



**PROTECTIVE BOX RIGHT (NR-528060_A) & SHAFT ASSEMBLY
(NR-528410_0) SHOULD COSTING REPORT**

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1. PROJECT OVERVIEW

1.1. Scope of Work

The scope of this engagement covers the activities required to analyse customer-provided drawings and develop a detailed cost estimation framework. The key tasks include

- Reviewing and studying the technical drawings provided by the customer.
- Preparing an optimized manufacturing plan (best method of manufacturing) for each part, focusing on efficiency and feasibility.
- Estimating the manufacturing costs based on the developed manufacturing plan for both the **Eastern Europe (EE)** and **France (FR)** regions

Estimations will be based on drawings provided by the customer and it having following deliverables

1. Detailed Process Planning Report
2. Detailed Should Costing Report
3. Cost Analysis Report

1.2. Customer Inputs & Assumptions

As per the below table some of the inputs are taken as per customer provided data and some of the inputs assumed based on market standard.

S.I	Description	Input Details	UOM	Remarks
1	Product details	2D & 3D Drawing	-	Customer Input
2	Total Annual Volume	1200	Nos	Customer Input
3	Batch Size	100	Nos	Customer Input
4	Manufacturing Location	France & Eastern Europe	-	Customer Input
5	Over Head & Margin	Material OH 5% Machine OH 3% Labor OH 2% Profit 8%	-	Assumed as per Market Standard

1.3. Machine Data Base

Process Name	Machine Name	FR		EE	
		LHR	MHR	LHR	MHR
Laser Cut	Amada FOL -3015 AJ 4kW Fiber	\$35.85	\$56.16	\$13.55	\$42.54
Laser Cut	Salvagnini L3-30 2 KW Fiber	\$35.85	\$39.13	\$13.55	\$26.47
Press Break	HG-8025 (Amada)-800KN	\$35.85	\$20.54	\$13.55	\$18.39
Machining	2 Axis Lathe -Acra 4400 HLA	\$46.77	\$28.88	\$17.67	\$19.62
Machining	2 Axis Lathe -Okuma Genos L250II	\$46.77	\$27.25	\$17.67	\$17.57
Machining	3 Axis mill-Haas VF10/50	\$46.77	\$38.59	\$17.67	\$25.80
Machining	Inspection	\$42.66	\$13.95	\$16.12	\$5.43
Machining	Manual Deburr	\$29.57	\$13.92	\$11.17	\$5.45
Assembly	Manual Pick and Place	\$29.57	\$23.37	\$11.17	\$9.90
Assembly	Mig Welding-C240 (ESAB-20A to 220 A)	\$52.05	\$15.90	\$19.67	\$6.94
Assembly	Weld Spatter Removal	\$29.57	\$15.02	\$11.17	\$6.14
Post Process	Powder Coat spray booth -1 m x1.2 m x 2 m	\$29.57	\$14.08	\$11.17	\$5.53

1.4. Raw Material Price

S.no	Material Grade	RM cost/kg
1	St52-3 / Grade 50	\$ 0.94
2	CK45	\$ 0.93
3	St37-2 / S235 JR	\$ 0.98

2. SHOULD COSTING SUMMARY

2.1. Eastern Europe Region

Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Msterial Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528410_0	Shaft		Assy		1	0.000	0.000	0.000	17.290	\$ 17.29	\$ 11.72	\$ 0.86	\$ 1.38	\$ 31.26	\$ 31.26	\$ 732	
L1	NR-525411_0	Steel Sheet		Sheet Metal	St52-3	84	0.327	0.207	0.940	0.272	0.454	\$ 0.73		\$ 0.02	\$ 0.06	\$ 0.81	\$ 67.76	
L1	NR-528415_0	Plain shaft for flail shaft		Sub Assy		1	0.000	0.000	0.000	0.000	8.304	\$ 8.30		\$ 0.42	\$ 0.66	\$ 9.38	\$ 9.38	\$ 633
L2	NR-525418_0	Shaft stub		Machining	Ck45	1	33.629	8.493	0.930	26.015	104.454	\$ 130.47		\$ 4.07	\$ 10.44	\$ 144.98	\$ 144.98	
L2	NR-528416_0	Tube flail shaft		Machining	St52-3	1	106.187	101.469	0.940	128.464	43.571	\$ 172.03		\$ 7.51	\$ 13.76	\$ 193.30	\$ 193.30	
L2	NR-528417_0	Shaft stub		Machining	Ck45	1	61.654	10.738	0.930	46.684	210.543	\$ 257.23		\$ 7.91	\$ 20.58	\$ 285.72	\$ 285.72	

Total Cost /Assembly -732 USD

Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Msterial Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528060_A	Protective box right		Sub Assy	St37-2	1			\$ -	\$ 12.62	\$ 12.62	\$ 0.75	\$ 0.63	\$ 1.01	\$ 15.00	\$ 15.00	\$ 43	
L1	NR-528058_0	Sheet Steel-1		Sheet Metal	St37-2	1	0.123	0.088	\$ 0.98	\$ 0.11	\$ 0.23	\$ 0.34		\$ 0.01	\$ 0.03	\$ 0.38	\$ 0.38	
L1	NR-528059_0	Sheet Steel-2		Sheet Metal	St37-2	1	0.438	0.338	\$ 0.98	\$ 0.40	\$ 0.55	\$ 0.95		\$ 0.03	\$ 0.08	\$ 1.05	\$ 1.05	
L1	NR-528064_A	Sheet Steel-3		Sheet Metal	St37-2	1	18.398	10.323	\$ 0.98	\$ 15.54	\$ 7.86	\$ 23.40		\$ 0.91	\$ 1.87	\$ 26.18	\$ 26.18	

Total Cost /Assembly -43 USD

2.2. France Region

Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Msterial Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528410_0	Shaft		Assy		1			\$ -	\$ 42.61	\$ 42.61	\$ 17.96	\$ 2.13	\$ 3.41	\$ 66.11	\$ 66.11	\$ 1,113	
L1	NR-525411_0	Steel Sheet		Sheet Metal	St52-3	84	0.327	0.207	\$ 0.94	\$ 0.27	\$ 0.77	\$ 1.05		\$ 0.03	\$ 0.08	\$ 1.16	\$ 97.35	
L1	NR-528415_0	Plain shaft for flail shaft		Sub Assy		1			\$ -	\$ 21.02	\$ 21.02		\$ 1.05	\$ 1.68	\$ 23.76	\$ 23.76	\$ 950	
L2	NR-525418_0	Shaft stub		Machining	Ck45	1	33.629	8.493	\$ 0.93	\$ 26.02	\$ 200.90	\$ 226.92		\$ 6.37	\$ 18.15	\$ 251.44	\$ 251.44	
L2	NR-528416_0	Tube flail shaft		Machining	St52-3	1	106.187	101.469	\$ 0.94	\$ 128.46	\$ 43.571	\$ 155.09		\$ 7.09	\$ 12.41	\$ 174.59	\$ 174.59	
L2	NR-528417_0	Shaft stub		Machining	Ck45	1	61.654	10.738	\$ 0.93	\$ 46.684	\$ 404.61	\$ 451.29		\$ 12.54	\$ 36.10	\$ 499.94	\$ 499.94	

Total Cost /Assembly -1113 USD

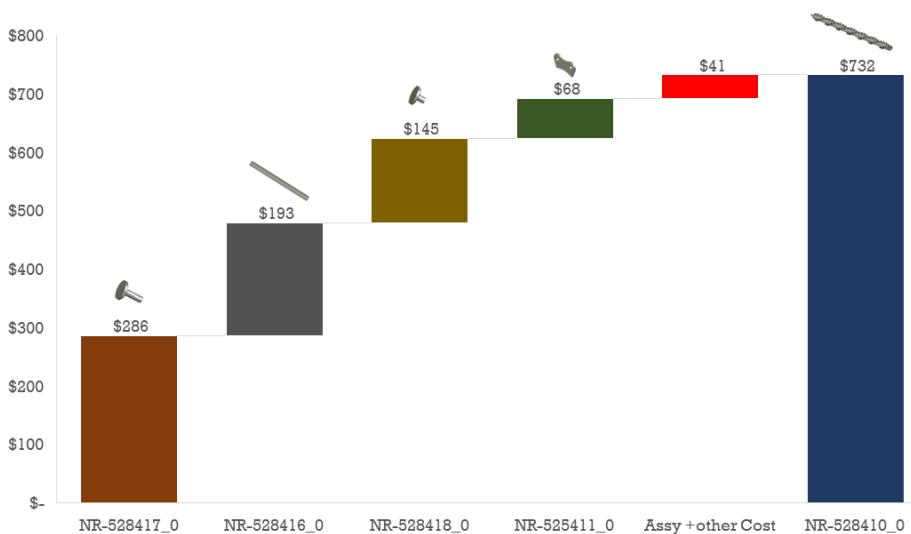
Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Msterial Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528060_A	Protective box right		Sub Assy	St37-2	1			\$ -	\$ 33.39	\$ 33.39	\$ 1.30	\$ 1.67	\$ 2.67	\$ 39.03	\$ 39.03	\$ 74	
L1	NR-528058_0	Sheet Steel-1		Sheet Metal	St37-2	1	0.123	0.088	\$ 0.98	\$ 0.11	\$ 0.47	\$ 0.58		\$ 0.01	\$ 0.05	\$ 0.64	\$ 0.64	
L1	NR-528059_0	Sheet Steel-2		Sheet Metal	St37-2	1	0.438	0.338	\$ 0.98	\$ 0.40	\$ 1.04	\$ 1.44		\$ 0.03	\$ 0.12	\$ 1.59	\$ 1.59	
L1	NR-528064_A	Sheet Steel-3		Sheet Metal	St37-2	1	18.398	10.323	\$ 0.98	\$ 15.54	\$ 13.89	\$ 29.43		\$ 1.00	\$ 2.35	\$ 32.78	\$ 32.78	

Total Cost /Assembly -74 USD

2.3. Shaft Assembly -Cost Walk

- Ex Works at Eastern Europe -732 USD

Cost Walk chart for Eastern Europe



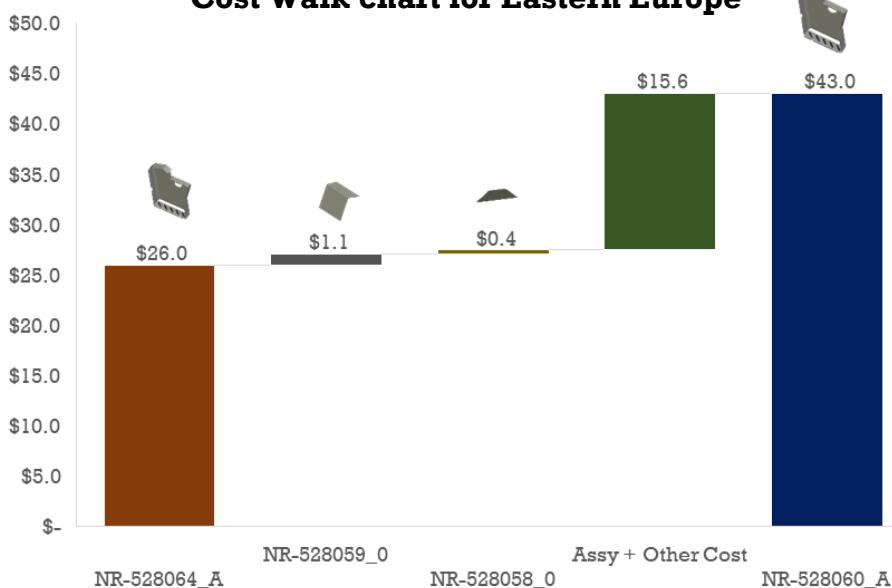
Key Takeaway

Shaft Assembly major cost driver is **Shaft Stub-1**, due to **high process cost** (high material removal)

2.4. Protective box Right- Cost Walk

- Ex Works at Eastern Europe -43 USD

Cost Walk chart for Eastern Europe



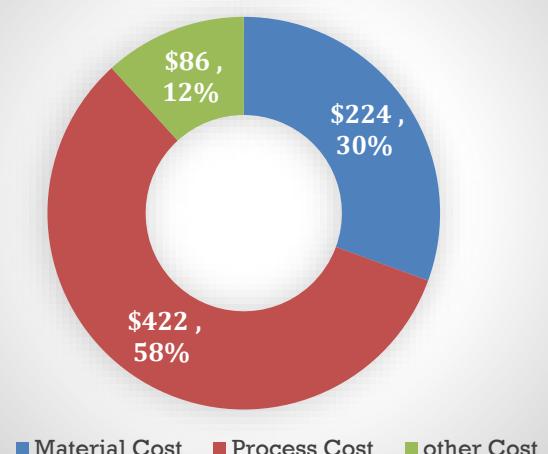
Key Takeaway

Protective box right base part has a higher cost due to **larger size** (weight per unit) and **higher number of operations**

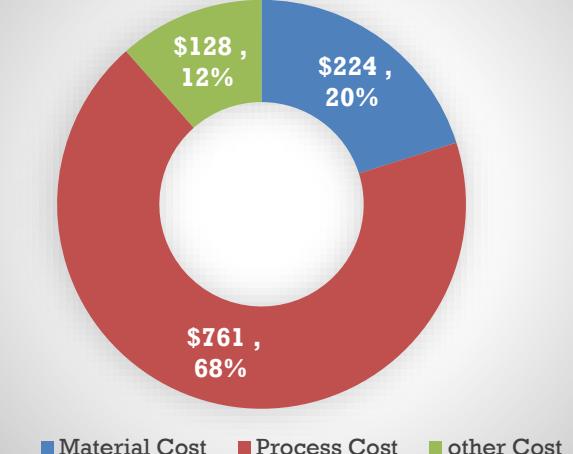
3. PRODUCT COST ANALYSIS

3.1. Shaft Assembly Cost Analysis

Cost Wise Breakdown-EE -732 USD

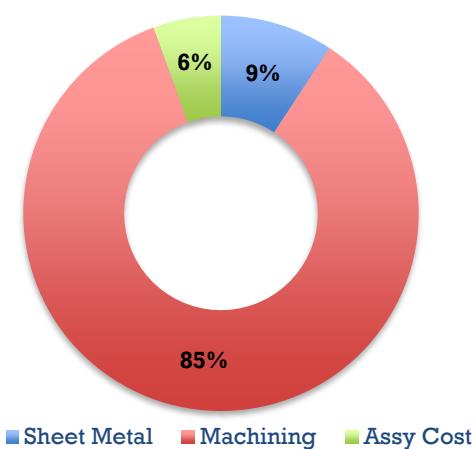


Cost Wise Breakdown-FR-1113\$



3.2. Shaft Assembly Cost Analysis -Commodity Wise Breakdown

Commodity Wise Breakdown



Region Wise Comparison

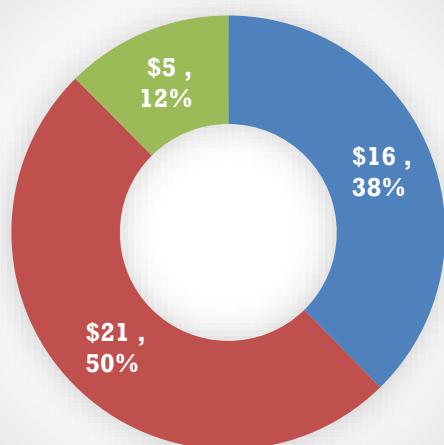


Eastern Europe region cost is **34% lower** than France region cost, due to lower labour rate (\$/hr): Eastern Europe (\$17.67) vs France (\$46.77).

3.3. Protective box right Cost Analysis

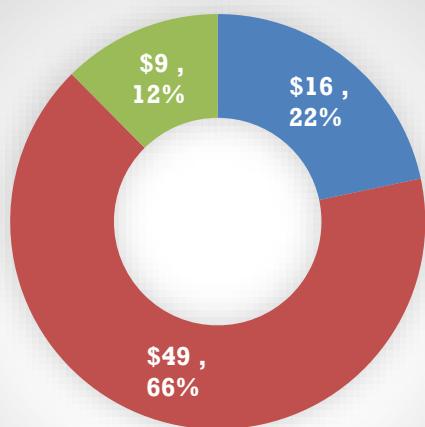
1. East Europe -43\$
2. France -74\$

Protective box right Cost Breakdown-EE



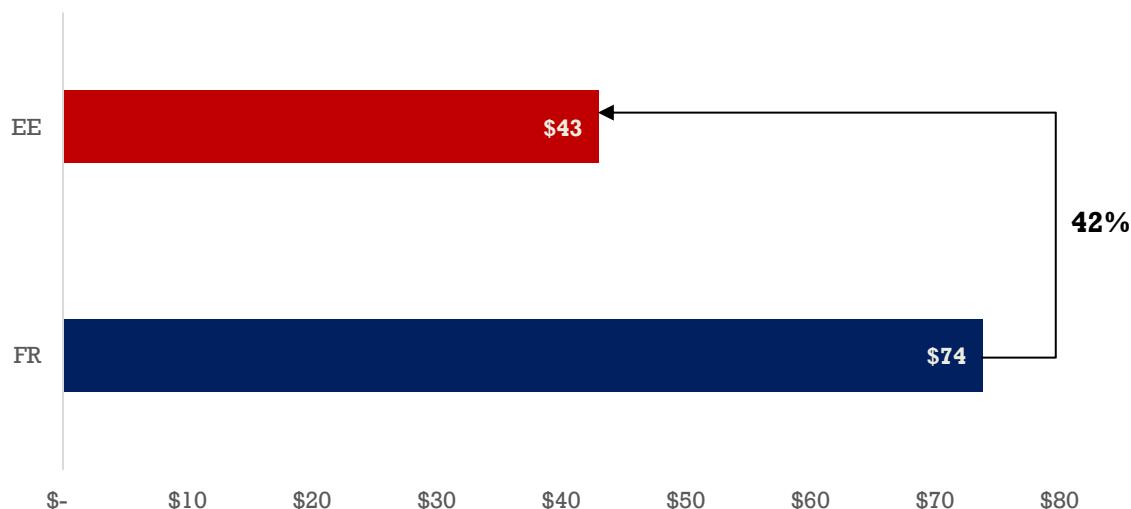
■ Material Cost ■ Process Cost ■ other Cost

Protective box right Cost Breakdown-FR



■ Material Cost ■ Process Cost ■ other Cost

Region Wise Comparison



Eastern Europe region cost is **42% lower** than France region cost, due to lower labour rate
(\$/hr): Eastern Europe (\$17.67) vs. France (\$46.77)

4. Value Analysis

Part Number -**NR-528417_0**

Part Description-**Shaft stub**

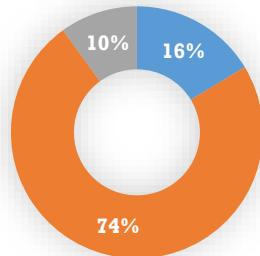
Cost per unit -\$285.72 (Bar Stock Machining)

Material Utilization -17%

Process Cost contribution -74%

Manufacturing Process –Bar Stock Raw material + Machining

Cost Breakdown



■ Material Cost ■ Process Cost ■ other Cost

In this part, the process cost contribution (74%) is very high because a large amount of raw material is removed through machining process. Therefore, we suggest considering an alternate manufacturing process to optimize the process cost

