



swisherinc.com

# OWNER'S MANUAL

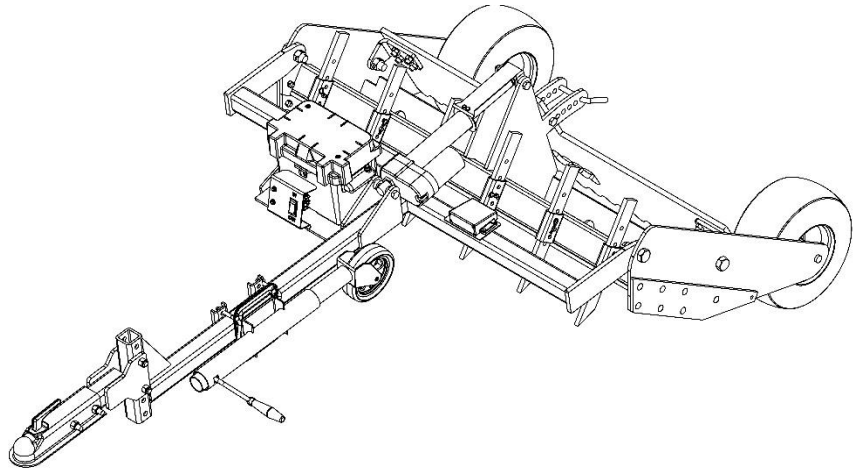
## MODEL NO.

STARTING SERIAL #:  
L115260001

20020

### IMPORTANT

Read and follow all Safety  
Precautions and Instructions  
before operating this  
equipment.



Model 20020 shown

# ROAD BUSTER GRAVEL GRADER

**Safety**  
**Assembly**  
**Operation**  
**Service and Adjustment**  
**Repair Parts**

1602 CORPORATE DRIVE, WARRENSBURG, MISSOURI 64093  
PHONE 800-222-8183 FAX 660-747-8650 EMAIL CustomerCare@SwisherInc.com

**Manufacturing quality lawn care equipment since 1945**



# LIMITED WARRANTY

The manufacturer's warranty to the original consumer purchaser is: This product is free from defects in materials and workmanship for the period's shown below beginning from the date of purchase by the original consumer purchaser. We will repair or replace, at our discretion, parts found to be defective due to materials or workmanship. This warranty is subject to the following limitations and exclusions:

Materials and Workmanship	3 Years
Commercial Use	The warranty period for this product when used for commercial or rental is limited to 1 year from the date of original purchase.
Limitation	This warranty applies only to products which have been properly assembled, adjusted, and operated in accordance with the instructions contained within this manual. This warranty does not apply to any product of Swisher that has been subject to alteration, misuse, abuse, improper assembly or installation, shipping damage or to normal wear of product.
Exclusions	Excluded from this warranty are normal wear items, normal or routine adjustments, and normal or routine maintenance.

In the event you have a claim under this warranty, you must return the product to an authorized service dealer. All transportation charges, damage, or loss incurred during transportation of parts submitted for replacement or repair under this warranty shall be borne by the purchaser. Should you have any questions concerning this warranty, please contact us toll-free at 1-800-222-8183. The model number, serial number, date of purchase, and the name of the authorized Swisher dealer from whom you purchased the splitter will be needed before any warranty claim can be processed.

**THIS WARRANTY DOES NOT APPLY TO ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AND ANY IMPLIED WARRANTIES ARE LIMITED TO THE SAME TIME PERIODS STATED HEREIN FOR ALL EXPRESSED WARRANTIES.** Some states do not allow the limitation of consequential damages or limitations on how long an implied warranty may last, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may have other rights, which vary from state-to-state. This is a limited warranty as defined by the Magnuson-Moss Act of 1975.

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# SAFETY PRECAUTIONS



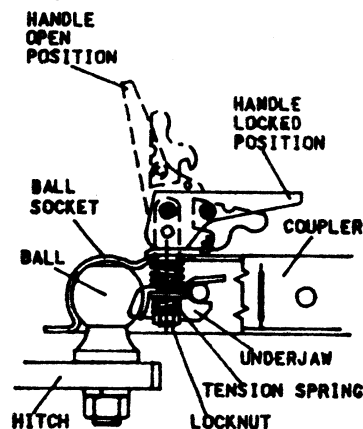
**This Safety Alert Symbol indicates important messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury.**

**Read this manual completely. This machine can amputate hands, feet, and throw objects. Failure to observe the following safety instructions could result in serious injury or death.**

- Read and understand the manual. Learn to operate this equipment in a safe manner. Familiarize yourself with all of the controls in a safe environment before starting to work with this machine.
- **DO NOT** under any circumstances alter this Grader. This equipment was designed and engineered in accordance with operating instructions. Altering this equipment, or using this equipment in such a way as to circumvent its design capabilities and capacities, could result in serious injury or fatality and **WILL VOID THE WARRANTY.**
- Allow **ONLY** responsible adults who have read this manual to operate this machine. **NEVER** allow children to operate this machine.
- **NEVER** operate or allow someone to operate this equipment while under the influence of alcohol, drugs or medication. Being coherent is essential for safety.
- **NEVER** use grader for any other purpose than grading non-public roadways/driveways. Any other use can result in injury. Your grader is a precision piece of power equipment, not a toy. Therefore, exercise extreme caution at all times.
- **ALWAYS** wear protective gear such as safety goggles, steel-toed shoes, and a helmet if on an ATV/UTV.
- **BEFORE** towing, be certain that the grader is securely attached to the towing vehicle and that the support leg is secured in the towing positions.
- **NEVER** allow persons to ride on grader. **DO NOT** carry any cargo on your grader other than weight that is secured on the main frame weight tray provided.
- **ALWAYS** watch for traffic of any kind when near or around roadways.
- **ALWAYS** shut the towing vehicle off and apply the emergency brake if applicable, before getting off to service grader.
- **ALWAYS** use grader only when sufficient lighting/daylight is present.
- **NEVER** operate the grader on slopes greater than 15°.
- **NEVER** attempt to work on the electric motor or electrical devices yourself. Contact customer service and they will find a qualified service center.
- **ALWAYS** check working parts on grader before each use for worn or broken parts that would need replaced.
- **ONLY** use manufacturer-recommended replacement parts.

# TOWING SAFETY

- Be sure support jackstand is in the travel position and the coupling is secure. This must also be retracted so not to interfere while towing. Retract jackstand by removing pin, pivoting up, and replacing pin.
- Never exceed 15 MPH while towing your grader. Be extra cautious when traveling over rough terrain.
- Always be careful while backing your grader. You could jackknife your grader if not careful.
- See tire and wheel specifications for PSI while towing.
- Be aware of the extra length of grader while turning, parking, crossing intersections, and in all driving situations.



