

CONSIGNEE'S RECEIVING COPY

McLean Trucking Company

PRO. NO. 39-191007

5-22-60 VW

P.O. Box 213 Winston-Salem, N.C. 4096

DAYTON INDUSTRIAL PROD STL NO

NORTH CAROLINA STATE COLLEGE ATTN; MR WE SPLINTER, DEPT OF AGRI. ENGR.,

RALEIGH, N.C.

DOWN TRANSFER 5-19-60 338261 IP

NO. PCS.	DESCRIPTION	WEIGHT	RATE	PRE PAID	COLLECT	DELIVERY DATE
1	BOX SHAFTING SHEAVES 47	50	M		1.66	
			TOTAL =			
			CHARGES			

IBM0-923915

RECEIVED IN GOOD CONDITION EXCEPT AS NOTED:

2023 W 1 66664

FIRM:

BY:

TRIP NO.

6 20

1 23 49 1 6664

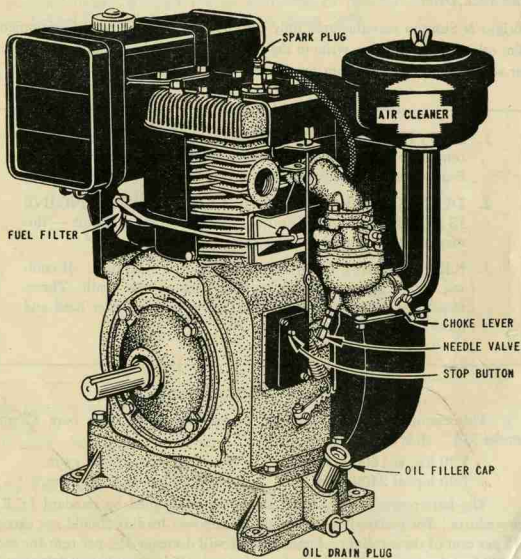
OPERATING INSTRUCTIONS

Adjustment and Repair
Instructions • Parts List



MODELS

"23"—"23B"—"23BC"—"23BP"—"23C"—"23FB"
"23FBC"—"23FBL"—"23FBP"—"23FBPC"—"23P"
"23PC"—"23R6"—"23R6D"



BRIGGS & STRATTON CORP., Milwaukee 1, Wis., U.S.A.

REGISTRATION CARD

No 210699 R

Please print carefully in ink

Engine Model Number.....
Engine Type Number.....
Engine Serial Number.....

} Copy from
Metal Plate
on Engine

Kind of Machine Engine is used on.....
Name of Machine..... Date Purchased.....
Dealer Purchased from.....
Town..... County..... State.....
Owner's Name.....
Address.....
Town..... County..... State.....

WARRANTY CERTIFICATE No 210699 R

...

7 OR NINETY DAYS from purchase date, Briggs & Stratton Corp. will replace for the original purchaser, FREE OF CHARGE, any part or parts found upon examination at any Factory Authorized Service Distributor or at our Factory at Milwaukee, Wisconsin, to be defective under normal use and service, on account of defects in material or workmanship. All transportation charges on parts submitted for replacement under this warranty must be borne by purchaser.

THIS WARRANTY shall not be effective if the engine has been the subject of misuse, negligence or accident, nor if the engine has been repaired or altered outside of our Milwaukee Factory, or any factory-approved Service Station, in any respect which, in our judgment, affects its condition or operation.

BRIGGS & STRATTON CORP.

This Warranty shall be effective only providing attached card is properly filled out and returned to Briggs & Stratton Corp. at time of purchase.

By

W. J. Doughlin President

SAVE THIS WARRANTY CARD

Fill in this information for your own engine record.

Name of Machine Engine is used on

.....

Purchased from

.....

Date Purchased

Engine Model No.....

Engine Type No.....

Engine Serial No.

For Prompt and Accurate Service

Model, Type, and Serial Numbers Must Always be Given When Ordering Parts or Writing for Information.

Form 27087 (13-250)

IMPORTANT

To make Warranty valid, fill in and return attached card.



Briggs & Stratton Corp.

Milwaukee 1, Wis., U. S. A.

Printed in U. S. A.

POST CARD

PLACE
STAMP
HERE

Briggs & Stratton Corp.

2711 North Thirteenth Street

Milwaukee 1, Wis., U. S. A.

Bolens Products Division

Food Machinery and Chemical Corporation

GARDEN TRACTORS



PORT WASHINGTON, WISCONSIN, U. S. A.

DATE ISSUED 5/28/56	REQUESTED BY Mc Carthy	OUR ORDER NO.	YOUR INV. DATE & NO.	BACK ORDER DATE
------------------------	---------------------------	---------------	----------------------	-----------------

SOLD TO Mr. Wm. E. Splinter
c/o Agriculture Engr. Dept.
North Carolina State College
Raleigh, North Carolina

SHIP TO SAME

SHIPPED COLLECT PREPAID X
SHIPPED VIA Olson - Central Motors
DATE SHIPPED 5/28/56 B/L NO. F22582

Nº 29231
DEBIT MEMO
DATE 5/31/56

QUANTITY ORDERED	BACK ORDERED	QUANTITY SHIPPED	PART NUMBER	DESCRIPTION	UNIT PRICE	EXTENSION
1		1		R662 Vertical Spray Boom		62.00
24		24		M659 (20GPA) Nozzles	1.30	31.20
1		1		R757 Drawbar Hitch		5.60
1 pr.		1 Pr.		R776 Wheel Conversion 15x5.00		20.00
<p>TO HOLD YOU ACCOUNTABLE FOR ABOVE EQUIPMENT.</p> <p>MEMO CHARGE FOR EXPERIMENTAL PURPOSES. ABOVE EQUIPMENT IN ADDITION TO THAT PREVIOUSLY CHARGED ON D.M.'s 28172 and 28524.</p>						

DEBIT MEMO



Dayton Industrial Products Co.

ORIGINAL INVOICE

MAIL REMITTANCE TO:
P.O. BOX 2729, CHICAGO 90, ILLINOIS

A Division of The Dayton Rubber Company

CUSTOMERS ORDER DATE AND NUMBER 4/11/60				DATE ENTERED 4-13-60	OUR ORDER NUMBER S 6120	SHIP NO. 801-5423	INVOICE NO.
STATE NO.	CUST. NO.	C. OF C.	TERRITORY NO.	TERMS	INVOICE DATE 5/26/60		
32	3	120	10-881	2 1/2 10th Prox			

SOLD TO

North Carolina State College
Dept. of Agricultural Engineering
Raleigh, North Carolina

WE CERTIFY THAT THESE GOODS WERE PRODUCED AND PRICED IN COMPLIANCE WITH ALL FEDERAL OR STATE REGULATIONS, LAWS AND ORDERS RELATING TO THE MANUFACTURE AND SALE, INCLUDING ALL REQUIREMENTS OF SECTIONS 6, 7 AND 12 OF THE FAIR LABOR STANDARDS ACT OF 1938 AS AMENDED, AND OF REGULATIONS AND ORDERS OF THE ADMINISTRATOR OF THE WAGE AND HOUR DIVISION ISSUED UNDER SECTION 14 THEREOF.

SAME AS ABOVE UNLESS OTHERWISE INDICATED

SHIP TO

North Carolina State College
Attn: Mr. W. E. Splinter
Dept. of Agricultural Engineering
Raleigh, N. C.

PARTIAL	COMPL.
	X

ROUTING	SHIPPING POINT (F.O.B.) St. Louis	DATE SHIPPED 5/19/60
FREIGHT Collect	MARK	SHIPPED VIA Dobrn Transfer
		PPD, COLL. X

QUANTITY ORDERED	PART NUMBER	DESCRIPTION	UNIT PRICE	UNIT TAX	QUANTITY BACK ORD.	QUANTITY SHIPPED	AMOUNT
4	10J100	10. 3/4" Poly V Sheave	N/C			4	No Charge

No Charge

THIS SHIPPING ORDER

must be legibly filled in, in ink, in indelible pencil, or in carbon and retained by the Agent.

Shipper's No. _____

Agent's No. _____

DOHRN TRANSFER COMPANY

RECEIVE, subject to the classifications and tariffs in effect on the date of the issue of this Shipping Order.

From Dayton Industrial Products Co., Date May 19, 1960, 19At Street St. Louis City, Mo. County, Mo. State

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as shown below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own railroad, water line, highway route or routes, or within the territory of its highway operations, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to North Carolina State College Att: Mr. W.E. SplinterDestination Dept. of Agricultural Engineering Street, Raleigh City,County, North Carolina State

Routing _____

Delivering Carrier _____ Vehicle or Car Initial _____ No. _____

Collect On Delivery and remit to: _____

Street _____ City _____ State _____

C. O. D. charge (Shipper to be paid by) (Consignee)

No. Packages	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	*Weight (Subject to Correction)	Class or Rate	Check Column	
1	box shafting sheaves	50 lbs.			Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. (Signature of Consignor.) If charges are to be prepaid write or stamp here "To be Prepaid." Collect Received \$ _____ to apply in prepayment of the charges on the property described hereon. Agent or Cashier Per _____ (The signature here acknowledges only the amount prepaid.) Charges Advanced: _____
4	10 1/2" 10.0" Poly VJ Sheaves				

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
 NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____ \$ _____

Shipper _____

 EP Agent must detach and retain this Shipping Order and must sign the Original Bill of Lading.

MAY 20 1960

© 2 Per _____

Permanent Address of Shipper: _____ Street, _____

City, _____ State _____

Dayton Industrial Products Co.



A Division of The Dayton Rubber Company

R. O. BOX 3725, CHICAGO 90, ILLINOIS
MAIL ROOM ATTENTION TO

DATE ENTERED 4/22/60	CUSTOMER ORDER NO. AND DATE #11160	MEMO	PAGE 32	OF 32	INVOICE NO. 132 004752
STATE NO. CUST. NO. 32 3	D. O. C. 120	DEPT. TERM. 10-001	DEPT. CODE 32	TAX	EXTRA COPY INVOICE DATE 4/22/60

NORTH CAROLINA STATE COLLEGE
DEPT. OF AGRICULTURAL ENGINEERING
RALEIGH, NORTH CAROLINA

WE CERTIFY THAT THESE GOODS WERE PRODUCED AND PRICED IN COMPLIANCE WITH ALL FEDERAL OR STATE REQUIREMENTS AND ALL APPLICABLE LAWS AND ORDINANCES. ALL INVOICES ARE SUBJECT TO THE CHANGES AND REQUIREMENTS OF SECTIONS 7 AND 12 OF THE TAX REVENUE ACT OF 1954 AS AMENDED. OUR LABOR STANDARDS SET BY THE NATIONAL LABOR STANDARDS BOARD ARE IN FULL FORCE AND EFFECT. THE DATE OF THE LAST HOUR INVOICE ISSUED IN EFFECT ON THE DATE OF THIS INVOICE.

hereby acknowledge receipt of your order for the items described herein:
 SHIP TO: W.E. SPLITTER
 ATTN: SALES OFFICE
 MELROSE PARK, ILLINOIS, U. S. A.

In the event of a price increase, any unshipped portion of orders may be cancelled, however on orders being produced to your specifications, (1) when notified of a price increase prior to our commencement of manufacture, if you do not thereupon elect to cancel the right to cancel is forfeited, and (2) if when notified you elect to cancel, any portion of your order completed or in process will be completed and delivered at the price specified herein. You will accept delivery and reimbursement for our unamortized cost of all materials, special tooling and equipment procured for the performance of the order.

subject to all future Government regulations affecting production or delivery.

You will indemnify Dayton Industrial Products and hold it harmless for actual or alleged patent infringements arising from the manufacture of products to your design or specifications.

QTY	PART	DESCRIPTION	INTER	AMOUNT	UNIT
2	980110	POLY V BELTS			PC

All orders other than items listed in our standard catalog or price list are subject to the condition that customers accept over-runs or under-runs not exceeding 10% of quantity ordered.

The provisions of Dayton Industrial Products' quotation or acknowledgment shall prevail if purchase orders contain conditions that are different, with the understanding that any clerical errors are subject to correction.

We shall not be liable for delay or failure in performance for any cause of whatever nature beyond our reasonable control, and in the event we are unable to fulfill our total commitments you agree to accept deliveries as and when allocated by us.

All first quality merchandise manufactured by us is warranted to be free from defects in material and workmanship. Our liability under this warranty is limited to the purchase price or, at our option, the repair or replacement of merchandise proved defective upon its return to us, transportation charges prepaid, with our prior written authorization. No claim will be allowed under this warranty unless we are notified within thirty (30) days after your receipt of the merchandise. Dayton Industrial Products shall not be subject to liability resulting from any use or further processing of said merchandise. No representative has authority to make any representation or agreement not set forth herein.

RECEIVED BY	DATE	TOTAL AMOUNT
		NO CHARGE

* "X" INDICATES NO STATE OR CITY TAX EXEMPTION CERTIFICATE FILED
 ** EACH UNLESS OTHERWISE INDICATED

COMMENTS ON THE OPERATION OF THE FORD 541 OFFSET TRACTOR WHEN USED
IN THE TRANSPLANTING AND CULTIVATION OF TOBACCO

by

W. E. Splinter, Research Associate Professor
North Carolina State College

1. The tractor has more than adequate power for these operations and performs satisfactorily as a one-row tractor. Controls are generally conveniently located with the exception of the rear wheel brake locks.
2. The engine governor does not maintain a steady speed when throttled below 900 rpm for the transplanting operation. It allows the tractor to slow down in loose soil or upward slopes and speed up on firm soil or downward slopes. It is also difficult to make small throttle adjustments at these low speeds. It is essential that the transplanting rate be kept constant as this allows individuals setting plants to adjust to a rhythm.
3. The tractor was operated with three types of transplanters. In all cases operation was satisfactory. When operated with transplanters with a full water barrel at the rear the front of the tractor may need additional weight.
4. In the cultivation operation the mounting and operation of the shovels were satisfactory although clearances were a little close in some cases. The use of the hydraulic independent front lift would be preferable to the mechanically linked unit (which we used) as the rear shovels tend to hold the front shovels out of the ground if the tractor is entering the row from a ditch.
5. The declutching arrangement for the fertilizer hopper was not satisfactory. The linkage pulled the eye out where the chain is attached to the cultivator lift arm. A heavy spring was substituted. The pulling of the declutching chain through the metal tube introduced considerable friction in the operation of the clutch. The tolerance between the chain eye connected to the clutch itself and the rotating member of the clutch was insufficient, allowing the clutch to wear the eye considerably.
6. The 200# capacity of the fertilizer hopper was appreciated as a good feature.
7. The rubber tubes tended to clog unless stretched out.
8. Visibility for cultivation was minimal.

SECOND REPORT ON OPERATION OF
FORD HIGH CLEARANCE TRACTOR
W. E. Splinter

A summary of jobs for which the tractor was operated is enclosed along with the number of hours used and fuel used. The tractor was received too late to be used in breaking ground.

The general performance of the tractor was quite satisfactory. The clearance for cultivation of tobacco was minimal but not unsatisfactory. Visibility was also minimal but adequate.

Operation of the cultivator with the mechanical front lift was not satisfactory when ditches were present at the ends of the row (quite common for drainage). The mounting of the hydraulic lift resulted in a satisfactory unit as the rear shovels no longer affected the operation of the front gangs.

At the time the hydraulic cylinder was mounted modifications were made in accordance with directions from Ford representatives.

