

Technica de conformado

Aplicación de punzondo

Forming Technology
Piercing Applications

La incorporación de agujeros, muescas o recortes adicionales es una de nuestras especialidades en la tecnología de conformado.

Como unidades de punzonado, utilizamos tanto sistemas de cuerpo en C como pinzas con mecanismo de rodillera (consulte la página siguiente).

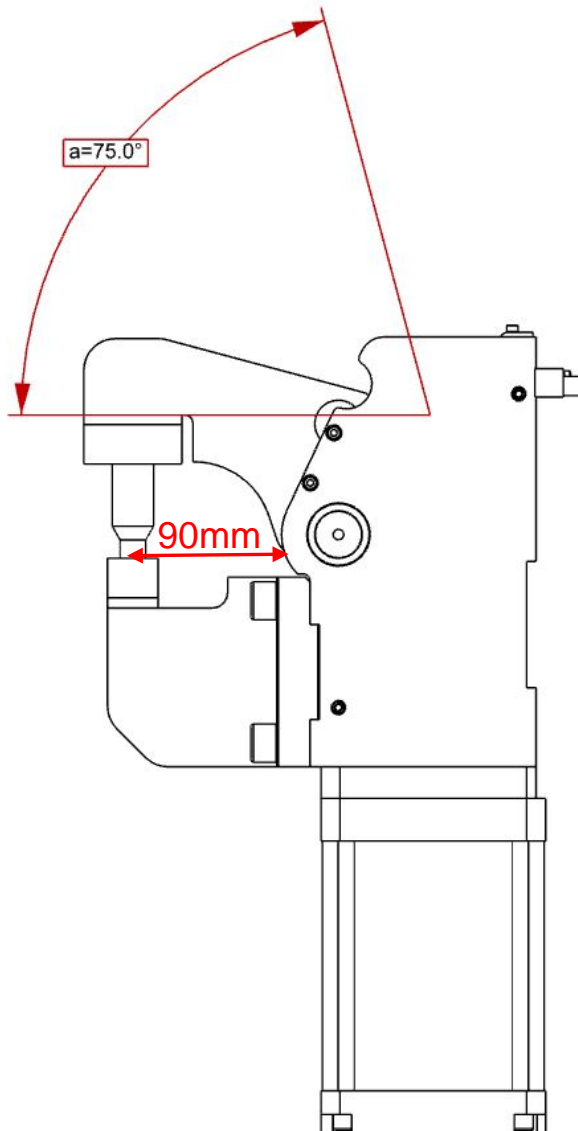
Las imágenes a continuación brindan una visión general de las aplicaciones típicas que hemos realizado en los últimos años.

Tal vez pueda encontrar aquí alguna sugerencia para su aplicación actual.

The insertion of additional holes, recesses or trimming is one of our specialties in forming technology.

As punching units we use both C-frame systems and toggle-type tongs (see next page).

This "picture book" gives you an overview of typical applications that we have realized in recent years. You may also find suggestions for your current application here.



PFS 400-90 S T12/3 75° 125mm

PFS: punzonadora con mecanismo de rodillera neumatica /
pneumatic toggle unit

400: Tamaño / *Size*

90: Alcance [in mm] / *Reach [in mm]*

S: Punzonado/Corte/ *Piercing/Cutting*

T12/3: Sistema de detección / *Sensor*

75° : Angulo de apertura/ *opening angle*

125mm: Cilindro-Ø / *cylinder Ø*

Sistema de detección / *Sensors*

T12: detección 24V, 1 salida con 3 LEDs integrados

inductive Sensor 24 V, 1 outlet with 3 integrated LEDs

T08: Detección neumatica/ *pneumatic sensor*

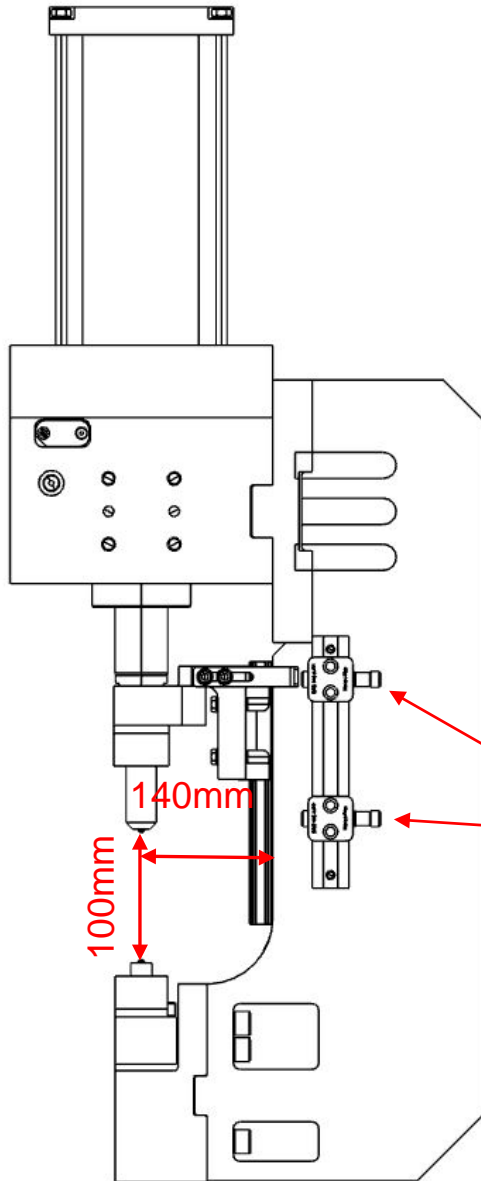
Angulo de apertura max. 75° / *Opening angle max. 75°*

Suministro

Aire, max. 6 bar, funcionamiento con aire libre de aceite permitido *Air,*
max. 6 bar, operation permitted with oil-free air

Ejemplo de sistema con cuerpo en C

Example C-Frame-System



CBMZ 10-140 100 S T02

CB: Unidad con cuerpo en C / *C-frame unit*

MZ: Accionamiento / *Drive*

MZ: Cilindro multiplicador de fuerza / *Mult-power cylinder*

HZ: Cilindro hidráulico/ *hydraulic cylinder*

HA: Cilindro air-hidráulico / *HydroAir cylinder*

10: Fuerza de pundonado [in kN] / *Piercing force [in kN]*

140: Alcance [in mm] / *Reach [in mm]*

100: Carrera del cilindro [in mm] / *Cylinder stroke [in mm]*

S: Punzonado/Corte / *Piercing/Cutting*

T02: Sistema de detección / *Sensor*

Sistemas de detección / *Sensors*

T02: 2x sistemas de detección inductivos externos M12

2x external inductive Sensor M12

T08: 2x sistemas de detección neumáticos externos / *2x external pneumatic sensor*

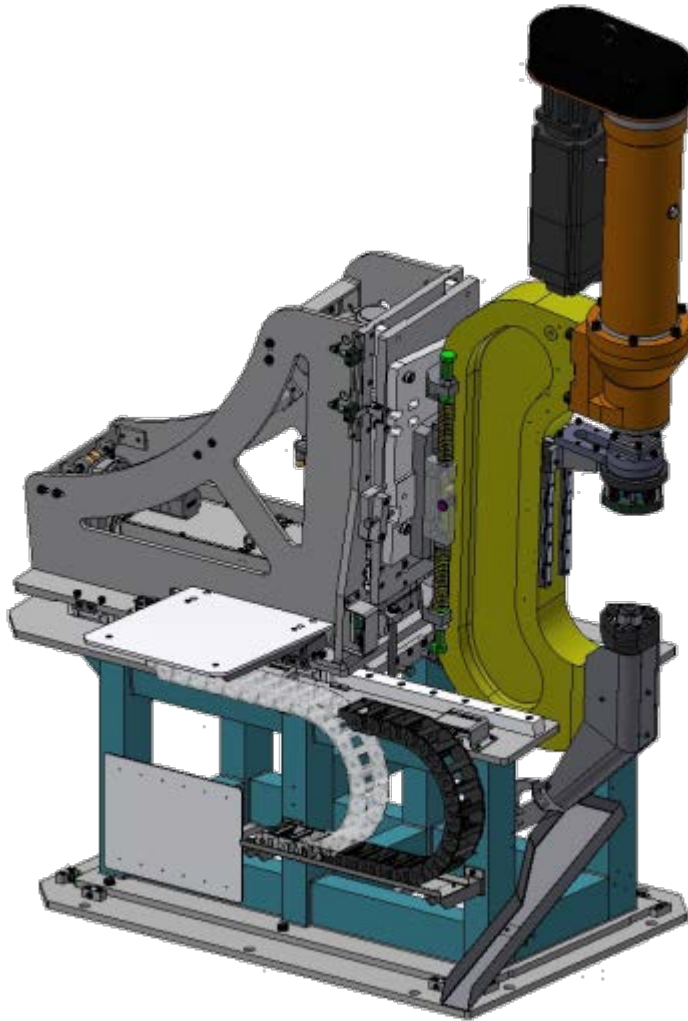
Alcance/ *Reach*

Standard: 140mm, 200mm, 300mm *

*otros tamaños disponibles bajo petición/ *further measurements upon request*

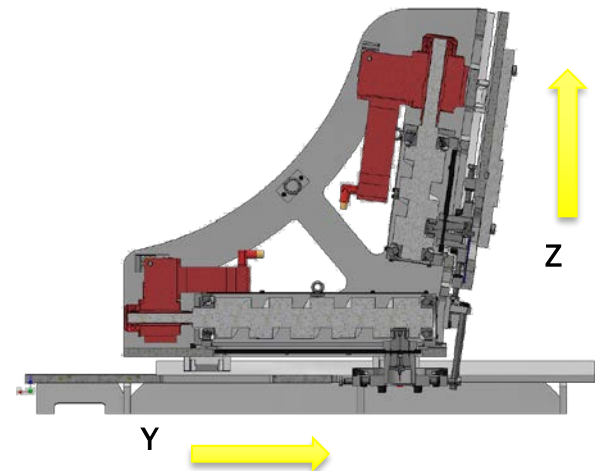
Punzonadora de cazoletas de suspensión totalmente eléctrica

Electric shock tower piercing unit



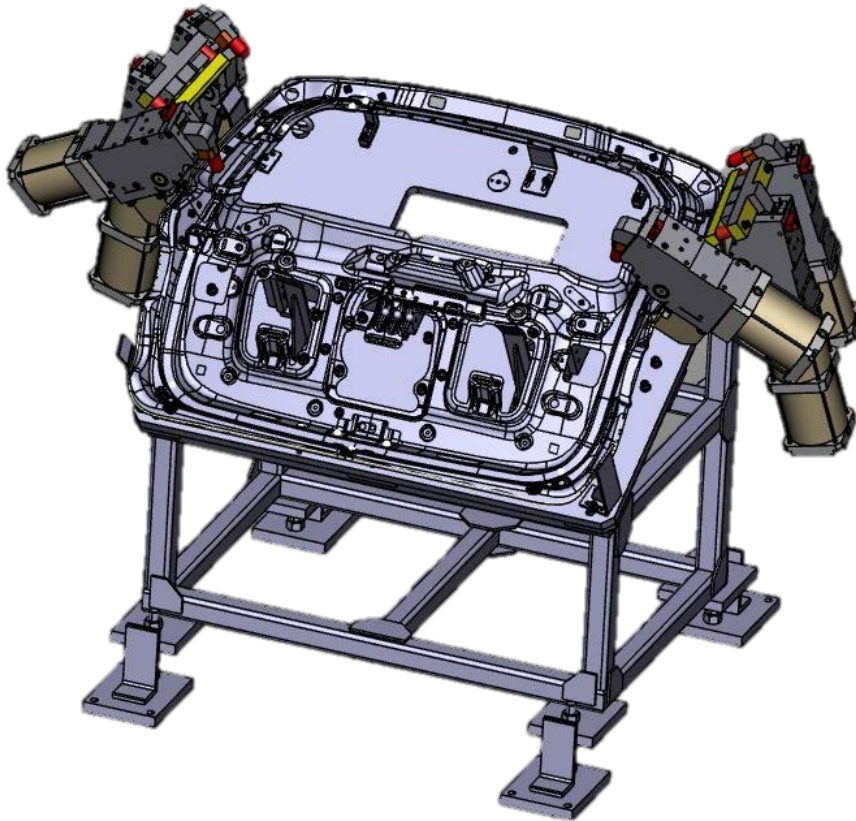
- E- Accionamiento con engranaje planetario
- $F_{max} = 250 \text{ kN}$, Alcance 235 mm, Carrera 360 mm
- Tiempo de ciclo < 28 sec

- *Performance data*
- *E-Drive with planetary screw assemblies*
- $F_{max} = 250 \text{ kN}$, reach 235 mm, stroke 360 mm
- *Cycle Time < 28 sec*



Punzonado con PFS – Portón trasero

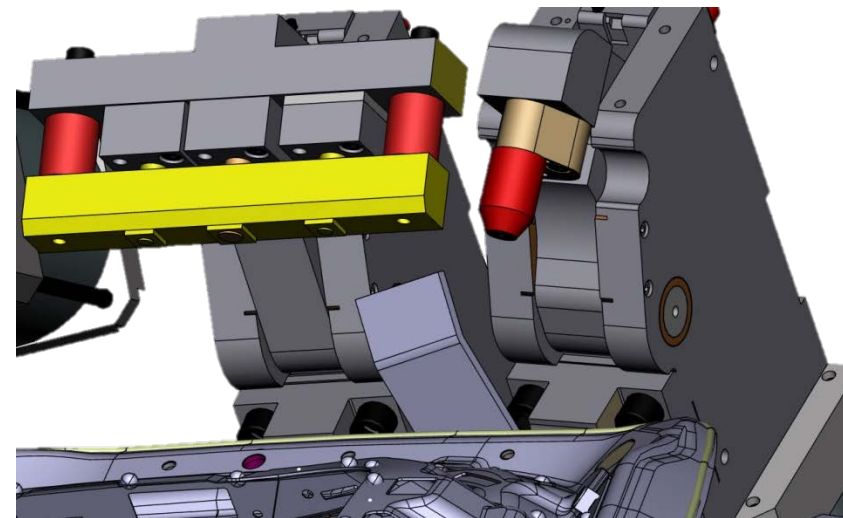
Piercing with PFS – Rear Door



Cliente / *Customer:* SAIC (China)

