

**JABIL CIRCUIT  
AUSTRIA GMBH**

**VIENNA, AUSTRIA**

**JABIL**



# VIENNA SITE OVERVIEW



ESTABLISHED

2002

HEADCOUNT

150

TOTAL SPACE

6,700

SQUARE Meter

MANUFACTURING SPACE

1,500

SQUARE Meter

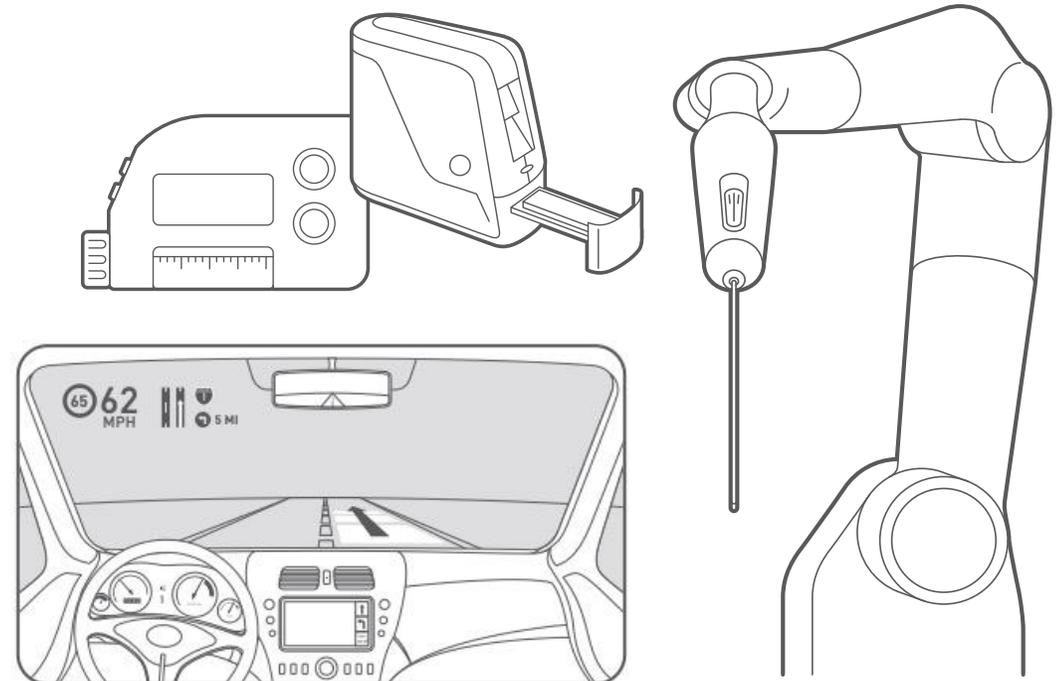


## CERTIFICATIONS

- ISO 9001
- ISO 14001
- ISO13485
- IATF 16949
- EN 9100

## PRODUCT TYPES

- Healthcare Robotics
- Diabetes Care
- Consumer Appliances
- Automotive e.g. HUD, EV Car Power electronics
- High complex mechatronics products

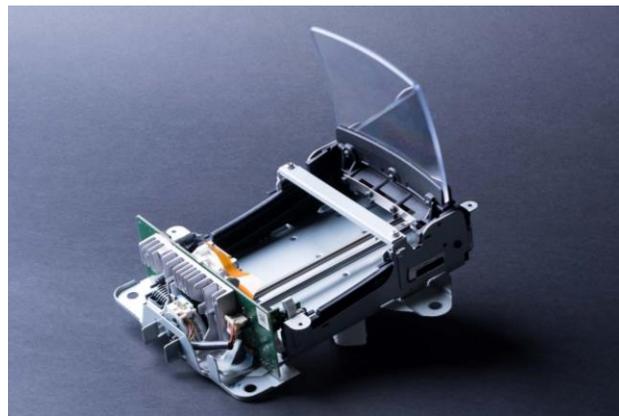


**Jabil Vienna** specializes in mechatronics — precision mechanics and electronics — with comprehensive design, manufacturing, supply chain management, and aftermarket services.