## OPERATION INSTRUCTIONS POSI-LOCK COUPLER

ADJUST COUPLER LOCKING PRESSURE ON BALL BEFORE USE. PLACE HANDLE IN LOCKED POSITION WITH BALL IN COUPLER. TIGHTEN LOCKNUT AGAINST TENSION SPRING SO THAT COUPLER IS NOT LOOSE ON BALL. CORRECT ADJUSTMENT WILL ALLOW HANDLE TO BE RELEASED WITH MODERATE PRESSURE APPLIED TO HANDLE.

TO OPEN, PULL UP ON COUPLER HANDLE AND ROTATE FORWARD. PLACE COUPLER ON BALL WHEN BALL IS COMPLETELY NESTED IN BALL SOCKET, ROTATE COUPLER HANDLE BACKWARD UNTIL HANDLE IS IN LOCKED POSITION.

AFTER TOWING, CHECK COUPLER FOR TIGHTNESS ON BALL. ALWAYS CHECK TIGHTNESS BEFORE TOWING. BE SURE COUPLER HANDLE IS IN LOCKED POSITION.

## WARNING:

NEVER EXCEED WEIGHT CAPACITY. ALWAYS USE CORRECT BALL SIZE, MAKING SURE BALL IS COMPLETELY INSERTED INTO COUPLER. LOCK COUPLER HANDLE SECURELY BEFORE TOWING. ALWAYS CHECK FOR DAMAGES AND REPLACE IF DAMAGED. AVOID SHARP TURNS AND STEEP VERTICAL ANGLES WHEN TOWING.

# MAINTENANCE & STORAGE

When storing the grader always lower the grader to which the scarifiers contact the ground and the actuator is relieved of carrying any load. It is not recommended to ever leave the grader stored with the actuator holding the weight of the unit.

It is recommended to use the jackstand provided to raise and lower the unit when connecting and disconnecting from vehicles. **DO NOT** try and lift the weight of the grader by yourself when uncoupling, it may cause injury.

## INTENDED USE / RECOMMENDED VEHICLES

The grader is intended to refinish non-public driveways or roadways consisting of primarily gravel and or rock. Be aware of your surroundings and what is beneath the ground you intend to use the grader on. **ALWAYS** avoid large rocks, embedded obstacles, and buried utilities such as gas, electric, or phone lines.

A minimum of a 500 cc ATV/UTV or a 20 HP /500 lb. garden tractor is required to pull the grader and Four-wheel or all wheel drive is always recommended when available on the vehicle to gain maximum traction to ensure best performance.

Understand that the amount of ground engagement with the scarifiers depends strongly on the type of vehicle you are using and media make up that you are refinishing. The looser the media and the more traction from vehicle allows more ground engagement and the lighter the vehicle and more hard packed the media allows less engagement.

It is recommended to start with minimum engagement (1/4"-1/2") when beginning to refinish an area, and as the ground loosens increase the depth of engagement on scarifiers.

The grader design allows the operator to add weight to the unit if necessary to break up the ground when pulled with an adequate vehicle. The weight area is located in the main frame section on the unit on either side of the actuator mount. Any additional weight should not exceed 100 lbs and should always be secured within the weight area by any means possible.

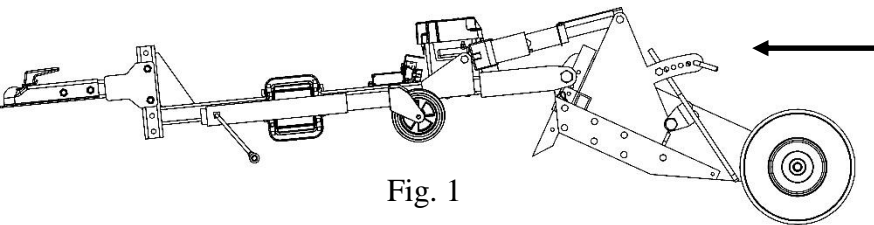


Fig. 1

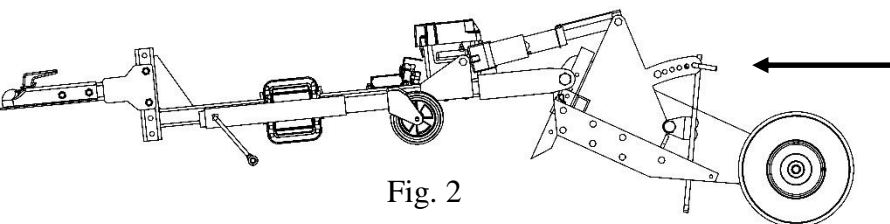


Fig. 2

The rear blade on the grader can be used in several positions depending on the work you are doing. In fig. 1 the blade is free floating and only restrained by the a pin in the last pin position. This allows the blade to swing freely and the weight of the blade helps level and smooth loose media. In fig 2 the blade is pinned in the upright position and the grader can act as a scrapping blade when scarifiers are raised up away from media.

# TRANSMITTER AND RECEIVER

The grader comes equipped with a remote control to raise and lower the unit by electric actuator. The remote has two buttons, one to extend and one to retract the actuator. Follow the directions below to activate the remote once battery is installed.

- 1) **Once receiver is plugged into a power source, with the remote in hand hold down the button on the receiver box until a GREEN LED light comes on solid.**
- 2) **Once the GREEN LED is solid hold down one of the buttons on the remote for approximately one second and verify the GREEN LED light flashes momentarily when button is pressed.**
- 3) **Repeat this process but with the opposite button on the remote**
- 4) **Once both signals have been sent to the receiver the LED light on the receiver should turn solid RED. This means your transmitter and receiver are now paired.**
- 5) **Press the IN and OUT button as needed.**



IN

OUT

**To turn off the wireless system press the button on the receiver box once and ensure there is no longer a LED light on.**

## LED Indicator Light

Steady RED – The system is active and ready to use.

Flashing RED during use – The battery or power source is low.

RED light is off – The wireless remote control is turned off, or not active.

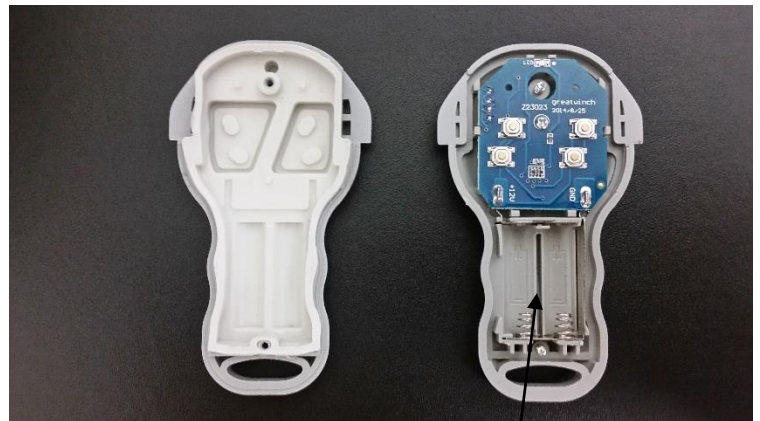


Screws

## Replacing batteries

If the indicator light on the handheld remote flashes during use, the batteries are low and should be replaced.

