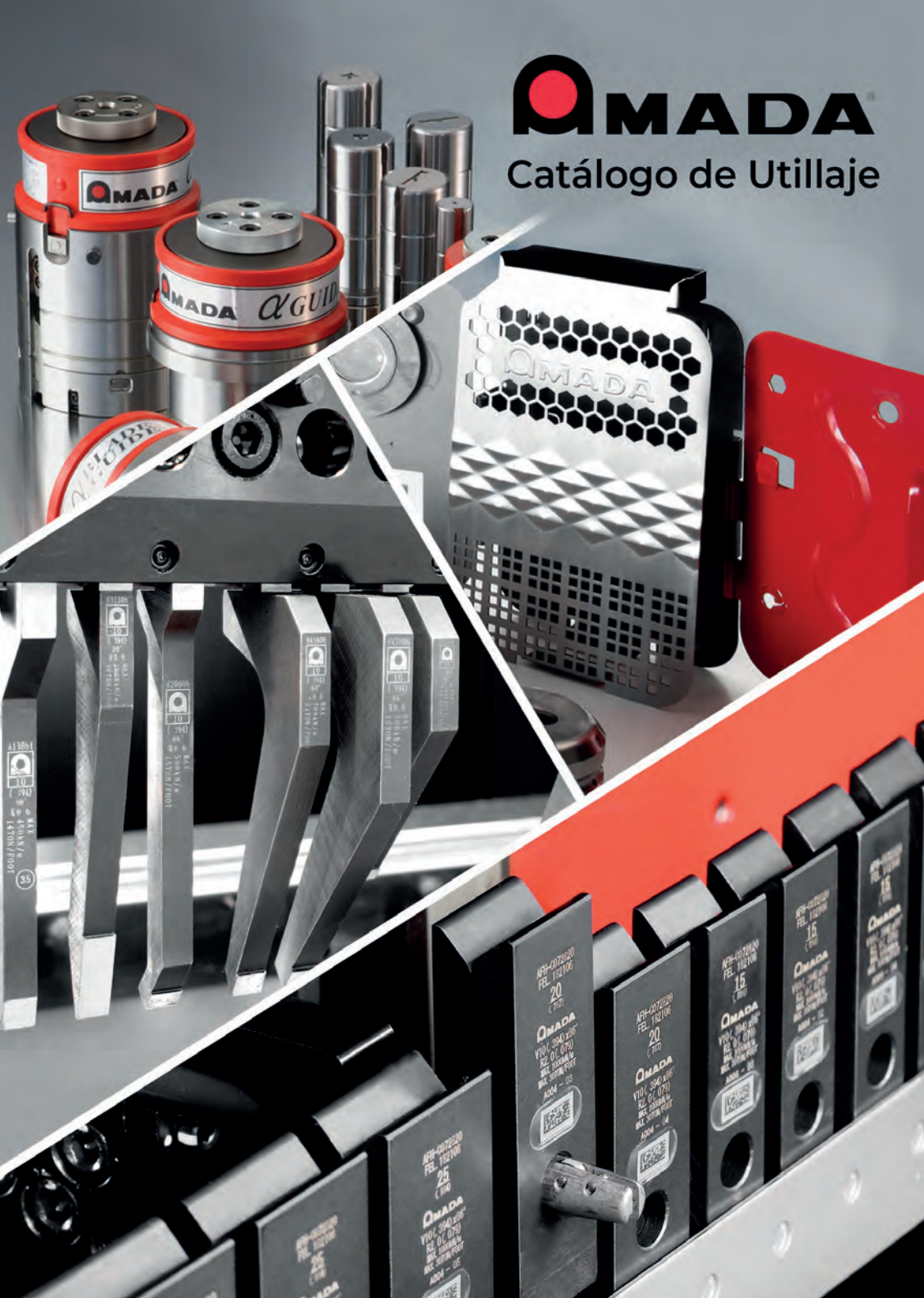
AMADA

# Catálogo de Utillaje



AMADA

# Contenido
# Utillaje de Plegadora

## Utillaje con Calidad AMADA

AMADA ha sido líder en la producción de Plegadoras de Precisión durante más de 40 años y ha instalado más de 80.000 máquinas en todo el mundo. El conocimiento adquirido durante este tiempo ha confirmado nuestra convicción de que el uso de herramientas de alta Calidad asegura un óptimo plegado a lo largo del tiempo. El uso de herramientas de plegadora AMADA garantiza la productividad, lo que la pone por delante de la competencia.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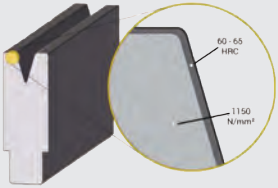
# Características

## Calidad de Punzones

Acero templado desde el núcleo y extrusionado en caliente:

- Alta precisión consistente y duradera
- Dureza en superficie: 45~50 HRC
- Resistencia del Cuerpo: **1500 N/mm²**

## Calidad de Matrices




Las matrices AMADA son AMANIT®, lo que les confiere:

- Mayor resistencia al desgaste en la superficie (60-65 HRC)
- Baja fricción en el radio
- Máxima resistencia del cuerpo: - **1150 N/mm²**
- Resistencia a la corrosión

## Características de las Herramientas

Mediante técnicas innovadoras de tratamiento térmico y tests específicos conferimos la mejor durabilidad al acero, no sólo contra cargas de alta presión sino también por un número infinito de cargas repetitivas.

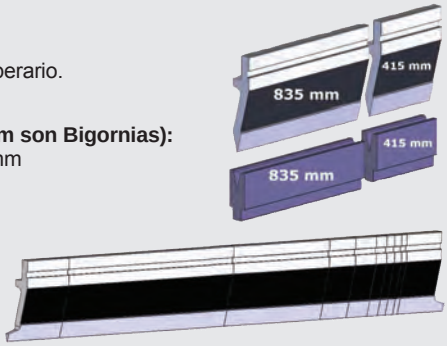
Utillaje de Plegadora

## Marcado Láser Completo

Todos los útiles AMADA de plegadora, incluso los tramos fraccionados, están marcados por láser con información esencial como tipo de utillaje, ángulo, tonelaje, longitud y radio.

## Longitudes de Utillajes

Disponibles en tramos de 835 mm, 415 mm y
Fraccionadas (Frac) para facilitar el manejo del operario.




**Punzones Fraccionados (Los tramos de 100mm son Bigornias):**
100, 10, 15, 15, 20, 40, 50, 150, 300, 100 = 800 mm

**Matrices Fraccionadas:**
100, 10, 15, 15, 20, 40, 50, 150, 400 = 800 mm

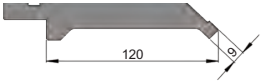
# Cómo utilizar esta sección

## Esta sección debe interpretarse:

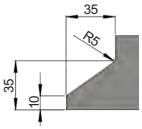
## Ejemplo: Punzón #804

1 2 3 4 5 6

| Ángulo | Radio | Código | Longitud | Precio | Tipo #804 - 100 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8048061 | 835 mm | c.p. | |
| | | 8048062 | 415 mm | c.p. | |
| | | 8048063 | Sec | c.p. | |
| | R1.5 | 8048151 | 835 mm | c.p. | |
| | | 8048152 | 415 mm | c.p. | |
| | | 8048153 | Sec | c.p. | |
| | R3.0 | 8048301 | 835 mm | c.p. | |
| | | 8048302 | 415 mm | c.p. | |
| | | 8048303 | Sec | c.p. | |
| 88° | R0.6 | 8047061 | 835 mm | c.p. | |
| | | 8047062 | 415 mm | c.p. | |
| | | 8047063 | Sec | c.p. | |




9 mm tip

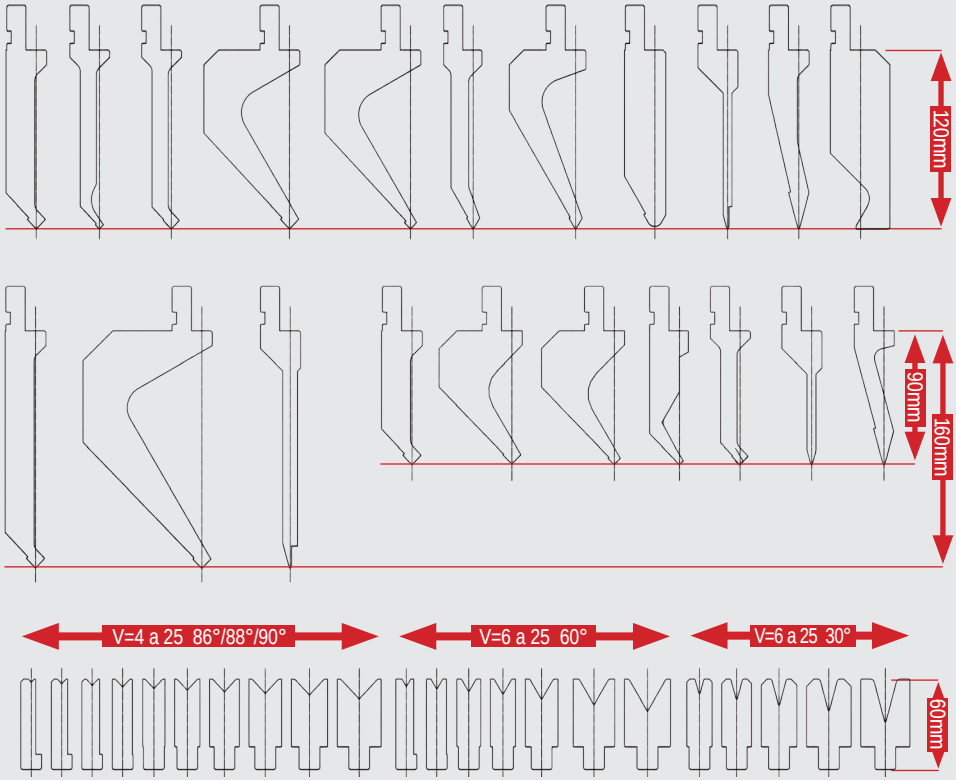



7 → Antes #

8 → Tonelaje Bigornia = 45 t/m

1. Ángulo de la Herramienta (codificado en color)
2. Radio estándar de la punta del Punzón
3. Código para el radio especificado
4. Longitud de la Herramienta
5. Número de Herramienta
6. Tonelaje permitido – Toneladas por metro
7. Número anterior de herramienta (cuando sea aplicable)
8. Tonelaje en Bigornias – Toneladas por metro

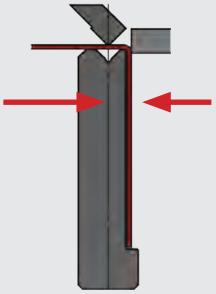
# AFH - Herramienta de Altura Fija






# Ventajas del AFH

**Matrices 1V**

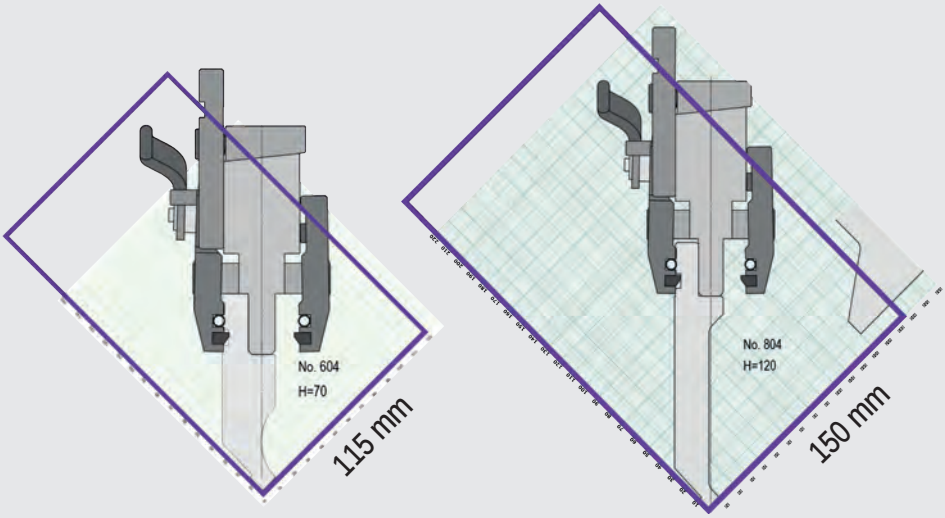


Rebaje trasero para valores mínimos de pestaña

Rebaje superior para formas o plegados cerrados

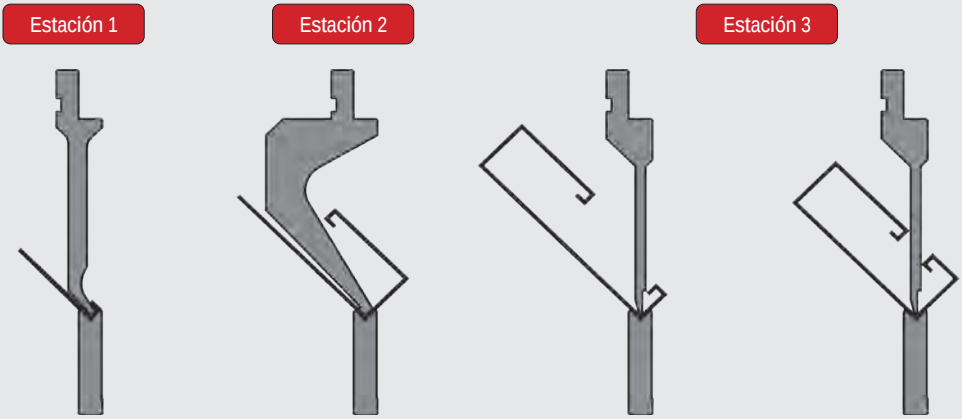
# Ventajas del AFH

**Permite más profundidad en cajas y mayor longitud de área de retorno**



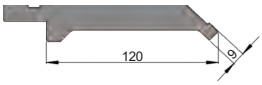
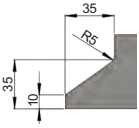

**Herramienta anterior** **Nueva AFH (H=120 mm)**

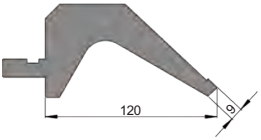
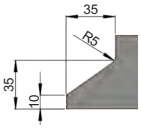
Perfiles diversos de punzón y matriz a misma altura, haciendo más rápidos los montajes y el rebaje por estaciones.




Ejemplo de 3 perfiles diferentes en un montaje de máquina.

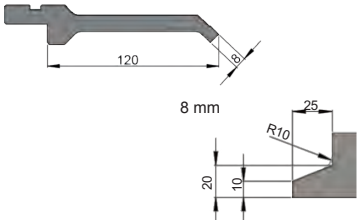
# Punzones AFH H=120

| Ángulo | Radio | Código | Longitud | Precio | Tipo #804 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8048061 | 835 mm | c.p. |   9 mm   Tonelaje Bigornia = 45 t/m |
| | | 8048062 | 415 mm | c.p. | |
| | | 8048063 | Sec | c.p. | |
| | R1.5 | 8048151 | 835 mm | c.p. | |
| | | 8048152 | 415 mm | c.p. | |
| | | 8048153 | Sec | c.p. | |
| | R3.0 | 8048301 | 835 mm | c.p. | |
| | | 8048302 | 415 mm | c.p. | |
| | | 8048303 | Sec | c.p. | |
| 88° | R0.6 | 8047061 | 835 mm | c.p. | |
| | | 8047062 | 415 mm | c.p. | |
| | | 8047063 | Sec | c.p. | |

| Ángulo | Radio | Código | Longitud | Precio | Tipo #847 AFH - 50 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8478061 | 835 mm | c.p. |   9 mm   Tonelaje Bigorniae = 45 t/m |
| | | 8478062 | 415 mm | c.p. | |
| | | 8478063 | Sec | c.p. | |
| | R1.5 | 8478151 | 835 mm | c.p. | |
| | | 8478152 | 415 mm | c.p. | |
| | | 8478153 | Sec | c.p. | |
| | R3.0 | 8478301 | 835 mm | c.p. | |
| | | 8478302 | 415 mm | c.p. | |
| | | 8478303 | Sec | c.p. | |
| 88° | R0.6 | 8477061 | 835 mm | c.p. | |
| | | 8477062 | 415 mm | c.p. | |
| | | 8477063 | Sec | c.p. | |

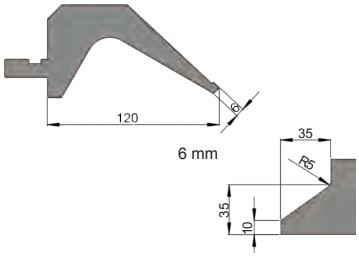
# Punzones AFH H=120

| Ángulo | Radio | Código | Longitud | Precio | Tipo #820 AFH - 50 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8208061 | 835 mm | c.p. | |
| | | 8208062 | 415 mm | c.p. | |
| | | 8208063 | Sec | c.p. | |
| | R1.5 | 8208151 | 835 mm | c.p. | |
| | | 8208152 | 415 mm | c.p. | |
| | | 8208153 | Sec | c.p. | |
| 88° | R0.6 | 8207061 | 835 mm | c.p. | |
| | | 8207062 | 415 mm | c.p. | |
| | | 8207063 | Sec | c.p. | |



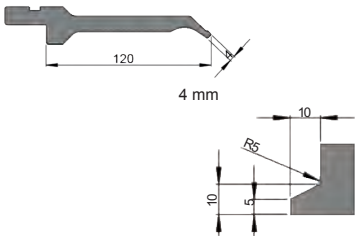

Tonelaje Bigornia = 20 t/m

| Ángulo | Radio | Código | Longitud | Precio | Tipo #846 AFH - 45 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8468061 | 835 mm | c.p. | |
| | | 8468062 | 415 mm | c.p. | |
| | | 8468063 | Sec | c.p. | |
| 88° | | 8467061 | 835 mm | c.p. | |
| | | 8467062 | 415 mm | c.p. | |
| | | 8467063 | Sec | c.p. | |



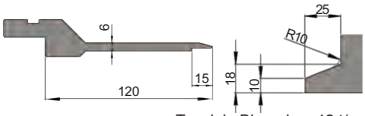

Tonelaje Bigornia = 35 t/m

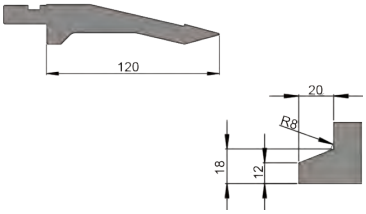
| Ángulo | Radio | Código | Longitud | Precio | Tipo #817 AFH - 30 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8178061 | 835 mm | c.p. | |
| | | 8178062 | 415 mm | c.p. | |
| | | 8178063 | Sec | c.p. | |
| 88° | | 8177061 | 835 mm | c.p. | |
| | | 8177062 | 415 mm | c.p. | |
| | | 8177063 | Sec | c.p. | |




Tonelaje Bigornia = 15 t/m

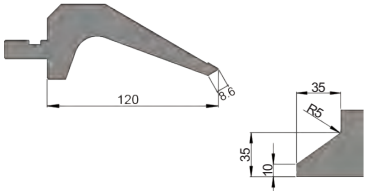
# Punzones AFH H=120

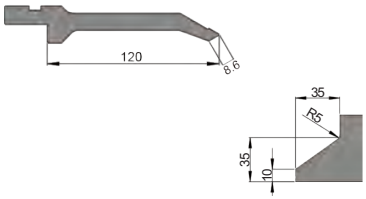
| Ángulo | Radio | Código | Longitud | Precio | Tipo #814 AFH - 45 t/m |
|---|---|---|---|---|---|
| 30° | R0.6 | 8143061 | 835 mm | c.p. |   Tonelaje Bigornia = 12 t/m |
| | | 8143062 | 415 mm | c.p. | |
| | | 8143063 | Sec | c.p. | |

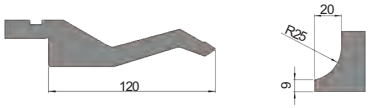
| Ángulo | Radio | Código | Longitud | Precio | Tipo #831 AFH - 100 t/m |
|---|---|---|---|---|---|
| 26° | R0.6 | 8312061 | 835 mm | c.p. |   Tonelaje Bigornia = 30 t/m |
| | | 8312062 | 415 mm | c.p. | |
| | | 8312063 | Sec | c.p. | |
| 30° | R0.6 | 8313061 | 835 mm | c.p. | |
| | | 8313062 | 415 mm | c.p. | |
| | | 8313063 | Sec | c.p. | |
| | R1.5 | 8313151 | 835 mm | c.p. | |
| | | 8313152 | 415 mm | c.p. | |
| | | 8313153 | Sec | c.p. | |
| | R3.0 | 8313301 | 835 mm | c.p. | |
| | | 8313302 | 415 mm | c.p. | |
| | | 8313303 | Sec | c.p. | |
| | R4.0 | 8313401 | 835 mm | c.p. | |
| | | 8313402 | 415 mm | c.p. | |
| | | 8313403 | Sec | c.p. | |

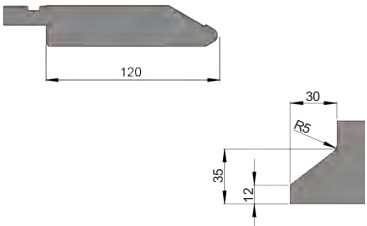
* Templado por inducción

# Punzones AFH H=120

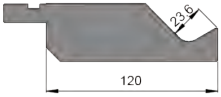
| Ángulo | Radio | Código | Longitud | Precio | Tipo #841 AFH - 70 t/m |
|---|---|---|---|---|---|
| 60° | R0.6 | 8416061 | 835 mm | c.p. |   Tonelaje Bigornia = 30 t/m |
| | | 8416062 | 415 mm | c.p. | |
| | | 8416063 | Sec | c.p. | |
| | R1.5 | 8416151 | 835 mm | c.p. | |
| | | 8416152 | 415 mm | c.p. | |
| | | 8416153 | Sec | c.p. | |

| Ángulo | Radio | Código | Longitud | Precio | Tipo #840 AFH - 70 t/m |
|---|---|---|---|---|---|
| 60° | R0.6 | 8406061 | 835 mm | c.p. |   Tonelaje Bigornia = 30 t/m |
| | | 8406062 | 415 mm | c.p. | |
| | | 8406063 | Sec | c.p. | |
| | R1.5 | 8406151 | 835 mm | c.p. | |
| | | 8406152 | 415 mm | c.p. | |
| | | 8406153 | Sec | c.p. | |

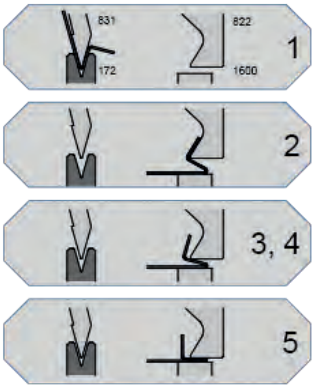
| Ángulo | Radio | Código | Longitud | Precio | Tipo #843 AFH - 60 t/m* |
|---|---|---|---|---|---|
| 60° | R0.6 | 8436061 | 835 mm | c.p. |   Tonelaje Bigornia = 25 t/m |
| | | 8436062 | 415 mm | c.p. | |
| | | 8436063 | Sec | c.p. | |

| Ángulo | Radio | Código | Longitud | Precio | Tipo #803 AFH - 100 t/m |
|---|---|---|---|---|---|
| 60° | R6.0 | 8036601 | 835 mm | c.p. |   Tonelaje Bigornia = 100 t/m |
| | | 8036602 | 415 mm | c.p. | |
| | | 8036603 | Sec | c.p. | |
| | R5.0 | 8036501 | 835 mm | c.p. | |
| | | 8036502 | 415 mm | c.p. | |
| | | 8036503 | Sec | c.p. | |

# Punzones AFH H=120

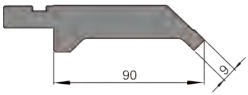
| Ángulo | Radio | Código | Longitud | Precio | Tipo #822 AFH - 100 t/m |
|---|---|---|---|---|---|
| Aplastado | | 8220001 | 835mm | c.p. |   |
| | | 8220002 | 415mm | c.p. | |
| | | 8220003 | Sec (sin bigornias) | c.p. | |

Ejemplo estación de Aplastado

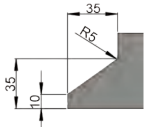


# Punzones AFH H=90

| Ángulo | Radio | Código | Longitud | Precio | Tipo #704 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 7048061 | 835 mm | c.p. | |
| | | 7048062 | 415 mm | c.p. | |
| | | 7048063 | Sec | c.p. | |
| | R1.5 | 7048151 | 835 mm | c.p. | |
| | | 7048152 | 415 mm | c.p. | |
| | | 7048153 | Sec | c.p. | |
| | R3.0 | 7048301 | 835 mm | c.p. | |
| | | 7048302 | 415 mm | c.p. | |
| | | 7048303 | Sec | c.p. | |
| 88° | R0.6 | 7047061 | 835 mm | c.p. | |
| | | 7047062 | 415 mm | c.p. | |
| | | 7047063 | Sec | c.p. | Antes #0S01 (86°)<br>Antes #0S02 (90°) |

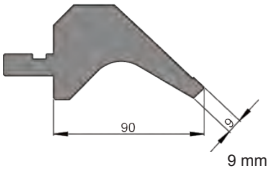



9 mm




Tonelaje Bigornia = 45 t/m

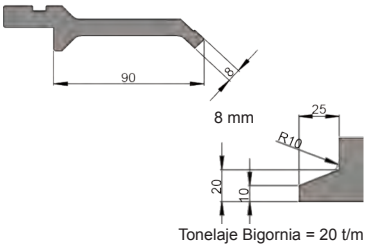
| Ángulo | Radio | Código | Longitud | Precio | Tipo #747 AFH - 80 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 7478061 | 835 mm | c.p. | |
| | | 7478062 | 415 mm | c.p. | |
| | | 7478063 | Sec | c.p. | |
| | R1.5 | 7478151 | 835 mm | c.p. | |
| | | 7478152 | 415 mm | c.p. | |
| | | 7478153 | Sec | c.p. | |
| | R3.0 | 7478301 | 835 mm | c.p. | |
| | | 7478302 | 415 mm | c.p. | |
| | | 7478303 | Sec | c.p. | |
| 88° | R0.6 | 7477061 | 835 mm | c.p. | |
| | | 7477062 | 415 mm | c.p. | |
| | | 7477063 | Sec | c.p. | Antes #452 (88°) |

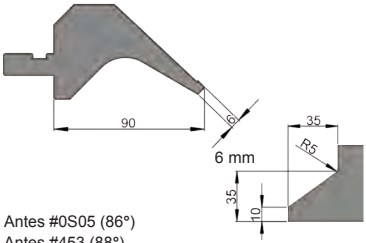


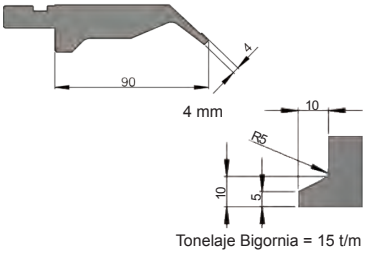

9 mm

Tonelaje Bigornia = 45 t/m

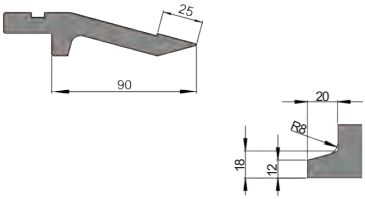
# Punzones AFH H=90

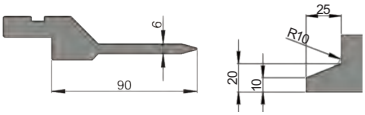
| Ángulo | Radio | Código | Longitud | Precio | Tipo #720 AFH - 50 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 7208061 | 835 mm | c.p. |   |
| | | 7208062 | 415 mm | c.p. | |
| | | 7208063 | Sec | c.p. | |
| | R1.5 | 7208151 | 835 mm | c.p. | |
| | | 7208152 | 415 mm | c.p. | |
| | | 7208153 | Sec | c.p. | |
| 88° | R0.6 | 7207061 | 835 mm | c.p. | |
| | | 7207062 | 415 mm | c.p. | |
| | | 7207063 | Sec | c.p. | Antes #0S03 (86°) |

| Ángulo | Radio | Código | Longitud | Precio | Tipo #746 AFH - 55 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 7468061 | 835 mm | c.p. |   |
| | | 7468062 | 415 mm | c.p. | |
| | | 7468063 | Sec | c.p. | |
| 88° | | 7467061 | 835 mm | c.p. | |
| | | 7467062 | 415 mm | c.p. | Antes #0S05 (86°)<br>Antes #453 (88°) |
| | | 7467063 | Sec | c.p. | |

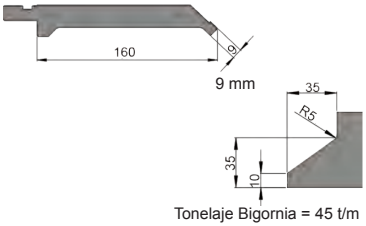
| Ángulo | Radio | Código | Longitud | Precio | Tipo #717 AFH - 20 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 7178061 | 835 mm | c.p. |   |
| | | 7178062 | 415 mm | c.p. | |
| | | 7178063 | Sec | c.p. | |
| 88° | | 7177061 | 835 mm | c.p. | |
| | | 7177062 | 415 mm | c.p. | |
| | | 7177063 | Sec | c.p. | |

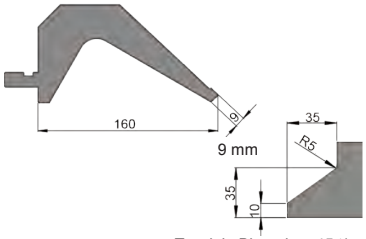
# Punzones AFH H=90

| Ángulo | Radio | Código | Longitud | Precio | Tipo #731 AFH - 100 t/m |
|---|---|---|---|---|---|
| 30° | R0.6 | 7313061 | 835 mm | c.p. |   Tonelaje Bigornia = 30 t/m |
| | | 7313062 | 415 mm | c.p. | |
| | | 7313063 | Sec | c.p. | |
| | R1.5 | 7313151 | 835 mm | c.p. | |
| | | 7313152 | 415 mm | c.p. | |
| | | 7313153 | Sec | c.p. | |
| | R3.0 | 7313301 | 835 mm | c.p. | |
| | | 7313302 | 415 mm | c.p. | |
| | | 7313303 | Sec | c.p. | |

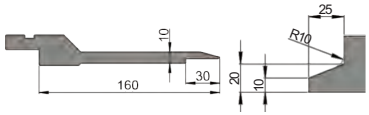
| Ángulo | Radio | Código | Longitud | Precio | Tipo #713 AFH - 45 t/m |
|---|---|---|---|---|---|
| 30° | R0.6 | 7133061 | 835 mm | c.p. |   Tonelaje Bigornia = 12 t/m |
| | | 7133062 | 415 mm | c.p. | |
| | | 7133063 | Sec | c.p. | |

# Punzones AFH H=160

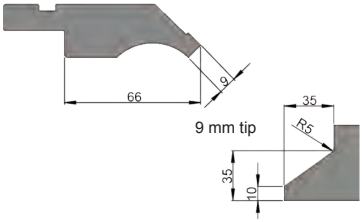
| Ángulo | Radio | Código | Longitud | Precio | Tipo #904 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 9048061 | 835 mm | c.p. |  |
| | | 9048062 | 415 mm | c.p. | |
| | | 9048063 | Sec | c.p. | |
| | R1.5 | 9048151 | 835 mm | c.p. | |
| | | 9048152 | 415 mm | c.p. | |
| | | 9048153 | Sec | c.p. | |
| | R3.0 | 9048301 | 835 mm | c.p. | |
| | | 9048302 | 415 mm | c.p. | |
| | | 9048303 | Sec | c.p. | |
| 88° | R0.6 | 9047061 | 835 mm | c.p. | |
| | | 9047062 | 415 mm | c.p. | |
| | | 9047063 | Sec | c.p. | |

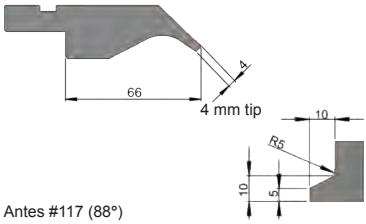
| Ángulo | Radio | Código | Longitud | Precio | Tipo #947 AFH - 50 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 9478061 | 835 mm | c.p. |  |
| | | 9478062 | 415 mm | c.p. | |
| | | 9478063 | Sec | c.p. | |
| | R1.5 | 9478151 | 835 mm | c.p. | |
| | | 9478152 | 415 mm | c.p. | |
| | | 9478153 | Sec | c.p. | |
| | R3.0 | 9478301 | 835 mm | c.p. | |
| | | 9478302 | 415 mm | c.p. | |
| | | 9478303 | Sec | c.p. | |
| 88° | R0.6 | 9477061 | 835 mm | c.p. | |
| | | 9477062 | 415 mm | c.p. | |
| | | 9477063 | Sec | c.p. | |

# Punzones AFH H=160

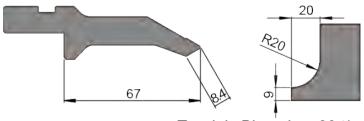
| Ángulo | Radio | Código | Longitud | Precio | Tipo #914 AFH - 45 t/m |
|---|---|---|---|---|---|
| 30° | R0.6 | 9143061 | 835 mm | c.p. |   Tonelaje Bigornia = 12 t/m |
| | | 9143062 | 415 mm | c.p. | |
| | | 9143063 | Sec | c.p. | |

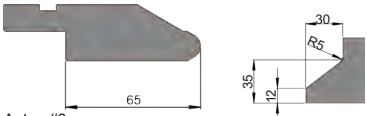
# Punzones AFH H=70

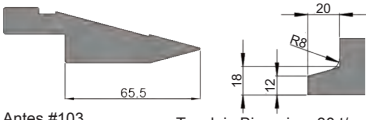
| Ángulo | Radio | Código | Longitud | Precio | Tipo #604 - 100 t/m |
|---|---|---|---|---|---|
| 88° | R0.6 | 6047061 | 835 mm | c.p. |   Tonelaje Bigornia = 45 t/m<br>Antes #4 (88°)<br>Antes #16 (90°) |
| | | 6047062 | 415 mm | c.p. | |
| | | 6047063 | Sec | c.p. | |
| | R0.8 | 6047081 | 835 mm | c.p. | |
| | | 6047082 | 415 mm | c.p. | |
| | | 6047083 | Sec | c.p. | |
| | R1.5 | 6047151 | 835 mm | c.p. | |
| | | 6047152 | 415 mm | c.p. | |
| | | 6047153 | Sec | c.p. | |
| | R3.0 | 6047301 | 835 mm | c.p. | |
| | | 6047302 | 415 mm | c.p. | |
| | | 6047303 | Sec | c.p. | |

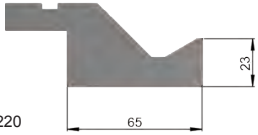
| Ángulo | Radio | Código | Longitud | Precio | Tipo #617 - 30 t/m |
|---|---|---|---|---|---|
| 88° | R0.6 | 6177061 | 835 mm | c.p. |   Antes #117 (88°)<br>Antes #116 (90°)<br>Tonelaje Bigornia = 15 t/m |
| | | 6177062 | 415 mm | c.p. | |
| | | 6177063 | Sec | c.p. | |
| | R0.8 | 6177081 | 835 mm | c.p. | |
| | | 6177082 | 415 mm | c.p. | |
| | | 6177083 | Sec | c.p. | |

# Punzones AFH H=70

| Ángulo | Radio | Código | Longitud | Precio | Tipo #640 - 100 t/m |
|---|---|---|---|---|---|
| 60° | R0.8 | 6406081 | 835 mm | c.p. |   Tonelaje Bigornia = 30 t/m<br>Antes #704 or #705 |
| | | 6406082 | 415 mm | c.p. | |
| | | 6406083 | Sec | c.p. | |
| | R2.0 | 6406201 | 835 mm | c.p. | |
| | | 6406202 | 415 mm | c.p. | |
| | | 6406203 | Sec | c.p. | |

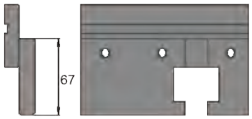
| Ángulo | Radio | Código | Longitud | Precio | Tool #603 - 100 t/m |
|---|---|---|---|---|---|
| 60° | R6.0 | 6036601 | 835 mm | c.p. |   Antes #3 Tonelaje Bigornia = 100 t/m |
| | | 6036602 | 415 mm | c.p. | |
| | | 6036603 | Sec | c.p. | |

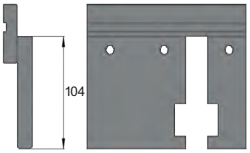
| Ángulo | Radio | Código | Longitud | Precio | Tipo #631 - 100 t/m |
|---|---|---|---|---|---|
| 30° | R0.52 | 6313051 | 835 mm | c.p. |   Antes #103 Tonelaje Bigornia = 30 t/m |
| | | 6313052 | 415 mm | c.p. | |
| | | 6313053 | Sec | c.p. | |

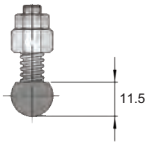
| Ángulo | Radio | Código | Longitud | Precio | Tipo #622 - 100 t/m |
|---|---|---|---|---|---|
| Aplastado | | 6220001 | 835 mm | c.p. |   Antes #220 |
| | | 6220002 | 415 mm | c.p. | |

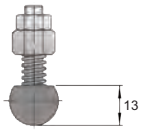
846001
86° R0.6(.024)
415 (16.339)
ALLOWABLE TONNAGE
MAX: 450 kN/m (45ton/m)
MAX: 14 TON/FOOT
F-6a
MADE IN AUSTRIA
AMANIT

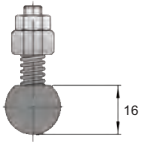
# Punzones de Radio

| | Radio | Código | Longitud | Precio | Tipo #0150 Soporte - 100 t/m |
|---|---|---|---|---|---|
| | | 0150001 | 830 mm | c.p. |   Antes #15 |
| | | 0150002 | 412 mm | c.p. | |

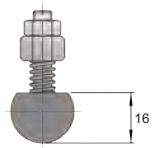
| | Radio | Código | Longitud | Precio | Tipo #0160 Soporte - 100 t/m |
|---|---|---|---|---|---|
| | | 0160001 | 830 mm | c.p. |   |
| | | 0160002 | 412 mm | c.p. | |

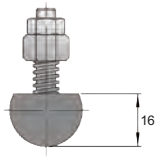
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R7.0 | 0170071 | 835 mm | c.p. |   |
| | | 0170072 | 415 mm | c.p. | |

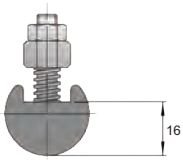
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R8.0 | 0170081 | 835 mm | c.p. |   |
| | | 0170082 | 415 mm | c.p. | |

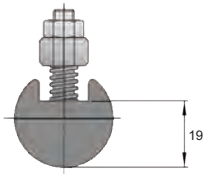
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R9.0 | 0170091 | 835 mm | c.p. |   |
| | | 0170092 | 415 mm | c.p. | |

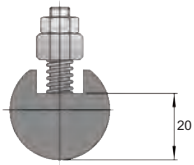
# Punzones de Radio

| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R10.0 | 0170101 | 835 mm | c.p. |   |
| | | 0170102 | 415 mm | c.p. | |

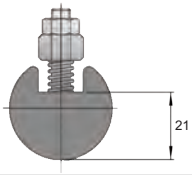
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R11.0 | 0170111 | 835 mm | c.p. |   |
| | | 0170112 | 415 mm | c.p. | |

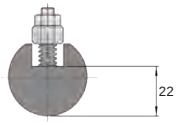
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R12.5 | 0170121 | 835 mm | c.p. |   |
| | | 0170122 | 415 mm | c.p. | |

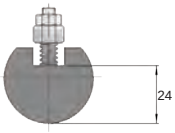
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R14.0 | 0170141 | 835 mm | c.p. |   |
| | | 0170142 | 415 mm | c.p. | |

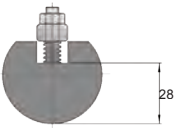
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R15.0 | 0170151 | 835 mm | c.p. |   |
| | | 0170152 | 415 mm | c.p. | |

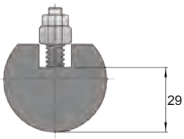
# Punzones de Radio

| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R16.0 | 0170161 | 835 mm | c.p. |   |
| | | 0170162 | 415 mm | c.p. | |

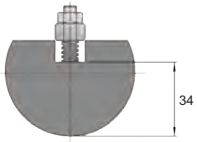
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R17.5 | 0170171 | 835 mm | c.p. |   |
| | | 0170172 | 415 mm | c.p. | |

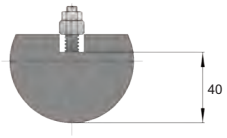
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R20.0 | 0170201 | 835 mm | c.p. |   |
| | | 0170202 | 415 mm | c.p. | |

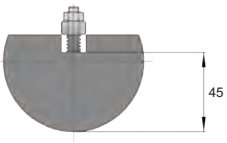
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R22.5 | 0170221 | 835 mm | c.p. |   |
| | | 0170222 | 415 mm | c.p. | |

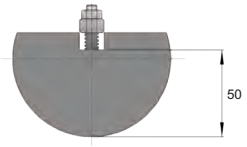
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R25.0 | 0170251 | 835 mm | c.p. |   |
| | | 0170252 | 415 mm | c.p. | |

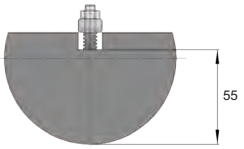
# Punzones de Radio

| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R30.0 | 0170301 | 835 mm | c.p. |   |
| | | 0170302 | 415 mm | c.p. | |

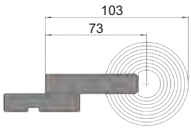
| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R35.0 | 0170351 | 835 mm | c.p. |   |
| | | 0170352 | 415 mm | c.p. | |

| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R40.0 | 0170401 | 835 mm | c.p. |   |
| | | 0170402 | 415 mm | c.p. | |

| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R45.0 | 0170451 | 835 mm | c.p. |   |
| | | 0170452 | 415 mm | c.p. | |

| | Radio | Código | Longitud | Precio | Tipo #17 - 100 t/m |
|---|---|---|---|---|---|
| | R50.0 | 0170501 | 835 mm | c.p. |   |
| | | 0170502 | 415 mm | c.p. | |

# Punzón Multi-Radio de Colores

| | Radio | Código | Longitud | Precio | Tipo #CR30 - 50 t/m |
|---|---|---|---|---|---|
| | | 730001 | 835 mm | c.p. |   |
| | | 730002 | 415 mm | c.p. | |
| | | 730801 | Sec* | c.p. | |

| | Radio | Código | Longitud | Precio | Amarillo |
|---|---|---|---|---|---|
| | | 03YE01 | 835 mm | c.p. | |
| | R12.5 | 03YE02 | 415 mm | c.p. | |
| | | 03BYE1 | Sec* | c.p. | |

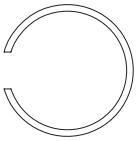
| | Radio | Código | Longitud | Precio | Rojo |
|---|---|---|---|---|---|
| | | 03RE01 | 835 mm | c.p. | |
| | R15.0 | 03RE02 | 415 mm | c.p. | |
| | | 03BRE1 | Sec* | c.p. | |

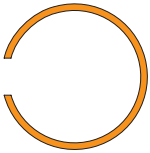
| | Radio | Código | Longitud | Precio | Negro |
|---|---|---|---|---|---|
| | | 03BR01 | 835 mm | c.p. | |
| | R17.5 | 03BR02 | 415 mm | c.p. | |
| | | 03BBR1 | Sec* | c.p. | |

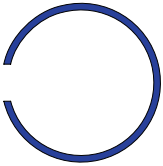
| | Radio | Código | Longitud | Precio | Azul Claro |
|---|---|---|---|---|---|
| | | 03SB01 | 835 mm | c.p. | |
| | R20.0 | 03SB02 | 415 mm | c.p. | |
| | | 03BSB1 | Sec* | c.p. | |

# Punzón Multi-Radio de Colores

| | Radio | Código | Longitud | Precio | Verde |
|---|---|---|---|---|---|
| | R22.5 | 03GR01 | 835 mm | c.p. | |
| | | 03GR02 | 415 mm | c.p. | |
| | | 03BGR1 | Sec* | c.p. | |

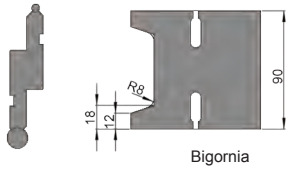
| | Radio | Código | Longitud | Precio | Blanco |
|---|---|---|---|---|---|
| | R25.0 | 03HD01 | 835 mm | c.p. |  |
| | | 03HD02 | 415 mm | c.p. | |
| | | 03BHD1 | Sec* | c.p. | |

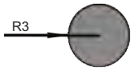
| | Radio | Código | Longitud | Precio | Naranja |
|---|---|---|---|---|---|
| | R27.5 | 03OR01 | 835 mm | c.p. |  |
| | | 03OR02 | 415 mm | c.p. | |
| | | 03BOR1 | Sec* | c.p. | |

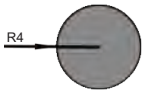
| | Radio | Código | Longitud | Precio | Azul Oscuro |
|---|---|---|---|---|---|
| | R30.0 | 03BU01 | 835 mm | c.p. |  |
| | | 03BU02 | 415 mm | c.p. | |
| | | 03BBU1 | Sec* | c.p. | |

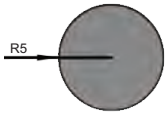
*** Sec Longitud:** 25, 40, 50, 100, 120, 200, 300 = 835 mm

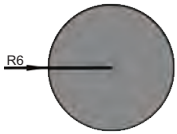
# Punzones Multi-Radios

| | Radio | Código | Longitud | Precio | Tipo #91 Soporte |
|---|---|---|---|---|---|
| | | 691001 | 835 mm | c.p. |   |
| | | 691002 | 415 mm | c.p. | |
| | | 691801 | Sec* | c.p. | |

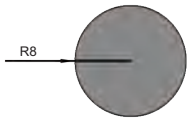
| | Radio | Código | Longitud | Precio | Tipo #90 |
|---|---|---|---|---|---|
| | | 090301 | 835 mm | c.p. |   |
| | R3.0 | 090302 | 415 mm | c.p. | |
| | | 090831 | Sec* | c.p. | |

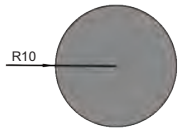
| | Radio | Código | Longitud | Precio | Tipo #90 |
|---|---|---|---|---|---|
| | | 090401 | 835 mm | c.p. |   |
| | R4.0 | 090402 | 415 mm | c.p. | |
| | | 090841 | Sec* | c.p. | |

| | Radio | Código | Longitud | Precio | Tipo #90 |
|---|---|---|---|---|---|
| | | 090501 | 835 mm | c.p. |   |
| | R5.0 | 090502 | 415 mm | c.p. | |
| | | 090851 | Sec* | c.p. | |

| | Radio | Código | Longitud | Precio | Tipo #90 |
|---|---|---|---|---|---|
| | | 090601 | 835 mm | c.p. |   |
| | R6.0 | 090602 | 415 mm | c.p. | |
| | | 090861 | Sec* | c.p. | |

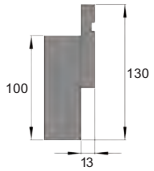
# Punzones Multi-Radios

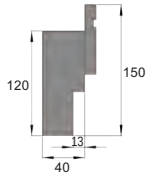
| | Radio | Código | Longitud | Precio | Tipo #90 |
|---|---|---|---|---|---|
| | R8.0 | 090801 | 835 mm | c.p. |   |
| | | 090802 | 415 mm | c.p. | |
| | | 090881 | Sec* | c.p. | |

| | Radio | Código | Longitud | Precio | Tipo #90 |
|---|---|---|---|---|---|
| | R10.0 | 090101 | 835 mm | c.p. |   |
| | | 090102 | 415 mm | c.p. | |
| | | 090811 | Sec* | c.p. | |

*** Sec Longitud:** 100 (bigornia x 2), 20, 25, 30, 35, 40, 50, 70, 165, 200 = 835 mm

# Soportes de Punzón Especiales

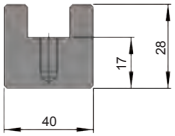
| Tipo Máquina | Código | Longitud | Precio | Tipo #225 |
|---|---|---|---|---|
| Máquinas de apertura 300 mm o más | 225002 | 415 mm | c.p. |   |

| Tipo Máquina | Código | Longitud | Precio | Tipo #227 |
|---|---|---|---|---|
| Máquinas de apertura 370 mm o más | 227002 | 415 mm | c.p. |   |

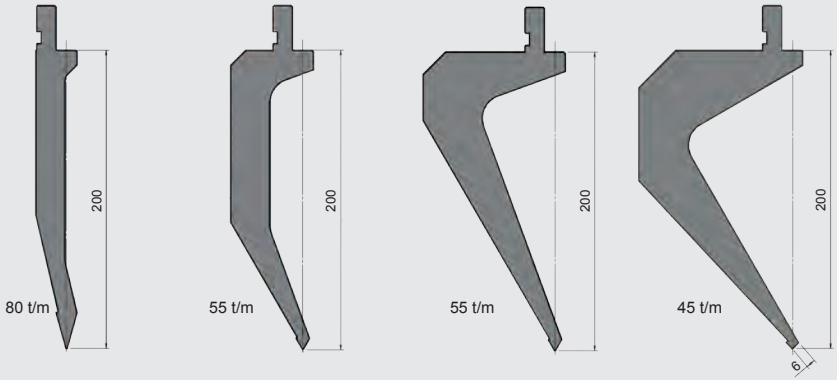
Se utilizan soportes en lugar de los intermediarios estándar, siempre y cuando el tonelaje necesario para el plegado exceda 1 tonelada por cada cm



# Aplastado

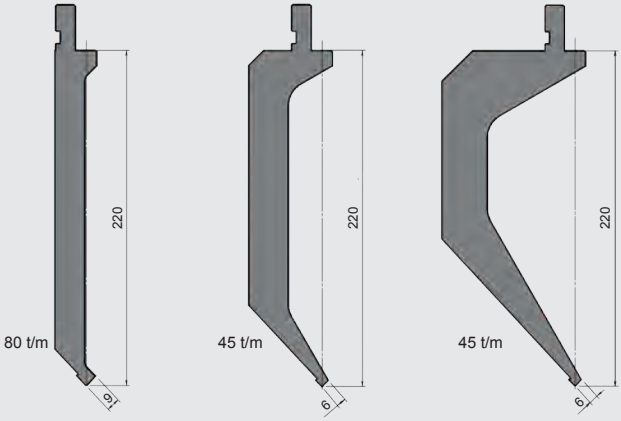
| Ángulo | Radio | Código | Longitud | Precio | Tipo #020 |
|---|---|---|---|---|---|
| Aplastado | | 0200001 | 835 mm | c.p. |   Antes #20 |
| | | 0200002 | 415 mm | c.p. | |

# Herramienta Semi-estándar



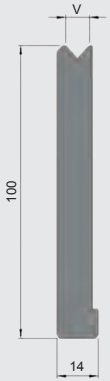

| Tipo | 831 | 841 W55 | 841 W95 | 846 W110 |
|---|---|---|---|---|
| Ángulo | 30° | 60° | 60° | 86° |
| Radio | R0.6 | R0.6 | R0.6 | R0.6 |
| Altura | 200 mm | 200 mm | 200 mm | 200 mm |
| Longitud | 415 mm | 415 mm | 415 mm | 415 mm |






| Tipo | 804 | 846 W55 | 846 W95 |
|---|---|---|---|
| Ángulo | 86° | 86° | 86° |
| Radio | R0.6 | R0.6 | R0.6 |
| Altura | 220 mm | 220 mm | 220 mm |
| Longitud | 415 mm | 415 mm | 415 mm |

**Matriz Semi-estándar**




Todas las matrices hasta V25 las podemos fabricar con una altura de 100 mm.





