



American Tooling Center, Inc.

DEFENSE

FULL SERVICE CONTRACT MANUFACTURING



Midland Design



Bespro Pattern



Superior Cam



American Tooling Center



Full-Service



Defense Industry

American Tooling Center (ATC) delivers single source solutions to the Defense, Automotive, Heavy Truck, Industrial Equipment, Power Generation, Rail and Foundry Industries.

- ❖ 425 Highly Skilled Personnel
- ❖ 775,000 sq. ft. of Engineering and Crane Manufacturing Facilities
- ❖ Fabrication, CNC Machining, Assembly, Paint, Castings and Non-Destructive Testing
- ❖ Gages, Fixtures and Tooling
- ❖ AWS and NAVSEA Weld Certifications
- ❖ ITAR and JCP 2345 Registered
- ❖ AS 9100 Certified
- ❖ Member of ACIBC and SIBC



American Tooling Center, Inc.

FULL SERVICE ENGINEERING AND MANUFACTURING



Equipment

- 42 CAD Eng. Stations
- 35 CNC Mills
- 4 Atos Cloud Scanners
- Laser Tracking Equipment
- 2 Water Jets
- 49 Major Stamping Presses
- 7 5-Axis Lasers
- Welding Cells
- Press Brakes
- 400 Employees
- 775,000 sq. ft. of Buildings
- ISO 9001-2015
- AS 9100
- ITAR Registered



**Plate
Processing**



**Programmable
Press Brakes**



**Manual &
Robotic Welding**



**Large
CNC Machining**



Assemblies



Blast & Paint



**Inspection
& NDT**



**Reverse
Engineering**

Products for Industry

Military Components
Wind Components
Railroad Components
Aerospace
Mining Equipment
Oil Industry
Excavating Equipment
Heavy Industry
Pipe & Valve
Automotive
Architecture

45 Years of Experience, Knowledge and Innovation



DIVERSIFIED TOOLING

G · R · O · U · P

FULL SERVICE ENGINEERING AND MANUFACTURING

DIVERSIFIED TOOLING GROUP AFFILIATED COMPANIES



Superior Cam, Inc.



Midland Design, Inc.



Bespro Patterns, Inc.



American Tooling Center, Inc.



American Tooling Center Facilities



ATC Grass Lake – 145,000 sq. ft.

Main Office

American Tooling Center, Inc. - Grass Lake

4111 Mt. Hope Road

Grass Lake, MI 49240

Phone: 517-522-8411

Fax: 517-522-8078

ATC – 540,000 sq. ft. Total

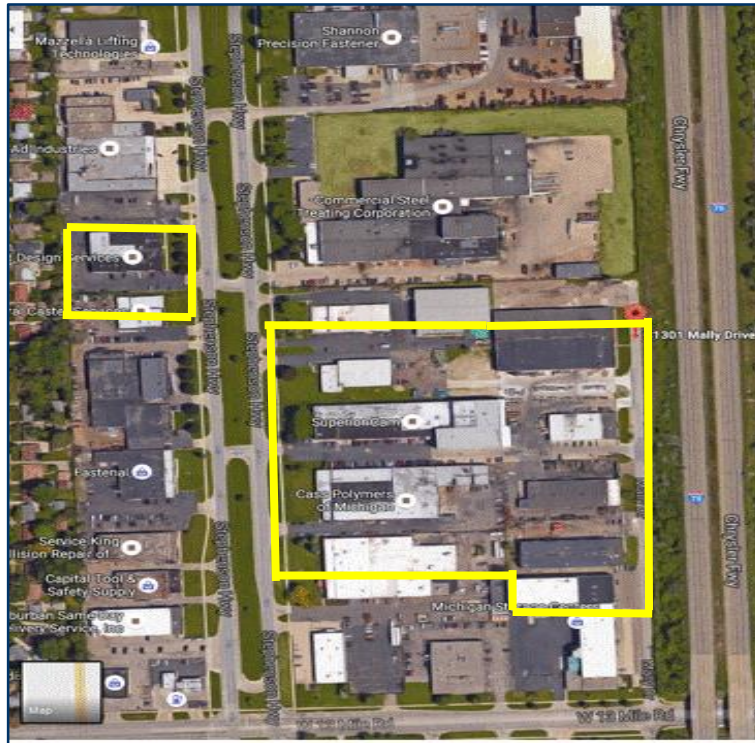


ATC Lansing – 270,000 sq. ft.