Suggested Manufacturing Process – Hot Forging + Machining

Cost Breakdown

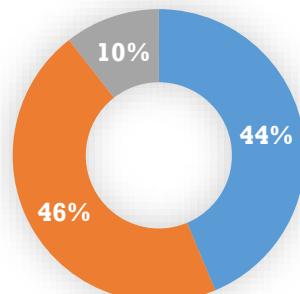
Process Parameters

Input RM weight –16.97 Kg

Finished Part Weight -10.73 Kg

Material Utilization –63%

Process Cost contribution -46%



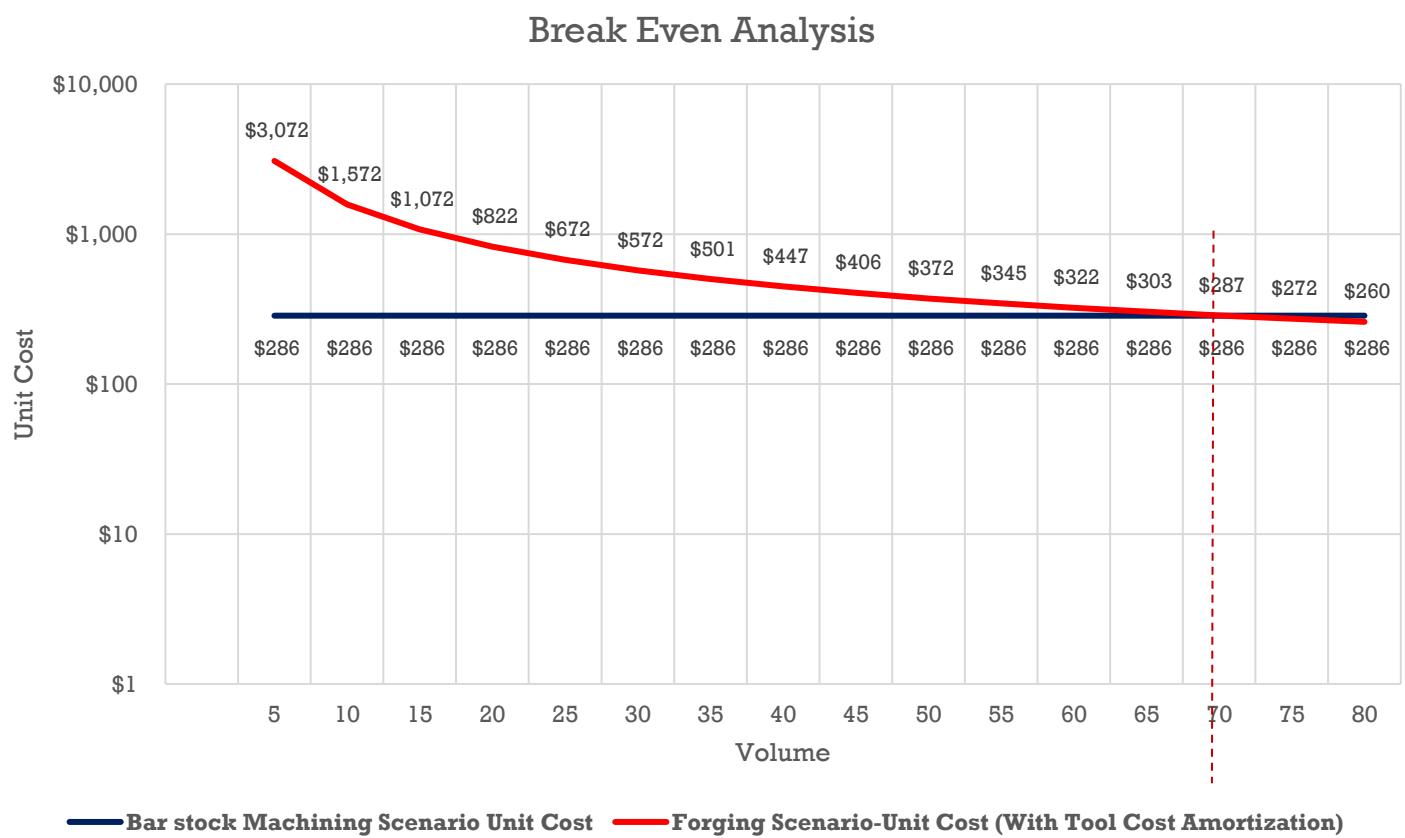
■ Material Cost ■ Process Cost ■ OH

Total Cost Per unit- 72.41\$ (Without Tool Cost Amortization)

Bar stock Machining to Hot forging manufacturing route will not affect any function of the products, it will support to increase the material **utilization (17% to 63%)** and reduce the **process cost contribution (74% to 46%)**

Total additional investment (Capex) is required for Hot forging route is \$15K
 (Including 4 Stage of Forging die -Preform, Blocker, Finisher & Trimming)

Break Even analysis for Tool cost Recovery



Description	Cost/Unit
Forging Scenario-Unit Cost	\$ 72.41
Bar stock Machining Scenario-Unit Cost	\$ 286
Delta	\$ 213

The break-even quantity is 70 units, which means the savings from the first 70 units will cover the forging tool cost of \$15K. Thereafter, each additional part produced will generate a saving of \$213, directly contributing to an increase in the product's bottom line (profit)

5. TAKEAWAY

1. Eastern Europe is identified as the most cost-effective manufacturing location, since the Machine Hour Rate (MHR) and Labor Hour Rate (LHR) are higher in countries like France and other parts of Western Europe
2. Average cost difference between the two regions is 30–40%.
3. In both regions, process cost is the major contributor compared to material cost.
4. While selecting a supplier, the key factor is optimizing process cost by choosing the most appropriate machine that meets the required product specifications.

Part Number	Part Name	Eastern Europe	France	Region Wise Comparison
NR-528410_0	Shaft Assembly	732 USD	1113 USD	34%
NR-528060_A	Protective box Right	43 USD	74 USD	42%

DETAILED PROCESS PLAN

5. PRODUCT DETAILS & PROCESS PLAN

5.1. Bill of Material - Protective Box Right (NR-528060_A)

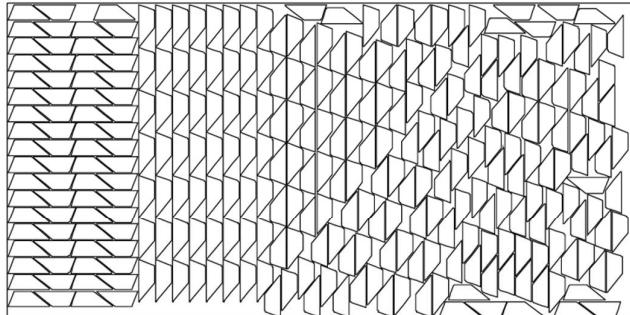
Level	Par Number	Description	Commodity	RM Grade	Qty/Assy in Nos	Annual Volume	Batch Volume
L0	NR-528060_A	Protective box right	Sub Assy	-	1	1200	100
L1	NR-528058_0	Sheet Steel-1	Sheet Metal	St37-2	1	1200	100
L1	NR-528059_0	Sheet Steel-2	Sheet Metal	St37-2	1	1200	100
L1	NR-528064_A	Sheet Steel-3	Sheet Metal	St37-2	1	1200	100

5.2. Detailed Process flow- Protective Box Right (NR-528060_A)

5.2.1. Process flow for NR-528060_A

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Chil Parts Inspection	As per 2D drawing	Manual Inspection	Before Assy need to ensure CT dimension
20	Weld Preparation	As per WI Doc	Wire Brush	Clean the Welding area
30	Manual Mig Welding	Continues fillet Welding, thickness 3 mm	Mig Welding Machine-C240 (ESAB-20A to 220 A)	
40	Weld Cleaning	As per WI Doc	Manual / Grinding machine (Sanding)	Spatter Removal
50	Powder Coating	As per Standard, Colour code- RAL 6018	Powder Coat spray booth -1 m x 1.2 m x 2 m	
60	Inspection	As per WI or as per 3D Model	Vernier Calliper / Height Gauge	
70	Packing	Corrugated Box Packing	Manual	

5.2.2. Process flow for NR-528058_0



Material:	New Material	Thickness:	0.00 mm
Plate Size:	1250.00 x 2500.00 mm	Planned Process Time:	47min58.2s
Total Cut Length:	118857.07 mm	Planned Cut Time:	33min49.1s
Total Travel Length:	37060.30 mm	Planned Travel Time:	3min35.3s
Pierce Qty:	300	Planned Pierce Time:	10min31.3s

Part List 1 Parts Total 300

Thumbnail	Part Name	Size	Count	
	20250822A	165.35 x 62.93 mm	300	

NR-528058_0 -2D Drawing

Nesting Drawing

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Hot-rolled steel plate according to EN 10029 standard, Grade-St37-2, Sheet Thick-1.5 mm, Sheet Size 1250 x 2500	Spectro Meter & Vernier gauge	
20	Laser Cutting	As per nesting Drawing	Salvagnini L3-30 2 KW Fiber Laser Cutting Machine	Cutting length - 456.60 mm, no of Sheet per parts -300
30	Manual debur	Clean Cutting Spatter	Manual debur /Sanding machine	
40	Inspection	As per WI or as per 2D drawing, L=165.4 mm, W=62.9 mm	Vernier Calliper	
70	Packing	Corrugated Box Packing	Manual	

5.2.3. Process flow for NR-528059_0

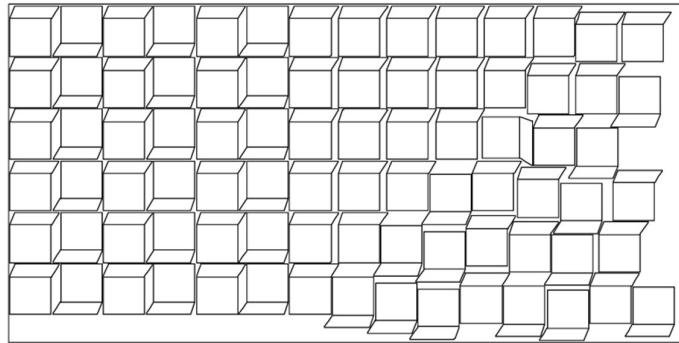


Plate Size:	1250.00 x 2500.00mm	Planned Process Time:	24min11s
Total Cut Length:	72267.89mm	Planned Cut Time:	19min26.4s
Total Travel Length:	20678.56mm	Planned Travel Time:	1min45.6s
Pierce Count:	84	Planned Pierce Time:	2min56.8s

Part List

1 parts of total 84

Thumbnail	Part Name	Size	Count	
	20250822A	181.76 x 185.73 mm	84	

NR-528059_0 -2D Drawing

Nesting Drawing

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Hot-rolled steel plate according to EN 10029 standard, Grade-St37-2, Sheet Thick-1.5 mm, sheet size -1250x 2500	Spectro Meter & Vernier gauge	
20	Laser Cutting	As per nesting Drawing	Salvagnini L3-30 2 KW Fiber Laser Cutting Machine	Cutting length -736.40 mm, No Of parts per sheet 84
30	Bending	As per 2D Drawing, bending L=46.7 mm, bend Angle -65°	Press Brake -HG-8025 (Amada)-800KN	No of bend -1
40	Manual debur	Clean Cutting Spatter	Manual debur /Sanding machine	
50	Inspection	As per WI or as per 2D drawing, L=185.4 mm, W=181.8 mm	Vernier Calliper	
60	Packing	Corrugated Box Packing	Manual	

5.2.4. Process flow for NR-528064_A

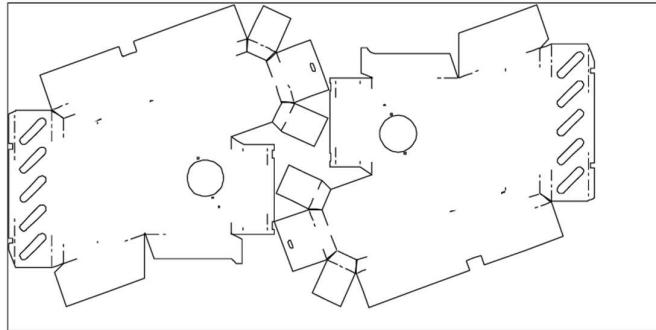
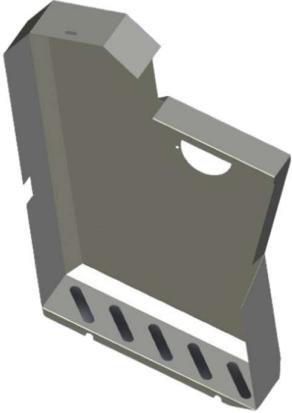


Plate Size:	1250.00 x 2500.00mm	Planned Process Time:	9min43.6s
Total Cut Length:	20360.99mm	Planned Cut Time:	6min7.4s
Total Travel Length:	28661.39mm	Planned Travel Time:	2min31.6s
Pierce Count:	30	Planned Pierce Time:	1min3.1s

Part List				
Thumbnail	Part Name	Size	Count	
	20250821A	1154.33 x 1222.89 mm	2	

NR-528064_0 -2D Drawing

Nesting View – Sheet Size – 1.5 x 1250 X 2500

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Hot-rolled steel plate according to EN 10029 standard, Grade-St37-2, Sheet Thick-1.5 mm Sheet Size-1250x 2500	Spectro Meter & Vernier gauge	
20	Laser Cutting	As per nesting Drawing	Salvagnini L3-30 2 KW Fiber Laser Cutting Machine	Cutting length- 5753.20 mm, No of parts per sheet -2
30	Bending	As per 2D Drawing, bending -Various, bend Angle -65°, 25°,90°	Press Brake -HG-8025 (Amada)-800KN	No of bend-16
40	Manual debur	Clean Cutting Spatter	Manual debur /Sanding machine	
50	Inspection	As per WI or as per 2D drawing, L=1222.4 mm, W=1154.2 mm	Vernier Calliper	
60	Packing	Corrugated Box Packing	Manual	

5.3. Bill of Material – Shaft (NR-528410_0)

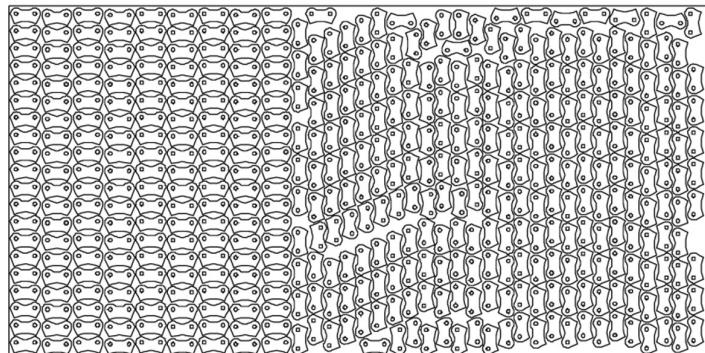
Level	Par Number	Description	Commodity	RM Grade	Qty/Assy	Annual Volume	Batch Volume
L0	NR-528410_0	Shaft	Assy		1	1200	100
L1	NR-525411_0	Steel Sheet	Sheet Metal	St52-3	84	1,00,800	8400
L1	NR-528415_0	Plain shaft for flail shaft	Sub Assy		1	1200	100
L2	NR-525418_0	Shaft stub-2	Machining	Ck45	1	1200	100
L2	NR-528416_0	Tube flail shaft	Machining	St52-3	1	1200	100
L2	NR-528417_0	Shaft stub-1	Machining	Ck45	1	1200	100

5.4. Detailed Process flow- Shaft (NR-528410_0)



Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Chil Parts Inspection	As per 2D drawing	Manual Inspection	Before Assy need to ensure CT dimension
20	Weld Preparation	As per WI Doc	Wire Brush	Clean the Welding area
30	Manual Mig Welding	Fillet Welding, thickness 4 mm, two Side Weld, Weld Length 25 mm, Pitch - 30 mm	Mig Welding Machine- C240 (ESAB-20A to 220 A)	
40	Weld Cleaning	As per WI Doc	Manual / Grinding machine (Sanding)	Spatter Removal
50	Powder Coating	As per Standard, Colour code- RAL 6018	Powder Coat spray booth -1 m x 1.2 m x 2 m	
60	Inspection	As per WI or as per 3D Model	Vernier Calliper / Height Gauge	
70	Packing	Corrugated Box Packing	Manual	

5.4.1. Detailed Process flow- Steel Sheet (NR-525411_0)



3D Drawing -NR-528411-0

Plate Size:	1250.00 x 2500.00mm	Planned Process Time:	2hours38min52.9s
Total Cut Length:	176500.79mm	Planned Cut Time:	1hours40min51.7s
Total Travel Length:	96367.73mm	Planned Travel Time:	10min30.6s
Pierce Count:	1350	Planned Pierce Time:	47min20.6s

Part List

1 parts of total 450

Thumbnail	Part Name	Size	Count	
	20250822A	107.29 x 56.99 mm	450	

Nesting drawing

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Hot-rolled steel plate according to EN 10029 standard, Grade-St52-3, Sheet Thick-6 mm, Sheet Size 1250 x 2500	Spectro Meter & Vernier gauge	
20	Laser Cutting	As per nesting Drawing	Amada FOL -3015 AJ 4kW Fiber Laser Cutting Machine	Cutting length - 454.60 mm, No of parts per sheet 450
30	Manual debur	Clean Cutting Spatter	Manual debur /Sanding machine	
40	Inspection	As per WI or as per 2D drawing, L=107.3 mm, W=57 mm	Vernier Calliper	
70	Packing	Corrugated Box Packing	Manual	

5.4.2. Detailed Process flow- Plain shaft for flail shaft (NR-525415_0)



3D Drawing -NR-528415-0

Op- No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Chil Parts Inspection	As per 2D drawing	Manual Inspection	Before Assy need to ensure CT dimension
20	Weld Preparation	As per WI Doc	Wire Brush	Clean the Welding area
30	Manual Mig Welding	Fillet Welding, thickness 5 mm, two place weld, Weld Length 571.8 mm,	Mig Welding Machine- C240 (ESAB-20A to 220 A)	
40	Weld Cleaning	As per WI Doc	Manual / Grinding machine (Sanding)	Spatter Removal
50	Inspection	As per WI or as per 3D Model	Vernier Calliper / Height Gauge	
60	Packing	Corrugated Box Packing	Manual	

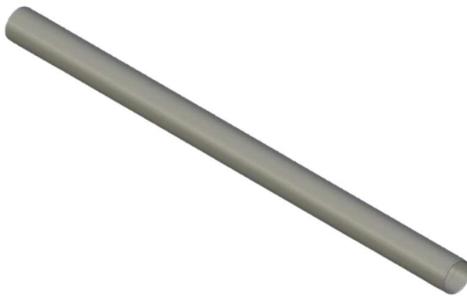
5.4.3. Detailed Process flow- Shaft Stub-2 (NR-525418_0)



3D Drawing -NR-528418-0

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Round bar according to DIN 1013, Grade - CK45 Dia -182 mm	Spectro Meter & Vernier gauge	
20	Bandsaw Cutting	Dia -182 mm, Length -130 mm		
30	Machining -Turning Centre	As per 2D Drawing, Ra s6.3, Dia 60 & 182 mm h8 tolerance, Concentricity 50 micron	2 Axis Lathe -Okuma Genos L250II	Facing, Turning
40	Manual debur	Clean bur & coolant oil	Manual debur /Sanding machine	
50	Inspection	As per WI or as per 2D drawing	Vernier Calliper	
60	Packing	Corrugated Box Packing	Manual	

5.4.4. Detailed Process flow- Plain shaft for flail shaft (NR-525416_0)



3D Drawing -NR-528418-0

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Electro-galvanized steel tube according to EN 10219 standard. Grade -St52-3, OD-193.7 mm, Thick-7.1 mm	Spectro Meter & Vernier gauge	
20	Bandsaw Cutting	Dia -193.7 mm, Length - 3158 mm		
30	Machining -Turning Centre	As per 2D Drawing, Dia 182 mm N7 tolerance, total Run out 50 microns	2 Axis Lathe -Acra 4400 HLA	Facing, OD Turning, ID Turning
40	Manual debur	Clean bur & coolant oil	Manual debur /Sanding machine	
50	Inspection	As per WI or as per 2D drawing	Vernier Calliper	
60	Packing	Corrugated Box Packing	Manual	

5.4.5. Detailed Process flow- Shaft Stub-1 (NR-525417_0)



3D Drawing -NR-528417-0

Op-No	Process name	Process Parameter/Spec	Equipment Selected	Remarks
10	Raw Material Inspection	Round bar according to DIN 1013, Grade - CK45 Dia -182 mm	Spectro Meter & Vernier gauge	
20	Bandsaw Cutting	Dia -182 mm, Length -130 mm		
30	Machining -Turning Centre	As per 2D Drawing, Ra 6.3, Dia 60 & 182 mm h8 tolerance, total Run out 50 microns	2 Axis Lathe -Okuma Genos L250II	Facing, Turning & Milling
40	Machining-VMC	18 mm Width 80 mm length key slot- 30-micron tolerance	3 Axis mill-Haas VF10/50	
40	Manual debur	Clean bur & coolant oil	Manual debur	
50	Inspection	As per WI or as per 2D drawing	Vernier Calliper	
60	Packing	Corrugated Box Packing	Manual	

