



MURATA WIEDEMANN

TURRET PUNCH PRESS TOOLING

FIVE DECADES OF GLOBAL EXCELLENCE

Founded in 1962, Mate is a world-class manufacturer of superior sheet metal fabrication products and solutions. We manufacture tooling for every major CNC punch press. In North America, we also offer a complete line of press brake tooling, CO₂ and fiber laser consumables. Mate products and services are available worldwide, fully supported by over than 80 dealers in every industrialized country.



Headquartered in Anoka, Minnesota, in a 300,000 sq. ft. (28,000m²) state-of-the-art facility.



WE RESPECT YOU PERSONAL CONNECTIONS

Mate does business with people, not companies. Our connection to you is personal. Mate's team of manufacturing and sheet metal professionals knows what you go through. We know what it's like to compete for that next job, manage deadlines or even need a rescue. With Mate you have a partner that respects your knowledge and is dedicated to helping you succeed.



WE SUPPORT YOU YOUR GO-TO SOURCE

In your plant. Or on the phone. From our Sales Engineers and Customer Service, to our machinists and shipping department, Mate is pulling for YOU. Mate's in-field sales engineers know from experience what happens on the shop floor. They speak your language, fully capable of helping you improve processes and solve problems. Inside Mate, Customer Service makes quoting and ordering tooling fast and easy, guiding it through our world class manufacturing systems to ensure you receive your order when you expect it.



WE INSPIRE YOU THINK BOLD, WE'VE GOT YOU COVERED

Whether it's on-site at your facility or in our Solution Center, Mate can inspire innovation from looking at new ways to use existing products or by developing new or specialty solutions that meet your specific requirements. Mate's team will assist you with a fast solution, whether it's a hinge, a building façade or a completely new challenge. Plus you're BACKED by our no-risk 100% customer satisfaction guarantee.

MATE'S MISSION AND PROMISE TO YOU:

To personally **respect**, **support** and **inspire** sheet metal professionals around the world with high-quality precision tooling and services.

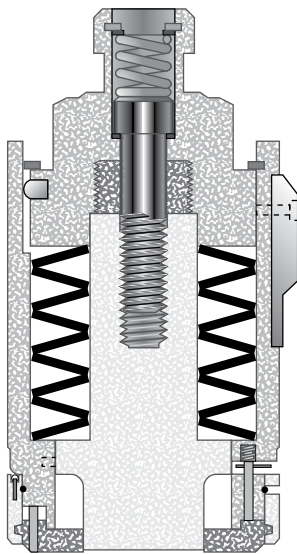
Part Number Index	1	112 STYLE for CENTRUM 1000, 2000, 2500 - MAGNUM 1250	30
Table of Contents	2	114 STYLE for CENTRUM 3000, 3500 - 34, 36, 40 Station Single Track	31
Side by Side Comparison	3-4	112 STYLE for CENTRUM 3000, 3500 - 34, 36, 40 Station Single Track	32
MATE MARATHON® SYSTEM Punches, Strippers, and Dies	5	114 STYLE for CENTRUM 3000, 3500 - 34, 36, 40 Station Double Track	33
MATE MARATHON® Punches, Strippers and Dies Critical Dimensions	6	112 STYLE for CENTRUM 3000, 3500 - 34, 36, 40 Station Double Track	34
114 SYSTEM Punches and Dies	7	114 STYLE for MAGNUM 2125	35
114 Style Punches, Strippers, and Dies Critical Dimensions	8	112 STYLE for MAGNUM 2125	36
114 HEAVY DUTY SYSTEM Punches and Dies	9	114 STYLE for MAGNUM 5000 52 Station - VECTRUM 5000 52 Station	37
114 Heavy Duty Style Punches, Strippers and Dies Critical Dimensions	10	112 STYLE for MAGNUM 5000 52 Station - VECTRUM 5000 52 Station	38
112 SYSTEM Punches and Dies	11	114 STYLE for MAGNUM 5000 36, 46, 60 Station - VECTRUM 5000 60 Station	39
112 Style Punches, Strippers, and Dies Critical Dimensions	12	112 STYLE for MAGNUM 5000 36, 46, 60 Station - VECTRUM 5000 60 Station	40
VULCAN SYSTEM Punches, Strippers, and Dies	13	114 STYLE for Motorum	41
VULCAN Style Punches, Strippers, and Dies Critical Dimensions	14	112 STYLE for Motorum	42
114 SYSTEM Punch and Die Shims	15	114 STYLE for VECTRUM 3000 _α	43
112 SYSTEM Punch and Die Shims	16	112 STYLE for VECTRUM 3000 _α	44
114 SYSTEM Urethane Strippers	17	Punch and Die Maintenance	45
112 SYSTEM Urethane Strippers	18	MATE MARATHON® Punch Straight Before Radius (SBR) and Grind Life	46
VARITOOL Punches, Strippers, and Dies	19	Punch Shear Specifications	47
VARITOOL Punch Stem Assembly	20	Punch Holder Set-up Dimensions	48
MATE MARATHON® Maintenance Fixtures and Tools	21	Custom Angle Settings	49
MATE MARATHON® Replacement Kits	22	Mate Special Shapes	50-51
Punch Holder Replacement Parts and Accessories	23-24	Add-Ons	52
Die Holder Replacement Parts and Accessories	25-26		
MATE MARATHON® Punch Holder Parts and Specifications	27		
Special Assemblies	28		
114 STYLE for CENTRUM 1000, 2000, 2500 - MAGNUM 1250	29		

*All prices in this catalog are subject to change without notice.

SIDE BY SIDE COMPARISON

MARATHON PLUS™
AND MARATHON®

A Comparison of Punching Systems...

STANDARD
112 AND 114 STYLES

Punching force and motion are contained inside a sleeve with lubricated punch guides, punch press bore suffers no wear and stays accurate.



Captive

Built-in fine thread adjustable shim

Marathon Plus™ offers external adjustment

Premium M2 high speed steel for high speed punching compatibility

Three way positive guided action – top, middle and punch point

Steel stripper for positive stripping action, flatter sheets
New self-releasing "pop-up" stripper

Built-in angles for 0°, 45° left, 45° right and 90°

Spring loaded stripper pops in or out without tools

SLUG FREE® Die with Stress Free Relief™ improves slug control and die strength

DRAWBOLT

LENGTH
ADJUSTMENT

PUNCH

PUNCH
GUIDING
ACTION

STRIPPER

ANGLE
ADJUSTMENT

ASSEMBLY

DIE

Not captive

Metal shims must be added or separate adjustable length punch holder must be used

Premium air hardened tool steel

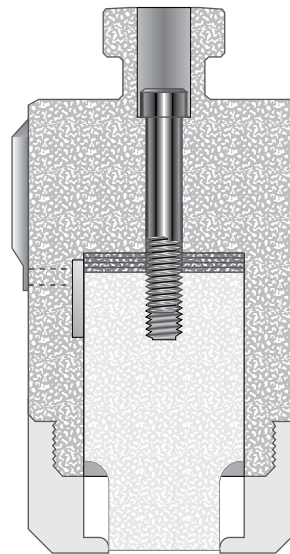
Unguided

Non-marring, resilient urethane stripper must be added

Single custom angle available, or separate adjustable angle punch holder must be used for settings other than 0° and 90°

Drawbolt assembles punch and shims to punch holder. Force fit urethane stripper to punch holder holding spud

Stress Free Relief™ for high die strength



Punching force and motion are in direct contact with the punch press bore, causing bore walls to wear and lose accuracy.

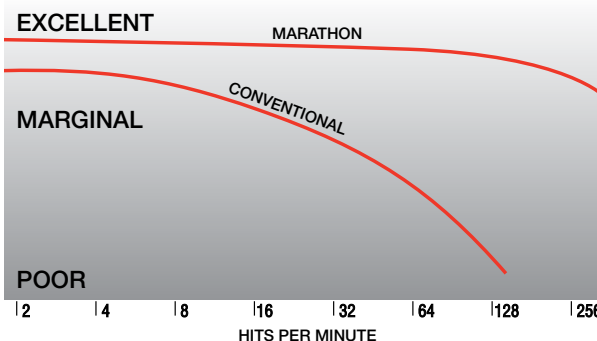


MARATHON PLUS™ TOOLING SYSTEM FEATURES:

- External length adjustment built into the punch holder
- Angle adjustment keyed to both punch and die holder
- Positive stripping to hold material flat
- Self-releasing "pop-up" stripper
- Eliminates slug pulling in the die
- Increases accuracy at the punch tip
- Customers frequently report producing over 1 million hits before needing to sharpen
- Attain a lower cost per hole compared to other available tooling systems
- Works with 114 and 112 dies

FLATNESS OF MATERIAL

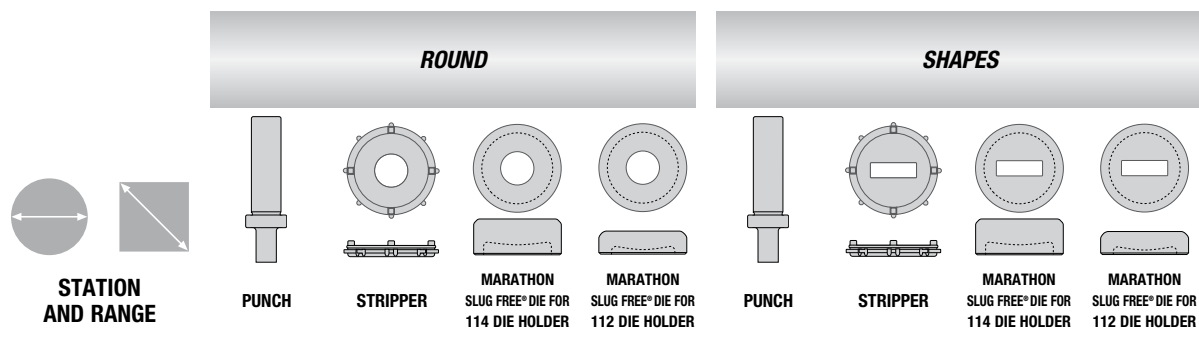
MARATHON TOOLING SYSTEM VS. CONVENTIONAL TOOLS



[Dimensions in Inches (mm)]

	MARATHON PLUS™ TOOLING SYSTEM	114 TOOLING SYSTEM	114 HEAVY DUTY TOOLING SYSTEM FOR THICK MATERIAL AND/OR HIGH TONNAGE APPLICATIONS	112 TOOLING SYSTEM
PUNCH HOLDER	• External length adjustment • Built in adjustment – no shims needed • Built in lubrication and cooling vents • Eight angle settings at 45 degree intervals • Spring loaded stripping • Full length guiding at three points	• Standard holder for general use • Adjustable angle holder available • Adjustable length holder available for forming tools	• Standard holder for general use • Adjustable angle holder available • Adjustable length holder available for forming tools	• Standard holder for general use • Adjustable angle holder available • Adjustable length holder available for forming tools
PUNCH SHIM	• No shims needed	• Premium grade steel holds accurate dimensions	• Premium grade steel holds accurate dimensions	• Premium grade steel holds accurate dimensions
PUNCH	• Premium M2 High Speed Steel • Punch point, shoulder and shank guided for stability • Optional Maxima™ coating • Optional Nitride treatment	• Premium grade tool steel • Also available in High Speed Steel • Optional Maxima™ coating • Optional Nitride treatment	• Premium grade tool steel hardened for long life and superior performance	• Premium grade tool steel hardened for long life and superior performance
STRIPPER	• Self releasing “pop-up” stripper • Quick tool change – no wrenches needed • Multiple angle settings • Hardened steel for long life	• Urethane strippers available in push-on or custom molded • Available in two durometers to custom fit your application	• Urethane strippers available in push-on or custom molded • Available in two durometers to custom fit your application	• Urethane strippers available in push-on or custom molded • Available in two durometers to custom fit your application
SLUG SHEDDER	• Not needed	• Provides additional measure to prevent slug pulling • Fits shedder holes in all Mate punches	• Provides additional measure to prevent slug pulling • Fits shedder holes in all Mate punches	• Provides additional measure to prevent slug pulling • Fits shedder holes in all Mate punches
DIE	• SLUG FREE® die eliminates slug pulling • Premium grade hardened tool steel • Stress Free Relief™ • Clearance radius in die corners	• SLUG FREE® die option eliminates slug pulling • Premium grade hardened tool steel • Stress Free Relief™ • Clearance radius in die corners	• SLUG FREE® die eliminates slug pulling • Premium grade hardened tool steel • Stress Free Relief™ • Clearance radius in die corners	• SLUG FREE® die option eliminates slug pulling • Premium grade hardened tool steel • Stress Free Relief™ • Clearance radius in die corners
DIE SHIM	• Precise uniform design • Premium grade steel	• Precise uniform design • Premium grade steel	• Precise uniform design • Premium grade steel	• Precise uniform design • Premium grade steel
DIE HOLDER	• High grade alloy steel • Quick, easy, accurate installation	• High grade alloy steel • Quick, easy, accurate installation	• High grade alloy steel • Quick, easy, accurate installation	• High grade alloy steel • Quick, easy, accurate installation

More information available. Request these literature items:
LIT00573 Marathon Plus Installation & Maintenance
LIT00594 Marathon Plus Maintenance Fixture Installation & Use
LIT00228 Marathon Installation & Maintenance
LIT00359 Marathon Lock Ring Replacement
LIT00371 Marathon Punch Holder Tang Replacement



B	INNER TRACK XB thru 0.500(12.7)	S6MX0A*						
B	thru 1.000(25.4)	PAMB0A*	S6MB0A*	DOMB00*	DORB00*	PAMB_A*	S6MB_A*	DOMB_0* DORB_0*
C	over 1.000(25.4) thru 1.500(38.1)	PAMC0A*	S6MC0A*	DMC00*	DORC00*	PAMC_A*	S6MC_A*	DMC_0* DORC_0*
D	over 1.500(38.1) thru 2.000(50.8)	PAMD0A*	S6MD0A*	DOMD00*	DORD00*	PAMD_A*	S6MD_A*	DOMD_0* DORD_0*
E	over 2.000(50.8) thru 2.500(63.5)	PAME0A*	S6ME0A*	DOME00*	DORE00*	PAME_A*	S6ME_A*	DOME_0* DORE_0*
F	over 2.500(63.5) thru 3.000(76.2)	PAMF0A*	S6MF0A*	DOMF00*	DORF00*	PAMF_A*	S6MF_A*	DOMF_0* DORF_0*
G	over 3.000(76.2) thru 3.500(88.9)	PAMG0A*	S6MG0A*	DOMG00*	DORG00*	PAMG_A*	S6MG_A*	DOMG_0* DORG_0*
H	over 3.500(88.9) thru 4.125(104.8)	PAMH0A*	S6MH0A*	DOMH00*		PAMH_A*	S6MH_A*	DOMH_0*
J	over 4.125(104.8) thru 4.750(120.7)	PAMJ0A*	S6MJ0A*	DOMJ00*		PAMJ_A*	S6MJ_A*	DOMJ_0*
K	over 4.750(120.7) thru 5.500(139.7)	PAMK0A*	S6MK0A*	D2MK00*		PAMK_A*	S6MK_A*	D2MK_0*

*Add punch sizes as final digits of complete part number. Fifth character represents shape.

See page 52
for Add-Ons

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond
1	3	A05	0	N	P	2	4	5	C08	C07

[Dimensions in Inches (mm)]

		LEGEND	PUNCH DIMENSIONS	STRIPPER DIMENSIONS	DIE DIMENSIONS		
		D1 - Width/Outside Diameter D2 - Punch Shank Diameter D3 - Maximum Station Range D4 - Outside Diameter -112 Die L1 - Overall Length/Height L2 - Overall Height - 114 Die L3 - Overall Height - 112 Die					
MARATHON PUNCH		STATION	D1	D2	D3	L1	
	B		1.060(26.9)	0.750(19.1)	1.000(25.4)	3.750(95.3)	
	C		2.031(51.6)	1.312(33.3)	1.500(38.1)	3.750(95.3)	
	D		2.031(51.6)	1.312(33.3)	2.000(50.8)	3.750(95.3)	
	E		3.061(77.8)	1.500(38.1)	2.500(63.5)	2.375(60.3)	
	F		3.061(77.8)	1.500(38.1)	3.000(76.2)	2.375(60.3)	
	G		4.155(105.5)	1.500(38.1)	3.500(88.9)	2.375(60.3)	
	H		4.155(105.5)	1.500(38.1)	4.125(104.8)	2.375(60.3)	
	J		4.779(121.4)	1.500(38.1)	4.750(120.7)	2.375(60.3)	
	K		5.513(140.0)	1.500(38.1)	5.500(139.7)	2.375(60.3)	
MARATHON STRIPPER			D1	D3	Stabilized stripper		
	B		1.493(37.9)	1.000(25.4)	Stabilized strippers are made with two vertical locators providing support to hold small narrow punches in alignment. This configuration is automatically provided when punch dimensions fall into the ranges defined below.		
	C	Stripper Clearance:	2.680(68.1)	1.500(38.1)			
	D	All Marathon	2.680(68.1)	2.000(50.8)			
	E	round .0025(9.843)	3.618(91.9)	2.500(63.5)			
	F	shapes .0017(6.693)	3.618(91.9)	3.000(76.2)			
	G		4.711(119.7)	3.500(88.9)			
	H		4.711(119.7)	4.125(104.8)			
	J		5.337(135.6)	4.750(120.7)	"B" Range Width ≤ 0.099(2.5) 0.100(2.5) - 0.156(4.0) 0.157(4.0) - 0.375(9.5)	"A" Range Length NOT LIMITED ≤ 0.625(15.9) ≤ 0.375(9.5)	
MARATHON SLUG FREE® DIE			D1 - 114	D4 - 112	D3	L2 - 114	L3 - 112
	B		1.563(39.7)	1.563(39.7)	1.000(25.4)*	1.125(28.6)	0.594(15.1)
	C		2.250(57.2)	2.250(57.2)	1.500(38.1)*	1.125(28.6)	0.594(15.1)
	D		2.750(69.9)	2.750(69.9)	2.000(50.8)*	1.125(28.6)	0.750(19.1)
	E		3.500(88.9)	3.500(88.9)	2.500(63.5)*	1.125(28.6)	0.750(19.1)
	F		4.000(101.6)	4.250(108.0)	3.000(76.2)*	1.125(28.6)	0.750(19.1)
	G		4.500(114.3)	4.750(120.7)	3.500(88.9)*	1.125(28.6)	0.750(19.1)
	H		5.250(133.4)		4.125(104.8)*	1.125(28.6)	
	J		6.000(152.4)		4.750(120.7)*	1.125(28.6)	
	K		7.000(177.8)		5.500(139.7)*	1.125(28.6)	

