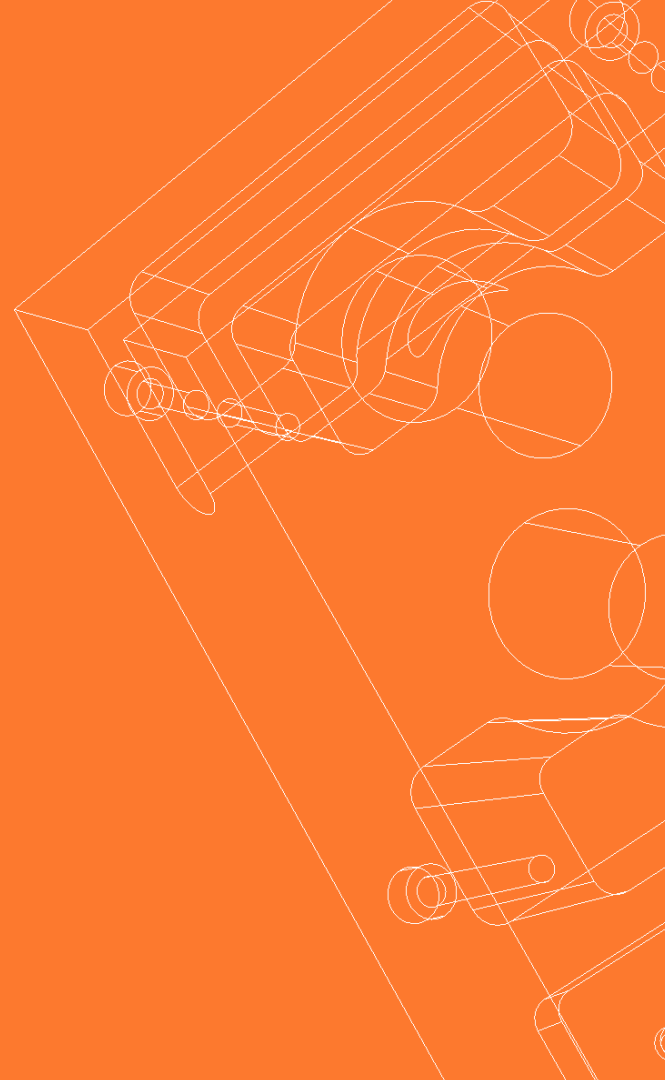


paperless**PARTS** 

Paperless Parts

Company Overview

PRESENTED BY **JASON RAY, CEO**



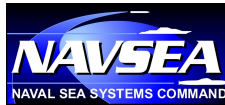
About Jason Ray



Grew up in CT



US Navy OCS



Contracting Officer



Additive Manufacturing and Innovation Officer



Series B Funding OpenView

Trinity College Economics/History



Minesweeper USS Warrior (MCM 10)



