

# PATRIOT™

## Dry Inoculation Kits For Seed Tenders

Owner's Manual



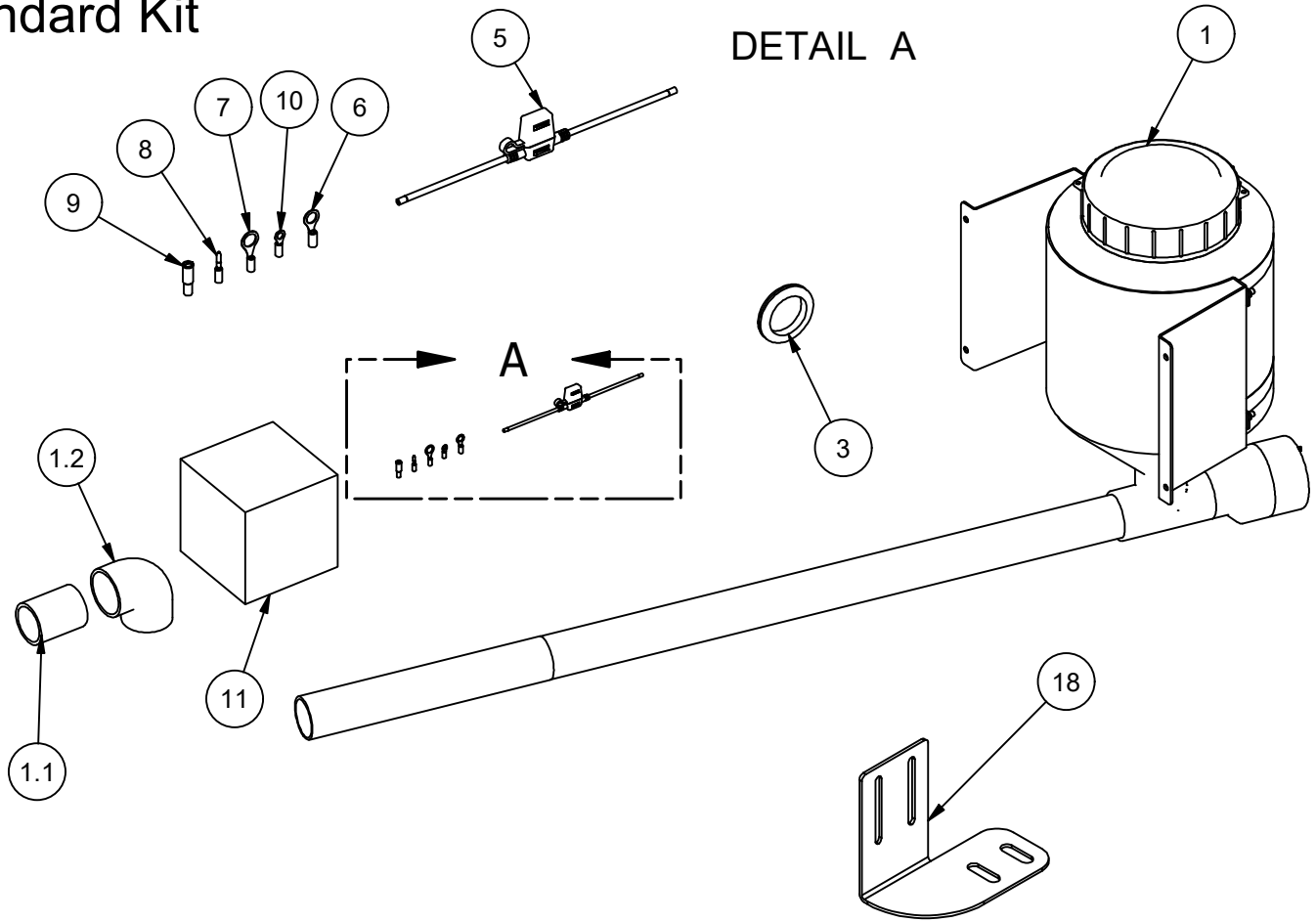
**Minden Machine Shop Inc.**  
1302 K Road  
Minden, NE 68959  
308-832-0220

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# ST-DI-1

## Standard Kit



Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr) Kit
1.1	1	Dry Inoc Chute Tube	Length Varies (Part of S3501 Kit)
1.2	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
3	1	S3502	Grommet 2-3/8x1/8x2-3/4x3-3/8x1/2
4	1	WI1030	On/Off Switch
5	1	TR1820	Mini Fuse Holder
6	2	TR1928	5/16" Ring Terminal
7	2	TR1938	3/8" Ring Terminal
8	2	TR1942	Bullet Connector Stud
9	2	TR1943	Bullet Connector Socket
10	4	TR1908	16-14 ga #10 Stud Ring Terminal
11	1	Bolt Kit	Bolt Kit
12	1	TR1825	15 Amp Mini Fuse
13	14	TR2112	Duplex Wire
14	1	WI1032	Paddle Switch Boot
15	1	WI1031	Paddle Switch
16	1	WI1033	On/Off Switch Boot
17	1	WI1029	On/Off Switch Plate
18	1	ST-CP-P0244	Paddle Switch Mount

