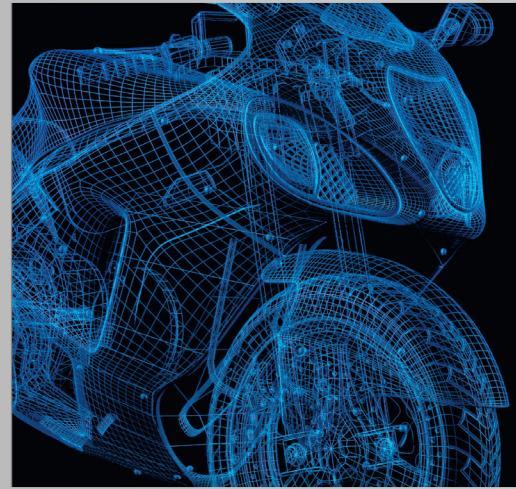
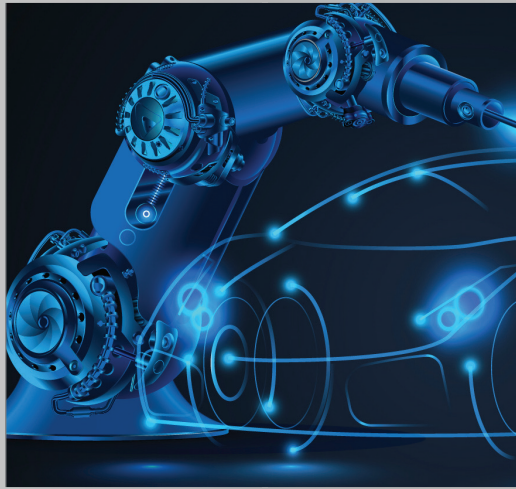
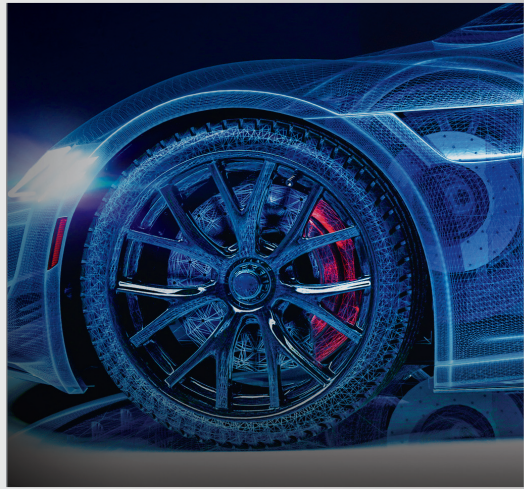


# AdvanTech

INTERNATIONAL



DRIVING PRODUCT LEADERSHIP

AdvanTech International Inc. (ATI), established in 1951 as a specialized international trading company has evolved into a global sales and market development organization. Driving product leadership, **ATI** partners with global leading manufacturers to deliver engineered product solutions through our strategically located operations.

## CORE TECHNOLOGIES

- Precision Cold Forming
- Resolvers and Encoders
- High Pressure Aluminum Die Casting
- Press Forming/Precision Stamping
- Precision Machining
- Servo Motors
- Steel and Aluminum Forgings
- Precision Ball Screws & Actuators
- Gyroscopes and Inertial Measurement Units (IMU's)
- Motorcycle Rims
- Metal Formed Thermal Management Components
- High Pressure Magnesium Diecasting

## GLOBAL FOOTPRINT



# VALUE-ADDED SERVICES



## PROJECT MANAGEMENT

- Intercontinental program coordination with strategically located support
- AIAG and all International Major OEM & Tier 1 Standards
- Tier 1 Accountability

## COMMERCIAL

- Contract Negotiation
- Global Currency Management and Transactions
- Incoterm Flexibility
- Continuous Improvement Management

## QUALITY

- APQP Support
- Change Management
- ISO9001:2015 Certified
- Supplier Base IATF-16949
- 8D Non-Conformance Resolution
- Sorting, Containment, Inspection
- MMOG Compliant

## TECHNICAL SUPPORT

- Application Engineering
- Multi-lingual Staff
- Global Business Culture Mediation
- Drawing Management

## DEVELOPMENT

- Global Sourcing
- Market Research
- Product Introductions
- Global Marketing Expertise