Babson College MBA



Started Paperless Parts 2017



100+% Y/Y Growth with 150 Employees



Enter Paperless Parts

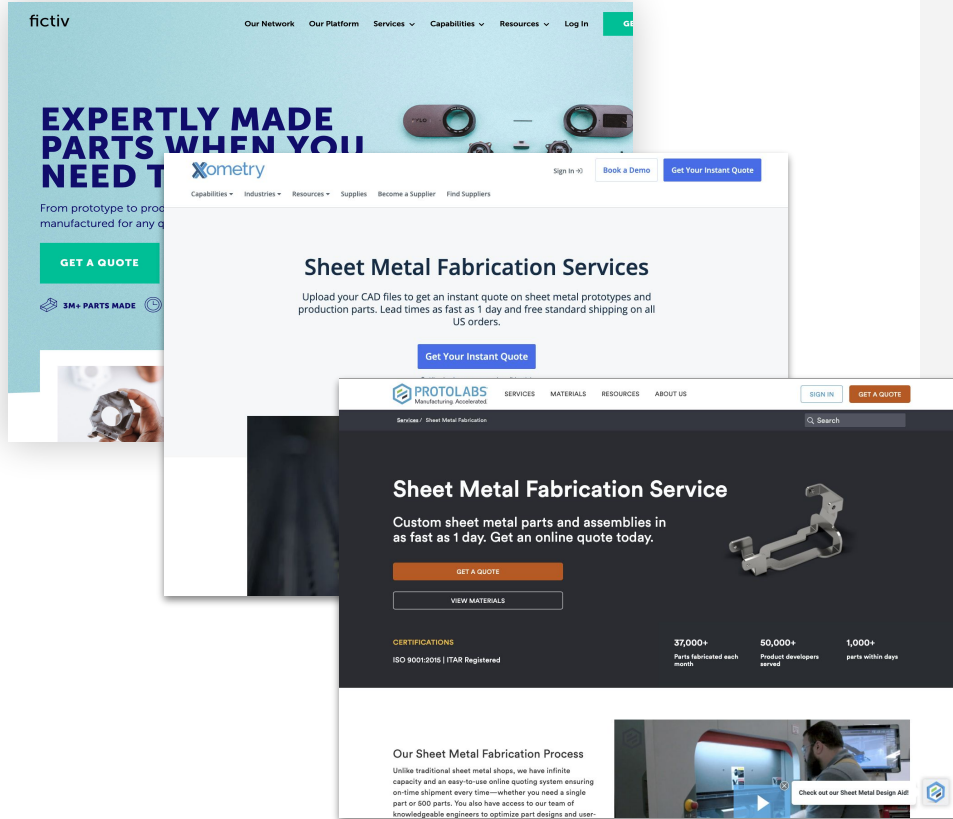
ABOUT PAPERLESS PARTS

Paperless Parts is a secure, ITAR registered and compliant cloud-based software platform that automates and streamlines the quoting process for custom part manufacturers.

WE STARTED IN A JOB SHOP

Our team has spent time in hundreds of manufacturing operations: from the smallest one-person job shop, to high-volume production operations doing \$100M contracts. We've spoken with thousands of owners and operators, analyzed millions of parts files, and supported hundreds of millions of dollars in orders.





Part buyers are being trained to **expect a fast digital quoting and buying experience.**

QUOTES IN HOURS

Customers get digital quotes in hours, and can instantly check out online

PARTS IN DAYS

Quickturn prototype and short run production jobs turned around in 3-5 days

24/7 LIVE CUSTOMER SUPPORT

Customers can speak with a sales engineer any time of day

Manufacturing Today

SKILLS GAP

Only a few people have the expertise and memory of past jobs.

MATERIAL AVAILABILITY AND PRICING

Causes bottlenecks and inconsistency in profitability.

TECHNOLOGY GAP

No digital thread and all parties reading off different sheets of music.

OVER-ENGINEERED

Increasingly complex parts are pressurizing an overly challenged supply chain.



**The future of
manufacturing
is here.**

paperless**PARTS** 



Paperless Parts is a secure, cloud-based quoting platform that helps manufacturers:

- Quote faster and more accurately
- Communicate securely and effectively
- Capture and analyze sales and quoting data

Your Logo
Here

Sample Quote	Requested By	Quote Details
<p>137 Portland Street Boston, MA 02114 Phone: (617) 475-0161 yourcompany.com</p>	<p>Sample Buyer Sample Company buyer@company.com 137 PORTLAND ST BOSTON, MA 02114-1702</p>	<p>Quote number: 133 Prepared on: 04/23/2020 Prepared by: Jason Ray Contact: jason@paperlessparts.com Quote range: \$65.00 - \$53,863.00 Modified from Quote #1 ● QUOTE EXPIRED 05/23/2020</p>

1. TITAN-2-3M.stp
PART # 46342323

AVAILABLE FROM
\$23.00/ea + \$130.00/ea

ADDITIONAL CHARGES
Dye Black (Optional)

