer punch life.
— Less down time.

2 Z-Engineered Shank Length (S):
— *Reduces* backing plate breakage.
— Redistributes shock over *greater area.*

3 Through-Ground Punch Point:
— No radius blend to interfere.
— *Ease of removal* through stripper.
— Long life, many sharpenings of punch.
— Replacement in minutes, not hours.

4 Coordinated Punch - Retainer Design:
— For greatest strength, punch is *matched to Retainer and Retainer is altered to punch.* (See Retainer ordering example below).
— Radius is cleared to *remove Stress-Riser.*
— Provides maximum punch life.
— Longer production runs.

SHANK LENGTH S	LIGHT DUTY	HEAVY DUTY	EXTRA HEAVY DUTY
	.998	1.373	2.498

INVERTED POINT SHAPE CHART	LIGHT DUTY	LIGHT DUTY EJECTOR	HEAVY DUTY	HEAVY DUTY EJECTOR	EXTRA HEAVY
ROUND Page	BILR B15	BNLR B6	BIHR B30	BNHR B21	BPER B31
OBLONG Page	BILO B15	BNLO B6	BIHO B30	BNHO B21	BPEO B31
SQUARE/ RECT. Page	BILS B15	BNLS B6	BIHS B30	BNHS B21	BPES B31
HIGH PRODUCTION RADIUSED RECT. Page	BILH B15	BNLH B6	BIHH B30	BNHH B21	BPEH B31
SPECIALS DESIGN ASSISTANCE	SEE TECHNICAL SECTION OR CALL ANY PLANT FOR ASSISTANCE.				
RETAINERS	SEE STANDARD RETAINER SECTION.				

ORDERING EXAMPLE:

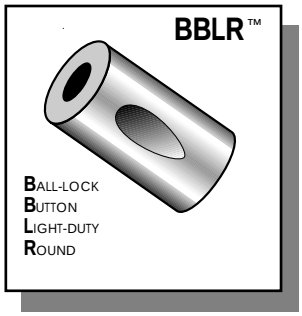
1. Select Punch catalog letters from chart above. Select length, steel etc., from page listed.
2. Insert the letter "Z" to specify punch to *bottom on retainer top surface.*
3. The Retainer must be altered to the punch to eliminate interference. Please select Retainer from Standard Retainer section.

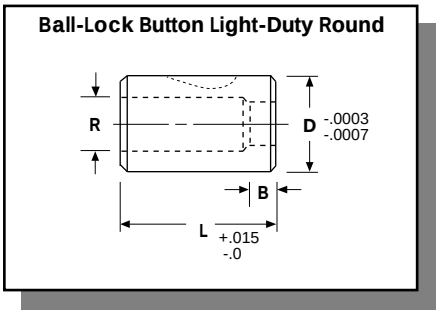
Punch Ordering Examples:
1. Catalog Standard:
(3) BIHS 1250-Z400 M2 P1.750 W.750
2. Custom Per Your Drawing:
(2) BIHC 1250-Z400 per print attached.

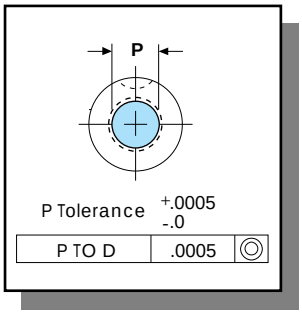
Retainer Ordering Example:
(2) BRHT 1250 with .12 x 45` chamfer

Punch *Stripping Force* formula and Retainer *Stripping Force Resistance* chart are in the Technical Section.

Ball-Lock Button Light-Duty Round™





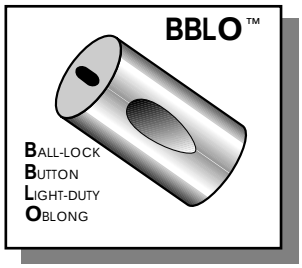


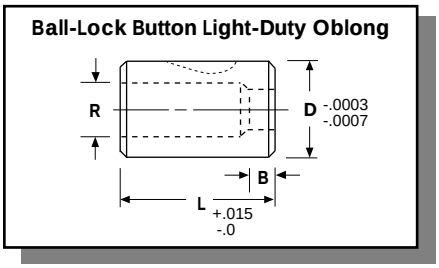
A2, R/c 59-61 double tempered

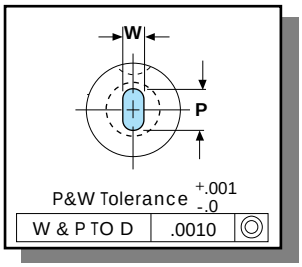
Ordering Example:
(10) BBLR 750-118 A2 P.375

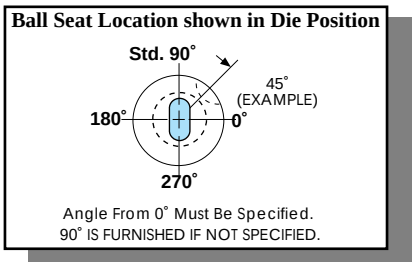
CATALOG NUMBER	BODY DIA. "D"	MIN. P	MAX P	MIN. B	LENGTH L 1.187	MAX R
BBLR 500	.500	.064	.250	.156	118	.281
BBLR 625	.625	.125	.344	.187	118	.375
BBLR 750	.750	.150	.453	.187	118	.500
BBLR 875	.875	.174	.562	.187	118	.594
BBLR 1000	1.000	.200	.656	.250	118	.687
BBLR 1250	1.250	.250	.751	.250	118	.781
BBLR 1500	1.500	.300	.935	.250	118	.969
BBLR 1750	1.750	.350	1.200	.312	118	1.230

Ball-Lock Button Light-Duty Oblong™









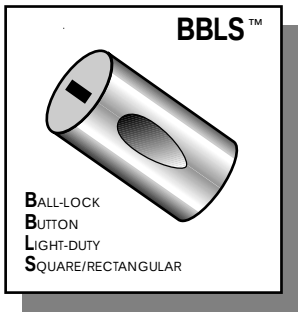
A2, R/c 59-61 double tempered

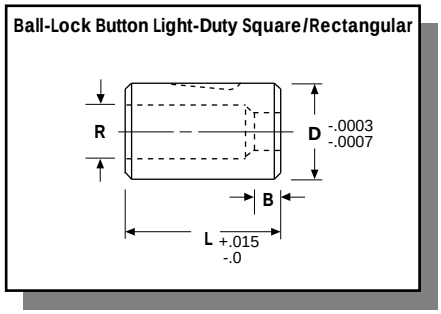
Ordering Example:
(7) BBLO500-118 A2 P.250 W.093 BS-90°

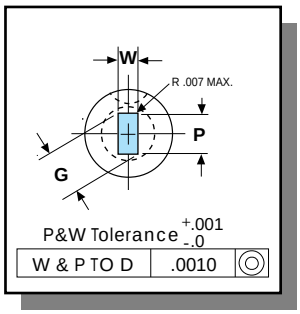
CATALOG NUMBER	BODY DIA. "D"	MIN. W	MAX P	MIN. B	LENGTH L 1.187	MAX R
BBLO 500	.500	.048	.250	.156	118	.281
BBLO 625	.625	.062	.344	.187	118	.375
BBLO 750	.750	.093	.453	.187	118	.500
BBLO 875	.875	.125	.562	.187	118	.594
BBLO 1000	1.000	.156	.656	.250	118	.687
BBLO 1250	1.250	.187	.751	.250	118	.781
BBLO 1500	1.500	.218	.935	.250	118	.969
BBLO 1750	1.750	.250	1.200	.312	118	1.230

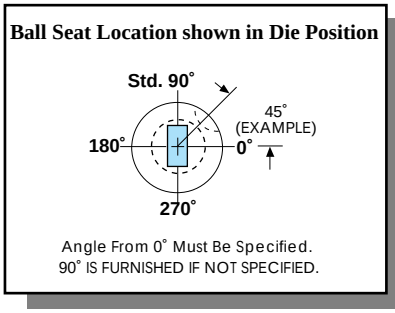
Ball-Lock Button Light-Duty Square/Rectangular™

Lane® PUNCH CORPORATION









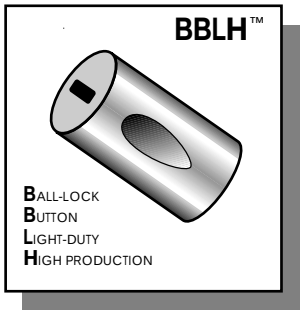
CATALOG NUMBER	BODY DIA. "D"	MIN. W	MAX G	MIN. B	LENGTH L 1.187	MAX R
BBLS 500	.500	.048	.250	.156	118	.281
BBLS 625	.625	.062	.344	.187	118	.375
BBLS 750	.750	.093	.453	.187	118	.500
BBLS 875	.875	.125	.562	.187	118	.594
BBLS 1000	1.000	.156	.656	.250	118	.687
BBLS 1250	1.250	.187	.751	.250	118	.781
BBLS 1500	1.500	.218	.935	.250	118	.969
BBLS 1750	1.750	.250	1.200	.312	118	1.230

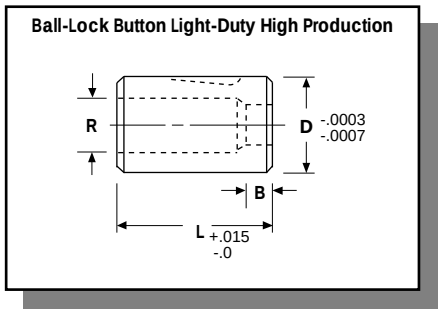
A2, R/c 59-61 double tempered

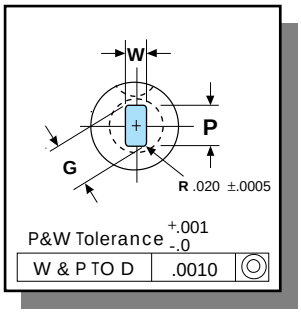
Ordering Example:
(10) BBLS 750-118 A2 P.375 W.125 BS-0°

