

## LASER/ARM REVERSE ENGINEERING (DREDGING CENTRIFUGAL PUMP DONE BY LASER)

### Input data required from Customer:

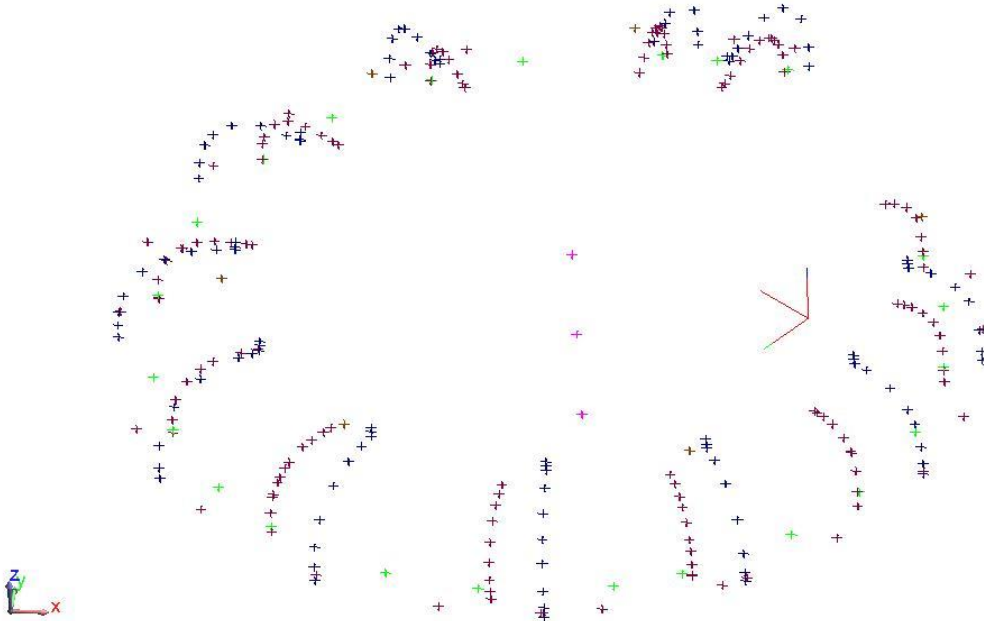
1. Object to be re-engineered
2. Any drawings if available



Output after reverse engineering:

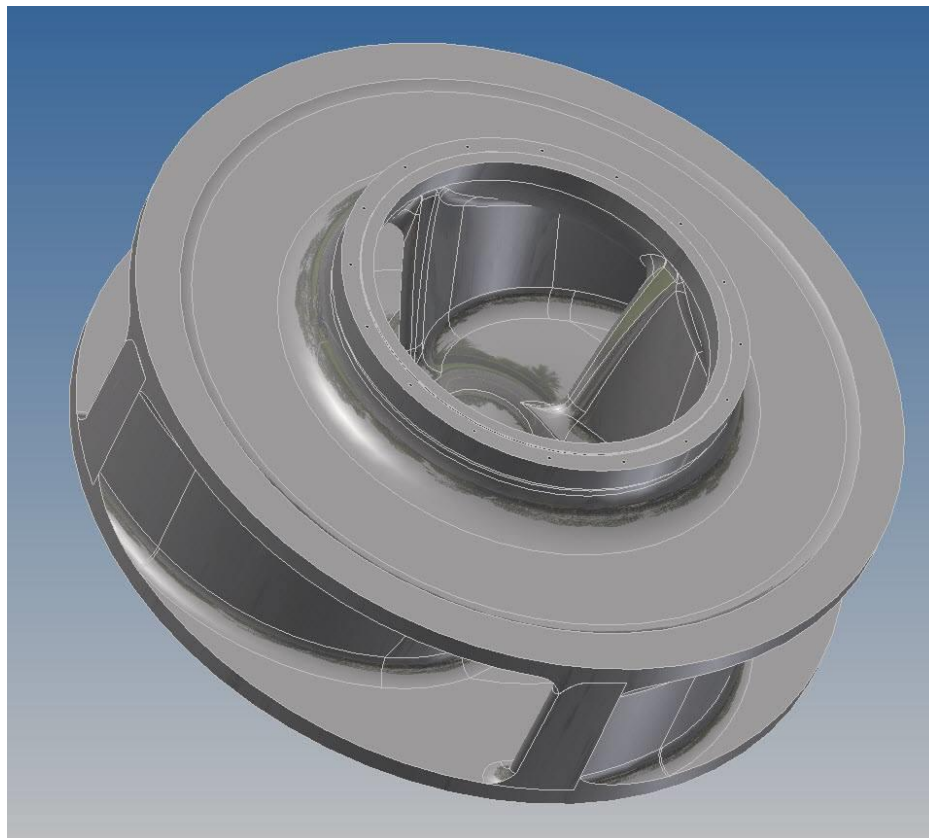
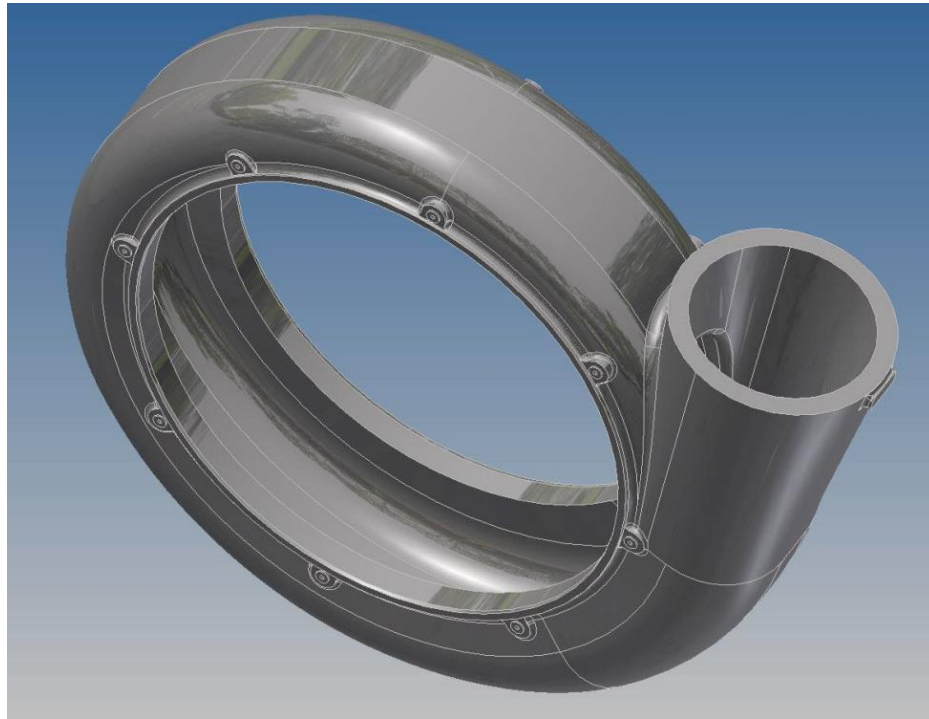
Based on Customer requirements output data can be furnished in several ways:

- a. Raw IGES (unified 3D software exchange format), STEP, DXF, VDA, SAT files which will require further post processing.



Example of the output data (points groups)

- b. Complete 3D model where all post processing is done by ALTO.



c. Any combined solution, such as development of 2D drawing, etc. based on mutual agreement.

*Advantages of using laser:*

1. Allows to measure only features of interest (which reduces post processing time dramatically) instead of scanning whole unnecessary surroundings (increases post processing time).
2. Accuracy of measurements (up to 0.01mm) is maintained over big distances (up to 320m) which is best solution for machined parts.
3. Software integration due to multi station functionality allows you to tight up all object (virtually not visible from one position) in one 3D image which allows you to acquire any relative dimension/position in space
4. Time savings: fast instrument installation, measurement acquisition and results reporting.