These included:

- 1) The lever actuating the front cylinder was cut and welded so as to be clear of the operator's leg.
- 2) The front bracket was heated and bent to allow clearance for operation of the cylinder.
- 3) A corner of the front casting was burned off to prevent interference with the steering.

During the cultivation operation it was found that tripping of the cultivator shovel broke the bolt mounting the trip spring. It appeared that, when tripped, the linkage tended to bend this bolt. This should be corrected.

The clearance between the valve stem and the heavy casting on the right rear tire was insufficient and the stem was worn through during the season. A new stem was vulcanized to the tire. Attention should be paid to eliminating both the clearance and the need for the single piece valve stem which requires special equipment to put water in the tire.

The personnel at the test farm were quite happy with the operating ease and general performance of the tractor.

FORD TRACTOR

Date	Hours	Gas	Job Description
5-2-59	3	5	Set Tobacco
5-4-59	10	4	Set Tobacco
5-5-59	10	10	Set Tobacco
5-8-59	5	0	Set Tobacco
5-12-59	8	0	Cultivated tobacco
5-14-59	2	0	Remade tobacco ground
5-16-59	4	0	Cultivated tobacco
5-18-59	10	7	Cultivated tobacco
5-19-59	10	11	Cultivated & topdressed cotton
5-20-59	10	7	Cultivated corn & topdress cotton
5-21-59	5	6	Cultivated cotton
5-25-59	10	7	Cultivated corn & tobacco
5-26-59	10	0	Cultivated corn & tobacco
Oil Change	Oil Change		
5-27-59	10	10	Cultivated tobacco & corn
5-28-59	10	7	Cultivated corn
5-29-59	10	7	Cultivated milo
6-8-59	12	8	Cultivated tobacco
6-9-59	10	8	Cultivated tobacco & alfalfa
6-10-59	8	8	Cultivated alfalfa
6-29-59	10	8	Haul irrigation pipe
7-1-59	5	5	Haul irrigation pipe
7-3-59	5	7	Culti-pack beans
7-6-59	5	10	Dragged roads
7-13-59	10	9	Dragged roads
7-15-59	10	8	Dragged roads
7-16-59	5	5	Disked land
7-22-59	5	4	Fix roads
7-23-59	5	7	Fix roads
7-20-59	5	8	Disked
7-21-59	5	8	Disked
7-29-59	7	10	Disked

NORTH CAROLINA STATE COLLEGE
SCHOOL OF AGRICULTURE

CENTRAL CROPS
RESEARCH STATION

CLAYTON, N. C.
BOX 303

August 31, 1959

Dr. William E. Splinter
102 Mangum
N. C. State College
Raleigh, North Carolina

Dear Dr. Splinter:

The information you requested on the Ford Tractor is
listed on the enclosed sheet.

Very truly yours,

CENTRAL CROPS RESEARCH STATION



Wm. C. Allsbrook
Superintendent

WCA/11

Enclosure

FOOD MACHINERY
AND CHEMICAL
CORPORATION

FOOD MACHINERY
AND CHEMICAL
CORPORATION

SPEED SPRAYER Plant

JOHN BEAN DIVISION

1312 W. WASHINGTON STREET, ORLANDO, FLORIDA

July 2nd, 1956.

Dr. William Splinter,

North Carolina State College of
Agriculture and Engineering
University of North Carolina,
Raleigh, North Carolina.

Dear Bill,

Your letter of June 28th addressed to Mr. Coleman reached my desk this morning, and we all appreciate the suggestions and information that it carried. Information gathered from field tests such as you are doing makes it possible to improve our products.

Under separate cover we are sending thirteen (13) each of the following tips - TXL #6, TXL #12, TXL #18. If you will refer to page six of the enclosed catalogue you can check the gallons applied at the various M.P.H.

Bill, if you have any other problems or suggestions we certainly would appreciate hearing from you.

Thanks again for your cooperation.

Very truly yours,

SPEED SPRAYER PLANT

George Meadowcroft
George Meadowcroft

/1a
Enc.

catalog no. 30

See Page #6

for farm, ranch, orchard
and garden spraying

Spraying Systems Co.
SPRAY NOZZLES
and accessories

TeeJet

SPRAY NOZZLES

BoomJet

SPRAY NOZZLES

GunJet

SPRAY GUNS

TRIGGER
TeeJet

SHUT-OFF VALVES

you can be sure of top performance
from equipment and chemicals with . . .

SPRAYING SYSTEMS CO.

ENGINEERS AND MANUFACTURERS

3201 RANDOLPH STREET • BELLWOOD, ILLINOIS

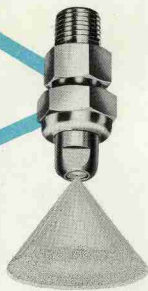
TELEPHONE: LINDEN 4-0380 • CABLE ADDRESS: SPRAYSYS CO

the world's leading
designers and producers
of farm spray nozzles

TeeJet[®] SPRAY NOZZLES

WITH ConeJet[®] TIPS

for row crop spraying
of insecticides



Patent No.
2,666,669



ConeJet TIP
cutaway view



ConeJet TIP
front view

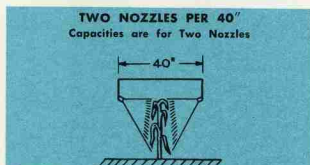
Produces hollow cone spray pattern. Body, cap and strainer are the same as supplied with Flat Spray TeeJet Spray Nozzles, described on preceding pages. Made in 1/4" (female) and 1/2" (male) 1/4" pipe connection . . . and in 1/4" (female) and 1/2" (male) 1/4" pipe connection. Made of all brass. Nozzle weight, all capacities, 2 1/2 ounces.

Designed to give maximum uniform, complete coverage of insecticides in spraying row crops. Minute spray particles are densely distributed throughout uniform hollow cone spray pattern, for thorough coverage of plant surfaces. Special internal design of nozzle tip prevents clogging, even in small capacities. Capacity tables give Gallons Per Acre coverage for three standard types of boom mounting for 40" crop row. Illustrated are both direct-to-boom and drop pipe types of mounting. For drop pipe mounting either Swivel Nozzles or Swivel Connectors should be used (see page 13). By adjusting boom height or varying length of drop pipes, all types and heights of plants may be effectively sprayed.

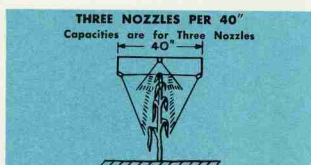


NOZZLE NO.	LIQUID PRESSURE in p.s.i.	CAPACITY in G.P.H.	TOTAL CAPACITY IN GALLONS PER ACRE		
			3 M.P.H.	4 M.P.H.	5 M.P.H.
1/4" Y1	40	1.0	.8	.6	.5
60	1.2	1.0	.7	.6	
75	1.4	1.1	.8	.7	
90	1.5	1.2	.9	.8	
120	1.7	1.4	1.1	.9	
150	1.9	1.6	1.2	1.0	
1/4" Y1.5	40	1.5	1.2	1.0	.7
60	1.8	1.5	1.2	.9	
75	2.1	1.7	1.3	1.0	
90	2.2	1.9	1.4	1.1	
120	2.4	2.2	1.6	1.3	
150	2.9	2.4	1.8	1.5	
1/4" X2	40	2.0	1.6	1.2	1.0
60	2.4	2.0	1.5	1.2	
75	2.7	2.2	1.7	1.3	
90	3.0	2.5	1.9	1.5	
120	3.5	2.9	2.2	1.7	
150	3.9	3.2	2.4	1.9	
1/4" X3	40	3.0	2.5	1.9	1.5
60	3.6	3.1	2.3	1.8	
75	4.1	3.3	2.5	2.0	
90	4.5	3.7	2.8	2.2	
120	5.2	4.3	3.2	2.6	
150	5.8	4.8	3.6	2.9	
1/4" X6	40	6.0	5.0	3.8	3.0
60	7.2	6.0	4.5	3.6	
75	8.2	6.8	5.0	4.1	
90	9.0	7.5	5.6	4.5	
120	10.4	8.3	6.2	5.0	
150	11.6	9.7	7.2	5.8	
1/4" X12	40	12.0	10.0	7.5	6.0
60	14.7	12.1	9.1	7.3	
75	16.4	13.6	10.0	8.2	
90	18.0	14.8	11.1	8.9	
120	20.8	17.3	13.0	10.4	
150	23.3	19.4	14.5	11.6	
1/4" X18	40	18.0	15.0	11.2	9.0
60	22.0	18.1	13.6	10.9	
75	24.6	20	15.0	12.2	
90	27.0	22	16.7	13.4	
120	31.2	26	19.5	15.4	
150	35.0	29	22	17.4	
1/4" X26	40	26.0	21	16.1	12.9
60	31.6	26	19.6	15.7	
75	35.6	29	22	17.6	
90	39.0	32	24	19.3	
120	45.0	37	28	22	
150	50.0	41	31	25	

▶ INDICATES STANDARD RATING



NOZZLE NO.	LIQUID PRESSURE in p.s.i.	CAPACITY in G.P.H.	TOTAL CAPACITY IN GALLONS PER ACRE		
			3 M.P.H.	4 M.P.H.	5 M.P.H.
1/4" Y1	40	2.0	1.6	1.2	1.0
60	2.4	2.0	1.5	1.2	
75	2.8	2.2	1.7	1.3	
90	3.0	2.5	1.9	1.5	
120	3.4	2.8	2.2	1.8	
150	3.8	3.2	2.4	2.0	
1/4" Y1.5	40	3.0	2.4	2.0	1.4
60	3.6	3.1	2.3	1.8	
75	4.2	3.3	2.5	2.0	
90	4.4	3.7	2.8	2.2	
120	5.2	4.3	3.2	2.6	
150	5.8	4.8	3.6	3.0	
1/4" X3	40	6.0	5.0	3.8	3.0
60	7.2	6.0	4.5	3.6	
75	8.2	6.8	5.0	4.1	
90	9.0	7.5	5.6	4.5	
120	10.4	8.6	6.4	5.2	
150	11.6	9.6	7.2	5.8	
1/4" X6	40	12.0	10.0	7.6	6.0
60	14.4	12.1	9.1	7.3	
75	16.4	13.6	10.0	8.2	
90	18.0	14.8	11.1	8.9	
120	20.8	17.3	13.0	10.4	
150	23.2	19.4	14.4	11.6	
1/4" X10	40	20.0	16.6	12.4	10.0
60	24.6	20	15.3	12.2	
75	27.4	23	17.0	13.6	
90	30.0	25	18.6	14.9	
120	34.6	29	21	17.1	
150	38.2	32	24	19.0	
1/4" X12	40	24.0	20	15.0	12.0
60	29.4	24	18.2	14.6	
75	32.8	27	20	16.2	
90	36.0	30	22	16.9	
120	41.6	35	26	21	
150	46.6	39	29	23	
1/4" X14	40	28.0	23	17.4	14.4
60	34.2	28	21	17.0	
75	38.3	32	24	19.0	
90	42.0	35	26	21	
120	48.0	40	30	24	
150	53.4	44	33	26	
1/4" X18	40	36.0	30	22	18
60	44.0	36	27	22	
75	49.2	41	30	24	
90	54.0	44	33	27	
120	62.4	52	39	31	
150	70.0	58	44	35	
1/4" X26	40	52.0	43	32	26
60	63.2	52	39	31	
75	71.1	59	44	35	
90	79.0	65	49	39	
120	90.0	74	56	45	
150	100	83	62	50	



NOZZLE NO.	LIQUID PRESSURE in p.s.i.	CAPACITY in G.P.H.	TOTAL CAPACITY IN GALLONS PER ACRE		
			3 M.P.H.	4 M.P.H.	5 M.P.H.
1/4" Y1	40	3.0	2.4	1.8	1.5
60	3.6	3.1	2.5	1.8	
75	4.0	4.2	3.3	2.0	
90	4.5	4.7	3.7	2.8	
120	5.1	5.1	4.2	3.2	
150	5.7	5.7	4.8	3.6	
1/4" X2	40	6.0	5.0	3.8	3.0
60	7.2	6.0	4.5	3.6	
75	8.2	6.8	5.0	4.1	
90	9.0	7.5	5.6	4.5	
120	10.4	8.3	6.4	5.0	
150	11.6	9.6	7.2	5.8	
1/4" X4	40	12.0	10.0	7.5	6.0
60	14.7	12.1	9.1	7.3	
75	16.4	13.6	10.0	8.2	
90	18.0	14.8	11.1	8.9	
120	20.8	17.3	13.0	10.4	
150	23.3	19.4	14.5	11.6	
1/4" X6	40	18.0	15.0	11.4	9.0
60	21.6	18.1	13.6	10.9	
75	24.6	20	15.0	12.2	
90	27.0	22	16.7	13.4	
120	31.2	26	19.5	15.4	
150	35.0	29	22	17.4	
1/4" X8	40	24.0	20	15.0	12.0
60	29.4	24	18.2	14.6	
75	32.8	27	20	16.2	
90	36.0	30	22	16.9	
120	41.6	34	26	21	
150	46.6	39	29	23	
1/4" X10	40	30.0	25	18.7	15.0
60	36.4	30	22	18.1	
75	41.1	33	25	20	
90	45.0	36	28	22	
120	51.9	43	32	26	
150	57.9	48	36	29	
1/4" X12	40	36.0	30	23	18
60	44.1	36	27	22	
75	49.2	41	30	24	
90	54.0	44	33	27	
120	62.4	52	39	31	
150	69.9	58	44	35	
1/4" X14	40	42.0	35	26	21
60	51.3	42	32	25	
75	57.5	47	36	28	
90	63.0	52	39	31	
120	72.6	60	45	36	
150	81.1	67	50	40	
1/4" X18	40	54.0	45	34	27
60	66.0	54	41	32	
75	74.0	61	46	37	
90	81.0	67	50	40	
120	93.5	77	58	46	
150	105	87	65	52	
1/4" X26	40	78.0	64	48	39
60	94.8	78	59	47	
75	107	88	66	53	
90	117	97	73	58	
120	135	111	84	67	
150	150	124	93	74	

FOOD MACHINERY
AND CHEMICAL
CORPORATION

FOOD MACHINERY
AND CHEMICAL
CORPORATION

SPEED SPRAYER Plant

JOHN BEAN DIVISION

1312 W. WASHINGTON STREET, ORLANDO, FLORIDA

July 25th, 1956.

Dr. William Splinter,
North Carolina State College,
Raleigh, N.C.

Dear Bill,

This is to advise that we are shipping two sets of steel cable belts, for both the Ridemaster and the Cotton Sprayer power units. We would like you to put these on the machines if you will and give us a reading as to whether or not this is correcting your belt stretching problem.

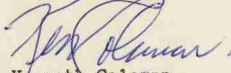
Stan Ferguson stopped by the office this morning for a few minutes, advising that you people were getting along very well with both the Bolens Ridemaster and the Cotton Sprayer. He also told me that one of your farm hands had corrected the belt of slippage and we are changing our specifications to include a can of molasses with each sprayer.

I had been in hopes of seeing you prior to this, - I think perhaps I may get up in that direction probably the week of August 13th. If I find that I am going to be able to make it I will contact you to let you know what day I will get in.

I appreciate very much the work that you are doing with our equipment, and wish to thank you a lot.

