

NATRAJ CORRUGATING MACHINERY CO.

Executive Summary

Corrugated Box Plant Investment — Investor Education Guide

Full Automatic Plant Range · 200T to 4000T/Month · Public Edition

WHO WE ARE

Natraj Corrugating Machinery Co. has been manufacturing corrugated box machinery since **1970 — 54 years of uninterrupted production**. We are headquartered in Palwal, Haryana, and are **ISO 9001:2015 certified** by URS, United Kingdom. We have supplied and commissioned **over 1,000 machines across India**, and were the **first Indian OEM to export complete corrugated board plants internationally** — to the West Indies, Mexico, Sri Lanka, and the UAE.

We received the **PAC Machine Innovation Award in 2012** and operate **Natraj Care** — a pan-India after-sales service network covering 8 cities with a written 48-hour on-site response guarantee. Our **Natraj Care Academy** provides structured operator training at every plant we commission across India.

<p>Est. 1970</p> <p>54 Years Manufacturing</p>	<p>ISO 9001:2015</p> <p>Certified by URS, UK</p>	<p>1,000+</p> <p>Machines Running in India</p>	<p>PAC Award 2012</p> <p>Machine Innovation Recognition</p>	<p>First Indian OEM</p> <p>To Export Complete Plants Globally</p>	<p>Natraj Care</p> <p>48-Hr On-Site Service SLA</p>
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ABOUT THIS GUIDE — FULL AUTOMATIC PLANT EDITION

This guide is for investors evaluating a **full automatic corrugated box plant** — the premium end of the industry, covering capacities from 200 tons to 4,000 tons per month. It explains how the full auto plant generates superior economics compared to semi-auto, why scale is the most powerful financial lever in this business, and what the full automatic line is capable of in terms of product and customer type. Specific financial figures are shared privately with serious investors on request.

CAPACITY RANGE

MONTHLY OUTPUT

TYPICAL INVESTOR PROFILE



Entry Auto	200 – 600 Tons/Month	Serious investor stepping up from semi-auto or entering at industrial scale. Die-cut capability opens premium FMCG and retail clients.
Mid-Scale Auto	900 – 1,500 Tons/Month	Regional industrial supplier or group company. Dedicated supply contracts with large manufacturers. 22–23 operators, 4-colour printing.
Industrial Auto	2,000 – 4,000 Tons/Month	Large group / national converter / dedicated anchor-customer supply plant. Lowest conversion cost per kg achievable. 32–33 operators.

NATRAJ PERFORMANCE GUARANTEE

Every Natraj-commissioned plant carries a written performance and uptime guarantee in Year 1. Downtime beyond a specified threshold triggers a written credit commitment from Natraj. We are the only Indian OEM that puts this in writing.

SECTION 1 — WHY FULL AUTOMATIC? THE ECONOMIC ARGUMENT

The corrugated box business generates profit from conversion — the process of turning raw paper into finished boxes. The paper cost is a passthrough. **Your profit is the margin between your conversion revenue and your conversion cost.** The full automatic plant wins on this metric decisively because it reduces conversion cost through three levers simultaneously: automation, scale, and speed.

SEMI-AUTO VS FULL AUTO — THE KEY DIFFERENCES

DIMENSION	SEMI-AUTOMATIC PLANT	FULL AUTOMATIC PLANT
Paper Feed & Tension	Motorised with pneumatic tension control — operator monitors and adjusts manually	Zero-stop auto splicer with PLC tension — reel changes happen without stopping the line
Corrugating & Gluing	Manual glue application monitoring — operator-dependent consistency	Auto glue dosing with PLC viscosity control — consistent board bond every run
Print Capability	2-colour flexo printer slotter — standard branding	4-colour flexo printer slotter with inline die cutter — premium retail and FMCG boxes
Job Changeover	Manual size changeover — 15–25 minutes between runs	CNC auto job change — near-zero changeover time, minimal waste strips
Labour Requirement	12–25 people depending on capacity	12–33 people depending on capacity — same or fewer than semi-auto for much higher output
Output per Shift	100T–250T/month per shift depending on configuration	200T–4000T/month depending on configuration
Box Types Possible	Standard RSC boxes, plain or 2-colour printed	Standard RSC, die-cut display boxes, auto-glued presentation boxes, 4-colour retail packaging
Client Types	Local manufacturers, SME customers, regional supply	FMCG brands, e-commerce fulfilment, pharmaceutical, industrial, export

THE DIE-CUT ADVANTAGE

The 4-colour printer slotter with inline die cutter on the full auto line is a market access tool, not just a machine feature. **Standard semi-auto plants cannot produce die-cut boxes.** Die-cut boxes are required by retail shelf displays, FMCG consumer goods, pharmaceutical packaging, and e-commerce product boxes. These are the highest-margin, highest-volume customer segments in the Indian corrugated market. The auto plant opens this entire segment to you.

