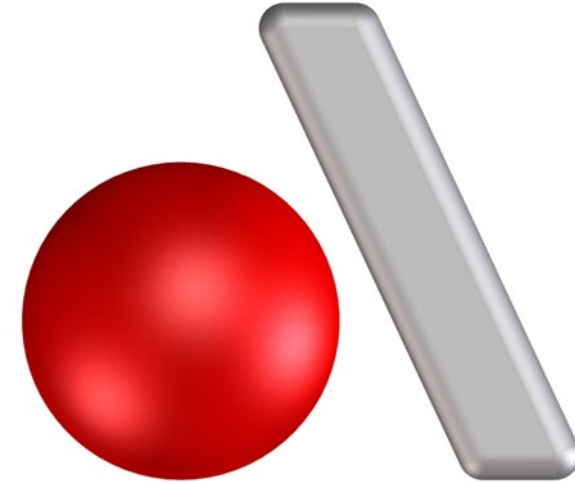


# ANGSTROM AUTOMOTIVE GROUP

*Company Overview 2024*



# WHO WE ARE



**Angstrom Automotive Group (AAG)** is a leading full-service supplier for Automotive and Industrial OEMs.

- Privately held company, founded in 1999
- Global Headquarters in Southfield, Michigan, USA
- 15 Companies (33 locations) across North & South America and Europe
- Over 4000 employees worldwide
- More than 4.0 million square feet of manufacturing floorspace
- Offering a vast portfolio of all types of parts including metal-formed, resin-based, electrical, lighting and more.

# OVERVIEW

# METAL FORMED

## TUBULAR ASSEMBLIES

## STAMPINGS

## FORGINGS



**Angstrom  
Taylor**

Taylor, MI

- Driveline Systems
- Propshafts
- U-Joint Needle Bearing
- Tubular Products
- Steering Comp.
- Machining Ops.



**Angstrom  
Tubular  
Solutions**

Ortonville, MI

- Engine Coolant / Air Bleed Tubes
- Turbocharger Coolant Feed Tubes
- Heater Inlet & Outlet Tubes
- Water Pump Inlet Tubes



**Wrena**

Tipp City, OH

- Structural Stamping
- Fabricated & Welded Assemblies
- Clutch Assemblies
- Heavy Truck Comp.
- Plastic over metal overlay



**Enforge**

Albemarle, NC

- Steel
- Steering Linkages
- Suspension Assemblies
- Control Arms
- Track Bars
- Center / Toe Links



**TruForge**

Eger, Hungary

- Steel
- Crown Wheels
- Clutch Bodies
- Synchronizer Rings
- Transmission Gears
- Sun Gears / Hubs



**Alumina**

Greenwood, SC

- Aluminum
- Suspension & Drive Train Components
- Control Arms
- Knuckles
- Yoke, Diff. Covers
- Blocks & Flanges



# ANGSTROM USA

## Capabilities:

- Automatic Robotic Welding
- Tube Cutting / Chamfering
- Universal Balancing Machine
- Assembly
- Machining
- Broaching
- Swaging

## Products:



***Driveshafts***



***Bearing Cups***



***Tubes***



***Pitman Arms***



# ANGSTROM TUBULAR SOLUTIONS

## Capabilities:

- Tube Bending
  - ✓ Mild Steel
  - ✓ Stainless Steel
  - ✓ Aluminum
- Assembly
- Robotic Welding
- Spot-Welding
- End-Forming
- Automated TIG Welding



***Water Pump Inlet***



***Radiator Outlet***



***Turbo Coolant Return***



***Heater Inlet & Outlet***



***Turbo Coolant Feed***



**WRENA**

**Capabilities:**

- Small to Large Stampings
- Structural & Drawn Stampings
- Plastic Insert Molded Stampings
- Welded Assemblies
- Fabricated Assemblies
- Clutch Assemblies