Yours very truly,

SPEED SPRAYER PLANT


Kenneth Coleman

/la

The Amazing BOLENS M-E ROTARY TILLER

COMPLETES SEED BED PREPARATION IN ONE SINGLE OPERATION

**BUILDS YOUR SOIL
NATURE'S WAY FOR
HEALTHIER,
MORE PRODUCTIVE PLANTS**

The Mighty Little MUSTANG

—ideal outdoor power unit for the home gardener or commercial grower. Tills, cultivates, weeds and mulches—makes garden care a breeze. Runs quickly down the rows and around corners filling a 16 inch swath with selective depths adjustable to 8 inches.

Universal, non-winding, self-sharpening tines slice and thoroughly mix organic material with the soil to form a crumb-like aggregate most favorable to healthy plant growth.

The Mustang model, shown here, takes six easily-hitched attachments for all those tough, outdoor maintenance jobs. Powered by a 2½ hp. Clinton 4-cycle air-cooled engine. Throttle-controlled wheel and rotor speeds. Adjustable handlebars. Tines are guaranteed against breakage. See complete specifications in table on inside page.

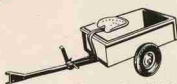
**TODAY'S MOST VERSATILE UNIT
FOR THE HOME GARDENER and
COMMERCIAL GROWER**

**POWER WHEEL CONVERSION UNIT ADAPTS TILLER TO
MULTI-PURPOSE USE . . . ATTACHMENTS FOR EASY YEAR
'ROUND GARDEN MAINTENANCE.**

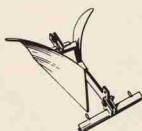
Lawn Roller M789 with seat. Can be filled with water for additional weight; requires Power Wheel Conv. attachment RA809.



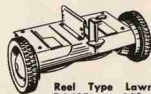
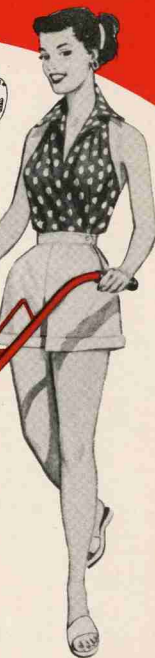
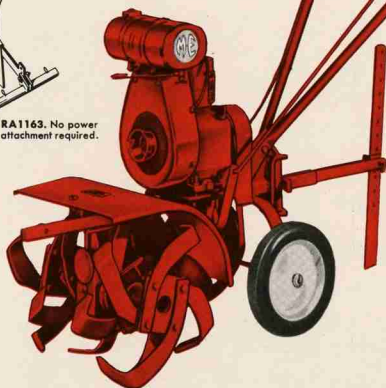
Riding Sulky M455A; Tractor type seat; foot brake included. Requires Power Wheel Conv. attachment RA809.



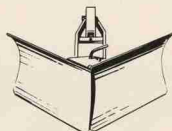
Dump Cart M456 with seat; moves 1000 lbs.; dumps easily. Requires Power Wheel Conv. attachment RA809.



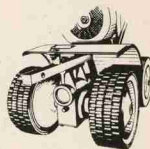
Furrower RA1163. No power conversion attachment required.



Real Type Lawn Mower RA413 cuts 18" swath. Requires Power Wheel Conv. attachment RA809.



Snow Plow Blade RA307. Adjustable 26" straight blade or 22½" V-blade. Requires Power Wheel Conv. attachment RA809.



Power Wheel Conversion Attachment RA809. Fits on rotor shaft; converts tiller to power unit for operating attachments.

THERE'S A BOLENS M-E ROTARY TILLER FOR EVERY TYPE OF GROWER

Gardening Jobs are Easy . . . Maintenance Jobs are a Cinch with **BOLENS** **ROTARY TILLERS**

Series BA models Bolens M-E Rotary Tillers, famous for dependability, are available in sizes from 3 to 6 horsepower. Used by thousands of satisfied home and institutional gardeners as well as fruit growers, truck and poultry farmers, nurserymen and other commercial growers.

The BA series features the only available combination of **FOUR FORWARD SPEEDS** and **TWO ROTOR SPEEDS** for desired controlled soil aggregation.

As in all Bolens M-E tillers, the BA series has specially designed self-sharpening tines for handling large amounts of organics such as tall weeds, manure or standing corn without winding—for all-purpose operations includ-

HOW BOLENS M-E ROTARY TILLERS UNLOCK THE STOREHOUSE OF FERTILITY FOR BETTER CROPS AT LOWER COST

M-E ROTARY TILLERS through their universal, all-purpose, non-winding, self-sharpening tines not only slice organic matter into small pieces, but also place them in close contact with the silt and clay found in the soil.

A **CRUMB-LIKE AGGREGATION** is formed through which air and water can freely pass. Rapid development of micro-organic life also occurs.

The tiny crumbs of soil formed are joined together with organic material to make a **DESIRABLE FRAMEWORK OR SOIL STRUCTURE**. This blending of the organics with the soil builds structure while increasing plant growth.

The completely distributed organic materials not only act as **TINY FEEDING STATIONS** from which the roots of plants can obtain their nutrients, but also set off a whole series of changes which are helpful to the soil and to the growing plants.

FULL USE IS MADE of organic materials rather than merely disposing of them, regardless of their form: weeds, grasses, manures, compost or green cover crops.

The improvement in soil structure encourages the **QUICK GERMINATION** of seeds and **DEEP ROOTING** of plants.

SOIL LOSS IS REDUCED because the crumb-like structure is more resistant to breakdown by rain. This lessens losses not only by water erosion but also by leaching.

This desirable soil build-up can only be brought about through the use of a rotary tiller. **BOLENS M-E DOES IT BETTER THAN ANY OTHER** because of its controlled rotor speeds and scientific tine and hood design.

Bolens M-E's special line design and controlled rotor speed reduces soil aggregation separation to an absolute minimum.

Bolens M-E's outstanding engineering research has resulted in a rotary tiller with universal tines which can be used for carrying on all types of soil management programs: seed and root bed preparation, tilling, weeding, mulching, cultivating without the need for any change of tines.

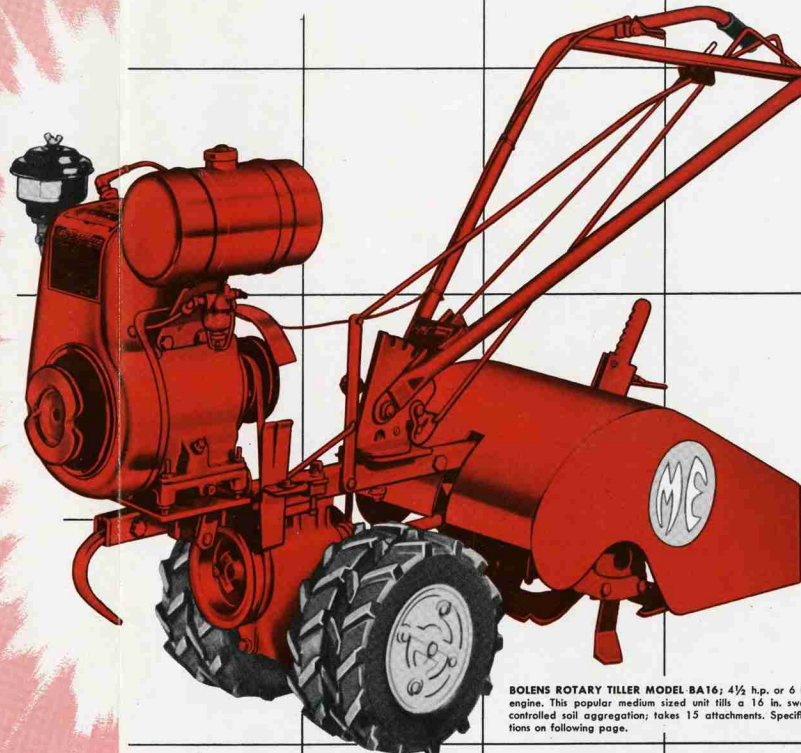
This means a smaller investment of money . . . a saving of time because no change-over to special mulching attachments is necessary . . . and best of all, a tine which will really handle large amounts of organics, such as standing corn and tall weeds.

Alex N. Klose
Bolens M-E Horticulturist

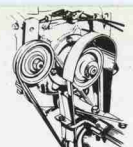
ing seed and root-bed preparation, tilling, weeding and cultivating **WITHOUT CHANGING TINES**.

Bolens M-E Rotary Tillers easily handle your toughest gardening job, and with several attachments, can do all your difficult, time-taking maintenance chores. Complete specifications are shown on the inside page.

You'll find it worth while to look over the Bolens M-E Rotary Tiller line at your dealers. Select the model that suits your own requirements and ask for a free demonstration.



BOLENS ROTARY TILLER MODEL BA16; 4½ h.p. or 6 h.p. engine. This popular medium sized unit tills a 16 in. swath, controlled soil aggregation; takes 15 attachments. Specifications on following page.



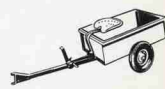
Reverse Kit RB785 attaches to BA16 and BA24 models for reverse travel.



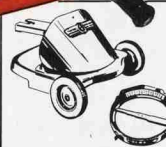
Universal Power Take-Off RB802. Pulley drive; required to operate front power driven attachments, F310, F311, F401, F402, F405, F800.



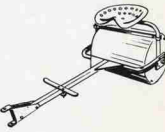
Riding Sulky M455A. Tractor type seat; foot brake included. Requires rear hitch RB130.



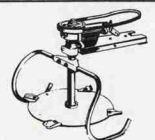
Dump Cart M456 with seat. Moves 1000 lbs.; dumps easily. Requires rear hitch RB130.



20" Rotary Lawn Mower F414. Cuts lawn and high weeds. Requires PTO attachment RB802. Grind-a-leaf (413) shown pulverizes leaves.



Lawn Roller M789 with seat. Can be filled with water for additional weight. Requires rear hitch RB130.



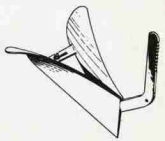
Drive Unit F800 for 20" weed cutter (A408) shown, and saw blade (A650). Adjustable for horizontal and vertical cutting.



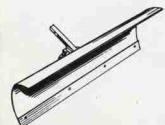
Front Bumper RB787.



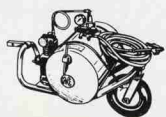
Rotary Snow-Caster F505; clears 2½" path in 6" wet snow at full speed; throws snow side or front. Requires PTO attachment RB802.



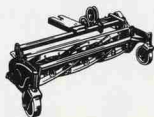
Furrower RB1162.



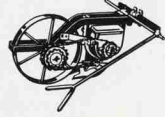
Snow Plow or Grader Blade RB532. 36" blade. Has year 'round use.



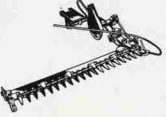
Compressor-Sprayer RB663. Includes compressor unit, 25 foot hose, spray boom and air-check (does not include paint spray gun).



Real Type Lawn Mower F401 is 24", Model F402, 30" (illustrated). Cuts to ¾ acre per hour. Requires PTO attachment RB802.



One-Row Seeder A556B, rotary type for general use; 6 assorted discs. Requires rear hitch RB130.



30" Sickle Bar F310 cuts close to trees, etc. 42" Sickle Bar F311 (not shown) also available. Requires PTO attachment RB802.



Plug-In Rear Hitch RB130 for use with rear attachments M455A, M456, M789, A556B.

BOLENS M-E—MOST DIVERSIFIED LINE OF ROTARY TILLERS AVAILABLE . . . See the complete line on next page.



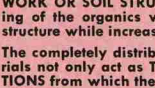
Bolens M-E Rotary Tiller shown turning under heavy vegetation. Every model does an excellent job of soil-preparation and soil-building.



Light in weight, plenty of power . . . the Bolens M-E Tiller is easy to handle on the straightaway and around corners, close to fences and shrubs.



Ideal for the home gardener or commercial grower, adjustable handle bars help make cultivating between rows an easy, quick and effortless task.



Rapid growth of micro-organisms is encouraged.



Crumb-like structure freely admits air and moisture.



Rapid growth of micro-organisms is encouraged.



Bolens M-E exclusive tines are guaranteed against breakage.



BOLENS M-E
IS BETTER
EASIER
QUICKER
TILLING WITH A

BOLENS M-E ROTARY TILLER DOES THE WORK OF MANY MACHINES... EVERY SEASON OF THE YEAR

Tills your soil in one operation . . . and with easily-hitched attachments, the **MUSTANG** model can furrow, roll your lawn, cut the grass, haul almost anything around, and do your snow plowing . . . **THE BA SERIES** also has attachments for these operations, plus attachments for one-row seeding, wood and weed cutting and compressing air for spraying and other uses.

A **BOLENS M-E ROTARY TILLER** is the most useful outdoor tool you can buy; saves time, saves effort, saves money . . . and remember — it does the finest job of rotary tilling of any equipment available. See for yourself. . .



ASK YOUR DEALER FOR A FREE DEMONSTRATION



OTHER FAMOUS BOLENS OUTDOOR POWER EQUIPMENT



Bolens Power Mowers
 6 Rotary and 3 Reel type; one for every size lawn.



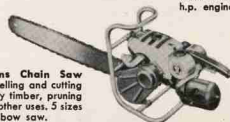
Bolens Handi-No Garden Tractors
 For yard or garden. 1.6 h.p. and 2.5 h.p. engines.



Bolens Power-No Garden Tractors
 For home and commercial use; take 111 attachments. 4 models up to 3.6 h.p.



Bolens Ridemaster Tractor
 Front wheel drive, 6 h.p. engine.



Bolens Chain Saw
 For felling and cutting heavy timber, pruning and other uses. 5 sizes and bow saw.

BOLENS PRODUCTS DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Port Washington

Wisconsin

ORIGINAL INVOICE

CUSTOMER ORDER NO.	DATE ENTERED	BACK ORDER DATE	S	8212	TERRITORY
7/16/56	7/19/56				

Bolens Products Division

Food Machinery and
Chemical Corporation

PORT WASHINGTON, WISCONSIN, U. S. A.

Outdoor Power Equipment



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DR WM E. SPLINTER-RESEARCH
N.C. STATE COLLEGE OF AGR & ENG
U. OF NO. CAROLINA
RALEIGH, NORTH CAROLINA

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Same as "SOLD TO" Unless Otherwise Indicated Above

SHIPPING SCHEDULE		SHIPPED VIA			
APPR WK 7/23/56		PP			
TERMS: 2% discount may be deducted from all invoices dated 26th to the 25th if paid by the 10th of the month following. Due on 11th.		F.O.B.	INVOICE DATE	BILL/LADING NO.	DATE SHIPPED
		PT. WASH.	7-19-56		7-19-56
DESCRIPTION		QUANTITY ORDERED & SHIPPED	BACK ORDERED	UNIT PRICE	EXTENSION
SPINDLES	1701434	2		N/C	
DRIVE BELTS	1702443	1		N/C	
ENGINE SHEAVE ASSY	1700949	1		N/C	
FRICITION DISC	1701467	2		N/C	
WING NUTS(REPLACES 229783)	1701069	2		N/C	
CARRIAGE BOLTS 3/8"116 X 1	1102817	2		N/C	
V BELT	1108479	1		N/C	
FOR EXPERIMENTAL EQUIPMENT PER REQUEST BY MR STAN FERGUSON.					