ATC Jackson – 125,000 sq. ft.

Diversified Tooling Group Facilities



Midland Design

Bespro Pattern

Superior Cam

Midland Design Service
Bespro Pattern, Inc.
Superior Cam, Inc.
235,000 sq. ft.



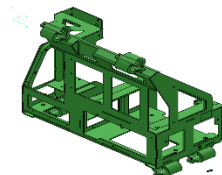
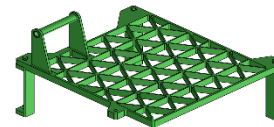
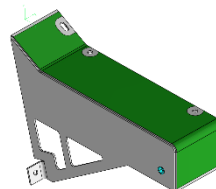
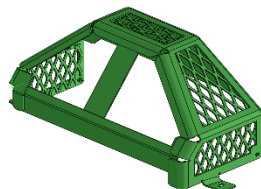
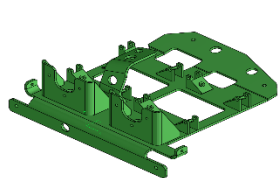


Product Sampling

(Naval/Amphibious/Wheel & Track)

❖ M-88 ❖ MPF ❖ DDG ❖ MMPV ❖ LCS
❖ AMPV ❖ ABRAMS ❖ STRYKER ❖ ACV

- ❖ Hull Components
- ❖ Brackets
- ❖ Cut & Machine Armored Plate
- ❖ Complete Door Assemblies
- ❖ Fuel Tank Covers
- ❖ Foundations
- ❖ Base Frames
- ❖ Deck Assemblies
- ❖ Ammunition Boxes
- ❖ Rail Assemblies
- ❖ Patterns & Castings
- ❖ Strut Barrels
- ❖ Strut Arms
- ❖ LET/LPTs
- ❖ Sea Chests
- ❖ PVLS Frame (Ingalls)
- ❖ Weapon Cradles
- ❖ Guide Rails
- ❖ Whistle Stop Doors
- ❖ Rudder Hubs
- ❖ Peg Boards (Ingalls)
- ❖ Bellmouth
- ❖ Radar Platforms
- ❖ Armored Hulls
- ❖ Armored Turrets
- ❖ Applique Kits
- ❖ UP Armored Kits