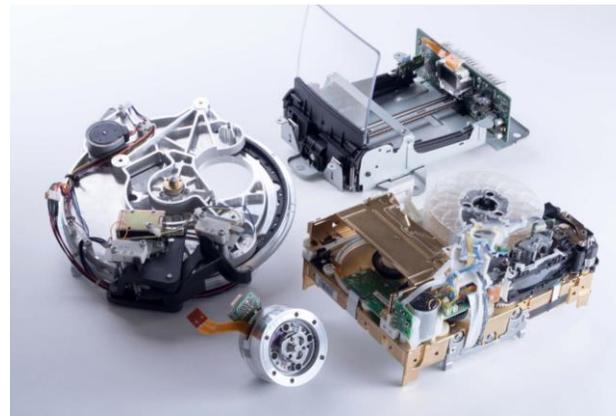
## HIGH PRECISION MECHANICS

Able to design and industrialize product with tolerance classed typically between 0.1 – 0.001mm



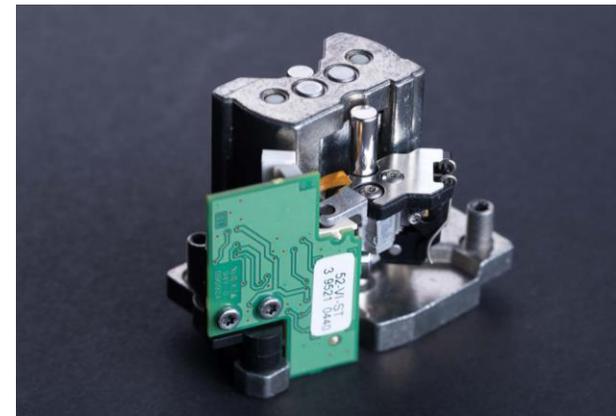
## KINEMATIC SYSTEMS

Moving mechanics where typically issues like vibration, wear, climatic conditions, noise need to be managed



