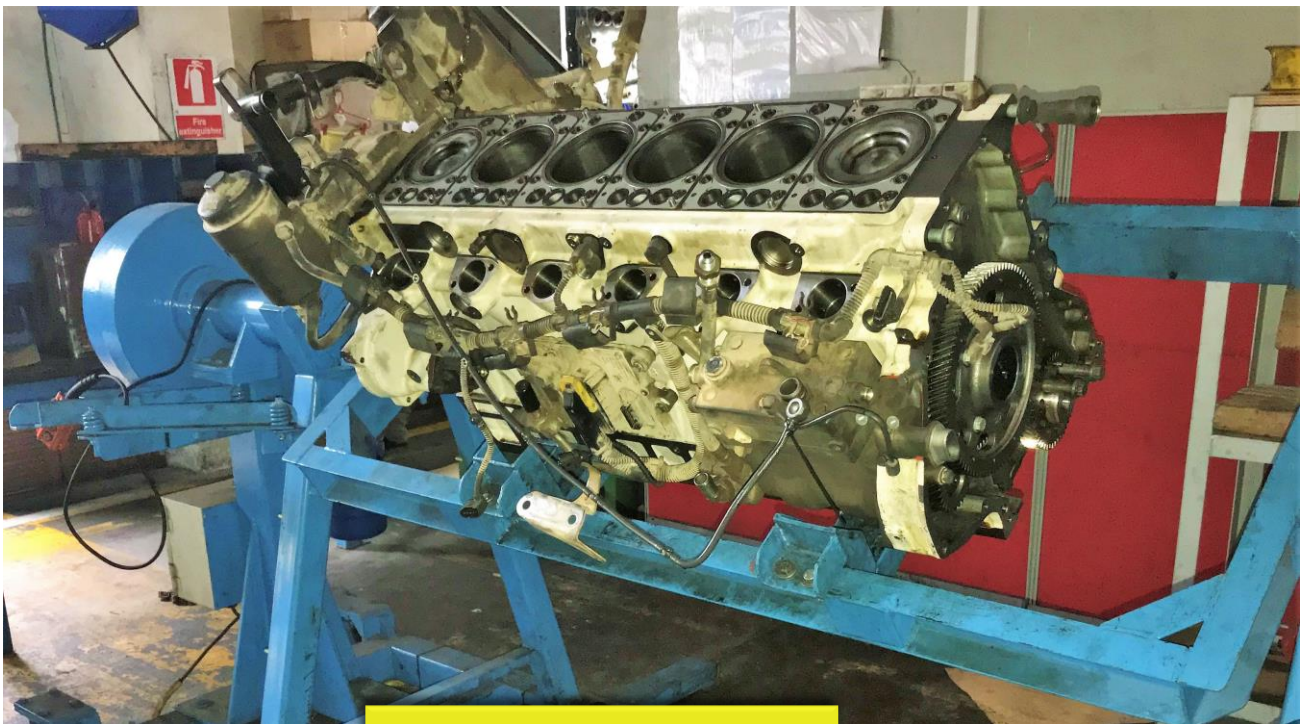


## TURNKEY PROJECT – ENGINE HOLDING JIG

### Customer's Challenge

A client in the automotive industry has an existing engine holding jig and its key function is to rotate the engine for easier access of parts removal. The limitation is that the holding frame is at a fixed elevation and unable to perform a 180° rotation due to the engine overall height; the repair personnel requires to be in odd positions in order to reach and remove some parts of the engine.

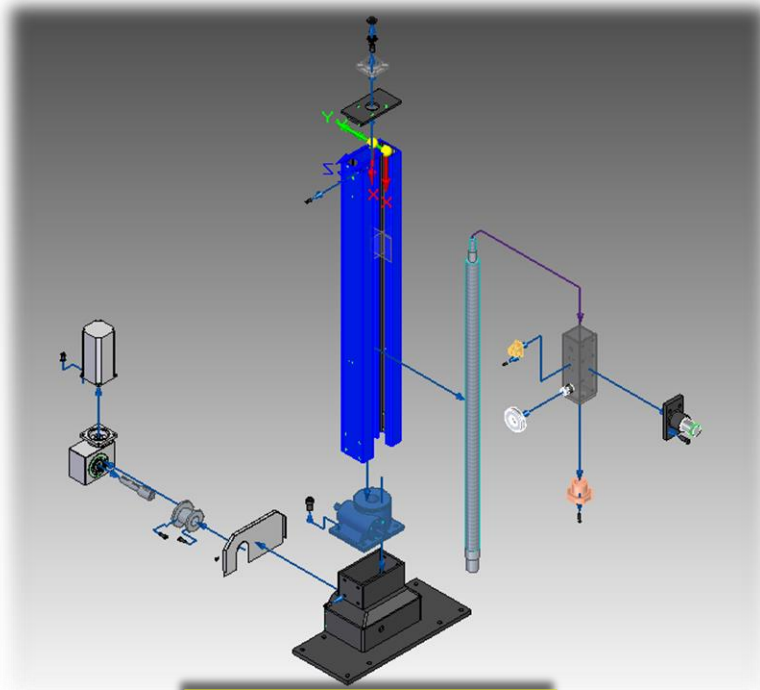
The client wants to fabricate 7 new sets of engine holding jig with functionality improvements in which the repair personnel can single-handedly overhaul the engine in a safer and ergonomics way.



Client's Engine Holding Jig

## TURNKEY PROJECT – ENGINE HOLDING JIG

### Solution



Sub-Assembly Drawing

Metal Machines started the engagement with the client by deploying the R&D (Research and Development) Team to understand the expectations on the jig's functionality and engine overhauling process.

The R&D team first worked on the jig design, engineering drawings and simulation using the Solid Edge software.

Upon client's acceptance on the engine holding jig design, the whole fabrication including welding,

machining, NDT (non-destructive test) and painting was carried out in-house by the Metal Machine's Team. The fabrication and the assembly of the 1<sup>st</sup> jig took around 2 weeks and client was invited to witness the functional test before continue with the fabrication of the remaining 6 jigs. The whole turnkey project took almost half a year to complete from initial discussion to the delivery of the jigs.



Trial Assembly of the Engine Holding

## TURNKEY PROJECT – ENGINE HOLDING JIG

### Benefits



According to a collaboration study conducted by the client and Metal Machines R&D team, the customised engine holding jig is able to reduce time taken to overhaul the engine by 20% - 25%. Most importantly, it has provided a safer working condition for the personnel doing the engine overhauling.

Metal Machines has a R&D team that is able to take up small scale turnkey project and always looking forward in providing customised engineering solutions to the clients.

Shared by: Yap Beng Chin (Assistant Engineer)

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