

**SAMPLE PART**

# END OF ARM TOOLING: END EFFECTORS

End effectors are custom-designed components used for part-transfers on typical robotic production lines. The high cost and long lead times associated with outsourcing the fabrication of new or replacement effectors is a constant challenge for many companies. Until now, 3D printing was never considered a viable option for these parts due to the fragile nature of traditional 3D printing thermoplastics like ABS and PLA. The Markforged 3D printer lineup has changed all of that.

At Dixon Valve, robotic arms are commonplace in production line cells. Before 3D printing, producing these grippers would take a large amount of time. After implementing carbon fiber 3D printing from Markforged, they can now re-tool their robotic arms in under 24 hours. These robotic arm grippers are printed in Onyx, a beautiful black filament made from combining tough nylon with micro-carbon reinforcement. Onyx gives you stiff and dimensionally stable engineering grade parts, with twice the strength of other 3D printed plastics. Additionally, Onyx parts have a high quality surface finish and high heat tolerance of up to 150C.



Producing precise parts with the strength of metal at a low cost helped Dixon Valve eliminate weeks of manufacturing lead time and enabled them to expand their product offerings. Adding on-site, same-day tooling capabilities will allow you to achieve these same game-changing results within your organization. More is ALWAYS Possible with these revolutionarily affordable Markforged 3D printers offered by DesignPoint.

**PART COMPARISON**

	Markforged	Standard Process
Material	Onyx	Steel
Cost	\$9.06	\$290.25
Time	9 hours, 20 minutes	72 hours + shipping time