



Complete Manufacturing Solutions



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Global Manufacturing Solutions for OEM customers - *since 1995*

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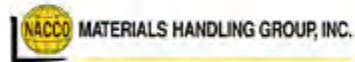
01

# COMPANY OVERVIEW

Pricing + Quality are a given | customer service sets us apart

# Client Portfolio

Quality is something that's built into a product from the beginning - not checked for once the job is done.

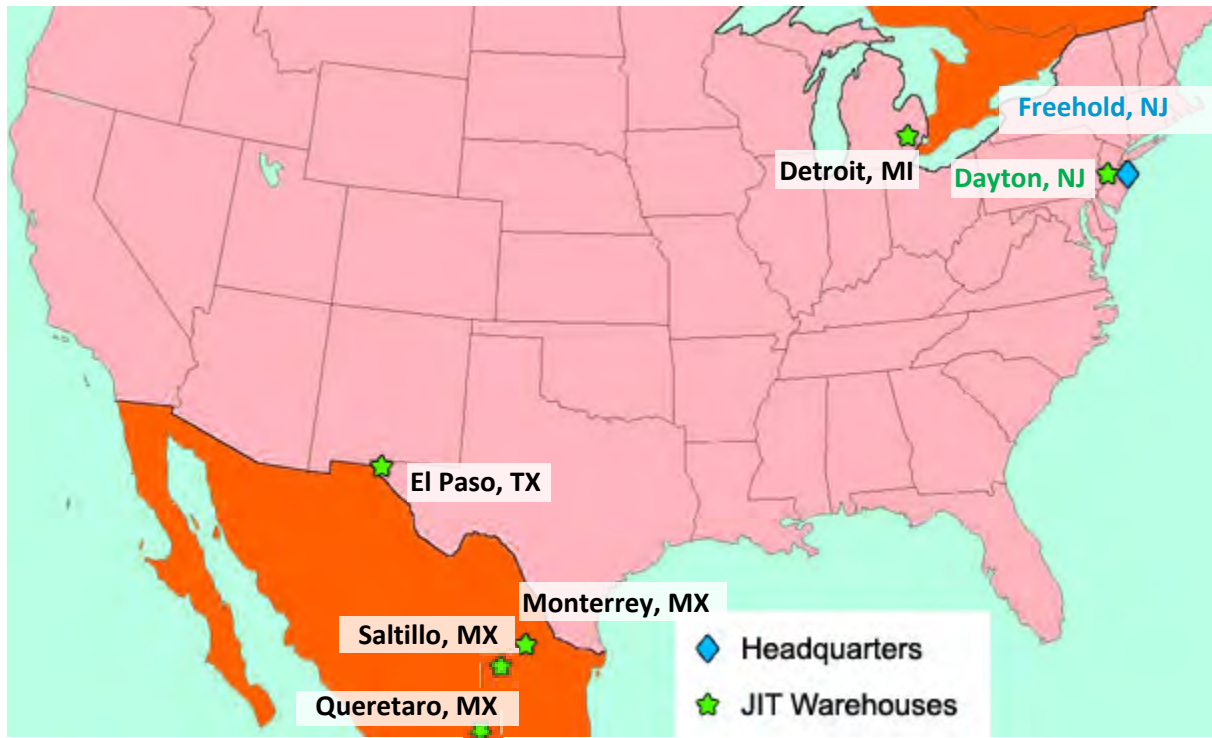




# Inventory Control / Warehousing Capabilities

Are you struggling with demand by always ordering out-of-stock parts?

AmTech JIT stocking programs are the perfect solution to reduce production line delays and storage costs.



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# GEARS

Bevel, Hypoid, Cylinder, Spur, Worm, Ring & Pinion Sets

# Gear Production Capabilities

## **Straight Bevel Gear**

M1.3 to M8.5

Min. diameter = 40mm

Max. outer diameter = 216mm

## **Spiral Bevel Gear - Zerol - Hypoid Gear**

M2 to M15

Min. diameter is 40mm

Max. outer diameter = 600mm

## **Spur Gear - Cylinder Gear**

M1 to M5

Min. diameter = 40mm

Max. diameter = 300mm

## **Ring and Pinion**

M2 to M15

Min. diameter = 40mm

Max. diameter = 600mm

### **Services and Materials Used:**

- **Grinding, Hobbing, Skiving, Shaving, Non-circular Grinding, Milling, Shaping, Rack Rolling, Wire EDM, Honing, Broaching, Nitriding, Heat Treatment**
- **Gear Grinding:** AGMA 15-12  
**Gear Honing:** AGMA 13-9  
**Gear Shaping:** AGMA 12-9  
**Gear Shaving:** AGMA 13-10  
**Gear Hobbing:** AGMA 12-8
- **Brass**
- **Bronze**
- **Aluminum**
- **Steel:** Carbon Steel, Low Alloy, Stainless and Tool Steels