***Plastic Insert Molded Stampings***



***Clutch Actuation***



***Structural Stampings***



***Clutch Assembly***



***Welded Assemblies***



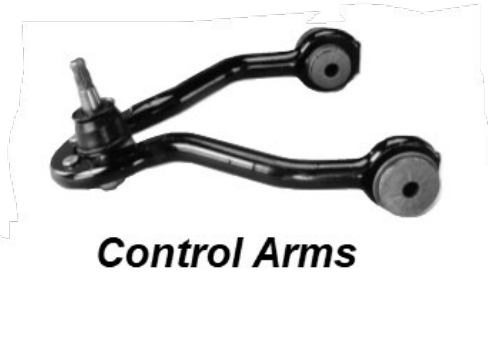
# ENFORGE

## Capabilities:

- Blank Cutting
- Steel Forging
- Precision Machining
- Assembly
  - ✓ Bushing Presses Assemblies
  - ✓ Press and Crimp Assemblies
  - ✓ Robotic Loading



**Track Bars**



**Control Arms**



**Complete Steering Systems**





# TRUFORGE

## Capabilities:

- Heavy Steel Forging (up to 17kg)
- Heat Treat
- Shot Blast
- Inspection
- Machining

*Flanges*



*Gear Blanks*





Capabilities:

- Impact Forging (Hot or Cold)
- Heat Treat
- Pre-Form Operations
- Dye Penetrant / Ultrasonic / Metallurgical / Eddy Current Inspection
- Machining
- Assembly (Bushings, Ball Joints, Inserts)

***Control Arms******Suspension Links******Knuckles***

# OVERVIEW

# METAL FORMED

## ALUMINUM CASTINGS



### Angstrom Aluminum Castings

### Conneaut Division

### Fremont Division

### Huntington Division

### Piedras Division

### Ravenna Division

### Wapakoneta Division

### Angstrom Voss

#### Grand Rapids

- Driveline Housing, Covers, Adaptors
- Mounting Brackets & Cross Members
- Timing Belt & Valve Covers
- Precision Machining

#### Conneaut, OH

- Safety Critical Knuckle Control Arm and Links
- Driveline Stator & Clutch Housings
- Gravity Cast
- Precision Machining

#### Fremont, IN

- Powertrain Brackets
- Driveline Hibs and Carriers
- High Pressure Diecast
- Precision Machining

#### Huntington, OH

- Powertrain Oil Pan & Flywheel Hsg.
- Mercury Intakes
- Gravity Cast & Lost Foam
- Precision Machining

#### Piedras, MX

- Safety Critical Knuckles
- Brackets & Clutch Housing
- Gravity
- Precision Machining

#### Ravenna, OH

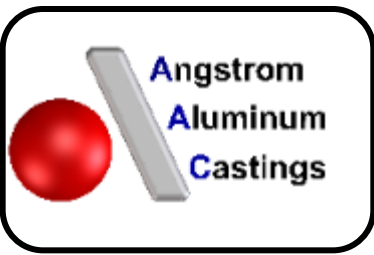
- Safety Critical Knuckles Control Arm
- Driveline Stator Hsg.
- Gravity Cast
- Precision Machining

#### Wapakoneta, OH

- Safety Critical Knuckles Control Arm Cradles & Crossmembers
- Powertrain Brackets
- Low Pressure Cast

#### Finnentrop, Ger.

- Industrial Castings
- Canopy Systems
- High Pressure
- Lo Pressure
- Gravity Fed



