

## Professional Power Tool & Automotive Components Manufacturer



Precision Machined Parts • Forgings • Assemblies  
Custom Engineered Solutions

# FORTIS GROUP VISION

## Overview

## *“Always a Solution Ahead”*

### Business Definition

*Fortis is a trusted producer of mission-critical component and sub-assemblies for integration into world-class products that benefit humanity. We focus on growth of precision machining, cold forging, and assembly of products for OEMs in North America, Asia, and Europe.*

### Value Shift

*Our people and community are our most valuable resources. Quality is important in everything we do. We leverage key trends in manufacturing: data driven technology, automation, innovation that is software inspired; “hassle-free” customer experience; higher productivity; and flexible customer business models.*

### Value Leadership

*We serve our customers with the best total value by providing innovative designs, proprietary assembly solutions, 6-Sigma quality execution, speed to market, advanced problem-solving processes, world class delivery systems and channels, and a global footprint.*

### Growth Plan

*We will grow our core business, embrace our rich brand heritage, and develop emerging global markets, while diversifying our business into complex assemblies, medical products, and adjacent markets through organic expansion and acquisition.*

# FORTIS GROUP MISSION & VALUES

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## MISSION

*Produce precision machined components and assemblies which require custom engineered solutions that provide customers high value from our supply chain.*

## CULTURE

*“A PATTERN OF BELIEFS, VALUES, AND EXPECTATIONS THAT ARE SHARED BY ALL MEMBERS OF FORTIS GROUP.”*

# FORTIS GROUP MISSION & VALUES

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## MISSION

*Produce precision machined components and assemblies which require custom engineered solutions that provide customers high value from our supply chain.*

## VALUES

*FOCUS: Our highest priority is to satisfy our external & internal customers.*

*TEAMWORK: We encourage each Associate to achieve maximum individual potential as an empowered team member.*

*SPEED: We strengthen our competitive advantage by simplifying processes & compressing cycle times.*

*INTEGRITY: We expect our Associates to meet personal commitments & deal with facts.*

*PERFORMANCE: We coach our Associates to set ambitious goals & meet our high expectations including financial commitments.*

*ALLIANCE: We share technologies & best practices in a team approach with our suppliers.*

*CREATIVITY: We utilize engineering talent to create innovative designs, invent new techniques, & reduce cost.*



# FORTIS GROUP STRATEGIC INITIATIVES & GOALS

## STRATEGIC INITIATIVES

*Grow global revenue & profitability through organic expansion of Fortis' "share of wallet" at Top 3 customers; while diversifying customer base by marketing current products & unique capabilities.*

## 2024 GOALS

- ☐ *Achieve financial breakeven in Monterrey – real gross margin must cover expenses.*
- ☐ *Win Marmon Foodservice business & introduce Fortis to other Marmon Holdings' Divisions.*
- ☐ *Focus on Assembly business development by North America Leadership Team.*
  - ✓ *Build world-class showcase work cells & achieve ISO certification.*
  - ✓ *Reach proposal phase for gearbox assembly.*
- ☐ *Capture global Sango business.*
- ☐ *Introduce Fortis Group to Exhaust System OEMs in Japan.*
- ☐ *Explore Exhaust System OEM business in North America.*
- ☐ *Implement Productivity Initiatives in manufacturing bases.*
  - ✓ *Automation & robots.*
  - ✓ *Work sampling (Utilization).*
  - ✓ *5S & safety.*
  - ✓ *World-class factories with Fortis Group "Feel".*
- ☐ *Attend Design & Contract Manufacturing (d2p.com) trade show in Novi, MI (6/19-6/20/24).*
- ☐ *Certify Nantong factory for Sango parts manufacturing.*
- ☐ *Explore options of delivering products from China to North America in case of disruption.*
- ☐ *Evaluate feasibility of investing in powder metal forming & sintering technology & production.*

# BUSINESS OVERVIEW

## FORTIS MANUFACTURING SOLUTIONS

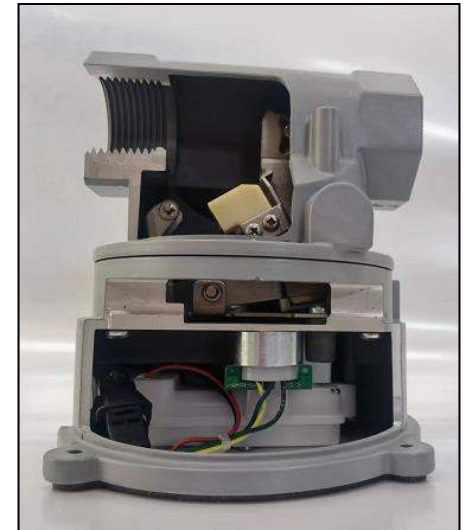
Precision Machined &  
Cold Forged Parts



