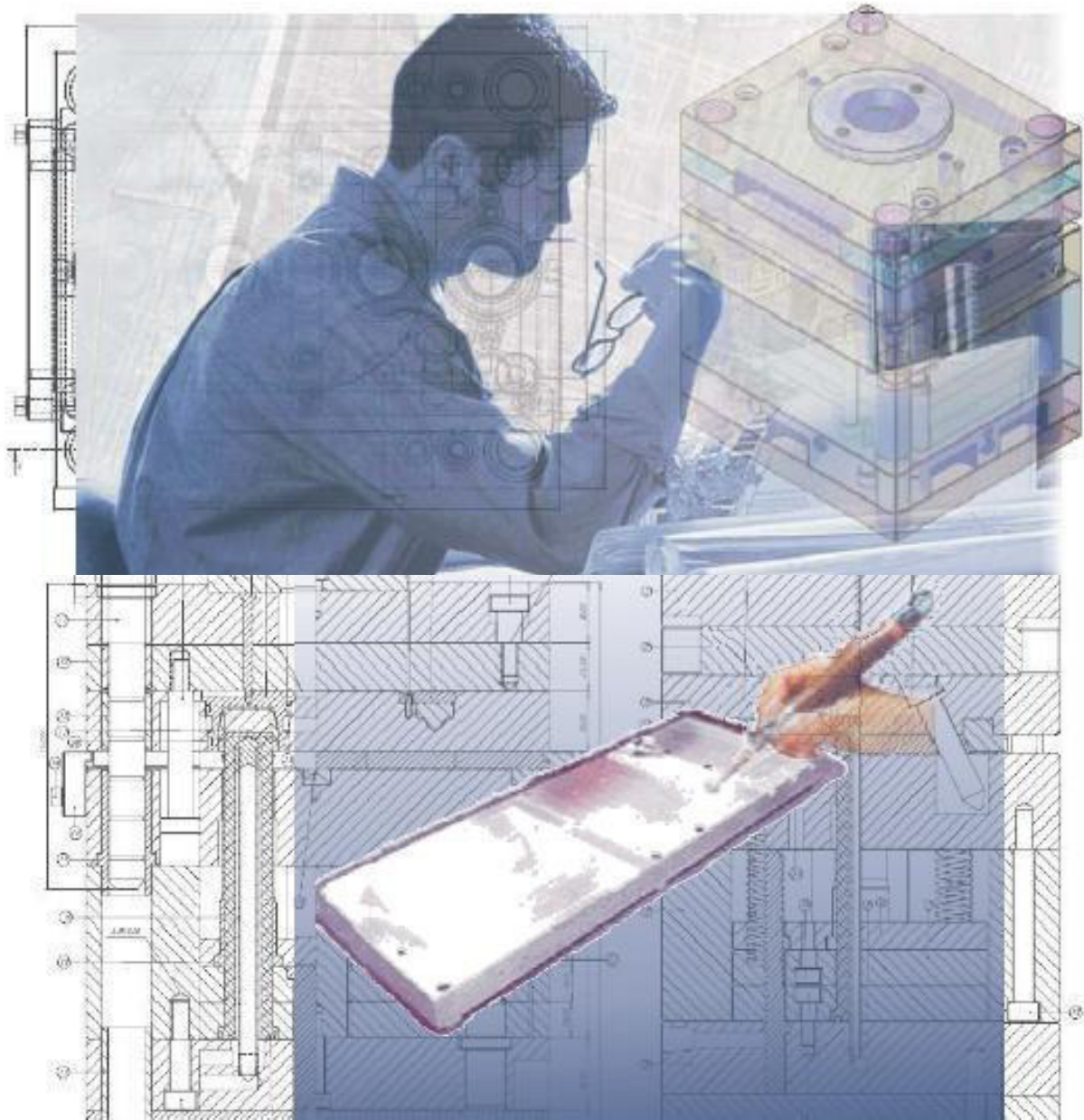


# SEMYT LTDA.

Servicios especializados para moldes troqueles Ltda.



**Libere a su empresa de los cuellos de botella más complejos. Reciba excelente calidad y cumplimiento.**

Dirección: Calle 70F 106ª 29 Teléfono: 4401008-2289144 Celular 315-6108429  
<https://semytltda.wixsite.com/semyt>

# SEMYT LTDA

Servicios Especializados para moldes y troqueles Ltda.

Bogotá D. C.

Señores:

L. C.

REF: Carta de presentación

Respetados señores:

SERVICIOS ESPECIALIZADOS PARA MOLDES Y TROQUELES LTDA. **SEMYT LTDA.** Es una empresa que se dedica desde hace más de quince años a la distribución de elementos internos y a la prestación de servicios relacionados con la elaboración de moldes de inyección y troqueles para la industria metalmecánica.

Distribuimos y Comercializamos entre otros:

- ❖ Pines expulsores
- ❖ Piedras abrasivas para pulir
- ❖ Canastillas
- ❖ Carros y rieles para patines
- ❖ Puntas montadas
- ❖ Ruedas abrasivas para rectificar
- ❖ Pines rectos centradores (Dowell pins)
- ❖ Tornillos de bola con resorte (frenos para patín)
- ❖ Tornillos de hombro rectificado
- ❖ Punzones
- ❖ Resortes de sección plana para moldes y troqueles
- ❖ Cachuchas abrasivas
- ❖ Pomadas y limas de diamante
- ❖ Pomadas abrasivas
- ❖ Felpas
- ❖ Ruedas de lija para pulir

Calle 70F No. 106A – 29 TEL 4401008 TEL/FAX 2289144 E-mail: [semyt1@yahoo.com](mailto:semyt1@yahoo.com)

# SEMYT LTDA

Servicios Especializados para moldes y troqueles Ltda.

## SERVICIO DE CORTE POR EROSION DE HILO

Para piezas metálicas en diferentes aplicaciones especialmente para trabajos relacionados con **MOLDES Y TROQUELES.**

Especificaciones de trabajo:

- Altura máxima de trabajo: 220 mm
- Angulo máximo de inclinación +/- 15 grados por cada 150 mm
- Resolución máxima eje X, Y, U, V = 0.5 micras
- Eje Z = 0.0020 mm.

La tolerancia final en la entrega del trabajo depende de variables como: si es un macho o una matriz, la altura de la pieza, si hay o no descargues entre otras; en términos generales se puede considerar +/-0.01 mm.

Prestamos la asistencia necesaria para que el trabajo final cumpla con las expectativas de nuestros clientes.



**Servicio de erosión por hilo desarrollado para garantizar geometría, rugosidad, y dimensiones en el tiempo Justo; para que su empresa tenga una solución económica y rápida.**

# SEMYT LTDA

Servicios Especializados para moldes y troqueles Ltda.

En **SEMYT LTDA**. Estamos comprometidos en suministrar a nuestros clientes productos y servicios de elevada calidad, buscando siempre que ellos se encuentren dentro de las especificaciones requeridas por el cliente las cuales son aclaradas previamente mediante la cotización o los documentos alternos que sean necesarios.

Nuestro propósito es convertirnos en un aliado estratégico para nuestros clientes.

Cordial saludo.

JAVIER IBAÑEZ V.

Gerente.

# SEMYT LTDA

Servicios Especializados para moldes y troqueles Ltda.



Los elementos normalizados que su empresa necesita para hacer moldes y troqueles más rápido. Permítanos ayudarle a desarrollar herramientas más productivas y más rentables.

Calle 70F No. 106A – 29 TEL 4401008 TEL/FAX 2289144 E-mail: [semyt1@yahoo.com](mailto:semyt1@yahoo.com)



# Congress

TOOLS, INC.

## SEMYT LTDA.

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 4401008 Fax 228144 Bogotá

### AA SUPER WHITE MOUNTED POINTS

Hard Grade Aluminum Oxide

Grit Range: 60-120

*(Varies according to size of point)*

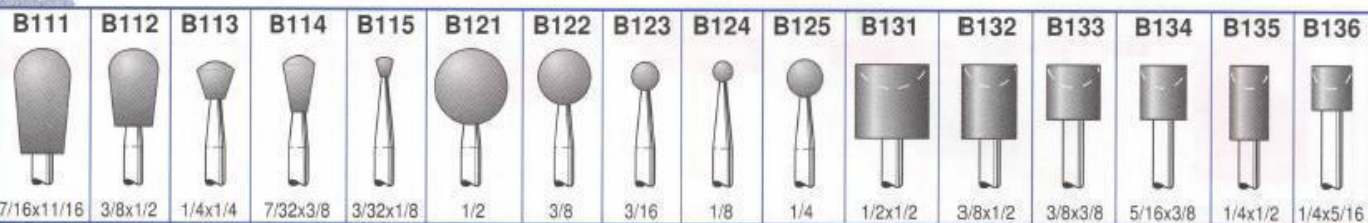
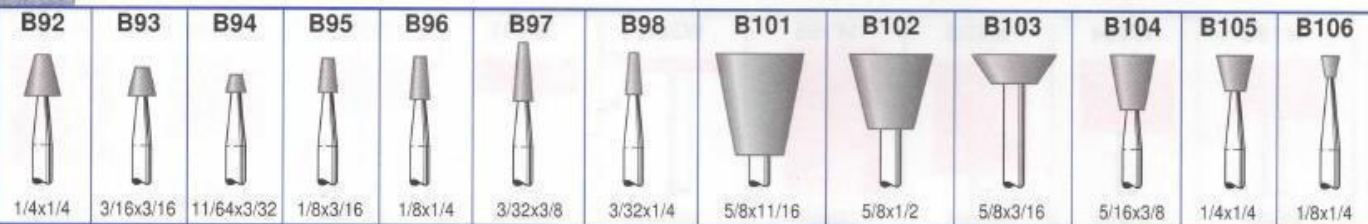
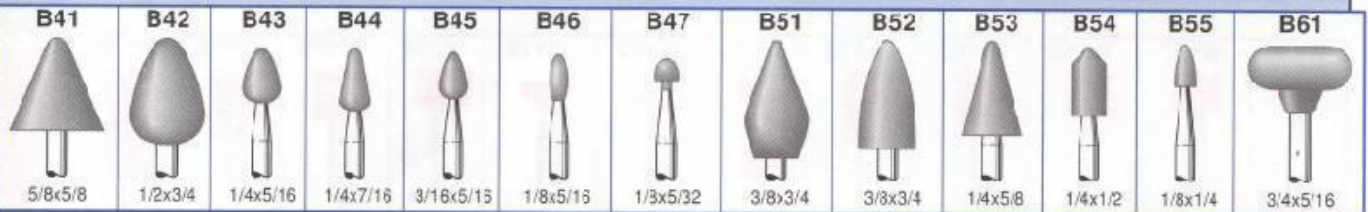
Congress AA super white mounted points are made of premium aluminum oxide grain in a hard bond. Each point is securely bonded to the shank and then individually tested to assure a true running product.

White mounted points are harder than the blue points and are recommended for hardened, tempered, and high alloy steels. White points break down slowly and maintain their shape.

MOUNTED POINTS AND WHEELS

### "B" SERIES — 1/8" SHANKS














STANDARD PACKAGE: 25 Pcs.


















**"W" SERIES — 1/8" SHANKS**










STANDARD PACKAGE: 25 PCS.