Precio a consultar (C.P.V.)

# Intermediarios

| Código | Precio | AGRIP M |
|---|---|---|
| 905200 | c.p. | |

| Código | Precio | SGRIP | SGRIP Brida Trasera |
|---|---|---|---|
| 903100 (SGRIP) | c.p. | | |
| 903300 (Brida trasera) | c.p. | | |

| Código | Precio | Brida AMACLIP |
|---|---|---|
| 980000 | c.p. | |

**Nota:** Requiere 2 tornillos ref.C10549 y 2 muelles ref.C52487. Por favor solicite precio.

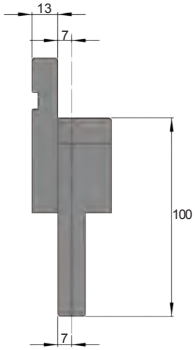
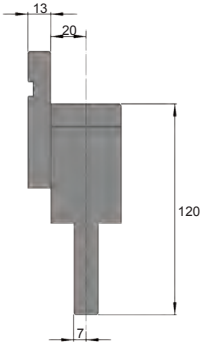
| Código | Precio | Brida de Seguridad Rápida con leva |
|---|---|---|
| C58621 | c.p. | |

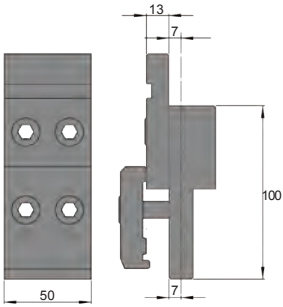
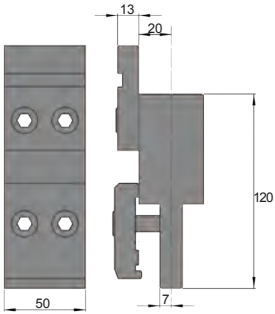
**Nota:** Incluye tornillos y muelles.

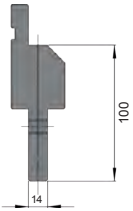
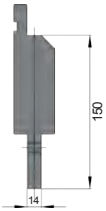
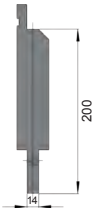
| Código | Precio | Brida de Seguridad |
|---|---|---|
| 961000 | c.p. | |

**Nota:** Requiere 2 tornillos ref.C10549 y 2 muelles ref.C52487. Por favor solicite precio.

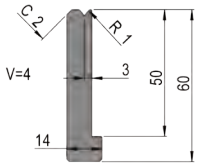
# Intermediarios

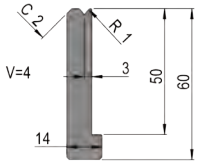
| Código | Precio | Estándar Tipo ZI | Estándar Tipo ZII |
|---|---|---|---|
| C58652 ZI | c.p. |   |   |
| C58654 ZII | c.p. | | |

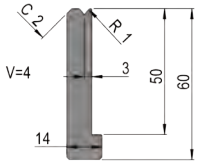
| Código | Precio | Completo con Brida – Tipo ZI | Completo con Brida – Tipo ZII |
|---|---|---|---|
| 912000 ZI | c.p. |   |   |
| 913000 ZII | c.p. | | |

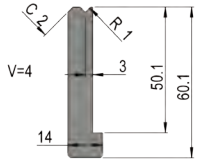
| Intermediario 100 | Intermediario 150 | Intermediario 200 |
|---|---|---|
|   |   |   |

# Matrices AFH 1V V=4

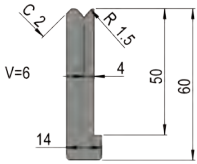
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0848 AFH - 75 t/m |
|---|---|---|---|---|---|
| 86° | V4 | 0848101 | 835 mm | c.p. |   |
| | | 0848102 | 415 mm | c.p. | |
| | | 0848103 | Sec | c.p. | |

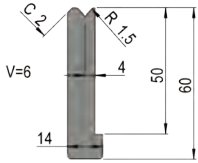
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0847 AFH - 75 t/m |
|---|---|---|---|---|---|
| 88° | V4 | 0847101 | 835 mm | c.p. |   |
| | | 0847102 | 415 mm | c.p. | |
| | | 0847103 | Sec | c.p. | |

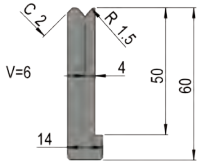
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0849 AFH - 75 t/m |
|---|---|---|---|---|---|
| 90° | V4 | 0849101 | 835 mm | c.p. |   |
| | | 0849102 | 415 mm | c.p. | |
| | | 0849103 | Sec | c.p. | |

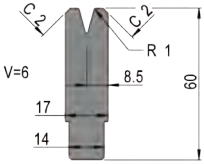
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1848 STAGED - 75 t/m |
|---|---|---|---|---|---|
| 86° | V4 | 1848101 | 835 mm | c.p. |   Antes #OS84 |
| | | 1848102 | 415 mm | c.p. | |
| | | 1848103 | Sec | c.p. | |

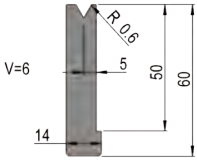
# Matrices AFH 1V V=6

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0708 AFH - 80 t/m |
|---|---|---|---|---|---|
| 86° | V6 | 0708151 | 835 mm | c.p. |   |
| | | 0708152 | 415 mm | c.p. | |
| | | 0708153 | Sec | c.p. | |

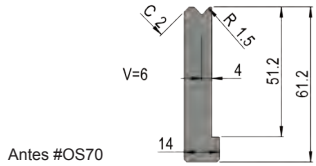
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0707 AFH - 80 t/m |
|---|---|---|---|---|---|
| 88° | V6 | 0707151 | 835 mm | c.p. |   |
| | | 0707152 | 415 mm | c.p. | |
| | | 0707153 | Sec | c.p. | |

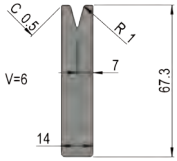
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0709 AFH - 80 t/m |
|---|---|---|---|---|---|
| 90° | V6 | 0709151 | 835 mm | c.p. |   |
| | | 0709152 | 415 mm | c.p. | |
| | | 0709153 | Sec | c.p. | Antes #70 |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0703 AFH - 50 t/m |
|---|---|---|---|---|---|
| 30° | V6 | 0703101 | 835 mm | c.p. |   |
| | | 0703102 | 415 mm | c.p. | |
| | | 0703103 | Sec | c.p. | Antes #14006 |

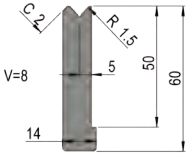
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0706 AFH - 38 t/m |
|---|---|---|---|---|---|
| 60° | V6 | 0706061 | 835 mm | c.p. |   |
| | | 0706062 | 415 mm | c.p. | |
| | | 0706063 | Sec | c.p. | Antes #170 |

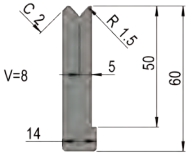
# Matrices AFH 1V V=6

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1708 STAGED - 80 t/m |
|---|---|---|---|---|---|
| 86° | V6 | 1708151 | 835 mm | c.p. |   |
| | | 1708152 | 415 mm | c.p. | |
| | | 1708153 | Sec | c.p. | |

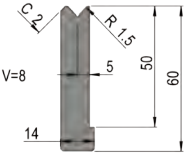
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1703 STAGED - 40 t/m |
|---|---|---|---|---|---|
| 30° | V6 | 1703101 | 835 mm | c.p. |   |
| | | 1703102 | 415 mm | c.p. | |
| | | 1703103 | Sec | c.p. | |

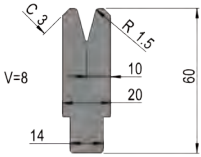
# Matrices AFH 1V V=8

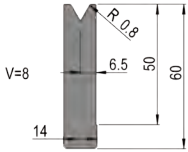
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0718 AFH - 90 t/m |
|---|---|---|---|---|---|
| 86° | V8 | 0718151 | 835 mm | c.p. |   |
| | | 0718152 | 415 mm | c.p. | |
| | | 0718153 | Sec | c.p. | |

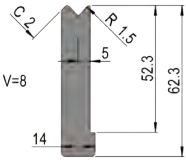
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0717 AFH - 90 t/m |
|---|---|---|---|---|---|
| 88° | V8 | 0717151 | 835 mm | c.p. |   |
| | | 0717152 | 415 mm | c.p. | |
| | | 0717153 | Sec | c.p. | |

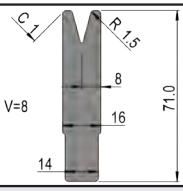
# Matrices AFH 1V V=8

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0719 AFH - 90 t/m |
|---|---|---|---|---|---|
| 90° | V8 | 0719151 | 835 mm | c.p. |   |
| | | 0719152 | 415 mm | c.p. | |
| | | 0719153 | Sec | c.p. | Antes #71 |

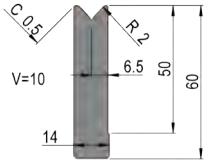
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0713 AFH - 60 t/m |
|---|---|---|---|---|---|
| 30° | V8 | 0713151 | 835 mm | c.p. |   |
| | | 0713152 | 415 mm | c.p. | |
| | | 0713153 | Sec | c.p. | |

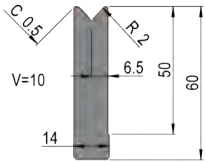
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0716 AFH - 45 t/m |
|---|---|---|---|---|---|
| 60° | V8 | 0716081 | 835 mm | c.p. |   |
| | | 0716082 | 415 mm | c.p. | |
| | | 0716083 | Sec | c.p. | Antes #171 |

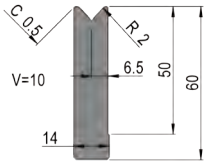
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1718 STAGED - 90 t/m |
|---|---|---|---|---|---|
| 86° | V8 | 1718151 | 835 mm | c.p. |   |
| | | 1718152 | 415 mm | c.p. | |
| | | 1718153 | Sec | c.p. | Antes #OS71 |

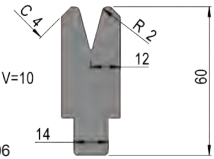
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1713 STAGED - 50 t/m |
|---|---|---|---|---|---|
| 30° | V8 | 1713151 | 835 mm | c.p. |   |
| | | 1713152 | 415 mm | c.p. | |
| | | 1713153 | Sec | c.p. | Antes #OS713 |

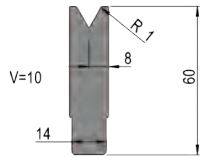
# Matrices AFH 1V V=10

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0728 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V10 | 0728201 | 835 mm | c.p. |   |
| | | 0728202 | 415 mm | c.p. | |
| | | 0728203 | Sec | c.p. | |

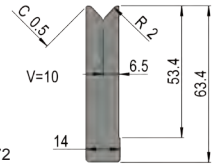
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0727 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V10 | 0727201 | 835 mm | c.p. |   |
| | | 0727202 | 415 mm | c.p. | |
| | | 0727203 | Sec | c.p. | Antes #72 |

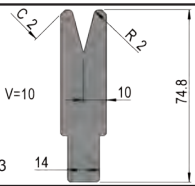
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0729 AFH - 100 t/m |
|---|---|---|---|---|---|
| 90° | V10 | 0729201 | 835 mm | c.p. |   |
| | | 0729202 | 415 mm | c.p. | |
| | | 0729203 | Sec | c.p. | Antes #73 |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0723 AFH - 70 t/m |
|---|---|---|---|---|---|
| 30° | V10 | 0723201 | 835 mm | c.p. |   |
| | | 0723202 | 415 mm | c.p. | |
| | | 0723203 | Sec | c.p. | Antes #14106 |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0726 AFH - 55 t/m |
|---|---|---|---|---|---|
| 60° | V10 | 0726101 | 835 mm | c.p. |   |
| | | 0726102 | 415 mm | c.p. | |
| | | 0726103 | Sec | c.p. | Antes #172 |

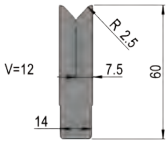
# Matrices AFH 1V V=10

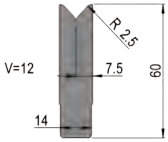
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1728 STAGED - 100 t/m |
|---|---|---|---|---|---|
| 86° | V10 | 1728201 | 835 mm | c.p. |   Antes #OS72 |
| | | 1728202 | 415 mm | c.p. | |
| | | 1728203 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1723 STAGED - 60 t/m |
|---|---|---|---|---|---|
| 30° | V10 | 1723201 | 835 mm | c.p. |   Antes #OS723 |
| | | 1723202 | 415 mm | c.p. | |
| | | 1723203 | Sec | c.p. | |

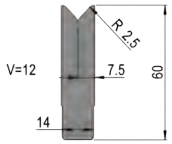


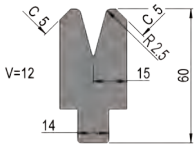
# Matrices AFH 1V V=12

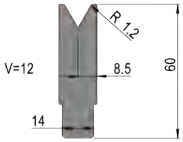
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0748 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V12 | 0748251 | 835 mm | c.p. |   |
| | | 0748252 | 415 mm | c.p. | |
| | | 0748253 | Sec | c.p. | |

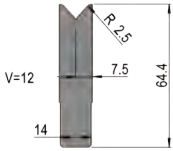
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0747 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V12 | 0747251 | 835 mm | c.p. |   Antes #74 |
| | | 0747252 | 415 mm | c.p. | |
| | | 0747253 | Sec | c.p. | |

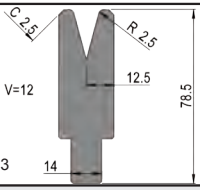
# Matrices AFH 1V V=12

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0749 AFH - 100 t/m |
|---|---|---|---|---|---|
| 90° | V12 | 0749251 | 835 mm | c.p. |   Antes #75 |
| | | 0749252 | 415 mm | c.p. | |
| | | 0749253 | Sec | c.p. | |

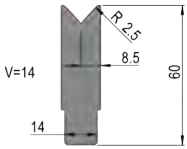
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0743 AFH - 80 t/m |
|---|---|---|---|---|---|
| 30° | V12 | 0743251 | 835 mm | c.p. |   Antes #142 |
| | | 0743252 | 415 mm | c.p. | |
| | | 0743253 | Sec | c.p. | |

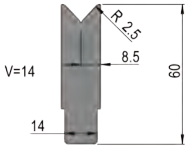
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0746 AFH - 55 t/m |
|---|---|---|---|---|---|
| 60° | V12 | 0746121 | 835 mm | c.p. |   Antes #174 |
| | | 0746122 | 415 mm | c.p. | |
| | | 0746123 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1748 STAGED - 100 t/m |
|---|---|---|---|---|---|
| 86° | V12 | 1748251 | 835 mm | c.p. |   Antes #OS74 |
| | | 1748252 | 415 mm | c.p. | |
| | | 1748253 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1743 STAGED - 70 t/m |
|---|---|---|---|---|---|
| 30° | V12 | 1743251 | 835 mm | c.p. |   Antes #OS743 |
| | | 1743252 | 415 mm | c.p. | |
| | | 1743253 | Sec | c.p. | |

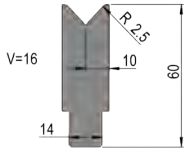
# Matrices AFH 1V V=14

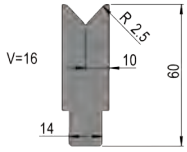
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0768 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V14 | 0768251 | 835 mm | c.p. |   |
| | | 0768252 | 415 mm | c.p. | |
| | | 0768253 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0767 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V14 | 0767251 | 835 mm | c.p. |   Antes #76 |
| | | 0767252 | 415 mm | c.p. | |
| | | 0767253 | Sec | c.p. | |

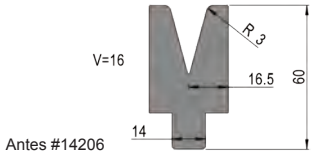


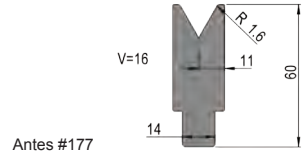
# Matrices AFH 1V V=16

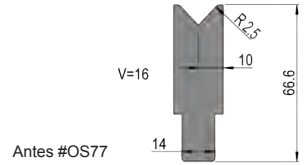
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0778 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V16 | 0778251 | 835 mm | c.p. |   |
| | | 0778252 | 415 mm | c.p. | |
| | | 0778253 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0777 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V16 | 0777251 | 835 mm | c.p. |   Antes #77 |
| | | 0777252 | 415 mm | c.p. | |
| | | 0777253 | Sec | c.p. | |

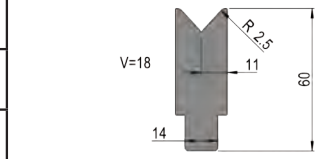
# Matrices AFH 1V V=16

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0773 AFH - 60 t/m |
|---|---|---|---|---|---|
| 30° | V16 | 0773301 | 835 mm | c.p. |   |
| | | 0773302 | 415 mm | c.p. | |
| | | 0773303 | Sec | c.p. | |

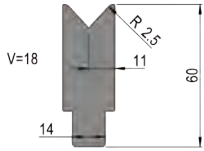
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0776 AFH - 65 t/m |
|---|---|---|---|---|---|
| 60° | V16 | 0776161 | 835 mm | c.p. |   |
| | | 0776162 | 415 mm | c.p. | |
| | | 0776163 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1778 STAGED - 100 t/m |
|---|---|---|---|---|---|
| 86° | V16 | 1778251 | 835 mm | c.p. |   |
| | | 1778252 | 415 mm | c.p. | |
| | | 1778253 | Sec | c.p. | |

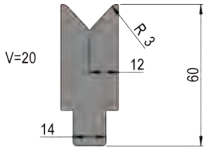
# Matrices AFH 1V V=18

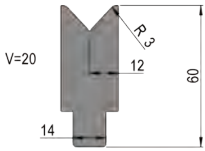
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0788 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V18 | 0788251 | 835 mm | c.p. |   |
| | | 0788252 | 415 mm | c.p. | |
| | | 0788253 | Sec | c.p. | |

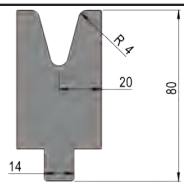
# Matrices AFH 1V V=18

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0787 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V18 | 0787251 | 835 mm | c.p. |   Antes #78 |
| | | 0787252 | 415 mm | c.p. | |
| | | 0787253 | Sec | c.p. | |

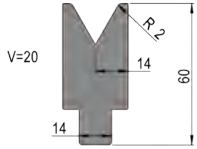
# Matrices AFH 1V V=20

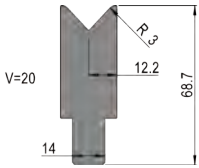
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0798 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V20 | 0798301 | 835 mm | c.p. |   |
| | | 0798302 | 415 mm | c.p. | |
| | | 0798303 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0797 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V20 | 0797301 | 835 mm | c.p. |   Antes #79 |
| | | 0797302 | 415 mm | c.p. | |
| | | 0797303 | Sec | c.p. | |

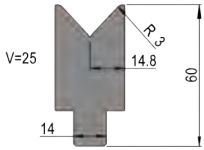
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0793 - 60 t/m |
|---|---|---|---|---|---|
| 30° | V20 | 0793401 | 835 mm | c.p. |   Antes #143 |
| | | 0793402 | 415 mm | c.p. | |
| | | 0793403 | Sec | c.p. | |

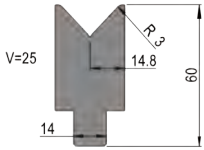
# Matrices AFH 1V V=20

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0796 AFH – 85 t/m |
|---|---|---|---|---|---|
| 60° | V20 | 0796201 | 835 mm | c.p. |   |
| | | 0796202 | 415 mm | c.p. | |
| | | 0796203 | Sec | c.p. | Antes #179 |

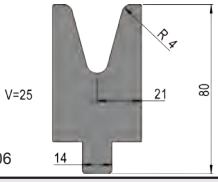
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1798 STAGED - 100 t/m |
|---|---|---|---|---|---|
| 86° | V20 | 1798301 | 835 mm | c.p. |   |
| | | 1798302 | 415 mm | c.p. | |
| | | 1798303 | Sec | c.p. | Antes #OS79 |

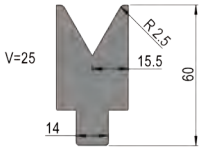
# Matrices AFH 1V V=25

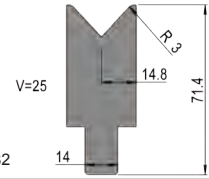
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0828 AFH - 100 t/m |
|---|---|---|---|---|---|
| 86° | V25 | 0828301 | 835 mm | c.p. |   |
| | | 0828302 | 415 mm | c.p. | |
| | | 0828303 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0827 AFH - 100 t/m |
|---|---|---|---|---|---|
| 88° | V25 | 0827301 | 835 mm | c.p. |   |
| | | 0827302 | 415 mm | c.p. | |
| | | 0827303 | Sec | c.p. | Antes #82 |

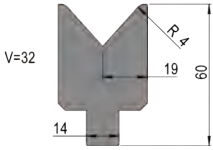
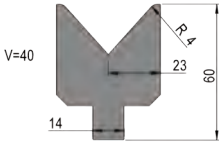
# Matrices AFH 1V V=25

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0823 – 60 t/m |
|---|---|---|---|---|---|
| 30° | V25 | 0823401 | 835 mm | c.p. |   Antes #14306 |
| | | 0823402 | 415 mm | c.p. | |
| | | 0823403 | Sec | c.p. | |

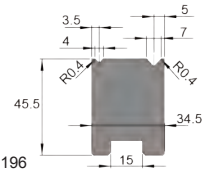
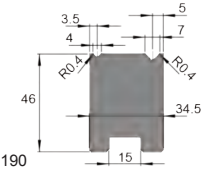
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0826 AFH – 85 t/m |
|---|---|---|---|---|---|
| 60° | V25 | 0826251 | 835 mm | c.p. |   Antes #182 |
| | | 0826252 | 415 mm | c.p. | |
| | | 0826253 | Sec | c.p. | |

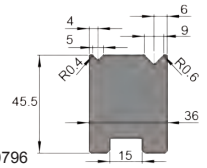
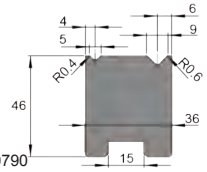
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1828 STAGED – 100 t/m |
|---|---|---|---|---|---|
| 86° | V25 | 1828301 | 835 mm | c.p. |   Antes #OS82 |
| | | 1828302 | 415 mm | c.p. | |
| | | 1828303 | Sec | c.p. | |

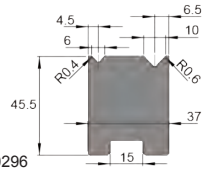
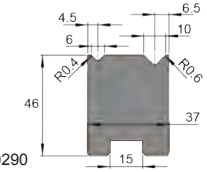
# Matrices AFH 1V V=32 & V=40

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0874 (V32) & Tipo #0884 (V40) – 100 t/m |
|---|---|---|---|---|---|
| 84° | V32 | 0874401 | 835 mm | c.p. |   |
| | | 0874402 | 415 mm | c.p. | |
| | | 0874403 | Sec | c.p. | |
| | V40 | 0884401 | 835 mm | c.p. |   |
| | | 0884402 | 415 mm | c.p. | |
| | | 0884403 | Sec | c.p. | |

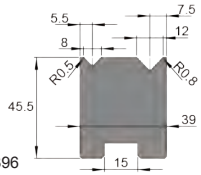
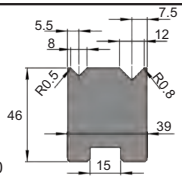
# Matrices 2V Reversibles 88°/90°

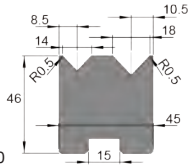
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #501704 / #501904 – 60 t/m |
|---|---|---|---|---|---|
| 88° | V4 & V7 | 5017041 | 835 mm | c.p. |   Antes #50196 |
| | | 5017042 | 415 mm | c.p. | |
| | | 5017043 | Sec | c.p. | |
| 90° | | 5019041 | 835 mm | c.p. |   Antes #50190 |
| | | 5019042 | 415 mm | c.p. | |
| | | 5019043 | Sec | c.p. | |

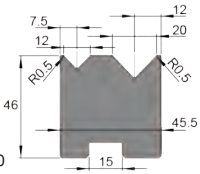
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #507704 / #507904 – 65 t/m |
|---|---|---|---|---|---|
| 88° | V5 & V9 | 5077041 | 835 mm | c.p. |   Antes #50796 |
| | | 5077042 | 415 mm | c.p. | |
| | | 5077043 | Sec | c.p. | |
| 90° | | 5079041 | 835 mm | c.p. |   Antes #50790 |
| | | 5079042 | 415 mm | c.p. | |
| | | 5079043 | Sec | c.p. | |

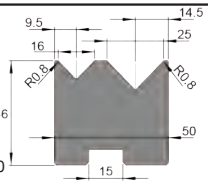
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #502704 / #502904 – 70 t/m |
|---|---|---|---|---|---|
| 88° | V6 & V10 | 5027041 | 835 mm | c.p. |   Antes #50296 |
| | | 5027042 | 415 mm | c.p. | |
| | | 5027043 | Sec | c.p. | |
| 90° | | 5029041 | 835 mm | c.p. |   Antes #50290 |
| | | 5029042 | 415 mm | c.p. | |
| | | 5029043 | Sec | c.p. | |

# Matrices 2V Reversibles 88°/90°

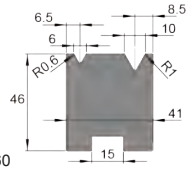
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #503705 / #503905 – 70 t/m |
|---|---|---|---|---|---|
| 88° | V8 & V12 | 5037051 | 835 mm | c.p. |   Antes #50396 |
| | | 5037052 | 415 mm | c.p. | |
| | | 5037053 | Sec | c.p. | |
| 90° | | 5039051 | 835 mm | c.p. |   Antes #50390 |
| | | 5039052 | 415 mm | c.p. | |
| | | 5039053 | Sec | c.p. | |

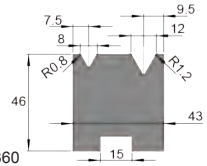
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #504705 – 100 t/m |
|---|---|---|---|---|---|
| 88° | V14 & V18 | 5047051 | 835 mm | c.p. |   Antes #50490 |
| | | 5047052 | 415 mm | c.p. | |
| | | 5047053 | Sec | c.p. | |

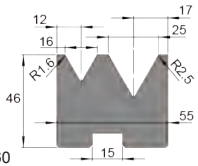
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #505705 – 100 t/m |
|---|---|---|---|---|---|
| 88° | V12 & V20 | 5057051 | 835 mm | c.p. |   Antes #50590 |
| | | 5057052 | 415 mm | c.p. | |
| | | 5057053 | Sec | c.p. | |

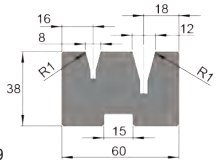
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #506708 – 100 t/m |
|---|---|---|---|---|---|
| 88° | V16 & V25 | 5067081 | 835 mm | c.p. |   Antes #50690 |
| | | 5067082 | 415 mm | c.p. | |
| | | 5067083 | Sec | c.p. | |

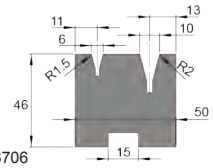
# Matrices 2V Reversibles 60°/30°

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #502606 – 60 t/m |
|---|---|---|---|---|---|
| 60° | V6 & V10 | 5026061 | 835 mm | c.p. |   Antes #50260 |
| | | 5026062 | 415 mm | c.p. | |
| | | 5026063 | Sec | c.p. | |

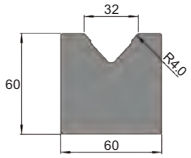
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #503608 – 60 t/m |
|---|---|---|---|---|---|
| 60° | V8 & V12 | 5036081 | 835 mm | c.p. |   Antes #50360 |
| | | 5036082 | 415 mm | c.p. | |
| | | 5036083 | Sec | c.p. | |

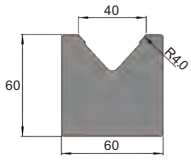
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #506616 – 60 t/m |
|---|---|---|---|---|---|
| 60° | V16 & V25 | 5066161 | 835 mm | c.p. |   Antes #50660 |
| | | 5066162 | 415 mm | c.p. | |
| | | 5066163 | Sec | c.p. | |

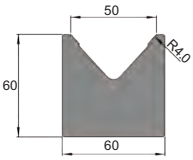
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #339310 – 40 t/m |
|---|---|---|---|---|---|
| 30° | V8 & V12 | 3393101 | 835 mm | c.p. |   Antes #339 |
| | | 3393102 | 415 mm | c.p. | |
| | | 3393103 | Sec | c.p. | |

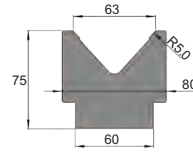
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #337315 – 26 t/m |
|---|---|---|---|---|---|
| 30° | V6 & V10 | 3373151 | 835 mm | c.p. |   Antes #33706 |
| | | 3373152 | 415 mm | c.p. | |
| | | 3373153 | Sec | c.p. | |

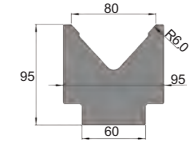
# Matrices Base 60 1V

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0355 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V32 | 035001 | 835 mm | c.p. |   Antes #35 |
| | | 035002 | 415 mm | c.p. | |

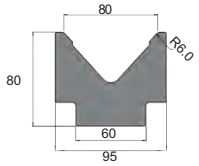
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0365 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V40 | 036001 | 835 mm | c.p. |   Antes #36 |
| | | 036002 | 415 mm | c.p. | |

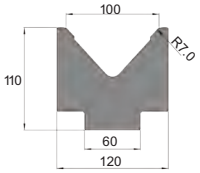
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0375 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V50 | 037001 | 835 mm | c.p. |   Antes #37 |
| | | 037002 | 415 mm | c.p. | |

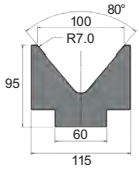
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0385 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V63 | 0385501 | 835 mm | c.p. |   Antes #38 |
| | | 0385502 | 415 mm | c.p. | |

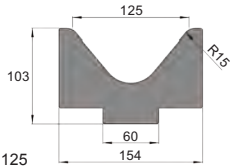
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #13 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V80 | 013601 | 835 mm | c.p. |   |
| | | 013602 | 415 mm | c.p. | |

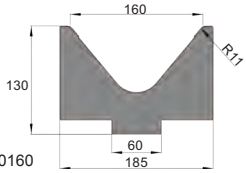
# Matrices Base 60 1V

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #V80 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V80 | 0135601 | 835 mm | c.p. |  |
| | | 0135602 | 415 mm | c.p. | |

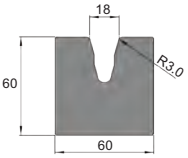
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #18 – 100 t/m |
|---|---|---|---|---|---|
| 85° | V100 | 018601 | 835 mm | c.p. |  |
| | | 018602 | 415 mm | c.p. | |

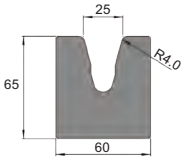
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #V100 – 100 t/m |
|---|---|---|---|---|---|
| 80° | V100 | 0180701 | 835 mm | c.p. |  |
| | | 0180702 | 415 mm | c.p. | |

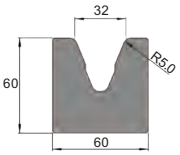
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #039015 – 100 t/m |
|---|---|---|---|---|---|
| 80° | V125 | 0390151 | 835 mm | c.p. |  Antes #Z0125 |
| | | 0390152 | 415 mm | c.p. | |

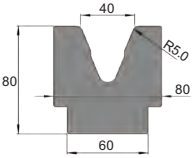
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #014011 – 100 t/m |
|---|---|---|---|---|---|
| 80° | V160 | 0140111 | 835 mm | c.p. |  Antes #Z0160 |
| | | 0140112 | 415 mm | c.p. | |

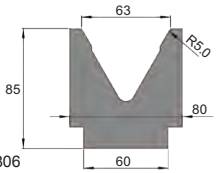
# Matrices Base 60 1V

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #3403 – 100 t/m |
|---|---|---|---|---|---|
| 30° | V18 | 340001 | 835 mm | c.p. |   Antes #340 |
| | | 340002 | 415 mm | c.p. | |

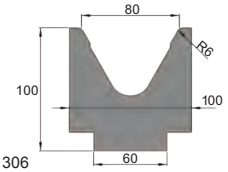
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #3413 – 100 t/m |
|---|---|---|---|---|---|
| 30° | V25 | 341001 | 835 mm | c.p. |   Antes #341 |
| | | 341002 | 415 mm | c.p. | |

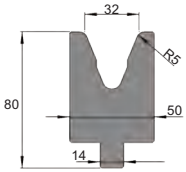
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #3421 – 100 t/m |
|---|---|---|---|---|---|
| 45° | V32 | 342001 | 835 mm | c.p. |   Antes #342 |
| | | 342002 | 415 mm | c.p. | |

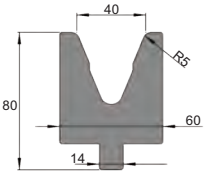
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #343150 – 70 t/m |
|---|---|---|---|---|---|
| 45° | V40 | 3431501 | 835 mm | c.p. |   Antes #343 |
| | | 3431502 | 415 mm | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #038650 – 100 t/m |
|---|---|---|---|---|---|
| 60° | V63 | 0386501 | 835 mm | c.p. |   Antes #03806 |
| | | 0386502 | 415 mm | c.p. | |

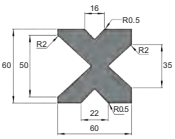
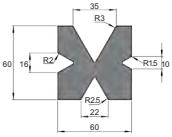
# Matrices Base Estándar 1V

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #013660 – 100 t/m |
|---|---|---|---|---|---|
| 60° | V80 | 0136601 | 835 mm | c.p. |   Antes #01306 |
| | | 0136602 | 415 mm | c.p. | |

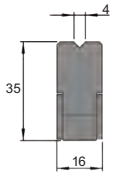
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0871 – 100 t/m |
|---|---|---|---|---|---|
| 45° | V32 | 0871501 | 835 mm | c.p. |   |
| | | 0871502 | 415 mm | c.p. | |

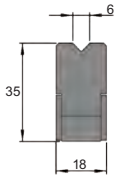
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0881 – 100 t/m |
|---|---|---|---|---|---|
| 45° | V40 | 0881501 | 835 mm | c.p. |   |
| | | 0881502 | 415 mm | c.p. | |

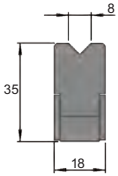
# Otras Matrices

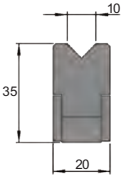
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1290 - 100 t/m & Tipo #1296 - 90 t/m |
|---|---|---|---|---|---|
| | V16 V22 V35 V50 | 129001 | 835 mm | c.p. |   Antes #Z0000 |
| | | 129002 | 415 mm | c.p. | |
| | V10 V16 V22 V35 | 129601 | 835 mm | c.p. |   Antes #Z0006 |
| | | 129602 | 415 mm | c.p. | |

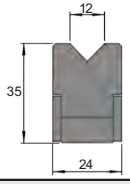
# Matrices de Policarbonato

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #331 – 32 t/m |
|---|---|---|---|---|---|
| 88° | V4 | 331881 | 835 mm | c.p. |   |
| | | 331882 | 415 mm | c.p. | |

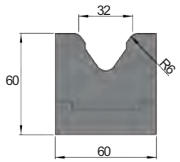
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #332 – 32 t/m |
|---|---|---|---|---|---|
| 88° | V6 | 332881 | 835 mm | c.p. |   |
| | | 332882 | 415 mm | c.p. | |

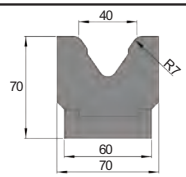
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #333 – 32 t/m |
|---|---|---|---|---|---|
| 88° | V8 | 333001 | 835 mm | c.p. |   |
| | | 333002 | 415 mm | c.p. | |

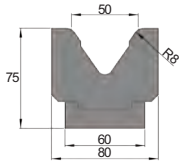
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #334 – 32 t/m |
|---|---|---|---|---|---|
| 88° | V10 | 334001 | 835 mm | c.p. |   |
| | | 334002 | 415 mm | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #335 – 32 t/m |
|---|---|---|---|---|---|
| 88° | V12 | 335001 | 835 mm | c.p. |   |
| | | 335002 | 415 mm | c.p. | |

# Matrices Policarbonato Plegado Radio

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #351 – 50 t/m |
|---|---|---|---|---|---|
| 70° | V32 | 351001 | 835 mm | c.p. |  |
| | | 351002 | 415 mm | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #361 – 50 t/m |
|---|---|---|---|---|---|
| 70° | V40 | 361001 | 835 mm | c.p. |  |
| | | 361002 | 415 mm | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #371 – 50 t/m |
|---|---|---|---|---|---|
| 70° | V50 | 371001 | 835 mm | c.p. |  |
| | | 371002 | 415 mm | c.p. | |

**Especificaciones**

| | V=32 | | | V=40 | | | V=50 | | |
|---|---|---|---|---|---|---|---|---|---|
| Espesor / Radios | Hierro | Inoxidable | Aluminio | Hierro | Inoxidable | Aluminio | Hierro | Inoxidable | Aluminio |
| | 0.4~2.3 | 0.4~1.5 | 0.4~3.0 | 0.6~2.3 | 0.6~1.5 | 0.6~3.0 | 0.8~2.3 | 0.8~1.5 | 0.8~3.0 |
| 6.0 | ✔ | ✔ | ✔ | | | | | | |
| 8.0 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | |
| 10.0 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 12.5 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 15.0 | | ✔ | | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 17.5 | | | | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 20.0 | | | | | ✔ | | ✔ | ✔ | ✔ |
| 22.5 | | | | | | | ✔ | ✔ | ✔ |
| 25.0 | | | | | | | | ✔ | |

**Nota:** Medidas en mm

# Matrices Poliuretano
# Directrices Técnicas

### 1. Seleccione el bloque de Matriz adecuado

| Espesor(mm) \ Radios (mm) | 10 | 15 | 17.5 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|
| 0.4 | Matriz 50 x 50 | | | Matriz 80 x 30 | | |
| 0.6 | | | | | | |
| 0.8 | | | | | | |
| 1.0 | | | | | | |
| 1.2 | | | | | | |
| 1.6 | | | | | | |
| 2.3 | | | | | Matriz 110 x 45 | |
| 2.6 | | | | | | |
| 3.2 | | | | | | |

La matriz superior incluye el rango de la inferior (Consultar)

### 2. Directrices de Tonelaje

Tonelaje para plegar 90º de Hierro (400N/mm$^2$) utilizando # 60(4) con 80x30 # 61(4)