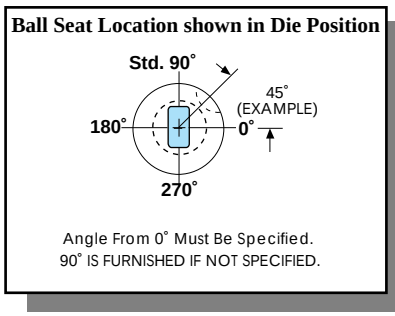
$G = \sqrt{P^2 + W^2}$

Ball-Lock Button Light-Duty High Production™









CATALOG NUMBER	BODY DIA. "D"	MIN. W	MAX G	MIN. B	LENGTH L 1.187	MAX R
BBLH 500	.500	.048	.250	.156	118	.281
BBLH 625	.625	.062	.344	.187	118	.375
BBLH 750	.750	.093	.453	.187	118	.500
BBLH 875	.875	.125	.562	.187	118	.594
BBLH 1000	1.000	.156	.656	.250	118	.687
BBLH 1250	1.250	.187	.751	.250	118	.781
BBLH 1500	1.500	.218	.935	.250	118	.969
BBLH 1750	1.750	.250	1.200	.312	118	1.230

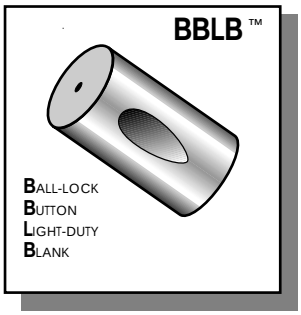
A2, R/c 59-61 double tempered

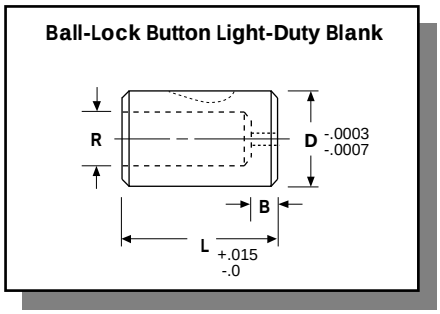
Ordering Example:
(5) BBLH 1000-118 A2 P.500 W.250 BS-90°

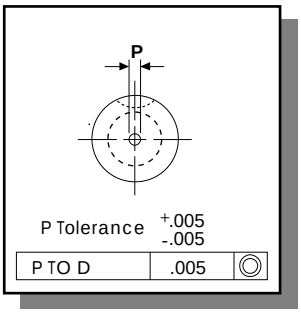
The Lane "H" punch and die will outproduce any sharp cornered rectangle or square, same steel, same clearance, punch to die.

$G = \left[\sqrt{(P-.040)^2 + (W-.040)^2}\right] + .040$

Ball-Lock Button Light-Duty Blank™





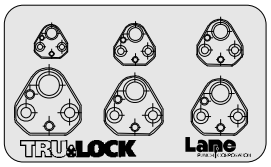


A2, R/c 59-61 double tempered

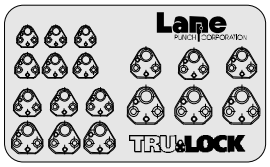
Ordering Example:
(25) BBLB 750-118 A2

CATALOG NUMBER	BODY DIA. "D"	HOLE DIA. P	MIN. B	LENGTH L 1.187	MAX R
BBLB 500	.500	.032	.156	118	.281
BBLB 625	.625	.048	.187	118	.375
BBLB 750	.750	.062	.187	118	.500
BBLB 875	.875	.093	.187	118	.594
BBLB 1000	1.000	.125	.250	118	.687
BBLB 1250	1.250	.125	.250	118	.781
BBLB 1500	1.500	.125	.250	118	.969
BBLB 1750	1.750	.125	.312	118	1.230

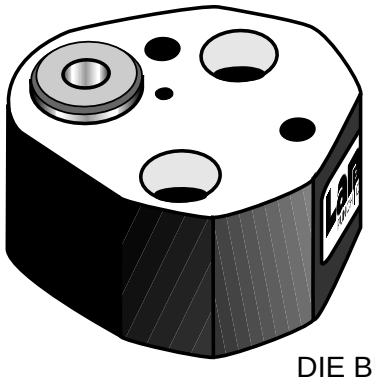
Note: BPLB Blank Punches on Page B 14.
BELB Ejector Blanks on Page B 5.



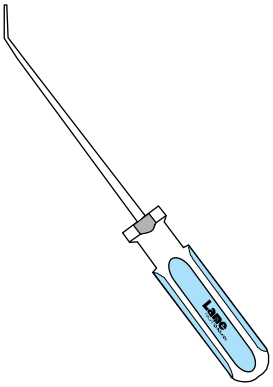
Full scale design template:
BA 70 Page SR 13



Reduced scale design template:
1/2 1/3 1/4 scale
BA 71 Page SR 13



DIE BUTTON RETAINER
Page SR 1



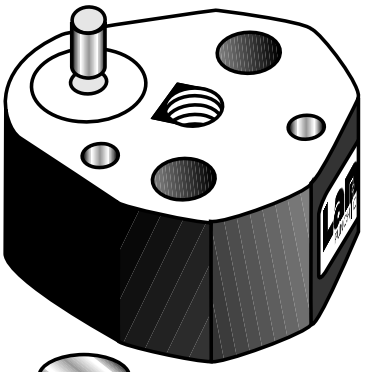
RTA RELEASE TOOL ANGULAR
Page SR 11.

Retainer Accessories

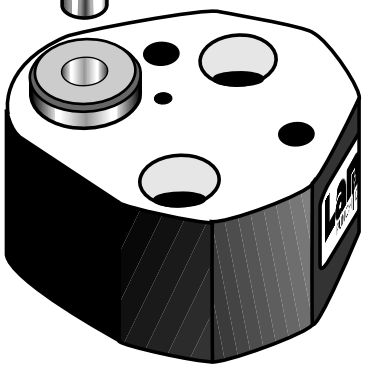
Screws
Retainer Nuts
Dowels
Springs
Backing plugs
Release tools
Pages SR11-13

Lane TRU&LOCK Retainers

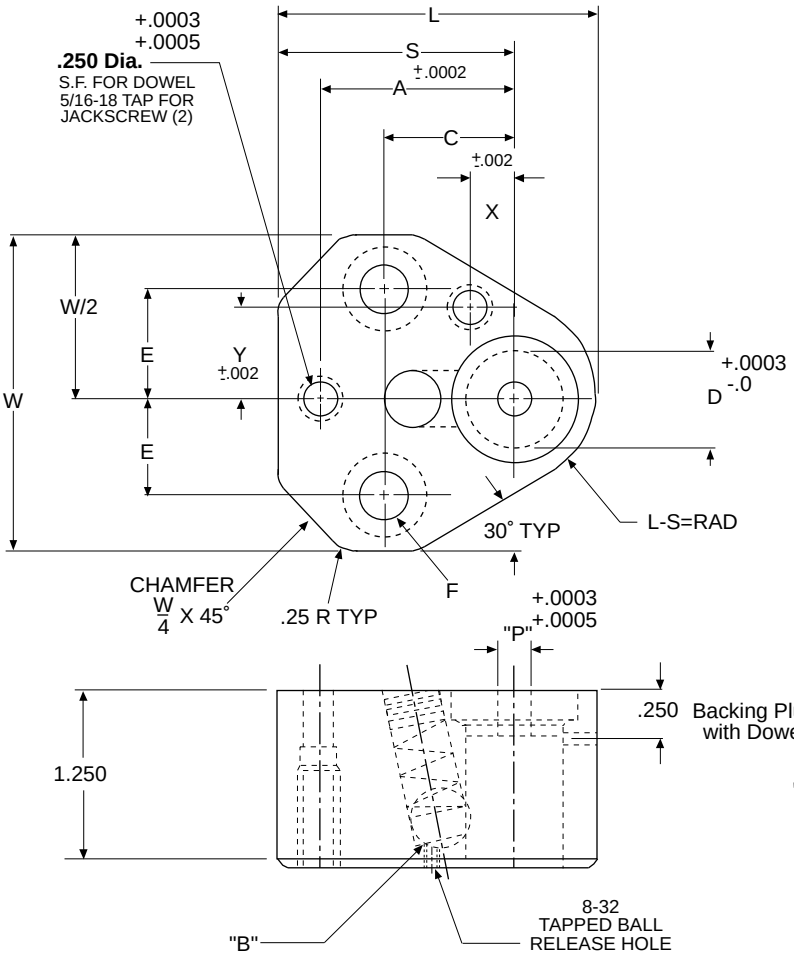
- Require Less Space • Offer More Strength
- Made From Through-Hardened Chrome-Vanadium Steel (AISI 6150)
- In-Line Centering Dowel • Radial Lock Accuracy ±0° 3'
- The Ultimate in Precision for Standard Retainers

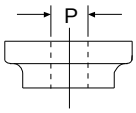


PUNCH RETAINER



DIE BUTTON RETAINER





"P" DIA. SLIP FIT FOR DOWEL
.1250 FOR BRLT 250
.1875 FOR BRLT 375
.2500 ALL OTHERS

Retainer set includes:
2 Socket head cap screws.
2 Vented and tapped dowels.
1 Ball release set screw.