## SUPPLY CHAIN LOGISTICS

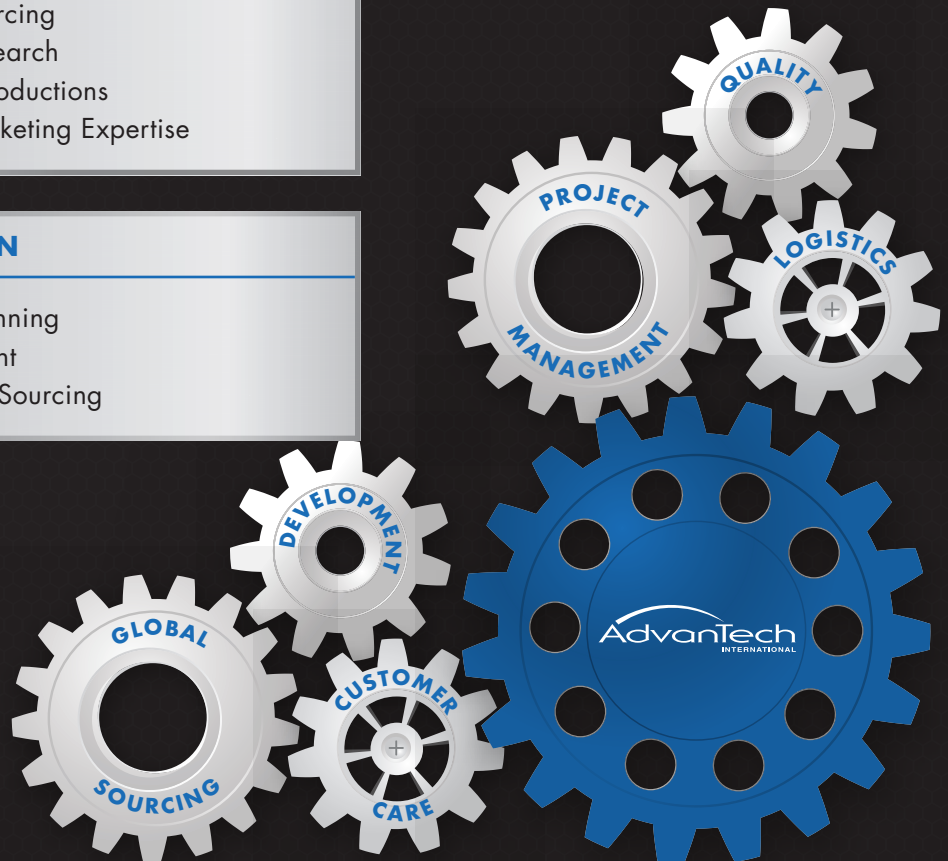
- Global JIT Delivery
- Local Warehousing
- International Packaging
- Consolidated Freight Efficiency
- Shipping to Operational Requirements
- Repack and Labeling/Bar Coding

## VALIDATION

- Product Planning
- Management
- Laboratory Sourcing

## PRODUCTION SUPPORT

- Capacity Planning
- Material/Inventory Management
- Life Cycle Planning





# AUTOMOTIVE APPLICATIONS

Connecting unique component technology to the automotive industry through our global footprint

