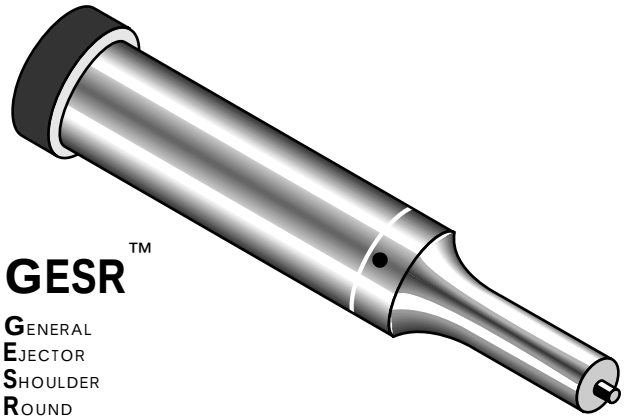
General™ (PRESS-FIT) TABLE OF CONTENTS

Lane® PUNCH CORPORATION

ISO 8020



GESR™

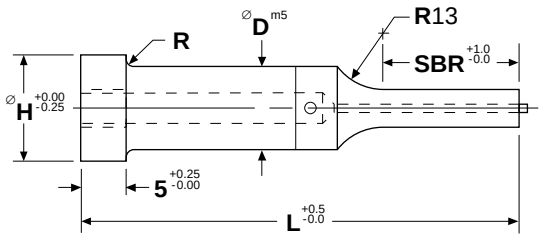
GENERAL
EJECTOR
SHOULDER
ROUND

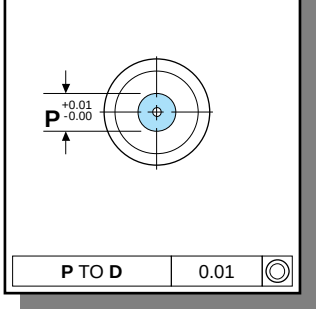
Ordering Example:
(12) GESR 13-13-71 M2 P10.1

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

Heads drawn to Rc 40-55.

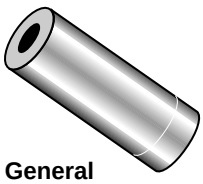
General Ejector Shoulder Round



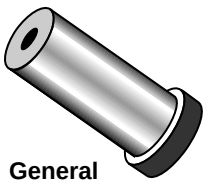


TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "P"	HEAD DIA. "H"	EJECT. TYPE
		8	10	13	19	25	32	50	56	63	71	80	90	100			
GESR	5	8	10	13				50	56	63	71				1.9	8	E2AM
GESR	6	8	10	13				50	56	63	71	80			2.0	9	E3M
GESR	8	8	10	13				50	56	63	71	80			2.9	11	E4M
GESR	10		10	13	19			50	56	63	71	80	90	100	4.0	13	E6M
GESR	13		10	13	19			50	56	63	71	80	90	100	4.0	16	E6M
GESR	16			13	19	25		50	56	63	71	80	90	100	5.7	19	E9M
GESR	20			13	19	25			56	63	71	80	90	100	5.7	24	E9M
GESR	25			13	19	25			56	63	71	80	90	100	5.7	29	E9M
GESR	32				19	25	32				71	80	90	100	9.9	36	E12M
GESR	40				19	25	32					80	90	100	12.0	45	E12M
GESR	45					25	32					80	90	100	14.0	50	E12M
GESR	50					25	32					80	90	100	16.0	55	E12M
GESR	56					25	32					80	90	100	18.0	61	E12M
GESR	63					25	32					80	90	100	20.0	68	E12M

For Matching Die Buttons:

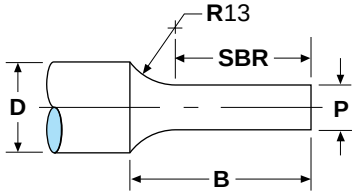


General (Press-Fit)
see page G25



General (Shoulder)
see page G25

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - P}{2}\right)\right)^2} + SBR$$

EXAMPLE:

GESR 13-13-71 M2 P10.1
R = 13, D = 13, SBR = 13, P = 10.1

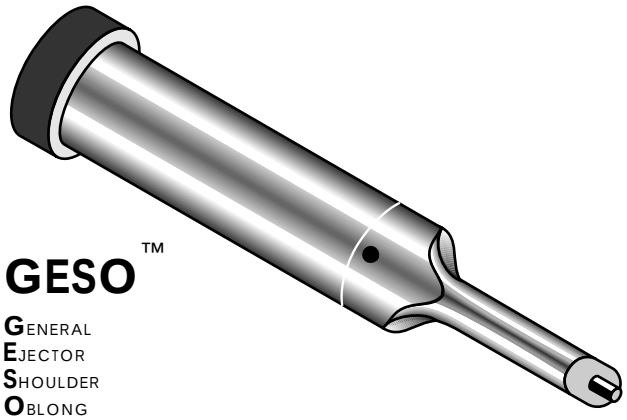
$$B = \sqrt{13^2 - \left(13 - \left(\frac{13 - 10.1}{2}\right)\right)^2} + 13$$

B = 18.9

General Ejector Shoulder Oblong™

Lane PUNCH CORPORATION

ISO 8020



GESO™

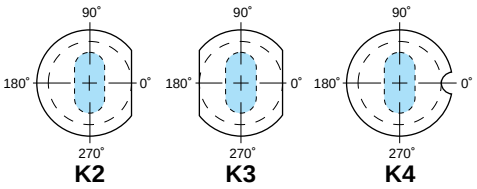
GENERAL
EJECTOR
SHOULDER
OBLONG

Ordering Example:
(12) GESO 20-19-80 M2 P18.2 W9.5 K4

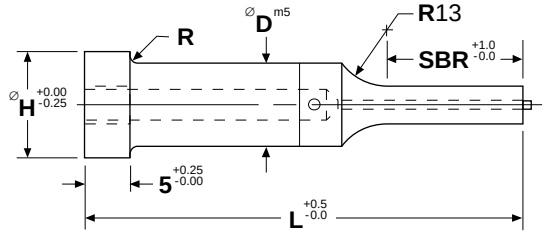
A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

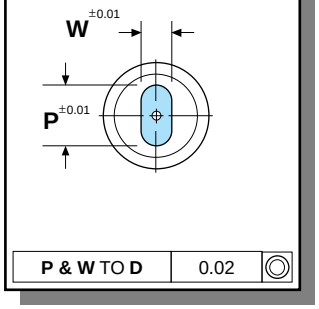
Heads drawn to Rc 40-55.

Key-Flats in Die Position
See Pg. T9-10



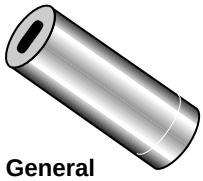
General Ejector Shoulder Oblong





TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "W"	HEAD DIA. "H"	EJECT. TYPE
		8	10	13	19	25	32	50	56	63	71	80	90	100			
GESO	5	8	10	13				50	56	63	71				1.9	8	E2AM
GESO	6	8	10	13				50	56	63	71	80			2.0	9	E3M
GESO	8	8	10	13				50	56	63	71	80			2.9	11	E4M
GESO	10		10	13	19			50	56	63	71	80	90	100	4.0	13	E6M
GESO	13		10	13	19			50	56	63	71	80	90	100	4.0	16	E6M
GESO	16			13	19	25		50	56	63	71	80	90	100	5.7	19	E9M
GESO	20			13	19	25			56	63	71	80	90	100	5.7	24	E9M
GESO	25			13	19	25			56	63	71	80	90	100	5.7	29	E9M
GESO	32				19	25	32				71	80	90	100	9.9	36	E12M
GESO	40				19	25	32					80	90	100	12.0	45	E12M
GESO	45					25	32					80	90	100	14.0	50	E12M
GESO	50					25	32					80	90	100	16.0	55	E12M
GESO	56					25	32					80	90	100	18.0	61	E12M
GESO	63					25	32					80	90	100	20.0	68	E12M

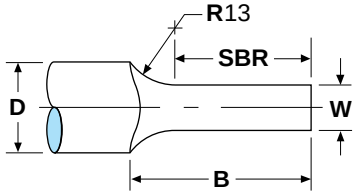
For Matching Die Buttons:



General (Press-Fit)
see page G26

General (Shoulder)
see page G26

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

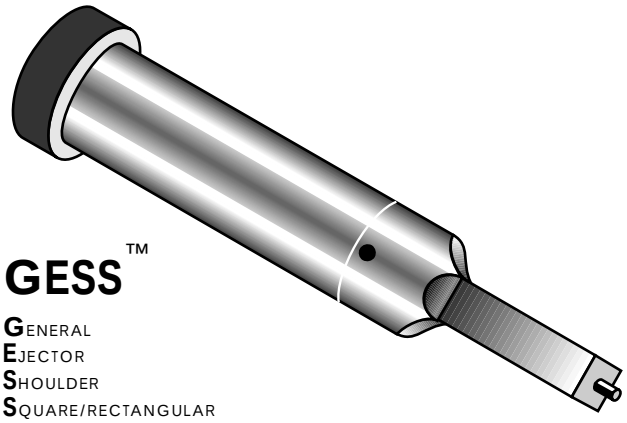
EXAMPLE:

GESO 20-19-80 M2 P18.24 W9.5 K4
R = 13, D = 20, SBR = 19, W = 9.5

$$B = \sqrt{13^2 - \left(13 - \left(\frac{20 - 9.5}{2}\right)\right)^2} + 19$$

B = 29.4

ISO 8020



GESS™

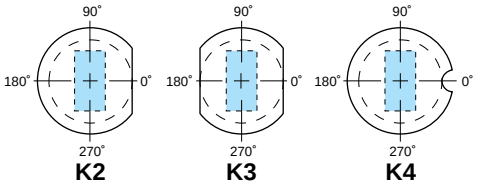
GENERAL
EJECTOR
SHOULDER
SQUARE/RECTANGULAR

Ordering Example:
(10) GESS 16-25-80 M2 P9.4 W9.4 K4

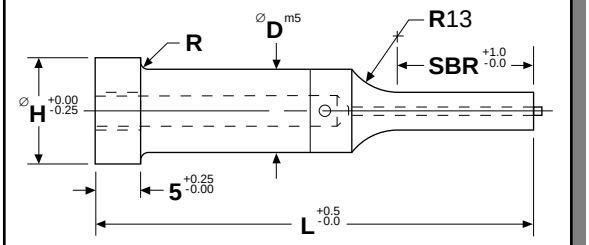
A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

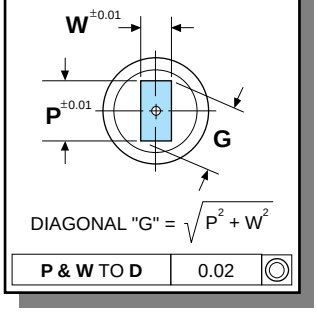
Heads drawn to Rc 40-55.

Key-Flats in Die Position
See Pg. T9-10



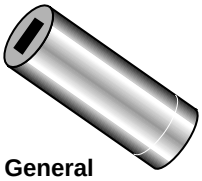
General Ejector Shoulder Square/Rectangular





TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "W"	HEAD DIA. "H"	EJECT. TYPE
		8	10	13	19	25	32	50	56	63	71	80	90	100			
GESS	5	8	10	13				50	56	63	71				1.9	8	E2AM
GESS	6	8	10	13				50	56	63	71	80			2.0	9	E3M
GESS	8	8	10	13				50	56	63	71	80			2.9	11	E4M
GESS	10		10	13	19			50	56	63	71	80	90	100	4.0	13	E6M
GESS	13		10	13	19			50	56	63	71	80	90	100	4.0	16	E6M
GESS	16			13	19	25		50	56	63	71	80	90	100	5.7	19	E9M
GESS	20			13	19	25			56	63	71	80	90	100	5.7	24	E9M
GESS	25			13	19	25			56	63	71	80	90	100	5.7	29	E9M
GESS	32				19	25	32				71	80	90	100	9.9	36	E12M
GESS	40				19	25	32					80	90	100	12.0	45	E12M
GESS	45					25	32					80	90	100	14.0	50	E12M
GESS	50					25	32					80	90	100	16.0	55	E12M
GESS	56					25	32					80	90	100	18.0	61	E12M
GESS	63					25	32					80	90	100	20.0	68	E12M

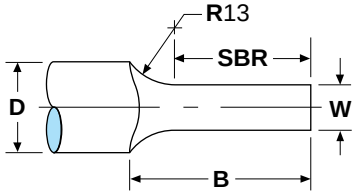
For Matching Die Buttons:



General (Press-Fit)
see page G27

General (Shoulder)
see page G27

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

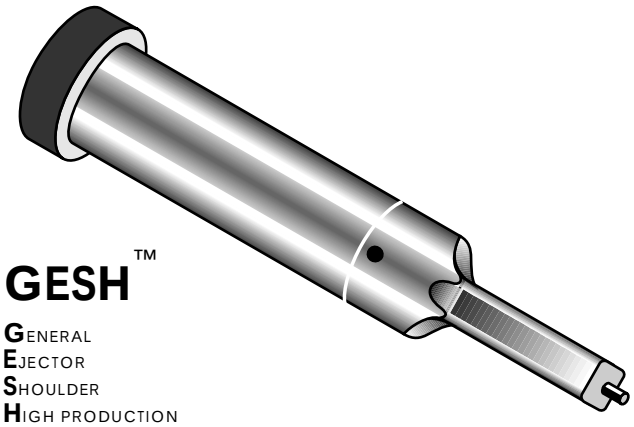
EXAMPLE:

GESS 16-25-80 M2 P9.4 W9.4 K4
R = 13, D = 16, SBR = 25, W = 9.4

$$B = \sqrt{13^2 - \left(13 - \left(\frac{16 - 9.4}{2}\right)\right)^2} + 25$$

B = 33.7

ISO 8020



GESH™

GENERAL
EJECTOR
SHOULDER
HIGH PRODUCTION

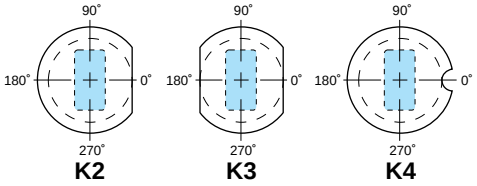
Lane recommends the "H" punch and "H" die button for longest corner wear and highest production on all rectangular and square holes.

Ordering Example:
(15) GESH 40-25-90 M2 P33.6 W21.8 K2

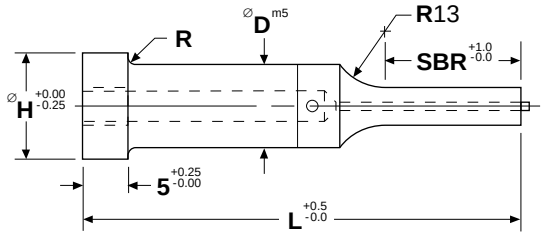
A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

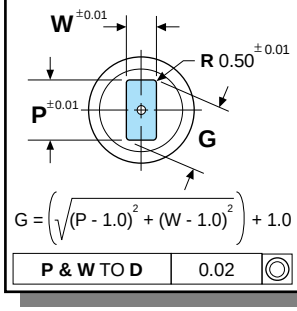
Heads drawn to Rc 40-55.

