

HepcoMotion's flagship GV3 is used in industry-first pipe measurement product for the oil and gas industry

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INDUSTRY	PRODUCT	COUNTRY	PROCESS
	GV3 - V Linear Guide System		

Task

When Optical Metrology Services designed its latest weld inspection tool, the Auga, they turned to HepcoMotion to supply the linear motion system required for this ground-breaking new internal weld inspection tool.

Providing precision inspection and measurement services for clients across the globe, Optical Metrology Services (OMS) leads the way in engineering excellence for industries including aerospace, civil engineering, and oil and gas. In the high stake world of oil and gas pipelines where delays and failures can be both disastrous and costly, companies are increasingly striving to mitigate the risk and turning to companies like OMS for help and advice. OMS provides solutions that are designed to maximise performance, minimise risk and deliver projects on time – ultimately providing cost savings for the client.

OMS's latest tool, the OMS Auga, is an internal weld inspection tool specifically designed to examine and measure the quality of internal girth welds in detail in the firing line. Auga can be attached directly to an internal line-up clamp (ILUC) and provides unrivalled dimensional accuracy. The Auga can be configured to measure and report on a range of different weld attributes in the firing line – such as concavity, cracking, undercut and incomplete fusion. Compared to more traditional weld inspection processes, which can take up to an hour to complete, Auga collects the data in less than two minutes, saving valuable time and allowing weld defects to be rapidly qualified.

Solution

A camera and laser is mounted inside the Auga which is used to complete a full 360 degree scan of the weld in under 20 seconds, recording a 3D topographic map to check the weld is within the product specification. The camera and laser require a slide and carriage to move them into the position required to check the weld; the GV3 provides this. As the camera and laser are moved backwards and forwards to inspect the pipe internally, it is critical to have a smooth movement. With its precision ground running surface, the GV3 provides a low friction and highly accurate system ideally suited to providing smooth indexing of the camera.

Auga utilises a GV3 spacer slide with rack, used with Hepco's dowel pins, which ensures simple and quick mounting inside the Auga unit. GV3 provides a low maintenance, fit and forget solution – factors of key importance considering that time saving is a key advantage of the Auga. Usually, linear guides need to be frequently re-lubricated, requiring the machine to be stopped and causing costly and inconvenient downtime. With cap seals fitted, a key advantage of the GV3 is that it does not need to be re-lubricated, so it provides a long trouble free life. Featuring Hepco's well-renowned V guide technology, the GV3 is the perfect choice in tough environments such as offshore engineering. The self-cleaning action eliminates contamination of the slideway – a key benefit for OMS working in the inevitably dirty welding environment.

Scope Of Supply

Jack Parlane, Senior Design Engineer at OMS comments; "We chose HepcoMotion as they were a tried and tested source for components. The GV3 provides a backbone to the Auga, giving it the strength and rigidity required for the purpose of weld inspection in a confined environment that would be impossible for humans access."

1 of NM60L2370P1R

2 of SJ25CDR

2 of SJ25EDR

4 of CS25

30 of SDP10

Result

The flexibility of the GV3 system is important for OMS – they are able to mix and match slides and bearings of different sizes to suit the application space and load requirements. GV3 offers a wide range of slide widths allowing the most rigid unit within the space available.