

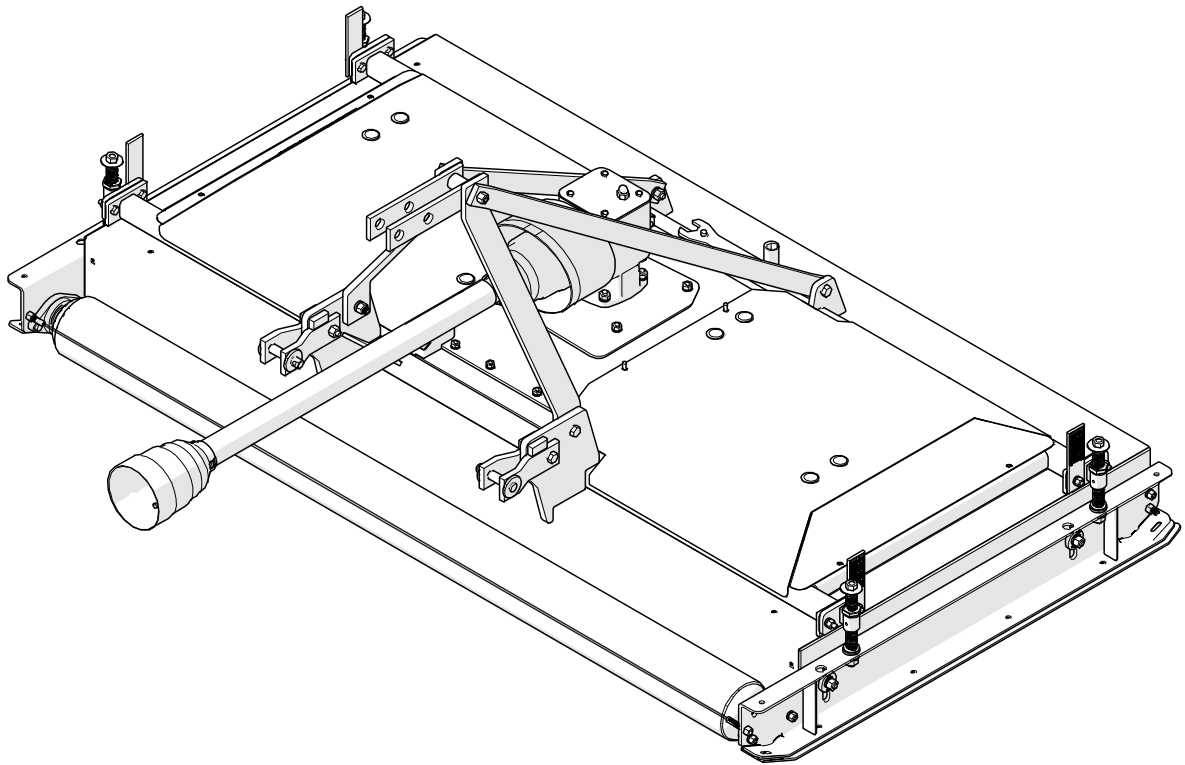


## Operator's Manual and Parts List

# SDR-65

### Single Deck Rotary Finishing Mower

SDR-65 Serial No. 15365073 and up



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ISSUE DATE: May 2017

SERIAL # \_\_\_\_\_  
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P.N.120528



Si No Lee Ingles, Pida Ayuda a Alguien Que Se Lo Lea  
Para Que le Traduzca Las Medidas de Seguridad



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## **TO THE OWNER:**

Before you operate this mower, study this manual carefully. It has been prepared to help you do a better and safer job of maintaining your mower.

Use only genuine Progressive Turf Equipment Inc. replacement parts. Substitute parts will void the warranty and may not meet the standards required for safe and satisfactory operation of this equipment.

Blades are especially important. Their manufacturing process is a very exacting one and only a handful of blade producers are capable of this process. Always insist on purchasing and using OEM blades for your own protection and that of your employees.



**ATTENTION** - This safety symbol means your personal safety is involved. Be sure to observe and follow these instructions.



**DANGER** - An extreme intrinsic hazard exists which would result in high probability of death or serious injury if proper precautions are not taken.



**WARNING** - A hazard exists which can result in injury or death if proper precautions are not taken.



**CAUTION** - A reminder about safety practices, or directs attention to unsafe practices, which could result in personal injury if proper precautions are not taken.

## **GENERAL INFORMATION:**

The purpose of this manual is to assist the operator in maintaining and operating Progressive Turf Equipment mowers. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

Some information may be general in nature due to unknown and varying conditions. However, through experience and these instructions, you should be able to develop operating procedures suitable to your particular situation.