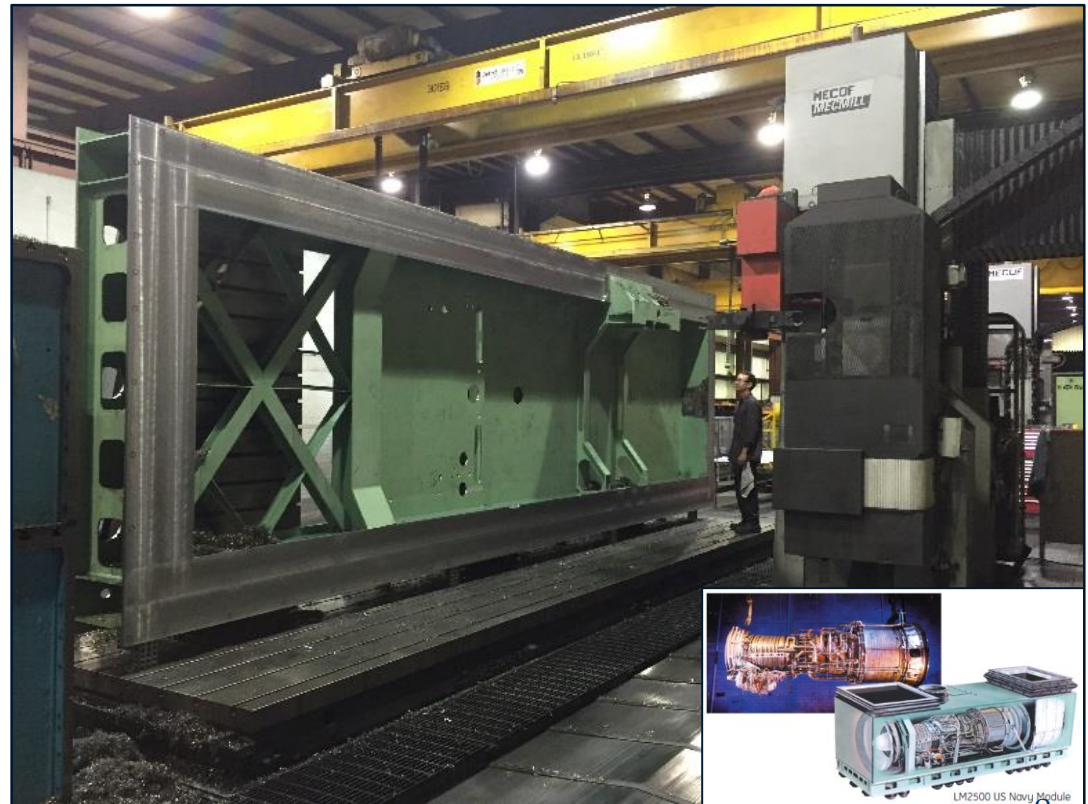


Product Sampling





Product Sampling (GE LM2500 BASE FRAME)



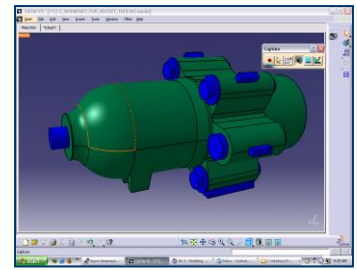
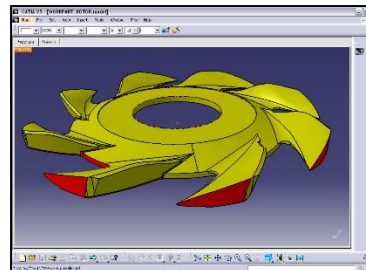
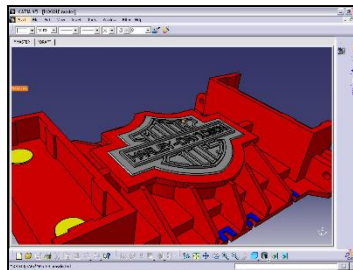
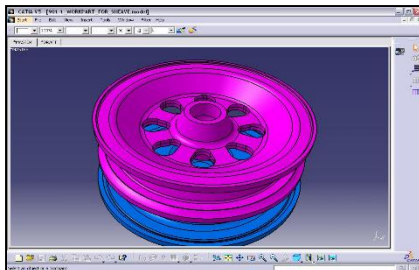
Computer Aided Design Midland Design

Computer Aided Design (CAD)

- CATIA, UniGraphics, IDEAS, Pro-E, SolidWorks, others
 - ✓ Specializing in solid model design & 2D to 3D conversion
 - ✓ Overflow support / Midland Design (Madison Heights)

Computer Aided Manufacturing (CAM)

- CAD / CAM Departments at all facilities
 - ✓ Optimal use of CNC equipment



Foundry Tooling Bespro Pattern



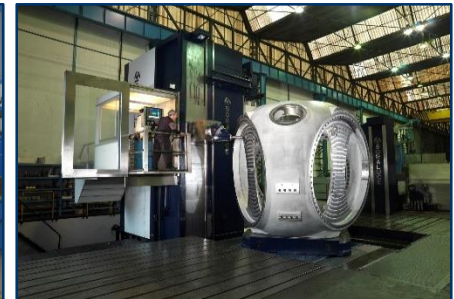
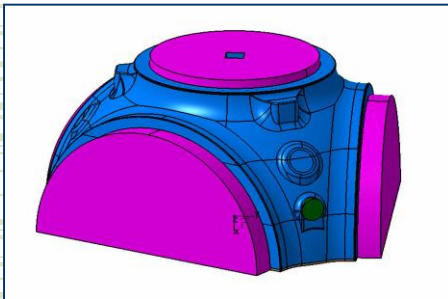
- Computer Aided Pattern Design
- CNC Machining Of Patterns
- Wood, Poly, Urethane, Aluminum
- NNS Supplier Code Pending



Sourcing of Castings

Single Source for Machined Complete Castings

- Established Relationships
 - ✓ Business relationships with 25 + domestic foundries
 - ✓ Steel, Iron, Titanium, Aluminum, Invar, Bronze
- Centralized Location
 - ✓ Reduced Transportation & Logistics Costs
 - ✓ Michigan, Ohio, Iowa, Indiana, Illinois, Pennsylvania



CNC Machining American Tooling Center

Horizontal & Vertical Milling Equipment

- Two machining facilities with thirty-seven large CNC mills
- Large, 5- Axis, CNC Machining Capability
 - ✓ Three 50 Ton & Twenty 25 Ton cranes
 - ✓ Operates 24 hours / 7 days a week
 - ✓ Capable of managing additional capacity on the outside.