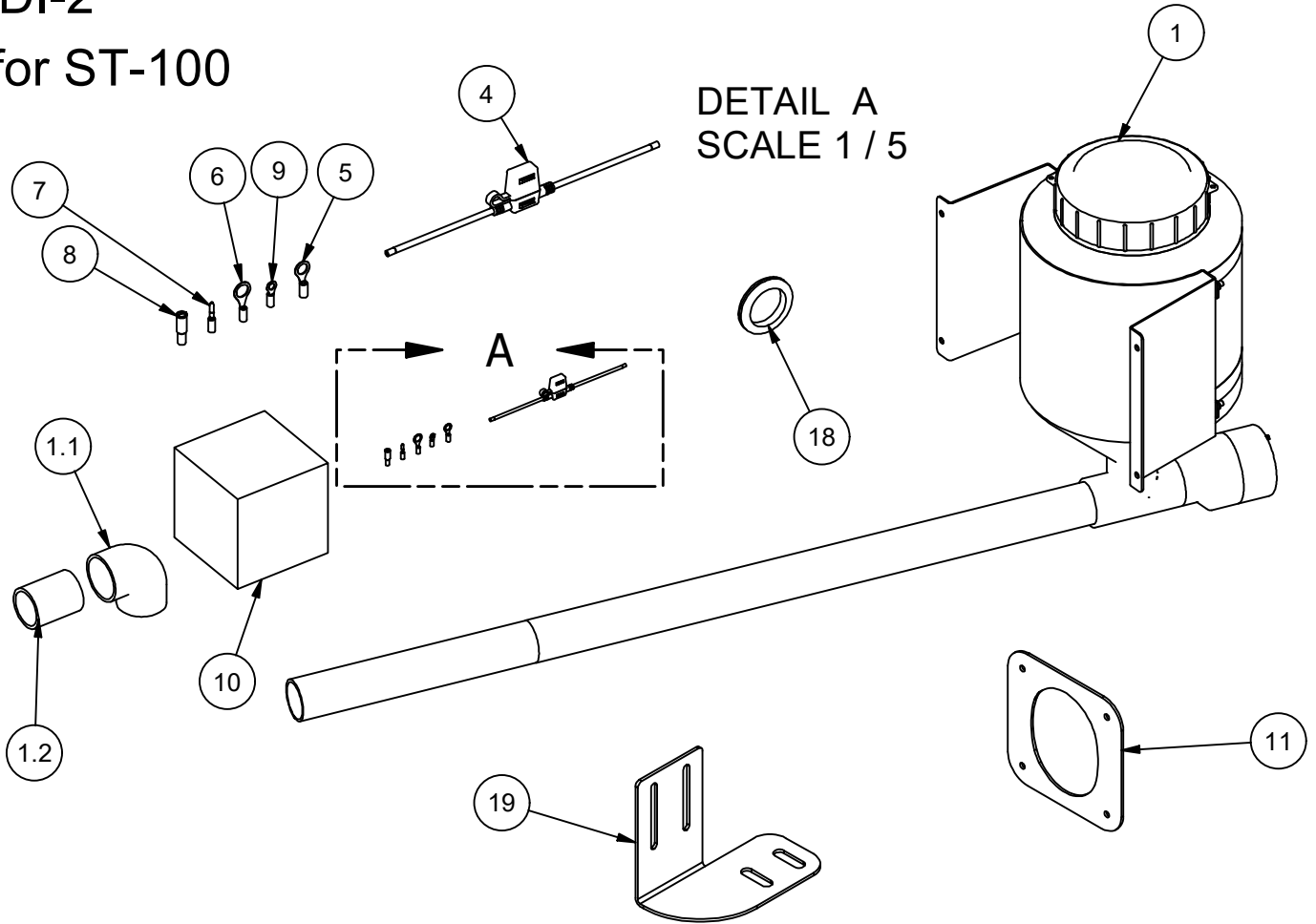
Bolt Kit

QTY	Part Number	Description
8	B5/16X1.0	Bolt
8	W5/16L	Lock Washer
8	N5/16N	Nut
4	B1/4X1.0	Bolt
4	W1/4L	Lock Washer
6	W1/4F	Flat Washer
4	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

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# ST-DI-2

## Kit for ST-100



DETAIL A  
SCALE 1 / 5

### Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr)
1.1	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
1.2	1	Dry Inoc Chute Tube	Dry Inoculation Short Tube (Part of S3501 Kit)
3	1	WI1030	On/Off Switch
4	1	TR1820	Mini Fuse Holder
5	2	TR1928	5/16" Ring Terminal
6	2	TR1938	3/8" Ring Terminal
7	2	TR1942	Bullet Connector Stud
8	2	TR1943	Bullet Connector Socket
9	4	TR1908	16-14 ga #10 Stud Ring Terminal
10	1	Bolt Kit	Bolt Kit
11	1	ST-100-P0054	Dry Inoc. Auger Plate
12	1	TR1825	15 Amp Mini Fuse
13	14	TR2112	Duplex Wire
14	1	WI1032	Paddle Switch Boot
15	1	WI1031	Paddle Switch
16	1	WI1033	On/Off Switch Boot
17	1	WI1029	On/Off Switch Plate
18	1	S3550	2-3/4" Inside Diameter Rubber Grommet
19	1	ST-CP-P0244	Paddle Switch Mount

### Bolt Kit

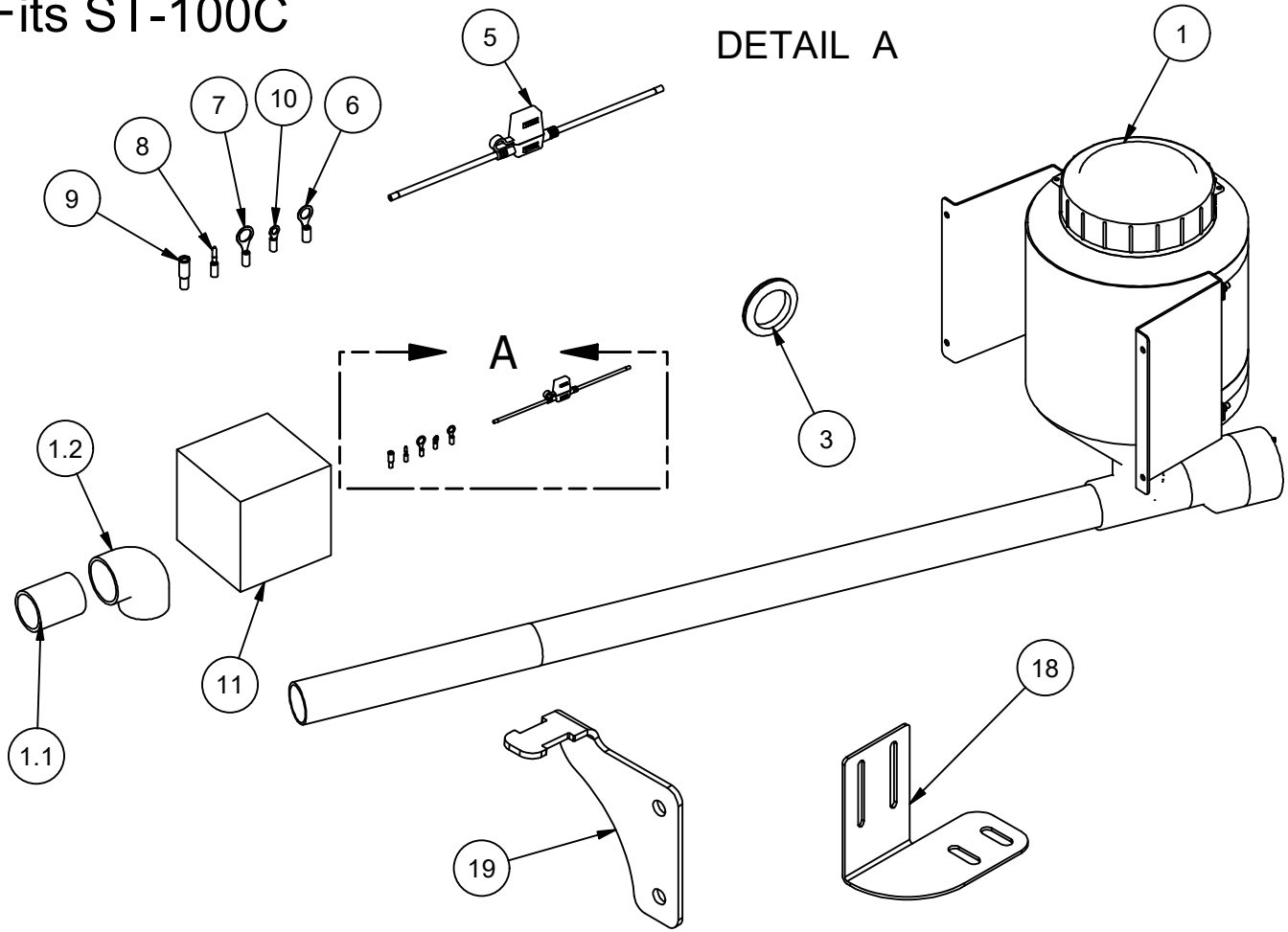
QTY	Part Number	Description
6	B5/16X1.0	Bolt
6	W5/16L	Lock Washer
6	N5/16N	Nut
4	B1/4X1.0	Bolt
4	W1/4L	Lock Washer
6	W1/4F	Flat Washer
4	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