6. Detailed Should Costing Reports

Eastern Europe Region Cost Summary

Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Material Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528410_0	Shaft		Assy		1	0.000	0.000	0.000	0.000	17.290	\$ 17.29	\$ 11.72	\$ 0.86	\$ 1.38	\$ 31.26	\$ 31.26	\$ 732
L1	NR-525411_0	Steel Sheet		Sheet Metal	St52-3	84	0.327	0.207	0.940	0.272	0.454	\$ 0.73		\$ 0.02	\$ 0.06	\$ 0.81	\$ 67.76	
L1	NR-528415_0	Plain shaft for flail shaft		Sub Assy		1	0.000	0.000	0.000	0.000	8.304	\$ 8.30		\$ 0.42	\$ 0.66	\$ 9.38	\$ 9.38	
L2	NR-525418_0	Shaft stub		Machining	Ck45	1	33.629	8.493	0.930	26.015	104.454	\$ 130.47		\$ 4.07	\$ 10.44	\$ 144.98	\$ 144.98	
L2	NR-528416_0	Tube flail shaft		Machining	St52-3	1	106.187	101.469	0.940	128.464	43.571	\$ 172.03		\$ 7.51	\$ 13.76	\$ 193.30	\$ 193.30	
L2	NR-528417_0	Shaft stub		Machining	Ck45	1	61.654	10.738	0.930	46.684	210.543	\$ 257.23		\$ 7.91	\$ 20.58	\$ 285.72	\$ 285.72	

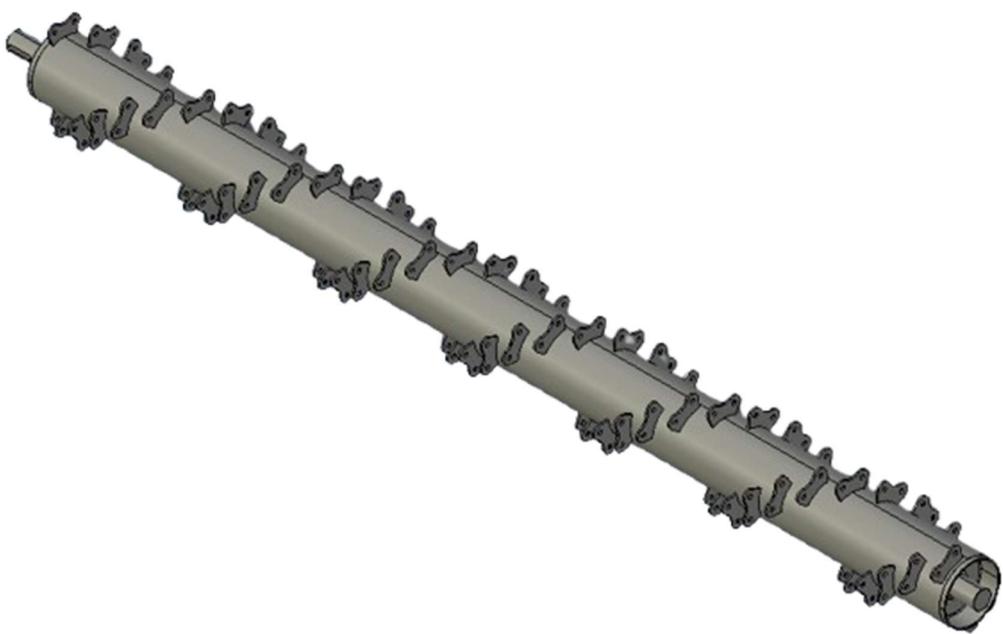
Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Material Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528060_A	Protective box right		Sub Assy	St37-2	1				\$ -	\$ 12.62	\$ 12.62	\$ 0.75	\$ 0.63	\$ 1.01	\$ 15.00	\$ 15.00	
L1	NR-528058_0	Sheet Steel-1		Sheet Metal	St37-2	1	0.123	0.088	\$ 0.98	\$ 0.11	\$ 0.23	\$ 0.34		\$ 0.01	\$ 0.03	\$ 0.38	\$ 0.38	
L1	NR-528059_0	Sheet Steel-2		Sheet Metal	St37-2	1	0.438	0.338	\$ 0.98	\$ 0.40	\$ 0.55	\$ 0.95		\$ 0.03	\$ 0.08	\$ 1.05	\$ 1.05	
L1	NR-528064_A	Sheet Steel-3		Sheet Metal	St37-2	1	18.398	10.323	\$ 0.98	\$ 15.54	\$ 7.86	\$ 23.40		\$ 0.91	\$ 1.87	\$ 26.18	\$ 26.18	\$ 43

France Region Cost Summary

Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Material Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528410_0	Shaft		Assy		1			\$ -	\$ -	\$ 42.61	\$ 42.61	\$ 17.96	\$ 2.13	\$ 3.41	\$ 66.11	\$ 66.11	\$ 1,113
L1	NR-525411_0	Steel Sheet		Sheet Metal	St52-3	84	0.327	0.207	\$ 0.94	\$ 0.27	\$ 0.77	\$ 1.05		\$ 0.03	\$ 0.08	\$ 1.16	\$ 97.35	
L1	NR-528415_0	Plain shaft for flail shaft		Sub Assy		1			\$ -	\$ 21.02	\$ 21.02			\$ 1.05	\$ 1.68	\$ 23.76	\$ 23.76	
L2	NR-525418_0	Shaft stub		Machining	Ck45	1	33.629	8.493	\$ 0.93	\$ 26.02	\$ 200.90	\$ 226.92		\$ 6.37	\$ 18.15	\$ 251.44	\$ 251.44	
L2	NR-528416_0	Tube flail shaft		Machining	St52-3	1	106.187	101.469	\$ 0.94	\$ 128.46	\$ 26.63	\$ 155.09		\$ 7.09	\$ 12.41	\$ 174.59	\$ 174.59	
L2	NR-528417_0	Shaft stub		Machining	Ck45	1	61.654	10.738	\$ 0.93	\$ 46.68	\$ 404.61	\$ 451.29		\$ 12.54	\$ 36.10	\$ 499.94	\$ 499.94	

Level	Par Number	Description	Assembly Image	Commodity	RM Grade	Qty/ass y	Input weight in kg	Finished Weight in Kg	RM cost /kg	Net Material Cost	Process Cost	Sub total	Packing Cost	OH	Margin	Piece per Cost	CBOM cost	Ex Works Cost
L0	NR-528060_A	Protective box right		Sub Assy	St37-2	1			\$ -	\$ 33.39	\$ 33.39	\$ 1.30	\$ 1.67	\$ 2.67	\$ 39.03	\$ 39.03		
L1	NR-528058_0	Sheet Steel-1		Sheet Metal	St37-2	1	0.123	0.088	\$ 0.98	\$ 0.11	\$ 0.47	\$ 0.58		\$ 0.01	\$ 0.05	\$ 0.64	\$ 0.64	
L1	NR-528059_0	Sheet Steel-2		Sheet Metal	St37-2	1	0.438	0.338	\$ 0.98	\$ 0.40	\$ 1.04	\$ 1.44		\$ 0.03	\$ 0.12	\$ 1.59	\$ 1.59	
L1	NR-528064_A	Sheet Steel-3		Sheet Metal	St37-2	1	18.398	10.323	\$ 0.98	\$ 15.54	\$ 13.89	\$ 29.43		\$ 1.00	\$ 2.35	\$ 32.78	\$ 32.78	\$ 74

Eastern Europe Should Cost Report- Shaft Assembly



L0-NR-528410_0-Shaft-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	NR-528410_0
	Part Description :	Shaft
	Annual Volume (#) :	1,200
	Commodity :	Assembly
	Process Name :	Welding (GMAW)
	Current Supplier Name :	
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Welding (GMAW)
	Family :	Wire
	Description/Grade :	ER70S6
	Density (g/cc) :	7.874
	Material price (\$/Kg) :	1.00
	Wire Dia (mm):	1.20
	Bead Size (mm):	2X2
	Weld Triangle Area (mm^2):	1.73
	Penetration (mm^2)	0.69
	Cap (mm^2)	0.26
	Total Weld Bead Area (mm^2):	2.68
	Total Weld Length (mm):	5,040.00
	Weld Bead Weight (g):	106.54
	Effeciency%:	80%
	Weld Bead Weight With Wastage (g):	127.85
	Weld Wire Cost / Cycle (\$):	0.13

Manufacturing 1 :	Process Type :	Weld Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	420.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$) :	
	Machine Cost (\$) :	\$ -
	Setup Cost (\$) :	\$ 0.03
	Labor Cost (\$) :	\$ 1.30
	Inspection Cost (\$) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	

	Net Process cost (\$):	\$	1.33
Manufacturing 2 :	Process Type :	Welding	
	Machine Name :	GMAW Setup	
	M/c Automation :	Manual	
	Wire feed speed (WFS) (m/min):	2.00	
	Wire net deposition rate: (g/Hr)	1,068.09	
	Welding Time Theoretical (sec)	430.92	
	Arc On Time (sec):	517.10	
	Arc Off Time (sec):	51.71	
	Total Weld Cycle Time (sec):	568.81	
	No of weld area:	84.00	
	Time to shift (Sec):	420.00	
	Effeciency%:	80%	
	Total Weld Cycle Time With Effeciency (sec):	766.57	
	Setup Time (min/piece) :	0.30	
	Set up time (Hrs/Batch)	0.50	
	# of Direct Labors :	0	
Cost Drivers :	# of Skilled Labors :	1	
	Direct Labor Rate /hr	19.67	
	Skilled Labor Rate /hr	19.67	
	QA Inspector Rate /hr:	19.67	
	Sampling Rate (%)	5%	
	Inspection time (min) :	3.00	
	Yield (Net Good Parts) (%) :		
	Machine hour Rate \$:	6.94	
	Machine Cost \$:	1.4778	
	Setup Cost \$:	0.1331	
	Labor Cost \$:	4.1885	
	Inspection Cost \$:	0.0492	
	Yield Cost (Rejected Parts Scrap Rate) \$		
	Net Process cost \$:	5.8485	
Manufacturing 3 :	Process Type :	Weld Clean	
Cost Drivers :	Operation	Grinding / Deburring	
	M/c Automation :	Manual	
	Total Time : (sec)	420.00	
	Setup Time (min/piece) :	0.15	
	# of Direct Labors :	1.00	
	# of Skilled Labors :	-	
	# of QA Inspector :	1.00	
	Direct Labor Rate /hr	\$ 11.17	
	Skilled Labor Rate /hr	\$ 11.17	
	QA Inspector Rate /hr:	\$ 19.67	
	Sampling Rate (%)	5%	
	Inspection time (min) :	3.00	
	Yield (Net Good Parts) (%) :		
	Machine hour Rate (\$):	\$ 6.14	
	Machine Cost (\$):	\$ 0.72	
	Setup Cost (\$):	\$ 0.04	
	Labor Cost (\$):	\$ 1.30	
	Inspection Cost (\$):	\$ 0.05	
	Yield Cost (Rejected Parts Scrap Rate) (\$)		
	Net Process cost (\$):	\$ 2.11	
	Total Welding Cost \$:		9.4194

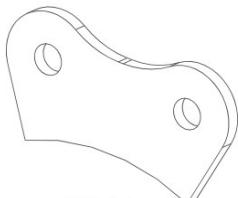
Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Coating
	Process Name :	Powder Coating
	Current Supplier Name :	
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Manufacturing 4 :	Process Type :	Paint Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	120.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	
	Machine Cost (\$) :	\$ -
	Setup Cost (\$) :	\$ 0.03
	Labor Cost (\$) :	\$ 0.37
	Inspection Cost (\$) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$) :	\$ 0.40
Manufacturing 5 :	Process Type :	Powder Coating
	Machine Name :	Generic Paint Booth (Spray Type)
	M/c Automation :	Semi Auto
	Powder Price (\$/kg) :	1.41
	Coating Thickness (µm)	100.00
	Coating coverage / kg (sqm)	10.00

Coating Area / Part (m^2)		2.42
Coating Volume Per Part (kg):		0.24
Net Material Per Part (\$)		0.34
Total Material Cost (\$)	\$	0.34
Machine Coating Capacity (sqm/Hr)		15.00
Total Coating Area Per Part (sqm)		2.42
No Of Coats		2.00
Cycle Time (sec) :		1,163.77
Setup Time (min/piece) :		0.30
# of Direct Labors :		1.00
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr		11.17
Skilled Labor Rate /hr		11.17
QA Inspector Rate /hr:		19.67
Sampling Rate (%)		1%
Inspection time (min) :		3.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):		6.94
Machine Cost (\$):	\$	2.24
Setup Cost (\$):	\$	0.09
Labor Cost (\$):	\$	3.61
Inspection Cost (\$):	\$	0.01
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$):	\$	6.30
Manufacturing 6 :		
Process Type :		Curing
Machine Name :		Generic Industrial Oven
M/c Automation :		Semi-Auto
Cycle Time Per Part (sec) :		500.00
Stock Load/Unload Time (sec) :		20.00
Setup Time (min/piece) :		0.10
No Of Parts In One Batch (Estimated):		30.00
# of Direct Labors :		0.25
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr		11.17
Skilled Labor Rate /hr		11.17
QA Inspector Rate /hr:		19.67
Sampling Rate (%)		1%
Inspection time (min) :		2.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):		5.53
Machine Cost (\$):	\$	0.77
Setup Cost (\$):	\$	0.01
Labor Cost (\$):	\$	0.39
Inspection Cost (\$):	\$	0.00
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$):	\$	1.17
Total Coating Cost	\$	7.87

L1-NR-525411_0-Steel Sheet-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-525411_0
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days



Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St52-3
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.94
	Scrap price (\$/Kg) :	\$ 0.33
	Part Envelope Length (mm) :	107.30
	Part Envelope Width (mm) :	57.00
	Part Height (mm) :	6.00
	Net weight (g) :	207.00
	Volume (mm ³) :	26,369.43
	Part Blank Length (mm) :	107.30
	Part Blank Width (mm) :	57.00
	Thickness (mm) :	6.00
	Part allowance : (Kerf)	1.50
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm) :	6.00
	Edge Allowance (mm) :	63.50
	Parts per Sheet	450.00
	Sheet Weight (g) :	1,47,187.50
	Scrap weight per part(g) :	120.08
	Net weight per part (g) :	207.0000
	Gross weight per part (g) :	327.0833
	Utilisation %	63%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 0.31
	Scrap Rec Cost (\$) :	\$ 0.04
	Net Material cost (\$) :	\$ 0.27

Total Material Cost	\$	0.27
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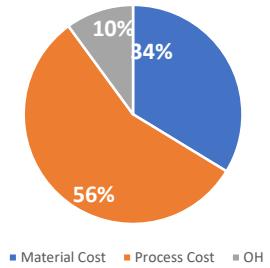
Manufacturing 1 :	Process Type :	Laser Cutting
	Laser cutting machine	Amada FOL -3015 AJ 4kW Fibre
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	392.22
	No of Starts (Piercings) : (Count)	3.00
	Cutting Speed : m/min	1.76
	Cutting Time : (min)	0.22
	Piercing Time : (min)	0.10
	Idle Travel Time : (min)	0.02
	Total Time : (sec)	21.07
	Setup Time (min/piece) :	0.10
	Sheet loading time (min)	10.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 13.55
Cost Drivers :	Skilled Labor Rate /hr	\$ 13.55
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 42.54
	Machine Cost (\$) :	\$ 0.25
	Setup Cost (\$) :	\$ 0.08
	Labor Cost (\$) :	\$ 0.04
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.39
Manufacturing 2 :	Process Type :	Deburring
	Laser cutting machine	Manual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	10.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 5.45
	Machine Cost (\$) :	\$ 0.02
	Setup Cost (\$) :	\$ 0.01
	Labor Cost (\$) :	\$ 0.03
	Inspection Cost (\$) :	\$ 0.01
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.07

Total Process Cost	\$ 0.45
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Overheads	Material OH 5%	\$ 0.01
	Machine OH 3%	\$ 0.01
	Labor OH 2%	\$ 0.00
	Profit 8%	\$ 0.06

Total OH	\$ 0.08
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Summary	Material Cost	\$ 0.27
	Process Cost	\$ 0.45
	OH	\$ 0.08
	Total Part Cost	\$ 0.81



■ Material Cost ■ Process Cost ■ OH

L1-NR-528415_0-Plain shaft for flail shaft-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	NR-528415_0
	Part Description :	Plain shaft for flail shaft
	Annual Volume (#) :	1200
	Commodity :	Assembly
	Process Name :	Press Fit & Welding (GMAW)
	Current Supplier Name :	
	Ş	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Welding (GMAW)
	Family :	Wire
	Description/Grade :	ER70S6
	Density (g/cc) :	7.874
	Material price (\$/Kg) :	1.00
	Wire Dia (mm) :	1.20
	Bead Size (mm) :	5X5
	Weld Triangle Area (mm^2) :	10.83
	Penetration (mm^2) :	4.33
	Cap (mm^2) :	1.62
	Total Weld Bead Area (mm^2) :	16.78
	Total Weld Length (mm) :	1,143.60
	Weld Bead Weight (g) :	151.09
	Effeciency%:	80%
	Weld Bead Weight With Wastage (g) :	181.31
	Weld Wire Cost / Cycle (\$):	0.18
Manufacturing 1 :	Process Type :	Press Fit
	Operation	1 Ton Manual Press
	M/c Automation :	Manual
	Total Time : (sec)	30.00
	Setup Time (min/piece) :	0.10
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%

	Machine hour Rate (\$):	\$ 5.53
	Machine Cost (\$):	\$ 0.05
	Setup Cost (\$):	\$ 0.03
	Labor Cost (\$):	\$ 0.09
	Inspection Cost (\$):	\$ 0.01
	Yield Cost (Rejected Parts Scrap Rate)	-
	Net Process cost (\$):	\$ 0.17
Manufacturing 2 :	Process Type :	Weld Setup
Cost Drivers :	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	180.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	I+C9+C69	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	
	Machine Cost (\$):	\$ -
	Setup Cost (\$):	\$ 0.03
	Labor Cost (\$):	\$ 0.56
	Inspection Cost (\$):	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 0.59
Manufacturing 3 :	Process Type :	Welding
Cost Drivers :	Machine Name :	GMAW Setup
	M/c Automation :	Manual
	Wire feed speed (WFS) (m/min):	2.50
	Wire net deposition rate: (g/Hr)	1,335.12
	Welding Time Theoretical (sec)	488.89
	Arc On Time (sec):	586.66
	Arc Off Time (sec):	58.67
	Total Weld Cycle Time (sec):	645.33
	Effeciency%:	80%
	Total Weld Cycle Time With Effeciency (sec)	774.39
	Setup Time (min/piece) :	0.30
	Set up time (Hrs/Batch)	0.50
	# of Direct Labors :	0
	# of Skilled Labors :	1
	Direct Labor Rate /hr	19.67
	Skilled Labor Rate /hr	19.67
	QA Inspector Rate /hr:	19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	3.00

	Yield (Net Good Parts) (%) :	
	Machine hour Rate \$:	6.94
	Machine Cost \$:	1.4929
	Setup Cost \$:	0.1331
	Labor Cost \$:	4.2312
	Inspection Cost \$:	0.0098
	Yield Cost (Rejected Parts Scrap Rate) \$	
	Net Process cost \$:	5.8669
Manufacturing 4 :	Process Type :	Weld Clean
Cost Drivers :	Operation	Grinding / Deburring
	M/c Automation :	Manual
	Total Time : (sec)	300.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	3.00
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	\$ 6.14
	Machine Cost (\$):	\$ 0.51
	Setup Cost (\$):	\$ 0.04
	Labor Cost (\$):	\$ 0.93
	Inspection Cost (\$):	\$ 0.01
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 1.50
	Total Welding Cost \$:	8.3038

L2-NR-525418_0-Shaft stub-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-525418_0
	Part Description :	Asstomp
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	CK45
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.93
	Scrap price (\$/Kg) :	\$ 0.23
	Part Envelope Length (mm) :	182.00
	Part Envelope Width (mm) :	182.00
	Part Envelope Height (mm) :	125.00
	Net weight (g) :	8,493.00
	Area (mm^2) :	-
	Volume (mm^3) :	10,81,910.83
	Rod Stock OD (mm) :	200.00
	Rod Stock ID (mm) :	-
	Rod Stock Length (mm)	1,500.00
	Start & End Scrap Length (mm)	5.00
	Part Length (mm)	125.00
	Part Allowance (mm)	10.00
	Part Stock Length (mm)	135.00
	Parts Per Rod (Pcs)	11.00
	Rod Weight (g)	3,69,922.53
	Scrap weight per part(g) :	25,136.32
	Net weight per part (g) :	8,493.00
	Gross weight per part (g) :	33,629.32
	Utilisation %	25%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 31.28
	Scrap Rec Cost (\$) :	\$ 5.26
	Net Material cost (\$) :	\$ 26.02

