



December 18, 2006

Construction Products Inc.
1800 NE Broadway Avenue
Des Moines, IA 50313-2644

Attention: Lee Smith

Subject: **Revised** Firm Proposal – Criterion Pierce Machines
CMI Reference # FP-5152H

Dear Lee,

We are pleased to provide you with this **Revised** Firm Proposal for a Criterion Pierce Machines. **This Revision reflects required changes that became evident during the prototyping, including that the process requires clamping the tube 360 degrees when piercing to minimize distortion so the tube can be pushed off the mandrels (previously pulled).** This Proposal includes the following [3] Pierce Machines:

Machine A: 2-Station Pierce Machine	Pierces [4] Windows and [2] Notches (Detail B) on your L1, L2, and L3 Upper Post Tubes
Machine B: CNC Pierce Machine	Pierces “Tombstones” (Detail A) on your L1, L2 and L3 Upper Post Tubes
Machine C: 2-Press Pierce Machine	Pierces [4] Ø 25/32” Holes on your L1, L2 and L3 Lower Post Tubes

Machine A: 2-Station Pierce Machine (Upper Post Tubes)

Upper Post Tubes Pierced

Part Number 31526 (L1):	Ø 2.125” x 0.148” wall ERW tube, 65.5” long
Part Number 32526 (L2):	Ø 2.375” x 0.148” wall ERW tube, 77.5” long
Part Number 33526 (L3):	Ø 2.875” x 0.148” wall ERW tube, 96.5” long
OPTIONALLY L4:	Ø 3.25” x 0.148” wall ERW tube, 92.75” long

Machine A: 2-Station Pierce Machine (Upper Post Tubes) continued

Qty [2] “Notches” and are pierced from the outside inward in Station #1. Qty [4] “Windows” are pierced from the outside inward in 2-Hits in Station #2. The tube is Clamped 360-degrees around the OD during piercing. The Machine is painted “Vista Green”.

Main Components

1. Station #1 – Double Pierce Station with:
 - a. Qty [1] 5-Ton Double Pierce Press with Interlocking Clamps
 - b. Adjustable Tube guides
 - c. **Tube Stripper**
 - d. Qty [3] Sets of Tooling (31526, 32526 and 33526) for “Notches”

2. Station #2 – Double Pierce Station with:
 - a. Qty [1] 20-Ton Double Pierce Press with Interlock Clamps
 - b. Adjustable Tube Guides
 - c. Tube Locating Details
 - d. **Tube Stripper**
 - e. Qty [3] Sets of Tooling (31526, 32526 and 33526) for “Windows”

3. Tube Gravity Rail for Manual Tube support between Stations and to the CNC Pierce Machine.

4. Automatic Lubrication System

5. Hydraulic Power Unit

6. Allen Bradley PLC Control

7. “Vista Green” Machine Frame with Safety Yellow Safety Guarding

Sequence of Operation

1. The operator loads [1] cut-to-length and deburred tube per cycle into Station #1, over the Mandrel, visually orienting the Weld Seam and end aligning the tube.

2. The operator activates the cycle, the tube is clamped 360-degrees on the OD and Qty [2] “Notches” are pierced 180-degrees opposing from each other at 3:00 and 9:00. (The slugs remain in the Mandrel.)

Machine A: 2-Station Pierce Machine (Upper Post Tubes) continued

Sequence of Operation (continued)

- 3. The tube is pushed to break the pierce burr by the Stripper.**
4. The operator transfers the tube to Station #2, orienting the tube off the “Notches”
5. The operator activates the cycle, the tube is clamped 360-degrees on the OD and Qty [2] “Windows” are pierced 180-degrees opposing from each other at 3:00 and 9:00. (The slugs remain in the Mandrel).
- 6. The Tube Stripper pushes the tube to break the burr on the ID** and allow the operator to retract the tube. (This allows the slugs to fall out of the mandrel.)
7. The operator rotates the tube 90-degrees and reloads the tube.
8. The Tube Locating Detail assures the proper orientation.
9. The operator activates the cycle, the tube is clamped 360-degrees on the OD and Qty [2] “Windows” are pierced 180-degrees opposing from each other at 3:00 and 9:00 on the end of the tube.
- 10. The Tube Stripper pushes the tube to break the burr on the ID** and to allow the operator to unload the tube. (This allows the slugs to fall out of the mandrel.)

Change-Over

The Machine will require changeover from one diameter to another. The changeover includes:

1. Adjust Tube Guides on the Presses
2. Change Interlocking Tube Clamps in the Pierce Station
3. Change Mandrels

Estimated Total Changeover... 20 - 30 Minutes

Machine B: CNC Pierce Machine (Upper Post Tubes)

Qty [1] tube per cycle will be pierced over a Mandrel from [2] directions simultaneously with Indexing of the tube controlled by CNC Servo Control. The tube is Clamped 360-degrees around the OD during piercing. The Machine is painted "Vista Green".

