

# Stone Application

## CNC machining centre

# Z-LASER

The laser projector is used in CNC machining for the alignment of the workpieces and positioning of the vacuum pods.



### Alignment of vacuum pods

The laser shows the contours of the vacuum pods, so that the operator can place the vacuum pod in the correct position. They are positioned so that the milling cutter does not damage the vacuum during the work process.

### Alignment of stone plates

The laser helps to achieve optimum use of material in the alignment of the workpiece. The contours of the finished workpiece are shown in advance. This means that the material can be aligned so that material errors or graining can be taken into account.

### Data formats

The primary, freely scalable laser projection software LPM supports the most common CNC formats and DXF. The contours can be directly transferred via the machine control to the laser. The projection is automatically set to the correct height if the vacuum pod height or material thickness is contained in the source file.

### Polling

The polling module is a clear and simple interface for data transfer of primary control systems. The geometrics to be projected are written as a file. LPM automatically opens the file and projects them. Errors are hereby avoided and the work process is optimised.

### Communication

The laser projector can be connected via various interfaces:

- RS-323 / V24 (10m)
- Optical fiber / RS-458
- Ethernet TP
- 100 Base TX
- Cable
- W-LAN

Each LPM instance can control up to 16 projectors and an almost unlimited number of LPM instances can be addressed in a company network.



### LP-HFD

#### Advantages

- Optimal use of material
- Increase of work quality
- Reduction of material setup time
- Fast and correct vacuum pod positioning
- No damage to the vacuum pod caused by the milling cutter
- Nesting

#### Recommendation

- LP-HFD green
- Cardanic mount

#### Upgrade

- Manual nesting
- (DXF Import and DXF Changer)
- Polling

#### Information for machine manufacturers

Please enquire about our data import filters for the various NC controls for connection to your machine control system:

- FANUC G1x Serie
- SIN 840 D
- OSAI G10
- NUM 750 and higher
- and more

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### Manual nesting

For valuable marble or granite slabs, it is very important to have an optimized utilisation of material with less clipping waste. The desired contours can be projected with laser projectors from **Z-LASER** on the slabs and they can be modified manually with the optional extension nesting.

### Nesting processing steps:

1. Automatic acquisition of geometry from host software
2. Projection of contours on the slab
3. Selection of one contour
4. Manual shifting or rotation of the contour in realtime
5. Saving of new contour positions to file
6. Transmission of the modified positions to CNC controller



Typically, DXF drawings are comprised of several layers. Our software LPM, with the extension DXF Import can import these layers as independent elements. It is also possible to import every contour, via drag & drop, to allocate them into different plot buffers. This feature has the greatest benefit for all nesting applications where the operator has the opportunity to modify single elements inside a DXF File.

The modified elements in plot buffer can be written with the extension DXF Changer as a new, modified file and be processed by another automated device (also possible for CNC- bridge saws).

The standard settings for this nesting function is the simultaneous use of two projectors: ideally one green and one red projector. One projector will show the static image and the other projector will react on the commands of the input device.



Contours before manual shifting



Result of nesting

**qttec**  
Automation & WaterJet Technology

QtEc ApS  
Lundsberg Industrivej 17  
DK-6200 Aabenraa  
Phone +45 73 66 21 00  
Fax +45 73 66 22 00  
E-mail: info@qttec.dk  
Http: www.qttec.dk  
CVR-nr.: DK-28 85 49 43