Throughout this manual, references are made to right and left directions. These are determined by standing at the rear of the equipment and facing the direction of forward travel. Blade rotation is counter-clockwise as viewed from the top of the mower.

For quick reference, record the following information.

MODEL: \_\_\_\_\_

DATE PURCHASED: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

For additional information, assistance during assembly, or operation of this mower, contact the dealer from whom the machine was purchased, or call Progressive Turf Equipment Inc.

PHONE: 519-527-1080    1-800-668-8873    FAX: 519-527-2275

## **SAFETY**

### **WORK SAFELY ---- FOLLOW THESE RULES**



Instructions given with this symbol are for personal safety. Be sure you and your workers follow them.

**A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT**

**BEFORE HANDLING ANY EQUIPMENT READ THE OPERATOR'S  
MANUAL.**

- ❖ To avoid accident or injury, do not allow anyone to operate this equipment without proper instructions. Any person who operates this equipment must be instructed in and be capable of the safe operation of the unit.
- ❖ Know your controls and how to stop tractor engine, and mower quickly in an emergency.

### **OPERATING SAFELY:**

- ❖ Shift tractor into neutral and disengage power take-off before starting tractor.
- ❖ Never allow riders on tractor or equipment.
- ❖ Use extreme care when operating on uneven terrain.
- ❖ Immediately stop mower and shut off tractor upon striking any object. Inspect mower and repair any damage before you continue mowing.
- ❖ Always turn off tractor before making any adjustments to mower, if operator has to dismount tractor.
- ❖ If mower becomes clogged, disengage power to mower and turn off tractor before dismounting.
- ❖ Always disengage PTO and be sure driveline has stopped rotating before raising decks into transport position.
- ❖ Always obey all local and state regulations when operating on public roadways and highways.
- ❖ Reduce speed while operating during wet conditions on slopes, especially when making sharp turns.

