

DATE: 4/3/98

MACHINE NUMBER: M-4041 CUSTOMER NAME: Customer Products Company

FINAL: 04/21/98:JP

SALES PERSON: Norman Schimmelpfennig

MECH. DESIGNER: Don Blakesley

ELEC. DESIGNER: Dave Bullock

PROJECT MANAGER: Jim Poppe

SPEC SHEET

PURCHASE ORDER NO: F8089240 MACHINE NUMBER: M-4041

PROPOSED SHIP DATE: 12/04/98 QUOTATION NO.: 98-000105

MACHINE NAME: Knock Down Case Packer

CUSTOMER: Customer Products
Company

MACHINE DESTINATION: Fremont, MI

1. SPEED REQUIRED FOR MACHINE: Variable up to 30 cases or 180 cartons per minute. (See Item #6 for maximum machine speed for each individual product size.)

2. SIZE RANGE FOR MAIN MACHINE: **(Approximate inside KD case dimension range)**

	Between Flights	Vertical Dimension	Across Machine
Minimum	14"	6-1/4"	8"
Maximum:	16"	14"	10"

3. SIZE RANGE FOR INFEED SECTION: (Outside Product Dimension)

	Direction Of Travel	Vertical Dimension	Across Infeed
Minimum	(6-3/8" **) or 2-3/8"	2-3/8" or (6-3/8" *)	9"
Maximum:	(6-3/8" **) or 2-3/8"	2-3/8" or (6-3/8" *)	9"
	** Before upended wheel	* After upended	

4. MACHINE ORIENTATION AND CONVEYOR LENGTHS: (See Floor Plan #FP- 980108 B revision "A" or greater)

4.1. Infeed height: 40" $\pm$ 2"

4.2. Discharge height: 34" $\pm$ 2"

4.3. Leg style:

4.3.1. Threaded RodYes ☐ No ☒

4.3.2. Square tube with threaded adjustment.....Yes ☒ No ☐

4.3.3. Stainless steel adjustment screws. Recommended for wet and washdown environments
.....Yes ☐ No ☒

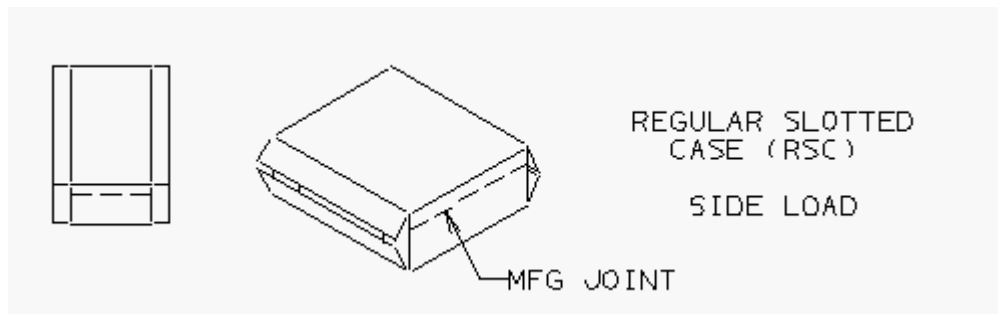
4.3.4. Other.....Yes ☐ No ☒

5. PRODUCT DESCRIPTION AND UNITS PER MINUTE OF EACH PRODUCT TO BE LOADED:

Product Cartons of Cereal	Direction Of Travel	Across Conveyor	Vertical	Units/ Minute
A. Before upended wheel	6-3/8"	9"	2-3/8"	180
B. After upending wheel and in main machine	2-3/8"	9"	6-3/8"	180
C.				
D.				
E.				
F.				

How is product received. Laying on its face or back. **NOTE:** Carton has film wrap on it.

6. SIZES AND SKETCH OF BLANK: **KD style case blank with RSC style flaps**



Approximate inside case dimension of the knock down style blank

Product Reference From Item 5	Pack Pattern A x B x C	Direction Of Travel (A)	Vertical (B)	Across Machine (C)	Tray Depth	Case Speed
Cartons of Cereal	6 x 1 x 1	15"	6-1/2"	9"		30
Cartons of Cereal	6 x 2 x 1	15"	13"	9"		15

6.1. Description:

6.2. Flap folding sequence: **Standard minors then majors**

6.3. Offset Score LinesYes ☐ No ☒

Although not required, offset score lines will result in a case that is more square on all sides and ends, tighter, easier to seal, and over all results in a better appearing case.