# ANGSTROM ALUMINUM CASTINGS

## Capabilities:

- Aluminum HPDC
- Continuous Flow
- Precision Machining
- Assembly



*Housing*



*Transmission Case Extension*



*Transfer Case*



*Chain Case Assy*



# GENERAL ALUMINUM CORPORATION

## Cast Capabilities:

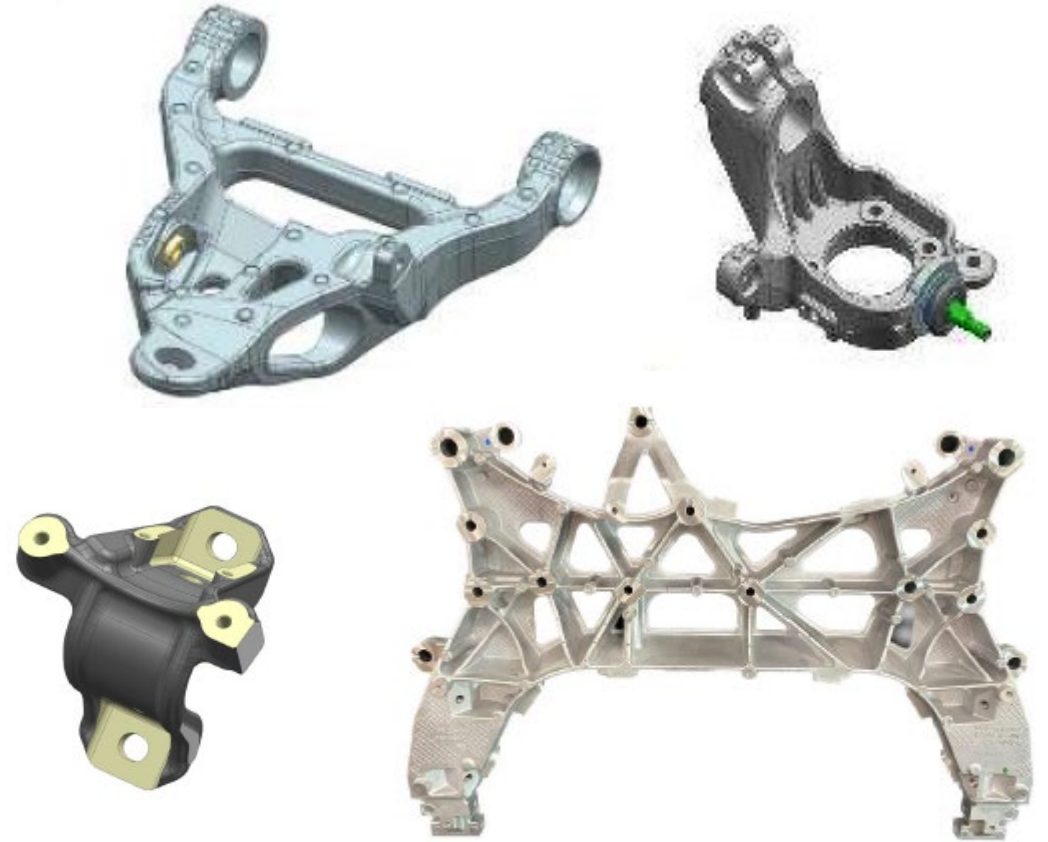
### Processes

Gravity Permanent Mold  
Semi-Permanent Mold  
High Pressure Diecast  
Low Pressure Permanent Mold  
Lost Foam Casting

## Value add Capabilities:

### Processes

Horizontal CNC's  
Vertical CNC's  
Turning Lathes  
Assemblies  
Mechanical Testing

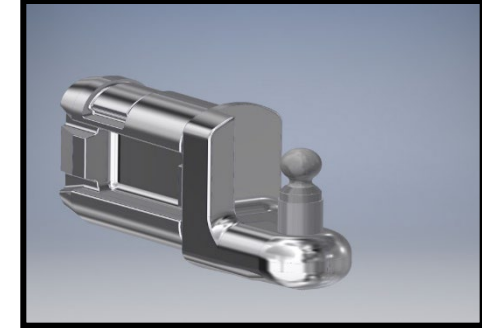
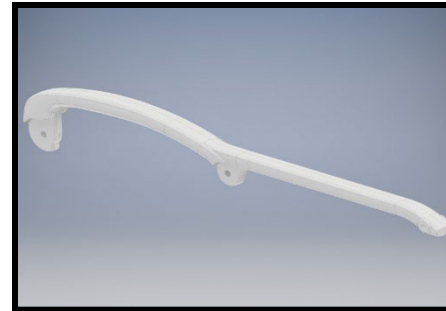
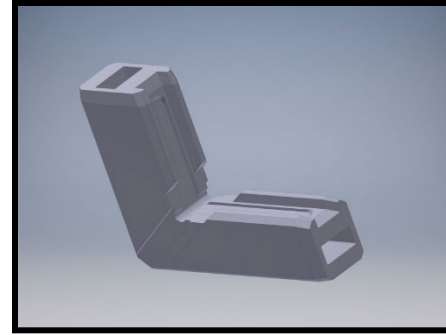




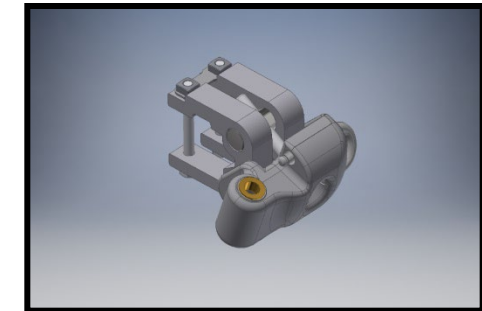
# VOSS

## Capabilities:

- HPDC, Gravity Casting
- CNC Machining
- Powder Coating



***Aluminum Castings***



# OVERVIEW

# RESIN BASED

## PLASTIC INJECTION

## POLYURETHANE FOAM

## COMPRESSED FIBER



**Tec Air**

Munster, IN  
Plastic Injection

- Fans (Appliances, Medical & Automobiles)
- Blower Wheels
- Automotive Engine Cooling Shrouds



