

## 軟爪的製造成型

- 調整軟爪位置可將固定主爪之六角孔圓頭螺絲鬆開使與主爪分離。
- 依據工件大小、尺寸、質料、表面精度及切削條件來選擇合適之軟爪。
- 軟爪製程中油壓壓力必須與實際工作時相同或較低。

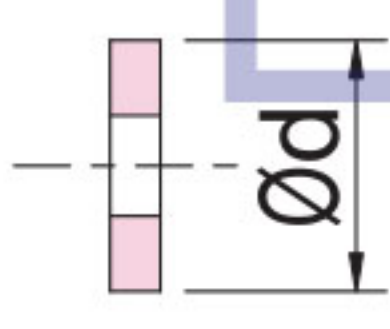
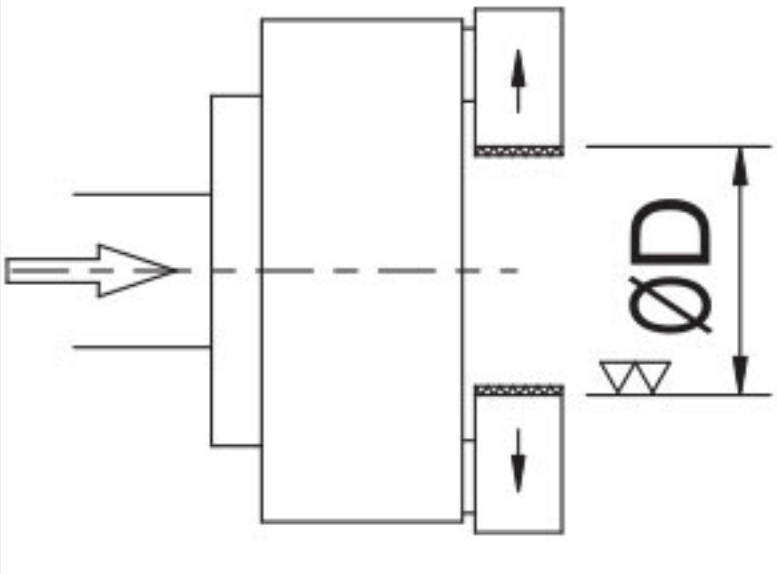
### IMPORTANT 留意事項

- 盡可能將工件夾持在行程中點。

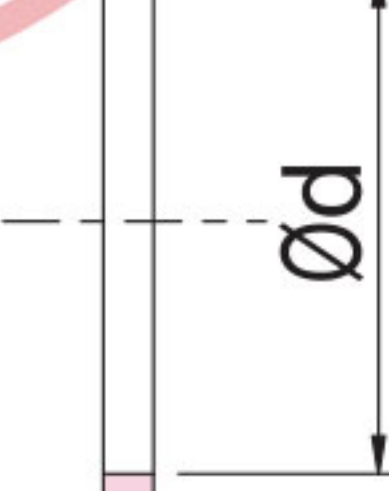
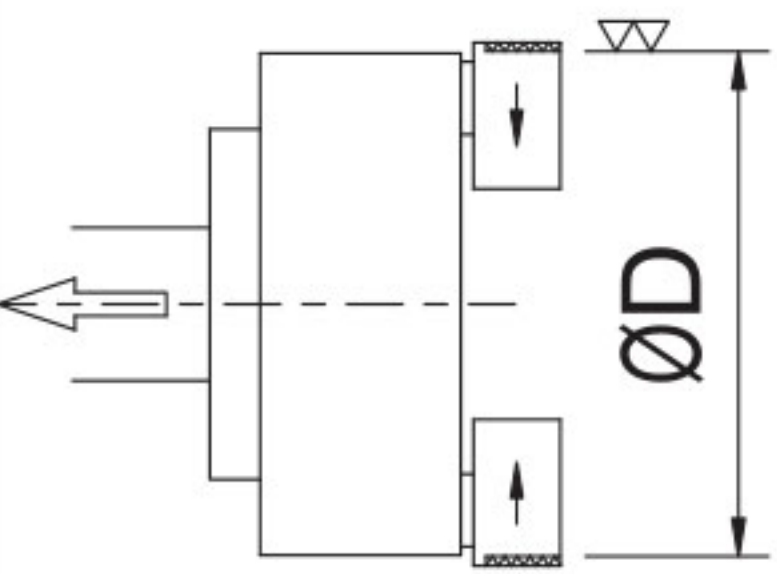
## Forming of soft jaws

- Since the soft jaw can be easily separated from the master jaw by loosening hexagon socket head screws, it can be freely adjusted by changing the engaged position on the serration.
- Fit a suitable soft jaw according to the shape, size, material, surface roughness and cutting conditions of the workpiece.
- Adjust the cylinder pressure in forming the soft jaw to the same or less as cutting a workpiece.
- It is desirable to chuck the workpiece in the central part of the stroke.