THE SCALE ECONOMICS — WHY BIGGER OUTPUT MEANS HIGHER PROFIT PER KG

This is the most counterintuitive and most important insight about the full auto plant. As your monthly output increases — whether through adding shifts on the same machines or upgrading to a higher-capacity line — your conversion cost per kg falls. This happens because your fixed costs (factory rent, bank loan EMI, management salaries) remain roughly the same regardless of output, but are now spread across far more kilograms.

AS OUTPUT SCALE INCREASES →	ENTRY 200–600T	MID-SCALE 900–1500T	INDUSTRIAL 2000–4000T
Fixed cost per kg	Moderate ▲	Lower ▼	Lowest ▼▼
Conversion cost per kg	Moderate	Lower	Lowest in industry
Profit per kg	Good ▲	Strong ▲▲	Maximum ▲▲▲
Total monthly profit	Significant	Very strong	Industry-leading
Price competitiveness to customer	Competitive	Strong	Can undercut market significantly

THE MOST POWERFUL FEATURE

The full auto plant's single greatest financial advantage: **the same machinery infrastructure supports multiple capacity levels by adding shifts.** You do not buy new machines to double or triple output — you add operating shifts. The marginal investment to scale is working capital, not new capital equipment. This means one good machine decision serves you for years as your market grows.

SECTION 2 — THE FULL AUTOMATIC MACHINE LINE

A full automatic corrugated board plant converts raw paper rolls into finished, printed, die-cut, and auto-glued boxes in a single integrated line. Every stage is PLC-controlled and servo-driven. Here is what each machine in the line does and why it matters:

MACHINE / STAGE	FUNCTION	AUTO ADVANTAGE OVER SEMI
1. Auto Mill Roll Stand with Zero-Stop Splicer	Feeds paper from large reels into the corrugating line. Zero-stop splicer joins a new reel to the running reel without stopping production.	Semi-auto stops the line for every reel change. Auto loses zero production time.
2. High Speed Single Facer (PLC Controlled)	Creates the corrugated flute (the wavy middle layer of the board) using heated, fluted rollers under controlled tension. Runs at up to 80 metres per minute.	PLC controls ensure flute consistency at high speed. Semi-auto is operator-dependent.
3. Automatic Glue Machine (PLC Viscosity Control)	Applies starch-based adhesive to the corrugated flute at precisely controlled viscosity and volume. Consistent glue application is the single biggest factor in board strength.	Auto PLC dosing eliminates over/under-gluing. Semi-auto glue is manually monitored.
4. Heating Section & Hot Plate System	Removes residual moisture from the freshly glued board under controlled heat. Ensures flat, warp-free board output — critical for high-speed printing downstream.	Dedicated heating section eliminates board warp that causes print misalignment.
5. Inline Slitter Scorer (Auto Job Change)	Cuts board to the correct width and creates fold scores for box formation. CNC auto job change means size changes between runs take seconds, not minutes.	Auto changeover eliminates the 15–25 minute manual setup semi-auto requires.
6. 4-Colour Flexo Printer Slotter + Die Cutter	Prints 4-colour graphics and text, then slots the corners for box formation, then die-cuts to the required shape — all in one inline pass.	4-colour + die cut opens retail and FMCG clients entirely inaccessible to semi-auto.
7. Auto Rotary Die Cutter	Produces specialist die-cut shapes — display trays, shelf-ready packaging, tuck boxes, and custom formats — at full line speed.	No equivalent in semi-auto. Enables premium value-added products.
8. Auto Folder Gluer	Automatically folds and glues box blanks into finished, sealed boxes. Produces retail-ready presentation boxes without manual assembly.	Semi-auto requires manual stitching. Auto folder gluer enables glued box products.
9. Auto Stacker / Counter Ejector	Counts finished boxes into predetermined batch sizes and stacks them ready for wrapping and dispatch. Minimal manual handling at line-end.	Reduces the 2–3 manual workers needed at semi-auto line-end to near zero.

ONE LINE, MULTIPLE PRODUCTS

The full auto line with die cutter and folder gluer can produce: regular slotted containers (RSC), half-slotted containers, die-cut trays, shelf-ready display boxes, auto-glued presentation boxes, pizza boxes, e-commerce mailers, pharmaceutical shipper cases, and custom-format industrial packaging. This product range commands significantly higher conversion revenue per kg from premium clients vs standard box production.

SECTION 3 — CHOOSING THE RIGHT CAPACITY

Natraj's full automatic range covers 9 capacity configurations from 200 to 4,000 tons per month. The right choice depends on your available capital, your market demand assessment, and your growth ambitions. Here is how to think about it:

CAPACITY TIERS — WHAT EACH LEVEL REPRESENTS

CAPACITY TIER	MONTHLY OUTPUT	SPACE	TEAM SIZE	WHAT THIS TIER SERVES
Entry Auto	200T–600T/month	25,000 sq ft	12–15 people	Local industrial and mid-size FMCG customers requiring 2-colour + die-cut boxes. First full auto investment. Same machinery scales across all 3 levels.
Mid-Scale Auto	900T–1,500T/month	35,000–45,000 sq ft	22–23 people	Regional supply anchor — serves large FMCG plants, pharma distributors, e-commerce fulfilment. 4-colour print standard.
Industrial Auto	2,000T–4,000T/month	50,000–100,000 sq ft	22–33 people	National converter or captive plant for large industrial group. Lowest cost-per-box achievable. Serves multiple large customers simultaneously.