Upper Post Tubes Pierced

Part Number 31526 (L1):	Ø 2.125" x 0.148" wall ERW tube, 65.5" long
Part Number 32526 (L2):	Ø 2.375" x 0.148" wall ERW tube, 77.5" long
Part Number 33526 (L3):	Ø 2.875" x 0.148" wall ERW tube, 96.5" long
OPTIONALLY L4:	Ø 3.25" x 0.148" wall ERW tube, 92.75" long

Main Components

1. "Vista Green" Machine Frame for up to 102" long tubes
2. CNC Tube Carriage with:
 - a. Rack & Pinion Electric Servo Drive System (± 0.001 " repeatability)
 - b. Tube Clamp with Part Locator and [3] Sets of Tooling
3. Indexing Tube End Aligner
4. Pierce Station with:
 - a. Qty [2] Opposing Hydraulic Pierce Presses (3:00 and 9:00 mount)
 - b. Qty [3] Set of Interlocking Tube OD Clamps
 - c. Qty [1] Set of Adjustable Tube Guides
 - d. Qty [1] Set of Punch Tooling
 - e. Automatic Punch Lubrication System
5. Mandrel System with:
 - a. Intermediate Mandrel Support
 - b. Qty [3] Mandrels
 - c. Slug Air Blast System
6. Hydraulic Power Unit

Machine B: CNC Pierce Machine (Upper Post Tubes) continued

Main Components (continued)

7. Allen Bradley CNC PLC Control
8. Safety Light Curtain and Safety Guarding

Sequence of Operation

1. The operator loads a tube previously pierced in Machine A, **through the Pierce Station and over the Mandrel**, orienting the tube off the “Notch” in the Tube Clamp on the Tube Carriage.
2. The tube is clamped and the Carriage retracts the tube completely through the Pierce Station.
3. **The Indexing Tube End Aligner lifts up.**
4. The Carriage indexes forward **with the Tube Clamp open** and end aligns the tube against the Indexing Tube End Aligner.
5. The tube is clamped and the Indexing Tube End Aligner drops away.
6. The tube is indexed to the first pierce position.
7. The tube is clamped 360-degrees around the OD and Qty [2] holes are pierced 180-degrees opposing simultaneously. The slugs are air blasted forward in the ID of the tube towards the previously pierced portion.
8. The tube is indexed under CNC Control, OD clamped and pierced again. This is repeated according to the Part Program until the pattern is completed.
9. The operator unloads the tube and dumps the remaining slugs from the ID of the tube.

Machine B: CNC Pierce Machine (Upper Post Tubes) continued

Change-Over

The Machine will require changeover from one diameter to another. The changeover includes:

1. Change Clamp Tools on Tube Carriage
2. Adjust Tube Guides on the Presses
3. Change Interlocking Tube Clamps in the Pierce Station
4. Change Mandrels

Estimated Total Changeover... 20 – 30 Minutes

Machine C: 2-Press Pierce Machine (Lower Post Tubes)

Qty [4] Holes are pierced from the outside inward by [2] Hydraulic Pierce Presses in [1] load. The tube is Clamped 360-degrees around the OD during piercing. The Presses are in a Fixed location. **No provisions to pierce your L4 Lower Post Tube are included.**

Lower Post Tubes Pierced

Part Number 35526 (L1): Ø 2.50" x 0.109" wall ERW tube, 53.75" long

Part Number 36526 (L2): Ø 2.75" x 0.109" wall ERW tube, 65.75" long

Part Number 37526 (L3): Ø 3.25" x 0.109" wall ERW tube, 84.75" long

Main Components

1. Qty [2] Fixed Double Pierce Presses, each with:
 - a. Interlocking Clamps
 - b. Qty [3] Sets of Tooling (35526, 36526 and 37526)
 - c. Adjustable Tube Guides
2. Qty [3] Mandrels (35526, 36526 and 37526)
3. Tube Stripper
4. Automatic Lubrication System

Machine C: 2-Press Pierce Machine (Lower Post Tubes) (continued)

Main Components (continued)

5. Hydraulic Power Unit
6. Allen Bradley PLC Control
7. “Vista Green” Machine Frame and Safety Yellow Safety Guarding

Sequence of Operation

1. The operator loads [1] cut-to-length and deburred tube per cycle into the [2] Presses, over the Mandrel, visually orienting the Weld Seam and end aligning the tube.
2. The operator activates the cycle, the tube is clamped 360-degrees on the OD and Qty [4] Ø 25/32” holes are pierced 180-degrees opposing from each other. Qty [2] at 3:00 and Qty [2] at 9:00. (The slugs remain in the Mandrel).
3. The Tube Stripper pushes the tube approximately ¾” to break the burr on the ID and allow the operator to unload the tube. (This allows the slugs to fall out of the mandrel.)