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# ST-DI-6

## Kit Fits ST-100C



### Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr) Kit
1.1	1	Dry Inoc Chute Tube	Length Varies (Part of S3501 Kit)
1.2	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
3	1	S3502	Grommet 2-3/8x1/8x2-3/4x3-3/8x1/2
4	1	WI1030	On/Off Switch
5	1	TR1820	Mini Fuse Holder
6	2	TR1928	5/16" Ring Terminal
7	2	TR1938	3/8" Ring Terminal
8	2	TR1942	Bullet Connector Stud
9	2	TR1943	Bullet Connector Socket
10	4	TR1908	16-14 ga #10 Stud Ring Terminal
11	1	Bolt Kit	Bolt Kit
12	1	TR1825	15 Amp Mini Fuse
13	14	TR2112	Duplex Wire
14	1	WI1032	Paddle Switch Boot
15	1	WI1031	Paddle Switch
16	1	WI1033	On/Off Switch Boot
17	1	WI1029	On/Off Switch Plate
18	1	ST-CP-P0244	Paddle Switch Mount
19	1	ST-100C-P0042	Tube Mount

### Bolt Kit

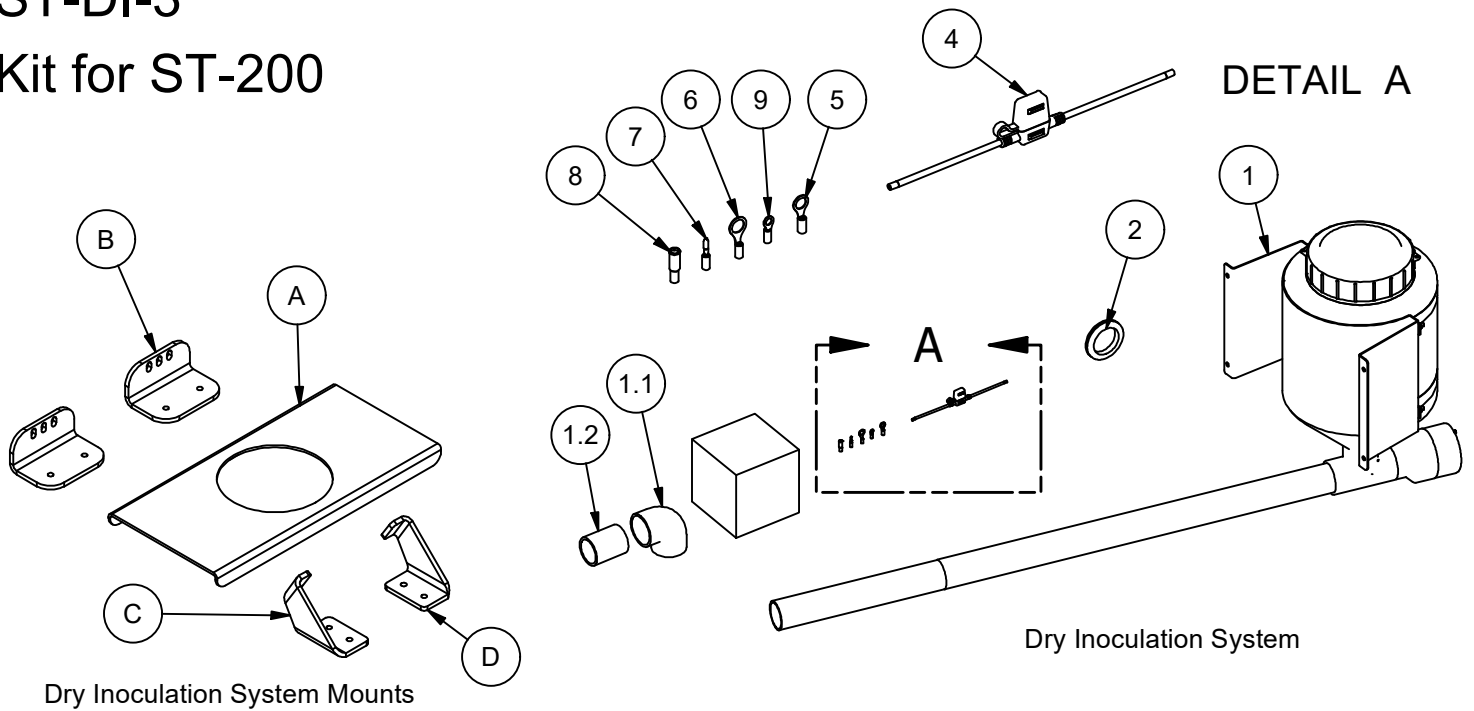
QTY	Part Number	Description
8	B5/16X1.0	Bolt
8	W5/16L	Lock Washer
8	N5/16N	Nut
6	B1/4X1.0	Bolt
6	W1/4L	Lock Washer
6	W1/4F	Flat Washer
6	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

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# ST-DI-3

## Kit for ST-200

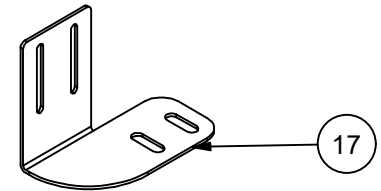


Dry Inoculation System Mounts

Dry Inoculation System Mounts			
ITEM	QTY	PART NUMBER	DESCRIPTION
A	1	ST-200D-P0035	Auger Support
B	2	ST-200D-P0037	Dry Noc Bracket
C	1	ST-200D-P0038	Dry Noc Upper Bracket RH
D	1	ST-200D-P0039	Dry Noc Upper Bracket LH