Precision Assemblies  
Gear Box & Sub-assy



Custom Engineered  
Solutions



# UNIQUE SELLING PROPOSITION

- Full-service Supplier
- Superior Quality
  - ✓ ISO 9001:2015 & IATF16949:2016
  - ✓ Emphasis on repeatability & reproducibility; 6-Sigma tools
- Global Footprint
  - ✓ Operations in China & Mexico, US HQ
  - ✓ Flexible & adaptable plant layout in response to customer needs
  - ✓ LCP for parts & assemblies
- Supply Chain Management
  - ✓ Experience in global logistics support
  - ✓ Continuous supplier development
  - ✓ Kan-ban systems
  - ✓ 24/7 operation
- Other Process
  - ✓ 14 years of cold forge process experience
  - ✓ 19 years of investment casting process experience
  - ✓ 11 years of powder metallurgy process experience
- Long-Term Customer Focus
- Cost-down Solutions
  - ✓ VE/VA capability
  - ✓ Mfg. engineering support



# CAPABILITIES

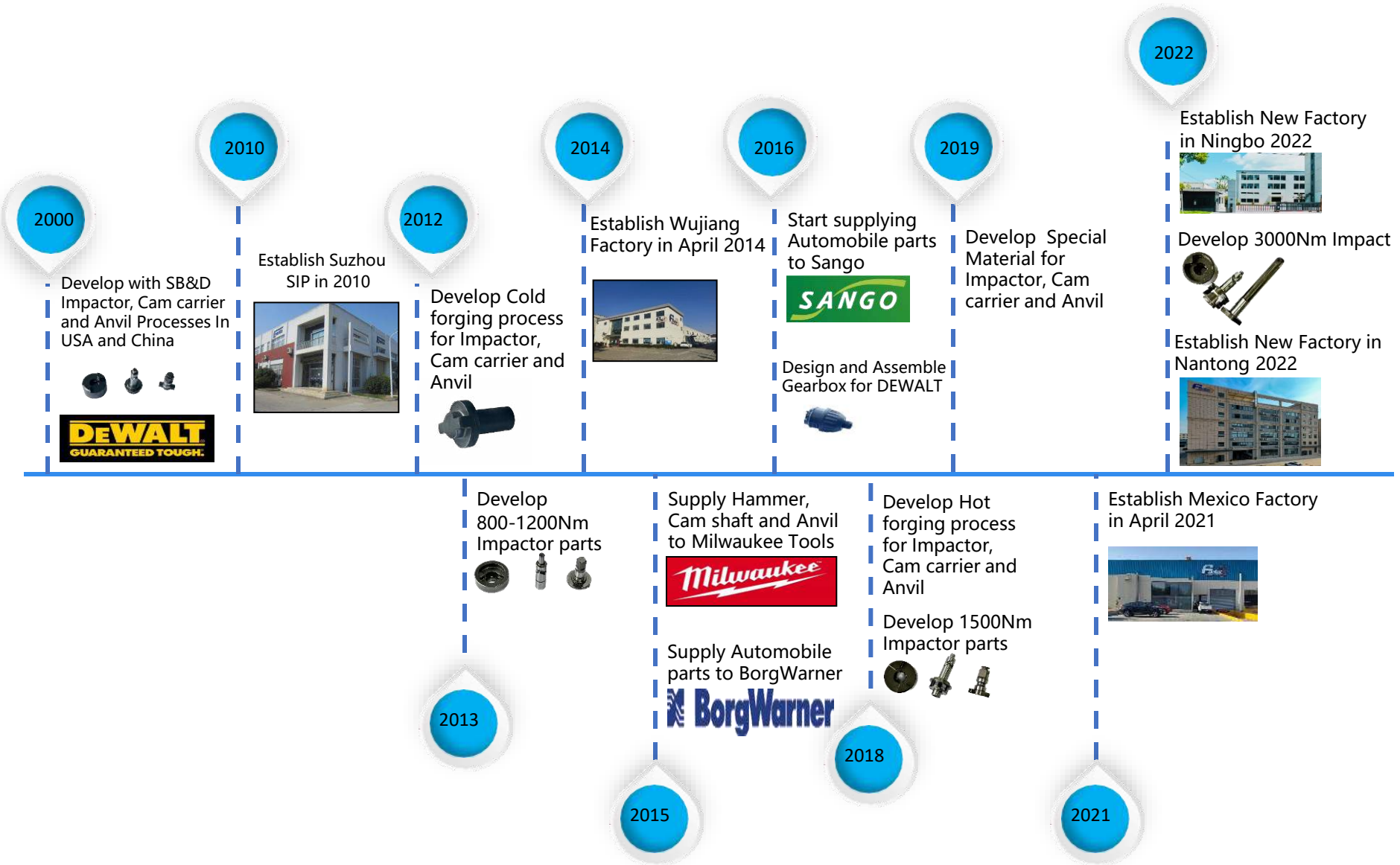
- Precision Assembly
  - ✓ Advance Product & Quality Plan
  - ✓ Design & build assembly cells
  - ✓ Pockets of Automation
  - ✓ Full Automation
  - ✓ Mistake-proofing
- Precision Parts Machining
  - ✓ Multi-axis CNC Turning
  - ✓ Milling and Hard Turning
  - ✓ High Speed Machining Centers
  - ✓ Grinding and Shot-peening
  - ✓ Lapping, Polishing, Honing
  - ✓ Ultrasonic Cleaning
  - ✓ Multi-axis Swiss machining
- Custom Engineered Solutions
  - ✓ New Product Design, Feasibility, and Development
  - ✓ Mistake-proofed & Computerized Assembly Cell Design and Build
  - ✓ Prototype and Proof-of-concept
  - ✓ Fixture Design and Build
  - ✓ Leak Test Design and Build
  - ✓ Impactor Tool Gearbox Durability Test Design and Build