* Total Die Clearance Maximums:

Rounds, Ovals, 'D', 'DD' - 0.054(1.4)

Squares, Rectangles - 0.024(0.6)

[Dimensions in Inches (mm)]

STATION AND RANGE	ROUND			SHAPES		
	PUNCH	114 DIE	114 SLUG FREE® DIE	PUNCH	114 DIE	114 SLUG FREE® DIE
A thru 0.500(12.7) rounds only	P04A0A*	D04B00*	D0MB00*			
B thru 1.000(25.4)	P04B0A*	D04B00*	D0MB00*	P04B_A*	D04B_0*	D0MB_0*
C over 1.000(25.4) thru 1.500(38.1)	P04C0A*	D04C00*	D0MC00*	P04C_A*	D04C_0*	D0MC_0*
D over 1.500(38.1) thru 2.000(50.8)	P04D0A*	D04D00*	D0MD00*	P04D_A*	D04D_0*	D0MD_0*
E over 2.000(50.8) thru 2.500(63.5)	P04E0A*	D04E00*	D0ME00*	P04E_A*	D04E_0*	D0ME_0*
F over 2.500(63.5) thru 3.000(76.2)	P04F0A*	D04F00*	D0MF00*	P04F_A*	D04F_0*	D0MF_0*
G over 3.000(76.2) thru 3.500(88.9)	P04G0A*	D04G00*	D0MG00*	P04G_A*	D04G_0*	D0MG_0*
H over 3.500(88.9) thru 4.125(104.8)	P04H0A*	D04H00*	D0MH00*	P04H_A*	D04H_0*	D0MH_0*
J over 4.125(104.8) thru 4.750(120.7)	P04J0A*	D04J00*	D0MJ00*	P04J_A*	D04J_0*	D0MJ_0*
K over 4.750(120.7) thru 5.500(139.7)	P04K0A*	D24K00*	D2MK00*	P04K_A*	D24K_0*	D2MK_0*
L over 5.500(139.7) thru 6.000(152.4)	P04L0A*	D24L00*	D2ML00*	P04L_A*	D24L_0*	D2ML_0*

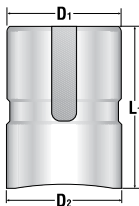
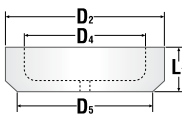
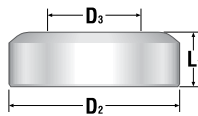
*Add punch sizes as final digits of complete part number. Fifth character represents shape.

See page 52
for Add-Ons

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond	
	1	3	A05	0	N	P	2	4	5	C08	C07

[Dimensions in Inches (mm)]

		LEGEND	PUNCH DIMENSIONS	STRIPPER DIMENSIONS	DIE DIMENSIONS
		D1 - Punch Shank Diameter D2 - Outside Diameter - OD D3 - Maximum Station Range D4 - Inside Diameter - ID D5 - Stripper Face Diameter L1 - Overall Length/Height			
STATION		D1	D2	L1	
114 STYLE PUNCH	A*	0.688(17.5)	0.513(13.0)	2.725(69.2)	
	B	1.063(27.0)	1.000(25.4)	4.000(101.6)	
	C	1.313(33.4)	1.500(38.1)	4.063(103.2)	
	D	1.750(44.5)	2.000(50.8)	3.531(89.7)	
	E	2.500(63.5)	2.500(63.5)	3.531(89.7)	
	F	2.500(63.5)	3.000(76.2)	3.531(89.7)	
	G	4.125(104.8)	3.500(88.9)	3.531(89.7)	
	H	4.125(104.8)	4.125(104.8)	3.531(89.7)	
	J	4.125(104.8)	4.750(120.7)	3.531(89.7)	
	K	5.375(136.5)	5.500(139.7)	3.531(89.7)	
L	5.375(136.5)	6.000(152.4)	3.531(89.7)		
		D2	D4	D5	L1
URETHANE STRIPPER	B	1.970(50.0)	1.060(26.9)	1.130(28.7)	2.250(57.2)
	C	2.500(63.5)	1.750(44.5)	1.720(43.7)	2.310(58.7)
	D	3.000(76.2)	1.970(50.0)	2.220(56.4)	2.090(53.1)
	E	4.000(101.6)	2.970(75.4)	2.910(73.9)	2.090(53.1)
	F	4.000(101.6)	2.970(75.4)	3.280(83.3)	2.090(53.1)
	G	5.160(131.1)	4.340(110.2)	3.770(95.8)	2.090(53.1)
	H	5.160(131.1)	4.340(110.2)	4.530(115.1)	2.090(53.1)
	J	5.810(147.6)	4.720(119.9)	5.340(135.6)	2.090(53.1)
	K	6.630(168.4)†	5.720(145.3)†	6.380(162.1)***	2.090(53.1)
			D2	D3	L1
114 STYLE DIE	B	1.563(39.7)	1.000(25.4)*	1.125(28.6)	
	C	2.250(57.2)	1.500(38.1)*	1.125(28.6)	
	D	2.750(69.9)	2.000(50.8)*	1.125(28.6)	
	E	3.500(88.9)	2.500(63.5)*	1.125(28.6)	
	F	4.000(101.6)	3.000(76.2)*	1.125(28.6)	
	G	4.500(114.3)	3.500(88.9)*	1.125(28.6)	
	H	5.250(133.4)	4.125(104.8)*	1.125(28.6)	
	J	6.000(152.4)	4.750(120.7)*	1.125(28.6)	
	K	7.000(177.8)	5.500(139.7)*	1.125(28.6)	
	L	7.500(190.5)	6.000(152.4)*	1.125(28.6)	

* Total Die Clearance Maximums:

Rounds, Ovals, 'D', 'DD' - 0.054(1.4)

Squares, Rectangles - 0.024(0.6)

**A station - Rounds Only

*** K station stripper - rectangle

D5 - 6.000(152.4)

† K station Magnum 5000 stripper

D2 - 6.330(160.8)

D4 - 5.630(143.0)

[Dimensions in Inches (mm)]

STATION	PUNCH RANGE				ROUND		SHAPES		
									
B	ROUND AND OVAL 0.250(6.4)** thru 0.938(23.8) Maximum clearance 0.054(1.4) for die at punch range maximum **Diameter/width less than 0.250(6.4) not available.	RECTANGLE AND SQUARE 0.250(6.4)** thru 0.813(20.7) Maximum clearance 0.024(0.6) for die at punch range maximum			POHB0A*	D2HB00*	POHB_A*	D2HB_0*	
C	ROUND AND OVAL over 0.938(23.8) thru 1.438(36.5) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 0.813(20.7) thru 1.313(33.4) Maximum clearance 0.024(0.6) for die at punch range maximum			POHC0A*	D2HC00*	POHC_A*	D2HC_0*	
D	ROUND AND OVAL over 1.438(36.5) thru 1.938(49.2) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 1.313(33.4) thru 1.750(44.5) Maximum clearance 0.024(0.6) for die at punch range maximum			POHDOA*	D2HD00*	POHD_A*	D2HD_0*	
E	ROUND AND OVAL over 1.938(49.2) thru 2.438(61.9) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 1.750(44.5) thru 2.125(54.0) Maximum clearance 0.024(0.6) for die at punch range maximum			POHE0A*	D2HE00*	POHE_A*	D2HE_0*	
F	ROUND AND OVAL over 2.438(61.9) thru 2.938(74.6) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 2.125(54.0) thru 2.750(69.9) Maximum clearance 0.024(0.6) for die at punch range maximum			POHFOA*	D2HF00*	POHF_A*	D2HF_0*	
G	ROUND AND OVAL over 2.938(74.6) thru 3.438(87.3) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 2.750(69.9) thru 3.250(82.6) Maximum clearance 0.024(0.6) for die at punch range maximum			POHGOA*	D2HG00*	POHG_A*	D2HG_0*	
H	ROUND AND OVAL over 3.438(87.3) thru 4.000(101.6) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 3.250(82.6) thru 3.750(95.3) Maximum clearance 0.024(0.6) for die at punch range maximum			POHH0A*	D2HH00*	POHH_A*	D2HH_0*	
J	ROUND AND OVAL over 4.000(101.6) thru 4.625(117.5) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 3.750(95.3) thru 4.385(111.1) Maximum clearance 0.024(0.6) for die at punch range maximum			POHJOA*	D2HJ00*	POHJ_A*	D2HJ_0*	
K	ROUND AND OVAL over 4.625(117.5) thru 5.250(133.3) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 4.385(111.1) thru 5.125(130.2) Maximum clearance 0.024(0.6) for die at punch range maximum			POHK0A*	D2HK00*	POHK_A*	D2HK_0*	
L	ROUND AND OVAL over 5.250(133.3) thru 5.750(146.0) Maximum clearance 0.054(1.4) for die at punch range maximum	RECTANGLE AND SQUARE over 5.125(130.2) thru 5.625(142.9) Maximum clearance 0.024(0.6) for die at punch range maximum			POHLOA*	D2HL00*	POHL_A*	D2HL_0*	

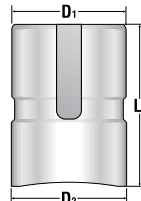
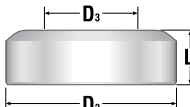
*Add punch sizes as final digits of complete part number. Fifth character represents shape.

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond
										

See page 52
for Add-Ons

[Dimensions in Inches (mm)]

		LEGEND		PUNCH DIMENSIONS		STRIPPER DIMENSIONS		DIE DIMENSIONS	
		D1 - Punch Shank Diameter D2 - Outside Diameter - OD D3 - Maximum Station Range D4 - Inside Diameter - ID D5 - Stripper Face Diameter L1 - Overall Length/Height							
STATION		D1	D2 - DIAMETERS*	D2 - DIAGONALS*	L1				
114 HEAVY DUTY STYLE PUNCH									
B		1.063(27.0)	0.938(23.8)	0.813(20.7)	4.000(101.6)	114 Heavy Duty Punches			
C		1.313(33.4)	1.438(36.5)	1.313(33.4)	4.063(103.2)	• 1° back taper per side to improve stripping			
D		1.750(44.5)	1.938(49.2)	1.750(44.5)	3.563(90.5)	• 0.031(0.8) radius on 90° angles to improve corner strength			
E		2.500(63.5)	2.438(61.9)	2.125(54.0)	3.625(92.1)	• D-L station rooftop shear to reduce punching force			
F		2.500(63.5)	2.938(74.6)	2.750(69.9)	3.625(92.1)	• Squares made without shear to reduce lateral movement			
G		4.125(104.8)	3.438(87.3)	3.250(82.6)	3.625(92.1)				
H		4.125(104.8)	4.000(101.6)	3.750(95.3)	3.625(92.1)				
J		4.125(104.8)	4.625(117.5)	4.385(111.1)	3.625(92.1)				
K		5.375(136.5)	5.250(133.3)	5.125(130.2)	3.625(92.1)				
L		5.375(136.5)	5.750(146.0)	5.625(142.9)	3.625(92.1)				
		D2	D4	D5	L1				
URETHANE STRIPPER									
B		1.970(50.0)	1.060(26.9)	1.130(28.7)	2.250(57.2)				
C		2.500(63.5)	1.750(44.5)	1.720(43.7)	2.310(58.7)				
D		3.000(76.2)	1.970(50.0)	2.220(56.4)	2.090(53.1)				
E		4.000(101.6)	2.970(75.4)	2.910(73.9)	2.090(53.1)				
F		4.000(101.6)	2.970(75.4)	3.280(83.3)	2.090(53.1)				
G		5.160(131.1)	4.340(110.2)	3.770(95.8)	2.090(53.1)				
H		5.160(131.1)	4.340(110.2)	4.530(115.1)	2.090(53.1)				
J		5.810(147.6)	4.720(119.9)	5.340(135.6)	2.090(53.1)				
K		6.630(168.4)†	5.720(145.3)†	6.380(162.1)**	2.090(53.1)				
		D2	D3 - DIAMETERS*	D3 - DIAGONALS*	L1				
114 HEAVY DUTY STYLE DIE									
B		1.563(39.7)	0.992(25.2)*	0.837(21.3)*	1.125(28.6)	114 Heavy Duty Dies			
C		2.250(57.2)	1.492(37.9)*	1.337(34.0)*	1.125(28.6)	• 3° hold down flat standard			
D		2.750(69.9)	1.992(50.6)*	1.774(45.1)*	1.125(28.6)	• Stress Free Relief™ for added strength			
E		3.500(88.9)	2.492(63.3)*	2.149(54.6)*	1.125(28.6)	• SLUG FREE® die design for positive slug control			
F		4.000(101.6)	2.992(76.0)*	2.774(70.5)*	1.125(28.6)				
G		4.500(114.3)	3.492(88.7)*	3.274(83.2)*	1.125(28.6)				
H		5.250(133.4)	4.054(103.0)*	3.774(95.9)*	1.125(28.6)	Recommended Total Die Clearance :			
J		6.000(152.4)	4.679(118.9)*	4.409(112.0)*	1.125(28.6)	15-25% of material thickness up to 0.188(4.8). 25-35% of material thickness more than 0.188(4.8)			
K		7.000(177.8)	5.304(134.4)*	5.149(130.8)*	1.125(28.6)				
L		7.500(190.5)	5.804(147.5)*	5.649(143.5)*	1.125(28.6)				

* Total Die Clearance Maximums:

Diameters - Standard Rounds, Ovals,
'D's, 'DD's, - 0.054(1.4)

Diagonals - Standard Squares,
Rectangles - 0.024(0.6)

** K station stripper - rectangle

D5 - 6.000(152.4)

† K station Magnum 5000 stripper

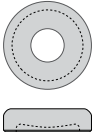
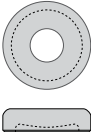
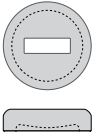
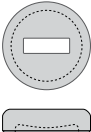
D2 - 6.330(160.8)

D4 - 5.630(143.0)

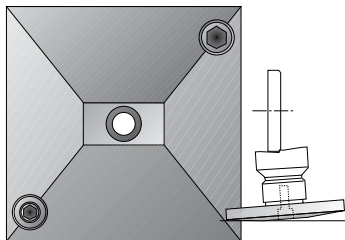


[Dimensions in Inches (mm)]

112 SYSTEM PUNCHES AND DIES

ROUND				SHAPES		
						
STATION AND RANGE	PUNCH	112 DIE	112 SLUG FREE® DIE	PUNCH	112 DIE	112 SLUG FREE® DIE
A thru 0.344(8.7) rounds only	P02A0A*	D02A00**	D0RA00**		D02A_0**	D0RA_0**
B thru 1.000(25.4)	P02B0A*	D02B00*	D0RB00*	P02B_A*	D02B_0*	D0RB_0*
C over 1.000(25.4) thru 1.500(38.1)	P02C0A*	D02C00*	D0RC00*	P02C_A*	D02C_0*	D0RC_0*
D over 1.500(38.1) thru 2.000(50.8)	P02D0A*	D02D00*	D0RD00*	P02D_A*	D02D_0*	D0RD_0*
E over 2.000(50.8) thru 2.500(63.5)	P02E0A*	D02E00*	D0RE00*	P02E_A*	D02E_0*	D0RE_0*
F over 2.500(63.5) thru 3.125(79.4)	P02F0A*	D02F00*	D0RF00*	P02F_A*	D02F_0*	D0RF_0*
G over 3.125(79.4) thru 3.500(88.9)	P02G0A*	D02G00*	D0RG00*	P02G_A*	D02G_0*	D0RG_0*

112/114 SYSTEM MISCELLANEOUS ACCESSORIES



112/114 PUNCH SHARPENING FIXTURE
TS0000

*Add punch sizes as final digits of complete part number. Fifth character represents shape.

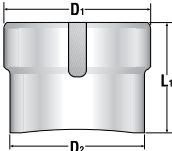
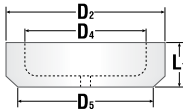
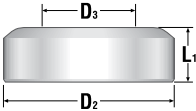
**A station die is 1.062(26.97) outside diameter. Some presses can use A station punches with B station dies.