Key-Flats in Die Position
See Pg. T9-10



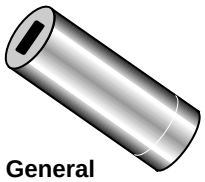
General Ejector Shoulder High Production





TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "W"	HEAD DIA. "H"	EJECT. TYPE
		8	10	13	19	25	32	50	56	63	71	80	90	100			
GESH	5	8	10	13				50	56	63	71				1.9	8	E2AM
GESH	6	8	10	13				50	56	63	71	80			2.0	9	E3M
GESH	8	8	10	13				50	56	63	71	80			2.9	11	E4M
GESH	10		10	13	19			50	56	63	71	80	90	100	4.0	13	E6M
GESH	13		10	13	19			50	56	63	71	80	90	100	4.0	16	E6M
GESH	16			13	19	25		50	56	63	71	80	90	100	5.7	19	E9M
GESH	20			13	19	25			56	63	71	80	90	100	5.7	24	E9M
GESH	25			13	19	25			56	63	71	80	90	100	5.7	29	E9M
GESH	32				19	25	32				71	80	90	100	9.9	36	E12M
GESH	40				19	25	32					80	90	100	12.0	45	E12M
GESH	45					25	32					80	90	100	14.0	50	E12M
GESH	50					25	32					80	90	100	16.0	55	E12M
GESH	56					25	32					80	90	100	18.0	61	E12M
GESH	63					25	32					80	90	100	20.0	68	E12M

For Matching Die Buttons:

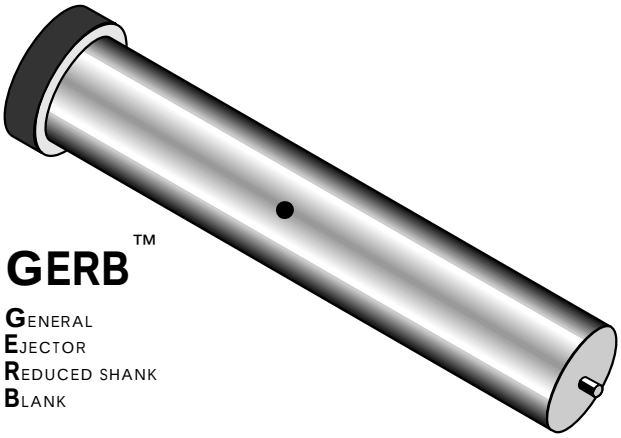


General (Press-Fit)
see page G28

General (Shoulder)
see page G28

General Ejector Reduced-Shank Blanks™

ISO 8020



GERB™

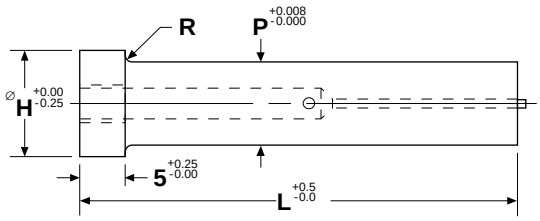
GENERAL
EJECTOR
REDUCED SHANK
BLANK

A2, R/c 59-61 double tempered

M2, R/c 61-63 triple tempered

Heads drawn to Rc 40-55.

General Ejector Reduced-Shank Blank

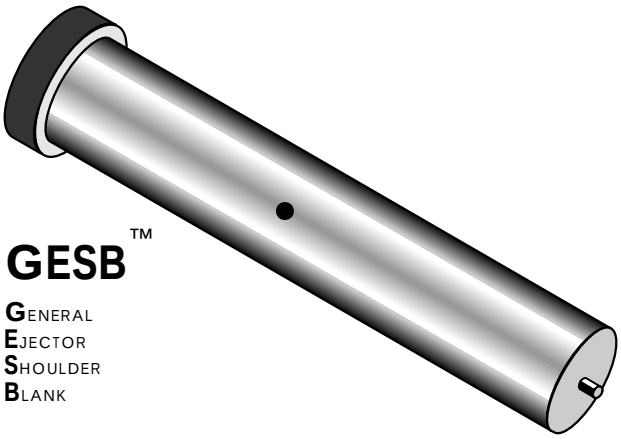


Ordering Example:
(12) GERB 10-56 M2 P8.9

TYPE	"D"	OVERALL LENGTH "L"							POINT RANGE "P"	HEAD DIA. "H"	EJECT. TYPE
		50	56	63	71	80	90	100			
GERB	5	50	56	63	71				3.2 – 4.9	8	E2AM
GERB	6	50	56	63	71	80			4.7 – 5.9	9	E3M
GERB	8	50	56	63	71	80			6.0 – 7.9	11	E4M
GERB	10	50	56	63	71	80	90	100	8.0 – 9.9	13	E6M

General Ejector Shoulder Blank™

ISO 8020



GESB™

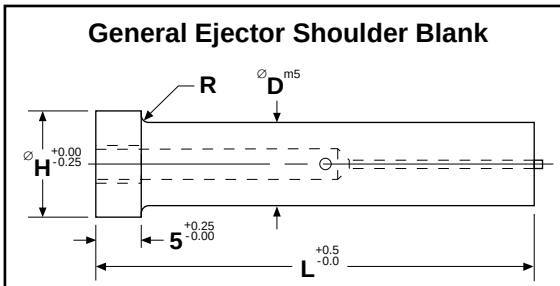
GENERAL
EJECTOR
SHOULDER
BLANK

A2, R/c 59-61 double tempered

M2, R/c 61-63 triple tempered

Heads drawn to Rc 40-55.

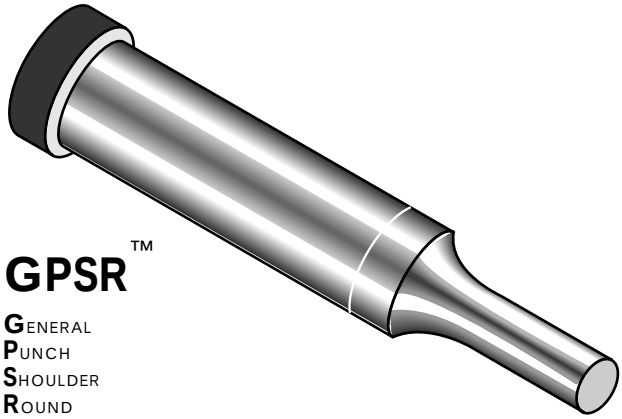
General Ejector Shoulder Blank



Ordering Example:
(18) GESB 13-80 M2

TYPE	"D"	OVERALL LENGTH "L"							HEAD DIA. "H"	EJECT. TYPE
		50	56	63	71	80	90	100		
GESB	5	50	56	63	71				8	E2AM
GESB	6	50	56	63	71	80			9	E3M
GESB	8	50	56	63	71	80			11	E4M
GESB	10	50	56	63	71	80	90	100	13	E6M
GESB	13	50	56	63	71	80	90	100	16	E6M
GESB	16	50	56	63	71	80	90	100	19	E9M
GESB	20		56	63	71	80	90	100	24	E9M
GESB	25		56	63	71	80	90	100	29	E9M
GESB	32				71	80	90	100	36	E12M
GESB	40					80	90	100	45	E12M
GESB	45					80	90	100	50	E12M
GESB	50					80	90	100	55	E12M
GESB	56					80	90	100	61	E12M
GESB	63					80	90	100	68	E12M

ISO 8020



GPSR™

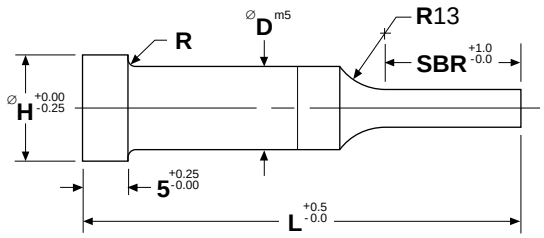
GENERAL
PUNCH
SHOULDER
ROUND

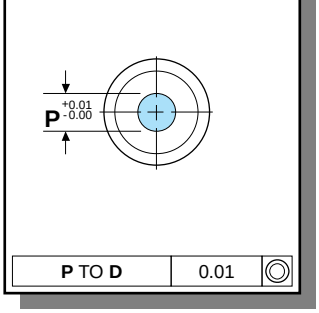
Ordering Example:
(12) GPSR 6-13-63 M2 P4.2

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

Heads drawn to Rc 40-55.

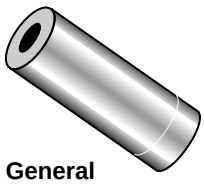
General Punch Shoulder Round



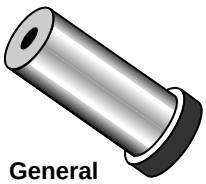


TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "P"	HEAD DIA. "H"
		8	10	13	19	25	32	50	56	63	71	80	90	100		
GPSR	4	8	10					50	56	63					0.8	7
GPSR	5	8	10	13				50	56	63	71				1.3	8
GPSR	6	8	10	13				50	56	63	71	80			1.4	9
GPSR	8	8	10	13				50	56	63	71	80			1.5	11
GPSR	10		10	13	19			50	56	63	71	80	90	100	1.9	13
GPSR	13		10	13	19			50	56	63	71	80	90	100	3.1	16
GPSR	16			13	19	25		50	56	63	71	80	90	100	5.7	19
GPSR	20			13	19	25			56	63	71	80	90	100	5.7	24
GPSR	25			13	19	25			56	63	71	80	90	100	5.7	29
GPSR	32				19	25	32				71	80	90	100	9.9	36
GPSR	40				19	25	32					80	90	100	12.0	45
GPSR	45					25	32					80	90	100	14.0	50
GPSR	50					25	32					80	90	100	16.0	55
GPSR	56					25	32					80	90	100	18.0	61
GPSR	63					25	32					80	90	100	20.0	68

For Matching Die Buttons:

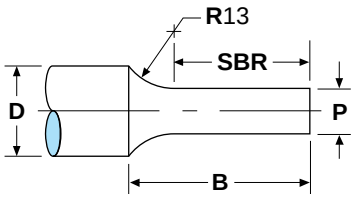


General (Press-Fit)
see page G25



General (Shoulder)
see page G25

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - P}{2}\right)\right)^2} + SBR$$

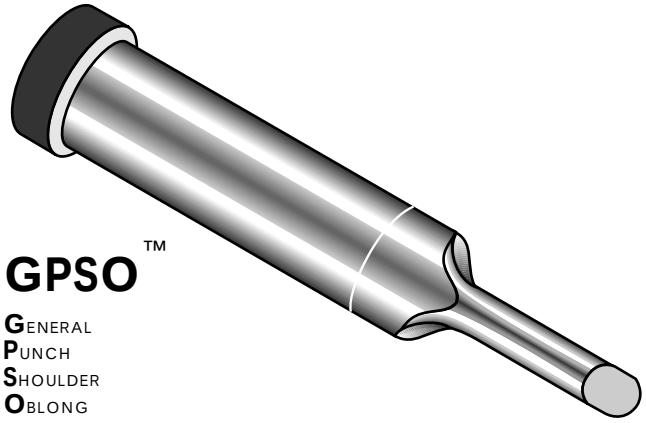
EXAMPLE:

GPSR 6-13-63 M2 P4.2
R = 13, D = 6, SBR = 13, P = 4.2

$$B = \sqrt{13^2 - \left(13 - \left(\frac{6 - 4.2}{2}\right)\right)^2} + 13$$

B = 17.8

ISO 8020



GPSO™

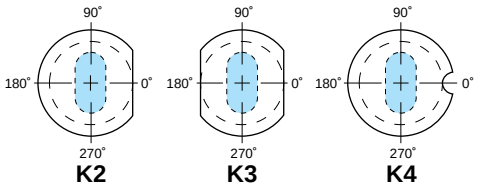
GENERAL
PUNCH
SHOULDER
OBLONG

Ordering Example:
(12) GPSO 25-19-80 M2 P21.6 W12.2 K2

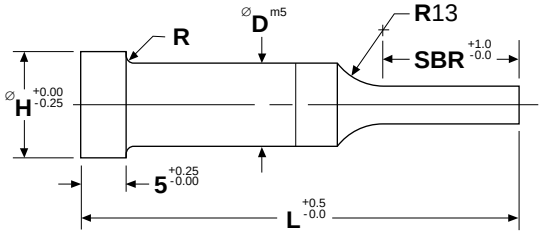
A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

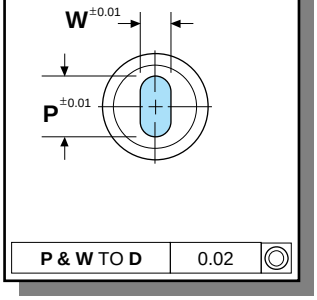
Heads drawn to Rc 40-55.

Key-Flats in Die Position
See Pg. T9-10



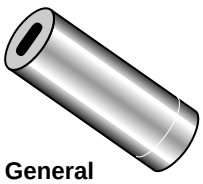
General Punch Shoulder Oblong





TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "W"	HEAD DIA. "H"
		8	10	13	19	25	32	50	56	63	71	80	90	100		
GPSO	4	8	10					50	56	63					0.8	7
GPSO	5	8	10	13				50	56	63	71				1.3	8
GPSO	6	8	10	13				50	56	63	71	80			1.4	9
GPSO	8	8	10	13				50	56	63	71	80			1.5	11
GPSO	10		10	13	19			50	56	63	71	80	90	100	1.9	13
GPSO	13		10	13	19			50	56	63	71	80	90	100	3.1	16
GPSO	16			13	19	25		50	56	63	71	80	90	100	5.7	19
GPSO	20			13	19	25			56	63	71	80	90	100	5.7	24
GPSO	25			13	19	25			56	63	71	80	90	100	5.7	29
GPSO	32				19	25	32				71	80	90	100	9.9	36
GPSO	40				19	25	32					80	90	100	12.0	45
GPSO	45					25	32					80	90	100	14.0	50
GPSO	50					25	32					80	90	100	16.0	55
GPSO	56					25	32					80	90	100	18.0	61
GPSO	63					25	32					80	90	100	20.0	68

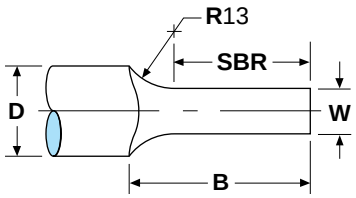
For Matching Die Buttons:



General (Press-Fit)
see page G26

General (Shoulder)
see page G26

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

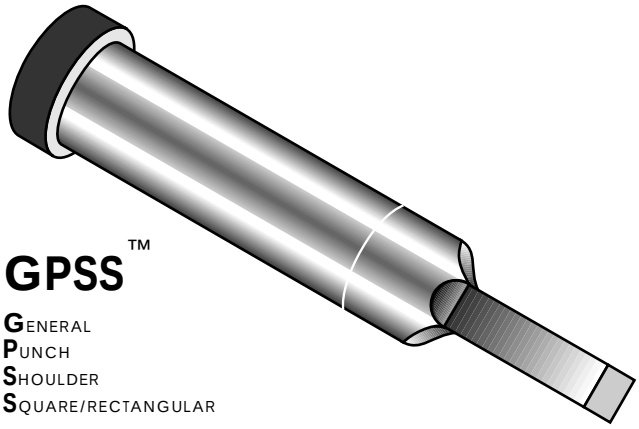
EXAMPLE:

GPSO 25-19-80 M2 P21.6 W12.2 K2
R = 13, D = 25, SBR = 19, W = 12.2

$$B = \sqrt{13^2 - \left(13 - \left(\frac{25 - 12.2}{2}\right)\right)^2} + 19$$

B = 30.2

ISO 8020



GPSS™

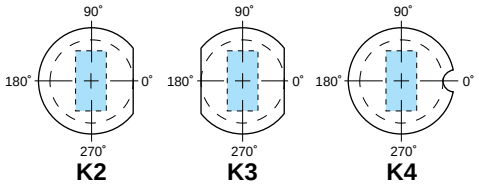
GENERAL
PUNCH
SHOULDER
SQUARE/RECTANGULAR

Ordering Example:
(10) GPSS 16-19-80 M2 P12.2 W8.7 K4

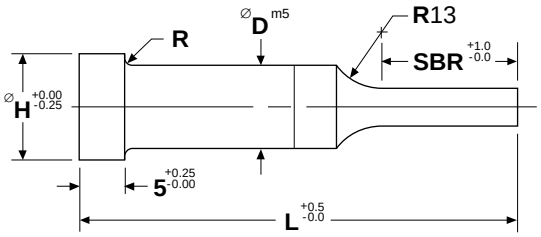
A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

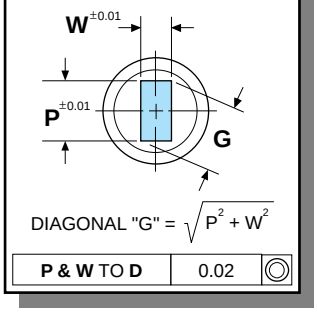
Heads drawn to Rc 40-55.

