

TOOL INFORMATION NO.4



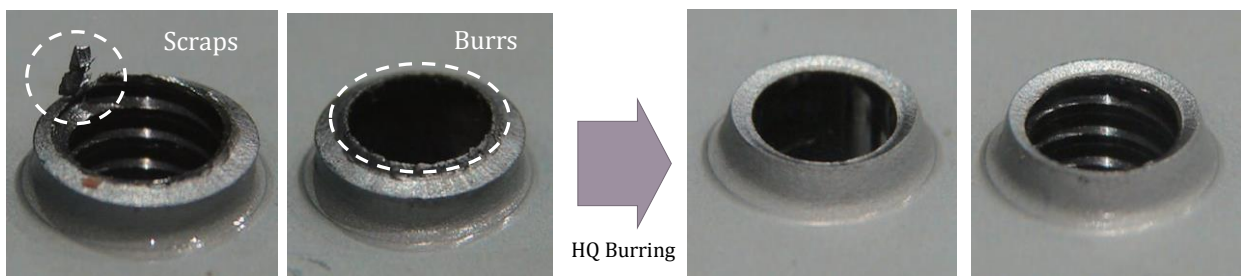
MURATA TOOL, LTD.

OCTOBER 2017

MTL Recommendable

HQ BURRING (Extrusive hole)

Have you faced any tapping troubles? – MURATA’s HQ BURRING will be a solution.



Selection

MTL has a wide selection of HQ BURRING. Just choose what you prefer and pick up the best model.

SCREW	SHEET 1	SHEET 2	DIRECTION & STN	TAP
<ul style="list-style-type: none"> • M3 • M4 • M5 • M6 	<ul style="list-style-type: none"> • Mild steel • AL • Stainless steel 	<ul style="list-style-type: none"> • 0.8-1.0 • 1.2-1.6 • 2.0-2.3 	<ul style="list-style-type: none"> • UPWARD • 114C • 114D • DOWNWARD • 114A • VULCAN AB 	<ul style="list-style-type: none"> • CUT • FORM (Mild steel, AL only)

Pilot hole

		M3 CUT	M4 CUT	M5 CUT	M6 CUT	M3 FORM	M4 FORM	M5 FORM	M6 FORM
Mild steel & AL	0.8-1.0	1.6	1.9	2.2	2.4	1.9	2.4	2.8	3
	1.2	1.9	2.4	2.7	2.7	2.2	2.8	2.9	3.6
	1.6	-	2.4	2.7	3.2	2.2	2.8	2.9	3.6
	2.0	-	2.7	3.2	3.4	-	2.8	3.3	4.0
	2.3	-	-	3.2	3.6	-	2.8	3.3	4.0
Stainless steel	0.8	1.7	1.9	2.3	2.7	-	-	-	-
	1.0	1.7	1.9	2.5	3.0	-	-	-	-
	1.2	2.0	2.5	2.8	3.2	-	-	-	-
	1.5	-	2.5	3.0	3.7	-	-	-	-

Note

- Pilot hole shall be exactly in the size as required (see above).
- The extrusion is lower than the one created by non-HQ tool.
- The tool’s service life is about 30,000 to 50,000 hits (may vary among users).
- The HQ tool requires a regular cleaning.

Mixed formation

Pierce and form in two step

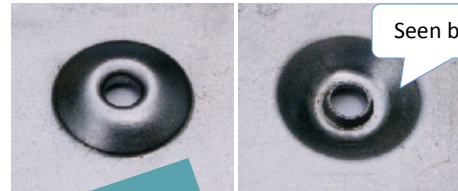
Posibility enlarges if a multiple forming tool is applied. Example 1 & 2 are created in two simple steps: pierce first and then emboss/bridge. Example 3 to 7 uses our mixed forming tool in the second step, which embosses up and creates an extrusion simultenuously. Example 8 applies a more complicated tool. The specially designed tool creates a upward square emboss and a downward countersunk at the same time. In any of the processes, the hole must be smaller than expected because it is enlarged by the following step of forming.



[EX.1] $\phi 27$ h6.0
(1) Pierce → (2) Emboss



[EX.2] 9x25 h3.5
(1) Pierce → (2) Bridge



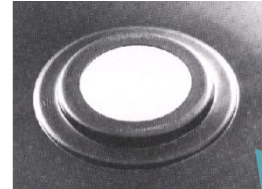
[EX.3] $\phi 14$ h2.0
(1) Pierce → (2) Burring & Emboss



[EX.4] 6x17 h3.0
(1) Pierce → (2) Burring & Bridge



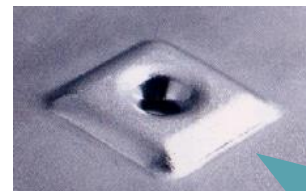
[EX.5] $\Phi 19.5$ & $\Phi 36$ h3.0
(1) Pierce → (2) Burring & Emboss



[EX.6] $\Phi 75$ & $\Phi 54$ h6.0
(1) Pierce → (2) Emboss & Emboss



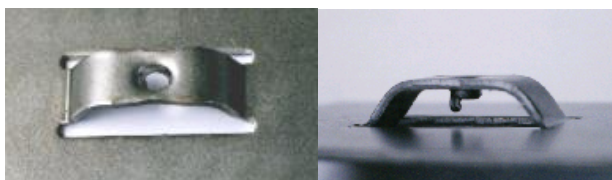
[EX.7] 19x48 h3.0 (1) Pierce → (2) Burring & Emboss



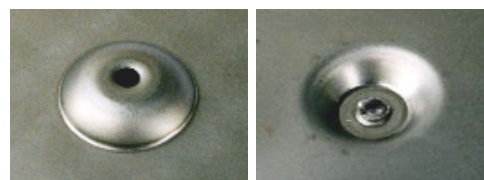
[EX.8] 14x14 h1.5 (1) Pierce → (2) Emboss & Countersink

Pierce and form in one step

If a deep formation is required, there may be a case that the separate process is not suitable. The deeper a shape is, the smaller the hole to punch shall be. For the case the hole is too small to punch, piercing shall be executed while formation is ongoing. MTL could make such a sensitive operation possible. The below are example shapes created by our *pierce-and-form-simultaneously* tool. The slug on the extrusive hole is deliberately created to prevent slug troubles.



[EX.9] Pierce & Burring & Bridge 10x28 h7.5



[EX.10] Pierce & Burring & Emboss 10x28 h7.5