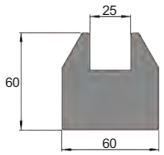
| Espesor \ Radios (mm) | 10 | 15 | 17.5 | 20 | 25 |
|---|---|---|---|---|---|
| 0.4 | 13 | 16 | 18 | 21 | 26 |
| 0.6 | 15 | 18 | 21 | 24 | 29 |
| 0.8 | 17 | 21 | 23 | 27 | 33 |
| 1.0 | 19 | 23 | 27 | 30 | 36 |
| 1.2 | 22 | 25 | 29 | 34 | 39 |
| 1.6 | 26 | 30 | 34 | 40 | 46 |
| 2.3 | 34 | 39 | 43 | 50 | 58 |
| 2.6 | 37 | 43 | 47 | 55 | 63 |
| 3.2 | 48 | 54 | 60 | | |

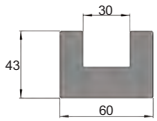
Por favor, asegúrese de estar dentro de los límites de tonelaje admitido por el utillaje y la máquina al doblar radios grandes o longitudes largas

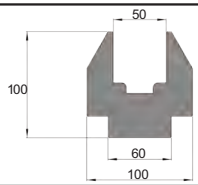
### 3. Otras consideraciones

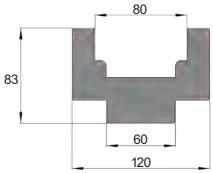
- Sin marcas
- Excelente forma del radio
- Una sola matriz para varios radios
- Requiere alto tonelaje
- La matriz es un consumible
- Obtener pestañas pequeñas puede ser difícil

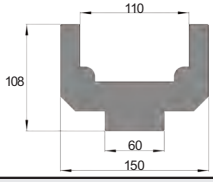
# Soportes de Poliuretano

| Tamaño | Código | Longitud | Precio | Tipo #60 (1) |
|---|---|---|---|---|
| 25mm | 061111 | 835 mm | c.p. |  |
| | 061112 | 415 mm | c.p. | |

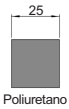
| Tamaño | Código | Longitud | Precio | Tipo #60 (2) |
|---|---|---|---|---|
| 30mm | 061211 | 835 mm | c.p. |  |
| | 061212 | 415 mm | c.p. | |

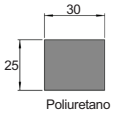
| Tamaño | Código | Longitud | Precio | Tipo #60 (3) |
|---|---|---|---|---|
| 50mm | 061311 | 835 mm | c.p. |  |
| | 061312 | 415 mm | c.p. | |

| Tamaño | Código | Longitud | Precio | Tipo #60 (4) |
|---|---|---|---|---|
| 80mm | 061411 | 835 mm | c.p. |  |
| | 061412 | 415 mm | c.p. | |

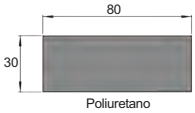
| Tamaño | Código | Longitud | Precio | Tipo #60 (5) |
|---|---|---|---|---|
| 110mm | 061511 | 835 mm | c.p. |  |
| | 061512 | 415 mm | c.p. | |

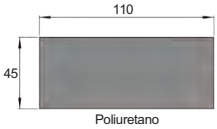
# Tacos para Matrices de Poliuretano

| Tamaño | Código | Longitud | Precio | Tipo #61 (1) |
|---|---|---|---|---|
| 25 x 25 | 061121 | 835 mm | c.p. |  |
| | 061122 | 415 mm | c.p. | |

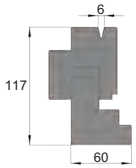
| Tamaño | Código | Longitud | Precio | Tipo #61 (2) |
|---|---|---|---|---|
| 25 x 30 | 061221 | 835 mm | c.p. |  |
| | 061222 | 415 mm | c.p. | |

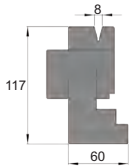
| Tamaño | Código | Longitud | Precio | Tipo #61 (3) |
|---|---|---|---|---|
| 50 x 50 | 061321 | 835 mm | c.p. | |
| | 061322 | 415 mm | c.p. | |

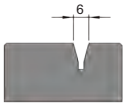
| Tamaño | Código | Longitud | Precio | Tipo #61 (4) |
|---|---|---|---|---|
| 30 x 80 | 061421 | 835 mm | c.p. |  |
| | 061422 | 415 mm | c.p. | |

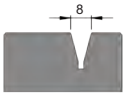
| Tamaño | Código | Longitud | Precio | Tipo #61 (5) |
|---|---|---|---|---|
| 45 x 110 | 061521 | 835 mm | c.p. |  |
| | 061522 | 415 mm | c.p. | |

# Herramienta de Chafado

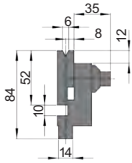
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #106310 – 65 t/m |
|---|---|---|---|---|---|
| 30° | V6 | 1063101 | 835 mm | c.p. |   Antes #10469 |
| | | 1063102 | 415 mm | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #108310 – 65 t/m |
|---|---|---|---|---|---|
| 30° | V8 | 1083101 | 835 mm | c.p. |   Antes #10409 |
| | | 1083102 | 415 mm | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #006310 |
|---|---|---|---|---|---|
| 30° | V6 | 0063101 | 835 mm | c.p. |   Antes #80149 |
| | | 0063102 | 415 mm | c.p. | |

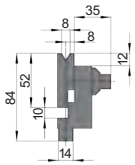
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo#008310 |
|---|---|---|---|---|---|
| 30° | V8 | 0083101 | 835 mm | c.p. |   Antes #80139 |
| | | 0083102 | 415 mm | c.p. | |

**Nota:** Para los tornillos y partes de repuesto, vea la página 76

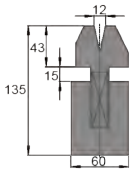
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1116 – 50 t/m* |
|---|---|---|---|---|---|
| 30° | V6 | 111601 | 835 mm | c.p. |   |
| | | 111602 | 415 mm | c.p. | |
| | | 111681 | Sec (470 mm) | c.p. | |

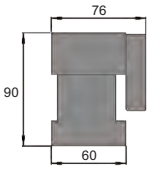
***** Tonelaje 30º pre-plegado = 50 t/m. Tonelaje para aplastado = 80 t/m

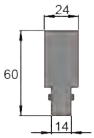
# Herramienta de Chafado y Aplastado

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #1118 – 50 t/m* |
|---|---|---|---|---|---|
| 30° | V8 | 111801 | 835 mm | c.p. |   |
| | | 111802 | 415 mm | c.p. | |
| | | 111881 | Sec (470 mm) | c.p. | |

*Tonelaje 30º pre-plegado = 50 t/m. Tonelaje para aplastado = 80 t/m

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #112220 – 100 t/m |
|---|---|---|---|---|---|
| 26° | V12 | 1122201 | 835 mm | c.p. |   Antes #Z330 |
| | | 1122202 | 415 mm | c.p. | |

| | | Código | Longitud | Precio | Tipo #105 |
|---|---|---|---|---|---|
| | | 105061 | 835 mm | c.p. |   |
| | | 105062 | 415 mm | c.p. | |

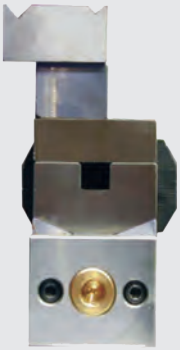
| | | Código | Longitud | Precio | Tipo #1600 STAGED – 100 t/m |
|---|---|---|---|---|---|
| Aplastado | | 1600001 | 835 mm | c.p. |   Antes #OSF600 |
| | | 1600002 | 415 mm | c.p. | |
| | | 1600003 | Sec | c.p. | |
| Tipo Stop | | 1600011 | 835 mm | c.p. | Tope para útil de aplastar |
| | | 1600012 | 415 mm | c.p. | |
| | | 1600013 | Sec | c.p. | |

**Nota:** Las matrices de aplastado son reversibles y se pueden montar en un soporte de punzón o sobre el raíl

# *Herramienta hemming neumática*

## Instalación permanente en su plegadora

- Permanece en posición cerrada hasta que se activa para realizar el aplastado
- 20° de inclinación que permite acercar la pieza y evitar colisiones
- Puede instalarse permanentemente en la plegadora pudiendo utilizar así cualquier matriz
- Herramienta de la misma longitud que la plegadora, gracias a esto no hay marcas en la chapa



Puede trabajar con matrices de base 14 mm, 60 mm o cualquier soporte de matriz



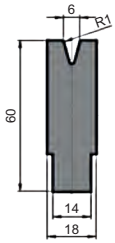
**Especificación**

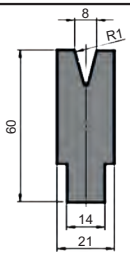
| | |
|---|---|
| **Espesor máximo permitido** | **Acero: 2.0 mm**<br>**Inoxidable: 1.5 mm** |
| **Tonelaje máximo** | **100 t/m** |
| **Potencia de la vávula solenoide** | **24V DC** |
| **Presión de aire** | **2 Bar** |
| **Flujo de Aire** | **400 litros/min** |

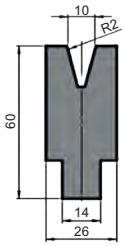
| Longitud |
|---|
| 1250 mm |
| 2050 mm |
| 2550 mm |
| 3050 mm |
| 4050 mm |

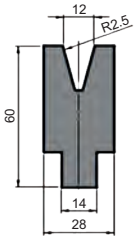
Precio a consultar (C.P.V.)
Imagen mostrada sin EPP

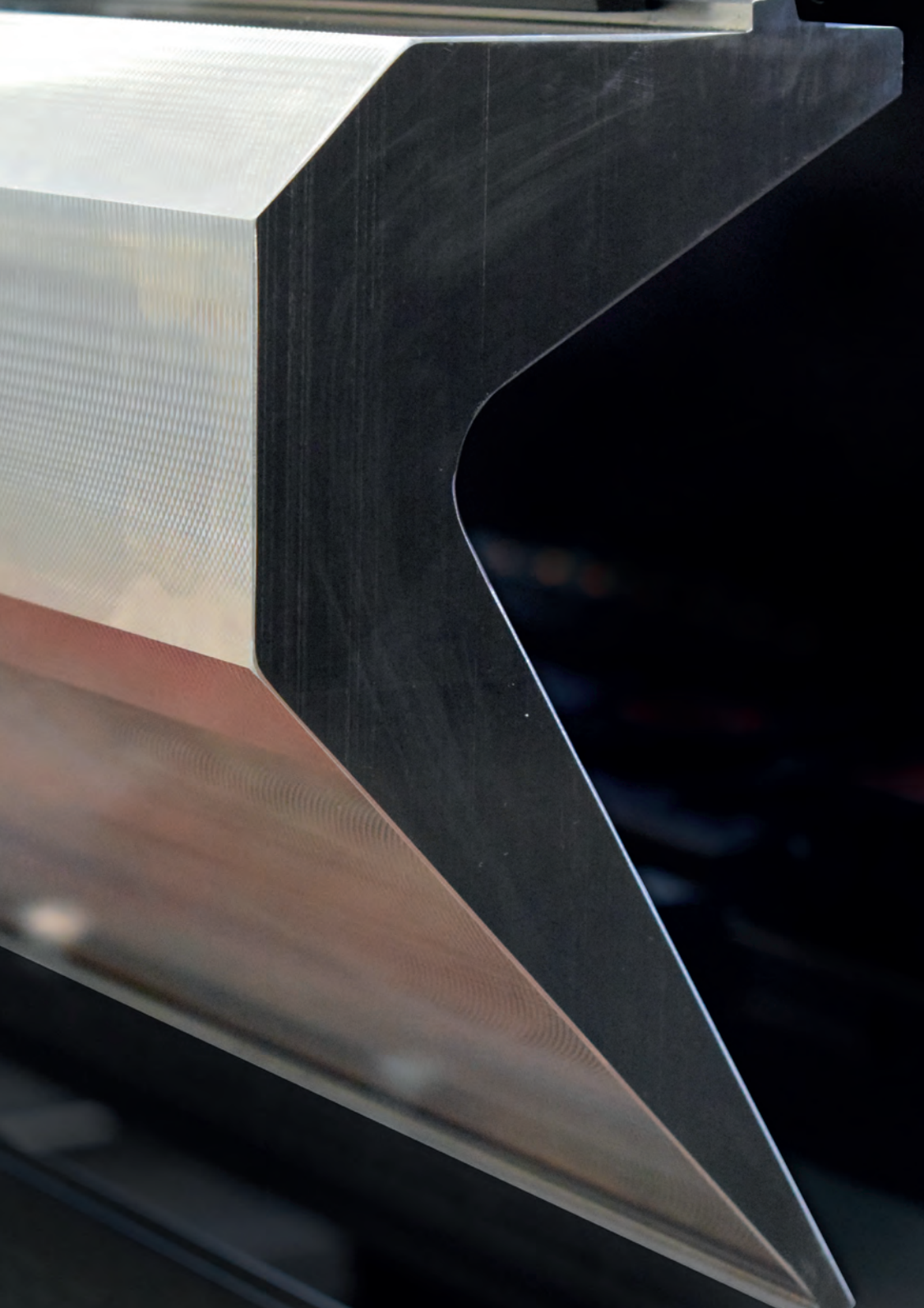
# Matrices 1 V 26°

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #26 – 80 t/m |
|---|---|---|---|---|---|
| 26° | V6 | T06261 | 835 mm | c.p. | 800 kN/m   |
| | | T06262 | 415 mm | c.p. | |
| | | T06263 | Sec (480 mm) | c.p. | |

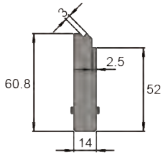
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #26 – 80 t/m |
|---|---|---|---|---|---|
| 26° | V8 | T08261 | 835 mm | c.p. | 800 kN/m   |
| | | T08262 | 415 mm | c.p. | |
| | | T08263 | Sec (480 mm) | c.p. | |

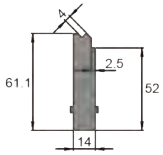
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #26 – 80 t/m |
|---|---|---|---|---|---|
| 26° | V10 | T10261 | 835 mm | c.p. | 800 kN/m   |
| | | T10262 | 415 mm | c.p. | |
| | | T10263 | Sec (480 mm) | c.p. | |

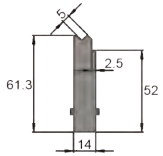
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #26 – 80 t/m |
|---|---|---|---|---|---|
| 26° | V12 | T12261 | 835 mm | c.p. | 800 kN/m   |
| | | T12262 | 415 mm | c.p. | |
| | | T12263 | Sec (480 mm) | c.p. | |

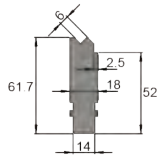


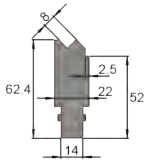
# Herramientas de Plegado Z

| Plegado | Código | Longitud | Precio | Tipo #Z3 STAGED – 100 t/m |
|---|---|---|---|---|
| 3.0 | 1630061 | 835 mm | c.p. |  |
| | 1630062 | 415 mm | c.p. | |
| | 1630063 | Sec | c.p. | |

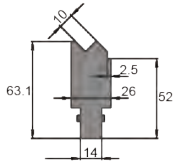
| Plegado | Código | Longitud | Precio | Tipo #Z4 STAGED – 100 t/m |
|---|---|---|---|---|
| 4.0 | 1640081 | 835 mm | c.p. |  |
| | 1640082 | 415 mm | c.p. | |
| | 1640083 | Sec | c.p. | |

| Plegado | Código | Longitud | Precio | Tipo #Z5 STAGED – 100 t/m |
|---|---|---|---|---|
| 5.0 | 1650101 | 835 mm | c.p. |  |
| | 1650102 | 415 mm | c.p. | |
| | 1650103 | Sec | c.p. | |

| Plegado | Código | Longitud | Precio | Tipo #Z6 STAGED – 100 t/m |
|---|---|---|---|---|
| 6.0 | 1660101 | 835 mm | c.p. |  |
| | 1660102 | 415 mm | c.p. | |
| | 1660103 | Sec | c.p. | |

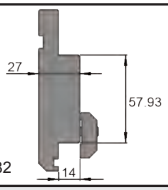
| Plegado | Código | Longitud | Precio | Tipo #Z8 STAGED – 100 t/m |
|---|---|---|---|---|
| 8.0 | 1680101 | 835 mm | c.p. |  |
| | 1680102 | 415 mm | c.p. | |
| | 1680103 | Sec | c.p. | |

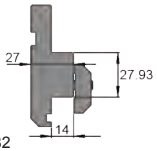
# Herramientas de Plegado Z

| Plegado | Código | Longitud | Precio | Tipo #Z10 STAGED – 100 t/m |
|---|---|---|---|---|
| 10.0 | 1610101 | 835 mm | c.p. |  |
| | 1610102 | 415 mm | c.p. | |
| | 1610103 | Sec | c.p. | |

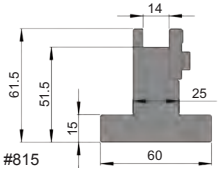
**Nota:** Montado en el raíl #815 y soporte punzón #582 (H=120) o #282 (H=90). En esta estación de plegado las matrices son reversibles.

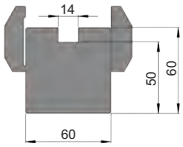
# Soportes Punzones

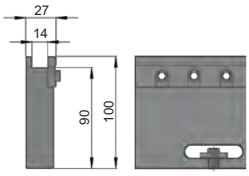
| Altura | Código | Longitud | Precio | Tipo #0582 – 100 t/m |
|---|---|---|---|---|
| 120mm | 0582002 | 415 mm | c.p. |  Antes #OSPH582 |

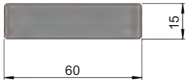
| Altura | Código | Longitud | Precio | Tipo #0282 - 100 t/m |
|---|---|---|---|---|
| 90mm | 0282002 | 415 mm | c.p. |  Antes #OSPH282 |

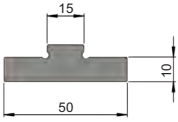
# Soportes Matriz, Calas y Raíles

| Altura | Código | Longitud | Precio | Tipo #0815 – 100 t/m |
|---|---|---|---|---|
| 51.5mm (Montar con Matrices 1V) | 0815001 | 840 mm | c.p. |   Antes #815 |
| | 0815002 | 420 mm | c.p. | |

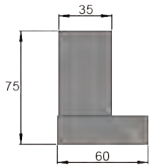
| Altura | Código | Longitud | Precio | Tipo #5330 – 100 t/m |
|---|---|---|---|---|
| 50mm (Montar con Matrices 1V o base 60) | 5330001 | 1050 mm | c.p. |   Antes #533 |
| | 5330002 | 450 mm | c.p. | |

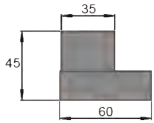
| Altura | Código | Longitud | Precio | Tipo #5340 – 100 t/m |
|---|---|---|---|---|
| 90mm (Montar con Matrices 1V) | 5340001 | 1050 mm | c.p. |   |
| | 5340002 | 450 mm | c.p. | |

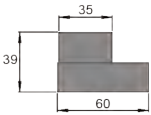
| Altura | Código | Longitud | Precio | Soporte para Tipo #5340 |
|---|---|---|---|---|
| 90mm (Montar con #5340) | 5340011 | 1050 mm | c.p. |   |
| | 5340012 | 450 mm | c.p. | |

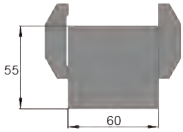
| Altura | Código | Longitud | Precio | Tipo #3000 Rail |
|---|---|---|---|---|
| 10mm (para Matrices 2V) | 3000001 | 835 mm | c.p. |   Antes #300 |
| | 3000002 | 415 mm | c.p. | |

# Soportes Matriz, Calas y Raíles

| Altura | Código | Longitud | Precio | Tipo #75H (2910) |
|---|---|---|---|---|
| 75mm (Para matrices 2V) | 2910001 | 835 mm | c.p. |  |
| | 2910002 | 415 mm | c.p. | |

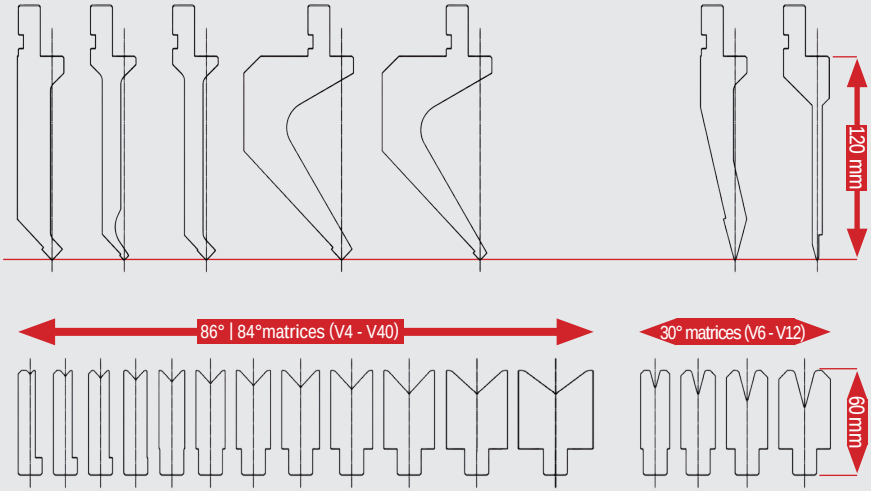
| Altura | Código | Longitud | Precio | Tipo #45H (2930) |
|---|---|---|---|---|
| 45mm (Para matrices 2V) | 2930001 | 835 mm | c.p. |  |
| | 2930002 | 415 mm | c.p. | |

| Altura | Código | Longitud | Precio | Tipo #39H (2900) |
|---|---|---|---|---|
| 39mm (Para matrices 2V) | 2900001 | 835 mm | c.p. |  |
| | 2900002 | 415 mm | c.p. | |

| Altura | Código | Longitud | Precio | Tipo #055 |
|---|---|---|---|---|
| 55mm | 0550001 | 835 mm | c.p. |  Was #55 |
| | 0550002 | 415 mm | c.p. | |

| Altura | Código | Longitud | Precio | Adaptador para Matrices de Policarbonato |
|---|---|---|---|---|
| Adaptor (Para #5340 o #0815) | 3300011 | 834 mm | c.p. | |
| | 3300012 | 414 mm | c.p. | |

# AFH-ATC Herramienta de Altura Fija






## Marcado Láser Completo

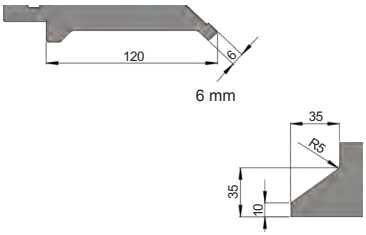
## AFH-ATC Longitudes de Utillajes

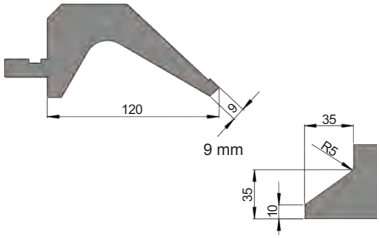
**Tramos de 200 mm**
4 x 200 mm = 800 mm

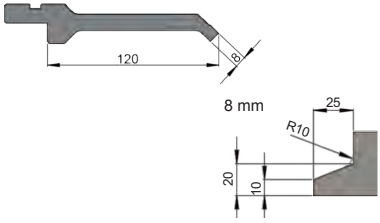
**Seccionada (Todos los punzones y matrices de V4 a V25)**
2 x 15, 2 x 20, 2 x 25, 2 x 40, 2 x 50, 2 x 100 = 500 mm
**Matrices de V32, V40**
2 x 20, 2 x 25, 2 x 30, 2 x 40, 2 x 50, 2 x 100 = 530 mm

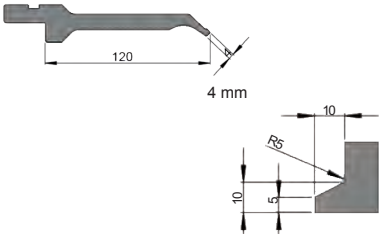
**Bigornias**
125 Bigornia izquierda, 125 Bigornia derecha = 250 mm

# Punzones AFH-ATC H=120

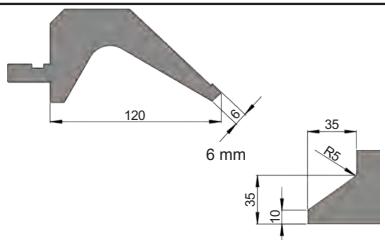
| Ángulo | Radio | Código | Longitud | Precio | Tipo #804 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8048065 | 200 mm Div. | c.p. |   Tonelaje Bigornia = 45 t/m |
| | | 8048066 | Sec | c.p. | |
| | | 8048067 | Bigornias | c.p. | |
| | R3.0 | 8048305 | 200 mm Div. | c.p. | |
| | | 8048306 | Sec | c.p. | |
| | | 8048307 | Bigornias | c.p. | |

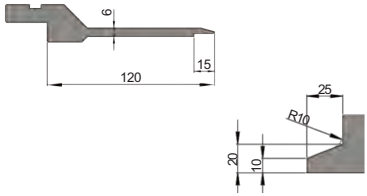
| Ángulo | Radio | Código | Longitud | Precio | Tipo #847 AFH-ATC - 50 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8478065 | 200 mm Div. | c.p. |   Tonelaje Bigornia = 45 t/m |
| | | 8478066 | Sec | c.p. | |
| | | 8478067 | Bigornias | c.p. | |
| | R3.0 | 8478305 | 200 mm Div. | c.p. | |
| | | 8478306 | Sec | c.p. | |
| | | 8478307 | Bigornias | c.p. | |

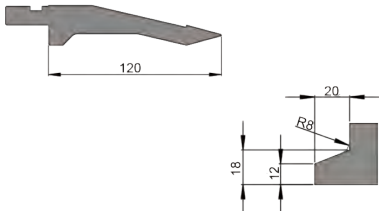
| Ángulo | Radio | Código | Longitud | Precio | Tipo #820 AFH-ATC - 50 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8208065 | 200 mm Div. | c.p. |   Tonelaje Bigornia = 20 t/m |
| | | 8208066 | Sec | c.p. | |
| | | 8208067 | Bigornias | c.p. | |

| Ángulo | Radio | Código | Longitud | Precio | Tipo #817 AFH-ATC - 30 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8178065 | 200 mm Div. | c.p. |   Tonelaje Bigorniae = 15 t/m |
| | | 8178066 | Sec | c.p. | |
| | | 8178067 | Bigornias | c.p. | |

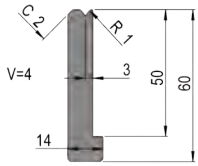
# Punzones AFH-ATC H=120

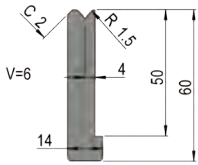
| Ángulo | Radio | Código | Longitud | Precio | Tipo #846 AFH-ATC - 45 t/m |
|---|---|---|---|---|---|
| 86° | R0.6 | 8468065 | 200 mm Div. | c.p. |   Tonelaje Bigorniae = 35 t/m |
| | | 8468066 | Sec | c.p. | |
| | | 8468067 | Bigornias | c.p. | |

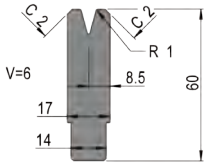
| Ángulo | Radio | Código | Longitud | Precio | Tipo #814 AFH-ATC - 45 t/m |
|---|---|---|---|---|---|
| 30° | R0.6 | 8143065 | 200 mm Div. | c.p. |   Tonelaje Bigorniae = 12 t/m |
| | | 8143066 | Sec | c.p. | |
| | | 8143067 | Bigornias | c.p. | |

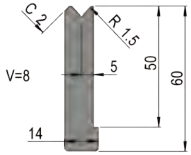
| Ángulo | Radio | Código | Longitud | Precio | Tipo #831 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 30° | R0.6 | 8313065 | 200 mm Div. | c.p. |   Tonelaje Bigorniae = 30 t/m |
| | | 8313066 | Sec | c.p. | |
| | | 8313067 | Bigornias | c.p. | |
| | R3.0 | 8313305 | 200 mm Div. | c.p. | |
| | | 8313306 | Sec | c.p. | |
| | | 8313307 | Bigornias | c.p. | |

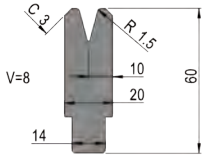
# Matrices AFH-ATC 1V

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0848 AFH-ATC - 75 t/m |
|---|---|---|---|---|---|
| 86° | V4 | 0848105 | 200 mm Div. | c.p. |  |
| | | 0848106 | Sec | c.p. | |

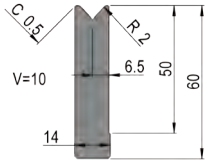
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0708 AFH-ATC - 80 t/m |
|---|---|---|---|---|---|
| 86° | V6 | 0708155 | 200 mm Div. | c.p. |  |
| | | 0708156 | Sec | c.p. | |

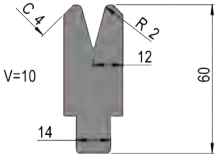
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0703 AFH-ATC - 50 t/m |
|---|---|---|---|---|---|
| 30° | V6 | 0703105 | 200 mm Div. | c.p. |  |
| | | 0703106 | Sec | c.p. | |

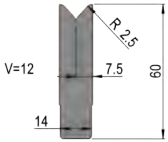
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0718 AFH-ATC - 90 t/m |
|---|---|---|---|---|---|
| 86° | V8 | 0718155 | 200 mm Div. | c.p. |  |
| | | 0718156 | Sec | c.p. | |

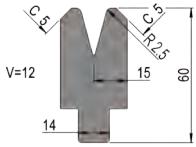
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0713 AFH-ATC - 60 t/m |
|---|---|---|---|---|---|
| 30° | V8 | 0713155 | 200 mm Div. | c.p. |  |
| | | 0713156 | Sec | c.p. | |

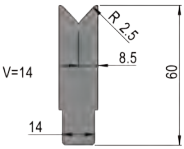
# Matrices AFH-ATC 1V

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0728 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V10 | 0728205 | 200 mm Div. | c.p. |   |
| | | 0728206 | Sec | c.p. | |

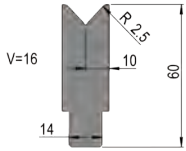
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0723 AFH-ATC - 70 t/m |
|---|---|---|---|---|---|
| 30° | V10 | 0723205 | 200 mm Div. | c.p. |   |
| | | 0723206 | Sec | c.p. | |

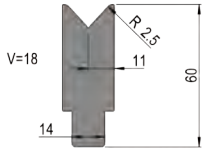
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0748 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V12 | 0748255 | 200 mm Div. | c.p. |   |
| | | 0748256 | Sec | c.p. | |

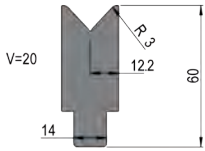
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0743 AFH-ATC - 80 t/m |
|---|---|---|---|---|---|
| 30° | V12 | 0743255 | 200 mm Div. | c.p. |   |
| | | 0743256 | Sec | c.p. | |

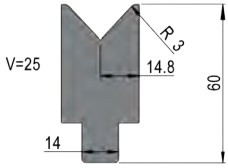
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0768 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V14 | 0768255 | 200 mm Div. | c.p. |   |
| | | 0768256 | Sec | c.p. | |

# Matrices AFH-ATC 1V

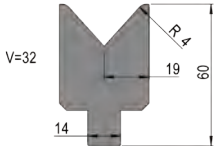
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0778 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V16 | 0778255 | 200 mm Div. | c.p. |   |
| | | 0778256 | Sec | c.p. | |

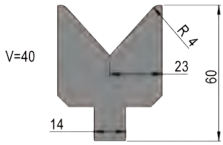
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0788 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V18 | 0788255 | 200 mm Div. | c.p. |   |
| | | 0788256 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0798 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V20 | 0798305 | 200 mm Div. | c.p. |   |
| | | 0798306 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0828 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 86° | V25 | 0828305 | 200 mm Div. | c.p. |   |
| | | 0828306 | Sec | c.p. | |

# Matrices AFH-ATC 1V

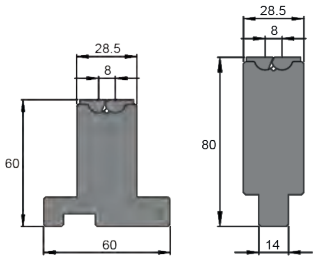
| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0874 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 84° | V32 | 0874405 | 200 mm Div. | c.p. |   |
| | | 0874406 | Sec | c.p. | |

| Ángulo | Tipo V | Código | Longitud | Precio | Tipo #0884 AFH-ATC - 100 t/m |
|---|---|---|---|---|---|
| 84° | V40 | 0884405 | 200 mm Div. | c.p. |   |
| | | 0884406 | Sec | c.p. | |

100
50
50
40
40

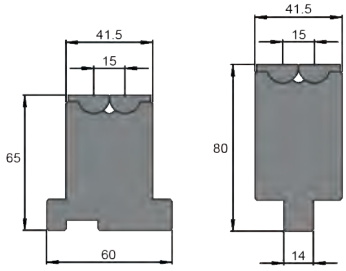
# Rolla V

## Modelo 1



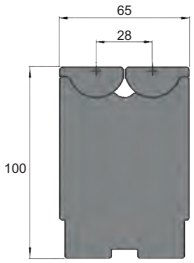

RVP60-1 RVS80-1

## Modelo 2



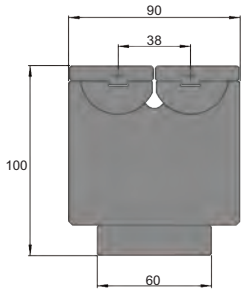

RVP65-2 RVS80-2

## Modelo 2.5




RVM-2.5

## Modelo 3




RVP100-3



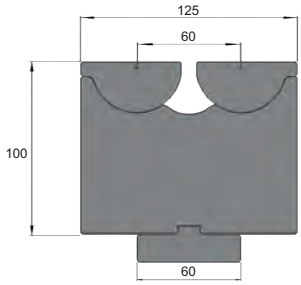




Precio a consultar (C.P.V.)

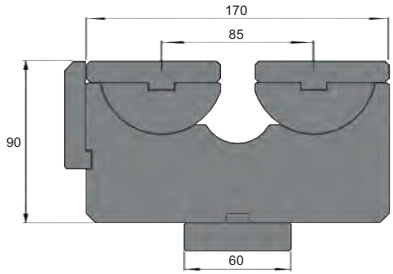
# Rolla V

## Modelo 3.5




RVM-3.5

## Modelo 4




RVM90-4

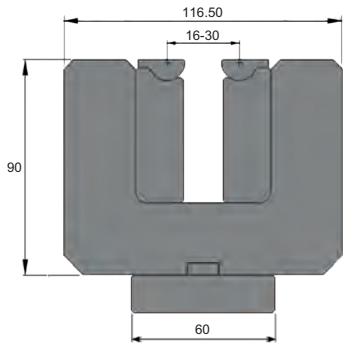
## Longitudes

| Modelo | Longitud | Longitud Sec |
|---|---|---|
| Modelo 1 | 500 mm | 1x15, 1x20, 1x25, 1x30, 1x50, 1x100, 1x200 = 440 mm |
| Modelo 2 | 500 mm | 1x20, 1x25, 1x30, 1x35, 1x40, 1x100, 1x200 = 450 mm |
| Modelo 2.5 | 500 mm | 1x35, 1x40, 1x45, 1x50, 1x100, 1x200 = 470 mm |
| Modelo 3 | 500 mm | 1x45, 1x50, 1x60, 1x100, 1x200 = 455 mm |

| Modelo | Longitud | Longitud |
|---|---|---|
| Modelo 3.5 | 250 mm | 500 mm |
| Modelo 4 | 250 mm | 500 mm |

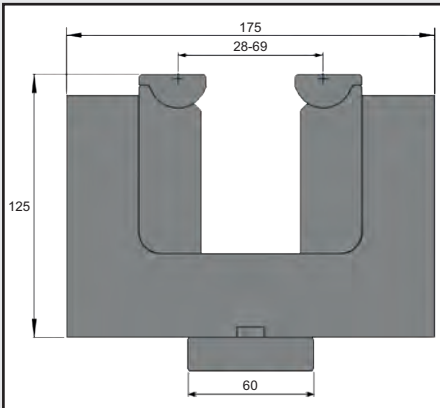
# Ajustable Rolla V

## Modelo Ajustable 2




RVHD2 Modelo Ajustable 2

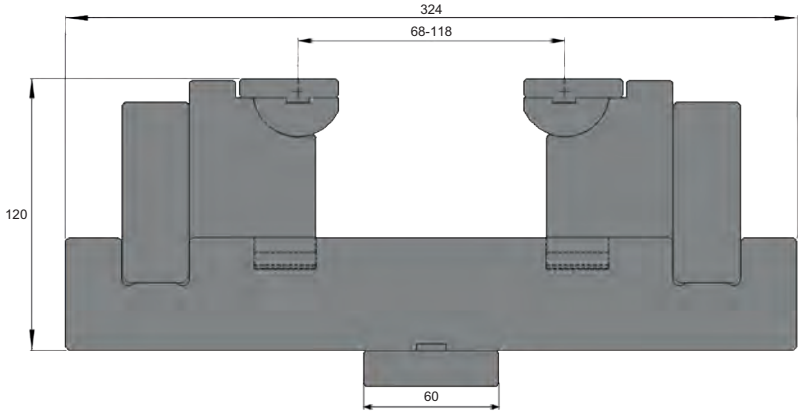
## Modelo Ajustable 2.5




RVHD2.5 Modelo Ajustable 2.5



## Modelo Ajustable 3




RVHD3 Modelo Ajustable 3

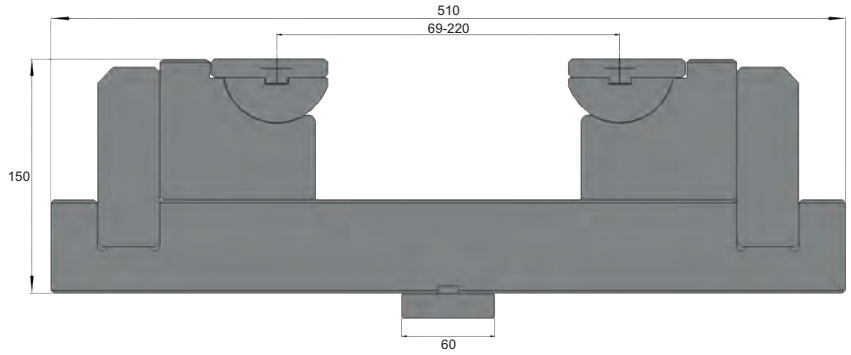




Precio a consultar (C.P.V.)

# Ajustable Rolla V

## Modelo Ajustable 4




RVHD4 Modelo Ajustable 4

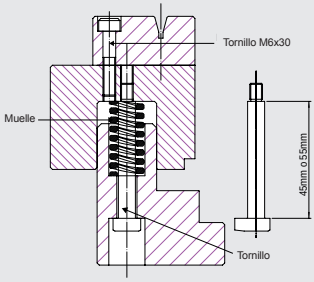
## Longitudes

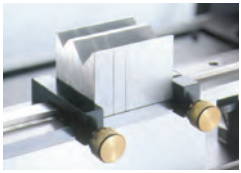
| Modelo | Longitud | Longitud |
|---|---|---|
| Modelo Ajustable 2 | 250 mm | 500 mm |
| Modelo Ajustable 2.5 | 250 mm | 500 mm |
| Modelo Ajustable 3 | 250 mm | 500 mm |
| Modelo Ajustable 4 | 250 mm | 500 mm |

# Accesorios

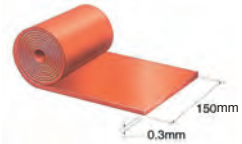
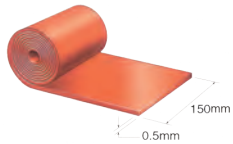
| Código | Precio | Escuadra magnética (Derecha) | Escuadra magnética (Izquierda) |
|---|---|---|---|
| 93000L (Derecha) | c.p. | | |
| 93000R (Izquierda) | c.p. | | |

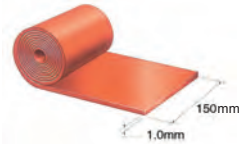
| Código | Precio | Accesorios para matrices Hemming |
|---|---|---|
| 800600 | c.p. | Tornillo extracción STO 8 x 45 |
| 800690 | c.p. | Tornillo extracción STO 8 x 55 |
| 800800 | c.p. | Muelle |
| 800900 | c.p. | Tornillo de sujección M6 x 30 |

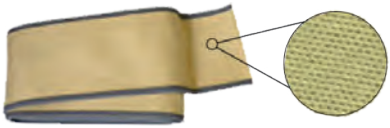



| Código | Precio | Brida matriz 2V |
|---|---|---|
| 936000 | c.p. |  |

# Cinta de Uretano

| Código | Precio | Tipo #42620 | Tipo #42619 |
|---|---|---|---|
| 426201 (0.3 mm de grosor) | c.p. Por metro |   Para uso hasta 1mm de Hierro |   Para uso entre 1mm - 2mm Hierro |
| 426191 0.5 mm de grosor) | c.p. Por metro | | |

| Código | Precio | Tipo #42618 | Cintas antimarcas ADH |
|---|---|---|---|
| 426181 (1.0 mm de grosor) | c.p. Por metro |   Para uso a partir de 2mm de Hierro | |
| 909910 (0.3 mm de grosor) | c.p. (10 m) | | |

| Código | Precio | Cintas antimarcas KIZU-NON |
|---|---|---|
| 999905 (5 m) | c.p. |  Para uso hasta 6mm de Inoxidable |
| 999910 (10 m) | c.p. | |