Key-Flats in Die Position
See Pg. T9-10



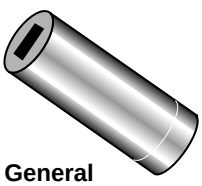
General Punch Shoulder Square/Rectangular





TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "W"	HEAD DIA. "H"
		8	10	13	19	25	32	50	56	63	71	80	90	100		
GPSS	4	8	10					50	56	63					0.8	7
GPSS	5	8	10	13				50	56	63	71				1.3	8
GPSS	6	8	10	13				50	56	63	71	80			1.4	9
GPSS	8	8	10	13				50	56	63	71	80			1.5	11
GPSS	10		10	13	19			50	56	63	71	80	90	100	1.9	13
GPSS	13		10	13	19			50	56	63	71	80	90	100	3.1	16
GPSS	16			13	19	25		50	56	63	71	80	90	100	5.7	19
GPSS	20			13	19	25			56	63	71	80	90	100	5.7	24
GPSS	25			13	19	25			56	63	71	80	90	100	5.7	29
GPSS	32				19	25	32				71	80	90	100	9.9	36
GPSS	40				19	25	32					80	90	100	12.0	45
GPSS	45					25	32					80	90	100	14.0	50
GPSS	50					25	32					80	90	100	16.0	55
GPSS	56					25	32					80	90	100	18.0	61
GPSS	63					25	32					80	90	100	20.0	68

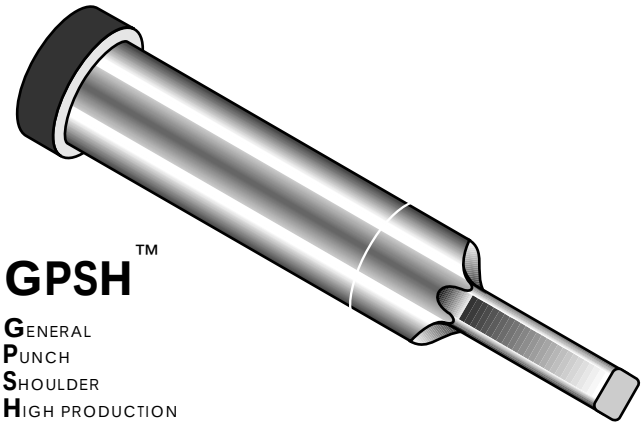
For Matching Die Buttons:



General (Press-Fit)
see page G27

General (Shoulder)
see page G27

ISO 8020



GPSH™

GENERAL
PUNCH
SHOULDER
HIGH PRODUCTION

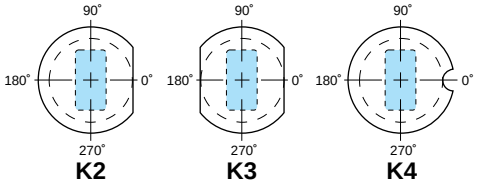
Lane recommends the "H" punch and "H" die button for longest corner wear and highest production on all rectangular and square holes.

Ordering Example:
(15) GPSH 32-25-90 M2 P24.2 W18.6 K2

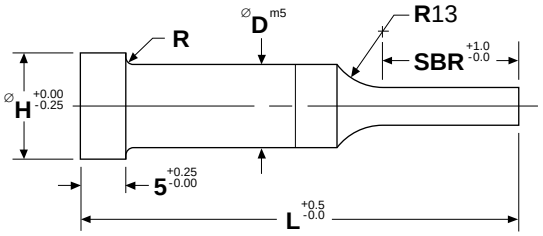
A2, R/c 59-61 double tempered
M2, R/c 61-63 triple tempered

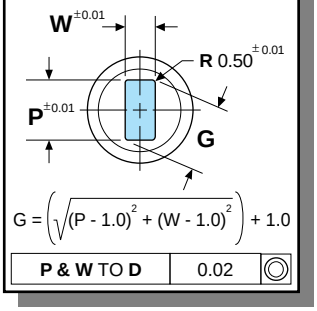
Heads drawn to Rc 40-55.

Key-Flats in Die Position
See Pg. T9-10



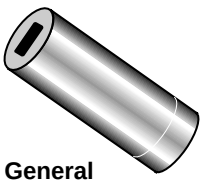
General Punch Shoulder High Production





TYPE	"D"	POINT LENGTH "SBR"						OVERALL LENGTH "L"							MIN. "P"	HEAD DIA. "H"
		8	10	13	19	25	32	50	56	63	71	80	90	100		
GPSH	4	8	10					50	56	63					0.8	7
GPSH	5	8	10	13				50	56	63	71				1.3	8
GPSH	6	8	10	13				50	56	63	71	80			1.4	9
GPSH	8	8	10	13				50	56	63	71	80			1.5	11
GPSH	10		10	13	19			50	56	63	71	80	90	100	1.9	13
GPSH	13		10	13	19			50	56	63	71	80	90	100	3.1	16
GPSH	16			13	19	25		50	56	63	71	80	90	100	5.7	19
GPSH	20			13	19	25			56	63	71	80	90	100	5.7	24
GPSH	25			13	19	25			56	63	71	80	90	100	5.7	29
GPSH	32				19	25	32				71	80	90	100	9.9	36
GPSH	40				19	25	32					80	90	100	12.0	45
GPSH	45					25	32					80	90	100	14.0	50
GPSH	50					25	32					80	90	100	16.0	55
GPSH	56					25	32					80	90	100	18.0	61
GPSH	63					25	32					80	90	100	20.0	68

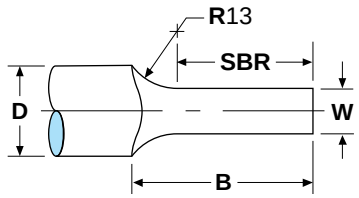
For Matching Die Buttons:



General (Press-Fit)
see page G28

General (Shoulder)
see page G28

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

EXAMPLE:

GPSH 32-25-90 M2 P24.2 W18.6 K4
R = 13, D = 32, SBR = 25, W = 18.6

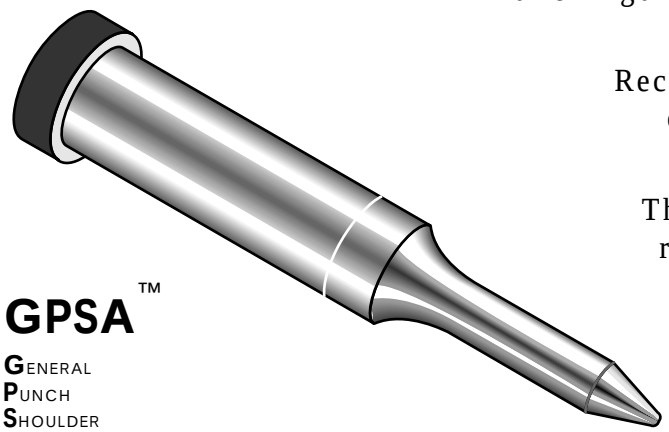
$$B = \sqrt{13^2 - \left(13 - \left(\frac{32 - 18.6}{2}\right)\right)^2} + 25$$

B = 36.4

General Punch Shoulder Angular Pilot™

Lane Punch Corporation

ISO 8020



GPSA™

GENERAL
PUNCH
SHOULDER
ANGULAR PILOT

Lane Angular Pilots provide greater positioning (movement) of stock than Conventional Pilots.

Recommended for large Panel Dies or Transfer Dies common to the Automotive and Major Appliance Industries.

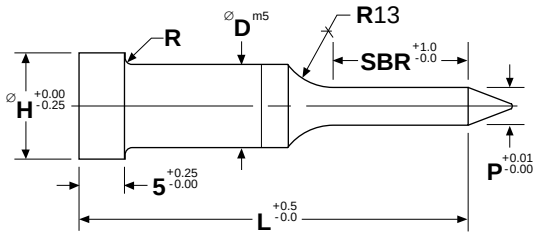
The Polished Angular Point (lead) reduces friction resulting in longer wear, less part distortion and improved stamping quality.

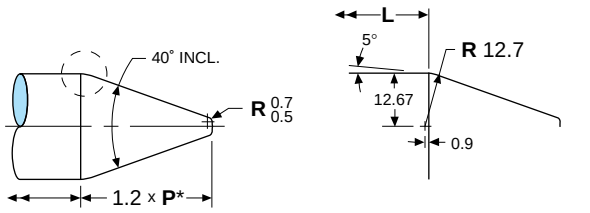
Ordering Example:
(18) GPSA 32-32-110 M2 P28.1

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

Heads drawn to Rc 40-55.

General Punch Shoulder Angular Pilot



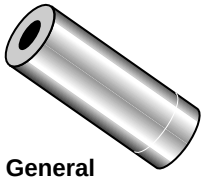


*** To calculate angular point length:**
P diameter ≧ 4.7: P x 1.2
P diameter < 4.7: P x 1.5

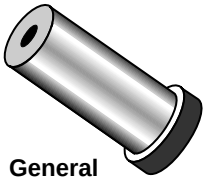
P TO D	0.01

TYPE	"D"	POINT LENGTH "SBR"						LENGTH "L"								MIN. "P"	HEAD DIA. "H"
		8	10	13	19	25	32	63	71	80	90	100	110	125	140		
GPSA	5	8	10	13				63	71							1.2	8
GPSA	6	8	10	13				63	71	80						1.3	9
GPSA	8	8	10	13				63	71	80	90					1.4	11
GPSA	10		10	13	19			63	71	80	90	100	110			1.8	13
GPSA	13		10	13	19			63	71	80	90	100	110	125		3.0	16
GPSA	16			13	19	25			71	80	90	100	110	125	140	5.6	19
GPSA	20			13	19	25			71	80	90	100	110	125	140	5.6	24
GPSA	25			13	19	25			71	80	90	100	110	125	140	5.6	29
GPSA	32				19	25	32			80	90	100	110	125	140	9.8	36
GPSA	40				19	25	32			80	90	100	110	125	140	11.9	45

For Matching Die Buttons:



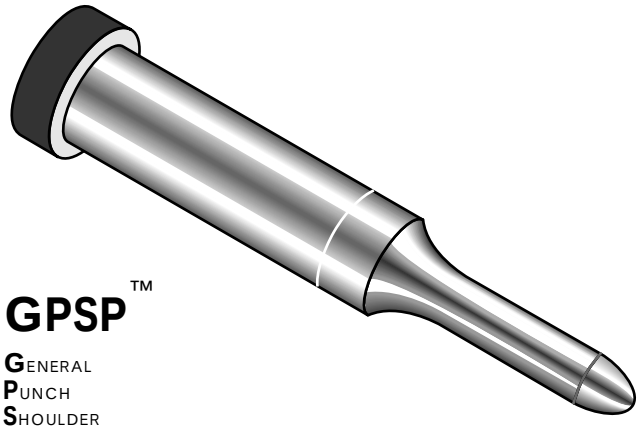
General (Press-Fit)
see page G25



General (Shoulder)
see page G25

General Punch Shoulder Parabolic Pilot™

ISO 8020



GPSP™

GENERAL
PUNCH
SHOULDER
PARABOLIC PILOT

Lane Parabolic Pilots are recommended for light-gage, high-speed applications.

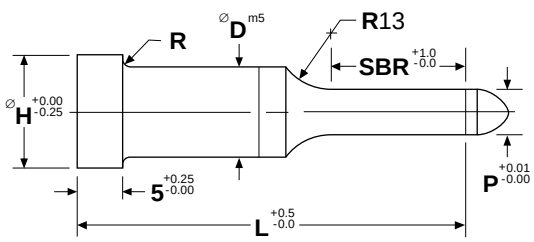
The Polished Parabolic Point (lead) reduces friction resulting in longer wear, less part distortion and improved stamping quality.

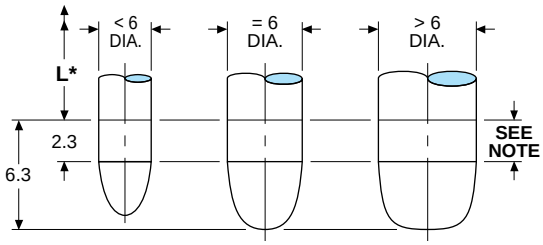
Ordering Example:
(12) GPSP 20-13-63 M2 P18.3

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

Heads drawn to Rc 40-55.

General Punch Shoulder Parabolic Pilot





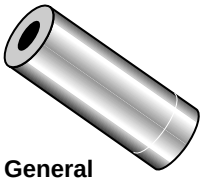
* "L" length of pilot does not include 6.3mm lead.

P TO D | 0.01 ⌀

NOTE: This 2.3mm length allows full diameter registration before punches make contact with material.

TYPE	"D"	POINT LENGTH "SBR"						LENGTH "L"							MIN. "P"	HEAD DIA. "H"
		8	10	13	19	25	32	50	56	63	71	80	90	100		
GPSP	5	8	10	13				50	56	63	71				1.2	8
GPSP	6	8	10	13				50	56	63	71	80			1.3	9
GPSP	8	8	10	13				50	56	63	71	80			1.4	11
GPSP	10		10	13	19			50	56	63	71	80	90	100	1.8	13
GPSP	13		10	13	19			50	56	63	71	80	90	100	3.0	16
GPSP	16			13	19	25		50	56	63	71	80	90	100	5.6	19
GPSP	20			13	19	25			56	63	71	80	90	100	5.6	24
GPSP	25			13	19	25			56	63	71	80	90	100	5.6	29
GPSP	32				19	25	32				71	80	90	100	9.8	36
GPSP	40				19	25	32					80	90	100	11.9	45

For Matching Die Buttons:



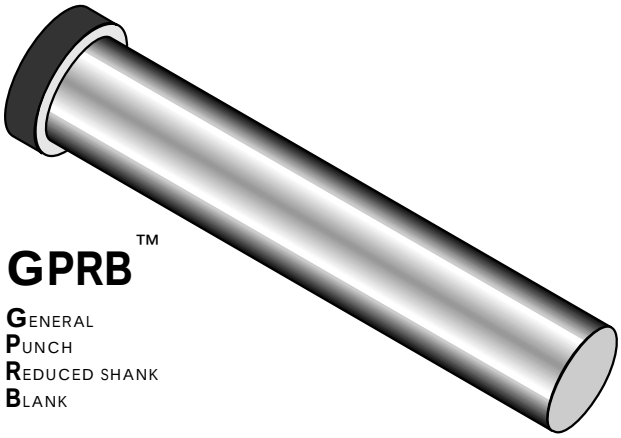
General (Press-Fit)
see page G25

General (Shoulder)
see page G25

General Punch Reduced-Shank Blank™

Lane PUNCH CORPORATION

ISO 8021



GPRB™

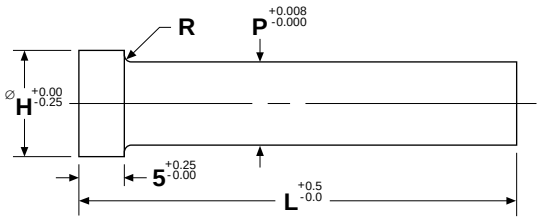
GENERAL
PUNCH
REDUCED SHANK
BLANK

A2, R/c 59-61 double tempered

M2, R/c 61-63 triple tempered

Heads drawn to Rc 40-55.

General Punch Reduced-Shank Blank



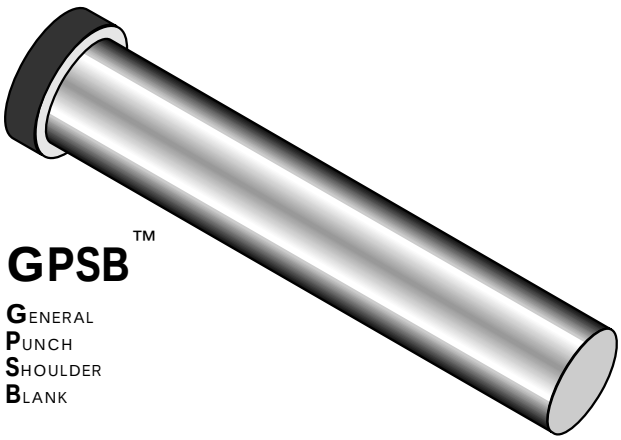
Ordering Example:
(10) GPRB 10-63 M2 P8.2

TYPE	"D"	OVERALL LENGTH "L"							POINT RANGE "P"	HEAD DIA. "H"
		50	56	63	71	80	90	100		
GPRB	5	50	56	63	71				3.2 – 4.9	8
GPRB	6	50	56	63	71	80			4.7 – 5.9	9
GPRB	8	50	56	63	71	80			6.0 – 7.9	11
GPRB	10	50	56	63	71	80	90	100	8.0 – 9.9	13

General Punch Shoulder Blank™

Lane PUNCH CORPORATION

ISO 8021



GPSB™

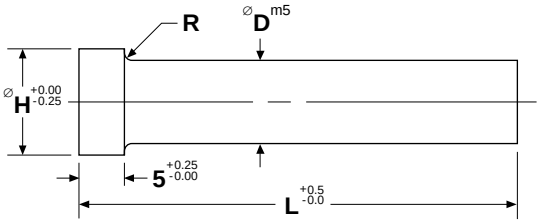
GENERAL
PUNCH
SHOULDER
BLANK

A2, R/c 59-61 double tempered

M2, R/c 61-63 triple tempered

Heads drawn to Rc 40-55.

