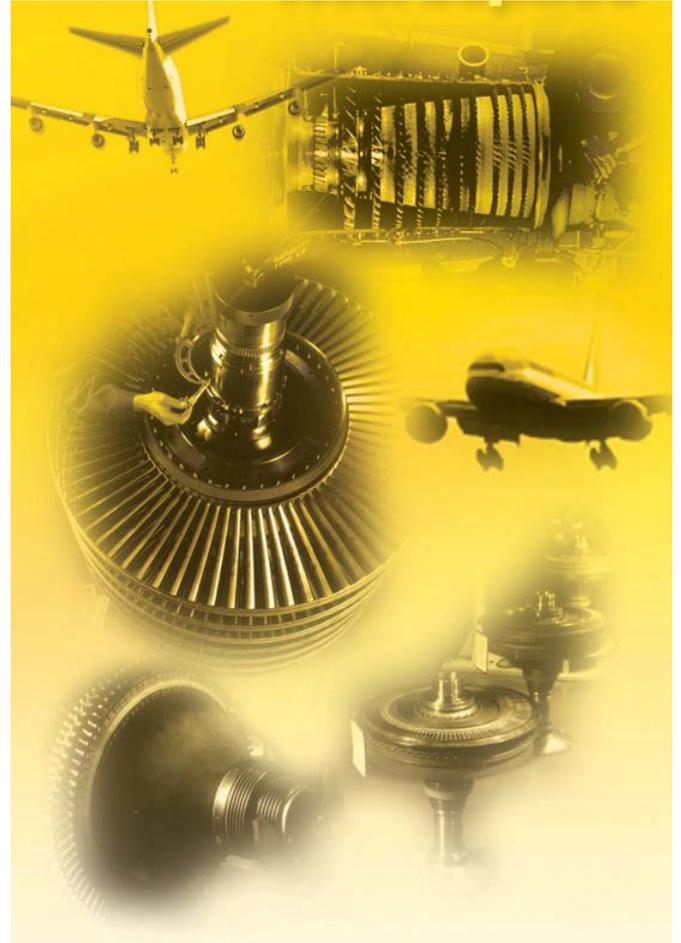




Wayne Trail[™]
A Lincoln Electric Company

Products and Systems

Build to Print / Manufacturing Services: Machining, Assembly and Capabilities Overview



Wayne Trail provides high precision machining, jigs and fixtures for critical jet engine ground support operations around the world

The aerospace ground support and 'build to print' portion of Wayne Trail has been a key part of our operation for over 50 years. The tools and fixtures we manufacture are MIL-spec and ISO certified to extreme levels of precision and quality. Ground support facilities around the world have come to depend on the products and services we provide.

This know-how and commitment to excellence allows us to offer our high quality machining and assembly services to a variety of customers and industries – when accuracy and performance are vital.

This brochure will provide you with an overview of our capabilities and experience. Learn how Wayne Trail build-to-print manufacturing services can help you meet the critical objectives of your next project.

INSIDE

MANUFACTURING EXPERTISE

TOOLS, JIGS & FIXTURES

EQUIPMENT AND FACILITIES LISTING

QA/QC LAB; CMM AND DATA COLLECTION

MANUFACTURING SUPPORT & SITE SERVICES

Tools, Jigs and Fixture Manufacturing



The manufacture, installation and maintenance of jet engines for today's military and commercial aircraft requires significant use of 'ground support tooling'. Such tooling, fixturing and devices are key to the quality, safety and care that must be constantly maintained when handling and caring for these critical devices. Wayne Trail has become a recognized leader in the supply of such equipment – providing a wide variety of products that are machined, assembled and checked to extremely tight tolerances and standards. These products are ultimately shipped and used at aircraft and jet engine maintenance facilities around the world.

This same quality and attention to detail is being applied by the Wayne Trail manufacturing team to an increasing number of projects involving check-fixtures, assembly jigs, specialized tooling and sub-systems for the automotive, appliance, HVAC markets and more. We can turn your prints and specifications into manufacturing reality – in a timeframe and at a cost that will meet your objectives, and with the quality you demand.

The equipment and services list on the opposite page is an overview of our broad range of manufacturing capabilities. We also work with a wide range of other local suppliers - as partners, that we've qualified and developed relationships with - to supplement our capabilities or capacity when required by a particular project scope or timeline.

Quality, QA/QC Lab, CMM Services, Data Collection



"The policy of Wayne Trail is to focus the efforts of the entire Wayne Trail team on totally satisfying our customers with defect free, reliable and maintainable products & services"

At Wayne Trail, quality is a priority in all that we do. Whether related to our personnel and staff, our organization or our facility, we embrace quality at every level, assuring our customers that any service we provide will be performed right the first time, on time and at a competitive price.