Ordering Example:
(24) BRLT 500

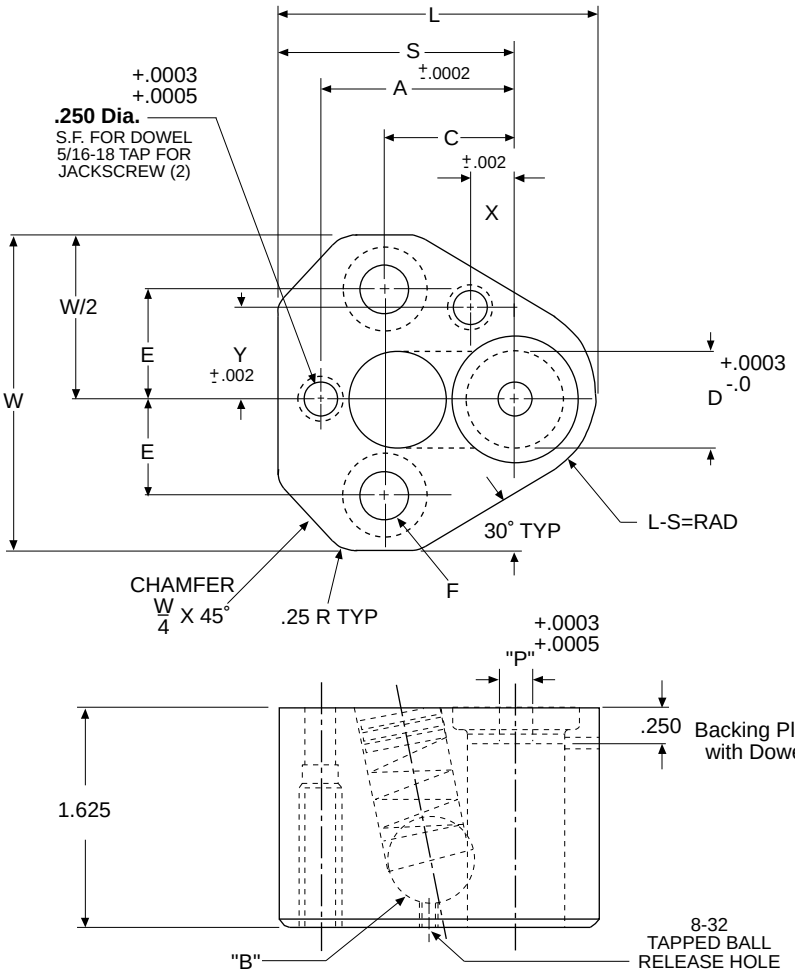
Design Templates see page SR13.
Retainer Accessories see pages SR11-12.

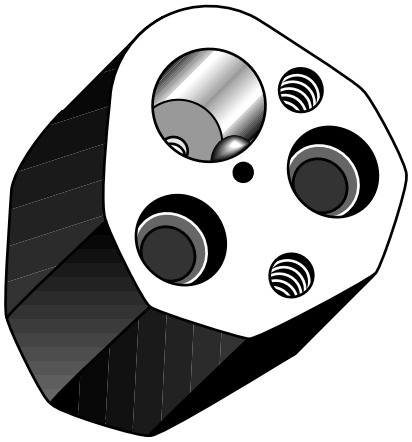
TYPE D	W	L	S	A	C	E	X	Y	B	F
BRLT 250	1.614	1.713	1.339	1.0600	.750	.438	.2953	.3543	.250	5/16-18
BRLT 375	1.614	1.713	1.339	1.0600	.750	.438	.2953	.3543	.250	5/16-18
BRLT 500	1.909	1.953	1.457	1.1800	.750	.562	.2559	.4724	.3125	3/8-16
BRLT 625	2.035	2.075	1.520	1.2500	.750	.625	.2362	.5315	.3125	3/8-16
BRLT 750	2.236	2.335	1.650	1.3200	.750	.688	.1969	.6496	.375	3/8-16
BRLT 875	2.236	2.455	1.710	1.4000	.750	.688	.1969	.7280	.375	3/8-16
BRLT 1000	2.539	2.713	1.839	1.6000	.938	.781	.2756	.8661	.375	1/2-13
BRLT 1250	2.539	2.713	1.839	1.6000	.938	.781	.2756	.8661	.375	1/2-13

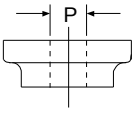
L

Lane TRU-LOCK Retainers

- Heavy Duty Tru-Lock is Recommended For Most Applications
- For Transfer Mounting, Use Lane Drill and Ream Bushings, (See Pg. SR12)







Radiused "T" Centering Type Backing Plug made from high impact shock steel. Hardened and Precision Ground.

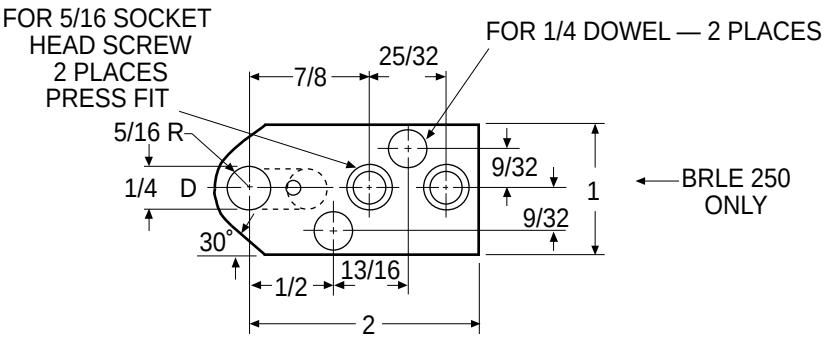
"P" DIA. SLIP FIT FOR DOWEL
.1875 FOR BRLT 375
.2500 ALL OTHERS

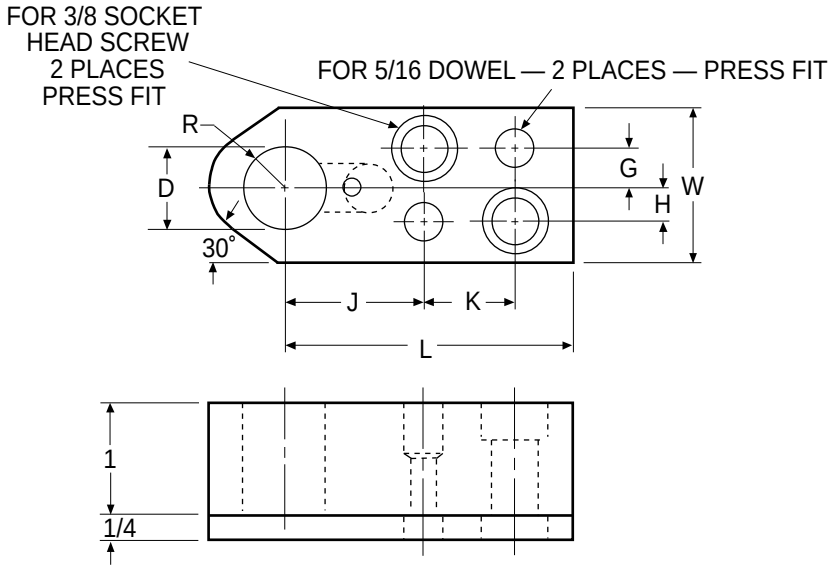
Retainer set includes:
2 Socket head cap screws.
2 Vented and tapped dowels.
1 Ball release set screw.

Ordering Example:
(50) BRHT 750

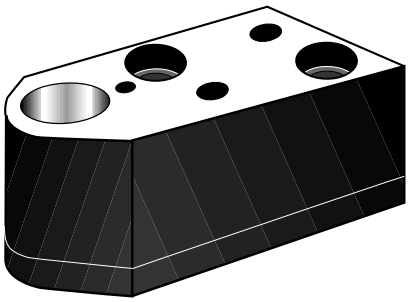
Design Templates see page SR13.
Retainer Accessories see pages SR11-12.

TYPE D	W	L	S	A	C	E	X	Y	B	F
BRHT 375	1.614	1.713	1.339	1.0600	.750	.438	.2953	.3543	.375	5/16-18
BRHT 500	1.909	1.953	1.457	1.1800	.750	.562	.2559	.4724	.500	3/8-16
BRHT 625	2.035	2.075	1.520	1.2500	.750	.625	.2362	.5315	.500	3/8-16
BRHT 750	2.236	2.335	1.650	1.3200	.750	.688	.1969	.6496	.500	3/8-16
BRHT 875	2.236	2.455	1.710	1.4000	.750	.688	.1969	.7280	.500	3/8-16
BRHT 1000	2.539	2.713	1.839	1.6000	.938	.781	.2756	.8661	.500	1/2-13
BRHT 1250	2.539	2.713	1.839	1.6000	.938	.781	.2756	.8661	.500	1/2-13





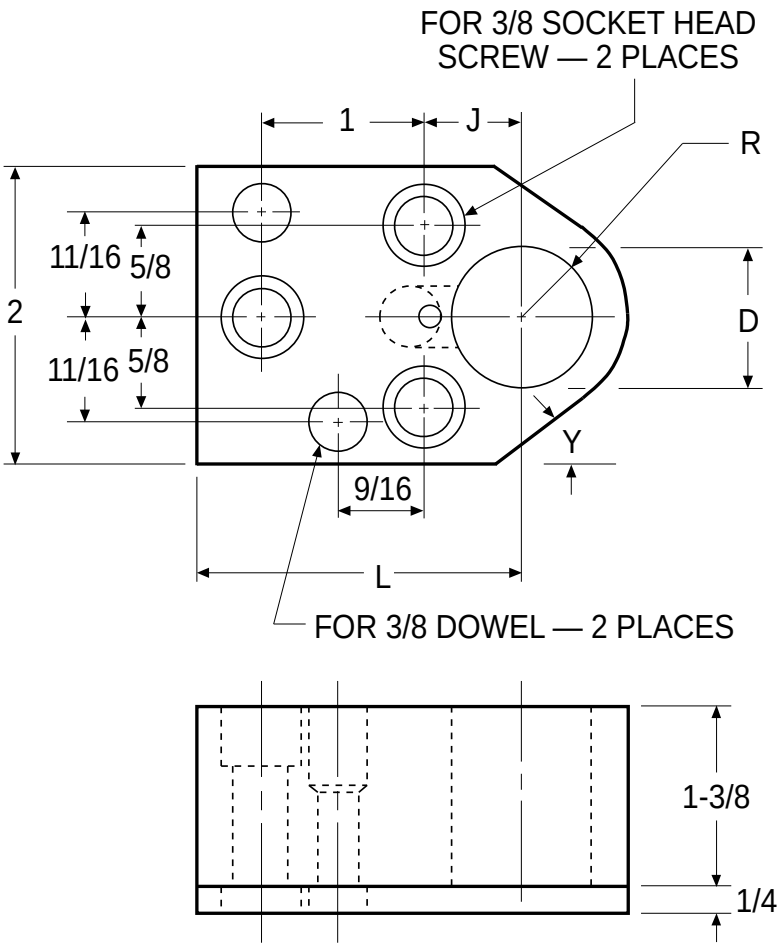
Traditional older-style 1950's technology replacement retainer for use in older dies that have not been upgraded to achieve the economic, and time saving advantages of Lane's Tru-Lock retainers listed on page SR1-2.



