GUJARAT METAL CAST

LOST FOAM FOUNDRY DIVISION

Gujarat Metal Cast Ind. Ltd.

Established in 1978 as a Green Sand foundry

Grown into newer technologies and areas like:

- Lost Foam
- PreciCast (Investment Casting)
- Sub-Assembly
- Fabrication

Employees: 300+ manpower

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Foundry Capability

Material

- Grey Cast Iron
- Malleable Cast Iron
- SG Iron (Ductile)
- Aluminium alloy

Casting Range

- Weight: 0.05 to 100.00 kg
- Dim.: 850 x 700 x 700 mm

Value Addition

- Heat Treatment
- Machining
- Coating
- Leak Testing
- Metal Impregnation
- Sub-assembly

Annual Volume

- 2000 to >7 million quantity

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Foundry Capacity

Installed Capacity: 4,500 MT

Spare Capacity: 1,200 MT approx

New capacity addition in:

- Foundry plant
- Fabrication shop
- Machine shop

Foundry Capacity Addition to be >6,000 MT

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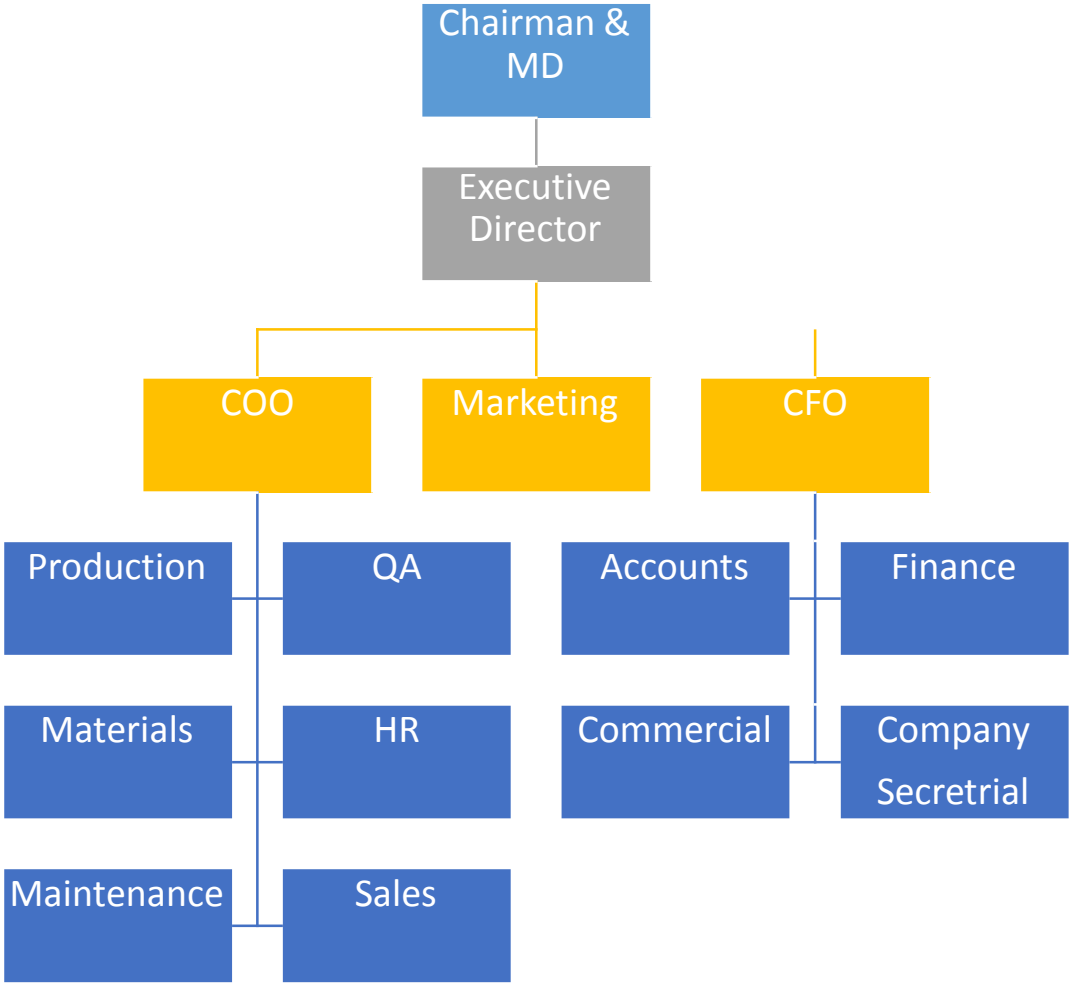
Organisation Structure