Within our on-site QA/QC lab, our trained and certified technicians can perform a variety of inspection and data collection services that may be required for your parts, system or process. Many of the fixtures and tools that we build require strict adherence to MIL-spec, ISO and other end-user specific standards. Our inspection equipment is well maintained and regularly calibrated – and includes coordinate measuring machinery, optical and non-contact measuring systems, various gauges and measurement tools, and ample computer power to collect, tabulate and analyze the data generated.

Equipment and Facility Overview

FACILITIES

122,000 square feet, with offices

CNC EQUIPMENT

59" x 78" Toshiba 110R16 Boring Mill

79" x 61" Toshiba TUE-150 VTL

-14" x 40" Okuma L470 Lathe

-14" x 25" Okuma LB25 Lathe

3" x 20" Okuma LB15 Lathe

40" x 84" HAAS VM-9 VMC

32" x 84" HAAS VM-7 VMC

64" x 32" HAAS VF-6 VMC

20" x 40" HAAS VF-3 VMC (2 units)

16" x 20" HAAS VF-1 VMC

20" x 66" Milltronics RH30 VMC

48" Seiki Mill (9 units)

30" Milltronics Mill

JIG GRINDER

-12" x 24" Moore #3

CYLINDRICAL & INTERNAL GRINDERS

-12" x 36" Cincinnati Universal

-20" x 24" Heald Internal

FLAT GRINDERS

36" Dia. Blanchard

6" x 18" Parker Majestic Surface (4)

6" x 18" Chevalier Surface (2)

8" x 24" Brown & Sharp Grinder

MILLING MACHINES

-72" Cincinnati Vertical

-52" Cincinnati Horizontal w/Vertical Head

-42" Bridgeport-Series I (1) w/Slotting Head (4)

-42" Bridgeport-Series I w/Readout System (2)

-Seiki 4VS Mills with Readouts (2)

-42" Jet Mills with Readouts (2)

LATHES

-16" x 54" Monarch w/Taper Attachment & Readout

-16" x 36" South Bend

w/Taper Attachment

-28" x 72" Monarch with Readout

-16" x 60" Fortune Engine Lathe (2)

TRYOUT PRESSES

-200 Ton Hydraulic

-75 Ton Minster OBG with Cushion

-50 Ton Hydraulic Hand Press

SAWS

-14" x 21" Do-All Vertical Cut-off Saw

-36" Do-All Vertical Bandsaw

-20" Powermatic Bandsaw

-10" Everett Abrasive Cut-off Saw

-8" Rockwell Cut-off Saw

-Milwaukee Panel Saw

RADIAL DRILL

48" Carlton Heavy Duty

DRILL PRESSES

Powermatics w/Tapping Attachments (4)

Delta

Edlund

WELDING

-Lincoln Electric (4) 350A MIG

-Lincoln Electric (6) 250A MIG

-Lincoln Electric (2) 375A TIG

-Lincoln Electric (2) 1000 series plasma

INSPECTION

-CMM – Brown & Sharp 96" x 59" x 36"

-18" x 24" Cordax #1000 Measuring Machine
3 Axis with Omni Probe and Pre-Processor

-14" Micro-Uu Comparator

w/Bausch & Lomb Readout

-72" x 72" x 10" Starrett Granite Surface Plate

-Variety of Surface Plates up to 36" x 60"

-Rockwell Hardness Tester with Master

-Roamer – Multi Measure 5000

LOAD TESTING

Certified Load Test Facility
(up to 20,000 pounds)

OTHER

-FLEX LASE and FLEX LASE PRO
laser prototyping cells

-FLEX BEND RD 1500 CNC tube bender

-Job tracking software

-CAD & Computer facilities

-GibbsCAM Advanced 3D Machining Software

-Blast Room and Paint Booth





Facilities

With over 120,000 sq. ft. of office, manufacturing and assembly space in multiple buildings, we are located in Fort Loramie, Ohio, close to the Interstate I-75 corridor, and within easy driving distance of several major airports.

All of the technical disciplines at Wayne Trail, from marketing and sales, program management and engineering design, to purchasing, machine shop, tool build and field service - are dedicated to the success of our customers and fully meeting or exceeding their requirements and expectations.

Installation and Start-Up Services



Wayne Trail offers expert installation and start-up support for every system we supply or service. From simple supervision and training, to complete turn-key installation, our field service team is available and eager to help you bring your system up to full production capability. Services we can provide include shipping and logistics, foundation prep, rigging, wiring and piping, area barrier safeguarding, site supervision, production support and more. We also supply system integration services for larger complex lines that require significant coordination between 3rd party vendor supplied equipment or existing, in-place processes. Our know-how and experience makes us the perfect partner for your next project.

Product Support



From the time you first implement your process, to re-tooling or reconfiguration needed to adapt a vintage system to new requirements, Wayne Trail product support is there to help. We provide engineered spare part packages to protect your up-time, and can recommend upgrades that will improve your productivity.

Our service team can also arrange for system relocation, on-site refurbishment or factory rebuild service when required. From warranty needs, to preventative maintenance and replacement parts – our service department is on call 24/7 to provide you with timely and effective product support.