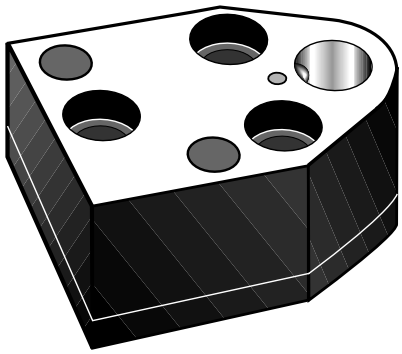
Ordering Example:
(3) BRLE 750

CATALOG NUMBER	HOLE DIA. "D"	G	H	J	K	L	R	W
BRLE 250	1/4			SEE SKETCH BRLE-250				
BRLE 375	3/8	3/8	9/32	29/32	31/32	2-1/4	3/8	1-1/4
BRLE 500	1/2	3/8	9/32	29/32	31/32	2-1/4	1/2	1-1/4
BRLE 625	5/8	3/8	9/32	29/32	31/32	2-1/4	9/16	1-1/4
BRLE 750	3/4	7/16	11/32	1-1/8	1	2-1/2	11/16	1-3/8
BRLE 875	7/8	7/16	11/32	1-1/8	1	2-1/2	3/4	1-1/2
BRLE 1000	1	7/16	11/32	1-1/8	1	2-1/2	13/16	1-5/8
BRLE 1250	1-1/4	9/16	9/16	7/8	1-1/8	2-3/8	1	1-7/8

INCLUDES: RETAINER, BACKING PLATE, SOCKET HEAD & BACKING PLATE SCREWS, DOWEL PINS.



Traditional older-style 1950's technology replacement retainer for use in older dies that have not been upgraded to achieve the economic, and time saving advantages of Lane's Tru-Lock retainers listed on page SR1-2.



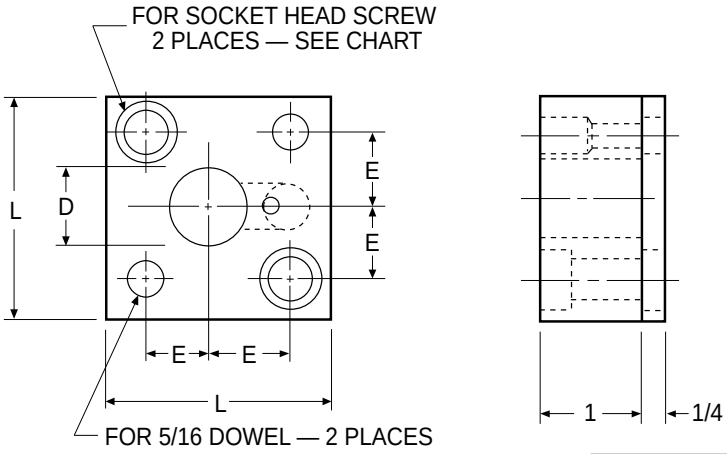
Ordering Example:
(12) BRHE 1000

CATALOG NUMBER	HOLE DIA. "D"	J	L	R	Y
BRHE 500	1/2	3/8	1-3/4	1/2	50°
BRHE 625	5/8	7/16	1-13/16	9/16	45°
BRHE 750	3/4	1/2	1-7/8	11/16	30°
BRHE 875	7/8	9/16	1-15/16	3/4	30°
BRHE 1000	1	5/8	2	13/16	30°
BRHE 1250	1-1/4	3/4	2-1/8	1	

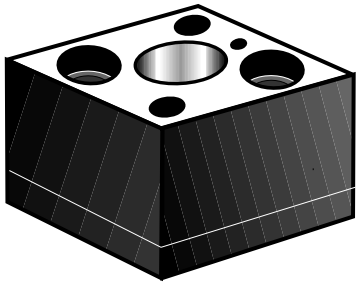
INCLUDES: RETAINER, BACKING PLATE, SOCKET HEAD & BACKING PLATE SCREWS, DOWEL PINS.

H

Lane® PUNCH CORPORATION — Ball-Lock Retainer Light-Duty Square™



Traditional older-style 1950's technology replacement retainer for use in older dies that have not been upgraded to achieve the economic, and time saving advantages of Lane's Tru-Lock retainers listed on page SR1-2.



Ordering Example:
(6) BRLS 1250

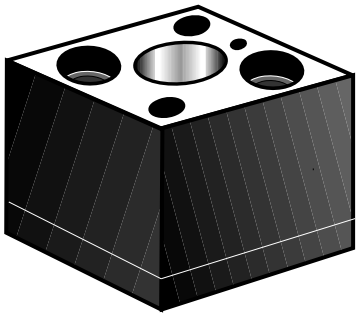
L

CATALOG NUMBER	HOLE DIA. "D"	L	E	SCREW
BRLS 250	1/4	1-1/4	5/16	1/4
BRLS 375	3/8	1-3/8	3/8	5/16
BRLS 500	1/2	1-1/2	7/16	5/16
BRLS 625	5/8	1-5/8	1/2	5/16
BRLS 750	3/4	1-7/8	9/16	3/8
BRLS 875	7/8	2	5/8	3/8
BRLS 1000	1	2-1/4	3/4	3/8
BRLS 1250	1-1/4	2-1/4	3/4	3/8
BRLS 1500	1-1/2	2-3/4	1	3/8
BRLS 1750	1-3/4	2-3/4	1	3/8

INCLUDES: RETAINER, BACKING PLATE, SOCKET HEAD & BACKING PLATE SCREWS, DOWEL PINS.

Ball-Lock Retainer Heavy-Duty Square™

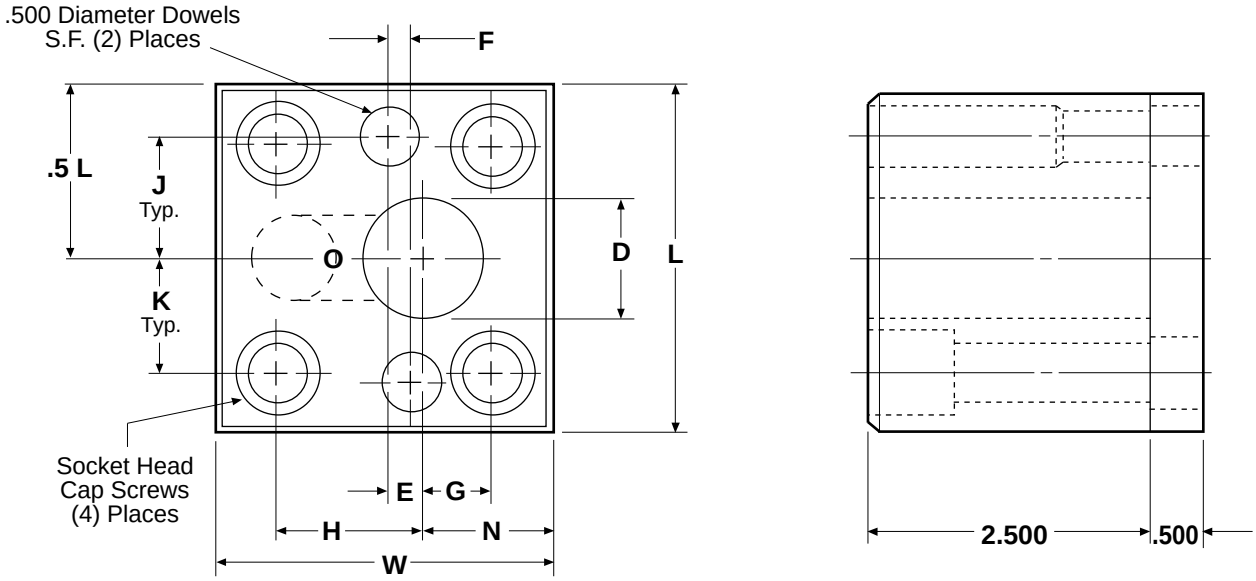
Ordering Example:
(6) BRHS 750

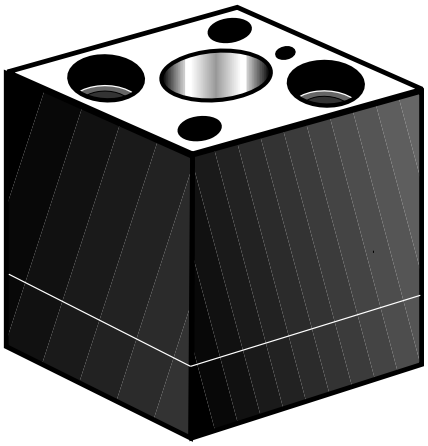


H

CATALOG NUMBER	HOLE DIA. "D"	L	E	SCREW
BRHS 500	1/2	1-7/8	9/16	3/8
BRHS 625	5/8	2	5/8	3/8
BRHS 750	3/4	2-1/8	11/16	3/8
BRHS 875	7/8	2-3/8	3/4	1/2
BRHS 1000	1	2-3/8	3/4	1/2
BRHS 1250	1-1/4	2-5/8	13/16	1/2

INCLUDES: RETAINER, BACKING PLATE, SOCKET HEAD & BACKING PLATE SCREWS, DOWEL PINS.





Tool Steel Rc 53-56

Stripping Force: 8400 LBS.
Ball Diameter 3/4".

Ordering Example
(3) BRES 1500

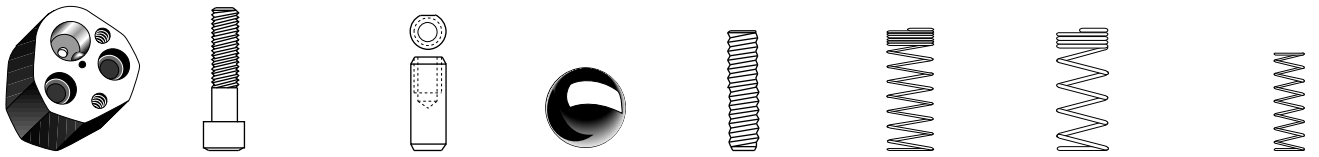
EXTRA HEAVY-DUTY PUNCH RETAINER SETS (Includes hardened backing plate.)