# GLOBAL FORTIS GROUP FOOTPRINT



# OUR DEVELOPMENT HISTORY





# FORTIS GROUP OPERATIONS

Since 1950, FORTIS products and services have been solving difficult manufacturing problems. The intention of FORTIS was, and still is, to be an innovative full-service company that addresses the complex and precise manufacturing requirements.



- Extensive experience in manufacturing and manufacturing Technology.
- Flexible and multidisciplinary teamwork.
- FORTIS Group employs 500+ Associates.
- Ingenuity and willingness to go beyond customer expectations.
- Global manufacturing space of 50,000+ square meters.



# FORTIS GROUP - WUJIANG

Precision Machining & Assembly Operations (Product Launch & Low-volume/High Mix Production)





# FORTIS GROUP - WUJIANG

Precision Machining & Assembly Operations (Product Launch & Low-volume/High Mix Production)



# FORTIS GROUP - NINGBO

## Cold Forging & Precision Machining Operations





# FORTIS GROUP - NINGBO

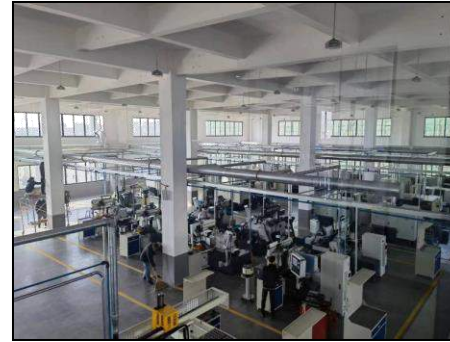
## Cold Forging & Precision Machining Operations





# FORTIS GROUP - NANTONG

## Precision Machining Operation





# FORTIS TECHNOLOGIES MONTERREY, MEXICO

Started Investment on New Factory in Monterrey, Mexico in November 2021.

- Fully-owned subsidiary, not a Shelter operation
- IMMEX certified
- VAT exempt
- Precision CNC Machining & Assembly
- New factory and High Precision Machines
- Managed by experienced Mexican nationals
- Production started in September 2022