# Armario de Utillaje

## Armario de Utillaje:

Mantenga sus herramientas organizadas y libres de polvo en el lugar de trabajo

| Tamaño | 1040 mm |
|---|---|
| Altura | 1240 mm |
| Profundidad | 1000 mm |

**Código: 990001**
**Precio: c.p.**

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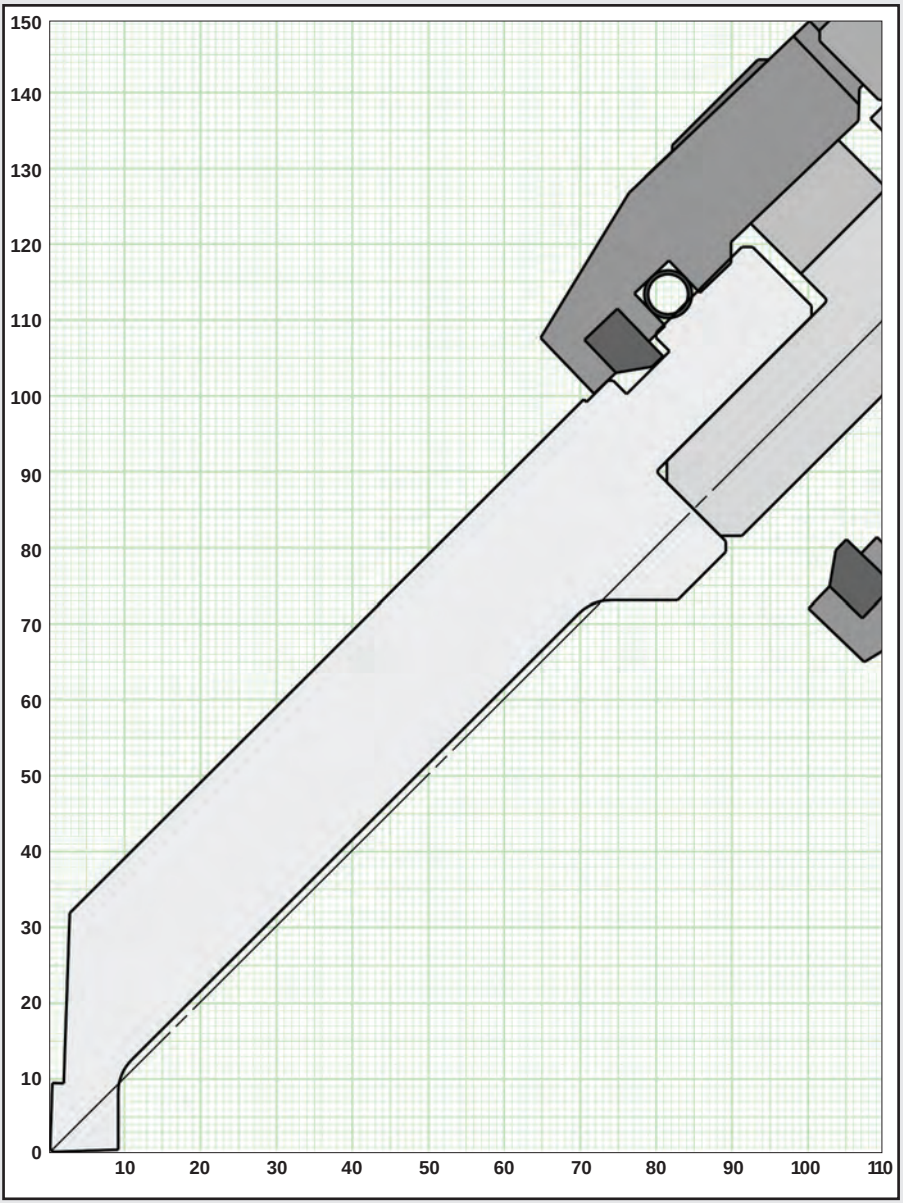
# #804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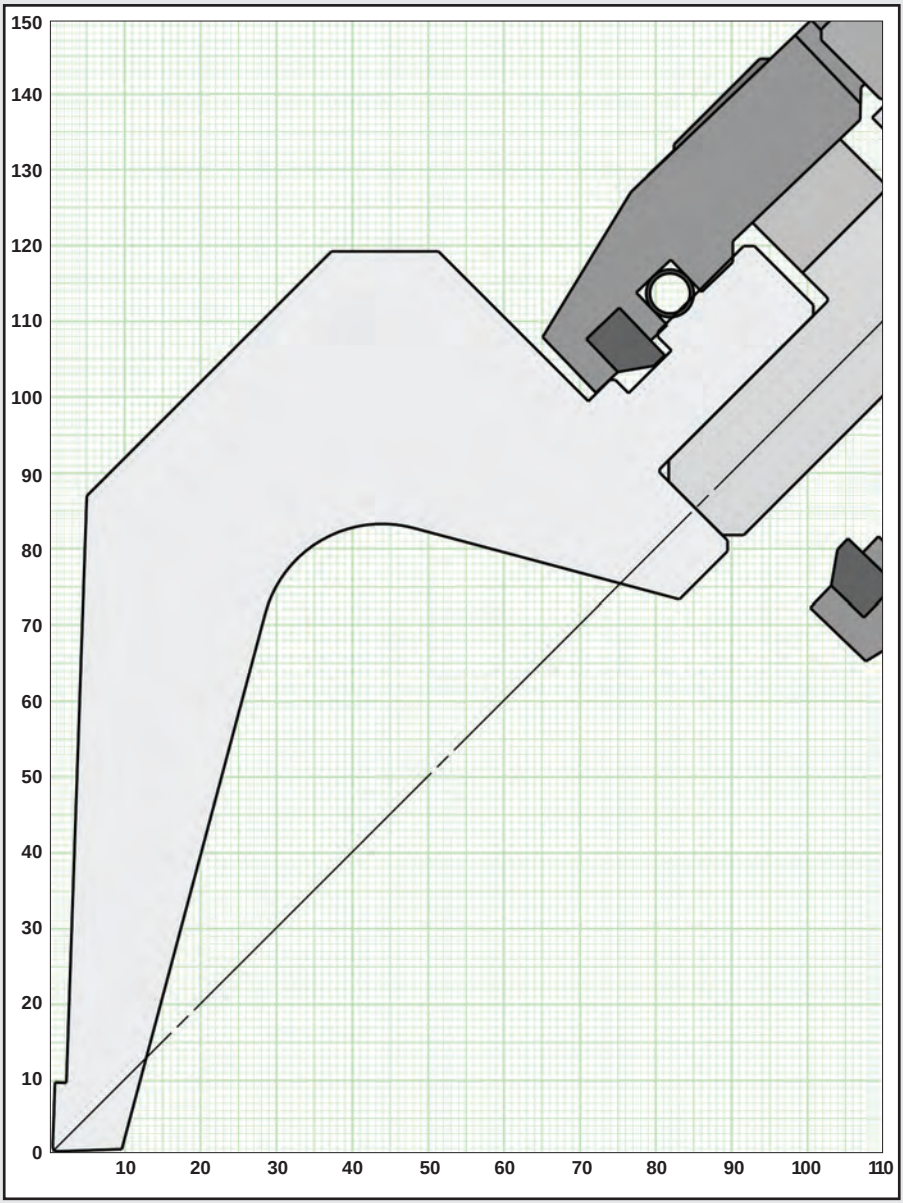
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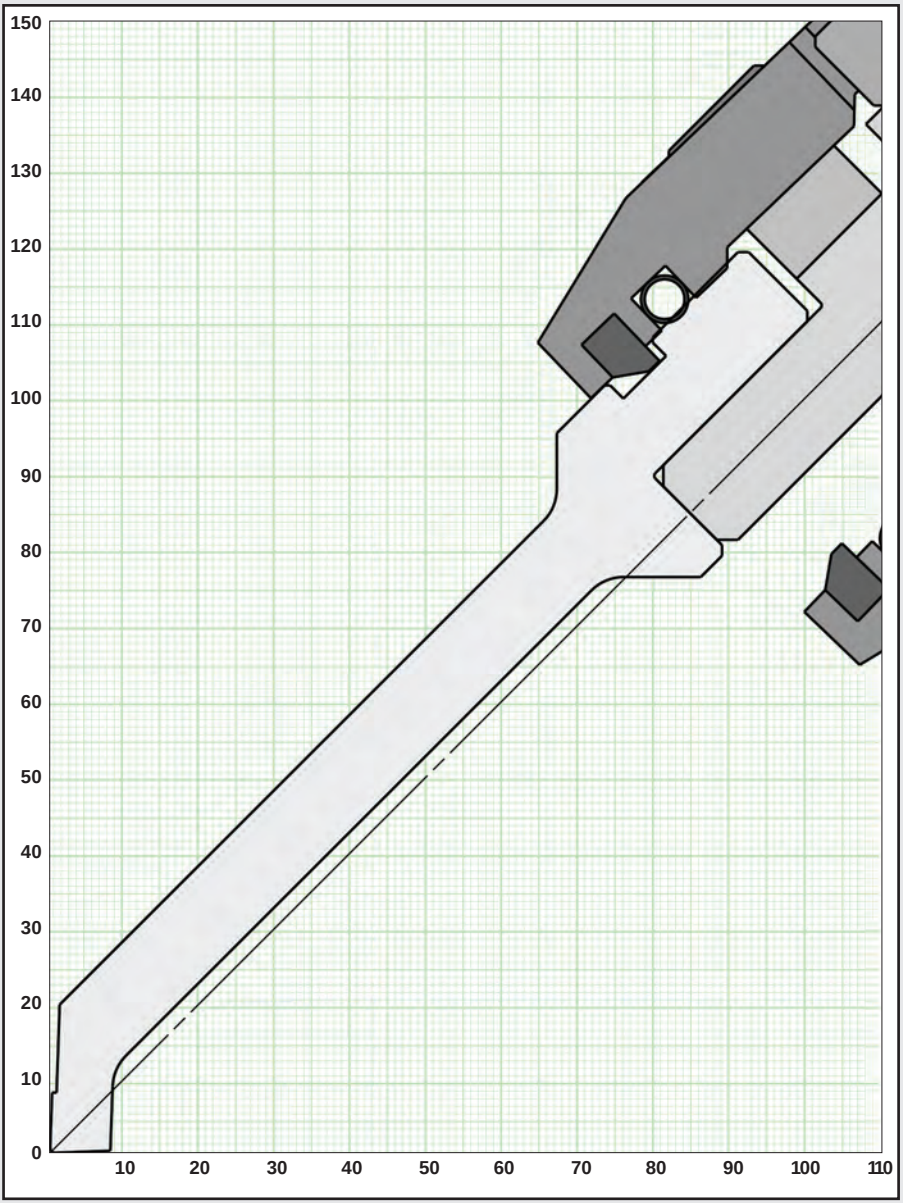
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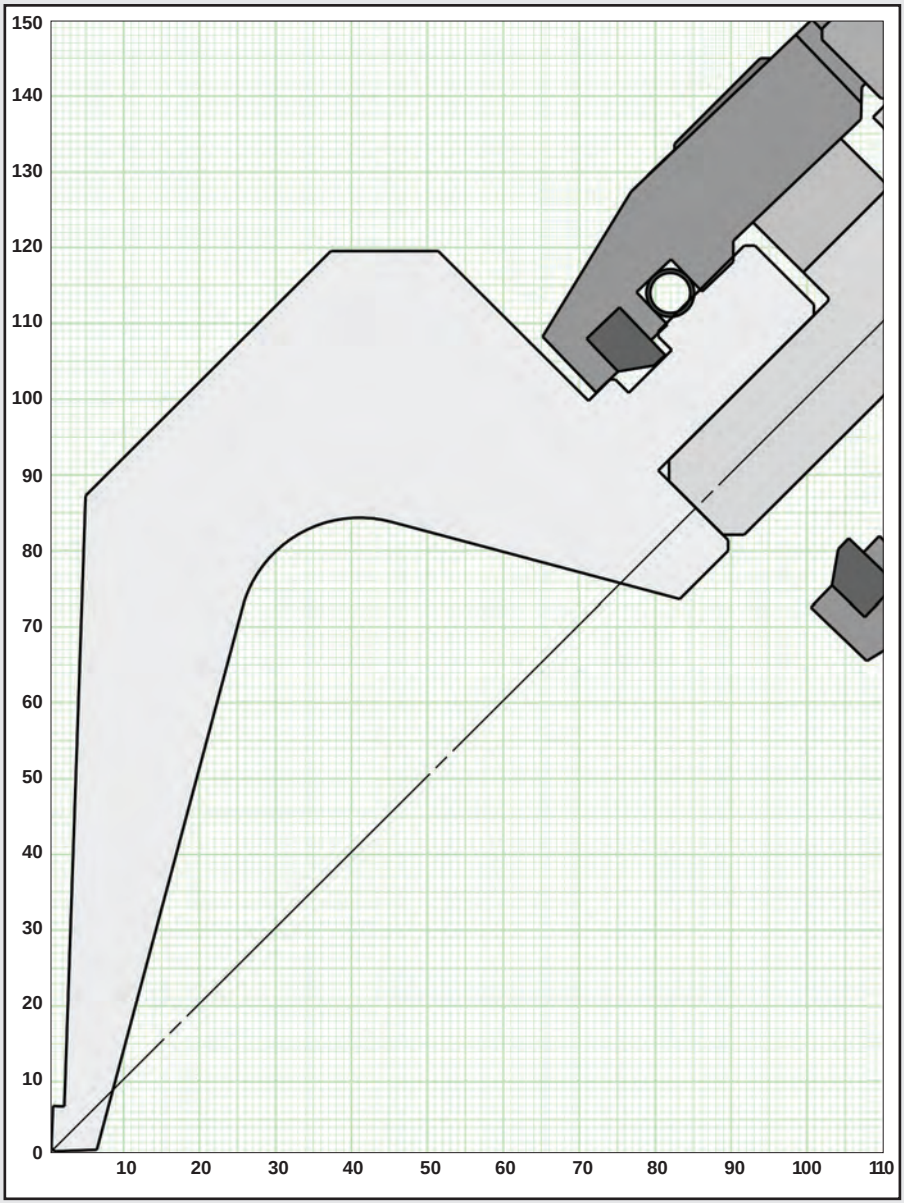
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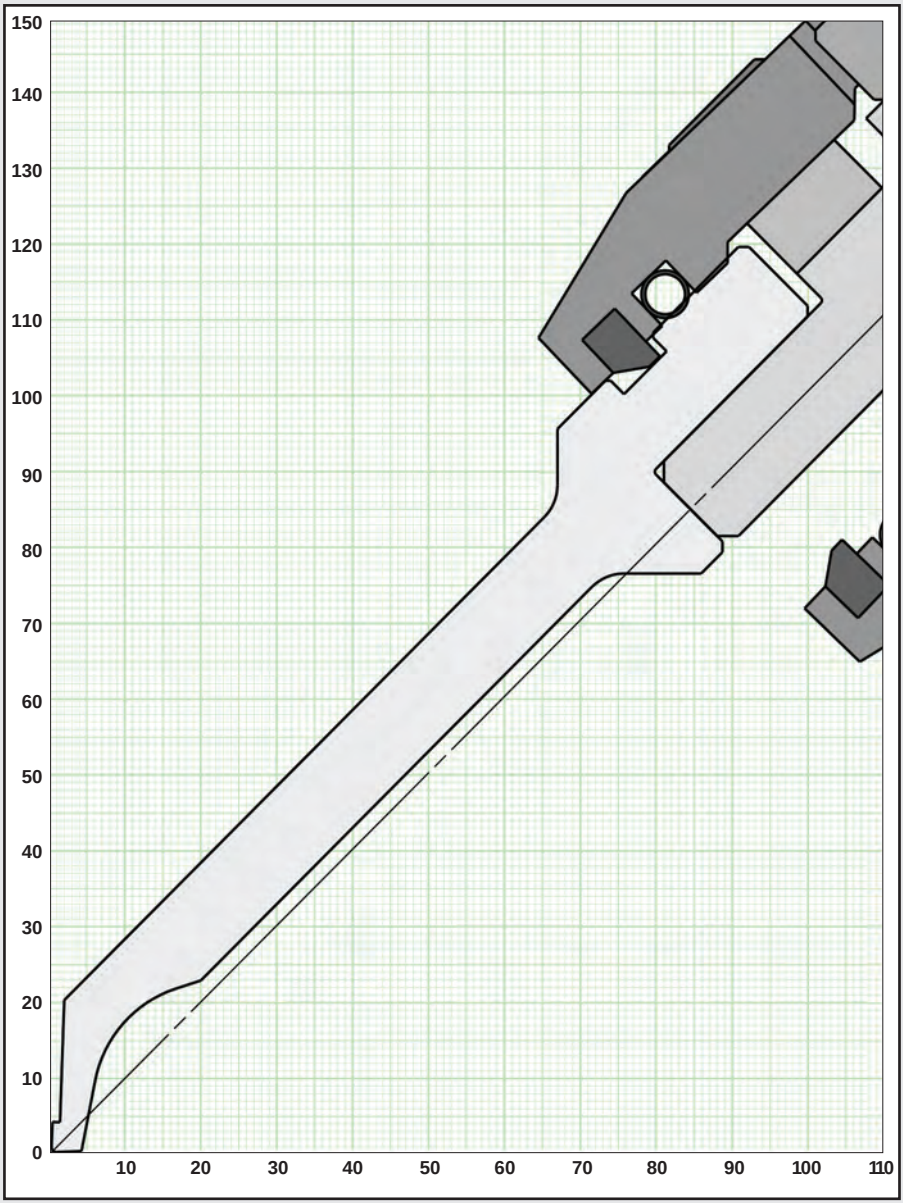
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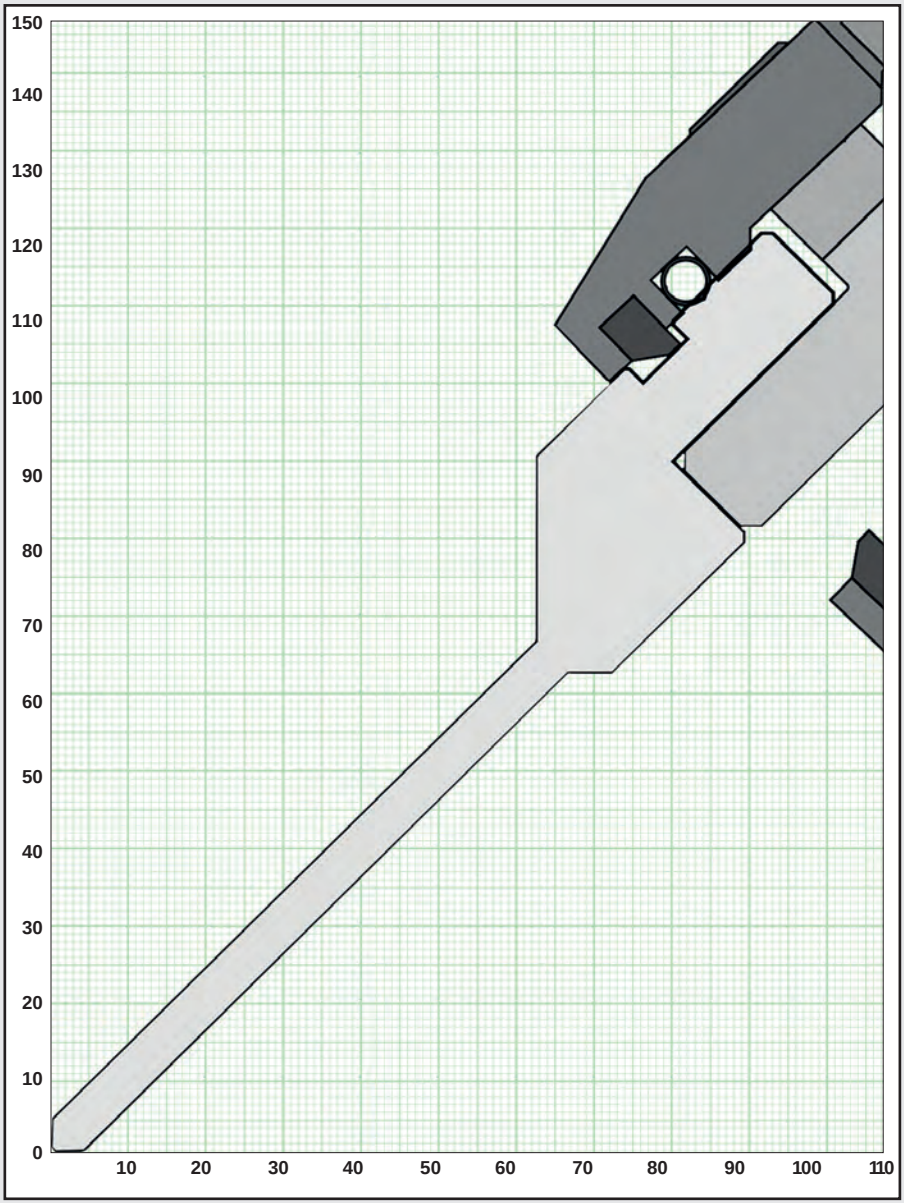
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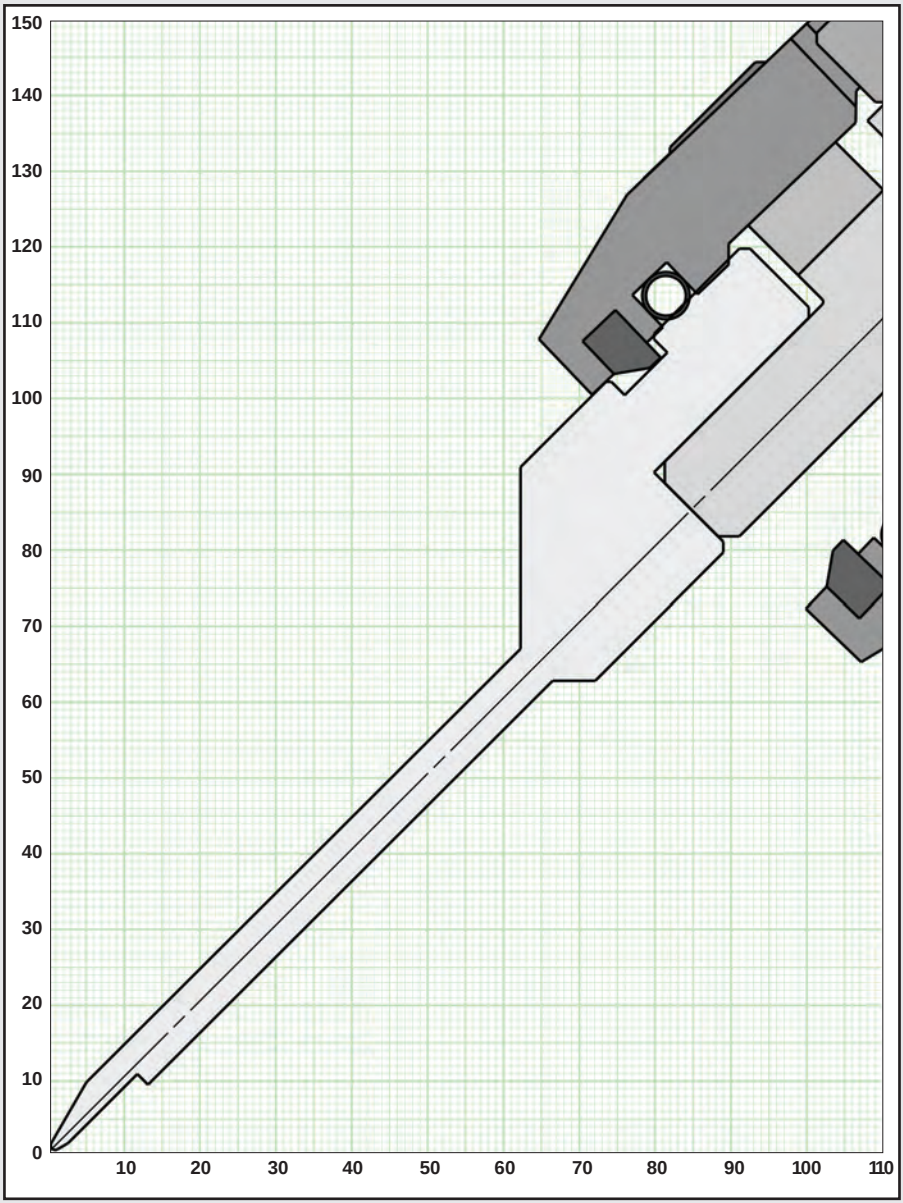
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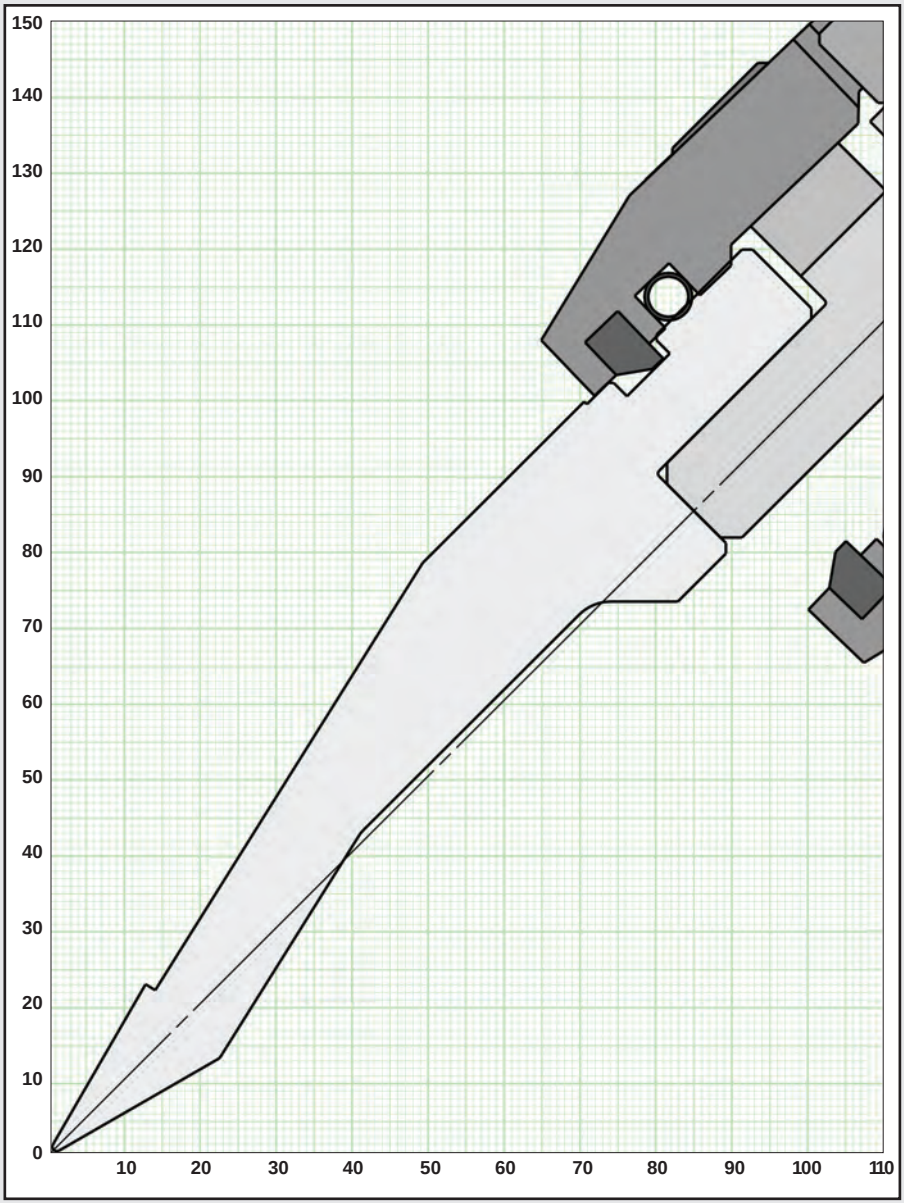
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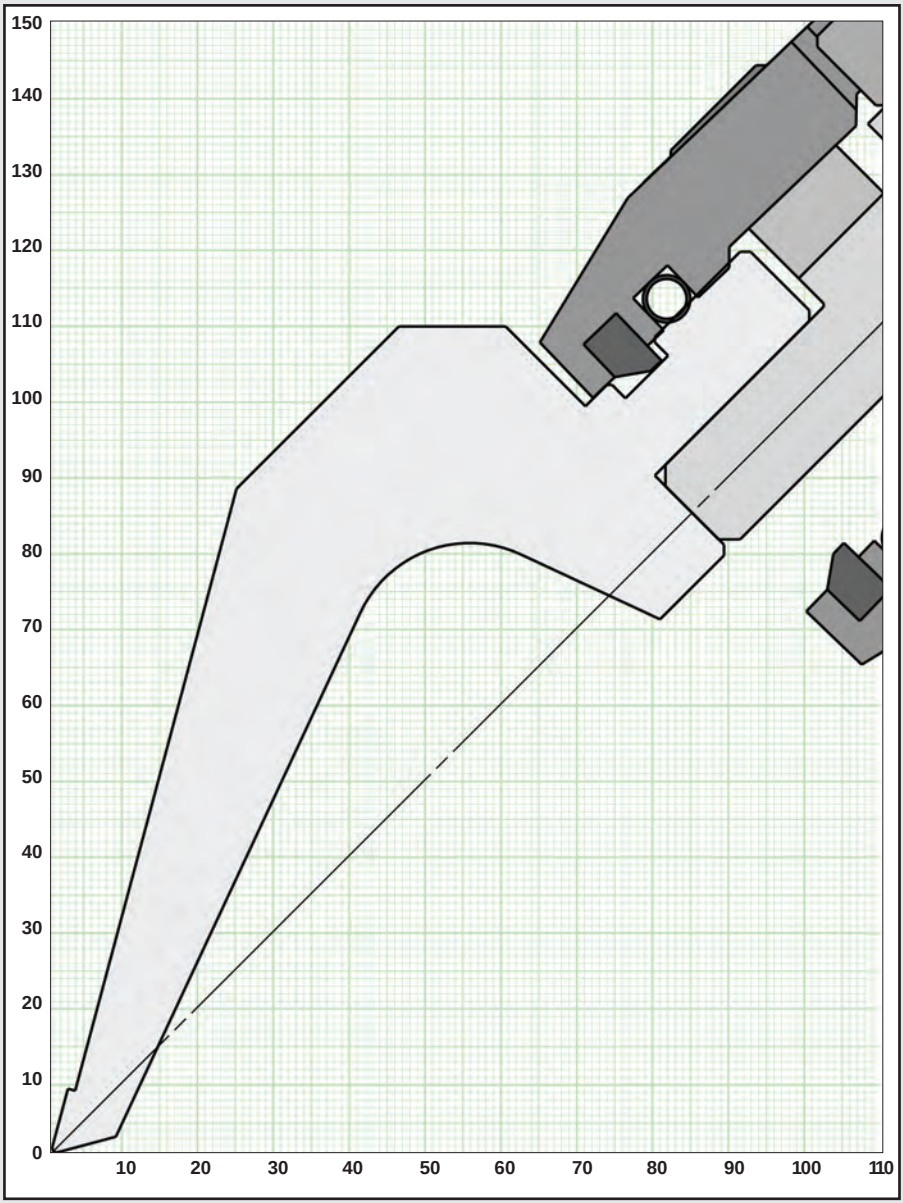
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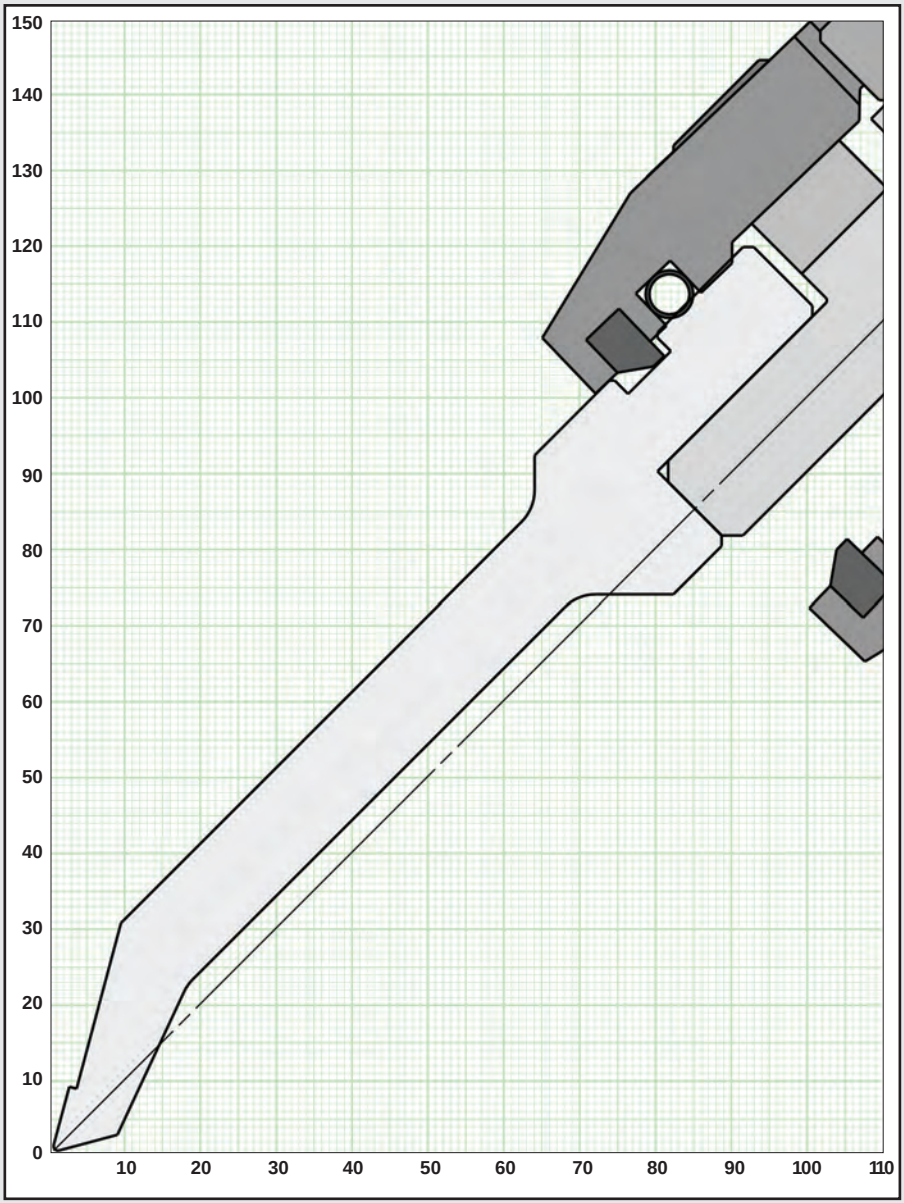
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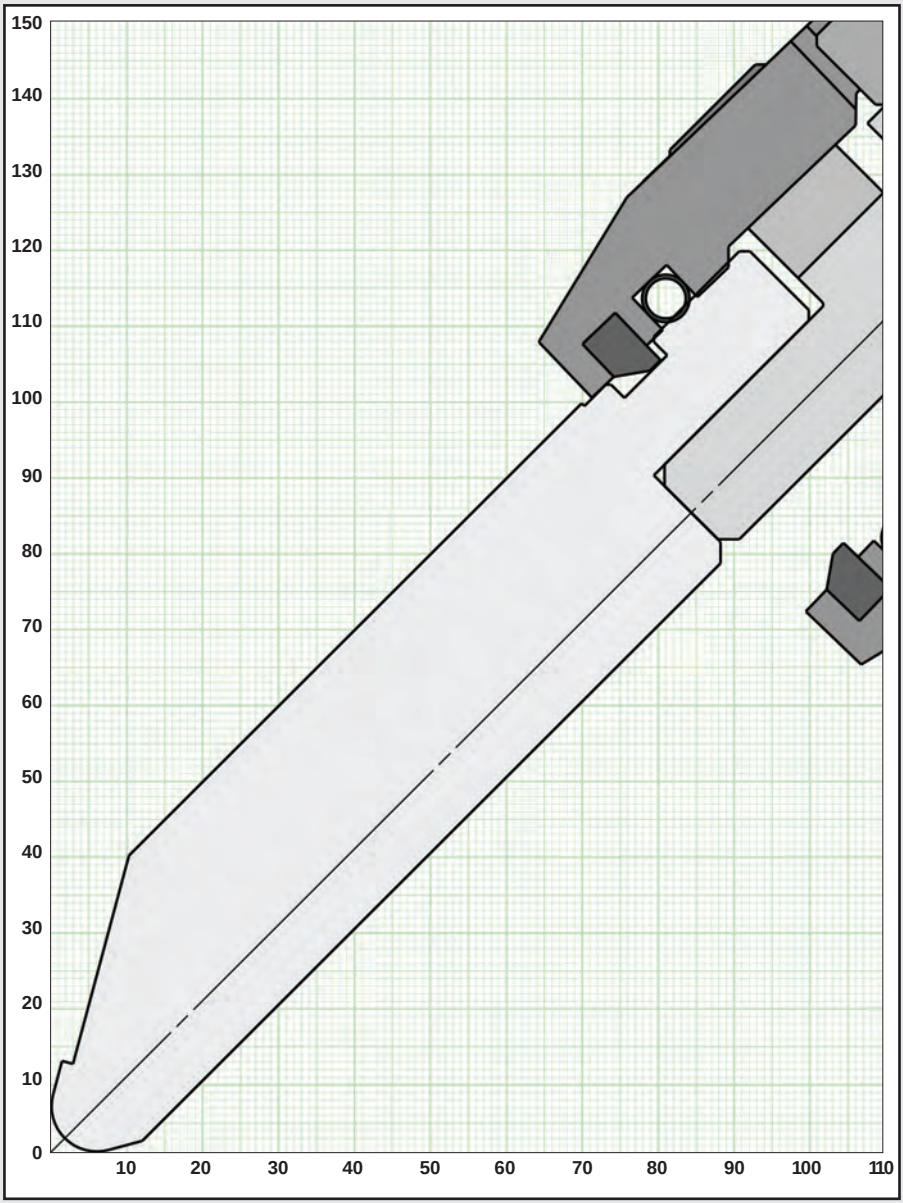
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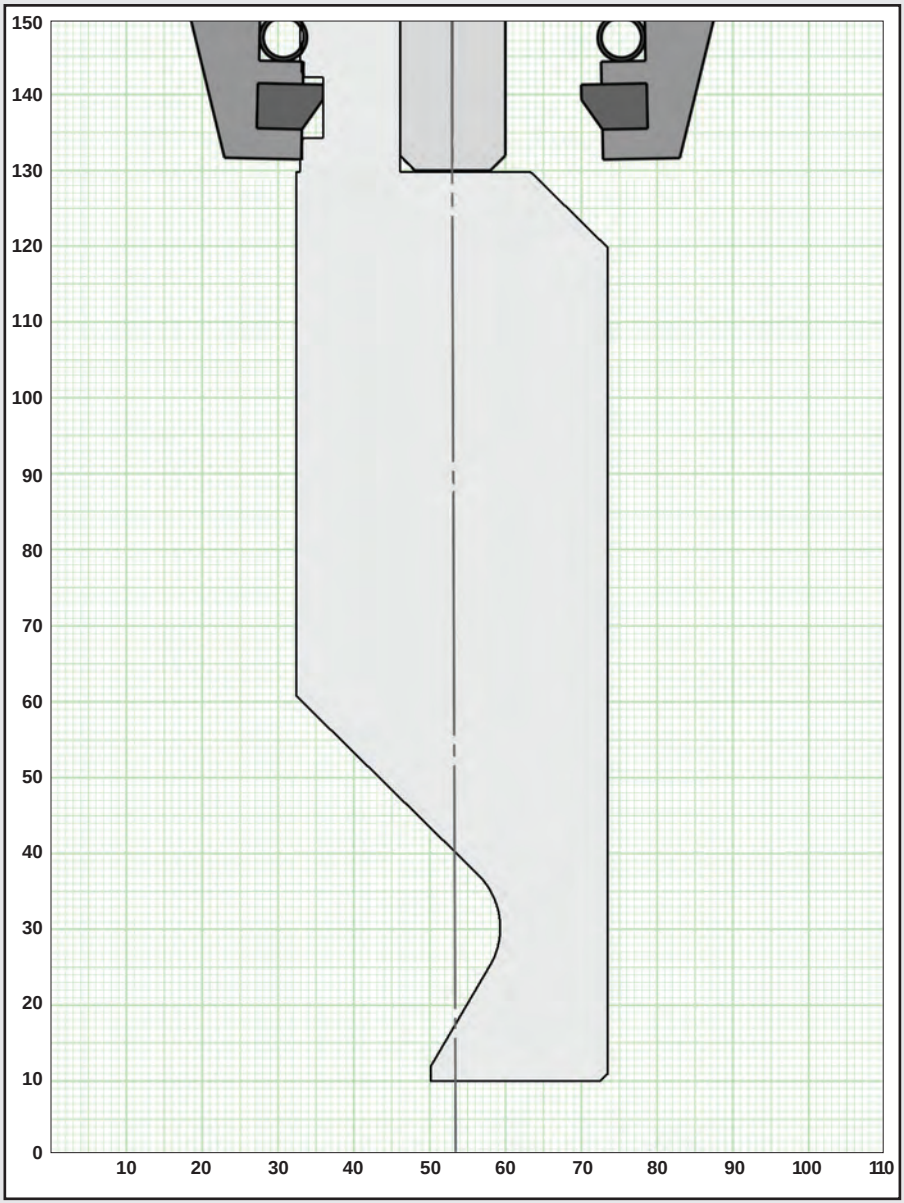
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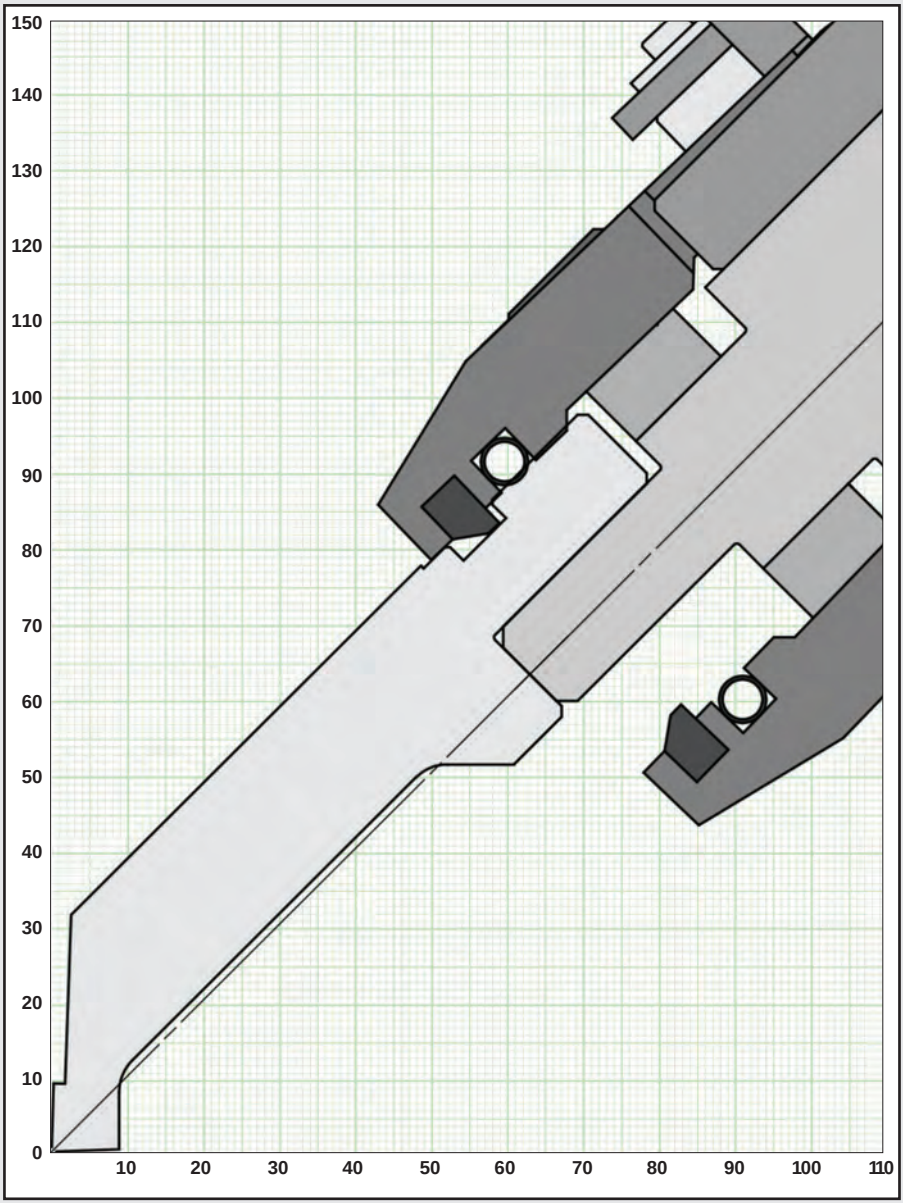
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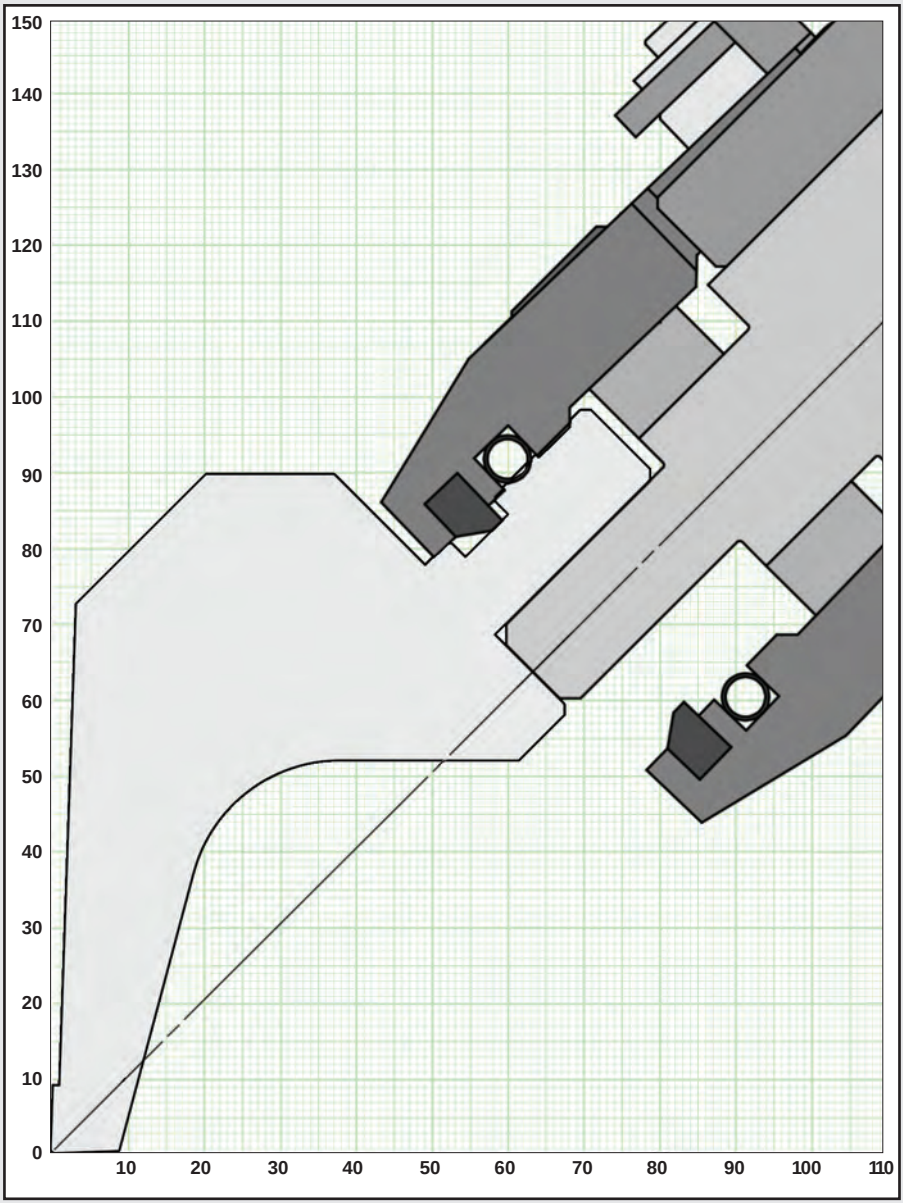