Catalog No.	HOLE DIA. "D"	"W"	"L"	"N"	"E"	"F"	"G"	"H"	"J"	"K"	Clearance Hole for Screw
BRES 1000	1.000	3.000	3.125	1.250	.312	.125	.687	1.187	1.125	1.062	1/2
BRES 1250	1.250	3.250	3.500	1.375	.437	.375	.812	1.312	1.250	1.187	1/2
BRES 1500	1.500	3.500	3.625	1.500	.562	.625	.937	1.437	1.375	1.312	1/2
BRES 1750	1.750	3.750	4.000	1.625	.437	.437	.937	1.437	1.500	1.312	5/8
BRES 2000	2.000	4.000	4.125	1.750	.625	.625	1.062	1.562	1.625	1.437	5/8
BRES 2250	2.250	4.250	4.500	1.875	.812	1.125	1.250	1.750	1.687	1.625	5/8
BRES 2500	2.500	4.500	4.625	2.000	.937	1.375	1.375	1.875	1.812	1.750	5/8

E

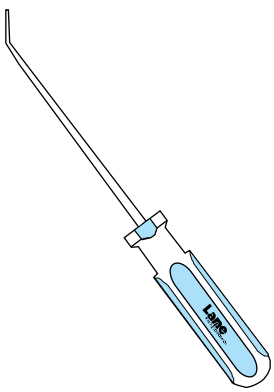
Prompt Quotations Will Be Furnished On Variations Or Specials

Lane® PUNCH CORPORATION — TRU-LOCK® Retainer Accessories

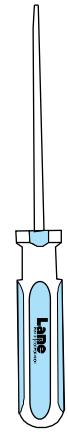


CATALOG NUMBER	SOCKET HEAD CAP SCREW	VENTED/TAPPED PULL DOWELS	BALL DIA.	BALL RELEASE SCREW	TRU-LOCK SPRING	OPTIONAL STIFF SPRING	INNER BOOSTER SPRING
BRLT 250	BA 312-150 5/16-18 x 1 1/2	BA 125-750 1/8 x 3/4* BA 250-750 1/4 x 3/4	BA 72-250 1/4	BA 94-100 8-32 x 1	BA 81-250		
BRLT 375	BA 312-150 5/16-18 x 1 1/2	BA 187-750 3/16 x 3/4* BA 250-750 1/4 x 3/4	BA 72-250 1/4	BA 94-100 8-32 x 1	BA 81-250		
BRLT 500	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4	BA 72-312 5/16	BA 94-100 8-32 x 1	BA 81-312		
BRLT 625	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4	BA 72-312 5/16	BA 94-100 8-32 x 1	BA 81-312		
BRLT 750	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4	BA 72-375 3/8	BA 94-100 8-32 x 1	BA 81-375		
BRLT 875	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4	BA 72-375 3/8	BA 94-100 8-32 x 1	BA 81-375		
BRLT 1000	BA 500-175 1/2-13 x 1 3/4	BA 250-750 1/4 x 3/4	BA 72-375 3/8	BA 94-100 8-32 x 1	BA 81-375		
BRLT 1250	BA 500-175 1/2-13 x 1 3/4	BA 250-750 1/4 x 3/4	BA 72-375 3/8	BA 94-100 8-32 x 1	BA 81-375		
BRHT 375	BA 312-175 5/16-18x1 3/4	BA 187-750 3/16 x 3/4* BA 250-750 1/4 x 3/4	BA 72-375 3/8	BA 94-100 8-32 x 1	BA 82-375	BA 83-375	BA 84-375
BRHT 500	BA 375-200 3/8-16 x 2	BA 250-750 1/4 x 3/4	BA 72-500 1/2	BA 94-100 8-32 x 1	BA 82-500	BA 83-500	BA 84-500
BRHT 625	BA 375-200 3/8-16 x 2	BA 250-750 1/4 x 3/4	BA 72-500 1/2	BA 94-100 8-32 x 1	BA 82-500	BA 83-500	BA 84-500
BRHT 750	BA 375-200 3/8-16 x 2	BA 250-750 1/4 x 3/4	BA 72-500 1/2	BA 94-100 8-32 x 1	BA 82-500	BA 83-500	BA 84-500
BRHT 875	BA 375-200 3/8-16 x 2	BA 250-750 1/4 x 3/4	BA 72-500 1/2	BA 94-100 8-32 x 1	BA 82-500	BA 83-500	BA 84-500
BRHT 1000	BA 500-200 1/2-13 x 2	BA 250-750 1/4 x 3/4	BA 72-500 1/2	BA 94-100 8-32 x 1	BA 82-500	BA 83-500	BA 84-500
BRHT 1250	BA 500-200 1/2-13 x 2	BA 250-750 1/4 x 3/4	BA 72-500 1/2	BA 94-100 8-32 x 1	BA 82-500	BA 83-500	BA 84-500

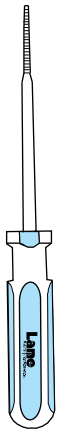
*** 1/8" AND 3/16" DOWELS ARE NOT TAPPED / VENTED.**



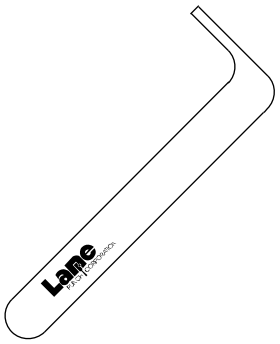
RTA
RELEASE TOOL ANGULAR



RTS
RELEASE TOOL STRAIGHT

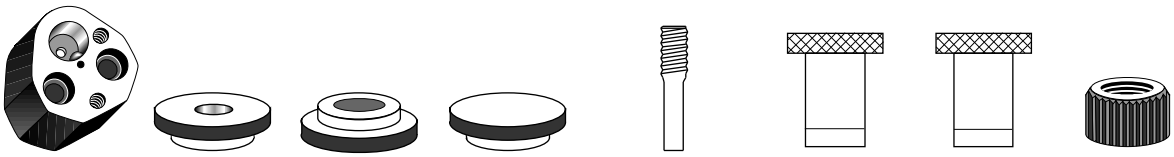


RTT
RELEASE TOOL THREADED



RTJ
RELEASE TOOL JIMMY

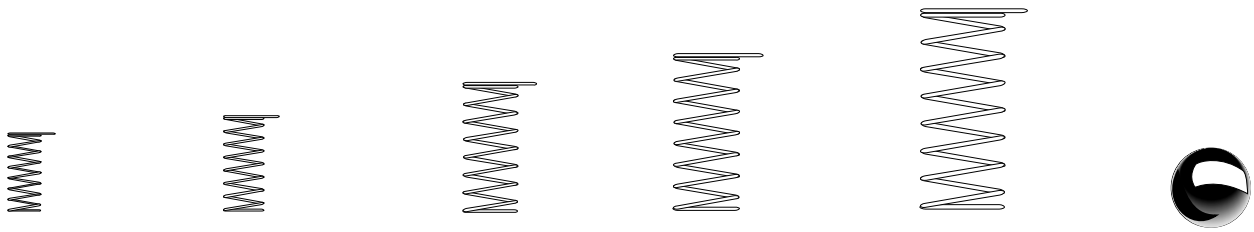
Retainer Accessories



CATALOG NUMBER	BACKING PLUGS: IN LINE DOWEL PLUG	BACKING PLUGS: DIE BUTTON PLUG	BACKING PLUGS: SOLID PLUG	JACK SCREW	For Manual Mounting, prevents chips from entering spring / ball hole. DRILL BUSHING	REAM BUSHING	RETAINER NUTS
BRLT 250	BA 91-250 .125 hole		BA 93-250 solid	BA 96-125 5/16-18 x 1 1/4	RDB-250	RRB-250	RN-312
BRLT 375	BA 91-375 .1875 hole		BA 93-375 solid	BA 96-125 5/16-18 x 1 1/4	RDB-375	RRB-375	RN-312
BRLT 500	BA 91-500 .250 hole	BA 92-500 .312 hole	BA 93-500 solid	BA 96-125 5/16-18 x 1 1/4	RDB-500	RRB-500	RN-375
BRLT 625	BA 91-625 .250 hole	BA 92-625 .406 hole	BA 93-625 solid	BA 96-125 5/16-18 x 1 1/4	RDB-625	RRB-625	RN-375
BRLT 750	BA 91-750 .250 hole	BA 92-750 .531 hole	BA 93-750 solid	BA 96-125 5/16-18 x 1 1/4	RDB-750	RRB-750	RN-375
BRLT 875	BA 91-875 .250 hole	BA 92-875 .625 hole	BA 93-875 solid	BA 96-125 5/16-18 x 1 1/4	RDB-875	RRB-875	RN-375
BRLT 1000	BA 91-1000 .250 hole	BA 92-1000 .719 hole	BA 93-1000 solid	BA 96-125 5/16-18 x 1 1/4	RDB-1000	RRB-1000	RN-500
BRLT 1250	BA 91-1250 .250 hole	BA 92-1250 .812 hole	BA 93-1250 solid	BA 96-125 5/16-18 x 1 1/4	RDB-1250	RRB-1250	RN-500
BRHT 375	BA 91-375 .1875 hole		BA 93-375 solid	BA 96-125 5/16-18 x 1 1/4	RDB-375	RRB-375	RN-312
BRHT 500	BA 91-500 .250 hole		BA 93-500 solid	BA 96-125 5/16-18 x 1 1/4	RDB-500	RRB-500	RN-375
BRHT 625	BA 91-625 .250 hole		BA 93-625 solid	BA 96-125 5/16-18 x 1 1/4	RDB-625	RRB-625	RN-375
BRHT 750	BA 91-750 .250 hole		BA 93-750 solid	BA 96-125 5/16-18 x 1 1/4	RDB-750	RRB-750	RN-375
BRHT 875	BA 91-875 .250 hole		BA 93-875 solid	BA 96-125 5/16-18 x 1 1/4	RDB-875	RRB-875	RN-375
BRHT 1000	BA 91-1000 .250 hole		BA 93-1000 solid	BA 96-125 5/16-18 x 1 1/4	RDB-1000	RRB-1000	RN-500
BRHT 1250	BA 91-1250 .250 hole		BA 93-1250 solid	BA 96-125 5/16-18 x 1 1/4	RDB-1250	RRB-1250	RN-500

Shoulder Punch Retainer Accessories are on page SR 13.

