



What's Brewing at Ampersand?

What's moving from our screens into debate



This edition decodes the precision engineering industry. This industry keeps surfacing in concalls across our coverage, from forgings to auto parts to defence, and we wanted a common frame to judge those comments against. We wanted to understand which Indian suppliers can take the work, what the qualification cycle costs them in time and capital, and which listed names are already inside it.

China makes 27.7% of the world's manufactured goods; India makes 2.9%. We look at where the demand is in India, who the buyer is, and which companies have capabilities here.

\$269bn

Global market size

~3%

India's share of it

6

companies on the desk

INDIAN DEMAND BY END USE



● Automobiles 33% ● Industrial machinery 15% ● Defence & aerospace 19% ● Others 33%

1 What is Precision Engineering?

What separates it from ordinary engineering

What's Brewing

Precision Engineering · Aug 2026



Making components to **micron-level tolerances** from hard-to-machine materials such as titanium, Inconel, and special steels for uses where failure is not survivable. These components go into aero engines, turbines, surgical implants, etc. Volumes are small but the mix is wide, and no order arrives until the buyer has qualified the shop.

📦 NORMAL ENGINEERING	🕒 PRECISION ENGINEERING
📦 Manufactures large industrial equipment	🕒 Manufactures high-precision components in batches
🔧 Focuses on complete systems or machinery	📦 Focuses on critical parts inside larger systems
📏 Standard manufacturing tolerances	📏 Micron-level manufacturing tolerances
⚙️ Lower design complexity	🔧 High engineering and manufacturing complexity
🏭 Easier to manufacture at scale	⭐ Requires specialised know-how and processes
📄 Lower entry barriers	🛡️ High entry barriers: Tech and approvals needed
📋 Materials handled: Steel, Aluminium, Copper	💎 Materials handled: Titanium, Tungsten, Inconel
📉 Low margins and ROCE (10-15% EBITDAM)	📈 High margins and ROCE (25-30% EBITDAM)

KEY TAKEAWAYS

- ◆ Precision engineering makes **critical, high-accuracy components** — the parts a system cannot run without.
- ◆ Tight tolerances and hard alloys mean **advanced processes**, not more machines.
- ◆ Even a small defect can **bring down the whole system**, so buyers qualify suppliers, not quote prices.
- ◆ Competition is on **technology, quality and engineering capability**.
- ◆ Every part needs **customer approval**, a long qualification process that itself creates entry barriers.
- ◆ High entry barriers translate into **better margins** and revenue that is rarely re-tendered.

📦 EXAMPLES — NORMAL ENGINEERING



Boilers

Pressure vessels, welded assemblies



Silos

Plate-formed storage structures



Heat exchangers

Shell and tube fabrication



Transformers

Core stacking, coil winding



Fabrication

Structural steel, material handling



Turbine blades

Cast in a ceramic mould, then machined



Engine casings

Rolled seamless, then turned



Landing gear

Closed-die forged, then machined



Artillery

Forged barrels, machined assemblies



Engine blocks

Cast, then multi-axis machined

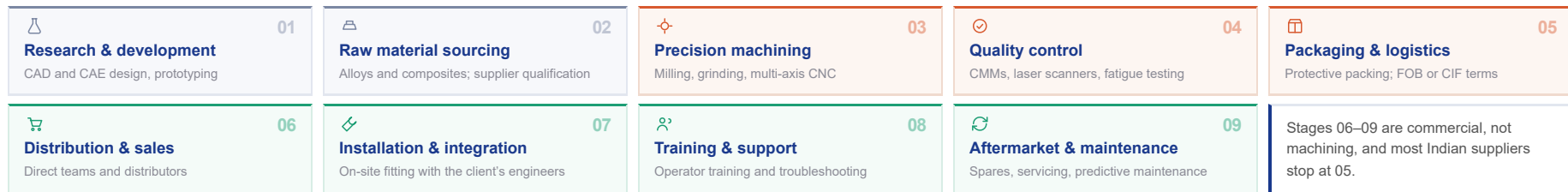
The barrier is not the machine. It is a customer qualification that takes two to five years to earn.