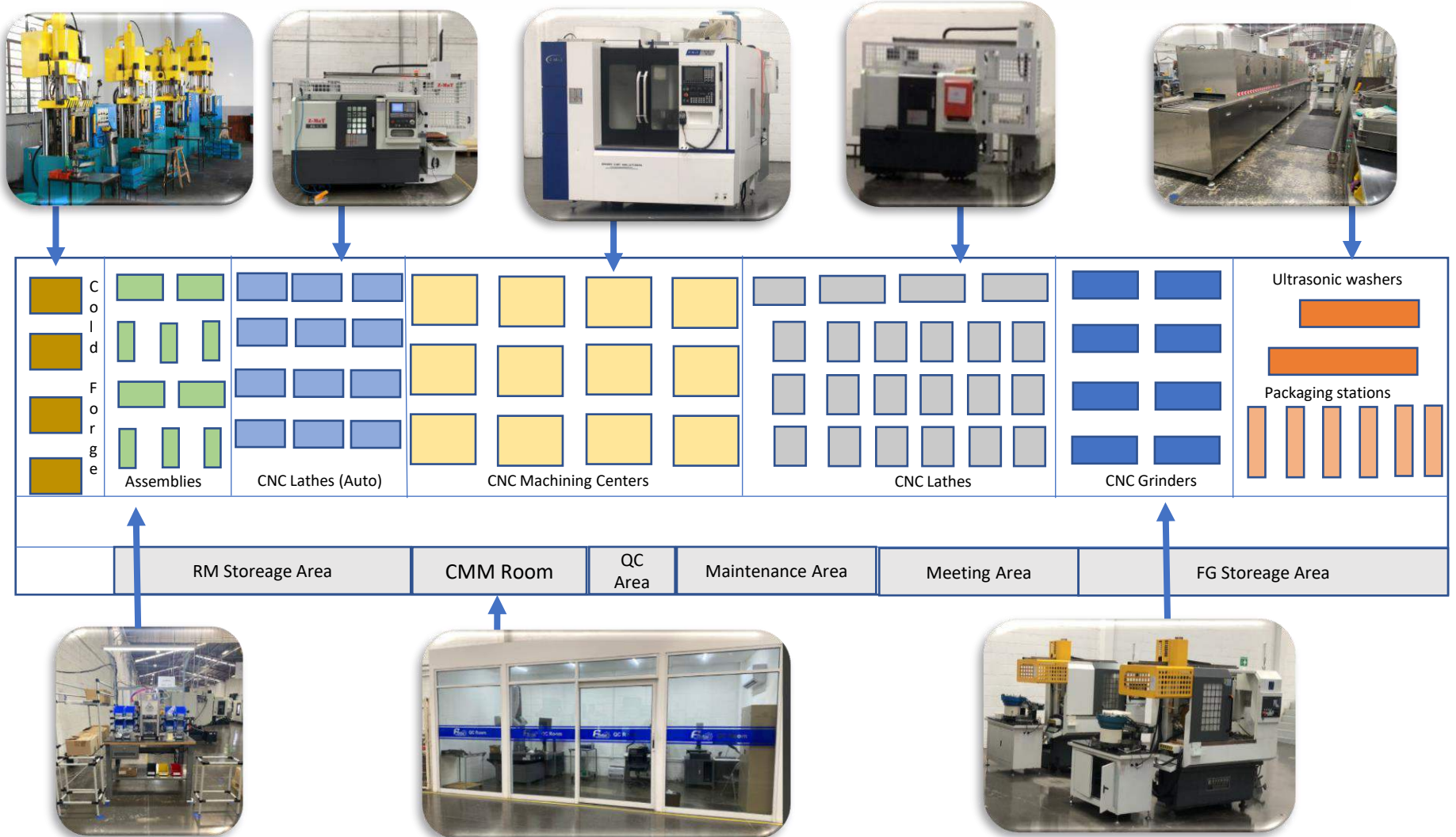


# SB&D-Fortis NA Localization Project Update

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- Site and building study - January 2020
- Appoint Mexican General Manager – November 2020
- Legal entity established - June 2021
- Machines for Phase I arrived - November 2021
- Machines installed and training started - December 2021
- Fortis obtained IMMEX and PROSEC - Mid 2022
- SBD Supplier QA audit, and system test complete – Q3 2022
- Production pilot complete - July 2022
- Phase 1 production launch – September 2022
- Phase 3 Machines arrived - January 2023
- Mexican employees trained in China for phase 3 - Q2 2023
- Phase 2 approved for Outkast and Lil Jon - Q3 2023
- Approved 6 Chinese engineers for Monterrey rotating assignment
- Additional 10 lathes, 4 machining centers, and 4 forging presses scheduled for Monterrey

# FORTIS MONTERREY MACHINE LAYOUT





# FACTORY FLOOR WITH MACHINES





# MACHINES IN MONTERREY



CNC  
Lathe



Cylindrical  
grinder



Centerless  
grinder



Ultrasonic  
cleaner



Automatic  
CNC Lathes



Shot peening

# MACHINES IN MONTERREY



Cylindrical  
grinder



CNC CENTER

## QC/METROLOGY LABORATORY



Hardness  
Tester



Ultraviolet  
Light



Smart  
Scope



CMM



# MACHINES IN MONTERREY



Assembly  
Line



CNC  
Centers



CNC  
Lathes

# MACHINES IN MONTERREY

## Precision Machining Operation





# ADDITIONAL MACHINES FOR MONTERREY AT WUJIANG





# ADDITIONAL MACHINES FOR MONTERREY AT WUJIANG





# ADDITIONAL MACHINES FOR MONTERREY AT NINGBO



# Localization of New Projects in Monterrey

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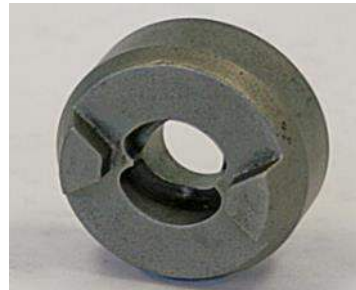
## Name of the Project: G2

G2 Cam Carrier  
N408020



N408020-C2D1.pdf

G2 Impactor  
N408022



N408022 C2D1.pdf

G2 Anvil  
N415589



N415589-C2D1.pdf



# Localization of New Projects in Monterrey

Name of the Project: HB2

HB2 Cam Carrier  
N863617



N863617-C2D1 V3.2.pdf

HB2 Impactor  
N863613



N863613-C2D1 V3.3.pdf

HB2 Anvil  
N900940



N900940-C2D1 V4.3.pdf

HB2 Anvil  
N911955



N911955-C2D1 V4.3.pdf

# Localization of New Projects in Monterrey

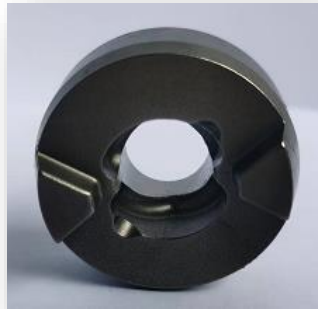
## Name of the Project: Lil Jon

Lil Jon Cam Carrier  
NA239782



NA239782-C2D1 V0.10.pdf

Lil Jon Impactor  
NA239796



NA239796-C2D1 V0.12.pdf

Lil Jon Anvil  
N799730



N799730-C2D1 V4.2.pdf

# Localization of New Projects in Monterrey

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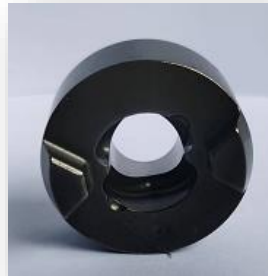
## Name of the Project: Outkast