## METAL FORMING TECHNOLOGIES

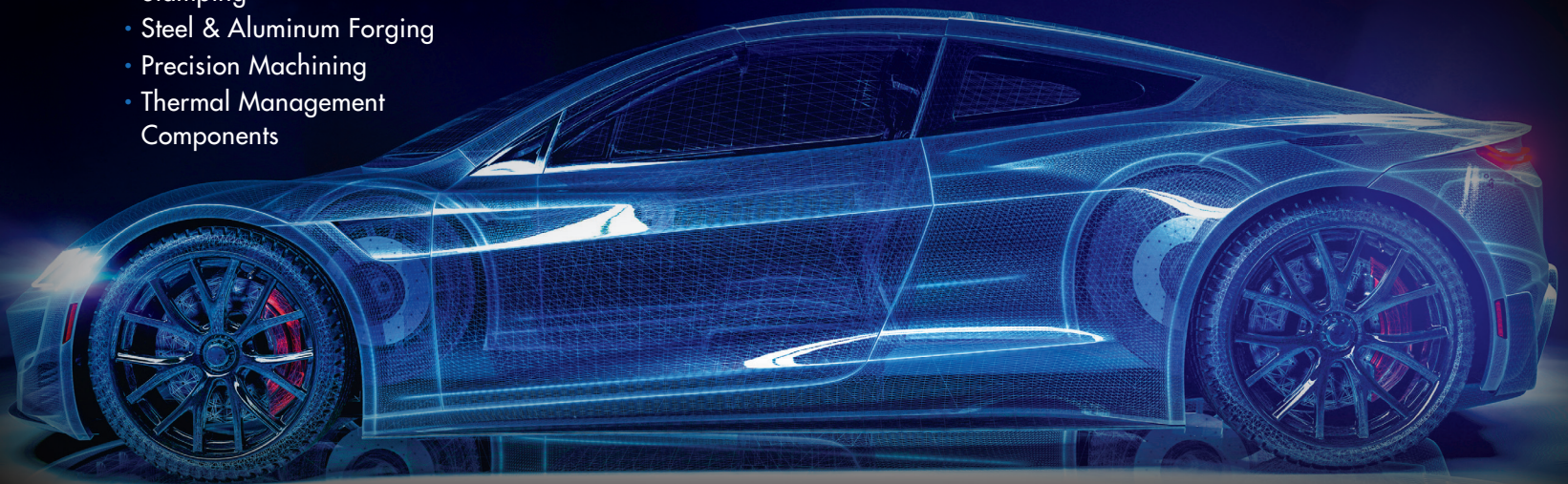
- Precision Cold Forming
- Weldable High Pressure Aluminum Die Cast
- Press Forming & Precision Stamping
- Steel & Aluminum Forging
- Precision Machining
- Thermal Management Components

## ROTATIONAL POSITION SENSORS

- Variable Reluctance Resolvers
- Inertial Measurement Units (IMU's)

## AUTOMOTIVE CHAIN

- Engine Timing Systems



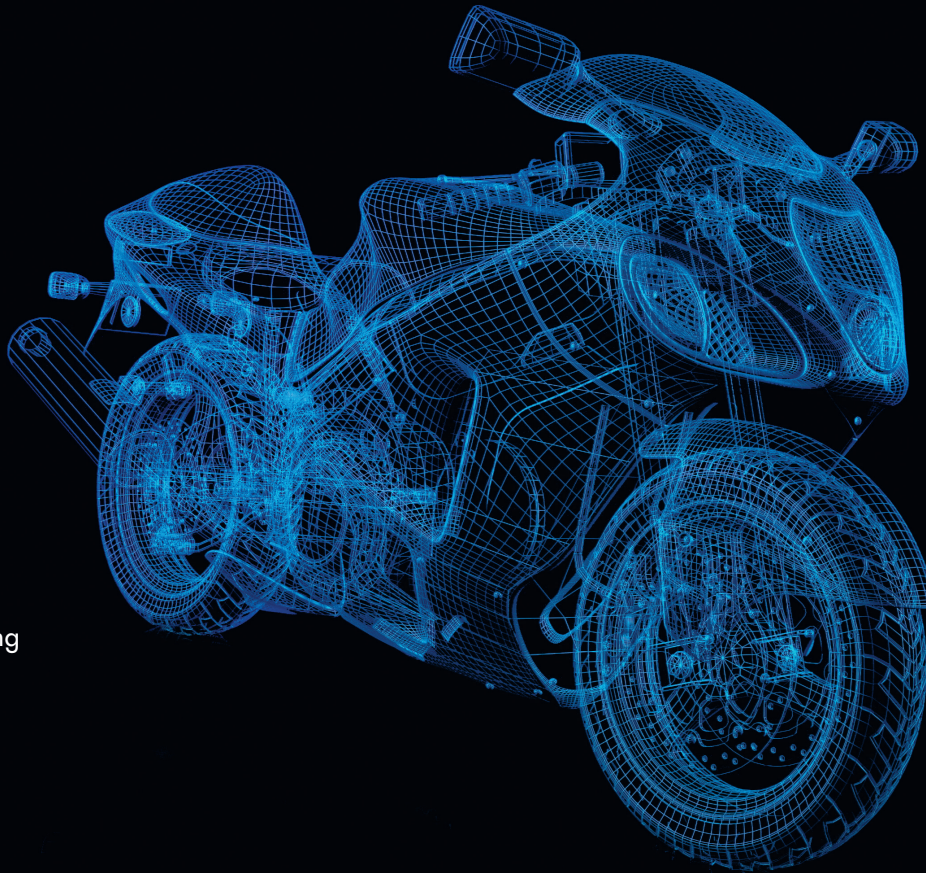


# MOTORCYCLE APPLICATIONS

Connecting unique component technology to the motorcycle industry through our global footprint