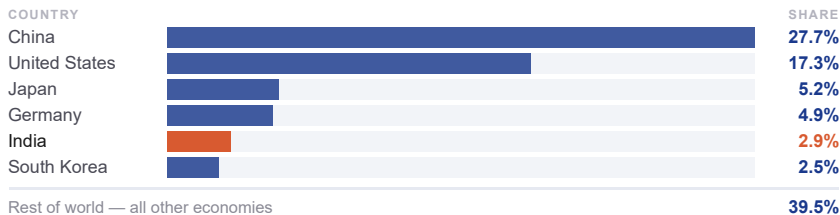


THE NINE STAGES

— DESIGN & INPUTS — MAKE & VERIFY — COMMERCIAL

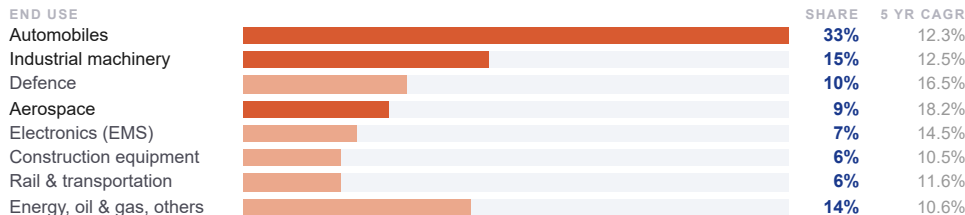


GLOBAL MANUFACTURING OUTPUT, 2024



India ranks 5th and makes about one-tenth of what China does.

INDIAN DEMAND BY END USE — FY26E SHARE AND NEXT 5-YEAR GROWTH CAGR



\$269bn

Global industry size of precision engineered goods, expected to grow at 10.1% CAGR

~3%

India's share; USD 8.3bn FY26E; against Europe 24%, North America 23% and China 27.7%

11.8%

India is expected to grow at a faster rate of 11.9% CAGR vs. global growth of 10.1% CAGR

\$1,862mn

IMPORTS FY26E

\$1,401mn

EXPORTS FY26E

\$461mn

NET IMPORT GAP

22%

IMPORTS AS % OF DOMESTIC MARKET

India is still very small in the global scheme of things and has huge headroom to grow given the capabilities we have built in the last few years.





POLICY TIMELINE

FY21

PLI launched across 14 sectors, ₹1.97 lakh cr

SEP 2025

PLI investment realised ₹2.00 lakh cr; ₹23,946 cr paid

NOV 2025

Global buyers announce five-fold India sourcing plans

FEB 2026

Electronics components outlay raised to ₹40,000 cr

FY27BE

Defence outlay ₹7.85 lakh cr; 75% reserved domestic

DOMESTIC PULL — GOVERNMENT INCENTIVES

01 Production Linked Incentive	SINCE FY21
₹1.97 lakh cr across 14 sectors; 836 approvals.	
02 Electronics Components Manufacturing	BUDGET FY27
Raised from ₹22,919 cr to ₹40,000 cr — up 75%.	
03 India Semiconductor Mission 2.0	FY27BE
₹1,000 cr — equipment, materials, domestic IP.	
04 Defence Capex	FY27BE
Record ₹7.85 lakh cr , up 15.2%; ₹1.39 lakh cr for domestic procurement.	
05 Customs duty exemption	IN FORCE
Aircraft parts and engines imported for manufacture and MRO.	

GLOBAL PULL — CHINA+1 AND DIVERSIFICATION

01 China exclusion has turned India into a preference	STRUCTURAL
Western defence and aero chains cannot use Chinese parts at any price.	
02 Cost convergence	PRICING
~29% dearer than China; 36–78% cheaper than Korea, Japan, the US and Europe.	
03 Global incumbents are not adding capacity	SUPPLY
Casting and forging suppliers, burned by the 737 MAX halt, take only high-volume work now.	
04 The customer funds the qualification	BUYER-LED
The qualification barrier is paid for by the buyer, not the supplier.	

