



The Art of Ultra Precision CNC Machining

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LJT Manufacturing
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Welcome to LJT Manufacturing

LJT offers our customers 50 years of combined experience engineering and machining extremely close tolerance Aerospace components.

Our team blends lean manufacturing techniques with state of the art equipment resulting in *superb quality* at a very competitive price



Our Focus

"Lean Manufacturing is an operational strategy oriented toward achieving the shortest possible cycle time by eliminating waste"

Lean Machining

- Multiple operations combined on multi-tasking mill turn equipment
- Less operations and set ups, shorter cycle times
- Reduced Lead time by 40%, less handling, less cost
- Minimize deburring and handling, machined chamfers and breaks edges
- Machining tolerances of less than .0002 (+/- .00005), no secondary grinding

Reduced Cost

- Combining turning, milling and hard turning finishing
- Significantly reducing part production costs
- Pull production techniques such as KANBAN
- GIBBS CAD/CAM mill turn provides quick and efficient part programming



Mill/Turn Machining Centers

Live Tool machines are ideal for complex turned components with simple to complex milling operations. The Machines have the ability to perform off center milling operations, contouring and complex shapes.



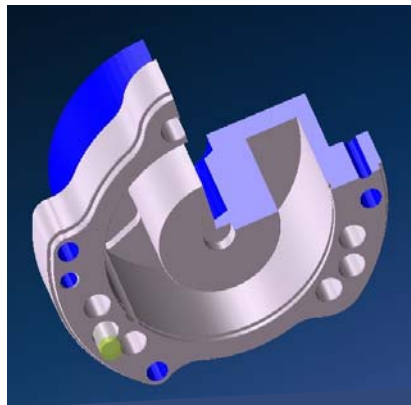
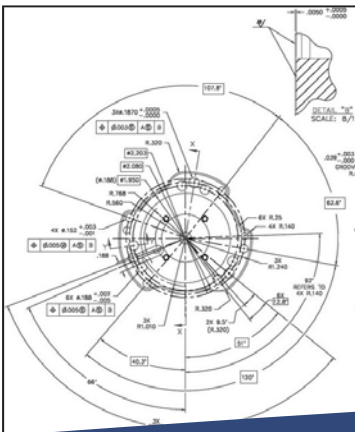


Engineering, Drawing to Product

Experience

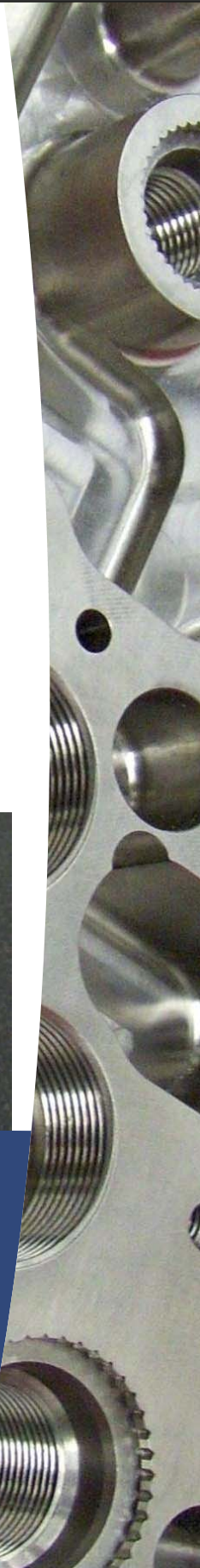
LJT Manufacturing blends state of the art CAD/CAM Systems, Multi-Tasking CNC machines and our experience resulting in superb quality, always.

LJT's people have been working in the Aerospace industry machining close tolerance parts since the early 80's, taking on the most complex machining challenges. We machine to extreme tolerances and finishes. Our experience encompasses some of the most exotic materials including Hymu-80, Inconel, Stellite, Titanium, Hastalloy, Monel, Inconel and High Nickel Stainless Steel materials. We routinely machine thin wall, close tolerance, complex and difficult shapes in tough material.



Diverse Machining Capability

- *High Strength Alloys*
- *Stainless Steels - 304 – 316, 430F - 17-4 PH*
- *Heat Treat Steels*
- *Titanium, Inconel, Hymu-80, Carpenter 49*
- *High Speed Aluminum machining*
- *Plastics, Nylon, Delrin, Polycarbonate*



