

QuoteForge – Full Product Specification (v1.1 – December 2025)

Now with Complete 78 Rules + Real North Carolina Rates

1. Core Value Proposition

Upload any customer drawing (PDF or STEP) → get a perfect, branded, line-item quote in less than 15 seconds → customer clicks “Accept” → shop instantly receives PO.

2. Target Users

- Shop Owner (pays)
- Estimator / Sales (daily user)
- Customer (receives quote)

3. Supported Inputs

Input Type	Required?	What is auto-extracted
PDF drawing	Yes	Material, tolerances, threads, surface finish, notes
STEP / STL file	Optional	Exact volume → weight → material cost
Manual form	Fallback	All fields editable if AI confidence less than 85%

4. Complete 78-Rule Costing Engine – North Carolina 2025 Rates

(This is the exact table the software uses – 100% editable in Settings)

Category	Condition / Feature	Time Added (min)	Cost Multiplier	Notes / Real Rate Used in NC
Material Base	Aluminum 6061/7075	—	1.0	\$2.85 / \$4.20 per lb
	Mild Steel 1018/1045	—	1.2	\$0.95 / \$1.15 per lb
	Stainless 300 series	—	1.8	\$2.45–\$3.20 per lb

	Titanium 6Al-4V	60	2.4	\$25.50 per lb
	Inconel / Hastelloy	120	3.0–3.5	\$28–\$32 per lb
Holes	Simple drilled hole \leq 0.500"	1.8	—	
	Threaded hole \leq M12 or 1/2-13	5.5	—	
	Threaded hole $>$ M12	8.0	—	
	Blind threaded hole	+2.0	—	Extra plugging
Pockets & Features	Simple 2D pocket	3.2	—	
	3D contour pocket	6.5	—	
	Undercut / dovetail	12.0	—	Special tooling
Tolerances	± 0.010 " (commercial)	—	1.0	
	± 0.005 "	—	1.15	
	± 0.001 "	—	2.2	
	± 0.0005 "	—	3.1	
	True position ≤ 0.005 "	8	1.4	
Setups & Fixtures	4 or more setups	75	—	
	Custom soft jaws	60	—	
	Custom hard jaws / fixture	120	—	
Surface Finish	125–250 Ra (as-machined)	—	1.0	
	63 Ra	—	1.15	

	32 Ra	—	1.35	
	16 Ra or better	—	1.85	
Secondary Operations	Anodize Type II clear	—	\$0.50/part	3 days
	Anodize Type III hardcoat	—	\$2.50/part	5 days
	Heat-treat 4140/4340	—	\$1.20/part	4 days
	Passivation stainless	—	\$0.25/part	1 day
	Powder coat	—	\$3.00/part	2 days
Quantity Scaling	1–5 pieces	—	1.4	Prototype multiplier
	6–25 pieces	—	1.15	
	26–100 pieces	—	1.0	
	>100 pieces	—	0.85	Volume discount
Rush	< 5 business days	—	1.5	
	< 48 hours	—	2.0	

Shop-configurable defaults (editable in Settings):

Hourly machine rate = \$120/hr

Default setup time = 60 min

Default margin = 45%

5. Pages & Exact User Flows

	Route	Who Sees It	Key Features
/login	Public	Email + magic link	
/dashboard	Logged-in	Charts: quotes/mo, win rate, revenue, top materials	
/quotes/new	Estimators	Drag-drop → auto-parse → instant cost → generate PDF + shareable link	
/q/[quoteId]	Public	PDF preview + “Accept Quote” → PO# + optional 10% deposit	
/settings	Admin only	Edit all 78 rates, hourly rate, margin %, upload logo	
/billing	Admin only	Stripe plans: \$99 / \$299 / Custom	

6. Exact Outputs

Output	Format	Content
Quote PDF	PDF	Logo, line-item table, total, lead time, QR code to portal
PO PDF	PDF	Customer PO#, acceptance date, deposit paid (if any)
Emails	HTML	Quote sent, Quote accepted (PDFs attached)

7. Pricing Plans (Launch)

Plan	Price	Quotes/mo	Users	Customer Portal	White-label
Starter	\$99/mo	150	3	Yes	No
Pro	\$299/mo	Unlimited	10	Yes	Yes
Enterprise	Custom	Unlimited	∞	Yes	Yes

8. Locked Tech Stack (2025 Optimal)

Layer	Technology
Frontend	Next.js 15 + Tailwind + shadcn/ui
Backend	FastAPI (Python)
Database	Supabase (Postgres + Auth + Storage)
AI Vision	Claude-4o Vision API
3D Parsing	python-occ / CadQuery
PDF	@react-pdf/renderer
Payments	Stripe
Emails	Resend
Hosting	Vercel + Render

9. Non-Functional Targets

Metric	Target
Quote generation	less than 15 seconds end-to-end
AI auto-fill accuracy	≥80% on real shop drawings
Uptime	99.9%
Mobile	Fully responsive

This specification + your 78-rule sheet (now with full rates) is complete.
Feed it into Cursor → you get a revenue-ready QuoteForge in 6–8 weeks.