<b>W140</b>  5/64x1/4	<b>W141</b>  3/32x5/32	<b>W142</b>  3/32x1/4	<b>W143</b>  1/8x1/8	<b>W144</b>  1/8x1/4	<b>W145</b>  1/8x3/8	<b>W146</b>  1/8x1/2	<b>W147</b>  5/32x1/32	<b>W148</b>  5/32x1/16	<b>W149</b>  5/32x1/4	<b>W150</b>  3/16x1/16	<b>W151</b>  3/16x1/8	<b>W152</b>  3/16x1/4
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<b>W153</b>  3/16x3/8	<b>W154</b>  3/16x1/2	<b>W155</b>  13/64x1/4	<b>W156</b>  1/4x1/32	<b>W157</b>  1/4x1/16	<b>W158</b>  1/4x1/8	<b>W159</b>  1/4x3/16	<b>W160</b>  1/4x1/4	<b>W161</b>  1/4x5/16	<b>W162</b>  1/4x3/8	<b>W163</b>  1/4x1/2	<b>W164</b>  1/4x3/4	<b>W165</b>  5/16x1/16
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<b>W166</b>  5/16x1/8	<b>W167</b>  5/16x1/4	<b>W168</b>  5/16x5/16	<b>W169</b>  5/16x3/8	<b>W170</b>  5/16x1/2	<b>W171</b>  5/16x3/4	<b>W172</b>  3/8x1/16	<b>W173</b>  3/8x1/8	<b>W174</b>  3/8x1/4	<b>W175</b>  3/8x3/8	<b>W176</b>  3/8x1/2	<b>W177</b>  3/8x3/4	<b>W178</b>  3/8x1
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<b>W180</b>  1/2x1/32 1.15	<b>W181</b>  1/2x1/16 1.15	<b>W182</b>  1/2x1/8 .75	<b>W183</b>  1/2x1/4 .75	<b>W184</b>  1/2x3/8 .75	<b>W185</b>  1/2x1/2 .75	<b>W186</b>  1/2x3/4 .90	<b>W187</b>  1/2x1 1.00	<b>W190</b>  5/8x1/16 1.15	<b>W191</b>  5/8x1/8 .75	<b>W192</b>  5/8x1/4 .75
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<b>W193</b>  5/8x3/8 .80	<b>W194</b>  5/8x1/2 .95	<b>W195</b>  5/8x3/4 .95	<b>W196</b>  5/8x1 .95	<b>W200</b>  3/4x1/8 1.25	<b>W201</b>  3/4x1/4 .80	<b>W202</b>  3/4x3/8 .80	<b>W203</b>  3/4x1/2 .95	<b>W204</b>  3/4x3/4 .95
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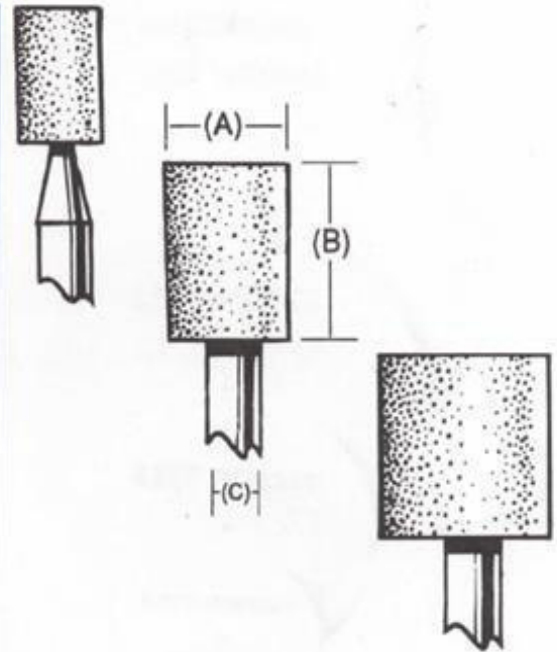
<b>W205</b>  3/4 x 1 (1/4" Shank) 1.05	<b>W210</b>  7/8x1/16 1.65	<b>W211</b>  7/8x1/8 1.25	<b>W212</b>  7/8x1/4 1.25	<b>W213</b>  7/8x3/8 .90	<b>W214</b>  15/16x1/4 1.65	<b>W215</b>  1x1/8 1.50	<b>W216</b>  1x1/4 1.65
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**MOUNTED POINTS AND WHEELS**

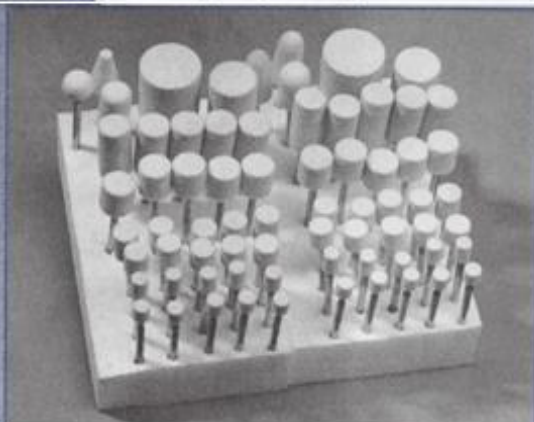
Congress felt products are made in the U.S.A. from the highest quality wool felt material available.

### FELT BOBS

ORDER NUMBER	DIAMETER (A)	FACE (B)	SHANK (C)			
MP1*	1/4"	1/4"	1/8"			
MP2*	1/4"	3/8"	1/8"			
MP3*	3/8"	3/8"	1/8"			
MP4*	3/8"	1/2"	1/8"			
MP5*	1/2"	1/2"	1/8"			
MP6*	1/2"	3/4"	1/8"			
MP7*	1/2"	1"	1/8"			
MP8*	3/4"	3/4"	1/8"			
MP9*	3/4"	1"	1/8"			
MP10*	3/4"	1 1/2"	1/8"			
MP104*	3/4"	1 1/2"	1/4"			
MP11*	1"	1"	1/8"			
MP114*	1"	1"	1/4"			
MP13*	1"	1 1/2"	1/4"			
MP14*	1"	2"	1/4"			
MP15*	1 1/4"	1"	1/4"			
MP16*	1 1/4"	1 1/4"	1/4"			
MP17*	1 1/2"	1"	1/4"			
MP18*	1 1/2"	1 1/2"	1/4"			



\*Please specify density: S - Soft • M - Medium • H - Hard • RH - Rock Hard



#### FELT BOB ASSORTMENT

Assortment contains 70 felt bobs mounted on 1/8" shanks in medium and hard density.

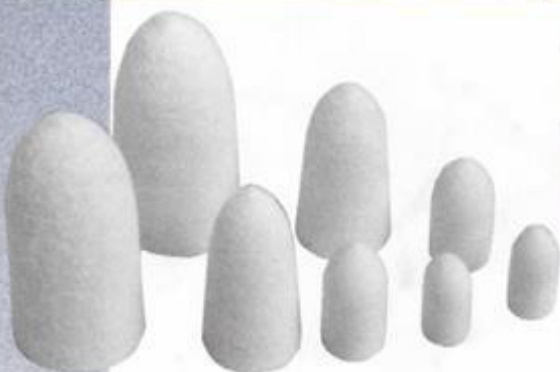
### UNMOUNTED FELT BOBS

ORDER NUMBER	SIZE (DIAMETER x FACE)	PRICE		
		EACH	DOZEN	GROSS
MP1U*	1/4" x 1/4"			
MP2U*	1/4" x 3/8"			
MP3U*	3/8" x 3/8"			
MP4U*	3/8" x 1/2"			
MP5U*	1/2" x 1/2"			
MP6U*	1/2" x 3/4"			
MP7U*	1/2" x 1"			
MP8U*	3/4" x 3/4"			
MP9U*	3/4" x 1"			
MP10U*	3/4" x 1 1/2"			
MP11U*	1" x 1"			

### UNMOUNTED FELT CONES

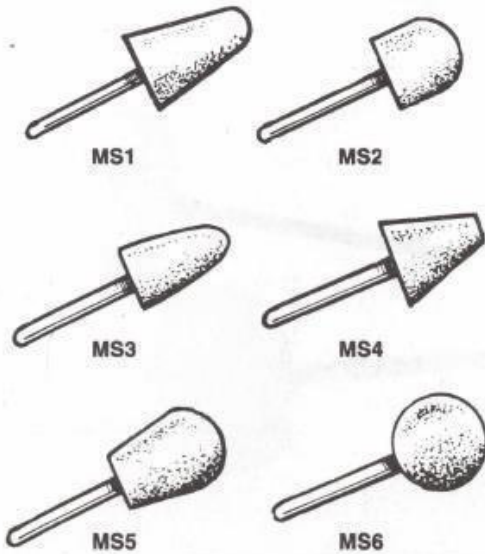
ORDER NUMBER	SIZE (DIAMETER x FACE)	PRICE		
		EACH	DOZEN	GROSS
FC14*	1/4" x 1/2"			
FC38*	3/8" x 3/4"			
FC12*	1/2" x 1"			
FC34*	3/4" x 1 1/2"			
FC1*	1" x 2"			

\*Please specify density: S - Soft • M - Medium • H - Hard





Congress felt products are made in the U.S.A. from the highest quality wool felt material available.



**FELT BOBS**

SHAPE	ORDER NUMBER	SIZE	SHANK	PRICE		
				EACH	DOZEN	GROSS
MS1	MS138*	3/8" x 1/2"	1/8"			
	MS112*	1/2" x 1"	1/8"			
MS2	MS214*	1/4" x 1/4"	1/8"			
	MS212*	1/2" x 1/2"	1/8"			
MS3	MS338*	3/8" x 1/2"	1/8"			
	MS312*	1/2" x 1"	1/8"			
MS4	MS4*	1/2" x 3/4"	1/8"			
MS5	MS538*	3/8" x 1/2"	1/8"			
	MS512*	1/2" x 3/4"	1/8"			
MS6	MS612*	1/2" dia.	1/8"			
	MS634*	3/4" dia.	1/8 or 1/4"			
	MS61*	1" dia.	1/4"			

\*Please specify density: S - Soft • M - Medium • H - Hard • RH - Rock Hard

**FELT STRIPS AND SHEETS**

ORDER NUMBER	SIZE	PRICE		
		SOFT	MEDIUM	HARD
FS18*	1/8" x 1" x 3"			
FSH18*	1/8" x 12" x 12"			
FSH316*	3/16" x 12" x 12"			
FSH14*	1/4" x 12" x 12"			
FSH38*	3/8" x 12" x 12"			
FSH12*	1/2" x 12" x 12"			

**UNMOUNTED FELT STICKS**

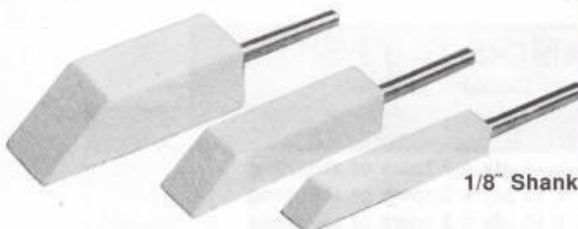
ORDER NUMBER	SIZE	PRICE	
		EACH	DOZEN
FS14*	1/4" Sq. x 4"		
FS12*	1/2" sq. x 4"		
FR14*	1/4" rd. x 4"		
FR12*	1/2" rd. x 4"		



\*Please specify density: S - Soft • M - Medium • H - Hard

**MOUNTED FELT STICKS**

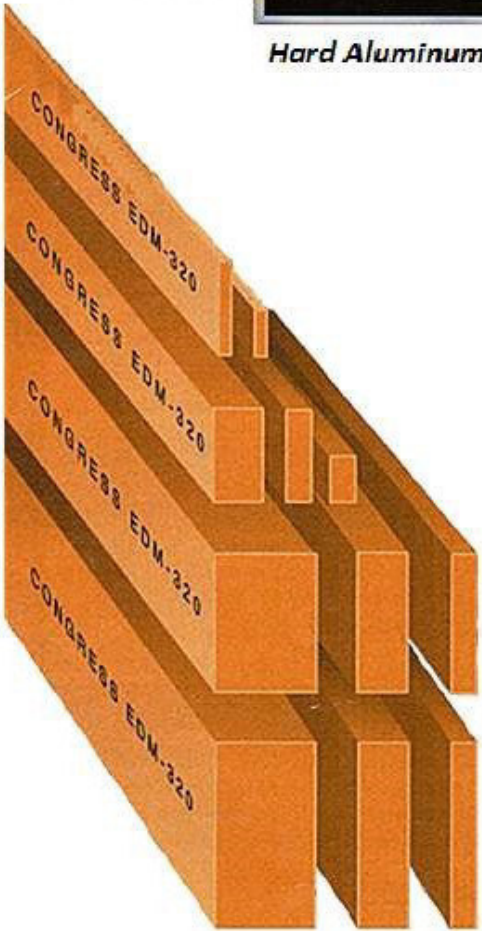
ORDER NUMBER	SIZE	PRICE		
		EACH	DOZEN	GROSS
FL14*	1/4" sq. x 1 1/2"			
FL38*	3/8" sq. x 1 1/2"			
FL12*	1/2" sq. x 1 1/2"			



\*Please specify density: M - Medium • H - Hard

**EDM.**

*Hard Aluminum Oxide*



Rectangular		Available Grits ..... Price Each					
SIZE	120	180	220	320	400	600	
*1/4 x 1/16 x 4 *1/4 x 1/8 x 6							
*1/2 x 1/16 x 4 *1/2 x 1/8 x 6 *1/2 x 1/4 x 6							
3/4 x 1/8 x 6 3/4 x 1/4 x 6 3/4 x 1/2 x 6							
1 x 1/8 x 6 1 x 1/4 x 6 1 x 1/2 x 6							

Square		Available Grits ..... Price Each					
SIZE	120	180	220	320	400	600	
*1/8 Sq. x 4 *5/32 Sq. x 4 *1/4 Sq. x 6 3/8 Sq. x 6 1/2 Sq. x 6 1 Sq. x 6							