\$10.00 - \$70.00

QTY	LEAD TIME	UNIT PRICE	TOTAL PRICE
1	3 days	\$230.00	\$230.00
1	5 days	\$97.50	\$97.50
1	10 days	\$81.25	\$81.25
1	15 days	\$65.00	\$65.00
5	3 days	\$79.00	\$395.00
5	5 days	\$62.50	\$312.50
5	10 days	\$43.75	\$218.75
5	15 days	\$35.00	\$175.00
10	3 days	\$50.00	\$500.00
10	5 days	\$37.50	\$375.00
10	10 days	\$31.25	\$312.50
10	15 days	\$25.00	\$250.00
25	3 days	\$46.00	\$1,150.00
25	5 days	\$34.50	\$862.50
25	10 days	\$28.75	\$718.75
25	15 days	\$23.00	\$575.00

PROCESS
HP Multi Jet Fusion

MATERIAL
PA12 HP Nylon

FINISH
No Finish

X	5,000	127,000	
Y	0.750	19,050	
Z	1.950	49,530	

CLOSE DETAILS

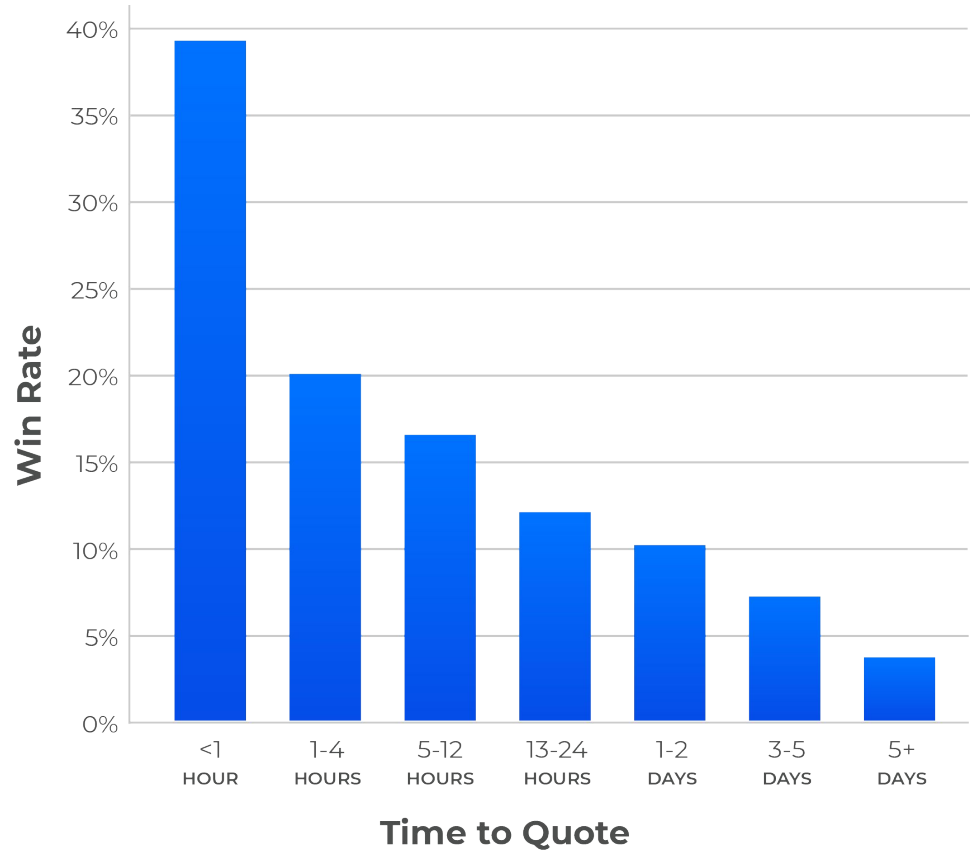
paperlessPARTS



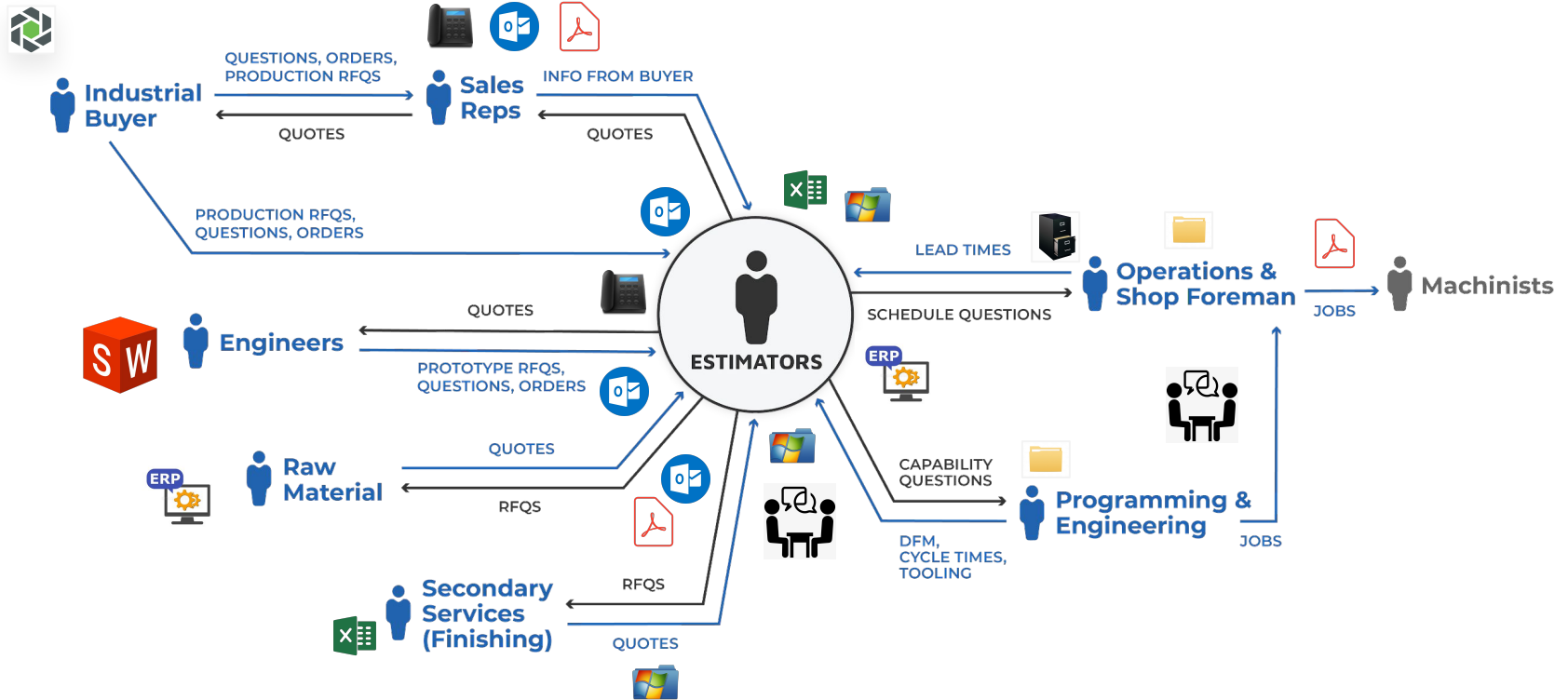
ITAR
REGISTERED
& COMPLIANT

Shops that quote faster **will win more jobs.**

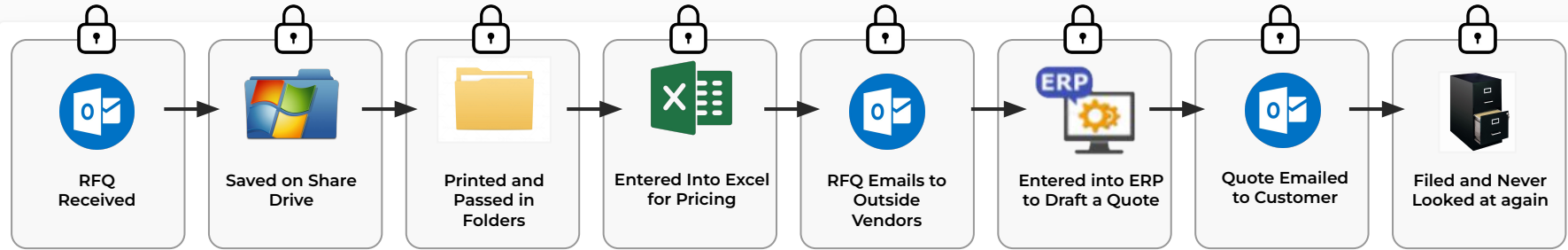
On top of winning more work, you'll spend more time being productive.