General Punch Shoulder Blank

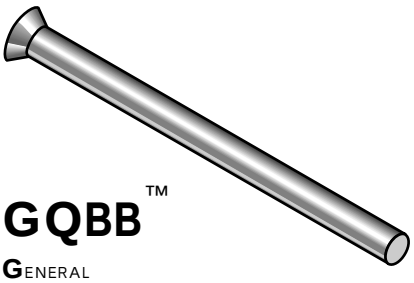


Ordering Example:
(15) GPSB 40-125 M2

TYPE	"D"	OVERALL LENGTH "L"													HEAD DIA. "H"
		50	56	63	71	80	90	100	110	125	140	150	175	200	
GPSB	4	50	56	63											7
GPSB	5	50	56	63	71										8
GPSB	6	50	56	63	71	80	90								9
GPSB	8	50	56	63	71	80	90								11
GPSB	10	50	56	63	71	80	90	100	110	125					13
GPSB	13	50	56	63	71	80	90	100	110	125	140	150			16
GPSB	16	50	56	63	71	80	90	100	110	125	140	150	175		19
GPSB	20		56	63	71	80	90	100	110	125	140	150	175		24
GPSB	25		56	63	71	80	90	100	110	125	140	150	175		29
GPSB	32				71	80	90	100	110	125	140	150	175	200	36
GPSB	40					80	90	100	110	125	140	150	175	200	45
GPSB	45					80	90	100	110	125	140	150	175	200	50
GPSB	50					80	90	100	110	125	140	150	175	200	55
GPSB	56					80	90	100	110	125	140	150	175	200	61
GPSB	63					80	90	100	110	125	140	150	175	200	68

General Quill Punches Bevel Blanks™

ISO 8021

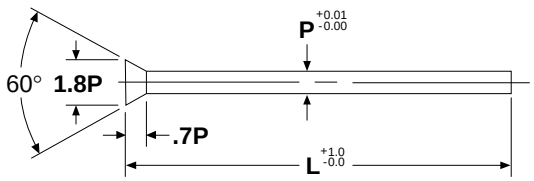


GQBB™

GENERAL
QUILL PUNCHES
BEVEL
BLANKS

M2, R/c 61-63
triple tempered

General Quill Punches Bevel Blanks

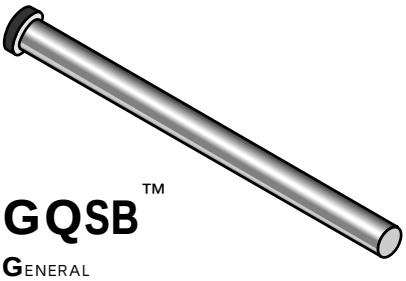


Ordering Example:
(9) GQBB 4-50 M2 P3.44

TYPE	"D"	OVERALL LENGTH "L"					POINT RANGE "P"
		40	45	50	56	63	
GQBB	2	40	45	50	56	63	0.81 – 2.00
GQBB	3	40	45	50	56	63	2.01 – 3.00
GQBB	4	40	45	50	56	63	3.01 – 4.00
GQBB	5	40	45	50	56	63	4.01 – 5.00
GQBB	6	40	45	50	56	63	5.01 – 6.00
GQBB	7	40	45	50	56	63	6.01 – 7.00

General Quill Punches Shoulder Blanks™

ISO 8021

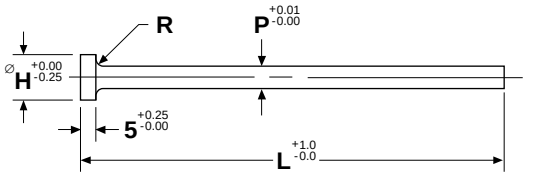


GQSB™

GENERAL
QUILL PUNCHES
SHOULDER
BLANKS

M2, R/c 61-63
triple tempered

General Quill Punches Shoulder Blanks



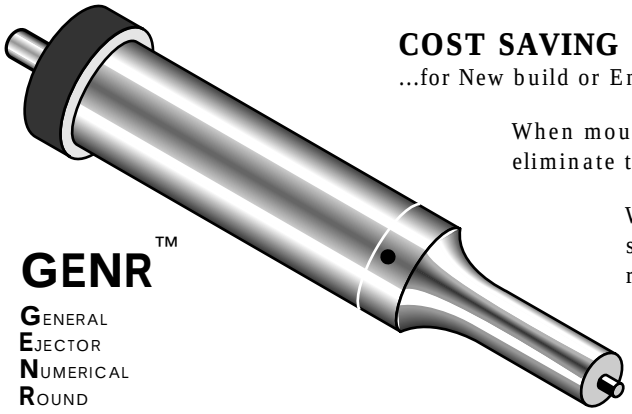
Ordering Example:
(18) GQSB 5-56 M2 P4.66

TYPE	"D"	OVERALL LENGTH "L"					POINT RANGE "P"	HEAD DIA. "H"
		40	45	50	56	63		
GQSB	2	40	45	50	56	63	0.81 – 2.00	4
GQSB	3	40	45	50	56	63	2.01 – 3.00	5
GQSB	4	40	45	50	56	63	3.01 – 4.00	6
GQSB	5	40	45	50	56	63	4.01 – 5.00	7
GQSB	6	40	45	50	56	63	5.01 – 6.00	8
GQSB	7	40	45	50	56	63	6.01 – 7.00	9

General Ejector Numerical Round™

Lane PUNCH CORPORATION

ISO 8020



GENR™

GENERAL
EJECTOR
NUMERICAL
ROUND

COST SAVING • SPACE SAVING • LABOR SAVING • TIME SAVING
...for New build or Engineering changes

When mounted in plates, common center dowels eliminate the need for additional dowels.

When mounted in Lane's new Shoulder Punch Retainer, shaped punches can be radially aligned in just minutes, requiring only round holes from your shop for location.

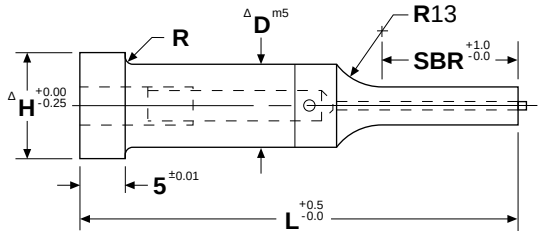
It is no longer necessary to mill keyways to lock shaped punches when using the new Lane Retainer for shoulder punches (page SR8).

Ordering Example:
(12) GENR 13-13-71 A2 P10.1

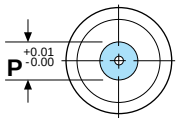
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

General Ejector Numerical Round



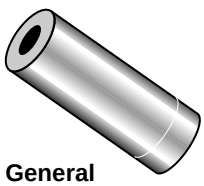
Dowel diameter = 6



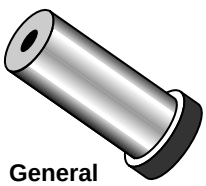
P TO D	0.01

TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "P"	HEAD DIA. "H"	EJECT. TYPE
		10	13	19	25	32	71	80	90	100			
GENR	10	10	13	19			71	80	90	100	4.0	13	E6M
GENR	13	10	13	19			71	80	90	100	4.0	16	E6M
GENR	16		13	19	25		71	80	90	100	5.7	19	E9M
GENR	20		13	19	25		71	80	90	100	5.7	24	E9M
GENR	25		13	19	25		71	80	90	100	5.7	29	E9M
GENR	32			19	25	32	71	80	90	100	9.9	36	E9M

For Matching Die Buttons:

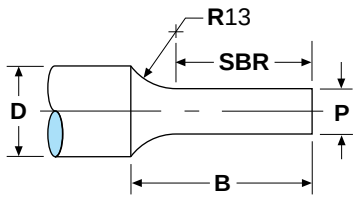


General (Press-Fit)
see page G25



General (Shoulder)
see page G25

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - P}{2}\right)\right)^2} + SBR$$

EXAMPLE:

GENR 13-13-71 A2 P10.1
R = 13, D = 13, SBR = 13, P = 10.1

$$B = \sqrt{13^2 - \left(13 - \left(\frac{13 - 10.1}{2}\right)\right)^2} + 13$$

B = 18.9

ISO 8020

GENO™

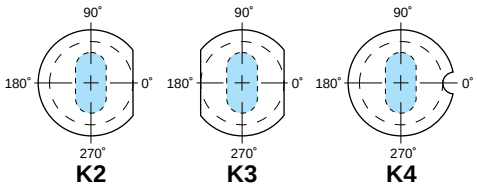
GENERAL
EJECTOR
NUMERICAL
OBLONG

Ordering Example:
(12) GENO 20-19-80 A2 P18.2 W9.5 K2

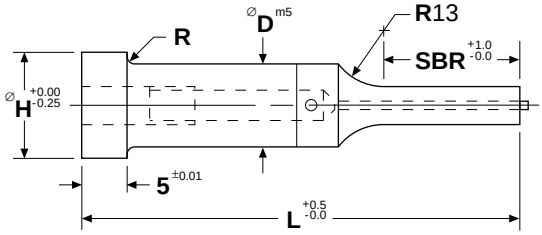
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

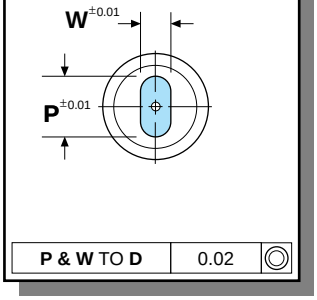
Key-Flats in Die Position
See Pg. T9-10



General Ejector Numerical Oblong

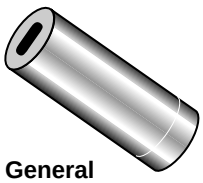


Dowel diameter = 6

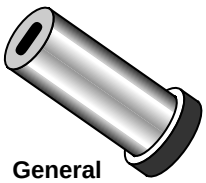


TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "W"	HEAD DIA. "H"	EJECT. TYPE
		10	13	19	25	32	71	80	90	100			
GENO	10	10	13	19			71	80	90	100	4.0	13	E6M
GENO	13	10	13	19			71	80	90	100	4.0	16	E6M
GENO	16		13	19	25		71	80	90	100	5.7	19	E9M
GENO	20		13	19	25		71	80	90	100	5.7	24	E9M
GENO	25		13	19	25		71	80	90	100	5.7	29	E9M
GENO	32			19	25	32	71	80	90	100	9.9	36	E9M

For Matching Die Buttons:

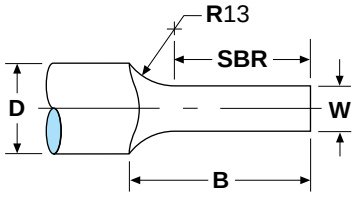


General (Press-Fit)
see page G26



General (Shoulder)
see page G26

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)^2\right)} + SBR$$

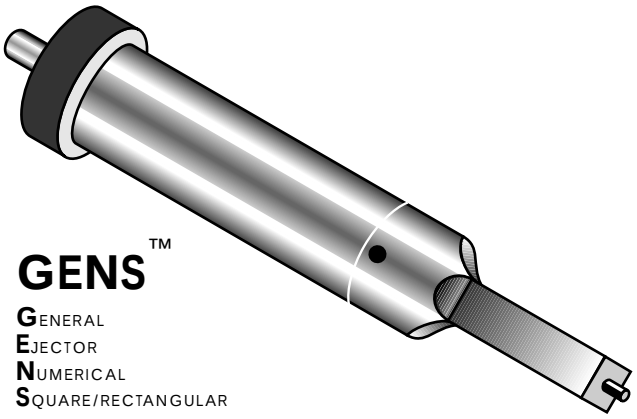
EXAMPLE:

GENO 20-19-80 A2 P18.2 W9.5 K2
R = 13, D = 20, SBR = 19, W = 9.5

$$B = \sqrt{13^2 - \left(13 - \left(\frac{20 - 9.5}{2}\right)^2\right)} + 19$$

B = 29.4

ISO 8020



GENS™

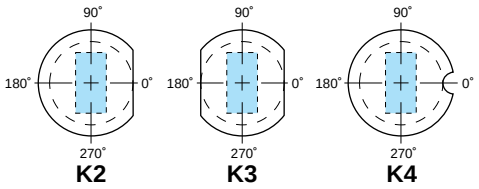
GENERAL
EJECTOR
NUMERICAL
SQUARE/RECTANGULAR

Ordering Example:
(18) GENS 20-13-80 A2 P13.3 W8.5 K4

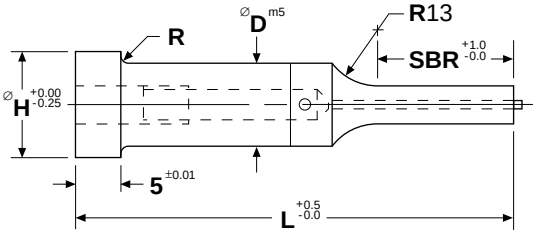
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

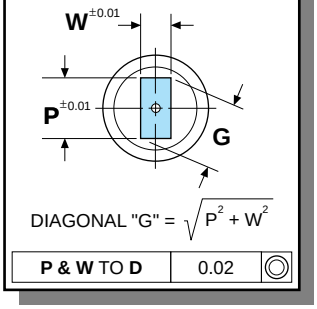
Key-Flats in Die Position
See Pg. T9-10



General Ejector Numerical Square/Rectangular

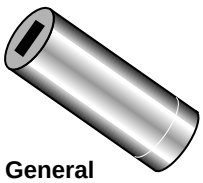


Dowel diameter = 6



TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "W"	HEAD DIA. "H"	EJECT. TYPE
		10	13	19	25	32	71	80	90	100			
GENS	10	10	13	19			71	80	90	100	4.0	13	E6M
GENS	13	10	13	19			71	80	90	100	4.0	16	E6M
GENS	16		13	19	25		71	80	90	100	5.7	19	E9M
GENS	20		13	19	25		71	80	90	100	5.7	24	E9M
GENS	25		13	19	25		71	80	90	100	5.7	29	E9M
GENS	32			19	25	32	71	80	90	100	9.9	36	E9M

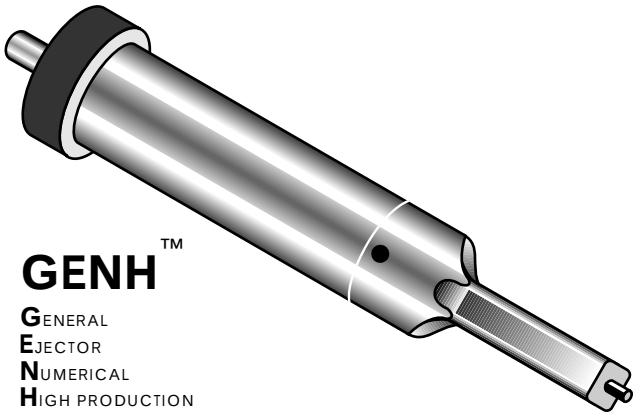
For Matching Die Buttons:



General (Press-Fit)
see page G27

General (Shoulder)
see page G27

ISO 8020



GENH™

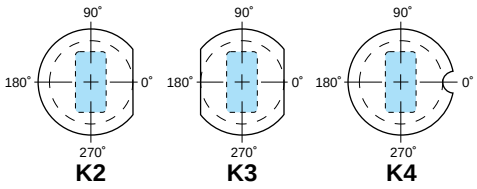
GENERAL
EJECTOR
NUMERICAL
HIGH PRODUCTION

Ordering Example:
(15) GENH 16-25-80 A2 P13.4 W9.4 K2

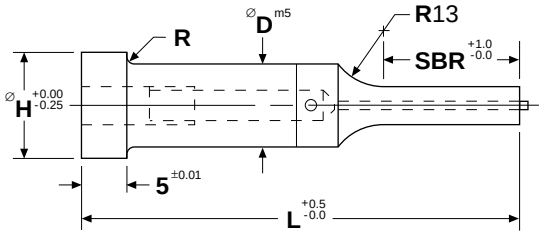
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