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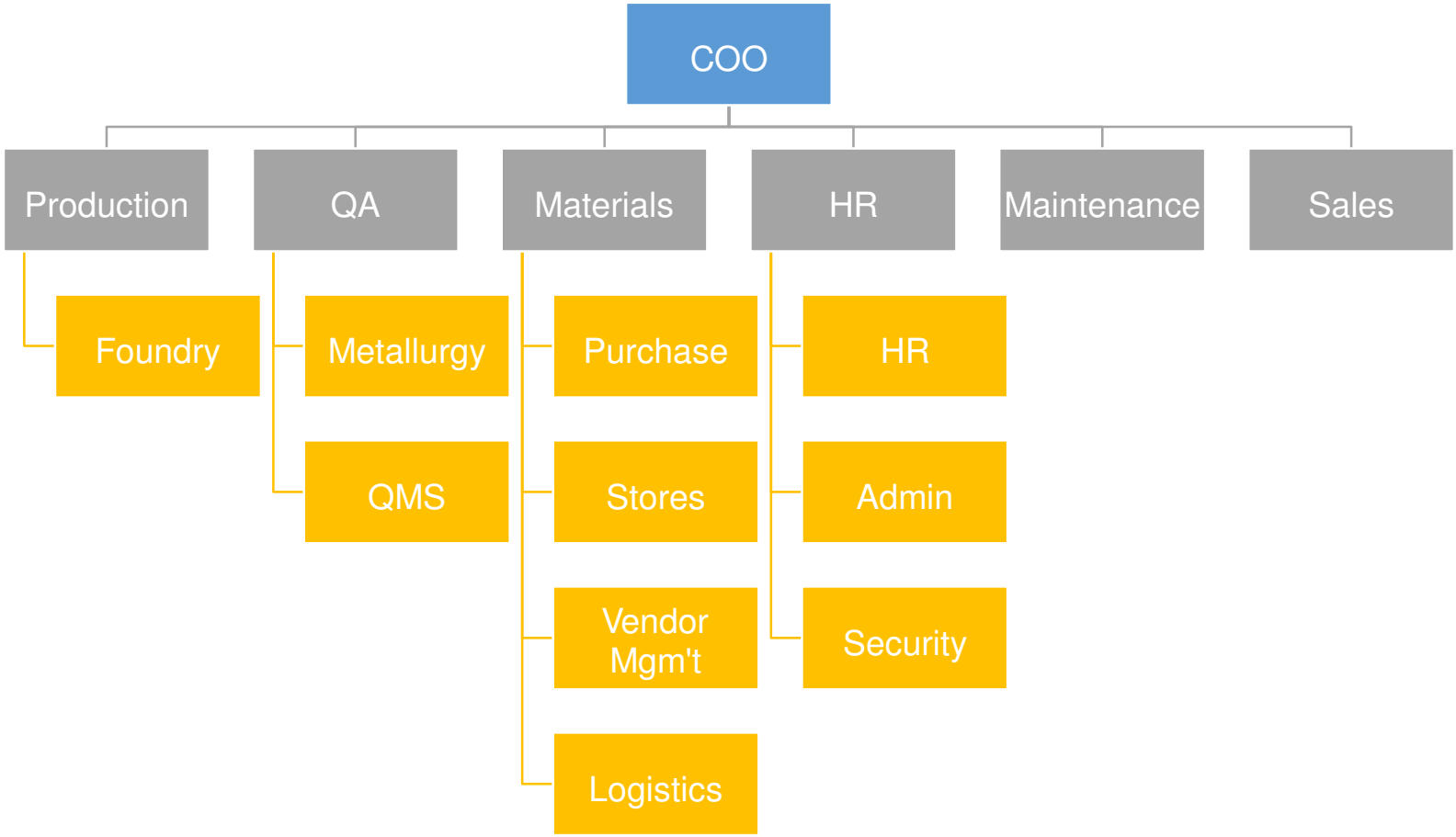

Manpower Distribution

Total Manpower Strength – 300

- Technical engineers – 30
- Quality Assurance – 8
- Design – 2
- Support Functions – 12
- Workers – balance

Training

- Emphasis on skill up gradation
- New skills training
- Annual Training calendar

Health and Safety

Major emphasis on

- Safety
- Health
- Environment

Safety gears

- Safety helmet
- Insulated gloves
- Safety shoes
- Ear protector
- Safety glass

Quality Control

Quality Certifications

- TS-16949
- ISO 9000

Certifying Body

- TUV Nord

Major emphasis on continual improvement in:

- Process
- Equipment
- Environment

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Quality Control Equipments

Equipment List

- Spectrometer "SPECTRO" Germany
- Carl Zeiss microscope with Metallurgical image analyzer software
- Olympus microscope
- BHN Hardness Testing Machine
- Rockwell Hardness Testing Machine
- Carbon Equivalent Meter
- Digital Pyrometer
- Universal Testing Machine
- Sand Sieve Analysis Set
- Volatile Measuring Machine
- Boroscope (flexible)
- CMM
- Ultrasonic NDT Testing
- Magnetic Particle NDT Testing

Customers

Global OEM Customers in:

Sectors

- Automotive
- Power Equipment
- Wagon Freight Car
- Airport Material Handling Equipment
- Pump
- EPC Boilers

Geography

- India
- USA
- Canada
- Germany

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Customers

Automotive

- Hero MotoCorp, India
- Bajaj Auto, India
- Honda Motorcycle & Scooters, India
- Honda Seil Power Products, India
- Mahindra & Mahindra, India
- Mahindra 2 Wheelers, India
- Suzuki Motorcycle, India
- Texspin, India
- Setco Automotive, India

Non-Automotive

- FMC Technologies, Germany
- JB Technologies, USA
- Wabtec, USA
- Wabco, Canada
- Kemrock, India
- Armstrong, Canada
- Flowserve, USA
- Orbinox, India

Customers' Requirements

OEM Customers' major emphasis on

- Quality product
- Value added product
- On-time delivery

Schedule Adherence

- NO line stoppage

Local Warehousing

- Orlando, USA

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Product Range

- Camshafts (Two wheeler engines and Genset)
- Rocker Arm (Diesel engine)
- Turbocharger Outlet Tail Pipe (Diesel engine)
- Bearing Hub (Commercial Vehicle)
- Valve Handle (Oil industry)
- Specialized Hub (Airport industry)
- Body valve (Railway air brakes)
- Access Plate (Railway air brakes)
- Multi-port control valve (Railway air brakes)
- Grate Clip (IBR Boiler)
- Casing (Spl Pump industry)
- Covers (Spl Pump industry)
- Collector Ring (Automotive clutch)
- Bearing Spider (Automotive clutch)

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Pipe Bracket

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Access Plate - Bottom

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Access Plate - Top

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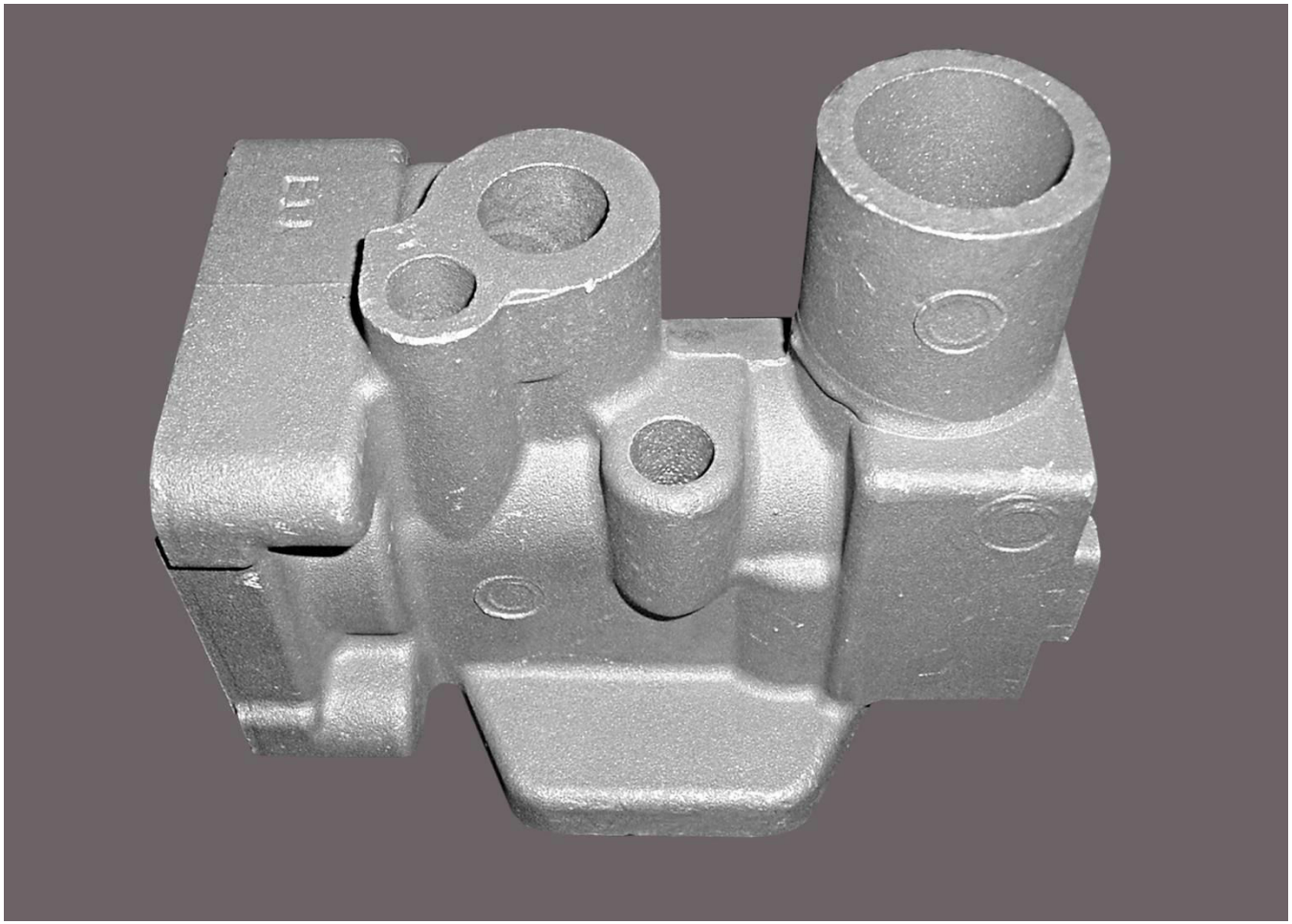
ELX Valve Body



