

AG SHIELD



**LandRoller 1 section quarter turn and
straight pull -11.5 ,14, 17, 20 foot**

OPERATOR'S HANDBOOK AND PARTS MANUAL

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-Part No 800051

WARRANTY REGISTRATION-LandRoller

RETURN TO



AG SHIELD MANUFACTURING

BOX 9, BENITO, MB, R0L 0C0

PHONE 800-561-0132 or 204-539-2000 FAX 204-539-2130

E-mail sales @agshield.com

This form must be filled out by the dealer (if applicable) and signed by both the dealer and customer at the time of delivery, and returned to Ag Shield within 10 days to validate warranty.

Customer _____

Dealer _____

Address _____

Address _____

City, _____

City, _____

Prov. _____ Code _____

Prov. _____ Code _____

phone(_____) _____

phone(_____) _____

fax _____

fax _____

Model and size _____

Model and size _____

Serial no _____

Delivery Date _____

Delivery Date _____

Used for - farm custom / rental

Used for - farm custom / rental

DEALER INSPECTION REPORT

____ Hydraulic connections all sealed

____ All decals installed

____ Reflectors clean

____ Review operating and safety instructions

____ Retainer pins installed as required

I have thoroughly instructed the customer on the above described equipment, including the content of the Owner's Handbook, equipment care, adjustments, safe operation, and applicable warranty policy.

Date _____ Dealer signature _____

The equipment was complete with all parts in good working order except as noted below. I have received the owner's handbook, and I have been thoroughly instructed in the use of it. I have been instructed in the care, adjustments, the safe operation of the machine, and the applicable warranty policy.

Date _____ Customer signature _____

Except _____

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3. SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means:
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on the Ag Shield LandRoller and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.



3 Big Reasons

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

Accidents Disable and Kill Accidents Cost Accidents Can Be Avoided

- DANGER -** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components, which for functional purposes, cannot be guarded.
- WARNING -** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
- CAUTION -** Indicates a potentially hazardous situation that, if not avoided, could result in minor injury. It may also be used to alert against unsafe practices.

3.1. SAFETY OVERVIEW

YOU are responsible for the **SAFE** operation and maintenance of your Ag Shield LandRoller. **YOU** must ensure that you and everyone who is going to operate, maintain or work around the LandRoller be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the LandRoller.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- LandRoller owners must give operating instructions to operators or employees before allowing them to operate the LandRoller, and at least annually thereafter per OSHA regulation 1928.57.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

3.2. GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or transporting the LandRoller.
2. Only trained competent persons shall operate the LandRoller. An untrained operator is not qualified to operate the machine.



3. Have a first-aid kit available for use should the need arise and know how to use it.



4. Have a fire extinguisher available for use should the need arise and know how to use it.



5. Do not allow riders.
6. Wear appropriate protective gear. This list includes but is not limited to:



- A hard hat
- Protective shoes with slip resistant soles
- Protective glasses or goggles
- Heavy gloves
- Hearing

6. protection
7. Stop the engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
8. Review safety related items with all personnel annually.

3.3. MAINTENANCE SAFETY

1. Review the Operators Manual and all safety items before working with, maintaining or operating the LandRoller.
2. Stop the tractor engine, place all controls in neutral, set park brake, remove ignition key, wait for all moving pads to stop before servicing, adjusting, repairing or unplugging.
3. Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
4. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
5. Keep hands, feet, clothing and hair away from all moving and/or rotating pads.
6. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
7. Place stands or blocks under the frame before working beneath the machine.

3.4. THROWN OBJECTS SAFETY

1. Always wear safety goggles when working near or adjusting conditioner.
2. Never stand or run directly behind rollers when machine is rotating, as rollers are capable of throwing obstacles at greater than 30 mph.
3. Shields are provided to reduce thrown debris hazard, Leave chain guard in place, be sure the rock guards are in place, and inspect chain guard frequently to ensure protection is in good repair.

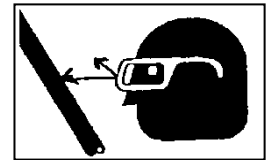
3.5. CHAIN DRIVE SAFETY

1. Always keep safety guard in place. You might be the one who trips and falls into a rotating machine.
2. Never adjust the chain tension, roller spacing, roller tension, or other items with the machine running, always stop the machine before opening chain cover.

3.6. HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before dismounting.

2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses and steel lines.
4. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs can fail suddenly and create a hazardous and unsafe condition.
5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
7. Before applying pressure to hydraulic system make sure that all connections are tight and that all hoses and fittings are in good condition.



3.7. MECHANICAL GEARBOX DRIVELINE SAFETY

The operator must obey all safety labels and must maintain the proper shielding. A high percentage of driveline injuries occur when safety shielding is missing or not functioning properly.

1. Do not operate the machine without all driveline, tractor, and implement shields in place.
2. Before operating the machine, be sure drivelines are attached securely to the tractor and to the implement.
3. Keep operators and bystanders away from all moving parts.
4. Shut off tractor engine and remove key before coming close to the implement or doing any maintenance
5. Drive shafts shielding must be kept in condition and checked daily to see that it is free spinning on the inner shaft.

3.8. STORAGE SAFETY

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored LandRoller.
3. Store in a lower position so persons cannot be injured or property cannot be damaged by mechanical failure.

3.9. TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the LandRoller in the field and/or on the road.
2. Check with local authorities regarding machinery transport on public roads. Obey all applicable laws and regulations.
3. Always travel at a safe speed. Use caution when making corners or meeting traffic.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended.
5. Ensure that the trailer is hitched positively to the towing vehicle. Always use a safety chain between the machine and the tractor.
6. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
7. Always use hazard warning flashers on the LandRoller when transporting unless prohibited by law.

3.10. REFUELING SAFETY



sparks.

1. Handle fuel with care. It is highly flammable.
2. Do not refuel the machine while smoking or when near open flame or

3. Stop engine before refueling. Clean up spilled fuel before restarting engine.

3.11. TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion, which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. Operate the tires at the pressures, loads, and speeds suggested by the manufacturer.
5. Tires rated Farm Hiway Service are rated for intermittent service at 50 mph / 80 kilometers per hour.

3.12. OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Stop engine place all controls in neutral, set park brake, remove ignition key, wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Before rolling a field, be familiar with all potential hazards: trees, rocks ditches, gullies, etc. Plan your route to avoid hazards. Keep LandRoller width in mind when maneuvering to avoid obstacles.
4. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
5. Keep all shields and guards in place when operating.
6. Do not allow riders on the LandRoller or tractor during operation or transporting.
7. Clear the area of all bystanders, especially children, before starting.
8. Stay away from machine when folding deflectors. Keep others away.
9. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
10. Review safety instructions annually

3.13. SAFETY DECALS

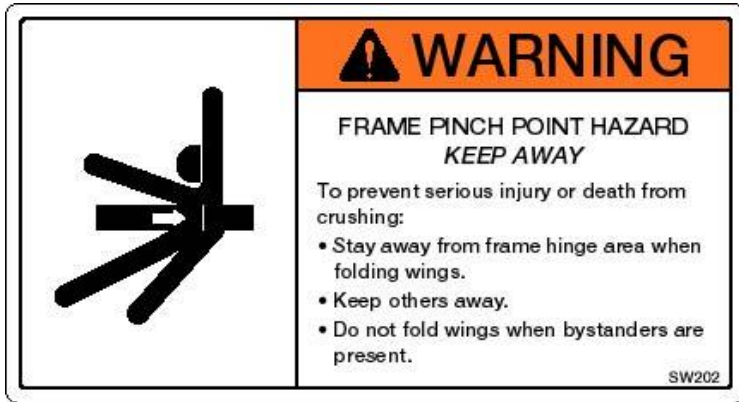
Become familiar with these decals, and the hazards they are marking.
The decal locations are detailed



part # 113552



Part # 113523



part number 113555

FIGURE 1 #116140 AG SHIELD STRIPES



FIGURE 2 DECAL AG SHIELD #116141



FIGURE 3 116142 "LANDROLLER" STRIPES

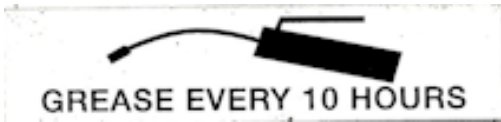




FIGURE 4 DECAL AGSHIELD MFG SIDE REAR OF HITCH 3X36 #116107



FIGURE 5 STRIPS SIDE DEFLECTOR 3X12 IN #116108



Serial plate part number



4. Setup from Shipping Mode

4.1. TRUCK SHIPPING

There are many variations to truck shipping Refer to instructions delivered with your shipment

Items required or preferred for setup

1. Forklift rated 6000 pounds or more. Total weight see specification chart section 6.
2. Tractor with hydraulic system to raise and lower the machine, as required.
3. Hand tools
4. Air pressure gauge and possibly a source of air to inflate tires up to 90 psi .

4.2. LUBRICATION

- 1) (do a complete grease up,) and field pre delivery.
- 2) Roll ON !!!

4.3. TOWED OUT SHIPPING

Towed out units should be field ready, Check wheel bearings for correct adjustment, grease and go to the field.

5. OPERATIONS



DANGER

WATCH FOR PEDESTRIAN TRAFFIC- Rollers will always win and pedestrians will lose the battle with a landroller.

The Ag Shield 20 foot quarter LandRoller has a transport width of 102”+.

There are 2-3 hydraulic circuits on all Ag Shield: LandRollers:

- A. This first circuit hereafter “Lever 1” that turns the roller and hitch so that NO BACKING UP motion will be necessary to convert from field to road, and road to field modes
- B. The second circuit (Lever2) that raises or lowers the wheels for road transport,
- C. The third (optional) circuit (Lever3) that raises and lowers the land leveling blade

4.4. FOLDING ROAD TO FIELD 20 FOOT

1. Chose a reasonably level location with no bystanders or children in the vicinity.
2. Raise the LandRoller to the extreme top height , see Figure 6 ROAD TRANSPORT Height LOCK Observe Lock “D” will be well below angle “E”. The transport tire will be at the balance point of the roller, either end of the roller may be closest to the ground. SEE Figure 8 ROLLER BALANCED FOR PIVOT FOLD
3. Rotate lock D rearward 90 degrees to position “J” to clear the frame when the wheels are lowered. See Figure 7 transport lock field position . Repeat on the other side.

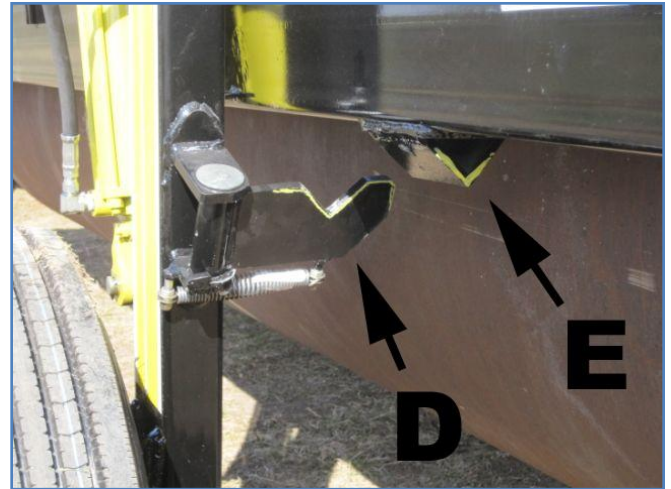


FIGURE 6 ROAD TRANSPORT HEIGHT LOCK



FIGURE 7 TRANSPORT LOCK FIELD POSITION



FIGURE 8 ROLLER BALANCED FOR PIVOT FOLD

4. See Figure 9 LOCK PIN FROM ROAD TO TEMPORARY HOLE. Move lock pin from road lock hole A to Temporary storage hole B.
5. Enter the tractor cab. Place the transmission in NEUTRAL, turn OFF the parking brake, leaving the tractor free to roll as required when the roller rotates to field position.

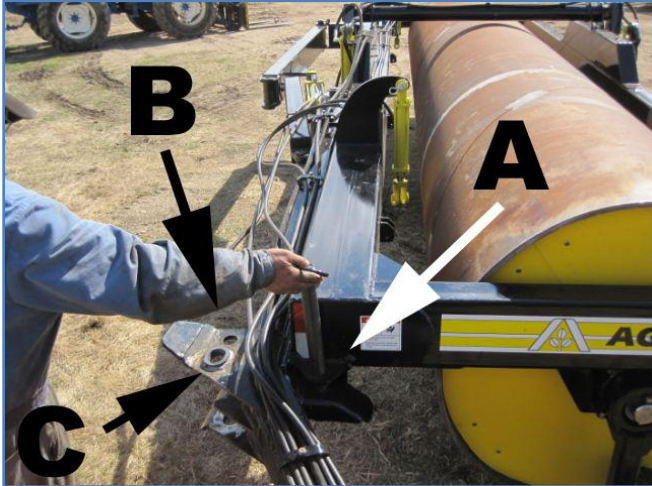


FIGURE 9 LOCK PIN FROM ROAD TO TEMPORARY HOLE

6. Move lever 3 to raise the leveling blade to the highest position,
7. Move lever 1 to rotate the roller to field position. See Figure 10 FOLDING TO FIELD. Observe that the right hand hitch bar "F" moves to a position near the drawbar hitch "G".

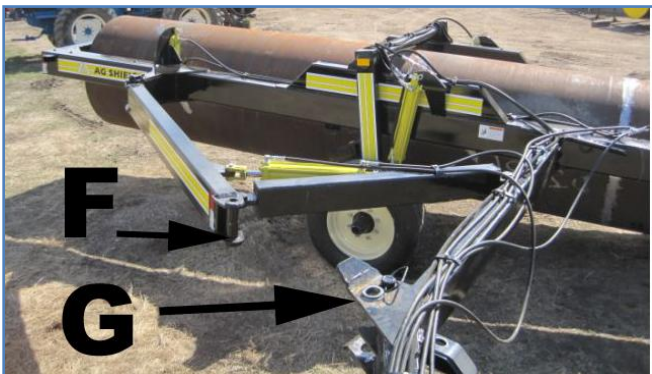


FIGURE 10 FOLDING TO FIELD

8. When the Bar F strikes Hitch G, lower the roller to the ground, and raise the transport wheels to highest position above ground. **Avoid backing up or driving ahead to help position the hitch bar F, as the wheel legs can be bent**
9. See Figure 11 HITCH PIN TO FIELD POSITION. Move the hitch pin from "B" to "C"

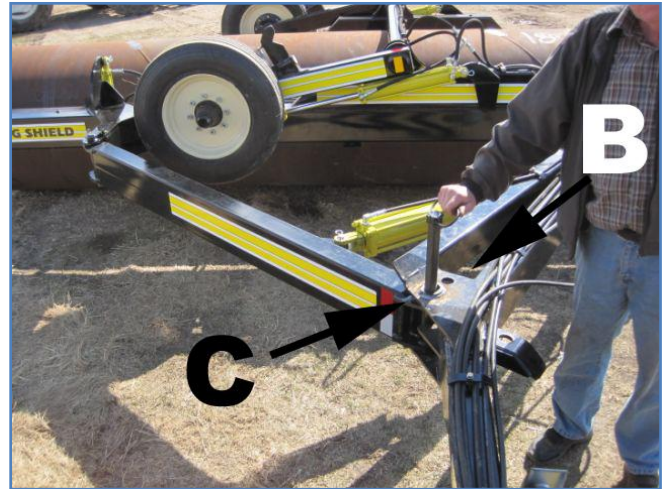


FIGURE 11 HITCH PIN TO FIELD POSITION

10. Enter the cab, Begin to smooth and firm your field to perfection.
11. **Maximum speed selection** depends upon field conditions. Mellow fields with corn root balls and few 8 inch diameter stones may be rolled at 5-8 mph. When using the leveling blade to move several inches of earth, 3-4 mph is appropriate, even less if there are a lot of larger square cornered stones protruding out of the ground. If there are a lot of 8 inch diameter stones, **speeds above 7 mph may dent the standard .530- .560 inch thick rollers.** If these are normal conditions and you wish to travel at higher field speeds, consider using the thicker .625 inch wall rollers. Rollers with Leveling blades **MUST** operate slower than rollers without leveling blades.

4.5. 20 FOOT FOLDING FROM FIELD TO ROAD PROCEDURE

1. Chose a reasonably level location with no bystanders or children in the vicinity.
2. If so equipped use lever 3 to raise the leveling blade to the highest position.
3. Using lever 1, raise the roller to the highest position where the roller barrel is balanced over the transport wheel axle. See Figure 8 ROLLER BALANCED FOR PIVOT FOLD.
4. Set parking brake, place tractor transmission in Neutral, leave the tractor cab tractor,

5. See Figure 11 HITCH PIN TO FIELD POSITION. Move the hitch pin from position "C" to "B" temporary position.
6. See Figure 13 transport locks road position. Rotate the transport height locks on BOTH sides of the roller forward to a position under the frame



FIGURE 12 TRANSPORT LOCK FIELD POSITION

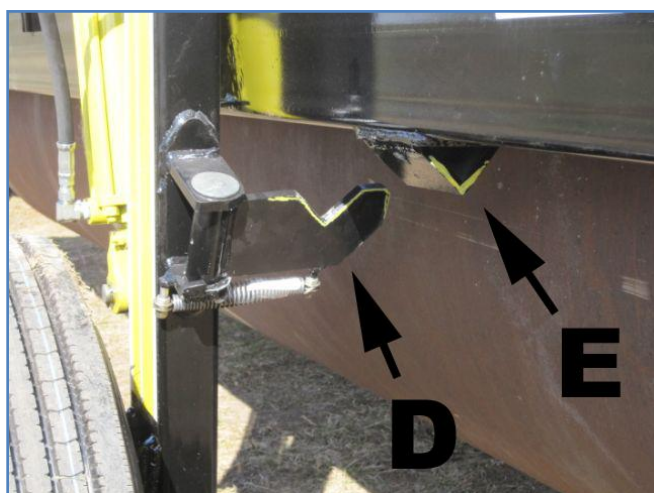


FIGURE 13 TRANSPORT LOCKS ROAD POSITION



FIGURE 14 ROAD READY TRANSPORT LOCKS

9. The roller has a transport width of 102"-road legal day or night anywhere, It is equipped with 12.5 L x 15 highway implement tires rated for temporary use at speeds up to 55 mph (90 kilometer per hour). The hitch weight is a sensible 800 pounds (365 kg) ONLY when the wheels are rotated to the rear, and riding on the transport height locks.
10. The standard 12.5 x 15 L tires are rated for intermittent service at 90 kilometers per hours or 55 miles per hour. The optional highway service tires are full highway speed rated tires.

7. Enter tractor cab.
8. **Always lower the V frame on to the transport locks. Firm contact of the frame to the V locks is essential to stabilize the rockshaft legs during high speed road transport, AND to shift the balance of the machine to a correct 800 pounds (365 kg),**

4.6. LEVELING BLADE OPERATION

The leveling blade is intended to move occasional or frequent rodent and badger mounds up to 12" high and several feet across. It is **not** designed to replace an earth moving scraper, reshaping the contours of a field, or doing drainage functions. There are hydraulic cylinder to raise the blade when required, check chains to keep the blade from digging too deep, and wheel cam adjustments to operate at different heights.