Triangular		Available Grits ..... Price Each					
SIZE	120	180	220	320	400	600	
1/4 Tri. x 6 3/8 Tri. x 6 1/2 Tri. x 6 1 Tri. x 6							

Round		Available Grits ..... Price Each					
SIZE	120	180	220	320	400	600	
5/32 Rd. x 4 1/4 Rd. x 6 3/8 Rd. x 6 1/2 Rd. x 6						—	

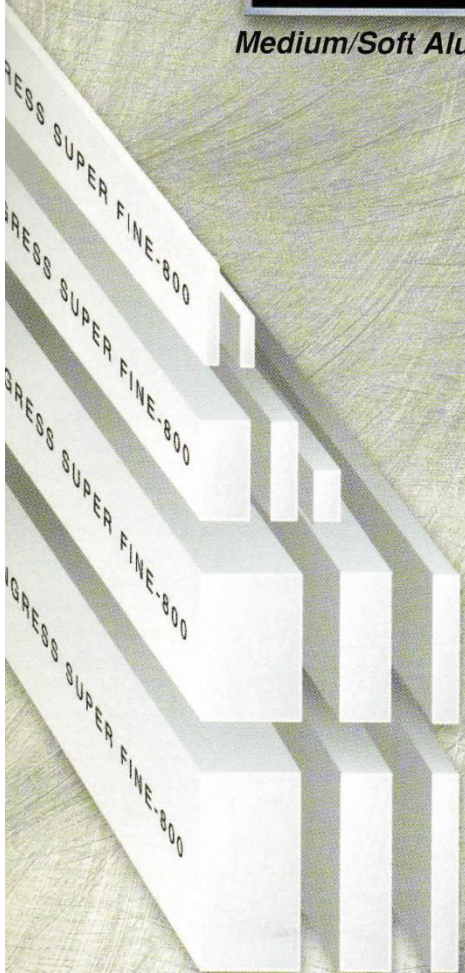
Half Round		Available Grits ..... Price Each					
SIZE	120	180	220	320	400	600	
3/8 HR. x 6 1/2 HR. x 6						—	

## SUPERFINE®

Medium/Soft Aluminum Oxide

**SEMYT LTDA.**

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 4401008 Fax 228144 Bogotá



### Rectangular

Available Grits

SIZE	400	600	800	900	1000	1200
1/4 x 1/16 x 4 1/4 x 1/8 x 6						
1/2 x 1/16 x 4 1/2 x 1/8 x 6 1/2 x 1/4 x 6						
3/4 x 1/8 x 6 3/4 x 1/4 x 6 3/4 x 1/2 x 6						
1 x 1/8 x 6 1 x 1/4 x 6 1 x 1/2 x 6						

### Square

Available Grits

SIZE	400	600	800	900	1000	1200
1/8 Sq. x 4 5/32 Sq. x 4 1/4 Sq. x 6 3/8 Sq. x 6 1/2 Sq. x 6 1 Sq. x 6						

### Triangular

Available Grits

SIZE	400	600	800	900	1000	1200
1/4 Tri. x 6 3/8 Tri. x 6 1/2 Tri. x 6						

### Round

Available Grits

SIZE	400	600	800	900	1000	1200
5/32 Rd. x 4 1/4 Rd. x 6 3/8 Rd. x 6 1/2 Rd. x 6						

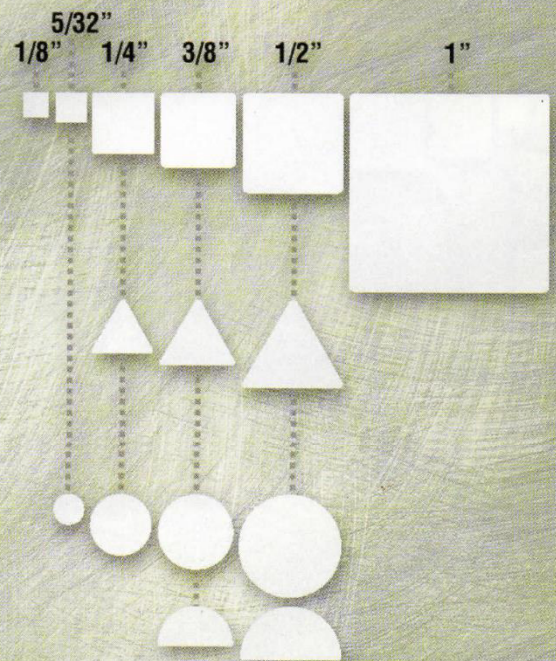
### Half Round

Available Grits

SIZE	400	600	800	900	1000	1200
3/8 HR. x 6 1/2 HR. x 6						

Other sizes available upon request.

Std. package 12 pcs. per box • Each stone individually poly bagged





Ceramic Super Stones está especialmente diseñado para lapidar esquinas cerradas, bolsillos, costillas y ranuras. Una de nuestras series más populares de piedras de acabado; ideal para el acabado de superficies EDM. Ceramic Super Stones soportará una presión considerable por su delgadez relativa. La arena de las fibras cerámicas está expuesta en la sección transversal de las piedras.

Estas piedras se pueden moldear fácilmente hasta un punto fino o borde en una muela abrasiva, un aliño o papel abrasivo, y aún así exhibir una fuerza tremenda. Se pueden usar a mano, con perfiladores o con sistemas de acabado ultrasónico. El valor de Ceramic Super Stones se hace evidente cuando se acaban las áreas difíciles de alcanzar donde otras piedras se desmoronan y se rompen. Disponible en ocho granos de color.

Las piedras están disponibles en grano: **120 verde, 180 dorada, 320 Café, 400 Arena, 600 Marron, 800 Azul, 1000 Blanca, 1200 Rojo**. En los tamaños especificados en la parte inferior

1 x 2 x 100	SL102	SO102	SP102	SB102	SW102	SR102
1 x 4 x 100	SL104	SO104	SP104	SB104	SW104	SR104
1 x 6 x 100	SL106	SO106	SP106	SB106	SW106	SR106
1 x 10 x 100	SL110	SO110	SP110	SB110	—	—
1/8" diameter x 50	SLD1A	SOD1A	SPD1A	SBD1A	SWD1A	SRD1A

**SUPER STONE HAND  
HOLDER**

Size	Order #
4mm wide	SSH04
6mm wide	SSH06
10mm wide	SSH10
3 pc. set	SSHA3



### CONGRESS DIAMOND COMPOUND Oil Soluble

Grade Number	Concentration	Color	Grain Size Micron	Grit Size Mesh Eq.	Finish Cut (Surface Roughness) End Use	5 Gram	18 Gram
1 1 1	Light Medium Heavy	Ivory	0-2	14,500	Ultra-Fine Micro Finish For finest select work		
3 3 3	Light Medium Heavy	Yellow	2-4	8,000	Super-Fine Micro Finish For finest select work Mirror Finish		
6 6 6	Light Medium Heavy	Orange	4-8	3,000	Fine-Micro Finish For general purpose high polish results		
9 9 9	Light Medium Heavy	Green	8-12	2,000	Light-Micro Finish For general purpose high polish results		
15 15 15	Light Medium Heavy	Blue	12-22	1,200	Medium-Micro Finish For general purpose high polish results		
30 30 30	Light Medium Heavy	Red	22-36	600	Light Cut For preparatory finishing		
45 45 45	Light Medium Heavy	Brown	36-54	325	Medium Cut For fast stock removal		
60 60 60	Light Medium Heavy	Purple	54-80	230	Medium-Coarse Cut For fast stock removal		
90 90 90	Light Medium Heavy	Black	Mesh	200	Coarse Cut For fast stock removal		



DIAMOND COMPOUND

STONE HOLDERS

### HAND HELD STONE HOLDERS



Order No: H10

#### #H-10 Stone Holder

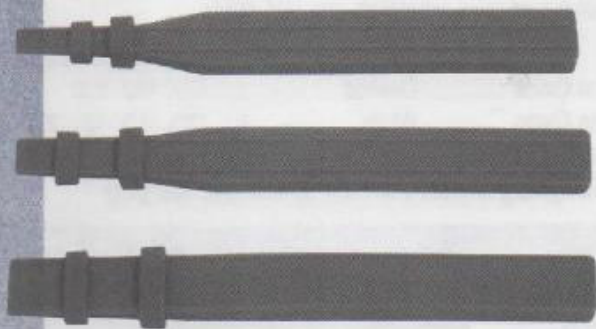
Our most versatile hand stone holder, able to accommodate stones to 1/2" x 1/8". A removable collar design holds stones firmly and allows for quick stone changes. Its composition of light weight wear resistant nylon eliminates accidental mold scratching. Accepts 1/4 x 1/8, 1/2 x 1/8, 5/32 sq., 1/8 sq., 1/4 sq., 1/2 x 1/16, 1/4 rd. stones. 5 1/2" overall length.



Order No: H12

#### #H-12 Stone Holder

Due to popular demand, we now offer the new H-12 double ended stone holder. The H-12 accepts 1/2 x 1/4 stones in one side and 1/4 sq. and 1/4 rd. in the other. A removable collar design allows for quick stone changes and the wear resistant nylon eliminates accidental surface scratching. 5 1/2" overall length.



Order No: UFCH4 - (4mm wide stones)  
 Order No: UFCH6 - (6mm wide stones)  
 Order No: UFCH10 - (10mm wide stones)

#### UFC Stone Holder

Lightweight plastic stone holders designed primarily for use with UltraFine Ceramic and Diamond Ultra Stones (see Page 20). The UFCH6 holder will also hold 1/4 x 1/16 polishing stones and help prevent breakage. 5 3/4" overall length.

# RX KNIGHTRIDE™ SERIES

**SEMYT LTDA.**

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 4401008 Fax 228144 Bogotá

## H-13 HOTWORK EJECTOR PINS

TIGHTEST TOLERANCES IN THE INDUSTRY(.0003")

MATERIAL: H-13 HOTWORK DIE STEEL  
CORE: THROUGH-HARDENED TO 41-45 RC  
SURFACE: ION NITRIDED TO 65-74 RC

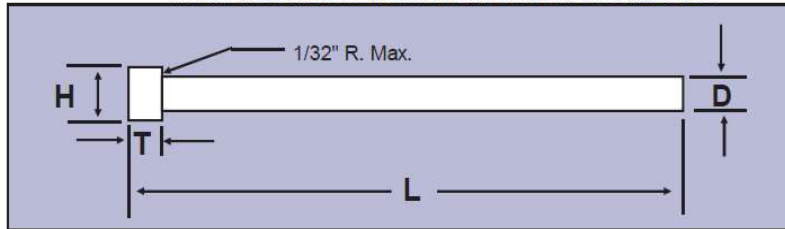
### STRAIGHT STYLE

FRACTIONAL AND .005" OVERSIZED AND LETTER SIZE DIAMETERS

TOLERANCES				
D	H	T	L	
UP TO 1/2" DIA AND UP TO 14" LG.	-0.0005" -0.0008"	+0.000"	+0.000"	+0.375"
OVER 1/2" DIA OR OVER 14" LG.	-0.0003" -0.0008"	-.010"	-.002"	-.000"

HOW TO ORDER: EXAMPLES				
Qty.	Cat No.	(IF .005" O.S.)	Length	
25	RX-13	+0.005	L-10	
50	RX-5		L-10	