Total Material Cost	\$	26.02
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Manufacturing 1 :	Process Type :	Saw Cutting
	Machine Name :	Bandsaw
	M/c Automation :	Semi Auto
	Stock length (mm) :	125.00
	Stock OD (mm) :	200.00
	Stock ID (mm) :	-
	Cycle Time (sec) :	628.32
	Setup Time (min/piece) :	0.60
	Cutting Area (mm^2):	31,415.93
	Cutting Speed (mm^2/sec)	50.00
	Total tool loading time (min)	10.00
	Rod loading/Unloading time (min)	50.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	-
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (₹) :	\$ 6.00
	Machine Cost (₹) :	\$ 1.05
	Setup Cost (₹) :	\$ 0.12
	Labor Cost (₹) :	\$ 0.97
	Inspection Cost (₹) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (₹)	\$ -
	Net Process cost (₹) :	\$ 2.14
Manufacturing 2 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Okuma Genos L250II
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	13,837
	Bar loading/Unloading time (min)	10.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing A
	Workpiece Diameter	200.00
	Length of Cut	110.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	2.00
	Total Depth of cut	5.00
	Spindle RPM	175.00
	No. of passes	2.50
	Tool Travel Time (min)	0.02
	Machining Time (min):	8.57
	Machining Time (sec):	515.28
	Operation : 2	Turning A
	Workpiece Initial dia (mm):	200.00
	Workpiece Final dia (mm):	183.00

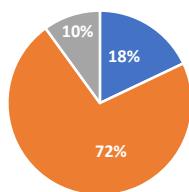
Length of Cut (mm);		125.00
Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		2.00
Spindle RPM		175.00
No. of passes (no.)		8.00
Tool Travel Time (min)		0.03
Machining Time (min):		31.46
Machining Time (sec):		1,887.68
Operation : 3	Turning B	
Workpiece Initial dia (mm):		182.00
Workpiece Final dia (mm):		61.00
Length of Cut (mm);		93.00
Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		2.00
Spindle RPM		192.31
No. of passes (no.)		61.00
Tool Travel Time (min)		0.03
Machining Time (min):		162.28
Machining Time (sec):		9,736.69
Operation : 4	Turning C - Finishing	
Workpiece Initial dia (mm):		182.00
Workpiece Final dia (mm):		181.00
Length of Cut (mm);		125.00
Cutting Speed (m/min)		160.00
Feed per revolution (mm/rev):		0.05
Depth of cut (mm):		0.50
Spindle RPM		279.73
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		19.70
Machining Time (sec):		1,181.73
Operation : 5	Facing B	
Workpiece Diameter		200.00
Length of Cut		110.00
Cutting Speed		110.00
Feed per revolution		0.20
Depth of cut		2.00
Total Depth of cut		5.00
Spindle RPM		175.00
No. of passes		2.50
Tool Travel Time (min)		0.02
Machining Time (min):		8.57
Machining Time (sec):		515.28
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	17.67
Skilled Labor Rate /hr	\$	17.67
QA Inspector Rate /hr:	\$	19.67

	Sampling Rate (%)	5%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (\$) :	\$ 17.57
	Machine Cost (\$) :	\$ 67.53
	Setup Cost (\$) :	\$ 0.13
	Labor Cost (\$) :	\$ 33.96
	Inspection Cost (\$) :	\$ 0.08
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 101.70
Manufacturing 3 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	120.00
	Setup Time (min/piece) :	0.10
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	5%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 5.45
	Machine Cost (\$) :	\$ 0.18
	Setup Cost (\$) :	\$ 0.03
	Labor Cost (\$) :	\$ 0.37
	Inspection Cost (\$) :	\$ 0.03
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.61
	Total Process Cost	\$ 104.45

Overheads	Material OH 5%	\$ 1.30
	Machine OH 3%	\$ 2.06
	Labor OH 2%	\$ 0.71
	Profit 8%	\$ 10.44

Total OH	\$ 14.51
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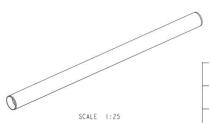
Summary	Material Cost	\$ 26.02
	Process Cost	\$ 104.45
	OH	\$ 14.51
	Total Part Cost	\$ 144.98



■ Material Cost ■ Process Cost ■ OH

L2-NR-528416_0-Tube flail shaft-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528416_0
	Part Description :	Buis Klepelas
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days



Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St52-3
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 1.22
	Scrap price (\$/Kg) :	\$ 0.31
	Part Envelope Length (mm) :	3,140.00
	Part Envelope Width (mm) :	193.70
	Part Envelope Height (mm) :	193.70
	Net weight (g) :	1,01,469.00
	Area (mm^2) :	-
	Volume (mm^3) :	1,29,25,987.26
	Rod Stock OD (mm) :	193.70
	Rod Stock ID (mm) :	179.50
	Rod Stock Length (mm)	6,500.00
	Start & End Scrap Length (mm)	5.00
	Part Length (mm)	3,140.00
	Part Allowance (mm)	10.00
	Part Stock Length (mm)	3,150.00
	Parts Per Rod (Pcs)	2.00
	Rod Weight (g)	2,12,374.75
	Scrap weight per part(g) :	4,718.37
	Net weight per part (g) :	1,01,469.00
	Gross weight per part (g) :	1,06,187.37
	Utilisation %	96%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 129.76
	Scrap Rec Cost (\$) :	\$ 1.30
	Net Material cost (\$) :	\$ 128.46

Total Material Cost	\$	128.46
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Manufacturing 1 :	Process Type :	Saw Cutting
	Machine Name :	Bandsaw
0	M/c Automation :	Semi Auto
	Stock length (mm) :	3,140.00
	Stock OD (mm) :	193.70
	Stock ID (mm) :	179.50
	Cycle Time (sec) :	83.24
	Setup Time (min/piece) :	2.60
	Cutting Area (mm^2):	4,162.17
	Cutting Speed (mm^2/sec)	50.00
	Total tool loading time (min)	10.00
	Rod loading/Unloading time (min)	250.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	-
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (₹) :	\$ 6.00
	Machine Cost (₹) :	\$ 0.14
	Setup Cost (₹) :	\$ 0.50
	Labor Cost (₹) :	\$ 0.13
	Inspection Cost (₹) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (₹)	\$ -
	Net Process cost (₹) :	\$ 0.77
Manufacturing 2 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Acra 4400 HLA
	M/c Automation :	
	Cycle Time (sec) :	2,853.80
	Bar loading/Unloading time (min)	20.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing X2
	Workpiece Diameter	193.70
	Length of Cut	8.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	1.00
	Total Depth of cut	5.00
	Spindle RPM	180.70
	No. of passes	5.00
	Tool Travel Time (min)	0.02
	Machining Time (min):	2.49
	Machining Time (sec):	300.85
	Operation : 2	Turning B X 2
	Workpiece Initial dia (mm):	193.70
	Workpiece Final dia (mm):	192.00
	Length of Cut (mm):	15.00

Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		1.00
Spindle RPM		180.70
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		0.95
Machining Time (sec):		113.58
Operation : 3	Turning D - ID Stepx2-Rough	
Workpiece Initial dia (mm):		179.50
Workpiece Final dia (mm):		181.50
Length of Cut (mm):		95.00
Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		1.00
Spindle RPM		194.99
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		5.39
Machining Time (sec):		647.11
Operation : 4	Turning D - ID Stepx2-Finish	
Workpiece Initial dia (mm):		181.50
Workpiece Final dia (mm):		182.00
Length of Cut (mm):		95.00
Cutting Speed (m/min)		160.00
Feed per revolution (mm/rev):		0.05
Depth of cut (mm):		0.25
Spindle RPM		280.50
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		14.94
Machining Time (sec):		1,792.26
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	46.77
Skilled Labor Rate /hr	\$	46.77
QA Inspector Rate /hr:	\$	52.07
Sampling Rate (%)		5%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$) :	\$	28.88
Machine Cost (\$) :	\$	22.89
Setup Cost (\$) :	\$	0.26
Labor Cost (\$) :	\$	18.54
Inspection Cost (\$) :	\$	0.22
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$) :	\$	41.91

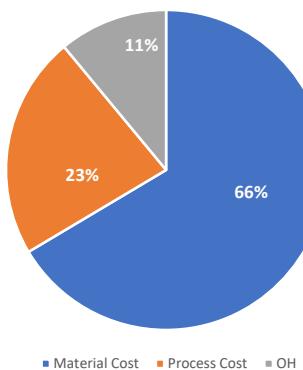
Manufacturing 3 :	Process Type :	Deburring
	Laser cutting machine	Mannual Debur
	M/c Automation :	Manual
	Total Time : (sec)	180.00
	Setup Time (min/piece) :	0.10
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	5%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 5.45
	Machine Cost (\$) :	\$ 0.27
	Setup Cost (\$) :	\$ 0.03
	Labor Cost (\$) :	\$ 0.56
	Inspection Cost (\$) :	\$ 0.03
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.89

Total Process Cost	\$ 43.57
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Overheads	Material OH 5%	\$ 6.42
	Machine OH 3%	\$ 0.70
	Labor OH 2%	\$ 0.38
	Profit 8%	\$ 13.76

Total OH	\$ 21.27
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Summary	Material Cost	\$ 128.46
	Process Cost	\$ 43.57
	OH	\$ 21.27
	Total Part Cost	\$ 193.30



L2-NR-528417_0-Shaft stub-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528417_0
	Part Description :	Asstomp
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days

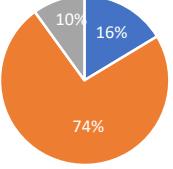
Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	CK45
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.93
	Scrap price (\$/Kg) :	\$ 0.23
	Part Envelope Length (mm) :	230.00
	Part Envelope Width (mm) :	182.00
	Part Envelope Height (mm) :	182.00
	Net weight (g) :	10,738.00
	Area (mm^2) :	-
	Volume (mm^3) :	13,67,898.09
	Rod Stock OD (mm) :	200.00
	Rod Stock ID (mm) :	-
	Rod Stock Length (mm)	1,500.00
	Start & End Scrap Length (mm)	5.00
	Part Length (mm)	230.00
	Part Allowance (mm)	10.00
	Part Stock Length (mm)	240.00
	Parts Per Rod (Pcs)	6.00
	Rod Weight (g)	3,69,922.53
	Scrap weight per part(g) :	50,915.76
	Net weight per part (g) :	10,738.00
	Gross weight per part (g) :	61,653.76
	Utilisation %	17%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 57.34
	Scrap Rec Cost (\$) :	\$ 10.65
	Net Material cost (\$) :	\$ 46.68

Total Material Cost	\$	46.68
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Manufacturing 2 :	Process Type :	Saw Cutting
	Machine Name :	Bandsaw
	M/c Automation :	Semi Auto
	Stock length (mm) :	230.00
	Stock OD (mm) :	200.00
	Stock ID (mm) :	-
	Cycle Time (sec) :	628.32
	Setup Time (min/piece) :	0.95
	Cutting Area (mm^2):	31,415.93
	Cutting Speed (mm^2/sec)	50.00
	Total tool loading time (min)	10.00
	Rod loading/Unloading time (min)	85.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	-
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (₹) :	\$ 6.00
	Machine Cost (₹) :	\$ 1.05
	Setup Cost (₹) :	\$ 0.18
	Labor Cost (₹) :	\$ 0.97
	Inspection Cost (₹) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (₹)	\$ -
	Net Process cost (₹) :	\$ 2.21
Manufacturing 3 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Okuma Genos L250II
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	26,940.47
	Bar loading/Unloading time (min)	10.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing A
	Workpiece Diameter	200.00
	Length of Cut	110.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	2.00
	Total Depth of cut	5.00
	Spindle RPM	175.00
	No. of passes	2.50
	Tool Travel Time (min)	0.02
	Machining Time (min):	8.57
	Machining Time (sec):	515.28
	Operation : 2	Drilling (A)
	Diameter of Hole (mm)	8.50
	Depth Of Hole (mm)	30.00
	Cutting Speed (m/min)	25.00

Feed per revolution (mm/rev)	0.15
Spindle RPM (RPM)	935.85
Machining Time (min)	0.24
Tool Travel Time (min)	0.03
Machining Time (s)	16.10
Operation : 3	Tapping (M10)
Diameter of Hole (mm)	8.50
Depth Of Hole (mm)	25.00
Cutting Speed (m/min)	8.33
Feed per revolution (mm/rev)	0.15
Spindle RPM (RPM)	311.95
Machining Time (min)	0.59
Tool Travel Time (min)	0.03
Machining Time (s)	37.26
Operation : 4	Turning A
Workpiece Initial dia (mm):	200.00
Workpiece Final dia (mm):	183.00
Length of Cut (mm);	230.00
Cutting Speed (m/min)	110.00
Feed per revolution (mm/rev):	0.20
Depth of cut (mm):	2.00
Spindle RPM	175.00
No. of passes (no.)	8.00
Tool Travel Time (min)	0.03
Machining Time (min):	57.86
Machining Time (sec):	3,471.65
Operation : 5	Turning B
Workpiece Initial dia (mm):	182.00
Workpiece Final dia (mm):	61.00
Length of Cut (mm);	198.00
Cutting Speed (m/min)	110.00
Feed per revolution (mm/rev):	0.20
Depth of cut (mm):	2.00
Spindle RPM	192.31
No. of passes (no.)	61.00
Tool Travel Time (min)	0.03
Machining Time (min):	345.46
Machining Time (sec):	20,727.47
Operation : 6	Turning C - Finishing
Workpiece Initial dia (mm):	182.00
Workpiece Final dia (mm):	181.00
Length of Cut (mm);	230.00
Cutting Speed (m/min)	160.00
Feed per revolution (mm/rev):	0.05
Depth of cut (mm):	0.50
Spindle RPM	279.73
No. of passes (no.)	2.00
Tool Travel Time (min)	0.03
Machining Time (min):	36.21
Machining Time (sec):	2,172.70
Operation : 7	Facing B

Workpiece Diameter		200.00
Length of Cut		110.00
Cutting Speed		110.00
Feed per revolution		0.20
Depth of cut		2.00
Total Depth of cut		5.00
Spindle RPM		175.00
No. of passes		2.50
Tool Travel Time (min)		0.02
Machining Time (min):		8.57
Machining Time (sec):		515.28
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	17.67
Skilled Labor Rate /hr	\$	17.67
QA Inspector Rate /hr:	\$	19.67
Sampling Rate (%)		5%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):	\$	17.57
Machine Cost (\$):	\$	131.48
Setup Cost (\$):	\$	0.13
Labor Cost (\$):	\$	66.12
Inspection Cost (\$):	\$	0.08
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$):	\$	197.81
Manufacturing 4 :	Process Type :	CNC Milling
	Machine Name :	3 Axis mill-Haas VF10/50
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	795.74
	Stock Load/Unload Time (sec)	10.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Slot Milling
	Length of Cut (mm)	80.00
	Width of Cut (mm)	18.00
	Total Depth of Cut (mm)	7.00
	Cutting Speed (m/min)	80.00
	Cutter Diameter (mm)	10.00
	Number of Teeth (Nos)	3.00
	Depth of cut per pass (mm)	0.40
	Feed per revolution (mm/rev)	0.30
	Spindle RPM (RPM)	2,545.50
	No. of passes (Nos)	18.00
	Machining Time (min)	13.06
	Tool Travel Time (min)	0.03
	Total Time (s)	785.74
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 17.67

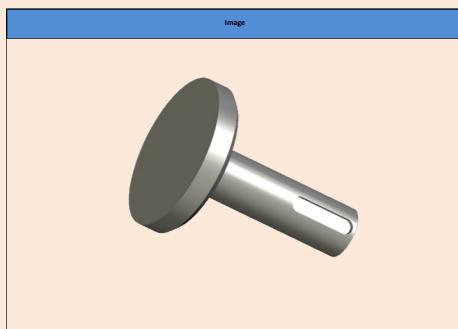
	Skilled Labor Rate /hr	\$	17.67
	QA Inspector Rate /hr:	\$	19.67
	Sampling Rate (%)		5%
	Inspection time (min) :		5.00
	Yield (Net Good Parts) (%) :		100%
	Machine hour Rate (\$):	\$	25.80
	Machine Cost (\$):	\$	5.70
	Setup Cost (\$):	\$	0.22
	Labor Cost (\$):	\$	3.91
	Inspection Cost (\$):	\$	0.08
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
	Net Process cost (\$):	\$	9.91
Manufacturing 5 :	Process Type :		Deburring
Cost Drivers :	Laser cutting machine		Manual Deburr
	M/c Automation :		Manual
	Total Time : (sec)		120.00
	Setup Time (min/piece) :		0.10
	# of Direct Labors :		1.00
	# of Skilled Labors :		-
	# of QA Inspector :		1.00
	Direct Labor Rate /hr	\$	11.17
	Skilled Labor Rate /hr	\$	11.17
	QA Inspector Rate /hr:	\$	19.67
	Sampling Rate (%)		5%
	Inspection time (min) :		2.00
	Yield (Net Good Parts) (%) :		100.0%
	Machine hour Rate (\$):	\$	5.45
	Machine Cost (\$):	\$	0.18
	Setup Cost (\$):	\$	0.03
	Labor Cost (\$):	\$	0.37
	Inspection Cost (\$):	\$	0.03
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
	Net Process cost (\$):	\$	0.61
	Total Process Cost	\$	210.54
Overheads	Material OH 5%	\$	2.33
	Machine OH 3%	\$	4.15
	Labor OH 2%	\$	1.43
	Profit 8%	\$	20.58
	Total OH	\$	28.49
Summary	Material Cost	\$	46.68
	Process Cost	\$	210.54
	OH	\$	28.49
	Total Part Cost	\$	285.72

■ Material Cost ■ Process Cost ■ OH

L2-NR-528417_0-Shaft stub-Cost Estimation EE Region-Forging

Project:		Manufacturing Location:	Eastern Europe	Measurement System	Kg & mm	SC Rev No.	1.0	Date	27-08-2025
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Sl.No	Level	Part Description	Part No	Drawing Revision No	Annual Quantity	Batch Quantity	Batch	Terms of Delivery	Commodity
1	1	Shaft stub-1	NR-525418_0	0	1200	100	Monthly	Ex-Works	FORGING



Forging Cost/Unit **\$31.641**

Cost per component			
S.No	Description	Units	Cost
1	Raw Material Cost	\$	14.92
2	Setup cost	\$	5.07
3	Process Cost	\$	11.31
4	Cost of Rejection	1.00%	\$ 0.35
5	SG & A	0.00%	\$ 0.00
6	Profit	0.00%	\$ 0.00

Raw Material Details			
1	Material	-	AISI 1045
2	Raw Material Form	-	ROUND BAR
3	Raw Material Size	mm x mm	Φ200 X L69
3.1	Part Diameter	mm	200.00
3.2	Part Length	mm	69.00
3.3	-	-	
4	Density	g/cm³	7.85
5	Blank Weight	Kg	16.97
6	Finished Part Size	mm x mm	Φ187 X L245
6.1	Part Diameter	mm	187.00
6.2	Part Length	mm	245.00
6.3	-	-	
7	Part Weight from Drawing	Kg	13.26
8	Scrap weight	Kg	3.71
9	Raw Material rate/Kg	\$	0.93
10	Gross Material cost/part	\$	15.78
11	Total surface area (if required)	Sq. mm	99117.2
12	Material Scrap Rate	25.00%	\$ 0.23
13	Scrap cost	\$	0.86
14	Net material cost	\$	14.92
15	Material Overhead	0.00%	\$ 0.00
16	Total Material Cost/part	\$	14.919

Forged Part Details			
	Dia	Length	Weight
Flange	187	37	7.973
Shank	65	203	5.285
Total Weight /Part			13.258

Labour Rate Details			
1	UnSkilled	\$/hr	11.17
2	Skilled	\$/hr	17.67

Flash Weight Calculation		UOM
Flash Thickness	6	mm
Flash Width	15	mm
Forging projected length	187	mm
Forging projected Width	245	mm
Total projected area without Flash	45815	Sqmm
Forging projected length with Flash	202	mm
Forging projected Width with Flash	260	mm
Total projected area without Flash	52520	Sqmm
Flash Weight	0.3158055	

