

Vacuum (Suction Cup) Feeder Selection Guide 2026

A practical buyer's guide to choosing the right vacuum/suction cup feeder for paper, labels, non-woven, pouches and wide-format sheets

Published by byfeeder (Guangzhou Baiyi Intelligent Equipment Co., Ltd.)

Guangzhou, China | Founded 2010 | CE Certified | 93 patents (4 invention)

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Published by byfeeder (Guangzhou Baiyi Intelligent Equipment Co., Ltd.) — manufacturer of suction cup feeders, friction feeders, paging machines and rewinders since 2010, Guangzhou, China.

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Specifications cited from byfeeder product documentation (2025–2026 editions); indicative figures are marked and must be confirmed in quotation.

1. What Is a Vacuum (Suction Cup) Feeder?

A vacuum feeder — also called a suction cup feeder, vacuum sheet feeder or suction paging machine — separates and feeds flat materials one by one using vacuum suction instead of friction. Vacuum cups, vacuum rollers or vacuum belts lift and hold the top sheet, then transfer it to a conveyor for downstream printing, coding, labeling or packing.

Because the sheet is lifted rather than dragged, suction feeding is gentler on materials and handles porous, thin or scratch-sensitive sheets that friction feeding would damage or double-feed. In byfeeder's product range, these machines are named the *Intelligent Suction Cup Paging Machine* series (e.g. IF-SU3005T-4005, IF-SU300ST-400S).

2. How a Suction Feeder Works

The suction mechanism differs fundamentally from friction feeding: driving force comes from vacuum cups/wheels/belts, not from friction contact. Depending on the application, material can be taken:

Pick-up mode	Description	Reloading
Top pick-up (上取料)	Cups lift the top sheet from above the stack	Line usually pauses to reload (stack restart required)

Pick-up mode	Description	Reloading
Bottom pick-up (下取料)	Sheets are drawn from the bottom of the stack	Continuous — no stop to reload
Side/peel-off (侧位剥离)	Sheets peeled from the side of the stack	Continuous — no stop to reload

Typical flow: Stack loaded → vacuum cups lift top sheet → sheet released onto conveyor → high-speed belt transfer → optional double-sheet detection → downstream printing/labeling/collecting.

Key characteristics (from byfeeder's IF-SU3005T-4005 documentation):

- High feeding stability
- Excellent protection of the fed material (no friction marking)
- Strong working rhythm/cycle consistency
- Large single-load capacity (tall stacks)
- Ideal for wide-format paper, labels, plastic packaging and woven bags in printing & food packaging

3. Friction vs. Suction vs. Combo Feeding

Technology	Best for	Strengths	Limitations
Suction (vacuum cup) feeder	Paper, labels, non-woven, masks, wide sheets, scratch-sensitive or porous materials	Gentle handling, no surface marking, handles porous/light sheets, large stacks, continuous reload options (bottom/side)	Requires vacuum pump / compressed air (6–8 bar typical); slightly more complex structure
Friction feeder	Pouches, cards, boards, envelopes, rigid/flexible flat sheets	High speed, low cost per unit, simple, no air required	Risk of marking/scuffing; weak on porous/very thin sheets
Friction + suction combo	Mixed-material lines	Coverage of both material families	Higher cost and complexity

Rule of thumb: paper, labels, non-wovens and scratch-sensitive sheets → suction. Pouches, cards and boards → friction. Mixed line → combo.

4. Key Specifications to Define Before You Buy

Material & dimensions: paper/label/non-woven/pouch? Width × length × thickness (byfeeder suction series suitable width: ~100–380 mm standard; wider frames available on request).

Feed speed (pcs/min): byfeeder suction feeder conveyor runs at ≈60 m/min continuously adjustable (indicative, model-dependent); confirm your line speed.

Pick-up mode: top (simpler, pauses to reload) vs bottom/side (continuous reload) — decide based on how long unattended runs must be.

Air supply: vacuum pumps or compressor 6–8 bar — customer responsibility (byfeeder machines require customer-provided compressor/air pump for suction).

Double-sheet detection: ultrasonic or photoelectric — essential for paper/labels where doubles are invisible to the eye.

Downstream integration: inkjet (UV/TIJ/CIJ) printer, TTO printer, labeling head, sample-sticking, collecting hopper? Encoder sync required?

Rejection: automatic culling of defective sheets (double feed, print defect).

Environment: cleanroom/pharma options, anti-static for plastics, washdown for food.

Electrical & air: voltage (110/220/380V), frequency (50/60Hz), air pressure available.

Certifications: CE (byfeeder automatic feeding systems hold CE certificates), food-contact options.