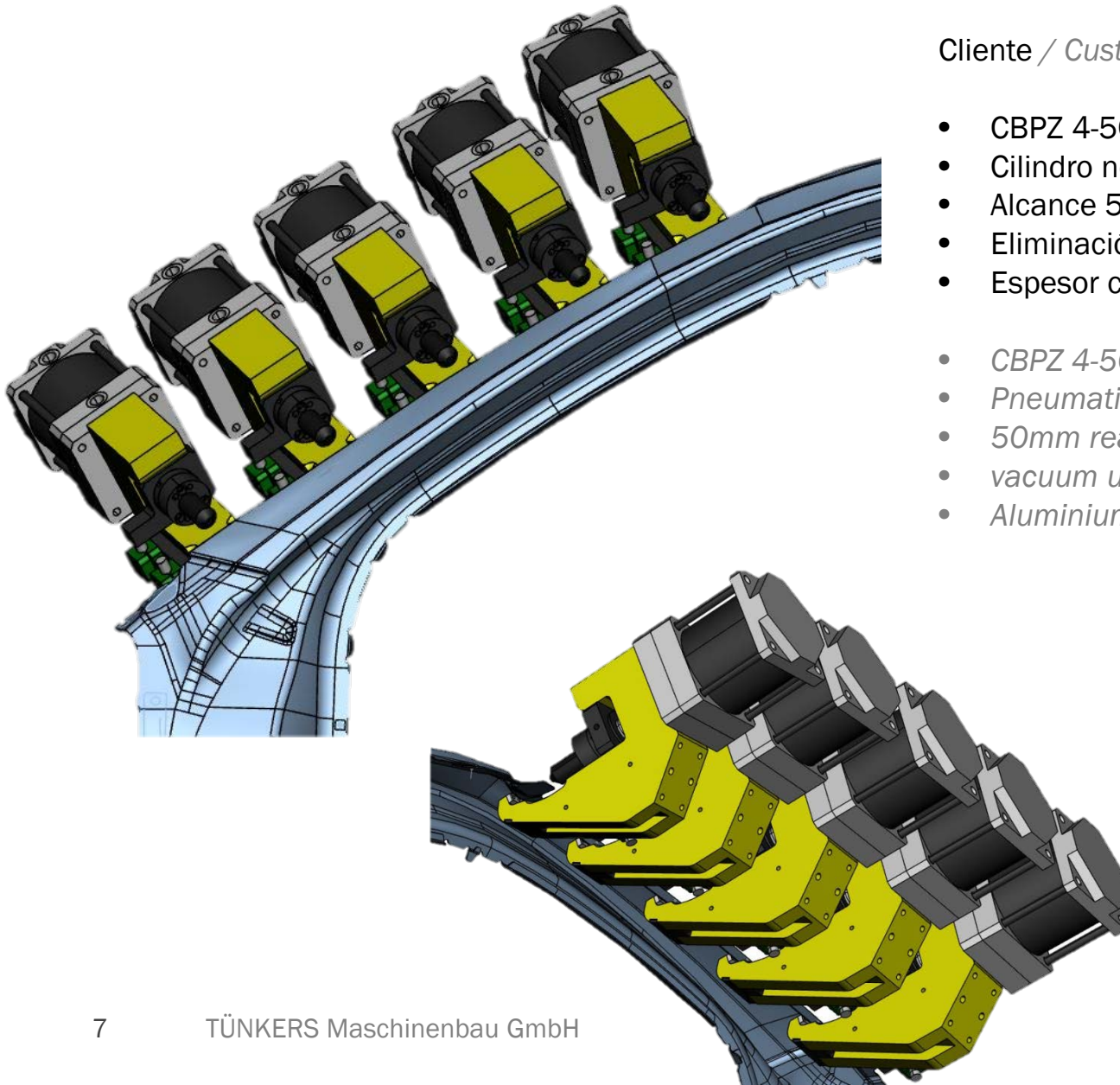
- PFS 400-90 S 70° para 1x Ø 8,5mm
- PFS 900-90 S 70° para 2x Ø 8,5mm und 1x Ø14mm
- Matrices adaptadas a la superficie de la pieza
- Espesor chapa de acero 0,65mm

- *PFS 400-90 S 70° for 1x Ø 8,5mm*
- *PFS 900-90 S 70° for 2x Ø 8,5mm and 1x Ø14mm*
- *Dies with 3D surface according to part contour*
- *Steel sheet 0,65mm thick*



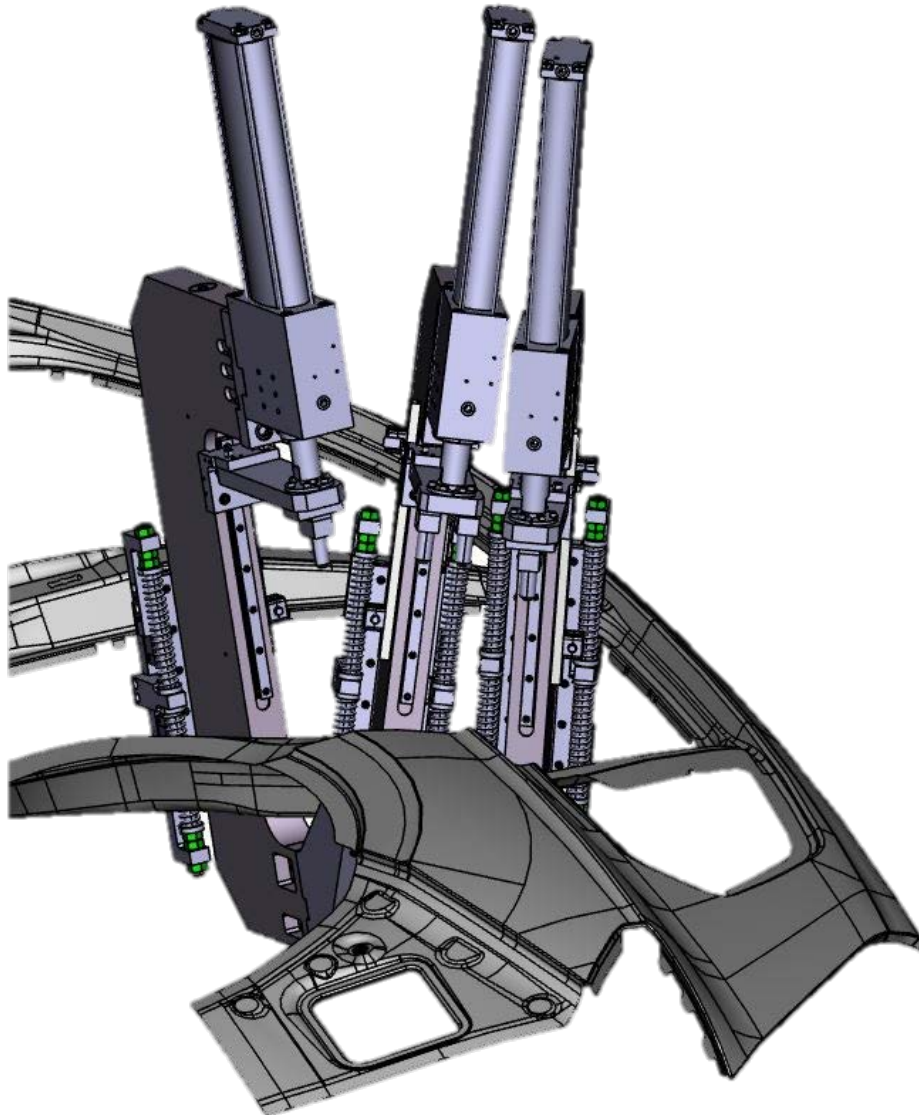
Punzonado con CBPZ – Pilar-A

Piercing with CBPZ – A-pillar



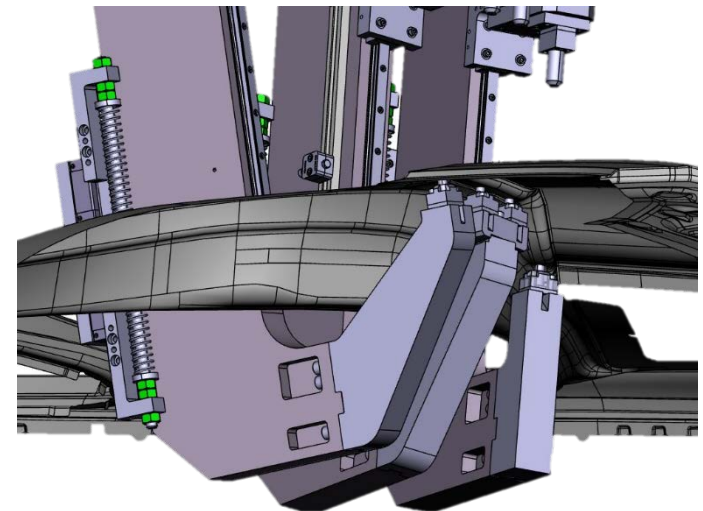
Cliente / *Customer*: AUDI (Bratislava)

- CBPZ 4-50 40 S para Ø 3,3mm
 - Cilindro neumático con carrera 40mm
 - Alcance 50mm
 - Eliminación de restos por succión de vacío
 - Espesor chapa de aluminio 1,15mm
-
- *CBPZ 4-50 40 S for Ø 3,3mm*
 - *Pneumatic cylinder with 40mm stroke*
 - *50mm reach*
 - *vacuum unit for slug disposal*
 - *Aluminium sheet 1,15mm thick*



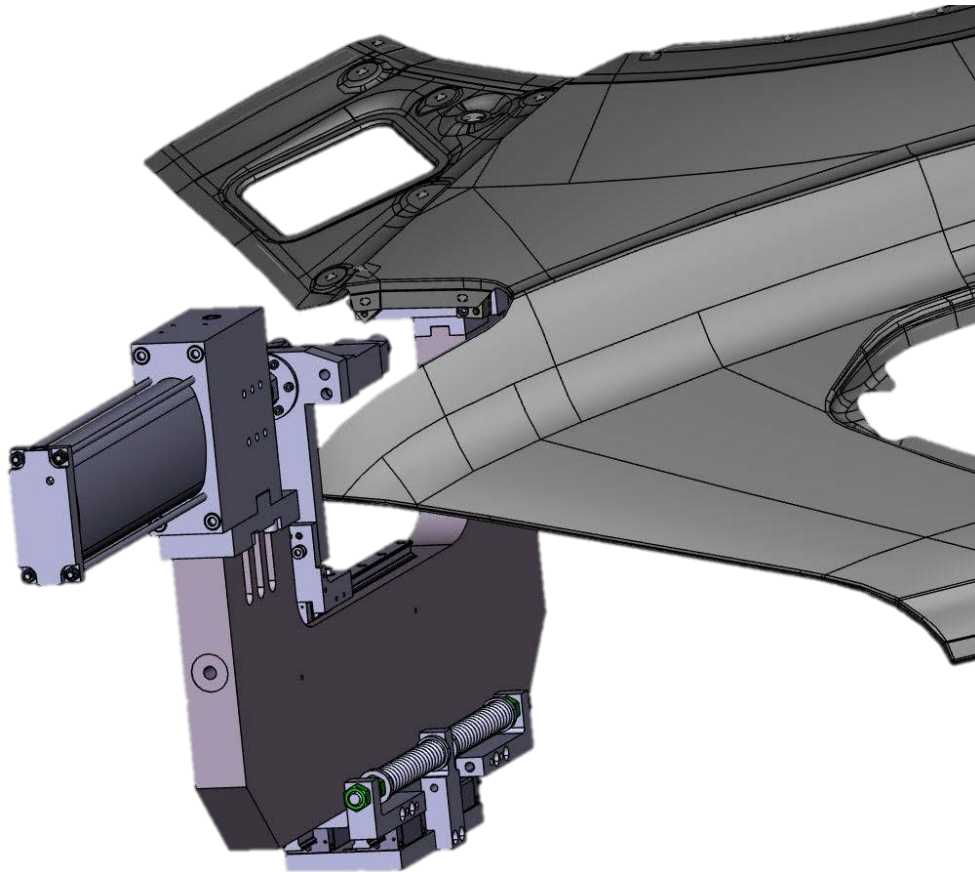
Cliente / *Customer*: AUDI (Bratislava)

- CBMZ 25-300 250 S para agujeros \varnothing 5,5mm
- MZ 80 (25kN) con carrero 250mm
- Alcance 300mm
- Espesor chapa de aluminio 1,15mm
- *CBMZ 25-300 250 S for \varnothing 5,5mm holes*
- *MZ 80 (25kN) with 250mm stroke*
- *300mm reach*
- *Aluminium sheet 1,15mm thick*



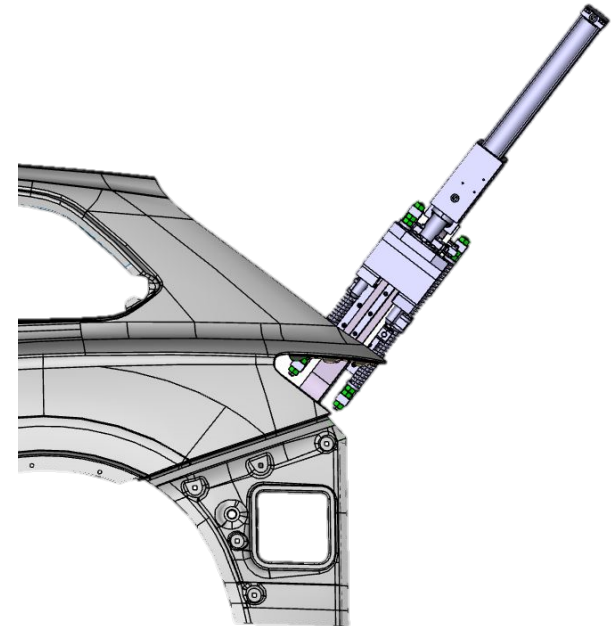
Punzonado con CBMZ – Luz trasera

Piercing with CBMZ – tail light



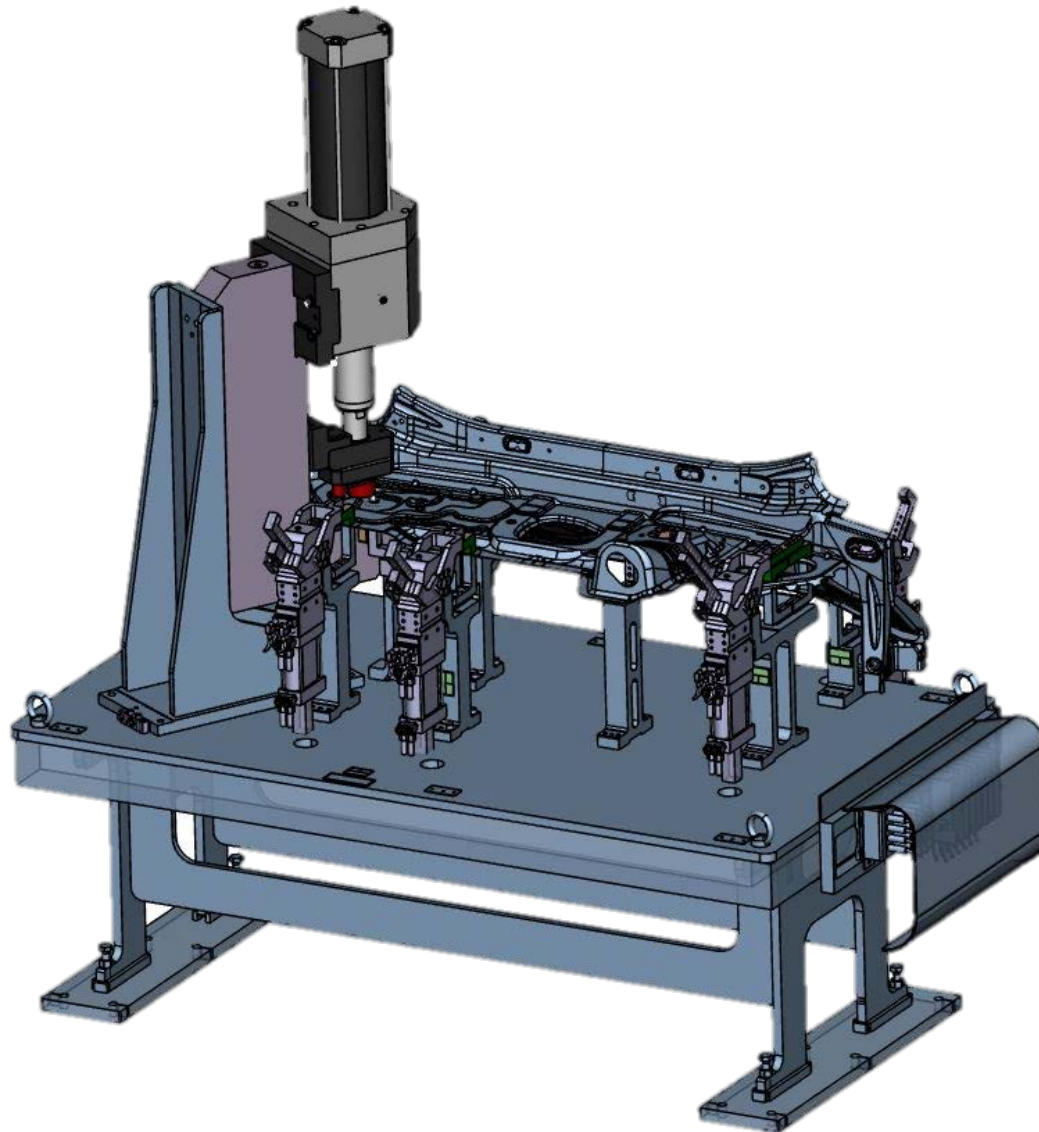
Cliente / *Customer*: AUDI (Bratislava)