Gross weight calculation		
Sl no	Element	Weight in Kgs
1	Net Weight	13.26
2	Flash Weight	0.32
3	Machining Loss	0.00
4	Forging Gross Weight	13.58
5	Scale Loss	0.81
6	End Billet Losses	1.36
7	Heat losses (Over & Under)	0.54
8	Tong Holding	0.68
Total Gross Weight		16.97

Billet cutting Calculation		
Dia of billet	mm	200
Blade diameter	mm	280
Blade Speed	rpm	200
Feed rate	mm/min	1.4
No of cuts	single cut	1
Manipulation time	sec	10
Billet cutting time		129.0

Billet cross section			
Sl no	Element	Value	UOM
1	Average cross section	200	mm
2	Required Length	69	mm

Forging Tonnage Calculation			
Sl no	Element	Value	UOM
1	Raw Material Weight	16.9675688	
2	Length	187	mm
3	Width	245	mm
4	Projected Area	45815	Sqmm
5	Material flow area(mean flow stress)	80	N/mm²
6	Required Tonnage (XN)	3665.2	
7	Safety consideration	4398.24	
8	Tonnage required	448	

Trimming Tonnage Calculation		
Perimeter	mm	628
Shear Strength	N/mm²	400
Flash Thickness	mm	6
Trimming Tonnage Calculation		151

Process Details																						
Sequence No.	Process Sequence	Type of Machine	No. of cavities/die	Set up time (Min)	Cycle time/Drum Batch (Sec)	No. of parts/ Batch	Cycle time/Part (Sec)	No. of pcs/hour @ 85% efficiency	Time required for Entire batch (Hrs)	Burden Rate/hour (\$)	Treatment Rate IN \$ (per Kg/Lbs or per Sq. mm/inch)	Labour Type	No. of Unskilled Operator per machine	No. of Skilled Operator per machine	Machine hour rate (\$)	Labor cost/part (\$)	Setup cost/Part (\$) A	Equipment Cost/part (\$) B	Process Cost/part (\$) C	Total Manufacturing Cost/part (\$)	% Taken	Remarks
10	Billet Cutting	Band Saw	NA	30.00	-	-	129	24	4.72	8.88		Skilled	NA	1	26.550	0.745	0.239	0.374	1.119	1.358	-	Dossal 500-SNC
20	Billet Heating	H.K Furnace RT4-105-12-10	NA	90.00	-	-	255	12	9.82	45.91		Skilled	NA	1	63.580	1.470	1.272	3.819	5.289	6.561	-	H.K FURNACE RT4-105- 12
30	Forging Press	Forging Press -500 Ton	NA	120.00	-	-	108.0	28	5.53	68.27		Skilled	NA	1	85.940	0.624	2.072	2.410	3.034	5.106	-	LASCO XFP 500
40	Trimming	Trimming Press 250 Ton	NA	60.00	-	-	20.0	153	1.65	37.40		Skilled	NA	1	55.07	0.115	0.727	0.244	0.359	1.086	-	LASCO XFP 250
50	Normalizing	Normalizing	NA	30.00	-	-						Skilled	NA	1						3.713	-	0.28 USD /kg
60	Shot Blasting	Shot Blasting	NA	30.00	-	-	60.0	51	2.46	24.21		Skilled	NA	1	41.88	0.346	0.298	0.475	0.821	1.119	-	SINTO KSB10 SPINNING HANGER
70	Composition, Hardness, Grain Structure	Metalurgical Inspection	NA	30.00	-	-	45.0	68	1.97	6.24		Skilled	NA	1	23.91	0.026	0.023	0.009	0.035	0.058	10.00%	LAB TESTING
80	MPI	MPI	NA	30.00	-	-	45.0	68	1.97	11.00		Skilled	NA	1	28.67	0.260	0.232	0.162	0.422	0.654	-	MAGNETIC PARTICLE TESTING
90	Visual Inspection	Inspection	NA	30.00	-	-	30.0	102	1.48	5.43		Skilled	NA	1	23.10	0.173	0.204	0.053	0.226	0.430	-	DIMENSIONAL AND VISUAL INSPECTION

L2-NR-528417_0-Shaft stub-Cost Estimation EE Region-Hot Forging + Machining

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528417_0
	Part Description :	Asstomp
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Forged Raw material cost	\$	31.64
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Manufacturing 1 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Okuma Genos L250II
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	3,055.04
	Bar loading/Unloading time (min)	10.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing A
	Workpiece Diameter	65.00
	Length of Cut	35.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	2.00
	Total Depth of cut	5.00
	Spindle RPM	538.47
	No. of passes	2.50
	Tool Travel Time (min)	0.02
	Machining Time (min):	1.04
	Machining Time (sec):	63.68
	Operation : 2	Drilling (A)
	Diameter of Hole (mm)	8.50
	Depth Of Hole (mm)	30.00
	Cutting Speed (m/min)	25.00
	Feed per revolution (mm/rev)	0.15
	Spindle RPM (RPM)	935.85
	Machining Time (min)	0.24
	Tool Travel Time (min)	0.03
	Machining Time (s)	16.10
	Operation : 3	Tapping (M10)

Diameter of Hole (mm)	8.50
Depth Of Hole (mm)	25.00
Cutting Speed (m/min)	8.33
Feed per revolution (mm/rev)	0.15
Spindle RPM (RPM)	311.95
Machining Time (min)	0.59
Tool Travel Time (min)	0.03
Machining Time (s)	37.26
Operation : 4	Turning A
Workpiece Initial dia (mm):	65.00
Workpiece Final dia (mm):	60.00
Length of Cut (mm):	203.00
Cutting Speed (m/min)	110.00
Feed per revolution (mm/rev):	0.20
Depth of cut (mm):	2.00
Spindle RPM	538.47
No. of passes (no.)	2.00
Tool Travel Time (min)	0.03
Machining Time (min):	4.18
Machining Time (sec):	250.82
Operation : 5	Turning B
Workpiece Initial dia (mm):	187.00
Workpiece Final dia (mm):	183.00
Length of Cut (mm):	37.00
Cutting Speed (m/min)	110.00
Feed per revolution (mm/rev):	0.20
Depth of cut (mm):	2.00
Spindle RPM	187.17
No. of passes (no.)	2.00
Tool Travel Time (min)	0.03
Machining Time (min):	2.21
Machining Time (sec):	132.47
Operation : 6	Turning C - Finishing
Workpiece Initial dia (mm):	183.00
Workpiece Final dia (mm):	182.00
Length of Cut (mm):	230.00
Cutting Speed (m/min)	160.00
Feed per revolution (mm/rev):	0.05
Depth of cut (mm):	0.50
Spindle RPM	278.20
No. of passes (no.)	2.00
Tool Travel Time (min)	0.03
Machining Time (min):	36.41
Machining Time (sec):	2,184.63
Operation : 7	Facing B
Workpiece Diameter	187.00
Length of Cut	98.00
Cutting Speed	110.00
Feed per revolution	0.20
Depth of cut	2.00
Total Depth of cut	5.00

Spindle RPM		187.17
No. of passes		2.50
Tool Travel Time (min)		0.02
Machining Time (min):		7.21
Machining Time (sec):		433.76
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	17.67
Skilled Labor Rate /hr	\$	17.67
QA Inspector Rate /hr:	\$	19.67
Sampling Rate (%)		5%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$) :	\$	17.57
Machine Cost (\$):	\$	14.91
Setup Cost (\$):	\$	0.13
Labor Cost (\$):	\$	7.50
Inspection Cost (\$):	\$	0.08
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$):	\$	22.62
Manufacturing 2 :	Process Type :	CNC Milling
Machine Name :		3 Axis mill-Haas VF10/50
M/c Automation :		Semi Auto
Cycle Time (sec) :		795.74
Stock Load/Unload Time (sec)		10.00
Setup Time (min/piece) :		0.30
Operation : 1		Slot Milling
Length of Cut (mm)		80.00
Width of Cut (mm)		18.00
Total Depth of Cut (mm)		7.00
Cutting Speed (m/min)		80.00
Cutter Diameter (mm)		10.00
Number of Teeth (Nos)		3.00
Depth of cut per pass (mm)		0.40
Feed per revolution (mm/rev)		0.30
Spindle RPM (RPM)		2,545.50
No. of passes (Nos)		18.00
Machining Time (min)		13.06
Tool Travel Time (min)		0.03
Total Time (s)		785.74
# of Direct Labors :		1.00
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	17.67
Skilled Labor Rate /hr	\$	17.67
QA Inspector Rate /hr:	\$	19.67
Sampling Rate (%)		5%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):	\$	25.80

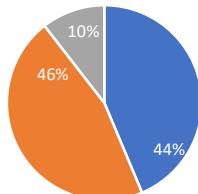
	Machine Cost (\$):	\$	5.70
	Setup Cost (\$):	\$	0.22
	Labor Cost (\$):	\$	3.91
	Inspection Cost (\$):	\$	0.08
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
	Net Process cost (\$):	\$	9.91
Manufacturing 3 :	Process Type :	Deburring	
	Laser cutting machine	Mannual Deburr	
	M/c Automation :	Manual	
	Total Time : (sec)		120.00
	Setup Time (min/piece) :		0.10
	# of Direct Labors :		1.00
	# of Skilled Labors :		-
	# of QA Inspector :		1.00
	Direct Labor Rate /hr	\$	11.17
Cost Drivers :	Skilled Labor Rate /hr	\$	11.17
	QA Inspector Rate /hr:	\$	19.67
	Sampling Rate (%)		5%
	Inspection time (min) :		2.00
	Yield (Net Good Parts) (%) :		100.0%
	Machine hour Rate (\$):	\$	5.45
	Machine Cost (\$):	\$	0.18
	Setup Cost (\$):	\$	0.03
	Labor Cost (\$):	\$	0.37
	Inspection Cost (\$):	\$	0.03
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
	Net Process cost (\$):	\$	0.61

Total Process Cost	\$	33.14
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Overheads	Material OH 5%	\$	1.58
	Machine OH 3%	\$	0.62
	Labor OH 2%	\$	0.24
	Profit 8%	\$	5.18

Total OH	\$	7.62
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Summary	Material Cost	\$	31.64
	Process Cost	\$	33.14
	OH	\$	7.62
	Total Part Cost	\$	72.41

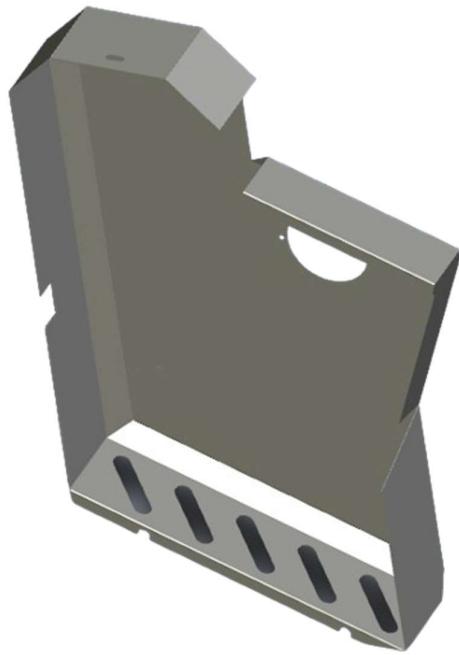


Forging Die Cost (Upsetting, Blocker, Finisher & Trimming)- 4 Die	\$	15,000.00
Amortisation Volume	\$	70.00
Amortisation cost/ unit	\$	214.29
Part Cost with Tool Amortisation Cost	\$	286.70

Machining Route cost	\$	285.00
Gap	\$	212.59
Break Even Volume		70

■ Material Cost ■ Process Cost ■ OH

Eastern Europe Should Cost Report- Protective box right



L0-NR-528060_A-Protective box right-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Assembly
	Process Name :	Welding (GMAW)
	Current Supplier Name :	
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Welding (GMAW)
	Family :	Wire
	Description/Grade :	ER70S6
	Density (g/cc) :	7.874
	Material price (\$/Kg) :	1.00
	Wire Dia (mm):	1.20
	Bead Size (mm):	3X3
	Weld Triangle Area (mm^2):	3.90
	Penetration (mm^2)	1.56
	Cap (mm^2)	0.58
	Total Weld Bead Area (mm^2):	6.04
	Total Weld Length (mm):	943.70
	Weld Bead Weight (g):	44.89
	Effeciency%:	80%
	Weld Bead Weight With Wastage (g):	53.86
	Weld Wire Cost / Cycle (\$):	0.05
Manufacturing 1 :	Process Type :	Weld Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	300.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	
	Machine Cost (\$) :	\$ -
	Setup Cost (\$) :	\$ 0.03
	Labor Cost (\$) :	\$ 0.93
	Inspection Cost (\$) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$) :	\$ 0.96
Cost Drivers :		

Manufacturing 2 :	Process Type :	Welding
	Machine Name :	GMAW Setup
	M/c Automation :	Manual
	Wire feed speed (WFS) (m/min):	2.00
	Wire net deposition rate: (g/Hr)	1,068.09
	Welding Time Theoretical (sec)	181.54
	Arc On Time (sec):	217.85
	Arc Off Time (sec):	21.79
	Total Weld Cycle Time (sec):	239.64
	Effeciency%:	80%
	Total Weld Cycle Time With Effeciency (sec)	287.56
	Setup Time (min/piece) :	0.30
	Set up time (Hrs/Batch)	0.50
	# of Direct Labors :	0
Cost Drivers :	# of Skilled Labors :	1
	Direct Labor Rate /hr	19.67
	Skilled Labor Rate /hr	19.67
	QA Inspector Rate /hr:	19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	3.00
	Yield (Net Good Parts) (%) :	
	Machine hour Rate \$:	6.94
	Machine Cost \$:	0.5544
	Setup Cost \$:	0.1331
	Labor Cost \$:	1.5712
	Inspection Cost \$:	0.0098
	Yield Cost (Rejected Parts Scrap Rate) \$	
	Net Process cost \$:	2.2685
Manufacturing 3 :	Process Type :	Weld Clean
Cost Drivers :	Operation	Grinding / Deburring
	M/c Automation :	Manual
	Total Time : (sec)	180.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	5%
	Inspection time (min) :	3.00
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	\$ 6.14
	Machine Cost (\$):	\$ 0.31
	Setup Cost (\$):	\$ 0.04
	Labor Cost (\$):	\$ 0.56
	Inspection Cost (\$):	\$ 0.05
Yield Cost (Rejected Parts Scrap Rate) (\$)		
Net Process cost (\$):		\$ 0.96
Total Welding Cost \$:		4.2390

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Coating
	Process Name :	Powder Coating
	Current Supplier Name :	
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Manufacturing 4 :	Process Type :	Paint Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	120.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$)	
	Machine Cost (\$)	\$ -
	Setup Cost (\$)	\$ 0.03
	Labor Cost (\$)	\$ 0.37
	Inspection Cost (\$)	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$)	\$ 0.40

Manufacturing 5		
	Process Type :	Powder Coating
	Machine Name :	Generic Paint Booth (Spray Type)
	M/c Automation :	Semi Auto
	Powder Price (\$/kg) :	1.41
	Coating Thickness (µm)	100.00
	Coating coverage / kg (sqm)	10.00
	Coating Area / Part (m^2)	2.82
	Coating Volume Per Part (kg):	0.28

Net Material Per Part (\$)		0.40
Total Material Cost (\$)	\$	0.40
Machine Coating Capacity (sqm/Hr)		15.00
Total Coating Area Per Part (sqm)		2.82
No Of Coats		2.00
Cycle Time (sec) :		1,354.46
Setup Time (min/piece) :		0.30
# of Direct Labors :		1.00
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr		11.17
Skilled Labor Rate /hr		11.17
QA Inspector Rate /hr:		19.67
Sampling Rate (%)		1%
Inspection time (min) :		3.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$)		5.53
Machine Cost (\$)	\$	2.08
Setup Cost (\$)	\$	0.08
Labor Cost (\$)	\$	4.20
Inspection Cost (\$)	\$	0.01
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$)	\$	6.77

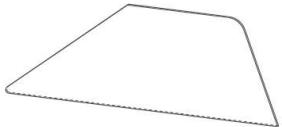
Manufacturing 6

Process Type :	Curing
Machine Name :	Generic Industrial Oven
M/c Automation :	Semi-Auto
Cycle Time Per Part (sec) :	500.00
Stock Load/Unload Time (sec) :	20.00
Setup Time (min/piece) :	0.10
No Of Parts In One Batch (Estimated):	30.00
# of Direct Labors :	0.25
# of Skilled Labors :	-
# of QA Inspector :	1.00
Direct Labor Rate /hr	11.17
Skilled Labor Rate /hr	11.17
QA Inspector Rate /hr:	19.67
Sampling Rate (%)	5%
Inspection time (min) :	2.00
Yield (Net Good Parts) (%) :	100%
Machine hour Rate (\$)	5.53
Machine Cost (\$)	\$ 0.77
Setup Cost (\$)	\$ 0.01
Labor Cost (\$)	\$ 0.39
Inspection Cost (\$)	\$ 0.03
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
Net Process cost (\$)	\$ 1.20

Total Coating Cost	\$ 8.38
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L1-NR-528058_0-Sheet Steel-1-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528058_0
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days



SCALE 1:2

Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St37-2
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.98
	Scrap price (\$/Kg) :	\$ 0.34
	Part Envelope Length (mm) :	165.40
	Part Envelope Width (mm) :	62.90
	Part Height (mm) :	1.50
	Net weight (g) :	88.00
	Volume (mm^3) :	11,210.19
	Part Blank Length (mm) :	165.40
	Part Blank Width (mm) :	62.90
	Thickness (mm) :	1.50
	Part allowance : (Kerf)	0.60
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm)	1.50
	Edge Allowance (mm)	-
	Parts per Sheet	300.00
	Sheet Weight (g) :	36,796.88
	Scrap weight per part(g) :	34.66
	Net weight per part (g) :	88.0000
	Gross weight per part (g) :	122.6563
	Utilisation %	72%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 0.12
	Scrap Rec Cost (\$) :	\$ 0.01
	Net Material cost (\$) :	\$ 0.11

Total Material Cost	\$	0.11
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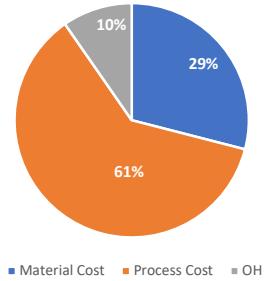
Manufacturing 1 :	Process Type :	Laser Cutting
	Laser cutting machine	Salvagnini L3-30 2 KW Fiber
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	396.19
	No of Starts (Piercings) : (Count)	1.00
	Cutting Speed : m/min	3.23
	Cutting Time : (min)	0.12
	Piercing Time : (min)	0.03
	Idle Travel Time : (min)	0.01
	Total Time : (sec)	10.10
	Setup Time (min/piece) :	0.10
	Sheet loading time (min)	10.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 13.55
Cost Drivers :	Skilled Labor Rate /hr	\$ 13.55
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 26.47
	Machine Cost (\$) :	\$ 0.07
	Setup Cost (\$) :	\$ 0.06
	Labor Cost (\$) :	\$ 0.02
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.17
Manufacturing 2 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	10.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
Cost Drivers :	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 5.45
	Machine Cost (\$) :	\$ 0.02
	Setup Cost (\$) :	\$ 0.01
	Labor Cost (\$) :	\$ 0.03
	Inspection Cost (\$) :	\$ 0.01
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.07

Total Process Cost	\$	0.23
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Overheads	Material OH 5%	\$ 0.01
	Machine OH 3%	\$ 0.00
	Labor OH 2%	\$ 0.00
	Profit 8%	\$ 0.03

Total OH	\$ 0.04
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Summary	Material Cost	\$ 0.11
	Process Cost	\$ 0.23
	OH	\$ 0.04
	Total Part Cost	\$ 0.38



L1-NR-528059_0-Sheet Steel-2-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528059_0
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St37-2
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.98
	Scrap price (\$/Kg) :	\$ 0.34
	Part Envelope Length (mm) :	185.40
	Part Envelope Width (mm) :	181.80
	Part Height (mm) :	46.70
	Net weight (g) :	338.00
	Volume (mm^3) :	43,057.32
	Part Blank Length (mm) :	186.40
	Part Blank Width (mm) :	181.80
	Thickness (mm) :	1.50
	Part allowance : (Kerf)	0.60
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm)	2,500.00
	Sheet Thickness (mm)	1.50
	Edge Allowance (mm)	63.50
	Parts per Sheet	84.00
	Sheet Weight (g)	36,796.88
	Scrap weight per part(g) :	100.06
	Net weight per part (g) :	338.0000
	Gross weight per part (g) :	438.0580
	Utilisation %	77%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 0.43
	Scrap Rec Cost (\$) :	\$ 0.03
	Net Material cost (\$) :	\$ 0.40