## METAL FORMING TECHNOLOGIES

- Precision Cold Forming
- Weldable High Pressure Aluminum Die Cast
- Press Forming & Precision Stamping
- Steel & Aluminum Forging
- Precision Machining



## ROTATIONAL POSITION SENSORS

- Variable Reluctance Resolvers
- Inertial Measurement Units (IMU's)
- Gyroscopes

## MOTORCYCLE WHEELS

- Extruded Aluminum & Steel
- Aluminum Cast



# METAL FORMING TECHNOLOGIES

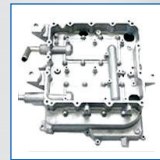
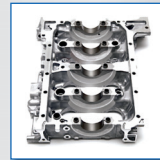
## PRECISION COLD FORMING

- Process Benefits
  - High Degree of Processing Accuracy
  - Tight Tolerances
  - Intricate Shape
  - Weight Reduction
  - Reduction of Manufacturing Steps / Secondary Machining
- Materials
  - Bearing Steel
  - Carbon Steel
  - Stainless Steel
  - Aluminum
  - Brass
- Finishes
  - Trivalent Chromate
  - Zinc
  - Nickel
  - Nickel Chrome
  - Copper
  - Phosphate
  - Geomet
  - Lock Patch / Sealer



## HIGH PRESSURE DIECASTING

- Process Benefits
  - Thin Wall Thickness to 1.0mm
  - Hollow Design
  - Weldable
  - Friction Stir Welding (FSW)
  - Weight Reduction
  - Production Efficiencies / Decreased Cycle Time
- Materials
  - Silafont36
  - ADC1 8, 10, 12
  - Magnesium
  - Zinc
- Finishes
  - Chrome
  - Anodized
  - Powder Coat
  - Paint



## ALUMINUM / STEEL EXTRUDED RIMS & CAST WHEELS

- Extruded Rims
  - Material – Aluminum - 7050 Equivalent, 6061, 6062, 6063 & Steel
  - Finishes – Chrome, Anodize, Paint, Laser Etching
  - Features – Multiple Contours, Multiple Widths, Tube, Tubeless
- Cast Wheels
  - Durable designs for rigorous applications
  - Weight Reduction
  - Custom Designs
  - Friction Stir Welding
    - Complex materials blend together becoming a single unit
    - Minimize deformation & maintain mechanical properties of base material
    - Reduction in pinholes, porosity and air leakage
  - Paint





# METAL FORMING TECHNOLOGIES

## PRECISION MACHINING

- Process Benefits
  - 5 Axis Machining
  - Precision Tolerance up to 5 microns
  - Machining Capacity – Max outer diameter up to 150mm, Max length to 1800mm
- Materials
  - Aluminum Alloy, Steel, Copper, Titanium
- Finishes
  - Zinc, Black Zinc, Chrome, Anodize, Sealant



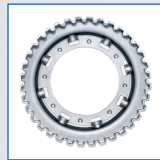
## THERMAL MANAGEMENT

- Battery Cooling Plate
  - Unique Joining Technologies
    - Fiber Laser Welding
    - Specially Developed Adhesive
  - Multiple Material Options
  - Thin Wall Thickness
  - Thermal Mapping / Simulation
  - Large Footprint Capability
  - Integrated Circuits
- Heat Sinks
  - Skived Micro Finned Heat Sinks
  - Precision Stamped Heat Sinks
  - Unique Shapes / Small Size Capability
  - Improved Surface Area
  - Superior Thermal Conductivity
  - Potential for direct mount to PCB
  - Copper / Aluminum