7. SEQUENCE OF OPERATION:

One case blank at a time will be removed by vacuum from the power fed magazine, pulled open by opposing vacuum cups. lowered to the conveyor lugs and indexed to the loading station. The product will be received on the infeed conveyor with the longest dimension across the conveyor lying on its face or back, upended on its side, automatically arranged in the proper load pattern and loaded into the case. After loading, the case will be conveyed through closing and sealing the flaps with hot melt glue. The complete case will be discharged from the machine through a mechanical rollover and then onto the customer's conveyor.

7.1. Sketch of Operation: **SEE FP-980108 B - Revision "A" or greater**

8. SHIPPING SIZE REQUIREMENTS: Douglas Machine standard of less than 95" wide X 100" high x lengths determined by machine design.

9. MAGAZINE:

9.1. Horizontal.....Yes ☒ No ☐

9.1.1. Style: Opposing vacuum cups low level.

9.1.2. Length: 6'

9.2. 3' 10 degreeYes ☐ No ☒

9.3. 5' 10 degreeYes ☐ No ☒

9.4. Auxiliary MagazinesYes ☐ No ☒

9.4.1. Style:

9.5. Other.....Yes ☐ No ☒

10. CODERS:Yes ☐ No ☒

10.1. Type and Brand of Coders:

10.2. Location, Size and Color of Code:

10.3. Coder Location (SEE FP-)

11. MACHINE FINISH & OPERATING CONDITIONS: 50° to 100° F Ambient Temperature, Non-Washdown

11.1. Purchased parts: Manufacturer's standard finish.

11.2. Machine Frame:

11.2.1. Powder Coated. Recommended for wet or washdown environments.....Yes X No _

11.2.1.1. Color: Steel Gray

Epoxy.....Yes X No _

Other.....Yes _ No X

11.2.1.2. Brand: Tri-Mite

11.2.1.3. Paint Number: 616 Gray Metallic

11.2.1.4. Supplier:

11.2.1.5. Powder or Paint to be supplied by: Customer _ Douglas X

11.3. Electrical Cabinets:

11.3.1. Powder CoatedYes X No _

11.3.1.1. Color: Steel Gray

Epoxy.....Yes X No _

Other.....Yes _ No X

11.3.1.2. Brand: Tri-Mite

11.3.1.3. Paint Number: 616 Gray Metallic

11.3.1.4. Supplier:

11.3.1.5. Powder or Paint to be supplied by: Customer _ Douglas X

11.3.2. Stainless steel enclosure. **No**

11.4. Machine Guards:

11.4.1. Powder Coated posts with lexan upper doors and panels. Recommended for all environments.

11.4.1.1.	1/4" lexan	Yes	X	No	_
11.4.1.2.	3/8" lexan	Yes	_	No	X
11.4.1.3.	1/2" lexan	Yes	_	No	X

11.4.2. Post Color: Steel Gray

11.4.2.1.	Powder Coated	Yes	X	No	_
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11.4.2.2. Lexan Color:

11.4.2.2.1.	Clear	Yes	X	No	_
11.4.2.2.2.	Tinted	Yes	_	No	X

11.4.2.3. Lower sheet metal doors and panels:

11.4.2.3.1.	CRS powder coated.....	Yes	X	No	_
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11.4.2.3.2.	Brushed stainless steel.....	Yes	_	No	X
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11.5. Fabricated Parts:

11.5.1. PACKAGE A

11.5.1.1.	Zinc Plating For A Non-Washdown Environment.....	Yes	X	No	_
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OEM PARTS: Manufacturers standard finish.

UNFINISHED OEM PARTS:

Zinc: Couplings, sprockets, etc.

Aarmor 900: Taper lock adapters.

ALUMINUM PARTS: Clear Anodize.

MACHINE FRAME: Powder Coat frame weldment and all components that are not used as adjustment slides. Parts used as adjustment slides will be zinc plated (Parts used as adjustment slides over 96" long will be Nickel Plated).

FABRICATED STOCK PARTS: Nickel Plated.

FABRICATED PARTS WHICH CONTACT THE PRODUCT OR CASE:

Aarmor 900 or Stainless Steel.

OTHER FABRICATED PARTS: Zinc Plated (high tolerance parts will be Electroless Nickel Plated).

CAMS: Zinc Plated (QPQ on continuous motion machines).