## MECHATRONICS

Competence where electronics are very deeply integrated into the mechanics



## MINIATURIZED SYSTEMS

Small, robust handheld or body worn devices typically with complex mechanisms

# MARKETS SERVED



## INDUSTRIAL



LTO Tape Drive



Video Conferencing Systems



Satellite Communications



Water Meter



Industrial Printers



Healthcare Robotics



Diabetes Care



Home Health



Cosmetic Devices



Diagnostic Devices

## CONNECTED CONSUMER



Small Appliances



Smart Drones



Robotic Vacuum



Vaporizers



Service Robots



Head Up Display



Stereos



Electro Mobility



Smart Farming



Autonomous Driving

## HEALTHCARE

## AUTOMOTIVE & TRANSPORTATION

# LOCATION



Located in the heart of Europe



Service Organization



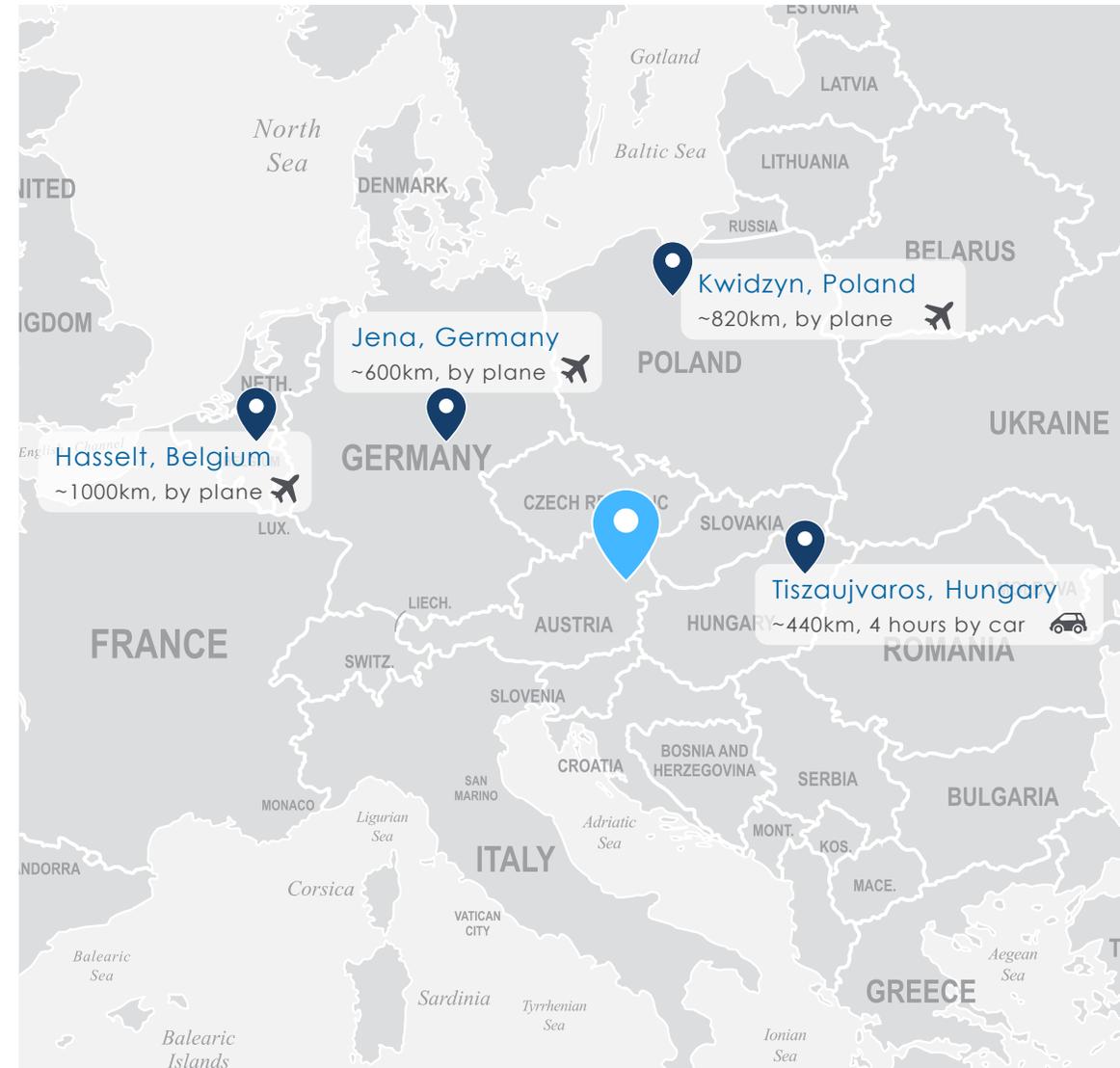
Close distance to Jabil's mass-production & low-cost sites



+30 years of experience managing & developing supply base



Management, Engineering, SCM, Q & Technology Support



# A ONE-STOP-SHOP SOLUTION

JABIL



## DESIGN

- System Architecture
- Electrical Engineering
- Mechanical Engineering
- Software Engineering



## RAPID PROTOTYPING

- In-house Prototyping
- Typical Lead Time < 5 Days



## VERIFICATION LAB

- Reliability Testing
- Environmental Testing (including Equipment Development)
- Demonstrator Build-up Support



## MEASUREMENT LAB

- Material & Failure Analysis
- Component Validation



## SUPPLY CHAIN

- Cost Engineering
- Technology Scouting
- Supplier Knowledge



## TEST ENGINEERING

- Application-Specific Test Solutions
- Functional Testing



## New Design Introduction

- Design for Manufacturing
- Engineering Builds
- Long-term Capability



## MANUFACTURING

- Precision Mechanical Products
- Advanced Module & Final Assembly
- High-complexity Design



# ADVANCED MANUFACTURING CAPABILITY CENTER

**JABIL**

## THE CAPABILITY CENTER CONSISTS OF FOLLOWING AREAS:



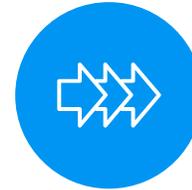
### PRECISION MEASURING

(analyze it)



### ADHESIVES

(fix it or make it move)