**Outkast Cam Carrier  
N875004**



N875004-C2D1 V2.3.pdf

**Outkast Impactor  
N875007**



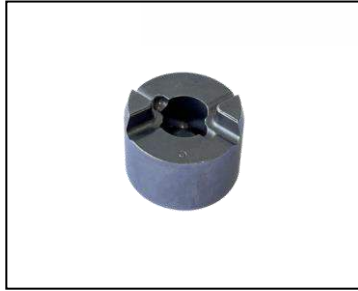
N875007-C2D1 V2.3.pdf

**Outkast Anvil  
N799730**



N799730-C2D1 V4.2.pdf

# PRECISION MACHINED PARTS: EXAMPLES



Impactor: 200Nm .



Impactor: 300Nm .



Impactor: 400Nm .



Impactor: 700Nm .



Impactor: 1000Nm .



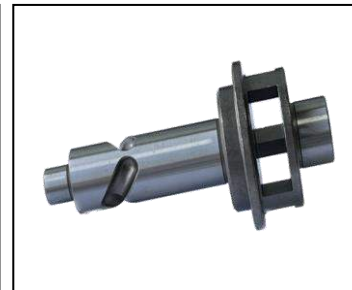
Cam shaft: 200Nm .



Cam shaft: 400Nm .



Cam shaft: 700Nm .



Cam shaft: 1000Nm .



Anvil



Anvil : 200Nm .



½ Anvil : 400Nm .



½ Anvil : 900Nm .



½ Anvil : 700Nm .



Anvil : 1000Nm .

# OTHER PARTS FOR POWER TOOLS : EXAMPLES



Sleeve No 1: 200k/yr.



Anvil: 200k/yr.



Nut: 300k/yr.



Plate: 150k/year



Sleeve No2: 120k/yr.



CAMPACTOR CUP: 150k/yr.



LOCK, SPINDLE: 200k/yr.



SECONDARY GUIDEPOST:  
300k/yr.



Shaft: 150k/yr.



Depth shaft: 170k/yr.



1/4 Collect No1 : 1600k/yr.



1/4 Collect No2: 100k/yr.



1/8 Chuck: 80k/yr.



Collect: 80k/yr.



Magazine Interface: 60/year

# AUTOMOTIVE PARTS: : EXAMPLES



Powder metallurgy Process  
(Material : PMZ4020)



Powder metallurgy Process  
(Material : PMZ4020)



Powder metallurgy Process  
(Material : PMZ4020)



Powder metallurgy Process  
(Material : PMZ4020)



Powder metallurgy Process  
(Material : PMZ4020)



Powder metallurgy Process  
(Material : PMZ4020)



Powder metallurgy Process  
(Material : PMZ4020Nb)



Powder metallurgy Process  
(Material : PMZ4020Nb)



Hot forging Process  
(Material : SUS430)



Powder metallurgy Process  
(Material : PMZ4020Nb)



investment casting  
(Material : SUS430)



investment casting  
(Material : SUS430)



investment casting  
(Material : SUS430)



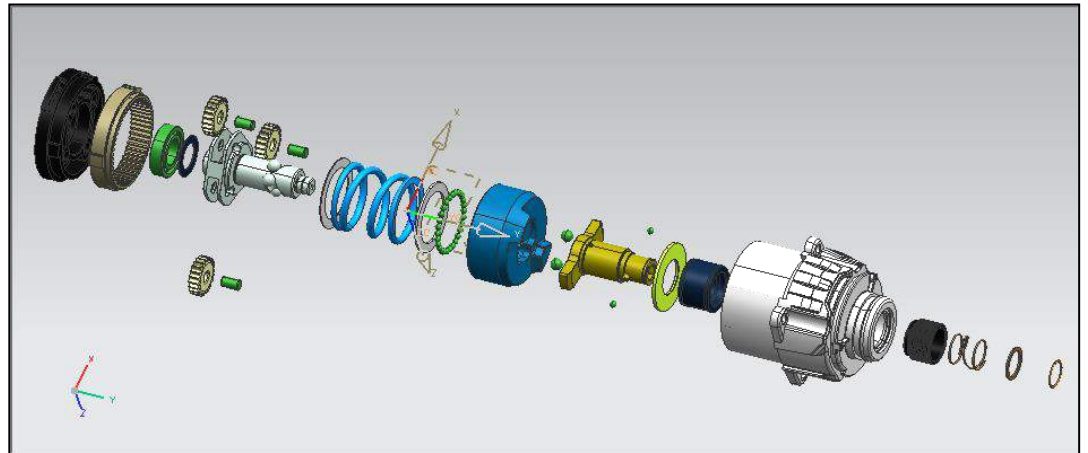
investment casting  
(Material : SUS430)



investment casting  
(Material : SUS430)

