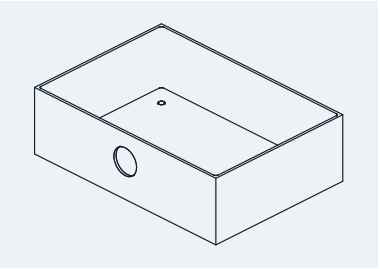
BF-4126 Sensor housing

Approved by R. Tallchief

6061-T6 aluminum · Precision, ±0.002 in · Clear anodize, Type II · 4 tapped holes · for Prairie Hauler Trailers November 10, 2026

MEASURED FROM THE MODEL

Size	5 x 3.5 x 1.5 in
Volume / surface	3.55 cu in / 82.7 sq in, 20 faces
Holes	1 x 0.625 in, 0.06 deep (-Y); 4 x 0.136 in, 0.125 deep (Z)
Inside corners	4 x R0.0625 in beside a 1.375 in wall
Thinnest wall	0.06 in
Reached from	+Z, -Z, -Y (3 directions)
Stock	1.75 in plate, sawn 5.25 x 3.75 in: 3.36 lb, $10.75 a blank; 30.9 cu in removed



ROUTING

Bandsaw
1 setup, 10 min; 2.1 min a piece at $55.00/h
1.1 sawing, 1 loading (minutes a piece)

3-axis mill
3 setups, 135 min; 34 min a piece at $85.00/h
13.6 roughing, 11.7 finishing, 1.3 holes, 1.3 tapping, 1.6 tool changes, 4.5 loading (minutes a piece)
Cutting time carries 32% for reach and thin walls.
Also priced: 5-axis mill, 2 setups, $172.85 each at 100.

COST OF THE LOT	5 pcs	25 pcs	50 pcs	100 pcs
Material	$101.64	$358.77	$680.17	$1,322.99
Bandsaw	$19.15	$59.07	$108.97	$208.77
3-axis mill	$442.09	$1,445.43	$2,699.60	$5,207.96
Programming	$131.25	$131.25	$131.25	$131.25
Inspection	$50.31	$64.90	$83.13	$119.58
Deburr and pack	$10.42	$52.08	$104.17	$208.33
Clear anodize, Type II	$109.25	$109.25	$214.48	$428.96
Direct cost	**$864.11**	**$2,220.75**	**$4,021.77**	**$7,627.84**
Overhead, 12%	$103.69	$266.49	$482.61	$915.34
Margin, 30% of price	$414.77	$1,065.96	$1,930.45	$3,661.36
Rounding to the cent a piece	$0.03	$0.05	$0.17	$0.46
Price for the lot	**$1,382.60**	**$3,553.25**	**$6,435.00**	**$12,205.00**
Price each	**$276.52**	**$142.13**	**$128.70**	**$122.05**
Band	plus or minus 25%	plus or minus 25%	plus or minus 25%	plus or minus 25%
Low to high, each	$207.39 to $345.65	$106.60 to $177.66	$96.53 to $160.88	$91.54 to $152.56
Machine hours	5.5	18.1	33.7	65.1
Lead time	16 working days	18 working days	20 working days	25 working days

Lead time at 5: 8 days in line (queue 8, material 3), 1 first article, 1 machine, 5 out for finishing, 1 to pack and ship. Band: base 8, not yet calibrated against past jobs 10, precision, ±0.002 in 2, 1 review flag 2, 1 estimator override 3.

REVIEW FLAGS

Looked at — **Thinnest wall is 0.06 in**
Under 0.08 in a wall chatters and moves. 25% has been added to the cutting time; check it.

Looked at — **Quoted with a 0.1875 in inside corner radius**
The model shows 0.0625 in. The quote lists this as an exception; the customer has to accept it.

CALCULATION CHECKS

8 of 8 passed: every lot's lines add up to its total; unit price never rises with quantity; the stock contains the part; every cycle time is positive; margin is applied once; no price is below the minimum order; lead time covers the queue and the buffer; the same inputs give the same answer.

A STEP file carries no threads, tolerances, finish notes or material. Those were typed in here; check them against the drawing.
These rates have not been checked against the shop's own past jobs yet, so the band is wider.