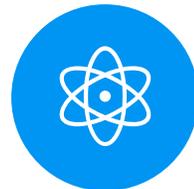
### Proto-Line

(make it )



### FLUIDICS LAB

(if fluids join the game)



### TECHNOLOGIES

(all the tiny things that make it work)



### NOISE

(how does it sound)



### AUTOMATION / SMART TESTING

(go test it)



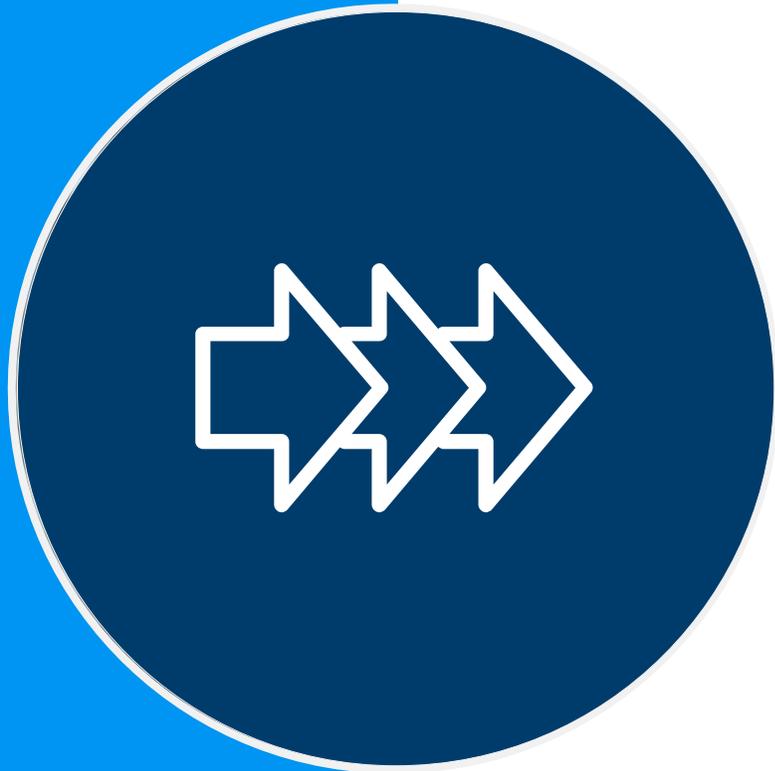
## WHAT DO WE OFFER?

- Tactile Measuring (ZEISS Contura), Laser Bending (Trumpf), Laser Labeling
- Material & Process Failure Analysis
- Validation of Components & Products (Pre-serial & AQL)
- Design Analysis
- Supplier Qualification
- CT Scanner
- High Accuracy (1 Mm)



## WHAT DO WE OFFER?

- Advanced adhesive technology applied via robot systems or manual dispenser
- Short serial lead times and robust products with 1K or 2K adhesives with UV activation (dedicated wavelengths for different applications)
- Food safe applications with FDA conformant silicone glues
- Short optimization cycles with noninvasive lab analysis of glued parts via CT-scan
- Greasing applications for product lifetime enhancement and noise management