- 1) Remove the two screws from the handheld remote located on the back of the remote.
- 2) Separate the top and bottom sections of the remote using a flat head screw driver or similar device.
- 3) Remove the old batteries and dispose in accordance with local environmental regulations.
- 4) Insert (2) new A23 style alkaline batteries as shown with the positive terminals facing the switches. Do not mix old and new batteries.
- 5) Join the top and bottom sections making sure they snap together and rubber seal remains intact.
- 6) Secure with the two screws.



Battery Location

## ASSEMBLY

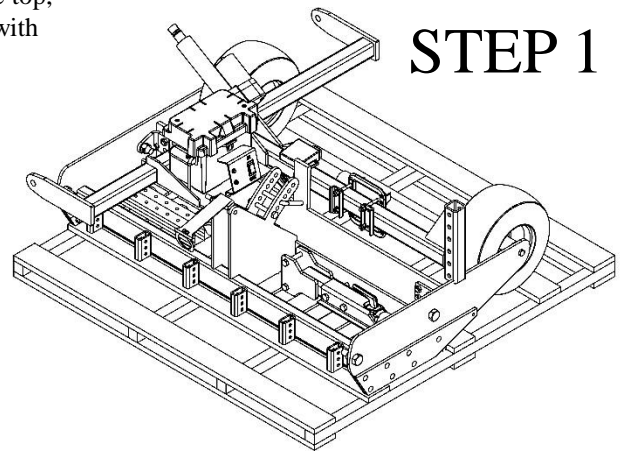
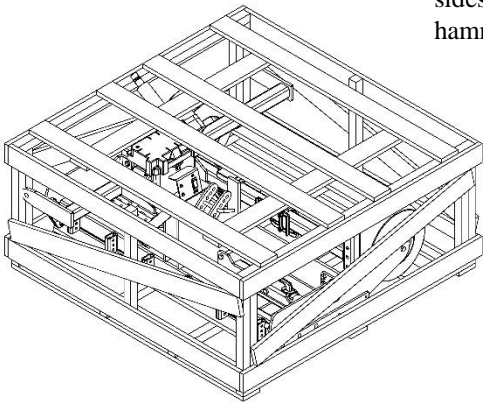
This grader has been mostly assembled at the factory. Refer to uncrating and assembly instructions below to complete the final assembly steps. Refer to the drawings and part lists should it become necessary to disassemble the unit for repair or replacement of parts.

Inspect all components for damage. If you believe you have a damaged part please contact customer service immediately at 1-800-222-8183.

**TOOLS REQUIRED: (2) 3/4" WRENCH OR SOCKET, (2) 1 1/4" WRENCHES/SOCKETS OR LARGE CRESCENT WRENCHES HAMMER, CROW BAR/PRY BAR, WIRE CUTTERS, GLOVES AND PROTECTIVE EYEWEAR RECOMMENDED**

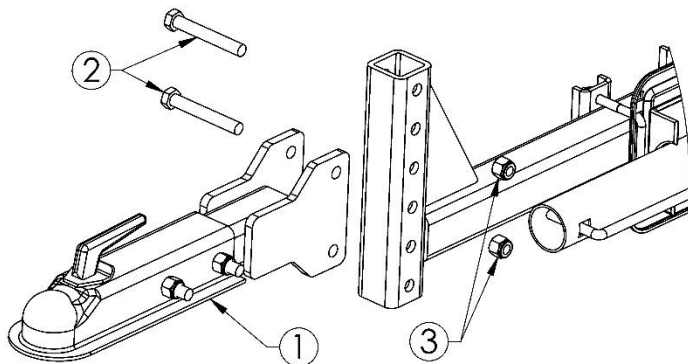
**WARNING:** Exercise extreme caution, as parts are very heavy. Sufficient persons or mechanical handling equipment should be used.

Step 1: Carefully remove top, sides, and ends of crate with hammer and pry bar.



Step 2: Remove the ball coupler assembly #1 from within the frame assembly and install it on to the tongue assembly with the NB577 (bolts) #2 and NB281 (nuts) #3 provided.

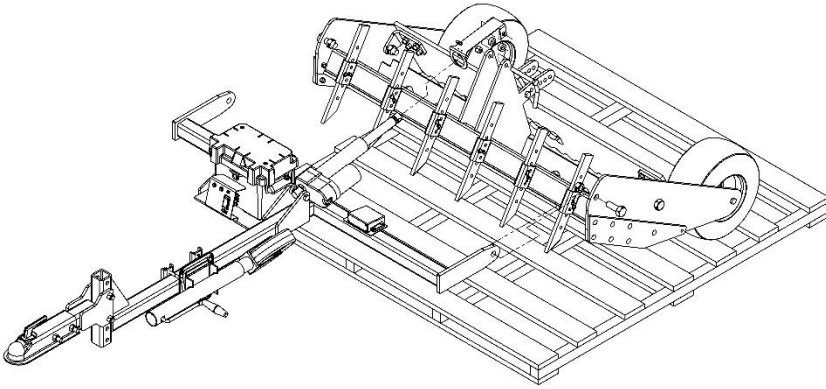
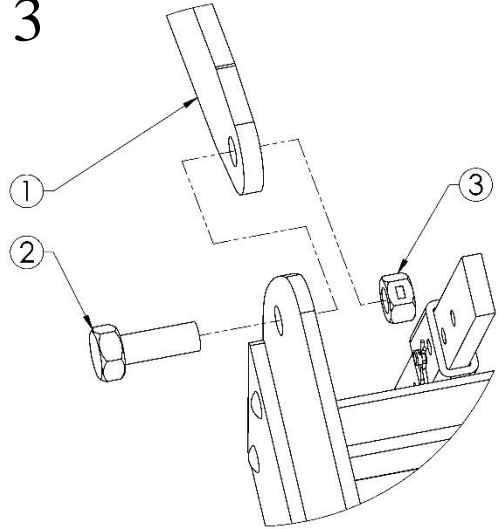
## STEP 2