SPRINGS FOR BACKING PLATE STYLE RETAINERS



250 S
1/4 SPRING

312 S
5/16 SPRING

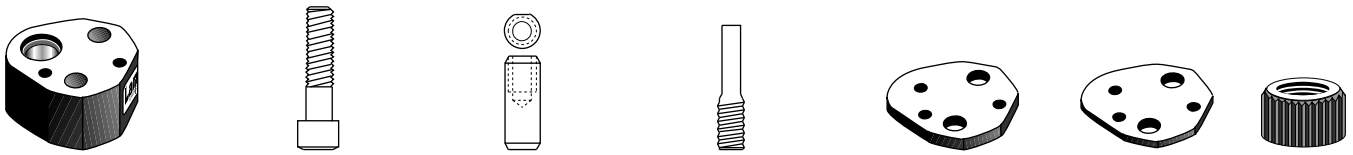
375 S
3/8 SPRING

500 S
1/2 SPRING

750 S
3/4 SPRING

BA 72-750
3/4 BALL

Shoulder Retainer Accessories

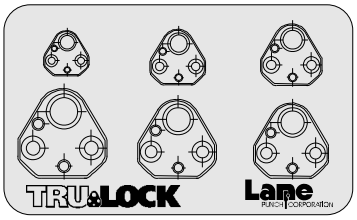


CATALOG NUMBER	CATALOG NUMBER	SOCKET HEAD CAP SCREW	VENTED/TAPPED PULL DOWELS	JACK SCREW	BACKING PLATE	SHIM PLATE	RETAINER NUTS
PRS_ 375	GRS_ 375	BA 312-150 5/16-18 x 1 1/2	BA 250-750 1/4 x 3/4"	BA 96-125 5/16-18 x 1 1/4	GBP 375 3/16 thick	GSP 375 1/16 thick	RN-312
PRS_ 500	GRS_ 500	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4"	BA 96-125 5/16-18 x 1 1/4	GBP 500 3/16 thick	GSP 500 1/16 thick	RN-375
PRS_ 625	GRS_ 625	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4"	BA 96-125 5/16-18 x 1 1/4	GBP 625 3/16 thick	GSP 625 1/16 thick	RN-375
PRS_ 750	GRS_ 750	BA 375-150 3/8-16 x 1 1/2	BA 250-750 1/4 x 3/4"	BA 96-125 5/16-18 x 1 1/4	GBP 750 3/16 thick	GSP 750 1/16 thick	RN-375
PRS_1000	GRS_ 1000	BA 500-175 1/2-13 x 1 3/4	BA 250-750 1/4 x 3/4"	BA 96-125 5/16-18 x 1 1/4	GBP 1000 3/16 thick	GSP 1000 1/16 thick	RN-500
PRS_1250	GRS_ 1250	BA 500-175 1/2-13 x 1 3/4	BA 250-750 1/4 x 3/4"	BA 96-125 5/16-18 x 1 1/4	GBP 1250 3/16 thick	GSP 1250 1/16 thick	RN-500

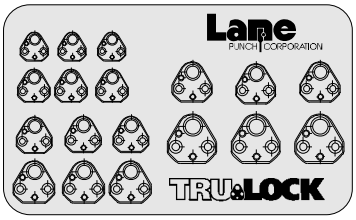
TRU-LOCK Retainer Accessories are on Page SR 11-12.

Design Package

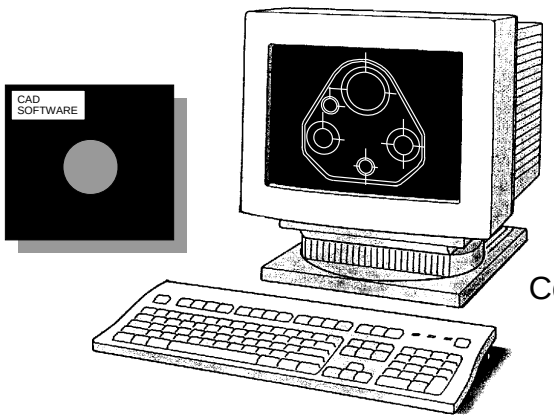
TRU-LOCK®



Full scale design template:
BA 70



Reduced scale design template:
BA 71
1/2 1/3 1/4 scale



Lane CAD
Electronic design package
IGES Format
Contact our Sales-Engineering staff.

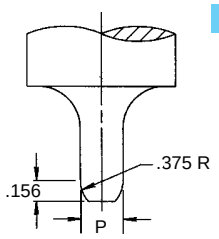
Lane® PUNCH CORPORATION

Draw / Extrude Punches™

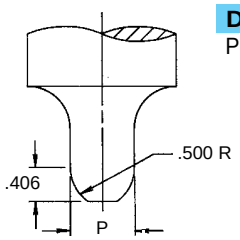
for Drawing, Extruding, Staking, Forming, Coining

Ordering Example: Select desired punch style below.	Select Punch Blank that desired Draw Punch is to be made from.	Blank Punch becomes Draw Punch.	Enter shank size.	Enter overall length.	A2 M2 PS	Enter shape D number	List the additional letters and dimensions for D number selected.
1.Ball-Lock Heavy-Duty	BPHB PAGE B20	BPHD					
2.General Shoulder	GPSB PAGE G15	GPSD					
3.Peerless Shoulder	PPSB PAGE PS22	PPSD					
4.Peerless Heavy-Duty	PPHB PAGE PB22	PPHD					

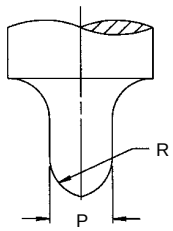
D201 PILOT



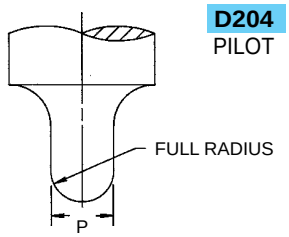
D202 PILOT



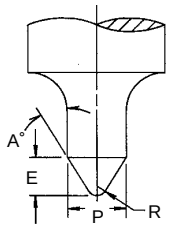
D203 PILOT



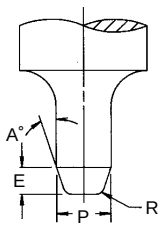
D204 PILOT



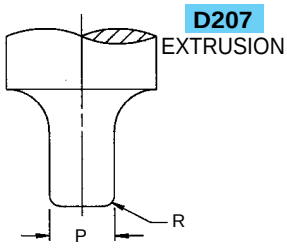
D205 PILOT



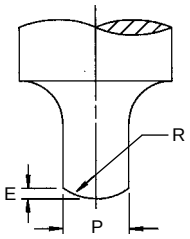
D206 PILOT



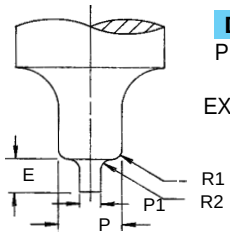
D207 EXTRUSION



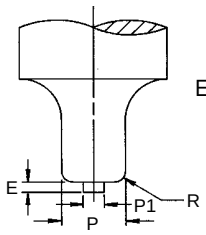
D208 FORM



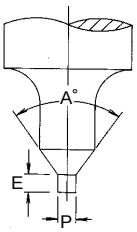
D209 PIERCE & EXTRUDE



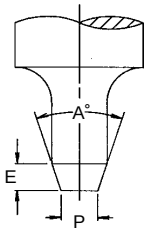
D210 PIERCE & EXTRUDE



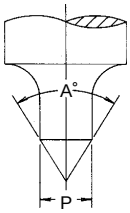
D211 PIERCE & COUNTER SINK



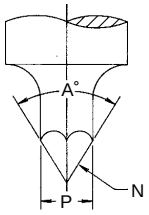
D212 COIN



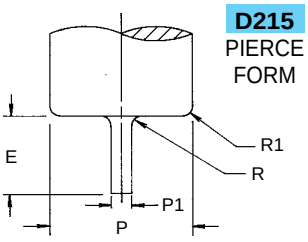
D213 CONE POINT



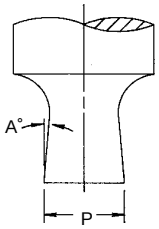
D214 NAIL POINT



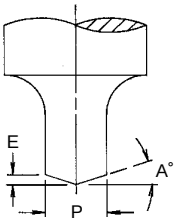
D215 PIERCE FORM



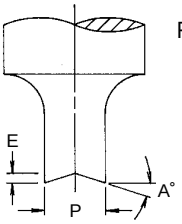
D216 BACK TAPER



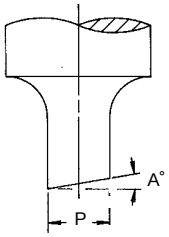
D217 CHISEL POINT



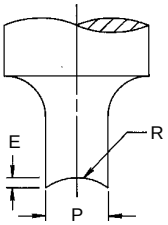
D218 ROOFTOP SHEAR



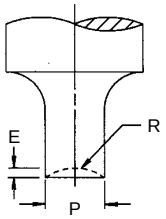
D219 ANGLED SHEAR



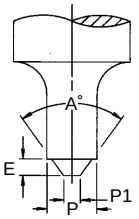
D220 THRU-RADIUS SHEAR



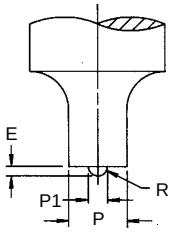
D221 CONCAVE SHEAR



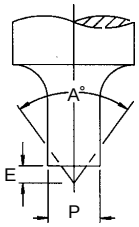
D222 COIN



D223 DIMPLE



D224 PICK-UP PIERCE



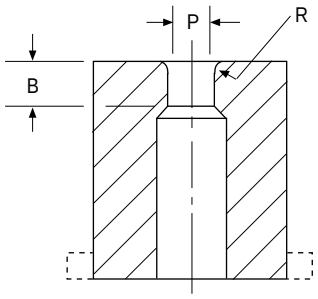
For Quotation: Toll Free Fax; (MI) 1-800-253-6731 or (NC) 1-800-227-6725.