# IMPACTOR GEAR BOX ASSEMBLY

Components  
details





# IMPACTOR GEARBOX COMPONENTS FLOW CHART





# GEAR CASE ASSEMBLY

- Gear Case
  - NA401099
  - NA407131
  - NA407134



# SUPPORT BRACKET ASSEMBLY

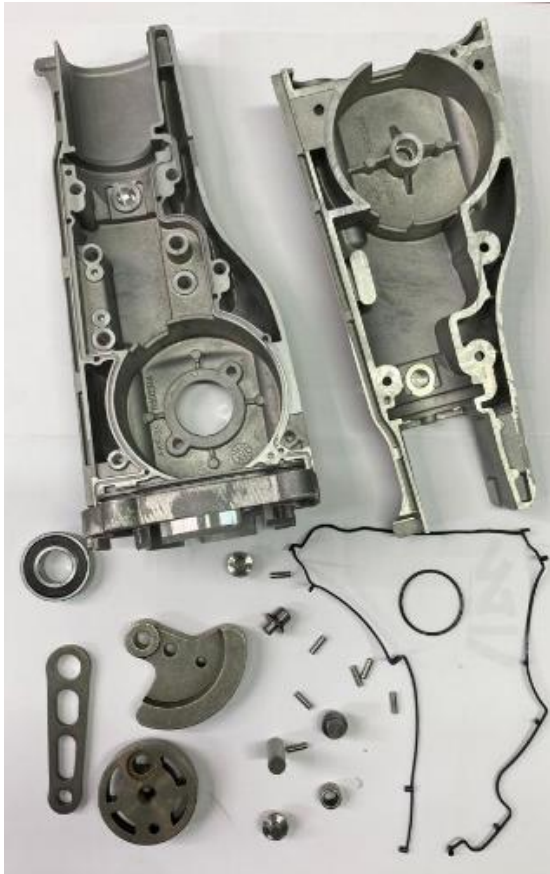
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- Support bracket - roller
  - NA006123



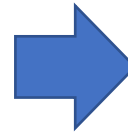
# RECIPROCATING SAW ASSEMBLY

- Reciprocating Saw
  - N433743
  - N433742
  - N410611



# HEDGE TRIMMER ASSEMBLY

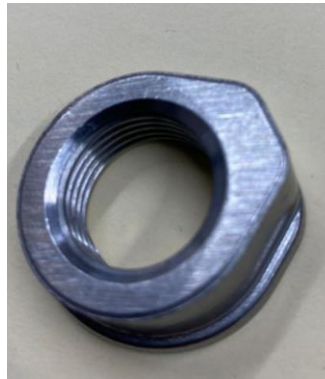
- Reciprocating Saw
  - NA006704
  - N898290



# ARVIN SANGO

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- Localization: Sensor Boss O2
  - G082
  - J158
  - J159
  - J160


















# TTI - MILWAUKEE TOOLS

- Localization Project

- Wave 1: 7 parts
- Wave 2: 1 part (other parts replaced by Stubby)
- Wave 3: 9 parts
- Stubby

MET MEX Model	Iter	Old P/N	Rev	Proposal MKE Wave	New P/N	Rev	Quaote Volum	Part description	Pic.
2565	1	622578002 622578001	1	1	622578003	1	97,000	CAMSHAFT	
2565	9	621352232	3	1	621352232	3	6,544	ANVIL-1/2"DP	
2565	10	621352233	3	1	621352233	3	34,752	ANVIL-1/2" FR	
2565	15	693116096 693116069	1	1	693116121	1	92,000	HAMMER	
3453	20	621338104	3	1	621338104	3	415,811	Camshaft, 8620, OD 11.483mm/018620	
3453	21	621352294	4	1	621352294	4	599,908	1/4" Anvil SINGLE Ball	
3453	22	693116095	6	1	693116095	6	418,971	HAMMER, 8620 OD37MM/018620	

MET MEX Model	Iter	Old P/N	Rev	Proposal MKE Wave	New P/N	Rev	Quaote Volum	Part description	Pic.
2552	5	621338080	1	3	621338080	1	11,217	CAMSHAFT,20CRMNT,OD11.483 \018256001	
2567/2569	6	622707001	2	3	622707001	2	298,237	3/8"ANVIL	
2566/2559 /2568	8	622070002	4	3	622070002	4	109,024	1/4"ANVIL	
2558	11	622114001	2	3	622114001	2	21,360	1/2"ANVIL	
2552	12	621352177	3	3	621352177	3	11,217	1/4" SQUARE ANVIL,20CR2N4 \018298	
2552	19	693116080	2	3	693116080	2	11,217	HAMMER	



# TTI - RYOBI

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- Localization
  - Lugnut
  - Bushing



# MARMON FOOD SERVICES

- Localization
  - Stainless Steel fittings & couplings



**Beverage Dispensing & Ice Equipment**

The world's leading supplier of beverage dispensing and ice equipment, tailoring systems to the most demanding environments to provide the perfect pour every time.