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Cam Shafts

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Turbo Charger Outlet Pipe

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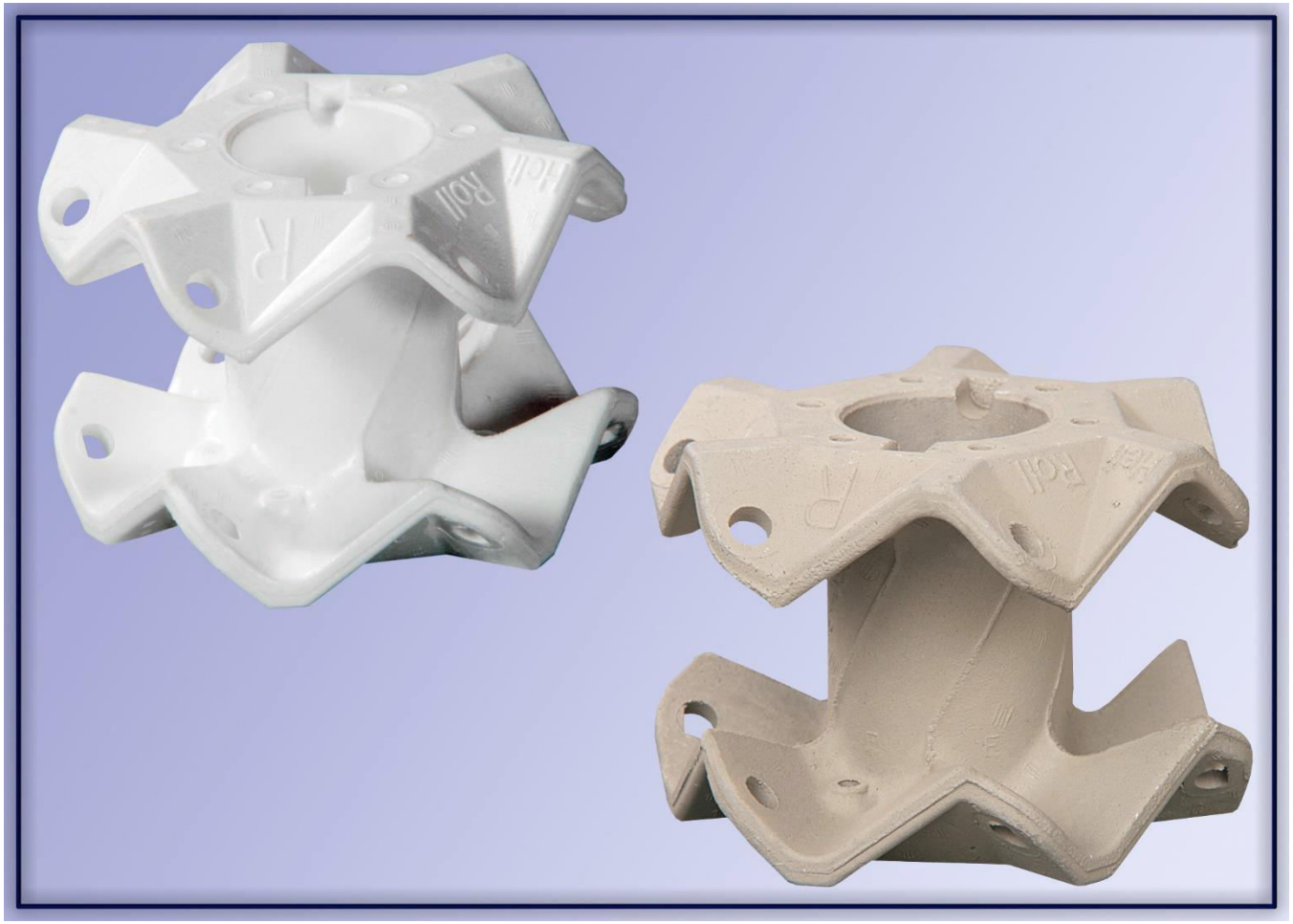
Heli Roll Casting