FIGURE 15 BLADE OPERATING IN PLOUGHED FIELD



FIGURE 16 END GAUGING WHEEL SINKING INTO PLOUGHED GROUND

The blade is designed to operate on steel gauging wheels on each end of the blade, with an average space of $\frac{3}{4}$ " between the ground and the bottom of the leveling blade. Longer leveling blade have a third wheel at the center of the span to assist in keeping the blade from digging too deeply into the ground at the center.



FIGURE 17 SUPPORT STOP AND ADJUST CAM

The wheel projection below the bottom of the cam traced in white in Figure 17 SUPPORT STOP AND ADJUST CAM is determined by rotation of the cam above the support stop.

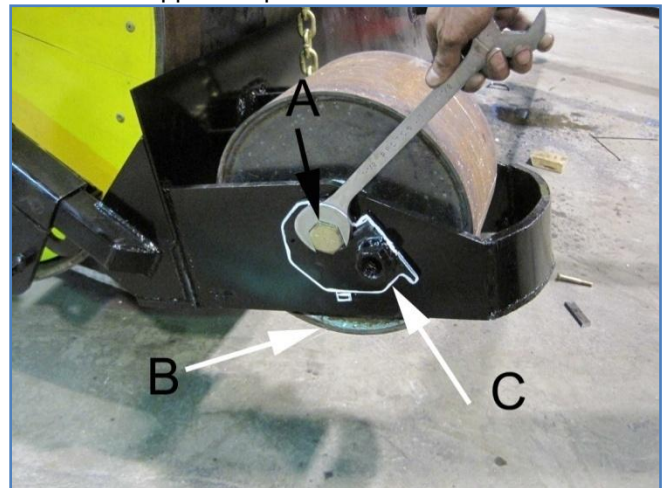


FIGURE 18 WHEEL ADJUST WITH CAM

The wheels have a cam for height setting on both sides of each wheel, when changing the wheel setting, change both sides equally.

To change the height of the blade for various field conditions:

- 1) Use a 1 $\frac{1}{2}$ inch wrench to loosen bolt A in Figure 18 WHEEL ADJUST WITH CAM
- 2) Rotate the cam by turning with the wrench to desired setting on both sides as shown in Figure 19 ROTATE CAM WITH WRENCH below. As the cam rotates the wheel projection B will change.
- 3) Tighten bolt A again.

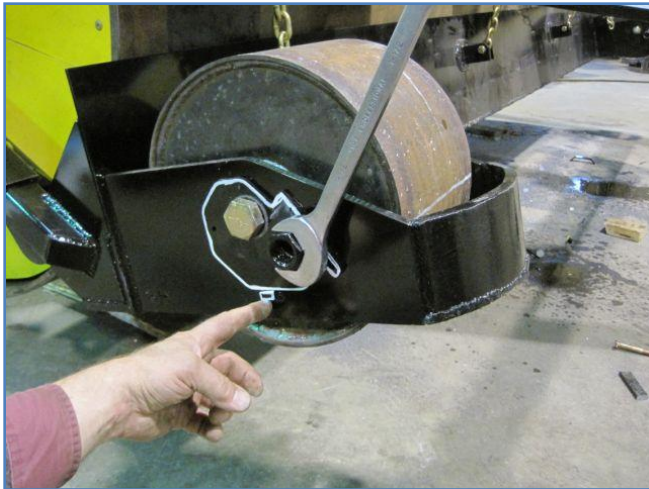


FIGURE 19 ROTATE CAM WITH WRENCH

The optimal wheel projection will change when operating in different field conditions--that is when operating on sod, set the wheel to project $\frac{3}{4}$ of one inch below the cutting blade.

When operating in stubble fields consider lowering the wheel farther below the blade to keep the blade $\frac{3}{4}$ " plus above softer ground. When operating in a soft ploughed or summer fallowed field, the wheels may be set to hold the blade at $\frac{3}{4}$ " by sinking into the ground 2 inches or more.

There are several "check" chains attached between the frame and the blade which prevent the blade from rotating under the roller when a large stone is contacted. These chains are factory set to allow the blade to float along on the gauging wheels, having less than 1 inch of slack when the barrel and the blade are sitting on a level floor surface.

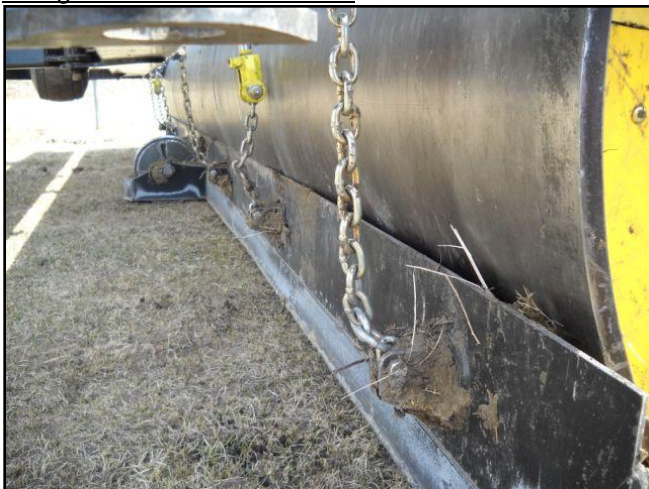


FIGURE 20 CHECK CHAINS LOOSE

The hydraulic lift cylinder are attached to the blade by chains that are factory set to allow blade to travel down about one inch compared to the level floor condition. The cylinder may be used to lift the blade completely up or part way up as may be desired. The cylinders are not synchronized, so uneven lifting may occur if some parts of some sections are more heavily loaded with dirt or sod. To get the blade operating level, raise all the way to the top and lower down to suit the field conditions.

The blade may be raised when required to dump sod into lower spots, or to allow stones to pass under and be pushed into the ground. Obviously, the blade may be raised above stubble in fields where the blade may or will not be used.

Raise the blade up when road transporting to provide additional clearance for obstacles that may be encountered on approaches or road.



FIGURE 21 BLADE RAISED FOR TRANSPORT, CLEAR STONE, OR DUMP SOD

When operating in soddy conditions, a significant build up of sod in front of the blade is normal. In some conditions it is desirable to raise the blade up to 2 inches above the ground to allow sod to flow evenly out from under the blade, and then lower again when more mounds are spotted to get a complete cut of the mounds to near original ground level.



FIGURE 22 SOD SPREADING FROM MOUNDS

The leveling blade spread all type of manure, horse, cattle, sheep in the normal course of leveling the rodent mounds.



FIGURE 23 SPREADING MANURE

4.7. WATER FILLING ROLLER TANK

The larger 3 – 5 section LandRollers typically used in grain farming are seldom filled with water. If your conditions require the extra weight, a water fill option may be factory installed, or field installed anytime after initial purchase.

The water fill option added about 550 pounds per lineal foot (820 kg/ meter) . for example- a nominal 20 foot roller would hold water in about 18 feet of the barrel, and therefore add a maximum of 10350 pounds (4490 kg/ 6 meter).

When planning to fill a 42” roller expect to use 55 Imperial gallons per foot, 66 USG per foot, 250 liters per foot, or 820 liters /meter

Except by special request Ag Shield LandRollers are not designed to be transported while filled. **Damage to machine components will occur if a water filled roller is even attempted to be raised hydraulically to road position.**

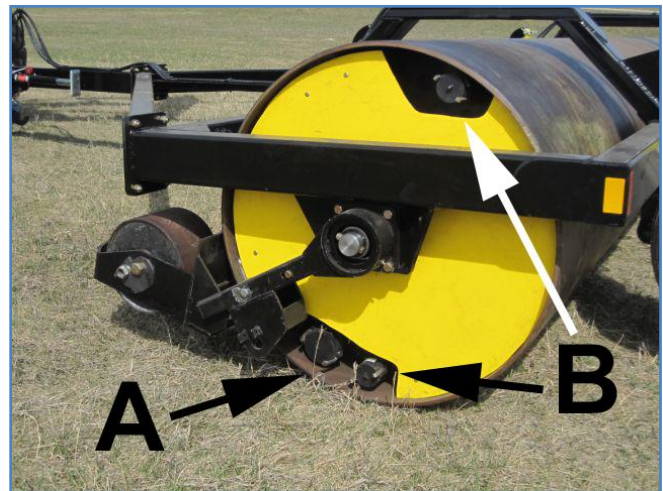


FIGURE 24 WATER FILL PORTS OPTION

There are 3 quick coupler attachments to allow the fastest filling and emptying of the roller. See Figure 24 WATER FILL PORTS OPTION. Port A is a 3” quick coupler, port B are both 2” quick couplers.

The fastest fill is to attach the hose to the 3” connection at the bottom, and open a 2” vent at the top. The water may be sucked out with a pump via either a 2 or 3” quick coupler. The tank can be drained the fastest by opening all 3 connections, and rolling ahead until the 3”/2” combination is at the bottom.



FIGURE 25 WATER DRAINING BY GRAVITY

IMPORTANT: lower barrel before unhooking DO NOT UNHOOK THE ROLLER WITH THE BARREL RAISED AND FULL OF WATER. IF THE GROUND IS NOT LEVEL, THE HITCH JACK IS LIKELY TO FAIL AS ROLLER ATTEMPTS TO ROLL DOWNHILL.

4.8. ACRE METER OPTION

The option electronic hubodometer threads into a 1/2" fine hole tapped into the end of the right hand center roller shaft. Install the acremeter with a oil filter wrench to 20 lb foot of torque with a star lock washer to ensure that the unit is not lost. It is protected by a flange welded onto the Veeder- Root electronic acre meter.

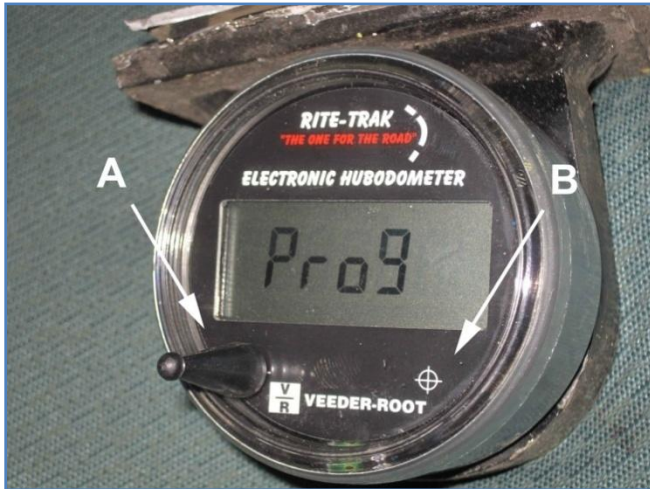


FIGURE 26 ACREMETER TO PROGRAM MODE

See Figure 26 ACREMETER TO PROGRAM MODE above.

The acre meter calibration is done by touching a magnet to the outside of the face of the odometer on a Left spot marked "A" and Right spot marked "B" The simplified instructions to set to 88.0 for a 45 foot LandRoller are:

- 1) Hold magnet on the left position- "A" – in 6 seconds will read serial number, leave on MUCH longer – until PROG shows on screen.
- 2) Lift off of left calibration for 1 second, touch magnet down to see units= "acres" set already
- 3) Lift and touch left again advance to revolutions per acre, 0000.0 acres per revolution will show—should be 0088.0 for a 45 foot –



FIGURE 27 CALIBRATING "REVS" FOR 45

- 4) Touch left to advance to second left zero-
- 5) Touch left again to have the third left digit of 0000.0 flashing,
- 6) Touch right "B" eight times to have the 0 advance to first "8" of 0088.0
- 7) Touch left to advance to fourth left digit of 0000.0.
- 8) Touch right "B" 8 times to advance to "8" in the fourth digit.
- 9) Do nothing for 10-20 seconds, and front screen will come up reading 88.0 revs acres in lower left. DO NOT continue to more programming as the counter may become locked and of no value.

The major instructions follow attached – try to ignore them
Consult the tabled below for other calibration numbers.

machine width feet	11.5	14	17.0	20.0
machine width meters	3.5	4.3	5.2	6.1
acres per 1/2 mile	.696	.848	1.0	1.2
rev per one acre	344.5	283	233.0	198.1
rev per 1 hectare	854.4	701.8	575.8	489.5
acres / hour @5 mph	6.9	8.5	10	12.1

4.9. SEEDING ATTACHMENT



FIGURE 28 TECHNIK PLUS 300 LITER 8 RUNS



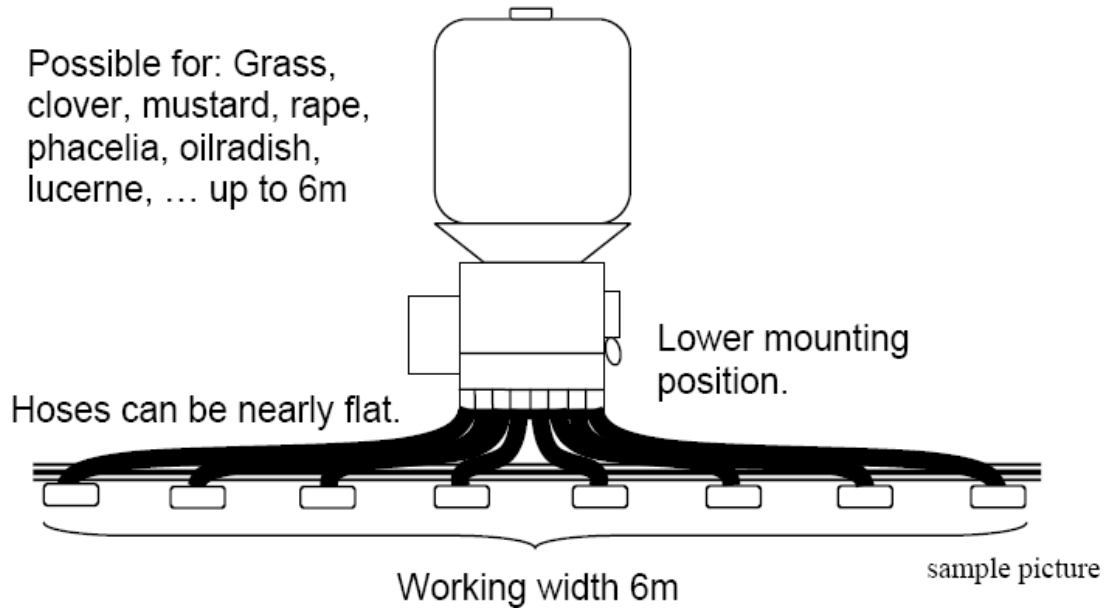
FIGURE 29 SEED DELIVERY BETWEEN BLADE AND ROLLER

4.10. TECHNIK PLUS SEEDER INSTALLED ON LANDROLLER
(TP-Turbo-Jet Super with Multifunctional-control-unit)



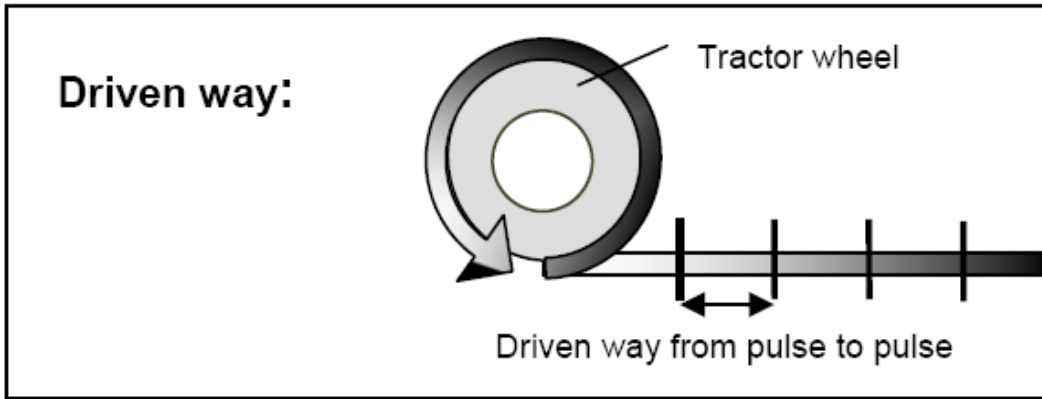
Seeder outline

Possible for: Grass,
clover, mustard, rape,
phacelia, oilradish,
lucerne, ... up to 6m



The speed sensor

The **speed sensor** reacts to metal; therefore it is important to give pulses to the sensor. The pulses can be screws, which can be affixed on a roller. The speed is named with mm/speed-pulse. The driven way between the pulses must be min. 1 mm to max. 500 mm.



Calculate the way as follows:

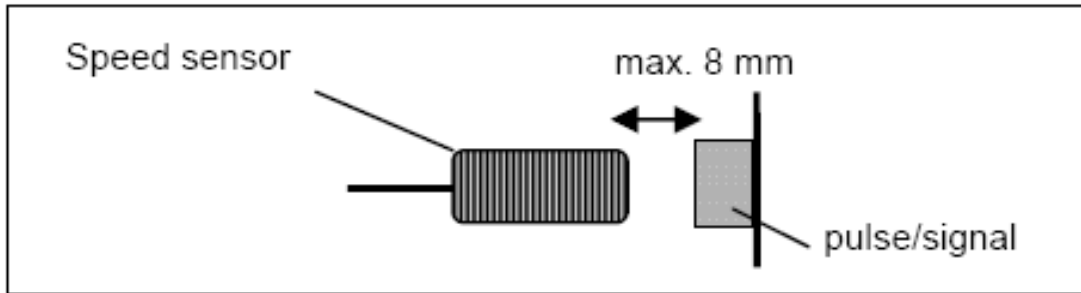
For example: The LandRoller barrel has a roller with a diameter of 42". The wheel circumference (circumference = Diameter x 3.14 => A=132") is 132"x25.4 = **3353mm**. The maximum distance from pulse to pulse has to be **under 500mm** driven way. As a fact of this ($3353/500=6.7$) → are required **MINIMUM 7 signals**.
At the "Pasture doctor" we have 10 signals.



The value you put now into the control unit is the estimated driven way

from signal to signal. **In this case put in $(3353/10=335.3)$ $335.3\text{mm}=\underline{335}$.**

The signals can be fitted in any radius, but it is important that the speed-sensor is off between the signals.



Inspection of the pulses/signals:

When the signals are fitted, first it is important to check if the speed sensor counts the signals. Attention! The sensor must count every signal (the light is on) (IMG. 1) and accordingly the sensor must be off between the signals (the light is off) (IMG 2).

Change the polarity of the sensor

The ON/OFF-sensor is one of three settings which can be changed.

Changing the parameter is done by holding both SET button and RESET Button down for 2 seconds when the **kg/ha** value is displayed.

Then press SET: The 1st parameter is displayed, press SET again to accept.

Then the 2nd parameter is displayed, press also SET to accept. When the 3rd parameter (= parameter for changing polarity) is displayed, press UP or DOWN for changing this value ("0" or "1").

Press SET again and this value is accepted and saved.

Mounting the suitable seed roll

There are different seed rolls. The seed rolls can vary depending on the desired application amount in kg/ha, the driven speed or the working width. (Have a look at the chart below!)

For seeding grass, respectively voluminous seed or big output has to be mount the delivered grass seed roll.