- CBMZ 25-250 250 S para agujero oblongo 2x 11x7mm
- MZ 80 (25kN) con carrera 250mm
- Alcance 250mm
- Espesor chapa de aluminio 1,15mm
- *CBMZ 25-250 250 S for 2x 11x7mm oblong holes*
- *MZ 80 (25kN) with 250mm stroke*
- *250mm reach*
- *Aluminium sheet 1,15mm thick*



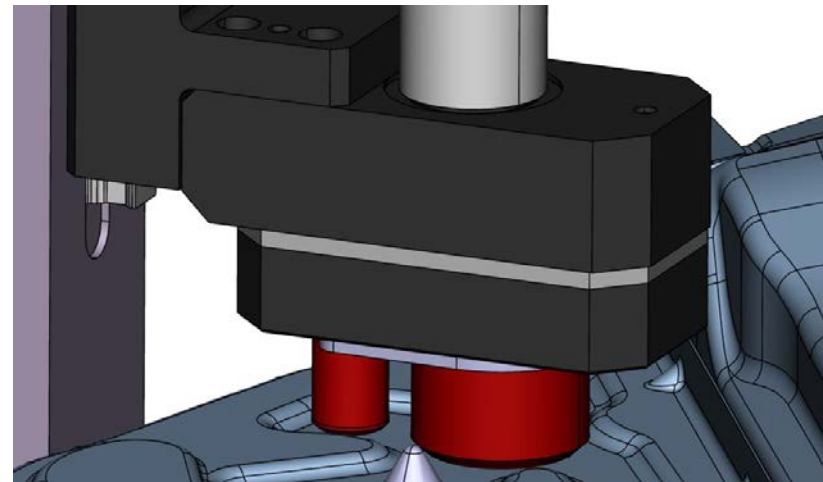
Punzonado con CBMZ – Salpicadero conducción a la derecha

Piercing with CBMZ – head wall RHD



Cliente / *Customer:* AUDI

- CBMZ 60-140 100 S para agujeros 1x Ø 40,2mm + 1x Ø 6,7mm
- MZ 140 (60kN) con carrera 100mm
- Espesor chapa de aluminio 1mm
- *CBMZ 60-140 100 S for 1x Ø 40,2mm + 1x Ø 6,7mm holes*
- *MZ 140 (60kN) with 100mm stroke*
- *Aluminium sheet 1mm thick*



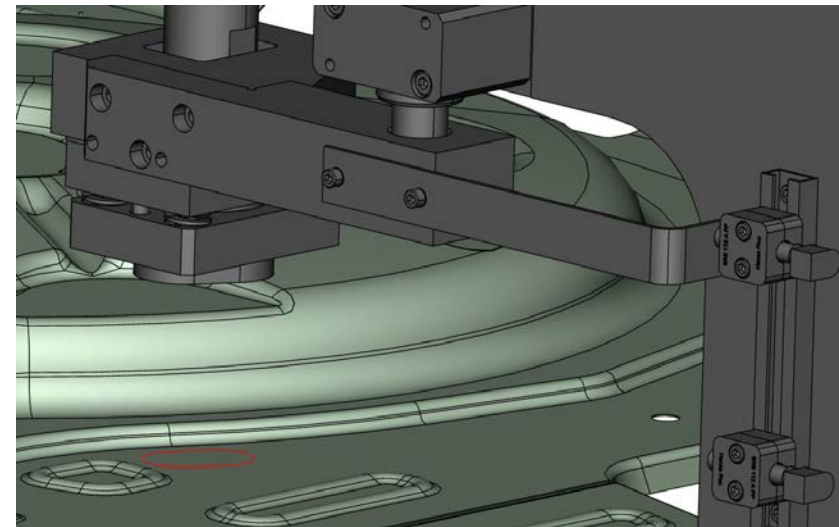
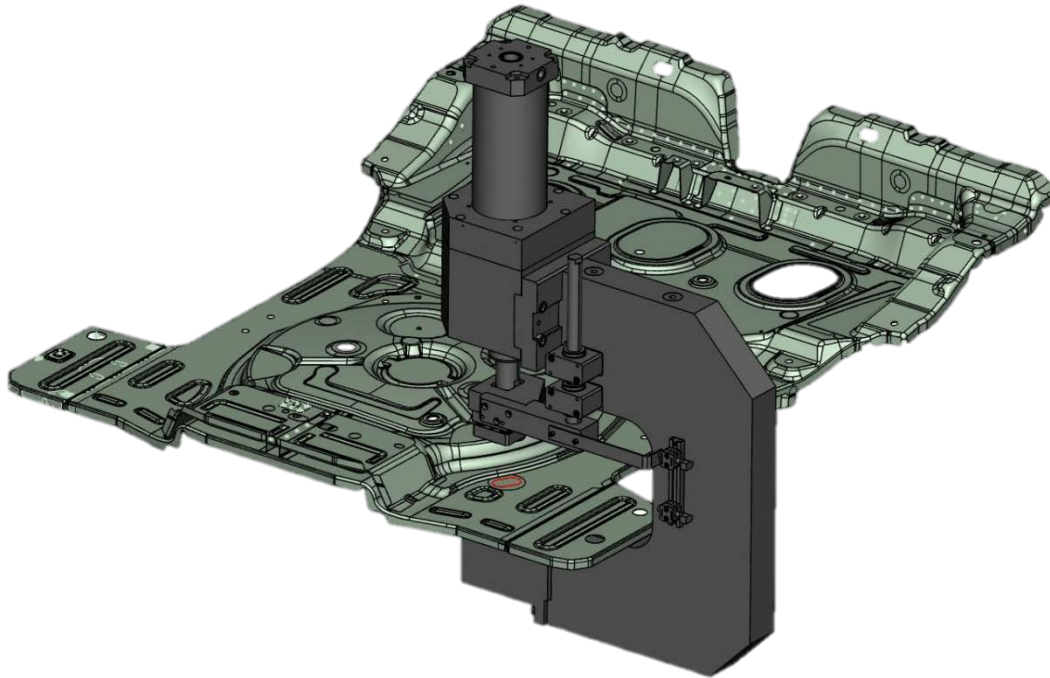
Punzonado con CBMZ – Piso

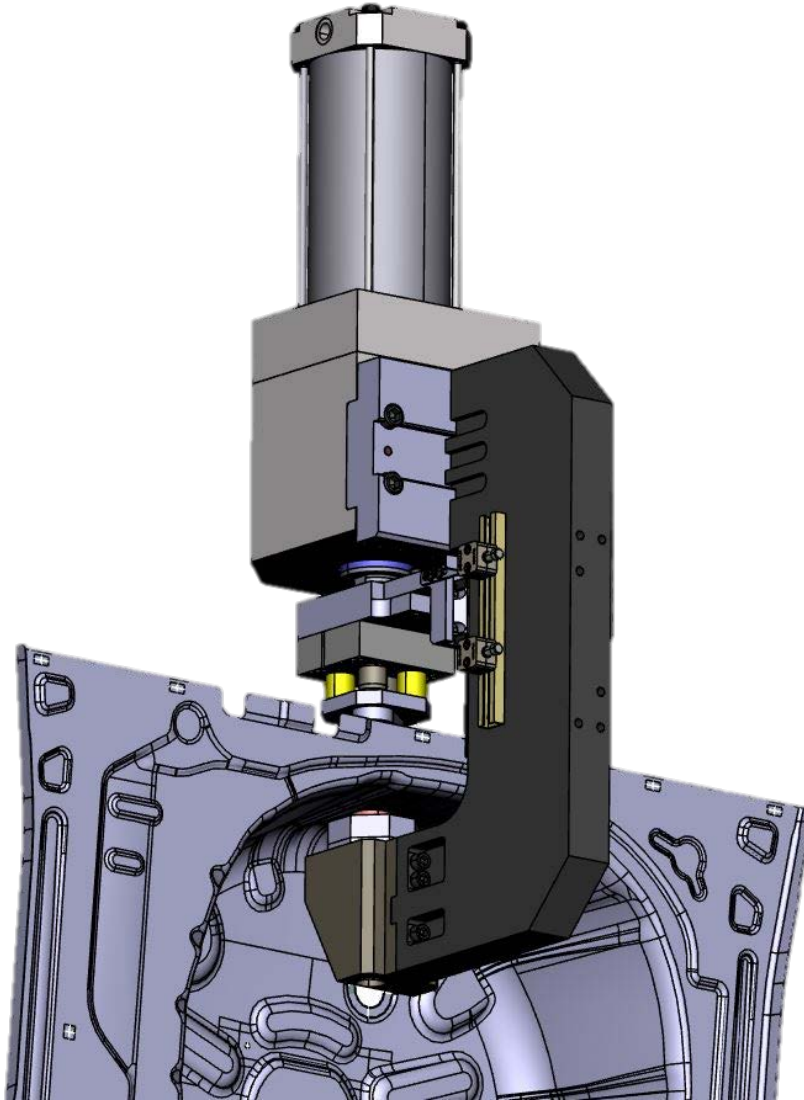
Piercing with CBMZ - Underbody

Clinte / Customer: VW

- CBMZ 60-400 100 S para agujero oblongo 35x60mm
- MZ 140 (60kN) con carrera 100mm
- Alcance 400mm
- Espesor chapa de acero 0,7mm

- *CBMZ 60-400 100 S for oblong hole 35x60mm*
- *MZ 140 (60kN) with 100mm stroke*
- *400mm reach*
- *Steel sheet 0,7mm thick*

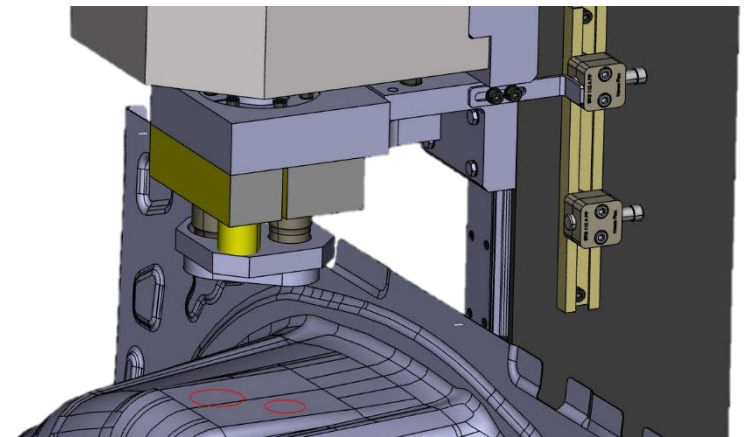




Cliente / Customer: Seat

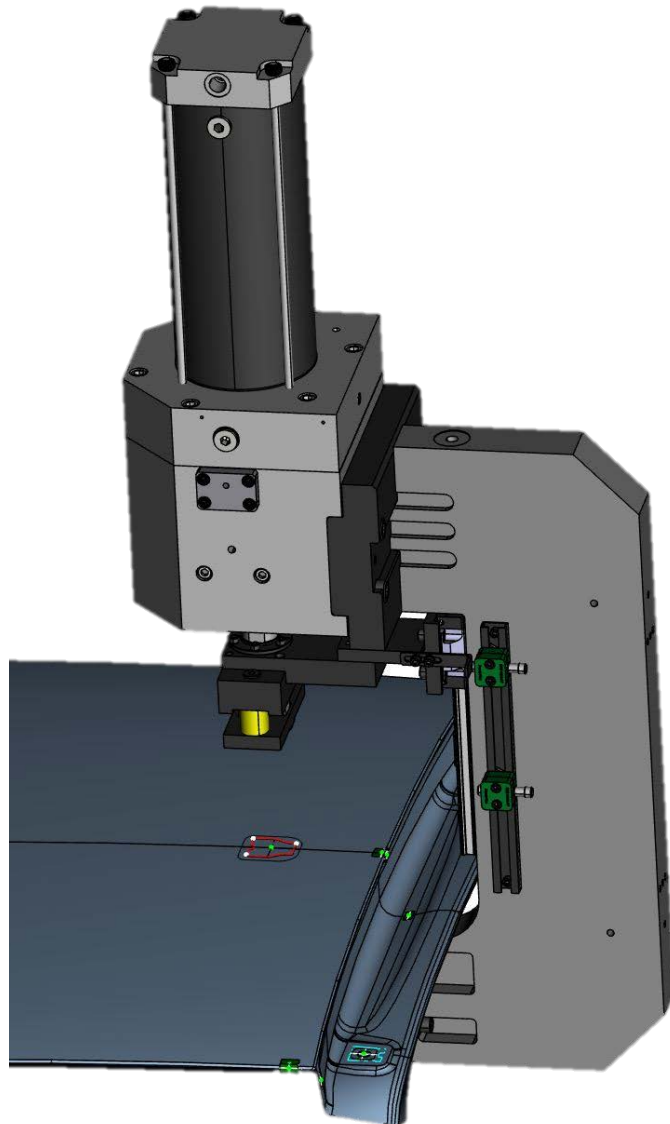
- CBMZ 60-200 100 S para agujeros 1x Ø 40,2mm + 1x Ø 30,2mm
- MZ 140 (60kN) con carrera 100mm
- Alcance 200mm
- Espesor chapa de acero 0,7mm

- *CBMZ 60-200 100 S for 1x Ø 40,2mm + 1x Ø 30,2mm holes*
- *MZ 140 (60kN) with 100mm stroke*
- *200mm reach*
- *Steel sheet 0,7mm thick*