See page 52
for Add-Ons

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond
1	3	A05	0	N	P	2	4	5	C08	C07

[Dimensions in Inches (mm)]

		LEGEND		PUNCH DIMENSIONS		STRIPPER DIMENSIONS		DIE DIMENSIONS	
		D1 - Punch Shank Diameter D2 - Outside Diameter - OD D3 - Maximum Station Range D4 - Inside Diameter - ID D5 - Stripper Face Diameter L1 - Overall Length/Height							
112 STYLE PUNCH	STATION	D1		D2		L1			
	A**	0.563(14.3)		0.344(8.7)		1.813(46.1)			
	B	0.625(15.9)		1.000(25.4)		2.813(71.5)			
	C	0.938(23.8)		1.500(38.1)		3.156(80.2)			
	D	1.625(41.3)		2.000(50.8)		2.063(52.4)			
	E	2.750(69.9)		2.500(63.5)		2.063(52.4)			
	F	2.750(69.9)		3.125(79.4)		2.063(52.4)			
	G	3.125(79.4)		3.500(88.9)		2.063(52.4)			
URETHANE STRIPPER		D2		D4		D5		L1	
	B	2.000(50.8)		0.970(25.0)		1.160(29.5)		1.840(46.7)	
	C	2.500(63.5)		1.470(37.3)		1.720(43.7)		2.060(52.3)	
	D	3.000(76.2)		1.970(50.0)		2.220(56.4)		1.500(38.1)	
	E	4.280(108.7)		3.090(78.5)		2.910(73.9)		1.500(38.1)	
	F	4.280(108.7)		3.090(78.5)		3.690(93.7)		1.500(38.1)	
	G	4.780(121.4)		3.490(88.7)		4.190(106.0)		1.500(38.1)	
		D2		D3		L1			
112 STYLE DIE	A**	1.062(27.0)		0.344(8.7)*		0.594(15.1)			
	B	1.563(39.7)		1.000(25.4)*		0.594(15.1)			
	C	2.250(57.2)		1.500(38.1)*		0.594(15.1)			
	D	2.750(69.9)		2.000(50.8)*		0.750(19.1)			
	E	3.500(88.9)		2.500(63.5)*		0.750(19.1)			
	F	4.250(108.0)		3.125(79.4)*		0.750(19.1)			
	G	4.750(120.7)		3.500(88.9)*		0.750(19.1)			

* Total Die Clearance Maximums:

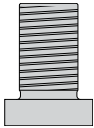
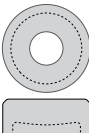
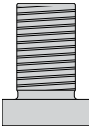
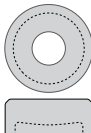
Rounds, Ovals, 'D', 'DD' - 0.054(1.4)

Squares, Rectangles - 0.024(0.6)

**A station - Rounds Only

[Dimensions in Inches (mm)]

VULCAN SYSTEM PUNCHES, STRIPPERS, AND DIES

ROUND				SHAPES		
						
STATION AND RANGE	PUNCH	STRIPPER	VULCAN SLUG FREE® DIE	PUNCH	STRIPPER	VULCAN SLUG FREE® DIE
X thru 0.500(12.7) rounds only	PAWX0A*	SOWX0A*	DOWB00*			
AB thru 0.984(25.0) LONG - 4.741**	PAWA0A*	SOWB0A*	DOWB00*	PAWA_A*	SOWB_A*	DOWB_0*
B thru 0.984(25.0) SHORT - 1.985**	PAWB0A*	SOWB0A*	DOWB00*	PAWB_A*	SOWB_A*	DOWB_0*
C over 0.984(25.0) thru 1.496(38.0)	PAWC0A*	SOWC0A*	DOWC00*	PAWC_A*	SOWC_A*	DOWC_0*
D over 1.496(38.0) thru 2.008(51.0)	PAWD0A*	SOWD0A*	DOWD00*	PAWD_A*	SOWD_A*	DOWD_0*
E over 2.008(51.0) thru 2.500(63.5)	PAWE0A*	SOWE0A*	DOWE00*	PAWE_A*	SOWE_A*	DOWE_0*
F over 2.500(63.5) thru 2.992(76.0)	PAWF0A*	SOWF0A*	DOWF00*	PAWF_A*	SOWF_A*	DOWF_0*
F VARISTATION over 2.500(63.5) thru 2.992(76.0)	PAWF0A*	SOWV0A*	DOWF00*	PAWF_A*	SOWV_A*	DOWF_0*
G over 2.992(76.0) thru 3.500(88.9)	PAWG0A*	SOWG0A*	DOWG00*	PAWG_A*	SOWG_A*	DOWG_0*
H over 3.500(88.9) thru 4.125(104.8)	PAWH0A*	SOWH0A*	DOWH00*	PAWH_A*	SOWH_A*	DOWH_0*
J over 4.125(104.8) thru 4.764(121.0)	PAWJ0A*	SOWJ0A*	DOWJ00*	PAWJ_A*	SOWJ_A*	DOWJ_0*
K over 4.764(121.0) thru 5.500(139.7)	PAWK0A*	SOWK0A*	D2WK00*	PAWK_A*	SOWK_A*	D2WK_0*
L over 5.500(139.7) thru 5.984(152.0)	PAWL0A*	SOWL0A*	D2WL00*	PAWL_A*	SOWL_A*	D2WL_0*

Stripper Bolt M4 x 25 - All Stations SHC11914***

See page 52
for Add-Ons

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond
										

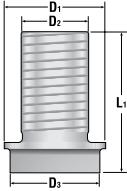
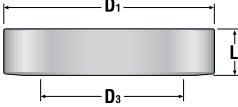
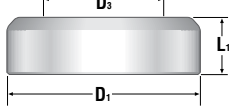
* Add punch sizes as final digits of complete part number. Fifth character represents shape.

** Overall Length

*** Minimum quantity required

[Dimensions in Inches (mm)]



STATION	LEGEND				PUNCH DIMENSIONS		STRIPPER DIMENSIONS		DIE DIMENSIONS	
	D1 - Outside Diameter - OD D2 - Punch Shank Diameter D3 - Maximum Station Range L1 - Overall Length/Height									
VULCAN STYLE PUNCH		D1	D2	D3	L1					
	X**	0.708(18.0)	0.713(18.1)	0.500(12.7)	2.004(50.9)					
	B	1.023(26.0)***	1.023(26.0)***	0.984(25.0)	1.985(50.4)***					
	C	1.516(38.5)	1.023(26.0)	1.496(38.0)	4.139(105.1)					
	D	2.028(51.5)	1.260(32.0)	2.008(51.0)	4.233(107.5)					
	E	3.012(76.5)	1.968(50.0)	2.500(63.5)	4.233(107.5)					
	F	3.012(76.5)	1.968(50.0)	2.992(76.0)	4.233(107.5)					
	G	4.784(121.5)	2.953(75.0)	3.500(88.9)	4.233(107.5)					
	H	4.784(121.5)	2.953(75.0)	4.125(104.8)	4.233(107.5)					
	J	4.784(121.5)	2.953(75.0)	4.764(121.0)	4.233(107.5)					
	K	6.004(152.5)	4.134(105.0)	5.500(139.7)	4.233(107.5)					
VULCAN STYLE STRIPPER		D1		D3	L1					
	X**	1.614(41.0)		0.500(12.7)	0.870(22.1)					
	B	1.949(49.5)		0.984(25.0)	0.970(24.6)***					
	C	2.748(69.8)		1.496(38.0)	0.870(22.1)					
	D	3.071(78.0)		2.008(51.0)	0.964(24.5)					
	E	4.212(107.0)		2.500(63.5)	0.964(24.5)					
	F	4.212(107.0)†		2.992(76.0)	0.964(24.5)†					
	G	5.872(148.0)		3.500(88.9)	0.964(24.5)					
	H	5.872(148.0)		4.125(104.8)	0.964(24.5)					
	J	5.872(148.0)		4.764(121.0)	0.964(24.5)					
	K	6.732(171.0)		5.500(139.7)	0.996(25.3)					
VULCAN STYLE DIE		D1		D3	L1					
	X**	1.563(39.7)		0.500(12.7)*	1.125(28.6)					
	B	1.563(39.7)		0.984(25.0)*	1.125(28.6)					
	C	2.250(57.2)		1.496(38.0)*	1.125(28.6)					
	D	2.750(69.9)		2.008(51.0)*	1.125(28.6)					
	E	3.500(88.9)		2.500(63.5)*	1.125(28.6)					
	F	4.000(101.6)		2.992(76.0)*	1.125(28.6)					
	G	4.500(114.3)		3.500(88.9)*	1.125(28.6)					
	H	5.250(133.4)		4.125(104.8)*	1.125(28.6)					
	J	6.000(152.4)		4.764(121.0)*	1.125(28.6)					
	K	7.000(177.8)		5.500(139.7)*	1.125(28.6)					
VULCAN STYLE DIE		D1		D3	L1					
	X**	1.563(39.7)		0.500(12.7)*	1.125(28.6)					
	B	1.563(39.7)		0.984(25.0)*	1.125(28.6)					
	C	2.250(57.2)		1.496(38.0)*	1.125(28.6)					
	D	2.750(69.9)		2.008(51.0)*	1.125(28.6)					
	E	3.500(88.9)		2.500(63.5)*	1.125(28.6)					
	F	4.000(101.6)		2.992(76.0)*	1.125(28.6)					
	G	4.500(114.3)		3.500(88.9)*	1.125(28.6)					
	H	5.250(133.4)		4.125(104.8)*	1.125(28.6)					
	J	6.000(152.4)		4.764(121.0)*	1.125(28.6)					
	K	7.000(177.8)		5.500(139.7)*	1.125(28.6)					
VULCAN STYLE DIE		D1		D3	L1					
	X**	1.563(39.7)		0.500(12.7)*	1.125(28.6)					
	B	1.563(39.7)		0.984(25.0)*	1.125(28.6)					
	C	2.250(57.2)		1.496(38.0)*	1.125(28.6)					
	D	2.750(69.9)		2.008(51.0)*	1.125(28.6)					
	E	3.500(88.9)		2.500(63.5)*	1.125(28.6)					
	F	4.000(101.6)		2.992(76.0)*	1.125(28.6)					
	G	4.500(114.3)		3.500(88.9)*	1.125(28.6)					
	H	5.250(133.4)		4.125(104.8)*	1.125(28.6)					
	J	6.000(152.4)		4.764(121.0)*	1.125(28.6)					
	K	7.000(177.8)		5.500(139.7)*	1.125(28.6)					
VULCAN STYLE DIE		D1		D3	L1					
	X**	1.563(39.7)		0.500(12.7)*	1.125(28.6)					
	B	1.563(39.7)		0.984(25.0)*	1.125(28.6)					
	C	2.250(57.2)		1.496(38.0)*	1.125(28.6)					
	D	2.750(69.9)		2.008(51.0)*	1.125(28.6)					
	E	3.500(88.9)		2.500(63.5)*	1.125(28.6)					
	F	4.000(101.6)		2.992(76.0)*	1.125(28.6)					
	G	4.500(114.3)		3.500(88.9)*	1.125(28.6)					
	H	5.250(133.4)		4.125(104.8)*	1.125(28.6)					
	J	6.000(152.4)		4.764(121.0)*	1.125(28.6)					
	K	7.000(177.8)		5.500(139.7)*	1.125(28.6)					

* Total Die Clearance Maximums:

Rounds, Ovals, 'D', 'DD' - 0.054(1.4)
Squares, Rectangles - 0.024(0.6)

**X station - Rounds Only

*** Station AB -

Long Punch:

D1 - 1.004(25.5)

D2 - 0.744(18.9)

L1 - 4.741(120.4)

*** Station AB -

Stripper:

L1 - 0.870(22.1)

†Station F -

VARISTATION

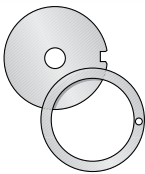
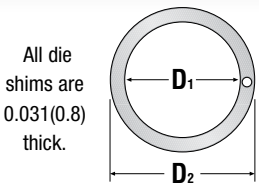
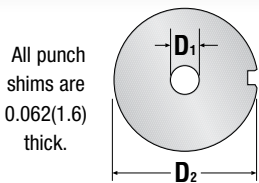
Stripper

D1 - 3.858(98.0)

L1 - 0.622(15.8)

[Dimensions in Inches (mm)]

114 SYSTEM PUNCH AND DIE SHIMS



Punch shims not required with MARATHON® system

STATION

114
PUNCH SHIM
PACKAGE

114/MARATHON®
DIE SHIM
PACKAGE

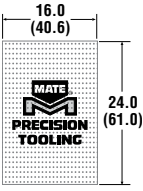
STATION

114 KIT
PUNCH/DIE SHIM
PIECE COUNT

MARATHON® KIT
DIE SHIM
PIECE COUNT

A	Quantity bag of 24 Shim D ₁ 0.53(13.5) Shim D ₂ 1.03(26.2)	PS4B			A	A Station order B Package	A Station order B Package	A Station order B Package
B	Quantity bag of 24 Shim D ₁ 0.53(13.5) Shim D ₂ 1.03(26.2)	PS4B	bag of 12 1.15(29.2) 1.54(39.1)	DS6B	B	60 B Station Punch Shim	60 B Station Die Shim	60 B Station Die Shim
C	Quantity bag of 24 Shim D ₁ 0.53(13.5) Shim D ₂ 1.28(32.5)	PS4C	bag of 12 1.65(41.9) 2.23(56.6)	DS6C	C	24 C Station Punch Shim	12 C Station Die Shim	12 C Station Die Shim
D	Quantity bag of 12 Shim D ₁ 0.53(13.5) Shim D ₂ 1.72(43.7)	PS4D	bag of 12 2.15(54.6) 2.73(69.3)	DS6D	D	12 D Station Punch Shim	12 D Station Die Shim	12 D Station Die Shim
E	Quantity bag of 12 Shim D ₁ 0.53(13.5) Shim D ₂ 2.47(62.7)	PS4F	bag of 12 2.77(70.4) 3.48(88.4)	DS6E	E	6 E Station Punch Shim	12 E Station Die Shim	12 E Station Die Shim
F	Quantity bag of 12 Shim D ₁ 0.53(13.5) Shim D ₂ 2.47(62.7)	PS4F	bag of 12 3.15(80.0) 3.98(101.1)	DS4F	F	6 F Station Punch Shim	12 F Station Die Shim	12 F Station Die Shim
G	Quantity bag of 12 Shim D ₁ 0.78(19.8) Shim D ₂ 4.09(103.9)	PS4J	bag of 6 3.65(92.7) 4.48(113.8)	DS4G	G	4 G Station Punch Shim	6 G Station Die Shim	6 G Station Die Shim
H	Quantity bag of 12 Shim D ₁ 0.78(19.8) Shim D ₂ 4.09(103.9)	PS4J	bag of 6 4.28(108.7) 5.23(132.8)	DS4H	H	4 H Station Punch Shim	6 H Station Die Shim	6 H Station Die Shim
J	Quantity bag of 12 Shim D ₁ 0.78(19.8) Shim D ₂ 4.09(103.9)	PS4J	bag of 6 4.90(124.5) 5.98(151.9)	DS4J	J	4 J Station Punch Shim	6 J Station Die Shim	6 J Station Die Shim
K	Quantity bag of 6 Shim D ₁ 0.78(19.8) Shim D ₂ 5.34(135.6)	PS4L	bag of 6 5.65(143.5) 6.98(177.3)	DS4K	120 126 Total Total		126 Total	
L	Quantity bag of 6 Shim D ₁ 0.78(19.8) Shim D ₂ 5.34(135.6)	PS4L	bag of 6 6.15(156.2) 7.48(190.0)	DS4L	PK4J 246 piece package		PKMJ 126 piece package	

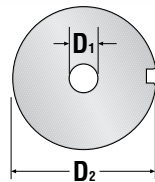
SHIM ORGANIZER PEGBOARD...



NOTE:
Package PK4J and PKMJ includes pegboard, shim hooks and miscellaneous hardware necessary to set up the shim organizer.

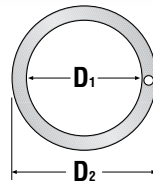
[Dimensions in Inches (mm)]





**112
PUNCH SHIM
PACKAGE**

All die
shims are
0.031(0.8)
thick.



**112
DIE SHIM
PACKAGE**

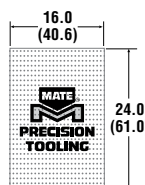


**112 KIT
PUNCH/DIE SHIM
PIECE COUNT**

STATION

A	Quantity	bag of 24	PS2B	bag of 12	DS2A	A	48	48
	Shim D ¹	0.34(8.6)		0.69(17.5)			B Station	A Station
	Shim D ²	0.59(15.0)		1.04(26.4)			Punch Shim	Die Shim
B	Quantity	bag of 24	PS2B	bag of 12	DS6B	B	48	48
	Shim D ¹	0.34(8.6)		1.15(29.2)			B Station	B Station
	Shim D ²	0.59(15.0)		1.54(39.1)			Punch Shim	Die Shim
C	Quantity	bag of 24	PS2C	bag of 12	DS6C	C	24	12
	Shim D ¹	0.34(8.6)		1.65(41.9)			C Station	C Station
	Shim D ²	0.90(22.9)		2.23(56.6)			Punch Shim	Die Shim
D	Quantity	bag of 12	PS2D	bag of 12	DS6D	D	12	12
	Shim D ¹	0.34(8.6)		2.15(54.6)			D Station	D Station
	Shim D ²	1.59(40.4)		2.73(69.3)			Punch Shim	Die Shim
E	Quantity	bag of 12	PS2F	bag of 12	DS6E	E	6	12
	Shim D ¹	0.34(8.6)		2.77(70.4)			E Station	E Station
	Shim D ²	2.72(69.1)		3.48(88.4)			Punch Shim	Die Shim
F	Quantity	bag of 12	PS2F	bag of 12	DS2F	F	6	12
	Shim D ¹	0.34(8.6)		3.25(82.6)			F Station	F Station
	Shim D ²	2.72(69.1)		4.23(107.4)			Punch Shim	Die Shim
G	Quantity	bag of 12	PS2G	bag of 6	DS2G			
	Shim D ¹	0.34(8.6)		3.65(92.7)		96	96	
	Shim D ²	3.09(78.5)		4.73(120.1)		Total	Total	
						PK2F		
						192 piece package		

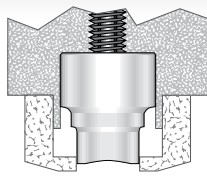
SHIM ORGANIZER PEGBOARD...



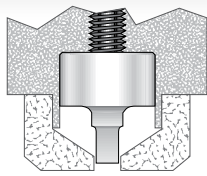
NOTE:

Package PK2F includes pegboard, shim hooks and miscellaneous hardware necessary to set up the shim organizer.

114 SYSTEM URETHANE STRIPPERS



Urethane Stripper Profile for Round Punches - Thicker Walls



Urethane Stripper Profile for Rectangle Punches - Two Walls Reinforced

SHORE HARDNESS: 92dA (standard)

less 15% quantities 12 or more

STATION	SHAPE OPTION	
A	STANDARD	U4A562
	STANDARD	U4B9
B	MOTORUM 2000	
	MAGNUM 2125	U4X9
	VECTRUM 3000α	
C	STANDARD	U4C9
D	STANDARD	U4D9
	RECTANGLE	U4DR59
	1" SQUARE	U4DSQ9
E	STANDARD	U4E9
	RECTANGLE	U4ER59
F	STANDARD	U4F9
	RECTANGLE	U4FR59
	2" SQUARE	U4FSQ9
	MOTORUM/VEC3000	U4V9
	VARISTATION	U4VR59
G	STANDARD	U4G9
	RECTANGLE	U4GR59
	2" SQUARE	U4GSQ9
H	STANDARD	U4H9
	RECTANGLE	U4HR59
J	STANDARD	U4J9
	RECTANGLE	U4JR59
	MOTORUM	U4JM
K	STANDARD	U4K9
	RECTANGLE	U4KR59
	MAGNUM 5000	U4KM
	VECTRUM 5000	

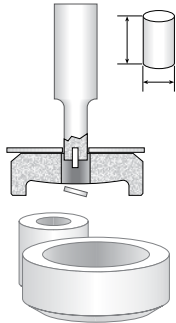
FOR MURATA MANUFACTURED PUNCH HOLDERS

B	STANDARD	WS0BB4UU
XB	STANDARD	WS0BB1UU

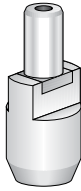
FOR MURATA MANUFACTURED PUNCH HOLDERS

B	STANDARD	WS0BB3UU
XB	STANDARD	WS0BB2UU

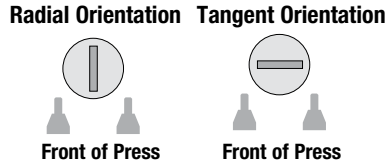
114 SYSTEM SLUG SHEDDERS



PUSH-ON STYLE STRIPPERS
When ordering specify machine model and station



CUSTOM MOLDED STYLE STRIPPERS
Stripper is molded directly on the punch and is specified with the punch. Also specify angle setting and whether radial or tangent orientation.