For mustard, oil radish, clover, Phacelia use the standard seed roll and for small seed a special seed roll with different breadth 5mm, 10mm or 15mm (optional).

It is necessary to make a calibration to get the right adjustment.



Metric Measure application

Working width	Km/h	.2 "(5mm)Standard seed roll (alfalfa- canola- mustard)				.38" (10mm)Grass seed roll (cereals- grass)			
		Min. Kg/acre	Min. Kg/ha	Max. Kg acre	Max. Kg/ha	Min. Kg/acre	Min. Kg/ha	Max. Kg acre	Max. Kg/ha
3m	5	14.2	35	102.4	253	14.2	35	252.6	624
	10	7.7	19	51.0	126	11.7	29	125.5	310
	15	4.9	12	34.4	85	8.1	20	84.2	208
4m	5	8.1	20	57.9	143	9.7	24	189.9	469
	10	5.3	13	33.2	82	8.1	20	81.8	202
	15	3.2	8	17.0	42	6.1	15	63.2	156
6m	5	6.1	15	51.0	126	8.5	21	126.3	312
	10	3.6	9	25.5	63	6.9	17	62.8	155
	15	2.4	6	17.4	43	5.3	13	40.9	101

Ag Shield Mfg 051415tm		Conversion Chart lb/acre to kg/ha	
Pounds per Acre	Kilograms per Hectare	Pounds per Acre	Kilograms per Hectare
1	1.0868	14	15.2152
2	2.1736	15	16.302
3	3.2604	16	17.3888
4	4.3472	17	18.4756
5	5.434	18	19.5624
6	6.5208	19	20.6492
7	7.6076	20	21.736
8	8.6944	25	27.17
9	9.7812	35	38.038
10	10.868	50	54.34
11	11.9548	75	81.51
12	13.0416	100	108.68
13	14.1284		
1 hectare= 2.47 acres			
1 kilogram= 2.2046 pounds			

English Measure application

Seed roll change

- 3 Disconnect the power supply
- 4 Remove the protector for agitator!
- 5 Knock out the roll pin of the seed roll gear and remove the gear wheel!
- 6 Remove the bearing bracket.
- 7 Remove the 3 screws
- 8 Pull the seed roll out carefully !
- 9 At motor end you have to remove the socket, the clip, the counting wheel & the square.
- 10 Change the seed roll.



Programming of Multifunctional control unit:

1. DISPLAY

The display is capable of showing four different types of values



1.1. Values

kg/ha: This is the value of how much you want to put out of the seeder.
The value is in kilogram by hectare, with one decimal.

Kg total: The total weight that has been put out. Value is in kilogram, with one decimal. This value can be cleared by pressing RESET for 2 seconds.

Ha: The driven area in hectare, with one decimal. This value can be cleared by pressing RESET for 2 seconds.

Km/h: Current speed, kilometer by hour, with one decimal.
The current value to show on the display is selected by pressing either

up-arrow or **down-arrow:**

A led tells you which value that is currently displayed.

Area switch (seed roll ON-OFF):

The display also indicates either the area-switch is on or off. When the area-switch is activated a colon is flashing in the display.

1.2 Hidden value

Ha total: The total driven area in hectare.

1. Press **up-arrow** and **down-arrow** at the same time for about 3 seconds.
2. The **ha** led will start flash, and the ha total value will be displayed.
3. Press RESET button for 2 seconds for clearing this value.
4. Press SET for return to **ha**.

2. CONTROLLING FAN and SEED OUTPUT

The two switches controllers the fan and the seed output. Pulling the switch named **fan** up activates the fan. A led is indicating the state of the fan. The led is on if the fan is on and off when the fan is off. Pulling the switch down deactivates the fan.

The state of the fan is memorized in the program and is started in that state when system is started.

The second switch is for controlling the seed output. There are three positions for this switch, **ON**, **OFF** and **AUTO**.

ON: The switch is in up position and the seeder is always controlled.

OFF: Switch is in middle position, none controlling of the seeder.

AUTO: Switch is in down position and the seeder is controlled if area switch input is not activated.

When the sensor has a contact the seed roll is OFF. The seeder will only be controlled when the fan is on. If you set the control-switch to on while the fan is off, error E 05 will be shown in the display.

3. Calibration

Calibrations for speed-sensor and motor-sensor have to be done before the system can work correctly. Make sure that the electric power supply is correct and safety before starting with the calibration!

Calibrations for speed-sensor and motor-sensor have to be done before the system can work correctly.

With the arrow key you can choose between kg/ha, kg total, ha, km/h after each calibration.

3.1 Kilogram-by-hectare [kg/ha] (1hectare = 2.47acre)

Kilogram-by-hectare is putted in kg/ha with one decimal.

Example: 20 kg/ha for outputted seed, the display value should be 20.0.

1. Set the displayed value to kg/ha.
2. Press SET button for 2 seconds.
3. The Kilogram-by-hectare value will be displayed, and the display will start to flash.
4. The value can now be changed by pressing up-arrow or down-arrow.
5. Press SET button to accept the new value (The display will stop flashing).
6. By pressing RESET button the value is not accepted and you are leaving the setup-routine, the value is not changed.

3.2 Motor-sensor programming of motor-sensor and magnet wheel

1. Set the display value to *kg tot*.

2. Press the SET button for 2 seconds, this will activate the calibration function.
3. The display is now showing the calibration value (the display is flashing).
The calibration value is in gram-by-pulse [set gram/motor pulse to 1,00].
4. Press SET and to activate the motor feeding.
5. *Note! The ON/Auto-switch must be in off-mode when entering this new state, else the ON-led will flash telling you to turn off the switch.*
6. The motor can now be turn on by switching the motor-switch to ON (without fan)
7. Feed out seed for measurement, the display will show you the value of the outputted seed with the current calibration value in kilograms [kg].



8. Measure the seed you have put out, and adjust the value on the display with the up and down button. The value is showed in kilogram, with three decimal.
9. Accept this value by pressing SET button.
10. The now corrected calibration value will be displayed. Press SET to accept this value, this will finish the calibration procedure.
11. You can always abort a current calibration by pressing the RESET button.

3.2 Working width [cm] (1 foot =30.48cm)

Working-width is put in cm. Example: 6 meters working-width, the display value should be 600 (no decimal)

1. Set the displayed value to ha.
2. Press SET button for 2 seconds.
3. The working-width value will be displayed, and the display will start to flash.
4. The value can now by changed by pressing up-arrow or down-arrow.
5. Press SET button to accept the new value (The display will stop flashing).
6. By pressing RESET button the value is not accepted and you are leaving the setup-routine, the value is not changed.

3.3 Speed-sensor

Calibration value for the speed sensor is in mm per pulse.

Example: If you have 430 mm between two pulses, the display value for the calibration-value should be 430 (no decimal) but minimally 1!

1. Set the display value to km/h.
2. Press the SET button for 2 seconds, this will activate the calibration function.
3. The display is now showing the calibration value (the display is flashing). The calibration value is millimeter/speed-pulse [mm/speed-pulse] from impulse to impulse. We have installed 10 signals. The value you put now into the control unit is the estimated driven way from signal to signal. → In this case 335 for 42 inch diameter roller with a 10 lug signal disk.
4. Press SET and drive a known length, example 100 meters, the display will show you how far you have driven with the current calibration value in meters [m].
5. If the display is showing you the wrong driven length, change the length by pressing up or down. It will show you the length in meters, with one decimal.
6. Press SET when the value is the same as the length you have driven.
6. The current and changed calibration value will be displayed.
7. Accept this value by pressing SET button again, this will finish the calibration procedure.
9. You can always abort a current calibration by pressing the RESET button.

4.0 ADVANCED SETTINGS

There are three settings:

Two regulator parameters can be changed (PI-regulator) and the polarity of the area-switch.

Default values for the parameters are:

Parameter 1: 250 (Gain, P-factor) *(If parameter 1 is set to high the seed output starts to Oscillate. If oscillation occurs then reduce parameter 1)*

Parameter 2: 50 (Integration, I-factor) *(If parameter 2 is set to high the seeder output can be unstable. If the seeder output is unstable try to reduce parameter 2. If the amount from the seeder output is not correct according to driven area try to increase parameter 2)*

Parameter 3: 0 (Polarity area-switch, 0 or 1) *(If parameter 3 is set to 0 the machine is active when the area-switch input signal is high. When parameter 3 is set to 1 the machine is active when the area-switch input signal is low.)*

Changing the parameters are done by holding both SET button and RESET button down for 2 seconds when the **kg/ha** value is displayed.

The RESET button must be released before the SET button for activating the changing procedure.

The first regulator parameter is displayed and the display is flashing.

Press UP or DOWN for changing the value.

By pressing SET the value is accepted and saved and the second regulator parameter is displayed. Press UP or DOWN for changing this value.

Press SET and the value is accepted and saved and the third parameter is displayed to change the polarity of the area-switch. Press UP or DOWN for changing this value.

By pressing SET again this value is accepted and saved, and the display will go back for displaying the **kg/ha** value.

Pressing RESET will abort the current settings if it is not accepted with SET.

5.0 ERROR MESSAGES

The display can show different error messages:

- VCC error. Supply voltage is below 10 voltages. → **Check the power-cable.**
- E00** Calibration value error. One or many calibration values are either zero or greater than 9999. → **Pressing RESET button turns this error message off. Check all calibration values and regulator-parameters**
- E01** Memory error. All saved values in memory is set to default values .
→ **Pressing RESET button turns this error message off. New calibrations has to be done before the unit will work correctly.**
- E02** Minimum output on motor. With the current kg/ha or the current speed, the motor is going to slow for correct regulation.
Possibilities:
- **Select a higher kg/ha-value**
- **Raise your current speed**
- **Mount seed roll for small amount (optional)**
- E03** Maximum output on motor. With the current kg/ha or the current speed, the motor is going to fast for correct regulation. This error can also occur if there's an error on the motor sensor or the motor axle. →
- **Select a lower kg/ha-value or reduce your current speed.**
- **Check signal on motor sensor.**
- **Check the rotation on the motor axle.**
- E04** Motor error. The motor is going to fast or is not responding to regulation. This error will occur when the divergence or the kg/ha has been more than 10% for over 5 seconds. → **Check power signal to motor.**
- E05** Fan not activated. The ON/OFF/AUTO switch is in ON or AUTO but the fan is not on. → **Activate the fan by pulling the fan-switch to ON.**
- E06** Tank level too low. → **Check tank level, check signal form level sensor.**

Seed shaft do not work for calibration:

Sensor motor plate no contact, wire damaged or no connection in the plug.

Hectare counter and seed motor not working:

Groundspeed sensor damaged or no connection to plug.

Note: *No errors, apart from VCC error, can deactivate the head-relay.*

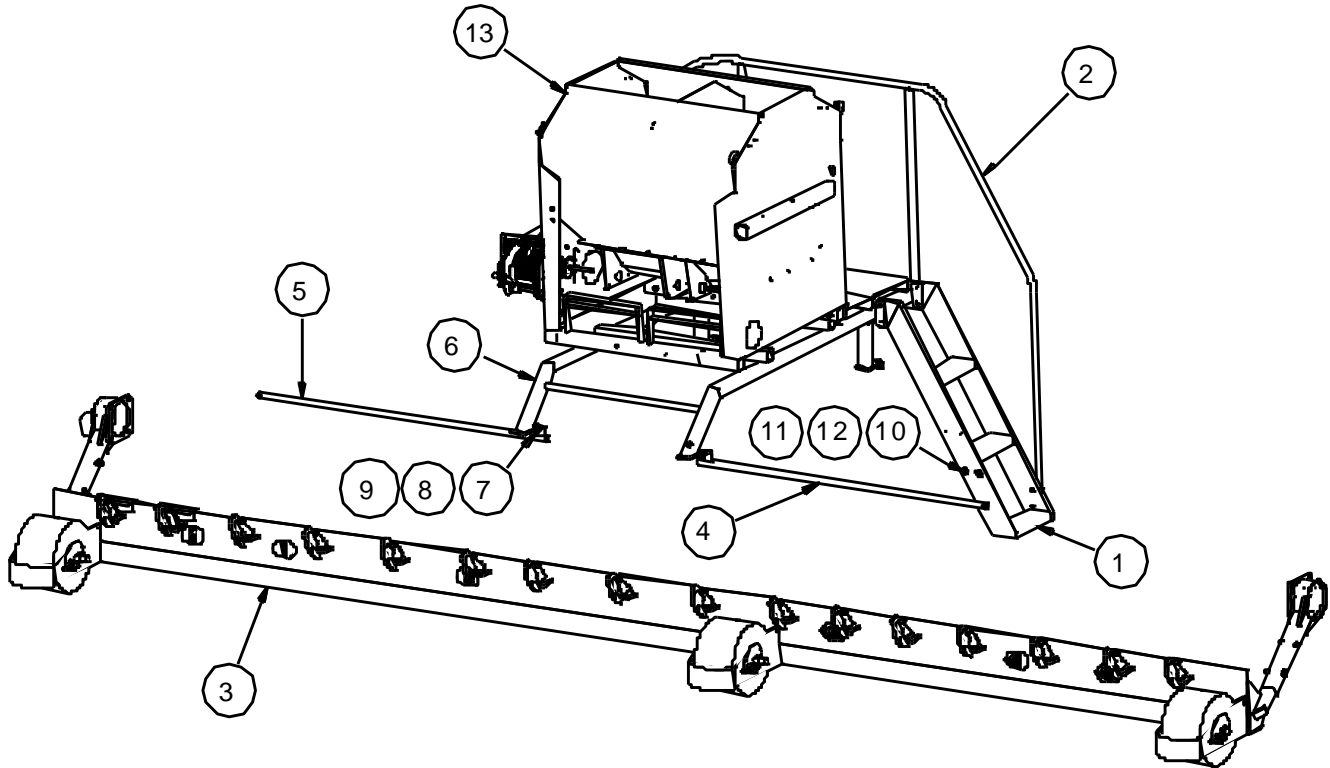
When an error occurs it is up to the user to turn of the motor and the fan.

The motor can be

off by setting the ON/OFF/AUTO switch to OFF position.