## ASSEMBLY CONTINUED

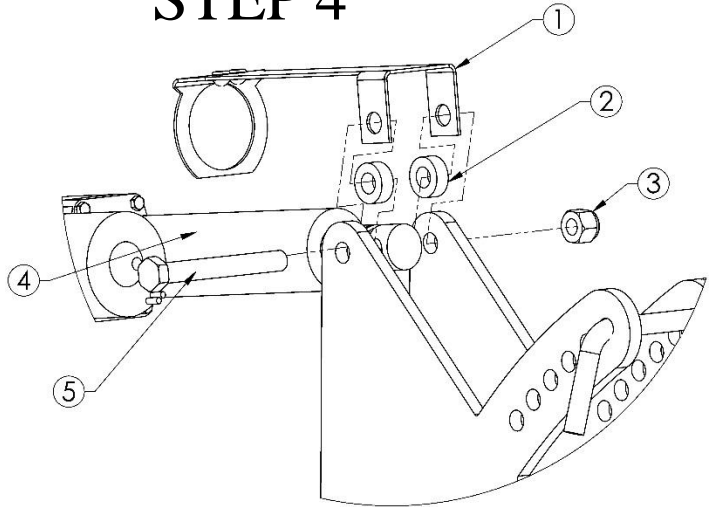
Step 3: Remove main tongue assembly from crate and bolt both frame ends #1 to the inside of main frame rail sides using (2) 11431 bolts #2 and (2) 13997 nuts #3 provided. Tighten hardware snug but do not lock completely, allow frame assemblies to hinge.

### STEP 3



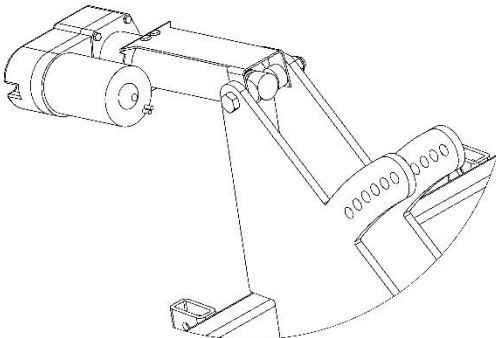
Step 4: Once the two main frame assemblies are fastened, install the 20008TK height indicator bracket #1 over the actuator #4 and slide towards front of unit. While holding actuator up run NB132 bolt #5 through frame, 20008TK #1, 19942TK #2, actuator, then through second spacer and opposite side of bracket. Capture the bolt with the NB281 nut #3 provided.

### STEP 4



**SHOWN BELOW IN FIG. 2 IS THE PROPER ASSEMBLY OF HEIGHT INDICATOR AND ACTUATOR.**

**Fig. 2**





# Supplying Power to the Grader

The grader is supplied with two power leads. The remote power lead (20038) is designed to be attached to your ATV/UTV or other vehicles 12V battery. The onboard power lead (20039) is designed to hook up to a battery installed directly on the grader. Both power leads plug directly into the grader wiring harness but only one can be used at a time. The 20039 harness requires (2) NB524 nuts and (2) NB690 bolts to fasten to battery posts. These are located in the parts bag.

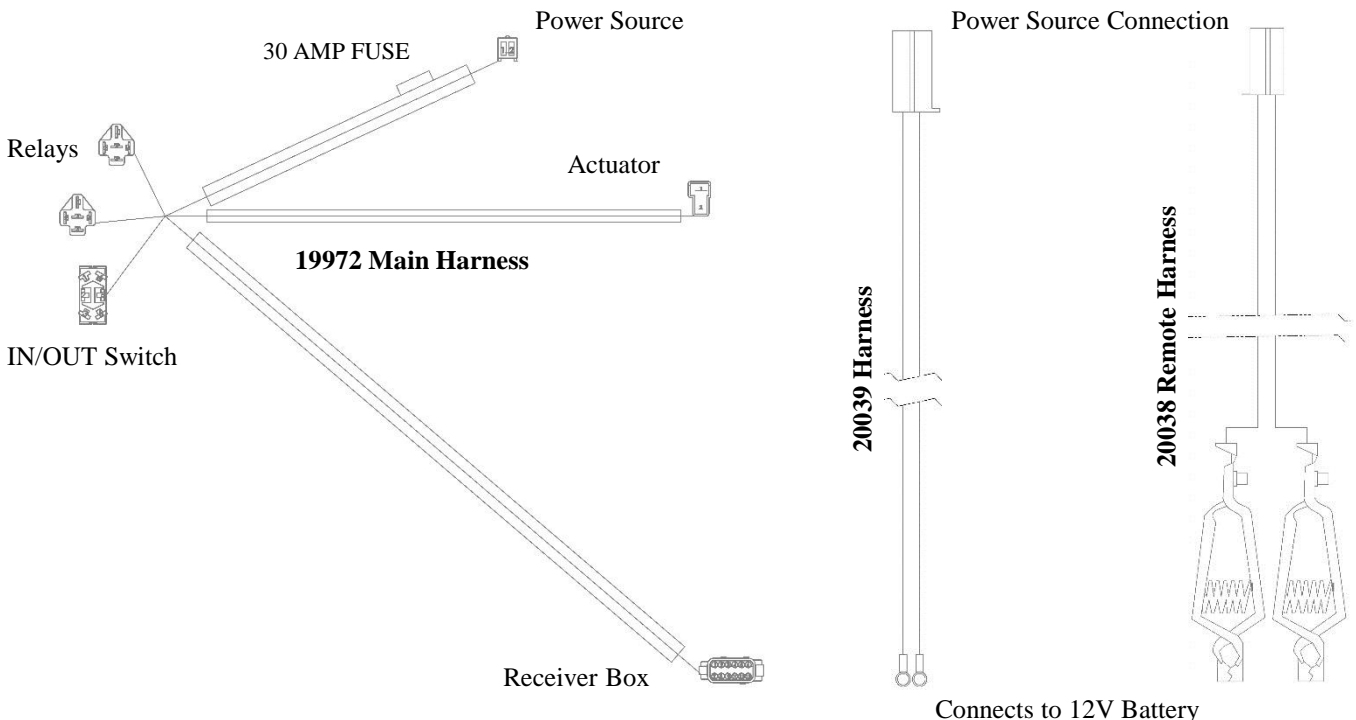
**Caution: Always be sure to install RED wire of lead to Positive side of battery and BLACK wire of lead to the negative side of battery. ALWAYS disconnect negative (black) lead from battery first and install negative (black) last when reconnecting to battery.**

**Caution: Always be sure to secure the remote lead to tongue of grader and vehicle so not to drag on ground or become tangled in unit.**