## PRESS FORMING / PRECISION STAMPING

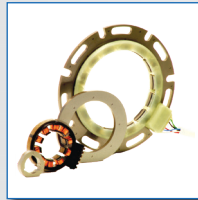
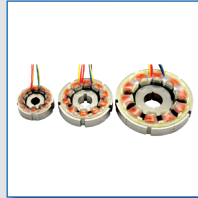
- Process Benefits
  - Shaping of teeth by one shot (no rolling or transfer process)
  - Stamping process improves accuracy of gear/shear droop is minimized
  - Improvement to mechanical properties
  - Weight Reduction
- Applications
  - Suspension, Power Steering, Engine Systems, Brake Systems



# ROTATIONAL POSITION SENSORS

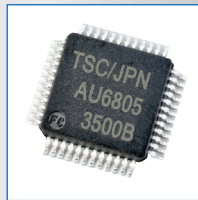
## SINGLSYN SPEED & POSITION SENSORS

- Rugged Variable Reluctance Design
- Absolute Signal
- Extremely Thin Axially
- Multi-Speed Options: 1x ~ 15x +
- Sizes from 11mm – 285mm O.D. +
- Wide Temperature Range:  
- 40° C ~ + 150° C
- Robust for Harsh Environments
  - Vibration: 196 m/sec<sup>2</sup> (20G)
  - Shock: 980 m/sec<sup>2</sup> (100G)
  - Humidity: 90% RH +
- High Rotational Speed: 30,000 rpm
- Easily Customized for Shape or Electrical Connection
- Low Cost Design



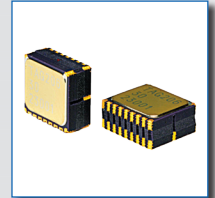
## RESOLVER TO DIGITAL R/D CONVERTOR IC

- Digital Tracking System,  
Analog to Digital Output
- Low Cost, Small Size
- High Speed – 12bit
- Operating Temperature: -40 to +125 Deg C



## GYROSCOPES

- MEMS Gyroscopes
  - Compact Design
  - Low Cost
  - High Accuracy: 5 Deg / Hour
  - Waterproof
- iFOG Gyroscopes
  - High Accuracy: 0.1Deg/Hour
  - Level 5 Autonomous Driving
  - Unique Fiber Optic Winding Technology = Low Cost
  - Closed Loop
- Inertial Measurement Units (IMU)
  - High Accuracy / Attitude Angle < 0.1deg
  - IP65
  - Kalman Filter & GNSS Dead Reckoning Type
- iFOG/MEMS Combined Inertial Measurement Units
  - Sensor Fusion for Level 5 Fully Autonomous Driving
  - Improved Dead Reckoning: 0.1Deg/Hour
  - Attitude: 0.1 Degree





# INDUSTRIAL APPLICATIONS

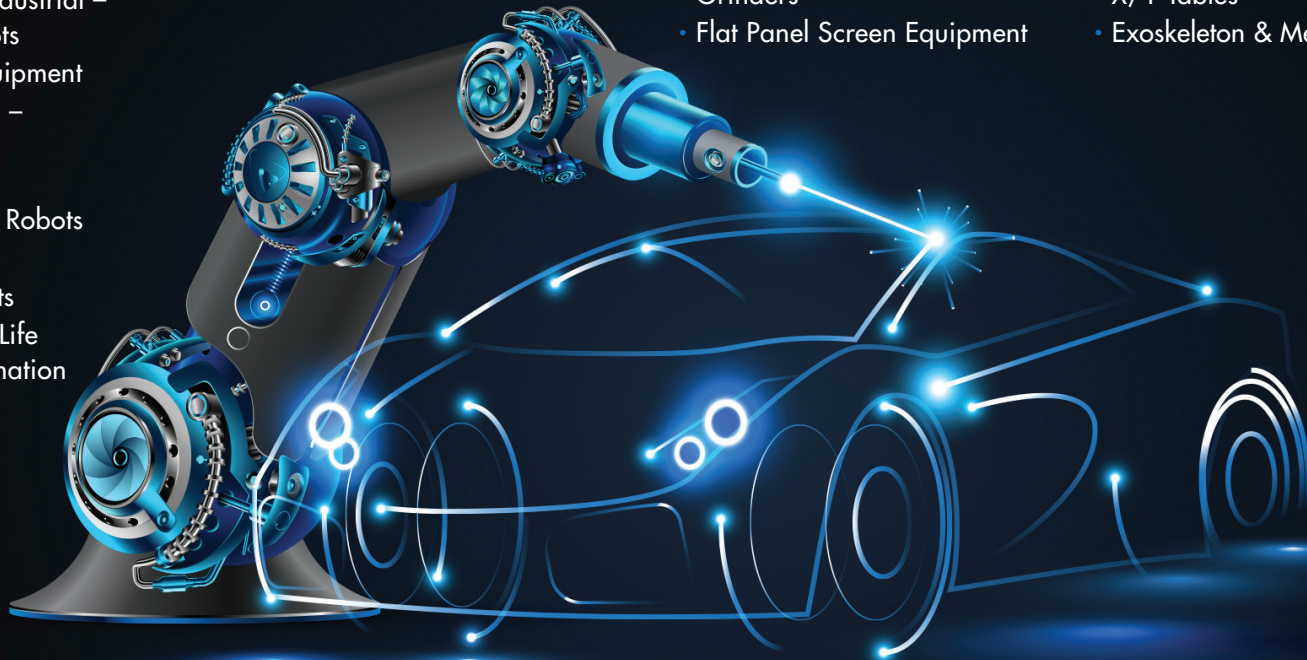
Connecting unique component technology to the industrial and automation industries through our global footprint