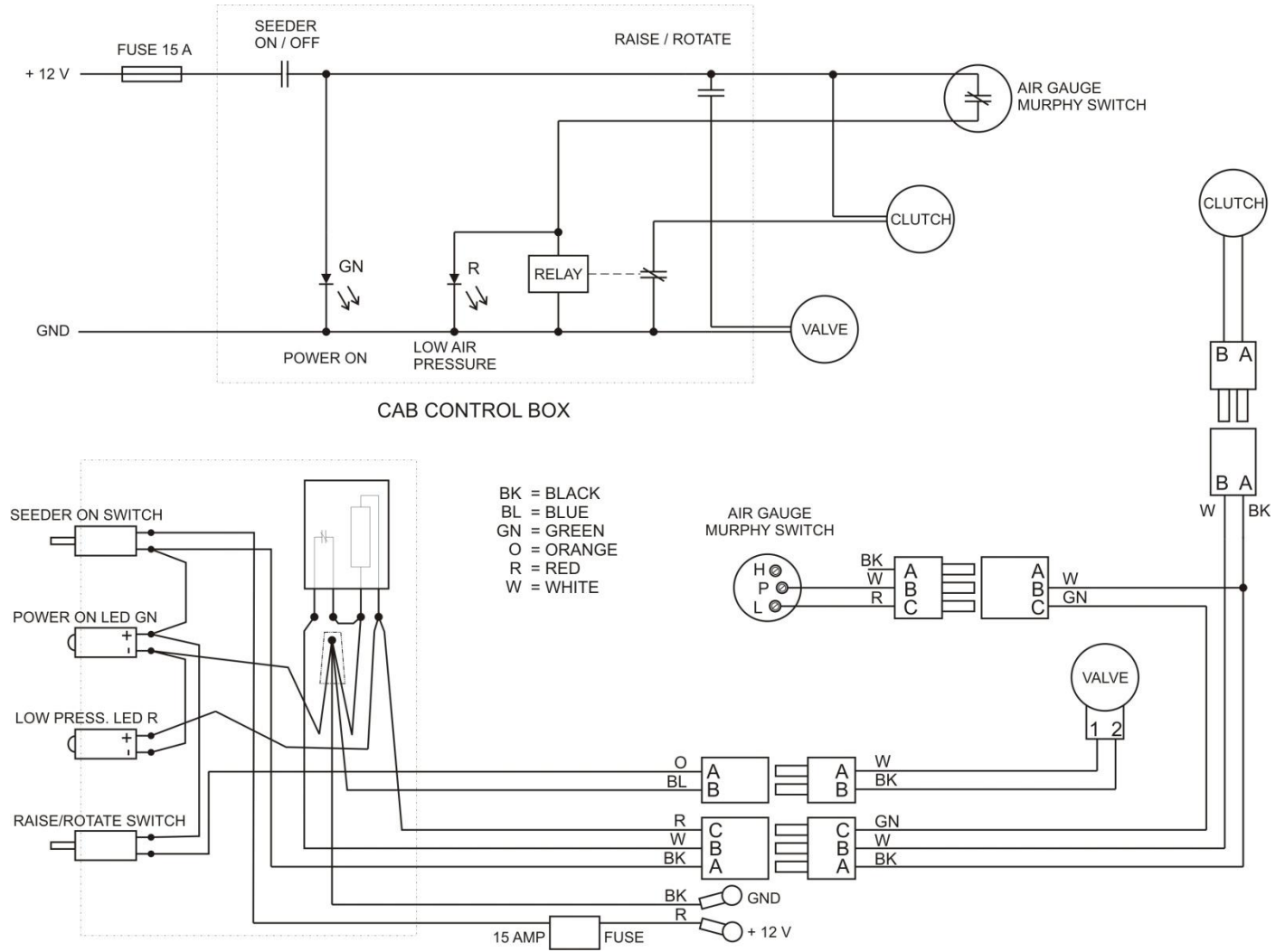
4.11. VALMAR AIR SEEDER

803020 VALMAR AIR SEEDER KIT



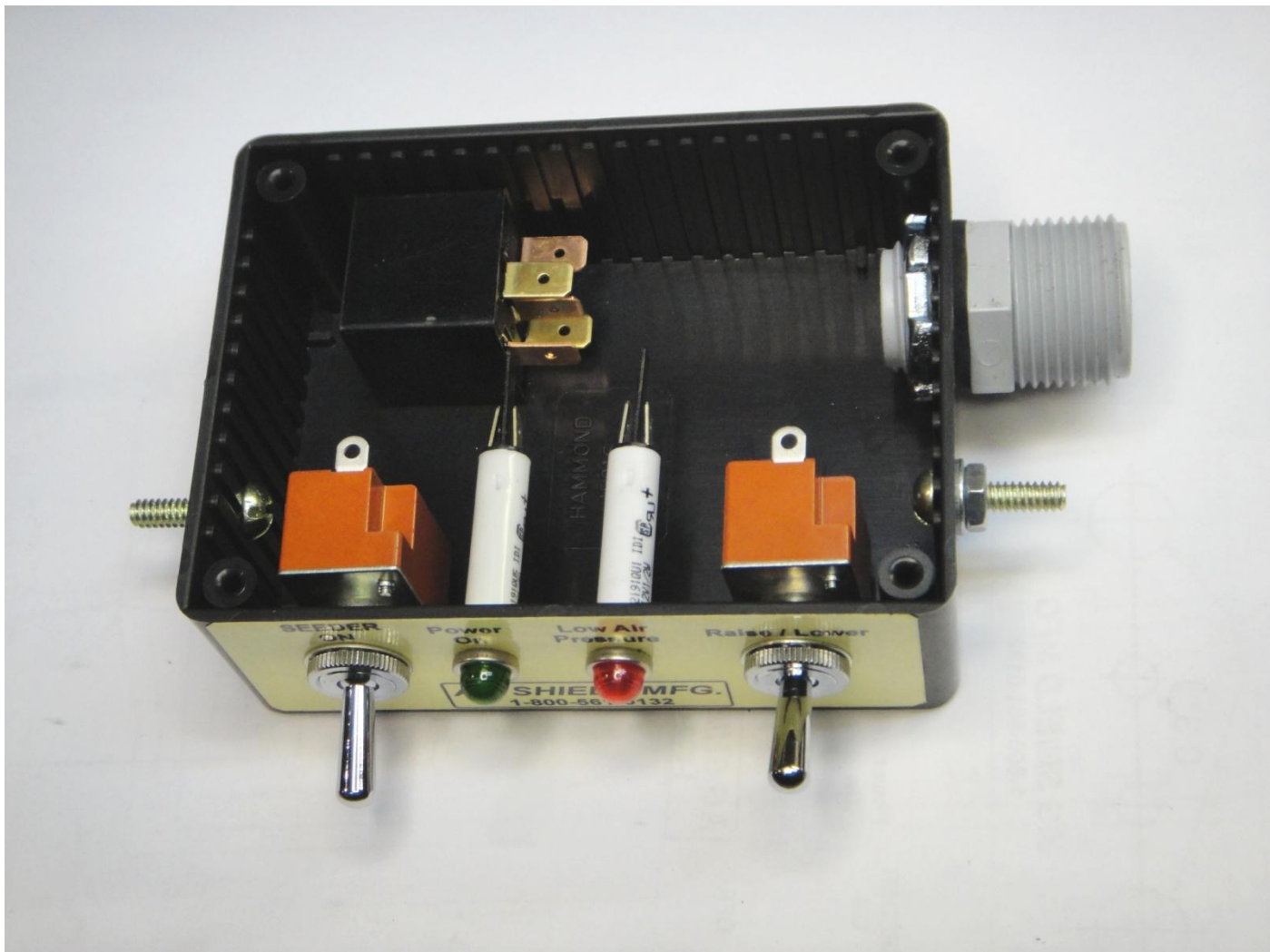
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	805323 technic stairs	8	8	101 114 washer flat 7 16
2	1	805321 technic handrail wldmnt	9	8	102 124 nut 7/16 nc nylock
3	1	805257 20ft 1 S Seeder Blade Assy	10	2	100 603 bolt 3 8NCx1 1 4 gr5 hex pltd
4	1	805343 Technic hose hanger wldmnt LH	11	2	101 105 washer flat 3/8"
5	1	805344 Technic hose hanger wldmnt RH	12	2	102 123 nut 3/8" nylock nc
6	1	805345 Technic mnt wldmnt	13	1	1655 SPECIAL 8 OUTLET
7	8	100659 hex hd bolt 7_16 x 1-1_4 NC			

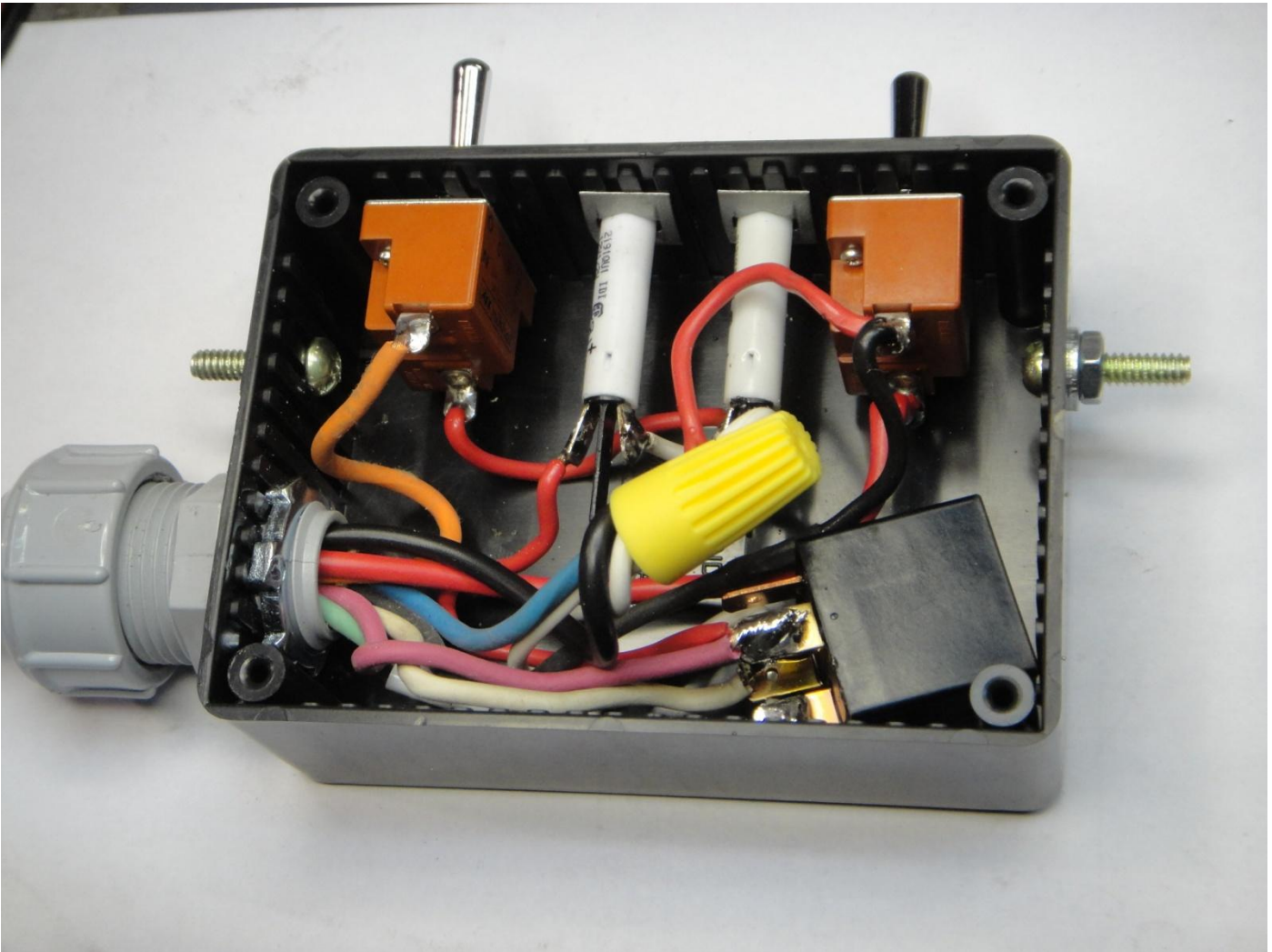
4.12. VALMAR WIRING SCHEMATIC



4.13. VALMAR WIRING







5. LUBRICATION

Grease all steel on steel pivot points daily, or 8 hours of operation.
Grease the bearings on the rollers weekly or 50 hours
No other lubrication is required

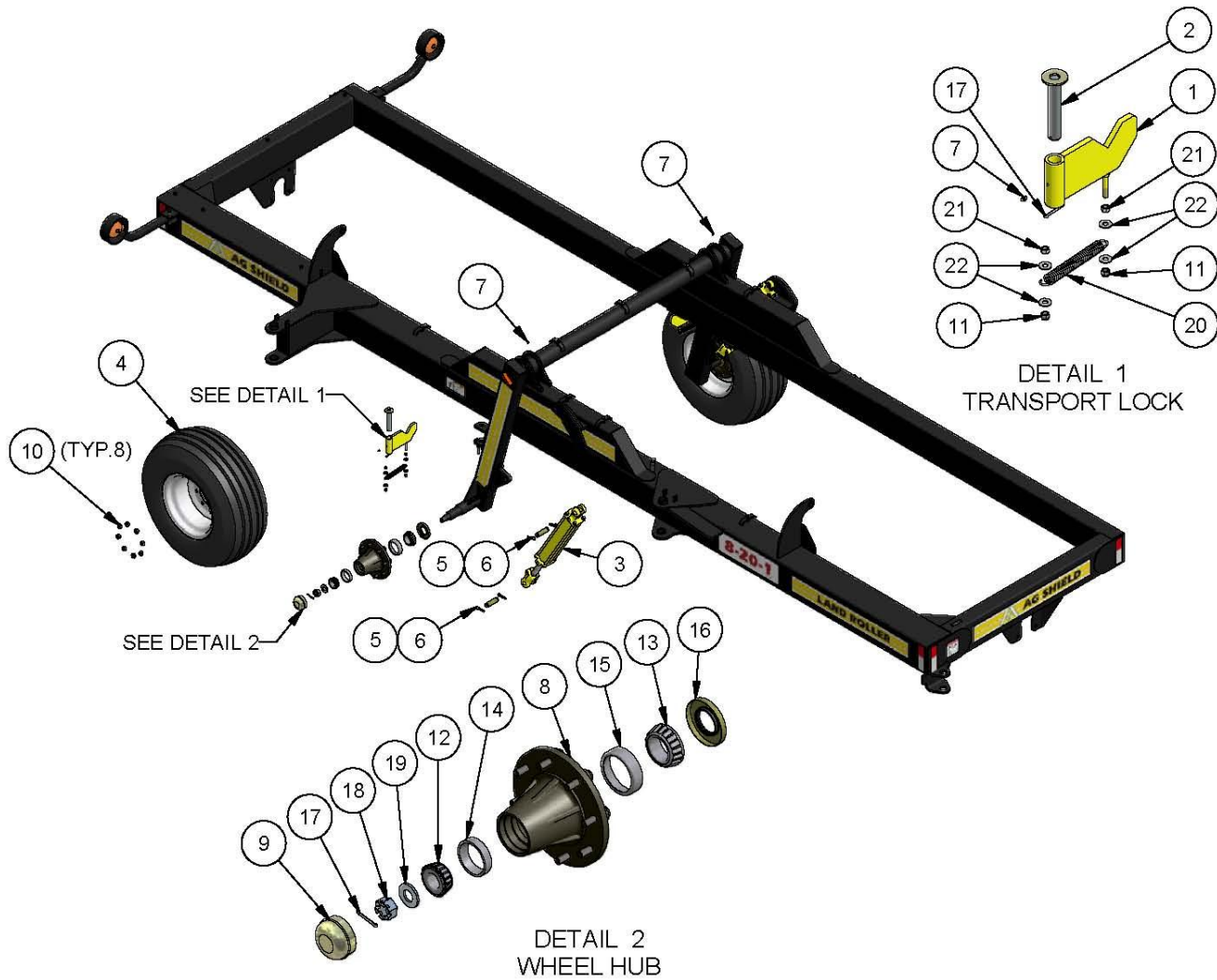
6.SPECIFICATIONS – 1 Section ¼ turn LandRollers

SPECIFICATION	20 foot 1 section	17 foot 1 section	14 foot 1 section	
Weight Dry(shipping) .56" barrel Operating(field)	8347 lbs without blade 833 lb blade 9180 lbs total with blade	7369 lbs without blade 752 lb blade 8121 lbs total with blade	6359 lbs without blade 713 lb blade 7072 lbs total with blade	
Shipping space partially knocked down LxW x H	300" x 105 x 59"	294.5" x 105" x 59"	292" x 105" x 59"	
Length transport mode	300"	294.5"	292"	
Width- transport mode	105"	105"	105"	
Tire Size	235 75 R 16 highway tire	235 75 R 16 highway tire	235 75 R 16 highway tire	
Wheel size	7.5 x 16 wheel With 8 bolt 6.5"BC-pilot	7.5 x 16 wheel With 8 bolt 6.5"BC-pilot	7.5 x 16 wheel With 8 bolt 6.5"BC- pilot	
Tire pressure	80	80	80	
Wheel nut size				
Wheel nut torque	100			
SPECIFICATION	20 foot straight pull	17 foot straight pull	14 ft straight pull	11.5 foot straight pull
Weight Dry (shipping) .56" barrel Operating field	7660 lbs without blade 833 lbs -blade 8493 lbs with blade	6097 lbs without blade 761 lbs -blade 6858 lbs with blade	5600 lbs without blade 713 lbs-blade 6313 total with blade	4400 without blade 570 lbs- blade 4970 total with blade
Shipping space partially Knocked down L x W x H	252 x 102x 108	216x 102x 108	180 x 102x 108	150 x 102x 108
Length Transport mode	258.5 "	240.25"	242.75"	196
Width transport mode	254.375"	216.50"	182.375"	148
Tire size	235 75 R 16 highway tire	235 75 R 16 highway tire	235 75 R 16 highway tire	235 75 R 16 highway tire
Wheel size	7.5 x 16 wheel With 8 bolt 6.5"BC-pilot	7.5 x 16 wheel With 8 bolt 6.5"BC-pilot	7.5 x 16 wheel With 8 bolt 6.5"BC- pilot	7.5 x 16 wheel With 8 bolt 6.5"BC-pilot
Tire pressure	80	80	80	80
Wheel nut size				
Wheel nut torque				

7.PARTS LIST 14, 17, 20 FT quarter turn transport, Technik plus

7.1. 14, 17, 20 FOOT ROCKSHAFT ASSEMBLY

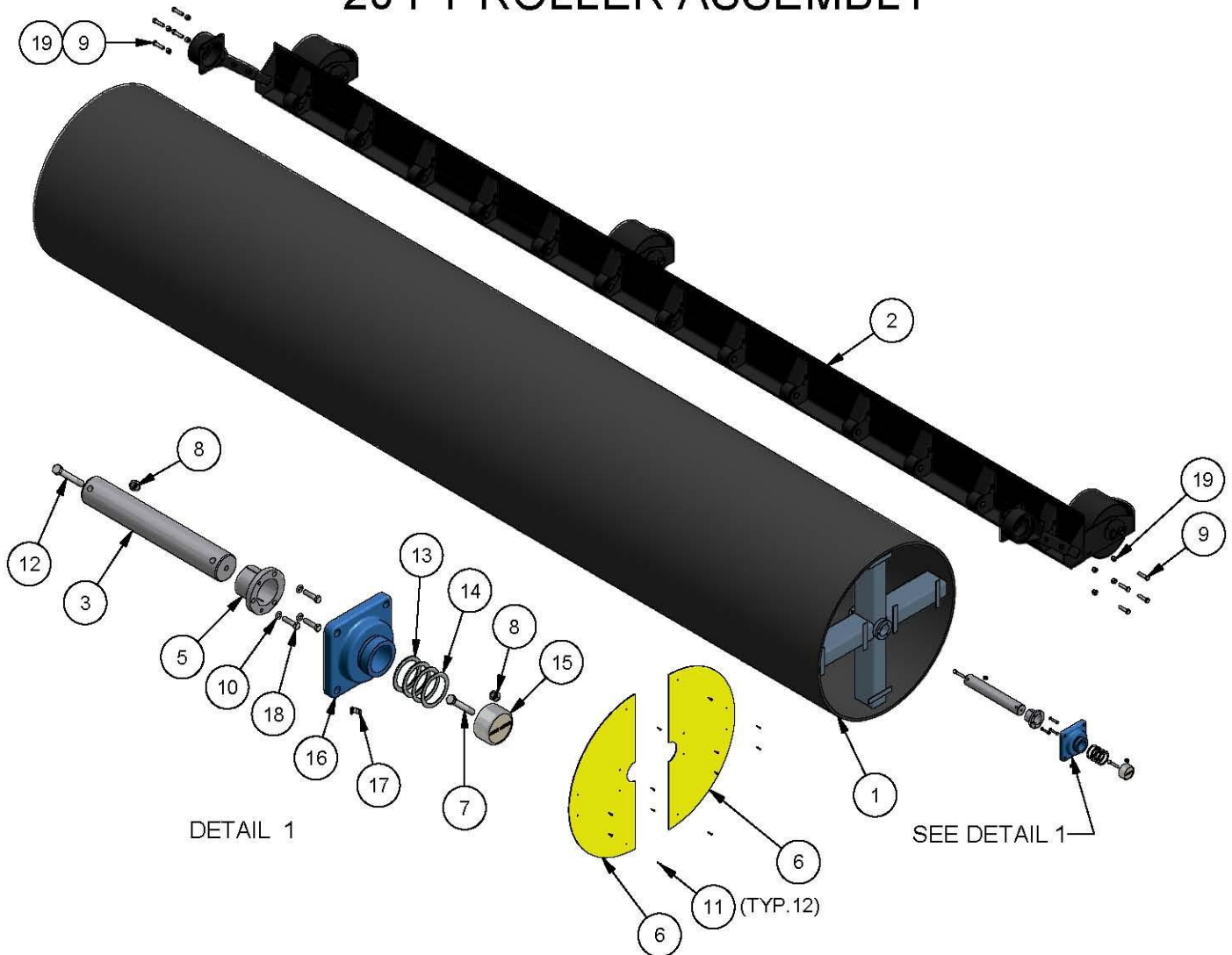
20FT ROCKSHAFT ASSEMBLY



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	803213 Trans Lock Flag Wldmt	12	2	113873 Bearing Cone 2790
2	2	803219 Trans Lock Pin Wldmt	13	2	113874 Bearing Cone 3780
3	2	117370 Hyd Cyl AGU 3 x 16	14	2	113878 Bearing Cup 2720
4	2	113999 Tire Assy 12-5L x 15, 14 Ply	15	2	113877 Bearing Cup 3720
5	4	117324 pin 3-5_8 in two grooves	16	2	113867 Wheel Seal SE35
6	8	104099 hairpin 16 1 8 x 2 5	17	4	104906 Cotter Pin 3-16 x 2in
7	4	105602 grease nipple 1 4 x28 nf str	18	2	113648 Spindle Castellated Nut WB33 1in
8	2	113650 Wheel Hub 8 Bolt, 6" Pilot, 8" RC	19	2	113676 Spindle Washer WA17 1in
9	2	113653 Hub Cap DC-17	20	2	113952 Extension Spring 5-1_2 LG
10	16	113687 Wheel Stud Nut 9-16	21	4	102106 nut 3-8 nc pltd
11	6	102123 nut nylok 3/8" nc gr5 pltd	22	8	101105 flat washer 3/8"