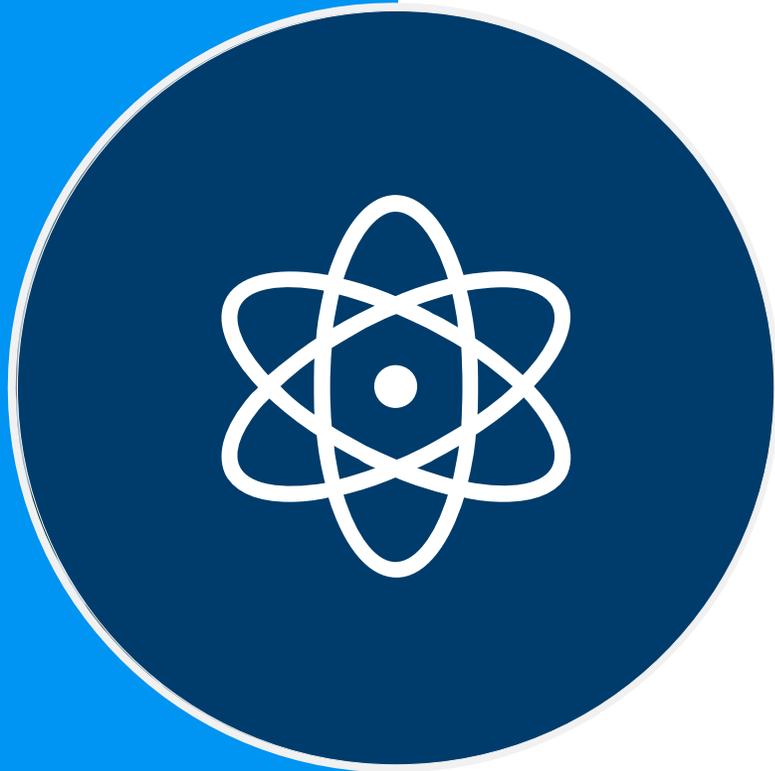
## WHAT DO WE OFFER?

- Small scale production with desired grade of automation and traceability
- Expert know-how on manual processes such as sensitive parts assembly, soldering and other various means of industrialization (e.g. Jig-development)
- Final & intermediate measurements on dedicated equipment (e.g. Acoustic measuring)



## WHAT DO WE OFFER?

- Characterization of pumps via measurements to understand the suitability for project/purpose of use
- Develop testing methods to check component conformity (for NPI & serial-production)
- Highly resolving pressure sensor by TRAFAG
- Coriolis flowmeter by HEINRICHS/KOBOLD
- Controllable needle valves (for reproduceable measurement conditions)
- Viscosimeter/mixing devices & oscilloscope
- Labview controlled electronics



## WHAT DO WE OFFER?

- Serial-labeling In Different Sizes With Zebra Printer (Database/MES Connected)
- Screwing Torque Value Measuring (Pre-serial Or AQL) with Reck Engineering
- Various Hand-lever Presses For NPI/Small Batch Processes
- Lasermarking With Vectormark By TRUMPF



## WHAT DO WE OFFER?

- Development of measurable, quantitative customer specification and proposals for improvement of noise emission level and quality
- Rising FPY with improvements of components
- Noise = vibration → improving noise behavior of products = longer lifecycle & more durable
- Triple wall acoustic booth Studiobricks® pro (insulating 52 db in accordance with ISO 717-1) and DESONE modular akustik m:box
- Acoustic camera (paddle and ring array) for noise emission localization



## WHAT DO WE OFFER?

- Lifecycle tests — customized and accelerated
- Housed EPSON multi axis robot increases cost saving and quick set-up of a new LCT (e.g. Mechanical connector testing)



## DEEP INVESTIGATIONS

- 3D camera scanner
- Nikon CT (noninvasive “see-through” investigation, 3D comparison against CAD)
- Tactile measurements (e.g. ZEISS Contura) 1µm
- Roundness/surface meter
- Electron-microscope /sputter coating
- Mass spectroscope (organic material analysis)
- Optical and camera stacking microscope(s)
- Tensile testing machines



## MATERIALS & LIFETIME

- Validation and verification of designs
- Accelerated Lifetime simulations  
(humidity/temperature/exposure/cyclecount)
- Cut sections (e.g. laser-welding investigation)
- Vibration/shake tests  
(max G-force/noise emission/resonance-frequency)
- Different types of 1k/2k and UV activated glues and silicones
- Tight bond to grease, glue & materials manufacturer