## SDR MOWER SPECIFICATIONS

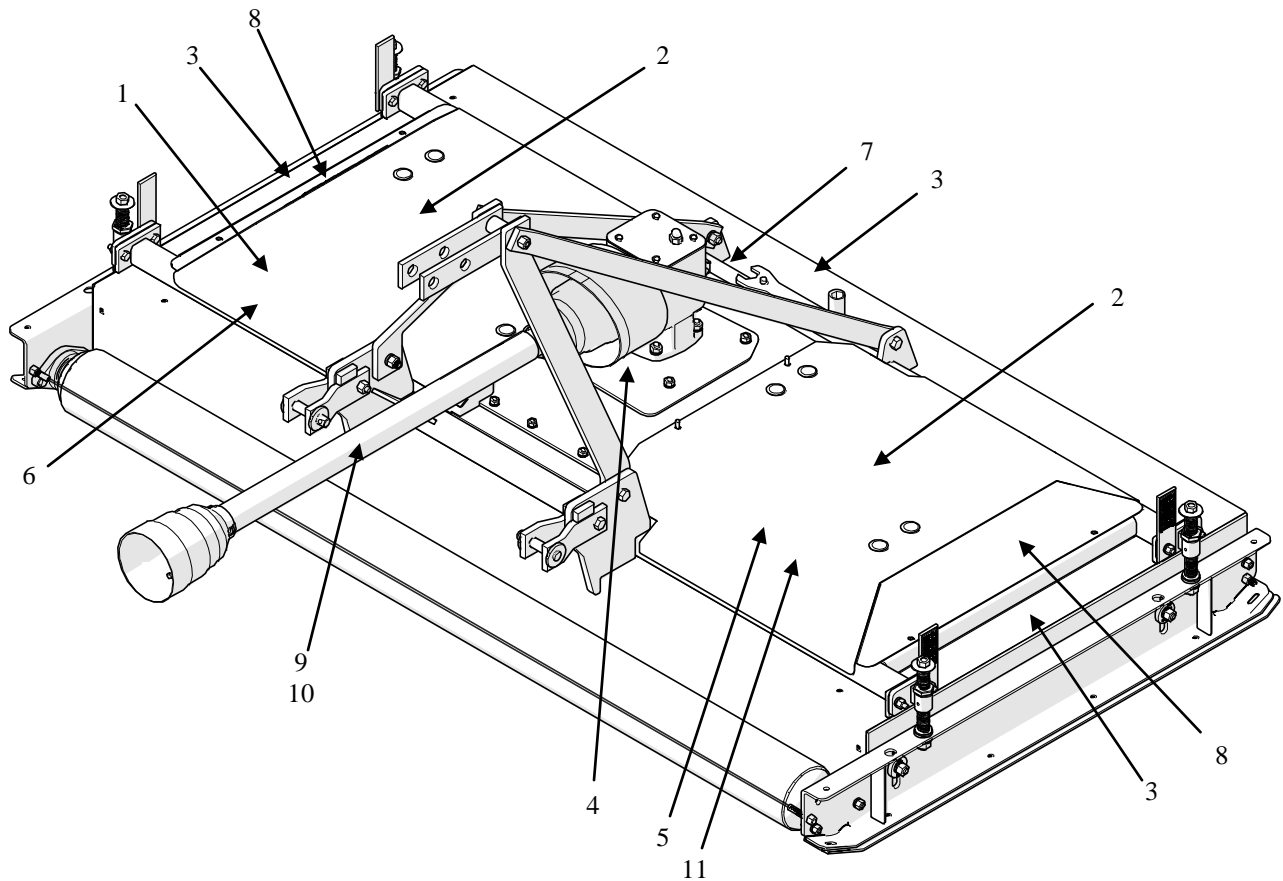
	<b>SDR-65</b>	<b>SDR-90</b>
Cutting Dimensions	65"	90"
Deck Dimensions	Width   Length   Depth 72"   51"   7"	Width   Length   Depth 97"   52"   7"
Recommended HP	25 hp*	35 hp*
Weight	975 LBS	1380 LBS
Speeds	TRACTOR PTO – 540 rpm Blades – 3040 rpm Blade tip speed - 18 287 rpm	TRACTOR PTO – 540 rpm Blades – 2890 rpm Blade tip speed – 18 300 fpm
Blades	3 - 23" Blades 5/16" x 2 1/2" heat treated alloy steel blades	4 - 24" Blades
Spindles	3 Spindles, 30 mm Supported by 2 deep groove ball bearings housed in a precision machined hub.	4 spindles, 35 mm
Cutting height	Infinite settings from 1/2" to 4"	
Deck Drive	PTO shaft to right angle gear box driving "B" section belts to heavy duty spindles.	
Blade Support	3/4" x 1/2" x 8" long bar welded to spindle and machined for balance. Two 1/2" bolts hold blade rigid to provide a clean level cut	
Deck Construction	A single piece of 3/16" steel plate formed and welded with supporting members at high stress areas to achieve maximum structural strength.	
Rollers	6" diameter with 0.188" wall thickness, supported by 1 1/4" two bolt ductile flange bearings.	
Belt Adjustment	Easily made by loosening hold down bolts and adjusting tap bolt to desired belt tension.	
P.T.O. Shaft	Telescoping category #4 agricultural PTO drive shaft, with proper safety shields, 1 3/8" – 6 spline quick disconnect yokes on both ends with ring lock collars	
Lift Link	Category 1	

\*May require weights on the front of the tractor



## **SAFETY & MAINTENANCE DECAL LOCATIONS ON MACHINE:**

ITEM NO.	DESCRIPTION	QTY
1	DANGER – READ MANUAL	1
2	CAUTION – REPLACE SHIELDS	2
3	DANGER – BLADE HAZARD	3
4	WARNING – OEM PARTS	1
5	CAUTION – DISENGAGE PTO	1
6	PTO GREASING	1
7	COMPANY NAME	1
8	MOWER MODEL	2
9	DANGER – OUTER TUBE	1
10	DANGER – OUTER SHIELD	1



# SDR DECAL LISTING

If decals become faded, damaged, or lost, replace immediately. Order decals according to corresponding Part # below. Complete decal kits are also available.