**Vantec**

Webster City, IA  
& Falls City, NE  
Plastic Injection

- Rec. Vehicle Components
- Small Appliances
- HVAC Assemblies
- Consumer Goods



**Aspen**

Brighton, MI  
Manchester, TN  
Polyurethane Foam

- Energy Absorbing
- Interior Components



ANGSTROM FIBER

**Angstrom Fiber**

Brantford, Ontario      Auburn, Maine  
Englewood, Ohio      Sydney, Ohio  
Polyester Fibers

- Interior Components
- Underbody Protection
- NVH materials



# TECAIR

## Capabilities:

- Scientific Molding
- Precision Molding
- Kinematic / Functional parts
- Over-Molding / 2 Shot Molding
- Assembly



***Blower Wheel Cover***



***Engine Fan***



***HVAC Fan***





**VANTEC**

**Capabilities:**

- Plastic Injection Molding
- SolidWorks, Cad Key and AutoCAD
- Assembly
- Vibration Welding
- Automation



***Recreational Vehicles***  
***(Small Engine Cover)***



***Automotive Accessories***  
***(Running Boards)***



***Industrial HVAC***  
***(Components)***



***Consumer Goods***  
***(Coolers)***



***Consumer Goods***



***Industrial***

## Capabilities:

- Polyurethane Components
- Focus on Energy Management and Interiors
- Assembly
- Automation

*Cup Holders*



*Interior inserts (side panel, arm rest)*





# ANGSTROM FIBER

## Capabilities:

- Raw Material Production
- Fiber Forming
- Compression Molding
- Robotic Waterjet Cutting
- Assembly



*Wheel Liners*

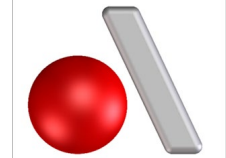


*Trunk Liners*



*Interior Headliners*

## WIRE HARNESS / CABLES / LIGHTING



ANGSTROM ELECTRIC

### Angstrom Electric

Pontiac, Michigan  
El Paso, Texas  
Juarez, Mexico

Electronics

- Wire Harness Assemblies
- Battery Cable Assemblies
- High Voltage Cable Assemblies



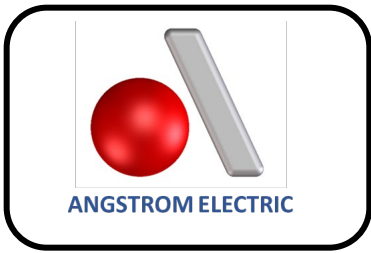
ANGSTROM LIGHTING

### Angstrom Lighting

Manaus, Brazil  
Juarez, MX

Electronics

- Lighting Components
- Lighting Assemblies
- Light Harnesses



# ANGSTROM ELECTRIC

## Capabilities:

- Low and High Voltage Battery Cables
- Wire Harnesses for interiors  
(IP, cooling, thermal, NAV, entertainment etc.)
- In-house testing and validation

*Battery Cable*



*IP Wire Harness*



*EV Cable systems*







# ANGSTROM LIGHTING

## Capabilities:

- Injection
- Metalizing
- Coating
- Welding / Gluing
- Assembly
- Leak Test / Electrical Test