GROB HUBS: Armor 900.

SPLINE SHAFTS: Armor 900/XL.

ADJUSTING SCREWS: Armor 900/XL.

LINE SHAFTS: Electroless Nickel XL.

THOMSON SHAFTS: Manufacturers standard finish.

ALL SHAFTING OTHER THAN SPLINES & THOMSON SHAFTS:
Electroless Nickel XL.

11.6. Special Fabricated Parts:

11.6.1. Lexan or Stainless Steel sheet metal hood for protection against product spillage and clean-up overspray on Torque Limiting Clutches and Disc Brakes. Recommended for washdown or wet environmentsYes ☐ No ☒

11.6.2. Nickel plated drive and flight chains and stainless steel hand adjustment chains. Recommended for wet and washdown environmentsYes ☐ No ☒

11.6.3. Stainless steel fasteners. Recommended for washdown environments.....Yes ☐ No ☒
(Except for setscrews)

12. LANE DIVIDER REQUIRED......Yes ☐ No ☒

12.1. Lane Divider Brand and Model to be used:

13. GLUE SYSTEM REQUIRED.Yes ☒ No ☐

13.1. Brand and Model of Glue System: **(Nordson 3500V Notice item 13.5 “separate disconnect”)**

13.1.1. Pre-meltYes ☐ No ☒

13.1.2. Auto feed hopperYes ☐ No ☒

13.1.3. Nordson AquaGuard System. Recommended for washdown environments
.....Yes ☐ No ☒

13.2. Glue Pattern Requirements (How many stripes per flaps and location on flaps):
Two (2) stripes per Major Flaps.

13.2.1. Gun style: **(4) H202 TLP**

- 13.3. Customer's Glue Preference (Brand & Number): Douglas preferred glue is National #34-2100, Swift #80625 and Fuller #7268.
- 13.4. Nordson Stitcher.....Yes ☐ No ☒
- 13.5. Separate glue disconnect (Square D).....Yes ☐ No ☒
(Customer will mount their own 230V disconnect on the machine).
- 13.6. Seven-Day glue timerYes ☐ No ☒
- 13.6.1. Paragon with separate Square D glue disconnect.....Yes ☐ No ☒
- 13.6.2. Other.....Yes ☐ No ☒
- 13.7. Special Glue System Requirements.....Yes ☐ No ☒
14. LUBRICATION SYSTEM REQUIRED......Yes ☒ No ☐
- 14.1. Douglas Grease Banks.....Yes ☒ No ☐
- 14.1.1. Aluminum cluster blocks with stainless steel tubing and 1/8" nylon flexible tubing
.....Yes ☒ No ☐
- 14.1.2. Aluminum cluster blocks with copper clad carbon steel tubing and 1/8" nylon flexible tubing
.....Yes ☐ No ☒
- 14.1.3. Other.....Yes ☐ No ☒
- 14.2. Lincoln Central LubricationYes ☐ No ☒
- 14.2.1. One shot (Manual).....Yes ☐ No ☒
- 14.2.2. Auto pump (PLC Controlled).....Yes ☐ No ☒
- 14.2.3. Plated steel manifolds with stainless steel tubing and 1/8" nylon flexible tubing
.....Yes ☐ No ☒
- 14.2.4. Plated steel manifolds with copper clad carbon steel tubing and 1/8" nylon
flexible tubing.
.....Yes ☐ No ☒
- 14.2.5. Other.....Yes ☐ No ☒
- 14.3. Other Grease SystemYes ☐ No ☒

14.4. Lubrication points or types of bearings requiring lubrication:

Grease banks and grease lines for lubricating non-sealed bearings and bushings, sealed linear bearings, and sealed bearings which have shafts that rotate 360° or more during each machine cycle. Lubrication would be performed with a manually operated grease gun. The grease fittings would be mounted in clusters on the upper perimeter of the machine's frame for convenient servicing. Each fitting will have a color-coded disc to indicate frequency of lubrication required. Rod ends would have their standard grease fittings.

14.5. Type of Grease in System:

14.5.1. Non-EdibleYes ☒ No ☐
 14.5.2. EdibleYes ☐ No ☒
 14.5.3. Will grease be provide by the customerYes ☐ No ☒

14.6. Chain Oilers: Recommended for washdown environments on driven chains with exception of magazine driveYes ☐ No ☒

14.7. Type of oil in system.

14.7.1. Non-EdibleYes ☒ No ☐
 14.7.2. EdibleYes ☐ No ☒
 14.7.3. Will Oil Be Provided By The Customer.....Yes ☐ No ☒

NOTE: Edible oil not available in sealed gear heads and indexers.