# Main Drive Assembly

Complex 19" long Main Drive Assembly. Mounted on a Main Shaft with splines, this is used within a Tractor Transmission application. This assembly includes the following components:

- ✓ **6 Ground Gears**
- ✓ **3 Shift Collars**
- ✓ **2 Cone Bearings**





# Bevel Gears

## Straight



## Spiral



## Hypoid



## Zerol



# Cylinder Gears



# Ring Gears & Flywheel Assemblies



# Ring and Pinion Gear Sets





# Worm Gears





# Shift Collar Gears



# Gear Manufacturing Equipment List

- GLEASON PHOENIX®II 275G
- GLEASON PHOENIX®II 275HC CUTTING MACHINE
- GLEASON 600HTL TURBO LAPPER
- GLEASON 300CG BLADE SHARPERNER
- GLEASON 562 BLADE INSPECTION MACHINE
- GLEASON PHOENIX CB CUTTER BUILD MACHINE
- GLEASON NO.106 Hypoid Generator - 7 sets
- GLEASON NO.116 Hypoid Generator - 15 sets
- GLEASON NO.112 Hypoid Rougher/Finisher - 4 sets
- GLEASON NO.26 Hypoid Generator - 2 sets
- GLEASON NO.104 Straight Bevel Coniflex Generator - 4 sets
- GLEASON Hypoid Lapper - 4 sets
- FEELER VMP-40A CNC Machining Center - 2 sets
- FEELER FTC-350 CNC Lathe - 4 sets



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# SHAFTS

Machined, Rolled, Forged, Hobbed, Welded and more

# Shaft Production Capabilities

AmTech has cutting-edge capabilities in producing precision shafts for motion control, power transmission and other critical applications.

## Simple Shafts

Length: 1" – 36"      Diameter: 0.25" – 4"

## Spline Shafts

Length: 1" – 60"      Diameter: 0.50" – 4"

## Gear Shafts

Length: 3" – 36"      Diameter: 2" – 8"

## Worm Shafts

Length: 2" – 12"      Diameter: 0.25" – 12"

## Forged Shafts

Length: 3" – 16"      Diameter: 1" – 8"

## Cast Shafts

Length: 4" – 14"      Diameter: 2" – 20"

## Welded Shafts

Length: 1" – 40"      Diameter: 1" – 6"

## Services and Materials Used:

- **CNC Machining, Turning, Grinding, Drilling, Tapping, Honing, Balancing, Threading, Broaching, Keyways, Nitriding, Heat Treatment**
- **Steel:** Carbon Steel, Low Alloy Steel, Stainless Steel, Tool Steel, 1020, 1026, 4140, FLEXOR, 8620, 8620H, 12L14, 52100
- **Iron:** Cast Iron, Ductile Iron
- **Aluminum**
- **Copper Alloy:** Brass, Bronze
- **Thermoplastics:** Acetal, PEEK, Delrin

# Coupling Shafts

Differential shaft used in front and rear wheel drive vehicle. Production includes carburization.

**Length:** 15.748"

**OD:** 1.26"

**Tightest Tolerances:**  $\pm 0.005\text{mm}$

**Material:** SCM420H

Coupling shaft used in heavy equipment machinery for the Forestry industry. Production includes centerless grinding and finished with induction treatment.

**Length:** 11.82"

**OD:** 0.79"

**Tightest Tolerances:**  $\pm 0.005\text{mm}$

**Material:** S55C





# Simple Motor Shafts



# EV Spline Shaft



Used by a Hybrid Vehicle OEM - multiple splines, keyways, heat treating & magnetic particle inspection.

**Length:** 19.413"    **OD:** 2.343"    **Material:** 4140    **Tightest Tolerances:**  $\pm 0.0066\text{mm}$

# Oversized Spline Shafts



Drive shaft used in an ATV rear axle application. This shaft is heat treated, with a chrome coating.

**Length:** 47.25"   **OD:** 1.58"   **Material:** SMCN439   **Tightest Tolerances:**  $\pm 0.005\text{mm}$



Driveshaft is used in an Golf Cart drive system. This shaft is induction treated, with a zinc plate coating.

**Length:** 38"   **OD:** 1.45"   **Material:** SCM 440   **Tightest Tolerances:**  $\pm 0.005\text{mm}$

# Gear Shafts

Gear shaft used in an off-highway vehicle Engine.

