# ON-SITE BORING OF STINGER HINGES ON NEWBUILD CABLE-LAYING VESSEL

## GOLTENS USES NEWLY DESIGNED BORING EQUIPMENT TO REDUCE MACHINING TIME

Goltens recently carried out an In-Situ machining operation on a pair of Stinger Hinges on a newbuild cable-laying vessel being built in a shipyard in Singapore. The job involved the removal of a substantial amount of material from the two hinges' rough-cut bores as well as from the faces of the hinges. Additionally, the spec called for the drilling and tapping 96 holes into the faces of the hinges once the faces were machined.

Goltens mobilized it laser alignment, boring, flange facing and drilling machinery along with in-situ specialists to the yard to undertake the work scope. Multiple flange facing machines were deployed to allow for machining of multiple surfaces in parallel (up to 20mm needed to be removed from each face).

Given the hinge pin bore diameter of 1350mm x 600mm long, and the substantial amount of material to be removed (around 30mm) the team used its large diameter (160mm dia. Bar) heavy cut boring equipment. The new machinery, designed by Goltens' Global Line Boring team, has a rigid design capable of carrying out heavy cuts, shortening machining time for larger jobs.

### REPAIRS CONSISTED OF:

- Site inspection of hinge pins
- Laser alignment of bores and rails
- Machining of the internal bore of the 2 hinges to finished diameter of 1350mm (with H7 tolerance)
- Machining of 4 end flanges on the hinges – removing up to 20mm of material from each face with a tolerance of +/- 1.5mm between the faces 8.0 meters apart
- Fabrication of tapping jig
- Drilling and tapping of a total of 96 M36 holes

### RESULTS:

The machining of the hinge pins was successfully carried out and inspected to the satisfaction of the yard and owner allowing the yard to continue to the next stage of the stinger installation.

| **PROJECT FACTS**: | Stinger Hinge Machining |
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| Internal diameter of bore: | 1350 mm |
| Distance between hinges: | 8 meter ± 1.5mm |
| Length of the bore: | 600 mm |
| Number of hinges machined: | 2 |
| Tolerance of the internal diameter: | H7 |