IMPORTANT: We hereby certify that these goods were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof. This merchandise is shipped in containers or crates acceptable to the Transportation Companies. Our responsibility ceases after delivery to carrier. If shipment arrives in damaged condition, secure proper notation on freight bill and file claim against carrier. Do not return goods without our consent. When permission is given to return goods, it will be with the understanding that they will be returned in good order, charges prepaid, and that an adequate service charge will be deducted from the credit. We will correct errors promptly.

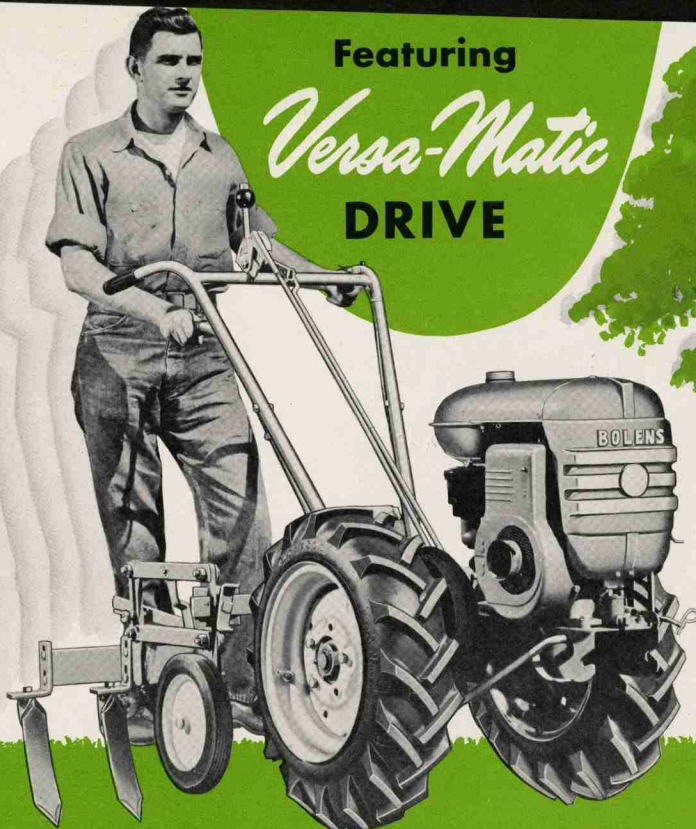
Form 550.332-2

For Gardeners
Who Know it's

BOLENS POWER-HO SERIES

Featuring

Versa-Matic
DRIVE



MOST USEFUL GARDEN TRACTOR EVER BUILT

BOLENS PRODUCTS DIVISION



Food Machinery and Chemical Corporation . . . Port Washington, Wis.

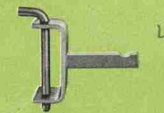
For TOWN and COUNTRY, GARDEN and FIELD!



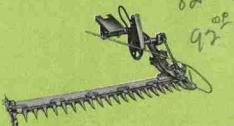
REEL TYPE LAWN MOWER Model F401 is a 24" Model F402, 30" is illustrated. Cuts to 3/4" deep per hour. Five blades, adjustable, alloy steel cutter bar, floating mower unit which follows ground contours. Cutter wheels with rubber tires that will not damage turf.



ONE-ROW SEEDER Model A551B, for general use.



HITCH Model F130 for both riding sulky and dump cart on Power-Ho Tractors.



SICKLE BAR Model F310 cuts 30" swath through grass hay, weeds and thistle patches. Can trim close to trees, under bushes and fences. Optional for 1.5 FD Tractor is Model F311 42" sickle bar, both models usable in either fixed or floating position for use on rough ground.



SNOW PLOW OR GRADER BLADE Model F531 has year 'round use. Use it on drives, walks and parking areas in winter, or as a grader, for removing litter in hen houses, or for cleaning barns. Has 42" blade. Tire chains and wheel weights recommended.

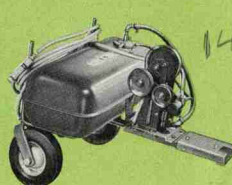
TIRE CHAINS Model DH214 have second link spacing for 5-12 (wide base) tires. Tractor Model 1.5 FD requires DH215 chains to fit 6-12 tires.



CIRCULAR SAW AND WEED CUTTER Model F800 Drive Unit is quickly and easily adjustable without tools, for horizontal or vertical cutting. Shown is Model A408 20" Weed Cutter, interchangeable with A650 20" Circular Saw Blade.



RIDING SULKY Model M455A gives an easy, comfortable ride while using front Snap Hitch attachments. Tractor type seat, foot brake and 14 x 2.75 semi-pneumatic tires.



SPRAYER Model F652 has 15 gallon capacity with 200 P.S.I. pressure. General purpose nozzle adjustable from fine mist to heavy spray, depending on adjustment of chute and type of snow, without creating banks. Deeper snow may be cleared at lower speeds. The easy way to "hovel" snow. Useful on walks, drives, parking areas, barn lots.



SNO-CASTER Model F505 clears 25 1/2" path in 6" deep wet snow at full speed, throwing snow from 3' to 18' to either side or front, depending on adjustment of chute and type of snow, without creating banks. Deeper snow may be cleared at lower speeds. The easy way to "hovel" snow. Useful on walks, drives, parking areas, barn lots.



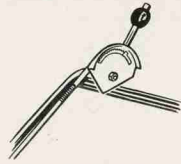
AIR COMPRESSOR UNIT Model F358 gives non-pulsating pressure to 100 lbs. for continuous service. Use it for tire inflation, power lubrication painting buildings or implements, spraying barns or hen houses with whitewash or insecticides and disinfectants, weed killing and other jobs.



CULTIVATOR Model F140 has six adjustable tool holders for garden type tools. Cross bar is 22". Includes guide handle. NOTE: Cultivator teeth not included.



ROTARY LAWN MOWER Model F414 cuts 20" swath on lawns and through weeds. Adjustable cutting height. GRIND-A-LEAF Model A11, shown with special blade, pulverizes leaves into nourishing mulch, eliminates need for raking.

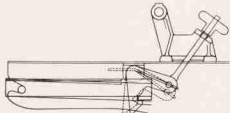


SMOOTH VERSA-MATIC DRIVE—You get infinitely variable forward speeds or powerful reverse from neutral by moving one easy-to-reach lever on the handlebar. No gears to shift, no stopping of engine for belt changing. Any rate from 1 to 3 m.p.h. at full engine-governed speed, with no need for throttling engine to sub power level to suit speed requirements.

POSITIVE SAFETY REVERSE—The Bolens reverse control is so designed that the tractor stops immediately if the operator loses footing and releases handle.



RECOIL STARTER—No starter rope problems. Cable always in position ready for use without re-winding. Starter cover quickly removable if manual operation desired.



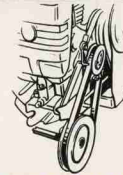
EASY SNAP HITCH—Front mounted attachments are hooked or unhooked by a simple snap of the patented hitch. No tools are required, there are no parts to come loose, yet all attachments are held firmly in place.

BRAKE KIT Model F783 for use with garden tractors when moving terraces or doing hillside work. (not illustrated).

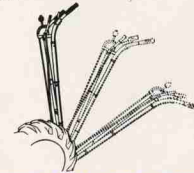
Bolens Versa-Matic Drive brings you amazing new advantages . . . single lever control . . . variable forward movement . . . wider speed range . . . instant control under power . . . and safety reverse. For the first time in the history of light two-wheeled tractors, speed can be adjusted in motion and while under load. A full range of attachments give Bolens Tractors year 'round value in garden and on farm. Be sure to ask your dealer for a demonstration.

BOLENS POWER-HO

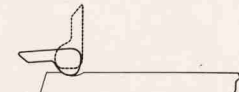
Featuring



DIRECT DRIVE POWER TAKE OFF WITH SAF-T-TORQ—Smoother flow of power to front-mounted attachments operating at high speed, such as weed cutters and rotary saws. The attachment idler clutch control linkage is adjustable, and is a part of the tractor itself. It works with all front mounted attachments and requires no separate rods. Belts and rotating attachments last longer because the Saf-T-Torq cushions against sudden stops and starts made with such tools as the Sno-Caster, rotary mower and sickle bar.



CONVENIENT STOR-A-WAY HANDLE BARS—Height completely adjustable to permit comfortable and efficient work by operator. Lock firmly into place in any position. Can be raised to vertical for storage, permitting placement in small floor area in shed or garage.



FAST TRIGGER HITCH—A flip of the trigger locks or unlocks rear-mounted attachments. No tools are needed. There are no loose parts to be lost, no pins to insert, no bolts to tighten.



DUMP CART Model M456 with seat moves half a ton or 7 cubic feet, dumps easily. As useful in barns and poultry houses as in garden or field.

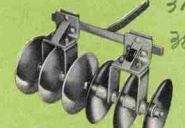


MOLDBOARD PLOW Model F300 6 1/2' plows up to 5" deep in average soil. Assembly includes 10" couler. Optional for 1.5 FD Tractor is Model F216 8" plow.

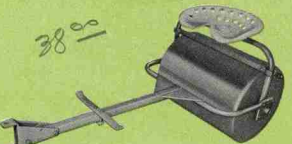
MODEL BH165 wheel weights for improved traction desirable under most conditions. Weigh 50 lbs. each.



SPIKE HARROW Model F254 has convenient lever which adjusts teeth to any of 12 positions according to soil conditions.



DISC HARROW Model F252 has six easily adjustable discs for breaking soil between rows, pulverizing, weed control and hilling. Optional for 1.5 FD Tractor is Model F255 with eight discs.



LAWN ROLLER Model M789 can be filled with 25 gal. of water, giving it a gross weight of 266 lbs. plus weight of operator.

BOLENS ATTACHMENTS MAKE YOUR TRACTOR PAY ITS WAY 12 MONTHS OF THE YEAR

BOLENS *NEW 1954* POWER-HO

GARDEN TRACTORS

WITH AMAZING

Versa-Matic

DRIVE

THERE'S A BOLENS TRACTOR AND TILLER FOR EVERY GARDENING JOB



BOLENS GARDENER

For farmers, commercial growers and institutions. 4.3 h.p. engine.



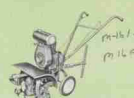
BOLENS HANDI-HO

Two models for yard or garden. With 1.6 h.p. and 2 1/2 h.p. engines.



BOLENS RIDEMASTER

Front wheel drive, turn-on-a-dime steering. 6 h.p. engine.



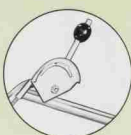
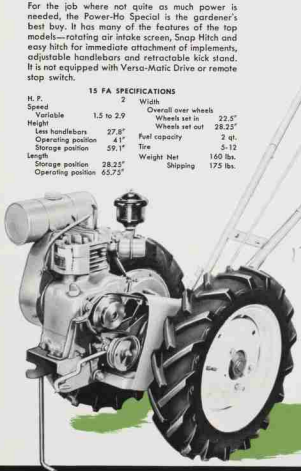
BOLENS M-E MUSTANG TILLER

Non-winding tines. Best in low-price field. 2 1/2 h.p. engine. Also four larger models.

POWER-HO SPECIAL Model 15 FA with 2 H.P. Engine

For the job where not quite as much power is needed, the Power-Ho Special is the gardener's best buy. It has many of the features of the top models—rotating air intake screen, Snap Hitch and easy hitch for immediate attachment of implements, adjustable handlebars and retractable kick stand. It is not equipped with Versa-Matic Drive or remote stop switch.

15 FA SPECIFICATIONS	
H. P.	2
Speed	Variable 1.5 to 2.9
Height	22 1/2"
Clear handlebars	27 1/2"
Operating position	41"
Storage position	29 1/2"
Length	5-12
Storage position	28 1/2"
Operating position	63 1/2"
Weight Net	160 lbs.
Shipping	172 lbs.



With this one-lever Versa-Matic control, a Bolens owner can choose any desired forward speed or reverse, without shifting, clutching or ball changing, all at full engine governed speed with no throttling down and loss of power. If operator releases handle when in reverse, tractor automatically goes into neutral—a great safety feature. . . . All with single lever control!

POWER-HO VERSA-MATIC Model 15 FC with 2.5 H.P. Engine

Powered to match its rugged good looks, the Bolens Versa-Matic is foremost in value for year 'round use, featuring safety and ease of operation. You can do every farm and garden job easier, quicker and better with a Bolens Versa-Matic. From spring plowing to winter snow removal. Adjustable handlebars, maneuverability, and safety design mean that youngsters and grandfathers alike may enjoy taking their turn at the controls, with no physical strain.

15 FC SPECIFICATIONS	
H.P.	2.5
Speed Forward	Continuously variable at full power 1 to 3 m.p.h.
Reverse	1.5 m.p.h.
Height less handlebars	29 1/2"
Operating position	46 1/2"
Storage position	29 1/2"
Length	Storage position 29 1/2"
Operating position	65 1/2"
Width Overall over wheels	23 1/2"
Wheels set in	29 1/2"
Wheels set out	29 1/2"
Overall including offset handlebars	29 1/2"
Wheels set in	29 1/2"
Wheels set out	32 1/2"
Fuel capacity	1 gal.
Tire	5-12
Weight Net	240 lbs.
Shipping	254 lbs.



POWER-HO SUPER VERSA-MATIC Model 15 FD with 3.6 H.P. Engine

The senior partner of the 15 F Series has every feature of the Versa-Matic Model 15 FC, and in addition is equipped with a big, powerful 3.6 h.p. engine and handy automatic retracting starter cable. There's no job suitable for a two-wheeled tractor that this machine can't perform with ease, whether it's plowing a fresh field or bucking a snowdrift!

15 FD SPECIFICATIONS	
H.P.	3.6
Speed Forward	Continuously variable at full power 1.1 to 3.3 m.p.h.
Reverse	1.8 m.p.h.
Height less handlebars	31 1/2"
Operating position	47"
Storage position	30"
Length	Storage position 29 1/2"
Operating position	62 1/2"
Width Overall over wheels	24 1/2"
Wheels set in	30"
Overall including offset handlebars	30 1/2"
Wheels set in	33 1/2"
Wheels set out	33 1/2"
Fuel capacity	1 gal.
Tire	6-12
Weight Net	275 lbs.
Shipping	288 lbs.



- LOW COST
- SAFE
- POWERFUL
- SMOOTH OPERATION
- EASY TO MANEUVER
- YEAR 'ROUND SERVICE
- DURABLE-LIGHTWEIGHT
- STREAMLINE DESIGN

FIRST!

With the Most Tractor for Your Money!

POWER-HO DELUXE MODEL 15 FB with 2.5 H.P. Engine

Here is a tractor with many refinements usually found in only the most expensive models, yet it is truly in the economy budget class. The Power-Ho Deluxe is equipped with a 2.5 h.p. engine and is capable of forward speeds of from 1.5 to 2.9 m.p.h., controlled with a manually adjustable variable speed engine shaver. It is essentially the same as the Model 15 FC, except that it does not have the Versa-Matic Drive and Soft-Torque features.

15 FB SPECIFICATIONS	
H.P.	2.5
Speed	Variable 1.5 to 2.9
Height	22 1/2"
Clear handlebars	27 1/2"
Operating position	41"
Storage position	29 1/2"
Length	5-12
Storage position	28 1/2"
Operating position	63 1/2"
Weight Net	230 lbs.
Shipping	235 lbs.
Width Overall over wheels	23 1/2"
Wheels set in	29 1/2"
Wheels set out	29 1/2"
Overall including offset handlebars	29 1/2"
Wheels set in	29 1/2"
Wheels set out	32 1/2"
Fuel capacity	1 gal.
Tire	5-12
Weight Net	230 lbs.
Shipping	235 lbs.