### 外徑夾持 External gripping

<p>①</p> 	<ul style="list-style-type: none"> <li>• 準備一個表面粗度 <math>\nabla\nabla</math> 內且無變形內壁厚度適當圓盤。 注意) 先備妥不同尺寸之圓盤。</li> <li>• Prepare the plug for forming. Forming outer dia. Of plug is limited to <math>\nabla\nabla</math> finishing. Ensurs the plug is strong with a suitable wall thickness.</li> </ul> <p><b>Note)</b> It is necessary to prepare different size plugs in advance.</p>
<p>②</p> 	<ul style="list-style-type: none"> <li>• 以切換閥將主爪完全打開。</li> <li>• 而後計算直徑D使夾持d時主爪位於行程中點處。</li> </ul> <ul style="list-style-type: none"> <li>• Open the master jaw fully by operating the valve.</li> <li>• Next, set <math>\text{ØD}</math> dimension to grip around the middle of the maximum jaw stroke. <math>\text{ØD} \doteq \text{Ød} + \text{Max Stroke of jaw} / 2</math></li> </ul>

### 內徑夾持 Internal gripping

<p>①</p> 	<ul style="list-style-type: none"> <li>• 準備一個內徑表面粗度在 <math>\nabla\nabla</math> 內且不變形具有適當厚度之圓環。</li> <li>• Prepare a ring with outer diameter is limited to <math>\nabla\nabla</math> finishing and with a suitable wall thickness.</li> </ul>
<p>②</p> 	<ul style="list-style-type: none"> <li>• 以切換閥將主爪關至最小。</li> <li>• 而後計算直徑D使夾持d時主爪位於行程中點處。</li> </ul> <ul style="list-style-type: none"> <li>• Close the master jaw as far as it will go by operating the valve.</li> <li>• Next, set <math>\text{ØD}</math> dimension to grip around the middle of the maximum jaw stroke. <math>\text{ØD} \doteq \text{Ød} - \text{Max Stroke} / 2</math></li> </ul>

<p>③</p>	<ul style="list-style-type: none"> <li>以切換閥使ØD之成型部分夾持圓盤。必須以夾頭端面支撐以防止傾斜。</li> <li>注意) 開合夾頭數次，以確定圓盤夾持正確。</li> <li>Grip the plug in ØD by operating the valve.</li> <li><b>Note)</b> Be sure the plug is correct so that repeat chucking several times.</li> </ul>
<p>④</p>	<ul style="list-style-type: none"> <li>成型一個工件夾持部份Ød時，需持續夾持圓盤，其尺寸必須相同(H7)於工件之夾持直徑，且表面粗度小於6s。</li> <li>製程中其壓力必須與實際夾持工件時相同。</li> <li>注意) 如圓盤產生變形時，須降低壓力或以較厚之圓盤。</li> <li>Form the part Ød' for gripping the workpiece with the plug still gripped. Machine the part Ød' to the same diameter(H7)as the workpiece and surface roughness less than 6s.</li> <li>Set the gripping pressure for the jaws to be approximately the same as when the workpiece is gripped.</li> <li><b>Note)</b> If the plug is distorted, reduce the pressure or alternatively use a stronger plug with additional wall thickness.</li> </ul>
<p>⑤</p>	<ul style="list-style-type: none"> <li>成型後，夾持工件以檢查夾頭行程。</li> <li>試切工件而後檢視其加工精度…等。</li> <li>使用內徑(A)及端面(B)來夾持。</li> <li>After forming jaws, grip the workpiece to check the jaw stroke.</li> <li>Perform trial cutting to inspect machining accuracy, etc.</li> <li>Grip the workpiece 2-face fitting of face A and face B. check end face(B).</li> </ul>
<p>③</p>	<ul style="list-style-type: none"> <li>以切換閥使ØD之成型部份夾持圓環，且必須防止圓環傾斜。</li> <li>注意) 開合夾頭數次，以確定夾持正確。</li> <li>Grip the ring in ØD part by operating the valve.</li> <li>Never incline the ring.</li> <li><b>Note)</b> Be sure the ring is correct so that repeat chucking several times.</li> </ul>
<p>④</p>	<ul style="list-style-type: none"> <li>成型一個工件夾持部份Ød時，需持續夾持圓環，其尺寸必須相同(h7)於工件之夾持直徑，且表面粗度小於6s。</li> <li>製程中其壓力必須與實際夾持工件時相同。</li> <li>注意) 如圓環產生變形時，須降低壓力或以較厚之圓環。</li> <li>Form the part Ød' for gripping the workpiece with the ring still gripped. Machine the part Ød' to the same diameter(h7)as the workpiece and surface roughness less than 6s.</li> <li>Set the gripping pressure for the jaws to be approximately the same as when the workpiece is gripped.</li> <li><b>Note)</b> If the ring is distorted, reduce the pressure or alternatively use a stronger ring with additional wall thickness.</li> </ul>
<p>⑤</p>	<ul style="list-style-type: none"> <li>成型後，夾持工件以檢查夾頭行程。</li> <li>試切工件而後檢視其加工精度…等。</li> <li>使用外徑(A)及端面(B)來夾持。</li> <li>After forming jaws, grip the workpiece to check the jaw stroke.</li> <li>Perform trial cutting to inspect machining accuracy, etc.</li> <li>Grip the workpiece 2-face fitting of face A and face B. check end face(B).</li> </ul>