D PIN DIA.		H HEAD DIA.	T HEAD THICK.	CATALOG NUMBER	L-4"	L-6"	L-10"	L-14"	L-18"	L-25"	L-36"				
NOMINAL DIA.	DECIMAL EQUIV.				STD DIA.	STD DIA.	STD DIA.	+0.005" DIA.	STD DIA.	+0.005" DIA.	STD DIA.	+0.005" DIA.	STD DIA.	STD DIA.	
1/32	0.0313	1/4	1/8	RX-2	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	
3/64	0.0469			RX-3		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
1/16	0.0625			RX-5				Q	Q	Q	Q	Q	Q	Q	Q
5/64	0.0781			RX-6					Q	Q	Q	Q	Q	Q	Q
3/32	0.0938			RX-7						Q	Q	Q	Q	Q	Q
7/64	0.1094			RX-8							Q	Q	Q	Q	Q
1/8	0.1250			RX-9								Q	Q	Q	Q
9/64	0.1406			RX-10		Q					Q	Q	Q	Q	Q
5/32	0.1563			9/32	5/32	RX-11						Q	Q	Q	Q
11/64	0.1719			11/32	3/16	RX-12					Q	Q	Q	Q	Q
3/16	0.1875	3/8	3/16	RX-13						Q			Q		
13/64	0.2031			RX-14	Q	Q		Q		Q	Q		Q	Q	
7/32	0.2188	13/32	3/16	RX-15						Q	Q		Q		
15/64	0.2344			RX-16	Q	Q		Q		Q	Q		Q	Q	
B	0.2380	7/16	3/16	RX-B	Q	Q		Q	Q	Q	Q		Q	Q	
C	0.2420			RX-C	Q	Q		Q	Q	Q	Q		Q	Q	
D	0.2460			RX-D	Q	Q		Q	Q	Q	Q		Q	Q	
1/4	0.2500			RX-17											Q
F	0.2570			RX-F	Q	Q		Q	Q	Q	Q		Q	Q	
G	0.2610	7/16	1/4	RX-G	Q	Q		Q	Q	Q	Q		Q	Q	
17/64	0.2656			RX-18	Q	Q		Q		Q	Q			Q	
I	0.2720			RX-I	Q	Q		Q	Q	Q	Q		Q	Q	
J	0.2770			RX-J	Q	Q		Q	Q	Q	Q		Q	Q	
9/32	0.2813			RX-19						Q	Q			Q	
L	0.2900			RX-L	Q	Q		Q	Q	Q	Q		Q	Q	
M	0.2950			RX-M	Q	Q		Q	Q	Q	Q		Q	Q	
19/64	0.2969			RX-20	Q	Q		Q		Q	Q		Q	Q	
N	0.3020			RX-N	Q	Q		Q	Q	Q	Q		Q	Q	
5/16	0.3125			RX-21											Q
P	0.3230	RX-P	Q	Q		Q	Q	Q	Q		Q	Q			
21/64	0.3281	9/16	1/4	RX-22	Q	Q		Q	Q	Q	Q		Q	Q	
Q	0.3320			RX-Q	Q	Q		Q	Q	Q	Q		Q	Q	
R	0.3390			RX-R	Q	Q		Q	Q	Q	Q		Q	Q	
11/32	0.3438			RX-23						Q	Q			Q	
23/64	0.3594			RX-24	Q	Q		Q		Q	Q		Q	Q	
U	0.3680			RX-U	Q	Q		Q	Q	Q	Q		Q	Q	
3/8	0.3750			RX-25											Q
V	0.3770	RX-V	Q	Q		Q	Q	Q	Q		Q	Q			
W	0.3860	RX-W	Q	Q		Q	Q	Q	Q		Q	Q			
X	0.3970	RX-X	Q	Q		Q	Q	Q	Q		Q	Q			
Y	0.4040	RX-Y	Q	Q		Q	Q	Q	Q		Q	Q			
13/32	0.4063	RX-27											Q		
7/16	0.4375	RX-29											Q		
15/32	0.4688	RX-31							Q				Q		
1/2	0.5000	RX-33											Q		
9/16	0.5625	13/16	1/4	RX-35	Q			Q	Q		Q		Q		
5/8	0.6250	7/8	1/4	RX-37	Q			Q	Q		Q		Q		
11/16	0.6875	15/16	1/4	RX-39	Q			Q	Q		Q		Q		
3/4	0.7500	1	1/4	RX-41	Q			Q	Q		Q		Q		
7/8	0.8750	1-1/8	1/4	RX-45	Q			Q	Q		Q		Q		
1	1.0000	1-1/4	1/4	RX-47	Q			Q	Q		Q		Q		

Q= Price Per Quotation

# ME TYPE

**SEMYT LTDA.**

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 4401008 Fax 228144 Bogotá

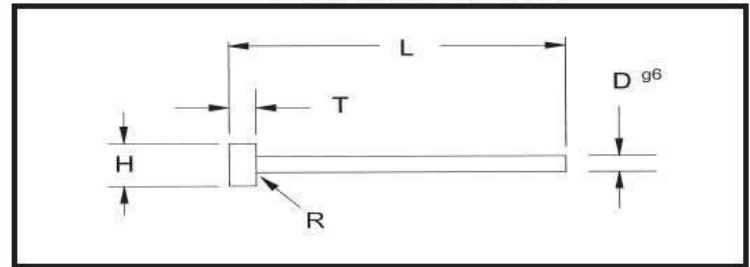
## METRIC *KNIGHTRIDE*™ SERIES H-13 HOTWORK EJECTOR PINS

MATERIAL : H-13 HOTWORK DIE STEEL

CORE: THROUGH-HARDENED TO 41-45 RC

SURFACE: ION NITRIDED TO 65-74 RC

### STRAIGHT STYLE



TOLERANCES (METRIC ISO)				
PIN DIA. (D)g6		R	Head Dia. (H)	+0.0 mm -0.2 mm
SIZE	TOLERANCE			
0 to 3 mm	-0.02 mm -0.08 mm	0.3 mm	Head Thick (T)	+0.00 mm -0.05 mm
3.5 to 6 mm	-0.04 mm -0.12 mm	0.3 mm		
6.5 to 10 mm	-0.05 mm -0.14 mm	0.5 mm	Length (L)	+2.0 mm -0.0 mm
11 to 18 mm	-0.06 mm -0.17 mm	0.8 mm		
20 to 25 mm	-0.07 mm -0.20 mm	0.8 mm		

HOW TO ORDER: EXAMPLE		
Qty.	Cat. No.	Length
24	ME-2.5	L-160

CATALOG NUMBER	D PIN DIA.	H HEAD DIA.	T HEAD THICK.	NET PRICE EACH (US \$)				PKG. QTY
				LENGTHS				
				L-160	L-250	L-315	L-400	
ME-2.0	2.0	4	2			Q	Q	
ME-2.5	2.5	5	2				Q	
ME-3.0	3.0	6	3					
ME-3.5	3.5	7	3				Q	
ME-4.0	4.0	8	3					
ME-4.5	4.5	8	3				Q	
ME-5.0	5.0	10	3					
ME-5.5	5.5	10	3				Q	
ME-6.0	6.0	12	5					
ME-6.5	6.5	12	5				Q	
ME-7.0	7.0	12	5				Q	
ME-8.0	8.0	14	5					
ME-9.0	9.0	14	5				Q	
ME-10.0	10.0	16	5					
ME-11.0	11.0	16	5				Q	
ME-12.0	12.0	18	7				Q	
ME-12.5	12.5	20	7				Q	
ME-14.0	14.0	22	7			Q	Q	
ME-16.0	16.0	22	7			Q	Q	
ME-18.0	18.0	24	7	Q		Q	Q	
ME-20.0	20.0	26	8	Q		Q	Q	
ME-25.0	25.0	32	10	Q		Q	Q	

Q = Price Per Quotation

# BH SERIES



**SEMYT LTDA.**

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 440 1008 228 9144 Bogotá

## BEVEL HEADED PUNCHES

### TOOL STEEL, (TS)

(OHTS), 58-60 RC, HEADS DRAWN

### HIGH SPEED STEEL (HSS)

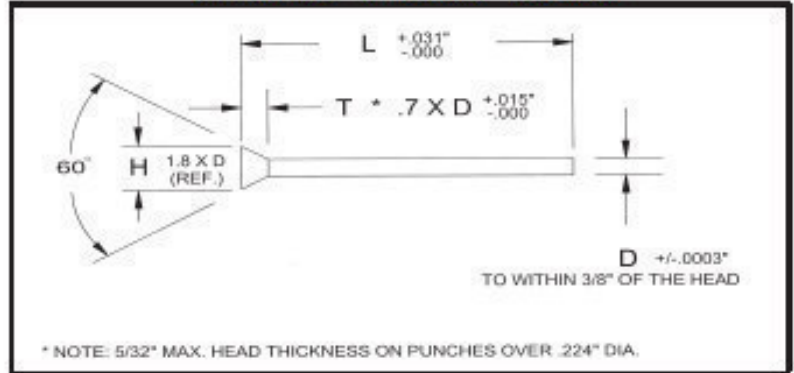
M-2, 60-63 RC

Used by tool, die, stamping, and mold manufacturers as perforators, punches, knock-out pins, gauge pins, ejectors and core pins.

Special lengths can be made to order with prompt delivery. Please refer to the "Modify Length" column in the price table below.

When closer tolerance and better wear resistance is desired, please refer to Type RQA found on page 2. RQA perforators/core pin blanks are form-ground to  $+0.0003"/-0"$  diameter tolerance, and are offered in M-2 HSS in diameter increments from  $.010"$  through  $.375"$ .

### Standard 2" and 2-1/2" Lengths



#### HOW TO ORDER: EXAMPLES

Qty.	Type	Dia.	X	Length	Steel
100	BH	.062	X	2	TS
50	BH	.138	X	2-1/2	HSS

D STANDARD DIAMETERS .001 INCREMENTS	L LENGTHS	NET PRICE EACH PER QUANTITY (US\$)												
		TOOL STEEL					HIGH SPEED STEEL							
		100	50-99	25-49	10-24	1-9	100	50-99	25-49	10-24	1-9			
.020" - .029"	2"													
	2-1/2"													
.030" - .039"	2"													
	2-1/2"													
.040" - .0625" (1/16)	2"													
	2-1/2"													
.063" - .0781" (5/64)	2"													
	2-1/2"													
.079" - .0937" (3/32)	2"													
	2-1/2"													
.094" - .1094" (7/64)	2"													
	2-1/2"													
.110" - .125" (1/8)	2"													
	2-1/2"													
.126" .127" .128"	2"													
	2-1/2"													
⊙ .129"	2"													
	2-1/2"													
.130"	2"													
	2-1/2"													
⊙ .131" - .134"	2"													
	2-1/2"													
.135"	2"													
	2-1/2"													
⊙ .136" - .139"	2"													
	2-1/2"													
.140" .1406" (9/64)	2"													
	2-1/2"													
⊙ .141" - .156"	2"													
	2-1/2"													
.1562" (5/32)	2"													
	2-1/2"													

⊙ Denotes Form-Ground Diameters



# BH SERIES

## BEVEL HEADED PUNCHES

Standard 2" and 2-1/2" Lengths (Continued)



**SEMYT LTDA.**

Servicios especializados para Moldes y troqueles  
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D STANDARD DIAMETERS .001" INCREMENTS	L LENGTHS	NET PRICE EACH PER QUANTITY (US\$)												
		TOOL STEEL					HIGH SPEED STEEL							
		100	50-99	25-49	10-24	1-9	100	50-99	25-49	10-24	1-9			
⊙ .157" - .171"	2"													
	2-1/2"													
.1719" (11/64)	2"													
	2-1/2"													
⊙ .172" - .187"	2"													
	2-1/2"													
.1875" (3/16)	2"													
	2-1/2"													
⊙ .188" - .203"	2"													
	2-1/2"													
.2031" (13/64)	2"													
	2-1/2"													
⊙ .204" - .218"	2"													
	2-1/2"													
.2187" (7/32)	2"													
	2-1/2"													
⊙ .219" - .234"	2"													
	2-1/2"													
.2343" (15/64)	2"													
	2-1/2"													
⊙ .235" - .249"	2"													
	2-1/2"													
.250" (1/4)	2"													
	2-1/2"													
⊙ .251" - .2812" (9/32)	2"													
	2-1/2"													
⊙ .282" - .3125" (5/16)	2"													
	2-1/2"													
⊙ .313" - .3437" (11/32)	2"													
	2-1/2"													
⊙ .344" - .375" (3/8)	2"													
	2-1/2"													
⊙ .3906" (25/64) .4062" (13/32) .4219" (27/64) .4375" (7/16)	2"	<b>Items in this size range are available per quotation</b>												
	2-1/2"													
⊙ .4531" (29/64) .4688" (15/32) .4844" (31/64) .5000" (1/2)	2"													
	2-1/2"													

⊙ Denotes Form-Ground Diameters

### QUANTITY DISCOUNTS

Based on one size, one shipment, and one destination





# RQA TYPE



**SEMYT LTDA.**

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 440 1008 228 9144 Bogotá

## PERFORATORS/CORE PIN BLANKS

M-2 HIGH SPEED STEEL, 60-63 RC

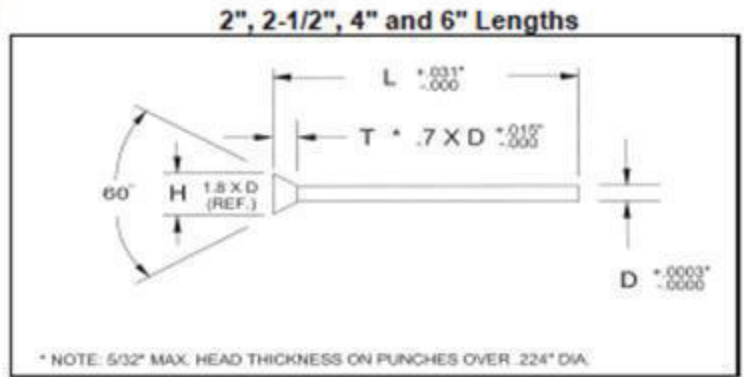
PRECISION FORM-GROUND

DIAMETERS IN .001" OR .0001" INCREMENTS

The following fractional diameters are included in the .001" increment price tables below: 5/32, 3/16, 1/8, 3/32, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, & 1.