THE SHIFT ADVANTAGE — NATRAJ'S UNIQUE SCALING MODEL

In the Entry Auto tier (200T–600T), the **same machines run at 200T, 400T, or 600T simply by adding shifts**. You purchase one machine once. Your plant scales as your market grows — no re-investment, no new civil works, no procurement cycle. This is the most capital-efficient scaling model in the industry.

10 QUESTIONS TO ASK BEFORE INVESTING IN A FULL AUTO PLANT

N O.	QUESTION	WHY IT MATTERS
1	Do I have committed volume from 2–3 anchor customers before I invest?	Auto plant economics require consistent throughput — spot market is not enough
2	Can my market absorb 2-colour + die-cut premium boxes?	If the local market only needs plain standard boxes, auto's premium capability is underutilised
3	What is my 3-year demand projection — am I likely to need 200T or 600T?	Determines whether to invest in Entry, Mid-Scale, or Industrial tier from Day 1

4	Do I have access to a 25,000+ sq ft factory or can I build/lease one?	The auto line requires minimum space — this is a harder constraint than semi-auto
5	What is my local paper supplier situation — can I get consistent grades?	4-colour printing requires consistent paper quality. Inconsistent supply causes colour variation
6	Do I have management depth for multi-shift operations?	Running 2–3 shifts requires a shift supervisor structure — not just an owner-operator model
7	What is my target customer segment — FMCG, pharma, e-comm, industrial?	Determines which machine features matter most and what print/die-cut capability to prioritise
8	Have I assessed competitors in my region already running auto plants?	If a strong competitor is already serving the premium market locally, pricing pressure is real
9	What is my equity + bank financing split?	Auto plants have higher investment — funding structure significantly affects break-even
10	Am I committed to running this business for 7–10 years?	The auto plant's economics compound over time — it rewards long-term committed operators

SECTION 4 — WHY BUILD YOUR AUTO PLANT WITH NATRAJ

REASON TO CHOOSE NATRAJ	WHAT IT MEANS FOR A FULL AUTO INVESTMENT
54 Years — Est. 1970	The full auto plant is a complex, integrated system. Institutional knowledge from 54 years of builds means every known failure mode has been engineered out. You are not the learning curve.
ISO 9001:2015 — URS, UK	PLC systems, servo drives, and glue dosing equipment require tight manufacturing tolerances to function consistently. ISO-audited production means your machines are built to spec, not assembled to 'close enough'.
1,000+ Machines in India	More Natraj full auto plants are running in India today than any other Indian OEM. Before you commit, we will show you a plant at your target capacity, in your region.
4-Colour + Die Cut Capability	Natraj's full auto line integrates 4-colour printing and inline die cutting as standard — not as an expensive afterthought. This is the specification that unlocks FMCG and retail client contracts.
First Indian OEM — International Exports	Our plants operate in the West Indies, Mexico, Sri Lanka, and UAE. International buyers evaluated every option available and chose Natraj. Reliability and post-sale service drove that decision.
Natraj Care — 48-Hr Written SLA	A full auto plant running 2–3 shifts has zero tolerance for extended downtime. Natraj Care's 8-city network and written 48-hour guarantee is the only credible service commitment in the Indian OEM market.
Single Machine — Multiple Capacities	Natraj engineers the Entry Auto line to scale from 200T to 600T on the same machines. This is an active design decision, not an accident. We build the machine to handle the load of all three capacity levels.
Full Project Report — Not Just a Quotation	Every serious auto plant prospect receives a confidential project report with financial modelling, capacity recommendation, funding structure, and realistic Year 1 ramp projection. We do the analysis with you — before you commit.

NATRAJ PERFORMANCE GUARANTEE

If any machine under our Natraj Care AMC programme has downtime exceeding **72 consecutive hours** due to mechanical failure within the first 12 months, Natraj provides a written credit commitment — toward spare parts or service costs. No other Indian auto plant OEM puts a downtime guarantee in writing. Ask them.

YOUR NEXT STEP — HOW TO GET A DETAILED PROJECT REPORT



This guide is the starting point. The detailed, confidential project report that follows will include the full financial model for your specific configuration — machine investment, civil cost, working capital requirement, monthly P&L, capacity sensitivity analysis, and a realistic 12-month ramp projection. Every number is calculated for your site, market, and operating model.

STEP	ACTION	TIMELINE
1	Call or email Rishi Nagpal — describe your target capacity and market	Today
2	Initial call to assess market fit and identify the right configuration	Within 24 hrs
3	Factory visit to Palwal — see full auto machines running at scale	This week
4	Reference plant visit — we connect you with a running Natraj auto plant	Within 1 week
5	Receive your confidential project report with complete financials	Within 3–5 days
6	Take your decision at your own pace — no pressure from us	Your timeline

REACH NATRAJ — START YOUR EVALUATION

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