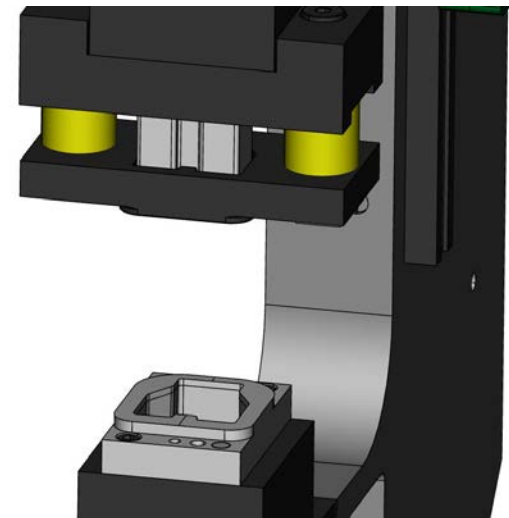
Punzonado con CBMZ – Agujero antenna

Piercing with CBMZ – antenna hole



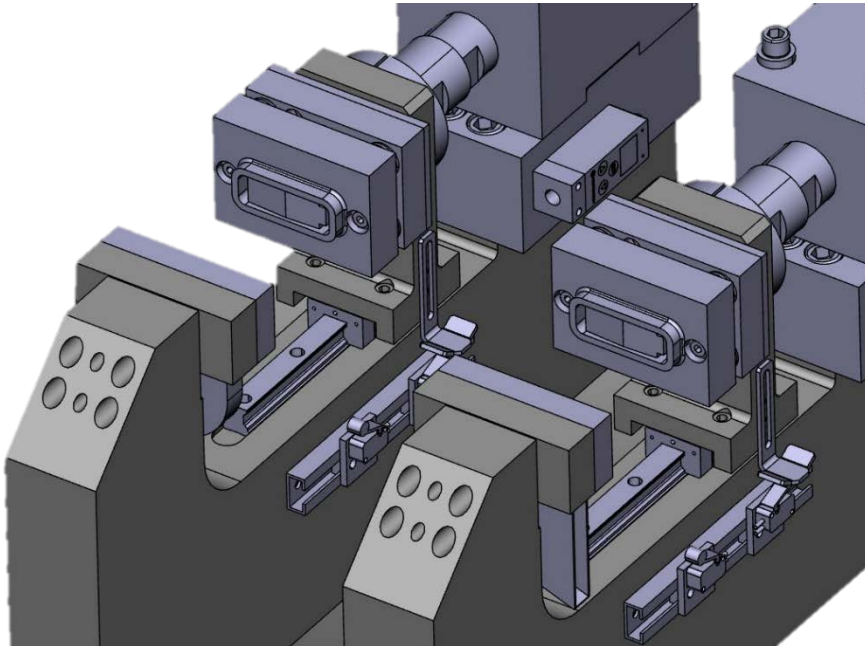
Cliente / *Customer*: Seat

- CBMZ 60-235 150 S
 - MZ 140 (60kN) con carrera 150mm
 - Alcance 235mm
 - Espesor chapa de acero 0,7mm
-
- *CBMZ 60-235 150 S*
 - *MZ 140 (60kN) with 150mm stroke*
 - *235mm reach*
 - *Steel sheet 0,7mm thick*



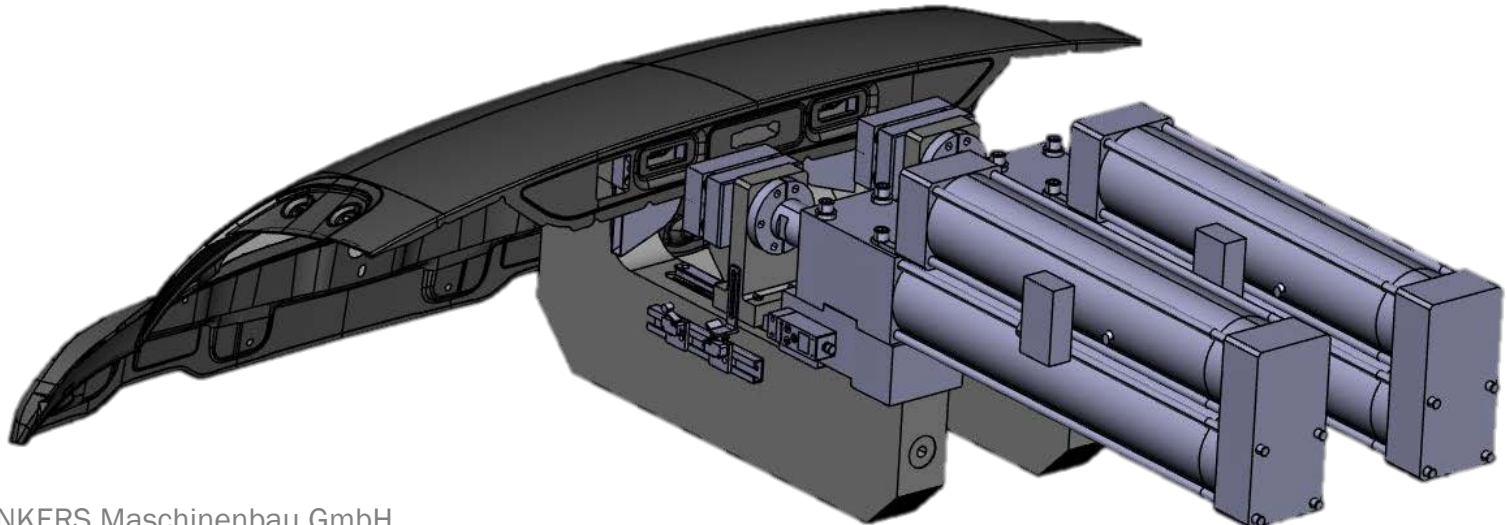
Punzonado con CBHA – Portón trasero

Piercing with CBHA – rear door



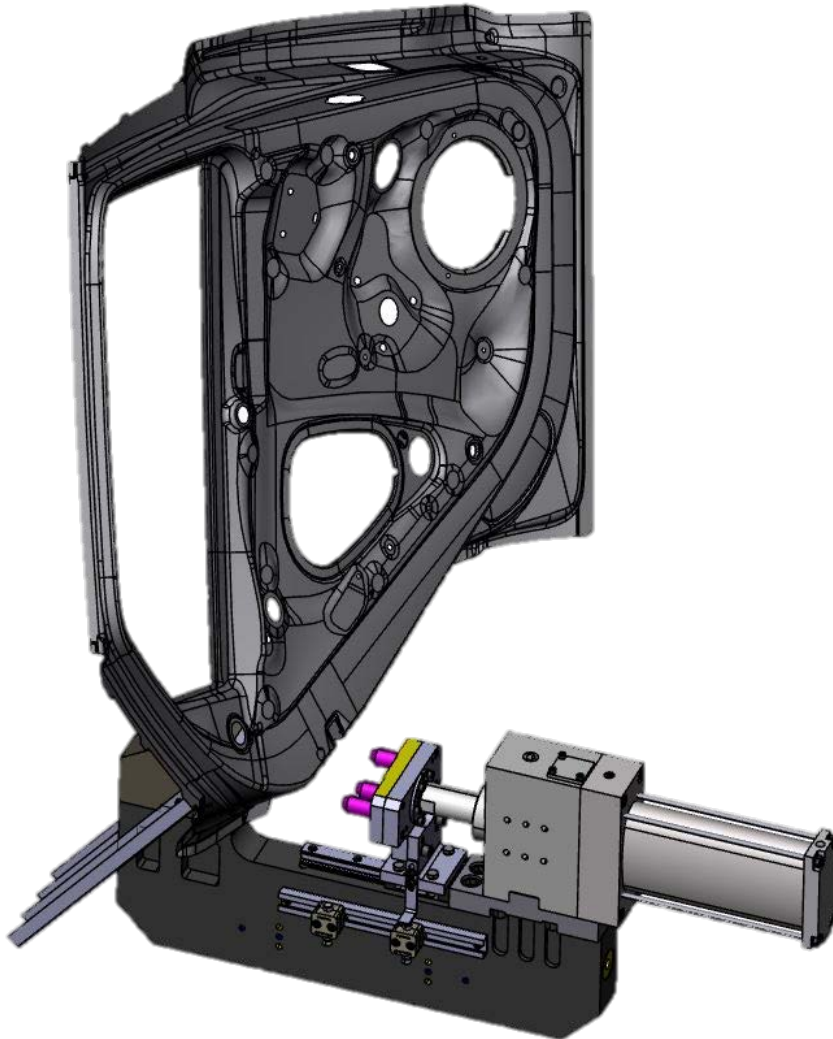
Cliente / *Customer*: DPCA (China)

- CBHA 60-140-100 S
- Fuerza U80 (60kN con 5 bar) con carrera 100mm
- Alcance 140mm
- Espesor chapa de acero 0,65mm
- *CBHA 60-140-100 S*
- *Powerpackage U80 (60kN) with 100mm stroke*
- *140mm reach*
- *Steel sheet 0,65mm thick*



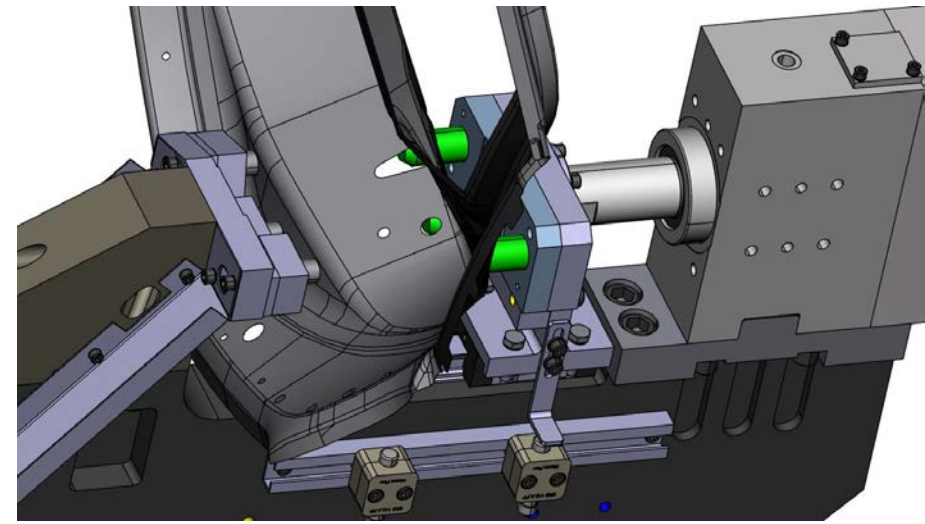
Punzonado con CBMZ – Marco puerta

Piercing with CBMZ – door frame



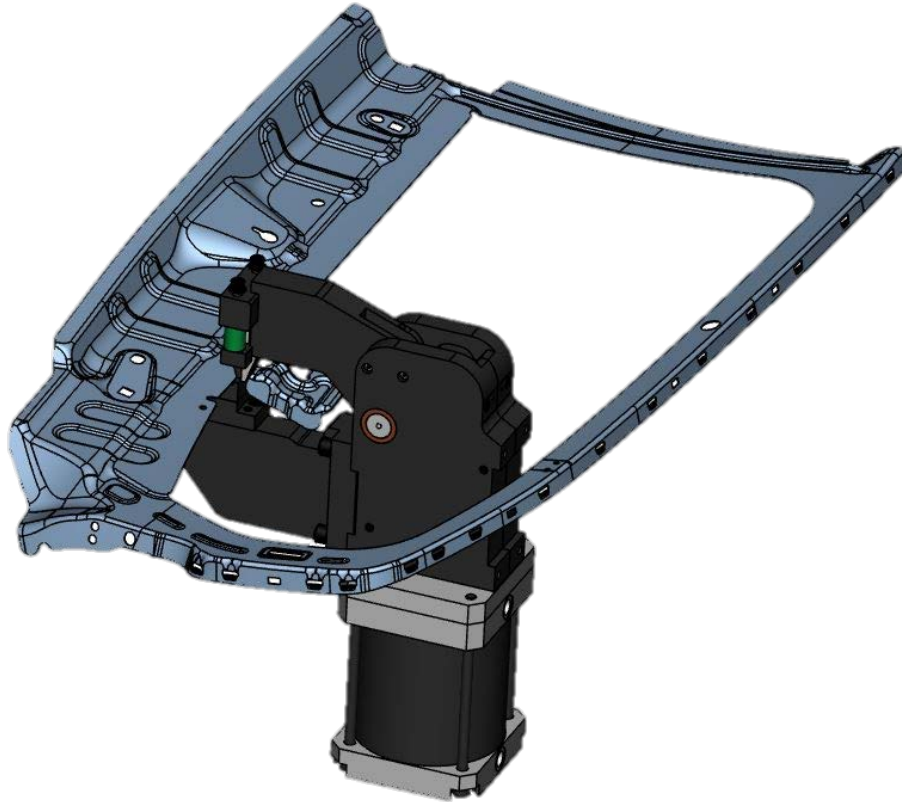
Cliente / *Customer*: AUDI

- CBMZ 25-140 100 S para agujeros 3x Ø 9mm
 - MZ 80 (25kN) con carrera 100mm
 - Cuerpo en C con alcance 140mm
 - Espesor chapa de acero 0,7mm
-
- *CBMZ 25-140 100 S for 3x Ø 9mm holes*
 - *MZ 80 (25kN) with 100mm stroke*
 - *C-Frame with 140mm reach*
 - *Steel sheet 0,7mm thick*



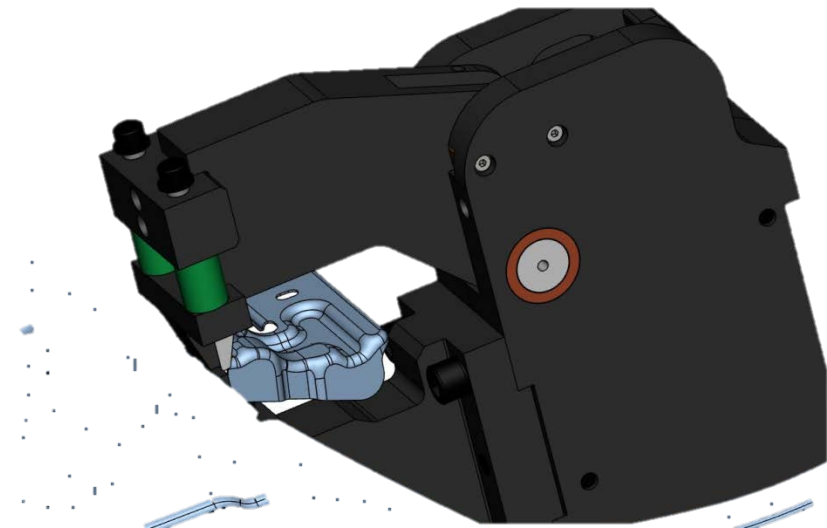
Corte con PFS – Marco de puerta interior