HOW TO ORDER, EXAMPLES				
Qty.	Type	Dia.	X	Length
25	RQA	.1875	X	4
50	RQA	.197	X	2-1/2

D DIAMETER .001" INCREMENTS	NET PRICE EACH PER QUANTITY (US\$)				
	L - LENGTH				
	2"				
.010 - .014	50-99	25-49	10-24	5-9	1-4
.015 - .019					
.020 - .029					



D DIAMETER .001" INCREMENTS	NET PRICE EACH PER QUANTITY (US\$)														
	L - LENGTH														
	2-1/2"					4"					6"				
	50-99	25-49	10-24	5-9	1-4	50-99	25-49	10-24	5-9	1-4	50-99	25-49	10-24	5-9	1-4
.030 - .055															
.056 - .087															
.088 - .131															
.132 - .179															
.180 - .225															
.226 - .250															
.251 - .336															
.337 - .375															
	STANDARD					NON-STANDARD									

DIAMETERS IN .001" INCREMENTS MADE TO ORDER	SETUP CHARGE - ADD TO STANDARD PRICE		
	2-1/2"	4"	6"

QUANTITY DISCOUNTS
Based on one size, one shipment and one destination



# SEMYT LTDA.

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 4401008 Fax 228144 Bogotá

## Medium Duty Mold and Die Springs (Blue) – SMD

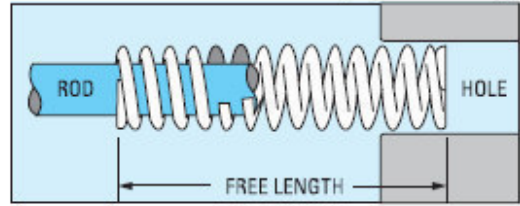
**Maximum Deflection: 50% of Free Length**

**Efficient Operating Range: 25% to 35% of Free Length**

Manufactured by Raymond® from a special rectangular-shaped, round-cornered chromium alloy. Provides high resistance to shock loads, increased deflection, wider operating temperatures and longer life. Color-coded by work range to simplify selection and specification.



(LBS x .454 = kg)



HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 50% DEFLEC. (LBS)
			INCH	MM		
3/8 9.5MM	3/16 4.7MM	SMD1004	1.00	25.40	6.0	30.0
		SMD1005	1.25	31.75	5.4	33.8
		SMD1006	1.50	38.10	4.0	30.0
		SMD1007	1.75	44.45	3.4	29.8
		SMD1008	2.00	50.80	2.8	28.0
		SMD1010	2.50	63.50	2.4	30.0
		SMD1012	3.00	76.20	2.1	31.5
		SMD1048	12.00	304.80	0.6	36.0
1/2 13MM	9/32 7MM	SMD2004	1.00	25.40	11.0	55.0
		SMD2005	1.25	31.75	8.2	51.3
		SMD2006	1.50	38.10	6.8	51.0
		SMD2007	1.75	44.45	6.0	52.5
		SMD2008	2.00	50.80	5.5	55.0
		SMD2010	2.50	63.50	4.5	56.3
		SMD2012	3.00	76.20	3.5	52.5
		SMD2014	3.50	88.90	3.0	52.5
		SMD2018	4.50	114.30	2.5	56.3
		SMD2022	5.50	139.70	2.1	57.8
		SMD2026	6.50	165.10	1.4	45.5
		SMD2030	7.50	190.50	1.2	45.0
		SMD2048	12.00	304.80	0.7	42.0
		5/8 16MM	11/32 8.7MM	SMD3004	1.00	25.40
SMD3005	1.25			31.75	12.8	80.0
SMD3006	1.50			38.10	10.8	81.0
SMD3007	1.75			44.45	9.6	84.0
SMD3008	2.00			50.80	8.8	88.0
SMD3010	2.50			63.50	6.0	75.0
SMD3012	3.00			76.20	5.6	84.0
SMD3014	3.50			88.90	4.8	84.0
SMD3016	4.00			101.60	4.4	88.0
SMD3048	12.00			304.80	1.6	96.0
3/4 19.5MM	3/8 9.5MM	SMD4004	1.00	25.40	31.2	156.0
		SMD4005	1.25	31.75	25.6	160.0
		SMD4006	1.50	38.10	20.0	150.0
		SMD4007	1.75	44.45	17.6	154.0
		SMD4008	2.00	50.80	14.4	144.0
		SMD4010	2.50	63.50	12.0	150.0
		SMD4012	3.00	76.20	9.6	144.0
		SMD4014	3.50	88.90	8.0	140.0
		SMD4016	4.00	101.60	7.2	144.0
		SMD4018	4.50	114.30	6.4	144.0
		SMD4020	5.00	127.00	6.0	150.0
		SMD4022	5.50	139.70	5.5	151.3
		SMD4024	6.00	152.40	5.0	150.0
		SMD4026	6.50	165.10	4.5	146.3
		SMD4030	7.50	190.50	3.8	142.5
		SMD4048	12.00	304.80	2.4	144.0
1 25.5MM	1/2 13MM	SMD5004	1.00	25.40	55.0	275.0
		SMD5005	1.25	31.75	45.0	281.3
		SMD5006	1.50	38.10	35.0	262.5
		SMD5007	1.75	44.45	30.0	262.5
		SMD5008	2.00	50.80	26.0	260.0
		SMD5010	2.50	63.50	20.0	250.0

HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 50% DEFLEC. (LBS)		
			INCH	MM				
1" 25.5MM	1/2 13MM	SMD5012	3.00	76.20	16.5	247.5		
		SMD5014	3.50	88.90	15.0	262.5		
		SMD5016	4.00	101.60	12.0	240.0		
		SMD5018	4.50	114.30	10.4	234.0		
		SMD5020	5.00	127.00	9.6	240.0		
		SMD5022	5.50	139.70	8.8	242.0		
		SMD5024	6.00	152.40	8.0	240.0		
		SMD5028	7.00	177.80	7.2	252.0		
		SMD5032	8.00	203.20	6.0	240.0		
		SMD5048	12.00	304.80	4.0	240.0		
		1 1/4 32MM	5/8 16MM	SMD6006	1.50	38.10	49.6	372.0
				SMD6007	1.75	44.45	42.4	371.0
				SMD6008	2.00	50.80	35.2	352.0
				SMD6010	2.50	63.50	28.8	360.0
SMD6012	3.00			76.20	24.0	360.0		
SMD6014	3.50			88.90	20.0	350.0		
SMD6016	4.00			101.60	17.6	352.0		
SMD6018	4.50			114.30	16.0	360.0		
SMD6020	5.00			127.00	13.6	340.0		
SMD6022	5.50			139.70	12.8	352.0		
SMD6024	6.00			152.40	12.0	360.0		
SMD6028	7.00			177.80	10.4	364.0		
SMD6032	8.00			203.20	8.8	352.0		
SMD6040	10.00			254.00	7.2	360.0		
SMD6048	12.00	304.80	6.0	360.0				
1 1/2 38.5MM	3/4 19.5MM	SMD7008	2.00	50.80	53.0	530.0		
		SMD7010	2.50	63.50	45.0	562.5		
		SMD7012	3.00	76.20	36.0	540.0		
		SMD7014	3.50	88.90	30.0	525.0		
		SMD7016	4.00	101.60	27.0	540.0		
		SMD7018	4.50	114.30	23.0	517.5		
		SMD7020	5.00	127.00	21.0	525.0		
		SMD7022	5.50	139.70	18.5	508.8		
		SMD7024	6.00	152.40	17.0	510.0		
		SMD7028	7.00	177.80	14.5	507.5		
		SMD7032	8.00	203.20	12.8	512.0		
		SMD7040	10.00	254.00	10.0	500.0		
		SMD7048	12.00	304.80	8.0	480.0		
		2 51MM	1 25.5MM	SMD8010	2.50	63.50	100.0	1250.0
SMD8012	3.00			76.20	83.0	1245.0		
SMD8014	3.50			88.90	64.8	1134.0		
SMD8016	4.00			101.60	60.0	1200.0		
SMD8018	4.50			114.30	53.0	1192.5		
SMD8020	5.00			127.00	47.0	1175.0		
SMD8022	5.50			139.70	39.2	1078.0		
SMD8024	6.00			152.40	39.0	1170.0		
SMD8028	7.00			177.80	31.2	1092.0		
SMD8032	8.00			203.20	28.5	1140.0		
SMD8040	10.00			254.00	20.8	1040.0		
SMD8048	12.00			304.80	17.5	1050.0		

# SEMYT LTDA.

Servicios especializados para Moldes y troqueles  
Calle 70F 106A 29 Tel 4401008 Fax 228144 Bogotá

## Medium Heavy Duty Mold and Die Springs (Red) – SMH

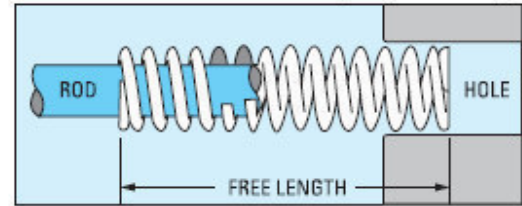
**Maximum Deflection: 37% of Free Length**

**Efficient Operating Range: 20% to 25% of Free Length**

Manufactured by Raymond® from a special rectangular-shaped, round-cornered chromium alloy. Provides high resistance to shock loads, increased deflection, wider operating temperatures and longer life. Color-coded by work range to simplify selection and specification.



(LBS x .454 = kg)



HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 37% DEFLEC. (LBS)		
			INCH	MM				
3/8 9.5MM	3/16 4.7MM	SMH1004	1.00	25.40	9.0	33.3		
		SMH1005	1.25	31.75	7.3	33.8		
		SMH1006	1.50	38.10	6.7	37.2		
		SMH1007	1.75	44.45	5.8	37.6		
		SMH1008	2.00	50.80	5.0	37.0		
		SMH1010	2.50	63.50	4.2	38.9		
		SMH1012	3.00	76.20	3.0	33.3		
		SMH1048	12.00	304.80	0.9	40.0		
		SMH2004	1.00	25.40	16.8	62.2		
		SMH2005	1.25	31.75	13.0	60.1		
		SMH2006	1.50	38.10	9.5	52.7		
		1/2 13MM	5/32 7MM	SMH2007	1.75	44.45	8.5	55.0
SMH2008	2.00			50.80	7.5	55.5		
SMH2010	2.50			63.50	6.0	55.5		
SMH2012	3.00			76.20	5.7	63.3		
SMH2014	3.50			88.90	4.0	51.8		
SMH2048	12.00			304.80	1.2	53.3		
SMH3004	1.00			25.40	30.0	111.0		
SMH3005	1.25			31.75	21.5	99.4		
SMH3006	1.50			38.10	19.0	105.5		
SMH3007	1.75			44.45	16.8	108.8		
SMH3008	2.00			50.80	14.8	109.5		
5/8 16MM	11/32 8.7MM			SMH3010	2.50	63.50	11.5	106.4
		SMH3012	3.00	76.20	10.0	111.0		
		SMH3014	3.50	88.90	8.5	110.1		
		SMH3016	4.00	101.60	7.6	112.5		
		SMH3048	12.00	304.80	2.7	119.9		
		SMH4004	1.00	25.40	50.0	185.0		
		SMH4005	1.25	31.75	38.0	175.8		
		SMH4006	1.50	38.10	32.0	177.6		
		SMH4007	1.75	44.45	28.8	186.5		
		SMH4008	2.00	50.80	24.8	183.5		
		3/4 19.5MM	3/8 9.5MM	SMH4010	2.50	63.50	19.2	177.6
				SMH4012	3.00	76.20	14.4	159.8
SMH4014	3.50			88.90	12.8	165.8		
SMH4016	4.00			101.60	12.0	177.6		
SMH4018	4.50			114.30	11.2	186.5		
SMH4020	5.00			127.00	9.0	166.5		
SMH4022	5.50			139.70	8.0	162.8		
SMH4024	6.00			152.40	7.5	166.5		
SMH4048	12.00			304.80	3.6	159.8		
SMH5004	1.00			25.40	76.0	281.2		
1" 25.5MM	1/2 13MM			SMH5005	1.25	31.75	62.4	282.6
				SMH5006	1.50	38.10	49.6	275.3
		SMH5007	1.75	44.45	44.0	284.9		
		SMH5008	2.00	50.80	40.0	296.0		
		SMH5010	2.50	63.50	31.0	286.8		
		SMH5012	3.00	76.20	25.0	277.5		
		SMH5014	3.50	88.90	21.6	279.7		
		SMH5016	4.00	101.60	18.4	272.3		
		SMH5018	4.50	114.30	17.0	283.1		
		SMH5020	5.00	127.00	14.4	266.4		
		SMH5022	5.50	139.70	12.8	260.5		
		WIRE .093 X .156		SMH5024	6.00	152.40	12.0	266.4
SMH5028	7.00			177.80	10.0	259.0		
SMH5032	8.00			203.20	8.8	260.5		
SMH5048	12.00			304.80	6.2	275.3		

HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 37% DEFLEC. (LBS)		
			INCH	MM				
1 1/4 32MM	5/4 16MM	SMH6006	1.50	38.10	114.4	634.9		
		SMH6007	1.75	44.45	100.8	652.7		
		SMH6008	2.00	50.80	86.4	639.4		
		SMH6010	2.50	63.50	62.4	577.2		
		SMH6012	3.00	76.20	51.2	568.3		
		SMH6014	3.50	88.90	44.0	569.8		
		SMH6016	4.00	101.60	36.8	544.6		
		SMH6018	4.50	114.30	32.0	532.8		
		SMH6020	5.00	127.00	29.0	536.5		
		SMH6022	5.50	139.70	26.4	537.2		
		SMH6024	6.00	152.40	25.0	555.0		
		WIRE .156 X .281		SMH6028	7.00	177.80	20.0	518.0
SMH6032	8.00			203.20	18.4	544.6		
SMH6040	10.00			254.00	14.5	536.5		
SMH6048	12.00			304.80	12.4	550.6		
SMH7008	2.00			50.80	108.0	799.2		
1 1/2 38.5MM	3/4 19.5MM			SMH7010	2.50	63.50	85.6	791.8
				SMH7012	3.00	76.20	62.4	692.6
				SMH7014	3.50	88.90	52.8	683.8
				SMH7016	4.00	101.60	48.0	710.4
				SMH7018	4.50	114.30	43.2	719.3
				SMH7020	5.00	127.00	36.8	680.8
				SMH7022	5.50	139.70	34.4	700.0
		SMH7024	6.00	152.40	30.4	674.9		
		SMH7028	7.00	177.80	26.4	683.8		
		SMH7032	8.00	203.20	22.0	651.2		
		WIRE .187 X .312		SMH7040	10.00	254.00	17.6	651.2
				SMH7048	12.00	304.80	14.4	639.4
SMH8010	2.50			63.50	118.4	1095.2		
2 51MM	1 25.5MM			SMH8012	3.00	76.20	96.0	1065.6
				SMH8014	3.50	88.90	80.0	1036.0
				SMH8016	4.00	101.60	66.4	982.7
				SMH8018	4.50	114.30	60.0	999.0
				SMH8020	5.00	127.00	56.0	1036.0
				SMH8022	5.50	139.70	50.4	1025.6
				SMH8024	6.00	152.40	47.2	1047.8
				SMH8028	7.00	177.80	40.0	1036.0
				SMH8032	8.00	203.20	35.2	1041.9
		SMH8040	10.00	254.00	26.0	962.0		
		SMH8048	12.00	304.80	22.4	994.6		
		WIRE .225 X .437		SMH8010	2.50	63.50	118.4	1095.2
SMH8012	3.00			76.20	96.0	1065.6		
SMH8014	3.50			88.90	80.0	1036.0		
SMH8016	4.00			101.60	66.4	982.7		
SMH8018	4.50			114.30	60.0	999.0		
SMH8020	5.00			127.00	56.0	1036.0		
SMH8022	5.50			139.70	50.4	1025.6		
SMH8024	6.00			152.40	47.2	1047.8		

The word "RAYMOND" and the gold, red, green and blue color coding of mold and die springs in the heavy duty, medium heavy duty, extra heavy duty and medium duty load ranges, respectively, are registered trademarks of the Barnes Group, Inc.

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## Heavy Duty Mold and Die Springs (Gold) – SHD

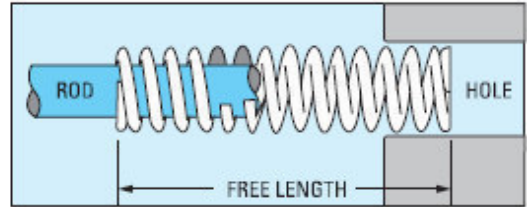
**Maximum Deflection: 30% of Free Length**

**Efficient Operating Range: 15% to 20% of Free Length**

Manufactured by Raymond® from a special rectangular-shaped, round-cornered chromium alloy. Provides high resistance to shock loads, increased deflection, wider operating temperatures and longer life. Color-coded by work range to simplify selection and specification.



(LBS x .454 = kg)



HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 30% DEFLEC. (LBS)
			INCH	MM		
3/8 9.5MM	3/16 4.7MM	SHD1004	1.00	25.40	11.0	33.0
		SHD1005	1.25	31.75	9.8	36.8
		SHD1006	1.50	38.10	8.0	36.0
		SHD1007	1.75	44.45	8.4	44.1
		SHD1008	2.00	50.80	7.2	43.2
		SHD1010	2.50	63.50	5.5	41.3
		SHD1012	3.00	76.20	4.2	37.8
		SHD1048	12.00	304.80	1.2	43.2
1/2 13MM	9/32 7MM	SHD2004	1.00	25.40	23.6	70.8
		SHD2005	1.25	31.75	18.6	69.8
		SHD2006	1.50	38.10	15.5	69.8
		SHD2007	1.75	44.45	13.8	72.5
		SHD2008	2.00	50.80	11.0	66.0
		SHD2010	2.50	63.50	8.4	63.0
		SHD2012	3.00	76.20	7.4	66.6
		SHD2014	3.50	88.90	6.0	63.0
		SHD2048	12.00	304.80	1.6	57.6
		5/8 16MM	11/32 8.7MM	SHD3004	1.00	25.40
SHD3005	1.25			31.75	29.6	111.0
SHD3006	1.50			38.10	27.2	122.4
SHD3007	1.75			44.45	24.0	126.0
SHD3008	2.00			50.80	20.8	124.8
SHD3010	2.50			63.50	17.0	127.5
SHD3012	3.00			76.20	14.4	129.6
SHD3014	3.50			88.90	12.2	128.1
SHD3016	4.00			101.60	10.8	129.6
SHD3048	12.00			304.80	3.0	108.0
3/4 19.5MM	3/8 9.5MM	SHD4004	1.00	25.40	108.0	324.0
		SHD4005	1.25	31.75	88.0	330.0
		SHD4006	1.50	38.10	65.6	295.2
		SHD4007	1.75	44.45	60.0	315.0
		SHD4008	2.00	50.80	49.6	297.6
		SHD4010	2.50	63.50	40.0	300.0
		SHD4012	3.00	76.20	34.0	306.0
		SHD4014	3.50	88.90	28.0	294.0
		SHD4016	4.00	101.60	25.0	300.0
		SHD4018	4.50	114.30	22.0	297.0
1 25.5MM	1/2 13MM	SHD4020	5.00	127.00	19.5	292.5
		SHD4022	5.50	139.70	17.0	280.5
		SHD4024	6.00	152.40	16.0	288.0
		SHD4048	12.00	304.80	8.0	288.0
		SHD5004	1.00	25.40	208.0	624.0
		SHD5005	1.25	31.75	171.2	642.0
		SHD5006	1.50	38.10	118.4	532.8
		SHD5007	1.75	44.45	104.0	546.0
		SHD5008	2.00	50.80	90.0	540.0
		SHD5010	2.50	63.50	68.0	510.0
WIRE .054 X .072	WIRE .072 X .095	SHD5012	3.00	76.20	54.4	489.6
		SHD5014	3.50	88.90	45.6	478.8
		SHD5016	4.00	101.60	40.0	480.0
		SHD5018	4.50	114.30	35.2	475.2
		SHD5020	5.00	127.00	31.2	468.0
		SHD5022	5.50	139.70	28.8	475.2
		SHD5024	6.00	152.40	25.6	460.8
		SHD5028	7.00	177.80	22.4	470.4
		SHD5032	8.00	203.20	19.2	460.8
		SHD5048	12.00	304.80	12.0	432.0

HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 30% DEFLEC. (LBS)
			INCH	MM		
1 1/4 32MM	5/8 16MM	SHD6006	1.50	38.10	212.0	954.0
		SHD6007	1.75	44.45	181.6	953.4
		SHD6008	2.00	50.80	149.6	897.6
		SHD6010	2.50	63.50	117.6	832.0
		SHD6012	3.00	76.20	95.2	856.8
		SHD6014	3.50	88.90	75.2	789.6
		SHD6016	4.00	101.60	66.4	796.8
		SHD6018	4.50	114.30	58.4	788.4
		SHD6020	5.00	127.00	53.0	795.0
		SHD6022	5.50	139.70	47.2	778.8
WIRE .200 X .295	WIRE .225 X .350	SHD6024	6.00	152.40	42.4	763.2
		SHD6028	7.00	177.80	36.8	772.8
		SHD6032	8.00	203.20	32.8	787.2
		SHD6040	10.00	254.00	25.6	768.0
		SHD6048	12.00	304.80	20.8	748.8
		SHD7008	2.00	50.80	190.4	1142.4
		SHD7010	2.50	63.50	155.0	1162.5
		SHD7012	3.00	76.20	130.0	1170.0
		SHD7014	3.50	88.90	106.4	1117.2
		SHD7016	4.00	101.60	91.2	1094.4
1 1/2 38.5MM	3/4 19.5MM	SHD7018	4.50	114.30	78.4	1058.4
		SHD7020	5.00	127.00	71.2	1068.0
		SHD7022	5.50	139.70	64.0	1056.0
		SHD7024	6.00	152.40	58.4	1051.2
		SHD7028	7.00	177.80	49.6	1041.6
		SHD7032	8.00	203.20	43.2	1036.8
		SHD7040	10.00	254.00	34.4	1032.0
		SHD7048	12.00	304.80	28.8	1036.8
		SHD8010	2.50	63.50	260.0	1950.0
		SHD8012	3.00	76.20	200.0	1800.0
2 51MM	1 25.5MM	SHD8014	3.50	88.90	170.0	1785.0
		SHD8016	4.00	101.60	150.0	1800.0
		SHD8018	4.50	114.30	120.0	1620.0
		SHD8020	5.00	127.00	110.0	1650.0
		SHD8022	5.50	139.70	100.0	1650.0
		SHD8024	6.00	152.40	94.0	1692.0
		SHD8028	7.00	177.80	82.0	1722.0
		SHD8032	8.00	203.20	73.0	1752.0
		SHD8040	10.00	254.00	55.0	1650.0
		SHD8048	12.00	304.80	42.0	1512.0

The word "RAYMOND" and the gold, red, green and blue color coding of mold and die springs in the heavy duty, medium heavy duty, extra heavy duty and medium duty load ranges, respectively, are registered trademarks of the Barnes Group, Inc.



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## Extra Heavy Duty Mold and Die Springs (Green) – SEH

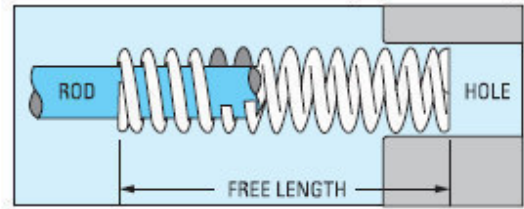
**Maximum Deflection: 25% of Free Length**

**Efficient Operating Range: 15% of Free Length**

Manufactured by Raymond® from a special rectangular-shaped, round-cornered chromium alloy. Provides high resistance to shock loads, increased deflection, wider operating temperatures and longer life. Color-coded by work range to simplify selection and specification.