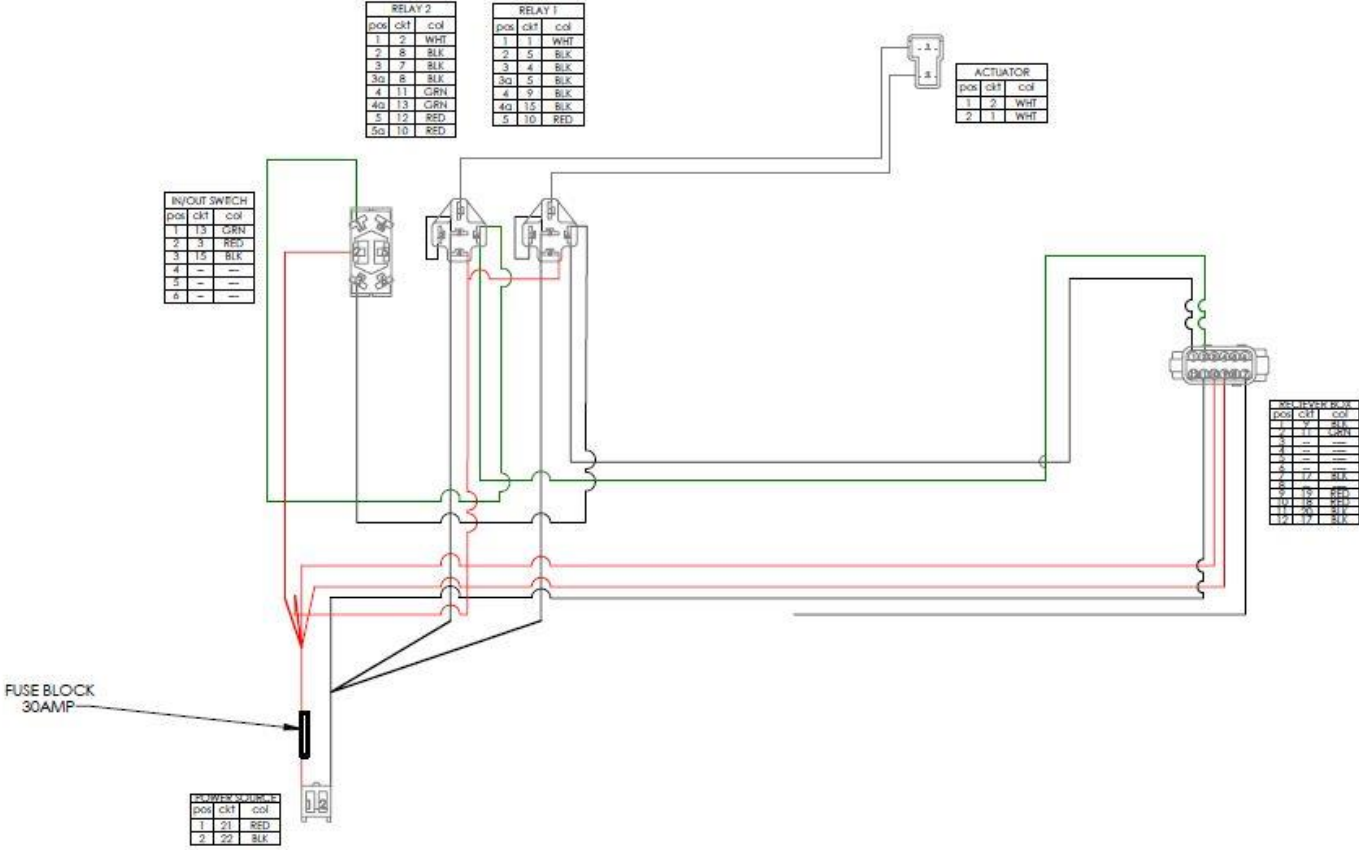
**\*Below is a visual of all harnesses and where the connections attach.**

NOTE: Grader does not come supplied with a battery but has the option of installing an onboard battery. The unit is designed to use a 12 V U1 or U1 deep cycle battery. Any other style of battery may not mount on unit correctly or allow unit to function properly.

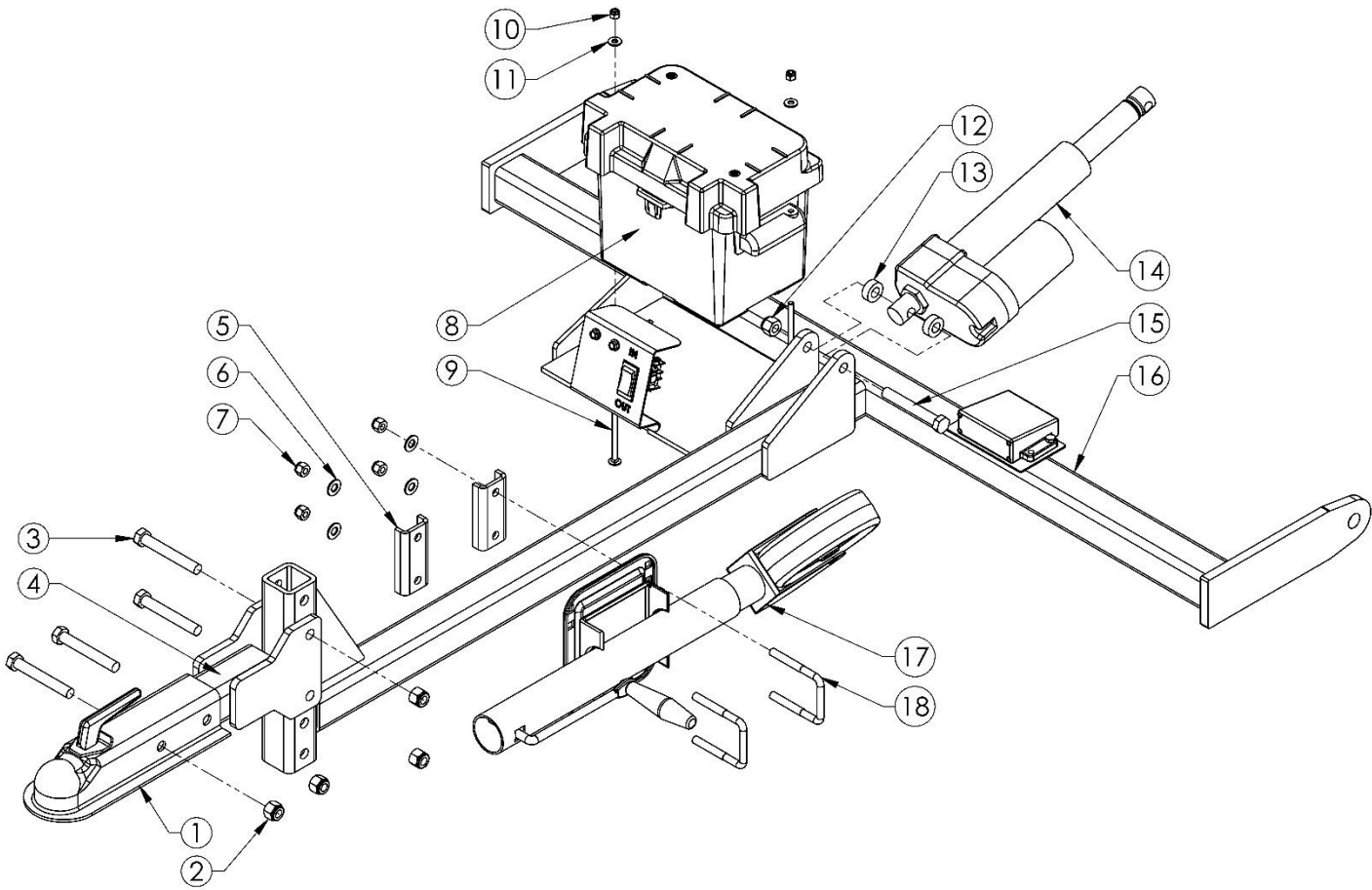
**Maintaining Battery: It is very important to recharge a battery after each use or if completely drained, and also recommended to install a battery tender (charger) on to the battery when not in use. IT IS NOT recommended to charge a battery at more than a 10 amp rate for extended periods of time.**