Cutting with PFS – Door frame



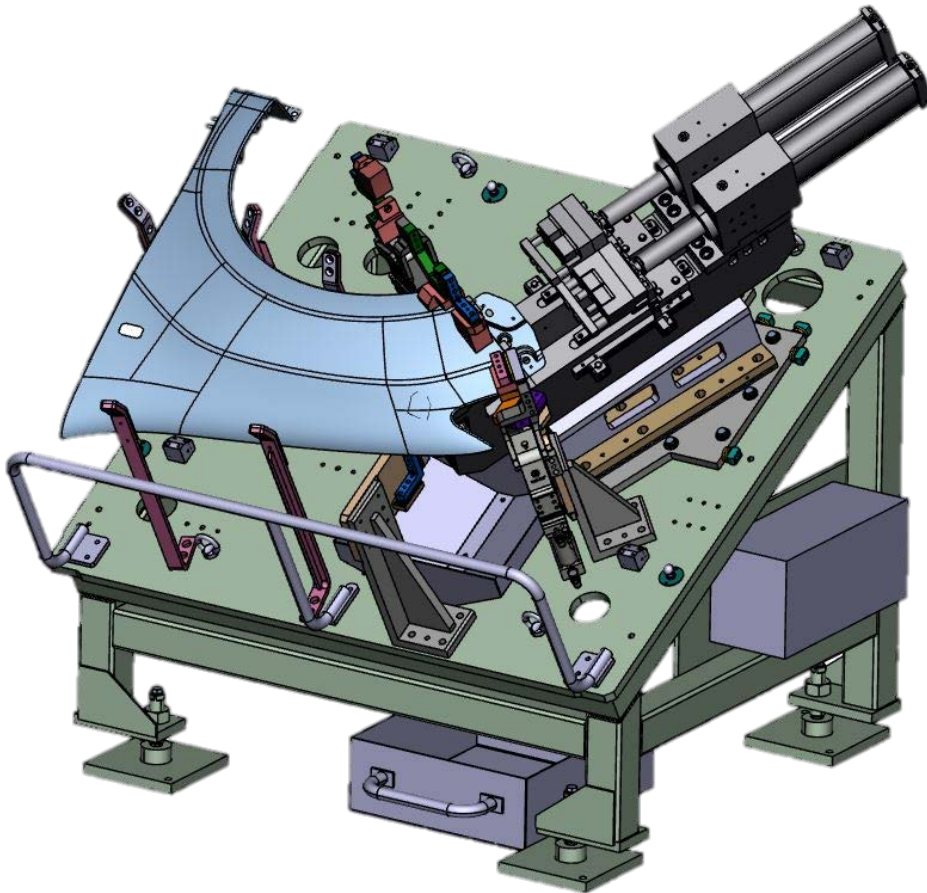
Cliente / Customer: PSA

- PFS 200-120 S T12/2 70°
 - Alcance 120mm; Angulo de apertura 70°
 - Largo de corte 10mm
 - Espesor chapa de acero 0,95mm
-
- *PFS 200-120 S T12/2 70°*
 - *Reach 120mm; Opening angle 70°*
 - *Cutting length 10mm*
 - *Steel sheet 0,95mm thick*



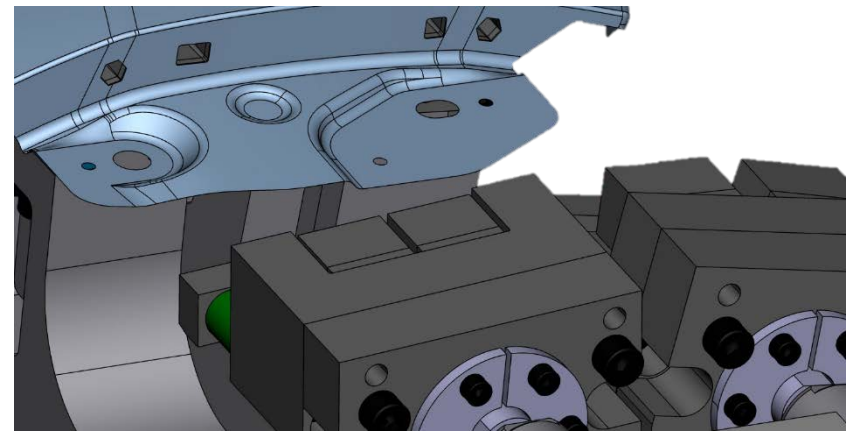
Punzonado con CBMZ – Guardabarrros

Piercing with CBMZ – Fender



Cliente / *Customer*: Dacia

- CBMZ 25-140 150 S para agujeros rectangulares y hexagonales
- MZ 80 (25kN) con carrera 150mm
- Cuerpo en C con alcance 140mm
- Espesor chapa de acero 0,65mm
- *CBMZ 25-140 150 S for rectangular and hexagonal holes*
- *MZ 80 (25kN) with 150mm stroke*
- *C-Frame with 140mm reach*
- *Steel sheet 0,65mm thick*



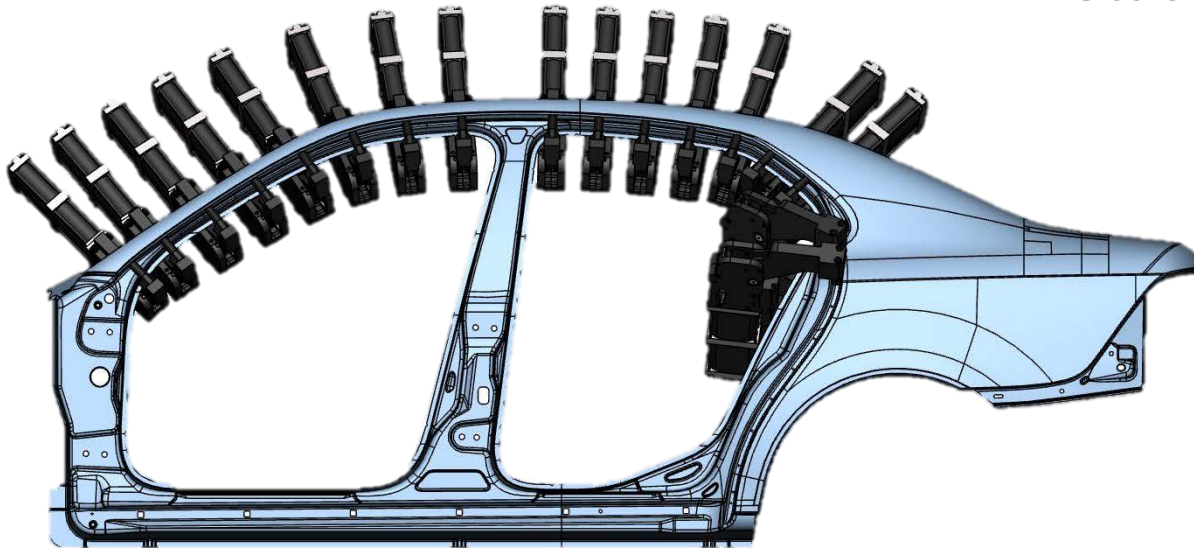
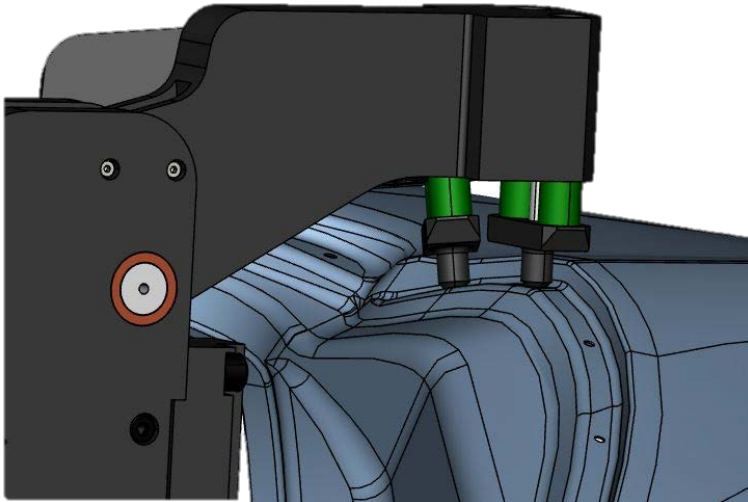
Punzonado con PFS – Lateral

Piercing with PFS – Side panel

Cliente / Customer: Saab

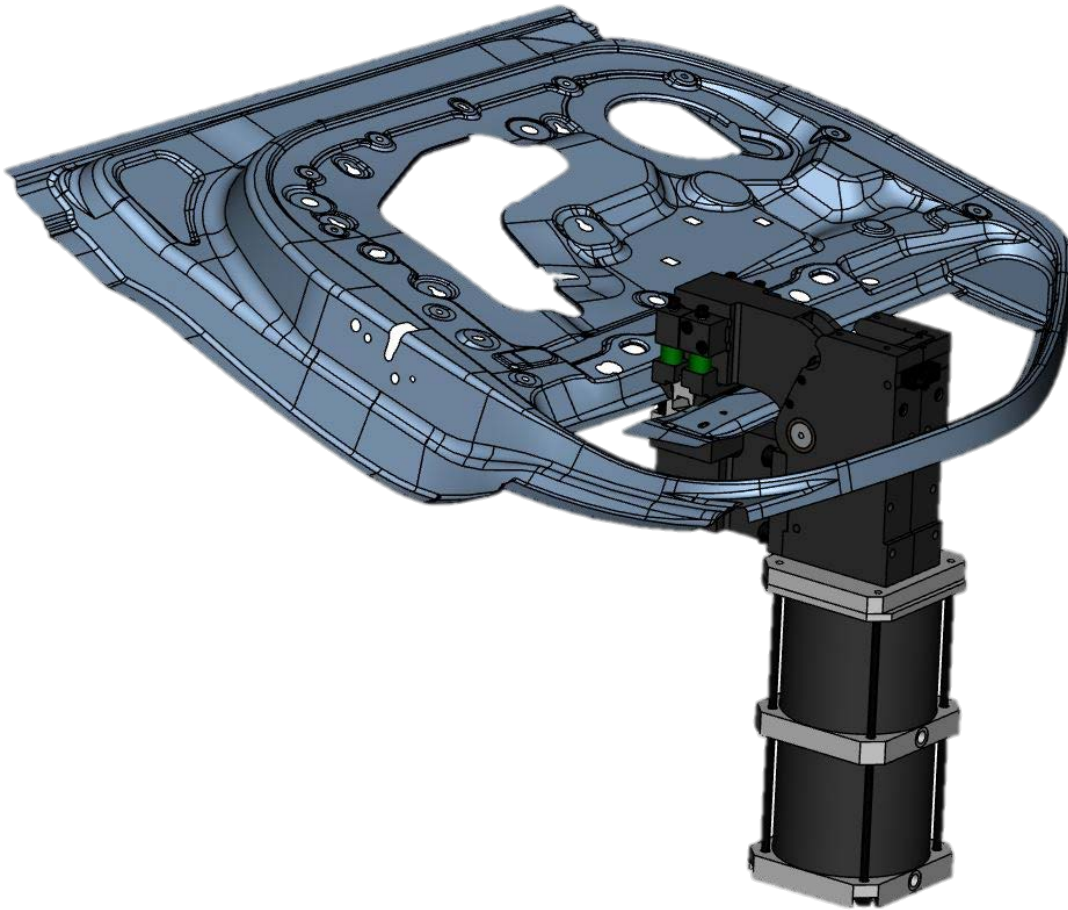
- PFS 200-100 S 75° para agujero Ø 6,4mm
- Alcance 100mm; Angulo de apertura 75°
- Cilindro: Versión en tándem plana ovalada
- Espesor chapa de acero 0,8mm

- *PFS 200-100 S 75° for Ø 6,4mm hole*
- *Reach 100mm; Opening angle 75°*
- *Cylinder: Tandem version flat oval*
- *Steel sheet 0,8mm thick*



Corte con PFS – Marco de puerta

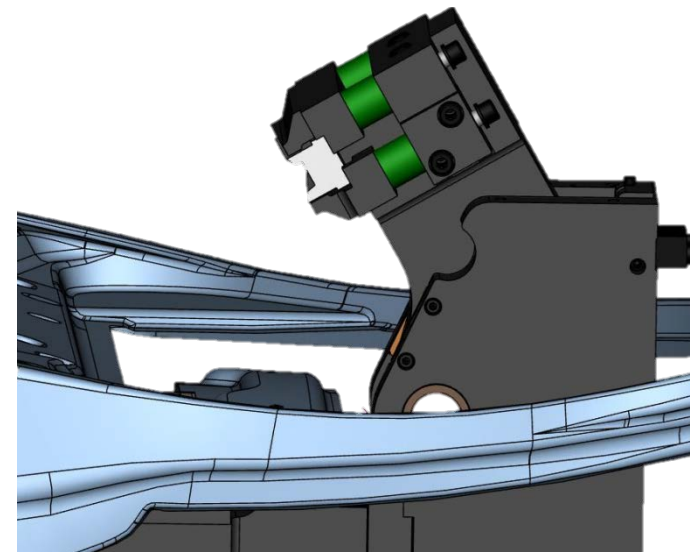
Cutting with PFS – Door frame



Cliente / Customer: Peugeot

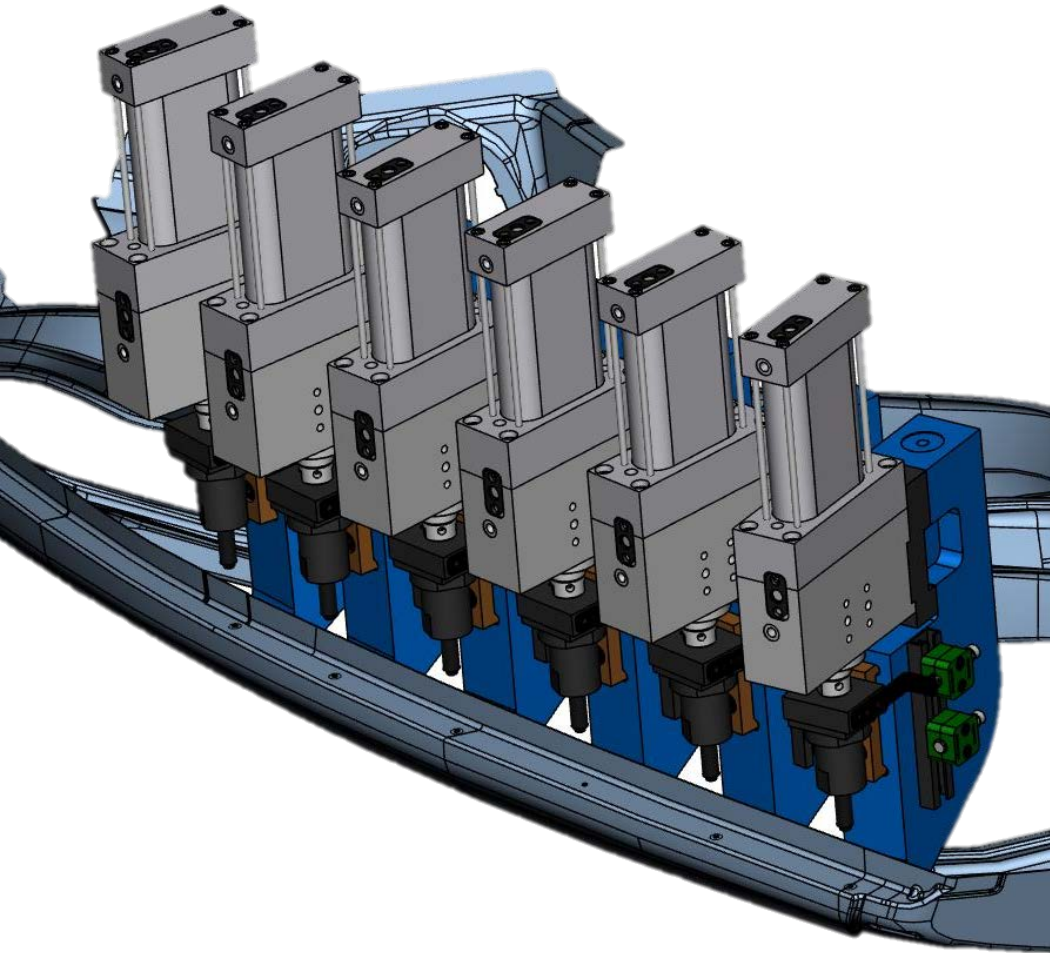
- PFS 900-120 S T12/2 60°
- Alcance 120mm, Angulo de apertura 60°
- Largo de corte 2x 60mm
- Espesor chapa de acero 0,65mm