# ANALYSIS EQUIPMENT

ENVIRONMENTAL  
(CLIMATE) TESTING



PRECISION  
MEASUREMENT



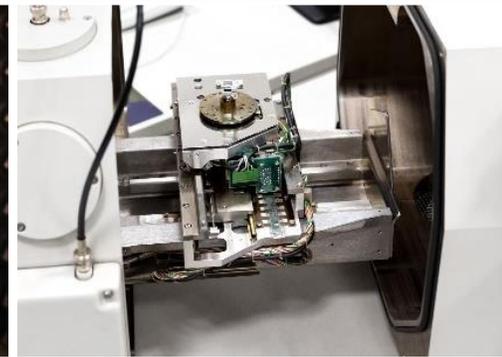
VIBRATION  
TESTING



NOISE  
ANALYSIS



FAILURE  
ANALYSIS



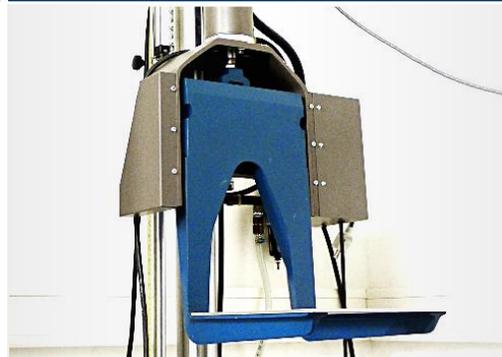
NIKON CT SCAN



MECHANICAL &  
STRESS INVESTIGATION



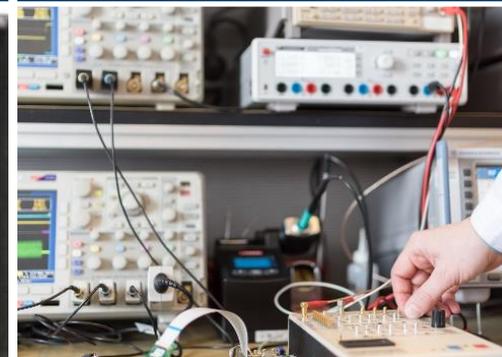
DROP & SHOCK  
TESTS



SPEED & MOTION  
ANALYSIS



ELECTRICAL &  
SAFETY TESTING



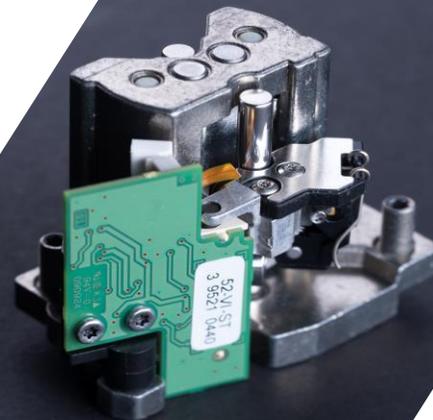
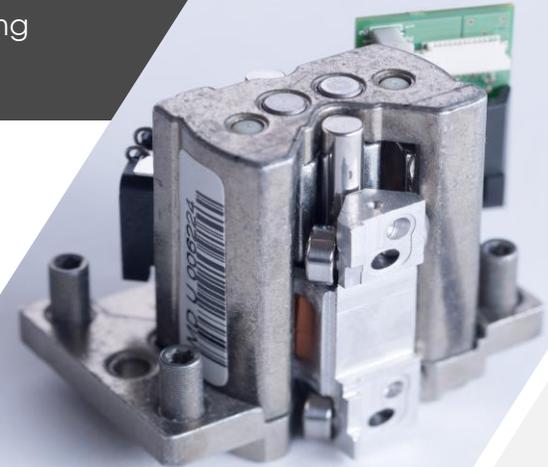
- Understanding Customer Requirements
- Calculating & Simulating
- Designing
- Prototyping
- Testing

A combination of **theoretical analysis** supported by a **practical evidence**

- System Architecture
- Mechanical Engineering
- Electrical Engineering
- Software Engineering

## TOOLBOX

- Creo3.0
- Solid Works
- Catia
- KissSoft
- CeTol
- Mechanica
- Simulate
- Intralink
- SAP



Highly customized & automated test concepts  
for requirements beyond specification

## APPLICATION SPECIFIC TEST SOLUTION DEVELOPMENT

Highly specialized testing concepts & procedures including test  
development, risk analysis, test implementation & qualification

## FUNCTIONAL & DIMENSIONAL TESTING

Highest accuracy for mechanical measurement  
beyond specification  
(e.g. bending strength, friction, power, noise, sound)