Draw / Extrude Die Buttons™

Lane® PUNCH CORPORATION

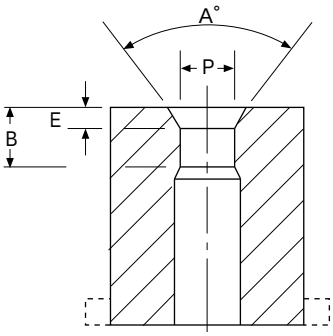
Ordering Example: Select desired die button style below.	Select Die Button Blank that desired Draw Button is to be made from.	Blank Button becomes Draw Button.	Enter body size.	Enter overall length.	Steel A2 M2	Enter shape D number.	List the additional letters and dimensions for D number selected.
1.Ball-Lock Button.	BBLB Page B35	BBLD					
2.General Button.	GBSB Page G34	GBPD					
3.Peerless Button.	PBSB Page PS27	PBSD					

D301



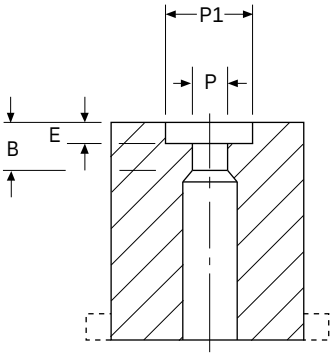
P=_____
R=_____
B=_____

D302



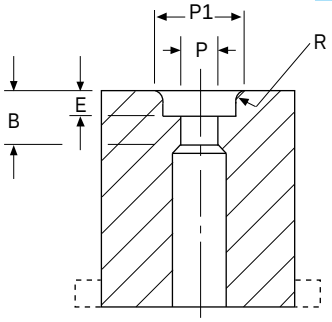
A=_____ E=_____
B=_____ P=_____

D303



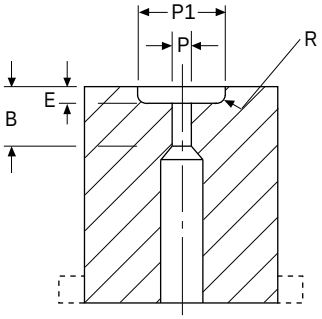
B=_____ P1=_____
E=_____ P=_____

D304



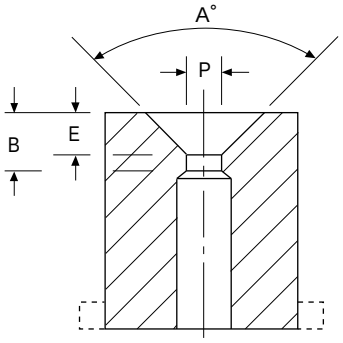
B=_____ P=_____
E=_____ R=_____
P1=_____

D305



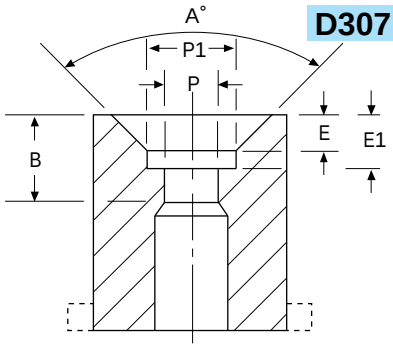
B=_____ P=_____
E=_____ R=_____
P1=_____

D306



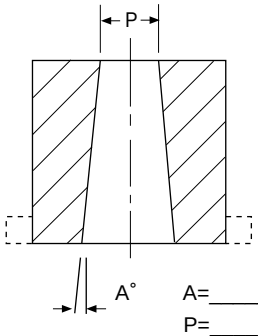
A=_____ E=_____
B=_____ P=_____

D307



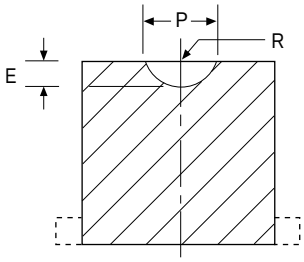
A=_____ P1=_____
B=_____ P=_____
E=_____ R=_____

D308



A=_____
P=_____

D309

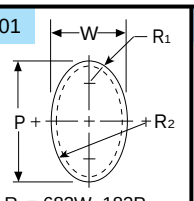


E=_____
P=_____
R=_____

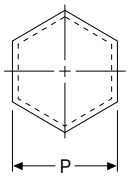
BALL-LOCK PUNCH BLANKS, PAGES B5, 14, 20, 29.
GENERAL PUNCH SHOULDER BLANKS, PAGES G6, 15, 28, 29.
PEERLESS PUNCH SHOULDER BLANKS, PAGES PS21-22.
PEERLESS BALL-LOCK PUNCH BLANKS, PAGES PB12, 22.

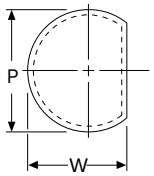
BALL-LOCK DIE BUTTON BLANKS, PAGE B35.
GENERAL DIE BUTTON BLANKS, PAGE G32.
PEERLESS DIE BUTTON BLANKS, PAGE PS27.

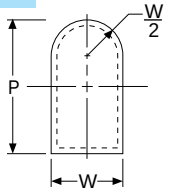
90°

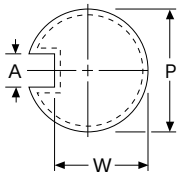
C101


R1 =.683W-.183P
R2 =1.183P-.683W

C102


C103


C104


C105


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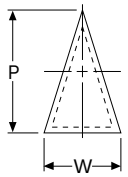

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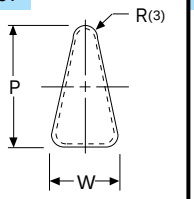

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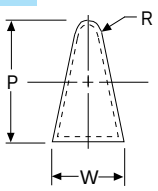

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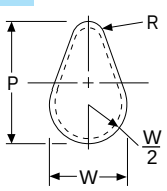

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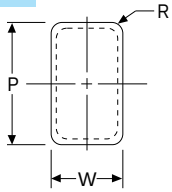

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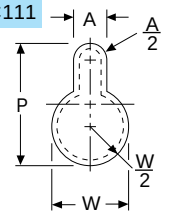

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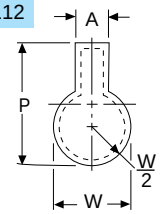

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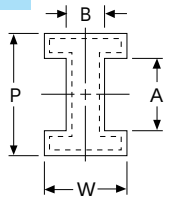

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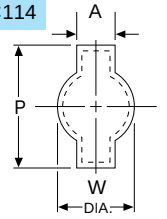

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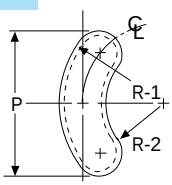

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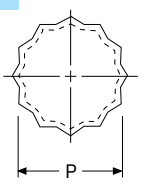

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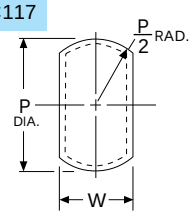

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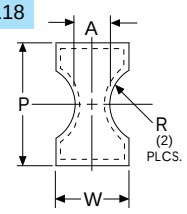

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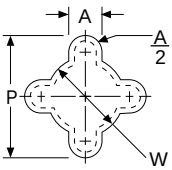

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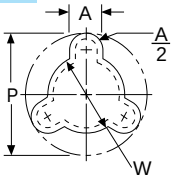

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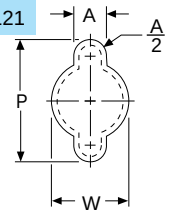

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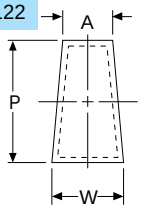

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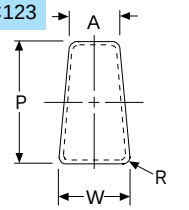

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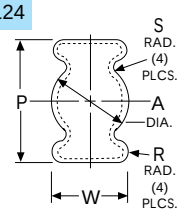

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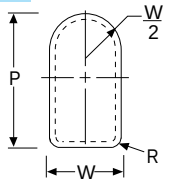

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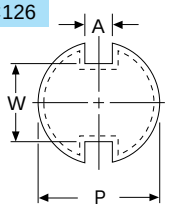

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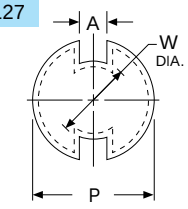

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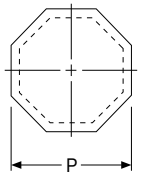

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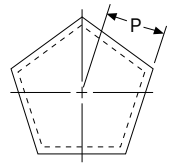

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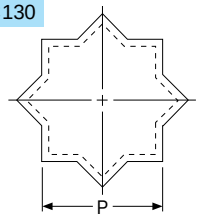

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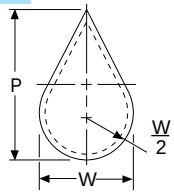

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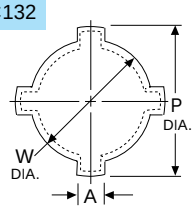

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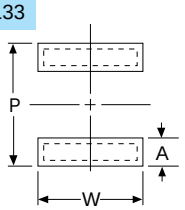

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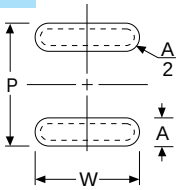

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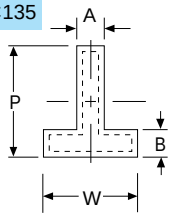

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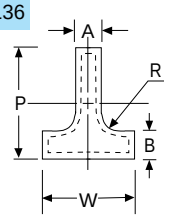

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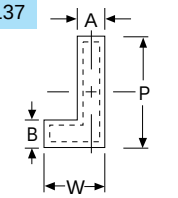
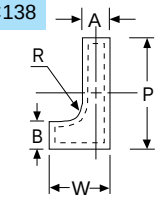


C138


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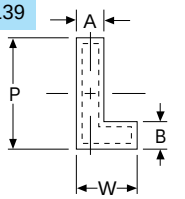
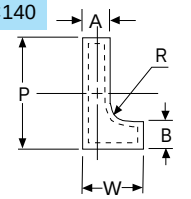


C140


C141

C142

180°

0°

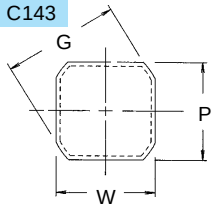
270°

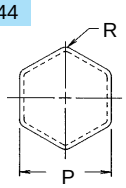
NOTE: View shown is in Die Position.