7.2. ROLLER ASSEMBLY

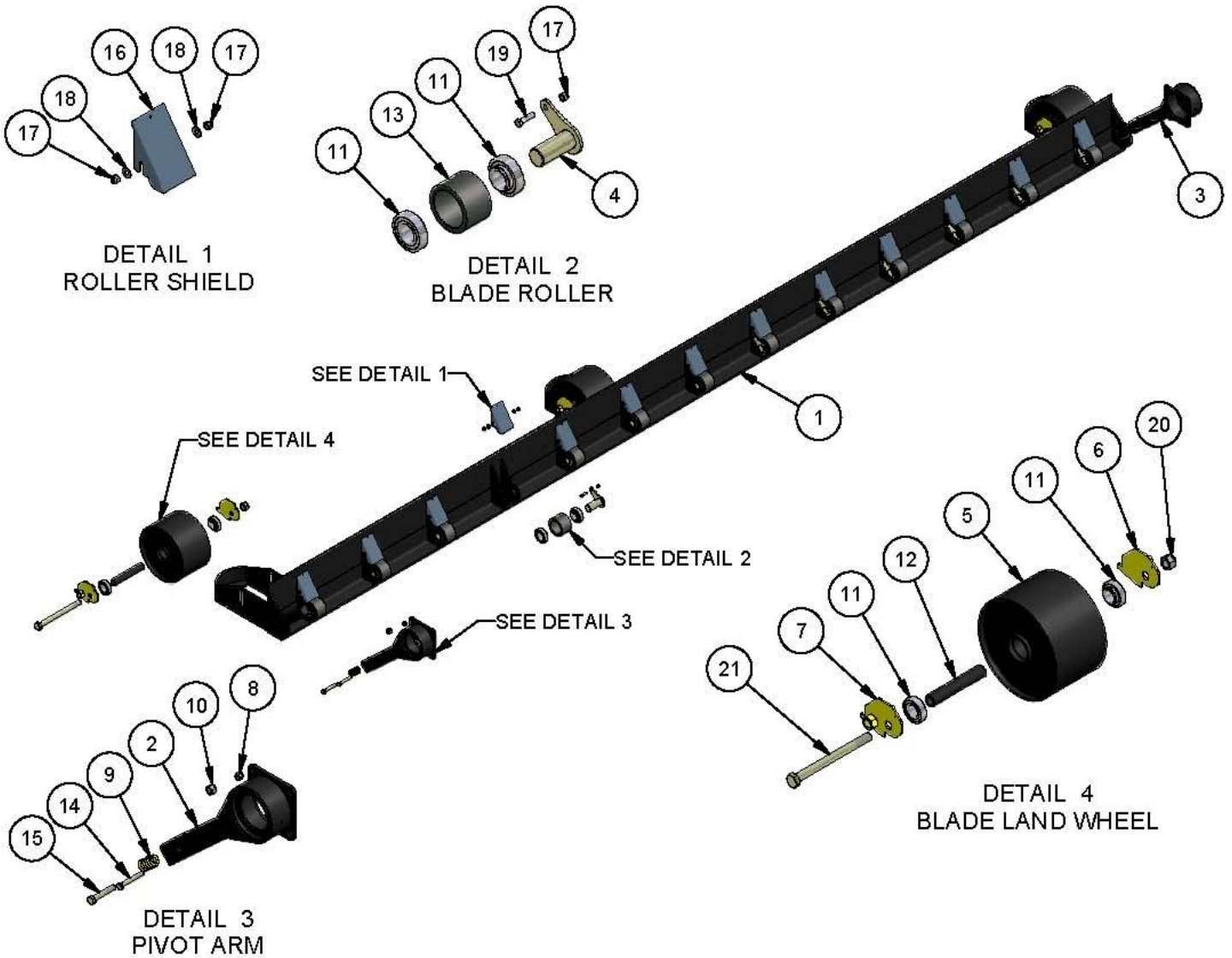
20 FT ROLLER ASSEMBLY



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803075 roller wldt 20 562	11	24	103204 10 X 1 drill tape liner screw
2	1	805255 20ft 1S Blade Assy	12	2	100707 bolt 1-2 X 4 gr5 pltd nc
3	1	803248 Shaft Roller End Threaded	13	4	101128 Machinery Washer 2_1-2 ID 10 Gauge
4	1	800106 Shaft Roller End	14	4	101127 Machinery Washer 2_1-2 ID 14 Gauge
5	2	114438 bushing Q1 2-1_2 bore	15	1	106010 Acre Meter
6	4	800345 end cover plastic	16	2	800999 Flange Bearing 2-1/2" UCF213-40
7	4	100706 bolt 1-2 X 3 1-2 gr5 pltd nc	17	2	105639 Grease Zerk 1_1-4LG 1-8 NPT
8	6	102125 nut nylok 1/2" nc gr5 pltd	18	6	100604 bolt 3-8 X 1 1-2 gr5 pltd nc
9	8	100804 bolt 5-8 X 2 1-2 gr5 pltd nc	19	8	102127 nut nylok 5/8" nc gr5 pltd
10	22	101145 lock washer 3/8"			

7.3. LEVELLING BLADE ASSEMBLY

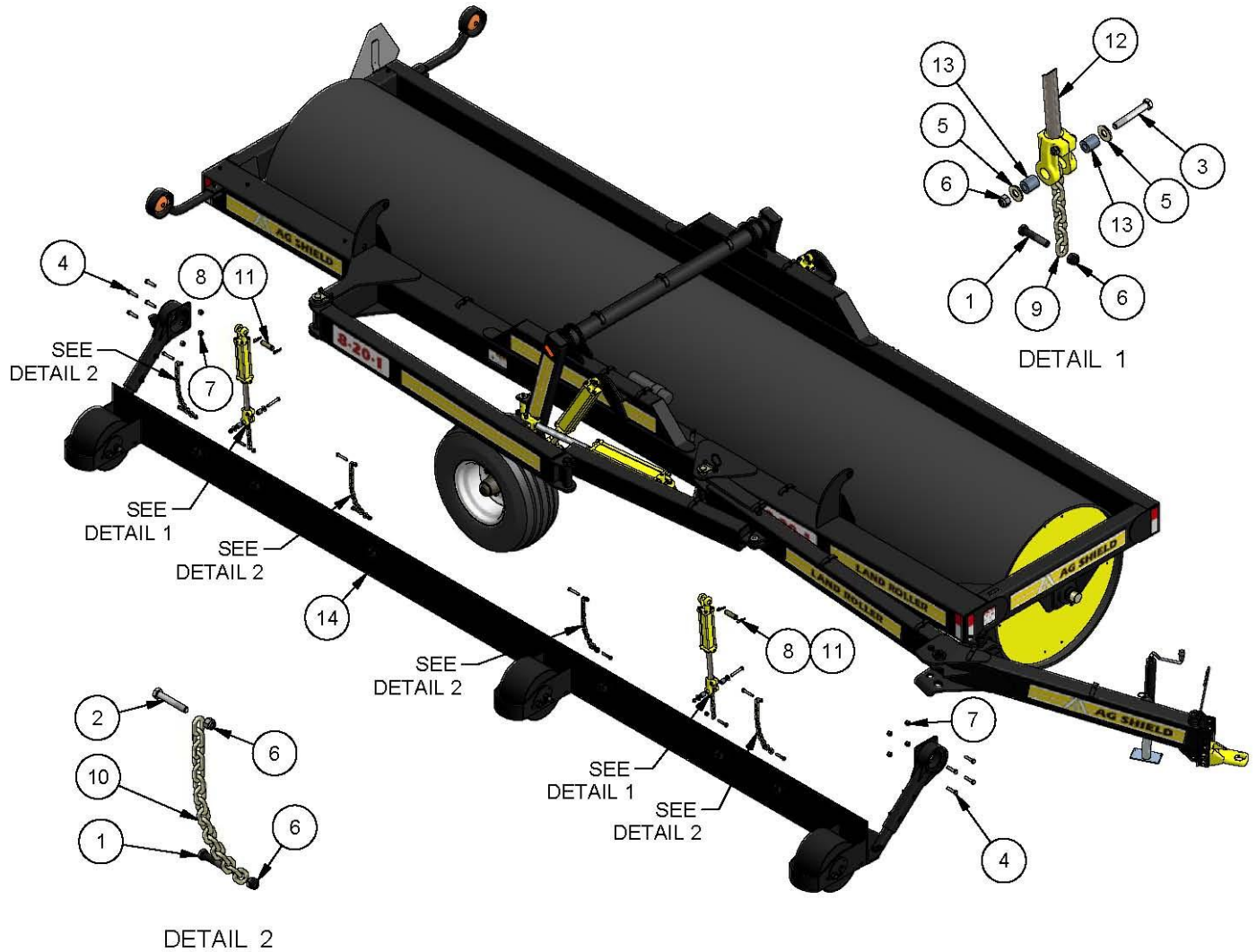
20FT LEVELING BLADE ASSEMBLY



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803106 20ft Scraper	12	3	805247 Gauge Wheel Through Bush
2	1	805059 LH Pivot Blade Arm	13	13	805224 Roller Body
3	1	805194 Blade Arm Wldmt W-Shield RH	14	2	100706 bolt 1-2 X 3 1-2 gr5 pltd nc
4	13	805227 Roller Pin Wldmt	15	2	100806 bolt 5-8 3 1-2 gr5 pltd nc
5	3	805241 Gauge Wheel 12 x 8 wide	16	13	805225 Roller Shield
6	3	805245 Cam Adjust LH Wldt	17	39	102123 nut nylok 3/8" nc gr5 pltd
7	3	805246 Cam Adjust RH Wldt	18	26	101104 flat washer 5/16"
8	8	102125 nut nylok 1/2" nc gr5 pltd	19	13	100604 bolt 3-8 X 1 1-2 gr5 pltd nc
9	2	113929 SPRING 276 wire x 2-1_2 L x 1-4OD	20	3	102130 nut nylok 1" nc gr5 pltd
10	2	102127 nut nylok 5/8" nc gr5 pltd	21	3	100930 bolt 1 X 12gr5 pltd nc
11	32	114500 Camlock Bearing FP7 208-24 2RS			

7.4. LEVELING BLADE MOUNTING

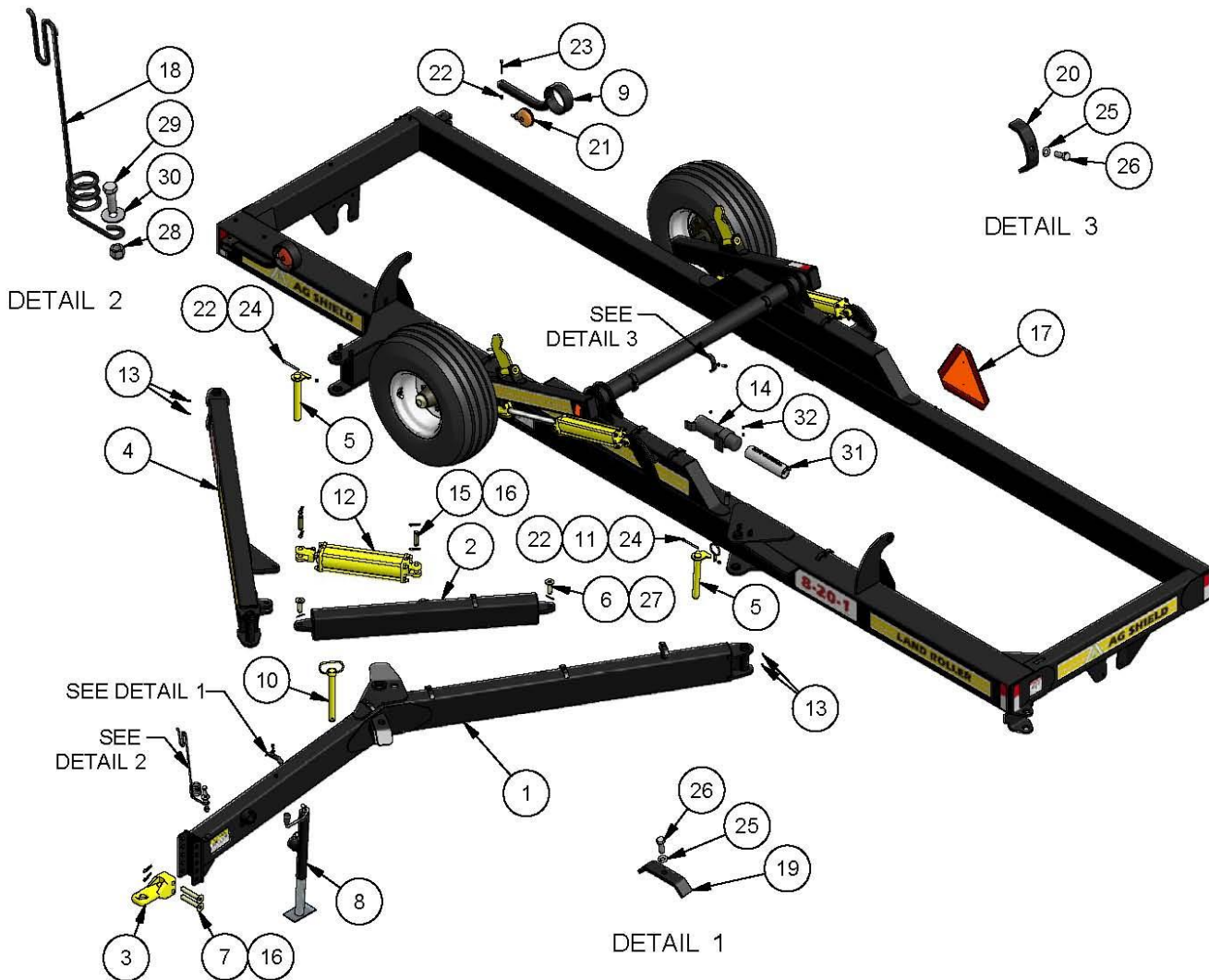
20FT LEVELING BLADE MOUNTING



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	6	100704 bolt 1/2" x 2 1/2" gr5 pltd nc	8	4	104099 hairpin 16 1 8 x 2 5
2	4	100705 bolt 1-2 X 3 gr5 pltd nc	9	2	114347 Chain 5/16 GR 70, 8 Link
3	4	100706 bolt 1-2 X 3 1-2 gr5 pltd nc	10	4	114347a Chain 5/16 GR 70, 17 Link
4	8	100804 bolt 5-8 X 2 1-2 gr5 pltd nc	11	2	117324 pin 3-5_8 in two grooves
5	4	101106 washer flat 1/2"	12	2	117351Hyd Cyl AGU 2 x 8
6	12	102125 nut nylok 1/2" nc gr5 pltd	13	4	805116 insert cyl clevis chain pull
7	8	102127 nut nylok 5/8" nc gr5 pltd	14	1	805255 20ft 1S Blade Assy

7.5. FRAME AND FOLD ARM ASSEMBLY

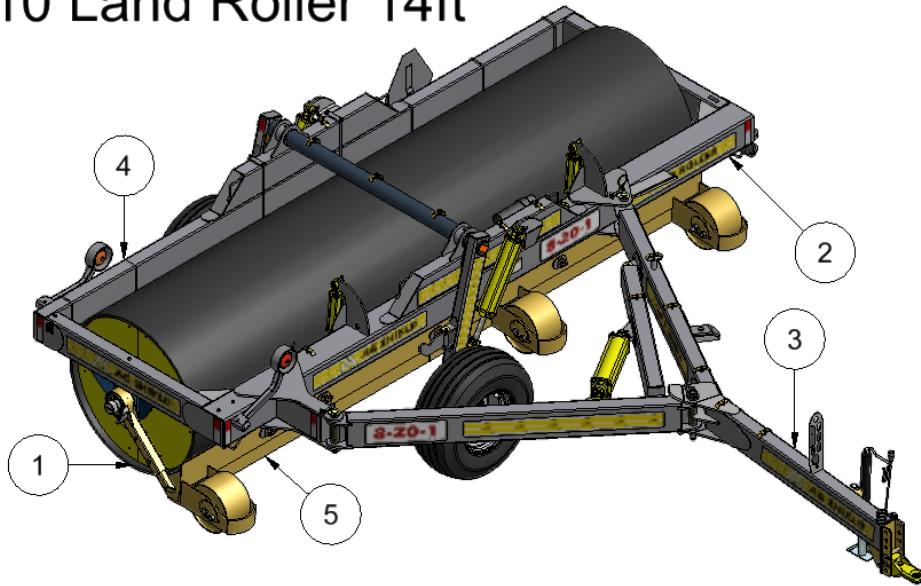
20FT FRAME ASSEMBLY



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803132 Hitch Towbar	17	1	113565 SMV Sign Triangle
2	1	803155Hitch Swing Power Tube	18	1	113803 Flat Mount Hose Holder
3	1	113640 power pin hitch CAT2 V desig	19	13	800472 tab hose retainer
4	1	803149 Hitch Trailing Tube	20	3	803223 Rshaft Hyd Hose Bar Clamp
5	2	803180 Pin Wldmt 1-1_2 x 11	21	2	113497 Light Dual Bulb 4-1_4 OD
6	2	803195 Power Tube Pin Wldmt 1in	22	4	102123 nut nylok 3/8" nc gr5 pltd
7	2	803196 Perfect Hitch Set Pin	23	2	100610 bolt 3-8 X 3 gr5 pltd nc
8	1	116905 HITCH JACK 2015	24	2	100615 bolt 3-8 X 4 1-2 gr5 pltd nc
9	2	803072 Light Arm Wldmt	25	28	101145 lock washer 3/8"
10	1	803229 Pull Pin Wldmt	26	22	100602 bolt 3/8" x 1" gr5 pltd nc
11	1	800490 retainer ring 3in	27	6	104906 Cotter Pin 3-16 x 2in
12	1	117369 Hyd Cyl AGU 4 x 16 (Clone)	28	9	102127 nut nylok 5/8" nc gr5 pltd
13	6	105602 grease nipple 1 4 x28 nf str	29	1	100803 bolt 5-8 X 2 gr5 pltd nc
14	1	128076 Operators manual cannister	30	1	101107 flat washer 5/8"
15	8	117324 pin 3-5_8 in two grooves	31	1	800051 20ft 1S Manual
16	18	104099 hairpin 16 1 8 x 2 5	32	3	102121 nut nylok 1/4" nc gr5 pltd

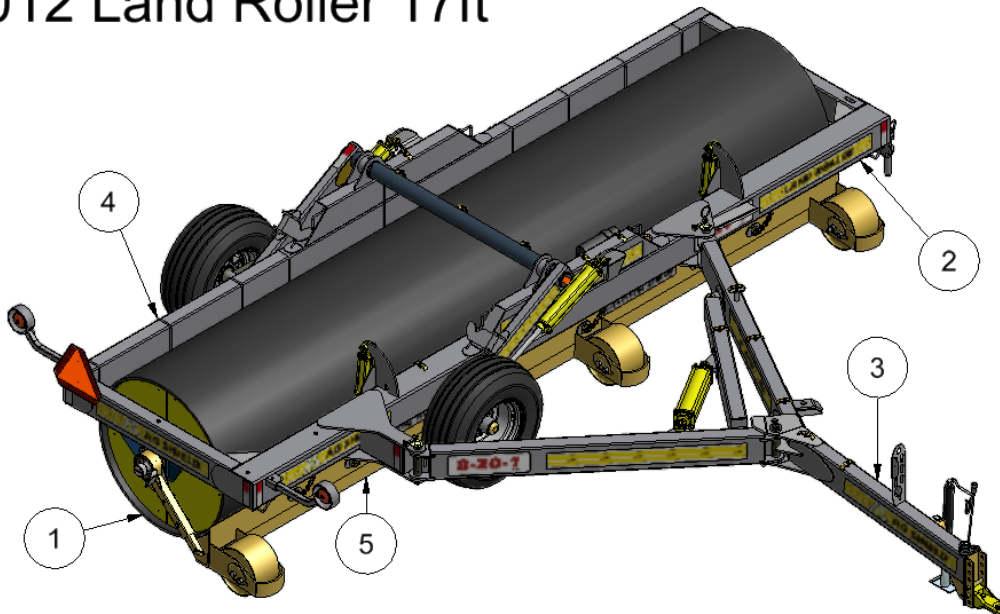
7.6. UNIQUE PARTS FOR 20FT, 17FT AND `14FT LAND ROLLERS