- *PFS 900-120 S T12/2 60°*
- *Reach 120mm, opening angle 60°*
- *Cutting length 2x 60mm*
- *Steel sheet 0,65mm thick*



Punzonado con CBMZ – Canal de agua

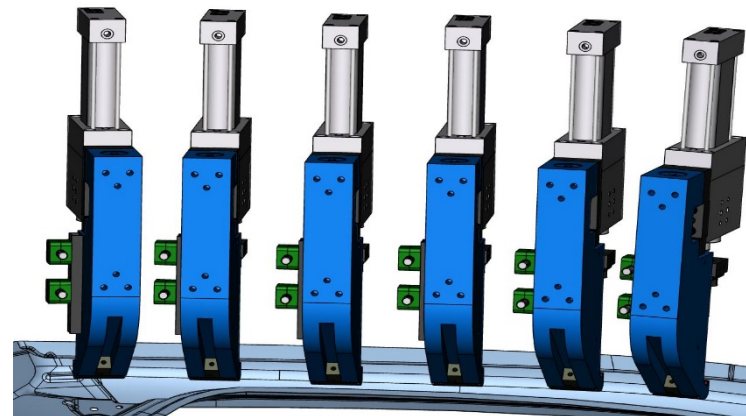
Piercing with CBMZ – A-Pillar



Cliente / Customer: JAC Motors (China)

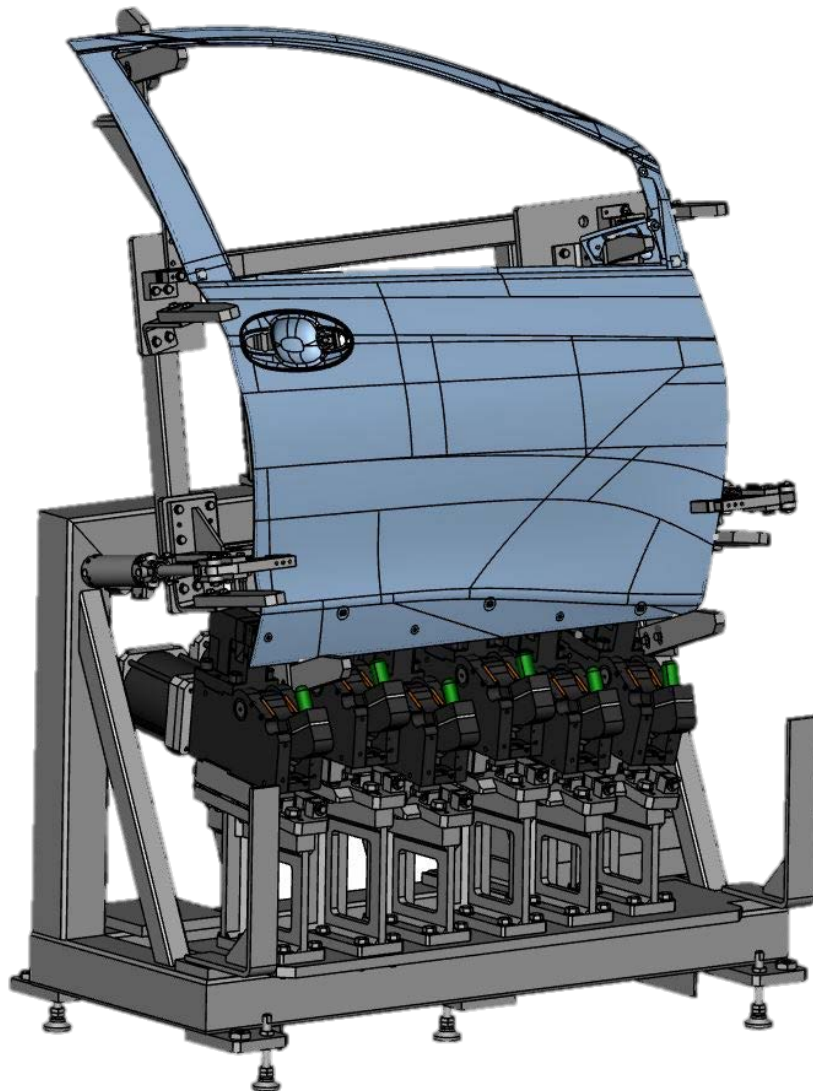
- CBMZ 10-30 50 S para agujeros Ø4,5mm
- MZ 63 (10kN) con carrera 50mm
- Cuerpo en C con alcance 30mm
- Eliminación de restos por succión de vacío
- Espesor chapa de acero 0,7mm

- *CBMZ 10-30 50 S for Ø4,5mm holes*
- *MZ 63 (10kN) with 50mm stroke*
- *C-Frame with 30mm reach*
- *vacuum unit for slug disposal*
- *Steel sheet 0,7mm thick*



Punzonado con PFS – Puerta delantera

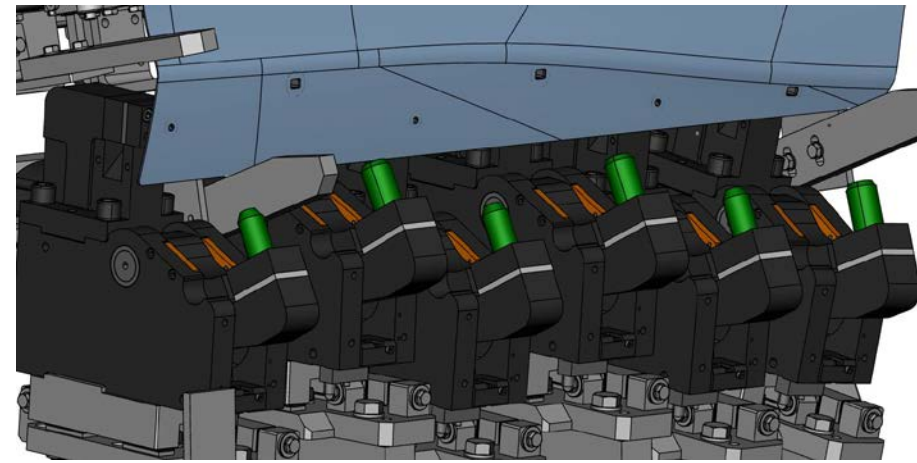
Piercing with PFS – Front door



Cliente / *Customer*: Toyota France

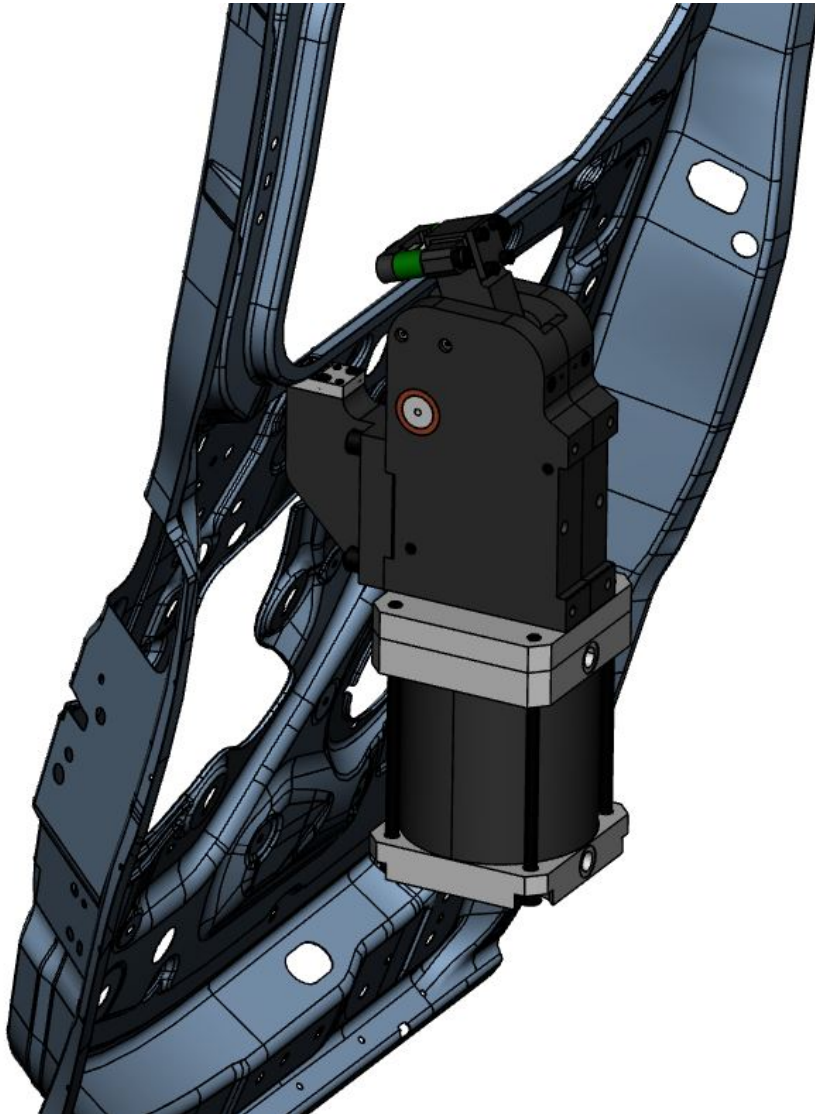
- PFS 400-90 S T12/2 60° para agujeros Ø7mm
- Alcance 90mm, Angulo de apertura 60°
- Eliminación de restos por succión de vacío
- Espesor chapa de acero 0,65mm

- *PFS 400-90 S T12/2 60° for Ø7mm holes*
- *Reach 90mm, Opening angle 60°*
- *Slug disposal through side of the jaw via vacuum unit*
- *Steel sheet 0,65mm thick*



Punzonado con PFS – Marco de puerta

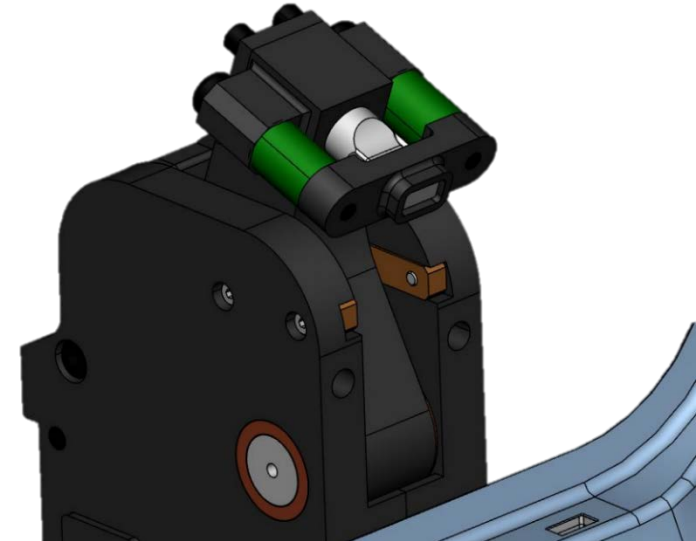
Piercing with PFS – Door frame



Cliente / *Customer: PSA*

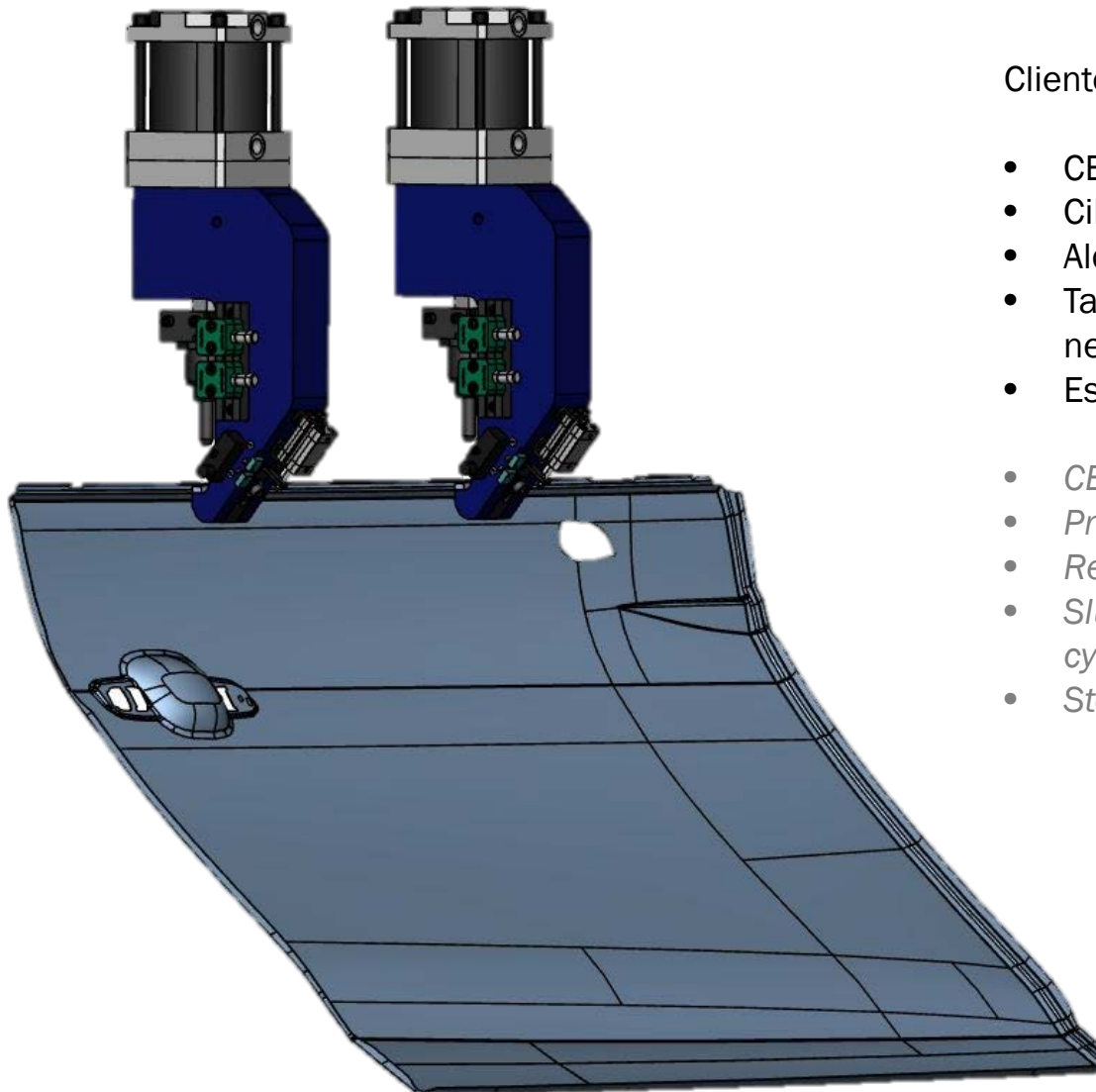
- PFS 200-80 S T12/2 70° para agujero 16,6 x 8,2mm
- Alcance 80mm, Angulo de apertura 70°
- Son necesarios separadores de acero debido a la falta de espacio
- Espesor chapa de acero 0,65mm

- *PFS 200-80 S T12/2 70° for 16,6 x 8,2mm hole*
- *Reach 80mm, Opening angle 70°*
- *Steel retainer used because of confined space*
- *Steel sheet 0,65mm thick*