BOLENS POWER-HO TRACTORS WORK THE YEAR 'ROUND
IN GARDENS AND ON LAWNS, WALKS AND DRIVES

With **BOLENS POWER-HO Garden Tractors** featuring *Versa-Matic* DRIVE

See your DEALER



DO THESE FARM and GARDEN JOBS EASIER in LESS TIME!

BOLENS POWER-HO GARDEN TRACTORS

with *Versa-Matic* DRIVE

Tractor Models **9**

Attachments and Tools **111**

Rotary Tillers **5**

Rotary Mowers **6**

Reel Type Mowers **3**

Sizes of Chain Saws **6**

Bring you these advantages

Versa-Matic Drive: Instantly variable forward speeds, controllable under full power, while in motion and under load.

Trigger-Hitch: A flip of the trigger locks or unlocks rear-mounted attachments.

Wide 3 to 1 Speed Range: Any speed from 1 to 3 m.p.h. at full engine governed speed.

Safety Reverse: Tractor stops automatically if operator loses footing or control.

No more belt-switching, stopping engine to adjust speeds, gear shift selecting or clashing of gears.

No more struggling with pins or tightening of bolts.

No more throttling engine to sub-power level to suit ground speed requirements.

No more danger of injury from tractor or attachments when running in reverse.

BOLENS POWER-HO has the Features you've always wanted in a Garden Tractor . . .

BOLENS PRODUCTS DIVISION

Food Machinery and Chemical Corporation . . . Port Washington, Wis.

INVOICE

No. 0891

DATE 3-22-56

POWELL

Manufacturing Company, Inc. 342

P. O. DRAWER 5 • PHONE 7-11287-1129 • WILSON, NORTH CAROLINA



N. C. State College
Raleigh, N. C.

MELVIN TRACTOR MOUNTED TRANSPLANTERS, POWELL SURE-SET AUTOMATIC TRANSPLANTERS, POWELL CUT-ALL STALK CUTTERS, POWELL TOBACCO HARVESTER, DAYTON AND TIGER TRANSPLANTER REPAIR PARTS

SHIPPED VIA His truck

DATE SHIPPED 3-22-56

CUSTOMER ORDER NO.

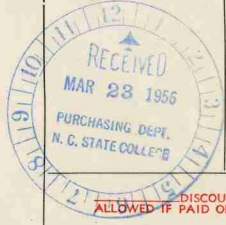
TERMS Loan Basis

SALESMAN

PACKING LIST NO.

2581

QUANTITY	DESCRIPTION	UNIT LIST	AMOUNT
1	Powell 44-A Transplanter, #2 p.w.	No charge	
1	Powell 33-B Transplanter, #1 p.p.	No charge	
1	3-2-C-101 Water Valve	No charge	
1	C-275 Valve Water	No charge	
1	Display Stand	No charge	
	(This unit valued @ \$20.00. Not to be paid for unless not returned)		



PLEASE SEND SECOND COPY OF INVOICE WHEN CHECK IS REMITTED. THANKS!

DISCOUNT WILL BE ALLOWED IF PAID ON OR BEFORE

THANKS!

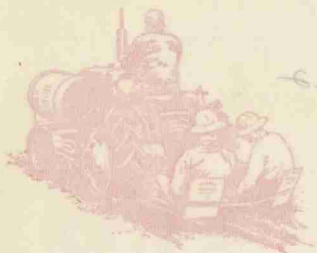
CASH DISCOUNTS ALLOWED ONLY WHEN, AND AS, SPECIFIED SHORTAGES MUST BE REPORTED WITHIN 10 DAYS OF RECEIPT OF SHIPMENT

No 0891

INVOICE

DATE 3-22-26

POWELL



Manufacturing Company, Inc. 372
P. O. BOX 2 - PHONE 7-117-1175 - WILSON, NORTH CAROLINA

M. O. State College
Raleigh, N. C.

MELVIN TRACTOR MOUNTED TRANSMISSIONS POWELL TRACT-521
AUTOMATIC TRANSMISSIONS POWELL CUT-ALL FLARE CUTTERS
POWELL TORQUE BRAKES BAYTON AND TIRE TRANSMISSIONS
REPAIR PARTS

ORDER NO.

DATE SHIPPED 3-22-26

SHIPPED VIA THIS TRACK

TERMS Loan Basis SALESMAN UNIT NO. RACKING 5281

QUANTITY	DESCRIPTION	UNIT LIST	AMOUNT
1	Powell M-A Transplanter, 1/2 P.M.	No charge	
1	Powell 33-B Transplanter, 1/2 P.M.	No charge	
1	3-2-0-101 Water Valve	No charge	
1	0-275 Valve Water (Cable Valve)	No charge	
1	Display Stand	No charge	
1	(This unit valued @ \$20.00. Not to be paid for unless not returned)		



Mrs. Ora Crawford

PLEASE SEND SECOND COPY OF INVOICE
WHEN ORDER IS SHIPPED

CASH DISCOUNTS ALLOWED ONLY WHEN AND AS SPECIFIED
SHORTAGES MUST BE REPORTED WITHIN 10 DAYS OF RECEIPT OF SHIPMENT

RECEIVED BY MAIL ON BEHALF OF

THANKS!

7

CREDIT MEMO

No. 0344

POWELL

DATE 3-22-56

Manufacturing Company, Inc.

P. O. DRAWER 5 • PHONE 7-1128, 7-1129 • WILSON, NORTH CAROLINA

N. C. State College
Raleigh, N. C.MELVIN TRACTOR MOUNTED TRANSPLANTERS, POWELL CUT-ALL STALK
CUTTERS, AND REPAIR PARTS FOR TIGER AND DAYTON TRANSPLANTERS

DATE RETURNED

Their truck

SALESMAN

PACKING
LIST NO.

2592

QUANTITY

DESCRIPTION

AMOUNT

1 1955 Sure-Set Transplanter, Ford, p.p.
1 19ff Sure-Set Pull-type transplanter, p.w.

NO CHARGE MADE

Credit

CUSTOMER'S COPY



CAROLINA FORD TRACTOR COMPANY

4100 MOUNT HOLLY ROAD • P. O. BOX 1496 • TEL. EXPRESS 9-9771

CHARLOTTE 1, N. C.



March 30, 1956

Mr. William E. Splinter
Research Associate Professor
North Carolina State College
Raleigh, North Carolina

Dear Bill:

I am sorry to have waited so long to answer your letter of February 27, but we are making arrangements for you to use a tractor again this year if you still need it. Our plans now are to let you have the same tractor you used last year and which is now being used by the Forestry Department. We plan to have a service man go to Raleigh and tune up the tractor and see that it is in good condition. At that time he will transfer it to you. I trust this meets with your approval and that we have not caused you any unnecessary delay in your work by not having answered your letter sooner.

I would be happy to receive the bulletin covering the use of cultivating tools that you referred to in your letter when it is available.

Very truly yours,

T. C. Feezor

Purchase order

#

10655

Dixie Gen

Transplanter

May 29, 1954.

~~#~~ 160.25

GENERAL FOUNDRY AND MACHINE COMPANY

MANUFACTURERS

TEXTILE MACHINERY • INDUSTRIAL & AGRICULTURAL EQUIPMENT • SAW MILLS

DISTRIBUTORS

INDUSTRIAL & MILL SUPPLIES

SANFORD, NORTH CAROLINA

PHONE SPring 3-3811

April 12, 1956

North Carolina State College of
Agriculture and Engineering
University of North Carolina
Raleigh, North Carolina

ATTENTION: Mr. William E. Splinter
Research Associate Professor

Dear Mr. Splinter:

Thank you for your letter of April 6 regarding the transplanter
we had loaned to Mr. R. W. Wilson.

We are giving a copy of this letter to Mr. Averitt, and he will
arrange for this unit to be picked up from you.

Very truly yours,

GENERAL FOUNDRY & MACHINE COMPANY

J. N. Pomeranz
J. N. Pomeranz
Vice President

JNP:lc

Plowed
apr. 16

FOOD MACHINERY
AND CHEMICAL
CORPORATION

FOOD MACHINERY
AND CHEMICAL
CORPORATION

SPEED SPRAYER *Plant*

JOHN BEAN DIVISION

1312 W. WASHINGTON STREET, ORLANDO, FLORIDA

May 24th, 1956.

Dr. William Splinter,
North Carolina State College,
Raleigh, N.C.

Dear Bill,

We made shipment of the Hi-Clearance Sprayer May 18th, - you should be receiving this in the next week I would guess.

I am enclosing a couple of photographs that might help you in assembling this machine. I hope this operation proves very successful.

I have made my report to the higher-ups on our discussion at North Carolina State recently, - I have not heard anything to date, but will keep you advised as this matter progresses.

I wish to thank you very much for your exceptionally nice reception when I was in Raleigh, and it was a pleasure being with both you and your wife.

Yours very truly,


KENNETH COLEMAN

/la
Enc.

SHIPPING MEMO


R. H. BOULIGNY, INC.
 MANUFACTURING DIVISION
 433 WEST MOREHEAD ST.
 CHARLOTTE 1, N. C.

INVOICE NUMBER 27737
 S. O. No.
 Invoice Date.....
 Date Shipped..... 5-2-56
 No. Boxes.....
 Packing List in Box No.....
 Ship Via T. C. Collect..... Prepaid.....
 Bill of Lading No.....
 Customer's Order No..... Item No.....
 Gov't Contract No.....
 Gross Wt..... Packed by.....

Sold To Agricultural Engineering Dept.
North Carolina State College
Raleigh, North Carolina

Shipped To Same

TERMS NET 30 DAYS

QUANTITY	PART NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT
1		Hi-clearance, four wheel, Tractor (For use in Tobacco Harvesting Research)		
				
<p align="center"><small>Seller represents that with respect to the production of the articles and/or the performance of the services covered by this invoice, it has fully complied with all sections of the Fair Labor Standards Act of 1938, as amended.</small></p>				

FOUND & MOORE CO - CHARLOTTE, N. C.

Uniform Straight Bill of Lading—Original—Not Negotiable.

Shipper's No. A 38099

CAROLINA FREIGHT CARRIERS CORPORATION

Agent's No. _____

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading,

AT _____ DATE _____ FROM _____
the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or street address of consignee—For purposes of notification only.)

CONSIGNEE TO North Carolina State College

DESTINATION Raleigh

STATE OF North Carolina

COUNTY OF _____

Att: Dr. William Splinter.

ROUTE
DELIVERING
CARRIER

Standard Truck Co.

CAR INITIAL

CAR NO.

No. Packages	Description of Articles, Special Marks, and Exceptions	*Weight (Sub. to Cor.)	Class or Rate	Check Column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
<u>1</u>	<u>*Box Cotton Sprayer</u>				Speed Sprayer Plant (Signature of Consignor) If charges are to be prepaid, write or stamp here, "To be Prepaid." PREPAID
					Received \$ _____ to apply in prepayment of the charges on the property described hereon.
					Agent or Cashier
					Per _____ (The signature here acknowledges only the amount prepaid.) Charges Advanced

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

per _____

The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Rule 41 of the Consolidated Freight Classification.

Speed Sprayer Plant Shipper, Per E. George

Agent, Per Louell

Permanent post-office address of shipper: 1312 W. Washington, Orlando, Florida

"Shipper's imprint in lieu of stamp: not a part of bill of lading approved by the Interstate Commerce Commission."



CAROLINA FORD TRACTOR COMPANY

4100 MOUNT HOLLY ROAD • P. O. BOX 1496 • TEL. EXPRESS 9-9771

CHARLOTTE 1, N. C.



March 15, 1957

Dr. William E. Splinter
N. C. State College School of Agriculture
Raleigh
North Carolina

Dear Bill:

Thank you for the tobacco mechanization studies report which you mailed March 8th. I found it quite interesting and I am sure anything that can further the mechanization of the handling of tobacco is going to be worth lots to North Carolina.

We will furnish you a tractor again this year and we have a 660 in stock at this time. I would suggest that you call or write before sending for it in order that we may have it ready for delivery to you. Let us know when you wish to pick the tractor up.

Very truly yours,

T. C. Feezor

TCF/en

Bolens Products Division

Food Machinery and Chemical Corporation

GARDEN TRACTORS



PORT WASHINGTON, WISCONSIN, U. S. A.

DATE ISSUED 11-3-55	REQUESTED BY J. H. Widder	OUR ORDER NO.	YOUR INV. DATE & NO.	BACK ORDER DATE
------------------------	------------------------------	---------------	----------------------	-----------------

SOLD TO

Mr. Wm. E. Splinter - Research Ass.
% Agriculture Engineering Dept.
North Carolina State College
Raleigh, North Carolina

Program
SHIP TO

SHIPPED COLLECT PREPAID **XXX**
SHIPPED VIA Olson - Central Motors
DATE SHIPPED 11-18-55 B/L NO. F-5192

Nº 28172
DEBIT MEMO
DATE 11-21-55

QUANTITY ORDERED	BACK ORDERED	QUANTITY SHIPPED	PART NUMBER	DESCRIPTION	UNIT PRICE	EXTENSION
1		1	✓ 38AB3	Ridemaster 3-6mph		675.00
1		1	✓ R209	9" Plow		52.00
5		5	R104	Cultivator standard	4.00	20.00
2		2	R109	Long Cultivator stand.	4.80	9.60
1		1	✓ R251	Disc Harrow		48.00
1		1	✓ R774	High Clearance axle		92.00
1		1	✓ R654	Sprayer		144.00
1		1	R661	6-Row spray boom		112.00
7		7	M655	Drop & Cluster Kits	4.60	32.20
1		1	✓ R114	Expanding Cultivator		48.00
1		1	✓ R106	4 Row Floating Cultivator		66.00
1		1	R108	Hitch for R106		5.80
16		16	4183	Duck foot Cultivator teeth	.72	11.52
1 pr.		1 pr	BH165	Wheel Weights		19.00
1		1	R554	Planter Hitch for Planter		9.40
1		1	R555	Wheat Dull Hitch		16.00
13		13	M650	Nozzles 15gpa	1.30	17.60
1		1	R775	24" Tool Bar		5.20
1		1	R771	60" Tool Bar		9.00
1 pr.		1 pr	R107	Wheel track cultivator		11.00
7		7	2368	2"x8" Steels		

Memo charge for experimental purposes. To be mutually reviewed in nine months.

DEBIT MEMO

†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Consolidated Freight Classification.

‡Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

STRAIGHT BILL OF LADING - SHORT FORM

ORIGINAL NOT NEGOTIABLE

Shipper's No. **F05192**

CARRIER:

Carrier's No.

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

At Port Washington, Wis.,

11-18 1955

From

BOLENS PRODUCTS DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the date to said destination. It is mutually agreed, as to each article of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Freight Classification and Tariffs in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back hereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to *Mr. Lem. E. Splinter - Research Ass. Program. Agric. Exp. Dept.*

Destination *Raleigh* State *North Carolina* Delivery Address *North Carolina State College*

Route *Okla. Central motor* Car Initial No.