## HOW WE CAN HELP YOU

- ✓ Testing Acc. Product Specification (e.g. noise, drop, vibration, temperature, humidity, etc.)
- ✓ Reliability Testing
- ✓ Accelerated Aging Test
- ✓ Safety & Approbation Support
- ✓ Environmental Compliancy Checks
- ✓ EMC Debugging & Pre-certification
- ✓ Wearing Tests, Hand Abrasion
- ✓ Consulting

### TOOLBOX

- Climate Chambers
- Thermal Shock Chambers
- Laser Vibrometer
- High Speed Camera
- Acoustic Camera
- Product-specific Tests



## PERFORMANCES

- ✓ Material And Process Failure Analysis
- ✓ Failure Analysis
- ✓ Validation of Products, Components & Equipment
- ✓ Calibration of Equipment
- ✓ Chemical & Metallurgical Analysis
- ✓ Root Cause Analysis

## TOOLBOX

- FTIR Spectroscopy & EDX Analysis
- Stereo, Light & Scanning Electron Microscopes
- Tensile Testing Machines
- Coordinate Measurement Equipment
- Measurement Microscope
- Optical 3D Measurement Equipment
- Profile Measurement
- Roughness Measurement
- 3D Scanning (White Light & Laser Scanner)
- CT Scanner



The ability to quickly ideate, build and test concepts allows rapid refinement, reduces errors, cost and enables faster time to development results

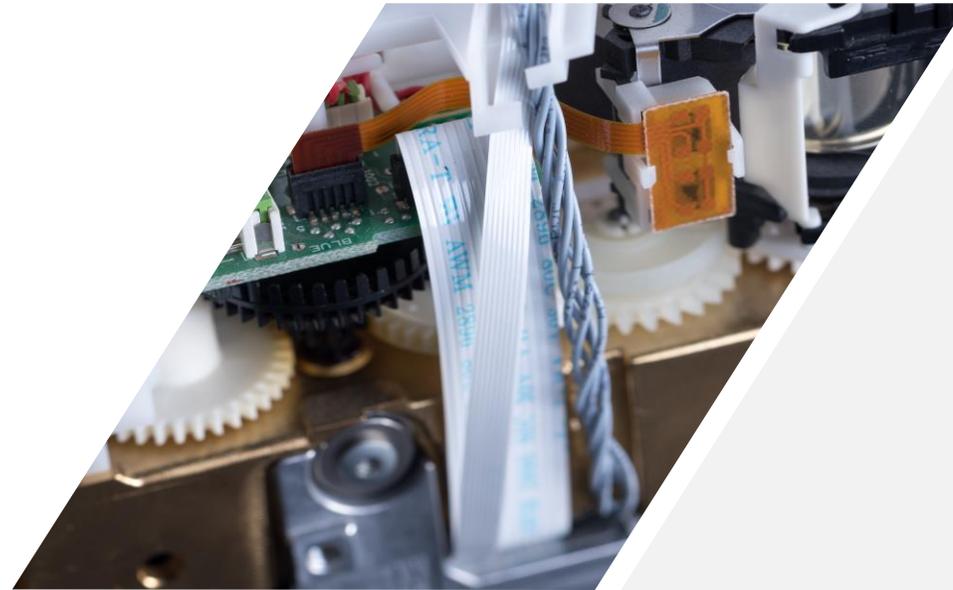
Engineers and mechanics have direct interaction to provide mutual advice and support on prototype builds, jigs, precision machining and soft tooling.