**Length:** 7.87"      **ID:** 0.79"      **OD:** 1.66"

**Material:** SCM420      **Tightest Tolerances:**  $\pm 0.005\text{mm}$





# Forged Shafts

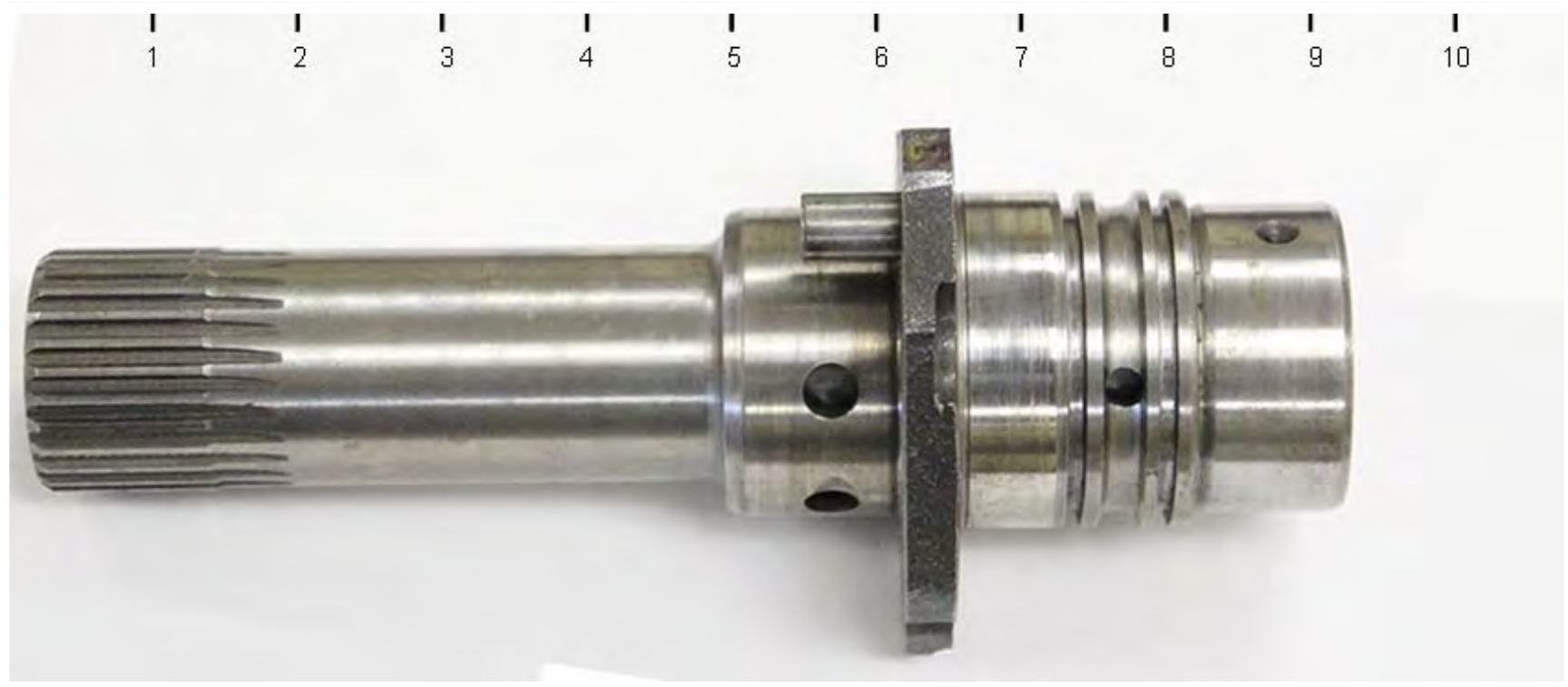


6" Forged Shafts used in a clutch gear set.





# Casted Shafts



# Welded Gear Shafts



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# MACHINED CASTINGS

Aluminum, Zinc, Magnesium, Iron and Steel

# Machined Casting Capabilities

## HP Die & Gravity Casting

- Press capabilities range from 120T to 2,500T.
- High speed production ideal for large volumes.
- Most suitable for restrictive dimensional tolerances.
- Most common form of casting in the Automotive Industry.

## Investment Casting

- Suitable for shaped or non-symmetrical parts with fine details.
- Parts that have complex internal structures.
- Requirements for tightest tolerances, thin walls and finishes.