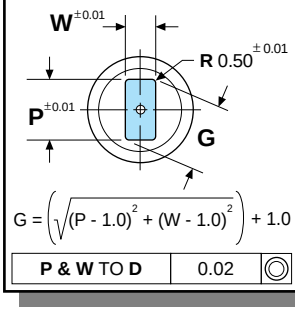
Key-Flats in Die Position
See Pg. T9-10



General Ejector Numerical High Production

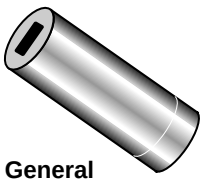


Dowel diameter = 6



TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "W"	HEAD DIA. "H"	EJECT. TYPE
		10	13	19	25	32	71	80	90	100			
GENH	10	10	13	19			71	80	90	100	4.0	13	E6M
GENH	13	10	13	19			71	80	90	100	4.0	16	E6M
GENH	16		13	19	25		71	80	90	100	5.7	19	E9M
GENH	20		13	19	25		71	80	90	100	5.7	24	E9M
GENH	25		13	19	25		71	80	90	100	5.7	29	E9M
GENH	32			19	25	32	71	80	90	100	9.9	36	E9M

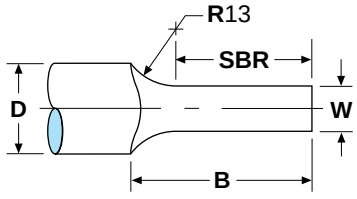
For Matching Die Buttons:



General (Press-Fit)
see page G28

General (Shoulder)
see page G28

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

EXAMPLE:

GENH 16-25-80 A2 P13.4 W9.4 K2
R = 13, D = 16, SBR = 25, W = 9.4

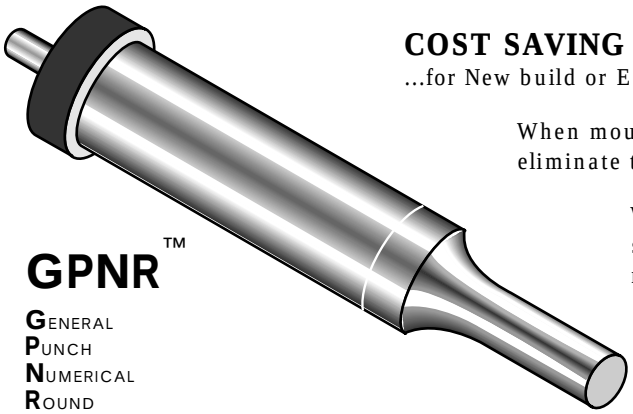
$$B = \sqrt{13^2 - \left(13 - \left(\frac{16 - 9.4}{2}\right)\right)^2} + 25$$

B = 33.7

General Punch Numerical Round™

Lane PUNCH CORPORATION

ISO 8020



GPNR™

GENERAL
PUNCH
NUMERICAL
ROUND

COST SAVING • SPACE SAVING • LABOR SAVING • TIME SAVING
...for New build or Engineering changes

When mounted in plates, common center dowels eliminate the need for additional dowels.

When mounted in Lane's new Shoulder Punch Retainer, shaped punches can be radially aligned in just minutes, requiring only round holes from your shop for location.

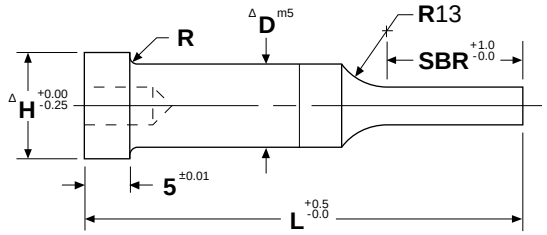
It is no longer necessary to mill keyways to lock shaped punches when using the new Lane Retainer for shoulder punches (page SR8).

Ordering Example:
(12) GPNR 13-13-71 A2 P10.1

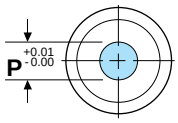
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

General Punch Numerical Round



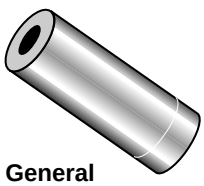
Dowel diameter = 6



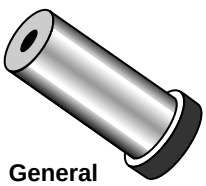
P TO D	0.01

TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "P"	HEAD DIA. "H"
		10	13	19	25	32	71	80	90	100		
GPNR	10	10	13	19			71	80	90	100	1.9	13
GPNR	13	10	13	19			71	80	90	100	3.1	16
GPNR	16		13	19	25		71	80	90	100	5.7	19
GPNR	20		13	19	25		71	80	90	100	5.7	24
GPNR	25		13	19	25		71	80	90	100	5.7	29
GPNR	32			19	25	32	71	80	90	100	5.7	36

For Matching Die Buttons:

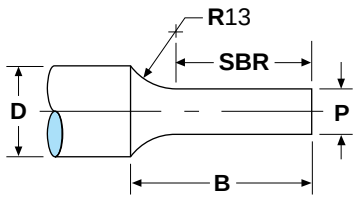


General (Press-Fit)
see page G25



General (Shoulder)
see page G25

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - P}{2}\right)\right)^2} + SBR$$

EXAMPLE:

GPNR 13-13-71 A2 P10.1
R = 13, D = 23, SBR = 13, P = 10.1

$$B = \sqrt{13^2 - \left(13 - \left(\frac{13 - 10.1}{2}\right)\right)^2} + 13$$

B = 18.9

ISO 8020

GPNO™

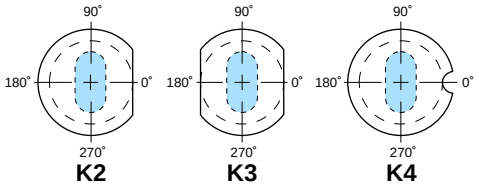
GENERAL
PUNCH
NUMERICAL
OBLONG

Ordering Example:
(12) GPNO 25-19-80 A2 P23.1 W12.2 K2

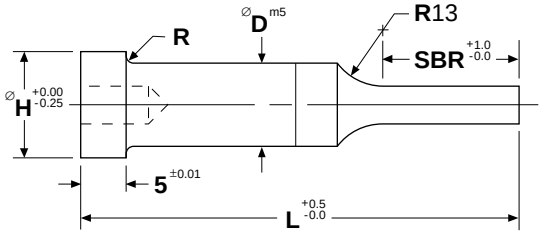
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

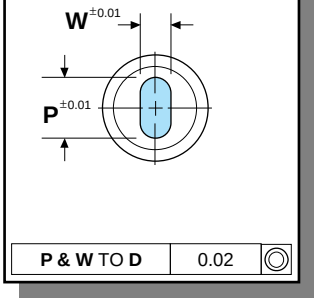
Key-Flats in Die Position
See Pg. T9-10



General Punch Numerical Oblong

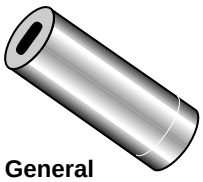


Dowel diameter = 6

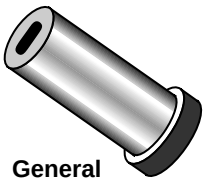


TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "W"	HEAD DIA. "H"
		10	13	19	25	32	71	80	90	100		
GPNO	10	10	13	19			71	80	90	100	1.9	13
GPNO	13	10	13	19			71	80	90	100	3.1	16
GPNO	16		13	19	25		71	80	90	100	5.7	19
GPNO	20		13	19	25		71	80	90	100	5.7	24
GPNO	25		13	19	25		71	80	90	100	5.7	29
GPNO	32			19	25	32	71	80	90	100	5.7	36

For Matching Die Buttons:

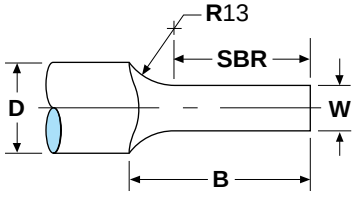


General (Press-Fit)
see page G26



General (Shoulder)
see page G26

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

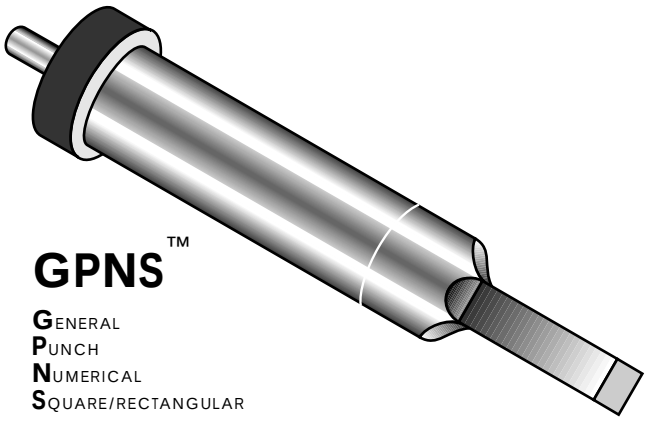
EXAMPLE:

GENO 25-19-80 A2 P23.1 W12.2 K2
R = 13, D = 25, SBR = 19, W = 12.2

$$B = \sqrt{13^2 - \left(13 - \left(\frac{25 - 12.2}{2}\right)\right)^2} + 19$$

B = 30.2

ISO 8020



GPNS™

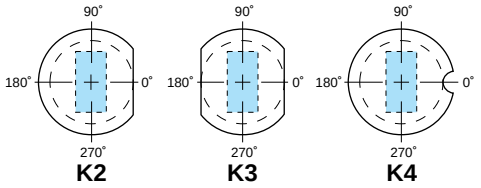
GENERAL
PUNCH
NUMERICAL
SQUARE/RECTANGULAR

Ordering Example:
(18) GPNS 25-25-90 A2 P18.8 W9.9 K4

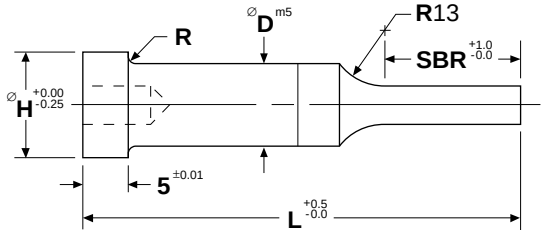
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

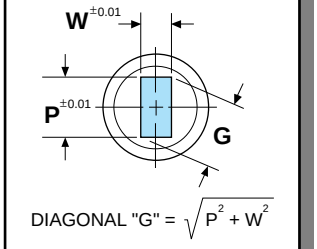
Key-Flats in Die Position
See Pg. T9-10



General Punch Numerical Square/Rectangular

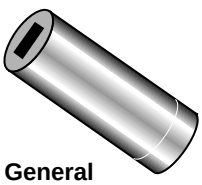


Dowel diameter = 6



TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "W"	HEAD DIA. "H"
		10	13	19	25	32	71	80	90	100		
GPNS	10	10	13	19			71	80	90	100	1.9	13
GPNS	13	10	13	19			71	80	90	100	3.1	16
GPNS	16		13	19	25		71	80	90	100	5.7	19
GPNS	20		13	19	25		71	80	90	100	5.7	24
GPNS	25		13	19	25		71	80	90	100	5.7	29
GPNS	32			19	25	32	71	80	90	100	5.7	36

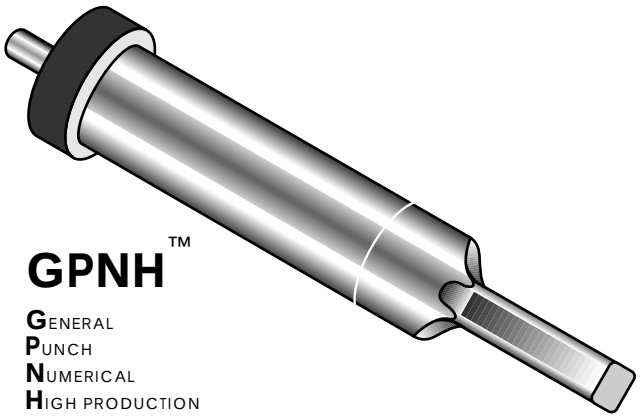
For Matching Die Buttons:



General (Press-Fit)
see page G27

General (Shoulder)
see page G27

ISO 8020



GPNH™

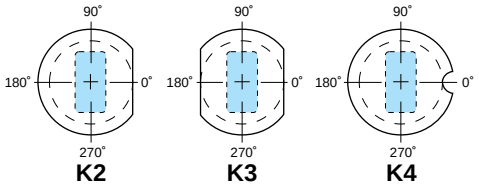
GENERAL
PUNCH
NUMERICAL
HIGH PRODUCTION

Ordering Example:
(9) GPNH 25-19-80 A2 P19.7 W12.2 K3

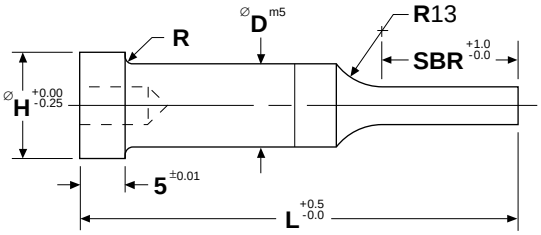
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

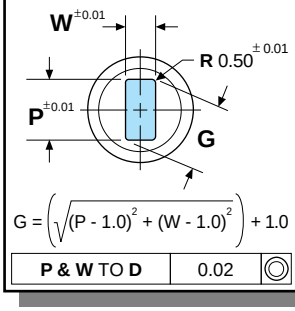
Key-Flats in Die Position
See Pg. T9-10



General Punch Numerical High Production

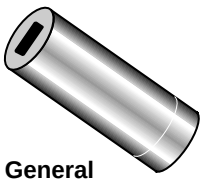


Dowel diameter = 6



TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "W"	HEAD DIA. "H"
		10	13	19	25	32	71	80	90	100		
GPNH	10	10	13	19			71	80	90	100	1.9	13
GPNH	13	10	13	19			71	80	90	100	3.1	16
GPNH	16		13	19	25		71	80	90	100	5.7	19
GPNH	20		13	19	25		71	80	90	100	5.7	24
GPNH	25		13	19	25		71	80	90	100	5.7	29
GPNH	32			19	25	32	71	80	90	100	5.7	36

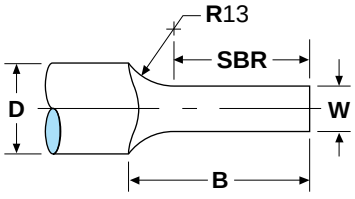
For Matching Die Buttons:



General (Press-Fit)
see page G28

General (Shoulder)
see page G28

Formula for Calculating "B" Dimension



$$B = \sqrt{R^2 - \left(R - \left(\frac{D - W}{2}\right)\right)^2} + SBR$$

EXAMPLE:

GPNH 25-19-80 A2 P19.7 W12.2 K3
R = 13, D = 25, SBR = 19, W = 12.2

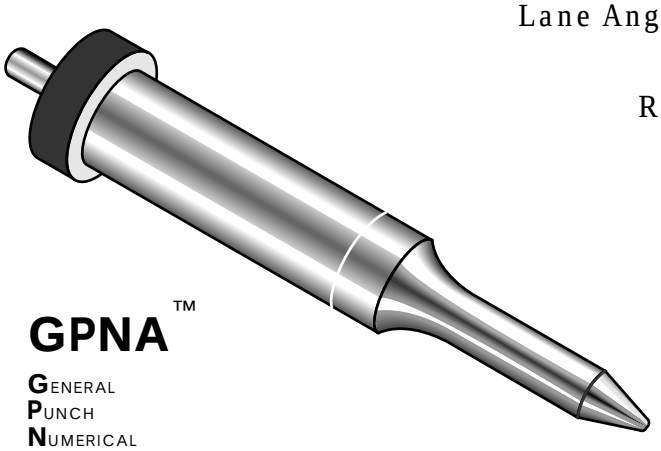
$$B = \sqrt{13^2 - \left(13 - \left(\frac{25 - 12.2}{2}\right)\right)^2} + 19$$

B = 30.2

General Punch Numerical Angular Pilot™

Lane Punch Corporation

ISO 8020



GPNA™

GENERAL
PUNCH
NUMERICAL
ANGULAR PILOT

Lane Angular Pilots provide greater positioning (movement) of stock than Conventional Pilots.

Recommended for large Panel Dies or Transfer Dies common to the Automotive and Major Appliance Industries.

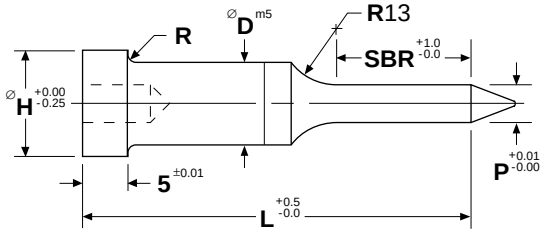
The Polished Angular Point (lead) reduces friction resulting in longer wear, less part distortion and improved stamping quality.