Dry Inoculation System

Dry Inoculation System			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr)
1.1	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
1.2	1	Dry Inoc Chute Tube	Dry Inoculation Short Tube (Part of S3501 Kit)
2	1	S3502	Grommet 2-3/8x1/8x2-3/4x3-3/8x1/2
3	1	WI1030	On/Off Switch
4	1	TR1820	Mini Fuse Holder
5	2	TR1928	5/16" Ring Terminal
6	2	TR1938	3/8" Ring Terminal
7	2	TR1942	Bullet Connector Stud
8	2	TR1943	Bullet Connector Socket
9	4	TR1908	16-14 ga #10 Stud Ring Terminal
10	1	Bolt Kit	Bolt Kit
11	1	TR1825	15 Amp Fuse
12	14	TR2112	Duplex Wire
13	1	WI1032	Paddle Switch Boot
14	1	WI1031	Paddle Switch
15	1	WI1033	On/Off Switch Boot
16	1	WI1029	On/Off Switch Plate
17	1	ST-CP-P0244	Paddle Switch Mount



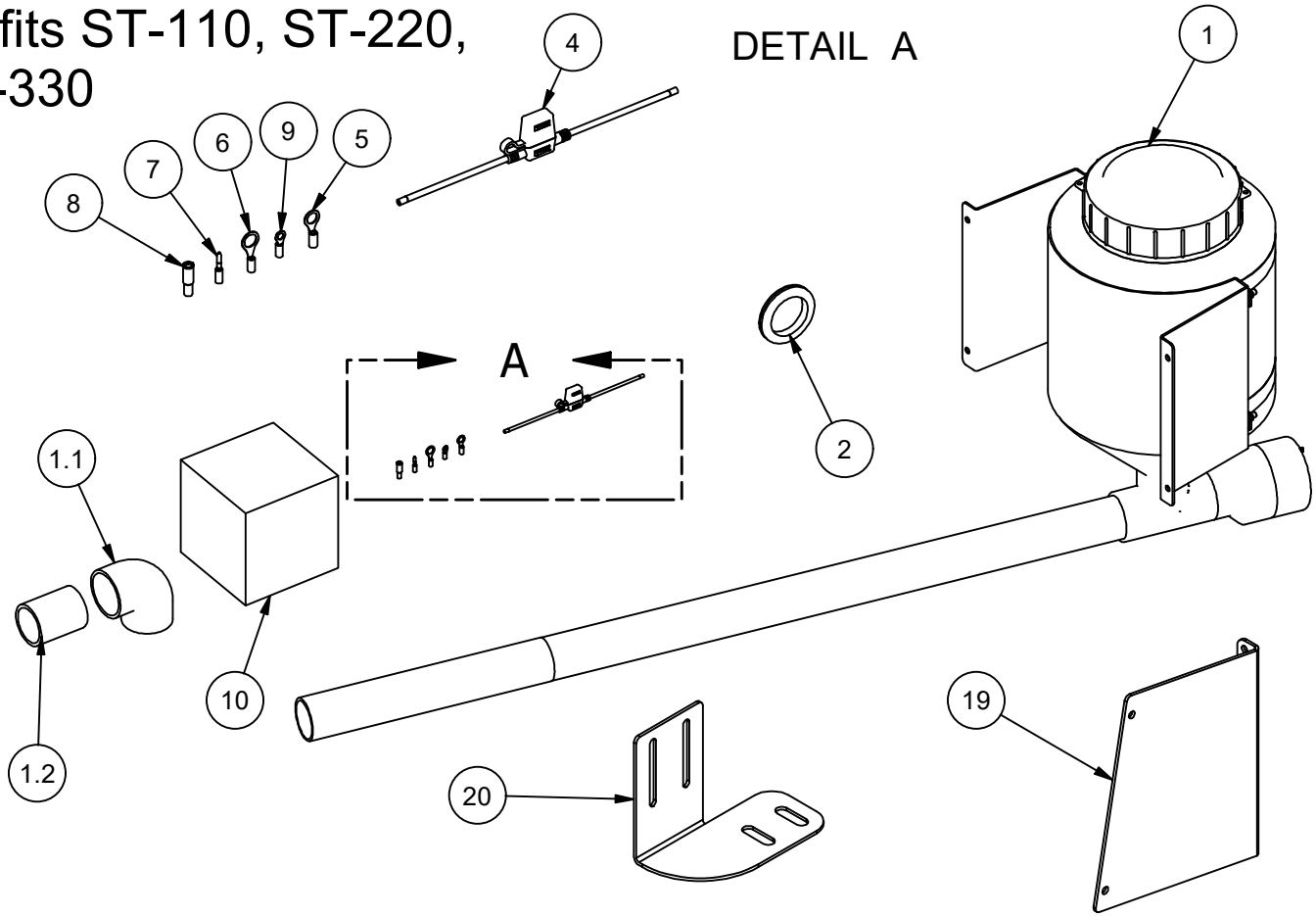
Bolt Kit

QTY	Part Number	Description
6	B5/16x1.0	Bolt
6	W5/16L	Lock Washer
6	N5/16N	Nut
4	B1/4X1.0	Bolt
4	W1/4L	Lock Washer
6	W1/4F	Flat Washer
4	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

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# ST-DI-4

Kit fits ST-110, ST-220,  
ST-330



Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr)
1.1	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
1.2	1	Dry Inoc Chute Tube	Dry Inoculation Short Tube (Part of S3501 Kit)
2	1	S3502	Grommet
3	1	WI1030	On/Off Switch
4	1	TR1820	Mini Fuse Holder
5	2	TR1928	5/16" Ring Terminal
6	2	TR1938	3/8" Ring Terminal
7	2	TR1942	Bullet Connector Stud
8	2	TR1943	Bullet Connector Socket
9	4	TR1908	14-16 ga #10 Stud Ring Connector
10	1	Bolt Kit	Bolt Kit
11	1	TR1825	15 Amp Mini Fuse
12	14	TR2112	Duplex Wire
13	1	WI1032	Paddle Switch Boot
14	1	WI1031	Paddle Switch
15	1	WI1033	On/Off Switch Boot
16	1	WI1029	On/Off Switch Plate
19	1	ST-220D-P0039	Dry Talc Mount Bracket
20	1	ST-CP-P0244	Paddle Switch Mount