# WIRING SCHEMATIC

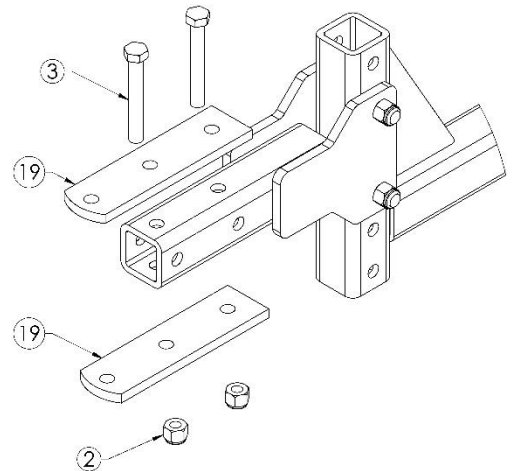


# PARTS BREAKDOWN

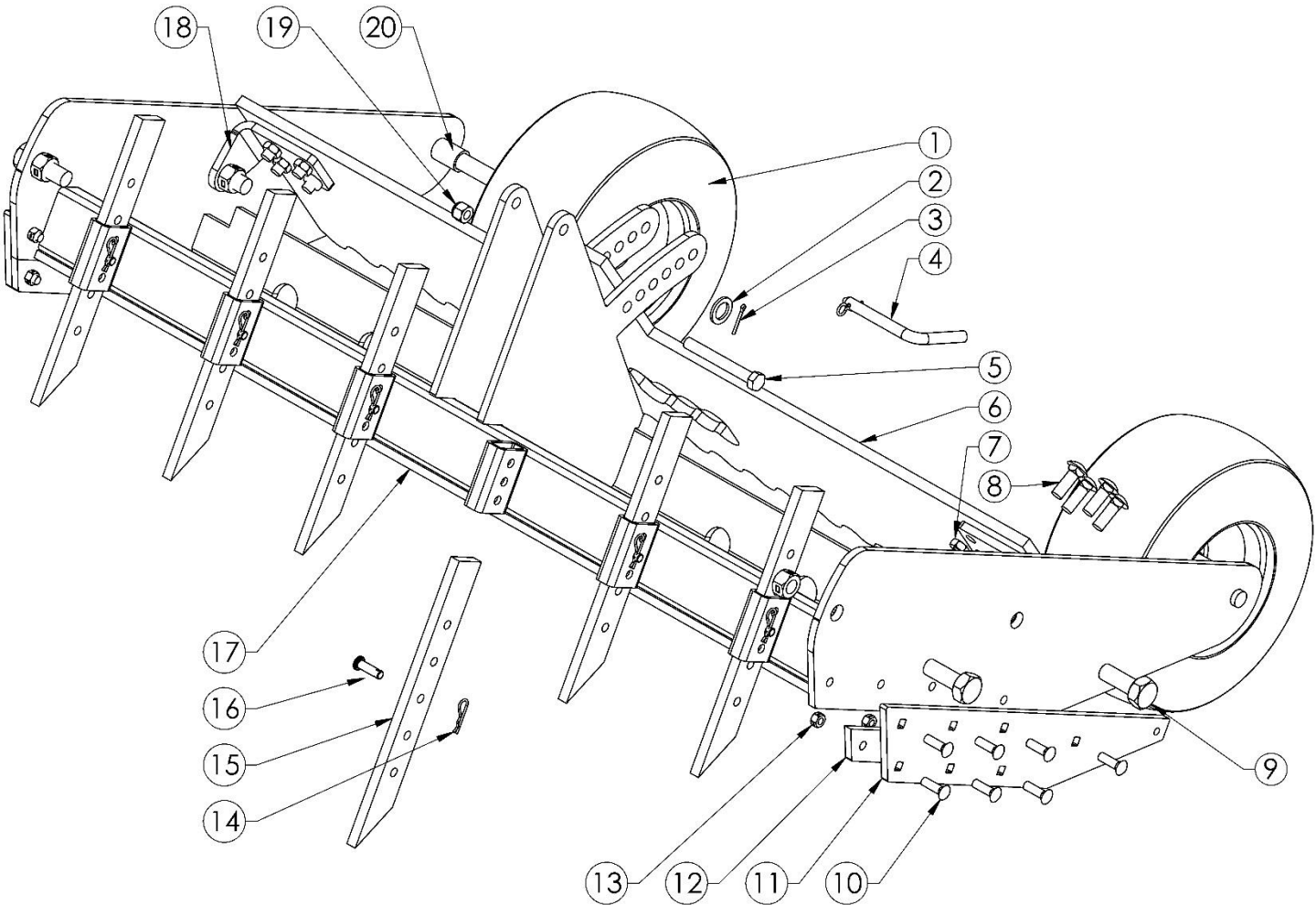


## LATCH PIN OPTION (Latch pin plates included in parts bag)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	7365	Coupler - 2" Ball	1
2	NB281	Nut - Nyloc 1/2-13 ZY	4
3	NB577	Bolt - 1/2-13 X 3 1/2 GR5 ZY	4
4	19958TK	Weldment - Hitch, Grader; Txt Blk	1
5	19477TK	Plate - Support, Kickstand Txt Blk	2
6	NB272	Washer - SAE Flat 3/8 ZY Carbon Steel	4
7	NB182	Nut - Nyloc 3/8-16 ZY	4
8	19974	Battery - Box, Grader	1
9	NB100	Bolt - Carriage, 1/4-20 X 6 GR5	2
10	NB180	Nut - Nyloc 1/4-20	2
11	NB274	Washer - SAE Flat 1/4 ZY	2
12	NB281	Nut - Nyloc 1/2-13 ZY	1
13	19942TK	Spacer - .515"ID X 1"OD X .500", Txt Blk	2
14	19957	Actuator - 12VDC, 20:1, ACME 6", 1500#	1
15	NB577	Bolt - 1/2-13 X 3 1/2 GR5 ZY	1
16	19946TK	Weldment - Main Tongue, Grader; Txt Blk	1
17	19179	Jackstand	1
18	12447	Ubolt - SQ, 3/8-16X2.437 X 3 Lg GR 5 ZY	2
19	19962TK	Plate - Hitch, Latch; Txt Blk	2