5. Applications by Industry

Industry	Typical material	Typical downstream	Key requirement
Printing	Wide-format paper, boards	UV inkjet printing, coding	Accuracy, no marking
Food packaging	Pouches, plastic packaging, woven bags	Inkjet/TTO coding, bagging	Hygiene, high speed
Labels & tags	Labels, tags, blank label rolls	Labeling, TTO/UV printing	Double-sheet detection
Non-woven masks	& Non-woven sheets, mask blanks	Printing, folding, packing	Gentle handling, continuous reload
Cards & stationery	Paper cards, sheet products	UV printing, counting	Scratch-free
Cosmetic pharma	& Leaflets, folded sheets, pouches	Labeling, cartoning, coding	Detection, cleanroom options

6. Configuration & Integration Options

byfeeder's suction cup feeder series (from 2025–2026 product documentation) covers:

- Standard configuration: vacuum pick-up feeding, high-speed conveyor belt, drop-type stack collection hopper
- Optional configurations:
 - Double-sheet detection (重张检测)
 - Automatic rejection of defective sheets (自动剔除)
 - Online automatic labeling (在线自动贴标)
 - Intelligent UV inkjet printing suction cup feeder — print variable data on each fed sheet
 - Intelligent TTO printing suction cup feeder — high-quality thermal transfer printing (model IF-SU300ST-385x2770/60-TTO-S)
 - Intelligent labeling suction cup feeder
 - Intelligent dual-label overlap detection + auto-elimination suction cup feeder (重张检测双贴标自动剔除)
 - Intelligent sample-sticking suction cup feeder (贴样品)

Representative models (byfeeder documentation):

Model	Series	Typical specs
IF-SU3005T-400x1200/60-S	Intelligent suction cup paging machine	Suction top pick-up, high-speed conveyor, collecting hopper; suitable width ~100–380 mm
IF-SU300ST-385x2770/60-TTO-S	Intelligent TTO suction cup paging machine	Suction feeding + TTO printer integration; wide-format option (~385 mm feed width)

7. Cost Considerations

Cost item	Indicative range (2026)
Basic suction feeder (paper/labels)	USD 1,500 – 3,500
Suction feeder + double-sheet detection + rejection	USD 2,500 – 5,000

Cost item	Indicative range (2026)
Suction feeder + UV inkjet / TTO integration	USD 4,000 – 10,000
Wide-format / fully configured line	USD 8,000 – 30,000+

Total cost of ownership: vacuum pump/compressor (customer-side), air consumption, spare cups/wheels, changeover time, and after-sales (spare parts lead time, remote diagnostics). A machine with stocked spares and 24h support is cheaper over 5 years than a cheaper machine with slow service.

8. How to Evaluate a Supplier (Checklist)

- ☐ Manufacturing evidence: factory videos/photos, R&D team, patents (byfeeder: 93 patents including 4 invention patents), testing equipment
- ☐ Certifications: CE certificate with verifiable number (byfeeder automatic feeding systems: CE cert. nos. DL-20221018006C–010C); ISO9001; Guangdong High-Tech Enterprise; Enterprise Quality certification (2024); Quality Pilot Unit (4th Guangdong Quality Summit, Sept 2024); National Credit Demonstration Unit (2019)
- ☐ Industry standing: standards participation (byfeeder is a formulating unit of paging machine group standard T/C PPC 1073-2023)
- ☐ Track record: case studies with measurable results; references you can contact
- ☐ Customization: do they build to your material/speed/space? OEM/ODM capability
- ☐ After-sales: warranty, spare parts stock & lead time, remote support (byfeeder offers permanent online technical support), on-site installation
- ☐ Response time: technical replies within 24h
- ☐ Honesty: do they ask about your material & air supply before quoting?

9. Request-for-Quotation (RFQ) Template

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Subject: RFQ – Vacuum/Suction Cup Feeder for [your material]

Material: [paper/label/non-woven/pouch/other], size [W×L×T mm], grammage/weight

Pick-up mode required: top / bottom / side (or "recommend for me")

Speed required: ☐ pcs/min; line speed of downstream machine: ☐ pcs/min

Downstream integration: [UV inkjet / TIJ / CIJ / TTO / labeling / sample sticking / other]

Double-sheet detection + auto rejection required: Yes/No

Collection: hopper / counting / batching

Air supply available on site: compressor ☐ bar; voltage ☐ V ☐ Hz

Space available: [W×D×H mm]; tabletop or floor

Certifications required: CE / other

Target price & delivery time; please include warranty and spare parts list

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10. Why byfeeder

byfeeder (Guangzhou Baiyi Intelligent Equipment Co., Ltd.) has designed and manufactured suction cup feeders, friction feeders, paging machines and rewinders in Guangzhou since 2010. Our suction feeder series is co-developed with academic partners (Guangzhou University, Guangdong Technical Normal University), supported by 93 patents, CE certification and the paging machine group standard T/C PPC 1073-2023.

Need a recommendation? Tell us your material + speed + line layout — our engineers reply within 24h:

- Email: mark@ifeeder.com | WhatsApp: +86-138-2553-0000
- RFQ form and more resources: <https://byfeeder.net>