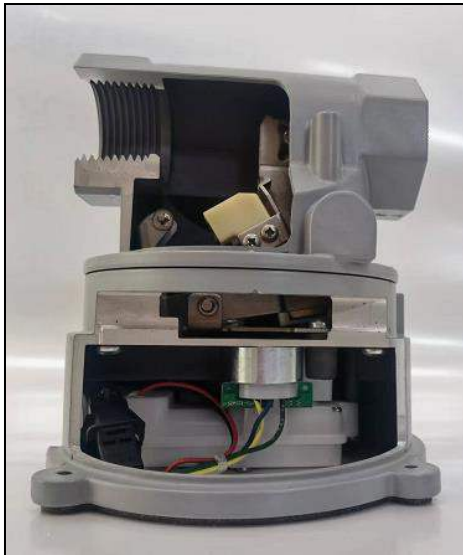
[www.cornelius.com](http://www.cornelius.com)

# CUSTOM ENGINEERING CAPABILITY

Fortis can develop the process and assembly line and determine process capability.

Fortis uses 5P process

- Planning
- Product Design & Development
- Process Design and Development
- Product and Process Validation
- Production



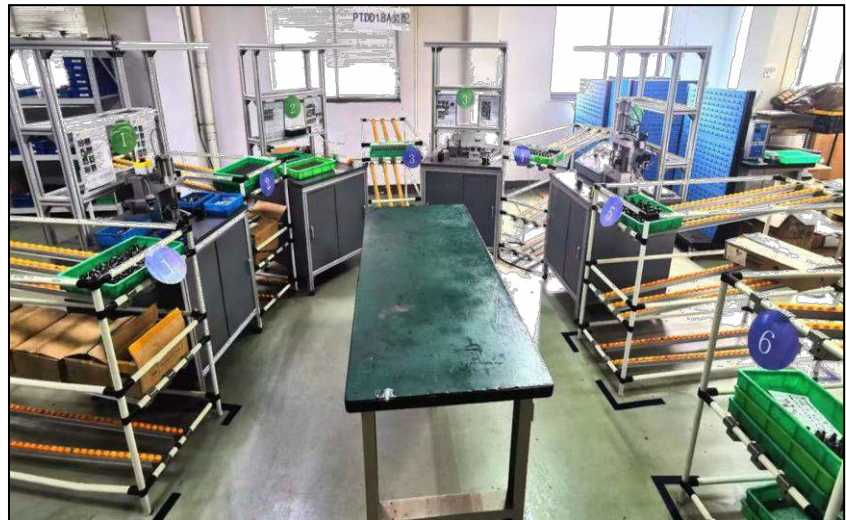
Gas Gate



Gear Box

# GEAR BOX ASSEMBLY CELL

- Takt is balanced per station to allow single or multiple operators
- Can handle quick SKU changes in response to schedule changes
- Pockets of Automation & Mistake-proofing ensures good quality
- In-house product testing capability ensures reliability of gearbox
- OEE is better than fully-automated assembly





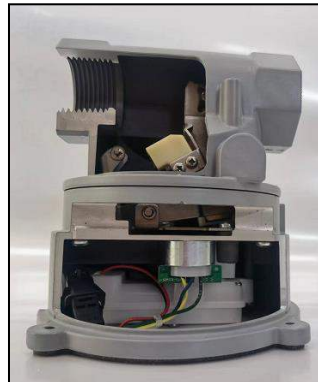
# GAS GATE VALVE ASSEMBLY



Front



Side



# ASSEMBLY CELL PANORAMA

Real Time Metrics



Station 1

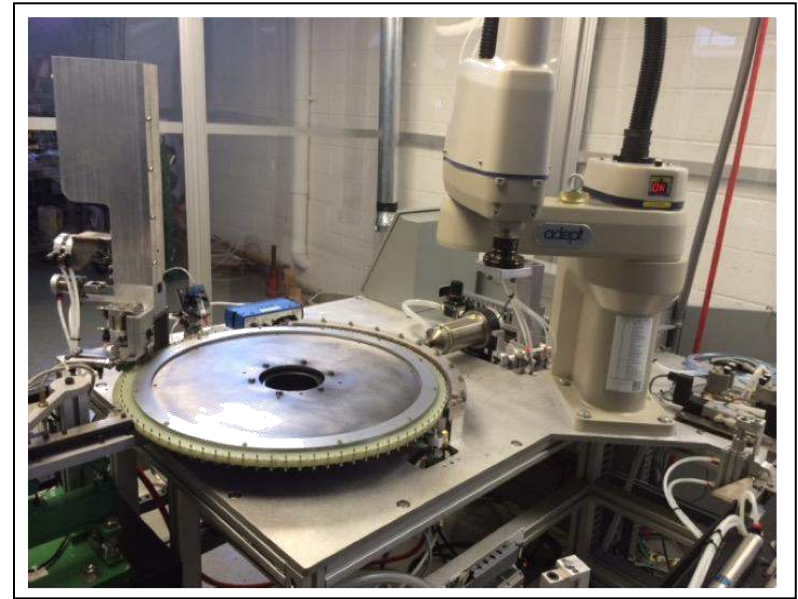
Station 6

- Good mistake proofing, driven by PFMEA
- Pockets of Automation
- Numerous real time metrics for efficiency and stabilization
- Great online work instructions
- Good visual que's