No. Pgs.	Kind of Package, Description of Articles, Special Marks, and Exceptions	WEIGHT (Sub. to Cor.)	Class or Rate	No. Pgs.	Kind of Package, Description of Articles, Special Marks, and Exceptions	WEIGHT (Sub. to Cor.)	Class or Rate
1	CRATES GARDEN TRACTORS K.D.	935			CARTONS DRIVE UNITS K.D.		
	BUNDLES HANDLES				BUNDLES DRIVE UNIT GUARDS		
	CARTONS LAWNMOWERS With or Without Engines				CARTONS WEED CUTTERS		
	CARTONS GRIND-A-LEAF ATTACHMENT				CRATES CARTONS SAW BLADES		
	BUNDLES Snow Plow Attachment For Tractors				PIECES SAW GUARDS		
	CARTONS FARM CART K.D.				CARTONS Rotary Tiller Attach., K.D.		
1	BUNDLES HITCHES	19		3	Cases - Cultivator Parts (Iron) N.O.I.B.N. - Frame	235	
	CARTONS SEED PLANTERS K.D.			2	CULTIVATOR PARTS CARTONS IRON N.O.I.B.N.	90	
1	CARTONS BUNDLES PLOWS K.D.	80		1	BUNDLES Wheel - Weights - Iron	100	
2	CARTONS BUNDLES DISC HARROW K.D.	90			CARTONS HARVESTER MOWER		
	BUNDLES HARROW-PEG TOOTH FLAT				BUNDLES CUTTER BARS K.D.		
	CARTONS SNOW CASTERS K.D.				CARTONS LAWN TRIMMERS K.D.		
	ENGINES N.O.I.B.N. Internal Combustion				BUNDLES Agric. Impl. Parts Other Than Iron		
	CARTONS CHAIN SAWS K.D.				CARTONS Agric. Impl. Parts Other Than Iron		
1	<i>of 2 Saw Bars</i> BUNDLES	45		2	<i>Cutter Sprayer attach</i>	255	
1	<i>Rear axle</i>	275		1	<i>Roller Spray Booms</i>	30	
1	<i>Ch. wheel Drill Hitch</i>	25					

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of freight and all other lawful charges.

(Signature of consignor.)
If charges are to be prepaid, write or stamp here, "To be Prepaid."

Prepaid

Received \$
to apply in prepayment of the charges on the property described hereon.

Agent or Cashier.

Per
(The signature here acknowledges only the amount prepaid.)

Charges advanced: \$

INVOICE No.
D. M.
2872

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is carrier's or shipper's weight.
NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

BOLENS PRODUCTS DIVISION
Food Machinery and Chemical Corporation
Permanent post-office address of shipper: PORT WASHINGTON, WIS.

Shipper, Per *[Signature]* Agent

RECEIVED
CLASSIFIED TRANSPORTATION
Per *[Signature]*
Form 550270-1

Bolens Products Division

Food Machinery and Chemical Corporation

GARDEN TRACTORS



PORT WASHINGTON, WISCONSIN, U. S. A.

DATE ISSUED 9/17/56	REQUESTED BY Widder	OUR ORDER NO.	YOUR INV. DATE & NO.	BACK ORDER DATE
------------------------	------------------------	---------------	----------------------	-----------------

SOLD TO Mr. Wm. E. Splinter
c/o Agricultural Engr. Dept.
North Carolina State College
Raleigh, North Carolina

SHIP TO Floyd Mc Gowan
New Carolina Warehouse No. 1
Greenville, North Carolina

SHIPPED COLLECT PREPAID

N^o 29578

SHIPPED VIA Olson - Roadway Express

DEBIT MEMO

DATE SHIPPED 9/18/56 B/L NO. F25096

DATE 9/19/56

QUANTITY ORDERED	BACK ORDERED	QUANTITY SHIPPED	PART NUMBER	DESCRIPTION	UNIT PRICE	EXTENSION
3		3		20HD Ride-a- matic Tractor		MEMO
				TO HOLD YOU ACCOUNTABLE FOR ABOVE EQUIPMENT.		
				FOR WAREHOUSE DEMONSTRATION. TO BE MOVED BY BOLENS OR RETURNED TO FACTORY WITHIN <u>60</u> DAYS.		

DEBIT MEMO

†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Consolidated Freight Classification.

‡Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

STRAIGHT BILL OF LADING - SHORT FORM

ORIGINAL - NOT NEGOTIABLE

Shipper's No. **F25096**

CARRIER:

Carrier's No.

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

At Port Washington, Wis.,

9-18

1956

From

BOLENS PRODUCTS DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood through-out this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is the duty of each carrier of all or any part of the property covered by this bill of lading to deliver to the consignee, and to each party at and through whom it is delivered, the property, and every article to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classifications in effect on the date hereof, if this is a bill of lading shipment, or (2) in the applicable motor carrier classification, or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back hereof, set forth in the classification or tariff which governs the transportation of this property, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to

Floyd McGowan New Carolina Warehouse No. 1

(Mail or street address of consignee—For purposes of notification only.)

Destination

Greenville North Carolina

State

Delivery Address*

(*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Route

OTM. Railway Express

Car Initial

No.

No. Pkgs.	Kind of Package, Description of Articles, Special Marks, and Exceptions	#WEIGHT (Sub. to Cor.)	Class or Rate	No. Pkgs.	Kind of Package, Description of Articles, Special Marks, and Exceptions	#WEIGHT (Sub. to Cor.)	Class or Rate
3	CRATES GARDEN TRACTORS K.D.	1260			CARTONS DRIVE UNITS K.D.		
	BUNDLES HANDLES				BUNDLES DRIVE UNIT GUARDS		
	LAWNMOWERS				CARTONS WEED CUTTERS		
	CARTONS With or Without Engines				CARTONS GRIND-A-LEAF ATTACHMENT		
	CARTONS GRIND-A-LEAF ATTACHMENT				CRATES		
	BUNDLES Snow Plow Attachment For Tractors				CARTONS SAW BLADES		
	CARTONS FARM CART K.D.				PIECES SAW GUARDS		
	BUNDLES HITCHES				CARTONS Rotary Tiller Attach., K.D.		
	CARTONS SEED PLANTERS K.D.				Cts. Cultivator Parts (Iron) N.O.I.B.N.-K.D.		
	CARTONS BUNDLES PLOWS K.D.				Bcls. Cultivator Parts (Iron) N.O.I.B.N.-Frame		
	CARTONS BUNDLES DISC HARROW K.D.				CULTIVATOR PARTS		
	BUNDLES HARROW-PEG TOOTH FLAT				CARTONS IRON N.O.I.B.N.		
	CARTONS SNOW CASTERS K.D.				BUNDLES Nose - Weights - Iron		
	ENGINES N.O.I.B.N. Internal Combustion				BUNDLES Wheel - Weights - Iron		
	CARTONS CHAIN SAWS K.D.				CARTONS HARVESTER MOWER		
	BUNDLES				BUNDLES CUTTER BARS K.D.		
					CARTONS LAWN TRIMMERS K.D.		
					BUNDLES Agric. Impl. Parts Other Than Iron		
					Agric. Impl. Parts Other Than Iron		
					CARTONS		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor.)
If charges are to be prepaid, write or stamp here, "To be Prepaid."

Prepaid

Received \$
in payment of the charges on the property described herein.

Agent or Cashier.

Per
(The signature here acknowledges only the amount prepaid.)

Charges advanced: \$

INVOICE No.
N.M.
29578

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is carrier's or shipper's weight.
NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

BOLENS PRODUCTS DIVISION
Food Machinery and Chemical Corporation
Permanent post-office address of shipper: PORT WASHINGTON, WIS.

Shipper, Per

[Signature]

Agent

Per

One Call Does It All

for MILL SUPPLIES AND MACHINERY

DILLON SUPPLY COMPANY

RALEIGH — DURHAM — ROCKY MOUNT — GOLDSBORO

2-7771

9-1693

2-2161

747

1 T WES - Oct 21
2 T WES - Oct 21
Del Del WES - Oct 21
1 T Eggs
Charlotte Nov 3

"Service Did It"

P. O. Box 5906

April 13, 1959

Mr. E. M. Corbett
John Deere Flow Co.
Chamblee, Georgia

Dear Mr. Corbett:

We have a John Deere 420 currently on lease until April 29, 1959. We would like to inquire if arrangements could be made for a one month extension of this lease until May 29. Please advise me if your policy on this and what rental would be required.

Yours very truly,

William E. Splinter
Associate Professor

WES/fc

CC: Mr. W. C. Adams
Raleigh Farm Equip. Co.
Raleigh, N. C.

FORD TRACTOR

DATE	HOURS	GAS	JOB DESCRIPTION
5-2-59	3	5	Set tobacco
5-4-59	10	4	Set tobacco
5-5-59	10	10	Set tobacco
5-8-59	5	0	Set tobacco
5-12-59	8	0	Cultivated tobacco
5-14-59	2	0	Remade tobacco ground
5-16-59	4	0	Cultivated tobacco
5-18-59	10	7	Cultivated tobacco
5-19-59	10	11	Cultivated & topdressed cotton
5-20-59	10	7	Cultivated corn & topdress cotton
5-21-59	5	6	Cultivated cotton
5-25-59	10	7	Cultivated corn & tobacco
5-26-59	10	0	Cultivated corn & tobacco
Oil Change	Oil Change		
5-27-59	10	10	Cultivated tobacco & corn
5-28-59	10	7	Cultivated corn
5-29-59	10	7	Cultivated milo
6-8-59	12	8	Cultivated tobacco
6-9-59	10	8	Cultivated tobacco & alfalfa
6-10-59	8	8	Cultivated alfalfa
6-29-59	10	8	Haul irrigation pipe
7-1-59	5	5	Haul irrigation pipe
7-3-59	5	7	Culti-pack beans
7-6-59	5	10	Dragged roads
7-13-59	10	9	Dragged roads
7-15-59	10	8	Dragged roads
7-16-59	5	5	Disked land
7-22-59	5	4	Fix roads
7-23-59	5	7	Fix roads
7-20-59	5	8	Disked
7-21-59	5	8	Disked
7-29-59	7	10	Disked
7-31-59	10	7	Hauled dirt
7-31-59	5	10	Hauled dirt
8-1-59	5	10	Hauled dirt
8-4-59	10	8	Hauled dirt
8-5-59	2	7	Hauled dirt
8-6-59	10	10	Hauled dirt
8-7-59	10	10	Hauled dirt

FORD TRACTOR

Date	Hours	Gas	Job Description
5-2-59	3	5	Set Tobacco
5-4-59	10	4	Set Tobacco
5-5-59	10	10	Set Tobacco
5-8-59	5	0	Set Tobacco
5-12-59	8	0	Cultivated tobacco
5-14-59	2	0	Remade tobacco ground
5-16-59	4	0	Cultivated tobacco
5-18-59	10	7	Cultivated tobacco
5-19-59	10	11	Cultivated & topdressed cotton
5-20-59	10	7	Cultivated corn & topdress cotton
5-21-59	5	6	Cultivated cotton
5-25-59	10	7	Cultivated corn & tobacco
5-26-59	10	0	Cultivated corn & tobacco
Oil Change	Oil Change		
5-27-59	10	10	Cultivated tobacco & corn
5-28-59	10	7	Cultivated corn
5-29-59	10	7	Cultivated milo
6-8-59	12	8	Cultivated tobacco
6-9-59	10	8	Cultivated tobacco & alfalfa
6-10-59	8	8	Cultivated alfalfa
6-29-59	10	8	Haul irrigation pipe
7-1-59	5	5	Haul irrigation pipe
7-3-59	5	7	Culti-pack beans
7-6-59	5	10	Dragged roads
7-13-59	10	9	Dragged roads
7-15-59	10	8	Dragged roads
7-16-59	5	5	Disked land
7-22-59	5	4	Fix roads
7-23-59	5	7	Fix roads
7-20-59	5	8	Disked
7-21-59	5	8	Disked
7-29-59	7	10	Disked

February 11, 1960

Mr. George K. McCutcheon
Product Planning
Tractor and Implement Division
Ford Motor Company
Birmingham, Michigan

Dear Mr. McCutcheon:

In accordance with our phone conversation about two weeks ago, I am sending photographs of some modifications we made to one of your Model 541 tractors. Photograph #1 shows where we cut the lever on the hydraulic valve activating the front cultivator gangs. Figure 2 shows the position of the lever with respect to the operator's leg and the lever activating the 3-point lift. This arrangement worked quite satisfactorily. Figure 3 shows where the main brace to the piston had to be bent outward from the tractor to prevent interference between the piston and the spring brace. Figure 4 shows where a corner of the front casting was cut away to decrease interference with the steering arm. Figure 5 shows one of two cultivator shovel bolts which were broken when the cultivator shovel tripped after striking an obstacle. It appeared that the linkage of the shovel trip mechanism was such as to bend the bolt when tripped.

The tractor was operated at the Clayton Station on almost every operation in tobacco culture except plowing. Cultivation with the mechanically activated front gangs was not too satisfactory as the linkage would hold the front gangs up until the rear gangs had dropped. Where the row was entered through a ditch the front shovels did not engage until they were some 6 feet down the row.

Operation of the tractor during transplanting pointed out a lack of governed engine control at low engine rpm's. The engine would slow down in soft dirt or uphill grades. It is essential that transplanting speed be kept constant during the operation to enable the operators to maintain a planting rhythm. The throttle linkage did not offer sufficiently small increments of adjustment for best planter operation.

Mr. George K. McCutcheon 2

February 11, 1960

Operation of the tractor for cultivation was satisfactory. Cultivation clearances and visibility were minimal but adequate.

We discussed the problem they were having with fertilizer flow when you were here last summer. All I would add to what was pointed out was that the linkage to de-clutch the fertilizer drive when the cultivator was lifted tended to straighten out the S shaped rod between the chain and the lever. A spring was substituted for this piece.

These are the general comments we would make concerning the tractor. If there are any details of a more specific nature feel free to ask.

Yours very truly,

W. E. Splinter

WES:shw
encls.

INSTRUCTIONS

SENDER:

Write (or type) message, pull out yellow sheet, mail the other two.

RECIPIENT:

Write your reply at bottom, mail back white sheet and keep the pink.

T
ONorth Carolina State College
Agricultural Engineering Dept.
Raleigh, N. C.

ATT: Mr. Bill Splinter

F
R
O
M**POWELL MANUFACTURING
COMPANY, INC.**
Telephone 7-1128
BOX 5
WILSON, NORTH CAROLINA

SUBJECT:

DATE:

3/25/60

Message - Reply

FOLD ▾ THIS IS NCR (NO CARBON REQUIRED) PAPER.

JUST TYPE (OR WRITE) ON ORIGINAL. YOUR IMPRESSION
WILL AUTOMATICALLY APPEAR ON COPIES BENEATH.

Form 87 - New England Business Service, Inc. Townsend, Mass.

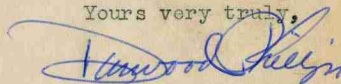
M
E
S
S
A
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E

Dear Mr. Splinter:

We have received order from Mr. Robert Wilson this date for bundles to convert Powell 42 "CF" which you have on hand to 42"B" model. This is to advise that you may come at your convenience and pick up same.

Thanking you for giving this your very kind attention, ~~XXXXX~~ we remain,

Yours very truly,



Durwood Phillips
Plant Manager

DP/e

SIGNED:

DATE OF REPLY:

REPLY TO:

R
E
P
L
Y

SIGNED:

SENDER: MAIL RECIPIENT WHITE AND PINK SHEETS

RECIPIENT: WRITE REPLY. RETURN WHITE TO SENDER. KEEP THIS PINK COPY.