## Sand Casting

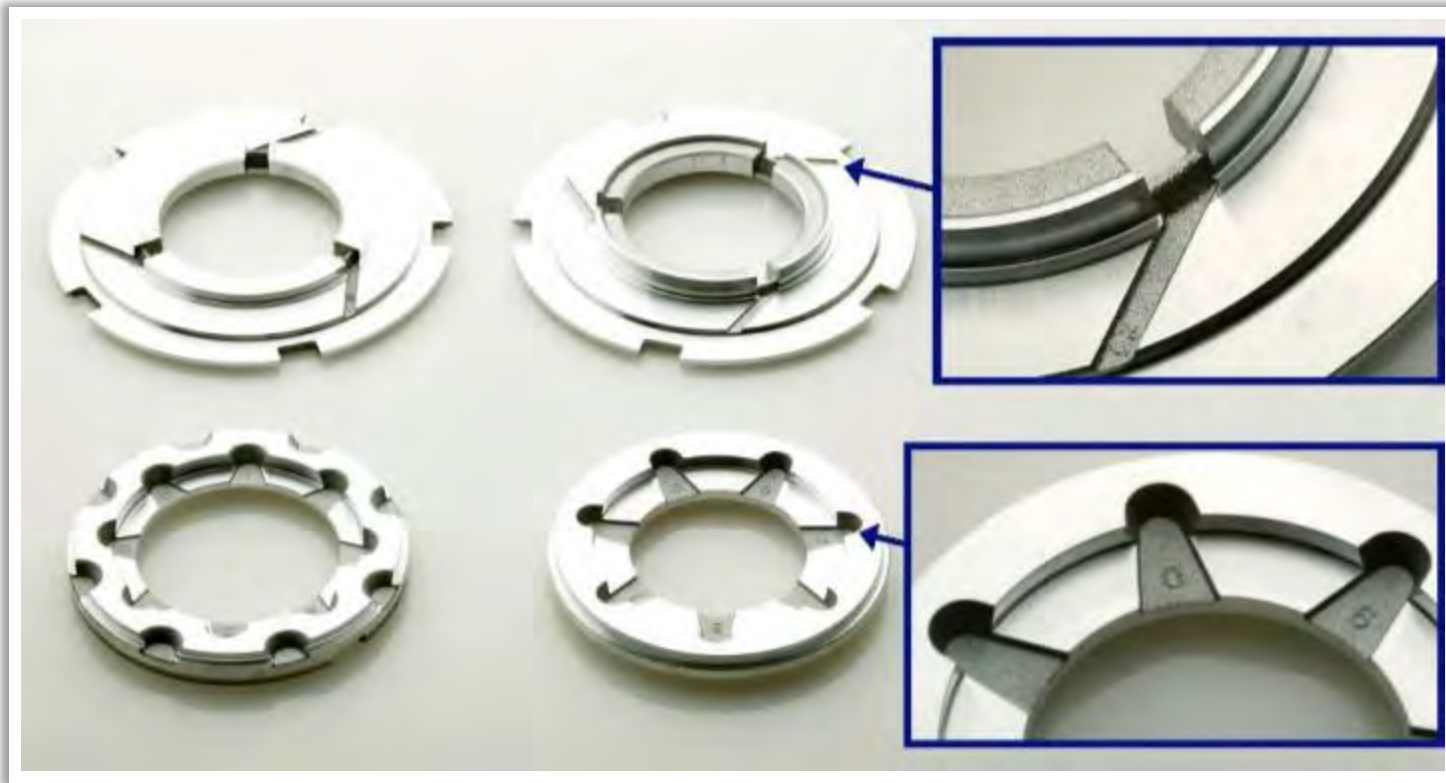
- Suitable for shaped or non-symmetrical parts with/without internal structures and less restrictive tolerances.
- Ideal for larger part sizes with less strict tolerances.
- Surface finish will be rough.

## In-House Services and Materials :

- **Mold design, fabrication and maintenance**
- **Secondary machining and finishing**
- **Aluminum:** A380, ADC10, A383, ADC12, ADC6, ALSi10Mg, ALSi12Fe, ALSi9Cu3, ALSi12Cu1Fe, ALSi12CuNiMg, ALSi12Cu2
- **Zinc:** Zinc 3, 5 and 27
- **Magnesium**
- **Iron:** Ductile Iron, Gray Iron, Cast Iron
- **Steel:** Carbon Steel, Low Alloy Steel, Stainless Steel
- **Brass & Bronze**

# Aluminum Die Casting -Automotive

Stator Plate Thrust Washers used by Automotive OEM customers.



**Weight**

0.4 oz

**Thickness**

0.496"

**I.D.**

3.500"

**O.D.**

4.025"

**Application**

Torque Converter

**Tightest Tolerances**

$\pm 0.0005\text{mm}$

**Usage**

1,000,000+

**Material**

A380



# Aluminum Die Casting - Automotive

This Stator is the “Torque Converter’s Brain”. A very critical part with 30 turbine blades at precise angles.