15. BRAND OF MOTORS:

15.1. Douglas Choice (Reliance).....Yes ☒ No ☐

15.2. Type:

15.2.1. Standard.....Yes ☒ No ☐
 15.2.2. Easy Clean Plus Motors up to 3-hp and Easy Clean Motors 3-hp and larger. (The DC magazine drive motors will not be washdown; but will be shielded from overspray.) Recommended for wet and washdown environments.....Yes ☐ No ☒
 15.2.3. Other. (Customer Specification).....Yes ☐ No ☒

16. VACUUM SYSTEM REQUIRED.Yes ☒ No ☐

16.1. Gast rotary vane oil-less vacuum pumpYes ☐ No ☒

16.2. Venturi.....Yes ☒ No ☐

16.2.1. Description: PIAB

16.3. House VacuumYes ☐ No ☒

17. MANUAL ADVANCE HANDWHEEL.....Yes X No _
18. SPLIT CAMS.....Yes _ No X
19. HARDENED SPROCKETSYes _ No X
(Includes all roller chain sprockets with 30 teeth or less other than sprockets used for adjustments.)
20. CONTINUOUS WELD.....Yes X No _
21. ADJUSTMENT INDICATORS.....Yes X No _
- 21.1. Scales in inchesYes X No _
- 21.2. Eles digital position indicatorsYes _ No X
- 21.3. Siko indicators.....Yes _ No X
- 21.4. Other.....Yes _ No X
22. PLANT VOLTAGE (Note item 22.2 below)
- 22.1. 480V-3ph-60Hz.....Yes X No _
- 22.2. 240V-3ph-60Hz (**Customer will supply this drop separate for Glue System**) ...Yes _ No X
- 22.3. Other.....Yes _ No X
23. CONTROL VOLTAGE
- 23.1. 24V DC (Standard if PLC is used).....Yes X No _
- 23.2. 120V ACYes _ No X
- 23.3. Other.....Yes _ No X
24. NEMA RATING:
- 24.1. NEMA 12Yes X No _
- 24.2. NEMA 4. Recommended for wet environments.....Yes _ No X
- 24.3. NEMA 4X. Includes stainless steel cabinets. Recommended for washdown environments
.....Yes _ No X
- 24.4. Other.....Yes _ No X
25. CONDUIT:
- 25.1. Rigid Aluminum (Standard). Can be used for all environmental conditions offered
.....Yes X No _
- 25.2. Galvanized. Can be used for all environmental conditions offeredYes _ No X
- 25.3. Other.....Yes _ No X

26. PROGRAMMABLE LOGIC CONTROLLER:26.1. Allen Bradley SLC 5/02Yes ☒ No ☐26.2. OtherYes ☐ No ☒27. ELECTRICAL OPTIONS:

27.1. Alphanumeric Display / Operator Interface

27.1.1. Vorne (Standard on Continuous Motion)Yes ☐ No ☒27.1.2. Allen-Bradley Dataliner (one line readout)Yes ☒ No ☐27.1.3. OtherYes ☐ No ☒

27.2. Variable Frequency Drive

27.2.1. Allen-Bradley 1305 **(For the over/under belt prior to the upender wheel)**
.....Yes ☒ No ☐27.2.2. Allen-Bradley 1336 Plus (Standard Continuous)Yes ☐ No ☒27.2.3. OtherYes ☐ No ☒

27.3. Programmable Limit Switch

27.3.1. Electro Cam 5004 (Standard Continuous)Yes ☐ No ☒27.3.2. **Electro Cam encoder only for the main**Yes ☒ No ☐

27.4. Alternate Control Panel

27.4.1. Partial (Start/Stop, No Fault Indication)Yes ☐ No ☒27.4.2. Complete (Start/Stop, w/Fault Indication)Yes ☐ No ☒27.5. Red Strobe for Shutdown ConditionsYes ☐ No ☒27.6. Amber Strobe for Non-Shutdown ConditionsYes ☐ No ☒