## AC/DC SERVO MOTORS & CONTROLLERS

- Wafer Handling Robots
- Heavy Duty Industrial – Welding Robots
- Inspection Equipment
- Machine Tools – X/Y/Z Axes
- Pick/Place Automation & Robots
- X/Y Tables
- Medical Robots
- Biomedical & Life Science Automation

## PRECISION BALL SCREWS, ACTUATORS & LINEAR GUIDES

- Wafer Handling Robots
- Machine Tool – Lathes, Grinders
- Flat Panel Screen Equipment
- Testing & Inspection Machinery
- X/Y Tables
- Exoskeleton & Medical Robots



## ROTARY ENCODERS & BRUSHLESS RESOLVERS

- Motor Speed & Position Feedback
- Length Measurement
- Positioning
- Elevator Door Control
- Metering Pumps
- Tension Control

## INERTIAL MEASUREMENT UNITS (IMU'S) & GYROSCOPES

- Mobile Robots
- Self-guided Vehicles
- Autonomous Robots
- Autonomous or Self-driving Vehicles
- Stabilizing & Mapping Systems
- Automated Material Handling
- Agricultural, Construction & Mining Vehicles

# INDUSTRIAL COMPONENTS

## SERVO MOTORS/DRIVERS/CONTROLLERS

- High Performance & Low Cogging
- 3 W to 15 kW
- Very Compact
- Low Inertia
- Feedback Options
  - Absolute Encoder up to 25bits
  - Brushless Resolver
  - Incremental Encoder 12,000 C/T +



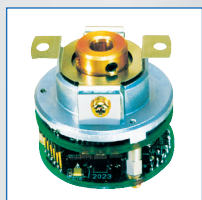
## PRECISION BALL SCREWS & ACTUATORS

- Ball Screws
  - Precision Ground & Rolled to C0 Accuracy
  - High Load – High Speed – Quiet
  - Wide Lead Range – 1mm to 50mm
  - Diameter Size Range – 6mm to 125mm
- Ball Screw Actuators
  - High Accuracy & Rigidity
  - Leads from 1 to 20mm
  - Various Mounting Designs and Sensor Options



## ROTARY ENCODERS

- Incremental
  - Hollow Shaft & Shaft Designs
  - Up to 12,000CT
- Absolute
  - 11bit to 25bit Resolution
  - Single & Multi-turn
- Magnetic Type
  - Extremely Rugged
  - Vibration Resistant
  - Absolute, High Resolution



## BRUSHLESS RESOLVERS

- Rugged Design
- High Accuracy Wound Rotor Type
- Variable Reluctance Type
- -55 to +155 Degrees C
- Vibration & Shock Resistant
- Various Mounting Configurations
- 6mm to 100mm Shaft Sizes (rotor bore)









DRIVING PRODUCT LEADERSHIP

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