**Weight**

2.2 lbs

**O.D.**

8.0”

**Balancing**

4000 RPM

**Application**

Torque Converter

**Tightest Tolerances**

$\pm 0.0005\text{mm}$

**Usage**

180,500

**Material**

A380

# Aluminum Die Casting

This Motor Housing is produced for an OEM that manufacturers industrial air conditioning Motors.



**Weight**  
2.35 lbs

**Height**  
11.45"

**I.D.**  
6.789"

**O.D.**  
6.820"

**Application**  
Electric Motor Housing

**Tightest Tolerances**  
 $\pm 0.001\text{mm}$

**Usage**  
80,000

**Material**  
A380

# Die Casting + Gears & Shafts

This fully assembled Aluminum Gearbox is manufactured for an Electric Vehicle OEM in Europe.



# Aluminum Die Casting - Automotive



**Description:** Manifold

**Weight:** 0.41kKg

**Dimensions:** 189mm x 101mm x 53mm

**Reference/Tolerances:**  $\pm 0.05$



**Description:** OBD-II Connector

**Weight:** 0.124 kg

**Dimensions:** 115mm x 71mm x 37mm

**Reference/Tolerances:**  $\pm 0.1$



**Description:** Headlight Housing

**Weight:** 0.075 Kg

**Dimensions:** 105mm x 84mm x 76mm

**Reference/Tolerances:**  $\pm 0.01$



**Description:** Wiring Housing

**Weight:** 0.85Kg

**Dimensions:** 175mm x 151mm x 132.5mm

**Reference/Tolerances:** H7



**Description:** Electrical System Fitting

**Weight:** 0.007Kg

**Dimensions:** 33.1mm x 21mm x 34mm

**Reference/Tolerances:**  $\pm 0.05$



**Description:** Thermostat Housing

**Weight:** 0.147Kg

**Dimensions:** 96.1mm x 87.6mm x 98.6mm

**Reference/Tolerances:** H7

# Gravity Die Casting

Electrical Air System Housing used by a Motorcycle OEM.



**Weight**  
1.33 lbs

**Length**  
6.31"

**I.D.**  
2.25"

**O.D.**  
4.05"

**Application**  
Motorcycle

**Tightest Tolerances**  
+0/-0.005mm

**Usage**  
30,000



# Gravity Die Casting

Gravity Cast and Machined body for a “ZERO Spill” Fuel Nozzle System OEM.