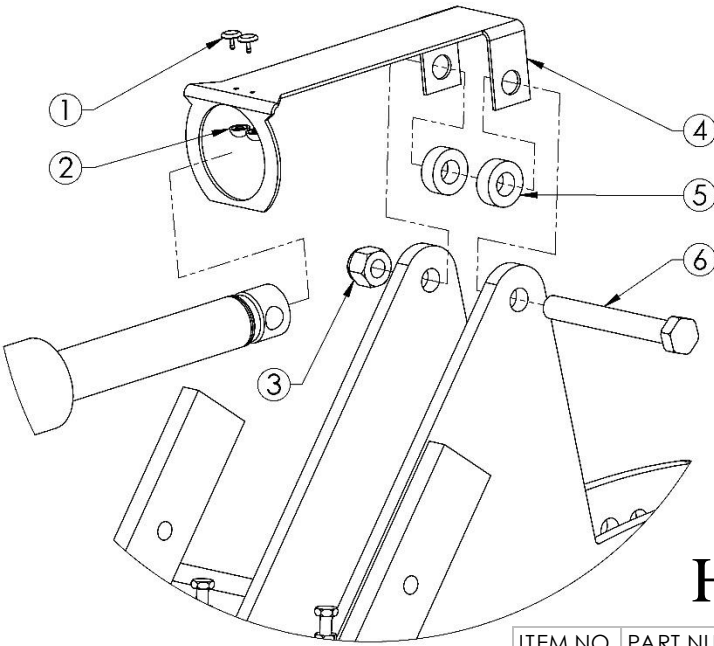


# PARTS BREAKDOWN



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	19971	Tire -13 X 650-6 3/4 ID Smooth	2
2	NB195	Washer - 13/16 X 1 1/4 X 1/8 ZY; Mild	2
3	NB126	Pin - Cotter, 1/8 X 1, Crbn Stl Ext Prng	2
4	15177	Bent Pin - W/ Hair Pin 1/2OD X 3.5, ZP	1
5	NB132	Bolt -1/2-13 X 4 HCC GR5 ZY	1
6	19944TK	Plate - Rake, Grader, Txt Blk	1
7	NB121	Nut - Jam Lock, 1/2-13 2-Way Gr A	8
8	20057	Bolt - Carriage, 1/2-13 X 1 1/2 GR5 ZY	8
9	11431	Bolt - 3/4-10 X 2 GR8 ZY	4
10	10501	Bolt - Carriage 3/8-16 X 1 1/4 GR5 ZY	14
11	19941TK	Plate - Outer Skid, Grader, Txt Blk	2
12	19940TK	Plate - Inner Skid, Grader, Txt Blk	2
13	NB280	Nut - 2 Way Lock 3/8-16 ZY & Wax Gr A	14
14	NB127	Pin - Hair, #39 (A155H) ZY Std	6
15	19943TK	Scarifier - 4140 Rc28-32, Txt Blk	6
16	20051	Pin - Clevis, Std 3/8 X 1 1/4 ZY	6
17	19929TK	Weldment - Main Frame, Txt Blk	1
18	19945TK	Bracket - Rake Hinge, Grader; Txt Blk	2
19	NB281	Nut - Nyloc 1/2-13 ZY	1
20	19961TK	Spacer - .750 ID X 1 OD X 1.250, Txt Blk	2

# PARTS BREAKDOWN

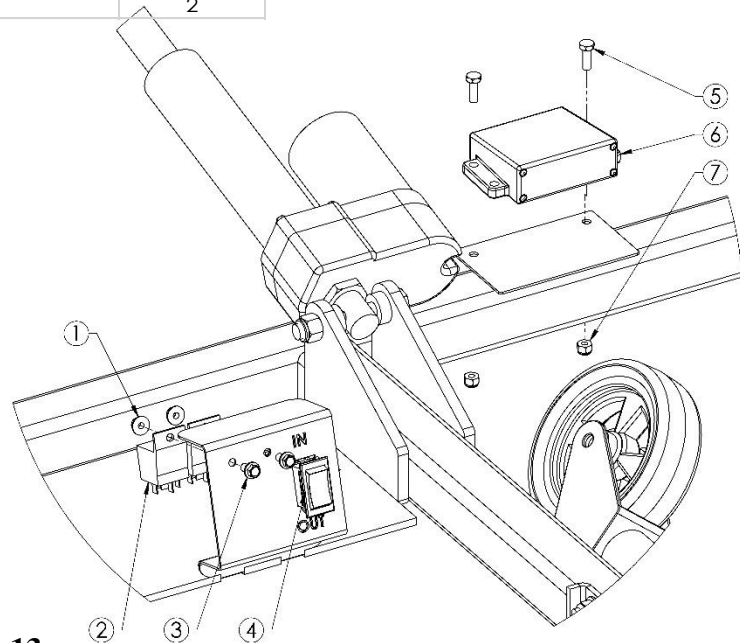


## HEIGHT INDICATOR

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	19858	Button - Plastic, Top	2
2	19857	Button - Plastic, Bottom	2
3	NB281	Nut - Nyloc 1/2-13 ZY	1
4	20008TK	Bracket - Height Indicator Txt Blk	1
5	19942TK	Spacer - .515"ID X 1"OD X .500", Txt Blk	2
6	NB577	Bolt - 1/2-13 X 3 1/2 GR5 ZY	1

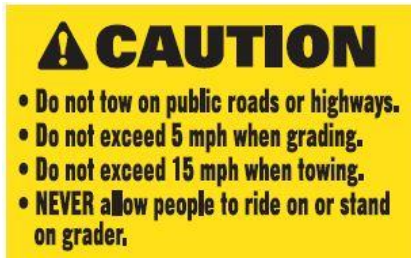
## ELECTRICAL CONTROLS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	NB524	Nut - Serr Flange, 1/4-20 Grade 5 ZY	2
2	15749	Electrical - 12V 30 AMP Relay	2
3	NB690	Bolt - Serr Flange, 1/4-20 X 3/4 GR5 ZY	2
4	19978	Switch - DPDT, 30A, On-Off-On MOM	1
5	NB250	Bolt - 1/4-20 X 3/4 GR5 ZY	2
6	22255	Remote - Wireless, Grader	1
7	NB180	Nut - Nyloc 1/4-20	2



# SAFETY DECALS

Replace decals immediately if damaged.