Chaos and Fragmented Communication in Estimating



Silos of Information from RFQ to Cash

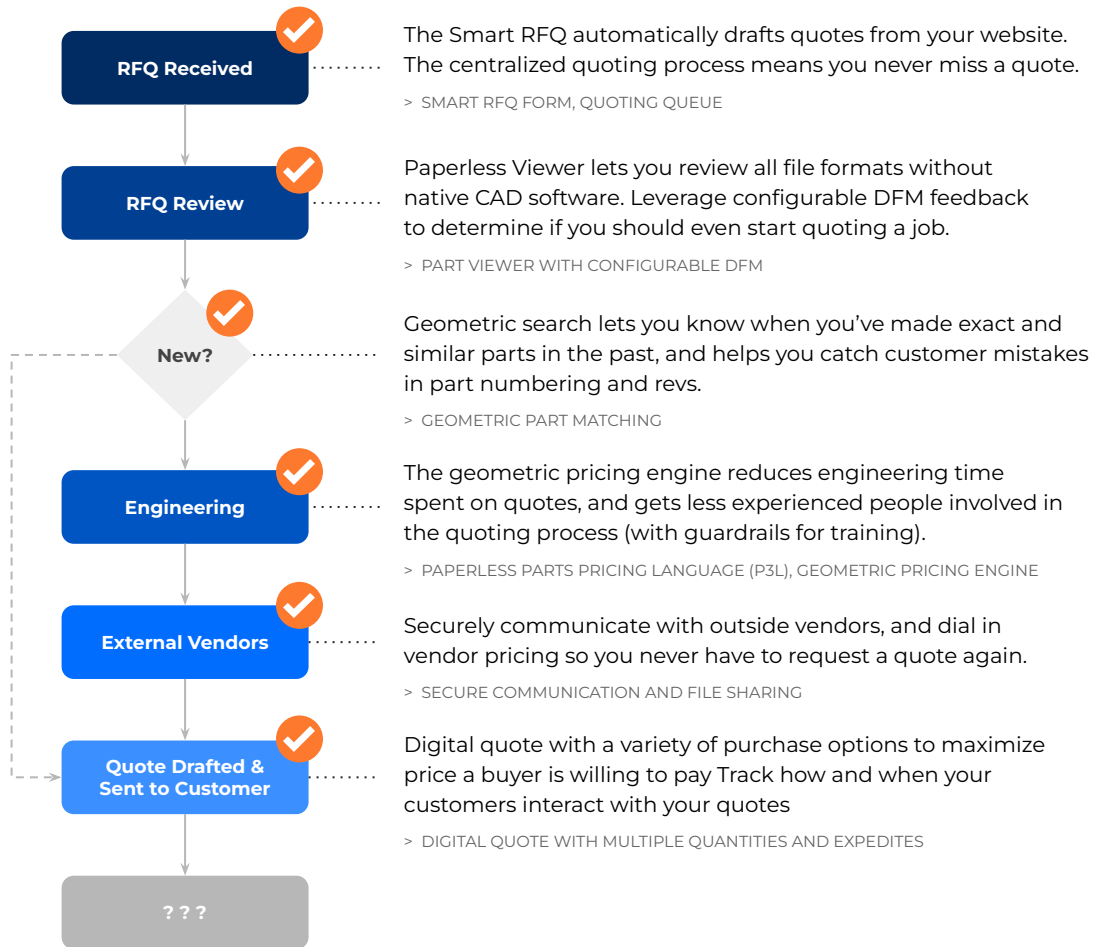


Each time you break the digital thread you are creating unnecessary risk and inefficiency in your shop.