Equip on Loan

COMMENTS ON THE OPERATION OF THE FORD 541 OFFSET TRACTOR WHEN USED
IN THE TRANSPLANTING AND CULTIVATION OF TOBACCO

by

W. E. Splinter, Research Associate Professor
North Carolina State College

1. The tractor has more than adequate power for these operations and performs satisfactorily as a one-row tractor. Controls are generally conveniently located with the exception of the rear wheel brake locks.
2. The engine governor does not maintain a steady speed when throttled below 900 rpm for the transplanting operation. It allows the tractor to slow down in loose soil on upward slopes and speed up on firm soil or downward slopes. It is also difficult to make small throttle adjustments at these low speeds. It is essential that the transplanting rate be kept constant as this allows individuals setting plants^{to} adjust to a rhythm.
3. The tractor was operated with three types of transplanters. In all cases operation was satisfactory. When operated with transplanters with a full water barrel at the rear the front *of the tractor* may need additional weight.
4. In the cultivation operation the mounting and operation of the shovels were satisfactory although clearances were a little close in some cases. The use of the hydraulic independent front lift would be preferable to the mechanically linked unit (which we used) as the rear shovels tend to hold the front shovels out of the ground if the tractor is entering the row from a ditch.
5. The declutching arrangement for the fertilizer hopper was not satisfactory. The linkage pulled the eye out where the chain is attached to the cultivator lift arm. A heavy spring was substituted. The pulling of the declutching chain through the metal tube introduced considerable friction in the operation of the clutch. The tolerance between the chain eye connected to the clutch itself and the rotating member of the clutch was insufficient, allowing the clutch to wear the eye considerably.
6. The 200# capacity of the fertilizer hopper was appreciated as a good feature.
7. The rubber tubes tended to clog unless stretched out.
8. Visibility for cultivation was minimal.



CAROLINA FORD TRACTOR COMPANY

4100 MOUNT HOLLY ROAD • P. O. BOX 1496 • TEL. EXPRESS 9-9771

CHARLOTTE 1, N. C.



April 10, 1962

Dr. Bill Splinter
Agricultural Engineering Department
North Carolina State College
Raleigh, North Carolina

Dear Bill:

Concerning our arrangements for the equipment on loan to you for use in connection with your experimental projects, we have supplied you with the following equipment.

#75472 541-16-43 tractor

with one 411-20 cultivator
one 10-273 curved beam
one 10-267 base
one 13-166 fertilizer attachment

It is our understanding that you will have use of the above equipment for the remainder of the year of 1962 or until you or Carolina Ford Tractor Company decide to cancel this agreement.

At any time you or Carolina Ford Tractor Company decide to end this agreement, you will return all equipment to our Charlotte warehouse in good condition except for normal wear on equipment. Gas, Oil, and regular maintenance is to be your responsibility. The tractor is covered under regular warranty policy should any defect under normal wear occur.

If this basically covers loan of tractor to you, please sign one copy of this letter and return to me for our files. Keep the other copy for your records.

Best wishes,

T. C. Feezor
Advertising Manager

TCF/bs

JOHN DEERE COMPANY

LEASE AGREEMENT

This Agreement, made this 1st day of May, 1959
between John Deere Company, Chamblee, Georgia
(hereinafter referred to as Lessor)
and North State College, Agricultural Engineering Dept., Raleigh, N.C.
(hereinafter referred to as Lessee)

Witnesseth, That Lessor, subject to and in accordance with the provisions of this Agreement, does hereby lease to Lessee, for a term beginning on April 29, 1959 and ending on May 29, 1959, the new John Deere farm machinery and equipment described on the reverse side hereof.

\$21.36 (for one month)

1. Lessee agrees to pay rental for said property in the sum of \$ 21.36 annually, said rental to be paid in advance at the beginning of each year of this lease at such place as Lessor shall designate.
2. Said property shall be delivered to Lessee at such place in the town of Raleigh, N. C. as Lessor shall elect, and Lessee shall (Branch or Transfer House) pay or reimburse Lessor for the transportation charges on said property from the point of shipment to the point of delivery, such payment to be made by Lessee upon Lessor's billing Lessee therefore.
3. Lessee agrees that said property will be used only in the operation of the farms owned or operated by Lessee, and Lessee shall not use or permit the property to be used elsewhere.
4. Lessee agrees that it will use said property in a careful manner; that it will keep the same in good repair and condition at Lessee's expense and properly housed when not in use; and that said property shall be used and operated by or under the direction of competent operators. Lessee assumes all responsibility for loss of or damage to said property while in its possession.
5. Lessee shall pay all taxes assessed against the goods while in his possession. If, under local law, the leasing of equipment hereunder is subject to sales, use or similar taxes, Lessee shall pay such taxes unless his doing so is prohibited by law. If for any reason Lessor pays any such taxes, the Lessee shall promptly reimburse it unless his doing so is prohibited by law.
6. Lessee assumes all risks arising from the possession or use of said property, and agrees to hold and save Lessor harmless from any loss, expense or liability for injury to persons or damage to property caused by said property or by the use thereof. Lessee shall immediately notify Lessor in writing of any such injury or damage.

~~REPRODUCED FROM THE ORIGINAL~~

7. Lessee shall retain said property in its possession at all times, and Lessee's right hereunder shall not be assignable.

8. If default shall be made in any of the conditions or agreements herein to be kept by Lessee, it will, upon demand of Lessor, immediately surrender the possession of said property to Lessor, and Lessor shall have the right to repossess said property or any part thereof wherever it may be found, with or without process of law, and to recover from Lessee for any damage done to said property.

9. At the end of the term of this lease Lessee shall peaceably surrender the possession of and deliver said property to Lessor in as good condition as when received, ordinary wear and tear excepted. Such delivery shall be made to Lessor at Lessee's expense at the railroad station or at such other place in the town of Raleigh, N.C. as Lessor shall designate, and if requested by Lessor, said property shall be properly bundled, boxed, or crated by Lessee at Lessee's expense.

In Witness Whereof, the parties hereto have executed these presents as of the day and year first above written.

John Deere Company

LESSOR

By *M. Mobell*

Sales Promotion Manager TITLE

W. P. ... LESSEE

By *Ann Prof*

TITLE

(See Other Side)

110

DESCRIPTION OF EQUIPMENT LEASED

and Lessee's right shall survive in all times.
420-W Tractor, Serial No. 133313

It is further agreed that the title to the equipment shall remain in the possession of the lessor, and the lessee shall have the right to possession of the property at any time as may be found, with or without process of law, and to recover from the lessee for any damage done to said property.

At the end of the term of this lease, the lessee shall return the equipment to the lessor at the place where it was delivered, and the lessee shall be liable for any damage to the equipment, and for any loss or destruction of the equipment, and for any cost of repair or replacement of the equipment, and for any cost of transportation of the equipment to the place where it was delivered, and for any other thing in the lease of the lessor, and if required by the lessor, the lessee shall be bound, or obliged by the lessor, to pay the cost of transportation of the equipment to the place where it was delivered, and for any other thing in the lease of the lessor.

In Witness Whereof, the parties hereto have executed these presents as of the day and year first above written.

LESSOR
LESSEE
TITLE

(See other side)



a convenient 0-1000 V supply

Model 240 Regulated High-voltage Supply permits dialing outputs to 1% with 0.02% stability.

The new Keithley 240 Regulated High-voltage Supply is specifically designed for safe and convenient testing of insulation, diode, and capacitor leakage resistances. Used in conjunction with a Keithley electrometer (See figure 3), resistances over the range of 0.1 ohm to 10^{16} ohms can be measured.

The 240 also may be employed as a general purpose laboratory voltage supply, furnishing excitation potential to ion chambers and photocells, and supplying a buck-out potential for precise voltage measurements by the null method. It also is useful as a stable dc potential in checking dc amplifier gains and in calibrating meters.

VOLTAGES FROM 0 TO 1000 VOLTS at up to 10 milliamperes are available. The voltage may be set in discrete steps of one volt, accurate within 1% or 100 millivolts. A potentiometer is furnished on the front panel to

permit interpolating between the one-volt steps, so that with the aid of an accurate voltmeter, output voltages can be set more accurately than possible with the panel dials.

NOISE AND HUM in the 240 are held to three millivolts RMS. A 20% line voltage change produces less than a 20-millivolt change in the output voltage. The very low noise and transient content, combined with 0.02% line regulation, make the Supply ideal for capacitor and diode testing.

Overload protection is provided at a current of about 12 milliamperes. If the current exceeds that amount, the output is disconnected within 50 milliseconds; the circuit can then be reset with the output switch on the front panel. In this way, not only is the instrument protected, but in most cases the test component as well.

OTHER FEATURES include output connectors at both front and rear, and optional bench or rack mounting. The polarity switch includes a zero output position, permitting connections to be made while the instrument is on and facilitating the timing of measurements.



FIGURE 1. Model 240 Regulated High-voltage Supply with 4101 End Frames attached.

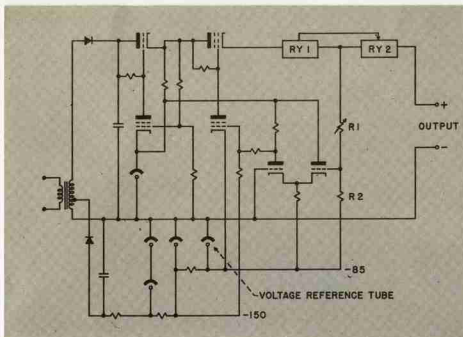


FIGURE 2. Simplified schematic diagram, Model 240. Cascaded regulators furnish a high degree of load and line regulation. The first regulator reduces the effect of input voltage change, while the second regulator provides the means for varying the output voltage and provides low output impedance and very close regulation. Resistors R1 and R2 determine the output voltage by referencing it to a selected, aged premium VR tube. The current supply to the reference tube is doubly regulated. Relays RY1 and RY2 are overload protectors, disconnecting the output within 50 milliseconds.

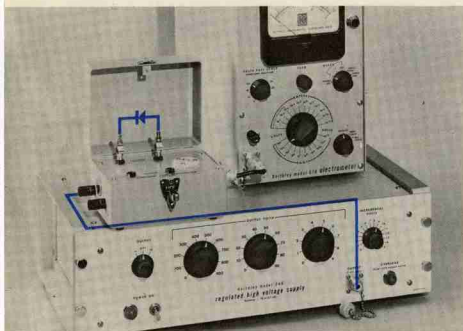


FIGURE 3. Keithley electrometers measure a broad range of resistances by applying a constant current to the sample. Addition of the Model 240 permits measurements from 0.1 ohm to 10^{16} ohms with a constant applied voltage. Thus, fast tests of capacitor and insulation resistance can be made over a very wide range of applied voltages. Shown above, Models 240, 610, and 6104 Test Shield measuring silicon diode reverse leakage. Overload protection prevents damage to diodes, even if they break down during test.



FIGURE 4. The Keithley 410 Micro-microammeter measuring photocell current, with excitation voltage furnished by the 240 Supply. The broad range of output voltages available with the 240 makes it an ideal choice for testing the sensitivity and linearity of photocells, photomultiplier tubes, and ionization chambers.

SPECIFICATIONS

Model 240 Regulated High-voltage Supply

OUTPUT VOLTAGE: Zero to 1000 volts, plus or minus, selected in one-volt steps with three calibrated front panel switches.

OUTPUT CURRENT: Zero to 10 milliamperes.

ACCURACY: Within 1% for outputs above 10 volts, and within 100 millivolts for outputs below 10 volts. A panel potentiometer is furnished to permit setting voltages to greater accuracy than possible with the panel dials, by using an accurate voltmeter.

OUTPUT IMPEDANCE: 0.15 ohm at 10 volts rising linearly to 15 ohms at 1000 volts.

LINE REGULATION: Output changes less than .02 volts + .02% of output voltage for a change in line voltage from 105 to 125.

LOAD REGULATION: .02% for 0 to 10 milliamperes.

RIPPLE: Less than 3 mv RMS above 5 cps.

STABILITY: Within .02 volts + .02% the first hour or in any subsequent eight hour period.

VOLTAGE RESETABILITY: Within the stability specifications.

RECOVERY TIME: 10 milliseconds from no load to full load.

OVERLOAD PROTECTION: A protective relay disconnects the output within 50 milliseconds when the output current exceeds about 12 milliamperes. The overload condition is indicated by a panel light. The relay is reset and the light turned off by a panel switch.

OUTPUT CONNECTORS: Amphenol 83-798 type UHF furnished at both front and rear.

INPUT REQUIREMENTS: 100-130 or 200-260 volts, 50-60 cps, 70 watts.

DIMENSIONS: 19" w x 5 3/4" h x 13" d; net weight, 21 pounds.

NET PRICE, F.O.B. CLEVELAND, OHIO

Model 240 Regulated Voltage Supply (for rack mounting) . \$325.00

Model 4101 End Frames (for bench use) 10.00

SALES OFFICES

ALBUQUERQUE, N. MEX.
Hytronic Measurements, Inc.
211 Sierra S. E., ALpine 5-0669

ATLANTA
Bivins & Caldwell, Inc.
3133 Maple Dr., CEedar 3-7522

CHICAGO
Robert L. Lang & Associates
6733 N. Olmsted Avenue
SPRING 4-3610

CLEVELAND
Keithley Instruments, Inc.
12415 Euclid Avenue
Sweetbriar 5-2666

DAYTON
M. P. Odell Company
2676 Salem Ave., CRestview 7-4441

DENVER
Hytronic Measurements, Inc.
1295 So. Bannock St., PEarl 3-7011

DETROIT
M.P. Odell Company
10531 West McNichols Rd.,
University 2-1573

HIGH POINT N. C.
Bivins & Caldwell, Inc.
P.O. Box 5187, Phone 2-6873

HUNTSVILLE, ALA.
Bivins & Caldwell, Inc.
Direct Line to Atlanta Office
JEfferson 2-5733

LOS ANGELES
T. Louis Snitzer Co.
5354 W. Pico Blvd., WEBster 8-2074

MINNEAPOLIS
Pinkney and Hine Co.
1925 Nicollet Avenue
FEderal 8-0523

NEW YORK
(See Ridgewood, N.J.)

ORLANDO, FLA.
Bivins & Caldwell, Inc.
1226 E. Colonial Drive,
CHerry 1-1091

PITTSBURGH
M. P. Odell Company
750 Penn Ave., FRemont 1-1231

RIDGEWOOD, N. J.
Keithley Instruments, Inc.
2 Godwin Ave., GILbert 4-7242

SALT LAKE CITY
Hytronic Measurements, Inc.
2022 South Main St.
INGersoll 6-4924

SAN DIEGO, CALIF.
T. Louis Snitzer Co.
7814 Ivanhoe, GLEncourt 4-2191

SAN FRANCISCO
T. Louis Snitzer Co.
510 S. Mathilda Ave. (Sunnyvale)
REgent 6-0733

SEATTLE
Rush Drake Associates
1806 Bush Place, EAst 3-8545

Keithley Instruments, Inc.

12415 EUCLID AVENUE • CLEVELAND 6, OHIO

TELEPHONE SWEETBRIAR 5-2666

March 23, 1959

Mr. E. M. Corbett
John Deere Company
Chamblee, Georgia

Dear Mr. Corbett:

This letter is to notify you that our lease contract for the John Deere 420W tractor will expire April 29, 1959. We do not wish to renew this contract and will therefore appreciate it if arrangements will be made to pick up this tractor on or about that date. We will make arrangements with our research shop to clean the tractor up prior to releasing it.