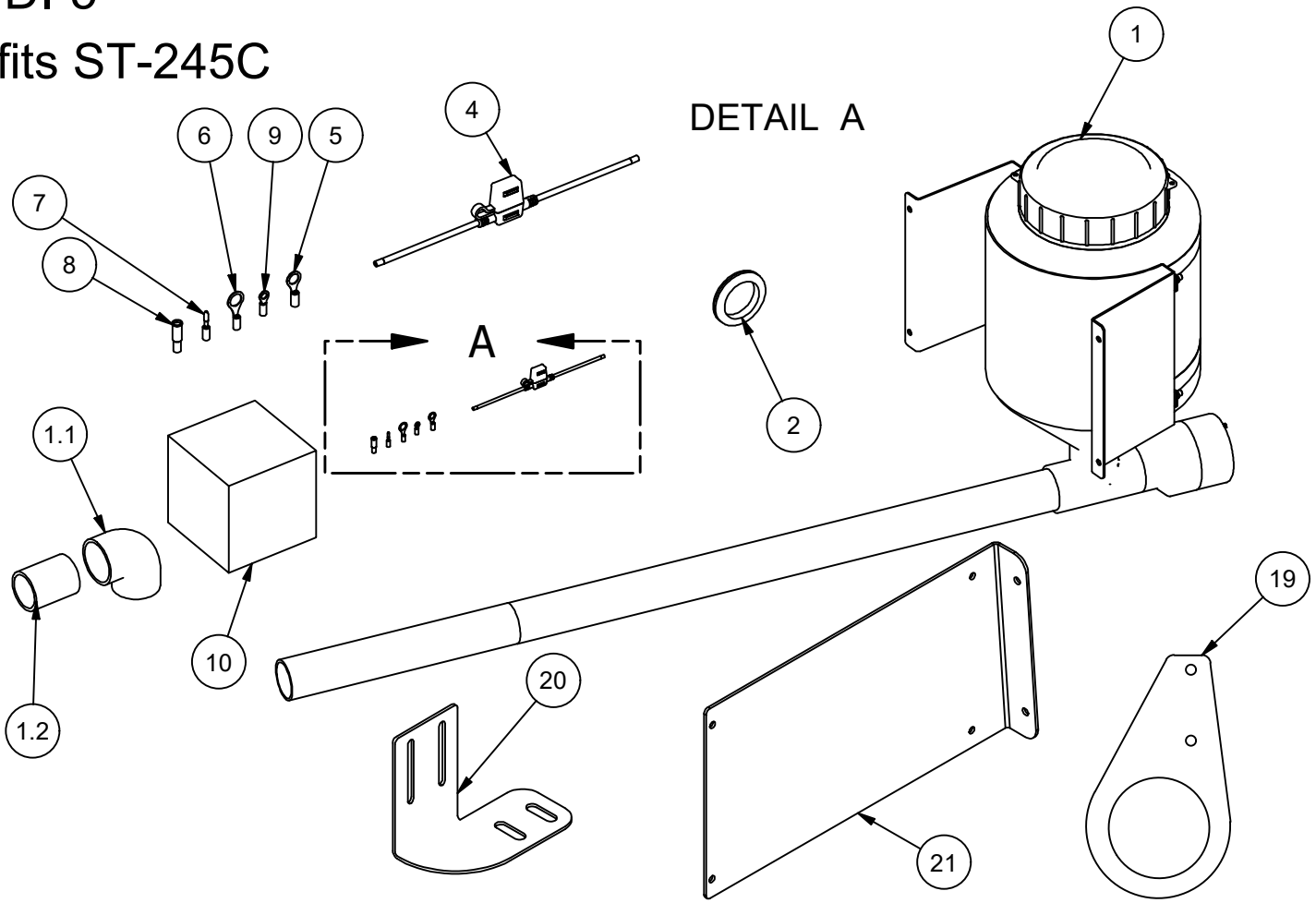
Bolt Kit

QTY	Part Number	Description
10	B5/16X1.0	Bolt
10	W5/16L	Lock Washer
10	N5/16N	Nut
4	B1/4X1.0	Bolt
4	W1/4L	Lock Washer
6	W1/4F	Flat Washer
4	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

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# ST-DI-5

Kit fits ST-245C



### Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr)
1.1	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
1.2	1	Dry Inoc Chute Tube	Dry Inoculation Short Tube (Part of S3501 Kit)
2	1	S3502	Grommet 2-3/8x1/8x2-3/4x3-3/8x1/2
3	1	WI1030	On/Off Switch
4	1	TR1820	Mini Fuse Holder
5	2	TR1928	5/16" Ring Terminal
6	2	TR1938	3/8" Ring Terminal
7	2	TR1942	Bullet Connector Stud
8	2	TR1943	Bullet Connector Socket
9	4	TR1908	16-14 ga #10 Stud Ring Terminal
10	1	Bolt Kit	Bolt Kit
11	1	TR1825	15 Amp Mini Fuse
12	14	TR2112	Duplex Wire
13	1	WI1032	Paddle Switch Boot
14	1	WI1031	Paddle Switch
15	1	WI1033	On/Off Switch Boot
16	1	WI1029	On/Off Switch Plate
17	1	S3550	2-3/4" Inside Diameter Rubber Grommet
19	1	ST-245D-P0045	Dry Inoculator Auger Tube Mount Bracket
20	1	ST-CP-P0244	Paddle Switch Mount
21	1	ST-245D-P0046	Bolt Plate