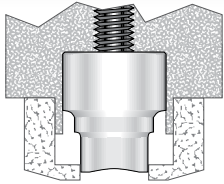
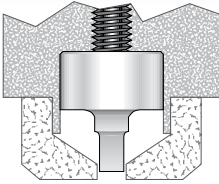


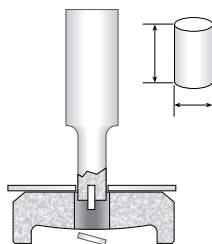
- *SMALL SLUG SHEDDERS 0.078(2.0) (50 IN A PACK) USE078P
- *LARGE SLUG SHEDDERS 0.250(6.4) (50 IN A PACK) USE250P
- SMALL SLUG SHEDDERS 0.118(3.0) (12 IN A PACK) URE40002
- LARGE SLUG SHEDDERS 0.236(6.0) (12 IN A PACK) URE40010

*For punches manufactured prior to 2017.

[Dimensions in Inches (mm)]



					
		Urethane Stripper Profile for Round Punches - Thicker Walls		Urethane Stripper Profile for Rectangle Punches - Two Walls Reinforced	
STATION	SHAPE OPTION	SHORE HARDNESS: 92dA (standard)	less 15% quantities 12 or more		
A	STANDARD	U2A187			
	STANDARD	U2A250			
	STANDARD	U2A312			
	STANDARD	U2A343			
	STANDARD	U2A375			
B	STANDARD	U2B9			
	MOTORUM 2000				
	MAGNUM 2125	U2X9			
	VECTRUM 3000α				
C	STANDARD	U2C9			
D	STANDARD	U2D9			
	RECTANGLE	U2DR59			
	1" SQUARE	U2DSQ9			
E	STANDARD	U2E9			
	RECTANGLE	U2ER59			
F	STANDARD	U2F9			
	RECTANGLE	U2FR59			
	2" SQUARE	U2FSQ9			
G	STANDARD	U2G9			
	RECTANGLE	U2GR59			



112 SYSTEM SLUG SHEDDERS

*SMALL SLUG SHEDDERS 0.078(2.0) (50 IN A PACK)

USE078P

*LARGE SLUG SHEDDERS 0.250(6.4) (50 IN A PACK)

USE250P

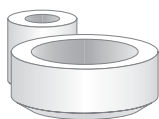
SMALL SLUG SHEDDERS 0.118(3.0) (Minimum of 12)

URE40002

LARGE SLUG SHEDDERS 0.236(6.0) (Minimum of 12)

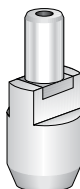
URE40010

*For punches manufactured prior to 2017.



PUSH-ON STYLE STRIPPERS

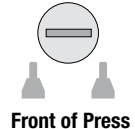
When ordering specify machine model and station



CUSTOM MOLDED STYLE STRIPPERS

Stripper is molded directly on the punch and is specified with the punch. Also specify angle setting and whether radial or tangent orientation.

Radial Orientation Tangent Orientation



[Dimensions in Inches (mm)]



12 Station VARITOOL
12 - MT500 Punches



10 Station VARITOOL
4 - MT750 Punches
6 - MT500 Punches

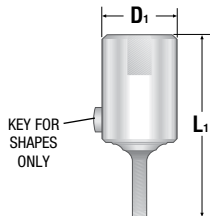


8 Station VARITOOL
8 - MT750 Punches



6 Station VARITOOL
6 - MT1000 Punches

MT500™ PUNCHES AND SLUG FREE® DIES
Range 0.030-0.500(0.8-12.7)

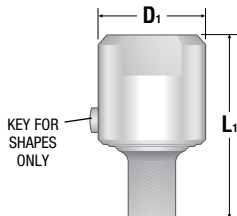


PUNCH D1 0.562(14.3) L1 1.375(34.9)

MT500™ Punch
ROUND POVTOA*
SHAPES POVT_A*
Key - for Shapes
KPVT
Shim Assortment
VSVT12

bag of 36, 12 each of 0.015(0.38),
0.030(0.76) and 0.060(1.52)

MT750™ PUNCHES AND SLUG FREE® DIES
Range 0.030-0.750(0.8-19.1)

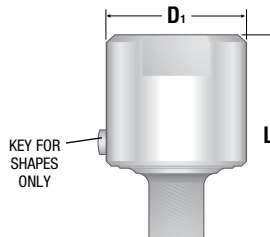


PUNCH D1 0.812(20.6) L1 1.375(34.9)

MT750™ Punch
ROUND POVVOA*
SHAPES POVV_A*
Key - for Shapes
KPVT
Shim Assortment
VSVT08

bag of 24, 8 each of 0.015(0.38),
0.030(0.76) and 0.060(1.52)

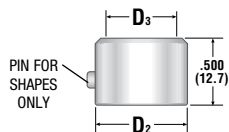
MT1000™ PUNCHES AND SLUG FREE® DIES
Range 0.030-1.000(0.8-25.4)



PUNCH D1 1.063(27.0) L1 1.563(39.8)

MT1000™ Punch
ROUND POVW0A*
SHAPES POVW_A*
Key - for Shapes
KPVT
Shim Assortment
VSVT06

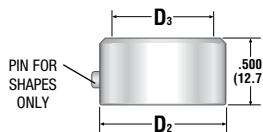
bag of 24, 8 each of 0.015(0.38),
0.030(0.76) and 0.060(1.52)



DIE D2 0.687(17.5) D3 0.530(13.5)

SLUG FREE® Die
ROUND DOVTO0*
SHAPES DOVT_0*
Pin - for Shapes
(10 minimum)
DPI16547**
Shim Assortment
MSVT12

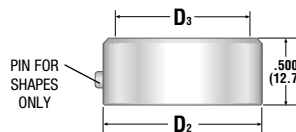
bag of 36, 9 each of 0.004(0.10),
0.006(0.15), 0.008(0.20) and
0.020(0.51)



DIE D2 0.937(20.6) D3 0.780(19.8)

SLUG FREE® Die
ROUND DOVV00*
SHAPES DOVV_0*
Pin - for Shapes
(10 minimum)
DPI16547**
Shim Assortment
MSVT08

bag of 24, 6 each of
0.004(0.10), 0.006(0.15),
0.008(0.20) and 0.020(0.51)

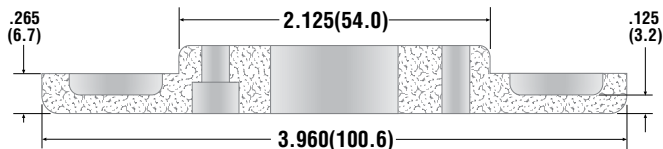


DIE D2 1.187(30.2) D3 1.030(26.2)

SLUG FREE® Die
ROUND DOVW00*
SHAPES DOVW_0*
Pin - for Shapes
(10 minimum)
DPI16547**
Shim Assortment
MSVT06

bag of 24, 6 each of
0.004(0.10), 0.006(0.15),
0.008(0.20) and 0.020(0.51)

URETHANE STRIPPERS



12 STATION VARITOOL
U771436

10 STATION VARITOOL
U760967

8 STATION VARITOOL
U760954

6 STATION VARITOOL
U760936

MT™ punches and dies are capable of one setting per set. When ordering shapes specify 0°, 90° or special angle setting (die view).

MAXIMUM PUNCHING
FORCE:
5(44.5) tons(kiloNewtons)

MAXIMUM MATERIAL
THICKNESS:
0.134(3.4) mild steel

TOTAL PUNCH GRIND LIFE:
0.060(1.5) for up to 12
sharpenings

TOTAL DIE GRIND LIFE:
0.060(1.5) for up to 12
sharpenings

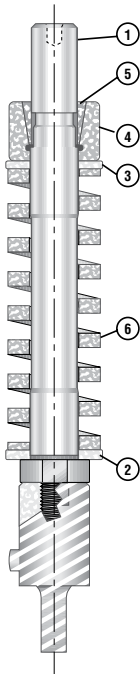
*Standard shapes
**Minimum quantity required

See page 52
for Add-Ons

[Dimensions in Inches (mm)]



Punch **NOT** included with
Punch Stem Assembly



1 PUNCH STEM,
Centrum 2000

1 PUNCH STEM,
Centrum 3000

2 WASHER,
all assemblies

3 WASHER,
MT500 only

4 PUNCH BUSHING,
Centrum 2000

4 PUNCH BUSHING,
Centrum 3000

5 COTTER**

**6 COMPRESSION
SPRING**

STEM ASSEMBLY,
Centrum 2000
(compatible with
Centrum-2500)

STEM ASSEMBLY,
Centrum 3000
(compatible with
Centrum 3500,
Motorum 2000,
Vectrum 3000α)

MT500™ PUNCH STEM ASSEMBLY
Range 0.030 - 0.500(0.8 - 12.7)

XAV760772

XAV771585

WA771443

WA771444

BU760741

BU771472

MIS59811

SPR33304

XAV760775

XAV771587

MT750™ PUNCH STEM ASSEMBLY
Range 0.030 - 0.750(0.8 - 19.1)

XAV760946

XAV772052

WA760948

BU760947

BU772053

MIS59811

SPR33523

XAV760958

XAV772056

MT1000™ PUNCH STEM ASSEMBLY
Range 0.030 - 1.000(0.8 - 25.4)

XAV760925

XAV772032

WA760927

BU760926

BU772033

MIS59811

SPR33603

XAV760939

XAV772041

VARIMARK MARKING PUNCH SET

**VARIMARK
MARKING
PUNCH**

**CENTRUM
2000
2500
3000
3500**

**MOTORUM
2000**

**VECTRUM
3000α
5000**



ABCDEFGHIJKLMNOPQRSTUVWXYZ23456789&./-()

← 1.000(25.4) → ACTUAL SIZE
"O" AND "I" ARE DUAL PURPOSE CHARACTERS

Full set of 40 punch inserts, size 0.094(2.4)

ANMS2MW

Individual characters (*designate character to complete part number)

ANMP2_*

Blank die anvil

DTN400

ABCDEFGHIJKLMNOPQRSTUVWXYZ23456789&./-()

← 1.000(25.4) → ACTUAL SIZE
"O" AND "I" ARE DUAL PURPOSE CHARACTERS

Full set of 40 punch inserts, size 0.125(3.2)

ANMS3MW

Individual characters (*designate character to complete part number)

ANMP3_*

VARIMARK punches are capable of only one setting. When ordering specify 0° or 90°.

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle

square

quad "D"

round

hexagon

octagon

oval

single "D"

double "D" triangle

diamond



**Minimum quantity required

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B	VAMB3C2125	VA4B3C2125	VA4B3C2125AA		MA4B3C2812	U4B9
C	VAMD3C3125	VA4C3C3125	VA4C3C3125AA		MA4C3C4580	U4C9
D	VAMD3C3125	VA4D3C3125	VA4D3C3125AA		MA4D3C4580	U4D9
D ⁺ AUTO INDEX	VAMX3C3125	114 NOT APPLICABLE IN THIS STATION RANGE				
D VARISTATION	VAMD3C4125AV	VA4D3C4125AV			MA4D3C6690AV	U4D9
D ⁺⁺ VARISTATION	VAMD3C4125AV	VA4D3C4125AV			MA4D5C4646AV	U4D9
E	VAMF3C4562	VA4F3C4562	VA4F3C4562AA		MA4E3C6350	U4E9
F	VAMF3C4562	VA4F3C4562	VA4F3C4562AA		MA4F3C6350	U4F9
G only in MAGNUM 1250 machines	VAMG3C5510	VA4G3C5510	VA4G3C5510AA		MA4G3C9134	U4G9

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond
1	3	A05	0	N	P	2	4	5	C08	C07

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B	VAMB3C2125	VA2B3C2125	VA2B3C2125AA		MA2B3C2812	U2B9
C	VAMD3C3125	VA2C3C3125	VA2C3C3125AA		MA2C3C4580	U2C9
D	VAMD3C3125	VA2D3C3125	VA2D3C3125AA	VA2D3C3125AL	MA2D3C4580	U2D9
D [†] AUTO INDEX	VAMX3C3125	VA2D3C3125AX			MA2D3C6693AXC	U2D9
D VARISTATION	VAMD3C4125AV	VA2D3C4125AV			MA2D3C6690AV	U2D9
D ^{††} VARISTATION	VAMD3C4125AV	VA2D3C4125AV			MA2D5C4646AV	U2D9
E	VAMF3C4562	VA2F3C4562	VA2F3C4562AA	VA2F3C4562AL	MA2E3C6350	U2E9
F	VAMF3C4562	VA2F3C4562	VA2F3C4562AA	VA2F3C4562AL	MA2F3C6350	U2F9
G only in MAGNUM 1250 machines	VAMG3C5510	VA2G3C5510	VA2G3C5510AA	VA2G3C5510AL	MA2G3C9134	U2G9

**LESS 15% QUANTITY 12 OR MORE*

†CENTRUM 2000 ONLY

††ALL CENTRUM 2500, AND CENTRUM 2000 SERIAL NUMBER 2474 AND AFTER

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B	VAMB502250	VA4B502250	VA4B502250AA		MA4B5C2625	U4B9
C	VAMD503125	VA4C503125	VA4C503125AA		MA4C5C3156	U4C9
D	VAMD503375	VA4D503375	VA4D503375AA	VA4D503375AL	MA4D5C3968	U4D9
D⁺ AUTO INDEX	VAMX5C3125	114 NOT AVAILABLE IN THIS STATION RANGE				
D^{††} AUTO INDEX	VAMX5M3375	VA4D5M3375AX			MA4D5C3620AX	U4D9
D VARISTATION	VAMD5C4172AV	VA4D5C4172AV			MA4D5C4646AV	U4D9
E	VAMF504562	VA4F504562	VA4F504562AA	VA4F504562AL	MA4E5C5580	U4E9
F	VAMF504562	VA4F504562	VA4F504562AA	VA4F504562AL	MA4F5C5580	U4F9
F VARISTATION	VAMF5C4562AV	VA4F5C4562AV			MA4F5C4872AV	U4F9
G	VAMH505938	VA4H505938	VA4H505938AA	VA4H505938AL	MA4G5C7688	U4G9
H	VAMH505938	VA4H505938	VA4H505938AA	VA4H505938AL	MA4H5C7688	U4H9
J	VAMJ505938	VA4J505938	VA4J505938AA	VA4J505938AL	MA4J5C7688	U4J9
K	VAMK506750	VA4L506750	VA4L506750AA	VA4L506750AL	MA4K5C9625	U4K9
L		VA4L506750	VA4L506750AA	VA4L506750AL	MA4L5C9625	

*LESS 15% QUANTITY 12 OR MORE

†SERIAL NUMBER 577 AND BEFORE, AND SERIAL NUMBERS 700-739

††SERIAL NUMBERS 578, 579, 582-585

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B	VAMB502250	VA2B502250	VA2B502250AA		MA2B5C2625	U2B9
C	VAMD503125	VA2C503125	VA2C503125AA		MA2C5C3156	U2C9
D	VAMD503375	VA2D503375	VA2D503375AA	VA2D503375AL	MA2D5C3968	U2D9
D[†] AUTO INDEX	VAMX5C3125	VA2D5C3125AX			MA2D5C3937AXC	U2D9
D^{††} AUTO INDEX	VAMX5M3375	VA2D5M3375AX			MA2D5C3620AX	U2D9
D VARISTATION	VAMD5C4172AV	VA2D5C4172AV			MA2D5C4646AV	U2D9
E	VAMF504562	VA2F504562	VA2F504562AA	VA2F504562AL	MA2E5C5580	U2E9
F	VAMF504562	VA2F504562	VA2F504562AA	VA2F504562AL	MA2F5C5580	U2F9
F VARISTATION	VAMF5C4562AV	VA2F5C4562AV			MA2F5C4872AV	U2F9
G	VAMH505938	VA2G505938	VA2G505938AA	VA2G505938AL	MA2G5C7688	U2G9

*LESS 15% QUANTITY 12 OR MORE

†SERIAL NUMBER 577 AND BEFORE, AND SERIAL NUMBERS 700-739

††SERIAL NUMBERS 578, 579, 582-585

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK ROUNDS ONLY	VAMR5M2250	VA4R5M2250			MA4B5M3125	U4B9
B	VAMB5V2250	VA4B5V2250	VA4B5M2250AA		MA4B5M3125	U4B9
C	VAMD503125	VA4C503125	VA4C503125AA		MA4C5M3937	U4C9
D	VAMD503375	VA4D503375	VA4D503375AA	VA4D503375AL	MA4D5M4687	U4D9
D AUTO INDEX	VAMX5T3375	VA4D5T3375AX			MA4D5C3620AX	U4D9
D VARISTATION	VAMD5C4172AV	VA4D5C4172AV			MA4D5C4646AV	U4D9
E	VAMF504562	VA4F504562	VA4F504562AA	VA4F504562AL	MA4E5M5580	U4E9
F	VAMF504562	VA4F504562	VA4F504562AA	VA4F504562AL	MA4F5M5580	U4F9
G	VAMH505938	VA4H505938	VA4H505938AA	VA4H505938AL	MA4G5M7688	U4G9
H	VAMH505938	VA4H505938	VA4H505938AA	VA4H505938AL	MA4H5M7688	U4H9
J	VAMJ505938	VA4J505938	VA4J505938AA	VA4J505938AL	MA4J5M7688	U4J9
K	VAMK506750	VA4L506750	VA4L506750AA	VA4L506750AL	MA4K5M10750	U4K9
L		VA4L506750	VA4L506750AA	VA4L506750AL	MA4L5M10750	