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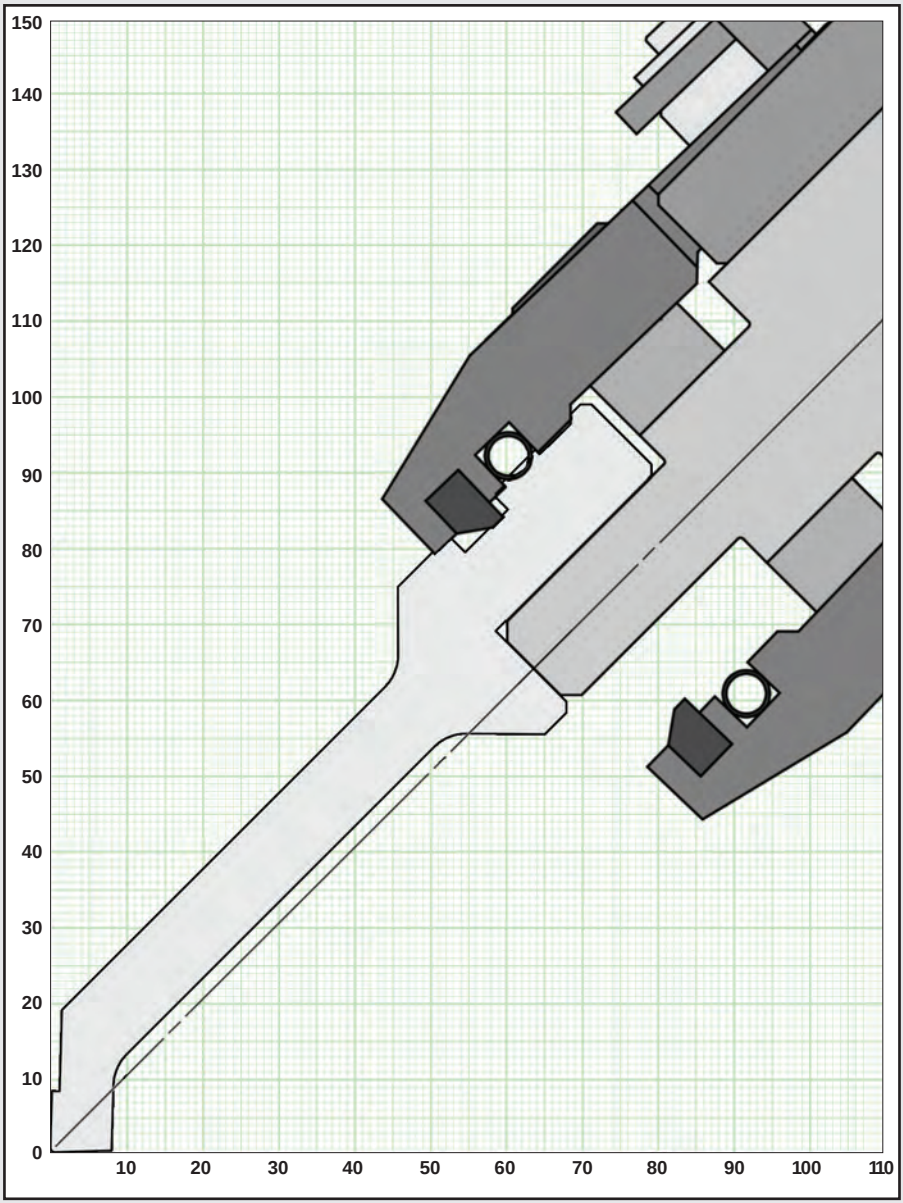
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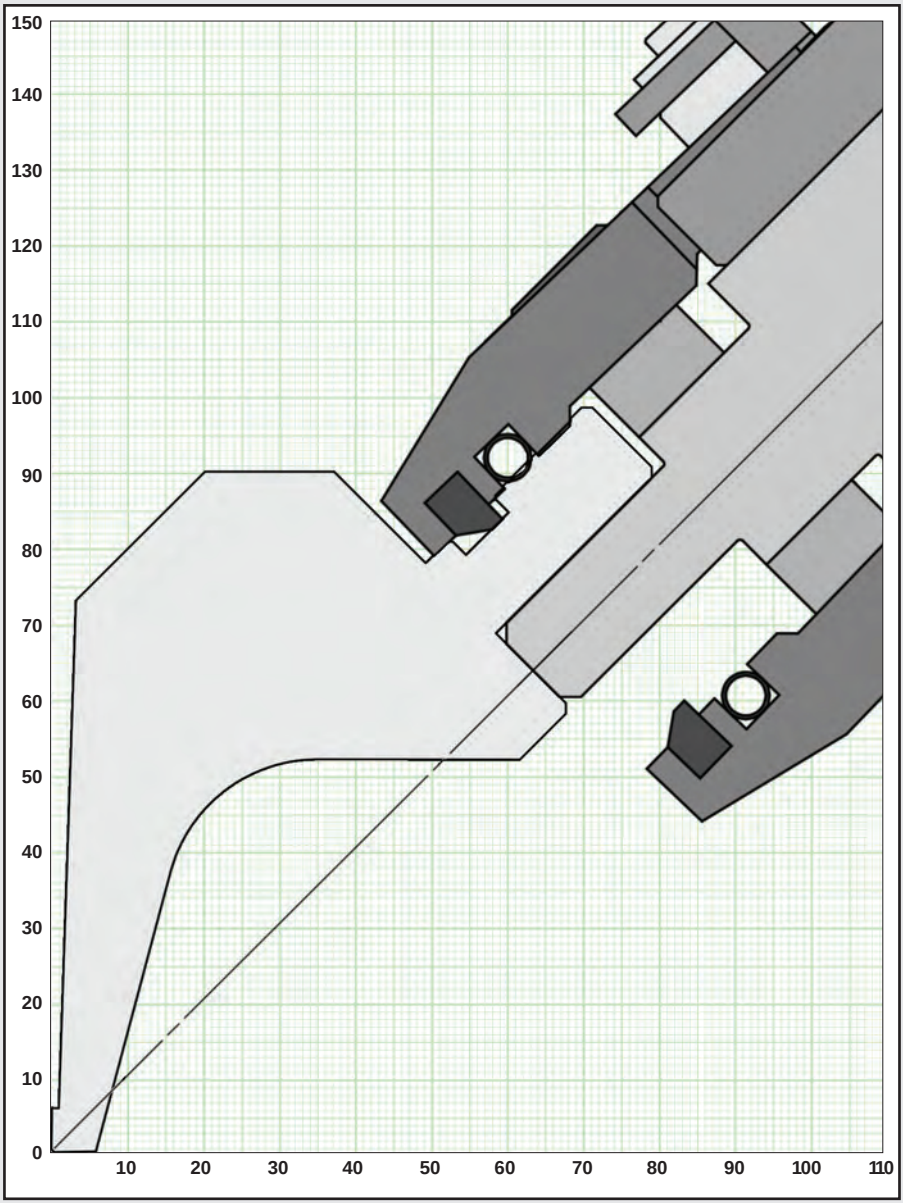
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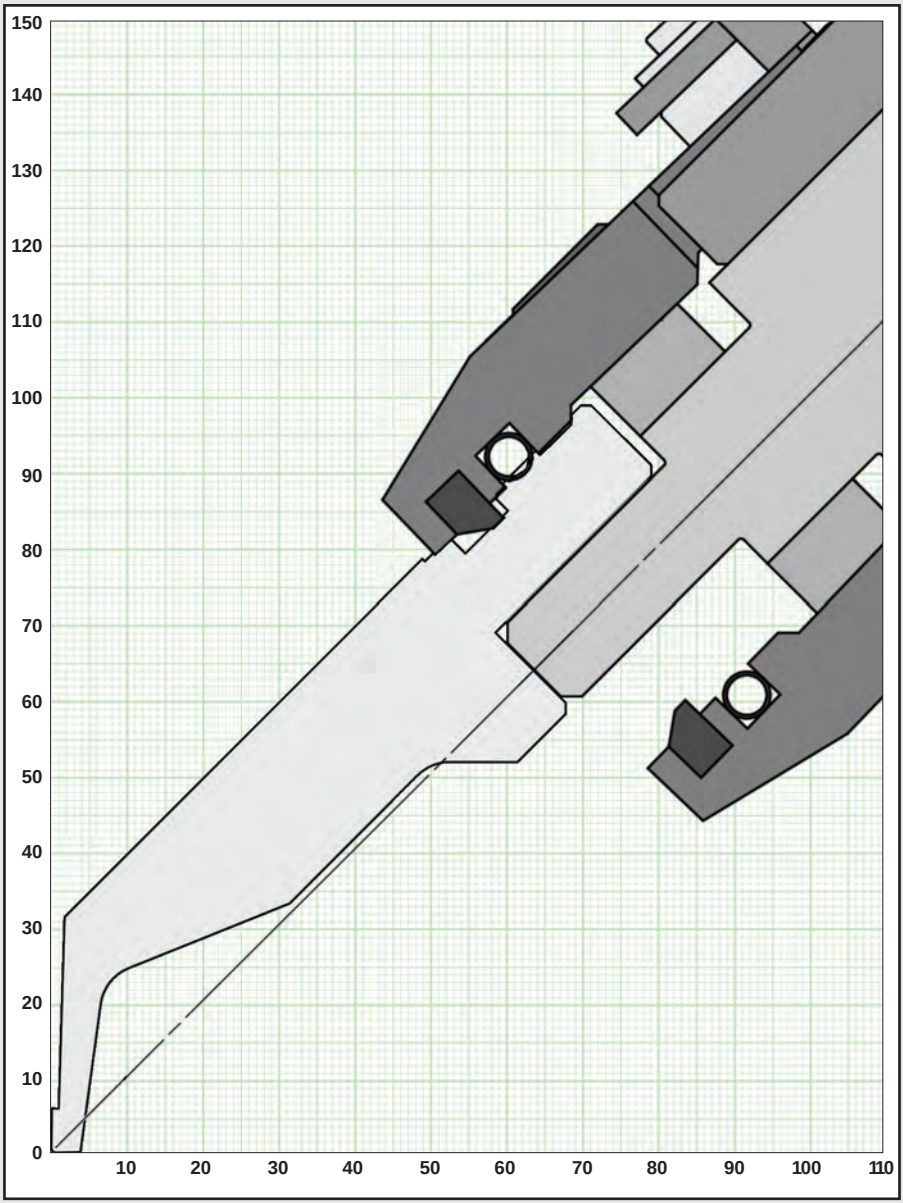
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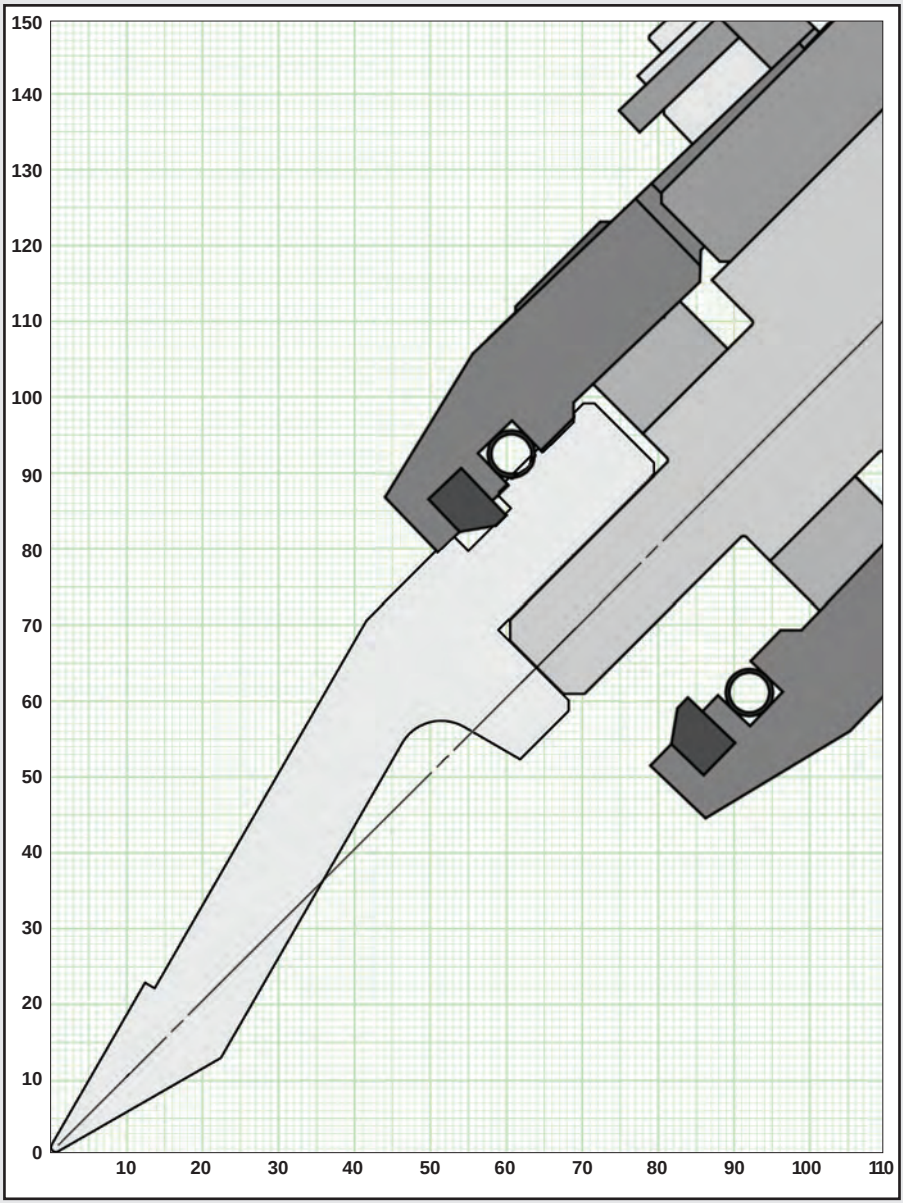
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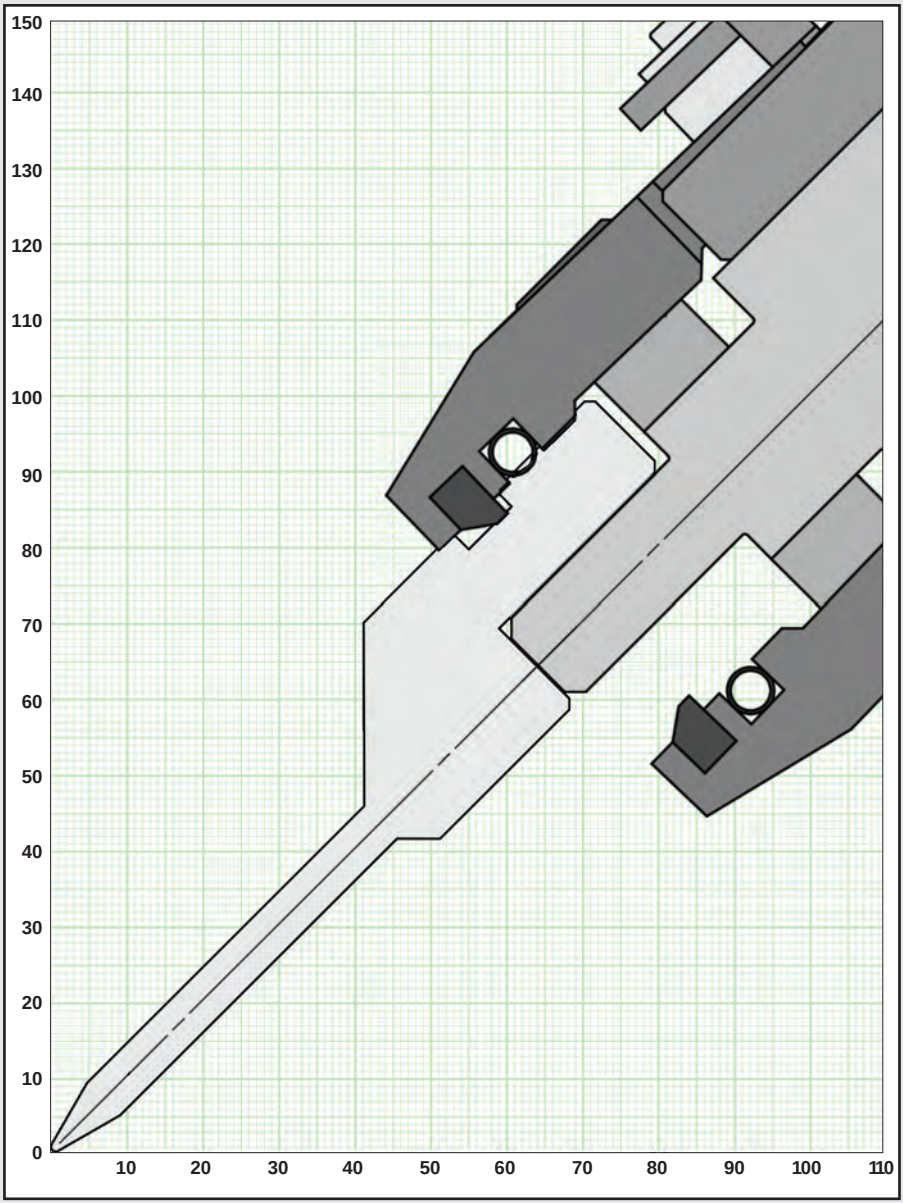
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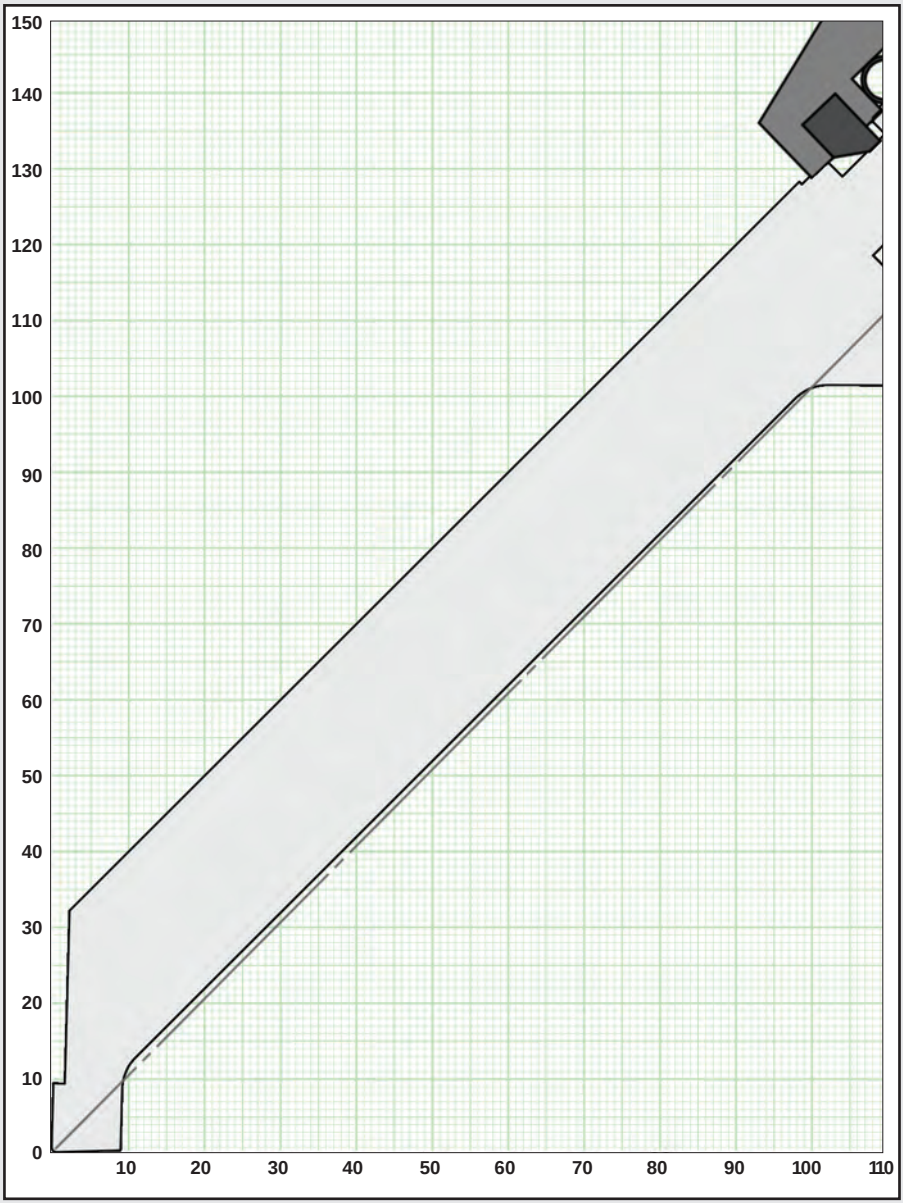
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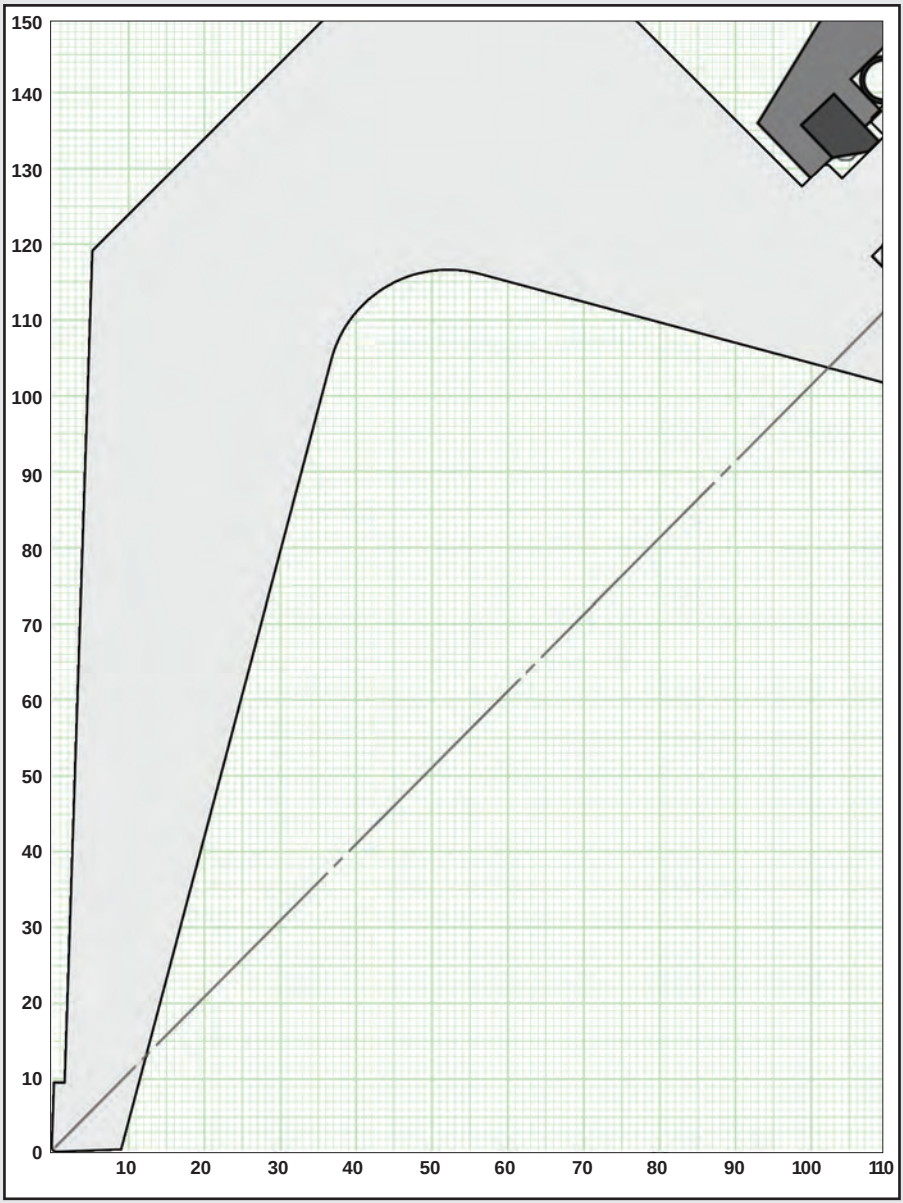
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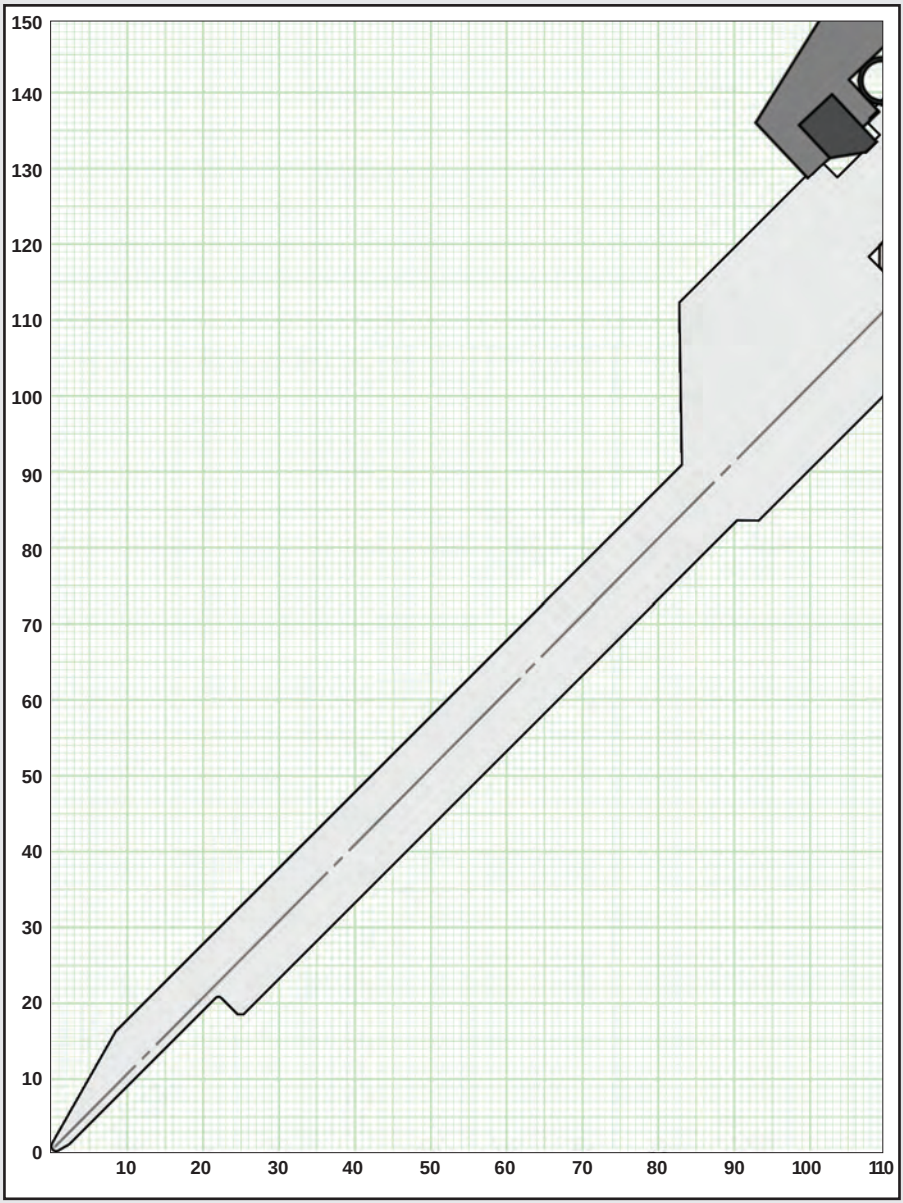
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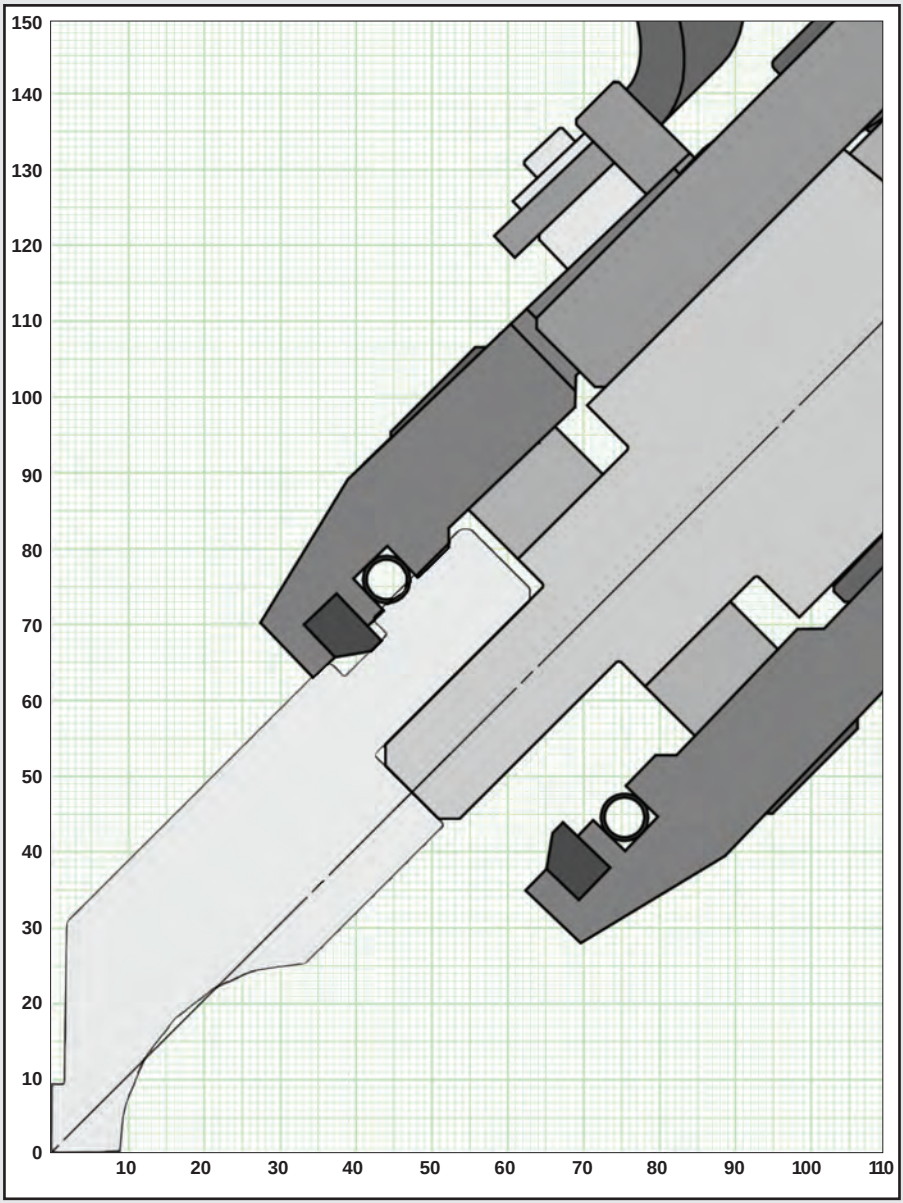
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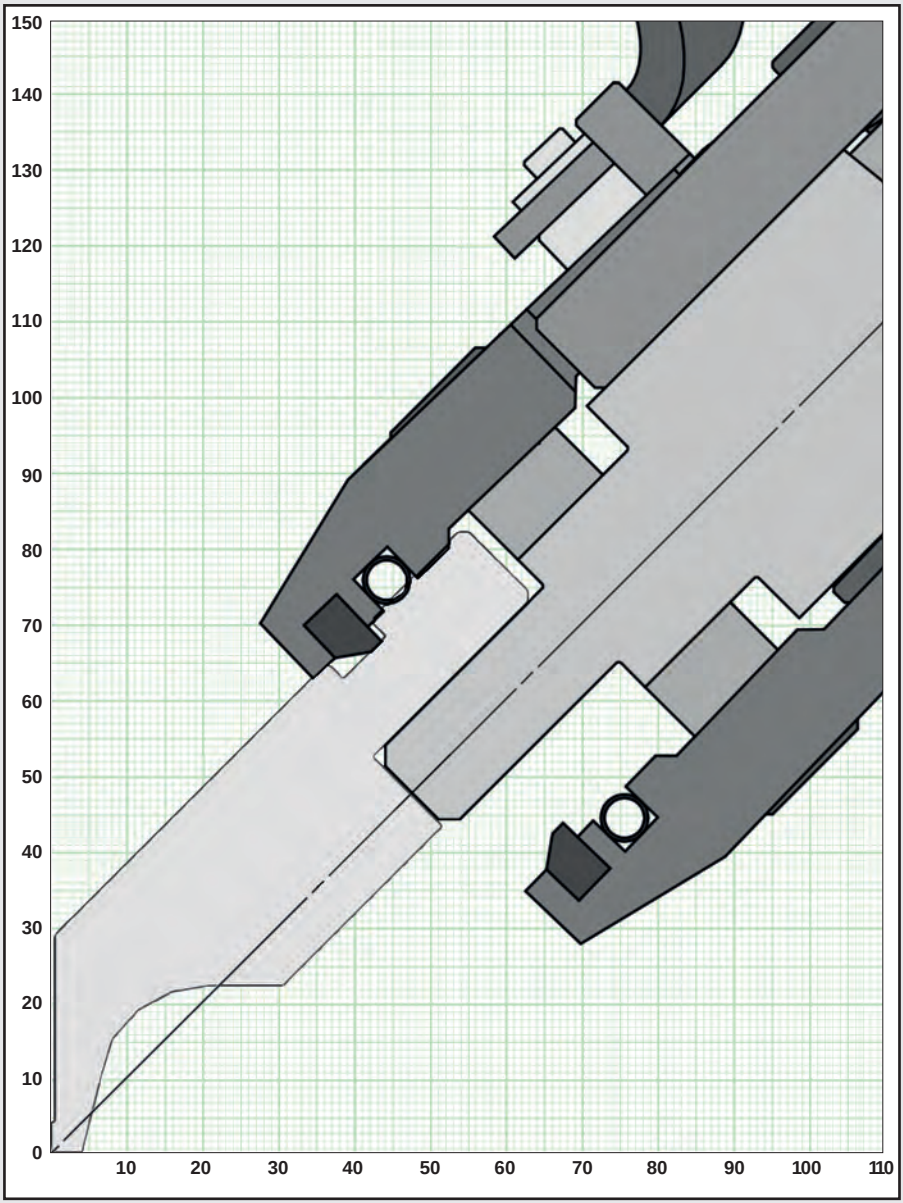
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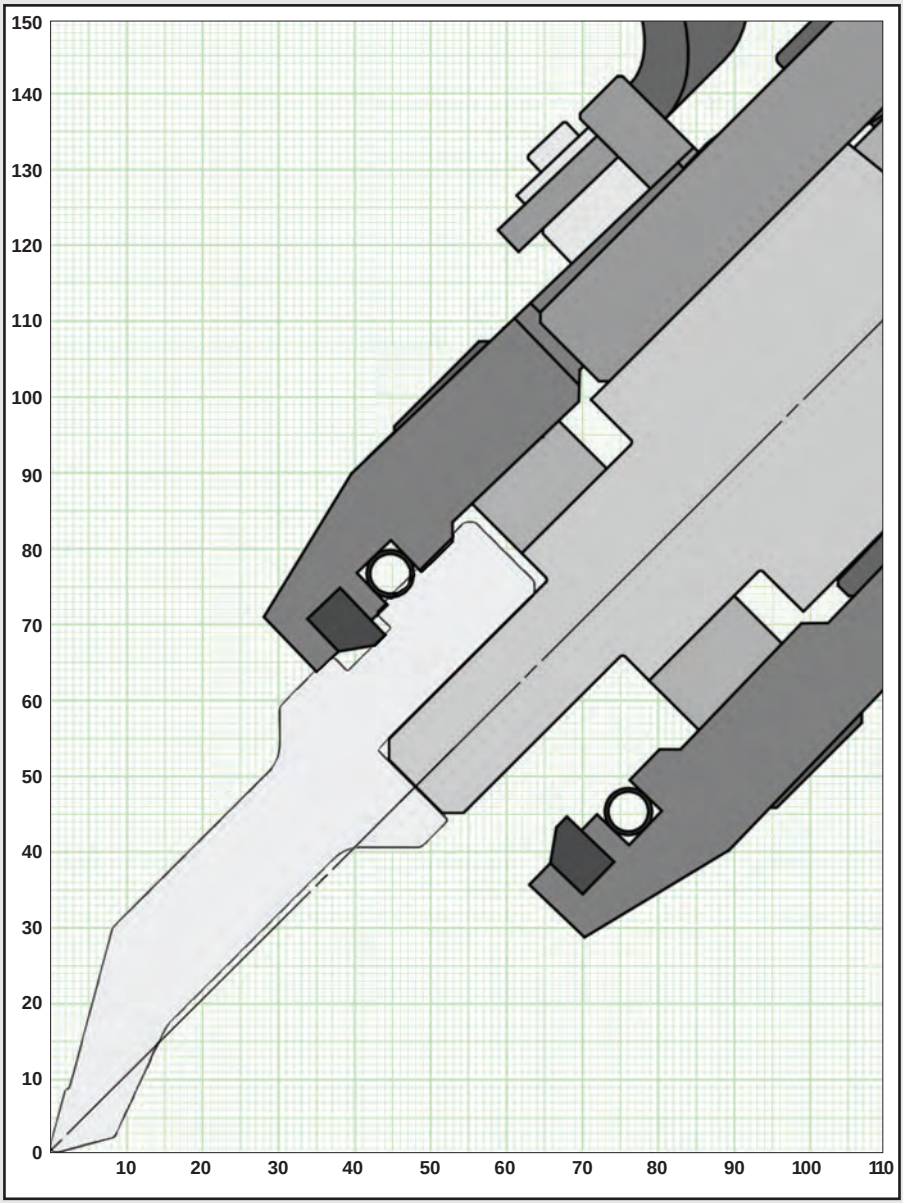
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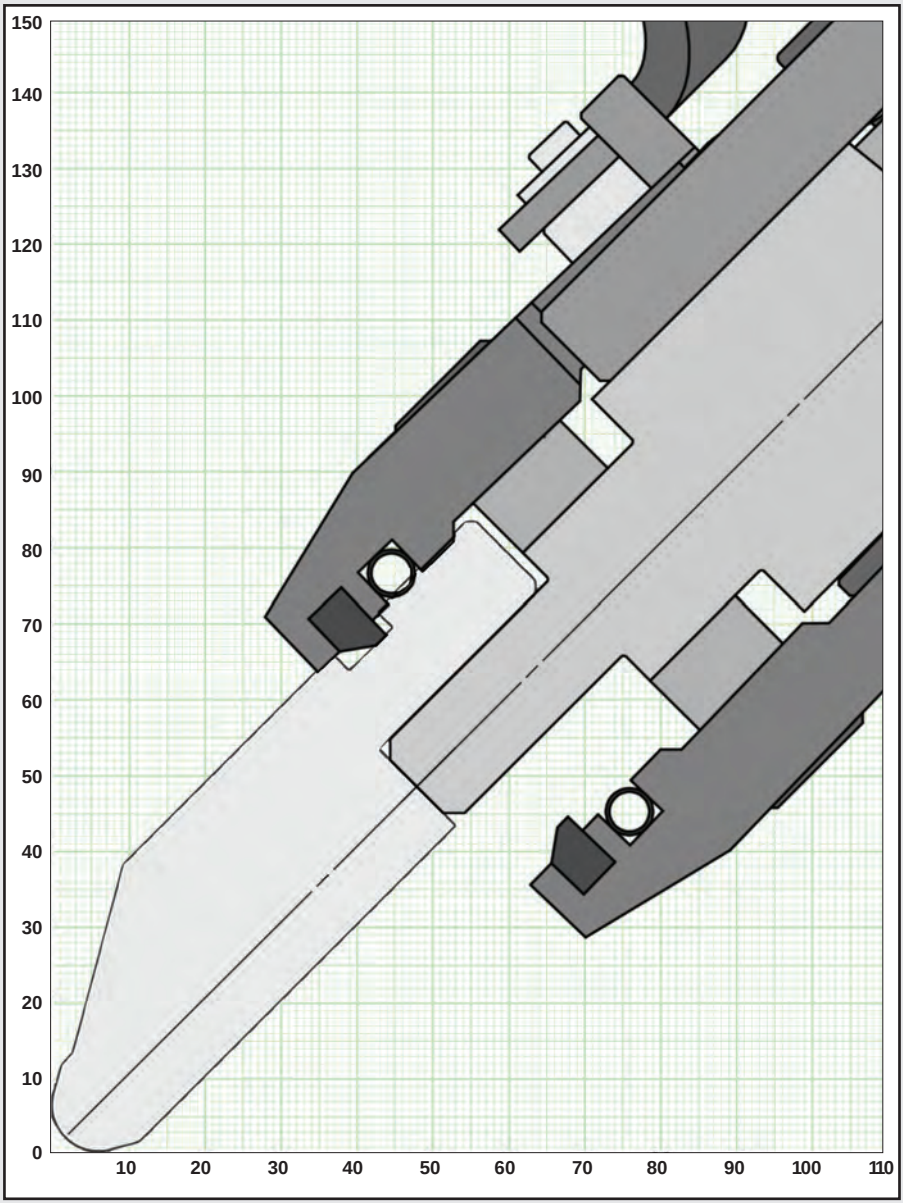
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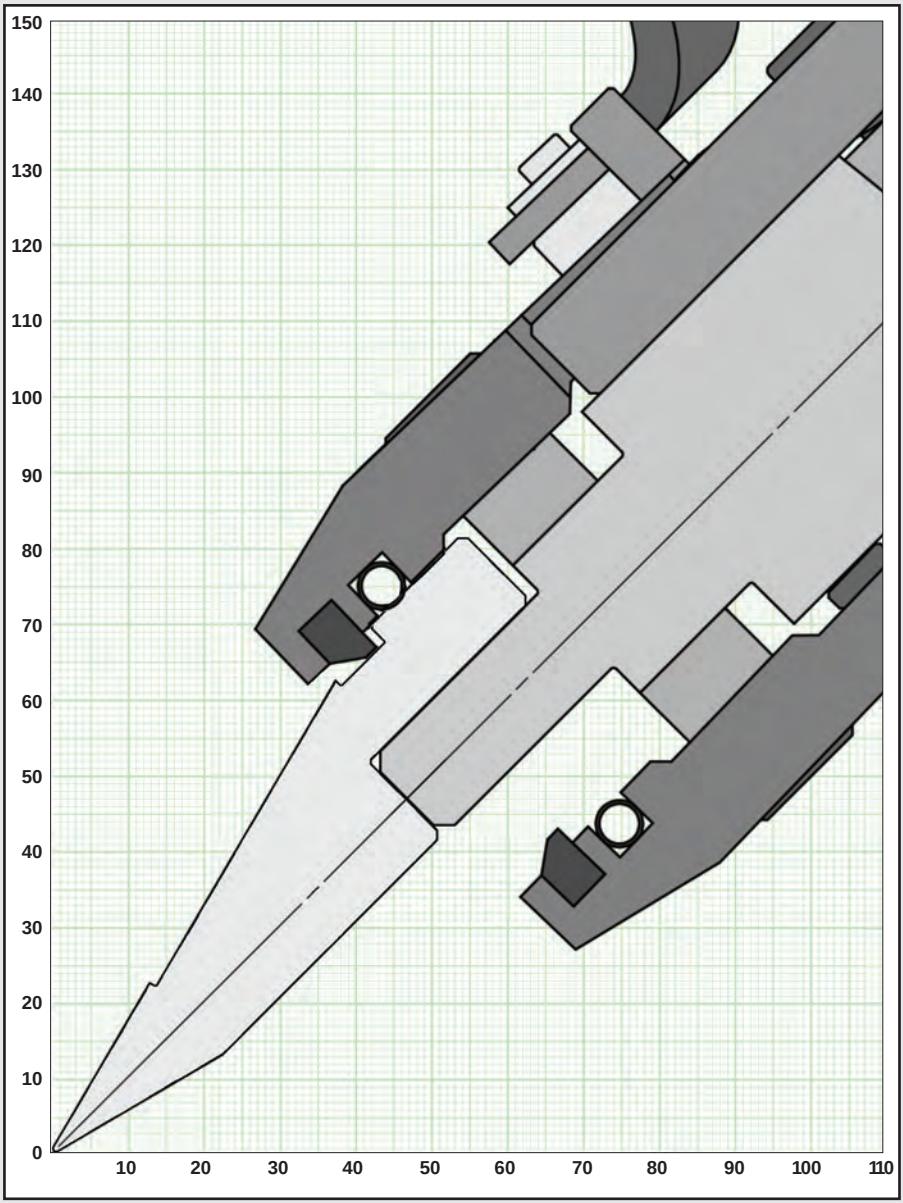
# #631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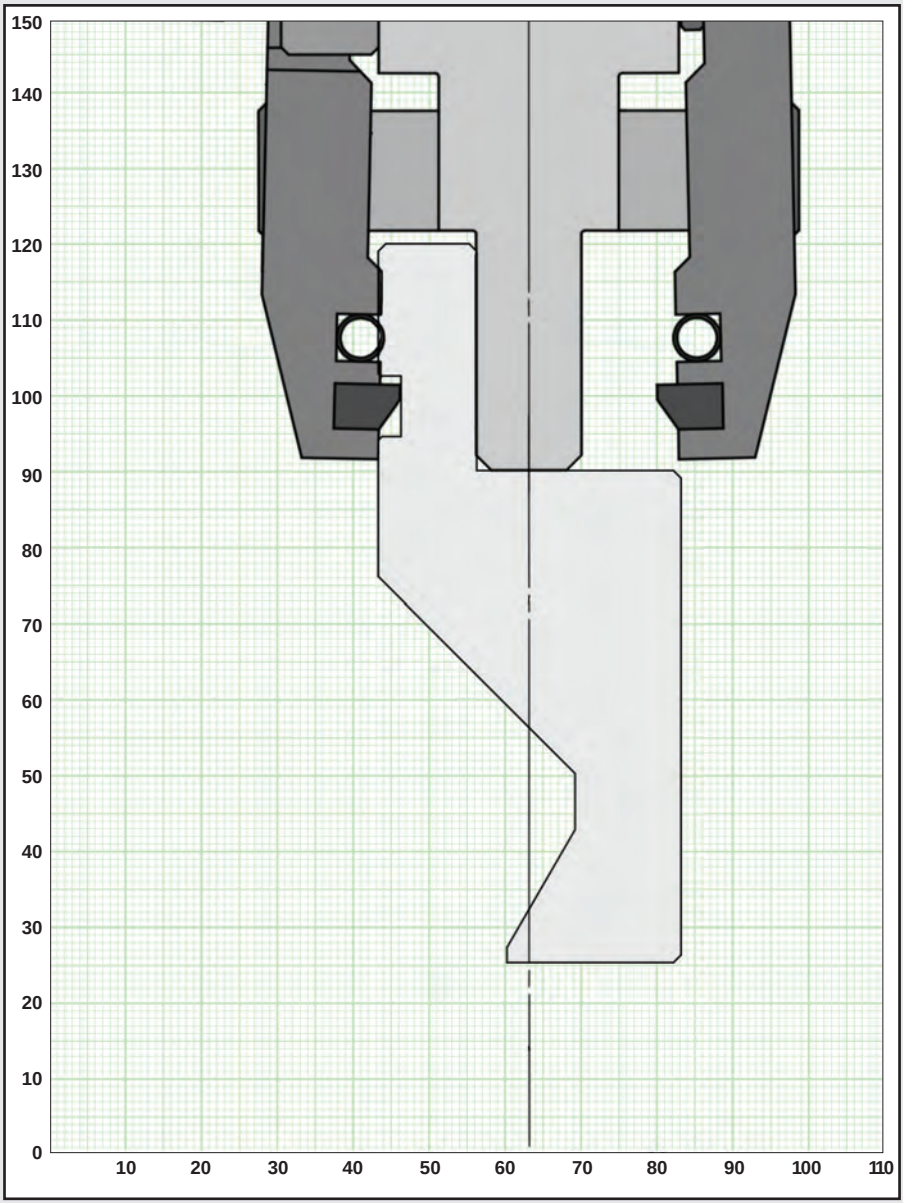
# #622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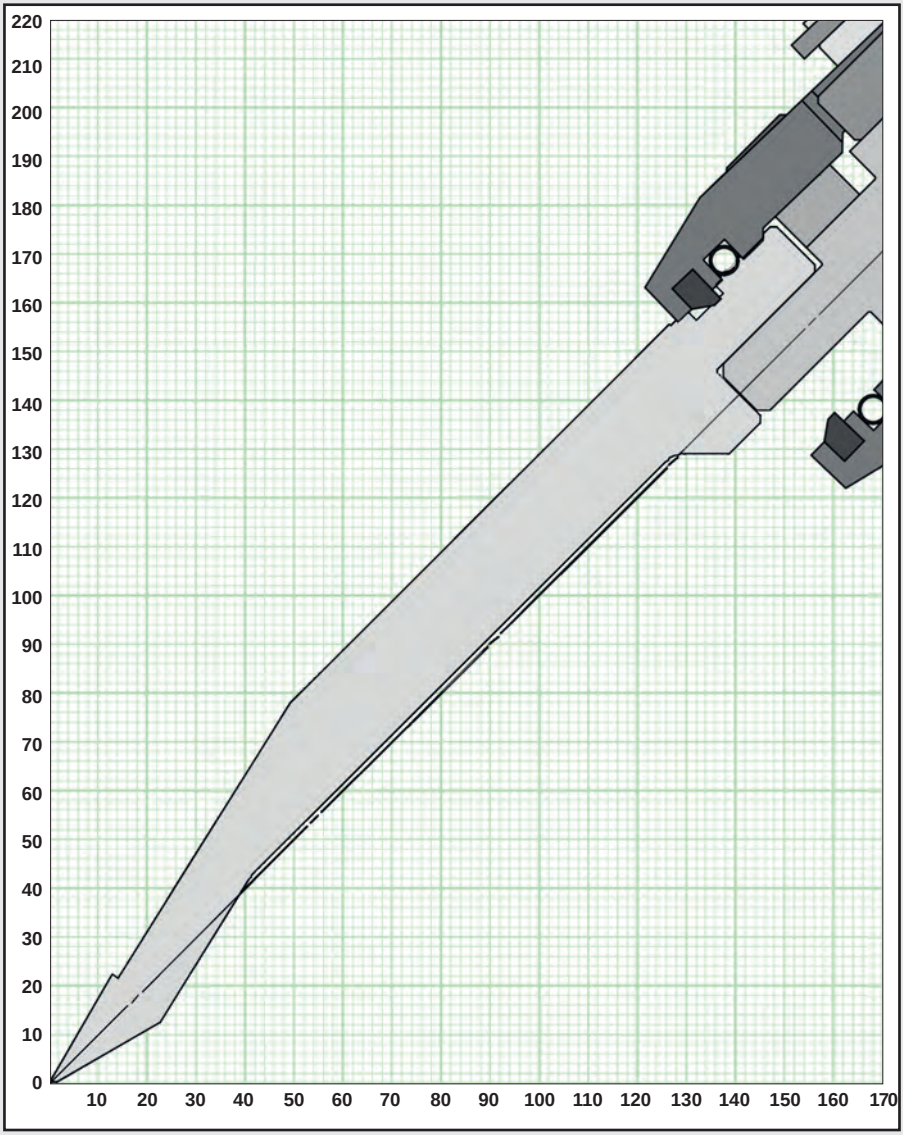
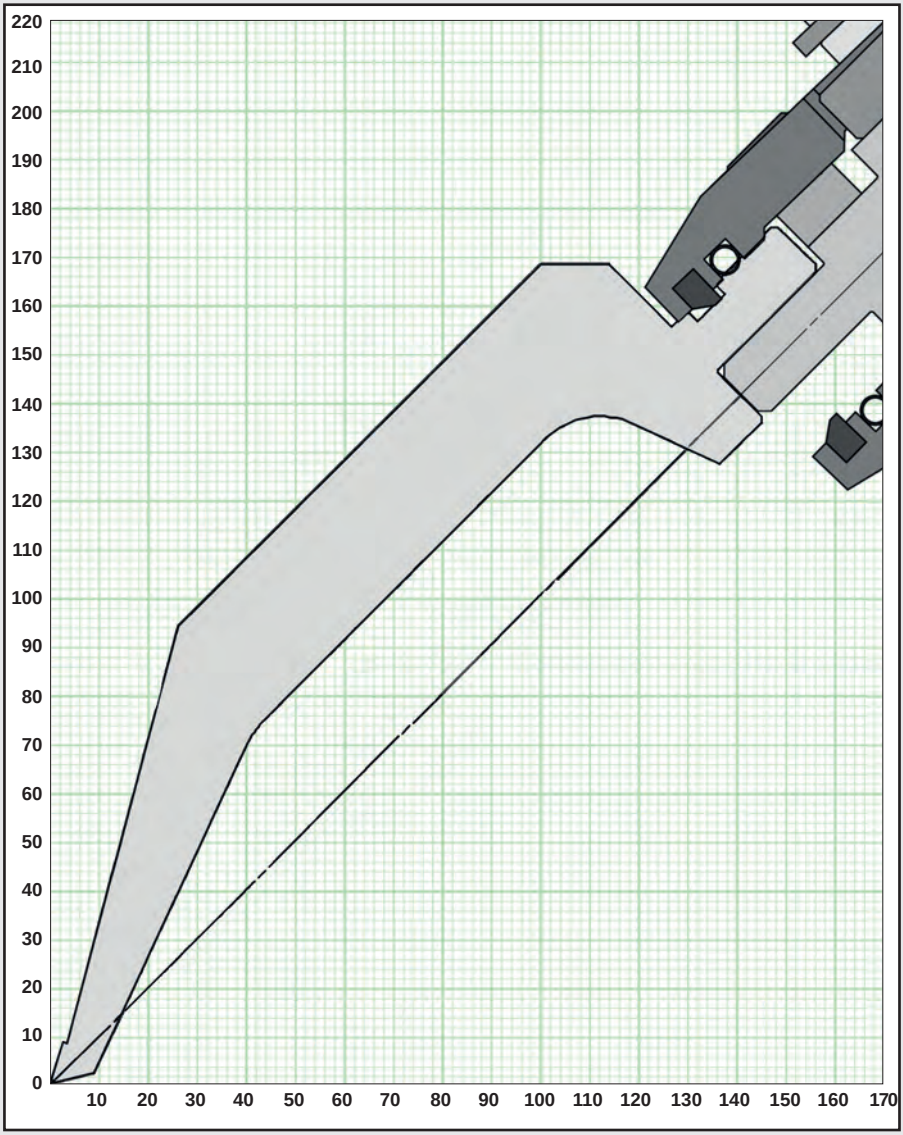
# Punzón Semi-estándar H=200 Tipo #831