27.7. Stackable Light

27.7.1. Red Light for Shutdown ConditionsYes ☐ No ☒27.7.2. Amber Light for Non-Shutdown ConditionsYes ☐ No ☒

27.7.3. Green Light for Machine Running	Yes	☐	No	☒
27.7.4. Other	Yes	☐	No	☒
27.8. Start-up Delay with Horn	Yes	☐	No	☒
27.9. Warning Horn for Shutdown Conditions	Yes	☐	No	☒
27.10. Magazine Low Detection and Indication.....	Yes	☐	No	☒
27.11. Magazine Empty Detection and Indication	Yes	☐	No	☒
27.12. Open Flap Detection and Indication.....	Yes	☒	No	☐
27.13. Downstream Surge Control	Yes	☒	No	☐
(Dwells machine if surge is detected)				
27.14. Separate Conduit Runs for Control and Power				
27.14.1.(24V DC) - (90V DC, 120-480V AC).....	Yes	☐	No	☒
27.14.2.(120V AC) - (90V DC, 240-480V AC).....	Yes	☐	No	☒
27.14.3.Other	Yes	☐	No	☒
27.15. Isolation Transformer for PLC				
27.15.1.Topaz	Yes	☐	No	☒
27.15.2.Sola	Yes	☐	No	☒
27.16. Additional Remote Stops.(Two standard, ___ Additional).....	Yes	☐	No	☒
27.17. Emergency Stop Pull Cords.....	Yes	☐	No	☒
27.18. Additional Disconnects: <u>Note item 27.18.2 below</u>				
27.18.1.Remote Safety Disconnect _ Additional	Yes	☐	No	☒
27.18.2.Glue System Disconnect		☐	No	☒
27.19. Flange Mounted Main Disconnect	Yes	☒	No	☐
27.20. Remote Mounted Electrical Enclosure.....	Yes	☐	No	☒
27.20.1.Wiring harness provided by Douglas	Yes	☐	No	☒
27.21. Enclosure Light for Remote Enclosure	Yes	☐	No	☒
27.22. Elevated Main Control Enclosure	Yes	☐	No	☒

27.23. Stainless Steel Electrical EnclosuresYes ☐ No ☒

27.24. UL approved panels.....Yes ☐ No ☒

28. WARRANTY:

28.1. Standard twelve (12) month warrantyYes ☒ No ☐

28.2. Other.....Yes ☐ No ☒

29. MISCELLANEOUS:

29.1. Spare parts kit **(See item 29.4 below)**Yes ☐ No ☒

29.2 This machine has to have a mechanical rollover at discharge so case discharges on the flaps. The rollover direction will be to the left hand **(Magazine side)** side of the machine Yes ☒ No ☐

29.3 Upon shipping, export files for conversion to Icom softwareYes ☒ No ☐

29.4 Douglas needs to submit a recommended spare parts list, at the completion of the final inventory, for Customer's considerationYes ☒ No ☐

29.5 Put set collars on the variable speed drive base, for quick locators when changing the speed of the main between the 12 pack and 6 pack operationYes ☒ No ☐

29.6 The Nordson 3500 Vista hot melt system will have a separate 230V disconnect supplied by Customer at the time of machine installation. We simply need to supply external power for checkout of the machine. The perimeter guarding is not be effected by this. Any guarding modifications, for this disconnect, will be the responsibility of Customer Foods.....Yes ☒ No ☐

29.7 We need to supply a junction box, with a dry contact, located at the beginning of the infeed conveyor. This contact will serve to give a running or not running signal for customer use upstreamYes ☒ No ☐

SPEC SHEET

PURCHASE ORDER NO:	F8089240	MACHINE NUMBER:	M-4041
PROPOSED SHIP DATE:	12/04/98	QUOTATION NO.:	98-000105
MACHINE NAME:	Knock-Down Case Packer		
CUSTOMER:	Customer Products Company		
MACHINE DESTINATION:	Fremont, MI		

Name and Address of Person to receive instruction manuals and how many:

___2___ Manuals to:

Customer Products Company
406 State Street
Fremont, MI 49413-0001
ATTN: Randy McDaniels