**LESS 15% QUANTITY 12 OR MORE*

[Dimensions in Inches (mm)]



STATION	MARATHON® PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK ROUNDS ONLY	VAMR5M2250	VA2R5M2250			MA2B5M3125	U2B9
B	VAMB5V2250	VA2B5V2250	VA2B5M2250AA		MA2B5M3125	U2B9
C	VAMD503125	VA2C503125	VA2C503125AA		MA2C5M3937	U2C9
D	VAMD503375	VA2D503375	VA2D503375AA	VA2D503375AL	MA2D5M4687	U2D9
D AUTO INDEX	VAMX5T3375	VA2D5T3375AX			MA2D5M3620AX	U2D9
D VARISTATION	VAMD5C4172AV	VA2D5C4172AV			MA2D5C4646AV	U2D9
E	VAMF504562	VA2F504562	VA2F504562AA	VA2F504562AL	MA2E5M5580	U2E9
F	VAMF504562	VA2F504562	VA2F504562AA	VA2F504562AL	MA2F5M5580	U2F9
G	VAMH505938	VA2G505938	VA2G505938AA	VA2G505938AL	MA2G5M7688	U2G9

**LESS 15% QUANTITY 12 OR MORE*

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK XB ROUNDS ONLY		VA4R5V1692				U4X9
B INNER TRACK IB ROUNDS ONLY	VAMB2M2250	VA4R2M2250			MA4B2M2625	U4B9
B	VAMB5V2250	VA4B5V2250			MA4B2M2625	U4B9
C	VAMD5V3125	VA4C5V3125			MA4C2M3543	U4C9
D	VAMD5V3375	VA4D5V3375			MA4D2M3937	U4D9
D AUTO INDEX	VAMD5C4172AV	VA4D5C4172AV			MA4D2M6690AXC	U4D9
D VARISTATION	VAMD5C4172AV	VA4D5C4172AV			MA4D5C4646AV	U4D9
E	VAMF504562	VA4F504562			MA4E2M5580	U4E9
F	VAMF504562	VA4F504562			MA4F2M5580	U4F9

**LESS 15% QUANTITY 12 OR MORE*

[Dimensions in Inches (mm)]

STATION	MARATHON® PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK XB ROUNDS ONLY		VA2R5V1692				U2X9
B INNER TRACK IB ROUNDS ONLY	VAMB2M2250	VA2R2M2250			MA2B2M2625	U2B9
B	VAMB5V2250	VA2B5V2250			MA2B2M2625	U2B9
C	VAMD5V3125	VA2C5V3125			MA2C2M3543	U2C9
D	VAMD5V3375	VA2D5V3375			MA2D2M3937	U2D9
D AUTO INDEX	VAMD5C4172AV	VA2D5C4172AV			MA2D2M6690AXC	U2D9
D VARISTATION	VAMD5C4172AV	VA2D5C4172AV			MA2D5C4646AV	U2D9
E	VAMF504562	VA2F504562			MA2E2M5580	U2E9
F	VAMF504562	VA2F504562			MA2F2M5580	U2F9

*LESS 15% QUANTITY 12 OR MORE

[Dimensions in Inches (mm)]

STATION	MARATHON PLUS™ PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK ROUNDS ONLY	MATE01144	VA4R5M2250			MA4B5M3125	U4B9
B	MATE01141	VA4B5V2250	VA4B5M2250AA		MA4B5M3125	U4B9
C	MATE01090	VA4C5V3125			MA4C5M3937	U4C9
D	MATE01132	VA4D5V3375		VA4D5V3375AL	MA4D5M4687	U4D9
D[†] AUTO INDEX (Available in standard Marathon only)	VAMX5M3125	114 NOT AVAILABLE IN THIS STATION RANGE				
D^{††} AUTO INDEX	MATE01145	VA4D5M3375AX			MA4D5M3620AX	U4D9
E	MATE01136	VA4F5V4562		VA4F5V4562AL	MA4E5M5580	U4E9
F	MATE01136	VA4F5V4562		VA4F5V4562AL	MA4F5M5580	U4F9
G	MATE01155	VA4H5M6750		VA4H5M6750AL	MA4G5M10750	U4G9
H	MATE01155	VA4H5M6750		VA4H5M6750AL	MA4H5M10750	U4H9
J	MATE01300	VA4J5M6750		VA4J5M6750AL	MA4J5M10750	U4JM
K (Available in standard Marathon only)	VAMK5M6750	VA4L5M6750		VA4L5M6750AL	MA4K5M10750	U4KM
L		VA4L5M6750		VA4L5M6750AL	MA4L5M10750	

*LESS 15% QUANTITY 12 OR MORE

†MAGNUM 5000 SERIAL NUMBER 584 AND BEFORE

††MAGNUM 5000 SERIAL NUMBER 585 AND AFTER - ALL VECTRUM 5000

To prevent damage, use Marathon Plus™ torque stand (MATE01293) when changing punch. See page 21.

[Dimensions in Inches (mm)]



STATION	MARATHON PLUS™ PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK ROUNDS ONLY	MATE01144	VA2R5M2250			MA2B5M3125	U2B9
B	MATE01141	VA2B5V2250	VA2B5M2250AA		MA2B5M3125	U2B9
C	MATE01090	VA2C5V3125			MA2C5M3937	U2C9
D	MATE01132	VA2D5V3375		VA2D5V3375AL	MA2D5M4687	U2D9
D [†] AUTO INDEX (Available in standard Marathon only)	VAMX5M3125	VA2D5M3125AX			MA2D5M3937AXC	U2D9
D ^{††} AUTO INDEX	MATE01145	VA2D5M3375AX			MA2D5M3620AX	U2D9
E	MATE01136	VA2F5V4562		VA2F5M4562AL	MA2E5M5580	U2E9
F	MATE01136	VA2F5V4562		VA2F5M4562AL	MA2F5M5580	U2F9
G	MATE01155	VA2G5M6750		VA2G5M6750AL	MA2G5M10750	U2G9

*LESS 15% QUANTITY 12 OR MORE

†MAGNUM 5000 SERIAL NUMBER 584 AND BEFORE

††MAGNUM 5000 SERIAL NUMBER 585 AND AFTER - ALL VECTRUM 5000

To prevent damage, use Marathon Plus™ torque stand (MATE01293) when changing punch. See page 21.

[Dimensions in Inches (mm)]

STATION	MARATHON PLUS™ PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK ROUNDS ONLY	MATE01144	VA4R5M2250			MA4B5M3125	U4B9
B	MATE01141	VA4B5V2250	VA4B5M2250AA		MA4B5M3125	U4B9
C	MATE01090	VA4C5V3125			MA4C5M3937	U4C9
D	MATE01132	VA4D5V3375		VA4D5V3375AL	MA4D5M4687	U4D9
D[†] AUTO INDEX	VAMX5M3125 (Available in standard Marathon only)		114 NOT AVAILABLE IN THIS STATION RANGE			
D^{††} AUTO INDEX	MATE01145	VA4D5M3375AX			MA4D5M3620AX	U4D9
E	MATE01136	VA4F5V4562		VA4F5V4562AL	MA4E5M5580	U4E9
F	MATE01136	VA4F5V4562		VA4F5V4562AL	MA4F5M5580	U4F9
G	MATE01154	VA4H5V5938		VA4H5V5938AL	MA4G5M7688	U4G9
H	MATE01154	VA4H5V5938		VA4H5V5938AL	MA4H5M7688	U4H9
J	MATE01299	VA4J5V5938		VA4J5V5938AL	MA4J5M7688	U4JM
K (Available in standard Marathon only)	VAMK5M6750	VA4L5M6750		VA4L5M6750AL	MA4K5M10750	U4KM
L		VA4L5M6750		VA4L5M6750AL	MA4L5M10750	

*LESS 15% QUANTITY 12 OR MORE

†SERIAL NUMBER 584 AND BEFORE

††SERIAL NUMBER 585 AND AFTER

To prevent damage, use Marathon Plus™
torque stand (MATE01293) when changing punch. See page 21.

[Dimensions in Inches (mm)]

STATION	MARATHON PLUS™ PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK ROUNDS ONLY	MATE01144	VA2R5M2250			MA2B5M3125	U2B9
B	MATE01141	VA2B5V2250	VA2B5M2250AA		MA2B5M3125	U2B9
C	MATE01090	VA2C5V3125			MA2C5M3937	U2C9
D	MATE01132	VA2D5V3375		VA2D5V3375AL	MA2D5M4687	U2D9
D [†] AUTO INDEX	VAMX5M3125 (Available in standard Marathon only)	VA2D5M3125AX			MA2D5M3937AXC	U2D9
D ^{††} AUTO INDEX	MATE01145	VA2D5M3375AX			MA2D5M3620AX	U2D9
E	MATE01136	VA2F5V4562		VA2F5M4562AL	MA2E5M5580	U2E9
F	MATE01136	VA2F5V4562		VA2F5M4562AL	MA2F5M5580	U2F9
G	MATE01154	VA2G5V5938		VA2G5V5938AL	MA2G5M7688	U2G9

*LESS 15% QUANTITY 12 OR MORE

†SERIAL NUMBER 584 AND BEFORE

††SERIAL NUMBER 585 AND AFTER

To prevent damage, use Marathon Plus™
torque stand (MATE01293) when changing punch. See page 21.

[Dimensions in Inches (mm)]

STATION	COMMENTS	MARATHON PLUS™ PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	†114 DIE HOLDER 2044EZ, 2044TC, 2048ST, 2048TE	URETHANE STRIPPER 92dA
B	Inner Track XB Rounds Only up to 0.500 (12.7)	MATE01159	VA4R5V1692		U4X9
B	Inner Track IB	MATE01141	VA4B5V2250		U4B9
B		MATE01141	VA4B5V2250	MA4B3C2812	U4B9
C		MATE01090	VA4C5V3125	MA4C3C4580	U4C9
D		MATE01132	VA4D5V3375	MA4D3C4580	U4D9
D	Varistation	MATE01091	VA4D5V4172AV		U4D9
F	Varistation	MATE01374	VA4F5V4172AV		U4V9
				U4R59	
E		MATE01137*	VA4F5V5938*	MA4E3C6350	U4E9
		MATE01136**	VA4F5V4562**		
F		MATE01137*	VA4F5V5938*	MA4F3C6350	U4F9
		MATE01136**	VA4F5V4562**		
G		MATE01154	VA4H5V5938		U4G9
H		MATE01154	VA4H5V5938		U4H9
J		MATE01299	VA4J5V5938		U4JM

*For use with Motorum model 2000.

**For use with Motorum models 2044, 2048, 2054 and newer.

†Motorum die holders not shown are available from Murata Machinery.

To prevent damage, use Marathon Plus™ torque stand (MATE01293) when changing punch. See page 21.

[Dimensions in Inches (mm)]

STATION	COMMENTS	MARATHON PLUS™ PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	†114 DIE HOLDER 2044EZ, 2044TC, 2048ST, 2048TE	URETHANE STRIPPER	
					92dA	70dA
B	Inner Track XB Rounds Only up to 0.500 (12.7)	MATE01159	VA2R5V1692			U2X9
B	Inner Track IB	MATE01141	VA2B5V2250			U2B9
B		MATE01141	VA2B5V2250	MA2B3C2812		U2B9
C		MATE01090	VA2C5V3125	MA2C3C4580		U2C9
D		MATE01132	VA2D5V3375	MA2D3C4580		U2D9
D	Varistation	MATE01091	VA2D5V4172AV			U2D9
E		MATE01137*	VA2F5V5938*			
		MATE01136**	VA2F5V4562**	MA2E3C6350		U2E9
F		MATE01137*	VA2F5V5938*			
		MATE01136**	VA2F5V4562**	MA2F3C6350		U2F9
G		MATE01154	VA2G5V5938			U2G9

*For use with Motorum model 2000.

**For use with Motorum models 2044, 2048, 2054 and newer.

†Motorum die holders not shown are available from Murata Machinery.

**To prevent damage, use Marathon Plus™
torque stand (MATE01293) when changing punch. See page 21.**

[Dimensions in Inches (mm)]

STATION	MARATHON PLUS™ PUNCH HOLDER	STANDARD 114 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	114 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK XB ROUNDS ONLY up to .500(12.7)	MATE01159	VA4R5V1692				U4X9
B INNER TRACK IB	MATE01141	VA4B5V2250				U4B9
B	MATE01141	VA4B5V2250				U4B9
C	MATE01090	VA4C5V3125				U4C9
D	MATE01132	VA4D5V3375				U4D9
D VARISTATION	MATE01091	VA4D5V4172AV				U4D9
F VARISTATION	MATE01374	VA4F5V4172AV				U4V9 U4VR59
E	MATE01136	VA4F5V4562				U4E9
F	MATE01136	VA4F5V4562				U4F9
G	MATE01154	VA4H5V5938				U4G9
H	MATE01154	VA4H5V5938				U4H9
J	MATE01299	VA4J5V5938				U4J9

VECTRUM 3000 DIE HOLDERS ARE AVAILABLE FROM MURATA WIEDEMANN

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle	square	quad "D"	round	hexagon	octagon	oval	single "D"	double "D"	triangle	diamond
1	3	A05	0	N	P	2	4	5	C08	C07

[Dimensions in Inches (mm)]

STATION	MARATHON PLUS™ PUNCH HOLDER	STANDARD 112 PUNCH HOLDER	ADJUSTABLE ANGLE PUNCH HOLDER	ADJUSTABLE LENGTH PUNCH HOLDER	112 DIE HOLDER	URETHANE STRIPPER* 92dA
B INNER TRACK XB ROUNDS ONLY up to .500(12.7)	MATE01159	VA2R5V1692				U2X9
B INNER TRACK IB	MATE01141	VA2B5V2250				U2B9
B	MATE01141	VA2B5V2250				U2B9
C	MATE01090	VA2C5V3125				U2C9
D	MATE01132	VA2D5V3375				U2D9
D VARISTATION	MATE01091	VA2D5V4172AV				U2D9
E	MATE01136	VA2F5V4562				U2E9
F	MATE01136	VA2F5V4562				U2F9
G	MATE01154	VA2G5V5938				U2G9

VECTRUM 3000 DIE HOLDERS ARE AVAILABLE FROM MURATA WIEDEMANN

112 STYLE

*LESS 15% QUANTITY 12 OR MORE

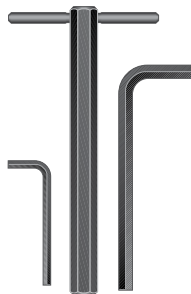
To prevent damage, use Marathon Plus™ torque stand (MATE01293) when changing punch. See page 21.

[Dimensions in Inches (mm)]

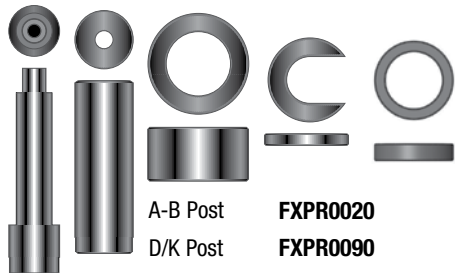


**MARATHON® EJECTOR
RETAINING RING ASSEMBLY TOOL**

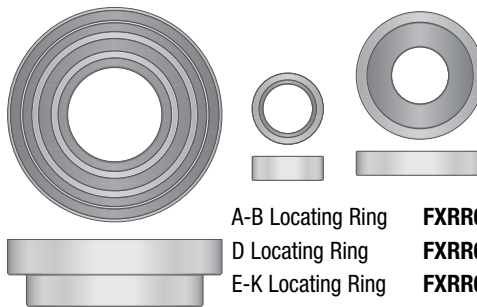
- | | |
|------------------|-----------------|
| B Auto Index Set | FX20S |
| Plunger | FXPL0020 |
| Guide Sleeve | FXG50020 |
| D Auto Index Set | FX40S |
| Plunger | FXPL0040 |
| Guide Sleeve | FXG50040 |
| D-K Set | FX90S |
| D-K Plunger | FXPL0090 |
| D-K Guide Sleeve | FXG50090 |



- | | |
|---|------------------|
| 1/4" Hex Wrench | ALW18964 |
| 3/8" Hex Wrench | ALW19000 |
| B Station Length
Adjustment Wrench | VPWR0020 |
| C-K Station Length
Adjustment Wrench | VPWR0090 |
| Wrench Handle | FXHR0000 |
| 1/4-20 x 1/2" Socket
Head Cap Screw | SHC09881* |



- | | |
|-------------------------|------------------|
| A-B Post | FXPR0020 |
| D/K Post | FXPR0090 |
| Lifter Cap | FXCR0000 |
| "C" Washer | FXWR0000 |
| Marathon Plus™ B Collar | MATE01143 |



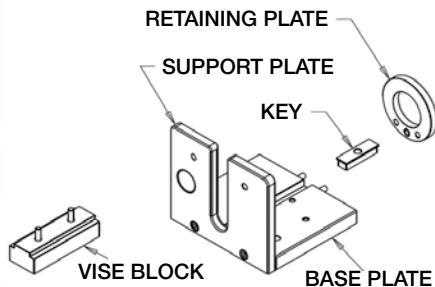
- | | |
|-------------------|-----------------|
| A-B Locating Ring | FXRR0020 |
| D Locating Ring | FXRR0040 |
| E-K Locating Ring | FXRR0090 |
| Base Plate | FXBR0000 |

MARATHON PLUS™ ACCESSORIES

MARATHON PLUS™ TORQUE STAND

The Marathon Plus™ Torque Stand is **highly recommended** when changing a punch to avoid damaging the tang mechanism. It allows the punch holder to be held securely during punch installation. This convenient torque stand can be machine or vise mounted.

MATE01293



MARATHON PLUS™ TOOL

To assist with B and C Station Platen installation and removal.