**Weight**  
1.51 lbs

**Length**  
10.77"

**I.D.**  
1.62"

**Material**  
A356-T6

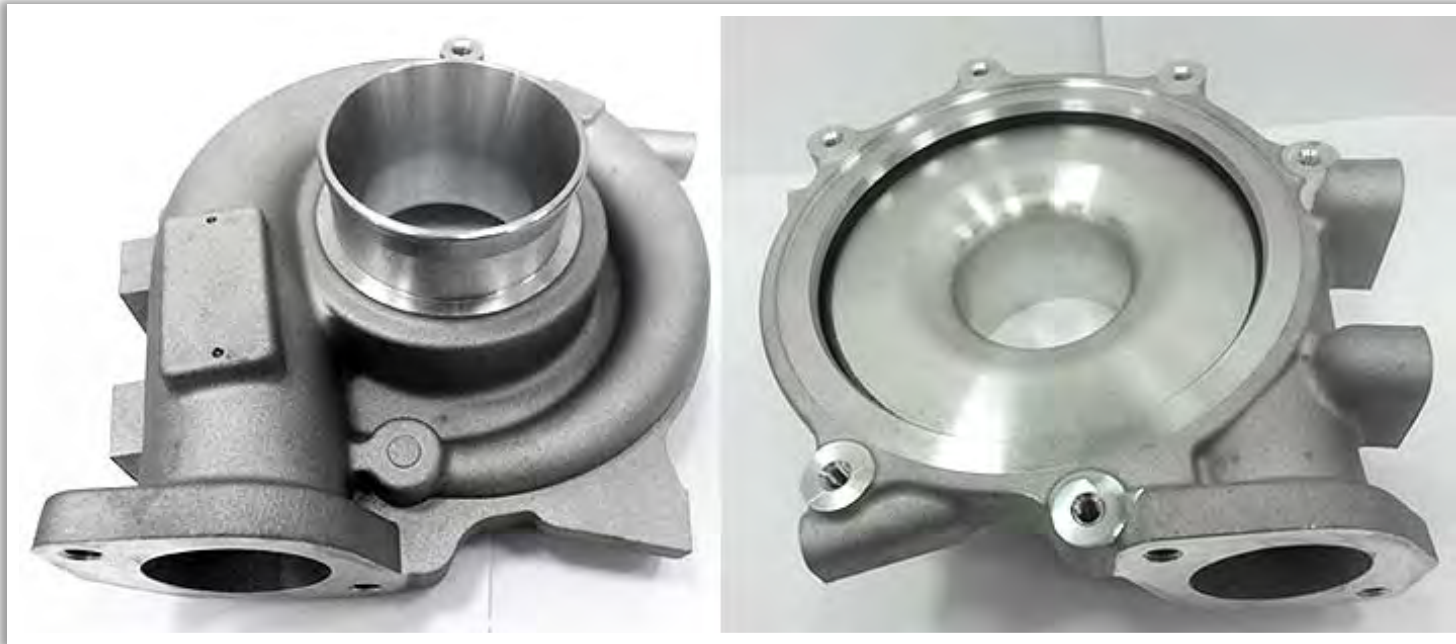
**Application**  
Fuel System

**Tightest Tolerances**  
 $\pm 0.005\text{mm}$

**Usage**  
40,000

# Gravity Die Casting

Gravity Cast and Machined Housing used by a Turbo Charger manufacturer.



**Weight**  
3.66 lbs

**Length**  
7.359"

**Width**  
7.050"

**Depth**  
4.010"

**Application**  
Automotive

**Tightest Tolerances**  
 $\pm 0.0001\text{mm}$

**Usage**  
120,000

# Gravity Casting



**Description:** Filter Block with Steel inserts  
**Weight:** 0.111 kg  
**Dimensions:** 99mm x 78mm x 33mm  
**Reference/Tolerances:** -0/+0.015



**Description:** EGR Cooling Housing  
**Weight:** 0.195 kg  
**Dimensions:** 363.2mm x 120mm x 104mm  
**Reference/Tolerances:**  $\pm 0.05$



**Description:** Engine Support Bracket  
**Weight:** 3.4 kg  
**Dimensions:** 453mm x 156mm x 92mm  
**Reference/Tolerances:**  $\pm 0.05$



**Description:** Turbine Housing  
**Weight:** 0.5 kg  
**Dimensions:** 471mm x 326mm x 69mm  
**Reference/Tolerances:**  $\pm 0.1$



**Description:** Air Regulator  
**Weight:** 0.109 kg  
**Dimensions:** 94mm x 55mm x 30mm  
**Reference/Tolerances:**  $\pm 0.1$