## SDR Decal Kit - 531002



**ITEM 1**  
**(209172)**



**ITEM 2**  
**(209113)**



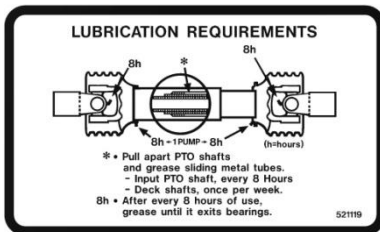
**ITEM 3**  
**(209173)**



**ITEM 4**  
**(209115)**



**ITEM 5**  
**(521820)**



**ITEM 6**  
**(521119)**



**ITEM 7**  
**(521817)**

## PROGRESSIVE SDR-90 ROLLER MOWER

**ITEM 8 – SDR-90**  
**(209133)**

## PROGRESSIVE SDR-65 ROLLER MOWER

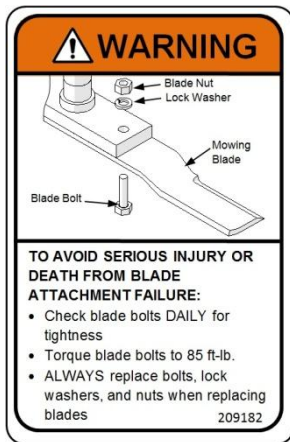
**ITEM 8 – SDR-65**  
**(209135)**



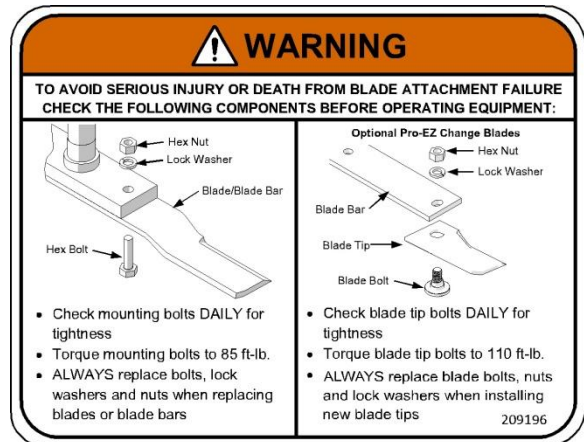
**ITEM 9  
(521451)**



**ITEM 10  
(521455)**



**ITEM 11 (SDR-65)  
(209182)**



**ITEM 11 (SDR-90)  
(209196)**

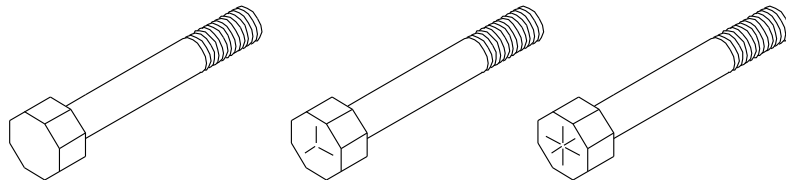
## MAINTENANCE SAFETY:

- ❖ Never work on mower without safety locks in place, if decks are in raised position.
- ❖ Keep tractor and mower in good operating condition and all safety devices in place.
- ❖ Frequently check blade mounting bolts for tightness.
- ❖ Periodically check to ensure all bolts are tight and that all nuts, screws and cotter pins are properly installed to ensure that the mower is in a safe condition.

## PROPER TORQUE FOR FASTENERS:

The chart lists the correct tightening torque for fasteners on Progressive Turf Equipment mowers. When bolts are to be tightened or replaced, refer to this chart to determine the proper torque except when specific torque values are assigned in the manual. Only SAE grade 5 fasteners are to be used in the assembly of this machine, or as otherwise specified in this manual.

### Bolt Head Markings



**SAE Grade 2**  
(No Dashes)

**SAE Grade 5**  
(3 Dashes)

**SAE Grade 8**  
(6 Dashes)

Recommended Torque in Foot Pounds (Newton-Meters)

Bolt Diameter (in.)	SAE Grade 5
5/16	21 (28)
3/8	38 (52)
7/16	55 (75)
1/2	85 (115)
9/16	125 (170)
5/8	175 (240)
3/4	300 (410)
7/8	450 (610)
1	680 (925)
1" L.H. Spindle Nut	60 (82)

## **OPERATING THE MOWER:**

A careful and knowledgeable operator is the best insurance against an accident.  
Allow no riders on any equipment.

If tractor is equipped with R.O.P.S., use the seat belt for maximum protection.

Make sure that everyone is clear of the tractor and mower before starting the engine or operating.

## **DAILY CHECK LIST:**

1. Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough soled work shoes. Never operate tractor or implements in bare feet, sandals or sneakers.
2. Check that mower is properly and securely attached to tractor with a safety chain.
3. Ensure all safety shielding is properly installed and check that all nuts and bolts are secure and pins are properly cotter-pinned.
4. Check condition of blades and security of attachment.
5. Ensure mower is properly mounted, adjusted and in good operating condition.
6. Clear area of stones, branches or other debris that might be thrown causing injury or damage.
7. Never permit any person other than the operator to ride or board the tractor at any time.
8. Check that all lubrication points with grease fittings have been lubricated as per schedule.
9. Check the gearbox for proper amount of gear oil. Mower must be on level surface when this is done.

## HITCHING MOWER TO TRACTOR:



For proper mower operation and maximum PTO life, the mower and PTO driveline must be setup correctly.