Total Material Cost	\$	0.40
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Manufacturing 1 :	Process Type :	Laser Cutting
	Laser cutting machine	Salvagnini L3-30 2 KW Fiber
	M/C Automation :	Semi-Auto
	Cutting Length : (mm)	860.33
	No of Starts (Piercings) : (Count)	1.00
	Cutting Speed : m/min	3.75
	Cutting Time : (min)	0.23
	Piercing Time : (min)	0.03

Cost Drivers :	Idle Travel Time : (min)	0.02
	Total Time : (sec)	16.64
	Setup Time (min/piece) :	0.20
	Sheet loading time (min)	20.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 13.55
	Skilled Labor Rate /hr	\$ 13.55
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$):	\$ 26.47
	Machine Cost (\$):	\$ 0.12
	Setup Cost (\$):	\$ 0.11
	Labor Cost (\$):	\$ 0.03
	Inspection Cost (\$):	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$):	\$ 0.28
Manufacturing 2 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	10.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$):	\$ 5.45
	Machine Cost (\$):	\$ 0.02
	Setup Cost (\$):	\$ 0.01
	Labor Cost (\$):	\$ 0.03
	Inspection Cost (\$):	\$ 0.01
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$):	\$ 0.07

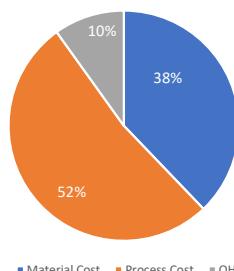
Manufacturing 3 :	Process Type :	Bending - Press Break
	Ultimate Tensile Strength Of Material : (Mpa)	440
	Bending line length : (mm)	181.8
	Shoulder width : (mm)	20
	Bending coefficient :	1.33
	Theoretical Force : (Ton)	1.22
	No. Of Bends: Count	1.00
	Total Tonnage Required: (Ton)	1.22
	Recommended Force : (Ton)	1.53
	Machine Name :	HG-8025 (Amada)-800KN
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	12.00
	Setup Time (min/piece) :	0.15
	Setup Time (Die Loading / Batch) :	15.00
Cost Drivers :	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 13.55
	Skilled Labor Rate /hr	\$ 13.55
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (\$):	\$ 18.39
	Machine Cost (\$):	\$ 0.06
	Setup Cost (\$):	\$ 0.08
	Labor Cost (\$):	\$ 0.05
	Inspection Cost (\$):	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$):	\$ 0.20

Total Process Cost	\$ 0.55
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Overheads	Material OH 5%	\$ 0.02
	Machine OH 3%	\$ 0.01
	Labor OH 2%	\$ 0.00
	Profit 8%	\$ 0.08

Total OH	\$ 0.10
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Summary	Material Cost	\$ 0.40
	Process Cost	\$ 0.55
	OH	\$ 0.10
	Total Part Cost	\$ 1.05



L1-NR-528064_A-Sheet Steel-3-Cost Estimation EE Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528064_A
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	Eastern Europe
	Delivery Country :	Eastern Europe
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St37-2
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.98
	Scrap price (\$/Kg) :	\$ 0.34
	Part Envelope Length (mm) :	1,154.20
	Part Envelope Width (mm) :	1,222.40
	Part Height (mm) :	161.00
	Net weight (g) :	10,323.00
	Volume (mm^3) :	13,15,031.85
	Part Blank Length (mm) :	1,154.20
	Part Blank Width (mm) :	1,222.40
	Thickness (mm) :	1.50
	Part allowance : (Kerf)	0.60
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm)	1.50
	Edge Allowance (mm)	25.40
	Parts per Sheet	2.00
	Sheet Weight (g)	36,796.88
	Scrap weight per part(g) :	8,075.44
	Net weight per part (g) :	10,323.0000
	Gross weight per part (g) :	18,398.4375
	Utilisation %	56%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 18.03
	Scrap Rec Cost (\$) :	\$ 2.49
	Net Material cost (\$) :	\$ 15.54
	Total Material Cost	\$ 15.54

Manufacturing 1 :	Process Type :	Laser Cutting
Cost Drivers :	Laser cutting machine	Salvagnini L3-30 2 KW Fiber
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	10,180.50
	No of Starts (Piercings) : (Count)	16.00
	Cutting Speed : m/min	2.99
	Cutting Time : (min)	3.40
	Piercing Time : (min)	0.65
	Idle Travel Time : (min)	1.16
	Total Time : (sec)	312.60
	Setup Time (min/piece) :	5.00
	Sheet loading time (min)	500.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 13.55
	Skilled Labor Rate /hr	\$ 13.55
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
Manufacturing 2 :	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 26.47
	Machine Cost (\$) :	\$ 2.30
	Setup Cost (\$) :	\$ 2.77
	Labor Cost (\$) :	\$ 0.59
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 5.67
Cost Drivers :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	60.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 11.17
	Skilled Labor Rate /hr	\$ 11.17
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 5.45
	Machine Cost (\$) :	\$ 0.09
	Setup Cost (\$) :	\$ 0.01
	Labor Cost (\$) :	\$ 0.19
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.31

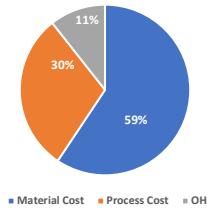
Manufacturing 3 :	Process Type :	Bending - Press Break
	Ultimate Tensile Strength Of Material : (Mpa)	440
	Bending line length : (mm)	1222.4
	Shoulder width : (mm)	25
	Bending coefficient :	1.33
	Theoretical Force : (Ton)	6.56
	No. Of Bends: Count	1.00
	Total Tonnage Required: (Ton)	6.56
	Recommended Force : (Ton)	8.20
	Machine Name :	HG-8025 (Amada)-800KN
	M/c Automation :	Semi Auto
	No. Of Repeat Bends	16.00
	Cycle Time (sec) :	192.00
	Setup Time (min/piece) :	0.30
	Setup Time (Die Loading / Batch) :	30.00
Cost Drivers :	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 13.55
	Skilled Labor Rate /hr	\$ 13.55
	QA Inspector Rate /hr:	\$ 19.67
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (\$):	\$ 18.39
	Machine Cost (\$):	\$ 0.98
	Setup Cost (\$):	\$ 0.16
	Labor Cost (\$):	\$ 0.72
	Inspection Cost (\$):	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$):	\$ 1.88

Total Process Cost	\$ 7.86
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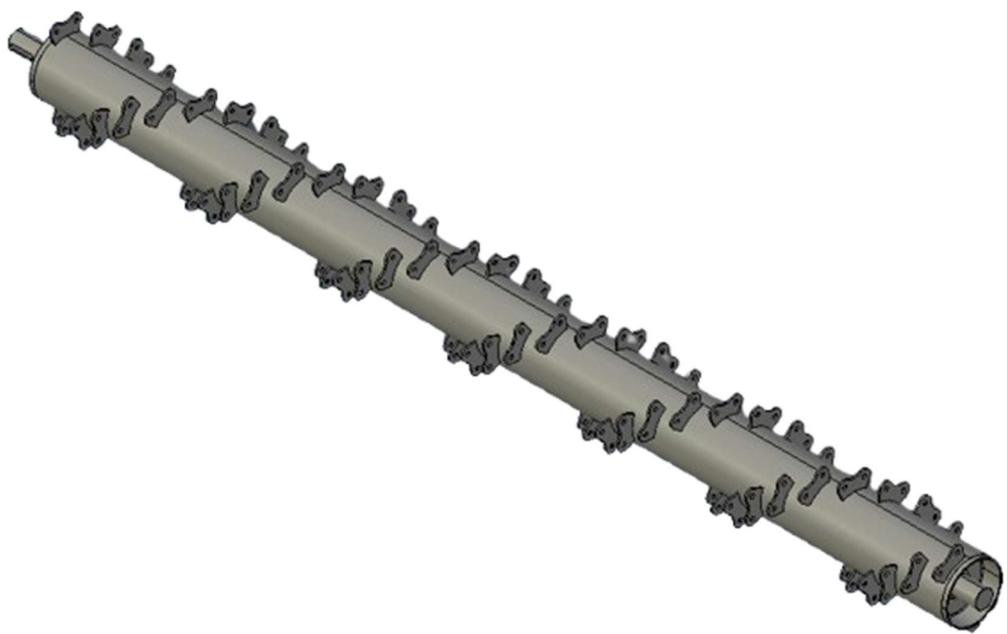
Overheads	Material OH 5%	\$ 0.78
	Machine OH 3%	\$ 0.10
	Labor OH 2%	\$ 0.03
	Profit 8%	\$ 1.87

Total OH	\$ 2.78
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Summary	Material Cost	\$ 15.54
	Process Cost	\$ 7.86
	OH	\$ 2.78
	Total Part Cost	\$ 26.18



France Should Cost Report- Shaft Assembly



L0-NR-528410_0-Shaft-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Assembly
	Process Name :	Welding (GMAW)
	Current Supplier Name :	
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Welding (GMAW)
	Family :	Wire
	Description/Grade :	ER70S6
	Density (g/cc) :	7.874
	Material price (\$/Kg) :	1.00
	Wire Dia (mm):	1.20
	Bead Size (mm):	2X2
	Weld Triangle Area (mm^2) :	1.73
	Penetration (mm^2)	0.69
	Cap (mm^2)	0.26
	Total Weld Bead Area (mm^2) :	2.68
	Total Weld Length (mm):	5,040.00
	Weld Bead Weight (g):	106.54
	Effeciency%:	80%
	Weld Bead Weight With Wastage (g):	127.85
	Weld Wire Cost / Cycle (\$):	0.13
Manufacturing 1 :	Process Type :	Weld Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	420.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$) :	
	Machine Cost (\$) :	\$ -
	Setup Cost (\$) :	\$ 0.07
Cost Drivers :		

	Labor Cost (\$) :	\$	3.45
	Inspection Cost (\$) :	\$	-
	Yield Cost (Rejected Parts Scrap Rate) (\$)		
	Net Process cost (\$) :	\$	3.52
Manufacturing 2 :	Process Type :		Welding
Cost Drivers :	Machine Name :	GMAW Setup	
	M/c Automation :	Manual	
	Wire feed speed (WFS) (m/min):	2.00	
	Wire net deposition rate: (g/Hr)	1,068.09	
	Welding Time Theoretical (sec)	430.92	
	Arc On Time (sec):	517.10	
	Arc Off Time (sec):	51.71	
	Total Weld Cycle Time (sec):	568.81	
	No of weld area:	84.00	
	Time to shift (Sec):	420.00	
	Effeciency%:	80%	
	Total Weld Cycle Time With Effeciency (sec)	766.57	
	Setup Time (min/piece) :	0.30	
	Set up time (Hrs/Batch)	0.50	
	# of Direct Labors :	0	
	# of Skilled Labors :	1	
	Direct Labor Rate /hr	52.05	
	Skilled Labor Rate /hr	52.05	
	QA Inspector Rate /hr:	52.05	
Cost Drivers :	Sampling Rate (%)	1%	
	Inspection time (min) :	3.00	
	Yield (Net Good Parts) (%) :		
	Machine hour Rate \$:	15.9	
	Machine Cost \$:	3.3857	
	Setup Cost \$:	0.3398	
	Labor Cost \$:	11.0834	
	Inspection Cost \$:	0.0260	
	Yield Cost (Rejected Parts Scrap Rate) \$		
	Net Process cost \$:		14.8348
Manufacturing 3 :	Process Type :	Weld Clean	
Cost Drivers :	Operation	Grinding / Deburring	
	M/c Automation :	Manual	
	Total Time : (sec)	420.00	
	Setup Time (min/piece) :	0.15	
	# of Direct Labors :	1.00	
	# of Skilled Labors :	-	
	# of QA Inspector :	1.00	
	Direct Labor Rate /hr	\$ 29.57	
	Skilled Labor Rate /hr	\$ 29.57	
	QA Inspector Rate /hr:	\$ 52.05	
	Sampling Rate (%)	1%	
	Inspection time (min) :	3.00	
	Yield (Net Good Parts) (%) :		
	Machine hour Rate (\$) :	\$ 15.02	
	Machine Cost (\$) :	\$ 1.75	
	Setup Cost (\$) :	\$ 0.11	
	Labor Cost (\$) :	\$ 3.45	
	Inspection Cost (\$) :	\$ 0.03	
	Yield Cost (Rejected Parts Scrap Rate) (\$)		
	Net Process cost (\$) :	\$	5.34

Total Welding Cost \$:	23.8261
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Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Coating
	Process Name :	Powder Coating
	Current Supplier Name :	
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Manufacturing 4 :	Process Type :	Paint Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	120.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$)	
	Machine Cost (\$)	\$ -
	Setup Cost (\$)	\$ 0.07
	Labor Cost (\$)	\$ 0.99
	Inspection Cost (\$)	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$)	\$ 1.06

Manufacturing 5 :	Process Type :	Powder Coating
	Machine Name :	Generic Paint Booth (Spray Type)
	M/c Automation :	Semi Auto
	Powder Price (\$/kg) :	1.41
	Coating Thickness (µm)	100.00
	Coating coverage / kg (sqm)	10.00
	Coating Area / Part (m^2)	2.42
	Coating Volume Per Part (kg):	0.24

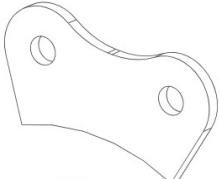
Net Material Per Part (\$)		0.34
Total Material Cost (\$)	\$	0.34
Machine Coating Capacity (sqm/Hr)		15.00
Total Coating Area Per Part (sqm)		2.42
No Of Coats		2.00
Cycle Time (sec) :		1,163.77
Setup Time (min/piece) :		0.30
# of Direct Labors :		1.00
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr		29.57
Skilled Labor Rate /hr		29.57
QA Inspector Rate /hr:		52.05
Sampling Rate (%)		1%
Inspection time (min) :		3.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$)		14.08
Machine Cost (\$)	\$	4.55
Setup Cost (\$)	\$	0.22
Labor Cost (\$)	\$	9.56
Inspection Cost (\$)	\$	0.03
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$)	\$	14.70

Manufacturing 6 :

Process Type :	Curing
Machine Name :	Generic Industrial Oven
M/c Automation :	Semi-Auto
Cycle Time Per Part (sec) :	500.00
Stock Load/Unload Time (sec) :	20.00
Setup Time (min/piece) :	0.10
No Of Parts In One Batch (Estimated):	30.00
# of Direct Labors :	0.25
# of Skilled Labors :	-
# of QA Inspector :	1.00
Direct Labor Rate /hr	29.57
Skilled Labor Rate /hr	29.57
QA Inspector Rate /hr:	52.05
Sampling Rate (%)	1%
Inspection time (min) :	2.00
Yield (Net Good Parts) (%) :	100%
Machine hour Rate (\$)	14.08
Machine Cost (\$)	\$ 1.96
Setup Cost (\$)	\$ 0.04
Labor Cost (\$)	\$ 1.03
Inspection Cost (\$)	\$ 0.01
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
Net Process cost (\$)	\$ 3.03

Total Coating Cost	\$	18.78
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Field Header	Field name	Field Value
Part Information :	Part Number :	nr-525411_0
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days



Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St52-3
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.94
	Scrap price (\$/Kg) :	\$ 0.33
	Part Envelope Length (mm) :	107.30
	Part Envelope Width (mm) :	57.00
	Part Height (mm) :	6.00
	Net weight (g) :	207.00
	Volume (mm^3) :	26,369.43
	Part Blank Length (mm) :	107.30
	Part Blank Width (mm) :	57.00
	Thickness (mm) :	6.00
	Part allowance : (Kerf)	1.50
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm) :	6.00
	Edge Allowance (mm) :	63.50
	Parts per Sheet	450.00
	Sheet Weight (g) :	1,47,187.50
	Scrap weight per part(g) :	120.08
	Net weight per part (g) :	207.0000
	Gross weight per part (g) :	327.0833
	Utilisation %	63%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 0.31
	Scrap Rec Cost (\$) :	\$ 0.04
	Net Material cost (\$) :	\$ 0.27

Total Material Cost	\$	0.27
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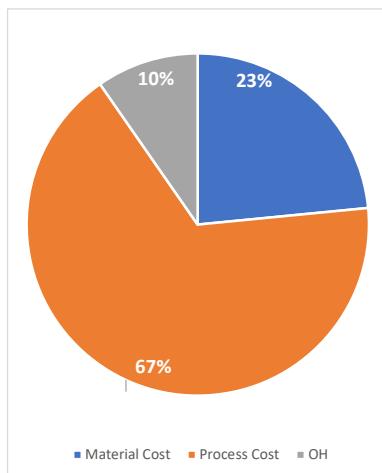
Manufacturing 1 :	Process Type :	Laser Cutting
	Laser cutting machine	Amada FOL -3015 AJ 4kW Fibre
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	392.22
	No of Starts (Piercings) : (Count)	3.00
	Cutting Speed : m/min	1.76
	Cutting Time : (min)	0.22
	Piercing Time : (min)	0.10
	Idle Travel Time : (min)	0.02
	Total Time : (sec)	21.07
	Setup Time (min/piece) :	0.10
	Sheet loading time (min)	10.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 35.85
Cost Drivers :	Skilled Labor Rate /hr	\$ 35.85
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 56.16
	Machine Cost (\$) :	\$ 0.33
	Setup Cost (\$) :	\$ 0.12
	Labor Cost (\$) :	\$ 0.10
	Inspection Cost (\$) :	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.60
Manufacturing 2 :	Process Type :	Deburring
	Laser cutting machine	Manual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	10.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 13.92
	Machine Cost (\$) :	\$ 0.04
	Setup Cost (\$) :	\$ 0.04
	Labor Cost (\$) :	\$ 0.08
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.17

Total Process Cost	\$ 0.77
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Overheads	Material OH 5%	\$ 0.01
	Machine OH 3%	\$ 0.01
	Labor OH 2%	\$ 0.00
	Profit 8%	\$ 0.08

Total OH	\$ 0.11
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Summary	Material Cost	\$ 0.27
	Process Cost	\$ 0.77
	OH	\$ 0.11
	Total Part Cost	\$ 1.16



L1-NR-528415_0-Plain shaft for flail shaft-Cost Estimation FR Region

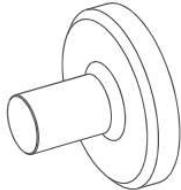
Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Assembly
	Process Name :	
	Current Supplier Name :	
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Welding (GMAW)
	Family :	Wire
	Description/Grade :	ER70S6
	Density (g/cc) :	7.874
	Material price (\$/Kg) :	1.00
	Wire Dia (mm):	1.20
	Bead Size (mm):	5X5
	Weld Triangle Area (mm^2):	10.83
	Penetration (mm^2)	4.33
	Cap (mm^2)	1.62
	Total Weld Bead Area (mm^2):	16.78
	Total Weld Length (mm):	1,143.60
	Weld Bead Weight (g):	151.09
	Effeciency%:	80%
	Weld Bead Weight With Wastage (g):	181.31
	Weld Wire Cost / Cycle (\$):	0.18
Manufacturing 1 :	Process Type :	Press Fit
	Operation	1 Ton Manual Press
	M/c Automation :	Manual
	Total Time : (sec)	30.00
	Setup Time (min/piece) :	0.10
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%

	Machine hour Rate (\$):	\$ 14.08
	Machine Cost (\$):	\$ 0.12
	Setup Cost (\$):	\$ 0.07
	Labor Cost (\$):	\$ 0.25
	Inspection Cost (\$):	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate)	-
	Net Process cost (\$):	\$ 0.45
Manufacturing 2 :	Process Type :	Weld Setup
Cost Drivers :	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	180.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	
	Machine Cost (\$):	\$ -
	Setup Cost (\$):	\$ 0.07
	Labor Cost (\$):	\$ 1.48
	Inspection Cost (\$):	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 1.55
Manufacturing 3 :	Process Type :	Welding
Cost Drivers :	Machine Name :	GMAW Setup
	M/c Automation :	Manual
	Wire feed speed (WFS) (m/min):	2.50
	Wire net deposition rate: (g/Hr)	1,335.12
	Welding Time Theoretical (sec)	488.89
	Arc On Time (sec):	586.66
	Arc Off Time (sec):	58.67
	Total Weld Cycle Time (sec):	645.33
	Effeciency%:	80%
	Total Weld Cycle Time With Effeciency (sec)	774.39
	Setup Time (min/piece) :	0.30
	Set up time (Hrs/Batch)	0.50
	# of Direct Labors :	0
	# of Skilled Labors :	1
	Direct Labor Rate /hr	\$ 52.05
	Skilled Labor Rate /hr	\$ 52.05
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	3.00