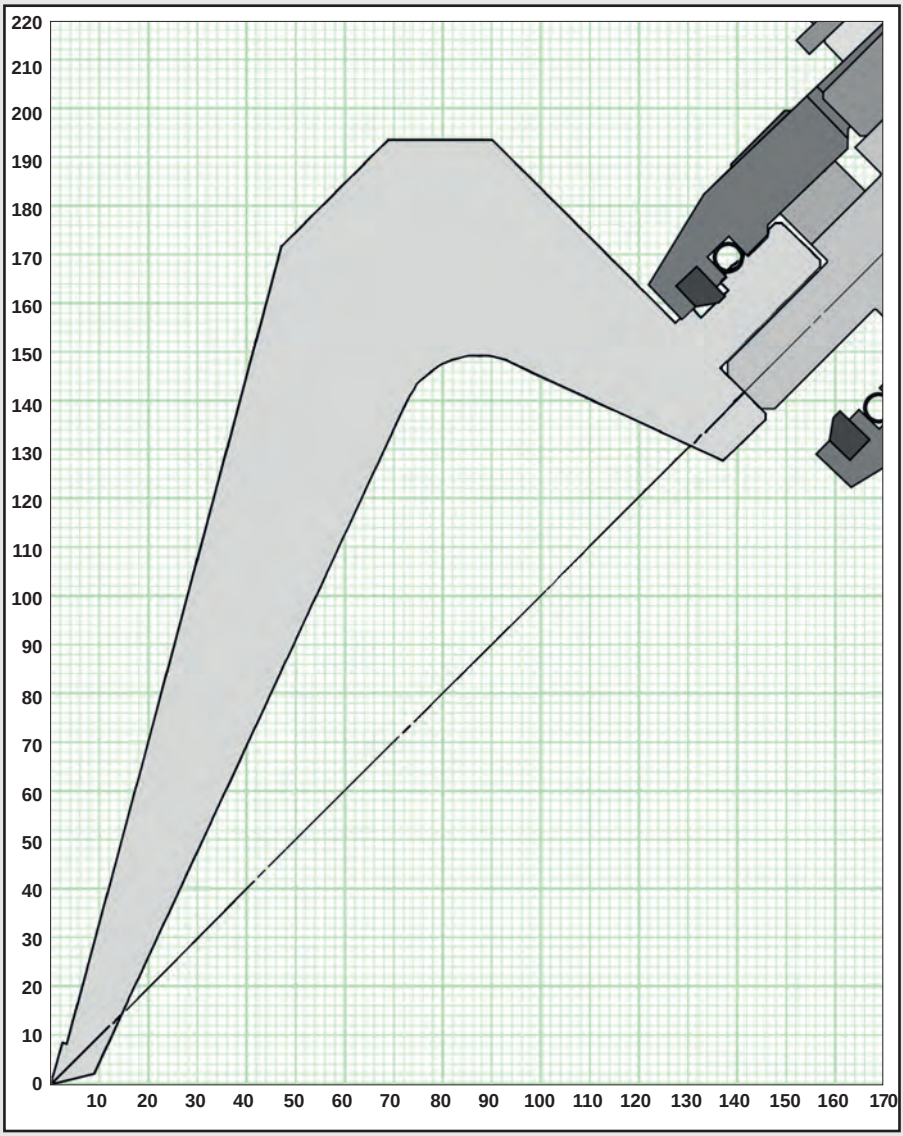

La gráfica de la imagen no está a escala 1:1

# Punzón Semi-estándar H=200 Tipo #841 W55



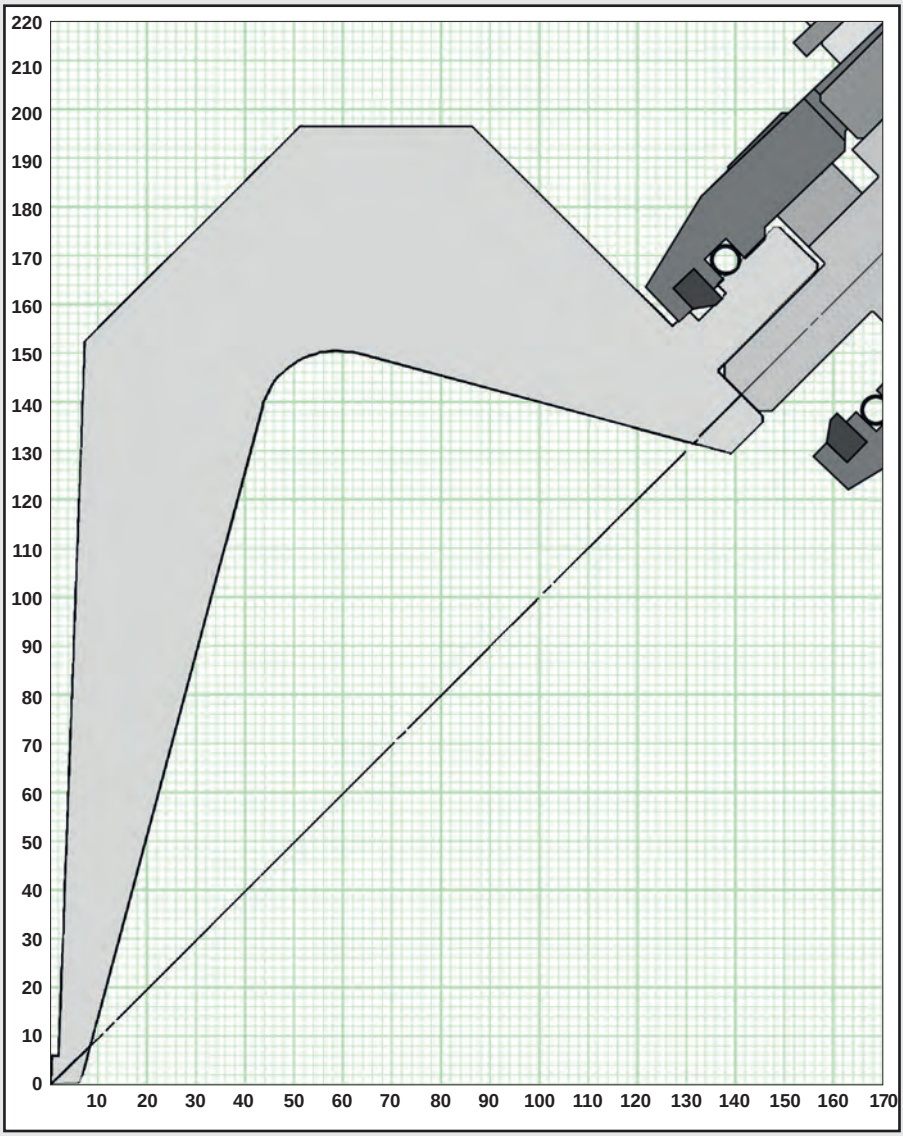

La gráfica de la imagen no está a escala 1:1

# Punzón Semi-estándar H=200 Tipo #841 W95



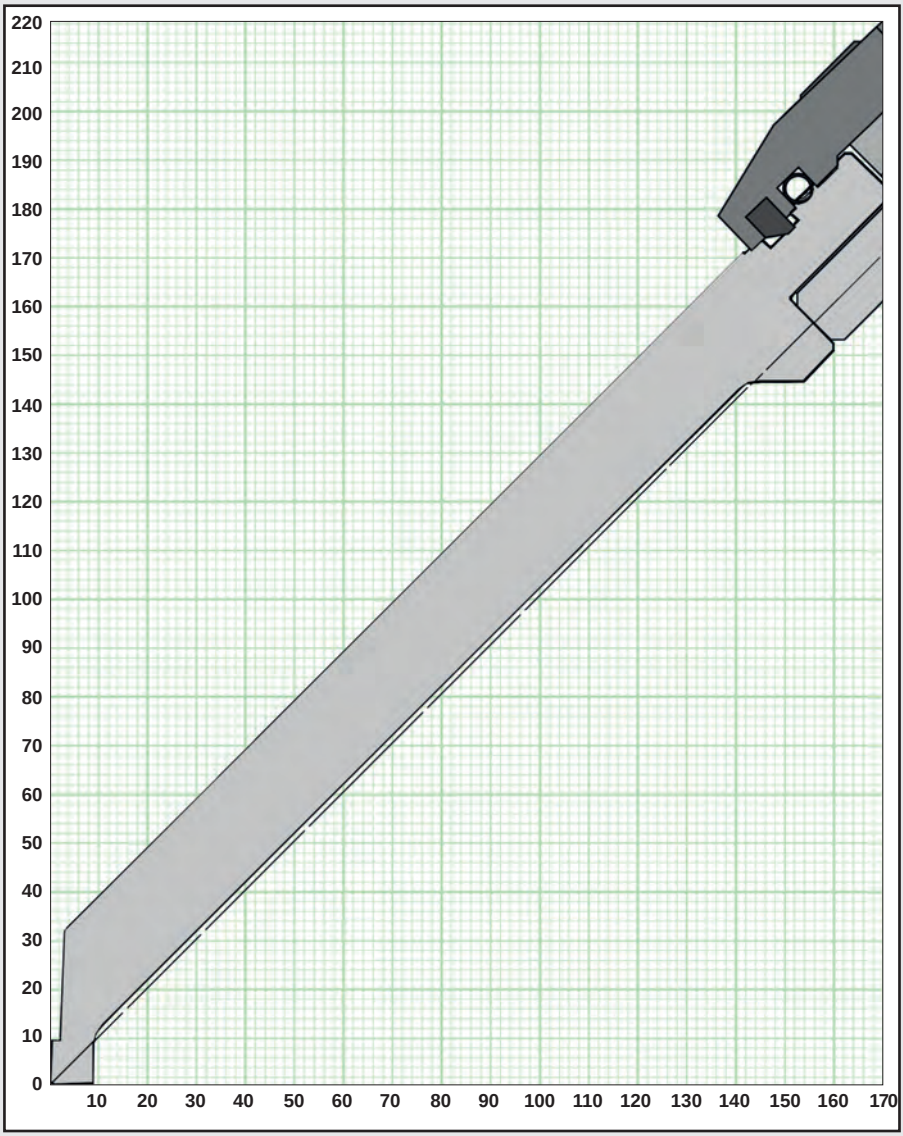

La gráfica de la imagen no está a escala 1:1

# Punzón Semi-estándar H=200 Tipo #846 W110



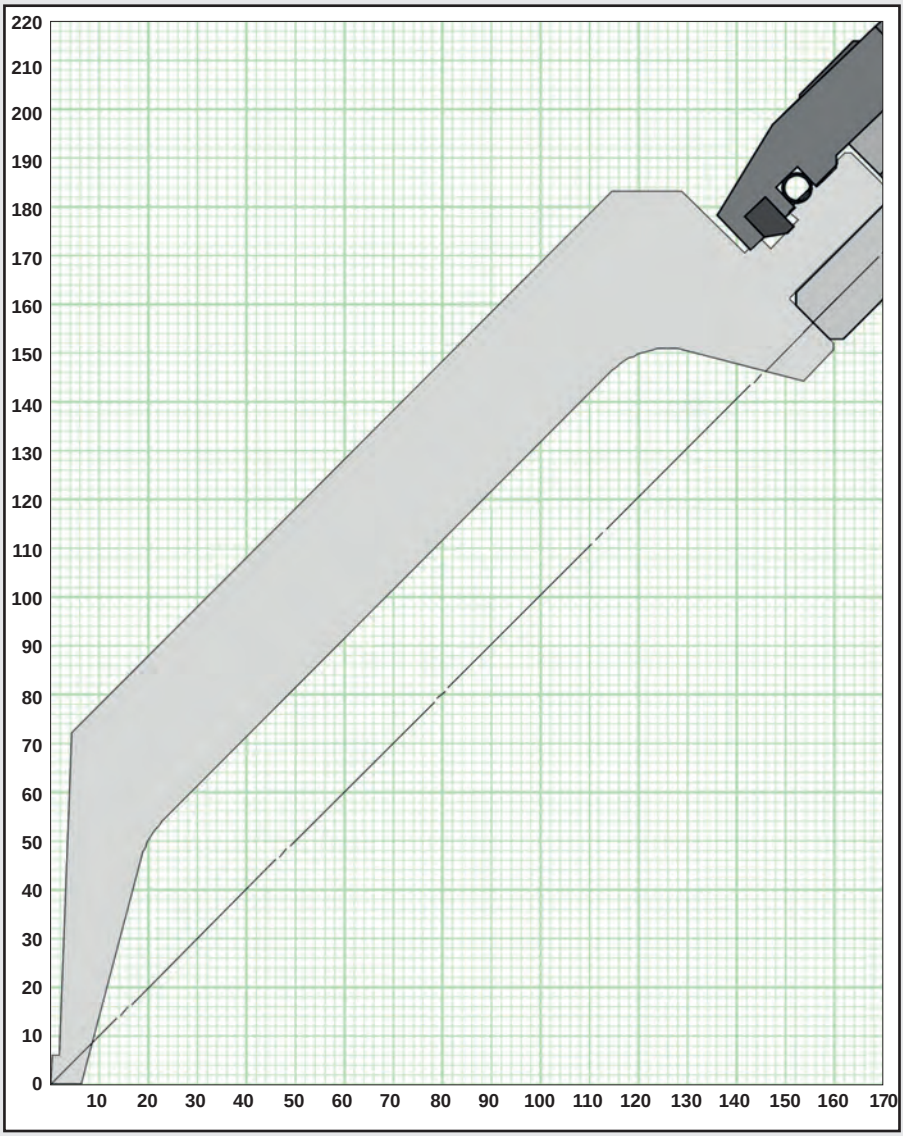

La gráfica de la imagen no está a escala 1:1

# Punzón Semi-estándar H=220 Tipo #804



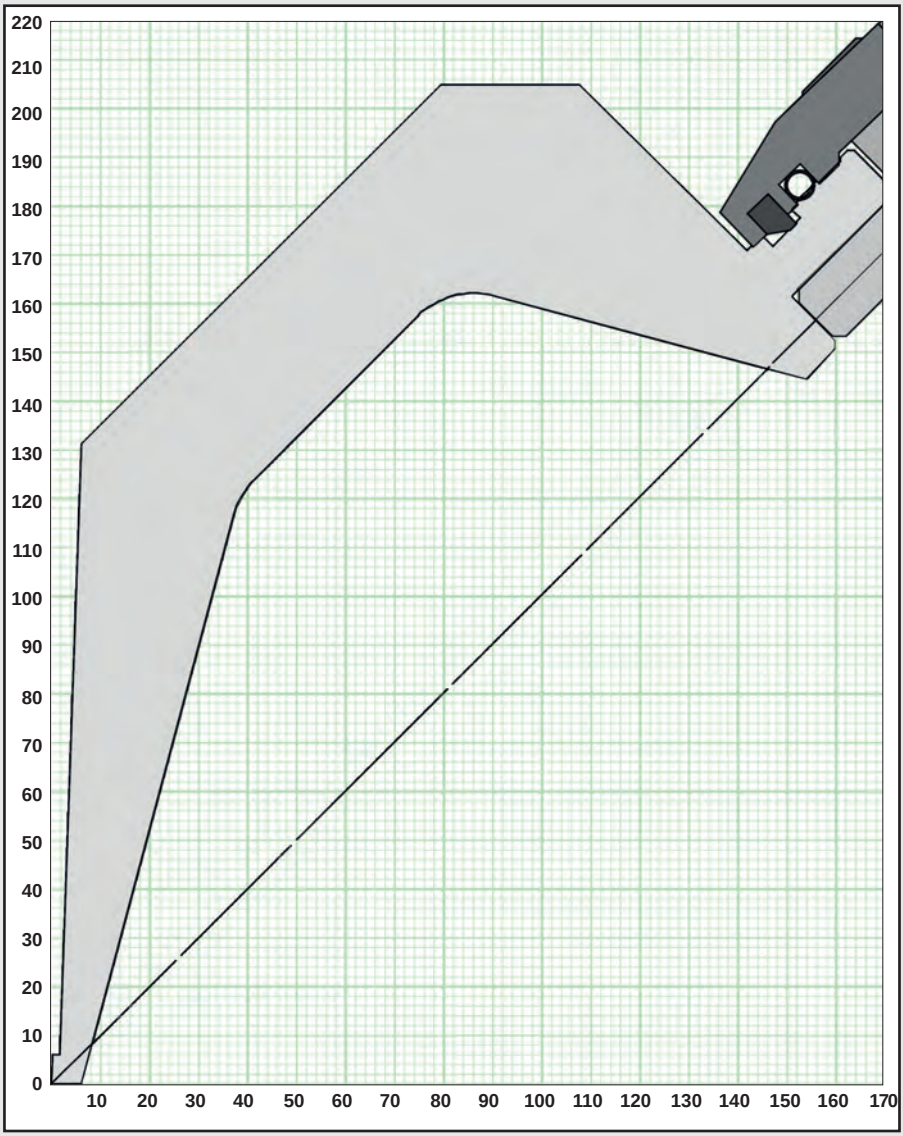

La gráfica de la imagen no está a escala 1:1

# Punzón Semi-estándar H=220 Tipo #846 W55




La gráfica de la imagen no está a escala 1:1

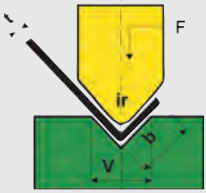
# Punzón Semi-estándar H=220 Tipo #846 W95




La gráfica de la imagen no está a escala 1:1

# Tabla de Plegado al Aire: Acero

## Cómo interpretar la Tabla de Presión:




Si se conoce el espesor del material y el radio interno de plegado, se puede obtener la siguiente información de la tabla:

1. Tonelaje requerido para plegar material de 1 metro de longitud
2. Ancho de la V a utilizar
3. Mínima longitud de pestaña de plegado

| t mm | 4 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.8 | 4 | 5 | 5.5 | 7 | 8.5 | 10 | 11 | 13.5 | 14 | 17.5 | 22 | 28 | 35 | 45 | 55 | 71 | 89 | 113 | 140 | 175 | b |
| | 0.7 | 1 | 1.1 | 1.3 | 1.6 | 2 | 2.3 | 2.6 | 3 | 3.3 | 4 | 5 | 6.5 | 8 | 10 | 13 | 16 | 20 | 26 | 33 | 41 | ir |
| 0.5 | 4 | 3 | | | | | | | | | | | | | | | | | | | | |
| 0.6 | 6 | 4 | 4 | 4 | | | | | | | | | | | | | | | | | | |
| 0.8 | | 7 | 7 | 5 | 4 | | | | | | | | | | | | | | | | | |
| 1 | | 11 | 10 | 8 | 7 | 6 | | | | | | | | | | | | | | | | |
| 1.2 | | | 14 | 12 | 10 | 8 | 7 | 6 | | | | | | | | | | | | | | |
| 1.4 | | | | 15 | 13 | 11 | 10 | 9 | 8 | | | | | | | | | | | | | |
| 1.6 | | | | | 17 | 15 | 13 | 11 | 10 | 9 | | | | | | | | | | | | |
| 2 | | | | | | 22 | 19 | 17 | 15 | 13 | 11 | | | | | | | | | | | |
| 2.3 | | | | | | | 25 | 23 | 19 | 17 | 15 | 12 | | | | | | | | | | |
| 2.6 | | | | | | | | 28 | 25 | 22 | 18 | 14 | | | | | | | | | | |
| 3 | | | | | | | | | 34 | 30 | 24 | 19 | 15 | | | | | | | | | |
| 3.2 | | | | | | | | | | 34 | 27 | 22 | 17 | 14 | | | | | | | | |
| 3.5 | | | | | | | | | | | 33 | 26 | 20 | 16 | 13 | | | | | | | |
| 4 | | | | | | | | | | | 43 | 34 | 27 | 21 | 17 | | | | | | | F |
| 4.5 | | | | | | | | | | | | 44 | 34 | 27 | 21 | | | | | | | |
| 5 | | | | | | | | | | | | 52 | 42 | 33 | 26 | 21 | | | | | | |
| 6 | | | | | | | | | | | | | 60 | 48 | 38 | 30 | 24 | | | | | |
| 7 | | | | | | | | | | | | | | | 52 | 41 | 33 | 26 | | | | |
| 9 | | | | | | | | | | | | | | | | 67 | 54 | 43 | | | | |
| 10 | | | | | | | | | | | | | | | | 85 | 67 | 53 | 42 | | | |
| 12 | | | | | | | | | | | | | | | | | 96 | 78 | 60 | 55 | | |
| 16 | | | | | | | | | | | | | | | | | | 136 | 107 | 86 | | |
| 19 | | | | | | | | | | | | | | | | | | | 150 | 125 | 100 | |
| 22 | | | | | | | | | | | | | | | | | | | | 160 | 130 | |
| 25 | | | | | | | | | | | | | | | | | | | | 210 | 170 | |
| 30 | | | | | | | | | | | | | | | | | | | | | 240 | |

- **t** Espesor del material (resistencia: 45 - 50kg/mm$^2$)
- **F** Toneladas por metro
- **ir** Radio de plegado interno
- **b** Mínima longitud de pestaña
- **V** Ancho de la V

## Espesor del Material y ancho de la V

La apertura de la matriz es el ancho de la V. El ancho adecuado de la V se debe seleccionar de acuerdo al espesor del material a plegar. La siguiente tabla muestra la relación óptima entre el espesor del material y el ancho de la V aunque a veces en la práctica, la relación viene determinada por requisitos específicos tales como, la longitud de la pestaña de plegado (b), el radio interno de plegado (ir), y el tonelaje de la máquina y el utillaje.

## Relación entre el Espesor de Material (t) y el Ancho de la V

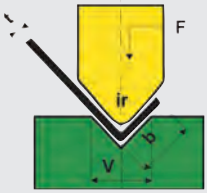
| Espesor del Material (t) | 0.5 - 2.5 | 3.0 - 8.0 | 9.0 - 10.0 | 12.0 ó más |
|---|---|---|---|---|
| Ancho de la V | 6 x t | 8 x t | 10 x t | 12 x t |

# Tabla de Plegado al Aire: Acero Inoxidable

## Cómo interpretar la Tabla de Presión:

Si se conoce el espesor del material y el radio interno de plegado, se puede obtener la siguiente información de la tabla:

1. Tonelaje requerido para plegar material de 1 metro de longitud
2. Ancho de la V a utilizar
3. Mínima longitud de pestaña de plegado




| t mm | 4 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.8 | 4 | 5 | 5.5 | 7 | 8.5 | 10 | 11 | 13.5 | 14 | 17.5 | 22 | 28 | 35 | 45 | 55 | 71 | 89 | 113 | 140 | 175 | b |
| | 0.7 | 1 | 1.1 | 1.3 | 1.6 | 2 | 2.3 | 2.6 | 3 | 3.3 | 4 | 5 | 6.5 | 8 | 10 | 13 | 16 | 20 | 26 | 33 | 41 | ir |
| 0.5 | 6 | 5 | | | | | | | | | | | | | | | | | | | | F |
| 0.6 | 9 | 6 | 6 | 6 | | | | | | | | | | | | | | | | | | |
| 0.7 | 12 | 8 | 8 | 6 | 6 | | | | | | | | | | | | | | | | | |
| 0.8 | | 11 | 11 | 8 | 7 | | | | | | | | | | | | | | | | | |
| 0.9 | | 13 | 12 | 10 | 8 | 7 | | | | | | | | | | | | | | | | |
| 1 | | 17 | 15 | 12 | 11 | 8 | | | | | | | | | | | | | | | | |
| 1.2 | | | 21 | 18 | 15 | 12 | 11 | 9 | | | | | | | | | | | | | | |
| 1.5 | | | | | | 20 | 17 | 15 | 13 | 12 | | | | | | | | | | | | |
| 2 | | | | | | 33 | 29 | 26 | 23 | 20 | 17 | | | | | | | | | | | |
| 2.5 | | | | | | | | 39 | 35 | 30 | 25 | 19 | | | | | | | | | | |
| 3 | | | | | | | | | 51 | 45 | 36 | 29 | 23 | | | | | | | | | |
| 4 | | | | | | | | | | | 65 | 51 | 41 | 32 | 26 | | | | | | | |
| 5 | | | | | | | | | | | | 78 | 63 | 50 | 39 | 32 | | | | | | |
| 6 | | | | | | | | | | | | | 90 | 72 | 57 | 45 | 36 | | | | | |
| 8 | | | | | | | | | | | | | | | 102 | 81 | 65 | 51 | | | | |
| 10 | | | | | | | | | | | | | | | | 128 | 101 | 80 | 63 | | | |
| 12 | | | | | | | | | | | | | | | | | 144 | 117 | 90 | 83 | | |
| 15 | | | | | | | | | | | | | | | | | | 180 | 141 | 114 | | |
| 20 | | | | | | | | | | | | | | | | | | | 250 | 208 | 167 | |
| 25 | | | | | | | | | | | | | | | | | | | | 315 | 255 | |
| 30 | | | | | | | | | | | | | | | | | | | | | 360 | |

- **t** Espesor del material (resistencia: 52 - 60kg/mm$^2$)
- **F** Toneladas por metro
- **ir** Radio de plegado interno
- **b** Mínima longitud de pestaña
- **V** Ancho de la V

## Espesor del Material y ancho de la V

La apertura de la matriz es el ancho de la V. El ancho adecuado de la V se debe seleccionar de acuerdo al espesor del material a plegar. La siguiente tabla muestra la relación óptima entre el espesor del material y el ancho de la V aunque a veces en la práctica, la relación viene determinada por requisitos específicos tales como, la longitud de la pestaña de plegado (b), el radio interno de plegado (ir), y el tonelaje de la máquina y el utillaje.

## Relación entre el Espesor de Material (t) y el Ancho de la V

| Espesor del Material (t) | 0.5 - 2.5 | 3.0 - 8.0 | 9.0 - 10.0 | 12.0 ó más |
|---|---|---|---|---|
| Ancho de la V | 6 x t | 8 x t | 10 x t | 12 x t |

α GUID
NEX II
QMADA
NEX II
QMADA

# Contenido
# Utillaje de Punzonadora

## La Calidad del Utillaje Fabricado por Amada

Como líder del mercado a nivel mundial en la fabricación de utillajes para punzonadora, Amada dispone de una experiencia de más de 40 años. Con más de 30.000 punzonadoras instaladas en todo el mundo, la cooperación y el intercambio de información entre clientes y nuestro personal garantiza la continua investigación y desarrollo de nuestros productos.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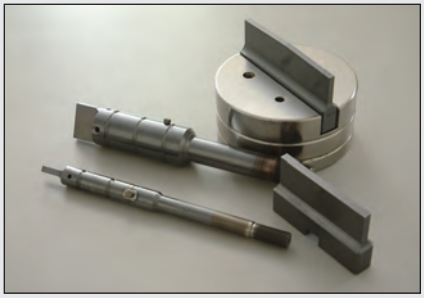
# Gama de Herramientas



Seleccionar el tipo de herramienta más adecuada para sus necesidades le garantizará conseguir el máximo rendimiento a su producción.

A continuación, indicamos las diferentes opciones que podemos ofrecer:

**NEX**
Rápido montaje y ajuste para asegurar la máxima productividad
**Tamaño de estaciones: 'A' & 'B'**

**NEX II**
Rango de herramientas alternativa con la calidad reconocida de AMADA
**Tamaño de estaciones: 'A' & 'B'** (C ,D y E consultar)

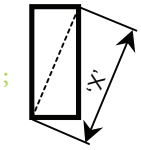
**NEX III**
Sistema de herramienta avanzado compatible con I.D. (AITS)
Utillaje codificado para uso de aplicaciones de cambio automático de herramientas. Nuevo diseño para rápido ajuste de altura y fácil mantenimiento
**Tamaño de estaciones: 'A' & 'B'**

**AIRBLOW:**
Herramienta de lubrificación automática para incrementar su vida y reducir el mantenimiento.

**Alpha / Alpha I.D.**
Compatible con todos los estilos de herramienta AMADA. Rápido montaje y ajuste para asegurar la máxima productividad
**Tamaño de estaciones: 'C', 'D' & 'E'**

**Opciones:**
**APH**
Máximo rendimiento de herramienta, ideal para uso intensivo, ofreciendo una vida muy superior a las herramientas con tratamiento de dureza estándar

# Rango de Tamaño

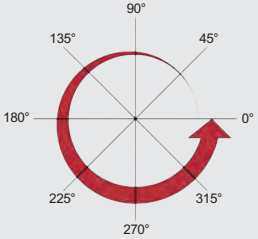
| Estación | Tamaño máximo | | | |
|---|---|---|---|---|
| | Redondo | | Forma | |
| ‘A’ | 12.7 mm | | 12.7 mm |  |
| ‘B’ | 31.7 mm* | | 31.7 mm | |
| ‘C’ | 50.8 mm* | | 50.8 mm | |
| ‘D’ | 88.9 mm* | | 88.9 mm | |
| ‘E’ | 114.3 mm* | | 114.3mm | |



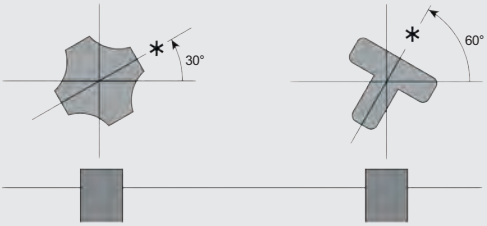
*** Nota:** Tamaños máximos para el Sistema Airblow: ‘B’ = 30.0 mm ‘C’ = 47.0 mm ‘D’ = 85.6 mm ‘E’ = 110.5 mm

# Posición de Chaveta

**Ángulo y posición pinzas:**




Ángulo chaveta

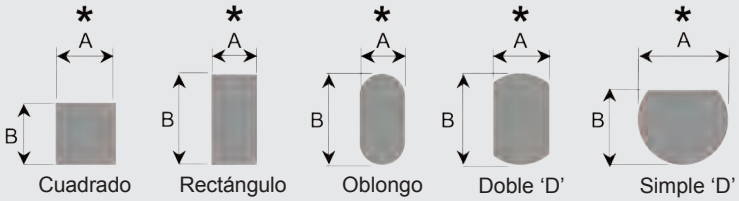


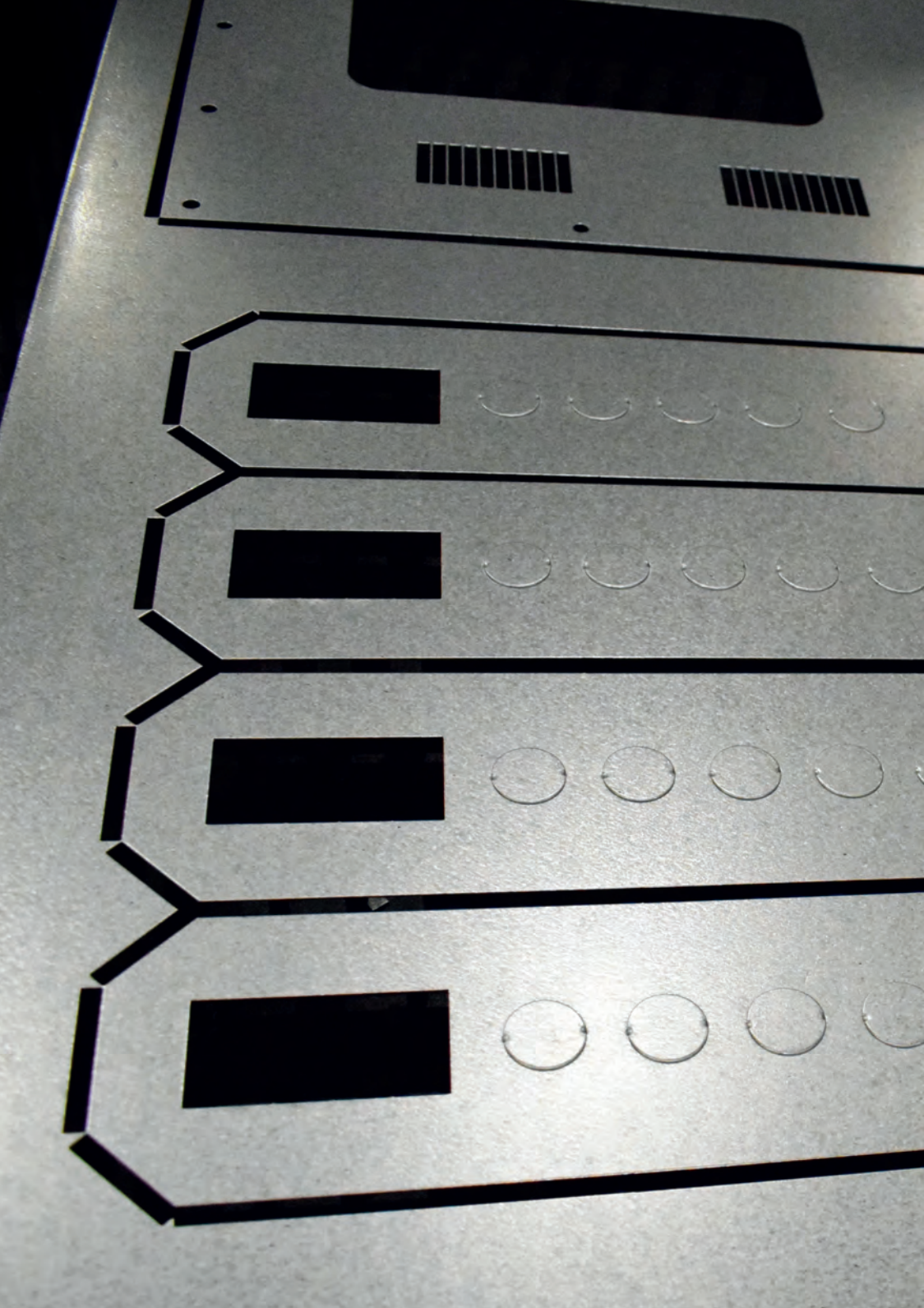

Pinzas

**Punto de referencia (*) para herramienta de forma:**

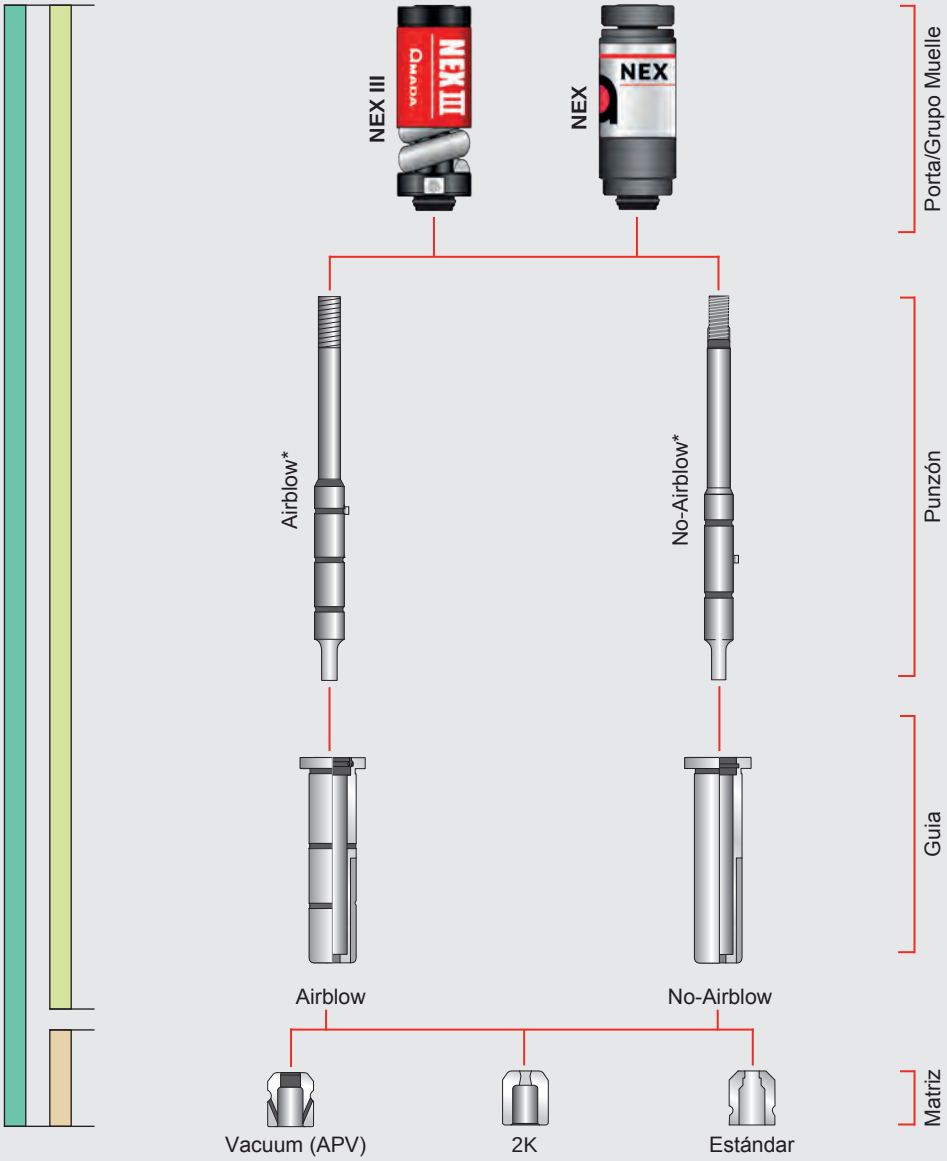
Dimensión A = Medida corte

Dimensión B = Medida largo





# Estación ‘A’



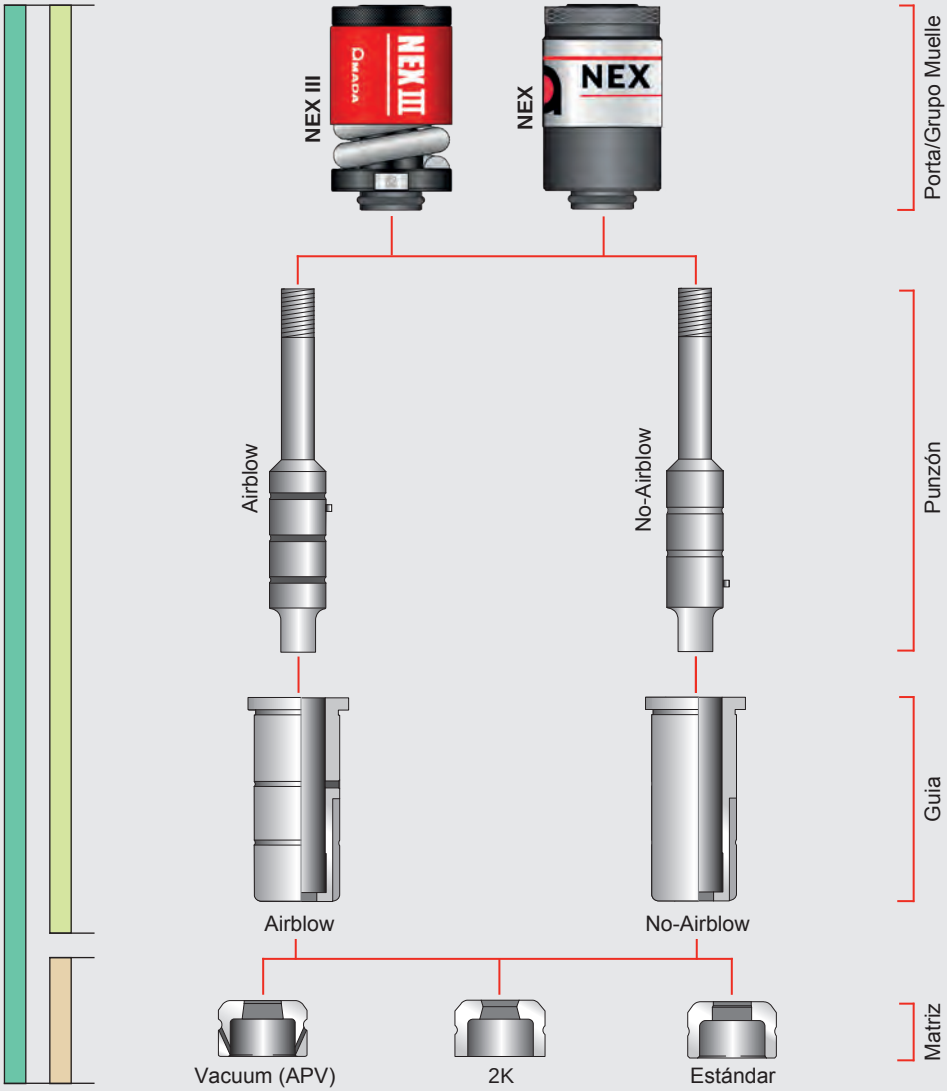

* Los punzones redondos NEX III no son compatibles con NEX o estilo Original

# Estación ‘A’

| Airblow | | NEX III/NEX Redondo | NEX III/NEX Forma |
|---|---|---|---|
| Conjunto completo con matriz vacuum | | c.p. | c.p. |
| Conjunto completo con matriz 2K | | c.p. | c.p. |
| Grupo muelle | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2K | c.p. | c.p. |
| | Vacuum | c.p. | c.p. |
| Punzón | Airblow | c.p. | c.p. |
| | Airblow APH | c.p. | c.p. |
| Guia | | c.p. | c.p. |

| No-Airblow | | NEX III/NEX Redondo | NEX III/NEX Forma |
|---|---|---|---|
| Conjunto completo con matriz vacuum | | c.p. | c.p. |
| Conjunto completo con matriz 2K | | c.p. | c.p. |
| Grupo muelle | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2K | c.p. | c.p. |
| | Vacuum | c.p. | c.p. |
| Punzón | No-Airblow | c.p. | c.p. |
| | No-Airblow APH | c.p. | c.p. |
| Guia | | c.p. | c.p. |