800010 Land Roller 14ft



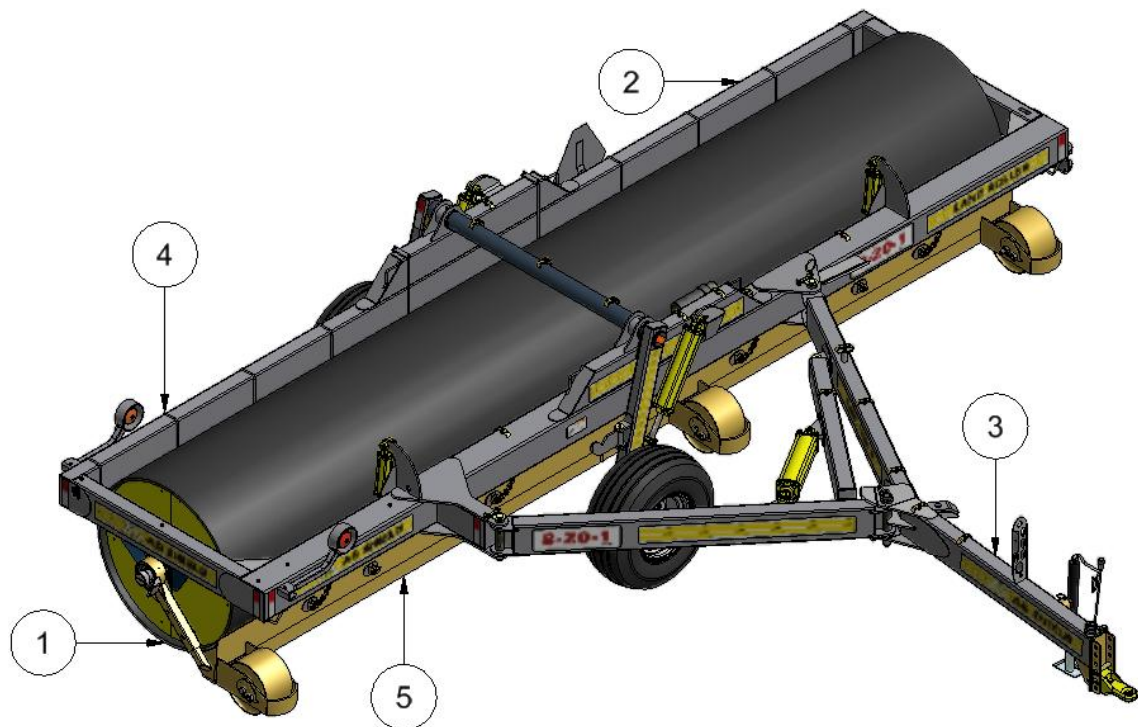
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803073 roller wldt 14 562	4	1	803310 Scraper Add-On Kit 14ft
2	1	803300 14ft Frame - Hvy Rshaft Wldmt	5	1	805016 14ft 1S Blade Assy Mounted
3	1	803305 Hitch Towbar			

800012 Land Roller 17ft



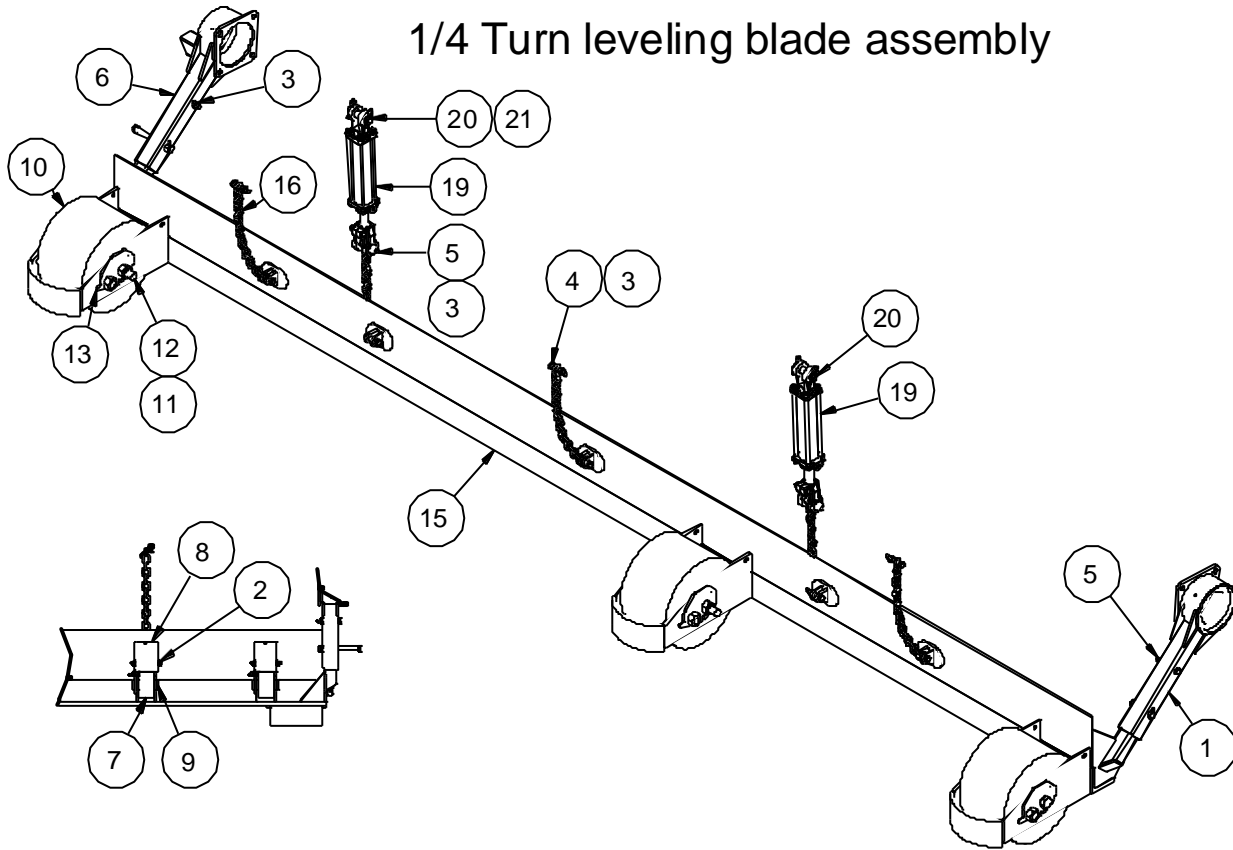
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	804235 roller wldt 562 17ft	4	1	804245 Scraper Add-On Kit 17ft
2	1	804230 17ft Frame - Hvy Rshaft Wldmt	5	1	804240 17ft 1S Blade Assy Mounted
3	1	804250 Hitch Towbar 17ft			

800006 Land Roller 1S 20ft



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803075 roller wldt 20 562	4	1	803240 Scraper Add-On Kit
2	1	803238 20ft Frame - Hvy Rshaft Wldmt	5	1	805255 20ft 1S Blade Assy Mounted
3	1	803132 Hitch Towbar			

7.7. 1/4 TURN LEVELLING BLADE ASSEMBLIES 14, 17, 20 FT



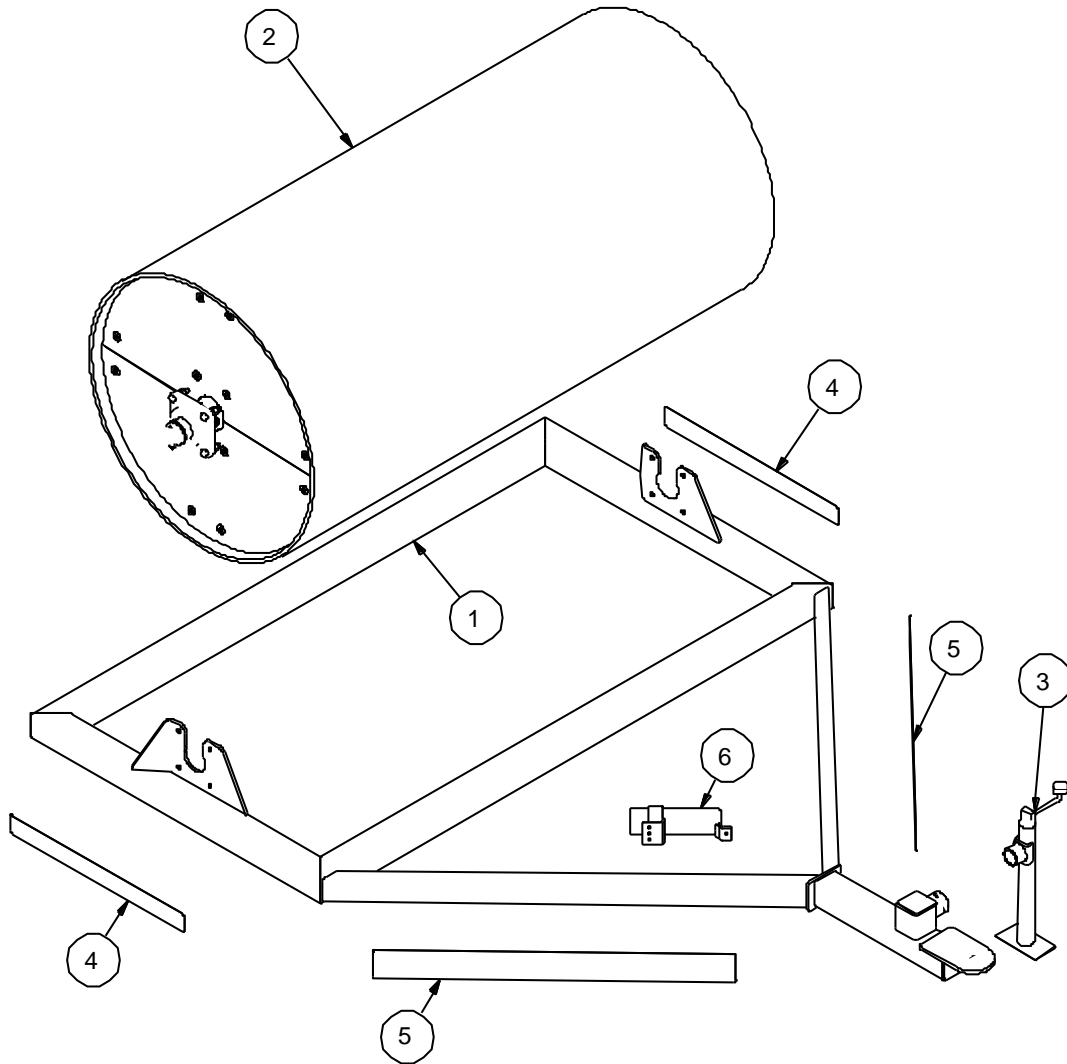
Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	805059 mt wldt bushing LH scraper	12	3	100955 bolt 1 X 12gr5 pltd nc
2	27	102123 nut nylok 3/8" nc gr5 pltd	13	3	805246 Cam Adjust RH Wldt
3	12	102125 nut nylok 1/2" nc gr5 pltd	14	18	101104 flat washer 5/16"
4	8	100704 bolt 1-2 X 2 1-2 gr5 pltd nc	15	1	805016 14ft leveling blade kit 804240 17 ft leveling blade kit 805255 20 ft leveling blade kit
5	4	100706 bolt 1-2 X 3 1-2 gr5 pltd nc	16	3	114347a CHAIN 5 16 TRANSPORT 70 Check Chain
6	1	805194 Blade Arm Wldmt W-Shield RH	17	2	114347 CHAIN 5 16 TRANSPORT 70 actual
7	9	805223 Roller Assembly No Rubber	18	4	101106 washer flat 1/2"
8	9	805225 Blade Short Roller Shield	19	2	117351Hyd Cyl AGU 2 x 8
9	9	805227 Roller Short Pin Wldmt	20	2	117324 pin 3-5_8 in two grooves
10	3	805241 wheel gauge leveller 12 x 8 wide	21	4	104099 hairpin 16 1 8 x 2 5
11	3	102130 nut nylok 1" nc gr5 pltd	22	4	805116 insert cyl clevis chain pull

For detailed leveling blade information, refer to the level blade assembly portion of manual.

8. Straight pull parts

8.1. 86 INCH STRAIGHT PULL

801050 86 INCH STRAIGHT PULL ROLLER

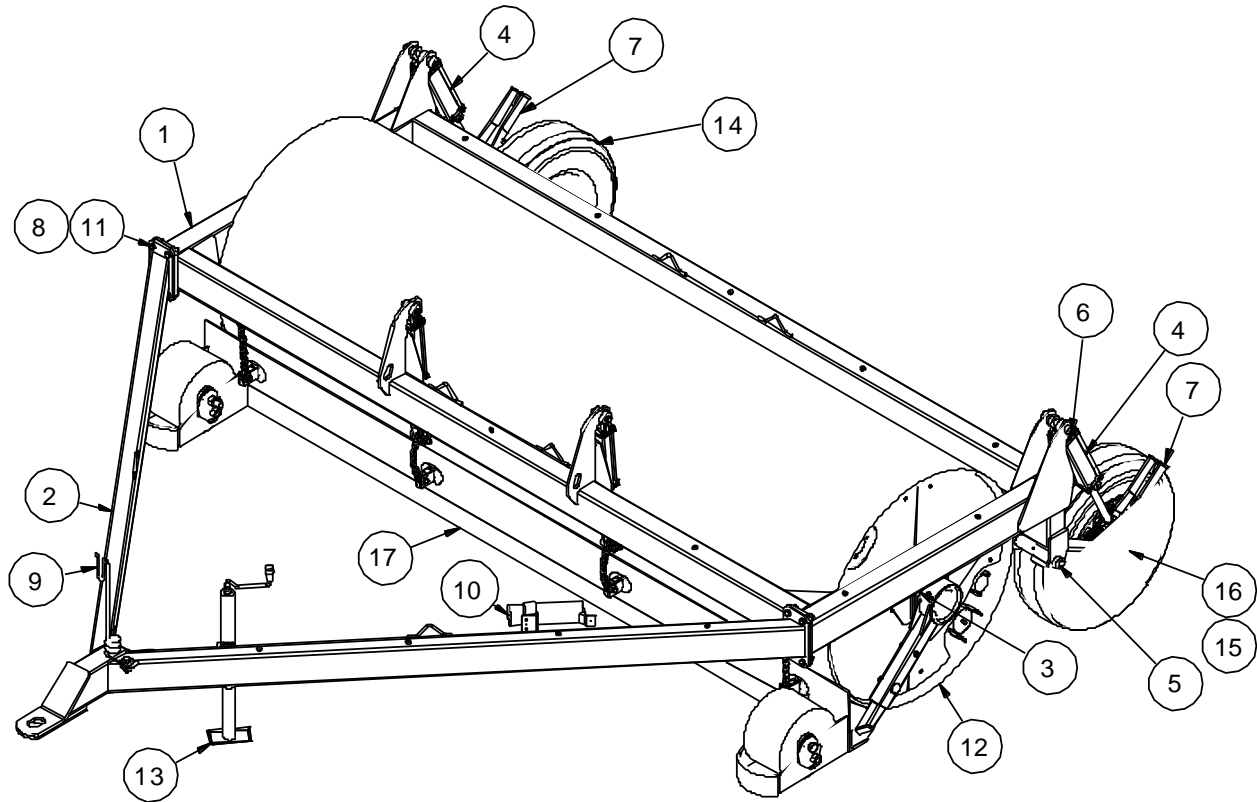


ITEM	QTY	PART NUMBER
1	1	801053 Frame Wldmnt 86 inch Roller AAFC
2	1	801054 Barrel Wldmnt 86 inch Roller AAFC
3	1	116903 HITCH JACK SIDE MNT TOP CRANK
4	2	116107 Recon 300 Rear Hitch Decal
5	2	116142 Decal Stripe Land Roller
6	1	128076 Operators manual canister

FOR ROLLER ASSEMBLY PARTS PLEASE REFER TO THE ROLLER ASSEMBLY PAGE

8.2. 11.5 FT STRAIGHT PULL

800004 Land roller 1S 11.5 ft (030813 ND)

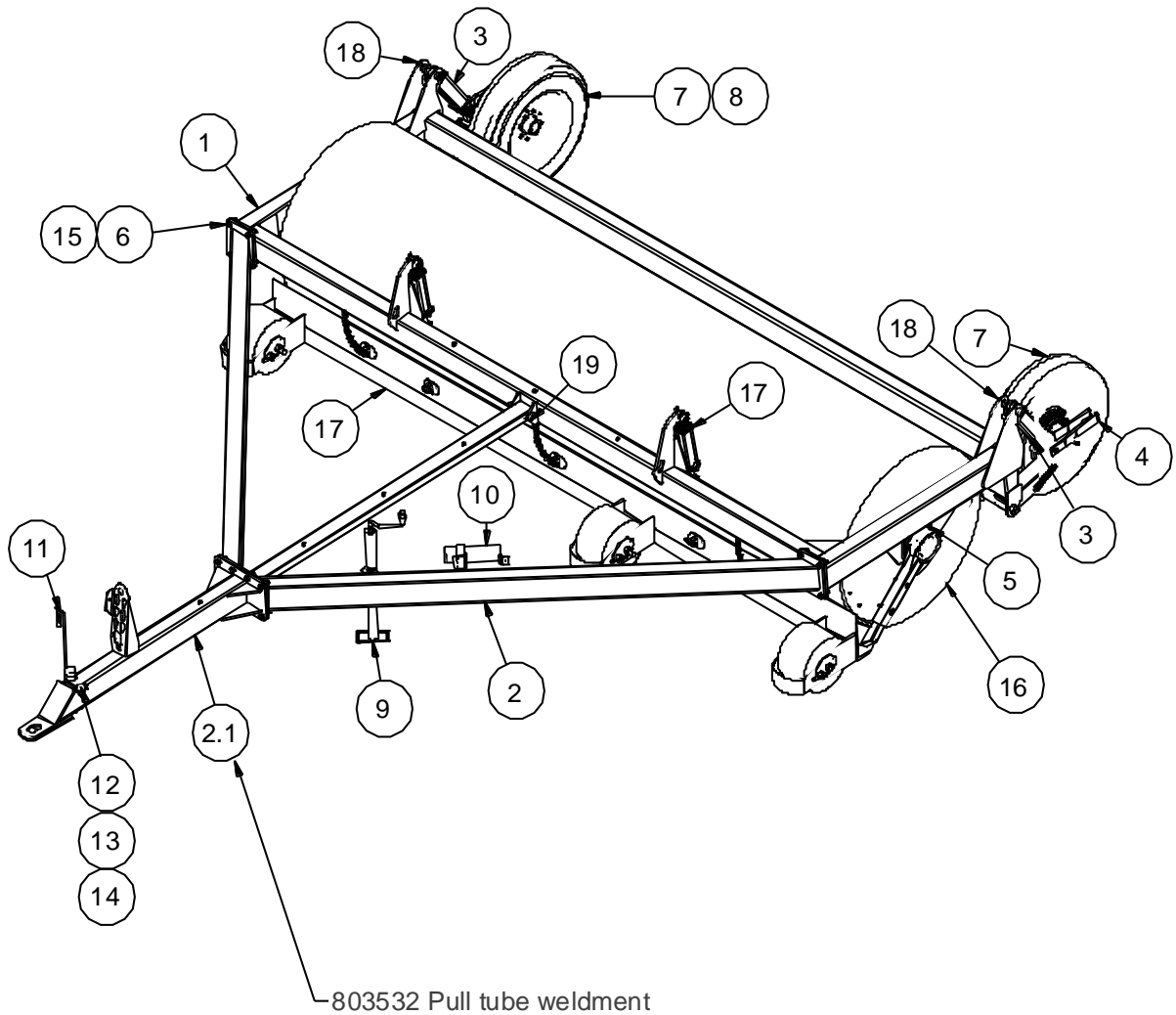


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	801651 Frame 12ft 1S	10	1	128076 Operators manual cannister
2	1	801665 Hitch Frame 12ft 1S	11	8	100803 bolt 5/8 X 2 gr5 pltd nc
3	8	100804 bolt 5-8 X 2 1-2 gr5 pltd nc	12	1	800110 roller wldt center
4	2	117342 Hyd Cyl AGU 3 x 10	13	1	116905 HITCH JACK 2015
5	2	800406 pin wldt 1-1_4 x 10-1_2	14	2	113986 tire whl assy 8 bolt 6 x 16 5.15 pilot
6	2	803534 Cyl Mount Pin Wldmt 1 x 6-1_8	15	1	801682 Transport Wheel Arm Wldmt 8 bolt 1S RH
7	2	800285 wheel lock mid trans	16	1	801681 Transport Wheel Arm Wldmt 8 bolt 1S LH
8	16	102127 nut nylok 5/8" nc gr5 pltd	17	1	805440 11-5 ft Land Leveller Blade Assy
9	1	128091 Flat Mount Hose Holder			

For leveling blade, Roller barrel details see 20 ft section.