- Lose track of a really important quote because files are printed and prioritized by stacks of paper
- Increased risk of quoting or making the wrong part that causes return merchandise authorization (RMAs)
- Miss an engineering revision because it was communicated in a silo and you lack a system that stores data in the same places

Paperless Parts Solves Problems at Every Step of Quote-to-Cash

We enable streamlined, secure, and searchable communication.



Geometric Attributes

Paperless Parts detects more than **62 different geometric attributes** in the 3D CAD model that can be used in the creation of your sheet metal pricing formulas.

Attribute	Description	Metric units	US units
bend_count	Count of bends	n/a	n/a
thickness	Thickness of sheet metal part	mm	in
size_x	X dimension of the unfolded sheet metal part	mm	in

Feedback Reference		
Name	Level	Properties (short description)
captive_part	complete_exclusion	n/a
close_countersink_bores	manufacturing_issue	dist, distance_ratio (traversal/thickness)

close_cutouts
countersink_bore_to_edge
curl_near_bend
cut_near_bend
cutout_to_edge
different_bend_directions
hem_near_bend
large_bend_radius
machining_required
neg_bend_allowance
no_bend_relief
no_corner_relief
non_standard_bend_angle
shallow_bend_relief
total_hole_setups
total_hole_count

Feature Reference	
Name	Properties
bend	area, angle, length, k_factor, radius
bend_relief	area, width, length
curl	area, angle, length, k_factor, radius
counterbore	area, depth, diameter, volume
countersink	area, depth, major_diameter, minor_diameter, semi_angle, volume
cutout_feature	area, cut_length, requires_piercing
drilled_hole	area, depth, diameter, volume
embossment	area, depth
offset	area, angle, length, offset_height, k_factor, radius
open_hem	area, angle, length, k_factor, radius
punch_multi_hit_feature	area, cut_length
punch_single_hit_feature	area, cut_length
tear_drop	area, angle, length, k_factor, radius

Feedback Reference		
Name	Level	Properties (short description)
captive_part	complete_exclusion	n/a
close_countersink_bores	manufacturing_issue	dist, distance_ratio (traversal/thickness)
close_cutouts	manufacturing_issue	dist, distance_ratio (traversal/thickness)
countersink_bore_to_edge	manufacturing_issue	dist, distance_ratio (traversal/thickness)
curl_near_bend	manufacturing_issue	dist, distance_ratio (traversal/thickness)
cut_near_bend	manufacturing_issue	dist, distance_ratio (traversal/thickness)
cutout_to_edge	manufacturing_issue	dist, distance_ratio (traversal/thickness)

Configurable Manufacturability Warnings

Paperless Parts offers
25 configurable manufacturability
checks driven from the 3D CAD
model to make sure you never miss
a design issue.

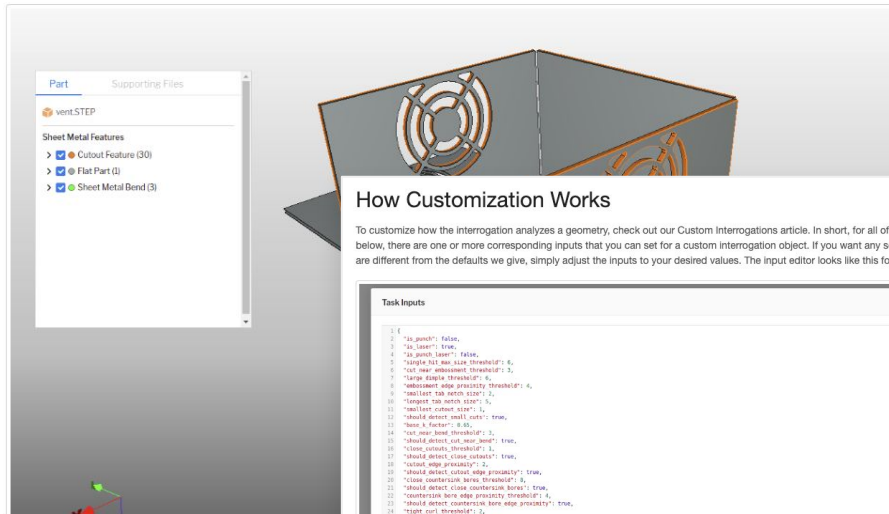
Sheet Metal Interrogation

Paperless Parts has a very robust interrogation module for sheet metal parts. It is also fully customizable to the characteristics of your shop and your capabilities.