(LBS x .454 = kg)



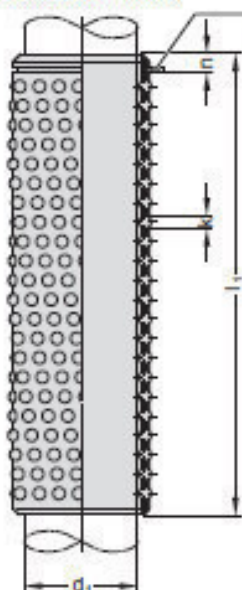
HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 25% DEFLEC. (LBS)		
			INCH	MM				
3/8 9.5MM	3/16 4.7MM	SEH1004	1.00	25.40	22.0	55.0		
		SEH1005	1.25	31.75	16.0	50.0		
		SEH1006	1.50	38.10	12.5	46.9		
		SEH1007	1.75	44.45	11.5	50.3		
		SEH1008	2.00	50.80	9.0	45.0		
		SEH1010	2.50	63.50	7.0	43.8		
		SEH1012	3.00	76.20	6.5	48.8		
		SEH1048	12.00	304.80	1.5	45.0		
		WIRE .059 X .080						
		1/2 13MM	9/32 7MM	SEH2004	1.00	25.40	32.0	80.0
				SEH2005	1.25	31.75	24.0	75.0
				SEH2006	1.50	38.10	20.0	75.0
SEH2007	1.75			44.45	17.0	74.4		
SEH2008	2.00			50.80	14.0	70.0		
SEH2010	2.50			63.50	11.5	71.9		
SEH2012	3.00			76.20	9.0	67.5		
SEH2014	3.50			88.90	8.0	70.0		
SEH2048	12.00			304.80	2.5	75.0		
WIRE .084 X .097								
5/8 16MM	11/32 8.7MM			SEH3004	1.00	25.40	63.0	157.5
				SEH3005	1.25	31.75	47.0	146.9
		SEH3006	1.50	38.10	38.0	142.5		
		SEH3007	1.75	44.45	32.0	140.0		
		SEH3008	2.00	50.80	29.0	145.0		
		SEH3010	2.50	63.50	22.0	137.5		
		SEH3012	3.00	76.20	19.0	142.5		
		SEH3014	3.50	88.90	16.0	140.0		
		SEH3016	4.00	101.60	13.5	135.0		
		SEH3048	12.00	304.80	4.5	135.0		
		WIRE .110 X .126						
		3/4 19.5MM	3/8 9.5MM	SEH4004	1.00	25.40	140.0	350.0
SEH4005	1.25			31.75	110.0	343.8		
SEH4006	1.50			38.10	89.0	333.8		
SEH4007	1.75			44.45	75.0	328.1		
SEH4008	2.00			50.80	68.0	340.0		
SEH4010	2.50			63.50	50.0	312.5		
SEH4012	3.00			76.20	40.5	303.8		
SEH4014	3.50			88.90	34.5	301.9		
SEH4016	4.00			101.60	30.0	300.0		
SEH4018	4.50			114.30	26.5	293.1		
SEH4020	5.00			127.00	23.5	293.8		
SEH4022	5.50			139.70	21.5	295.6		
SEH4024	6.00	152.40	19.5	292.5				
SEH4048	12.00	304.80	9.5	285.0				
WIRE .135 X .165								
1" 25.5MM	1/2 13MM	SEH5006	1.50	38.10	160.0	600.0		
		SEH5008	2.00	50.80	116.0	580.0		
		SEH5010	2.50	63.50	89.6	560.0		
		SEH5012	3.00	76.20	73.6	552.0		
		SEH5014	3.50	88.90	62.4	546.0		
		SEH5016	4.00	101.60	55.2	552.0		
		SEH5018	4.50	114.30	48.3	549.0		
		SEH5020	5.00	127.00	43.2	540.0		
		SEH5024	6.00	152.40	36.0	540.0		
		SEH5048	12.00	304.80	17.6	528.0		
		WIRE .183 X .225						

HOLE DIA	ROD DIA	ITEM NUMBER	FREE LENGTH		APPROX LOAD AT 1/10" DEFLEC. (LBS)	LOAD AT 25% DEFLEC. (LBS)		
			INCH	MM				
1 1/4 32MM	5/8 16MM	SEH6008	2.00	50.80	192.0	960.0		
		SEH6010	2.50	63.50	144.0	900.0		
		SEH6012	3.00	76.20	118.4	888.0		
		SEH6014	3.50	88.90	100.8	882.0		
		SEH6016	4.00	101.60	84.0	840.0		
		SEH6018	4.50	114.30	78.4	882.0		
		SEH6020	5.00	127.00	68.0	850.0		
		SEH6024	6.00	152.40	56.0	840.0		
		SEH6032	8.00	203.20	41.6	832.0		
		SEH6040	10.00	254.00	33.6	840.0		
		SEH6048	12.00	304.80	26.4	792.0		
		WIRE .225 X .295						
1 1/2 38.5MM	3/4 19.5MM	SEH7008	2.00	50.80	376.0	1880.0		
		SEH7010	2.50	63.50	294.4	1840.0		
		SEH7012	3.00	76.20	231.2	1734.0		
		SEH7014	3.50	88.90	196.0	1715.0		
		SEH7016	4.00	101.60	171.2	1712.0		
		SEH7018	4.50	114.30	148.0	1665.0		
		SEH7020	5.00	127.00	136.0	1700.0		
		SEH7024	6.00	152.40	110.4	1656.0		
		SEH7032	8.00	203.20	80.8	1616.0		
		SEH7040	10.00	254.00	67.2	1680.0		
		SEH7048	12.00	304.80	54.4	1632.0		
		WIRE .300 X .350						
2 51MM	1 25.5MM	SEH8010	2.50	63.50	381.6	2385.0		
		SEH8012	3.00	76.20	312.0	2340.0		
		SEH8014	3.50	88.90	254.4	2226.0		
		SEH8016	4.00	101.60	220.0	2200.0		
		SEH8018	4.50	114.30	188.8	2124.0		
		SEH8020	5.00	127.00	172.8	2160.0		
		SEH8024	6.00	152.40	141.6	2124.0		
		SEH8032	8.00	203.20	100.0	2000.0		
		SEH8040	10.00	254.00	84.0	2100.0		
		SEH8048	12.00	304.80	71.2	2136.0		
		WIRE .385 X .460						

The word "RAYMOND" and the gold, red, green and blue color coding of mold and die springs in the heavy duty, medium heavy duty, extra heavy duty and medium duty load ranges, respectively, are registered trademarks of the Barnes Group, Inc.

206.71.

Jaula de bolas con ranura para circlip



206.72.

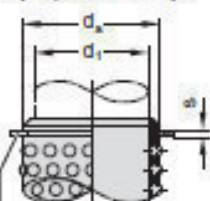
Circlip

206.72.

Circlip según DIN 471

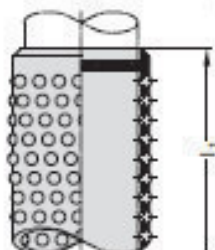


Ejemplo de montaje:



206.73.

Jaula de bolas con aro de montaje

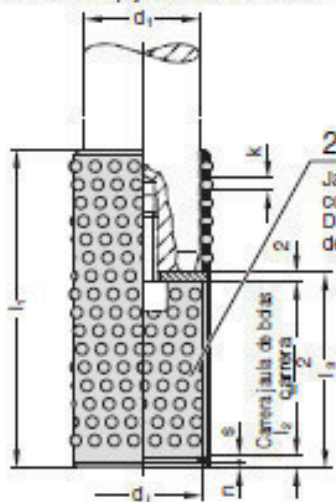


206.72.

Circlip según DIN 471

206.75.

Jaula de bolas con circlip y ranura de retención



206.75.

Jaula de bolas con circlip según DIN 472 y ranura de retención

206.71.



206.73.



206.75.



### Material:

Jaula: Latón

Bolas: Acero templado según DIN 5401

### Ejecución:

Las jaulas de bolas FIBRO tienen el cuerpo de latón, y se caracterizan por su estabilidad y el gran número de bolas que llevan. Por este motivo son imprescindibles en la construcción de aquellos utilajes y máquinas que exigen una elevada precisión junto con cursas rápidas.

El guiado a bolas funciona sin juego gracias a la pre-carga. Cada jaula de bolas lleva una ranura para alojar un circlip DIN 471.

### Nota:

Jaulas de bola FIBRO 206.73. con aro de montaje.

Este tipo de jaula puede ser posicionado correctamente sin la ayuda de otra persona. La jaula va provista, en la parte que se introduce, de un aro que frena el movimiento.

La ventaja es sobre todo notable cuando se trata de portamoldes con columnas múltiples.



206.71./73./75.  
206.72.

Jaulas de bolas  
Circlips

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206.71./206.73.

d <sub>1</sub>	8	10	11	12	15	16	19	20	24	25	30	32	38	40	48	50	60	63	80	
k	1,5	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	4	4	6	
n	-	2,2	2,2	2,2	2,9	2,9	2,9	2,9	3,2	3,95	3,95	3,95	4,25	4,75	4,75	6,15				
l <sub>1</sub>	Numero total de bolas										* Jaula de bolas Ø 8 mm se suministra sin ranuras para circlip!									
24											* Avance de la jaula = 1/2 de la corsa									
28																				
31																				
40	80	176	176	176			120	120	120		160	120								
45					144	144	180	180	180	140	168									
50										160	192	224								
56		272	272	272	192	192	240	240	240	180	216									
63					224	224					264	308								
71					256	256	320	320	320	240										
80							360	360	360	280	336	392								
95							440	440	440	340	408	476	544							
105										380	456	532	608							
120									560	440	528	616	704	540						
140										520	624	728	832	648						
160										600	720	840	960	756						
180											816	952	1088	864						
200											912	1064	1216	972						
240											1104	1288	1472	1152						

Ejemplo de pedido:

Jaula de bolas con ranura para circlip = 206.71.  
d<sub>1</sub> = 32 mm = 032.  
l<sub>1</sub> = 80 mm = 080  
Código = 206.71.032.080

Ejemplo de pedido:

Jaula de bolas con aro de montaje = 206.73.  
d<sub>1</sub> = 32 mm = 032.  
l<sub>1</sub> = 80 mm = 080  
Código = 206.73.032.080

206.72.

d <sub>1</sub>	10	11	12	15	16	18	19	20	24	25	30	32	38	40	42	48	50	52	60	63	80
d <sub>2</sub> x s	13x1	14x1	15x1	20x1,2	21x1,2	23x1,2	24x1,2	25x1,2	29x1,5	32x1,5	37x1,5	39x1,75	45x1,75	47x1,75	48x1,75	55x2	57x2	58x2	67x2,5	70x2,5	80x3
Código	010	011	012	015	016	018	019	020	024	025	030	032	038	040	042	048	050	052	060	063	080
d <sub>2</sub>	20,2	21,4	22,6	26,4	29,6	32	33,2	34,2	39,1	40,5	49	51,4	59,1	60,8	62,5	70,2	72,6	73,6	83,1	87	108,5

206.75.

d <sub>1</sub>	19	20	24	25	30	32	38	40	48	50	60	63
d <sub>1</sub> x s	20x1	21x1	25x1,2	26x1,2	31x1,2	33x1,2	39x1,5	41x1,75	50x2	51x2	60x2	63x2
Código	019	020	024	025	030	032	038	040	048	050	060	063
k	3	3	3	3	4	4	4	4	4	4	4	4
n	1,3	1,3	1,3	1,3	1,3	1,3	1,85	1,8	2,15	2,15	2,15	2,15
l <sub>1</sub> b <sub>1</sub> b <sub>2</sub>	58 2,6 31	58 2,6 31	70 2,6 41	80 3,45 51	80 4,30 51	95 4,30 61	95 4,30 61	120 7,3 83				
l <sub>2</sub> b <sub>1</sub> b <sub>2</sub>	72 41	72 41	80 51	95 61	95 61	105 61	120 73					
l <sub>3</sub> b <sub>1</sub> b <sub>2</sub>	80 51	80 51	95 61	105 61	120 73							

Ejemplo de pedido:

Jaula de bolas con circlip según  
DIN 472 y ranura de retención = 206.75.  
d<sub>1</sub> = 32 mm = 032.  
l<sub>1</sub> = 80 mm = 080  
l<sub>2</sub> = 51 mm = 051  
Código = 206.75.032.080.051