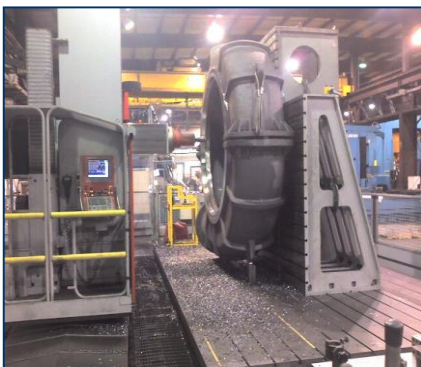


CNC Machining





CNC Machining





Fabricating

Cutting

- 5-Axis Lasers
- Multi-Head Water Jets

Forming

- 325 Ton Hydro Mechanical Press Brake
- 250 Ton Programmable Press Brake

Welding Equipment

- Forty welding cells
 - ✓ AWS & NAVSEA certified welders

Assembly

- Complete fixture design & build capable
 - ✓ One hundred plus journeymen tool & die makers

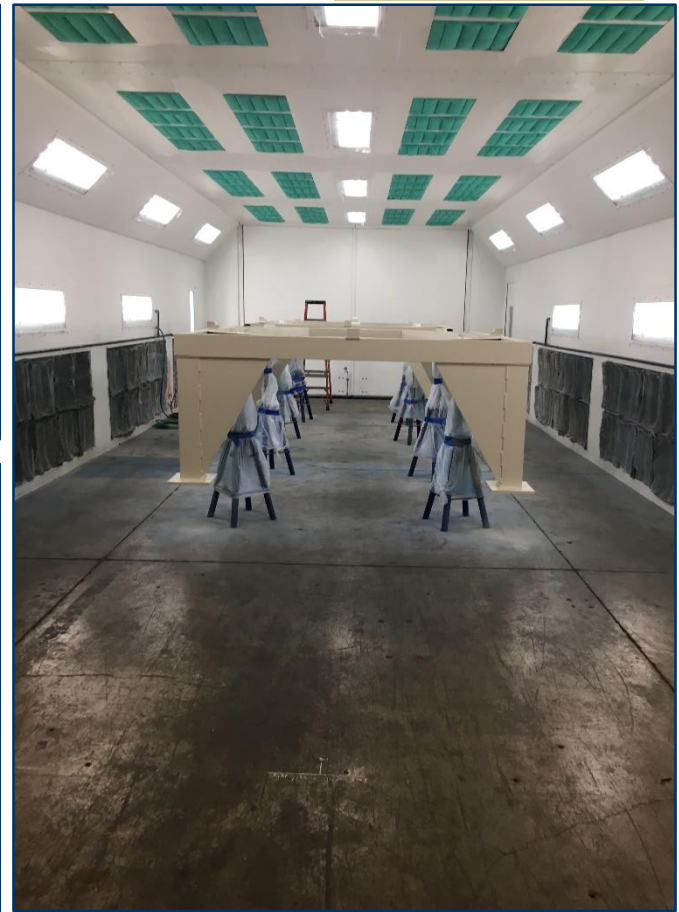
Warehousing

- Heavy crane, four shipping bays and multiple facilities that offer 120,000 sq. ft. of warehousing.