Sincerely yours,

William T. Mills

William T. Mills
Research Assistant
Professor

WFM:emh

CC: Mr. Clint Adams
Mr. ~~Frank~~ Greene
Mr. William Splinter

No. 6-24-57 1957

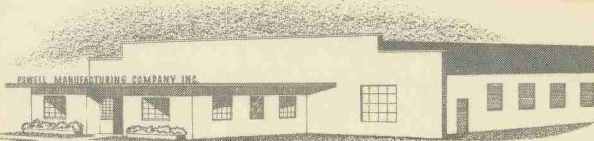
Received of State College
1660 Tractor ¹⁰⁰ Dollars

110137

\$

Thib

Powell



MANUFACTURING COMPANY, INC.

WILSON, NORTH CAROLINA

PHONE 7-1128
P. O. DRAWER 5

June 25, 1957

N. C. State College
Experiment Station
Raleigh, N. C.

ATT: Mr. Charlie Suggs

Dear Sir:

We have credited the "44" and "33" transplanter against your account that were shipped on a Loan Basis in March of 1956. However we note that 2 items are still charged to you that were not returned with the transplanter—one C-275 water valve and one display stand. We would appreciate your checking into this matter and advising us.

Thanking you for your cooperation with us, we remain,

Yours very truly,

Durwood Phillips
Plant Manager

DP/a

Manufacturers of

• MELVIN TRANSPLANTERS • POWELL SURE-SET AUTOMATIC TRANSPLANTERS • POWELL CUT-ALL
STALK CUTTERS • POWELL TOBACCO HARVESTERS • DAYTON AND TIGER TRANSPLANTER REPAIR PARTS

7

CREDIT MEMO

No. 0632
8/5/57

DATE

POWELL

Manufacturing Company, Inc.
P. O. DRAWER 5 • PHONE 7-1128, 7-1129 • WILSON, NORTH CAROLINA



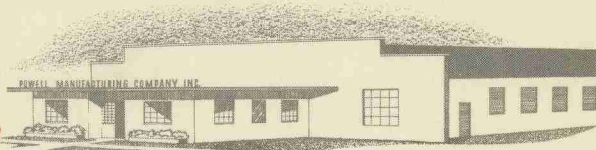
MELVIN TRACTOR MOUNTED TRANSPLANTERS, POWELL CUT-ALL STALK CUTTERS, AND REPAIR PARTS FOR TIGER AND DAYTON TRANSPLANTERS

N. C. State College
Experiment Station
Raleigh, N. C.
ATT: Mr. C. W. Suggs

DATE RETURNED	SALESMAN	PACKING LIST NO.	AMOUNT
6/20/57		713	
QUANTITY	DESCRIPTION		AMOUNT
1	Powell "44" Transplanter w/Press Plates	Loan Basis	N/C
1	Powell "33" Transplanter w/Press Wheels	" "	N/C
1	3-2C-101 Water Valve	" "	N/C

CUSTOMER'S COPY

Powell



MANUFACTURING COMPANY, INC.

WILSON, NORTH CAROLINA

PHONE 7-1128
P. O. DRAWER 5

July 22, 1957

N. C. State College
Experiment Station
Raleigh, N. C.

ATT: Mr. Charlie Suggs

Gentlemen:

We are again writing you in regards to the "44" and "33" Tobacco Transplanters which you returned to us on June 20th. You had these transplanters since March of 1956 on a Loan Basis. There are two items, however, as explained to you in our letter of June 25th which you still have and are still charged to you. Please advise if these two items will be returned to us or if you would like them billed to you. They are: one C-275 Water Valve and one display stand.

Please give this your most kind and prompt attention and reply.

Yours very truly,

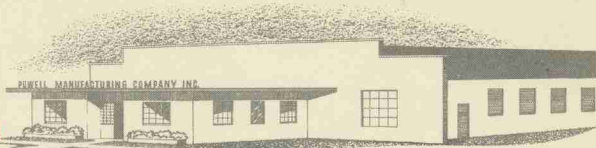
Durwood Phillips
Durwood Phillips
Plant Manager

DP/a

Manufacturers of

MELVIN TRANSPLANTERS • POWELL SURE-SET AUTOMATIC TRANSPLANTERS • POWELL CUT-ALL
STALK CUTTERS • POWELL TOBACCO HARVESTERS • DAYTON AND TIGER TRANSPLANTER REPAIR PARTS

Powell



MANUFACTURING COMPANY, INC.

WILSON, NORTH CAROLINA

PHONE 7-1128
P. O. DRAWER 5

June 20, 1955

Mr. Charles W. Suggs
Research Instructor
N. C. State College
Department of Agr. Eng.
Raleigh, North Carolina

Dear Charlie:

Relative to your letter of June 3 we appreciate very much your report on the use of our Sure-Set Transplanter.

At the moment we are in the process of making several changes on this machine based on your recommendations to Robert Wilson.

For the present, please keep the machines you have until our work is completed. At that time we would like to exchange or bring up-to-date the ones you have.

Thanks again for your nice letter.

Yours very truly,

Bob.

Robert H. Powell
President

RHP:bch

Manufacturers of

MELVIN TRANSPLANTERS • POWELL SURE-SET AUTOMATIC TRANSPLANTERS • POWELL CUT-ALL STALK CUTTERS • POWELL TOBACCO HARVESTERS • DAYTON AND TIGER TRANSPLANTER REPAIR PARTS

June 3, 1955.

Powell Manufacturing Company,
P. O. Drawer 5,
Wilson, N. C.

Dear Bob:

This letter is concerned with the transplanter investigation we made and the equipment we have on loan from your company.

The field study for this year has been completed, but the data has not been analyzed statistically. However, we did make some general observations during the test which might be of interest.

Robert Wilson, who was present during part of the preliminary work, brought a change-over package which allowed one man to feed plants. This method increased the efficiency of the operation since it was not necessary to reduce the ground speed by a factor of two. We had very little trouble with either of the machines. The valves leaked at first but that was corrected. There was some tendency for the machine to miss the ridge, especially on side hills. This was partially corrected by making planter wheels track with tractor, and could have been further improved by using stay bars on the tractor (lift type transplanter).

Two speeds were used in the tests, one at 45 plants per minute and one at 65 plants per minute. At the higher speed, there was some tendency for the plant carrying arms to bounce against each other and lose the plant. The press wheels did a good job at either speed.

If you would like, we will bring the equipment back to Wilson sometime within the next week or so. However, if you will permit us, we would like to keep them and extend our investigation of energy requirements this fall in the lab.

We appreciate your interest in our research work and would like to hear from you concerning our proposed work.

Yours very truly,

Charles W. Suggs,
Research Instructor.

S:S

January 21, 1955

Mr. Bob Powell, President
Powell Manufacturing Company, Inc.
P. O. Drawer 5
Wilson, North Carolina

Dear Bob:

Thank you for your letter of January 20 indicating that you are ready to loan us a Powell Sure-Set Transplanter (Pull-Type), to be used in our experimental work.

We are interested in making a modification on this machine concerning the division of the stream of water in order to get better coverage of dissolved insecticides. We would like to start this work fairly soon.

If your truck already has a trip to Raleigh, we would be pleased to have you bring the transplanter. However, if you do not have a trip planned, let me know and we will have our truck sent down from the college to pick it up.

Your cooperation is appreciated.

Yours very truly,

Charles W. Suggs
Research Assistant

CWS:jlf

7

INVOICE

Spencer

No. 04406

POWELL

DATE 2-14-55

Manufacturing Company, Inc.

P. O. DRAWER 5 • PHONE 4912, 5069 • WILSON, NORTH CAROLINA

71128



N. C. State College
Raleigh, N. C.

MELVIN TRACTOR MOUNTED TRANSPLANTERS, WINBOURNE STALK CUTTERS, AND REPAIR PARTS FOR TIGER AND DAYTON TRANSPLANTERS

SHIPPED VIA

DATE SHIPPED

2-11-55

CUSTOMER ORDER NO.

TERMS

Loan Basis

SALESMAN

PACKING LIST NO.

375

QUANTITY	DESCRIPTION	UNIT LIST	AMOUNT
1	Powell Sure-Set Transplanter, #2 press wheels, 3-point without barrel rack	<i>Returned March 1955 c.u.s.</i>	No charge
1	Display Stand complete with motor & extension cord		No charge



CASH DISCOUNTS ALLOWED ONLY WHEN, AND AS, SPECIFIED
SHORTAGES MUST BE REPORTED WITHIN 10 DAYS OF RECEIPT OF SHIPMENT

INVOICE

No. 04720

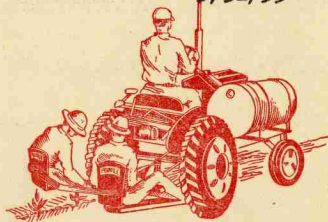
POWELL

DATE 3/31/55

Manufacturing Company, Inc.

P. O. DRAWER 5 • PHONE 401-5047 • WILSON, NORTH CAROLINA

N. C. State College
Raleigh, N. C.



MELVIN TRACTOR MOUNTED TRANSPLANTERS, WINBOURNE STALK CUTTERS, AND REPAIR PARTS FOR TIGER AND DAYTON TRANSPLANTERS

SHIPPED VIA **Picked up** DATE SHIPPED **3/30/55** CUSTOMER ORDER NO.

TERMS **Loan Basis** SALESMAN PACKING LIST NO. **538**

QUANTITY	DESCRIPTION	UNIT LIST	AMOUNT
1	Sure-Set Transplanter, Ford, #1 p.p.		
1	Sure-Set Trailer-type Transplanter, #2 p.w.		
1	C-99 Water Valve complete Sure-Set	(All items on LOAN BASIS)	

If not of Org. Eng. set. to P.O.



CASH DISCOUNTS ALLOWED ONLY WHEN, AND AS, SPECIFIED
SHORTAGES MUST BE REPORTED WITHIN 10 DAYS OF RECEIPT OF SHIPMENT

MELVIN
TRANSPLANTERS
&
WINBOURNE STALK
CUTTERS

CUSTOMER'S COPY

POWELL MANUFACTURING COMPANY, INC.

PACKING LIST
No. **0538**

P. O. Drawer 5

Phone 4912

WILSON, N. C.

TIGER AND DAYTON TRANSPLANTERS AND REPAIR PARTS

3-30-55

SHIP VIA

Pick Up

Ship To

N. C. State College

ACKNOWLEDGEMENT NO.

DATE SHIPPED

Raleigh, North Carolina

INVOICE NO.

SHIPPING CLERK

Charged To

SHIPPING CHARGE

Joe Harman

ORDERED	SHIPPED	BACK ORDERED	DESCRIPTION	UNIT PRICE
			BUNDLE, 2 SEAT RAILS, 2 BARREL RODS	
			BARREL, WITH WATER HOSE INSIDE	
			CENTER PLANTING CANE, WITH SEAT BRACE	
			BUNDLE, 2 SEATS	
			BUNDLE, FRONT BRACE, W/ROW PLOW & FRONT SHAFT ASY.	
			BUNDLE, BARREL RACK AND LIFT ASY.	
			SET OF 4 SPROCKETS	
			BAG, WITH BOLTS, NUTS, MISCELLANEOUS PARTS	
			ROLL OF CHAIN	
			ENVELOPE WITH OPERATING INSTRUCTIONS	
			SET ATTACHING BRACKETS	
			DRIVE SHAFT ASSEMBLY (AC "B" ONLY)	
1	1		Sure Set Transplanter for Ford, # ^{1 PP} RXER	
1	1		Sure Set Trailer Type Transplanter, # 2 PW	
1	1		C-99. <i>Water Valve complaint here</i>	
			WINBOURNE STALK CUTTER FRAME	
			WINBOURNE STALK CUTTER DRUM ASSEMBLY	
PACKING LIST				

CHECK SHIPMENTS IMMEDIATELY UPON RECEIPT. ALL SHORTAGES MUST BE REPORTED WITHIN 10 DAYS.

MELVIN
TRANSPANTERS
&
WINBOURNE STALK
CUTTERS

CUSTOMER'S COPY

POWELL MANUFACTURING COMPANY, INC.

PACKING LIST
No. **0375**

P. O. Drawer 5 Phone 4912
WILSON, N. C.

TIGER AND DAYTON TRANSPANTERS AND REPAIR PARTS

Received Feb. 11, 1955 C.W. Guggo

2-2-55

SHIP VIA
OUR TRUCK
DATE SHIPPED

Ship To N.C. State College
Raleigh, N.C.

ACKNOWLEDGEMENT NO.

INVOICE NO.

SHIPPING CLERK
Joe Garrison

Charged To _____

SHIPPING CHARGE

HAVE ASSEMBLED BY FRIDAY NOON

ORDERED	SHIPPED	BACK ORDERED	DESCRIPTION	UNIT PRICE
			BUNDLE, 2 SEAT RAILS, 2 BARREL RODS	
			BARREL, WITH WATER HOSE INSIDE	
			CENTER PLANTING CANE, WITH SEAT BRACE	
			BUNDLE, 2 SEATS	
			BUNDLE, FRONT BRACE, W/ROW PLOW & FRONT SHAFT ASY.	
			BUNDLE, BARREL RACK AND LIFT ASY.	
			SET OF 4 SPROCKETS	
			BAG, WITH BOLTS, NUTS, MISCELLANEOUS PARTS	
			ROLL OF CHAIN	
			ENVELOPE WITH OPERATING INSTRUCTIONS	
			SET ATTACHING BRACKETS	
			DRIVE SHAFT ASSEMBLY (AC "B" ONLY)	
<i>1</i>	<i>1</i>		<i>Powell Sure-Set transplanter</i> <i>Model 51 # 2 Press Wheels</i> <i>3 POINT W/1 BBL RACK.</i>	
			<i>LOAN BASIS</i>	
			WINBOURNE-STALK CUTTER FRAME	
			WINBOURNE STALK CUTTER DRUM ASSEMBLY	
<i>1</i>	<i>1</i>		<i>SURE set Display Stand complete</i> <i>w/ Motor + EXT. CORD</i>	
			PACKING LIST	

CHECK SHIPMENTS IMMEDIATELY UPON RECEIPT. ALL SHORTAGES MUST BE REPORTED WITHIN 10 DAYS.

Powell



MANUFACTURING COMPANY, INC.
WILSON, NORTH CAROLINA

PHONE 7-1128
P. O. DRAWER 5

July 22, 1958

N. C. State College
Agricultural Engineering Dept.
Raleigh, N. C.

ATT: Mr. Bill Splinter

Dear Sir:

According to our records we have shipped you the following two transplanters for experimental purposes:

- (1) 42"BF" w/tires and tubes
- (2) Powell "31" planter w/fertilizer attachment w/press wheels

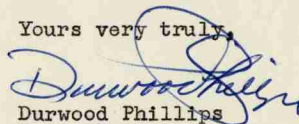
We are most interested at this time in receiving your report and ideas after using planters in field.

We would like to know how planters operated. We are most anxious to learn if you have any suggestions to offer for improvement of machines.

All reports taken from the field are most carefully studied and used in production of new transplanters and we would appreciate your comments and suggestions at your earliest convenience.

Thanking you for your co-operation with us in this matter and for giving this your kind attention, we remain,

Yours very truly,


Durwood Phillips
Plant Manager

DP/a

Manufacturers of Tobacco and Vegetable Transplanters