# Estación ‘B’



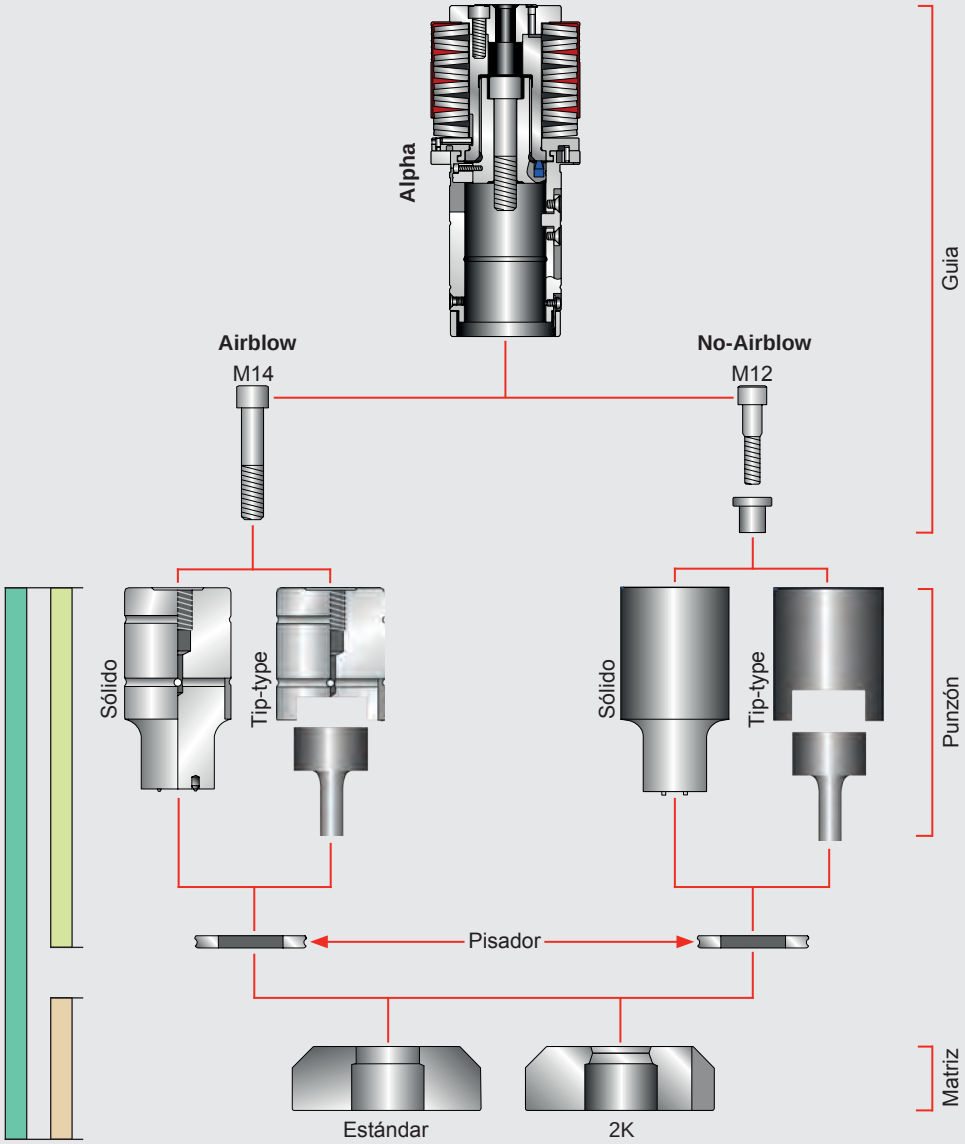

*Los punzones redondos NEX III no son compatibles con NEX o estilo Original

# Estación ‘B’

| Airblow | | NEX III/NEX Redondo | NEX III/NEX Forma |
|---|---|---|---|
| Conjunto completo con matriz vacuum | | c.p. | c.p. |
| Conjunto completo con matriz 2K | | c.p. | c.p. |
| Grupo muelle | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2K | c.p. | c.p. |
| | Vacuum | c.p. | c.p. |
| Punzón | Airblow | c.p. | c.p. |
| | Airblow APH | c.p. | c.p. |
| Guia | | c.p. | c.p. |

| No-Airblow | | NEX III/NEX Redondo | NEX III/NEX Forma |
|---|---|---|---|
| Conjunto completo con matriz vacuum | | c.p. | c.p. |
| Conjunto completo con matriz 2K | | c.p. | c.p. |
| Grupo muelle | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2K | c.p. | c.p. |
| | Vacuum | c.p. | c.p. |
| Punzón | No-Airblow | c.p. | c.p. |
| | No-Airblow APH | c.p. | c.p. |
| Guia | | c.p. | c.p. |

# Estación ‘C’


Alpha
Airblow
M14
No-Airblow
M12
Guía
Sólido
Tip-type
Sólido
Tip-type
Punzón
Pisador
Estándar
2K
Matriz

# Estación ‘C’

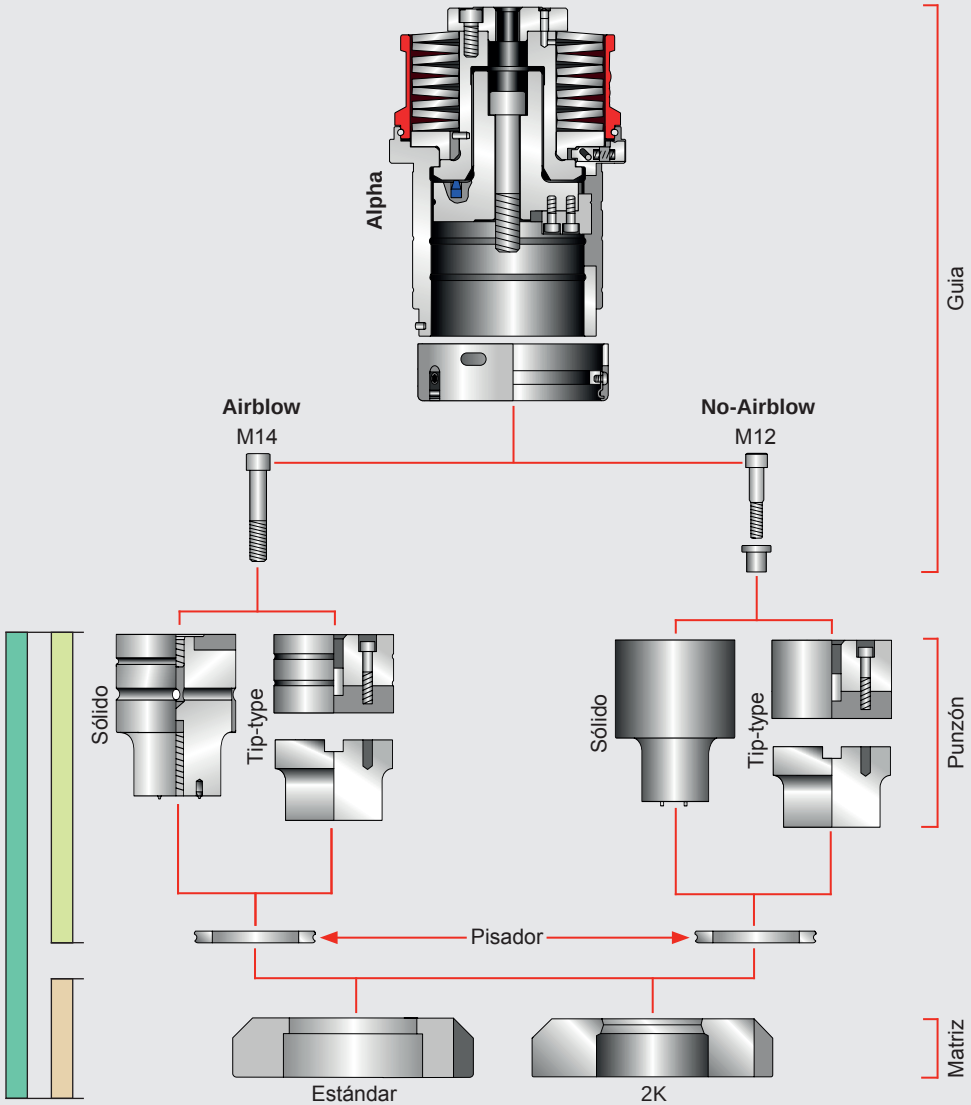
| Airblow | | Redondo | Forma |
|---|---|---|---|
| Conjunto Completo | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2k | c.p. | c.p. |
| Punzón | Airblow | c.p. | c.p. |
| Pisador | | c.p. | c.p. |

| No-Airblow | | Redondo | Forma |
|---|---|---|---|
| Conjunto Completo | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2k | c.p. | c.p. |
| Punzón | No-Airblow | c.p. | c.p. |
| Pisador | | c.p. | c.p. |

Tipos de Insertos (Forma)

| Descripción | Código | Precio |
|---|---|---|
| Soporte Inserto Punzón (Airblow) | 961279 | c.p. |
| Soporte Inserto Punzón (Estándar) | 961059 | c.p. |
| Inserto Punzón M2 | 461279 | c.p. |

# Estación ‘D’


Alpha
Airblow
M14
No-Airblow
M12
Guía
Sólido
Tip-type
Sólido
Tip-type
Punzón
Pisador
Estándar
2K
Matriz

# Estación ‘D’

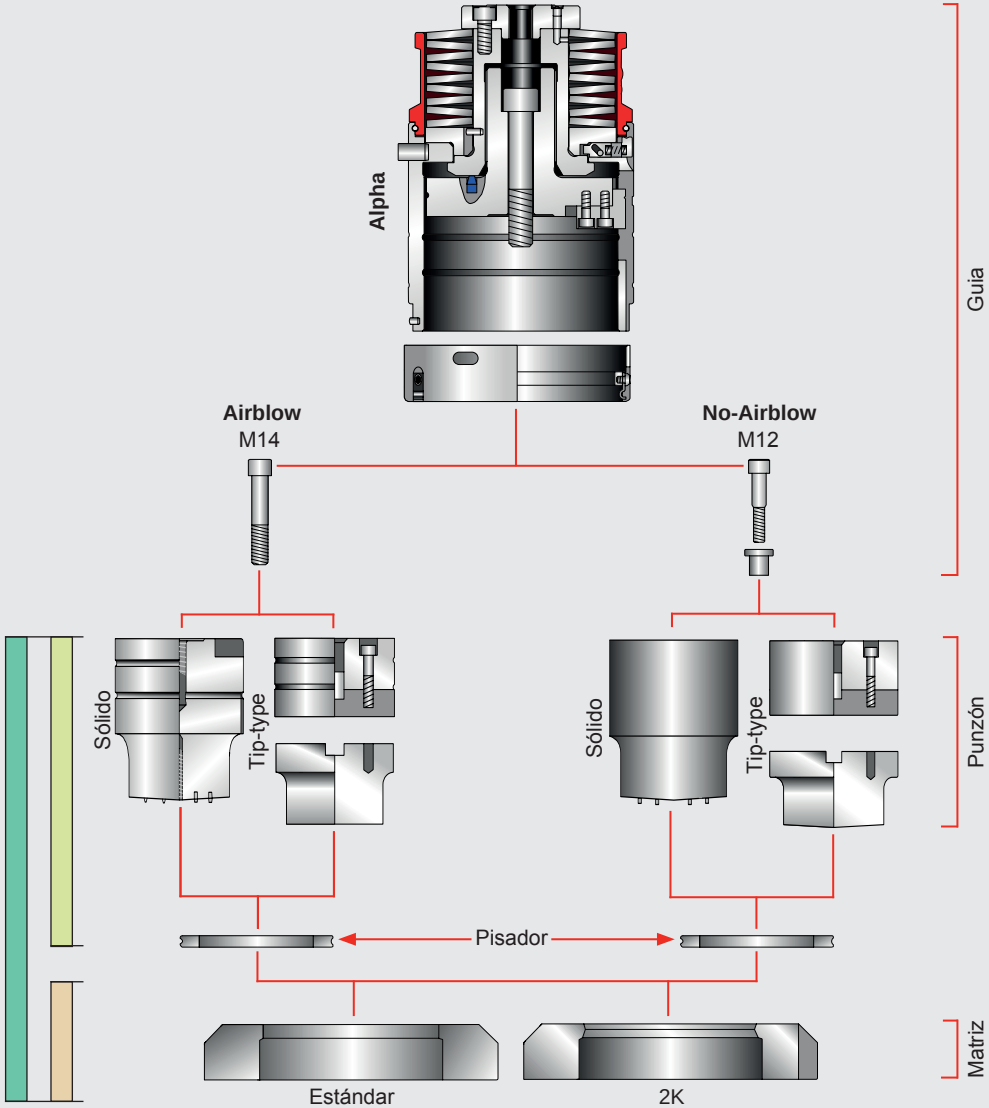
| Airblow | | Redondo | Forma |
|---|---|---|---|
| Conjunto Completo | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2k | c.p. | c.p. |
| Punzón | Airblow | c.p. | c.p. |
| Pisador | | c.p. | c.p. |

| No-Airblow | | Redondo | Forma |
|---|---|---|---|
| Conjunto Completo | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2k | c.p. | c.p. |
| Punzón | No-Airblow | c.p. | c.p. |
| Pisador | | c.p. | c.p. |

Tipos de Insertos (Forma)

| Descripción | Código | Precio |
|---|---|---|
| Soporte Inserto Punzón (Airblow) | 72F380 | c.p. |
| Soporte Inserto Punzón (No-Airblow) | 721380 | c.p. |
| Inserto Punzón M2 | 422280 | c.p. |
| Inserto Punzón APH | 42X280 | c.p. |

# Estación ‘E’


Alpha
Guia
Airblow
M14
No-Airblow
M12
Sólido
Tip-type
Sólido
Tip-type
Punzón
Pisador
Matriz
Estándar
2K

# Estación ‘E’

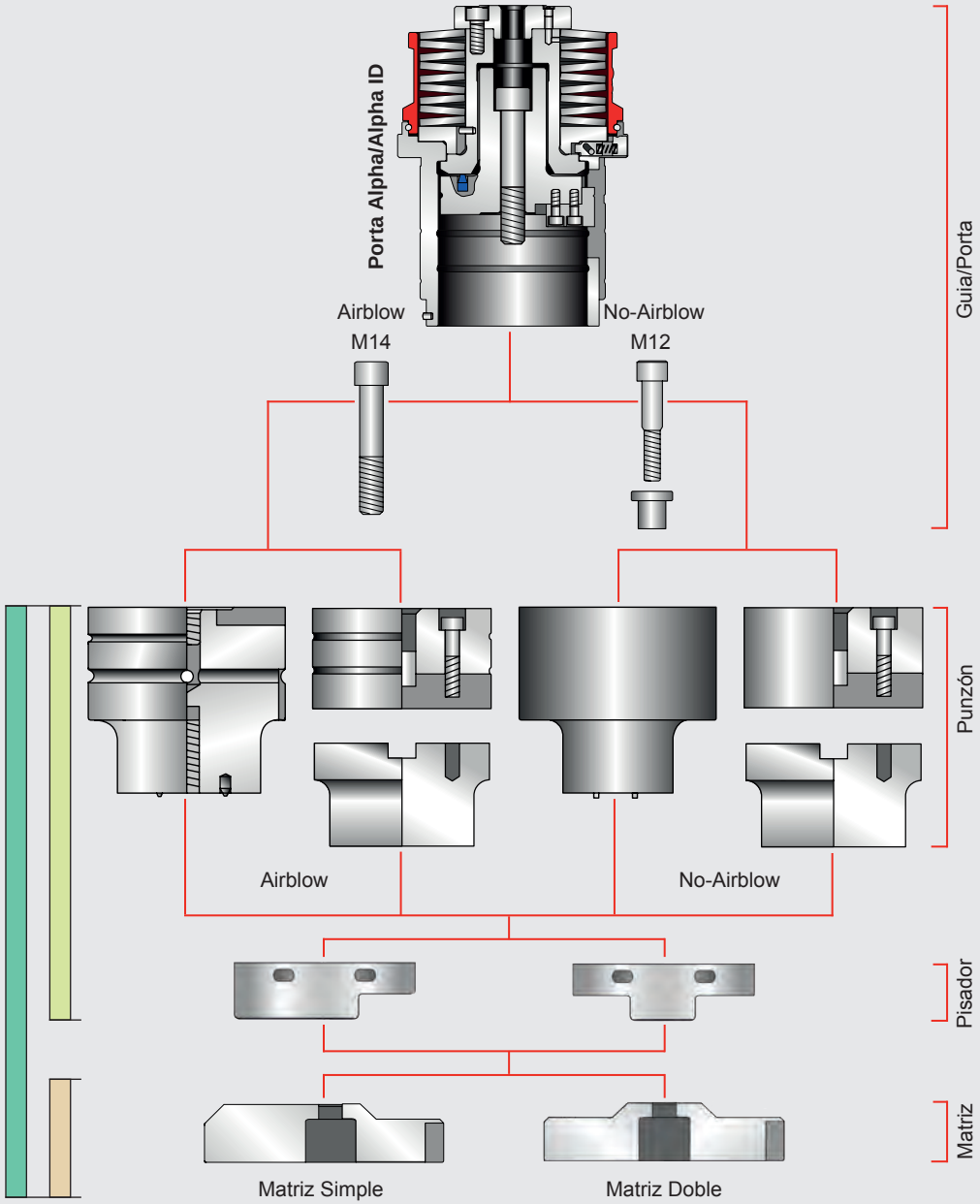
| Airblow | | Redondo | Forma |
|---|---|---|---|
| Conjunto Completo | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2k | c.p. | c.p. |
| Punzón | Airblow | c.p. | c.p. |
| Pisador | | c.p. | c.p. |

| No-Airblow | | Redondo | Forma |
|---|---|---|---|
| Conjunto Completo | | c.p. | c.p. |
| Conjunto Punzón | | c.p. | c.p. |
| Matriz | Estándar o 2k | c.p. | c.p. |
| Punzón | No-Airblow | c.p. | c.p. |
| Pisador | | c.p. | c.p. |

Tipos de Insertos (Forma)

| Descripción | Código | Precio |
|---|---|---|
| Soporte Inserto Punzón (Airblow) | 72F390 | c.p. |
| Soporte Inserto Punzón (No-Airblow) | 721390 | c.p. |
| Inserto Punzón M2 | 422290 | c.p. |
| Inserto Punzón APH | 42X290 | c.p. |

# Estación ‘D’ y ‘E’ Proximidad



# Estación ‘D’ y ‘E’ Proximidad

| Airblow | | Est. 'D' Forma | Est. 'E' Forma |
|---|---|---|---|
| Conjunto completo simple | | c.p. | c.p. |
| Conjunto completo doble | | c.p. | c.p. |
| Conjunto punzón simple | | c.p. | c.p. |
| Conjunto punzón doble | | c.p. | c.p. |
| Matriz | Est o KK simple | c.p. | c.p. |
| | Est o KK doble | c.p. | c.p. |
| Punzón (Sólido) | | c.p. | c.p. |
| Pisador simple (Alpha o Z)* | | c.p. | c.p. |
| Pisador doble (Alpha o Z)* | | c.p. | c.p. |

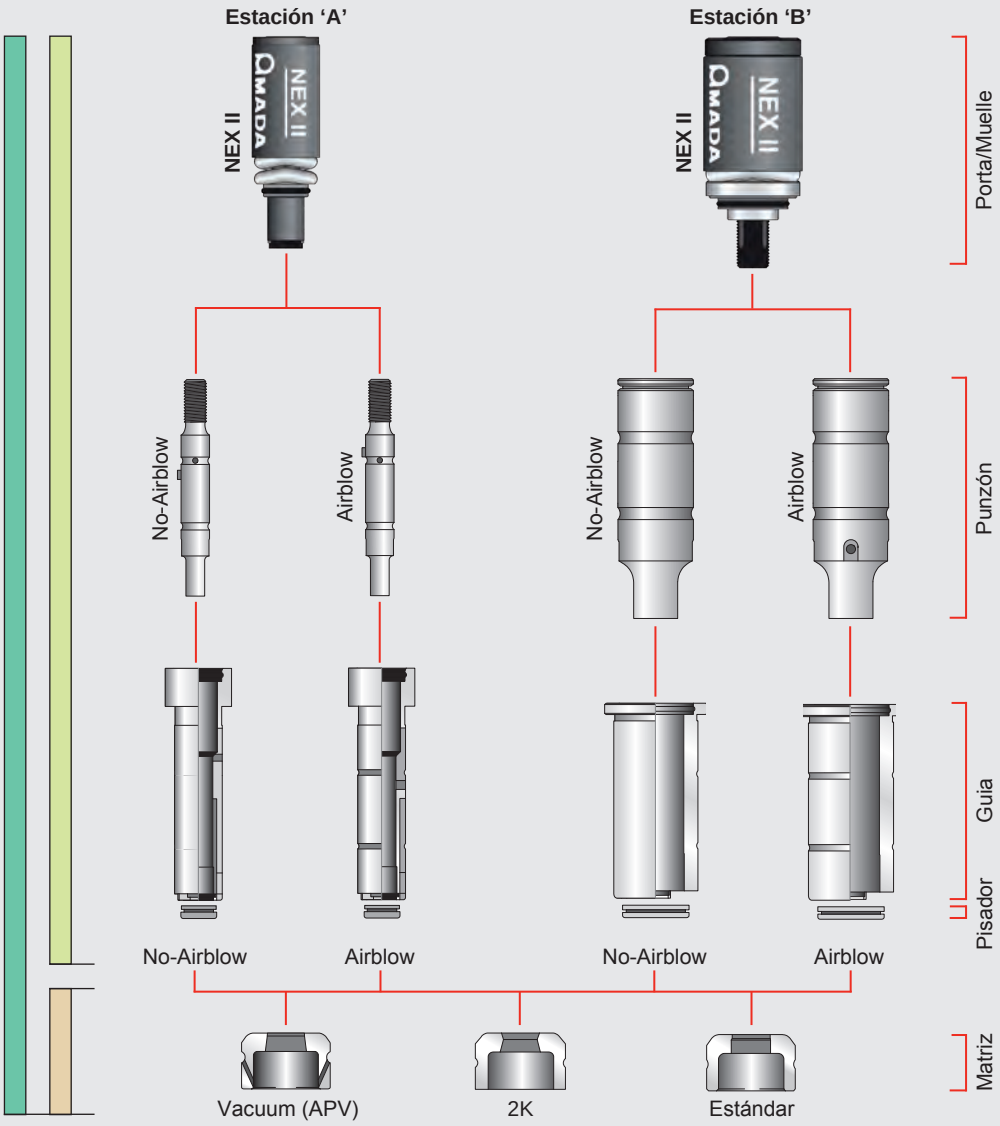
* El pisador tipo ID sólo es adecuado para el porta Alpha Guide. Los pisadores tipo Z y Alpha son diferentes

| No-Airblow | | Est. 'D' Forma | Est. 'E' Forma |
|---|---|---|---|
| Conjunto completo simple | | c.p. | c.p. |
| Conjunto completo doble | | c.p. | c.p. |
| Conjunto punzón simple | | c.p. | c.p. |
| Conjunto punzón doble | | c.p. | c.p. |
| Matriz | Est o KK simple | c.p. | c.p. |
| | Est o KK doble | c.p. | c.p. |
| Punzón (Sólido) | | c.p. | c.p. |
| Pisador simple (Alpha o Z)* | | c.p. | c.p. |
| Pisador doble (Alpha o Z)* | | c.p. | c.p. |

* El pisador tipo ID sólo es adecuado para Alpha Guide. Los pisadores tipo Z y Alpha son diferentes

| Tipos de Insertos (Forma) | Estación 'D' | | Estación 'E' | |
|---|---|---|---|---|
| Descripción | Código | Precio | Código | Precio |
| Soporte Inserto Punzón (Airblow) | 72F380 | c.p. | 72F390 | c.p. |
| Soporte Inserto Punzón (No-Airblow) | 721380 | c.p. | 721390 | c.p. |
| Inserto punzón M2 | 422280 | c.p. | 422290 | c.p. |
| Inserto punzón APH | 42X280 | c.p. | 42X290 | c.p. |

# NEX II Estaciones ‘A’ y ‘B’

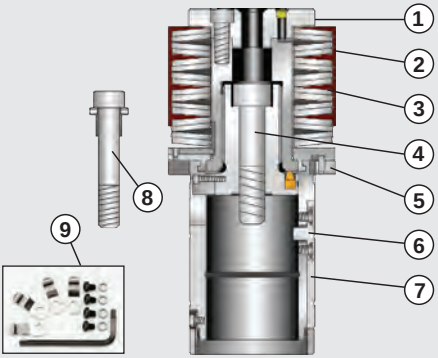


# NEX II Estaciones ‘A’ y ‘B’

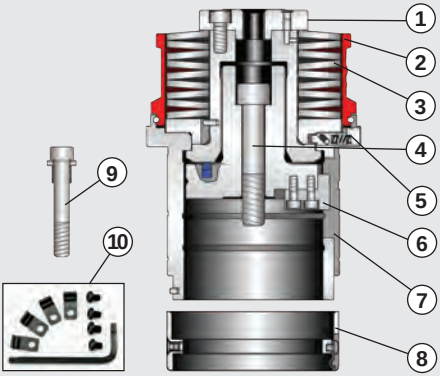
| NEX II Airblow | | Estación ‘A’ Redondo | Estación ‘A’ Forma | Estación ‘B’ Redondo | Estación ‘B’ Forma |
|---|---|---|---|---|---|
| Conjunto completo con matriz Vacuum | | c.p. | c.p. | c.p. | c.p. |
| Conjunto completo con matriz Estándar o KK | | c.p. | c.p. | c.p. | c.p. |
| Conjunto punzón | | c.p. | c.p. | c.p. | c.p. |
| Grupo muelle | | c.p. | c.p. | c.p. | c.p. |
| Matriz | Estándar o 2K | c.p. | c.p. | c.p. | c.p. |
| | Vacuum | c.p. | c.p. | c.p. | c.p. |
| Punzón Airblow | | c.p. | c.p. | c.p. | c.p. |
| Guia | | c.p. | c.p. | c.p. | c.p. |
| Pisador | | c.p. | c.p. | c.p. | c.p. |

| NEX II No-Airblow | | Estación ‘A’ Redondo | Estación ‘A’ Forma | Estación ‘B’ Redondo | Estación ‘B’ Forma |
|---|---|---|---|---|---|
| Conjunto completo con matriz Vacuum | | c.p. | c.p. | c.p. | c.p. |
| Conjunto completo con matriz Estándar o KK | | c.p. | c.p. | c.p. | c.p. |
| Conjunto punzón | | c.p. | c.p. | c.p. | c.p. |
| Grupo muelle | | c.p. | c.p. | c.p. | c.p. |
| Matriz | Estándar o 2K | c.p. | c.p. | c.p. | c.p. |
| | Vacuum | c.p. | c.p. | c.p. | c.p. |
| Punzón Airblow | | c.p. | c.p. | c.p. | c.p. |
| Guia | | c.p. | c.p. | c.p. | c.p. |
| Pisador | | c.p. | c.p. | c.p. | c.p. |

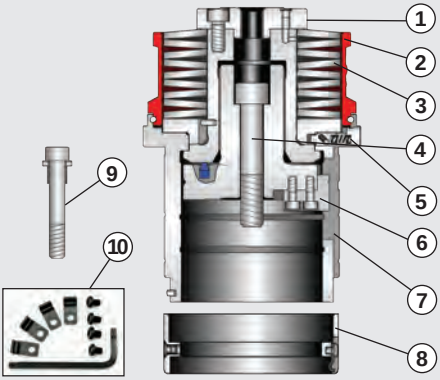
# Estación ‘C’, ‘D’ y ‘E’ Porta Alpha / Componentes




| Descripción | Código | Precio |
|---|---|---|
| Portapunzón Estación ‘C’ | 90743E | c.p. |
| 1. Placa de golpeo | 907460 | c.p. |
| 2. Envolvente Muelle | 907480 | c.p. |
| 3. Muelle de Disco | 907490 | c.p. |
| 4. Tornillo Airblow | 907520 | c.p. |
| 5. Botón de Bloqueo | 907550 | c.p. |
| 6. Conjunto Chaveta | 907560 | c.p. |
| 7. Guia del Punzón | 907570 | c.p. |
| 8. Tornillo Estándar | 907530 | c.p. |
| 9. Pack grapas | 907450 | c.p. |

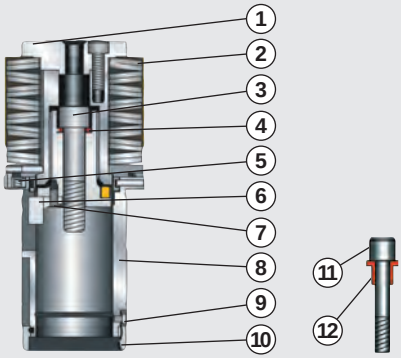



| Descripción | Código | Precio |
|---|---|---|
| Portapunzón Estación ‘D’ | 90719E | c.p. |
| 1. Placa de golpeo | 907630 | c.p. |
| 2. Envolvente Muelle | 907650 | c.p. |
| 3. Muelle de Disco | 907660 | c.p. |
| 4. Tornillo Airblow | 907690 | c.p. |
| 5. Botón de Bloqueo | 907760 | c.p. |
| 6. Chaveta | 908700 | c.p. |
| 7. Guia | 907750 | c.p. |
| 8. Adaptador Extractor | 907170 | c.p. |
| 9. Tornillo Estándar | 907740 | c.p. |
| 10. Pack grapas | 907780 | c.p. |



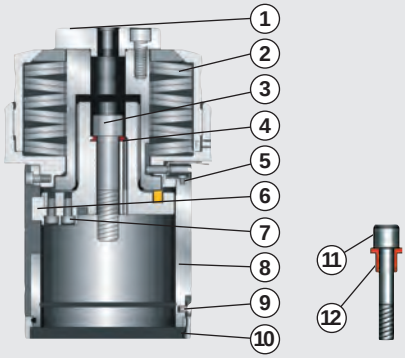

| Descripción | Código | Precio |
|---|---|---|
| Portapunzón Estación ‘E’ | 90720E | c.p. |
| 1. Placa de golpeo | 907630 | c.p. |
| 2. Envolvente Muelle | 907650 | c.p. |
| 3. Muelle de Disco | 907660 | c.p. |
| 4. Tornillo Airblow | 907690 | c.p. |
| 5. Botón de Bloqueo | 907820 | c.p. |
| 6. Chaveta | 908700 | c.p. |
| 7. Guia | 907810 | c.p. |
| 8. Adaptador Extractor | 907180 | c.p. |
| 9. Tornillo Estándar | 907740 | c.p. |
| 10. Pack grapas | 907780 | c.p. |

# Estación ‘C’, ‘D’ y ‘E’ Porta Tipo Z / Componentes



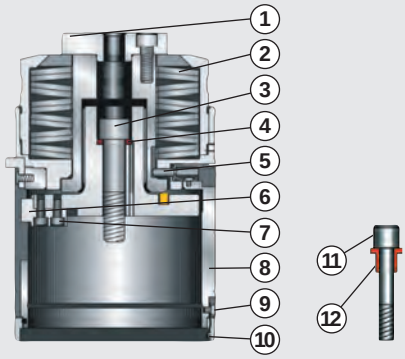

| Portapunzón Estación ‘C’ (900500) | Código | Precio |
|---|---|---|
| 1. Placa de golpeo | 906060 | c.p. |
| 2. Muelle de Disco | 906090 | c.p. |
| 3. Tornillo Airblow | 906300 | c.p. |
| 4. Separador | 906310 | c.p. |
| 5. Botón de Ajuste | 906350 | c.p. |
| 6. Chaveta | 906460 | c.p. |
| 7. Tornillo Extractor | 905680 | c.p. |
| 8. Guia | 900900 | c.p. |
| 9. Tornillo Extractor | 906550 | c.p. |
| 10. Grapa Extractor | 906610 | c.p. |
| 11. Tornillo M12 x 70 * | 999900 | c.p. |
| 12. Collar adaptador * | 906670 | c.p. |

* Tipo Estándar




| Portapunzón Estación ‘D’ (900510) | Código | Precio |
|---|---|---|
| 1. Placa de golpeo | 906070 | c.p. |
| 2. Muelle de Disco | 906180 | c.p. |
| 3. Tornillo Airblow | 901900 | c.p. |
| 4. Separador | 906310 | c.p. |
| 5. Botón de Ajuste | 906400 | c.p. |
| 6. Chaveta | 906330 | c.p. |
| 7. Tornillo Extractor | 906340 | c.p. |
| 8. Guia | 900910 | c.p. |
| 9. Tornillo Extractor | 906550 | c.p. |
| 10. Grapa Extractor | 906610 | c.p. |
| 11. Tornillo M12 x 70 * | 999900 | c.p. |
| 12. Collar adaptador * | 906670 | c.p. |

* Tipo Estándar

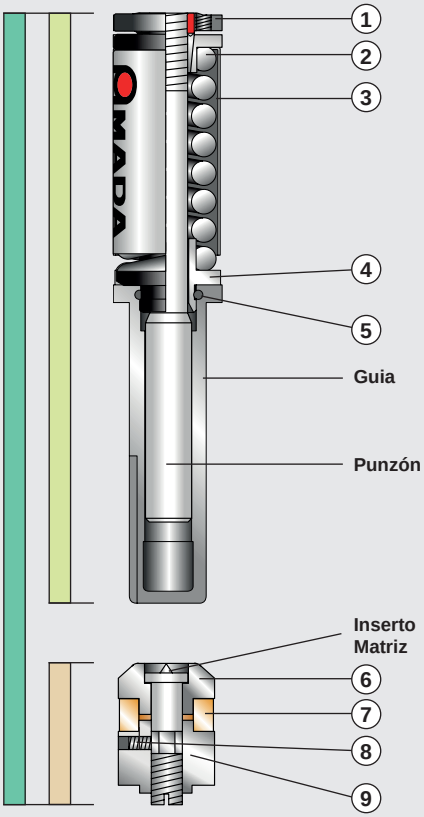



| Portapunzón Estación ‘E’ (900520) | Código | Precio |
|---|---|---|
| 1. Placa de golpeo | 906070 | c.p. |
| 2. Muelle de Disco | 906180 | c.p. |
| 3. Tornillo Airblow | 901900 | c.p. |
| 4. Separador | 906310 | c.p. |
| 5. Botón de Ajuste | 906400 | c.p. |
| 6. Chaveta | 906330 | c.p. |
| 7. Tornillo Extractor | 906340 | c.p. |
| 8. Guia | 900920 | c.p. |
| 9. Tornillo Extractor | 906550 | c.p. |
| 10. Grapa Extractor | 906610 | c.p. |
| 11. Tornillo M12 x 70 * | 999900 | c.p. |
| 12. Collar adaptador * | 906670 | c.p. |

* Tipo Estándar

# Estación 'A' Punto Granete Upform

**Espesor Máximo del Material = 6.0 mm**

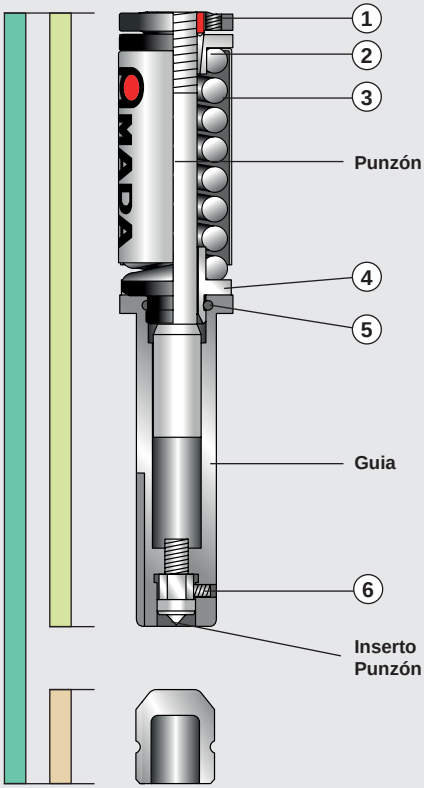



| Descripción | Código | Precio |
|---|---|---|
| Conjunto Completo | 381110 | c.p. |
| Conjunto Punzón | 181110 | c.p. |
| Conjunto Matriz | 281010 | c.p. |

| Descripción | Código | Precio |
|---|---|---|
| Guia | 581010 | c.p. |
| Punzón | 918310 | c.p. |
| Inserto Matriz | 918210 | c.p. |
| 1. Placa de golpeo | 901400 | c.p. |
| 2. Muelle extractor | 901300 | c.p. |
| 3. Envolvente muelle | 926120 | c.p. |
| 4. Collar de retención | 901200 | c.p. |
| 5. Junta Tórica | 910060 | c.p. |
| 6. Placa de extracción | 918320 | c.p. |
| 7. Muelle de Uretano | 918720 | c.p. |
| 8. Tornillo M4 x 4 | 918340 | c.p. |
| 9. Soporte Matriz | 918330 | c.p. |

# Estación ‘A’ Punto Granete Downform

**Espesor Máximo del Material = 6.0 mm**

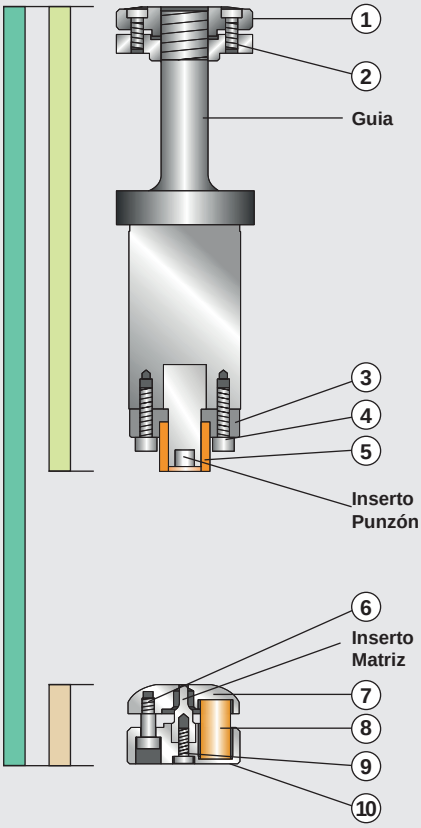



| Descripción | Código | Precio |
|---|---|---|
| Conjunto Completo | 381100 | c.p. |
| Conjunto Punzón | 181100 | c.p. |
| Conjunto Matriz | 281000 | c.p. |

| Descripción | Código. | Precio |
|---|---|---|
| Punzón | 918410 | c.p. |
| Guía | 918420 | c.p. |
| Inserto Punzón | 918110 | c.p. |
| 1. Placa de golpeo | 901400 | c.p. |
| 2. Muelle extractor | 901300 | c.p. |
| 3. Envolvente muelle | 926120 | c.p. |
| 4. Collar de retención | 901200 | c.p. |
| 5. Junta Tórica | 910060 | c.p. |
| 6. Tornillo M5 x 6 | 999960 | c.p. |

# Estación 'B'
# Extrusión Upform

**Rango de Medidas = M2.6 - M6**

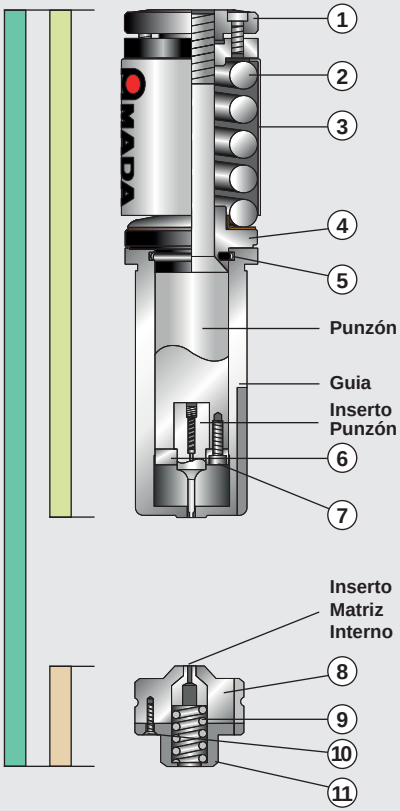



| Descripción | Código | Precio |
|---|---|---|
| Conjunto Completo | 301000 | c.p. |
| Conjunto Punzón | 101000 | c.p. |
| Conjunto Matriz | 201000 | c.p. |

| Descripción | Código | Precio |
|---|---|---|
| Guia | 902000 | c.p. |
| Inserto Punzón | 902020 | c.p. |
| Inserto Matriz | 902220 | c.p. |
| 1. Placa de golpeo | 901010 | c.p. |
| 2. Tornillo M6 x 25 | 998800 | c.p. |
| 3. Placa Punzón | 902030 | c.p. |
| 4. Tornillo M6 x 20 | 998900 | c.p. |
| 5. Muelle de Uretano | 902040 | c.p. |
| 6. Tornillo extractor | 902070 | c.p. |
| 7. Placa de extracción | 902060 | c.p. |
| 8. Muelle de Uretano | 998500 | c.p. |
| 9. Tornillo M5 x 12 | 901970 | c.p. |
| 10. Bloque matriz | 902210 | c.p. |