8.3. 14 FT STRAIGHT PULL

800003 14 ft 1 S Straight Pull

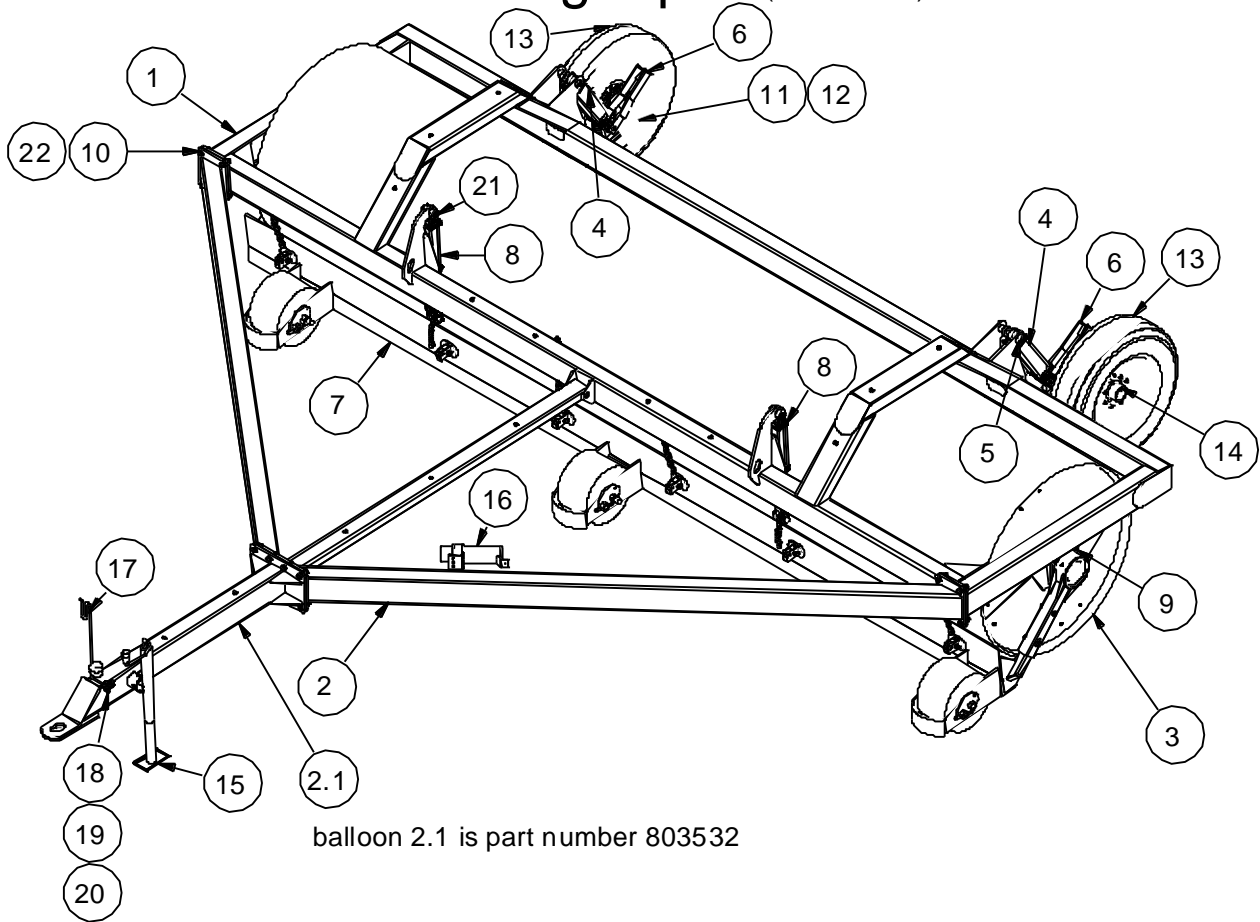


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803552 14ft 1S Frame	11	1	128091 Flat Mount Hose Holder
2	1	803555 14ft 1S Hitch Frame	12	1	100901 bolt 3-4 X 2 gr5 pltd nc
3	2	117342 Hyd Cyl AGU 3 x 10	13	1	101108 flat washer 3/4"
4	2	800285 wheel lock mid trans	14	1	102128 nut nylok 3/4" nc gr5 pltd
5	7	100705 bolt 1-2 X 3 gr5 pltd nc	15	16	102127 nut 5/8 nc nylock
6	16	100803 bolt 5-8 X 2 gr5 pltd nc	16	1	803073 roller wldt 14 562
7	2	113986 tire whl assy 8 bolt 6 x 16 5.15 pilot	17	1	805016 14ft 1S Blade Assy Mounted
8	2	113686 hub 8 bolt 6 5 bc 4500lb	18	2	803550 Cyl Mount Pin Wldmt 1 x 6-1-4
9	1	116905 HITCH JACK 2015	19	1	800415 pin wldt 1 x 5-1_2
10	1	128076 Operators manual cannister			

For leveling blade, Roller barrel details see 20 ft section of manual.

8.4. 17 FT STRAIGHT PULL

800005 17 ft 1 S straight pull (030813 ND)

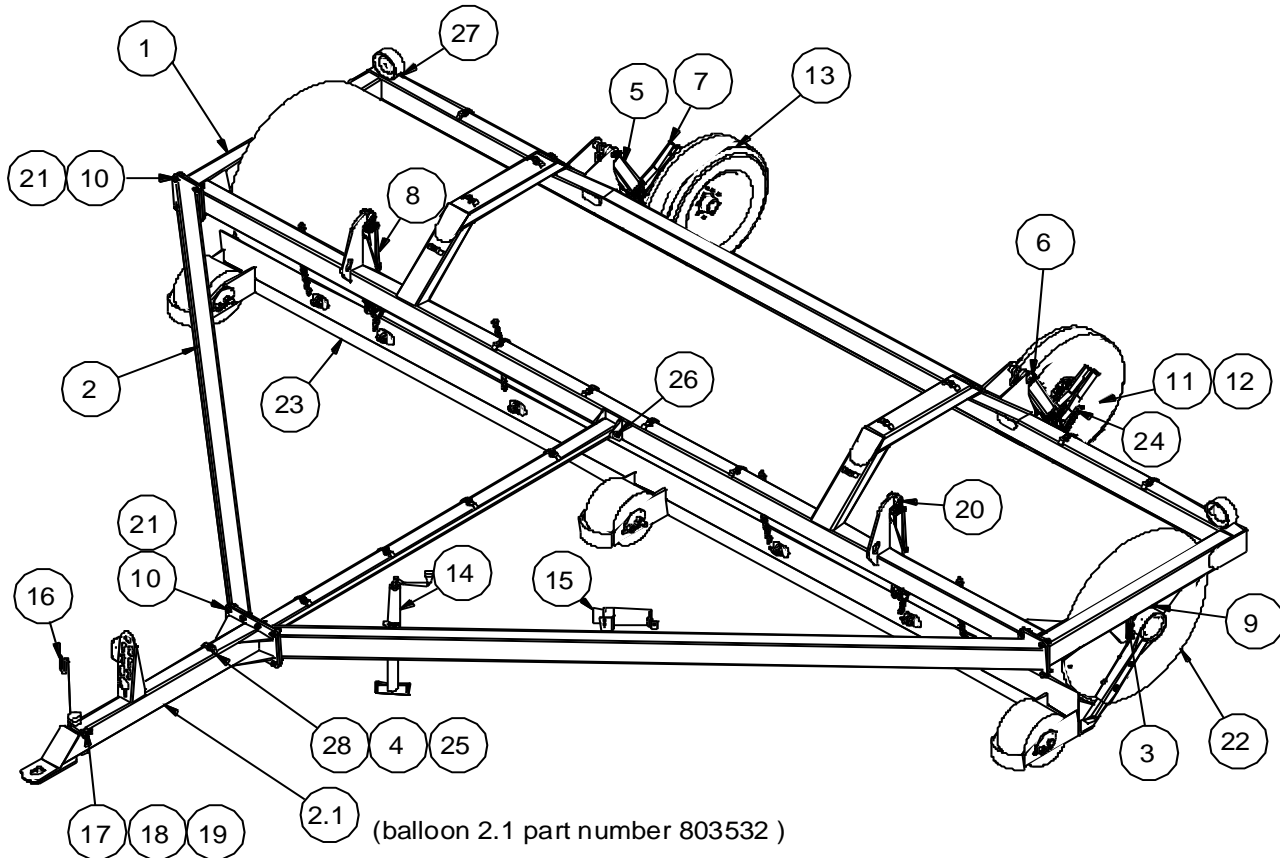


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803500 17ft 1S Frame	12	1	803440 Transport Wheel Arm Wldmt 8 Bolt
2	1	803508 17ft 1S Hitch Frame	13	2	113986 tire whl assy 8 bolt 6 x 16 5.15 pilot
3	1	800070 roller wldt wing 204 inches	14	2	113686 hub 8 bolt 6 5 bc 3500lb
4	2	117342 Hyd Cyl AGU 3 x 10	15	1	116905 HITCH JACK 2015
5	2	803534 Cyl Mount Pin Wldmt 1 x 6-1_8	16	1	128076 Operators manual cannister
6	2	800285 wheel lock mid trans	17	1	128091 Flat Mount Hose Holder
7	1	805186 17ft Land Leveller Blade Assy	18	1	100901 bolt 3/4" X 2" gr5 pltd nc
8	2	117358Hyd Cyl AGU 2 x 8 (Clone)	19	1	101108 flat washer 3/4"
9	7	100705 bolt 1-2 X 3 gr5 pltd nc	20	1	102128 nut nylok 3/4" nc gr5 pltd
10	16	100803 bolt 5/8 X 2 gr5 pltd nc	21	2	117324 pin 3-5_8 in two grooves
11	1	803441 Transport Wheel Arm Wldmt RH 8 Bolt	22	16	102127 nut 5/8 nc nylock

For leveling blade, Roller barrel details see 20 ft section.

8.5. 20 FT STRAIGHT PULL

800002 Land Roller 20 ft 1 S straight pull (03/27/2013)

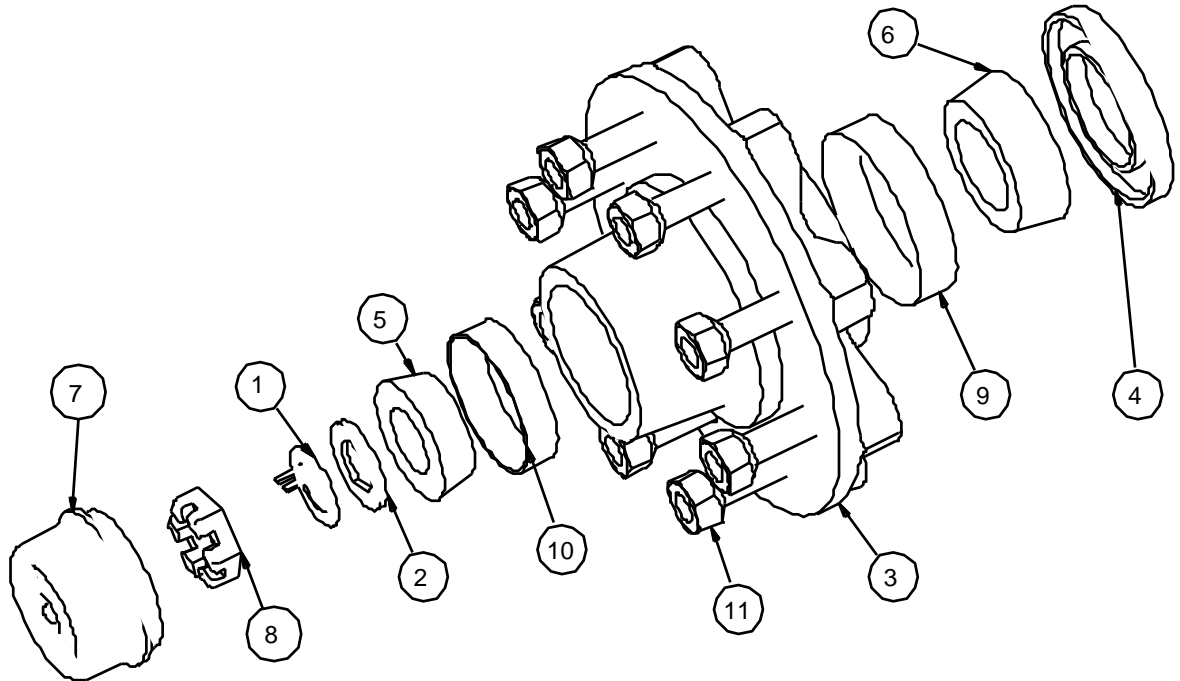


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	803575 20ft 1S Frame	15	1	128076 Operators manual cannister
2	1	803578 20ft 1S Hitch Frame	16	1	128091 Flat Mount Hose Holder
3	2	800999 Bearing Drilled and Tapped 2-1_2 UCF213-40	17	1	100901 bolt 3/4" X 2" gr5 pltd nc
4	25	101145 lock washer 3/8"	18	1	101108 flat washer 3/4"
5	2	117342 Hyd Cyl AGU 3 x 10	19	1	102128 nut nylok 3/4" nc gr5 pltd
6	2	803534 Cyl Mount Pin Wldmt 1 x 6-1_8	20	2	117324 pin 3-5_8 in two grooves
7	2	800285 wheel lock mid trans	21	16	102127 nut 5/8 nc nylock
8	2	117358Hyd Cyl AGU 2 x 8 (Clone)	22	1	803075 roller wldt 20 562
9	7	100705 bolt 1-2 X 3 gr5 pltd nc	23	1	805013 Ground Leveller Kit 20ft 1S Straight pull
10	16	100803 bolt 5/8 X 2 gr5 pltd nc	24	2	113952 Extension Spring 5-1_2 LG
11	1	803441 Transport Wheel Arm Wldmt RH 8 Bolt	25	21	100602 bolt 3/8" x 1" gr5 pltd nc
12	1	803440 Transport Wheel Arm Wldmt 8 Bolt	26	1	800415 pin wldt 1 x 5-1_2
13	2	113986 tire whl assy 8 bolt 6 x 16 5.15 pilot	27	2	113497 Light Dual Bulb 4-1_4 OD Pedestal Mnt
14	1	116905 HITCH JACK 2015	28	19	800472 tab hose retainer

For leveling blade, Roller barrel details see above 20 ft section.