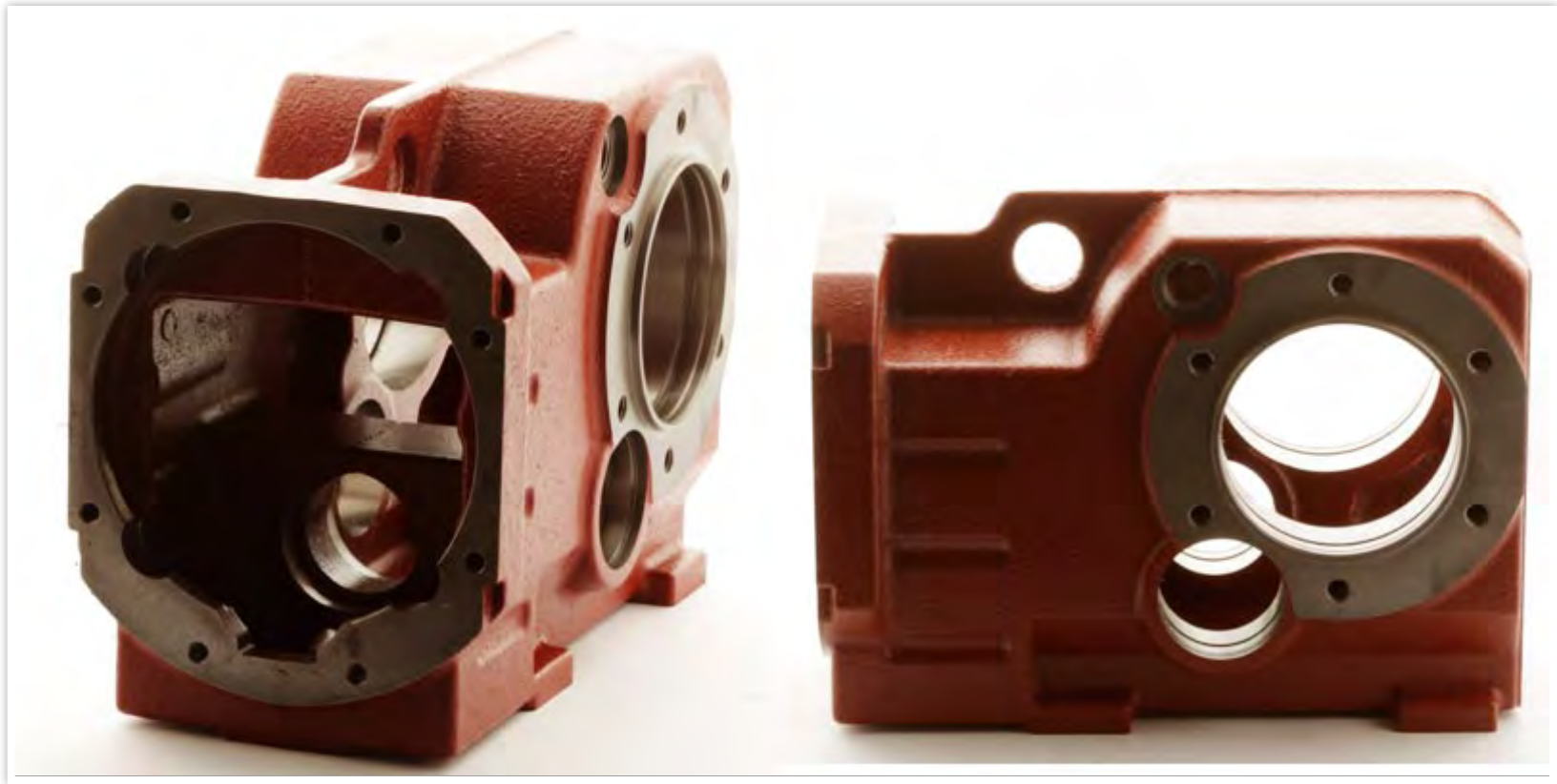


**Description:** Valve Housing  
**Weight:** 0.007Kg  
**Dimensions:** 33.1mm x 21mm x 34mm  
**Reference/Tolerances:**  $\pm 0.05$

# Sand Casting

This machined gearbox housing is used within a transmission application for Industrial Conveyor systems.

**Length:** 18"    **Width:** 11"    **Weight:** 98 lbs.    **Material:** Steel    **Tightest Tolerances:**  $\pm 0.0005\text{mm}$



# Sand Casting

Transmission gear case used by an OEM in the Marine Industry.

**Length:** 12"    **Width:** 10"    **Weight:** 33 lbs.    **Material:** Gray Iron    **Tightest Tolerances:**  $\pm 0.0005\text{mm}$





# Sand Casting



# Investment Casting



05

# MACHINED FORGINGS

Cold or Hot capabilities with precision machining

# Machined Forging Capabilities

## Cold Forging

- Reliable and cost efficient process.
- Savings in material and final machining.
- Increased dimensional control .
- Parts require very little or no finishing.
- Less susceptible to contamination issues.
- Favorable crystal grain flow increases toughness of the part.
- Final component features offer a better overall finish.
- Long die life.

## Hot Forging

- Main advantage of hot forging is that as the metal is deformed the strain-hardening effects are negated by the recrystallization process.
- Parts possess increased ductility which makes them desirable for many configurations.
- Homogenized Grain Structure.
- Porosity free surface quality enables a wide range of completion operations such as polishing or surface treatment.
- Efficient process when working with harder metals such as steel.

## In-House Services and Materials :

- **Mold design, fabrication and maintenance**
- **Secondary services and finishing**
- **Iron:** Ductile Iron, Gray Iron
- **Steel:** Carbon Steel, Low Alloy Steel, Stainless Steel

# Torque Converter Pilot



**Height:** 27.0mm    **OD:** 33.95mm    **Tolerances:**  $\pm 0.05/\pm 0.1$ mm    **Yearly Production:** 750,000 - 1,000,000

We currently produce this part for several Automotive OEMs in North America. The Pilot is a cold forged part, made from SAE 1018 material.

The Pilot is attached by heat welding onto the front side of the Torque Converter assembly. It's important to explain how this part serves as a critical guide or "pilot", during the installation of the Torque Converter.



# Hot Forgings



Used in the Forklift Transmission industry.

**Height:** 1"      **OD:** 4.25"

**Material:** AISI 1045



Used in the Forklift Transmission industry.

**Length:** 6.05"      **Width:** 2.5"

**Material:** 42CrMo

# Machined Forging Projects

Driveline Yokes used in Automotive, Off-Highway and Heavy Vehicle applications.