# Estación 'B'
# Extrusión Downform

**Rango de Medidas = M2.6 - M6**

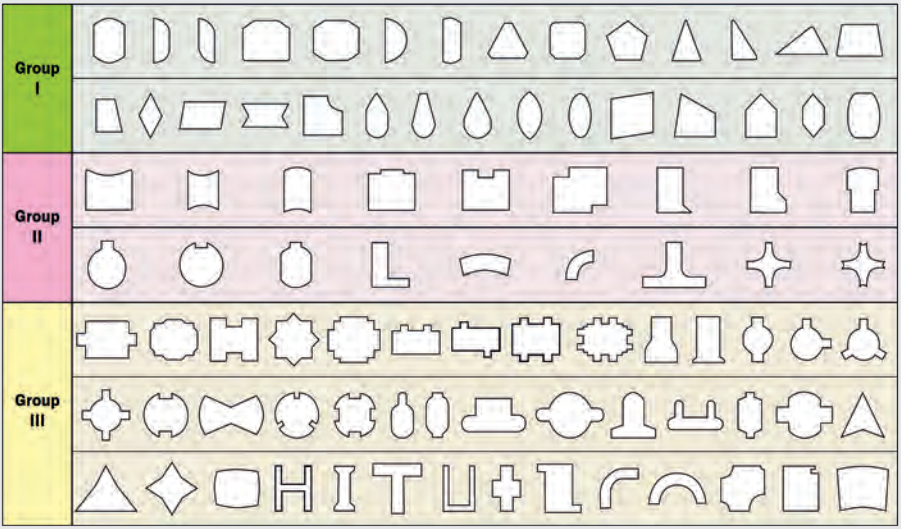



| Descripción | Código | Precio |
|---|---|---|
| Conjunto Completo | 301100 | c.p. |
| Conjunto Punzón | 101100 | c.p. |
| Conjunto Matriz | 201200 | c.p. |

| Descripción | Código | Precio |
|---|---|---|
| Punzón | 902010 | c.p. |
| Guía | 501100 | c.p. |
| Inserto Punzón | 902120 | c.p. |
| Inserto Matriz Interno | 903010 | c.p. |
| 1. Placa de golpeo | 901010 | c.p. |
| 2. Muelle extractor | 901410 | c.p. |
| 3. Envolvente Muelle | 926140 | c.p. |
| 4. Collar de retención | 901210 | c.p. |
| 5. Junta tórica | 910080 | c.p. |
| 6. Placa Punzón | 901960 | c.p. |
| 7. Tornillo M4 x 12 | 901940 | c.p. |
| 8. Bloque Matriz | 901920 | c.p. |
| 9. Muelle extractor | 902910 | c.p. |
| 10. Tornillo M3 x 12 | 901990 | c.p. |
| 11. Placa Matriz | 901980 | c.p. |

**Nota:** Esta herramienta no require punzonado previo

# Utillaje Semi-Estándar




| Grupo | Airblow NEX/NEX III | | Airblow Alpha | | |
|---|---|---|---|---|---|
| | 'A' | 'B' | 'C' | 'D' | 'E' |
| I | c.p. | c.p. | c.p. | c.p. | c.p. |
| II | c.p. | c.p. | c.p. | c.p. | c.p. |
| III | c.p. | c.p. | c.p. | c.p. | c.p. |

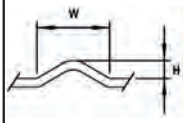
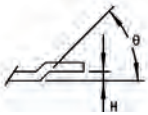
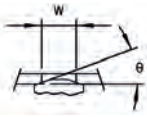
**Nota:**

i) Precios para conjuntos completos incluyendo matrices tipo vacuum (para estaciones A y B)
ii) 'C', 'D', 'E' incluyen matrices tipo 2K
iii) Todos los grupos son lubrificados
iv) Precios disponibles para componentes individuales (Punzón, Matriz, Guía/Pisador)
v) Punzones APH disponibles bajo demanda
vi) Las estaciones C, D y E no incluyen Portapunzón

**Nota:** Precios disponibles bajo demanda para grupos no Airblow

# ARFT
## AMADA Rapid Form Tooling

- Reduce el tiempo de producción con un formado contínuo de alta calidad y gran velocidad
- Calidad mejorada, eliminando marcas y aristas afiladas
- Mejora de diseño de productos, posibilitando perfiles más complejos

| | Beading | Offset | Chamfer | Ball Chamfer |
|---|---|---|---|---|
| **Estación** | Estación 'B' | | | |
| **Perfil** |  W: Max. 12.7 mm<br>H: Max. 3.0 mm |  θ: Max. 45°<br>H: Max. 1.6 mm |  W: Max. 10.0 mm<br>θ: 20° | C: 0.2 ~ 0.4 mm |
| **Material** | Hierro/Acero: 0.8 ~ 1.6 mm | | Hierro/Acero: 0.8 ~ 3.2 mm | |
| | Inox/Aluminio: 0.8 ~ 1.5 mm | | Inox/Aluminio: 0.8 ~ 3.0 mm | |
| **Min. Radio** | 25 mm | | | |
| **Veloc. Alim.** | Max. 30 m/min (ajuste dependiendo del perfil del producto) | | | |
| **Máquina** | EM-M2/EM-ZR/AE/C1/ACIES/C1-AJ/EML-AJ/ACIES-AJ (use AMNC 2/AMNC 3i)* | | | |

* Dependiendo de qué forma se requiera

# *Herramienta de Roscado*

## Reduzca los costes de producción

- Elimina la necesidad de insertos y operaciones secundarias
- Reducción drástica de componentes y horas de trabajo

| | 'B' Station (MPT) | 'C' Station (Fixed) |
|---|---|---|
| | | |
| **Medida del Tap** | M2.5 - M8 | M2.5 - M6 |
| **Material*** | Hasta 6 mm | Hasta 3.2 mm |
| **Vida del Tap*** | Hasta 10,000 golpes | 4,000 ~ 28,000 golpes |
| **Máquina** | Eléctrica con torreta MPT | VIPROS/AE/EM |

* Depende de la medida del tap



Las extrusiones pueden ser roscadas en espesores más finos para permitir incrementar la superfície de roscado,dando más robustez en la zona para su uso posterior

Pre-Punzonado

Extrusionado

Roscado

Extrusionado

Roscado

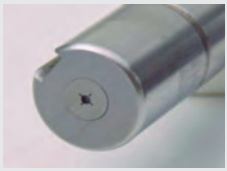




Precio a consultar (C.P.V.)

# *Herramienta de Contouring*

## Niblado con paso mínimo



- Niblado de paso 0.5 mm gracias al diseño innovador de la herramienta
- Acabado excelente
- Formas complejas sin necesidad de heramienta especial
- La tolerancia de 0.01 mm del tip respecto a la guía, minimiza las fuerzas de carga durante el niblado y asegura un acabado liso
- APH Punch Tip = 2.0 mm diámetro
- Espesor máximo de material:
- Acero /Hierro = 1.6 mm
- Inox = 1.0 mm

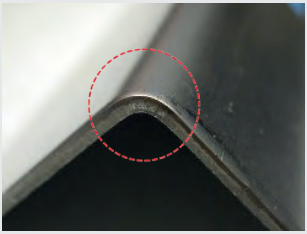


Precio a consultar (C.P.V.)

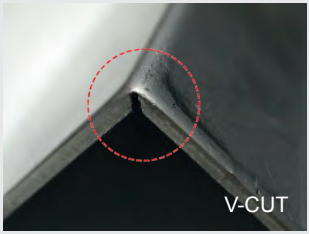
# Herramienta V-CUT

- Plegados con un ángulo afilado
- Reduce el tonelaje de aplastado
- Reduce deformaciones en los agujeros
- Plegados de alas mínimas

**Radio exterior**

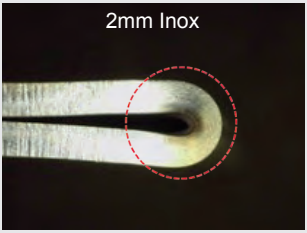


Plegado tradicional

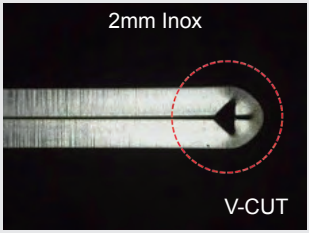



Plegado después V-Cut

**Reducción del tonelaje de aplastado**




Tonelaje a 100 t/m

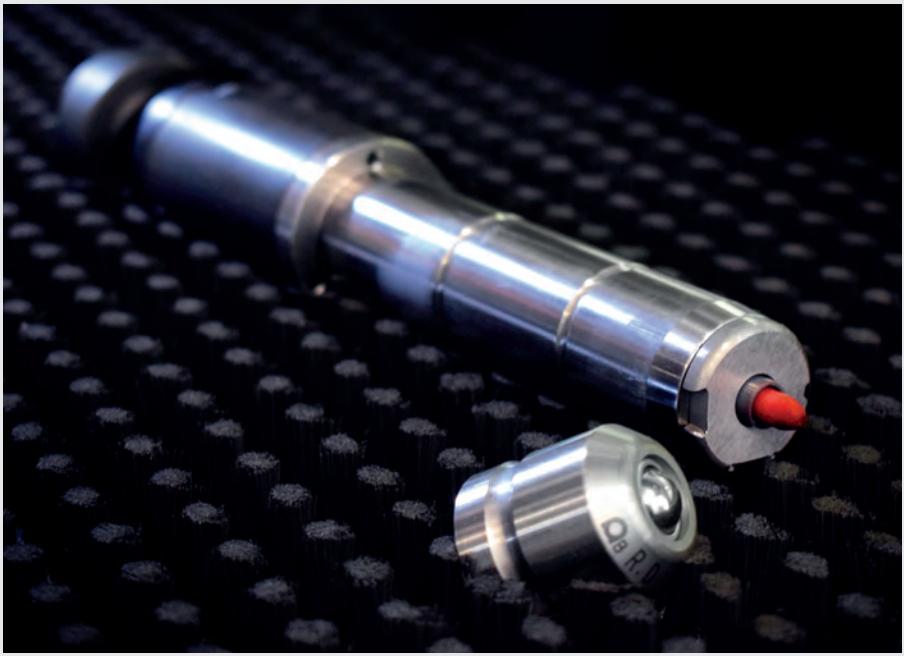



Tonelaje a 40 t/m

Para usar en máquinas eléctricas, usar la función “Ram Down” (en máquinas EM-ZR)

# *Herramienta de Marcado*

## Marcado de alta velocidad
## Incrementa la eficiencia y la productividad



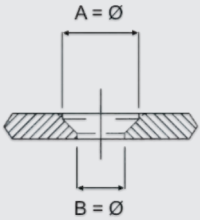
- Identificación rápida y a bajo coste de piezas
- Marcado con tinta permanente en todos los materiales
- Para máquinas con capacidad “ram-down”
- Disponibilidad de colores diferentes

Precio a consultar (C.P.V.)

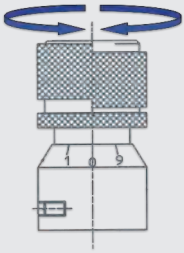
# *Kit de Avellanado*

## Reduzca costes de herramientas

- Elimina tiempo y coste de operaciones de formado
- Estación “A” que permite más opciones de ubicación
- Rango amplio de 7 tamaños: M2, M2.5, M2.6, M3, M4, M5, M6
- Adecuado para espesores de entre 1.0 y 3.2 mm




Dimensiones de forma



Cabezal tipo Vernier



### Especificaciones

| M2 (Ø A=Ø 4.3) | | | M2.5 (Ø A=Ø 5.3) | | | M2.6 (Ø A=Ø 5.5) | | | M3 (Ø A=Ø 6.4) | | | M4 (Ø A=Ø 8.6) | | | M5 (Ø A=Ø 10.6) | | | M6 (Ø A=Ø 12.8) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THK | Ø B | P/P | THK | Ø B | P/P | THK | Ø B | P/P | THK | Ø B | P/P | THK | Ø B | P/P | THK | Ø B | P/P | THK | Ø B | P/P |
| 1.0 | 3.2 | 3.5 | 1.0 | 4.2 | 4.5 | 1.0 | 4.4 | 4.7 | 1.0 | 5.5 | 5.7 | | | | | | | | | |
| 1.2 | 3.2 | 3.5 | 1.2 | 4.2 | 4.5 | 1.2 | 4.4 | 4.7 | 1.2 | 5.1 | 5.5 | 1.2 | 7.2 | 7.5 | | | | | | |
| 1.5 | 2.6 | 3.0 | 1.5 | 3.6 | 4.0 | 1.5 | 3.8 | 4.2 | 1.5 | 4.6 | 5.0 | 1.5 | 6.8 | 7.2 | 1.5 | 9.1 | 9.5 | | | |
| 1.6 | 2.6 | 3.0 | 1.6 | 3.6 | 4.0 | 1.6 | 3.8 | 4.2 | 1.6 | 4.6 | 5.0 | 1.6 | 6.8 | 7.2 | 1.6 | 9.1 | 9.5 | | | |
| 2.0 | 2.6 | 3.0 | 2.0 | 3.2 | 3.8 | 2.0 | 3.4 | 4.0 | 2.0 | 4.0 | 4.8 | 2.0 | 6.7 | 7.2 | 2.0 | 8.8 | 9.3 | 2.0 | 10.6 | 11.0 |
| 2.3 | 2.6 | 3.0 | 2.3 | 3.3 | 3.8 | 2.3 | 3.5 | 4.0 | 2.3 | 4.2 | 4.8 | 2.3 | 5.7 | 6.5 | 2.3 | 7.9 | 8.5 | 2.3 | 10.6 | 11.0 |
| | | | | | | | | | 2.5 | 4.1 | 4.7 | 2.5 | 5.6 | 6.4 | 2.5 | 7.8 | 8.4 | 2.5 | 10.4 | 10.8 |
| | | | | | | | | | 3.0 | 3.7 | 4.5 | 3.0 | 4.8 | 5.7 | 3.0 | 7.0 | 8.0 | 3.0 | 9.4 | 10.0 |
| | | | | | | | | | 3.2 | 3.7 | 4.5 | 3.2 | 4.8 | 5.7 | 3.2 | 7.0 | 8.0 | 3.2 | 9.4 | 10.0 |

THK = Espesor material
P/P = Diámetro pre-punzonado
Dimensiones: mm



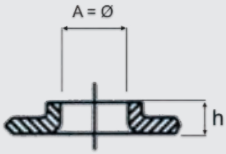


Precio a consultar (C.P.V.)

# *Kit de Extrusión*

## Reduzca costes de herramientas

- Elimina la necesidad de insertos y operaciones secundarias
- Fácil y rápido sistema de Tips intercambiables
- 5 medidas: M2.6, M3, M4, M5, M6 para materiales de entre 0.8 y 2.3 mm de espesor
- Cabezal ajustable “One Touch”
- Tips de matriz con recubrimiento especial para reducir la fricción y el desgaste






### Especificaciones

| ØA | 0.8t | | | 1.0t | | | 1.2t | | | 1.6t | | | 2.0t | | | 2.3t (M/S Only) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P/Tip Ø | Form Data | | P/Tip Ø | Form Data | | P/Tip Ø | Form Data | | P/Tip Ø | Form Data | | P/Tip Ø | Form Data | | P/Tip Ø | Form Data | |
| | | P/P | h | | P/P | h | | P/P | h | | P/P | h | | P/P | h | | P/P | h |
| 2.21 | 3.3 | 1.3 | 1.5 | 3.6 | 1.3 | 1.8 | 3.6 | 1.3 | 2.0 | 3.6 | 1.6 | 2.2 | | | | | | |
| 2.57 | 3.6 | 1.3 | 1.7 | 4.0 | 1.3 | 2.0 | 4.0 | 1.6 | 2.0 | 4.0 | 1.6 | 2.4 | | | | | | |
| 3.40 | 4.8 | 2.0 | 1.8 | 4.8 | 2.0 | 2.0 | 4.8 | 2.0 | 2.2 | 5.1 | 2.3 | 2.5 | 5.1 | 2.3 | 3.0 | 5.1 | 2.5 | 3.2 |
| 4.30 | | | | 6.0 | 2.3 | 2.3 | 6.0 | 2.3 | 2.5 | 6.3 | 2.8 | 2.8 | 6.6 | 2.8 | 3.2 | 6.6 | 3.0 | 3.5 |
| 5.10 | | | | | | | 7.0 | 3.0 | 2.6 | 7.2 | 3.0 | 3.1 | 7.4 | 3.8 | 3.2 | 7.4 | 3.8 | 3.4 |

ØA = Diámetro interno
P/Tip Ø = Diámetro tip punzón
P/P = Diámetro prepunzonado
h = Altura de la forma
M/S Only = Sólo para chapa de hierro o acero
Dimensiones: mm

Precio a consultar (C.P.V.)

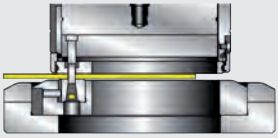
# Herramienta Work Chute

## Fácil extracción de piezas

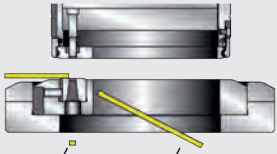
- Ideal para la extracción de piezas pequeñas
- Elimina las micro-juntas para piezas pequeñas
- No se necesitan segundas operaciones para extraer las piezas de las chapas de metal

Retal

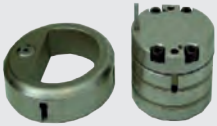
Productos



Punzón cuadrado de 5 mm que separa los componentes



Retal Componente



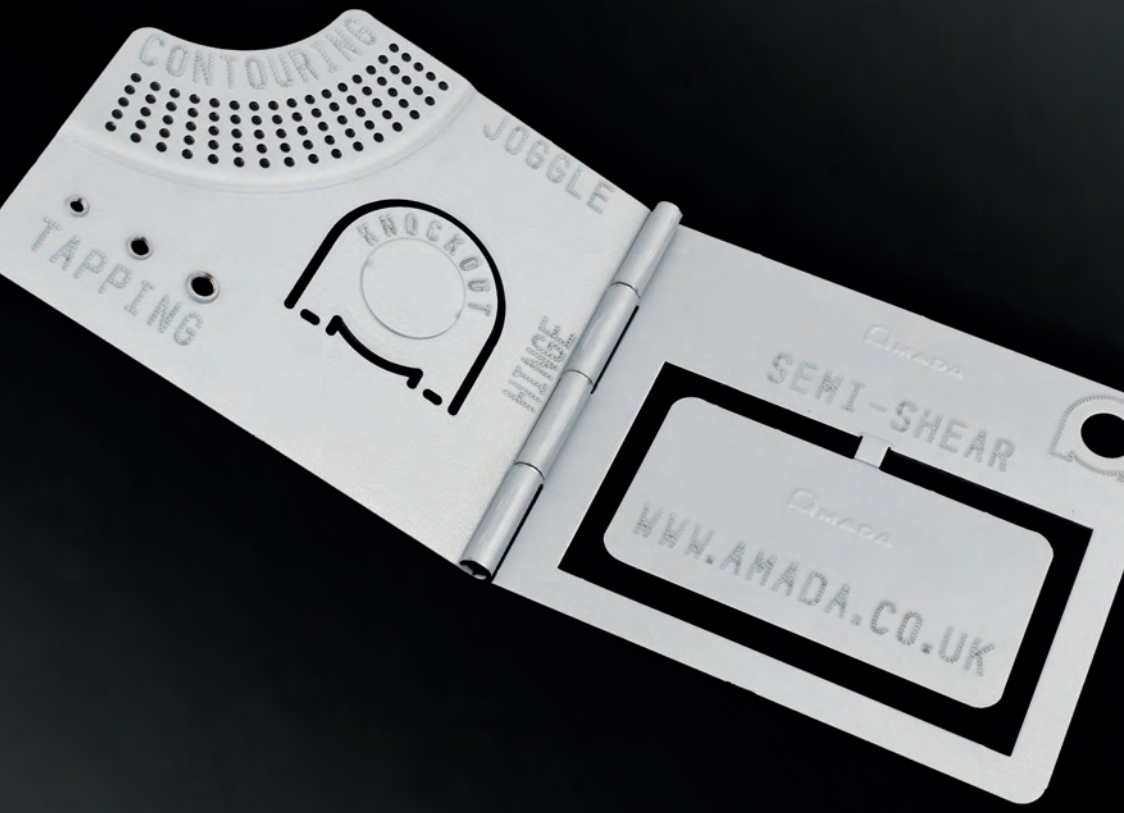
| Tamaño de la herramienta | 'D' | 'E' |
|---|---|---|
| Máx. tamaño del componente | Max. 65 SQ | Max. 85 SQ |
| Herramienta 'joint cut' | 5 mm SQ | 5 mm SQ |



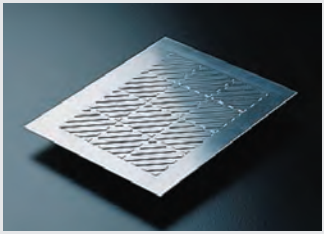


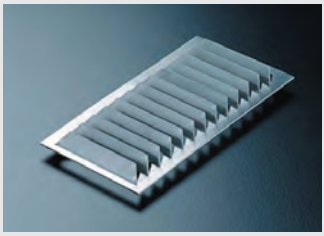


Precio a consultar (C.P.V.)


CONTOURING
JOGGLE
TAPPING
KNOCKOUT
RIVETING
AMADA
SEMI-SHEAR
AMADA
WWW.AMADA.CO.UK

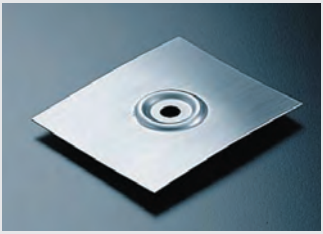
# Ejemplos de Herramientas Especiales

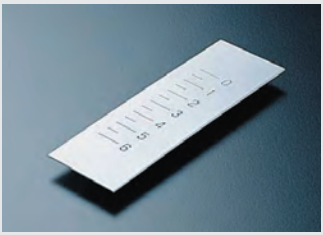




Las imágenes muestran componentes fabricados con Utillaje AMADA

# Ejemplos de Herramientas Especiales





Las imágenes muestran componentes fabricados con Utillaje AMADA

# Accesorios

## Packs de Galgas + grapa de sujeción

| Descripción | Código | Precio |
|---|---|---|
| Pack de Galgas Est. 'A' | 911100 | c.p. |
| Pack de Galgas Est. 'B' | 913300 | c.p. |
| Pack de Galgas Est. 'C' | 914100 | c.p. |
| Pack de Galgas Est. 'D' | 915100 | c.p. |
| Pack de Galgas Est. 'E' | 916100 | c.p. |

**Note:** 'A' y 'B' contiene las siguientes galgas: 5 x 0.5 mm, 5 x 0.2 mm y 5x 0.4 mm
'C', 'D; y 'E' contienen las siguientes galgas: 1 x 0.4 mm, 1 x 0.8 mm, 1 x 1.2 mm, 1 x 1.5 mm y 1 x 2.0mm

## Packs de Galgas Estaciones C', 'D' y 'E'

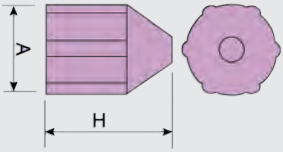
| Descripción | Código | Precio |
|---|---|---|
| Pack de Galga Matriz Est. 'C' | 914000 | c.p. |
| Pack de Galga Matriz Est. 'D' | 915000 | c.p. |
| Pack de Galga Matriz Est. 'E' | 916000 | c.p. |
| Pack de Galga Punzón Est. 'C' | 914400 | c.p. |
| Pack de Galga Punzón Est. 'D' | 915500 | c.p. |
| Pack de Galga Punzón Est. 'E' | 916600 | c.p. |

**Note:** Contiene las siguientes galgas 1 x 0.4 mm, 1 x 0.8 mm, 1 x 1.2 mm, 1 x 1.5 mm y 1 x 2.0 mm



## Expulsores de Pepitas

Fabricados en uretano, los expulsores ayudan a empujar la pepita hacia abajo para evitar su retorno




| | ØA (mm) | Altura (mm) | Código | Precio Unit. |
|---|---|---|---|---|
| No. 1 | 3.3 | 6.5 | 910010 | c.p. |
| No. 2 | 6.3 | 10.0 | 910020 | c.p. |
| No. 3 | 10.3 | 16.0 | 910030 | c.p. |

Pedido minimo 30 uds

# Accesorios

## Armario de Utillaje C-286-00

El armario de utillaje AMADA permite almacenar de forma eficaz el utillaje de punzonadora.

Protege el utillaje de las condiciones atmosféricas de la fábrica y reduce los daños que se producen debido a un mal almacenaje del utillaje.

**Dimensiones:** 975 x 2170 x 340 mm

**Capacidad:**

| | Punzones | Matrices |
|---|---|---|
| Estación ‘A’ | 34 | 102 |
| Estación ‘B’ | 22 | 66 |
| Estación ‘C’ | 6 | 12 |
| Estación ‘D’ | 5 | 10 |
| Estación ‘E’ | 4 | 8 |

**Carga** = 420kg

**Código:** 7056986

**Precio:** c.p.

AMADA

# Contenido

## AMADA Sección de Referencia

A continuación, les mostraremos información relevante que les puede servir de ayuda para el diseño y producción de componentes de metal.


| | Pág |
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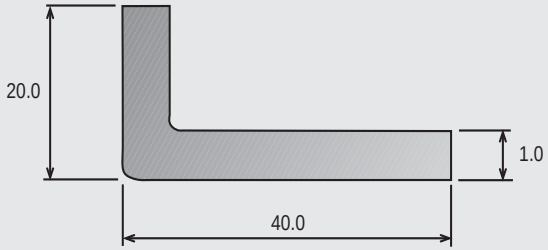
# Indicaciones de Plegado - 90º

**Ejemplo 1** - Hierro 1mm y V=6

Si (f) = Elasticidad
Si (d) = Tamaño de desarrollo completo

d = (20 + 40) - 2f
d = 60 - (2 x 0.87)
d = 58.26 mm




Las tablas muestran la elasticidad (f) del hierro, acero inoxidable y aluminio a 90º

V = Ancho de la V (mm)
t = Espesor del material (mm)
f = Indicaciones de plegado (mm)

## Hierro

| t \ V | 4 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.5** | 0.47 | 0.55 | 0.59 | 0.63 | 0.70 | | | | | | | |
| **0.6** | 0.54 | 0.62 | 0.65 | 0.69 | 0.77 | 0.85 | | | | | | |
| **0.7** | 0.60 | 0.68 | 0.72 | 0.76 | 0.83 | 0.91 | 0.99 | | | | | |
| **0.8** | 0.67 | 0.74 | 0.78 | 0.82 | 0.90 | 0.97 | 1.05 | 1.13 | | | | |
| **1.0** | 0.80 | 0.87 | 0.91 | 0.95 | 1.03 | 1.10 | 1.18 | 1.26 | 1.33 | 1.41 | | |
| **1.2** | | 1.00 | 1.04 | 1.08 | 1.15 | 1.23 | 1.31 | 1.38 | 1.46 | 1.54 | | |
| **1.5** | | 1.19 | 1.23 | 1.27 | 1.35 | 1.42 | 1.50 | 1.58 | 1.65 | 1.73 | 1.92 | |
| **1.6** | | | 1.29 | 1.32 | 1.40 | 1.47 | 1.76 | 1.86 | 1.96 | 2.05 | 2.29 | 2.63 |
| **2.0** | | | | 1.59 | 1.67 | 1.74 | 1.82 | 1.90 | 1.97 | 2.05 | 2.24 | 2.51 |
| **2.3** | | | | 1.65 | 1.71 | 1.77 | 1.84 | 1.90 | 1.97 | 2.03 | 2.19 | 2.41 |
| **2.5** | | | | | 1.99 | 2.07 | 2.14 | 2.22 | 2.29 | 2.37 | 2.56 | 2.83 |
| **2.6** | | | | | | 2.13 | 2.21 | 2.28 | 2.30 | 2.44 | 2.63 | 2.90 |
| **3.0** | | | | | | 2.39 | 2.46 | 2.54 | 2.62 | 2.69 | 2.88 | 3.15 |
| **3.2** | | | | | | 2.51 | 2.59 | 2.67 | 2.74 | 2.82 | 3.01 | 3.28 |

# Indicaciones de Plegado - 90º

V = Ancho de la V (mm)
t = Espesor del material (mm)
f = Indicaciones de plegado (mm)

## Inoxidable

| t \ V | 4 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.5** | 0.52 | 0.63 | 0.69 | 0.75 | 0.86 | | | | | | | |
| **0.6** | 0.58 | 0.69 | 0.75 | 0.80 | 0.92 | 1.03 | | | | | | |
| **0.7** | 0.64 | 0.75 | 0.81 | 0.86 | 0.98 | 1.09 | 1.20 | | | | | |
| **0.8** | 0.70 | 0.81 | 0.87 | 0.92 | 1.04 | 1.15 | 1.26 | 1.37 | | | | |
| **1.0** | 0.82 | 0.94 | 0.99 | 1.05 | 1.17 | 1.29 | 1.40 | 1.52 | 1.64 | 1.75 | | |
| **1.2** | | 1.05 | 1.10 | 1.16 | 1.27 | 1.38 | 1.50 | 1.61 | 1.72 | 1.83 | | |
| **1.5** | | 1.23 | 1.28 | 1.34 | 1.45 | 1.56 | 1.67 | 1.79 | 1.90 | 2.01 | 2.29 | |
| **1.6** | | | 1.34 | 1.40 | 1.51 | 1.62 | 1.73 | 1.85 | 1.96 | 2.07 | 2.35 | 2.74 |
| **2.0** | | | | 1.64 | 1.74 | 1.85 | 1.96 | 2.07 | 2.18 | 2.28 | 2.55 | 2.93 |
| **2.3** | | | | 1.81 | 1.93 | 2.04 | 2.15 | 2.26 | 2.37 | 2.49 | 2.77 | 3.16 |
| **2.5** | | | | | 2.04 | 2.16 | 2.27 | 2.38 | 2.49 | 2.60 | 2.88 | 3.28 |
| **2.6** | | | | | | 2.22 | 2.33 | 2.44 | 2.55 | 2.66 | 2.94 | 3.34 |
| **3.0** | | | | | | 2.45 | 2.56 | 2.68 | 2.79 | 2.90 | 3.18 | 3.57 |
| **3.2** | | | | | | 2.57 | 2.68 | 2.80 | 2.91 | 3.02 | 3.30 | 3.69 |

## Aluminio

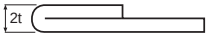
| t \ V | 4 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.5** | 0.40 | 0.44 | 0.47 | 0.49 | 0.54 | | | | | | | |
| **0.6** | 0.46 | 0.50 | 0.53 | 0.55 | 0.60 | 0.65 | | | | | | |
| **0.7** | 0.52 | 0.56 | 0.59 | 0.61 | 0.66 | 0.71 | 0.76 | | | | | |
| **0.8** | 0.58 | 0.62 | 0.65 | 0.67 | 0.72 | 0.77 | 0.82 | 0.87 | | | | |
| **1.0** | 0.69 | 0.74 | 0.77 | 0.80 | 0.85 | 0.90 | 0.95 | 1.00 | 1.06 | 1.11 | | |
| **1.2** | | 0.86 | 0.89 | 0.91 | 0.96 | 1.01 | 1.06 | 1.11 | 1.15 | 1.20 | | |
| **1.5** | | 1.04 | 1.07 | 1.09 | 1.14 | 1.19 | 1.24 | 1.29 | 1.33 | 1.38 | 1.50 | |
| **1.6** | | | 1.13 | 1.15 | 1.20 | 1.25 | 1.30 | 1.35 | 1.39 | 1.44 | 1.56 | 1.73 |
| **2.0** | | | | 1.40 | 1.45 | 1.49 | 1.54 | 1.58 | 1.63 | 1.67 | 1.79 | 1.94 |
| **2.3** | | | | 1.57 | 1.62 | 1.67 | 1.72 | 1.76 | 1.81 | 1.86 | 1.98 | 2.15 |
| **2.5** | | | | | 1.74 | 1.79 | 1.83 | 1.88 | 1.93 | 1.98 | 2.10 | 2.27 |
| **2.6** | | | | | | 1.85 | 1.89 | 1.94 | 1.99 | 2.04 | 2.16 | 2.33 |
| **3.0** | | | | | | 2.09 | 2.13 | 2.18 | 2.23 | 2.28 | 2.40 | 2.57 |
| **3.2** | | | | | | 2.20 | 2.25 | 2.30 | 2.35 | 2.40 | 2.52 | 2.69 |

Contenidos

# Tonelajes de Aplastado

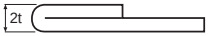
El aplastado requiere mayor tonelaje que el plegado al aire estándar. Las tablas muestran las toneladas necesarias para operaciones de aplastado

## Hierro

| Espesor (mm) | Forma de Plegado | | | |
|---|---|---|---|---|
| | | |   | |
| | Tonelaje | C | Tonelaje | 2t |
| **0.6** | 9.0 | 3.0 | 23.0 | 1.2 |
| **0.8** | 12.0 | 3.0 | 32.0 | 1.6 |
| **1.0** | 15.0 | 3.5 | 40.0 | 2.0 |
| **1.2** | 17.0 | 3.5 | 50.0 | 2.4 |
| **1.6** | 24.0 | 3.5 | 63.0 | 3.2 |
| **2.0** | 30.0 | 5.5 | 80.0 | 4.0 |
| **2.6** | 55.0 | 6.5 | 90.0 | 5.2 |
| **3.2** | 70.0 | 8.0 | 100.0 | 6.4 |
| **4.5** | 105.0 | 11.3 | 200.0 | 9.0 |

**Nota:** Toneladas por 1 metro de longitud

## Inoxidable

| Espesor (mm) | Forma de Plegado | | | |
|---|---|---|---|---|
| | | |   | |
| | Tonelaje | C | Tonelaje | 2t |
| **0.6** | 15.0 | 3.0 | 35.0 | 1.2 |
| **0.8** | 20.0 | 3.0 | 50.0 | 1.6 |
| **1.0** | 25.0 | 3.5 | 60.0 | 2.0 |
| **1.2** | 26.0 | 3.5 | 80.0 | 2.4 |
| **1.5** | 38.0 | 3.5 | 95.0 | 3.0 |
| **2.0** | 50.0 | 5.5 | 130.0 | 4.0 |
| **2.5** | 90.0 | 6.5 | 180.0 | 5.0 |
| **3.0** | 100.0 | 8.0 | 210.0 | 6.0 |
| **4.0** | 140.0 | 11.3 | 280.0 | 8.0 |

**Nota:** Toneladas por 1 metro de longitud

# Cálculo de Tonelaje

El tonelaje de punzonado se calcula usando la siguiente fórmula:

$$\frac{\textbf{Longitud de corte (mm) x Espesor material (mm) x resistencia (kg/mm}^2\textbf{)}}{\textbf{1000}}$$

**Ejemplo 1**
Rectángulo 50 x 10 en inoxidable de 2.0 mm

$$\text{Cálculo de Toneladas} = \frac{(50 + 50 + 10 + 10) \times (2.0) \times (60)}{1000}$$

Cálculo de Toneladas = 14.4 Toneladas

**Ejemplo 2**
30 mm en Hierro de 1.5 mm

$$\text{Cálculo de Toneladas} = \frac{(3.142 \times 30) \times (1.5) \times (40)}{1000}$$

Cálculo de Toneladas = 5.7 Toneladas

# Diámetro Mínimo de Agujero

De manera general, la tabla muestra el diámetro mínimo de un agujero punzonado respecto al espesor del material.

t = Espesor del material

| Material | Agujero Mínimo |
|---|---|
| Hierro | 1.0 x t |
| Aluminio | 1.0 x t |
| Inoxidable Hierro | 2.0 x t |

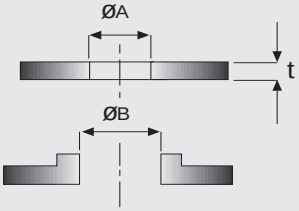
Es posible punzonar medidas inferiores, por favor contacte con el Departamento de Utillaje para consultar

Contenidos

# Referencias de Agujeros de Extrusión

La tabla muestra los tamaños del agujero de pre-punzonado y de extrusión para hierro

| Espesor / Tamaño de golpe | Diámetro Pre-punzonado (øA) | | | | | | Agujero de Extrusión Nominal (øB) |
|---|---|---|---|---|---|---|---|
| | 0.8 mm | 1.0 mm | 1.2 mm | 1.6 mm | 2.0 mm | 2.3 mm | |
| **M2.6 x 0.45** | 1.2 | 1.2 | 1.4 | 1.6 | - | - | 2.21 |
| **M3 x 0.5** | 1.2 | 1.5 | 1.5 | 1.7 | - | - | 2.57 |
| **M4 x 0.7** | - | 2.0 | 2.0 | 2.1 | 2.3 | 2.7 | 3.40 |
| **M5 x 0.8** | - | 2.0 | 2.0 | 2.6 | 3.0 | 3.1 | 4.30 |
| **M6 x 1.0** | - | 2.0 | 2.0 | 3.4 | 3.8 | 3.8 | 5.10 |




# Referencias de Agujeros de Avellanado

La table muestra el tamaño nominal necesario del agujero de pre-punzonado para hierro

| Espesor | Tamaño del tornillo | | | | | | |
|---|---|---|---|---|---|---|---|
| | M2 x0.4 | M2.5 x0.45 | M2.6 x0.45 | M3 x0.5 | M4 x0.7 | M5 x0.8 | M6 x1.0 |
| **1.0** | 3.5 | 4.5 | 4.8 | 5.7 | - | - | - |
| **1.2** | 3.5 | 4.5 | 4.5 | 5.3 | 7.3 | - | - |
| **1.5** | 3.2 | 4.2 | 4.5 | 5.3 | 7.3 | 9.0 | - |
| **1.6** | 3.0 | 4.0 | 4.3 | 5.0 | 7.0 | 8.8 | 10.8 |
| **2.0** | 3.0 | 3.8 | 4.0 | 4.8 | 7.0 | 8.6 | 10.6 |
| **2.3** | 3.0 | 3.8 | 4.0 | 4.8 | 6.8 | 8.5 | 10.5 |
| **2.5** | - | - | - | 4.5 | 6.5 | 8.4 | 10.4 |
| **3.0** | - | - | - | 4.4 | 6.0 | 8.0 | 10.0 |
| **3.2** | - | - | - | 4.0 | 5.8 | 7.8 | 9.8 |

# Alturas de Herramientas

La tabla muestra el tipo de Altura para utillaje Estándar y NEX

| Tipo | Altura | Punzón | Matriz |
|---|---|---|---|
| **Estación 'A' Estándar** | 207.5 | 207.0 | 30 |
| **Estación 'A' NEX** | 208.0 | 207.0 | 30 |
| **Estación 'B' Estándar** | 207.5 | 207.0 | 30 |
| **Estación 'B' NEX** | 208.0 | 207.0 | 30 |
| **Estación 'C'** | 208.0 | 96.0 | 30 |
| **Estación 'D'** | 209.0 | 84.0 | 30 |
| **Estación 'E'** | 210.0 | 85.0 | 30 |

**Nota:**

i) El ajuste del punzón de Altura es la medida tomada desde la parte superior de la cabeza de ensamblaje del punzón hasta el borde de corte inferior del cuerpo del punzón, no la parte inferior de la placa de guía o separador

# Tolerancia de la Matriz

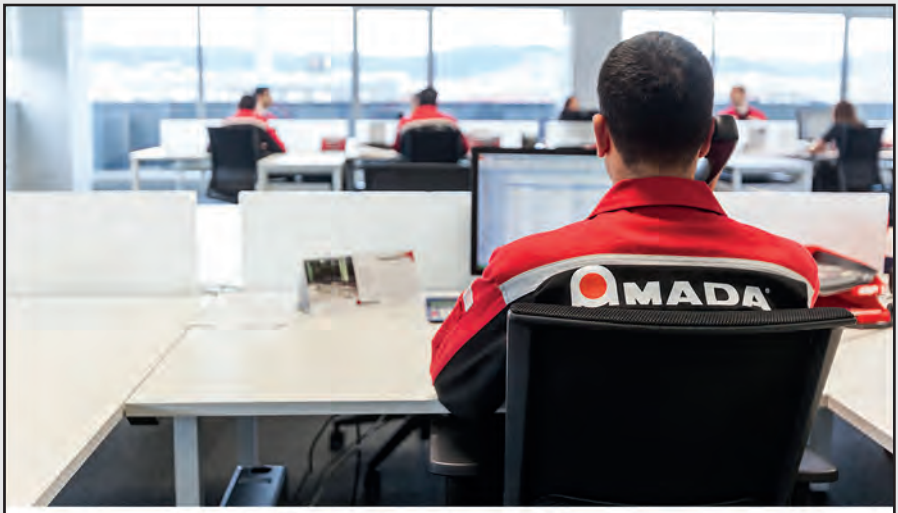
La tabla muestra las tolerancias recomendadas para las matrices para un rango de materiales y espesores.

| Espesor | Hierro | Inoxidable Hierro | Aluminio | Cobre | Latón |
|---|---|---|---|---|---|
| **0.8 mm** | 0.15 - 0.20 mm | 0.20 - 0.24 mm | 0.15 - 0.16 mm | 0.15 - 0.16 mm | 0.15 - 0.16 mm |
| **1.0 mm** | 0.20 - 0.25 mm | 0.25 - 0.30 mm | 0.15 - 0.20 mm | 0.15 - 0.20 mm | 0.15 - 0.20 mm |
| **1.5 mm** | 0.30 - 0.38 mm | 0.37 - 0.45 mm | 0.22 - 0.30 mm | 0.22 - 0.30 mm | 0.22 - 0.30 mm |
| **2.0 mm** | 0.40 - 0.50 mm | 0.50 - 0.60 mm | 0.30 - 0.40 mm | 0.30 - 0.40 mm | 0.30 - 0.40 mm |
| **2.5 mm** | 0.50 - 0.63 mm | 0.62 - 0.75 mm | 0.37 - 0.50 mm | 0.37 - 0.50 mm | 0.37 - 0.50 mm |
| **3.0 mm** | 0.60 - 0.75 mm | 0.75 - 0.90 mm | 0.45 - 0.60 mm | 0.45 - 0.60 mm | 0.45 - 0.60 mm |
| **3.2 mm** | 0.64 - 0.80 mm | 0.80 - 0.96 mm | 0.48 - 0.64 mm | 0.48 - 0.64 mm | 0.48 - 0.64 mm |
| **3.5 mm** | 0.70 - 0.88 mm | 0.88 - 1.05 mm | 0.53 - 0.70 mm | 0.53 - 0.70 mm | 0.53 - 0.70 mm |
| **4.0 mm** | 0.80 - 1.00 mm | 1.00 - 1.20 mm | 0.60 - 0.80 mm | 0.60 - 0.80 mm | 0.60 - 0.80 mm |
| **4.5 mm** | 0.90 - 1.13 mm | 1.13 - 1.35 mm | 0.68 - 0.90 mm | 0.68 - 0.90 mm | 0.68 - 0.90 mm |
| **5.0 mm** | 1.00 - 1.25 mm | - | 0.75 - 1.00 mm | 0.75 - 1.00 mm | 0.75 - 1.00 mm |
| **5.5 mm** | 1.10 - 1.38 mm | - | 0.83 - 1.10 mm | 0.83 - 1.10 mm | 0.83 - 1.10 mm |
| **6.0 mm** | 1.20 - 1.50 mm | - | 0.90 - 1.20 mm | 0.90 - 1.20 mm | 0.90 - 1.20 mm |

**Notas:**

i) Las figuras de la tabla anterior se indican como un rango, por Ejemplo 0.15 - 0.20mm
Para máquinas mecánicas elija la holgura más pequeña del rango
Para las máquinas hidráulicas elija la holgura más grande del rango
ii) Para materiales galvanizados y cincados use hierro como guía
iii) Las cifras anteriores son sólo una guía. Consulte el Manual del operador de la máquina para obtener detalles más específicos

# Más información

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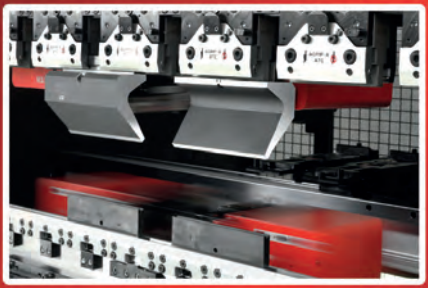

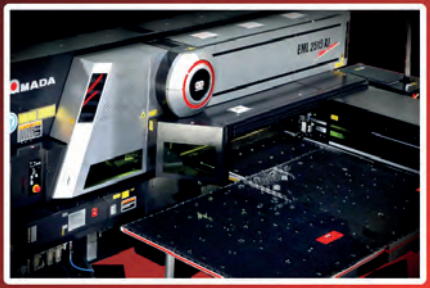

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