Ordering Example:
(12) GPNA 20-19-125 A2 P19.3

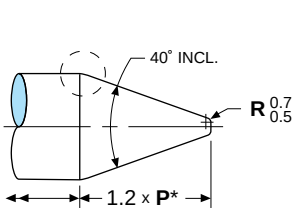
A2, R/c 59-61 double tempered

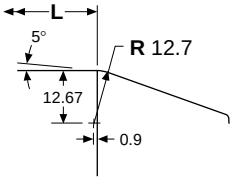
Heads drawn to Rc 40-55.

General Punch Numerical Angular Pilot



Dowel diameter = 6



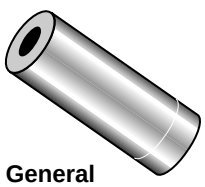


*** To calculate angular point length:**
P diameter ≧ 4.7: P x 1.2
P diameter < 4.7: P x 1.5

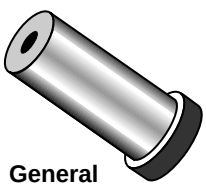
P TO D	0.01

TYPE	"D"	POINT LENGTH "SBR"					LENGTH "L"								MIN. "P"	HEAD DIA. "H"
		10	13	19	25	32	63	71	80	90	100	110	125	140		
GPNA	10	10	13	19			63	71	80	90	100	110			1.8	13
GPNA	13	10	13	19			63	71	80	90	100	110	125		3.0	16
GPNA	16		13	19	25			71	80	90	100	110	125	140	5.6	19
GPNA	20		13	19	25			71	80	90	100	110	125	140	5.6	24
GPNA	25		13	19	25			71	80	90	100	110	125	140	5.6	29
GPNA	32			19	25	32			80	90	100	110	125	140	9.8	36

For Matching Die Buttons:

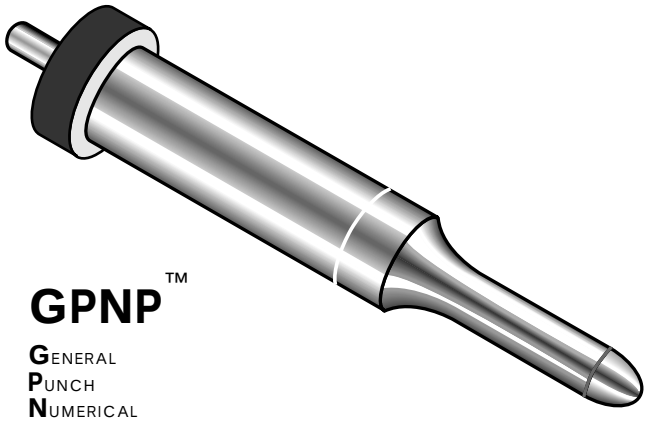


General (Press-Fit)
see page G25



General (Shoulder)
see page G25

ISO 8020



GPNP™

GENERAL
PUNCH
NUMERICAL
PARABOLIC PILOT

Lane Parabolic Pilots are recommended for light-gage, high-speed applications.

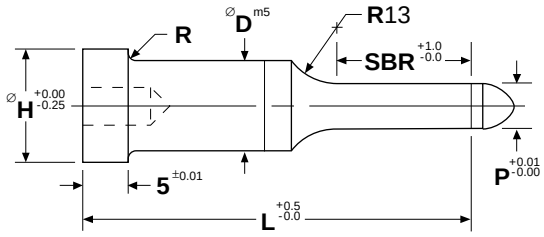
The Polished Parabolic Point (lead) reduces friction resulting in longer wear, less part distortion and improved stamping quality.

Ordering Example:
(18) GPNP 16-19-56 A2 P15.1

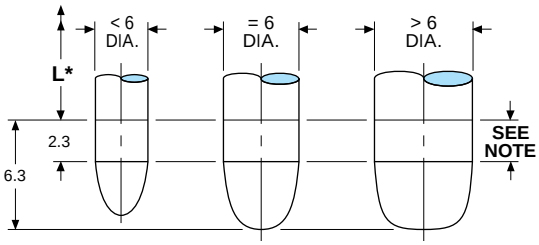
A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

General Punch Numerical Parabolic Pilot



Dowel diameter = 6



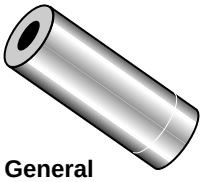
* "L" length of pilot does not include 6.3mm lead.

P TO D	0.01	◎

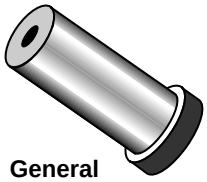
NOTE: This 2.3mm length allows full diameter registration before punches make contact with material.

TYPE	"D"	POINT LENGTH "SBR"					OVERALL LENGTH "L"				MIN. "P"	HEAD DIA. "H"
		10	13	19	25	32	71	80	90	100		
GPNP	10	10	13	19			71	80	90	100	1.8	13
GPNP	13	10	13	19			71	80	90	100	3.0	16
GPNP	16		13	19	25		71	80	90	100	5.6	19
GPNP	20		13	19	25		71	80	90	100	5.6	24
GPNP	25		13	19	25		71	80	90	100	5.6	29
GPNP	32			19	25	32	71	80	90	100	9.8	36

For Matching Die Buttons:



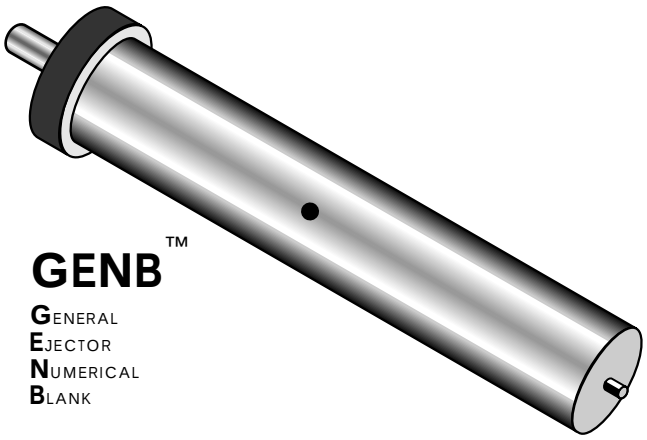
General (Press-Fit)
see page G25



General (Shoulder)
see page G25

General Ejector Numerical Blank™

ISO 8020



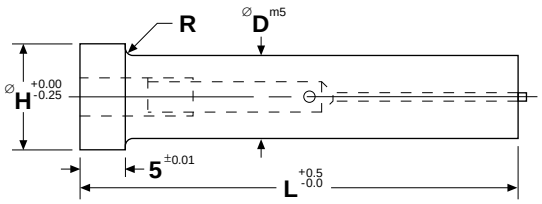
GENB™

GENERAL
EJECTOR
NUMERICAL
BLANK

A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

General Ejector Numerical Blank



Dowel diameter = 6

Ordering Example:
(9) GENB 32-71 A2

TYPE	"D"	OVERALL LENGTH "L"				HEAD DIA. "H"	EJECT. TYPE
		71	80	90	100		
GENB	10	71	80	90	100	13	E6M
GENB	13	71	80	90	100	16	E6M
GENB	16	71	80	90	100	19	E9M
GENB	20	71	80	90	100	24	E9M
GENB	25	71	80	90	100	29	E9M
GENB	32	71	80	90	100	36	E9M

General Punch Numerical Blank™

ISO 8020

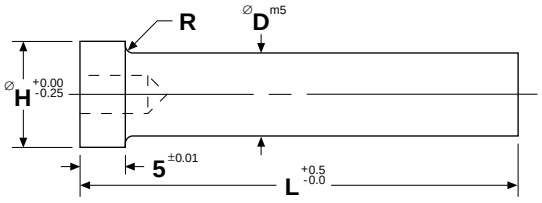
GPNB™

GENERAL
PUNCH
NUMERICAL
BLANK

A2, R/c 59-61 double tempered

Heads drawn to Rc 40-55.

General Punch Numerical Blank



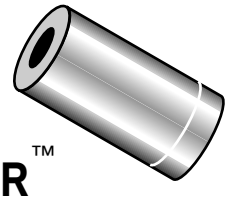
Dowel diameter = 6

Ordering Example:
(18) GPNB 16-80 A2

TYPE	"D"	OVERALL LENGTH "L"											HEAD DIA. "H"
		63	71	80	90	100	110	125	140	150	175	200	
GPNB	10	63	71	80	90	100	110	125					13
GPNB	13	63	71	80	90	100	110	125	140	150			16
GPNB	16	63	71	80	90	100	110	125	140	150	175		19
GPNB	20		71	80	90	100	110	125	140	150	175		24
GPNB	25		71	80	90	100	110	125	140	150	175		29
GPNB	32			80	90	100	110	125	140	150	175	200	36

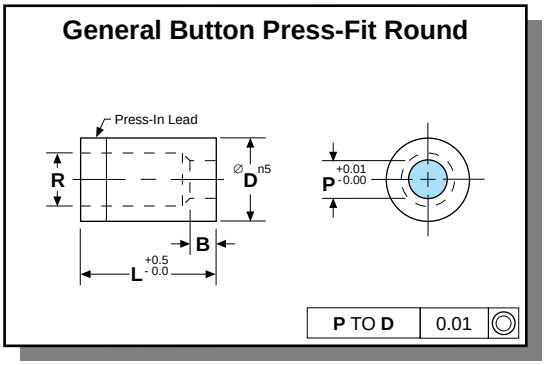
General Button Press-Fit Round™

ISO 8977



GBPR™

GENERAL
BUTTON
PRESS-FIT
ROUND



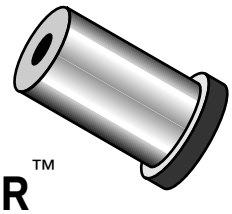
Ordering Example:
(12) GBPR 25-12-30 A2 P13.7

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"			OVERALL LENGTH "L"								POINT RANGE "P"	MAX. "R"
					20	22	25	28	30	32	35	40		
GBPR	8	4	8		20	22	25	28	30	32	35		1.5 – 3.2	4.0
GBPR	10	4	8		20	22	25	28	30	32	35		1.5 – 5.0	5.8
GBPR	13	5	8		20	22	25	28	30	32	35		3.0 – 7.2	8.0
GBPR	16	5	8		20	22	25	28	30	32	35		5.0 – 8.8	9.5
GBPR	20	5	12		20	22	25	28	30	32	35		7.0 – 11.0	11.9
GBPR	22	6	12		20	22	25	28	30	32	35		9.0 – 13.8	14.7
GBPR	25	6	12		20	22	25	28	30	32	35		11.0 – 16.5	17.4
GBPR	32	6	12		20	22	25	28	30	32	35		13.0 – 19.8	20.6
GBPR	38	8	12		20	22	25	28	30	32	35		16.0 – 26.0	27.0
GBPR	40	8	12	20			25	28	30	32	35		16.0 – 26.0	27.0
GBPR	45	8	12	20			25	28	30	32	35	40	19.0 – 35.0	36.0
GBPR	50	8	12	20			25	28	30	32	35	40	22.0 – 40.0	41.0
GBPR	56	8	12	20			25	28	30	32	35	40	25.0 – 45.0	46.0
GBPR	63	8	12	20			25	28	30	32	35	40	28.0 – 50.0	51.0
GBPR	71	8	12	20			25	28	30	32	35	40	31.0 – 56.0	57.0
GBPR	76	8	12	20			25	28	30	32	35	40	39.0 – 60.0	61.0
GBPR	85	8	12	20			25	28	30	32	35	40	43.0 – 66.0	67.0
GBPR	90	8	12	20			25	28	30	32	35	40	45.0 – 70.0	71.0
GBPR	100	8	12	20			25	28	30	32	35	40	50.0 – 78.0	79.0

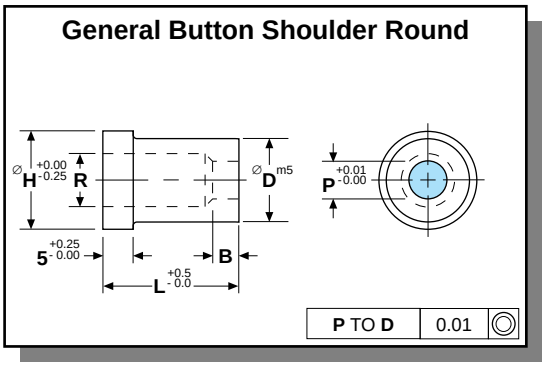
General Button Shoulder Round™

ISO 8977



GBSR™

GENERAL
BUTTON
SHOULDER
ROUND



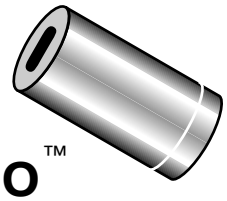
Ordering Example:
(15) GBSR 13-28 A2 P4.5

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"	OVERALL LENGTH "L"							POINT RANGE "P"	MAX. "R"	HEAD DIA. "H"
			20	22	25	28	30	32	35			
GBSR	10	4	20	22	25	28	30	32	35	1.5 – 5.0	5.8	13
GBSR	13	5	20	22	25	28	30	32	35	3.0 – 7.2	8.0	16
GBSR	16	5	20	22	25	28	30	32	35	5.0 – 8.8	9.5	19
GBSR	20	5	20	22	25	28	30	32	35	7.0 – 11.0	11.9	24
GBSR	22	6	20	22	25	28	30	32	35	9.0 – 13.8	14.7	26
GBSR	25	6	20	22	25	28	30	32	35	11.0 – 16.5	17.4	29
GBSR	32	6	20	22	25	28	30	32	35	13.0 – 19.8	20.6	36
GBSR	38	8	20	22	25	28	30	32	35	16.0 – 26.0	27.0	42

General Button Press-Fit Oblong™

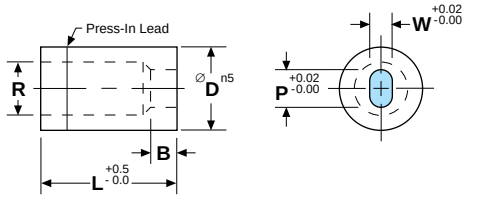
ISO 8977



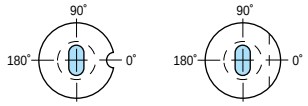
GBPO™

GENERAL
BUTTON
PRESS-FIT
OBLONG

General Button Press-Fit Oblong



Key-Flats in Die Position. See Pg. T9-10



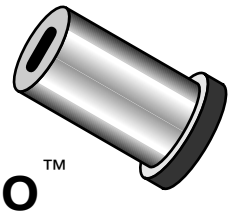
Ordering Example:
(9) GBPO 38-12-32 A2 P27.1 W21.1 K0

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"			OVERALL LENGTH "L"								POINT RANGE	MAX. "R"
					20	22	25	28	30	32	35	40	Min W - Max G	
GBPO	10	4	8		20	22	25	28	30	32	35		1.2 – 5.0	5.8
GBPO	13	5	8		20	22	25	28	30	32	35		2.0 – 7.2	8.0
GBPO	16	5	8		20	22	25	28	30	32	35		2.4 – 8.8	9.5
GBPO	20	5	12		20	22	25	28	30	32	35		3.2 – 11.0	11.9
GBPO	22	6	12		20	22	25	28	30	32	35		4.0 – 13.8	14.7
GBPO	25	6	12		20	22	25	28	30	32	35		4.8 – 16.5	17.4
GBPO	32	6	12		20	22	25	28	30	32	35		5.5 – 19.8	20.6
GBPO	38	8	12		20	22	25	28	30	32	35		6.4 – 26.0	27.0
GBPO	40	8	12	20			25	28	30	32	35		6.4 – 26.0	27.0
GBPO	45	8	12	20			25	28	30	32	35	40	8.0 – 35.0	36.0
GBPO	50	8	12	20			25	28	30	32	35	40	9.0 – 40.0	41.0
GBPO	56	8	12	20			25	28	30	32	35	40	10.0 – 45.0	46.0
GBPO	63	8	12	20			25	28	30	32	35	40	11.0 – 50.0	51.0
GBPO	71	8	12	20			25	28	30	32	35	40	12.0 – 56.0	57.0
GBPO	76	8	12	20			25	28	30	32	35	40	15.0 – 60.0	61.0
GBPO	85	8	12	20			25	28	30	32	35	40	21.0 – 66.0	67.0
GBPO	90	8	12	20			25	28	30	32	35	40	25.0 – 70.0	71.0
GBPO	100	8	12	20			25	28	30	32	35	40	33.0 – 78.0	79.0