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# OTHER MACHINED PARTS

# MIM & Powder Metal Projects

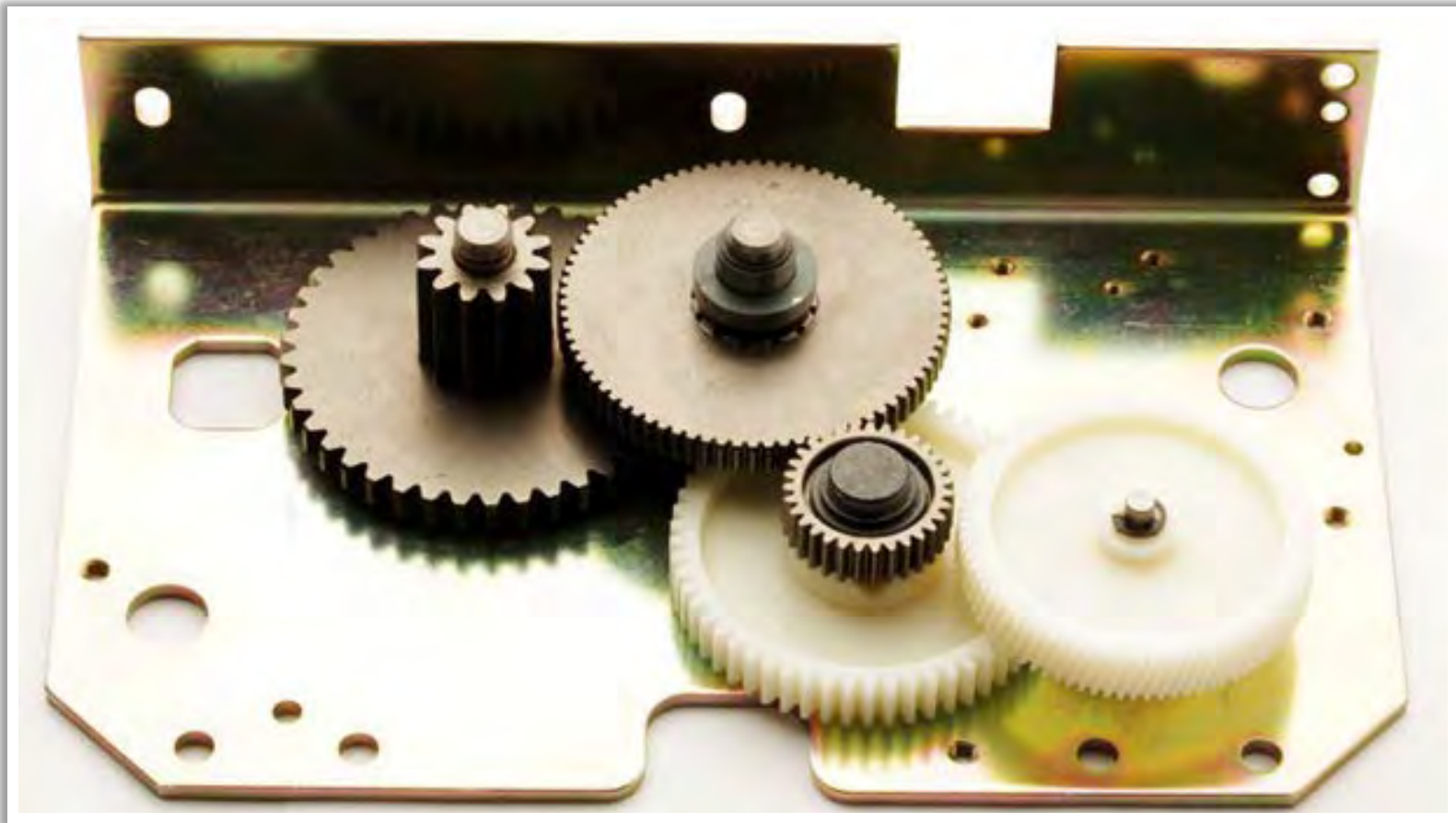


# Planetary Drive Assembly





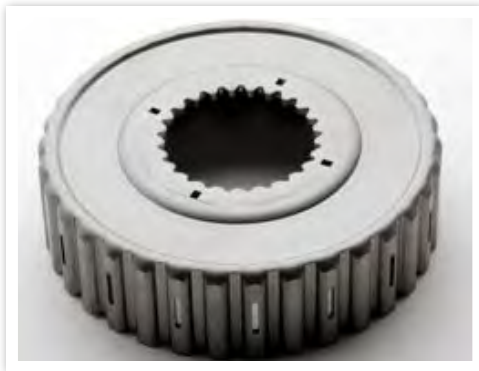
# Electric Drive Assembly



# Turbine and Impeller Hubs



# Clutch Shells and Baskets



08

## CONTACT US

Get your project started with us today

# Contact AmTech International

**Get started now.** The project team is available to assist you today.

Send your RFQ information to our Sales Department – [RFQ@amtechinternational.com](mailto:RFQ@amtechinternational.com)

To learn more about AmTech's manufacturing capabilities, please contact our Director of Sales & Marketing:

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