20068



20082



The operation of any grader can produce foreign objects to be thrown into the air, resulting in severe eye damage. Always wear certified safety glasses or wide-vision safety goggles over spectacles before and while operating such a machine.



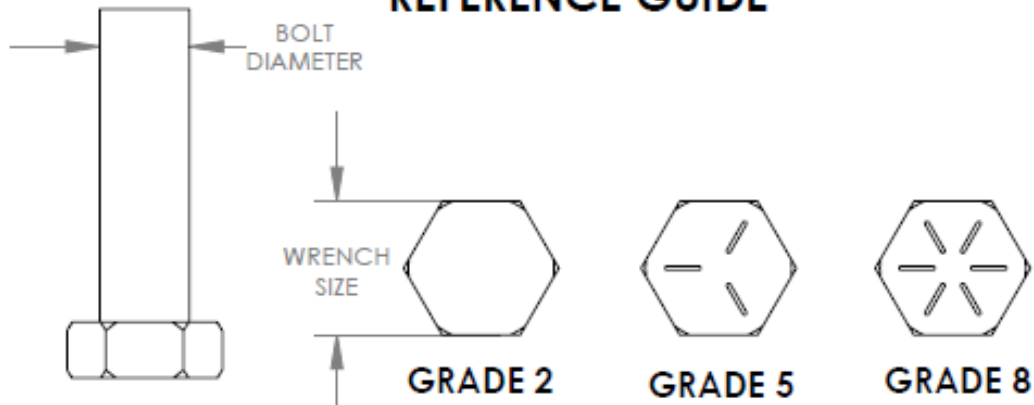
## MAINTENANCE LOG

Date of Service	Service Performed		Notes

# SPECIFICATIONS

<b>Dimensions</b>									
Length			95"						
Width			50"						
Weight			380lbs						
Shipping Dim.			51.5" X 51.5" X 24"						
Shipping Weight			460lbs						
<b>Working Dimensions</b>									
Working Width			50"						
Max. Teeth Ground Clearance			10"						
Grading Depth Range			1-10"	2" max. ground engagement recommended with ATV/UTV					
Total Scarifier Adjustment			9"						
<b>Material</b>									
Frame			Welded 3/8" Steel & Tube						
Scarifiers			Hardened 1/2" Steel						
Hardware			Minimum Grade 5						
<b>Towing</b>									
Recommended Towing Vehicle			Minimum 500cc ATV/UTV 4X4 Desired						
Hitch Style			2" Ball Coupler and Hitch Pin both Standard						
<b>Miscellaneous</b>									
Actuator			1500 # Industrial Remote Controlled Linear						
Tires/Wheels			13 X 650-6 3/4 ID Smooth						
Power Source			12V U1 Deep cycle battery recommended						

## TORQUE SPECIFICATIONS REFERENCE GUIDE



Bolt Diameter (INCH)	Wrench Size	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8	
		lb-ft	(Nm)	lb-ft	(Nm)	lb-ft	(Nm)
1/4	7/16	5.5	(7)	9	(12)	12.5	(17)
5/16	1/2	11	(15)	18	(24)	26	(35)
3/8	9/16	20	(27)	33	(45)	46	(62)
7/16	5/8	32	(43)	52	(70)	75	(102)
1/2	3/4	50	(68)	80	(108)	115	(156)
9/16	7/8	70	(95)	115	(156)	160	(217)
5/8	15/16	100	(136)	160	(217)	225	(305)
3/4	1-1/8	175	(237)	280	(380)	400	(542)
7/8	1-5/16	175	(237)	450	(610)	500	(678)
1	1-1/2	270	(366)	540	(732)	750	(1017)
1-1/8	1-11/16	300	(407)	675	(915)	1075	(1457)
1-1/4	1-7/8	425	(576)	950	(1288)	1500	(2034)

Torque values are for reference. 10% variance is allowable. Use these values unless specific torque values are given for a specific application.

Fasteners should be replaced with the same grade. Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten toothed or serrated-type lock nuts to the full torque value.





## SWISHER HISTORY

Back before electricity came to rural Missouri Max Swisher was producing lawn mowers from his mother's chicken house. Max never liked to mow grass. He installed a gearbox on his family's lawn mower creating a self-propelled unit. By tying one end of a rope to the mower and the other end to a tree in the center of the yard the mower circled the tree, shortening the rope and guiding the mower in concentric circles. Max enjoyed relaxing under a shade tree while his invention did all the work.

Max had designed his first self-propelled rotary lawn mower to do his dirty work for him. Neighbors noticed his new invention and began asking him to make more. Today, 60 years later, Swisher is still producing innovative lawn and garden and ATV/UTV equipment designed to give us all more "relaxing in the shade" time.

Swisher products have been featured nationally on television programs such as Regis and Kathie Lee and seen in publications like ATV Magazine, Country Journal, Popular Mechanics Magazine and others. In January 2000 Popular Mechanics Magazine named Max's zero turning radius riding mower one of the 20<sup>th</sup> century's top household inventions.

Swisher offers value and function in its products to meet your grounds maintenance needs.

**CELEBRATING OVER 70 YEARS OF INNOVATION  
SINCE 1945**



# OWNER'S MANUAL

## MODEL NO.

**20020**

# GRAVEL GRADER ROAD BUSTER

## HOW TO ORDER REPAIR PARTS:

Each Grader has its own serial number.

All Grader parts listed herein may be ordered directly from Swisher, your nearest Swisher dealer, or from our website.

WHEN ORDERING PARTS, PLEASE HAVE THE FOLLOWING INFORMATION AVAILABLE:

- \* PRODUCT – SWISHER GRADER
- \* SERIAL NUMBER - \_\_\_\_\_
- \* MODEL NUMBER - \_\_\_\_\_
- \* ENGINE MODEL NUMBER - \_\_\_\_\_
- \* TYPE - \_\_\_\_\_
- \* PART NUMBER
- \* PART DESCRIPTION

www.swisherinc.com  
TELEPHONE - 1-800-222-8183  
FAX - 1-660-747-8650

**SWISHER**  
1602 CORPORATE DRIVE  
WARRENSBURG, MO 64093

# SWISHER