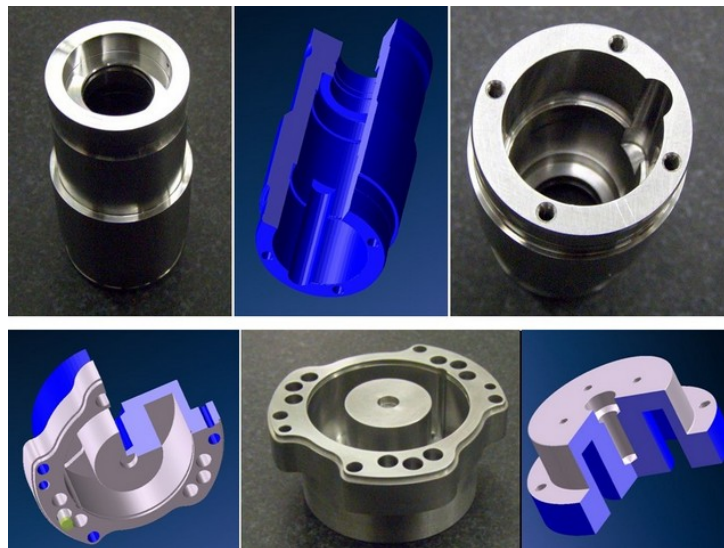


Engineering, Quality by Process

Integrated Systems

LJT employs high end Systems both mechanical equipment and software. Our company uses only the best: multi-axis MILL/TURN CNC machines enabling us to manufacture highly accurate parts from any material. The machines are driven by VIRTUAL GIBBS CAD/CAM providing the requirements of multi-task machine tools with the ultimate in flexibility and configurability.

We work directly with your native CAD files including Pro/E, CATIA, SolidWorks, Mech. Desktop, and all "neutral" formats.



Live Tooling Support

Multi-task machine tools provide LJT with the technology to produce parts with 50 % less operations, reducing handling, deburring, costs and lead time.





Multi Tasking CNC Equipment

(1) QUEST 8/51 MULTI AXIS X,Z,Y,C & Live Tooling

Mill / Turn CNC Machining Center
1.0" to 14" diameter x 24" lengths
Heavy metal removal rates
Quest 8/51 Super-Precision machines ideally suited for tough-to-machine materials
Surface finishes in the 8 micro-inch range
Continuous machining accuracies in the .0002" (5 micron) range



(1) QUEST 6/42 MULTI AXIS X,Z,C & Live Tooling

Mill / Turn CNC machining Center
1.0" to 10" diameter x 12" Lengths
Heavy metal removal rates
Surface finishes in the 8 micro-inch and under range
Continuous machining accuracies in the .0002" (5 micron) range
Linear scales on the X axis, providing super precision machining performance over long production runs

LJT's and Bramden Precision Additional Equipment
(1) Matsuura VMC 600 HIGH SPEED Machining Centres
(1) Nakamura Tome—Live Tool Mill Turn Center X,Y,C AXIS
(1) VMC HARDINGE 600II CNC Machining Centre
(2)Hardinge Cobra 42 CNC Turning Center
((1) Bridgeport manual mill
(1)CNC Automatic Saw
(2) Horizontal cut-off saws

Super Precision Equipment

Glass scales provide machines with less than .00005 repeatability, multi-axis, high speed and high torque spindles provide superb high metal removal rates and simultaneous milling turning machining capability.



Part Handling and Finishing

LJT Quality Deburring

LJT prides itself in the care and attention to detail when deburring and finishing parts. We have many types of deburring tooling for the most demanding requirements. Our deburring area features VHO Lighting, magnification systems and microscope deburring. All parts are 100% inspected under high output lighting and magnification.



This level of deburring is ideal for high end communications (satellite) and aerospace parts. Part Identification is also performed as per customer requirements.

LJT Quality Packaging and Cleaning

Parts are handled with extreme care using egg crate for all work in process avoiding part damage. LJT Provides custom packaging, part preservation and part identification and serial numbering as required.



Quality is in the Details

A commonly overlooked area is part deburring, we have the experience and capability to provide top class parts finished to the highest quality standards.



Quality Systems Summary

Quality Above All

LJT Manufacturing has a average of more than 98% acceptance of product shipped to our customers. Providing extremely close tolerance, fine precision machined components, we have extensive experience meeting Aerospace, Medical, Optical and Communications Quality Standards.

LJT is ISO9001:2000 compliant, with approvals from several key Aerospace Customers. We have many approved subcontractors for heat treatment, NDT and plating services.

LJT Manufacturing Total Parts Shipped vs. Rejected Average 6 month period

<i>Total Quantity</i>	<i>16,543.00</i>
<i>Total Rejects</i>	<i>284.00</i>
<i>Total Rejection Rate</i>	<i>1.72%</i>
<i>Total Acceptance rate</i>	<i>98.28%</i>



Mission Statement

Our mission is to serve LJT customers in a professional, responsive and cost effective manner.

To deliver a quality product as promised assuring the confidence with our customer to provide a relationship that will endeavour.



Quality Precision Products

LJT's shop floor is maintained to the highest of cleanliness, epoxy floors, white walls and ceilings provide excellent lighting and working conditions in a climate controlled shop.