## Motorcycle Lighting



## Bus Lighting



## Commercial Vehicle Lighting



# MANUFACTURING FOOTPRINT

## North America



## South America



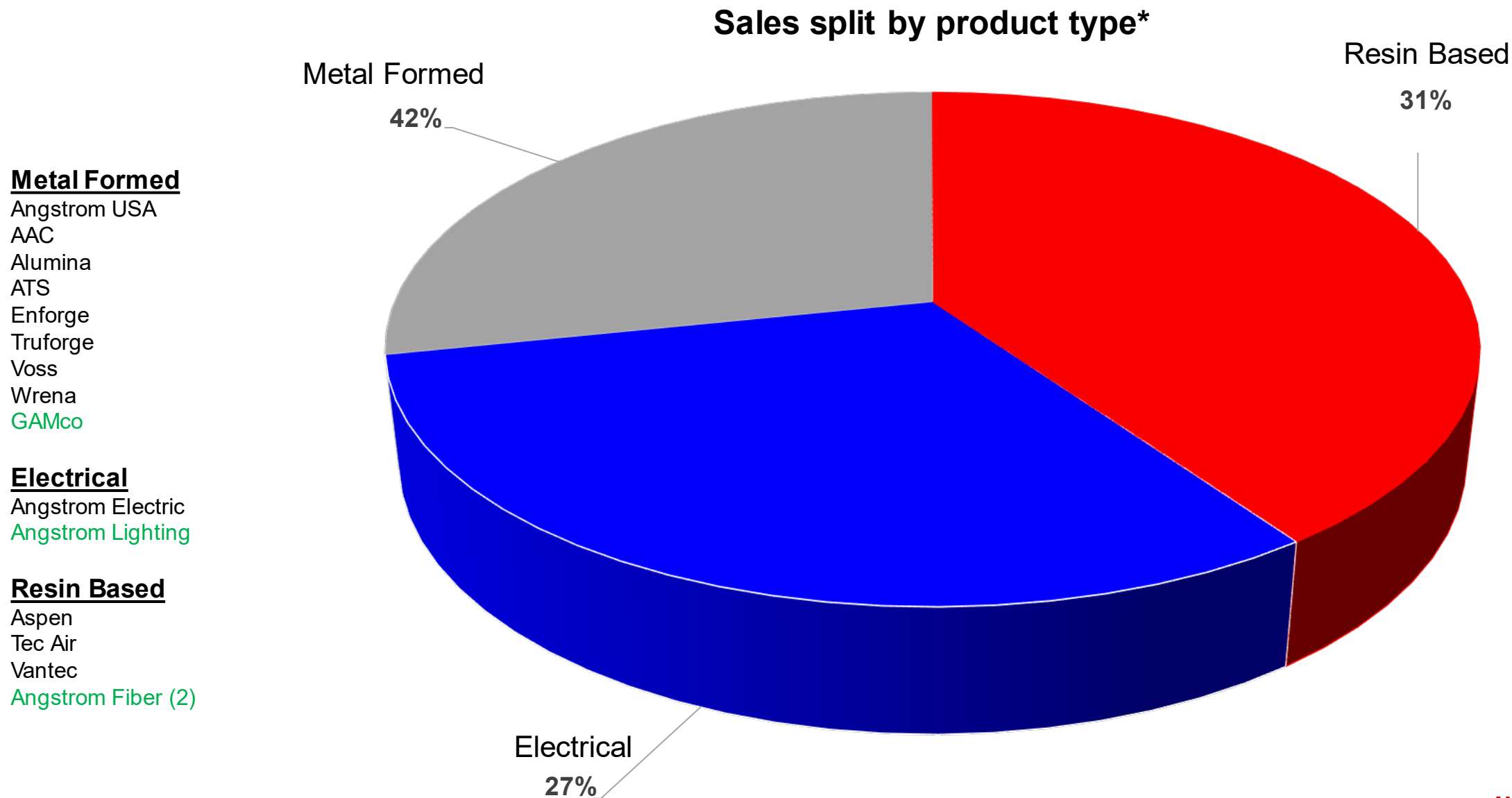
## Europe



- Current Footprint
- Further Global Expansion considered
- Willing to partner with other key suppliers to support global presence