**IMPORTANT  
留意事項**

**高夾持精度時的成型方法**

(例：外徑夾持情況)

欲達成高夾持精度時，可如圖1來成型夾具，軟爪成型必須與實際加工情況相同。

**Method for forming soft jaws when higher accuracy is required (e. g. External gripping)**

(1) with jigs used as shown in the following figure, soft jaws can be formed under the same conditions as the machining of the workpiece. jaws will enable higher accuracy to be achieved.

<p>1</p>	<ul style="list-style-type: none"> <li>準備好成型的夾具(市售亦可)安裝銷(例1)或螺絲及螺帽(例2)於一個圓環狀三等分的金屬板上。使用一個沒有變形及內壁有一定厚度的圓環。</li> </ul>	<ul style="list-style-type: none"> <li>Prepare jigs for forming.(Available also from market) Fit pins (EX.1)or nuts and bolts (EX.2)to the ring shaped plate divided equally into three. Use a strong ring with a suitable wall thickness.</li> </ul>
<p>2</p>	<ul style="list-style-type: none"> <li>以切換閥將主爪開至最大。</li> </ul>	<ul style="list-style-type: none"> <li>Fully open master jaws by operating the valve.</li> </ul>
<p>3</p>	<ul style="list-style-type: none"> <li>以切換閥把成型夾具的突出部分插入軟爪的螺絲孔內，而後將其夾持，此時將成型夾具的端面部分與軟爪的前端壓合，如此在夾持時方不致於震動。</li> <li>夾持時，檢查主爪是否位於行程中點附近。</li> <li>製程中油壓力必須與實際夾持工作物時相同或較小。</li> </ul>	<ul style="list-style-type: none"> <li>Operating the valve, insert projections of jig into the bolt holes of the soft jaw before gripping. At this time, enforce the jig to the jaw, ensuring closed fit.</li> <li>Check that the work is gripped nearby center of correct stroke.</li> <li>Set the hydraulic pressure to form jigs to the same or less pressure when the workpiece is machined.</li> </ul>
<p>4</p>	<ul style="list-style-type: none"> <li>保持成型夾具被夾持的情況，成型工作物的夾具部分<math>\text{Ød}'</math>，加工<math>\text{Ød}'</math>時尺寸必須與工件夾持部分的直徑相同(H7)，而表面精度比6S還小。</li> </ul>	<ul style="list-style-type: none"> <li>Form the part <math>\text{Ød}'</math> for gripping the workpiece with the plug still gripped. Machine the part <math>\text{Ød}'</math> to the same diameter (H7) as the workpiece and surface roughness than 6s.</li> </ul>
<p>5</p>	<ul style="list-style-type: none"> <li>成型後夾持工件以檢視其行程</li> <li>試切後測試工件精度。</li> <li>使用內徑面(A)及端面(B)來夾持。</li> </ul>	<ul style="list-style-type: none"> <li>After forming jaws, grip the workpiece to check the jaw stroke.</li> <li>Perform trial cutting to inspect machining accuracy, etc.</li> <li>Grip the workpiece 2-face fitting of face A and face B.</li> </ul>