Change-Over

The Machine will require changeover from one diameter to another. The changeover includes:

1. Adjust Tube Guides on the Presses
2. Change Interlocking Tube Clamps in the Pierce Station
3. Change Mandrels

Estimated Total Changeover... 20 – 30 Minutes

Work Cell Concept

The [3] Machines are tended by [1] operator and allow completion of [1] Upper Post for every [1] Lower Post. The operator tends Machine A and Machine C while Machine B is in cycle.

Estimated Machine B Cycle Rate at 100%:

Part Number 32526 ([19] x 2 holes)... (Assuming 16 seconds for Load / Unload)	50 - 55 per hour
Part Number 33526 ([25] x 2 holes)... (Assuming 16 seconds for Load / Unload)	40 – 45 per hour

Pricing Summary

1. Machine A: 2-Station Pierce Machine Firm Price and
Machine B: CNC Pierce Machine Total Firm Price ... \$ 398,600
(Includes Tooling for L1-31526, L2-32526 and L-3 33526
and “Vista Green” Paint)
2. OPTIONAL: Increase Machine A’s & Machine B’s
Maximum Tube OD Capacity from Ø 2.875” to Ø 3.25”
to accommodate the L4 Upper Post Tube... \$ 12,000
3. OPTIONAL: Tooling for L4 Upper Post Tubes... \$ 24,000
(Price valid if purchased with the Machines. Price
includes L4 Upper Post Tooling for both Machine A and
Machine B.)
4. Machine C: 2-Press Pierce Machine Firm Price... \$ 107,400
(Price includes Tooling for Lower Post Tubes
L1-35526, L2-36526, L3-37526 and “Vista Green” Paint)
5. Credit for Prototyping... \$ (6,500)

Machine Terms and Conditions

Payment:	30% Deposit due with the Purchase Order 25% Payment Due 6 Weeks after Deposit 25% Payment Due 12 Weeks after Deposit 10% Payment Due Prior to Shipment 10% Payment Due Upon Construction Products (CPI) Acceptance at CPI's Plant or Net 45 Days, whichever is earliest
Delivery:	20 – 21 Weeks after Receipt of the Deposit
F.O.B.:	Valley View, Ohio
Estimated Freight Cost:	\$ 3,000
Warranty:	1-Year Parts and Labor

Machines Run-Off

The Machine will be demonstrated at Criterion for your approval prior to shipment. Construction Products will supply the cut-to-length and de-burred tubes for the Run-Off. Engineering, Maintenance and Operations personnel need to attend the Run-Off, which will include Training on the Machines. Anticipated duration of the Run-Off is 2 days. The Run-Off will consist of:

1. Piercing of [50] Pieces of each Upper Post Part Number (Operations Training)
2. Piercing of [50] Pieces of each Lower Post Part Number (Operations Training)
3. Change-Overs between each Part Number (Engineering / Maintenance / Operations Training)
4. Machine Maintenance Training
5. Machine B Programming Training

The result of the Machines Run-Off will be Construction Products signing off and accepting the Machines' performances.

On-Site Start-Up and Training

On-Site Start-Up Assistance and Training are included. Prior to the arrival of Criterion's Technician Construction Products will:

1. Receive the Machines
2. Move the Machines to their intended location and level the Machines
3. Connect the Hydraulic Power Units to the Machines (Hydraulic and Electrical connections)
4. Connect Main Power to the Electrical Cabinets
5. Fill the Hydraulic Tanks with Hydraulic Oil

Travel Expenses incurred by Criterion's Technician will be billed at cost and are by Construction Products. Anticipated On-Site time is about 2 –3 days. Expected Expenses include:

1. Airfare
 - a. About \$ 1,000 1-day advance purchase
 - b. About \$ 600 3-day advance purchase
 - c. About \$ 300 7-day advance purchase
2. Hotel – About \$ 120 per day
3. Meals – About \$ 35 per day
4. Rental Car – About \$ 50 per day

Documentation

Qty [2] Sets of Documentation are provided at Machine Shipment. Included in the documentation are [2] Hard Copies and [2] DVD's with electronic data. The data includes:

1. Operation and Maintenance Manual
2. Subassembly PDF File Drawings with complete Bills of Material
3. Detailed Tooling PDF Drawings

Please feel free to call with any questions or whenever we may be of service. We look forward to working with Construction Products on this project.

Best regards,

Greg Sheerer