General Button Shoulder Oblong™

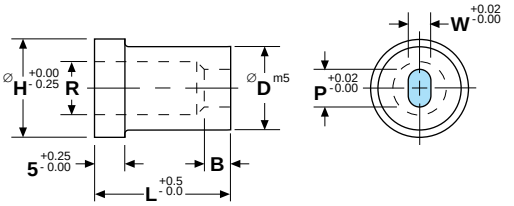
ISO 8977



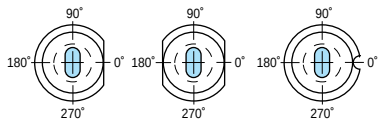
GBSO™

GENERAL
BUTTON
SHOULDER
OBLONG

General Button Shoulder Oblong



Key-Flats in Die Position. See Pg. T9-10



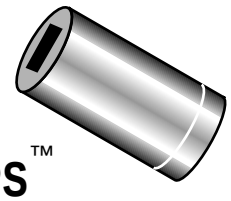
Ordering Example:
(12) GBSO 16-20 A2 P6.9 W4.3 K2

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"	OVERALL LENGTH "L"							POINT RANGE	MAX. "R"	HEAD DIA. "H"
			20	22	25	28	30	32	35	Min W - Max G		
GBSO	10	4	20	22	25	28	30	32	35	1.2 – 5.0	5.8	13
GBSO	13	5	20	22	25	28	30	32	35	2.0 – 7.2	8.0	16
GBSO	16	5	20	22	25	28	30	32	35	2.4 – 8.8	9.5	19
GBSO	20	5	20	22	25	28	30	32	35	3.2 – 11.0	11.9	24
GBSO	22	6	20	22	25	28	30	32	35	4.0 – 13.8	14.7	26
GBSO	25	6	20	22	25	28	30	32	35	4.8 – 16.5	17.4	29
GBSO	32	6	20	22	25	28	30	32	35	5.5 – 19.8	20.6	36
GBSO	38	8	20	22	25	28	30	32	35	6.4 – 26.0	27.0	42

Lane PUNCH CORPORATION — General Button Press-Fit Square/Rectangular™

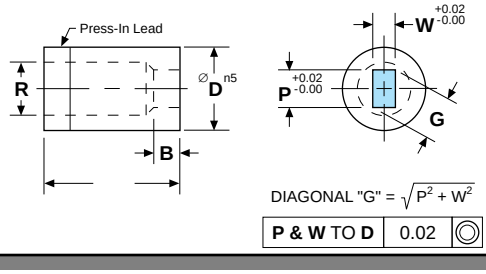
ISO 8977



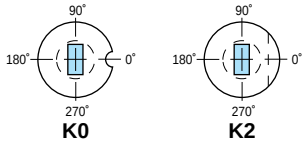
GBPS™

GENERAL
BUTTON
PRESS-FIT
SQUARE/RECTANGULAR

General Button Press-Fit Square/Rectangular



Key-Flats in Die Position. See Pg. T9-10



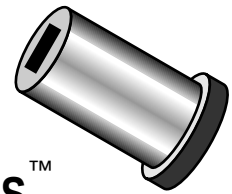
Ordering Example:
(12) GBPS 45-20-32 A2 P33.1 W9.8 K4

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"			OVERALL LENGTH "L"								POINT RANGE	MAX. "R"
					20	22	25	28	30	32	35	40	Min W - Max G	
GBPS	10	4	8		20	22	25	28	30	32	35		1.2 – 5.0	5.8
GBPS	13	5	8		20	22	25	28	30	32	35		2.0 – 7.2	8.0
GBPS	16	5	8		20	22	25	28	30	32	35		2.4 – 8.8	9.5
GBPS	20	5	12		20	22	25	28	30	32	35		3.2 – 11.0	11.9
GBPS	22	6	12		20	22	25	28	30	32	35		4.0 – 13.8	14.7
GBPS	25	6	12		20	22	25	28	30	32	35		4.8 – 16.5	17.4
GBPS	32	6	12		20	22	25	28	30	32	35		5.5 – 19.8	20.6
GBPS	38	8	12		20	22	25	28	30	32	35		6.4 – 26.0	27.0
GBPS	40	8	12	20			25	28	30	32	35		6.4 – 26.0	27.0
GBPS	45	8	12	20			25	28	30	32	35	40	8.0 – 35.0	36.0
GBPS	50	8	12	20			25	28	30	32	35	40	9.0 – 40.0	41.0
GBPS	56	8	12	20			25	28	30	32	35	40	10.0 – 45.0	46.0
GBPS	63	8	12	20			25	28	30	32	35	40	11.0 – 50.0	51.0
GBPS	71	8	12	20			25	28	30	32	35	40	12.0 – 56.0	57.0
GBPS	76	8	12	20			25	28	30	32	35	40	15.0 – 60.0	61.0
GBPS	85	8	12	20			25	28	30	32	35	40	21.0 – 66.0	67.0
GBPS	90	8	12	20			25	28	30	32	35	40	25.0 – 70.0	71.0
GBPS	100	8	12	20			25	28	30	32	35	40	33.0 – 78.0	79.0

Lane PUNCH CORPORATION — General Button Shoulder Square/Rectangular™

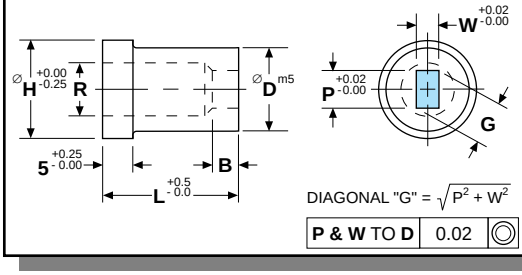
ISO 8977



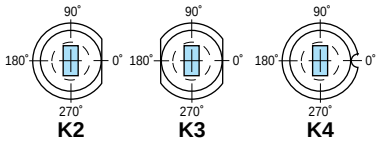
GBSS™

GENERAL
BUTTON
SHOULDER
SQUARE/RECTANGULAR

General Button Shoulder Square/Rectangular



Key-Flats in Die Position. See Pg. T9-10



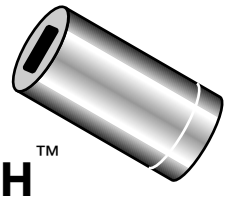
Ordering Example:
(15) GBSS 22-25 A2 P11.9 W5.1 K2

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"	OVERALL LENGTH "L"							POINT RANGE	MAX. "R"	HEAD DIA. "H"
			20	22	25	28	30	32	35	Min W - Max G		
GBSS	10	4	20	22	25	28	30	32	35	1.2 – 5.0	5.8	13
GBSS	13	5	20	22	25	28	30	32	35	2.0 – 7.2	8.0	16
GBSS	16	5	20	22	25	28	30	32	35	2.4 – 8.8	9.5	19
GBSS	20	5	20	22	25	28	30	32	35	3.2 – 11.0	11.9	24
GBSS	22	6	20	22	25	28	30	32	35	4.0 – 13.8	14.7	26
GBSS	25	6	20	22	25	28	30	32	35	4.8 – 16.5	17.4	29
GBSS	32	6	20	22	25	28	30	32	35	5.5 – 19.8	20.6	36
GBSS	38	8	20	22	25	28	30	32	35	6.4 – 26.0	27.0	42

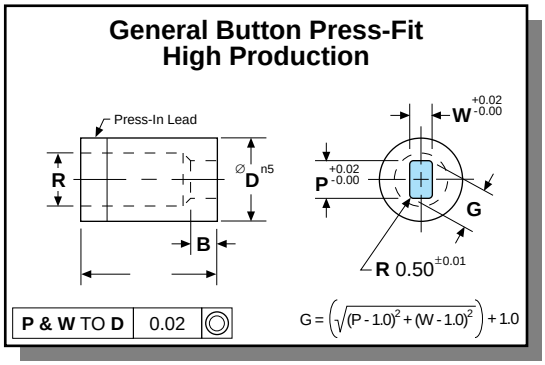
General Button Press-Fit High Production™

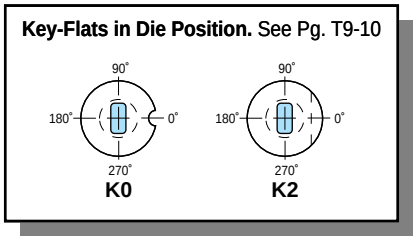
ISO 8977



GBPH™

GENERAL
BUTTON
PRESS-FIT
HIGH PRODUCTION





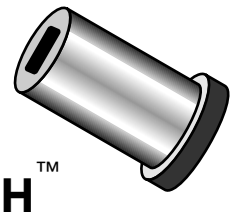
Ordering Example:
(18) GBPH 25-12-28 A2 P15.8 W5.3 K2

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"			OVERALL LENGTH "L"								POINT RANGE	MAX. "R"
					20	22	25	28	30	32	35	40	Min W - Max G	
GBPH	10	4	8		20	22	25	28	30	32	35		1.2 – 5.0	5.8
GBPH	13	5	8		20	22	25	28	30	32	35		2.0 – 7.2	8.0
GBPH	16	5	8		20	22	25	28	30	32	35		2.4 – 8.8	9.5
GBPH	20	5	12		20	22	25	28	30	32	35		3.2 – 11.0	11.9
GBPH	22	6	12		20	22	25	28	30	32	35		4.0 – 13.8	14.7
GBPH	25	6	12		20	22	25	28	30	32	35		4.8 – 16.5	17.4
GBPH	32	6	12		20	22	25	28	30	32	35		5.5 – 19.8	20.6
GBPH	38	8	12		20	22	25	28	30	32	35		6.4 – 26.0	27.0
GBPH	40	8	12	20			25	28	30	32	35		6.4 – 26.0	27.0
GBPH	45	8	12	20			25	28	30	32	35	40	8.0 – 35.0	36.0
GBPH	50	8	12	20			25	28	30	32	35	40	9.0 – 40.0	41.0
GBPH	56	8	12	20			25	28	30	32	35	40	10.0 – 45.0	46.0
GBPH	63	8	12	20			25	28	30	32	35	40	11.0 – 50.0	51.0
GBPH	71	8	12	20			25	28	30	32	35	40	12.0 – 56.0	57.0
GBPH	76	8	12	20			25	28	30	32	35	40	15.0 – 60.0	61.0
GBPH	85	8	12	20			25	28	30	32	35	40	21.0 – 66.0	67.0
GBPH	90	8	12	20			25	28	30	32	35	40	25.0 – 70.0	71.0
GBPH	100	8	12	20			25	28	30	32	35	40	33.0 – 78.0	79.0

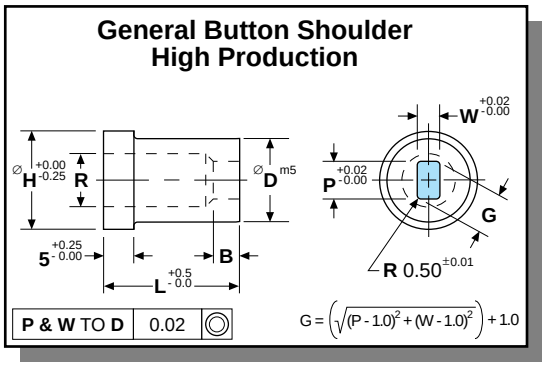
General Button Shoulder High Production™

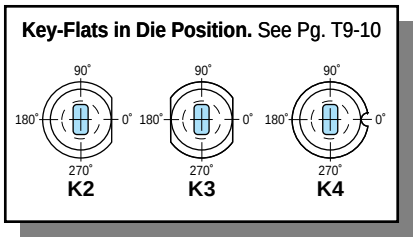
ISO 8977



GBSH™

GENERAL
BUTTON
SHOULDER
HIGH PRODUCTION





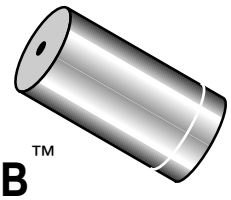
Ordering Example:
(12) GBSH 38-28 A2 P24.3 W7.9 K3

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"	OVERALL LENGTH "L"							POINT RANGE	MAX. "R"	HEAD DIA. "H"
			20	22	25	28	30	32	35	Min W - Max G		
GBSH	10	4	20	22	25	28	30	32	35	1.2 – 5.0	5.8	13
GBSH	13	5	20	22	25	28	30	32	35	2.0 – 7.2	8.0	16
GBSH	16	5	20	22	25	28	30	32	35	2.4 – 8.8	9.5	19
GBSH	20	5	20	22	25	28	30	32	35	3.2 – 11.0	11.9	24
GBSH	22	6	20	22	25	28	30	32	35	4.0 – 13.8	14.7	26
GBSH	25	6	20	22	25	28	30	32	35	4.8 – 16.5	17.4	29
GBSH	32	6	20	22	25	28	30	32	35	5.5 – 19.8	20.6	36
GBSH	38	8	20	22	25	28	30	32	35	6.4 – 26.0	27.0	42

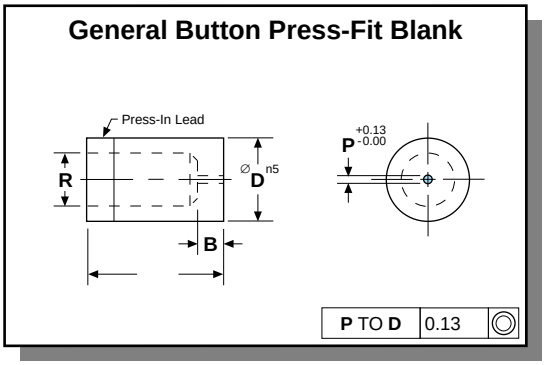
General Button Press-Fit Blank™

ISO 8977



GBPB™

GENERAL
BUTTON
PRESS-FIT
BLANK



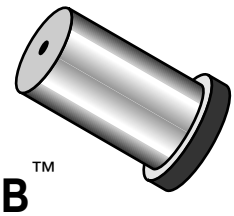
Ordering Examples:
STANDARD:
(15) GBPB 40-8-30 A2
WITH OPTIONAL THRU HOLE:
(12) GBPB 32-35 A2
P3.0 DRILL-THRU

A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"			OVERALL LENGTH "L"								DRILL "P"	MAX. "R"
					20	22	25	28	30	32	35	40		
GBPB	8	4	8		20	22	25	28	30	32	35		0.8	4.0
GBPB	10	4	8		20	22	25	28	30	32	35		0.8	5.8
GBPB	13	5	8		20	22	25	28	30	32	35		0.8	8.0
GBPB	16	5	8		20	22	25	28	30	32	35		1.5	9.5
GBPB	20	5	12		20	22	25	28	30	32	35		2.4	11.9
GBPB	22	6	12		20	22	25	28	30	32	35		3.0	14.7
GBPB	25	6	12		20	22	25	28	30	32	35		3.0	17.4
GBPB	32	6	12		20	22	25	28	30	32	35		3.0	20.6
GBPB	38	8	12		20	22	25	28	30	32	35		3.0	27.0
GBPB	40	8	12	20			25	28	30	32	35		3.0	27.0
GBPB	45	8	12	20			25	28	30	32	35	40	3.0	36.0
GBPB	50	8	12	20			25	28	30	32	35	40	3.0	41.0
GBPB	56	8	12	20			25	28	30	32	35	40	3.0	46.0
GBPB	63	8	12	20			25	28	30	32	35	40	3.0	51.0
GBPB	71	8	12	20			25	28	30	32	35	40	3.0	57.0
GBPB	76	8	12	20			25	28	30	32	35	40	3.0	61.0
GBPB	85	8	12	20			25	28	30	32	35	40	3.0	67.0
GBPB	90	8	12	20			25	28	30	32	35	40	3.0	71.0
GBPR	100	8	12	20			25	28	30	32	35	40	3.0	79.0