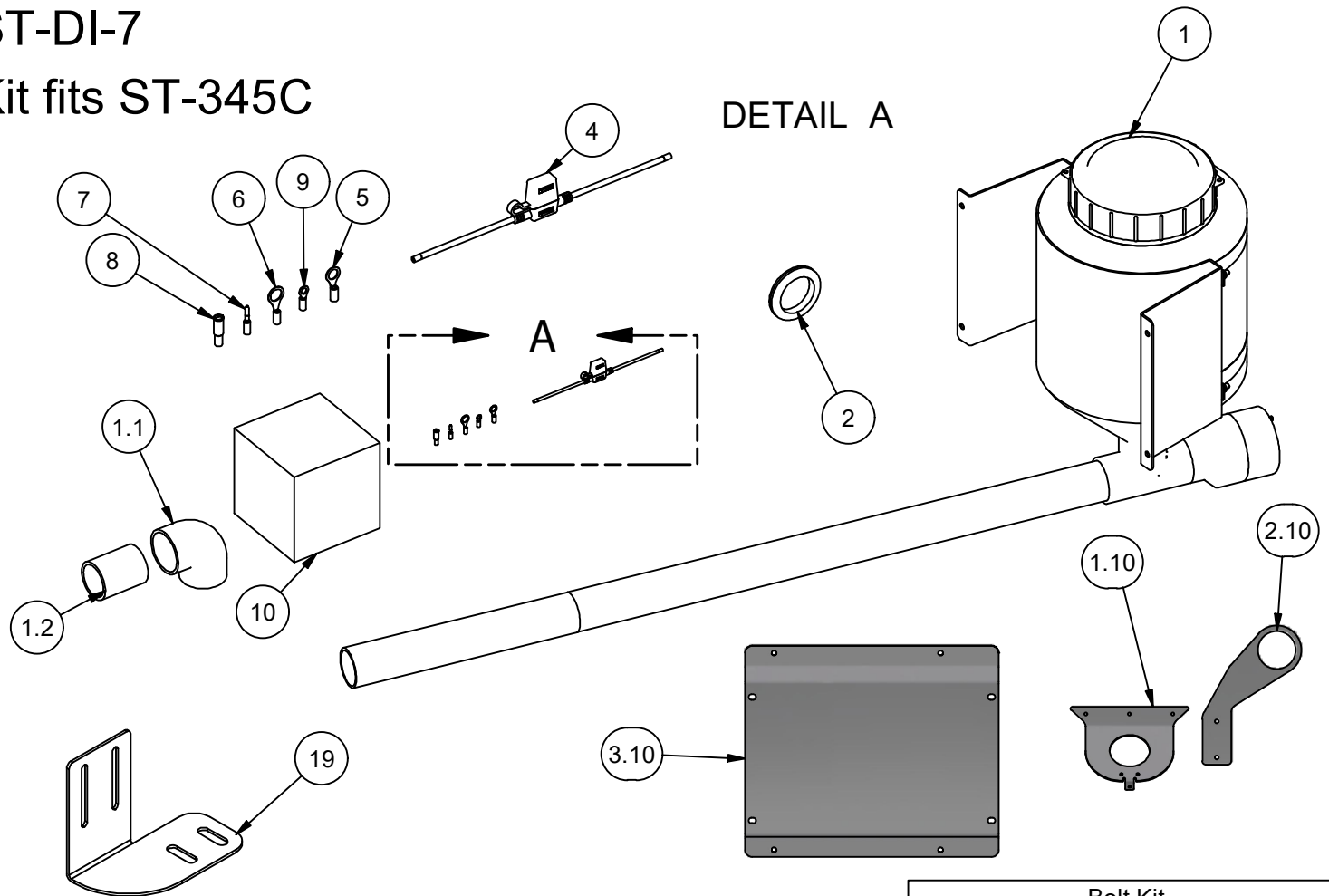
### Bolt Kit

QTY	Part Number	Description
8	B5/16X1.0	Bolt
8	W5/16L	Lock Washer
8	N5/16N	Nut
6	B1/4X1.0	Bolt
6	W1/4L	Lock Washer
8	W1/4F	Flat Washer
6	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

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# ST-DI-7

Kit fits ST-345C



## Dry Inoculator System

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr)
1.1	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
1.2	1	Dry Inoc Chute Tube	Dry Inoculation Short Tube (Part of S3501 Kit)
2	1	S3502	Grommet
3	1	WI1030	On/Off Switch
4	1	TR1820	Mini Fuse Holder
5	2	TR1928	5/16" Ring Terminal
6	2	TR1938	3/8" Ring Terminal
7	2	TR1942	Bullet Connector Stud
8	2	TR1943	Bullet Connector Socket
9	4	TR1908	14-16 ga #10 Stud Ring Connector
10	1	Bolt Kit	Bolt Kit
11	1	TR1825	15 Amp Mini Fuse
12	14	TR2112	Duplex Wire
13	1	WI1032	Paddle Switch Boot
14	1	WI1031	Paddle Switch
15	1	WI1033	On/Off Switch Boot
16	1	WI1029	On/Off Switch Plate
17	1	S3550	2-3/4" Inside Diameter Rubber Grommet
19	1	ST-CP-P0244	Paddle Switch Mount

## Bolt Kit

QTY	Part Number	Description
6	B5/16X1.0	Bolt
6	W5/16L	Lock Washer
6	N5/16N	Nut
4	B1/4X1.0	Bolt
4	W1/4L	Lock Washer
6	W1/4F	Flat Washer
4	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

## ST-345 Dry Inoculator Mounting Parts

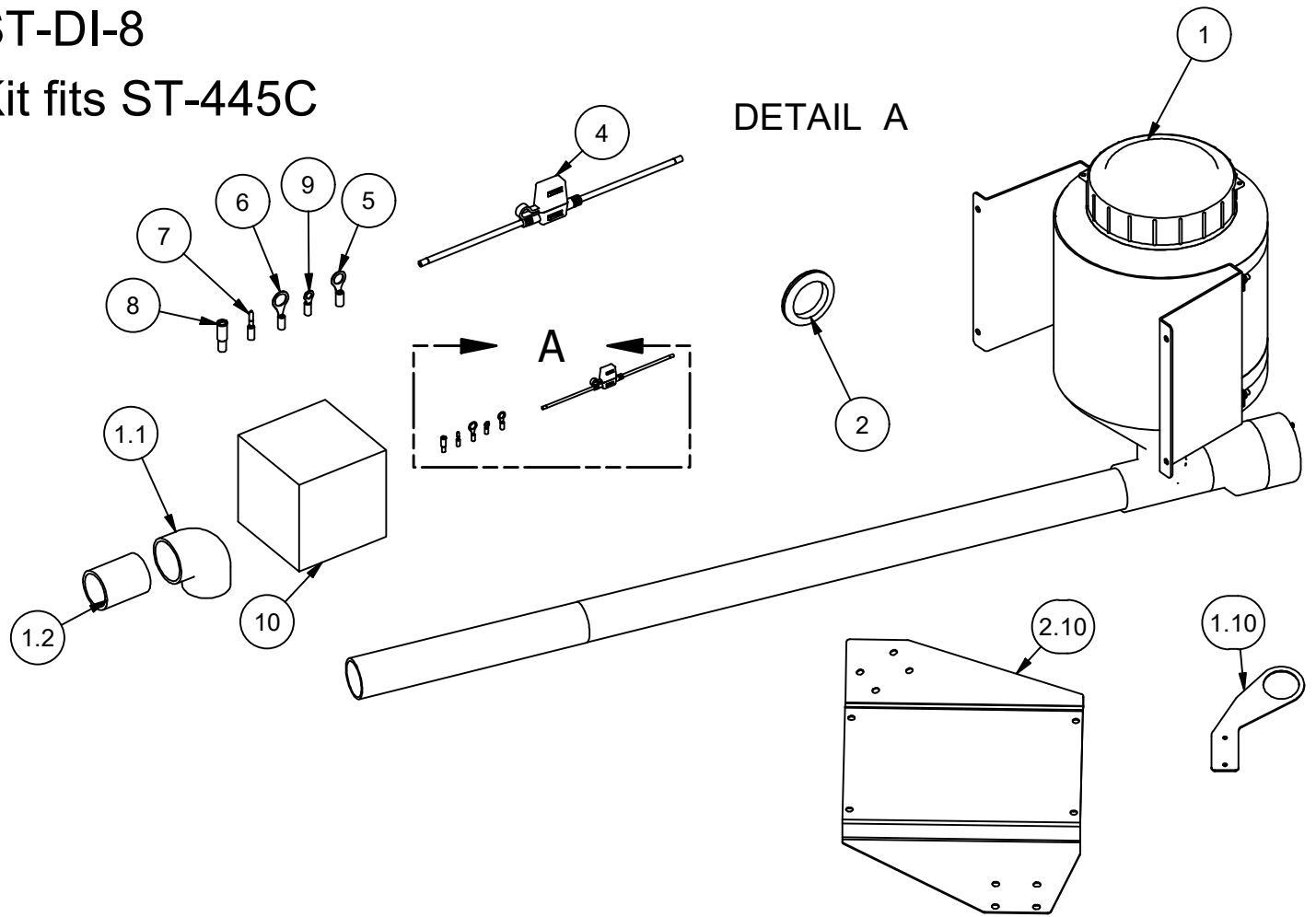
ITEM	QTY	PART NUMBER	DESCRIPTION
1.10	1	ST-345D-P0079	Chute Top Cover for Dry & Wet Inoc
2.10	1	ST-345D-P0076	Auger Support
3.10	1	ST-345D-P0023	345D Dry Inoculation Tank Mounting Plate