17-4PH, part is machined to .0002 total tolerance on the Bores .0003 total tolerance on OD's



Sample of medium production, 316L Stainless steel, 3.75 minutes cycle time, .0005 tolerances



7075 Aircraft Aluminum Gland.

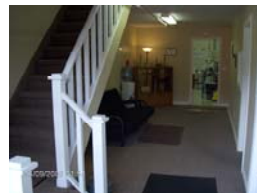
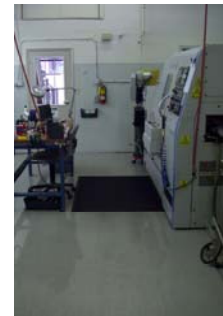


Titanium Manifold Housing



Live Tooling examples

Precision and Quality, LJT products.



Pride in Our Shop

Laboratory cleanliness and Clean climate controlled shop floor.



LJT Key Personnel

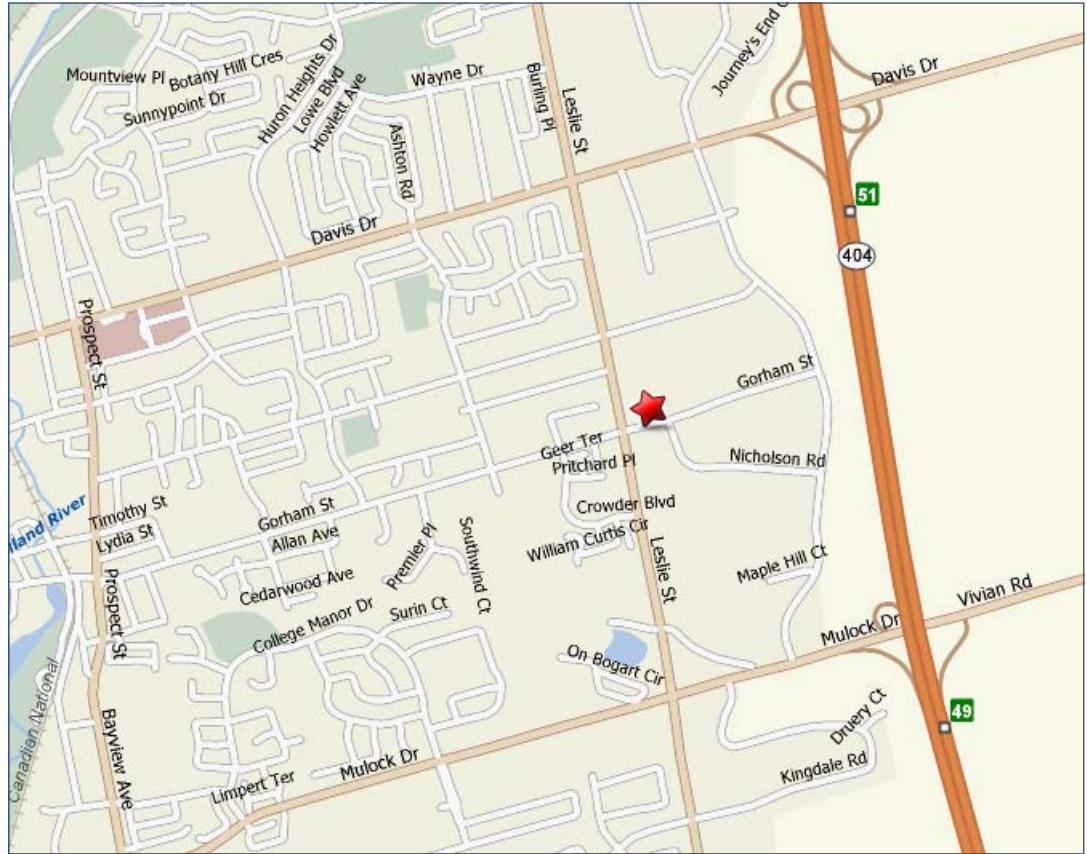
Larry Denham, President: More than 25 years experience in the Aerospace industry Larry apprenticed from 1980-1984 with TDP Aerospace and subsequently as plant manager from 1984 to 1994. Larry was a co-owner and Vice President at TDP Aerospace until the business was sold in 2002. The experience with TDP Aerospace has enabled LJT to become a top class supplier within 3 years of opening.

Christine Hallowell, Vice President: Christine has more than 10 years experience in the administration and accounting field. Christine is responsible for LJT Purchasing, Sub Contract Management, Accounting and Customer Service. Christine also manages the part finishing and microscope deburring department.

Mike Puhalski, Senior Engineer: Mike has more than 25 years in the Aerospace industry. Mike apprenticed in the early 80's with TDP Aerospace and has spent more than 15 years as a top level machinist and programmer on CNC Mills and Lathes. Mike has been senior Engineer with TDP Aerospace and BC Instruments for the last 10 years and has a wealth of experience engineering and machining extremely complex parts.

Ted Denham, QA, Advisor Committee: 50 years experience and former owner and President of TDP Aerospace, provides LJT with business advice, Quality Assurance, estimating and sales.

130 years of combined experience.



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