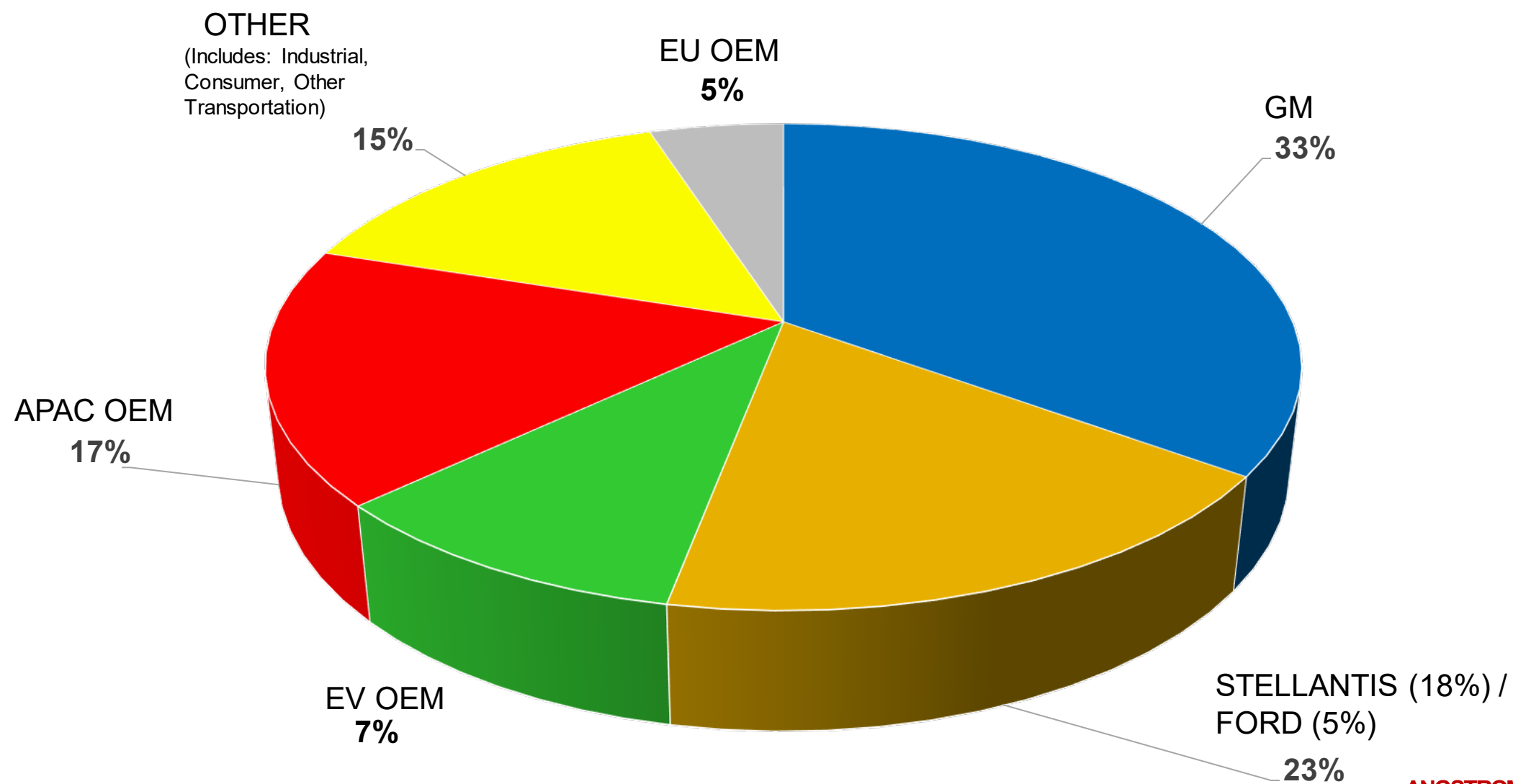


# CUSTOMER DEMOGRAPHICS



\* Based on forecasted 2023 Sales, which include latest acquisitions of Angstrom Fiber, Angstrom Lighting and GAMco

# CUSTOMER DEMOGRAPHICS



\* Based on forecasted 2023 Sales, which include latest acquisitions of Angstrom Lighting and GAMco

# CURRENT CUSTOMERS

We honor the relationships we have developed with our customers through our service and reliability

## Automotive



## Other Transportation



## Industrial



## Consumer Based



~ Angstrom has over 200 active customers! ~

# TAKEAWAYS / SUMMARY

## What does **ANGSTROM** offer?

- Vertically integrated cost competitive manufacturing
- Financially strong / Green Rating (Rapid Rating)
- Excellent quality and delivery (TS16949)
- Full Scale Logistics and Supply Chain Management
- **Angstrom is a Certified Minority Supplier**

# THANK YOU

For additional information or to send an RFQ please contact

**Steve Hunt**

Director of Sales

- +1 248-558-94458
- [steve.hunt@pkoh-ac.com](mailto:steve.hunt@pkoh-ac.com)
- [www.angstrom-usa.com](http://www.angstrom-usa.com)