**CGW** **White Surface Grinding Wheels**  
 Premium White Grain Aluminum Oxide ANSI Grade WA • Balanced Cool Cutting



**APPLICATIONS:**  
 • Friable grain best used when grinding tool dies and gages.

✓ *One of the world's leading manufacturers*

**FEATURES:**  
 • Compare to Norton 38A.

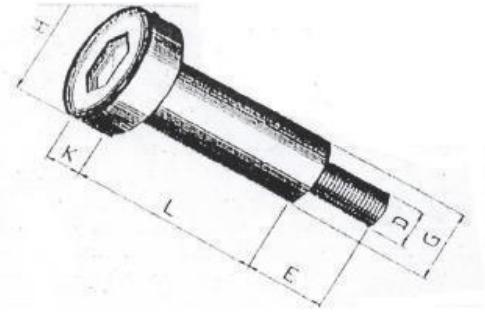
GRIT	ORDER #	PRICE EACH	PACKAGE QUANTITY	PRICE EACH
<b>7" X 1/4" X 1-1/4" - NO RECESS</b>				
46I				
60I				
60J				
60K				
80J				
80K				
100K				
120K				
150K				
<b>7" X 1/2" X 1-1/4" - NO RECESS</b>				
46H				
46I				
46J				
46K				
60H				
60I				
60J				
60K				
80K				
100K				
120K				
<b>7" X 3/4" X 1-1/4" - RECESS 1 SIDE R/1-3" X 1/4"</b>				
46H				
60H				
60J				
<b>7" X 1" X 1-1/4" - RECESS 1 SIDE R/1-3" X 1/2"</b>				
46H				
46J				
60I				
60J				
<b>8" X 1/4" X 1-1/4" - TYPE 01 - STRAIGHT</b>				
80J	53-200-510			
<b>8" X 1/2" X 1-1/4" - NO RECESS</b>				
46H				
46I				
46J				
46K				
60I				
60K				
80K				

GRIT	ORDER #	PRICE EACH	PACKAGE QUANTITY	PRICE EACH
<b>8" X 3/4" X 1-1/4" - RECESS 1 SIDE R/1-3" X 1/4"</b>				
46H				
46J				
60J				
60K				
<b>8" X 1" X 1-1/4" - RECESS 1 SIDE R/1-3" X 1/2"</b>				
46I				
46J				
60I				
60K				
<b>10" X 1/2" X 3" - NO RECESS</b>				
60K	53-200-095*			
<b>10" X 1" X 3" - NO RECESS</b>				
46H				
46J				
60J				
<b>12" X 1" X 3" - NO RECESS</b>				
46H				
<b>12" X 1" X 5" - NO RECESS</b>				
46J				
60J				
<b>12" X 1-1/2" X 3" - RECESS 1 SIDE R/1-7-1/2" X 1/2"</b>				
46H				
46I				
46J				
60I				
<b>12" X 1-1/2" X 5" - RECESS 1 SIDE R/1-7-1/2" X 1/2"</b>				
46J				
60I				
60K				
<b>14" X 1" X 5" - NO RECESS</b>				
46I				
60I				
60K				
<b>14" X 1-1/2" X 5" - RECESSED 1 SIDE R/1-8" X 1/2"</b>				
46I				
46J				
<b>14" X 2" X 5" - RECESSED 1 SIDE R/1-8" X 1"</b>				
46H				
46I				

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## TORNILLOS DE HOMBRO RECTIFICADO



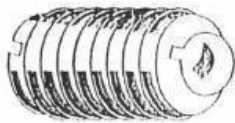
G	Rosca	E	Hes.	H	K
1/4"	10 - 24.	3/8"	1/8"	3/8"	3/16"
3/16"	1/4" - 20	7/16"	5/32"	7/16"	7/32"
3/8"	5/16" - 18	1/2"	3/16"	9/16"	1/4"
1/2"	3/8" - 16"	5/8"	1/4"	3/4"	5/16"
5/8"	1/2" - 13	3/4"	5/16"	7/8"	3/8"

La designación de los tornillos de hombro se realiza por el diametro de su hombro y su longitud posteriormente.

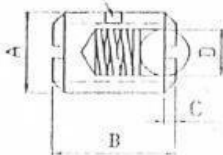
Por ejemplo: Ø1/2" x 3/4"

DIAM HOMB ROSCA	LONGITUD DEL HOMBRO	DIAM HOMB ROSCA	LONGITUD DEL HOMBRO	DIAM HOMB ROSCA	LONGITUD DEL HOMBRO	DIAM HOMB ROSCA	LONGITUD DEL HOMBRO
1/4" 10 - 24. 1/8" Key	3/8"	5/16" 1/4" - 20 5/32" Key	3/8"	3/8" 5/16" - 18 3/16" Key	3/8"	1/2" 3/8" - 16 1/4" Key	1/2"
	1/2"		1/2"		1/2"		5/8"
	5/8"		5/8"		5/8"		3/4"
	3/4"		3/4"		3/4"		1"
	1"		1"		1"		1 1/4"
	1 1/4"		1 1/4"		1 1/4"		1 1/2"
	1/2"		1 1/2"		1 1/2"		1 3/4"
DIAM HOMB ROSCA	LONGITUD DEL HOMBRO	DIAM HOMB ROSCA	LONGITUD DEL HOMBRO	DIAM HOMB ROSCA	LONGITUD DEL HOMBRO	DIAM HOMB ROSCA	LONGITUD DEL HOMBRO
5/8" 1/2" - 13 5/16" Key	1 1/4"	5/8" 1/2" - 13. 5/16" Key	3 1/4"	3/4" 5/8" - 18 3/16" Key	2 1/4"	1/2" 3/8" - 16 1/4" Key	2 1/4"
	1 1/2"		3 1/2"		2 1/2"		2 1/2"
	1 3/4"		4"		2 3/4"		2 3/4"
	2"		4 1/2"		3"		3"
	2 1/4"		5"		3 1/4"		3 1/4"
	2 1/2"				3 1/2"		3 1/2"
	2 3/4"				4"		4"
	3"				5"		5"

## TORNILLOS DE BOLA CON RESORTE BALL PLUNGER



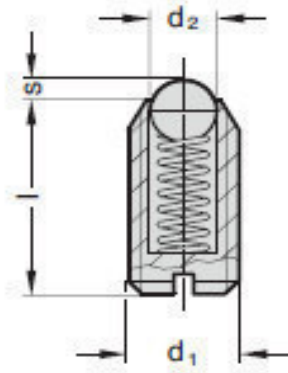
Elemento de Bloqueo



	A	B	C	D	START	FULL
#10-32	33/64"	0,25"	0,93"	0,5	1,5	
#10-32	33/64"	0,25"	0,93"	1,5	3	
#10-32	33/64"	0,25"	0,93"	2	5	
1/4"-20	17/32"	0,35"	,125"	2	4	
1/4"-20	17/32"	0,35"	,125"	3	7	
1/4"-20	17/32"	0,35"	,125"	4	12	
5/16"-18	37/64"	0,40"	,156"	2	4,5	
5/16"-18	37/64"	0,40"	,156"	4	9	
5/16"-18	37/64"	0,40"	,156"	6	17	
3/8"-16	5/8"	0,48"	,187"	2,5	5	
3/8"-16	5/8"	0,48"	,187"	5	10	
3/8"-16	5/8"	0,48"	,187"	6	21	
1/2"-13	3/4"	0,72"	,281"	3	6	
1/2"-13	3/4"	0,72"	,281"	6	12	
1/2"-13	3/4"	0,72"	,281"	6	30	
5/8" -11	63/64"	0,96"	,375"	9	18	
5/8" -11	63/64"	0,96"	,375"	9	18	
5/8" -11	63/64"	0,96"	,375"	7	50	

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## Fuerza de muelle normal

Fuerza de muelle en N\*

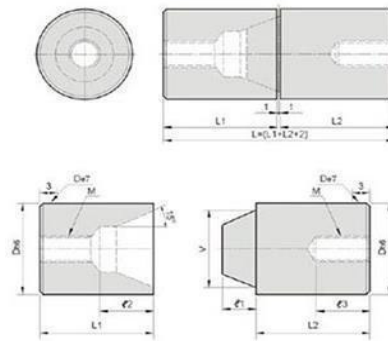
$d_1$	I	S	$d_2$	Inicial	Final
M 3	7	0,4	2	3	4,5
M 4	9	0,8	3	6	14,5
M 5	12	0,9	3	8	14
M 6	14	1	4	11	18
M 8	16	1,5	5	18	31
M 10	19	2	6	24	45
M 12	22	2,5	8	26	49
M 16	24	3,5	10	41	86
M 20	30	4,5	12	56	111
M 24	34	5,5	15	81	151

\*valor medio estático

$d_1$	I	S	$d_2$	Inicial	Final
M 5	12	0,9	3	15	22
M 6	14	1	3,5	19	28
M 8	16	1,5	4,5	36	62
M 10	19	2	6	57	104
M 12	22	2,5	8	61	110
M 16	24	3,5	10	68	142
M 20	30	4,5	12	84	166
M 24	34	5,5	15	127	237

# Centradores

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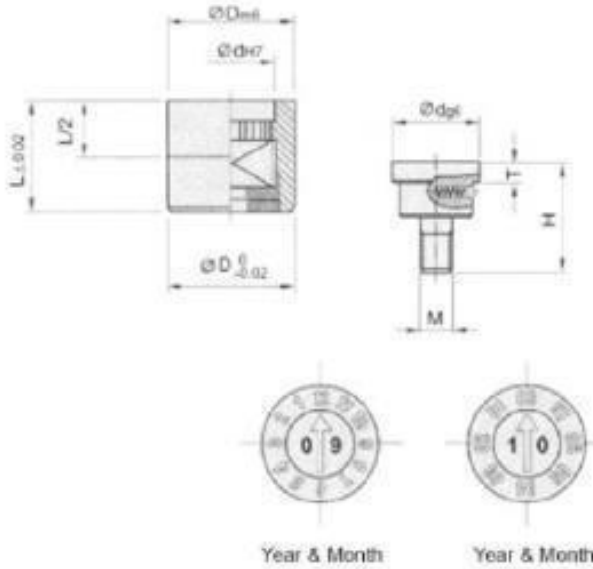


Type	D k6	A	V	L	L1	L2	ϕ1	ϕ2	ϕ3	M
	13	5°	8.5	30	14	14	6	5	10	M4
	16		10	30	14	14	6	5	10	M5
	20		13	40	19	19	9	8	12	M6
	25		16	50	24	24	12	11	16	M8
	30		20	60	29	29	15	14	20	M10
	32		20	60	29	29	15	14	20	M10
	35		24	70	34	34	18	17	24	M12
	42		30	80	39	39	24	23	24	M12

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## Fechaadores



SUS420  
 HRC48<sup>o</sup> - 50<sup>o</sup>

Unit: mm

Catalog No.		D	d H7		d g6		L	T	H	M
Type No.	D m6									
MCH	4	+0.012 +0.004	4	2.4 +0.010 +0	2.4 -0.002 -0.008	8	1.5	7.7	M1.6X0.2	
	5		5							2.9
	6		6							3.7
	8	+0.015 +0.006	+0.012 +0	8	5.0	-0.004 -0.012	10	2	9.7	M2.3X0.25
	10			10			6.3	-0.005 -0.014	12	2.5
	12	+0.018 +0.007	+0.015 +0	12	7.5	-0.006 -0.017	14			
	16			16				11.0		
	20			20				13.2		



DOWEL PIN



Ø Diameter	Lenght
1/16"	3/16"
	1/4"
	3/8"
	1/2"
	5/8"
	3/4"
	7/8"
	1"
3/32"	1/4"
	3/8"
	1/2"
	5/8"
	3/4"
	7/8"
1/8"	1"
	3/8"
	1/2"
	5/8"
	3/4"
	7/8"
	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
2"	
3/16"	1/2"
	5/8"
	3/4"
	7/8"
	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
2"	
1/4"	1/2"
	5/8"
	3/4"
	7/8"
	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
	2"
	2 - 1/4"
2 - 1/2"	
5/16"	1/2"
	5/8"
	3/4"
	7/8"
	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
	2"
	2 - 1/4"
2 - 1/2"	
3"	

Ø Diameter	Lenght
3/8"	1/2"
	5/8"
	3/4"
	7/8"
	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
	2"
	2 - 1/4"
	2 - 1/2"
3"	
7/16"	1"
	1 - 1/4"
	1 - 1/2"
	2"
	2 - 1/2"
1/2"	3"
	3/4"
	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
	2"
	2 - 1/4"
	2 - 1/2"
	3"
3 - 1/2"	
4"	
5/8"	1"
	1 - 1/4"
	1 - 1/2"
	1 - 3/4"
	2"
	2 - 1/2"
	3"
	3 - 1/2"
	4"
	5"
3/4"	2"
	2 - 1/2"
	3"
	3 - 1/2"
	4"
	5"
7/8"	6"
	2"
	2 - 1/2"
1"	3"
	4"
	2"
	2 - 1/2"