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# ST-DI-8

Kit fits ST-445C



### Dry Inoculator System

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S3501	Dry Inoculation System (20-80 lb/hr)
1.1	1	S3514	Dry Inoculation Elbow (Part of S3501 Kit)
1.2	1	Dry Inoc Chute Tube	Dry Inoculation Short Tube (Part of S3501 Kit)
2	1	S3502	Grommet
3	1	WI1030	On/Off Switch
4	1	TR1820	Mini Fuse Holder
5	2	TR1928	5/16" Ring Terminal
6	2	TR1938	3/8" Ring Terminal
7	2	TR1942	Bullet Connector Stud
8	2	TR1943	Bullet Connector Socket
9	4	TR1908	14-16 ga #10 Stud Ring Connector
10	1	Bolt Kit	Bolt Kit
11	1	TR1825	15 Amp Mini Fuse
12	14	TR2112	Duplex Wire
13	1	WI1032	Paddle Switch Boot
14	1	WI1031	Paddle Switch
15	1	WI1033	On/Off Switch Boot
16	1	WI1029	On/Off Switch Plate
17	1	S3550	2-3/4" Inside Diameter Rubber Grommet

### Bolt Kit

QTY	Part Number	Description
6	B5/16X1.0	Bolt
6	W5/16L	Lock Washer
6	N5/16N	Nut
4	B1/4X1.0	Bolt
4	W1/4L	Lock Washer
6	W1/4F	Flat Washer
4	N1/4N	Nut
2	S6-32x1.5	Machine Screw
2	N6-32NL	Nylock Nut

### ST-445 Dry Inoculator Mounting Parts

ITEM	QTY	PART NUMBER	DESCRIPTION
1.10	1	ST-345D-P0076	Auger Support
2.10	1	ST-445RD-P0087	445D Dry Inoculation Tank Mounting Plate

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# Dry Inoculator Instructions



## FreeFlo Dry Inoculator (By Lundell Plastics Corporation) Manual

For Use on dry inoculants, talc, graphite and blends of these materials. Not for use with unblended peat based inoculants.

### Specifications:

Voltage: 12VDC

Current Draw: 3A

Hopper Capacity: 35lb

Output: 20-80 lb/hr

### Mounting

The tank should be mounted in a location that will allow the auger discharge to be just above the auger or conveyor near the center of the seed flow. Mount the tank so it is as vertical as possible. Mounting at an angle will decrease the clean out capabilities. Once the tank is mounted, remove the plug from the bottom of the tee. Slide the auger over the shaft and tighten the set screw ensuring the set screw is seated on the flat portion of the shaft. Once the auger is installed, slide the PVC auger tube over the auger flighting. Fasten the discharge end of the auger tube to the tender frame.

### Wiring

Supply 12V power to the red wire and ground the black wire. Be sure not to reverse the polarity as this will damage the unit. The 12V power can come from an intermittent source such as a solenoid valve to allow the unit to only run while the auger or conveyor is operating.

### Operational Instructions

Calculate the approximate required application rate in lbs/hr; lbs/min; oz/hr or oz/min. Once the desired application rate is known, set the dry inoculator to the approximate corresponding setting using the chart on the corresponding page.

Once the unit is operating, visually inspect the seed for adequate application. Over application can be detected by excess product blowing off the seed as it is added to the planter just as lack of any dust can be a sign of under application. Once in use, the unit can be fine tuned based off of actual results.