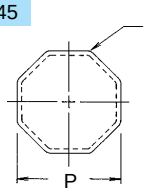
BALL-LOCK PUNCH BLANKS, PAGES B5, 14, 20, 29.
GENERAL PUNCH SHOULDER BLANKS, PAGES G6, 15, 28, 29.
PEERLESS PUNCH SHOULDER BLANKS, PAGES PS21-22.
PEERLESS BALL-LOCK PUNCH BLANKS, PAGES PB12, 22.

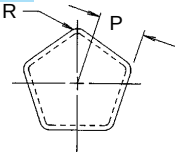
BALL-LOCK DIE BUTTON BLANKS, PAGE B35.
GENERAL DIE BUTTON BLANKS, PAGE G32.
PEERLESS DIE BUTTON BLANKS, PAGE PS27.

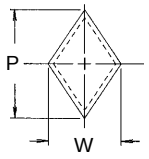
90°

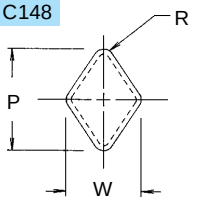
C143


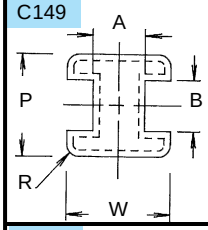
C144


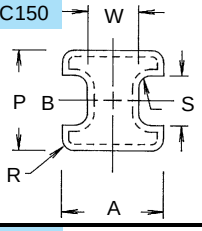
C145


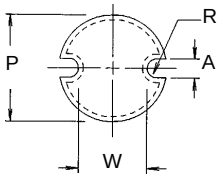
C146


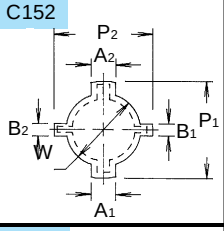
C147


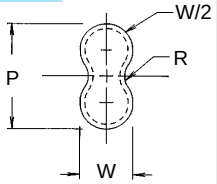
C148


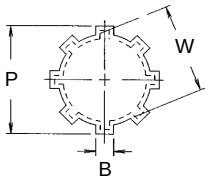
C149


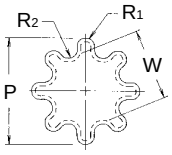
C150


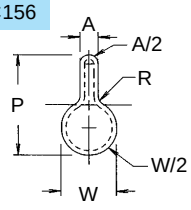
C151


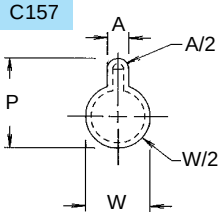
C152


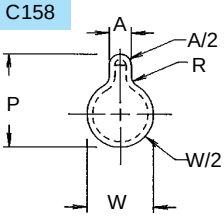
C153


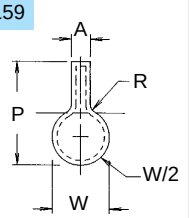
C154


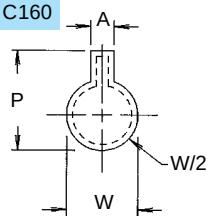
C155


C156


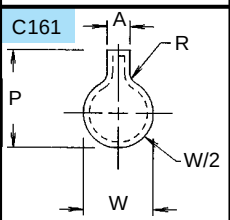
C157


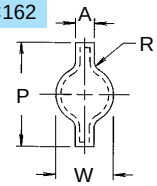
C158


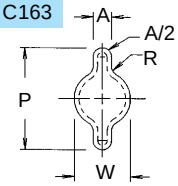
C159


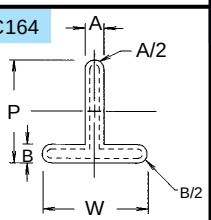
C160


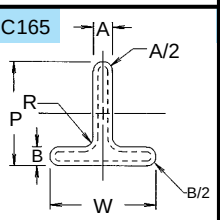
180°

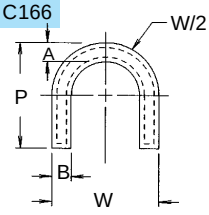
C161


C162


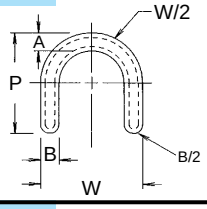
C163


C164


C165


C166


0°

C167


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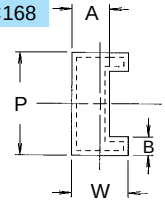
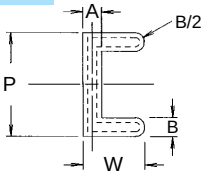
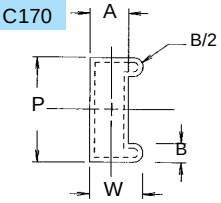
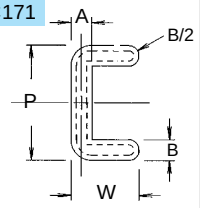
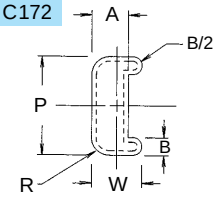
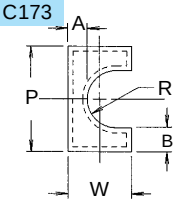


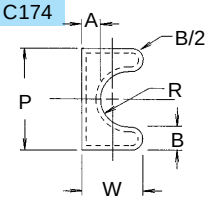
C169


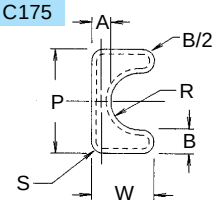
C170


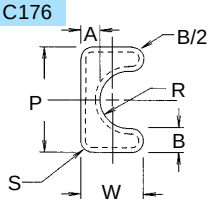
C171


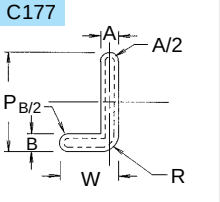
C172


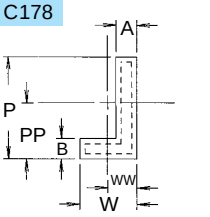
C173


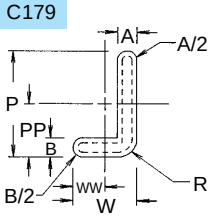
C174


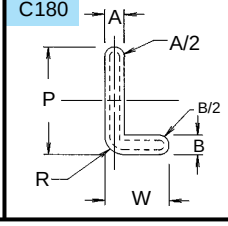
C175


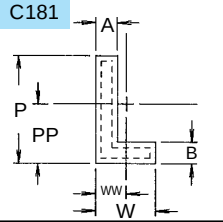
C176


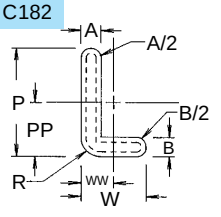
C177


C178


C179


C180


C181


C182


C183

C184

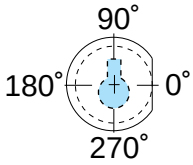
270°

NOTE: View shown is in Die Position.

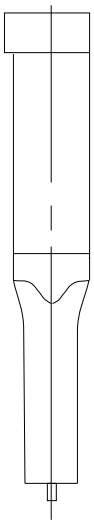
ORDERING EXAMPLE:
SEE PAGE T7.

Classifed Shapes, Ordering Examples

PUNCH



VIEW IS THROUGH HEAD

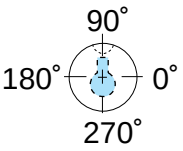


See pagePS21 for available blanks (PESB)

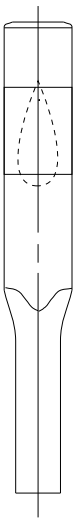
Ordering Example:

(1) PESC 375-B250 M2, C112 P.312 W.250 A.125 K2

PUNCH



VIEW IS THROUGH SHANK

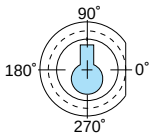


See page B14 for available punch blanks (BPLB)

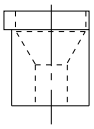
Ordering Example:

(1) BPLC 375-B250 M2, C112, P.312 W.250 A.125 BS-90°
See view of C-112 on previous page

GUIDE



VIEW IS THROUGH HEAD OF GUIDE

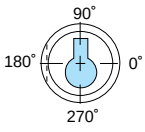


See page PS25 for available guides (PGU_)

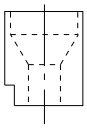
Ordering Example:

(1) PGUC 500-50 C112 P.3125 W.2505 A.1255 K2

GUIDE



VIEW IS THROUGH GUIDE

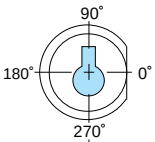


See page PS25 for available guides (PGP_)

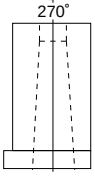
Ordering Example:

(1) PGPC 500-50 C112 P.313 W.251 A.126 K2 180°

DIE BUTTON



VIEW IS IN DIE POSITION

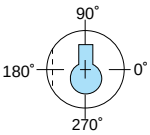


See page PS27 for available die button blanks (PBS_)

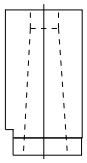
Ordering Example:

(1) PBSC 500-75 M2 C112 P.316 W.254 A.129 K2

DIE BUTTON



VIEW IS IN DIE POSITION



See pages G27-34 for available die button blanks (GBPB)

Ordering Example:

(1) GBPC 500-75 C112 P.316 W.254 A.129 K2 180°

Lane Classified Shapes are centered on shank or body diameters and shown ***in die position.*** Solid shaped lines indicate die button. Dash shaped lines indicate punch point. For Punch or Die Button Catalog number, refer to respective catalog pages.

Ball Seat or Key Flat Position must be specified by indicating 0°, 90°, 180°, or 270°. See ordering examples or refer to page T9-10. Other angles are optional.