Punzonado con CBPZ – Marco de puerta

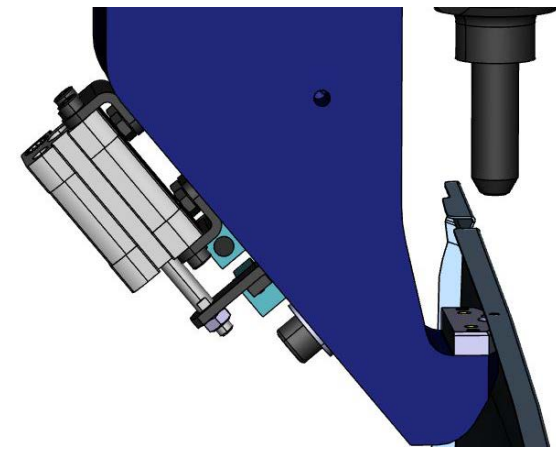
Piercing with CBPZ – Door frame



Cliente / *Customer*: AUDI

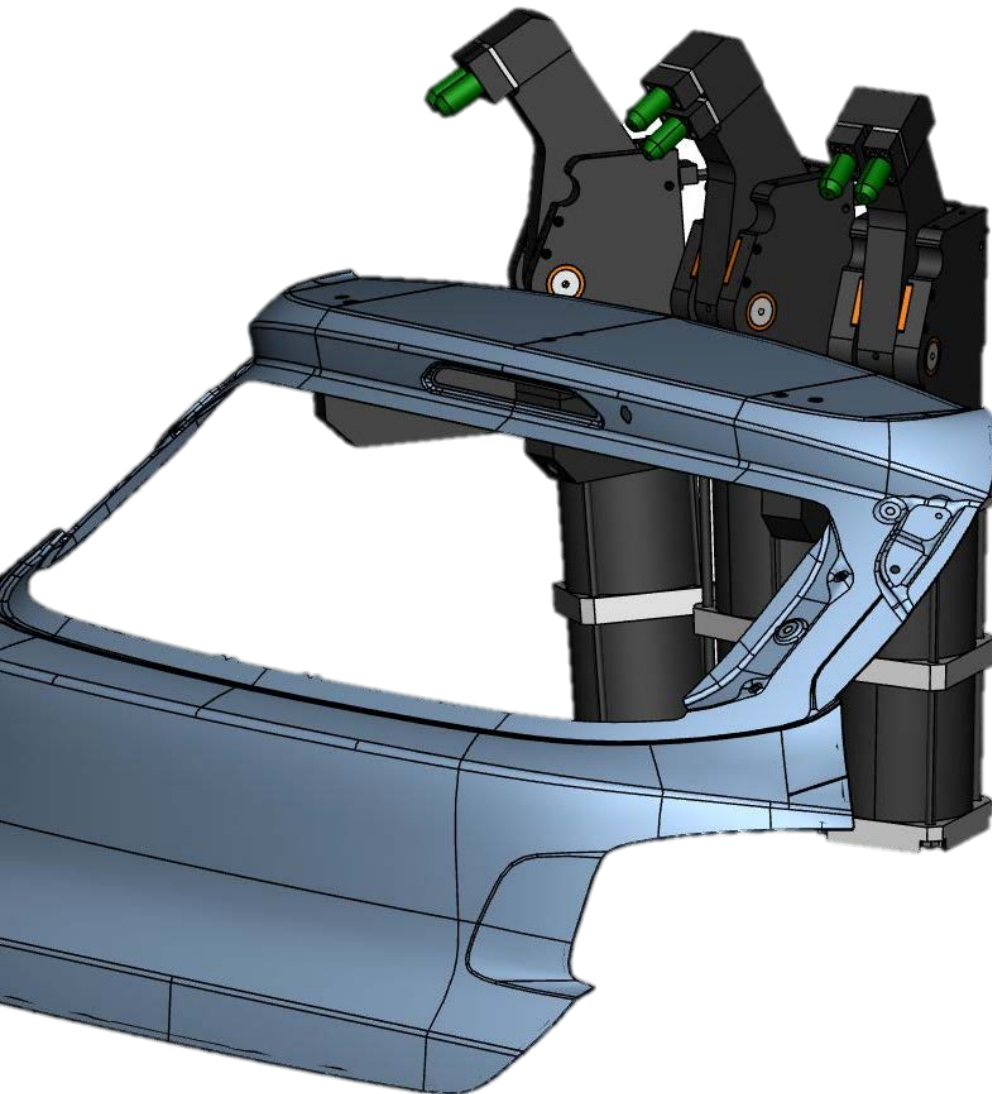
- CBPZ 4-30 40 S para agujeros \varnothing 3mm
- Cilindro neumático con carrera 40mm
- Alcance 30mm
- Tapa de deposito controlada por cilindro neumático
- Espesor chapa de acero 0,65mm

- *CBPZ 4-30 40 S for \varnothing 3mm holes*
- *Pneumatic cylinder with 40mm stroke*
- *Reach 30mm*
- *Slug disposal flap operated by pneumatic cylinder*
- *Steel sheet 0,65mm thick*



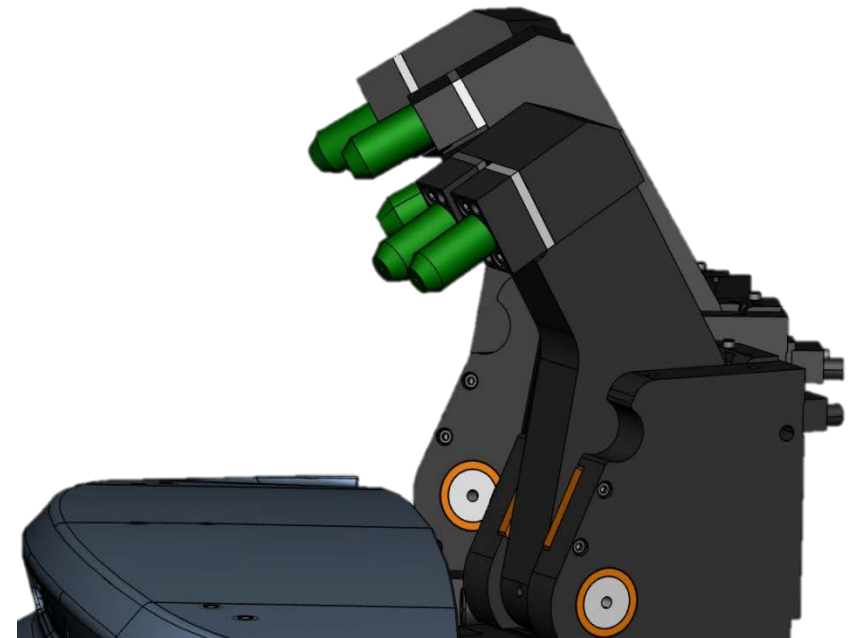
Punzonado con PFS – Marco de puerta trasera

Piercing with PFS – Door frame rear door



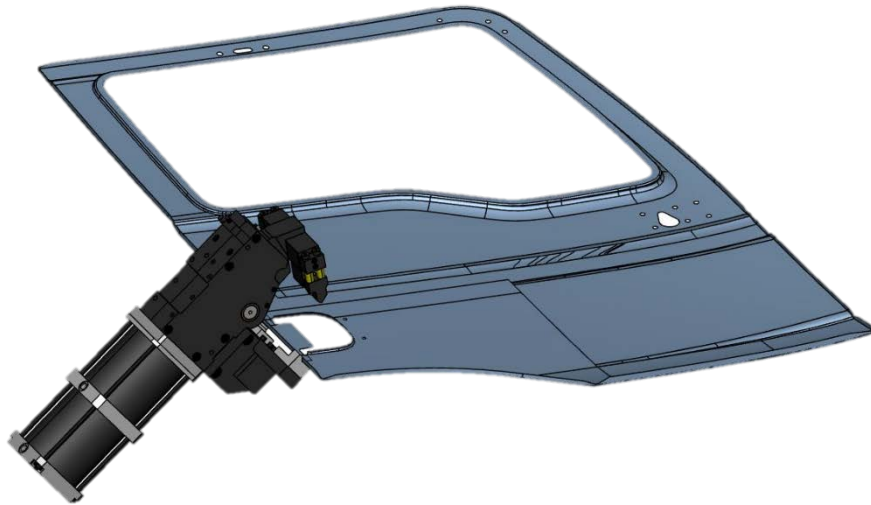
Cliente/ *Customer*: GM

- PFS 900-180 S T12/3 60° para 2 agujeros
- Alcance 180mm, Angulo de apertura 60°
- Espesor chapa de acero 0,6mm
- *PFS 900-180 S T12/3 60° for 2 holes*
- *Reach 180mm, Opening angle 60°*
- *Steel sheet 0,6mm thick*



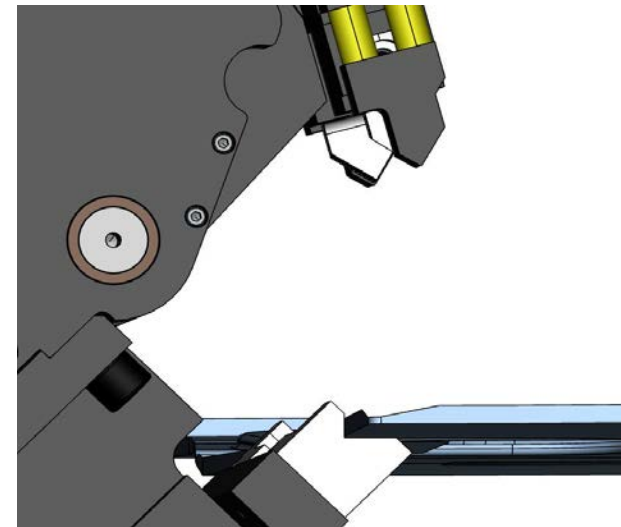
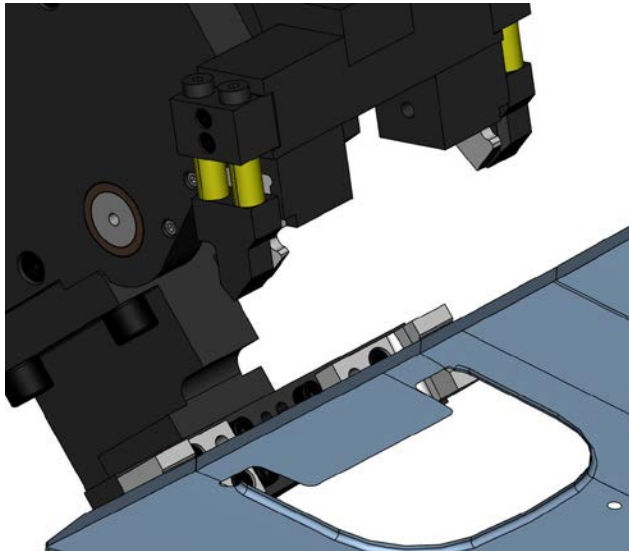
Corte con PFS – Marco de puerta

Cutting with PFS – Door frame



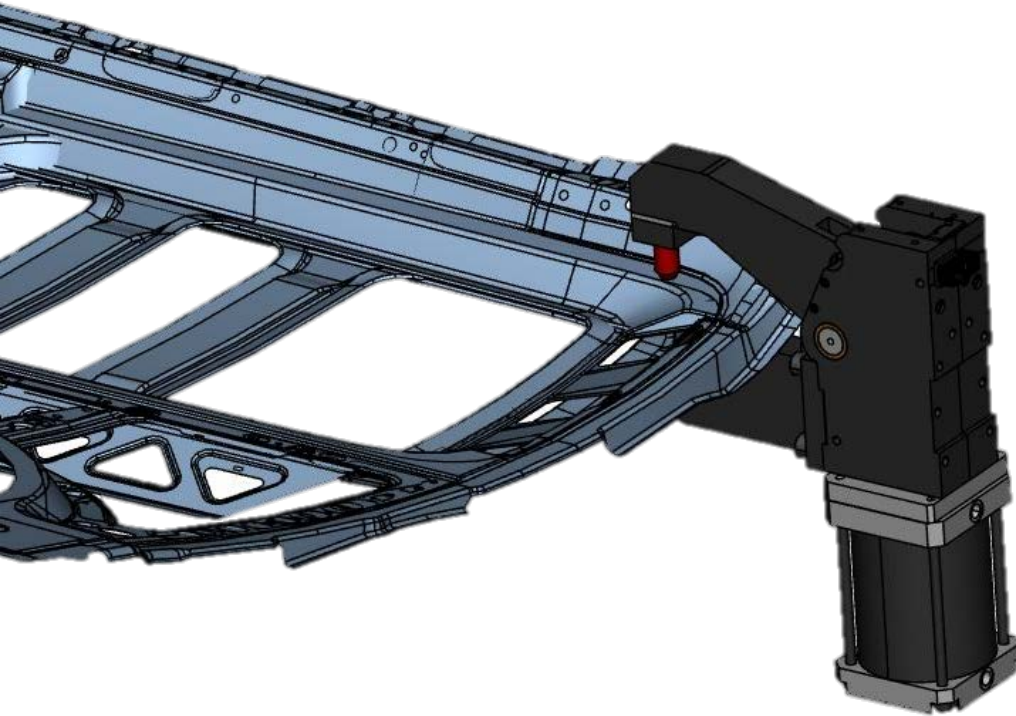
Cliente / Customer: MAN

- PFS 900-90 S T12/3 60° para 2 cortes
- Alcance 90mm, Angulo de apertura 60°
- Largo de corte 2x aprox. 26mm
- Espesor chapa de acero 1,0mm dick
- *PFS 900-90 S T12/3 60° for 2 cuts*
- *Reach 90mm, opening angle 60°*
- *Cutting length 2x approx. 26mm*
- *Steel sheet 1,0mm thick*