\$3bn+ a year already being sourced from India and many global majors have announced multi-year strategic tie-ups with Indian suppliers to be a critical part of their ecosystem.

WHAT ARE GLOBAL MAJORS SAYING ABOUT INDIA?

AIRBUS India sourcing tripled from \$500mn (2019) to ~\$1.5bn ; trajectory to \$2bn before 2030 INTERVIEW	 Over \$1bn a year sourced from 200+ Indian suppliers; 7,000 people across supply partners COMPANY DISCLOSURE	 2,200+ Indian suppliers; 300+ feed the Pune plant — castings, manifolds, subassemblies COMPANY DISCLOSURE	 Sourcing to rise five-fold ; supplier base from 25 to 40+ , next phase into casting and forging PRESS RELEASE	 To at least double India sourcing by 2030; fan blades for Pearl 700 and 10X engines COMPANY STATEMENT	 Qualifying Indian suppliers for precision components and high-purity gas delivery systems COMPANY STATEMENT	 Bangalore centre to develop equipment sub-systems alongside domestic suppliers PRESS RELEASE	 Ramping India parts sourcing alongside Pratt & Whitney as engine volumes outpace legacy suppliers INDUSTRY REPORTING
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Govt wants manufacturing at 25% of GDP. It has sat near 17% for a decade. Precision Engineering will be a key mover to fill that gap.





>25%

Revenue CAGR
till FY30

Azad Engineering

Aero & energy turbine parts

Makes 3D rotating airfoils, blades and vanes for gas, steam and nuclear turbines, with aero-engine and defence parts alongside. Over 90% exported, to GE Vernova, Mitsubishi, Siemens, Honeywell and Rolls-Royce. Azad is also at a pivotal phase in their Aerospace & Defence vertical.

Margin leader



#1

Global leader in
MIM

Indo-MIM

Metal injection moulding

World's largest manufacturer of precision components by Metal Injection Moulding (MIM). End markets are Automotive, Defence, Medical, Consumer and Aerospace. Their foray into new verticals in precision manufacturing has led them to become a supplier to Apple recently and they will onboard Tesla as well.

Strong execution track record



#1

CNC machine tool
maker, India

Jyoti CNC Automation

CNC machines & multi-axis machining centres

Supplies the machines precision manufacturing runs on: turning centres, VMCs and 5-axis machining centres. Order book is skewed to aerospace, defence and EMS customers, giving it a read on capex intent across the whole chain. Clients include Airbus, Volvo, BMW, Audi.

Makes the machines



#1

Supplier of
Titanium related
products from
India

PTC Industries

Titanium & superalloy castings

They manufacture Titanium and Superalloy components for critical applications in Oil & Gas, Aerospace industries. Exports above 75%. Buyers include Safran, Airbus, Rolls-Royce and GE. Through its new plant, PTC will become one of the few companies in the world to have aerospace-grade titanium capabilities.

Upstream build-out



~30%

Revenue CAGR
expected till FY30

Sansera Engineering

Precision machining

Manufactures high-precision components in the Automotive and Non-Automotive space. They have made big strides in Aerospace, Defence & Semiconductor (ADS) space by building products for engine & actuation parts. Sansera is scaling up this segment and aims to achieve 40% revenue from ADS by 2030.

Mix shift



~40%

Revenue growth
expected in FY27

Solar Industries

Explosives, ammunition & munitions

Transforming from an explosives manufacturing company to a top-notch global defence supplier. Solar has played an integral part in manufacturing of systems such as Pinaka and Nagastra, used by the armed forces. Solar is also doubling down on capex to build capabilities in drones, robotics and UAVs.

Defence export leader

RISKS TO WATCH

01 Customer concentration

Order books lean on a handful of global OEMs. One programme deferral can move a full year.

02 Capex ahead of offtake

Capex lands before volumes are contracted; returns need utilisation, which takes time to scale.

03 Slow revenue conversion

Approval cycles keep competition out, but they also delay new wins from turning into revenue.

04 Customer approvals required

Even the product delivered is checked rigorously before payment, elongating working capital cycle.