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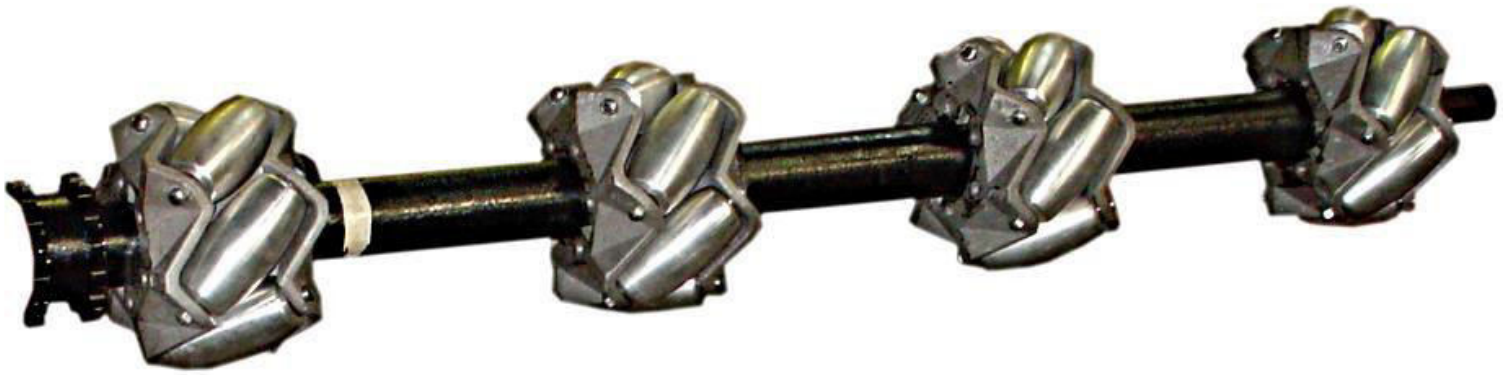
Heli Roll Shaft Assembly



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Engineering Capabilities

Re-engineering capabilities

- Conversion of casting from other foundry technologies to Lost Foam Process

3D modelling and drafting

- SolidWorks

Design Capabilities

- Mould Tools
- Fixtures
- Gauges

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Foundry Process Comparison

Foundry Process	Lost Foam	Shell	Green Sand
Pattern Material	Foam	Sand	Sand
Coating Layers	Single	-	-
Tree Structure	Solid	Hollow	Hollow
Mould Sand	Dry Sand	Resin Sand	Sand + Binder
Time	Shorter	Short	Short
Volume	High	Low to Medium	Low to High
Cost	Medium	Medium	Low

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Lost Foam Process Steps

1. 3D Modeling
2. Engineering (Sectioning)
3. Tool Making
4. Pattern Moulding
5. Gluing of Pattern Sections (if required)
6. Pattern Coating
7. Tree Making
8. Box Filling
9. Melting
10. Pouring & Knock-out
11. Fettling
12. Heat Treatment (if required)
13. Inspection
14. Packing

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IDEAL L.F. COMPONENT

From Cost Perspective, casting which have:

- Medium to high volume parts
- Complex and intricate shaped internal cavities
- Multi-core parts in conventional foundry technologies
- Parts which require lot of machining
- Numerous parts which have the possibility of joining together to form one casting