# CUSTOM ENGINEERING CAPABILITY



Clean Room for Medical Device



Automated Medical Needle Assembly Cell



Medical Customer's Syringe with Needle

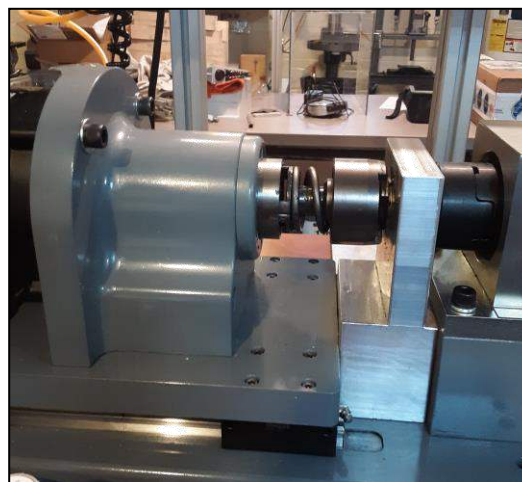
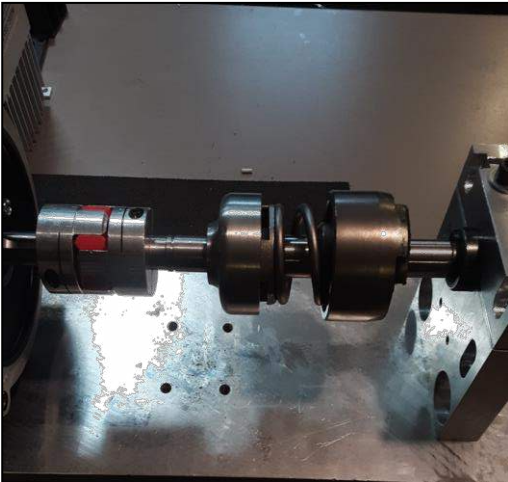


Assembled needle with Hub



# CUSTOM ENGINEERING CAPABILITY

Fortis engineers developed a proprietary **Gearbox Durability Test Machine** to validate performance of **Impactor Tool** component parts during product development.



# QUALITY IN OPERATION



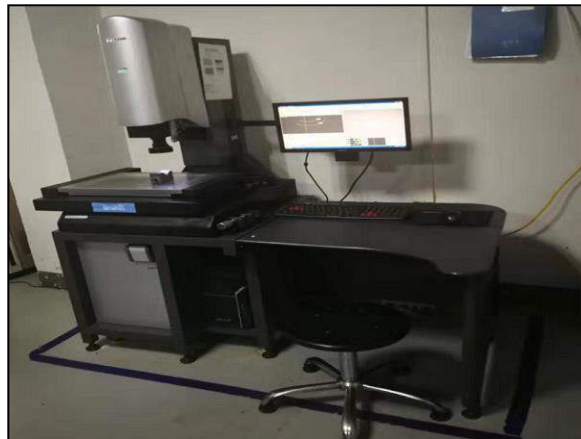
Lead Fly Series CMM



Roundness tester



Profile meter



Smart Scope (SP3020)



Vickers Hardness



Handheld XRF Spectrometer

# ENGINEERED QUALITY

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- Responsive engineering services
  - Design/models/prototypes
  - Full process development
- Employee participation in quality assurance
  - Quality is everyone's responsibility
  - State-of-the-art production facility combined with rigid quality controls standards results in:
    - + Close tolerances and fine finishes
    - + Repeatable quality and low PPMs
    - + Basis for developing and maintaining long-term relationships with key customers

QUALITY POLICY: "FORTIS and its subsidiaries are committed to achieving customer satisfaction by continual improvement of its manufactured products and services while maintaining the effectiveness of its Quality Management System and adherence to applicable standards and regulations."



# CUSTOMERS & REFERENCES

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## Power Tools



## Automotive



## Other Industrial



# FORTIS IS YOUR BEST PARTNER

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- Proven record on mix-volume machined parts & assemblies
- Low-cost & affiliate material sources established
- Full-time global supplier development team
- Flexible workforce including 24/7 operation
- Production facilities in China and Mexico plus US (R&D)
- Global logistics & supply chain support
- Manufacturing engineering capability
- Experienced management team
- Have available capacity now
- Passed ISO 9001:2015 and IATF16949:2016 certifications

***Thank You ! ! !***