Before reading this, it is highly recommended that you check out our [intro to P3L for sheet metal](#).

The appearance of certain features and manufacturability feedback items will be determined by the inputs you give to the analysis request `analyze_sheet_metal()`.

Our interrogation will take a CAD file and identify all bends, along with all the necessary pricing information about them (length, angle, radius, etc.). From these bends, the interrogation will then unfold the part to extract important pricing parameters like the unfolded dimensions and the thickness. The interrogation will also identify all marked features and commonly requested features like countersinks and counterbores.



How Customization Works

To customize how the interrogation analyzes a geometry, check out our Custom Interrogations article. In short, for all of these customization elements below, there are one or more corresponding inputs that you can set for a custom interrogation object. If you want any sort of interrogation inputs that are different from the defaults we give, simply adjust the inputs to your desired values. The input editor looks like this for sheet metal:

```
Task Inputs
1 | is_groove: false,
2 | is_laser: true,
3 | is_groove_laser: false,
4 | is_laser_max_size_threshold: 4,
5 | is_near_ambushment_threshold: 3,
6 | is_near_ambushment_threshold: 3,
7 | is_near_ambushment_threshold: 3,
8 | is_near_ambushment_threshold: 3,
9 | is_near_ambushment_threshold: 3,
10 | is_near_ambushment_threshold: 3,
11 | is_near_ambushment_threshold: 3,
12 | is_near_ambushment_threshold: 3,
13 | is_near_ambushment_threshold: 3,
14 | is_near_ambushment_threshold: 3,
15 | is_near_ambushment_threshold: 3,
16 | is_near_ambushment_threshold: 3,
17 | is_near_ambushment_threshold: 3,
18 | is_near_ambushment_threshold: 3,
19 | is_near_ambushment_threshold: 3,
20 | is_near_ambushment_threshold: 3,
21 | is_near_ambushment_threshold: 3,
22 | is_near_ambushment_threshold: 3,
23 | is_near_ambushment_threshold: 3,
24 | is_near_ambushment_threshold: 3,
25 | is_near_ambushment_threshold: 3,
26 | is_near_ambushment_threshold: 3,
27 | is_near_ambushment_threshold: 3,
28 | is_near_ambushment_threshold: 3,
29 | is_near_ambushment_threshold: 3,
30 | is_near_ambushment_threshold: 3,
31 | is_near_ambushment_threshold: 3,
```

We break down the customization into two sections: strategy and manufacturability analysis. Strategy customization lets the interrogation know how you fundamentally will manufacture the part. Manufacturability customization tells the interrogation what you want to see in terms of manufacturability warnings. In this section you can adjust thresholds and even turn off the discovery of certain feedback elements all together if they are not important to your shop.

Automate Purchased Component Pricing

Paperless Parts automatically identifies and pulls in purchased component pricing from your vendors or historical information.

Item	Quantity	Unit Price	Total Price
CLS-1224-3.step	3	\$0.30	\$1.50
CLS-448-3.step	54	\$6.48	\$32.40
CLS-822-3.step	4	\$0.52	\$2.60
Screen #4-48 x 0.188.step	51	\$8.67	\$43.35
Screen #8-32 x 0.188.step	4	\$0.36	\$1.80
Screen 1/4-20 x 0.188.step	3	\$0.21	\$1.05
Type A Flat washer #8.step	4	\$0.56	\$2.80
Total	136	\$17.10	\$85.50

PennEngineering®

paperlessPARTS 

Customizable Workflow Management

Paperless Parts offers teams the ability to create custom workflows for their estimating process to **ensure that no steps are missed.**