MATE01894



MAINTENANCE FIXTURE

Marathon Plus™ punch holder assemblies require very little routine maintenance. However, every few months the punch-receiver/tang should be disassembled from the punch holder to be inspected and cleaned. Disassembly is accomplished using this maintenance fixture.

FXAR0000



*Minimum quantity required

[Dimensions in Inches (mm)]

MARATHON PLUS™ TANG CONVERSION KIT

Tang conversion kits allow existing MARATHON® punch holders to be converted to use the new Marathon Plus™ external length adjustment mechanism.

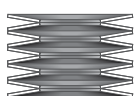
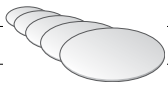
Station	MARATHON® Punch Holder	Marathon Plus™ Punch Holder	Use Tang Kit	
B Inner Track - Magnum 5000	VAMR5M2250	MATE01144	MATE01142	
B, B Inner Track - Vectrum, Motorum	VAMB5V2250 VAMB5M2250	MATE01141	MATE01142	
XB round only - Vectrum, Motorum	VAMB5V1692	MATE01159	MATE01158	
C, D - Vectrum, Motorum, Magnum 5000 with max. Diag. 1.500(38.10)	VAMD5V3125 VAMD5M3125	MATE01090	MATE01088	
C, D - Vectrum, Motorum, Magnum 5000 with max. Diag. 2.000(50.80)	VAMD5V3375 VAMD5M3375	MATE01132	MATE01088	
D Auto-Index - Magnum 5000	VAMX5M3375	MATE01145	MATE01088	
D Varistation - Vectrum, Motorum	VAMD5V4172AV	MATE01091	MATE01088	
E, F - Motorum 5.938(150.83) Upper Turret Bore Diameter	VAMF5V5938	MATE01137	MATE01135	
E, F - Vectrum, Motorum, Magnum 5000	VAMF5V4562 VAMF5M4562	MATE01136	MATE01135	
G, H - Vectrum, Motorum, Magnum 5000 with 5.938(150.83) Upper Turret Bore Diameter	VAMH5V5938 VAMH5M5938	MATE01154	MATE01149	
G, H - Magnum 5000	VAMH5M6750	MATE01155	MATE01149	
J - Magnum 5000 with 6.750(171.45) Upper Turret Bore Diameter	VAMJ5M6750	MATE01300	MATE01301	
J - Vectrum, Motorum, Magnum 5000	VAMJ5V5938	MATE01299	MATE01301	

MARATHON® LOCK RING REPLACEMENT KITS

Station	Kit	
B	MATE00595	
C	MATE00596	
D	MATE00597	
F	MATE00598	
F Varistation	MATE01148	
H	MATE00599	
J (With Outside Diameter slots)	MATE00600	
J (No Outside Diameter slots)	MATE00601	
K (With Outside Diameter slots)	MATE00602	
K (No Outside Diameter slots)	MATE00603	

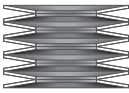
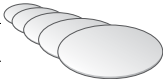
[Dimensions in Inches (mm)]

PUNCH HOLDER REPLACEMENT PARTS AND ACCESSORIES

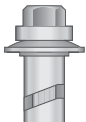
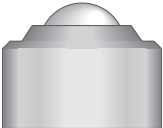
*Minimum quantity required	Part Number		MACHINE STYLES							
			114 Style Centrum 1000, 2000, 2500, Magnum 1250	112 Style Centrum 1000, 2000, 2500, Magnum 1250	114 Style Centrum 3000, 3500, 34,36,40 Single Track	112 Style Centrum 3000, 3500, 34,36,40 Single Track	114 Style Centrum 3000, 3500, 54 Double Track	112 Style Centrum 3000, 3500, 54 Double Track	114 Style Magnum 2125	112 Style Magnum 2125
Marathon Punch Holder Springs:										
B Station (20 required per unit)	MIS61305*		●	●	●	●	●	●	●	●
XB Station (14 required per unit)	MIS61620*									
C/D Station (12 required per unit)	MIS61321*		●	●	●	●	●	●	●	●
F Varistation (10 required per unit)	MATE01099*									
E/F Station (10 required per unit)	MIS61356*		●	●	●	●	●	●	●	●
G/H Station (10 required per unit)	MIS61372*		●	●	●	●	●	●		
J Station (8 required per unit)	MIS61399*				●		●			
K Station (6 required per unit)	MIS61428*				●		●			
Thread Adapter:										
114D Varitool	VA4D771502		●	●	●	●				
114D Auto Index	VTAM000						●	●	●	●
Self Adhesive Urethane Stripper Pads for Marathon:										
B Station (bag of 6) 1.32(33.5) O.D.	SAMBSF		●	●	●	●	●	●	●	●
C/D Station (bag of 6) 2.56(65.0) O.D.	SAMDSF		●	●	●	●	●	●	●	●
E/F Station (bag of 6) 3.45(87.6) O.D.	SAMFSF		●	●	●	●	●	●	●	●
G/H Station (bag of 4) 4.59(116.6) O.D.	SAMHSF		●	●	●	●	●	●		
J Station (bag of 4) 5.22(132.6) O.D.	SAMJSF				●		●			
K Station (bag of 4) 5.94(150.9) O.D.	SAMKSF				●		●			
Punch Holder Keys:										
Internal 114	VKI4S000		●		●		●		●	
Internal 112	VKI2S000			●		●		●		●
Internal 112 B station	VKI2M000							●		
External 112 auto index	VKE4M000					●	●	●	●	●
External 112 auto index	VKE4M010			●						
External 114 auto index	VKE5C000				●		●	●		
External Varitool	VKE771430				●	●	●	●	●	●
External 112/114	VKE4S811				●	●	●	●	●	●
External 112/114 (B-G station)	VKE4S810		●	●						
External 112/114 Varistation	VKE760738		●	●						
External MATE MARATHON® (B-G station)	VKE4R000		●	●			●	●	●	●
External MATE MARATHON® (B-G station) for C-3000 and M-5000	VKE4R001				●	●	●	●	●	●
External MATE MARATHON® Varistation for C-3000	VKE771546				●	●			●	●
Punch Holder Retaining Screws:										
114 B-C station 1/2-12x2-1/2	SHC11199*				●		●		●	
114 D-L station 1/2-13x3	SHC11228*				●		●		●	
114 D station 1/2-13x3-1/2	SHC11244*								●	
114 1/2-13 x 2-1/4	SHC11180*		●							
Washer, 114	WAS17881*		●		●		●		●	
Washer, 112	WAS17849*			●		●		●		●
112 B station 5/16-18x3	SHC10348*					●		●		●
112 B-C station 5/16-18x2-1/2	SHC10313*			●		●		●	●	
112 D-F station 5/16-18x3-1/2	SHC10364*			●		●		●		●
M5 x 14	SHC12052*						●	●		

[Dimensions in Inches (mm)]

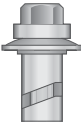
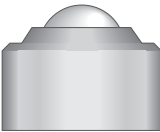


*Minimum quantity required	Part Number		MACHINE STYLES							
			114 Style Magnum 5000 Vectrum 5000 52 Station	112 Style Magnum 5000 Vectrum 5000 52 Station	114 Style Magnum 5000 36,46,60 Vectrum 5000 60 Station	112 Style Magnum 5000 36,46,60 Vectrum 5000 60 Station	114 Style Motorum 2000	112 Style Motorum 2000	114 Style Vectrum 3000	112 Style Vectrum 3000
Marathon Punch Holder Springs:										
B Station (20 required per unit)	MIS61305*		●	●	●	●	●	●	●	●
XB Station (14 required per unit)	MIS61620*						●	●	●	●
C/D Station (12 required per unit)	MIS61321*		●	●	●	●	●	●	●	●
F Varistation (10 required per unit)	MATE01099*						●		●	
E/F Station (10 required per unit)	MIS61356*		●	●	●	●	●	●	●	●
G/H Station (10 required per unit)	MIS61372*		●	●	●	●	●	●	●	●
J Station (8 required per unit)	MIS61399*		●		●				●	
K Station (6 required per unit)	MIS61428*		●		●					
Thread Adapter:										
114D Varitool	VA4D771502									
114D Auto Index	VTAM000		●	●	●	●	●	●	●	●
Self Adhesive Urethane Stripper Pads for Marathon:										
B Station (bag of 6) 1.32(33.5) O.D.	SAMBSF		●	●	●	●	●	●	●	●
C/D Station (bag of 6) 2.56(65.0) O.D.	SAMDSF		●	●	●	●	●	●	●	●
E/F Station (bag of 6) 3.45(87.6) O.D.	SAMFSF		●	●	●	●	●	●	●	●
G/H Station (bag of 4) 4.59(116.6) O.D.	SAMHSF		●	●	●	●	●	●	●	●
J Station (bag of 4) 5.22(132.6) O.D.	SAMJSF		●		●				●	
K Station (bag of 4) 5.94(150.9) O.D.	SAMKSF		●		●					
Punch Holder Keys:										
Internal 114	VK14S000		●		●		●		●	
Internal 112	VK12S000			●				●		●
Internal 112 B station	VK12M000						●			
External 112 auto index	VKE4M000		●	●	●	●	●	●	●	●
External 112 auto index	VKE4M010									
External 114 auto index	VKE5C000		●		●					
External Varitool	VKE771430							●	●	●
External 112/114	VKE4S811									
External 112/114 (B-G station)	VKE4S810									
External 112/114 Varistation	VKE760738									
External MATE MARATHON® (B-G station)	VKE4R000		●	●	●	●	●	●	●	●
External MATE MARATHON® (B-G station) for C-3000 and M-5000	VKE4R001		●	●	●	●				
External MATE MARATHON® Varistation for C-3000	VKE771546							●	●	●
Punch Holder Retaining Screws:										
114 B-C station 1/2-12x2-1/2	SHC11199*		●		●		●		●	
114 D-L station 1/2-13x3	SHC11228*		●							
114 D station 1/2-13x3-1/2	SHC11244*		●		●		●		●	
114 1/2-13 x 2-1/4	SHC11180*									
Washer, 114	WAS17881*		●		●		●		●	
Washer, 112	WAS17849*			●		●		●		●
112 B station 5/16-18x3	SHC10348*			●		●		●		●
112 B-C station 5/16-18x2-1/2	SHC10313*		●		●		●		●	
112 D-F station 5/16-18x3-1/2	SHC10364*			●		●		●		●
M5 x 14	SHC12052*		●	●	●	●				

[Dimensions in Inches (mm)]

*Minimum quantity required	Part Number		MACHINE STYLES							
			114 Style Centrum 1000, 2000, 2500, Magnum 1250	112 Style Centrum 1000, 2000, 2500, Magnum 1250	114 Style Centrum 3000, 3500, 34,36,40 Single Track	112 Style Centrum 3000, 3500, 34,36,40 Single Track	114 Style Centrum 3000, 3500, 54 Double Track	112 Style Centrum 3000, 3500, 54 Double Track	114 Style Magnum 2125	112 Style Magnum 2125
Locking Clamps:										
B station locking clamp for C-1000	MDC020		●	●						
C station locking clamp for C-1000	MDC030		●	●						
D station locking clamp for C-1000	MDC040		●	●						
B station locking clamp for C-3000	MDC023				●	●			●	●
C station locking clamp for C-3000	MDC033				●	●			●	●
D station locking clamp for C-3000	MDC043				●	●			●	●
B station locking clamp for M-5000	MDC025						●	●		
C station locking clamp for M-5000	MDC035					●	●			
D station locking clamp for M-5000	MDC045						●	●		
C Clamp:										
"C" clamp auto index	MDCAX		●	●	●	●	●	●	●	●
Locking Pins:										
114 Locking pin B, E-G station	MSP3C-01		●	●	●	●	●	●	●	●
Locking pin disc spring	MIS61460		●	●	●	●	●	●	●	●
Locking pin washer	MSP3C-03		●	●	●	●	●	●	●	●
Locking pin snap ring	MIS61487*		●	●	●	●	●	●	●	●
Cap Screws and Set Screws:										
M8 x 50 mm cap screw	SHC12095*		●	●					●	●
M8 x 65 mm cap screw	SHC12159*				●	●	●	●		
M8 x 12 mm set screw	SSS50198*		●	●	●	●	●	●	●	●
Wrenches:										
17 mm open end wrench	MIS60206		●	●					●	●
3/8" ratchet wrench	MIS60273				●	●	●	●		
5/32" hex wrench	ALW18921		●	●	●	●	●	●	●	●
17 mm socket	MARS				●	●	●	●		
5/16 allen wrench	ALW18980						●	●		
Ball Transfer:										
16 mm ball transfer	MIS97746						●	●		

[Dimensions in Inches (mm)]

*Minimum quantity required	Part Number		MACHINE STYLES							
			114 Style Magnum 5000 Vectrum 5000 52 Station	112 Style Magnum 5000 Vectrum 5000 52 Station	114 Style Magnum 5000 36,46,60 Vectrum 5000 60 Station	112 Style Magnum 5000 36,46,60 Vectrum 5000 60 Station	114 Style Motorum 2000	112 Style Motorum 2000	114 Style Vectrum 3000	112 Style Vectrum 3000
Locking Clamps:										
B station locking clamp for C-1000	MDC020									
C station locking clamp for C-1000	MDC030									
D station locking clamp for C-1000	MDC040									
B station locking clamp for C-3000	MDC023									
C station locking clamp for C-3000	MDC033									
D station locking clamp for C-3000	MDC043									
B station locking clamp for M-5000	MDC025		•	•	•	•				
C station locking clamp for M-5000	MDC035		•	•	•	•				
D station locking clamp for M-5000	MDC045		•	•	•	•				
C Clamp:										
"C" clamp auto index	MDCAX		•	•	•	•				
Locking Pins:										
114 Locking pin B, E-G station	MSP3C-01		•	•	•	•				
Locking pin disc spring	MIS61460		•	•	•	•				
Locking pin washer	MSP3C-03		•	•	•	•				
Locking pin snap ring	MIS61487*		•	•	•	•				
Cap Screws and Set Screws:										
M8 x 50 mm cap screw	SHC12095*									
M8 x 65 mm cap screw	SHC12159*		•	•	•	•				
M8 x 12 mm set screw	SSS50198*		•	•	•	•				
Wrenches:										
17 mm open end wrench	MIS60206									
3/8" ratchet wrench	MIS60273		•	•	•	•				
5/32" hex wrench	ALW18921		•	•	•	•				
17 mm socket	MARS		•	•	•	•				
5/16 allen wrench	ALW18980		•	•	•	•				
Ball Transfer:										
16 mm ball transfer	MIS97746		•	•	•	•				

Die Holder hardware available from Murata Wiedemann on these machine styles

Die Holder hardware available from Murata Wiedemann on these machine styles

[Dimensions in Inches (mm)]

PUNCH AND DIE MAINTENANCE

GRIND LIFE FOR 114 STYLE PUNCHES

	Maximum Grind Life Punching	Minimum Punch Overall Length
STATION	0.100(2.5) Material	
A	0.063(1.6)	2.656(67.5)
B	0.380(9.7)	3.620(91.9)
C	0.310(7.9)	3.753(95.3)
D - L	0.303(7.7)	3.228(82.0)

GRIND LIFE FOR 112 STYLE PUNCHES

	Maximum Grind Life Punching	Minimum Punch Overall Length
STATION	0.100(2.5) Material	
A	0.063(1.6)	1.750(44.5)
B	0.180(4.6)	2.683(68.1)
C	0.148(3.8)	3.008(76.4)
D - G	0.243(6.2)	1.820(46.2)

GRIND LIFE FOR VULCAN STYLE PUNCHES

	Maximum Grind Life Punching	Minimum Punch Overall Length
STATION	0.100(2.5) Material	
X	0.063(1.6)	2.656(67.5)
AB	0.380(9.7)	3.620(91.9)
B	0.310(7.9)	3.753(95.3)
C	0.303(7.7)	3.228(82.0)
D - L	0.303(7.7)	3.228(82.0)

GRIND LIFE FOR DIES

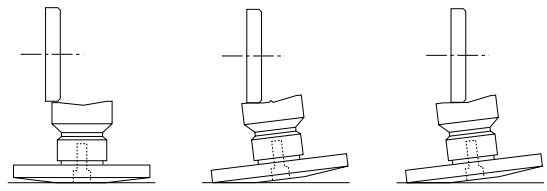
STATION	Tooling Style	Maximum Die Grind Life	Minimum Die OAL
B - L	MARATHON	0.125(3.2)	1.000(25.4)
X - L	114	0.125(3.2)	1.000(25.4)
B - L	VULCAN	0.125(3.2)	1.000(25.4)
B - C	112	0.125(3.2)	0.468(11.9)
D - G	112	0.125(3.2)	0.625(15.9)

GRINDING WHEEL SPECIFICATIONS

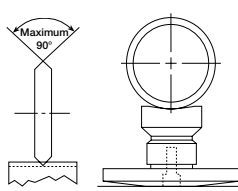
Tool Material	Wheel Hardness	Grit Size
Premium Tool Steel	G-J	40-60
High Speed Steel	D-G	40-60
Shock Steel	G-J	40-60

SHARPENING 112/114 PUNCHES

STEP 1- Grind Dull Edges STEP 2- Grind 1st Punch Face STEP 2- Grind 2nd Punch Face



STEP 4- Remove 'V' From Punch Face



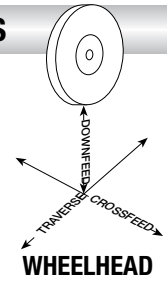
- Sharpening fixture, Part Number TS0000 is employed
- A 0.125(3.2) Radius edge on the grinding wheel will help avoid a stress point at punch center
- A good blend radius at punch center is required
- Grind punch flats between 0.060 0.180(1.5-4.6)
- If a sharp 'V' remains on the punch face, remove with a bevel wheel no greater than 4.000(101.6) in diameter

FEED RATES

Downfeed:
0.001-0.003(0.03-0.08)

Crossfeed:
0.010(0.25) per pass

Traverse (per pass):
100-150 inches/minute
(2.50-3.80 meters/minute)



FIXING SHARPENING PROBLEMS

PROBLEM:	CAUSE:	CURE:
Discoloration** and/or surface cracks	Insufficient coolant	Increase or redirect flow
	Improper wheel	Use coarser grain, softer grade grinding wheel
Harsh cutting sound and/or poor surface finish	Improper dress	Drop wheelhead 0.0002-0.0004(0.005-0.010) and redress. Move crossfeed approximately 50 inches/minute (1.25 meters/minute)
	Excessive stock removal	Less downfeed; lower crossfeed rate
	Improper wheel	Coarser grain, softer grade
	Improper dress or glazed wheel	Redress wheel, break glaze on wheel surface

**Dark discoloration indicates damage not necessarily limited to tool surface. Removal of burned surface will not rectify damage. Recommend replacement of the tool.