Fabrications Blasting, Painting & Assembly





Fabrications & Assemblies



Fabrications





Defense Vehicle Builds





CNC Machines

ATC Grass Lake

Grass Lake, MI	MECOF	CINCINNATI	GIDDINGS & LEWIS 8000	YCM	OKUMA	GIDDINGS & LEWIS MANUAL	PRATTS	PARPAS	OKK	FADAL	MITSUBISHI MVR40Ex
Quantity	2	1	1	2	1	1	4	1	4	1	1
Spindle configuration	H	H	H	V	V	H	V	H	V	V	V
Climate Controlled	N	N	N	N	N	N	N	N	N	N	N
Table size (Length)	315	204	168	162	160	120	120	120	60	40	236
Table size (Width)	118	96	72	107	80	60	72	60	30	20	118
X Axis travel (inches)	315	204	168	160	160	120	120	120	60	40	244
Y Axis travel (inches)	118	96	72	99	80	60	72	60	30	20	157
Z Axis travel (inches)	63	96	168	40	58	96	60	50	28	16	31
W Axis travel (inches)			40								51
Table capacity (lbs.)	UNLIMITED	UNLIMITED	35,000	44,000	26,500	10,000	55,000	14,000	600	1,000	66,000
# of Axis	3 + 2	3	3	3	3 + 2	3	3	3 + 2	3	3	3 + 2
Rotary Table	(1) Y / (1) N	N	N	N	N	N	N	N	N	N	N
Main spindle speed (rpm)	6,000	1,200	3,200	10,000	10,000	2,600	3,500	4,000	8,000	6,500	8,000
Main spindle power (hp)	80	55	65	30	40	40	65			10	50
Max cutting Feedrate (inches/min)	787	40	142	590	394	40	142	197	197	120	394
Programming system(s) used for cutter path	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	WORK N/C & TEBIS	MDI	WORK N/C & TEBIS
*Okuma is equipped with 4 heads. 6,000 RPM standard straight 10,000 RPM high speed straight BC 1 degree index 3+2 head 90 degree head			** Mecof is equipped with 2 heads 4,000 straight spindle 3+2, 360,000 position, 6,000 RPM universal head			*** Mecof # 2 3 meter traversing rotary table 2 meter in and out travel			****Parpas is equipped with 2 heads 3+2, 3 degree index 4,000 RPM straight		



CNC Machines

ATC Lansing

Lansing, MI	MAG U 5 1500	CINCINNATI Bar Mill	CINCINNATI 30V	GIDDINGS & LEWIS G60 FX	CINCINNATI 30V	CINCINNATI 30V	INCON HYDROTEL	FPT PRAGMA	CINCINNATI Bar Mill 40 HV	MAKINO A 92	MAG Magnum 800H	MAZAK FH-8800	KOMO
Quantity	1	1	1	1	1	1	1	1	1	1	2	1	1
Spindle configuration	V	H	V	H	V	V	V	H	H	H	H	H	V
Climate Controlled	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Table size (Length)	456	420	293	96	168	144	108	236	221	39.5	31	31.5	288
Table size (Width)	144	120	96	72	84	72	35	89	60	31.5	31	31.5	144
X Axis travel (inches)	456	420	336	288	168	144	144	93	96	59	51	48	144
Y Axis travel (inches)	144	120	120	111	90	68	40	78	88	49	43	43	288
Z Axis travel (inches)	60	48	24	48	24	24	24	47	24	53	44	39	12
W Axis travel (inches)				56									
Table capacity (lbs.)	50,000	50,000	20,000	44,000	20,000	20,000	10,000	30,000	30,000	4400	3000	4400	10,000
# of Axis	5	3	5	4	5	5	3	3 + 2	3	4	4	4	3
Rotary Table	N	N	N	Y	N	N	N	N	N	Y	Y	Y	N
Main spindle speed (rpm)	10,000	1,200	3,500	2,500	3,500	3,500	1,000	10,000	1,000	10,000	7,000	7,000	24,000
Main spindle power (hp)	40	75	30	75	30	30	30	35	40	35	50	40	34.7
Max cutting Feedrate (inches/min)	787	300	400	300	400	400	300	550	400	1968	784	1575	2500
Programming system(s) used for cutter path	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc	WorkNc

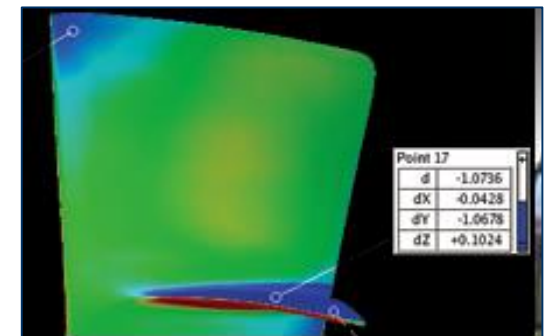
Metrology

Inspection Equipment Large Range, High Accuracy

- ❖ Leica Laser Tracker with T-Probe 45 Foot Radius Envelope
- ❖ Leica Laser Tracker with reflector 150 Foot Radius Envelope
- ❖ Faro Articulating Arm
- ❖ (1) Brown and Sharp D.E.A. CMM (130"x80"x59") – ATC
- ❖ (1) Tarus Overhead High Speed CMM (144"x96"x60") – Superior Cam
- ❖ (1) Programmable CMM (94"x60"x60") – Superior Cam
- ❖ (4) ATOS Cloud Scanning Systems (White and Blue Light Scanning)
- ❖ In-House ISO-17025 Testing Lab



ATOS 3D Scanning





Program Management



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