8.6. 8 BOLT HUB ASSEMBLY 113868 STRAIGHT PULL

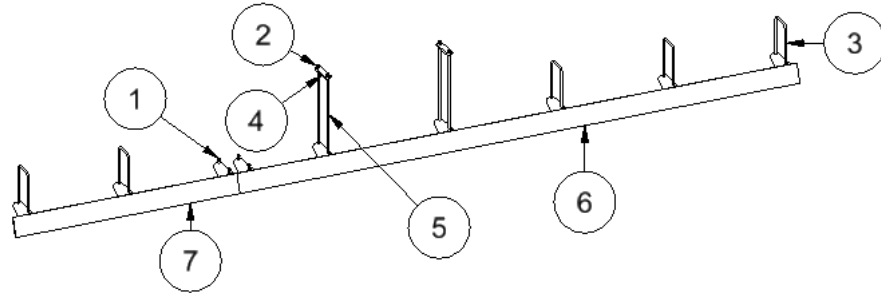
113686 hub assy 8 bolt 3500 pound hwy
with cup cones caps nut washers



1	1	1136975 washer locking castle nut hub
2	1	1136965 flat washer 1 ID x 1.7OD flat side on hole x .115th
3	1	113686 hub 8 bolt 6 5 bc 3500lb
4	1	113698 plug rubber
5	1	113694 bearing 14125A 3500M 1.25in
6	1	113695 bearing 25580 3500M 1.25in
7	1	113697 grease cap 2.72 OD x 1.53 hg
8	1	1136795 nut castle 1 -14 UNS
9	1	1136955 cup inner 3500M 8 bolt assy 100-2162
10	1	1136945 cup outer 3500M 8 bolt assy 100-2158
11	8	113655 wheel nut 9 16 nf wb40

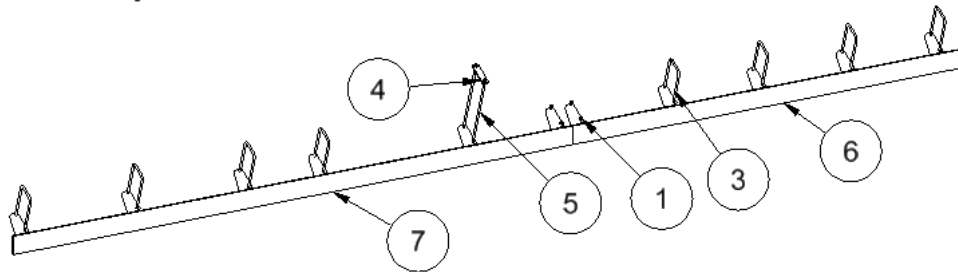
8.7. STRAIGHT PULL MUD SCRAPERS

803310 Scraper Add-On Kit 14ft



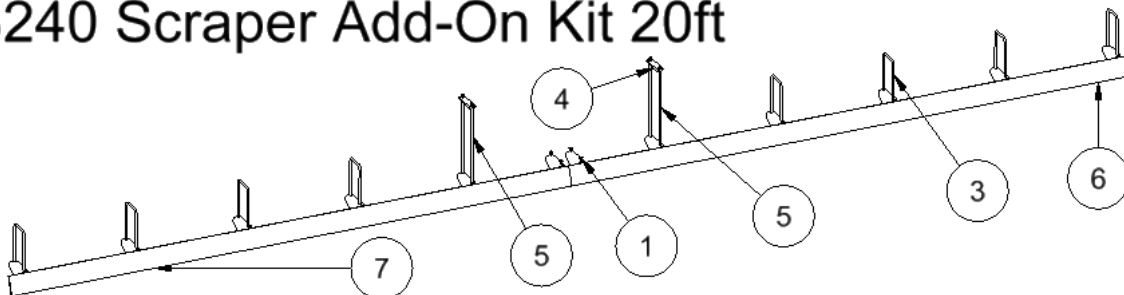
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	4	100604 bolt 3-8 X 1 1/2 gr5 pltd nc	5	4	803167 Bar Clamp All Thread
2	20	102123 nut nylok 3/8" nc gr5 pltd	6	1	803122 Bolt-On Scraper Wldmt
3	5	803124 U-Bolt 4x8 x 3/8	7	1	803311 Bolt-On Scraper Wldmt RH 14ft
4	2	803166 Scraper Bar Clamp			

804245 Scraper Add-On Kit 17ft



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	4	100604 bolt 3-8 X 1 1-2 gr5 pltd nc	5	2	803167 Bar Clamp All Thread
2	24	102123 nut nylok 3/8" nc gr5 pltd	6	1	804246 Bolt-On Scraper Wldmt LH 17ft
3	8	803124 U-Bolt 4x8 x 3-8	7	1	804248 Bolt-On Scraper Wldmt 17ft
4	1	803166 Scraper Bar Clamp			

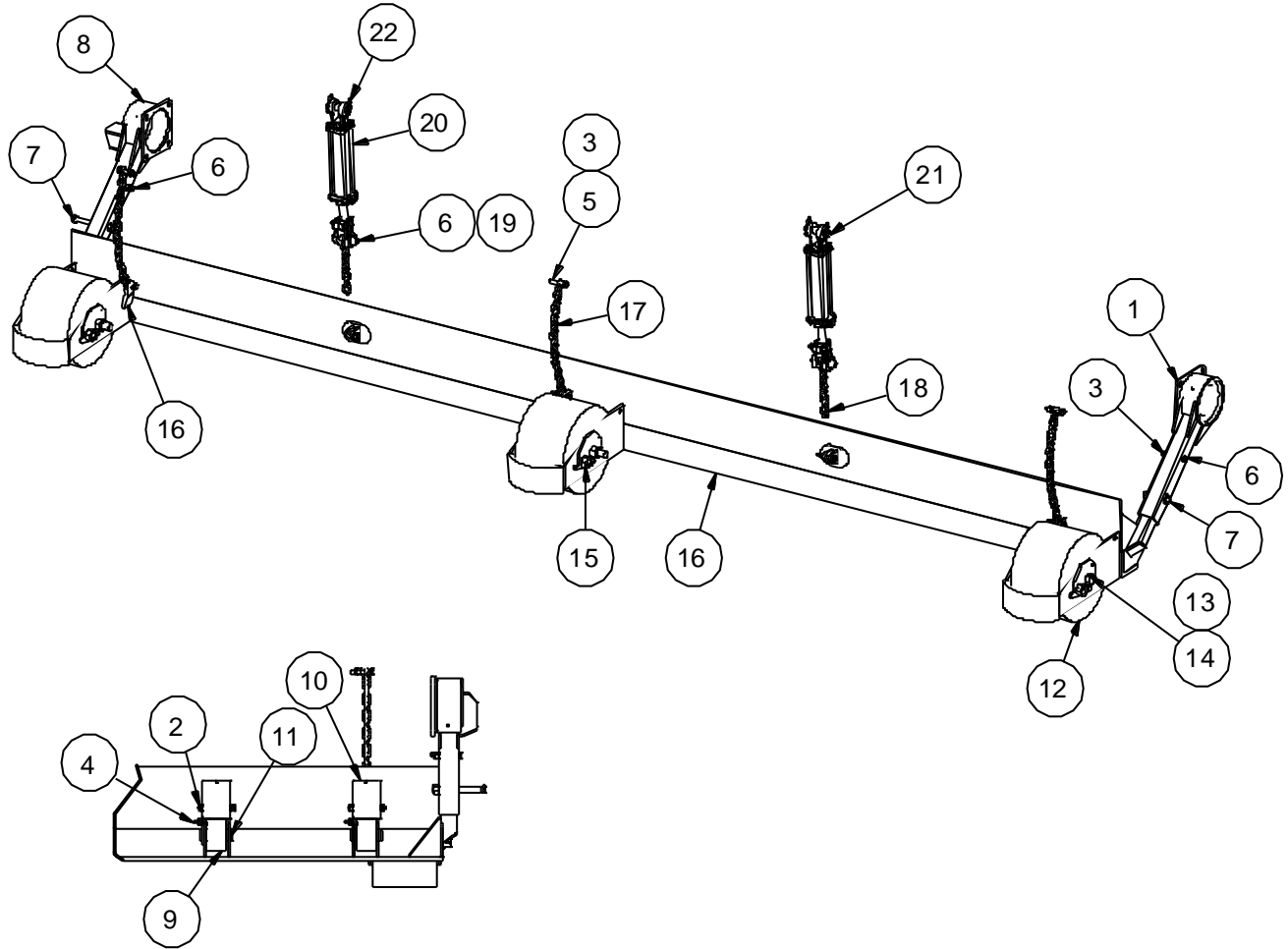
803240 Scraper Add-On Kit 20ft



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	4	100604 bolt 3-8 X 1 1-2 gr5 pltd nc	5	4	803167 Bar Clamp All Thread
2	28	102123 nut nylok 3/8" nc gr5 pltd	6	1	803122 Bolt-On Scraper Wldmt
3	8	803124 U-Bolt 4x8 x 3-8	7	1	803200 Bolt-On Scraper Wldmt RH
4	2	803166 Scraper Bar Clamp			

8.8. STRAIGHT PULL LEVELLING BLADE ASSEMBLIES 11.5, 14, 17, 20 FT

Straight pull leveling blade assembly



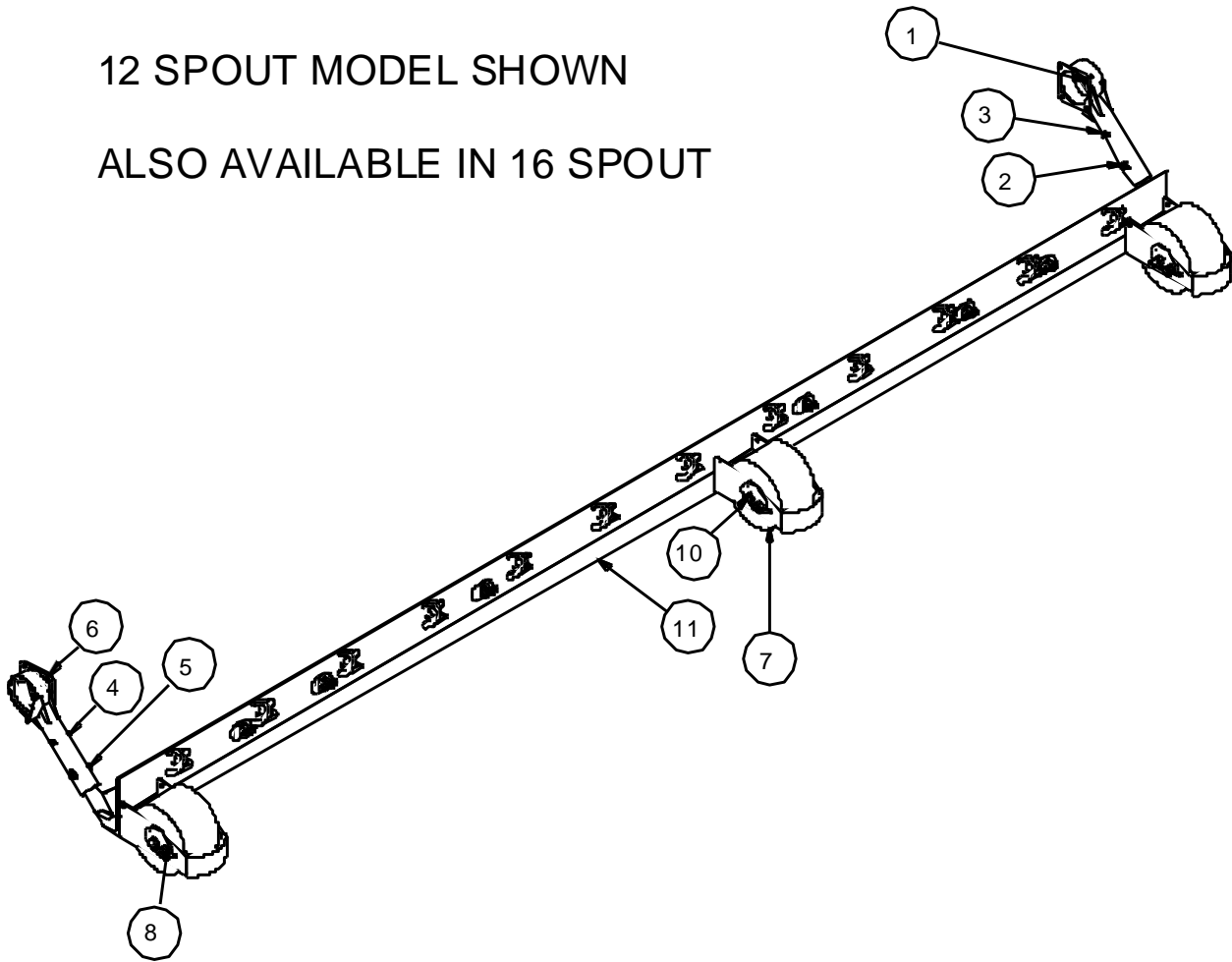
Parts List			Parts Lis:		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	805059 mt wldt bushing LH scraper	12	3	805241 wheel gauge leveller 12 x 8 wide
2	27	102123 nut nylok 3/8" nc gr5 pltd	13	3	102130 nut nylok 1" nc gr5 pltd
3	12	102125 nut nylok 1/2" nc gr5 pltd	14	3	100955 bolt 1 X 12gr5 pltd nc
4	9	100604 bolt 3-8 X 1 1-2 gr5 pltd nc	15	3	805246 Cam Adjust RH Wldt
5	8	100704 bolt 1-2 X 2 1-2 gr5 pltd nc	16	1	803315 14ft Straight Pull level blade 804241 17 ft Straight Pull level blade 803106 20 ft Straight Pull level blade
6	4	100706 bolt 1-2 X 3 1-2 gr5 pltd nc	17	3	114347a CHAIN 5 16 TRANSPORT 70 Check Chain
7	2	100806 bolt 5-8 3 1-2 gr5 pltd nc	18	2	114347 CHAIN 5 16 TRANSPORT 70 actual
8	1	805194 Blade Arm Wldmt W-Shield RH	19	4	101106 washer flat 1/2"
9	9	805223 Roller Assembly No Rubber	20	2	117351Hyd Cyl AGU 2 x 8
10	9	805225 Blade Short Roller Shield	21	2	117324 pin 3-5_8 in two grooves
11	9	805227 Roller Short Pin Wldmt	22	4	104099 hairpin 16 1 8 x 2 5

8.9. SEEDER BLADE

805356 20 FT AIR SEEDER

12 SPOUT MODEL SHOWN

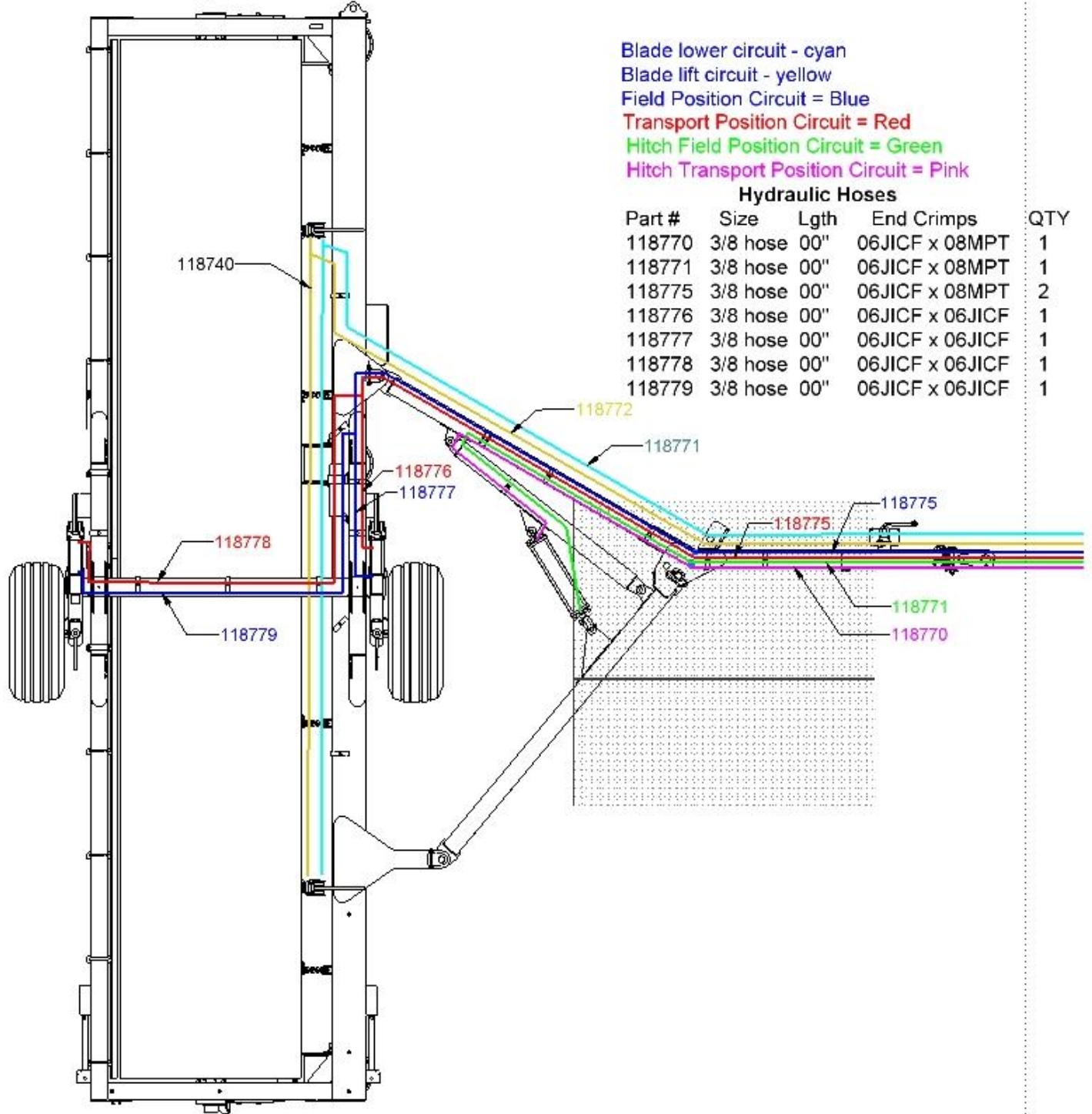
ALSO AVAILABLE IN 16 SPOUT



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	805059 mt wldt bushing LH scraper	7	3	805241 wheel gauge leveller 12 x 8 wide
2	2	102127 nut nylok 5/8" nc gr5 pltd	8	3	805245 Cam Adjust LH Wldt
3	8	102125 nut nylok 1/2" nc gr5 pltd	9	3	102130 nut nylok 1" nc gr5 pltd
4	2	100706 bolt 1-2 X 3 1-2 gr5 pltd nc	10	3	100955 bolt 1 X 12gr5 pltd nc
5	2	100806 bolt 5-8 3 1-2 gr5 pltd nc	11	1	805355 20ft seeder levelblade 12 PORT
6	1	805194 Blade Arm Wldmt W-Shield RH			

8.10. HYDRAULIC SCHEMATIC

Hyd Lift Circuit - 20ft - 1 Section



9. WARRANTY

1. Ag Shield Manufacturing warrants each new Ag Shield LandRoller to be free from factory defects in material and workmanship under normal use and service, when set up and operated in accordance with factory instructions for one year from the date of delivery to the original purchaser.
2. Ag Shield's obligation under this warranty is limited to the supplying of parts to replace those which are defective due to factory workmanship or material.
3. Your Ag Shield Dealer is responsible for providing warranty labour. Credit for required labour is specifically agreed to on an individual case basis.
4. The warranty is void on any unit which has been tampered with, or modified in any way not authorized in writing by the factory.
5. This warranty is void on any unit which is subject to misuse, negligence or accident, or which has had the serial number tampered or removed.
6. A "Warranty Claim Form" (sample at end of handbook) must be submitted to Ag Shield with returned parts in order for parts to be considered for warranty examination.
7. A warranty registration page from the front of this manual must be returned to the factory in order to qualify for warranty examination.
8. All returned parts must be sent to the factory freight prepaid, and warranty parts will be returned to you freight collect.
9. Replacement parts shipped pending receipt of parts for examination will be invoiced, and remain on your account until such time as examination indicates that a credit for those parts be issued or that payment is due.
10. Parts not returned for warranty examination within 30 days must be paid for at that time. Ag Shield will immediately reimburse any cash paid for items that are later determined defective.
11. Warranty terms and conditions are subject to provincial and state legislation.

9.1. WARRANTY CLAIM FORM

Ag Shield Mfg

Box 9, Benito,
MB, R0L 0C0
ph 800-561-0132
fax 204-539-2130
ph 204-539-2000i

Dealer			End User		
Address			Address		
City	State/Province	Zip/Postal	City	State/Province	

DATE OF SALE	DATE FAILED	REPAIR DATE	ACRES/HOURS	MODEL	SERIAL NUMBER
--------------	-------------	-------------	-------------	-------	---------------

LABOUR HOURS	LABOUR RATE	LABOUR AMOUNT	PARTS MUST BE RETURNED TO BENITO MB FREIGHT PREPAID TO BE CONSIDERED FOR WARRANTY. DATE SHIPPED		
--------------	-------------	---------------	---	--	--

QUANTITY ITEM	PART NUMBER	DESCRIPTION	PRICE EACH	TOTAL PRICE	DESCRIBE THE CAUSE OF FAILURE AND CORRECTIVE ACTION TAKEN	APPROVE /REJECT
1						
2						
3						
4						
5						
6						
7						
8						

I CERTIFY THAT THE INFORMATION IS ACCURATE AND THAT THE PARTS WERE REPLACED ON THE MACHINE	PARTS		DATE PARTS RECD	RECD BY	
	LABOUR		ITEMS TO SUPPLIERS		
	TOTAL				

SHADED AREAS AG SHIELD USE ONLY ---PLEASE ADD DETAILS FOR ITEM NUMBERS ON BACK