	Yield (Net Good Parts) (%) :	
	Machine hour Rate \$:	15.9
	Machine Cost \$:	3.4202
	Setup Cost \$:	0.3398
	Labor Cost \$:	11.1964
	Inspection Cost \$:	0.0260
	Yield Cost (Rejected Parts Scrap Rate) \$	
	Net Process cost \$:	14.9825
Manufacturing 4 :	Process Type :	Weld Clean
Cost Drivers :	Operation	Grinding / Deburring
	M/c Automation :	Manual
	Total Time : (sec)	300.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	3.00
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	\$ 15.02
	Machine Cost (\$):	\$ 1.25
	Setup Cost (\$):	\$ 0.11
	Labor Cost (\$):	\$ 2.46
	Inspection Cost (\$):	\$ 0.03
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 3.85
	Total Welding Cost \$:	21.0234

L2-NR-525418_0-Shaft stub-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-525418_0
	Part Description :	Asstomp
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days



Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	CK45
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.93
	Scrap price (\$/Kg) :	\$ 0.23
	Part Envelope Length (mm) :	182.00
	Part Envelope Width (mm) :	182.00
	Part Envelope Height (mm) :	125.00
	Net weight (g) :	8,493.00
	Area (mm^2) :	-
	Volume (mm^3) :	10,81,910.83
	Rod Stock OD (mm) :	200.00
	Rod Stock ID (mm) :	-
	Rod Stock Length (mm)	1,500.00
	Start & End Scrap Length (mm)	5.00
	Part Length (mm)	125.00
	Part Allowance (mm)	10.00
	Part Stock Length (mm)	135.00
	Parts Per Rod (Pcs)	11.00
	Rod Weight (g)	3,69,922.53
	Scrap weight per part(g) :	25,136.32
	Net weight per part (g) :	8,493.00
	Gross weight per part (g) :	33,629.32
	Utilisation %	25%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 31.28
	Scrap Rec Cost (\$) :	\$ 5.26
	Net Material cost (\$) :	\$ 26.02

Total Material Cost	\$	26.02
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Manufacturing 1 :	Process Type :	Saw Cutting
	Machine Name :	Bandsaw
	M/c Automation :	Semi Auto
	Stock length (mm) :	125.00
	Stock OD (mm) :	200.00
	Stock ID (mm) :	-
	Cycle Time (sec) :	628.32
	Setup Time (min/piece) :	0.60
	Cutting Area (mm^2):	31,415.93
	Cutting Speed (mm^2/sec)	50.00
	Total tool loading time (min)	10.00
	Rod loading/Unloading time (min)	50.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	-
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (₹) :	\$ 8.00
	Machine Cost (₹) :	\$ 1.40
	Setup Cost (₹) :	\$ 0.23
	Labor Cost (₹) :	\$ 2.58
	Inspection Cost (₹) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (₹)	\$ -
	Net Process cost (₹) :	\$ 4.20
Manufacturing 2 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Okuma Genos L250II
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	13,837
	Bar loading/Unloading time (min)	10.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing A
	Workpiece Diameter	200.00
	Length of Cut	110.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	2.00
	Total Depth of cut	5.00
	Spindle RPM	175.00
	No. of passes	2.50
	Tool Travel Time (min)	0.02
	Machining Time (min):	8.57
	Machining Time (sec):	515.28
	Operation : 2	Turning A
	Workpiece Initial dia (mm):	200.00
	Workpiece Final dia (mm):	183.00
	Length of Cut (mm);	125.00

Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		2.00
Spindle RPM		175.00
No. of passes (no.)		8.00
Tool Travel Time (min)		0.03
Machining Time (min):		31.46
Machining Time (sec):		1,887.68
Operation : 3	Turning B	
Workpiece Initial dia (mm):		182.00
Workpiece Final dia (mm):		61.00
Length of Cut (mm):		93.00
Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		2.00
Spindle RPM		192.31
No. of passes (no.)		61.00
Tool Travel Time (min)		0.03
Machining Time (min):		162.28
Machining Time (sec):		9,736.69
Operation : 4	Turning C - Finishing	
Workpiece Initial dia (mm):		182.00
Workpiece Final dia (mm):		181.00
Length of Cut (mm):		125.00
Cutting Speed (m/min)		160.00
Feed per revolution (mm/rev):		0.05
Depth of cut (mm):		0.50
Spindle RPM		279.73
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		19.70
Machining Time (sec):		1,181.73
Operation : 5	Facing B	
Workpiece Diameter		200.00
Length of Cut		110.00
Cutting Speed		110.00
Feed per revolution		0.20
Depth of cut		2.00
Total Depth of cut		5.00
Spindle RPM		175.00
No. of passes		2.50
Tool Travel Time (min)		0.02
Machining Time (min):		8.57
Machining Time (sec):		515.28
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	46.77
Skilled Labor Rate /hr	\$	46.77
QA Inspector Rate /hr:	\$	52.05
Sampling Rate (%)		5%
Inspection time (min) :		5.00

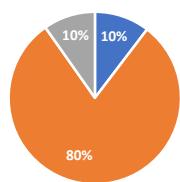
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (\$)	\$ 27.25
	Machine Cost (\$)	\$ 104.74
	Setup Cost (\$)	\$ 0.25
	Labor Cost (\$)	\$ 89.88
	Inspection Cost (\$)	\$ 0.22
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$)	\$ 195.09
Manufacturing 3 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	120.00
	Setup Time (min/piece) :	0.10
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	5%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$)	\$ 13.92
	Machine Cost (\$)	\$ 0.46
	Setup Cost (\$)	\$ 0.07
	Labor Cost (\$)	\$ 0.99
	Inspection Cost (\$)	\$ 0.09
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$)	\$ 1.61

Total Process Cost	\$ 200.90
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Overheads	Material OH 5%	\$ 1.30
	Machine OH 3%	\$ 3.20
	Labor OH 2%	\$ 1.87
	Profit 8%	\$ 18.15

Total OH	\$ 24.52
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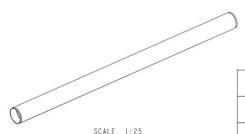
Summary	Material Cost	\$ 26.02
	Process Cost	\$ 200.90
	OH	\$ 24.52
	Total Part Cost	\$ 251.44



■ Material Cost ■ Process Cost ■ OH

L2-NR-528416_0-Tube flail shaft-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528416_0
	Part Description :	Buis Klepelas
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days



Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St52-3
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 1.22
	Scrap price (\$/Kg) :	\$ 0.31
	Part Envelope Length (mm) :	3,140.00
	Part Envelope Width (mm) :	193.70
	Part Envelope Height (mm) :	193.70
	Net weight (g) :	1,01,469.00
	Area (mm^2) :	-
	Volume (mm^3) :	1,29,25,987.26
	Rod Stock OD (mm) :	193.70
	Rod Stock ID (mm) :	179.50
	Rod Stock Length (mm)	6,500.00
	Start & End Scrap Length (mm)	5.00
	Part Length (mm)	3,140.00
	Part Allowance (mm)	10.00
	Part Stock Length (mm)	3,150.00
	Parts Per Rod (Pcs)	2.00
	Rod Weight (g)	2,12,374.75
	Scrap weight per part(g) :	4,718.37
	Net weight per part (g) :	1,01,469.00
	Gross weight per part (g) :	1,06,187.37
	Utilisation %	96%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 129.76
	Scrap Rec Cost (\$) :	\$ 1.30
	Net Material cost (\$) :	\$ 128.46

Total Material Cost	\$	128.46
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Manufacturing 1 :	Process Type :	Saw Cutting
	Machine Name :	Bandsaw
	M/c Automation :	Semi Auto
	Stock length (mm) :	3,140.00
	Stock OD (mm) :	193.70
	Stock ID (mm) :	179.50
	Cycle Time (sec) :	83.24
	Setup Time (min/piece) :	2.60
	Cutting Area (mm^2):	4,162.17
	Cutting Speed (mm^2/sec)	50.00
	Total tool loading time (min)	10.00
	Rod loading/Unloading time (min)	250.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	-
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (₹) :	\$ 8.00
	Machine Cost (₹) :	\$ 0.18
	Setup Cost (₹) :	\$ 0.99
	Labor Cost (₹) :	\$ 0.34
	Inspection Cost (₹) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (₹)	\$ -
	Net Process cost (₹) :	\$ 1.51
Manufacturing 2 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Acura 4400 HLA
	M/c Automation :	
	Cycle Time (sec) :	2,853.80
	Bar loading/Unloading time (min)	20.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing X2
	Workpiece Diameter	193.70
	Length of Cut	8.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	1.00
	Total Depth of cut	5.00
	Spindle RPM	180.70
	No. of passes	5.00
	Tool Travel Time (min)	0.02
	Machining Time (min):	2.49
	Machining Time (sec):	300.85
	Operation : 4	Turning B X 2
	Workpiece Initial dia (mm):	193.70
	Workpiece Final dia (mm):	192.00

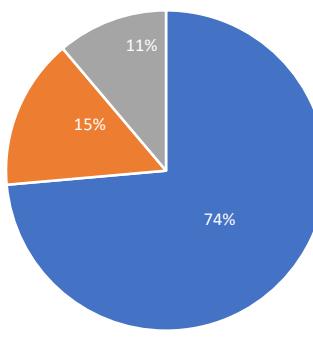
Length of Cut (mm);		15.00
Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		1.00
Spindle RPM		180.70
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		0.95
Machining Time (sec):		113.58
Operation : 5	Turning D - ID Stepx2-Rough	
Workpiece Initial dia (mm):		179.50
Workpiece Final dia (mm):		181.50
Length of Cut (mm);		95.00
Cutting Speed (m/min)		110.00
Feed per revolution (mm/rev):		0.20
Depth of cut (mm):		1.00
Spindle RPM		194.99
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		5.39
Machining Time (sec):		647.11
Operation : 5	Turning D - ID Stepx2-Finish	
Workpiece Initial dia (mm):		181.50
Workpiece Final dia (mm):		182.00
Length of Cut (mm);		95.00
Cutting Speed (m/min)		160.00
Feed per revolution (mm/rev):		0.05
Depth of cut (mm):		0.25
Spindle RPM		280.50
No. of passes (no.)		2.00
Tool Travel Time (min)		0.03
Machining Time (min):		14.94
Machining Time (sec):		1,792.26
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	17.67
Skilled Labor Rate /hr	\$	17.67
QA Inspector Rate /hr:	\$	19.67
Sampling Rate (%)		5%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):	\$	19.62
Machine Cost (\$):	\$	15.55
Setup Cost (\$):	\$	0.14
Labor Cost (\$):	\$	7.00
Inspection Cost (\$):	\$	0.08
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$):	\$	22.78

Manufacturing 3 :	Process Type :	Deburring
	Laser cutting machine	Mannual Debur
	M/c Automation :	Manual
	Total Time : (sec)	180.00
	Setup Time (min/piece) :	0.10
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	5%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 13.92
	Machine Cost (\$) :	\$ 0.70
	Setup Cost (\$) :	\$ 0.07
	Labor Cost (\$) :	\$ 1.48
	Inspection Cost (\$) :	\$ 0.09
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 2.33
Total Process Cost		\$ 26.63

Overheads	Material OH 5%	\$ 6.42
	Machine OH 3%	\$ 0.49
	Labor OH 2%	\$ 0.18
	Profit 8%	\$ 12.41

Total OH	\$ 19.50
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Summary	Material Cost	\$ 128.46
	Process Cost	\$ 26.63
	OH	\$ 19.50
	Total Part Cost	\$ 174.59



■ Material Cost ■ Process Cost ■ OH

L2-NR-528417_0-Shaft stub-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528417_0
	Part Description :	Asstomp
	Annual Volume (#) :	1,200
	Commodity :	Stock Machining
	Process Name :	Machining
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	-
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Material Information 1:

Category :	Ferrous
Family :	Steel
Description/Grade :	CK45
Density (g/cc) :	7.85
Material price (\$/Kg) :	\$ 0.93
Scrap price (\$/Kg) :	\$ 0.23
Part Envelope Length (mm) :	230.00
Part Envelope Width (mm) :	182.00
Part Envelope Height (mm) :	182.00
Net weight (g) :	10,738.00
Area (mm^2) :	-
Volume (mm^3) :	13,67,898.09
Rod Stock OD (mm) :	200.00
Rod Stock ID (mm) :	-
Rod Stock Length (mm)	1,500.00
Start & End Scrap Length (mm)	5.00
Part Length (mm)	230.00
Part Allowance (mm)	10.00
Part Stock Length (mm)	240.00
Parts Per Rod (Pcs)	6.00
Rod Weight (g)	3,69,922.53
Scrap weight per part(g) :	50,915.76
Net weight per part (g) :	10,738.00
Gross weight per part (g) :	61,653.76
Utilisation %	17%
Scrap Recovery %	90%
Gross Material cost (\$) :	\$ 57.34
Scrap Rec Cost (\$) :	\$ 10.65
Net Material cost (\$) :	\$ 46.68

Total Material Cost	\$	46.68
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Manufacturing 1 :	Process Type :	Saw Cutting
	Machine Name :	Bandsaw
	M/c Automation :	Semi Auto
	Stock length (mm) :	230.00
	Stock OD (mm) :	200.00
	Stock ID (mm) :	-
	Cycle Time (sec) :	628.32
	Setup Time (min/piece) :	0.95
	Cutting Area (mm^2):	31,415.93
	Cutting Speed (mm^2/sec)	50.00
	Total tool loading time (min)	10.00
	Rod loading/Unloading time (min)	85.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	-
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (₹) :	\$ 8.00
	Machine Cost (₹) :	\$ 1.40
	Setup Cost (₹) :	\$ 0.36
	Labor Cost (₹) :	\$ 2.58
	Inspection Cost (₹) :	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (₹)	\$ -
	Net Process cost (₹) :	\$ 4.34
Manufacturing 2 :	Process Type :	CNC Machining
	Machine Name :	2 Axis Lathe -Okuma Genos L250II
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	26,940.47
	Bar loading/Unloading time (min)	10.00
	Setup Time (min/piece) :	0.30
	Operation : 1	Facing A
	Workpiece Diameter	200.00
	Length of Cut	110.00
	Cutting Speed	110.00
	Feed per revolution	0.20
	Depth of cut	2.00
	Total Depth of cut	5.00
	Spindle RPM	175.00
	No. of passes	2.50
	Tool Travel Time (min)	0.02
	Machining Time (min):	8.57
	Machining Time (sec):	515.28
	Operation : 2	Drilling (A)
	Diameter of Hole (mm)	8.50
	Depth Of Hole (mm)	30.00
	Cutting Speed (m/min)	25.00
	Feed per revolution (mm/rev)	0.15
	Spindle RPM (RPM)	935.85
	Machining Time (min)	0.24
	Tool Travel Time (min)	0.03

Machining Time (s)	16.10
Operation : 3	Tapping (M10)
Diameter of Hole (mm)	8.50
Depth Of Hole (mm)	25.00
Cutting Speed (m/min)	8.33
Feed per revolution (mm/rev)	0.15
Spindle RPM (RPM)	311.95
Machining Time (min)	0.59
Tool Travel Time (min)	0.03
Machining Time (s)	37.26
Operation : 4	Turning A
Workpiece Initial dia (mm):	200.00
Workpiece Final dia (mm):	183.00
Length of Cut (mm):	230.00
Cutting Speed (m/min)	110.00
Feed per revolution (mm/rev):	0.20
Depth of cut (mm):	2.00
Spindle RPM	175.00
No. of passes (no.)	8.00
Tool Travel Time (min)	0.03
Machining Time (min):	57.86
Machining Time (sec):	3,471.65
Operation : 5	Turning B
Workpiece Initial dia (mm):	182.00
Workpiece Final dia (mm):	61.00
Length of Cut (mm):	198.00
Cutting Speed (m/min)	110.00
Feed per revolution (mm/rev):	0.20
Depth of cut (mm):	2.00
Spindle RPM	192.31
No. of passes (no.)	61.00
Tool Travel Time (min)	0.03
Machining Time (min):	345.46
Machining Time (sec):	20,727.47
Operation : 6	Turning C - Finishing
Workpiece Initial dia (mm):	182.00
Workpiece Final dia (mm):	181.00
Length of Cut (mm):	230.00
Cutting Speed (m/min)	160.00
Feed per revolution (mm/rev):	0.05
Depth of cut (mm):	0.50
Spindle RPM	279.73
No. of passes (no.)	2.00
Tool Travel Time (min)	0.03
Machining Time (min):	36.21
Machining Time (sec):	2,172.70
Operation : 7	Facing B
Workpiece Diameter	200.00
Length of Cut	110.00
Cutting Speed	110.00
Feed per revolution	0.20
Depth of cut	2.00
Total Depth of cut	5.00
Spindle RPM	175.00

No. of passes		2.50
Tool Travel Time (min)		0.02
Machining Time (min):		8.57
Machining Time (sec):		515.28
# of Direct Labors :		0.50
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	46.77
Skilled Labor Rate /hr	\$	46.77
QA Inspector Rate /hr:	\$	52.05
Sampling Rate (%)		5%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):	\$	27.25
Machine Cost (\$):	\$	203.92
Setup Cost (\$):	\$	0.25
Labor Cost (\$):	\$	175.00
Inspection Cost (\$):	\$	0.22
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$):	\$	379.40
Manufacturing 3 :	Process Type :	CNC Milling
Machine Name :		3 Axis mill-Haas VF10/50
M/c Automation :		Semi Auto
Cycle Time (sec) :		795.74
Stock Load/Unload Time (sec)		10.00
Setup Time (min/piece) :		0.30
Operation : 1		Slot Milling
Length of Cut (mm)		80.00
Width of Cut (mm)		18.00
Total Depth of Cut (mm)		7.00
Cutting Speed (m/min)		80.00
Cutter Diameter (mm)		10.00
Number of Teeth (Nos)		3.00
Depth of cut per pass (mm)		0.40
Feed per revolution (mm/rev)		0.30
Spindle RPM (RPM)		2,545.50
No. of passes (Nos)		18.00
Machining Time (min)		13.06
Tool Travel Time (min)		0.03
Total Time (s)		785.74
# of Direct Labors :		1.00
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr	\$	46.77
Skilled Labor Rate /hr	\$	46.77
QA Inspector Rate /hr:	\$	52.05
Sampling Rate (%)		1%
Inspection time (min) :		5.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):	\$	38.59
Machine Cost (\$):	\$	8.53
Setup Cost (\$):	\$	0.43
Labor Cost (\$):	\$	10.34
Inspection Cost (\$):	\$	0.04

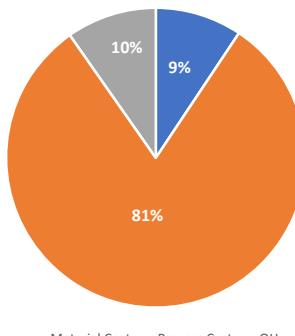
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
	Net Process cost (\$) :	\$	19.34
Manufacturing 4 :	Process Type :	Deburring	
	Laser cutting machine	Manual Deburr	
	M/c Automation :	Manual	
	Total Time : (sec)		120.00
	Setup Time (min/piece) :		0.10
	# of Direct Labors :		1.00
	# of Skilled Labors :		-
	# of QA Inspector :		1.00
	Direct Labor Rate /hr	\$	29.57
Cost Drivers :	Skilled Labor Rate /hr	\$	29.57
	QA Inspector Rate /hr:	\$	52.05
	Sampling Rate (%)		1%
	Inspection time (min) :		2.00
	Yield (Net Good Parts) (%) :		100.0%
	Machine hour Rate (\$):	\$	13.92
	Machine Cost (\$):	\$	0.46
	Setup Cost (\$):	\$	0.07
	Labor Cost (\$):	\$	0.99
	Inspection Cost (\$):	\$	0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
	Net Process cost (\$) :	\$	1.54

Total Process Cost	\$	404.61
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Overheads	Material OH 5%	\$	2.33
	Machine OH 3%	\$	6.43
	Labor OH 2%	\$	3.78
	Profit 8%	\$	36.10