[Dimensions in Inches (mm)]





"D"
Range
Diameter

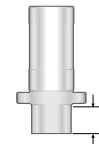


"A"
Range
Length

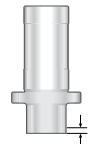
"B"
Range
Width



Maximum
Recommended
Material Thickness



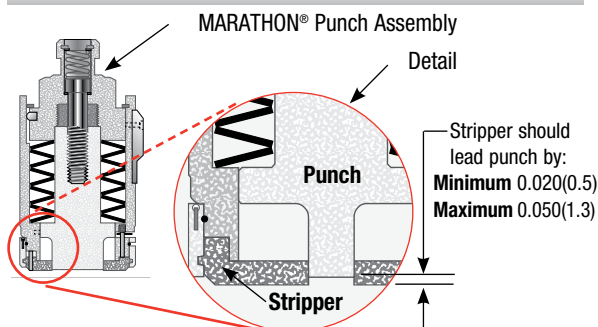
New Punch
SBR
±0.020(0.5)



Maximum
Grind
Life*

0.030-0.039(0.8-1.0)	0.030-0.187(0.8-4.7)	0.030-0.039(0.8-1.0)	0.020(0.5)	0.320(8.1)	0.000(0.0)
0.040-0.063(1.0-1.6)	0.030-0.187(0.8-4.7)	0.040-0.063(1.0-1.6)	0.060(1.5)	0.380(9.7)	0.030(0.8)
0.064-0.094(1.6-2.4)	0.030-0.187(0.8-4.7)	0.064-0.094(1.6-2.4)	0.090(2.3)	0.440(11.2)	0.060(1.5)
0.095-0.156(2.4-4.0)	0.030-0.187(0.8-4.7)	0.095-0.156(2.4-4.0)	0.140(3.6)	0.680(17.3)	0.120(3.0)
0.157-0.187(4.0-4.7)	0.030-0.187(0.8-4.7)	0.157-0.187(4.0-4.7)	0.180(4.6)	0.730(18.5)	0.120(3.0)
≥0.187(4.7)			0.250(6.4)	0.730(18.5)	0.060(1.5)
0.188-0.625(4.8-15.9)	0.188-0.625(4.8-15.9)	0.030-0.039(0.8-1.0)	0.020(0.5)	0.320(8.1)	0.000(0.0)
0.188-0.625(4.8-15.9)	0.188-0.625(4.8-15.9)	0.040-0.063(1.0-1.6)	0.060(1.5)	0.440(11.2)	0.060(1.5)
0.188-0.625(4.8-15.9)	0.188-0.625(4.8-15.9)	0.064-0.094(1.6-2.4)	0.090(2.3)	0.630(16.0)	0.120(3.0)
0.188-0.625(4.8-15.9)	0.188-0.625(4.8-15.9)	0.095-0.156(2.4-4.0)	0.140(3.6)	0.680(17.3)	0.120(3.0)
0.188-0.625(4.8-15.9)	0.188-0.625(4.8-15.9)	0.157-0.625(4.0-15.9)	0.250(6.4)	0.760(19.3)	0.060(1.5)
≥0.626(≥15.9)	≥0.626(≥15.9)	0.030-0.039(0.8-1.0)	0.020(0.5)	0.380(9.7)	0.000(0.0)
≥0.626(≥15.9)	≥0.626(≥15.9)	0.040-0.063(1.0-1.6)	0.060(1.5)	0.540(13.7)	0.060(1.5)
≥0.626(≥15.9)	≥0.626(≥15.9)	0.064-0.094(1.6-2.4)	0.090(3.0)	0.630(16.0)	0.120(3.0)
≥0.626(≥15.9)	≥0.626(≥15.9)	0.095-0.156(2.4-4.0)	0.140(3.6)	0.760(19.3)	0.120(3.0)
≥0.626(15.9)	≥0.626(15.9)	≥0.157(4.0)	0.250(6.4)	0.760(19.3)	0.060(1.5)

SETTING UP STRIPPER LEAD



THREE-POINT PUNCH CONTROL

Guided from top to bottom...

Three-point control
for precision
punching at all
speeds for greater
stability, rigidity
and minimal
lateral movement



Guided Surfaces...

1. Guided
by punch
receiver tang
2. Guided by
punch holder
body
3. Guided by
stripper

*Maximum grind life increases as material thickness decreases.

PUNCH SHEAR SPECIFICATIONS

Shear Specifications for MARATHON® Punches

Standard Shear for MARATHON punches all sizes, all stations is flat - without shear.

SHEAR SPECIFICATIONS FOR 114 PUNCHES

STATION	DESCRIPTION	SIZE	SHEAR REQUIRED
B	rounds and shapes	0.030-1.000(0.76-25.4)	none
C	rounds	1.001-1.500(25.42-38.1)	concave 0.062(1.57) shear depth
C	shapes	1.001-1.500(25.42-38.1)	none
D - L	rounds	1.501(38.12) and larger	concave 0.093(2.36) shear depth
D - L	shapes (except square)	width 0.030-0.187(0.76-4.75)	rooftop
D - L	shapes (except square)	width 0.188(4.77) and larger	concave 0.093(2.36) shear depth
D - L	squares with 45° setting	1.000-1.499(25.4-38.07)	4-way 0.040(1.02) shear depth with 0.187(4.75) square flats
D - L	squares with 45° setting	1.500(38.1) and larger	4-way 0.093(2.36) shear depth

SHEAR SPECIFICATIONS FOR HEAVY DUTY 114 PUNCHES

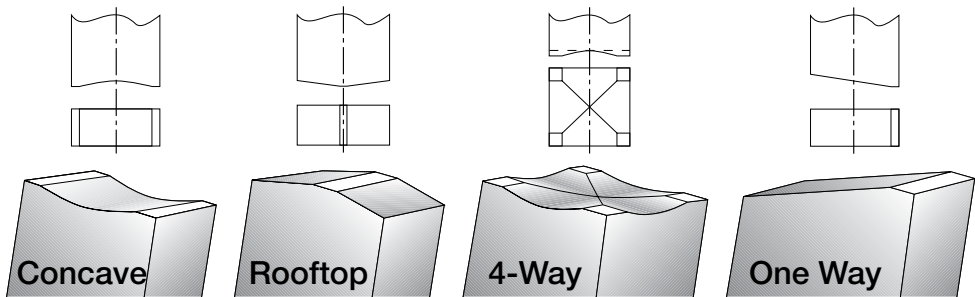
STATION	DESCRIPTION	SIZE	SHEAR REQUIRED
B	rounds and shapes	0.250-0.938(0.8-23.8)	none
C	square, rectangle	0.813-1.313(20.7-33.4)	none
C	round, oval, D, DD	0.939-1.492(23.9-37.9)	rooftop
D - L	round, oval, D, DD	1.493(37.9) and larger	rooftop
D - L	rectangle	1.314(33.4) and larger	rooftop
D - L	square	1.314(33.4) and larger	none - to reduce lateral movement

SHEAR SPECIFICATIONS FOR 112 PUNCHES

STATION	DESCRIPTION	SIZE	SHEAR REQUIRED
B	rounds and shapes	0.030-1.000(0.76-25.4)	none
C	rounds	1.001-1.500(25.42-38.1)	concave 0.062(1.57) shear depth
C	shapes	1.001-1.500(25.42-38.1)	none
D - G	rounds	1.501(38.12) and larger	concave 0.062(1.57) shear depth
D - G	shapes (except square)	width 0.030-0.187(0.76-4.75)	rooftop
D - G	shapes (except square)	width 0.188(4.77) and larger	concave 0.062(1.57) shear depth
D - G	squares with 45° setting	1.000-1.499(25.4-38.07)	4-way 0.040(1.02) shear depth with 0.187(4.75) square flats
D - G	squares with 45° setting	1.500(38.1) and larger	4-way 0.062(1.57) shear depth

SHEAR SPECIFICATIONS FOR VULCAN PUNCHES

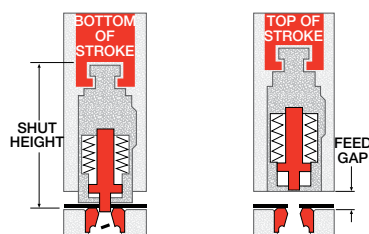
Standard Shear for Vulcan style punches all sizes, all stations X through L is flat - without shear. Rooftop shear is the recommended optional shear in some stations, for some size ranges.



[Dimensions in Inches (mm)]



PUNCH HOLDER SET-UP DIMENSIONS



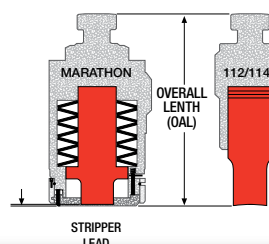
PUNCH PRESS	SHUT HEIGHT	FEED GAP
CENTRUM 1000	5.875(149.2)	0.835(21.2)
CENTRUM 2000	5.875(149.2)	0.875(22.2)
CENTRUM 3000	6.750(171.5)	0.875(22.2)
MAGNUM 1250	5.875(149.2)	0.875(22.2)
MAGNUM 2125	5.875(149.2)	0.875(22.2)
MAGNUM 5000	5.875(149.2)	0.875(22.2)
MOTORUM 2000	PROGRAMMABLE	0.875(22.2)
VECTRUM 3000 α	PROGRAMMABLE	0.875(22.2)
VECTRUM 5000	6.750(171.5)	0.875(22.2)
FLEXILASER	PROGRAMMABLE	0.875(22.2)

MURATA WIEDEMANN PUNCH
PRESS TONNAGE RATINGS

PUNCH PRESS	PUNCH PRESS TONNAGE (TONS)	PUNCH PRESS TONNAGE (METRIC TONS)
CENTRUM 1000	16.5	14.85
CENTRUM 2000	22.0	19.8
CENTRUM 3000	33.0	29.7
MAGNUM 1250	22.0	19.8
MAGNUM 2125	22.0	19.8
MAGNUM 5000	45.0	40.5
MOTORUM 2000	22.0	19.8
VECTRUM 3000 α	33.0	29.7
VECTRUM 5000	50.0	45.0
FLEXILASER	11.0	10.0

OVERALL LENGTH (OAL) OF PUNCH HOLDER ASSEMBLIES

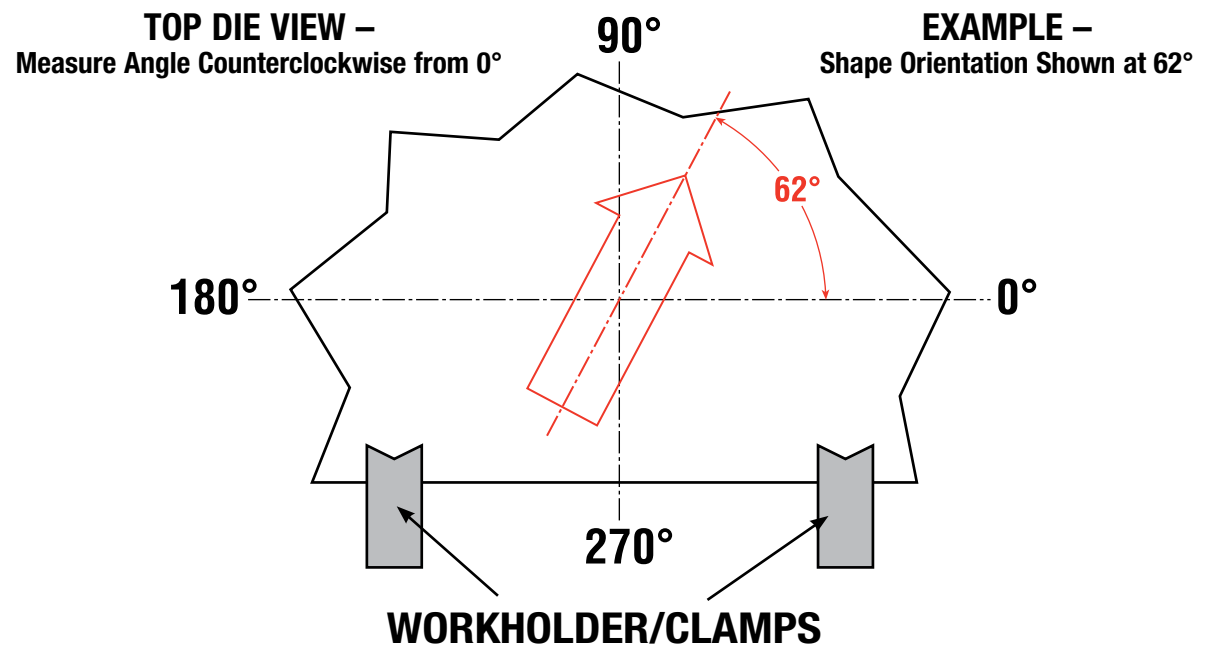
MARATHON® PUNCH HOLDER*	STATION	CENTRUM 1000 2000	CENTRUM 3000 W - 3050 W - 4560	MAGNUM 5000	MOTORUM	VECTRUM
	B	6.031(153.2)	6.906(175.4)	7.019 (178.3)	7.019 (178.3)	7.019 (178.3)
	C	6.125(155.6)	7.000(177.8)	7.124(180.94)	7.124(180.94)	7.124(180.94)
	D	6.125(155.6)	7.000(177.8)	7.124(180.94)	7.124(180.94)	7.124(180.94)
	E-G	6.125(155.6)	7.000(177.8)	7.115(180.72)	7.115(180.72)	7.115(180.72)
	H-L		7.000(177.8)	7.115(180.72)	7.115(180.72)	7.115(180.72)
114 STYLE PUNCH HOLDER	STATION	CENTRUM 1000 2000	CENTRUM 3000 W - 3050 W - 4560	MAGNUM 5000	MOTORUM	VECTRUM
	A	5.937(150.8)	6.812(173.0)	6.812(173.0)	6.812(173.0)	6.812(173.0)
	B	5.984(152.0)	6.843(173.8)	6.843(173.8)	6.843(173.8)	6.843(173.8)
	C	6.047(153.6)	6.906(175.4)	6.906(175.4)	6.906(175.4)	6.906(175.4)
	D	6.077(154.4)	6.937(176.2)	6.937(176.2)	6.937(176.2)	6.937(176.2)
	E-G	6.077(154.4)	6.937(176.2)	6.937(176.2)	6.937(176.2)	6.937(176.2)
112 STYLE PUNCH HOLDER	STATION	CENTRUM 1000 2000	CENTRUM 3000 W - 3050 W - 4560	MAGNUM 5000	MOTORUM	VECTRUM
	A	5.984(152.0)	6.812(173.0)	6.812(173.0)	6.812(173.0)	6.812(173.0)
	B	5.984(152.0)	6.843(173.8)	6.843(173.8)	6.843(173.8)	6.843(173.8)
	C	6.047(153.6)	6.906(175.4)	6.906(175.4)	6.906(175.4)	6.906(175.4)
	D	6.047(153.6)	6.906(175.4)	6.906(175.4)	6.906(175.4)	6.906(175.4)
	E-G	6.047(153.6)	6.906(175.4)	6.906(175.4)	6.906(175.4)	6.906(175.4)



[Dimensions in Inches (mm)]

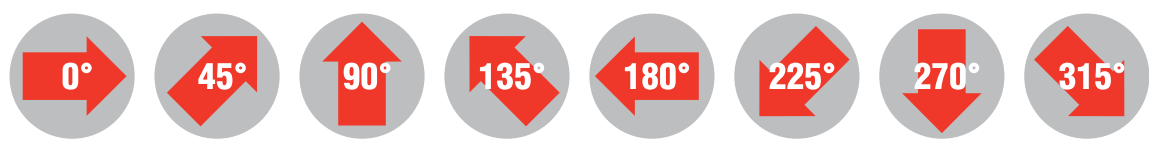
CUSTOM ANGLE SETTINGS

USING CARTESIAN COORDINATE SYSTEM



When ordering, please sketch the shape and angle of the punched hole(s).

ANGLE SETTINGS FOR MARATHON PLUS™ TOOLS



MARATHON PLUS™ Punch Holders
Have Eight Standard Settings...

