If high productivity and great path flexibility are what you need, this is the solution for you. This solution enables welding on the fly. It minimizes your cycle time and optimizes laser utilization.

By mounting a laser scan head on a robot you combine productivity and flexibility, creating a great partnership between the two.

**Configuration**
This configuration consists of:
- 1 laser source
- 1 fibre
- 1 robot
- 1 laser scanner head

**Best of both worlds**
This solution combines the great dynamic properties of the scanner mirror with the large working area of a robot. The robot and the scanner work simultaneously, thus enabling welding on the fly.
Welding on the fly

With welding on the fly the scan head is moved by the robot. At the same time the mirror in the scan head makes the weld. The robot has a large working area, but limited dynamic properties. However the mirror in the scan head is light and moves quickly. By using the movement of the robot to cross the whole working area and the precision and speed of the mirror you are able to minimize cycle time and maintain a high quality.

The challenge is the synchronization between the robot and the mirror. In order to have correct results both the robot and the mirror need to know exactly where they are. By using off-line programming it is possible to create a welding programme that makes welding on the fly possible.

The robot-mounted scanner head can process large working areas with a small spot. Compared to a fixed-position scanner head, this solution optimises the angle between the laser beam and the work piece.

This enables a higher welding speed as the position of the scan head can be changed. Furthermore it offers a good reach ability of the access areas as there is no obstruction of the line of sight.

With the remote scanner mounted on the robot you are able to weld really fast in a specific area (typical size of A4). Weld to weld time can be as low as 0.03 sec. Furthermore, the system can also be applied for marking the parts in the same process. Although this solution offers 3D reach ability, you do need to take into account the time the robot needs to reposition the scanner head, if changes in orientation are necessary.

Typical products

This solution is very interesting in the case of flat products with many welds close together. For example: rear seat backs, sill beams and doors.

As already stated, the system is fast and offers great path flexibility. It is even possible to create the most difficult patterns with the remote scanner.

In short, this solution offers great benefits for those who want a speedy process, the opportunity to weave and mark and still be able to have 3D reach ability.

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