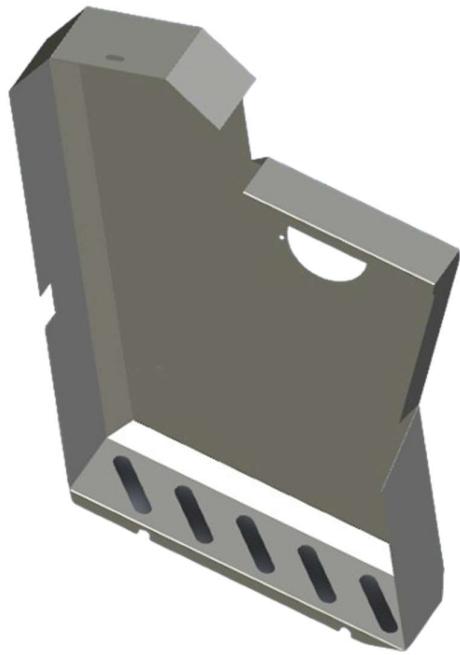
Total OH	\$	48.65
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Summary	Material Cost	\$	46.68
	Process Cost	\$	404.61
	OH	\$	48.65
	Total Part Cost	\$	499.94



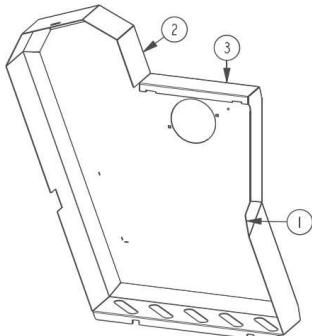
■ Material Cost ■ Process Cost ■ OH

France Should Cost Report- Protective box right



L0-NR-528060_A-Protective box right-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Assembly
	Process Name :	Welding (GMAW)
	Current Supplier Name :	
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Material Information 1:	Category :	Welding (GMAW)
	Family :	Wire
	Description/Grade :	ER70S6
	Density (g/cc) :	7.874
	Material price (\$/Kg) :	1.00
	Wire Dia (mm):	1.20
	Bead Size (mm):	3X3
	Weld Triangle Area (mm^2):	3.90
	Penetration (mm^2)	1.56
	Cap (mm^2)	0.58
	Total Weld Bead Area (mm^2):	6.04
	Total Weld Length (mm):	943.70
	Weld Bead Weight (g):	44.89
	Effeciency%:	80%
	Weld Bead Weight With Wastage (g):	53.86
	Weld Wire Cost / Cycle (\$):	0.05
Manufacturing 1 :	Process Type :	Weld Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	300.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
Cost Drivers :		



	Machine hour Rate (\$):	
	Machine Cost (\$):	\$ -
	Setup Cost (\$):	\$ 0.07
	Labor Cost (\$):	\$ 2.46
	Inspection Cost (\$):	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 2.54
Manufacturing 2 :	Process Type :	Welding
Cost Drivers :	Machine Name :	GMAW Setup
	M/c Automation :	Manual
	Wire feed speed (WFS) (m/min):	2.00
	Wire net deposition rate: (g/Hr)	1,068.09
	Welding Time Theoretical (sec)	181.54
	Arc On Time (sec):	217.85
	Arc Off Time (sec):	21.79
	Total Weld Cycle Time (sec):	239.64
	Effeciency%:	80%
	Total Weld Cycle Time With Effeciency (sec):	287.56
	Setup Time (min/piece) :	0.30
	Set up time (Hrs/Batch)	0.50
	# of Direct Labors :	0
	# of Skilled Labors :	1
	Direct Labor Rate /hr	52.05
	Skilled Labor Rate /hr	52.05
	QA Inspector Rate /hr:	52.05
	Sampling Rate (%)	1%
Cost Drivers :	Inspection time (min) :	3.00
	Yield (Net Good Parts) (%) :	
	Machine hour Rate \$:	15.9
	Machine Cost \$:	1.2701
	Setup Cost \$:	0.3398
	Labor Cost \$:	4.1577
	Inspection Cost \$:	0.0260
	Yield Cost (Rejected Parts Scrap Rate) \$	
	Net Process cost \$:	5.7935
Manufacturing 3 :	Process Type :	Weld Clean
Cost Drivers :	Operation	Grinding / Deburring
	M/c Automation :	Manual
	Total Time : (sec)	300.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	3.00
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$) :	\$ 15.02
	Machine Cost (\$):	\$ 1.25
	Setup Cost (\$):	\$ 0.11
	Labor Cost (\$):	\$ 2.46
	Inspection Cost (\$):	\$ 0.03
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 3.85
Total Welding Cost \$:		12.2388

Field Header	Field name	Field Value
Part Information :	Internal Part Number :	
	Part Description :	
	Annual Volume (#) :	1,200
	Commodity :	Coating
	Process Name :	Powder Coating
	Current Supplier Name :	
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Medium
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days
Manufacturing 4 :	Process Type :	Paint Setup
	Operation	Pick & Place / Surface Prep
	M/c Automation :	Manual
	Total Time : (sec)	120.00
	Setup Time (min/piece) :	0.15
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	0%
	Inspection time (min) :	-
	Yield (Net Good Parts) (%) :	
	Machine hour Rate (\$):	
	Machine Cost (\$):	\$ -
	Setup Cost (\$):	\$ 0.07
	Labor Cost (\$):	\$ 0.99
	Inspection Cost (\$):	\$ -
	Yield Cost (Rejected Parts Scrap Rate) (\$)	
	Net Process cost (\$):	\$ 1.06
Manufacturing 5 :	Process Type :	Powder Coating
	Machine Name :	Generic Paint Booth (Spray Type)
	M/c Automation :	Semi Auto
	Powder Price (\$/kg) :	1.41
	Coating Thickness (µm)	100.00

Coating coverage / kg (sqm)		10.00
Coating Area / Part (m^2)		2.82
Coating Volume Per Part (kg):		0.28
Net Material Per Part (\$)		0.40
Total Material Cost (\$)	\$	0.40
Machine Coating Capacity (sqm/Hr)		15.00
Total Coating Area Per Part (sqm)		2.82
No Of Coats		2.00
Cycle Time (sec) :		1,354.46
Setup Time (min/piece) :		0.30
# of Direct Labors :		1.00
# of Skilled Labors :		-
# of QA Inspector :		1.00
Direct Labor Rate /hr		29.57
Skilled Labor Rate /hr		29.57
QA Inspector Rate /hr:		52.05
Sampling Rate (%)		1%
Inspection time (min) :		3.00
Yield (Net Good Parts) (%) :		100%
Machine hour Rate (\$):		14.08
Machine Cost (\$) :	\$	5.30
Setup Cost (\$) :	\$	0.22
Labor Cost (\$) :	\$	11.13
Inspection Cost (\$) :	\$	0.03
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$	-
Net Process cost (\$) :	\$	17.07

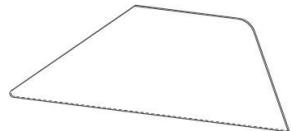
Manufacturing 6 :

Process Type :	Curing
Machine Name :	Generic Industrial Oven
M/c Automation :	Semi-Auto
Cycle Time Per Part (sec) :	500.00
Stock Load/Unload Time (sec) :	20.00
Setup Time (min/piece) :	0.10
No Of Parts In One Batch (Estimated):	30.00
# of Direct Labors :	0.25
# of Skilled Labors :	-
# of QA Inspector :	1.00
Direct Labor Rate /hr	29.57
Skilled Labor Rate /hr	29.57
QA Inspector Rate /hr:	52.05
Sampling Rate (%)	1%
Inspection time (min) :	2.00
Yield (Net Good Parts) (%) :	100%
Machine hour Rate (\$):	\$ 14.08
Machine Cost (\$) :	\$ 1.96
Setup Cost (\$) :	\$ 0.04
Labor Cost (\$) :	\$ 1.03
Inspection Cost (\$) :	\$ 0.01
Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
Net Process cost (\$) :	\$ 3.03

Total Coating Cost	\$	21.15
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L1-NR-528058_0-Sheet Steel-1-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528058_0
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days



SCALE 1:2

Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St37-2
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.98
	Scrap price (\$/Kg) :	\$ 0.34
	Part Envelope Length (mm) :	165.40
	Part Envelope Width (mm) :	62.90
	Part Height (mm) :	1.50
	Net weight (g) :	88.00
	Volume (mm^3) :	11,210.19
	Part Blank Length (mm) :	165.40
	Part Blank Width (mm) :	62.90
	Thickness (mm) :	1.50
	Part allowance : (Kerf)	0.60
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm) :	1.50
	Edge Allowance (mm) :	-
	Parts per Sheet	300.00
	Sheet Weight (g) :	36,796.88
	Scrap weight per part(g) :	34.66
	Net weight per part (g) :	88.0000
	Gross weight per part (g) :	122.6563
	Utilisation %	72%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 0.12
	Scrap Rec Cost (\$) :	\$ 0.01
	Net Material cost (\$) :	\$ 0.11

Total Material Cost	\$	0.11
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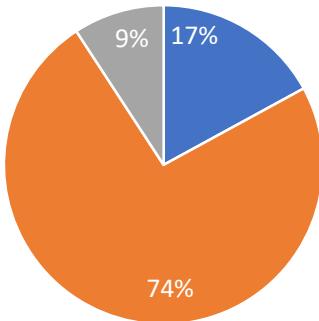
Manufacturing 1 :	Process Type :	Laser Cutting
	Laser cutting machine	Salvagnini L3-30 2 KW Fiber
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	396.19
	No of Starts (Piercings) : (Count)	1.00
	Cutting Speed : m/min	3.23
	Cutting Time : (min)	0.12
	Piercing Time : (min)	0.03
	Idle Travel Time : (min)	0.01
	Total Time : (sec)	10.10
	Setup Time (min/piece) :	0.10
	Sheet loading time (min)	10.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 35.85
Cost Drivers :	Skilled Labor Rate /hr	\$ 35.85
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 39.13
	Machine Cost (\$) :	\$ 0.11
	Setup Cost (\$) :	\$ 0.10
	Labor Cost (\$) :	\$ 0.05
	Inspection Cost (\$) :	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.30
Manufacturing 2 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	10.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 13.92
	Machine Cost (\$) :	\$ 0.04
	Setup Cost (\$) :	\$ 0.04
	Labor Cost (\$) :	\$ 0.08
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.17

Total Process Cost	\$ 0.47
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Overheads	Material OH 5%	\$ 0.01
	Machine OH 3%	\$ 0.00
	Labor OH 2%	\$ 0.00
	Profit 8%	\$ 0.05

Total OH	\$ 0.06
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Summary	Material Cost	\$ 0.11
	Process Cost	\$ 0.47
	OH	\$ 0.06
	Total Part Cost	\$ 0.64



■ Material Cost ■ Process Cost ■ OH

L1-NR-528059_0-Sheet Steel-2-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528059_0
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days

Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	ST37-2
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.98
	Scrap price (\$/Kg) :	\$ 0.34
	Part Envelope Length (mm) :	185.40
	Part Envelope Width (mm) :	181.80
	Part Height (mm) :	46.70
	Net weight (g) :	338.00
	Volume (mm^3) :	43,057.32
	Part Blank Length (mm) :	186.40
	Part Blank Width (mm) :	181.80
	Thickness (mm) :	1.50
	Part allowance : (Kerf)	0.60
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm) :	1.50
	Edge Allowance (mm) :	63.50
	Parts per Sheet :	84.00
	Sheet Weight (g) :	36,796.88
	Scrap weight per part(g) :	100.06
	Net weight per part (g) :	338.0000
	Gross weight per part (g) :	438.0580
	Utilisation %	77%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 0.43
	Scrap Rec Cost (\$) :	\$ 0.03
	Net Material cost (\$) :	\$ 0.40

Total Material Cost	\$	0.40
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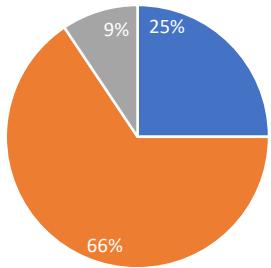
Manufacturing 1 :	Process Type :	Laser Cutting
	Laser cutting machine	Salvagnini L3-30 2 KW Fiber
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	860.33
	No of Starts (Piercings) : (Count)	1.00
	Cutting Speed : m/min	3.75
	Cutting Time : (min)	0.23
	Piercing Time : (min)	0.03
	Idle Travel Time : (min)	0.02
	Total Time : (sec)	16.64
	Setup Time (min/piece) :	0.20
	Sheet loading time (min)	20.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 35.85
Cost Drivers :	Skilled Labor Rate /hr	\$ 35.85
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 39.13
	Machine Cost (\$) :	\$ 0.18
	Setup Cost (\$) :	\$ 0.19
	Labor Cost (\$) :	\$ 0.08
	Inspection Cost (\$) :	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.50
Manufacturing 2 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	10.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	2.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 13.92
	Machine Cost (\$) :	\$ 0.04
	Setup Cost (\$) :	\$ 0.04
	Labor Cost (\$) :	\$ 0.08
	Inspection Cost (\$) :	\$ 0.02
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.17
Manufacturing 3 :	Process Type :	Bending - Press Break
	Ultimate Tensile Strength Of Material : (Mpa)	440

Cost Drivers :	Bending line length : (mm)	181.8
	Shoulder width : (mm)	20
	Bending coeffecient :	1.33
	Theoretical Force : (Ton)	1.22
	No. Of Bends: Count	1.00
	Total Tonnage Required: (Ton)	1.22
	Recommended Force : (Ton)	1.53
	Machine Name :	HG-8025 (Amada)-800KN
	M/c Automation :	Semi Auto
	Cycle Time (sec) :	12.00
	Setup Time (min/piece) :	0.15
	Setup Time (Die Loading / Batch) :	15.00
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 35.85
	Skilled Labor Rate /hr	\$ 35.85
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (\$) :	\$ 20.54
	Machine Cost (\$) :	\$ 0.07
	Setup Cost (\$) :	\$ 0.14
	Labor Cost (\$) :	\$ 0.12
	Inspection Cost (\$) :	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.37
Total Process Cost		\$ 1.04

Overheads	Material OH 5%	\$ 0.02
	Machine OH 3%	\$ 0.01
	Labor OH 2%	\$ 0.01
	Profit 8%	\$ 0.12

Total OH	\$ 0.15
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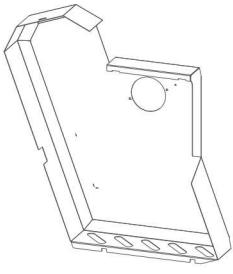
Summary	Material Cost	\$ 0.40
	Process Cost	\$ 1.04
	OH	\$ 0.15
	Total Part Cost	\$ 1.59



■ Material Cost ■ Process Cost ■ OH

L1-NR-528064_A-Sheet Steel-3-Cost Estimation FR Region

Field Header	Field name	Field Value
Part Information :	Part Number :	nr-528064_A
	Part Description :	Plaatstaal
	Annual Volume (#) :	1,200
	Commodity :	Sheet Metal
	Process Name :	Laser Cutting + Finish
	Current Supplier Name :	-
	Current Manufacturing Country :	France
	Delivery Country :	France
	BOM Qty (No's)	1
	Part Complexity :	Low
	Lot size (#) :	100
	Supply Chain Model :	Buy
	Packaging Type :	No Packing
	HS Code :	N/A
	Inco Terms :	EX-W
	Payment Terms :	60 Days



Material Information 1:	Category :	Ferrous
	Family :	Steel
	Description/Grade :	St37-2
	Density (g/cc) :	7.85
	Material price (\$/Kg) :	\$ 0.98
	Scrap price (\$/Kg) :	\$ 0.34
	Part Envelope Length (mm) :	1,154.20
	Part Envelope Width (mm) :	1,222.40
	Part Height (mm) :	161.00
	Net weight (g) :	10,323.00
	Volume (mm^3) :	13,15,031.85
	Part Blank Length (mm) :	1,154.20
	Part Blank Width (mm) :	1,222.40
	Thickness (mm) :	1.50
	Part allowance : (Kerf)	0.60
	Sheet Width (mm) :	1,250.00
	Sheet Length (mm) :	2,500.00
	Sheet Thickness (mm) :	1.50
	Edge Allowance (mm) :	25.40
	Parts per Sheet :	2.00
	Sheet Weight (g) :	36,796.88
	Scrap weight per part(g) :	8,075.44
	Net weight per part (g) :	10,323.0000
	Gross weight per part (g) :	18,398.4375
	Utilisation %	56%
	Scrap Recovery %	90%
	Gross Material cost (\$) :	\$ 18.03
	Scrap Rec Cost (\$) :	\$ 2.49
	Net Material cost (\$) :	\$ 15.54

Total Material Cost	\$	15.54
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Manufacturing 2 :	Process Type :	Laser Cutting
	Laser cutting machine	Salvagnini L3-30 2 KW Fiber
	M/c Automation :	Semi-Auto
	Cutting Length : (mm)	10,180.50
	No of Starts (Piercings) : (Count)	16.00
	Cutting Speed : m/min	2.99
	Cutting Time : (min)	3.40
	Piercing Time : (min)	0.65
	Idle Travel Time : (min)	1.16
	Total Time : (sec)	312.60
	Setup Time (min/piece) :	5.00
	Sheet loading time (min)	500.00
	# of Direct Labors :	0.50
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 35.85
Cost Drivers :	Skilled Labor Rate /hr	\$ 35.85
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 39.13
	Machine Cost (\$) :	\$ 3.40
	Setup Cost (\$) :	\$ 4.75
	Labor Cost (\$) :	\$ 1.56
	Inspection Cost (\$) :	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 9.75
Manufacturing 3 :	Process Type :	Deburring
	Laser cutting machine	Mannual Deburr
	M/c Automation :	Manual
	Total Time : (sec)	60.00
	Setup Time (min/piece) :	0.05
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 29.57
Cost Drivers :	Skilled Labor Rate /hr	\$ 29.57
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100.0%
	Machine hour Rate (\$) :	\$ 13.92
	Machine Cost (\$) :	\$ 0.23
	Setup Cost (\$) :	\$ 0.04
	Labor Cost (\$) :	\$ 0.49
	Inspection Cost (\$) :	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$) :	\$ 0.80
Manufacturing 4 :	Process Type :	Bending - Press Break
	Ultimate Tensile Strength Of Material : (Mpa)	440

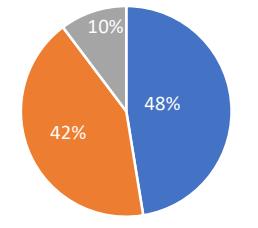
Cost Drivers :	Bending line length : (mm)	1000
	Shoulder width : (mm)	25
	Bending coeffecient :	1.33
	Theoretical Force : (Ton)	5.37
	No. Of Bends: Count	1.00
	Total Tonnage Required: (Ton)	5.37
	Recommended Force : (Ton)	6.71
	Machine Name :	HG-8025 (Amada)-800KN
	M/c Automation :	Semi Auto
	No. Of Repeat Bends	16.00
	Cycle Time (sec) :	192.00
	Setup Time (min/piece) :	0.30
	Setup Time (Die Loading / Batch) :	30.00
	# of Direct Labors :	1.00
	# of Skilled Labors :	-
	# of QA Inspector :	1.00
	Direct Labor Rate /hr	\$ 35.85
	Skilled Labor Rate /hr	\$ 35.85
	QA Inspector Rate /hr:	\$ 52.05
	Sampling Rate (%)	1%
	Inspection time (min) :	5.00
	Yield (Net Good Parts) (%) :	100%
	Machine hour Rate (\$):	\$ 20.54
	Machine Cost (\$):	\$ 1.10
	Setup Cost (\$):	\$ 0.28
	Labor Cost (\$):	\$ 1.91
	Inspection Cost (\$):	\$ 0.04
	Yield Cost (Rejected Parts Scrap Rate) (\$)	\$ -
	Net Process cost (\$):	\$ 3.33

Total Process Cost	\$ 13.89
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Overheads	Material OH 5%	\$ 0.78
	Machine OH 3%	\$ 0.14
	Labor OH 2%	\$ 0.08
	Profit 8%	\$ 2.35

Total OH	\$ 3.35
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Summary	Material Cost	\$ 15.54
	Process Cost	\$ 13.89
	OH	\$ 3.35
	Total Part Cost	\$ 32.78



■ Material Cost ■ Process Cost ■ OH