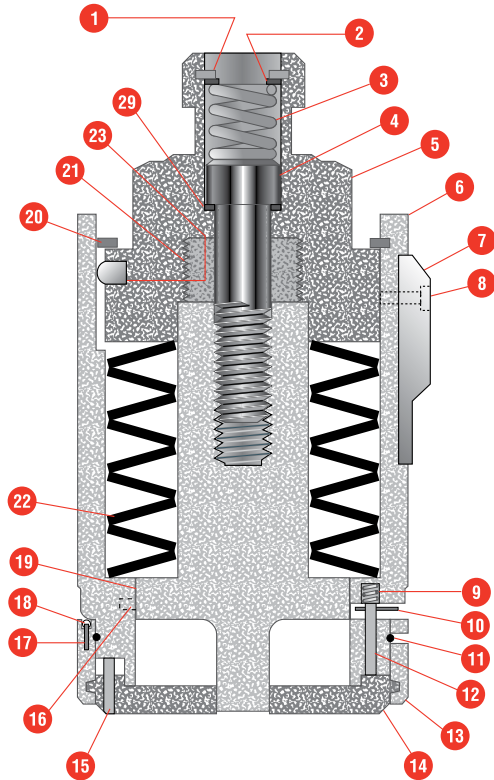
- Turn spring loaded lock ring
- Align stripper to desired angle
- Press down on stripper to engage spring loaded lock ring
- Special angles can also be specified



[Dimensions in Inches (mm)]

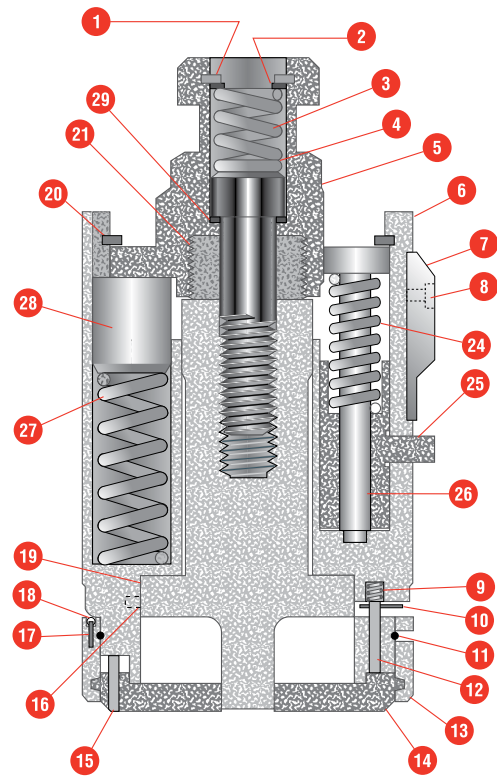


STANDARD



- | | |
|---|-------------------------|
| 1. Ejector Retaining Ring | 15. Zero Pin (pre 6/93) |
| 2. Ejector Washer | 16. Stop Pin |
| 3. Ejector Spring | (round punches only) |
| 4. Draw Bolt | 17. Stop Pins |
| 5. Tang | 18. Release Springs |
| 6. Punch Holder Body | 19. Punch |
| 7. Punch Holder Key | 20. Tang Retaining Ring |
| 8. Punch Holder Key Screw (metric as of 7/93) | 21. Platen |
| 9. Lock Spring | 22. Disc Springs |
| 10. Lock Pin | 23. Tang Key |
| 11. Lock Pin Retainer | 29. Draw Bolt Washer |
| 12. Release Pin | |
| 13. Locking Ring | |
| 14. Stripper | |

AUTO INDEX

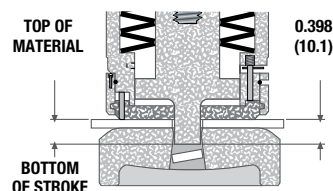


- | | |
|---|-------------------------|
| 1. Ejector Retaining Ring | 15. Zero Pin (pre 6/93) |
| 2. Ejector Washer | 16. Stop Pin |
| 3. Ejector Spring | (round punches only) |
| 4. Draw Bolt | 17. Stop Pins |
| 5. Tang | 18. Release Springs |
| 6. Punch Holder Body | 19. Punch |
| 7. Punch Holder Key | 20. Tang Retaining Ring |
| 8. Punch Holder Key Screw (metric as of 7/93) | 21. Platen |
| 9. Lock Spring | 24. Lifter Springs |
| 10. Lock Pin | 25. Lifter |
| 11. Lock Pin Retainer | 26. Lifter Rod |
| 12. Release Pin | 27. Coil Springs |
| 13. Locking Ring | 28. Spring Posts |
| 14. Stripper | 29. Draw Bolt Washer |

STRIPPING FORCE IN POUNDS(KILOGRAMS) INTO 0.250(6.4) MATERIAL

STATION	A	B	C	D	E/F	G	H	J	K
Standard	1033(468.6)	1033(468.6)	2161(980.2)	2161(980.2)	2643(1198.9)	1873(849.6)	1873(849.6)	3504(1589.4)	5577(2529.7)
Auto Index		742(337.3)		742(337.3)					
Heavy Duty		950(431.8)		950(431.8)		3561(1615.3)	3561(1615.3)		

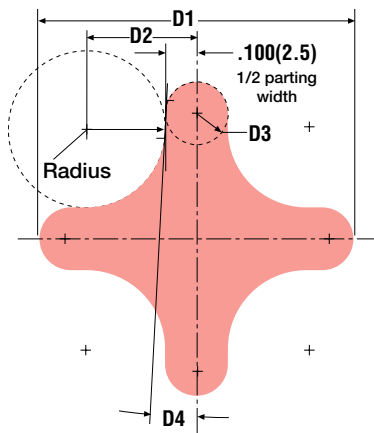
MAXIMUM TRAVEL from top of material to bottom of stroke is 0.398(10.1)



[Dimensions in Inches (mm)]

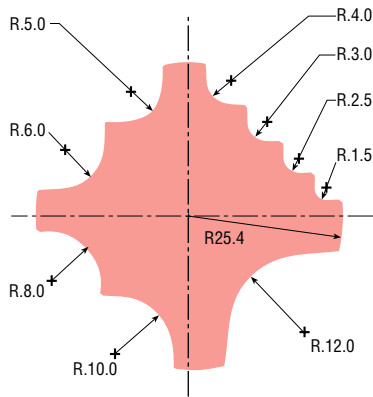
MATE SPECIAL SHAPES

4-WAY CORNER ROUNDING



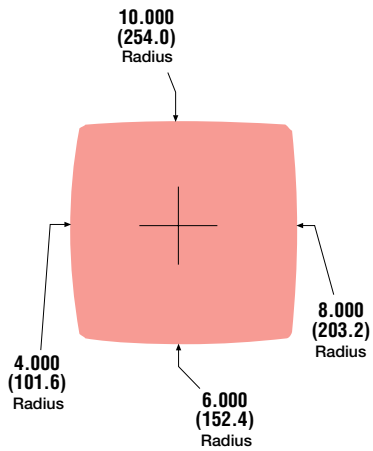
The 4-way corner rounding tool can round all four corners of a piece part without rotating the tooling - use with standard parting tools for piece part separation.

9-WAY CORNER ROUNDING



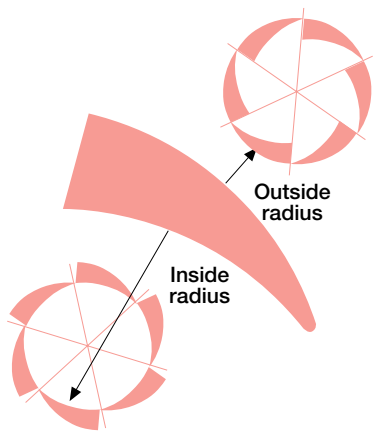
A single 9-way corner rounding tool provides nine popular radii in one tool. Auto indexing selects and rotates the desired radius to round off all corners of a piece part.

QUAD RADIUS



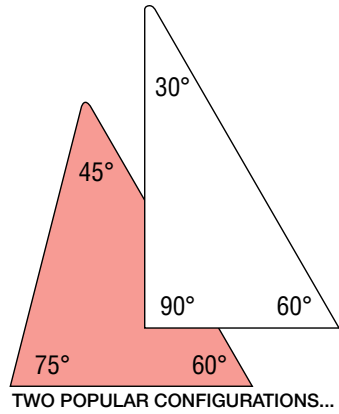
The quad radius tool nibbles large holes with smoother edges and fewer hits than using a round nibbling punch. Smooth round holes are not limited to station range.

INSIDE/OUTSIDE RADIUS



This tool's large radii results in blanks with smoother edges produced with fewer hits than with an ordinary radius punch. This tool can be programmed to punch holes with slugs or parts retained in the sheet, yet can be separated easily off the press.

3-WAY CORNER NOTCHING



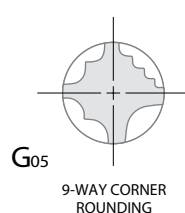
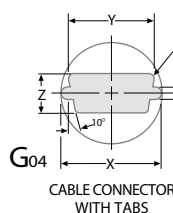
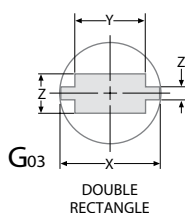
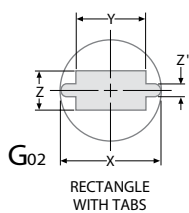
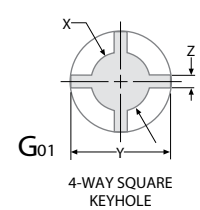
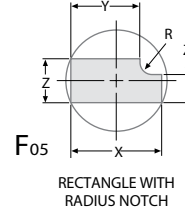
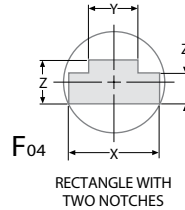
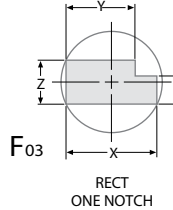
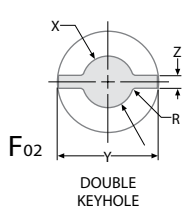
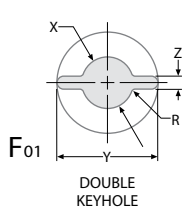
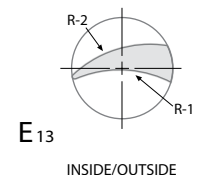
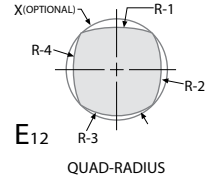
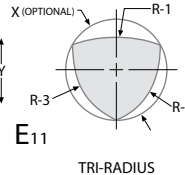
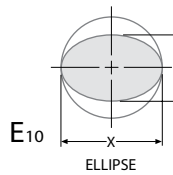
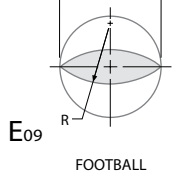
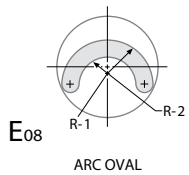
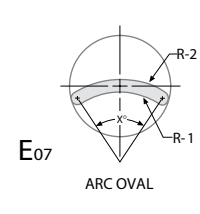
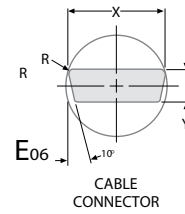
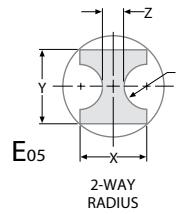
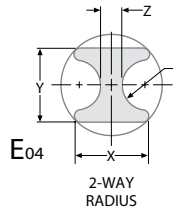
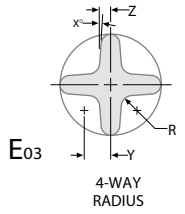
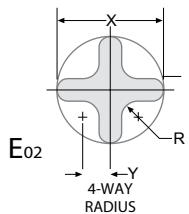
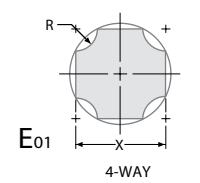
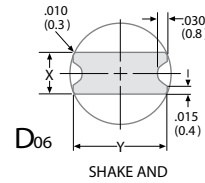
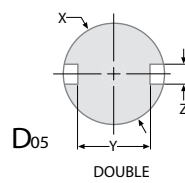
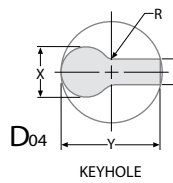
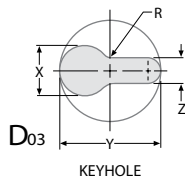
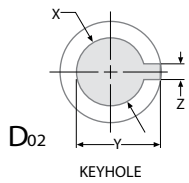
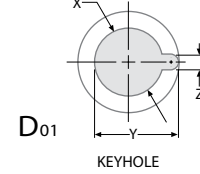
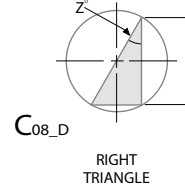
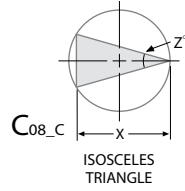
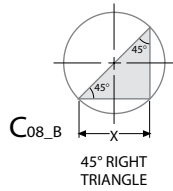
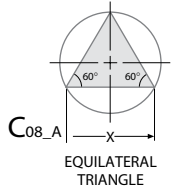
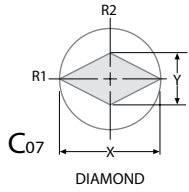
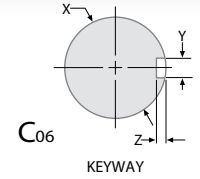
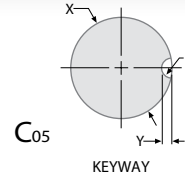
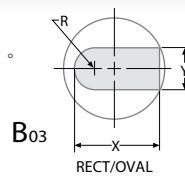
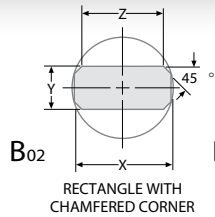
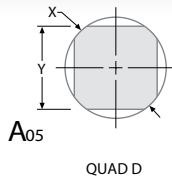
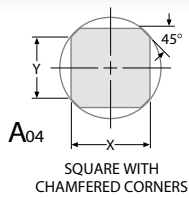
The 3-way notching tool can include angles from 150° to 15° - shown above are two popular arrangements. One tool can provide three corner options.

SPECIAL SHAPE SOLUTIONS TO OTHER PUNCHING PROBLEMS...

In addition to standard tooling, a few selected multi-purpose punches can fill out a very versatile tooling complement. Some very simple tools, along with auto index press capacity, can perform complex punching operations without resorting to other means to accomplish these tasks.

[Dimensions in Inches (mm)]

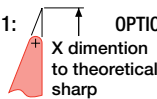




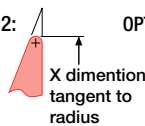
When ordering a special shape, please provide all dimensions noted above for the corresponding shape. Special shape drawings are also available at www.mate.com

*C2, C3, C4 ACUTE ANGLE OPTIONS

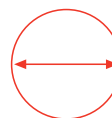
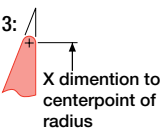
OPTION 1:



OPTION 2:



OPTION 3:



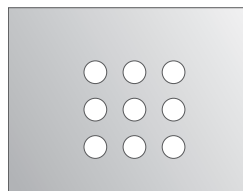
MAXIMUM STATION RANGE

B 1.000(25.4)	G 3.500(88.9)
C 1.500(38.1)	H 4.125(104.8)
D 2.000(50.8)	J 4.750(120.7)
E 2.500(63.5)	K 5.500(139.7)
F 3.000(76.2)*	L 6.000(152.4)

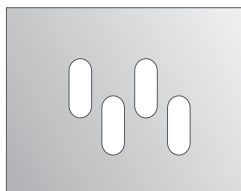
*F 3.125(79.4)-112 only

[Dimensions in Inches (mm)]

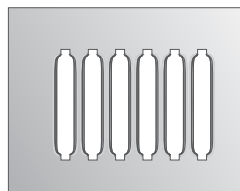
SPECIAL ASSEMBLIES



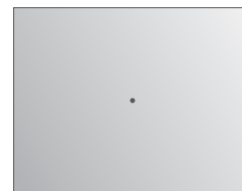
CLUSTER - ROUND



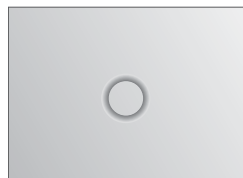
CLUSTER - SHAPE



CARD GUIDE



CENTERPOINT



COUNTERSINK - ROUND



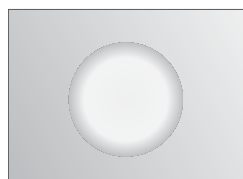
COUNTERSINK - SHAPE



EMBOSS - BEADING



EMBOSS - EDGEFORM



EMBOSS - FORMED



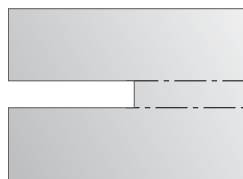
EMBOSS - COLD FORGED



EXTRUSION - TAPPING



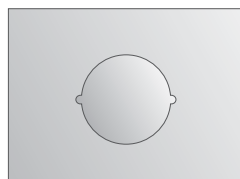
EXTRUSION - FLANGED HOLE



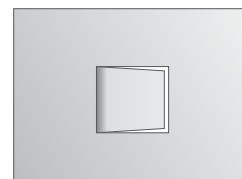
GUIDED SHEARING



HINGE TOOL



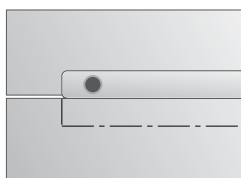
KNOCKOUT



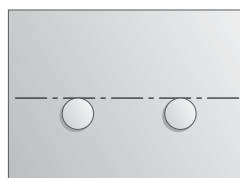
LANCE AND FORM



LOUVER



SCISSOR TOOL™



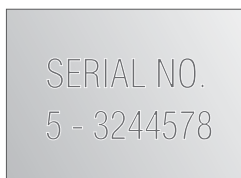
SHEAR BUTTON



ROLLERBALL™



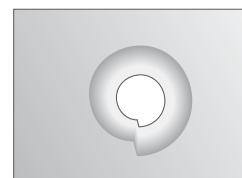
SHEETMARKER™



STAMPING - ALPHA/NUMERIC



STAMPING - V-LINE



THREAD FORM

**Special Assemblies order form and fill-in drawings
are available at: www.mate.com**

[Dimensions in Inches (mm)]

General

Radius Corner
 Non-Standard Straight Before Radius (SBR) Dimension
 Extra Back Taper (1 degree per side)
 Special Angle Settings
 Shock Steel
 Optional Shear (Limited Options)
 High Speed Steel Punch - 114 only

Non-Standard Slug Ejector Request (Limited Options)
 Stabilizer

Small Diameter Round Tools

Diameter 0.031 (0.79) to 0.061 (1.55)
 Diameter 0.062 (1.56) to 0.092 (2.34)

Narrow Width Shaped Tools

Widths under 0.125 (3.18)

Maxima™ and Nitride Coating (Available only on Marathon® Punches and High Speed Steel 114 Punches)

B -0.031(0.80) to 1.000 (25.40)
 C -1.000(25.40) to 1.500 (38.10)
 D -1.500(38.10) to 2.000 (50.80)
 E -2.000(50.80) to 2.500 (63.50)
 F -2.500(63.50) to 3.000 (76.20)
 G -3.000(76.20) to 3.500 (88.90)
 H -3.500(88.90) to 4.125 (104.80)
 J -4.125(104.80) to 4.750 (120.70)
 K -4.750(120.70) to 5.500 (139.70)
 L -5.500(139.70) to 6.000 (152.40)

For more information on Maxima™ coating and Nitride treatment, ask for LIT00368.



MATE PRECISION TOOLING GLOBAL COVERAGE

WORLDWIDE HEADQUARTERS:

1295 Lund Boulevard, Anoka, Minnesota 55303 USA
Tel +1.763.421.0230 mate.com

orders@mate.com