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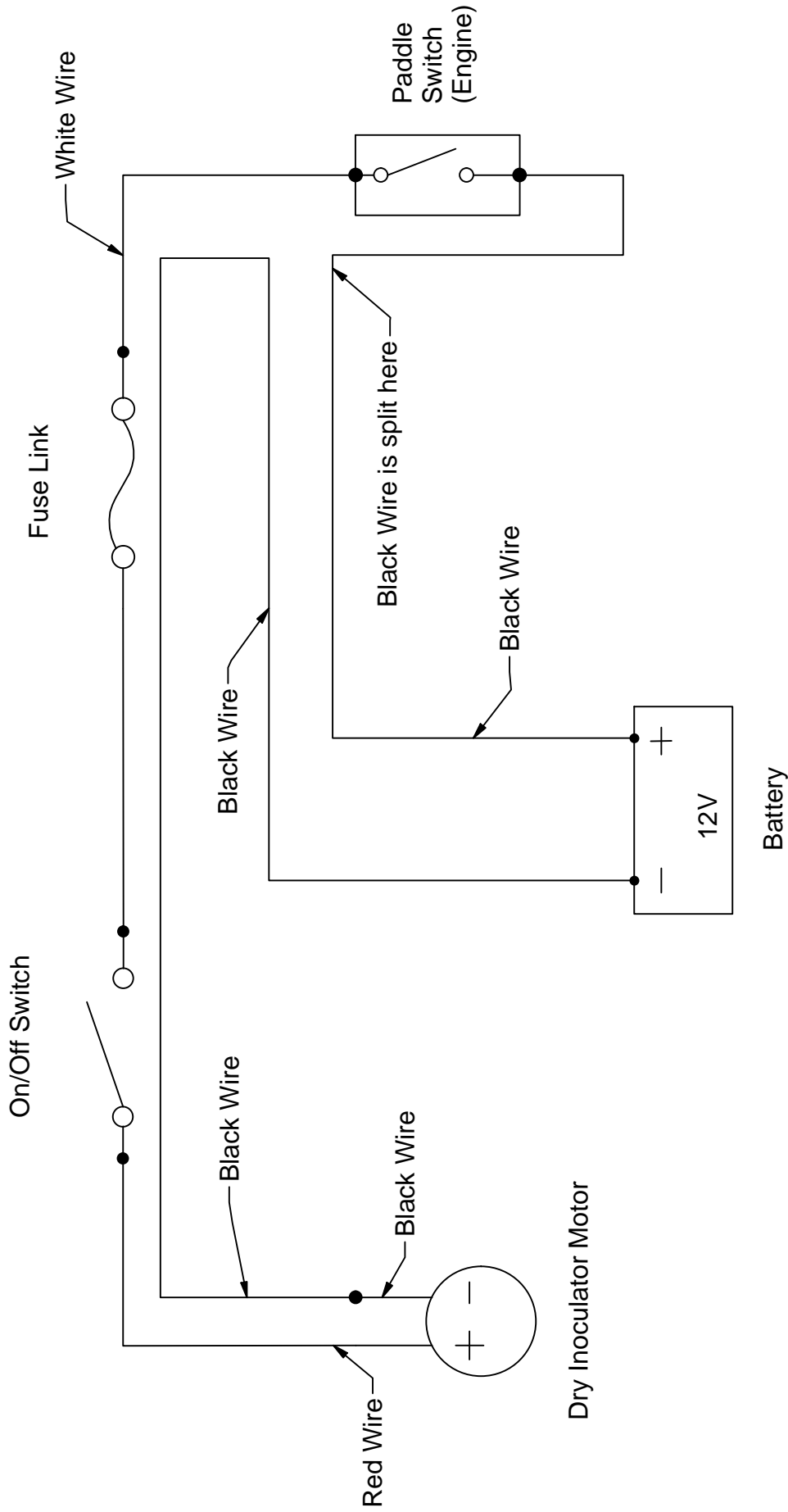
## DRY INOCULATOR RATE SETTINGS

20-80 lbs/hr Dry Inoculator								
	RATE	LBS/HR		OZ/HR		LBS/MIN		OZ/MIN
SETTINGS								
MIN		20		320		0.33		5.33
1		30.91		494.56		0.52		8.24
2		41.82		669.12		0.70		11.15
3		52.73		843.68		0.88		14.06
4		63.64		1018.24		1.06		16.97
5		74.55		1192.8		1.24		19.88
MAX		80		1280		1.33		21.33

Seed Tender Auger Capacities
6" = 8 bushels/minute
7" = 18 bushels/minute

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# Dry Inoculator Wiring Diagram



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Patriot Equipment  
 1302 K Road Minden, NE  
 308-832-0220

# Minden Machine Shop Inc

## **LIMITED WARRANTY**

Minden Machine Shop Inc warrants all products manufactured by it to be free of defect in material and workmanship for a period of one (1) year from the date of purchase.

This Minden Machine Shop Inc. warranty does not cover:

1. Parts and accessories supplied by Minden Machine Shop Inc. but manufactured by others. Minden Machine Shop Inc. will facilitate the other manufacturer warranty for the benefit of the purchaser but will not be bound thereby (example: augers, motors, trailers, tanks, etc.).
2. Products that have been altered by anyone other than a Minden Machine Shop Inc. employee or are used by the purchaser, for purposes other than what was intended at time of manufacture or used in excess of the "built specifications".
3. Products that are custom manufactured by Minden Machine Shop Inc. utilizing the purchaser's design which deviates from Minden Machine Shop Inc. normal production line manufactured or customized features of the products.
4. Malfunctions or damages to the product from misuse, negligence, customer alteration, accidents or product abuse due to incoming material or poor material flow ability or lack of required performance or required maintenance (e.g., poor material flow ability caused by incoming wet fertilizer or hot soybean meal, etc).
5. Loss of time, inconvenience, loss of material, down time or any other consequential damage.
6. Product use for a function that is different than designed intent (e.g., storing soybean meal in grain bin, unacceptable material in the bin such as hot bean meal when product originally designed for other application, etc).
7. Minden Machine Shop Inc is not responsible for any equipment that this product is attached to or mounted on.

To activate this warranty, the purchaser must make contact in writing with Minden Machine Shop Inc. within one (1) year of date of purchase. After contact, Minden Machine Shop Inc. has the right to determine the cause and qualify the legitimacy of the claim. Minden Machine Shop Inc., upon acceptance of a warranty claim, shall have a reasonable time to plan any repair or replacement and may affect repair or replacement out of its factory or through contract with a local repair service. If a purchaser after warranty notice is made, chooses to make the repair itself, Minden Machine Shop Inc. must approve any expenses before they are incurred to be responsible for customer reimbursement. Minden Machine Shop Inc. shall be liable on a warranty claim for repair or replacement of any defective products and this is the purchaser's sole and exclusive remedy. Minden Machine Shop Inc. will not be liable for any other or further remedy including claims for personal injury, property damage or consequential damage. The law of the State of Nebraska shall govern and any such claim and any issues with regard to the same shall be resolved in the Nebraska District Court for the county of Kearney.

### **RETURN OF MERCHANDISE**

Merchandise may not be returned without written approval from the factory. All returns must have a return authorization number. Obtain this number before the return and show it on all return items. A 15% restocking charge is made on merchandise returned. Returned merchandise must be shipped pre-paid.

### **RECEIVING MERCHANDISE AND FILING CLAIMS**

When receiving merchandise it is important to check both the number of parts and their description with packing slip. The consignee must make all claims for freight damage or shortage within 10 days from the date of delivery.

When the material leaves the factory it becomes the property of the consignee. It is the responsibility of the consignee to file a claim on any possible damage or loss. Please list your preferred routing on purchase orders.

### **MODIFICATIONS**

It is the policy of Minden Machine Shop Inc. to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

# WARRANTY REGISTRATION

To register equipment, or file a claim, copy and paste the words on this page into an email or word document, fill out the appropriate information completely, and email it to [larry@mindenmachine.com](mailto:larry@mindenmachine.com) with the subject as EQUIPMENT WARRANTY, or fill it out and fax it to 308-832-1340.

**Dealer Information:**                      Not Applicable, check here: [  ]

Dealer Name:

Address:

City:

State:

Zip Code:

Phone #:

Email:

**End User Information:**

Purchaser:

Address:

City:

State:

Zip Code:

Phone #:

Email:

Equipment:

Serial #:

Date Of Purchase:     /     /