MACHINE SPEC SHEET FOR MACHINE FINISH

MACHINE NO.: M-4041

SHIPPING DATE: 12/4/98

MACHINE NAME: Knock-Down Case Packer

CUSTOMER: Customer Products Company

MACHINE DESTINATION: Fremont, MI

1. Machine finish:

1.1. Machine Frame:

1.1.1. Powder Coated?.....Yes X No _

1.1.1.1. Color: Steel Gray

1.1.1.2. Brand: Tri-Mite

1.1.1.3. Paint Number: 616 Gray Metallic

1.1.1.4. Supplier:

1.1.1.5. Paint to be supplied by: Customer _ Douglas Machine X

1.1.2. Machine Guards:

1.1.2.1. Posts:

1.1.2.1.1. Powder Coated.....Yes X No _

1.1.3. Lower Sheet metal doors and panels:

1.1.3.1. Brushed stainless steel?.....Yes _ No X

1.1.3.2. CRS Powder Coated?.....Yes X No _

1.2. Fabricated Parts:

PACKAGE A

Zinc Plating For A Non-Washdown Environment.....Yes X No _

OEM PARTS: Manufacturers standard finish.

UNFINISHED OEM PARTS:

Zinc: Couplings, sprockets, etc.

Armor 900: Taper lock adapters.

ALUMINUM PARTS: Clear Anodize.

MACHINE FRAME: Powder Coat frame weldment and all components that are not used as adjustment slides. Parts used as adjustment slides will be zinc plated (Parts used as adjustment slides over 96" long will be Nickel Plated).

FABRICATED STOCK PARTS: Nickel Plated.

FABRICATED PARTS WHICH CONTACT THE PRODUCT OR CASE: Armor 900 or Stainless Steel.

OTHER FABRICATED PARTS: Zinc Plated (high tolerance parts will be Electroless Nickel Plated).

CAMS: Zinc Plated (QPQ on continuous motion machines).

GROB HUBS: Armor 900.

SPLINE SHAFTS: Armor 900/XL.

ADJUSTING SCREWS: Armor 900/XL.

LINE SHAFTS: Electroless Nickel XL.

THOMSON SHAFTS: Manufacturers standard finish.

ALL SHAFTING OTHER THAN SPLINES & THOMSON SHAFTS: Electroless Nickel XL.

1.3. Special Fabricated Parts:

- 1.3.1. Lexan or Stainless Steel sheet metal hood for protection against product spillage and clean-up overspray on Torque Limiting Clutches and Disc Brakes. Recommended for washdown or wet environments Yes ☐ No ☒
- 1.3.2. Nickel plated drive and flight chains and stainless steel hand adjustment chains. Recommended for wet and washdown environments Yes ☐ No ☒
- 1.3.3. Stainless steel fasteners. Recommended for washdown environments..... Yes ☐ No ☒

2. Electrical cabinet color: Powder Coated Steel Gray

3. Date frame scheduled to be welded: 7/10/98

4. Date parts scheduled back from Plating & anodizing: 7/24/98

5. Floor Plan No. attached: FP-980108 B

To Plating: 04/21/98:JP:bl

JOB NO.: M-4041

ADDITION NO.: 1

Customer Products

KDCP

JP

May 1, 1998

The floor plan has been updated by relocating the push button control panel from the downstream side of the loader to upstream from the loader, as shown. This was per the customer's request. Replace the existing floor plan #FP-980108 B with the latest revision "D". Note: just a reminder that this floor plan is still in its preliminary form.

JOB NO.: M-4041

ADDITION NO.: 2

Customer Products

KDCP

JP May 20, 1998

The customer has decided to add an Isotrol Filter, for surge suppression protection for the PLC.

Under item 27.15, Isolation Transformer for PLC, add item 27.15.3 calling for an Isotrol Filter, to serve as a surge suppressor.

JOB NO.: M-4041

ADDITION NO.: 3

Customer Products

KDCP

JP May 21, 1998

The customer has decided to add the spare parts kit, estimated @ \$5850.00, included as option 10 of Douglas Machine quote #98-000105 dated April 3, 1998.

Under item 29, Miscellaneous, change item 29.1, Spare parts kit, from No to Yes and add an estimated cost of \$5850.00.

JOB NO.: M-4041

ADDITION NO.: 4

Customer Products

KDCP

JP

June 5, 1998

The floor plan has been updated by being drawn to scale and adding the machine specifications. Replace the existing floor plan #FP-980108 B with the latest revision "E".

JOB NO.: M-4041

ADDITION NO.: 5

Customer Products

KDCP

JP

October 16, 1998

The floor plan has been updated by relocating the main electrical cabinet, push button control cabinet and adding the elevation view. Replace the existing floor plan #FP-980108 B with the latest revision "F".