TYPICAL LEAD TIME  
< 5 days

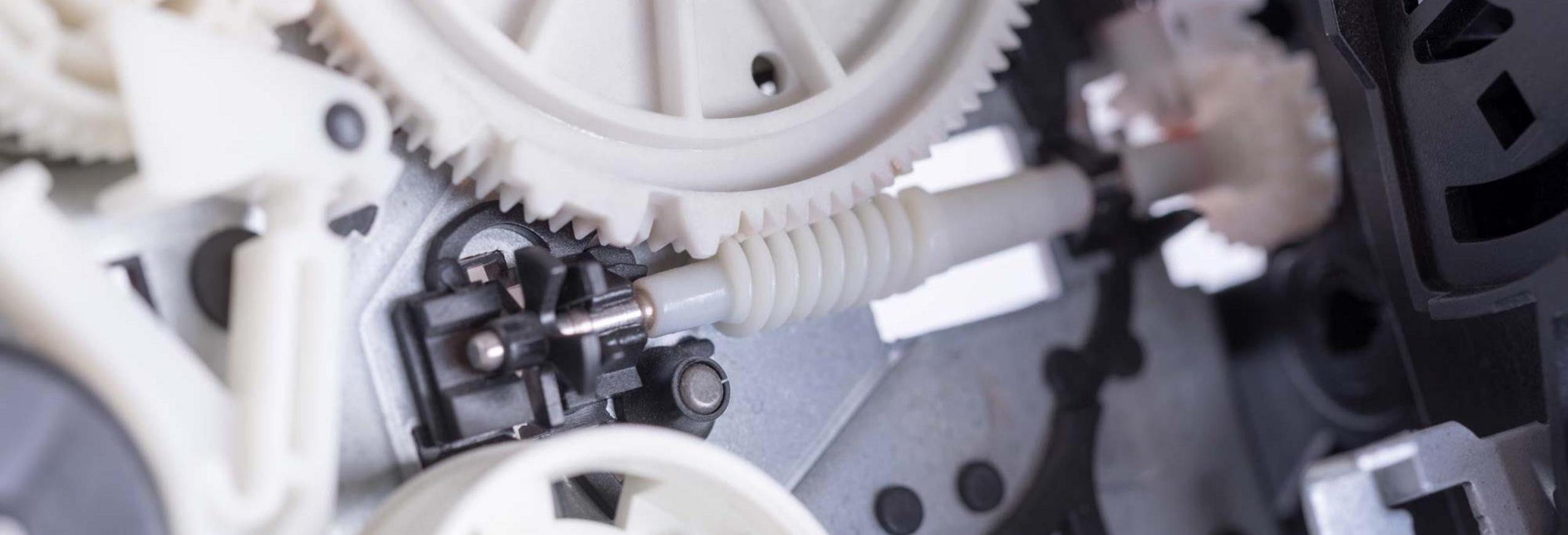
## TOOLBOX

- 3D Printer Projet 3600 (3D Systems)
- Precision Milling Kern
- Deckel SDT
- High Speed Milling (5 axis)
- EDM Charmilles Robofil 240
- Wire Erosion Charmilles
- Arburg 220 Molding



- Highly specialized expertise in precision mechanical supply base
- Cost engineering
- Technology scouting
- Preliminary BOM evaluation (early phase)
- Linkage to sectors- & business units supply chain organizations
- Supplier qualification & selection
- Tooling management & control
- Part qualification (PPAP, validation)





# SUMMARY



## EXPERIENCE

Deep experience and expertise in debugging, ramping & transferring production to low-cost sites



## STANDARD PROCEDURE

Outsourcing from Vienna became normal and even our standard.  
Improving before transferring is standard procedure.



## EDUCATION

Teams consist of highly trained university graduates & employees with decades of production experience  
[Apprentice](#) > [Line Leader](#) > [Engineer](#)



## LOCATION

In the heart of Europe

Close to customers

Close to Jabil's  
mass-production sites  
(East Europe)



## ALL UNDER ONE ROOF

From Development to Production

Model Shop

Laboratories for  
Analysis, Measurements &  
Verification Services



## MASS PRODUCTION

Able to support  
mass-production if needed

If product is not ready to transfer but  
demands increase, we can scale up  
temporarily to fulfil customer demands.



## COST SAVINGS

NDI engineering efforts can greatly affect the project budget.

It's more cost effective to debug foreign design and ramp under controlled conditions than to pay for troubleshooting in a mass-production site.



## MODULAR SYSTEM

Covering the entire spectrum of the product development process.

Customers using Jabil only for NPI and Ramp-Up may discover the design still not ready yet.

Our Design Engineering team can support analysis and improvement and up to taking over design responsibility.



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# THANK YOU

We look forward to hearing from you!

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**JABIL**