The screenshot displays the Paperless Parts software interface. The top navigation bar includes 'PARTS', 'QUOTES', 'ORDERS', 'PROCESSES', 'CONTACTS', and 'ANALYTICS'. The main view shows 'Quote #162' in 'DRAFT' status. A progress bar indicates the workflow stages: 'RFQ Received' (7/25/21 9:00AM), 'Quote Started' (7/26/21 8:19AM), 'Outstanding Work' (No Open Tasks), and 'Quote Sent'. Below the progress bar, there are fields for 'CONTACT' (Dan Winsberg), 'SALESPERSON' (Jason Ray), and 'ESTIMATOR' (John Smith). The 'ORDER REVENUE' section shows '\$0.00' for 'LAST 30 DAYS' and '\$0.00' for 'ALL TIME'. The 'QUOTES SENT' section shows '0' for 'LAST 30 DAYS' and '2' for 'ALL TIME'. A 'Workflow Steps' pop-up window is open, showing a table of quote items with their status and completion progress.

Quote Item	Status	Manufacturability Check	Engineering (Cycle Times)	Procurement - Materials	Procurement - Outside
part # -- REV -- angle STEP	Completed	Completed	Completed	Completed	Completed
part # -- REV -- box with bend rvl1fa 801 gap STEP	In Progress	Completed	Completed	In Progress	In Progress
part # -- REV -- box with no return STEP	On Hold	Not Started	Not Started	Not Started	Not Started
part # -- REV -- angle STEP	In Progress	Completed	In Progress	In Progress	Not Started
part # -- REV -- SM55-8017 STEP	In Progress	In Progress	Not Started	Not Started	Not Started
part # -- REV -- PP-13702114-04 stop	In Progress	In Progress	Not Started	Not Started	Not Started

Unit Price	Total Price	Lead Time
\$517.95	\$517.95	16 Days
\$105.63	\$528.15	16 Days
\$54.09	\$540.90	16 Days
\$36.91	\$553.65	16 Days

Unit Price	Total Price	Lead Time
\$79.64	\$79.64	13 Days
\$17.84	\$89.20	13 Days
\$10.12	\$101.20	13 Days
\$7.55	\$113.25	13 Days

Qty	Unit Price	Total Price	Lead Time
1	\$492.49	\$492.49	16 Days
5	\$101.48	\$507.40	16 Days
10	\$52.61	\$526.10	16 Days

Why Automate?

The benefits are **simple**.

There is a new generation of part buyers with different demands and expectations.

- Faster Quotes = Higher Win Rates
- Reduced Quoting Costs = Higher Profitability
- Higher Quote Volume = More Revenue
- Consistent Pricing = Stability
- Reduced human Error = Predictability

The Perfect Compliment For Your ERP System



SALES



OPERATIONS

Quote Faster. Win More.

HUNDREDS OF FABRICATORS ACROSS THE COUNTRY
TRUST PAPERLESS PARTS.

"Trust in the Paperless Parts quoting software has been transformative, the more information we have up front, the more we can speed up the process – and when you wear a lot of hats, it makes the biggest difference for your business."

PETER MARCOUX

Estimating and Sales Manager
Century Ty-Wood Manufacturing



AURORA
M A C H I N E

★ MADE IN USA ★



Do More With Modern Software.

SHEET METAL FABRICATION SHOPS SWEAR BY IT.



CENTRALIZED QUOTING PROCESS

Never miss an opportunity



MANUFACTURABILITY WARNINGS

Reduce human errors



GEOMETRY DRIVEN QUOTING

Fast and accurate quotes



SMART RFQ FORM

Reduce friction for your customers



ONLINE COLLABORATION

Chat with your team, vendors and customers



DIGITAL QUOTE & PAYMENTS

Create a seamless customer experience



CAD VIEWING

View all CAD formats



ITAR COMPLIANT SECURITY

Ensure data is secure



Modernize Your Shop. Grow Your Business.

Streamline the quoting process, amplify your digital presence, and manage customer communication with the secure platform build to help you grow your business.

Learn more at paperlessparts.com
Contact me directly jason@paperlessparts.com

