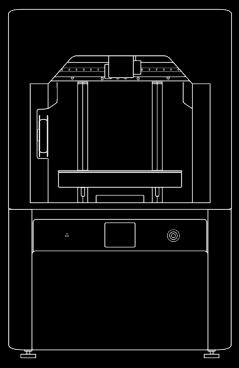
# HydraTune



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|---|---|
| Industry | Engineering / Mining |
| Application | Actuator Spline |
| Technology | FX10 Metal |
| Materials | 17-4v2 Stainless Steel |

Markforged

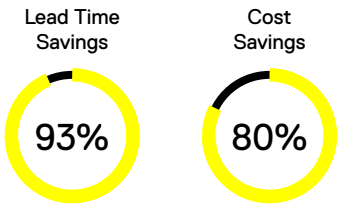
# Actuator Spline

Western Australian company, HydraTune, has developed a digital platform for the safe and accurate maintenance of hydraulic equipment that has the potential to substantially reduce losses caused by hydraulic inefficiency on mine sites worldwide.

Managing director, Shane Lewis, originally believed units would need to be made on a one-off basis to suit the specific needs of each user, and saw a key role for 3D printing in his manufacturing process. He invested in two Markforged FX10 printers and a metal upgrade kit.

This investment is already paying handsome dividends in cutting costs and lead times compared to outsourcing to conventional manufacturers, and also in increased strength and lighter weight of components.

> "We can print the spline for a fraction of the price – $90 compared to $495 for the outsourced item – and the end product is a superior item."
>
> — Shane Lewis
> Managing Director, HydraTune




# Actuator Spline

Shane cites, as a graphic example of the benefits of additive manufacturing, the production of the actuator spline that transfers rotational energy from a drive motor to a rotational shaft in the HydraTune Safe Adjust system.

> “Compared to the aluminium version, we’re getting higher wear resistance at lower cost.”

— Shane Lewis
Managing Director, HydraTune

Manufacture of the spline was originally outsourced. It was made from aluminium using a combination of EDM wire cutting and machining, a lengthy and expensive process. HydraTune can now achieve the required tolerances and strength printing the part in 17-4v2 on an FX10.

“Compared to the aluminium version, we’re getting higher wear resistance at lower cost and with much faster lead times.

“We can print the spline for a fraction of the price - $90 compared to $495 for the outsourced item – and the end product is a superior item. And even allowing for post-processing we can produce a spline in 3-4 days instead of waiting eight weeks for the outsourced version,” Shane said.