Punzonado con PFS – Lateral

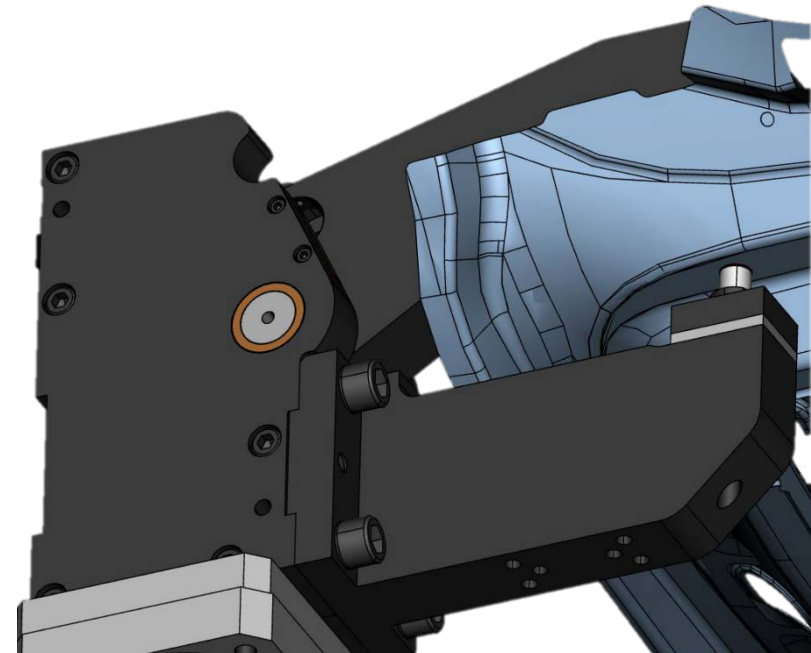
Piercing with PFS – Side panel

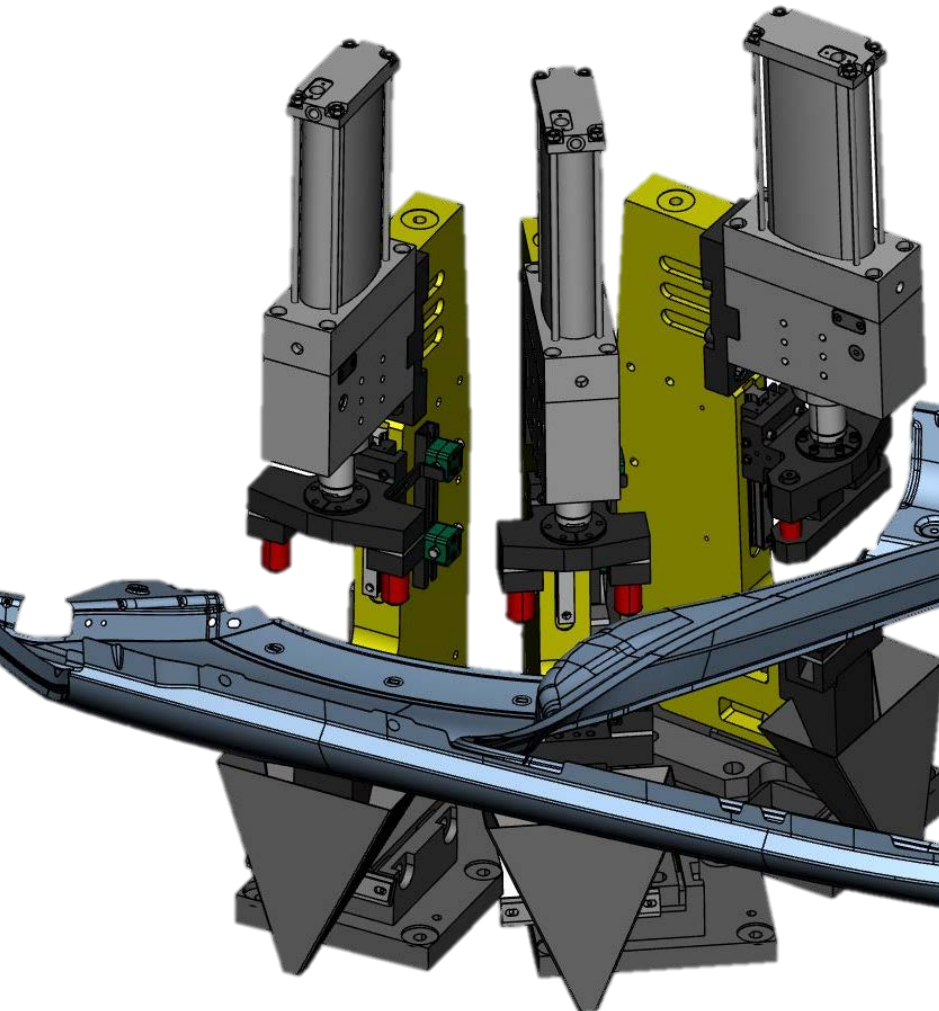


Cliente / Customer: VW

- PFS 400-190 S T12/3 75° agujero Ø 6,5mm
- Alcance 190mm, Angulo de apertura 75°
- Espesor chapa de acero 1,0mm

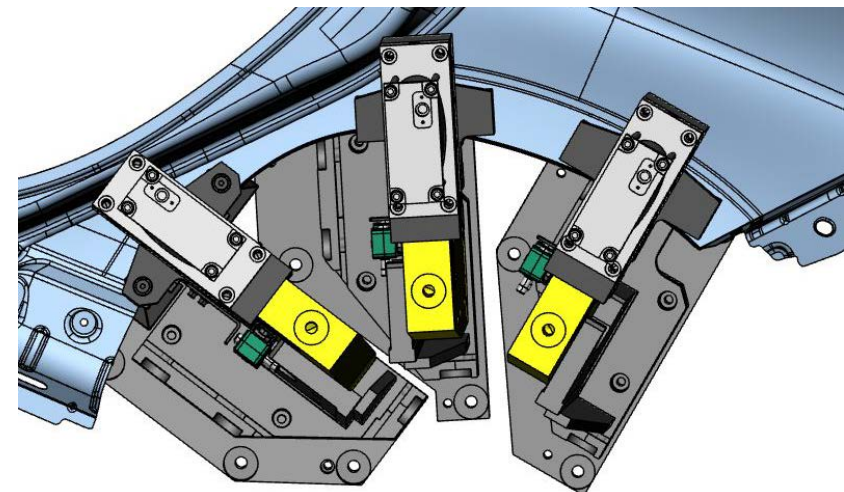
- *PFS 400-190 S T12/3 75° for Ø 6,5mm hole*
- *Reach 190mm, opening angle 75°*
- *Steel sheet 1,0mm thick*





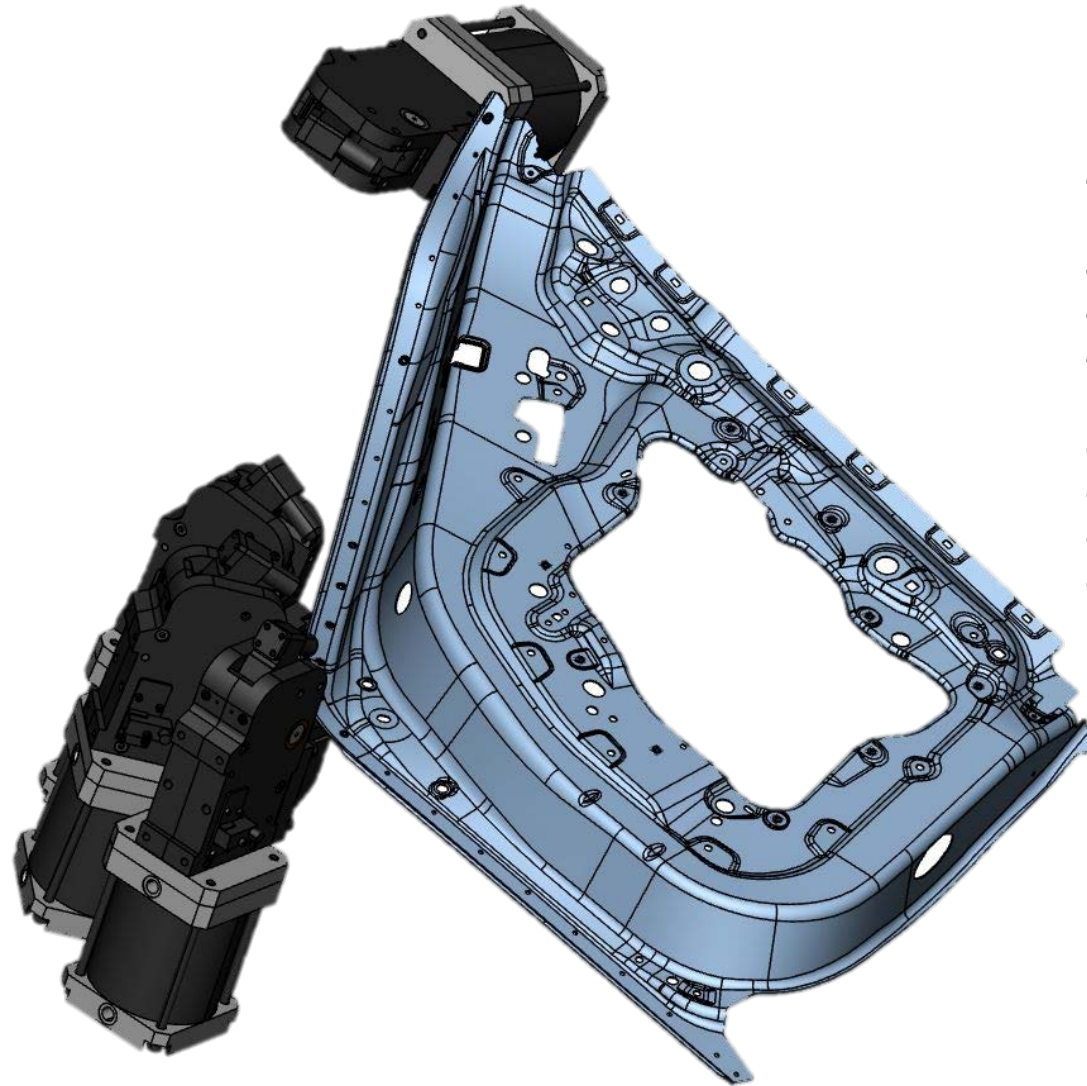
Cliente / *Customer*: TAM

- CBMZ 25-100 100 S para 2 agujeros
- MZ 80 (25kN) con carrera 100mm
- Cuerpo en C con alcance 100mm
- Espesor chapa de acero 0,6mm
- *CBMZ 25-100 100 S for 2 holes*
- *MZ 80 (25kN) with 100mm stroke*
- *C-Frame with 100mm reach*
- *Steel sheet 0,6mm thick*



Punzonado con PFS – Marco de puerta

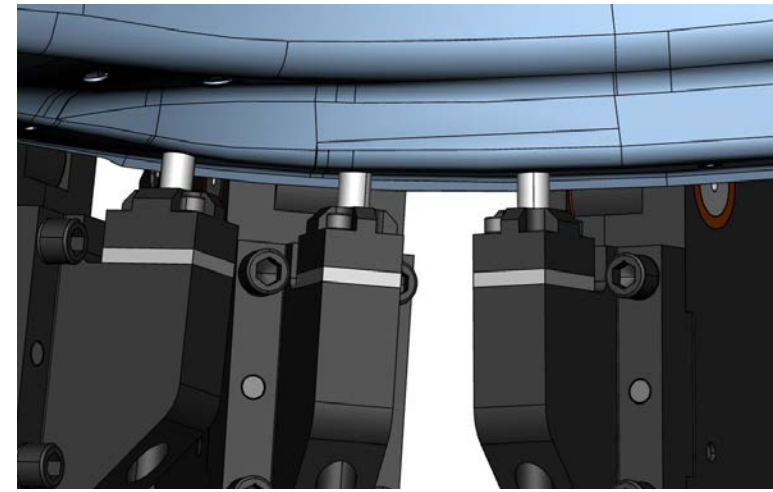
Piercing with PFS – Door frame



Cliente / *Customer*: BMW

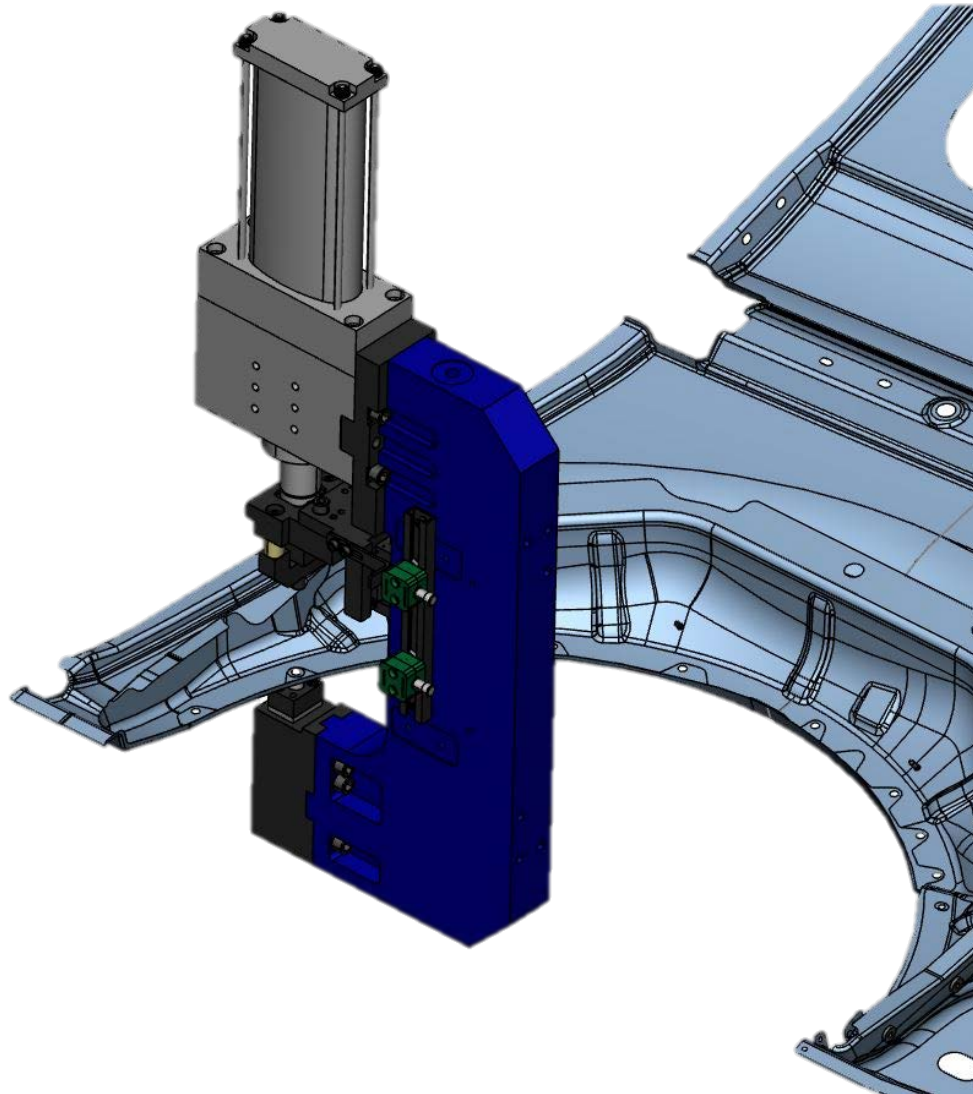
- PFS 200-60 S T12/3 70° para agujero Ø 5,1mm
- Alcance 60mm, Angulo de apertura 70°
- Matriz adaptada al contorno de la pieza
- Espesor chapa de aluminio 1,2mm

- *PFS 200-60 S T12/3 70° Ø 5,1mm hole*
- *Reach 60mm, opening angle 70°*
- *Die with 3D surface according to part contour*
- *Aluminium sheet 1,2mm thick*



Punzonado con CBMZ – Alojamiento rueda

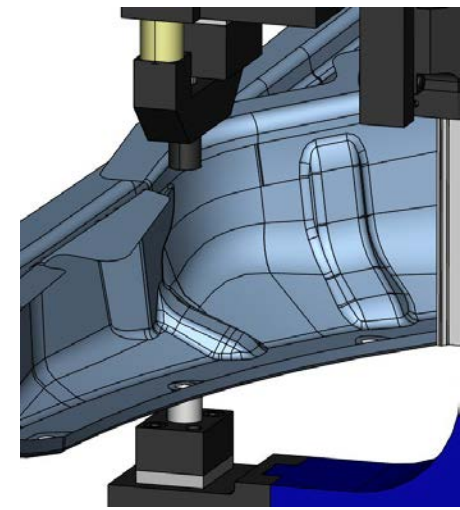
Piercing with CBMZ – Wheel house



Cliente / *Customer*: Ford

- CBMZ 25-140 150 S para agujeros Ø8,7mm
- MZ 80 (25kN) con carrera 150mm
- Cuerpo en C con alcance 140mm
- Espesor chapa de acero 0,8mm

- *CBMZ 25-140 150 S for Ø8,7mm holes*
- *MZ 80 (25kN) with 150mm stroke*
- *C-Frame with 140mm reach*
- *Steel sheet 0,8mm thick*



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