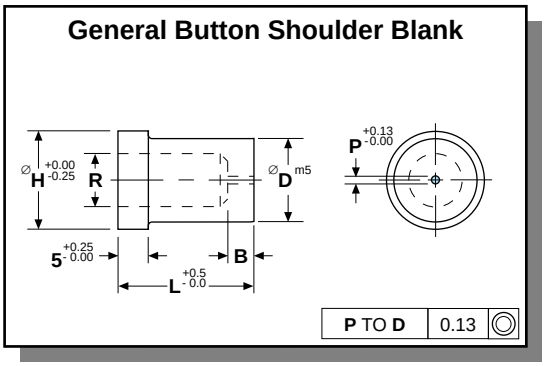
General Button Shoulder Blank™

ISO 8977



GBSB™

GENERAL
BUTTON
SHOULDER
BLANK



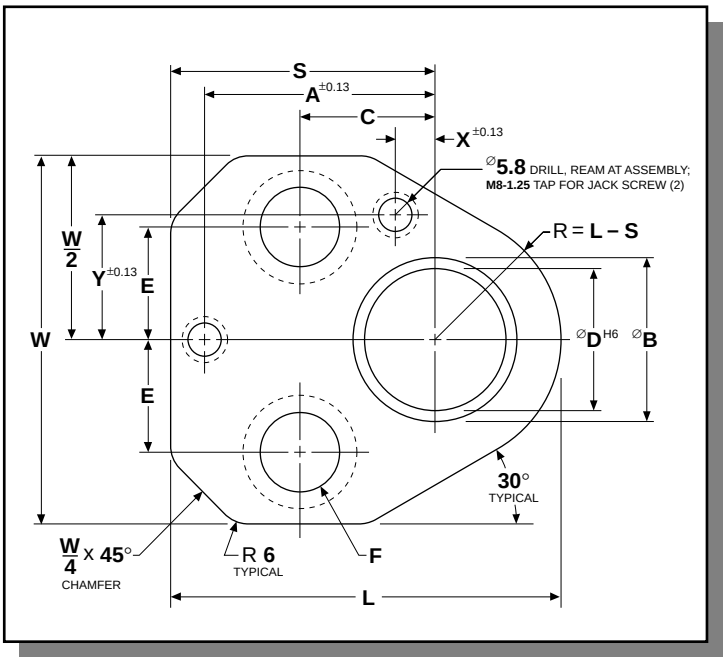
Ordering Examples:
STANDARD:
(15) GBSB 16-22 A2
WITH OPTIONAL THRU HOLE:
(12) GBSB 25-32 A2
P3.0 DRILL-THRU

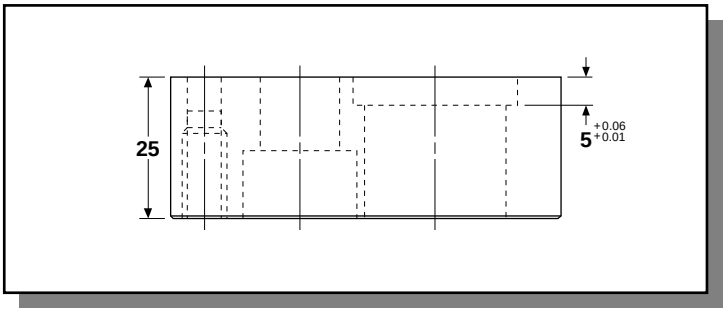
A2, R/c 59-61 double tempered

TYPE	"D"	LAND "B"	OVERALL LENGTH "L"							DRILL "P"	MAX. "R"	HEAD DIA. "H"
			20	22	25	28	30	32	35			
GBSB	10	4	20	22	25	28	30	32	35	0.8	5.8	13
GBSB	13	5	20	22	25	28	30	32	35	0.8	8.0	16
GBSB	16	5	20	22	25	28	30	32	35	1.5	9.5	19
GBSB	20	5	20	22	25	28	30	32	35	2.4	11.9	24
GBSB	22	6	20	22	25	28	30	32	35	3.0	14.7	26
GBSB	25	6	20	22	25	28	30	32	35	3.0	17.4	29
GBSB	32	6	20	22	25	28	30	32	35	3.0	20.6	36
GBSB	38	8	20	22	25	28	30	32	35	3.0	27.0	42

GRSR™

GENERAL
RETAINER
SHOULDER
ROUND





A Manual Solution for Round Shoulder Punches.

User locates, drills and taps mounting screw holes. After assembly, proper location is checked and screws are tightened. Then the dowel holes (which are furnished undersized) are transferred by drilling and reaming in place.

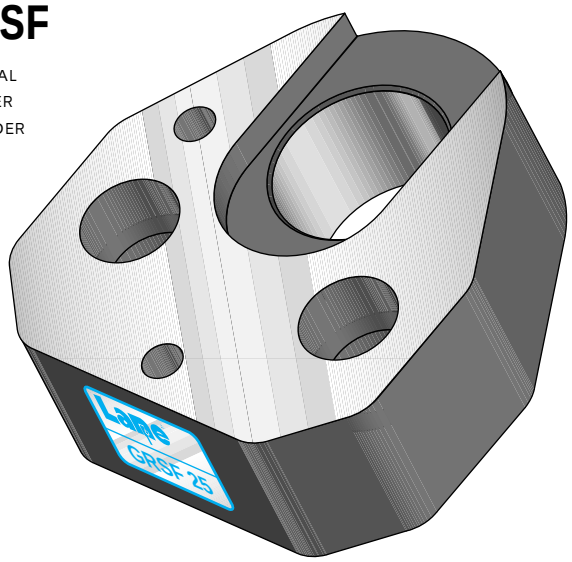
Ordering Example:
(2) GRSR 25

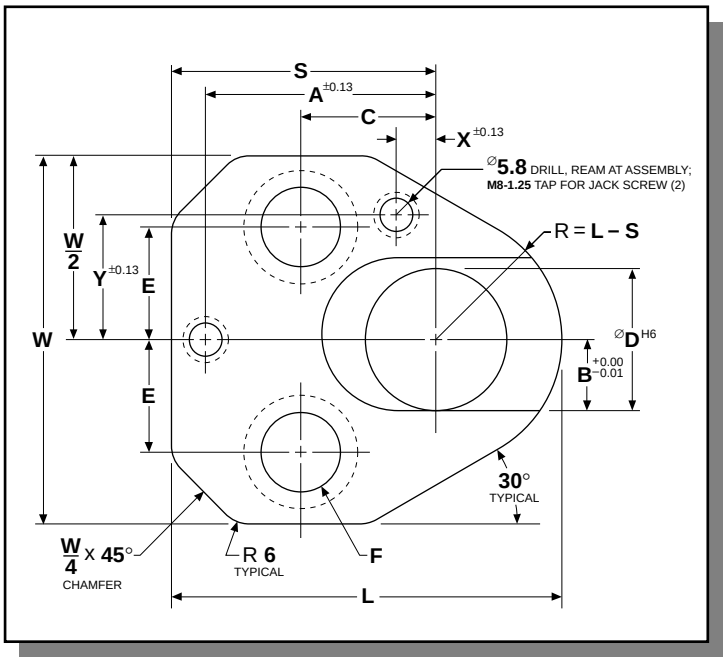
Retainer set includes:
2 Socket head cap screws.
2 Vented and tapped dowels.

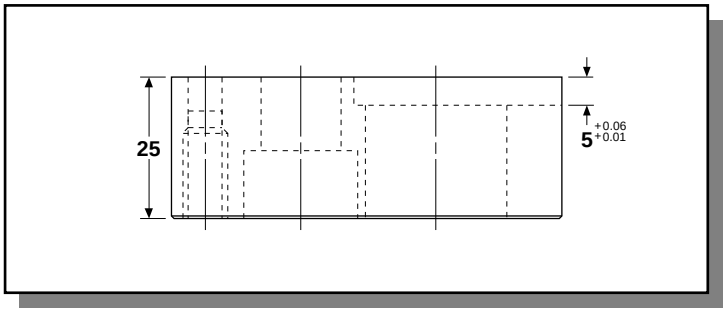
TYPE	"D"	"W"	"L"	"B"	"S"	"A"	"C"	"E"	"X"	"Y"	"F"
GRSR	10	41.0	43.5	14.0	34.0	26.924	19.05	11.12	7.5	9.0	M8
GRSR	13	48.5	49.6	17.0	37.0	29.972	19.05	14.27	6.5	12.0	M8
GRSR	16	51.7	52.7	20.0	38.6	31.750	19.05	15.87	6.0	13.5	M8
GRSR	20	56.8	59.3	24.0	41.9	33.528	19.05	17.47	5.0	16.5	M10
GRSR	25	64.5	68.9	29.0	46.7	40.640	23.82	19.84	7.0	22.0	M12
GRSR	32	64.5	68.9	36.0	46.7	40.640	23.82	19.84	7.0	22.0	M12

GRSF™

GENERAL
RETAINER
SHOULDER
FORM







A Fast Manual Way to Locate Shaped and Form-Pointed Punches.
A standard K2 key flat orients the shape *inside* the retainer.

User locates, drills and taps mounting screw holes. After assembly and tightening of screws, the dowel holes (furnished undersized) are transferred, drilled and reamed in place.

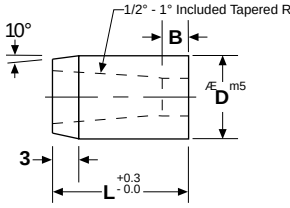
Ordering Example:
(4) GRSF 25

Retainer set includes:
2 Socket head cap screws.
2 Vented and tapped dowels.

TYPE	"D"	"W"	"L"	"B"	"S"	"A"	"C"	"E"	"X"	"Y"	"F"
GRSF	10	41.0	43.5	5.0	34.0	26.924	19.05	11.12	7.5	9.0	M8
GRSF	13	48.5	49.6	6.5	37.0	29.972	19.05	14.27	6.5	12.0	M8
GRSF	16	51.7	52.7	8.0	38.6	31.750	19.05	15.87	6.0	13.5	M8
GRSF	20	56.8	59.3	10.0	41.9	33.528	19.05	17.47	5.0	16.5	M10
GRSF	25	64.5	68.9	12.5	46.7	40.640	23.82	19.84	7.0	22.0	M12
GRSF	32	64.5	68.9	16.0	46.7	40.640	23.82	19.84	7.0	22.0	M12

GBN_™

GBNR
Round



NAAMS Standard for CNC build Applications

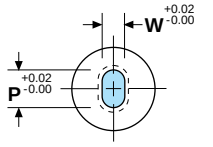
Ordering Example:
(12) GBNR 25-3-30 A2 P13.7

Ordering Example:
(9) GBNO 38-8-32 A2 P26.4 W17.1 K61

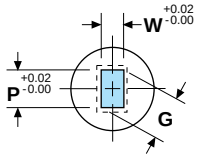
A2, R/c 60-63 double tempered

Type	"D"	Land "B"			Overall Length "L"										Point Range "P"
					13	16	20	22	25	28	30	32	35	40	
GBNR	10	3	4	5	13	16	20	22	25	28	30	32	35		1.6 – 6.8
GBNR	13	3	5	8	13	16	20	22	25	28	30	32	35		3.0 – 8.8
GBNR	16	3	5	8			20	22	25	28	30	32	35		7.4 – 10.8
GBNR	20	3	5	10			20	22	25	28	30	32	35		9.5 – 13.6
GBNR	22	3	6	10			20	22	25	28	30	32	35		10.5 – 15.0
GBNR	25	3	6	10			20	22	25	28	30	32	35		12.0 – 17.0
GBNR	32	3	6	12			20	22	25	28	30	32	35		16.0 – 22.0
GBNR	38	3	8	12			20	22	25	28	30	32	35		18.0 – 27.0
GBNR	40	3	8	12			20	22	25	28	30	32	35		18.0 – 27.0
GBNR	45	3	8	12				22	25	28	30	32	35	40	18.0 – 35.0
GBNR	50	3	8	12				22	25	28	30	32	35	40	18.0 – 40.0
GBNR	56	3	8	12				22	25	28	30	32	35	40	18.0 – 45.0
GBNR	63	3	8	12				22	25	28	30	32	35	40	18.0 – 50.0
GBNR	71	3	8	12				22	25	28	30	32	35	40	18.0 – 56.0
GBNR	76	3	8	12					25	28	30	32	35	40	25.0 – 60.0
GBNR	85	3	8	12					25	28	30	32	35	40	25.0 – 66.0
GBNR	90	3	8	12					25	28	30	32	35	40	32.0 – 70.0
GBNR	100	3	8	12					25	28	30	32	35	40	32.0 – 78.0

GBNO
Oblong

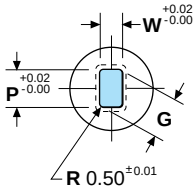


GBNS
Square/Rectangular



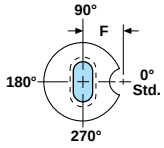
DIAGONAL "G" = $\sqrt{P^2 + W^2}$

GBNH
Square/Rectangular with 0.5 Radius



$G = \left(\sqrt{(P - 1.0)^2 + (W - 1.0)^2}\right) + 1.0$

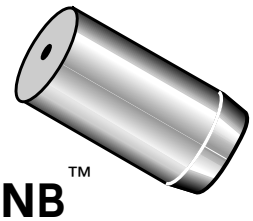
Key-Flats in Die Position
See pages T9-10



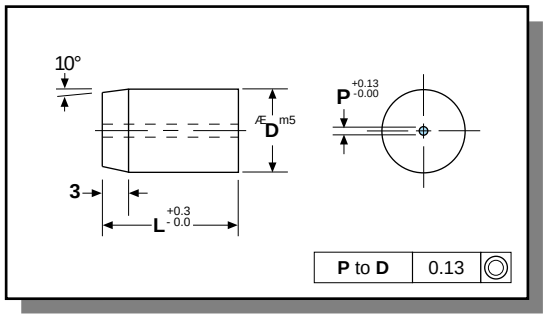
K61

NAAMS Std.
K61 ø 6.0 Pin Slot

Type	"D"	Land "B"			Overall Length "L"										Min. "W"	Max. "P"/"G"
					13	16	20	22	25	28	30	32	35	40		
GBN_	10	3	4	5	13	16	20	22	25	28	30	32	35		1.3	6.8
GBN_	13	3	5	8	13	16	20	22	25	28	30	32	35		1.9	8.8
GBN_	16	3	5	8			20	22	25	28	30	32	35		1.9	10.8
GBN_	20	3	5	10			20	22	25	28	30	32	35		1.9	13.6
GBN_	22	3	6	10			20	22	25	28	30	32	35		1.9	15.0
GBN_	25	3	6	10			20	22	25	28	30	32	35		1.9	17.0
GBN_	32	3	6	12			20	22	25	28	30	32	35		1.9	22.0
GBN_	38	3	8	12			20	22	25	28	30	32	35		1.9	27.0
GBN_	40	3	8	12			20	22	25	28	30	32	35		1.9	27.0
GBN_	45	3	8	12				22	25	28	30	32	35	40	2.4	35.0
GBN_	50	3	8	12				22	25	28	30	32	35	40	4.0	40.0
GBN_	56	3	8	12				22	25	28	30	32	35	40	4.0	45.0
GBN_	63	3	8	12				22	25	28	30	32	35	40	4.0	50.0
GBN_	71	3	8	12				22	25	28	30	32	35	40	4.0	56.0
GBN_	76	3	8	12					25	28	30	32	35	40	5.6	60.0
GBN_	85	3	8	12					25	28	30	32	35	40	5.6	66.0
GBN_	90	3	8	12					25	28	30	32	35	40	5.6	70.0
GBN_	100	3	8	12					25	28	30	32	35	40	5.6	78.0



GBNB™



NAAMS Standard for
CNC build Applications

Ordering Example
(15) GBNB 16-22 A2

A2, R/c 60-63 double tempered

Type	"D"	Overall Length "L"										Drill "P"
		13	16	20	22	25	28	30	32	35	40	
GBNB	10	13	16	20	22	25	28	30	32	35		0.8
GBNB	13	13	16	20	22	25	28	30	32	35		0.8
GBNB	16			20	22	25	28	30	32	35		1.5
GBNB	20			20	22	25	28	30	32	35		2.4
GBNB	22			20	22	25	28	30	32	35		3.0
GBNB	25			20	22	25	28	30	32	35		3.0
GBNB	32			20	22	25	28	30	32	35		3.0
GBNB	38			20	22	25	28	30	32	35		3.0
GBNB	40			20	22	25	28	30	32	35		3.0
GBNB	45				22	25	28	30	32	35	40	3.0
GBNB	50				22	25	28	30	32	35	40	3.0
GBNB	56				22	25	28	30	32	35	40	3.0
GBNB	63				22	25	28	30	32	35	40	3.0
GBNB	71				22	25	28	30	32	35	40	3.0
GBNB	76					25	28	30	32	35	40	3.0
GBNB	85					25	28	30	32	35	40	3.0
GBNB	90					25	28	30	32	35	40	3.0
GBNB	100					25	28	30	32	35	40	3.0