- a) Lower three point hitch arms on tractor and align them with the lower hitch links on both ends of the hitch assembly. Insert a 7/8" pin to secure links to lower tractor arms.
- b) Adjust tractor top link length to match distance between top link of mower and tractor top link mount. Attach with 7/8" pin.
- c) Raise and lower mower to ensure that it does not come into contact with the tractor. The links should operate smoothly and should not bind. Note that the SDR-90 will require front bumper weights.

## CONNECTING THE PTO SHAFT:

- a) Ensure that the tractor engine is shut off and the parking brake is locked.
- b) Holding the PTO against the end of the tractor PTO shaft, rotate the tractor PTO by hand until the shaft slides on slightly.
- c) Slide the locking collar on the PTO backwards, releasing the locking mechanism. Hold and slide the PTO on.
- d) Release the locking ring and pull the PTO shaft backwards until the locking mechanism snaps into place.
- e) Push the shaft forward and backwards to ensure that this is securely locked in place.
- f) **NOTE:** If mower is being used on another tractor, it is necessary to ensure that the overall length of the PTO is correct. Check and adjusted per the steps outlined above



**CAUTION** - If the PTO shaft comes off during operation, it may cause personal injury and damage to the PTO shaft and tractor PTO. When checking, make sure the locking collar is locked, and that the shaft is not just jammed against the end of the tractor PTO shaft.

## Adjusting the PTO shaft to the correct length

**IMPORTANT:** When checking driveline PTO shaft minimum length, it is necessary to align and level the tractor's PTO shaft with the gearbox shaft of the mower.

1. Measure the shortest distance possible between the tractor PTO shaft and the gearbox shaft of the mower. The lower links on the 3 point hitch must be hanging downward to obtain the shortest length (see diagram 1).

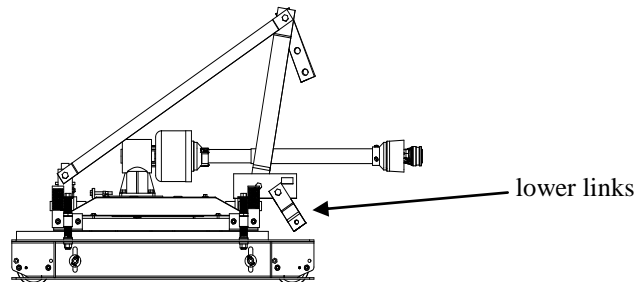


Diagram 1

2. Shorten the driveline PTO shaft as follows:
  - a. Make sure the tractor PTO shaft and the mower PTO shaft are level with each other.
  - b. Separate the two driveline shaft halves and connect one half to the tractor PTO shaft and the other half to the mower gearbox shaft.
  - c. Hold driveline shaft halves side by side to determine if they are too long. The shields on each half should end approximately 3" from the universal joint shield. Measure 3" back from the universal joint shield (dimension X on Diagram 2) and mark that location on the inner and outer shields.
  - d. Cut off the outer shield at dimension 'A'. Measure dimension 'A' from the end of the outer shaft and cut the same amount off of the outer shaft. Cut off the inner shield at dimension 'B'. Measure dimension 'B' from the end of the inner shaft and cut the same amount off of the inner shaft.
  - e. Remove all burrs from shafts. Keep shaft ends square not rounded off. Clean all filings from drive shield tubes.
  - f. Once driveline has been reassembled, check to make sure the driveline does not bottom out in the shortest position.

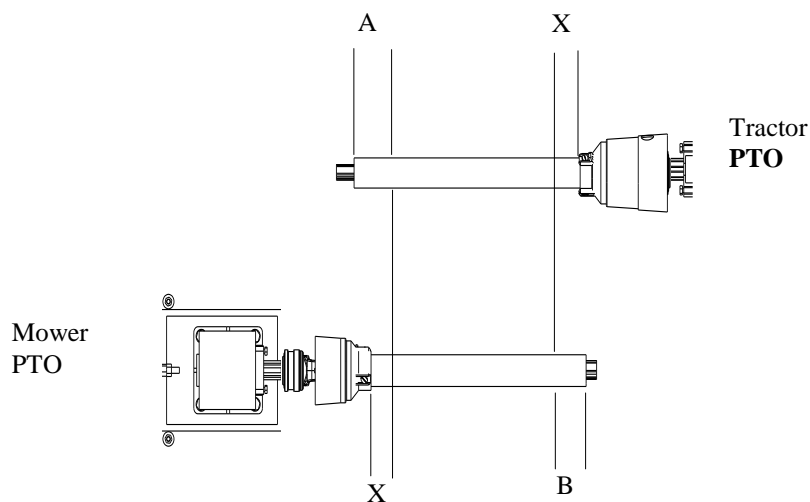


Diagram 2

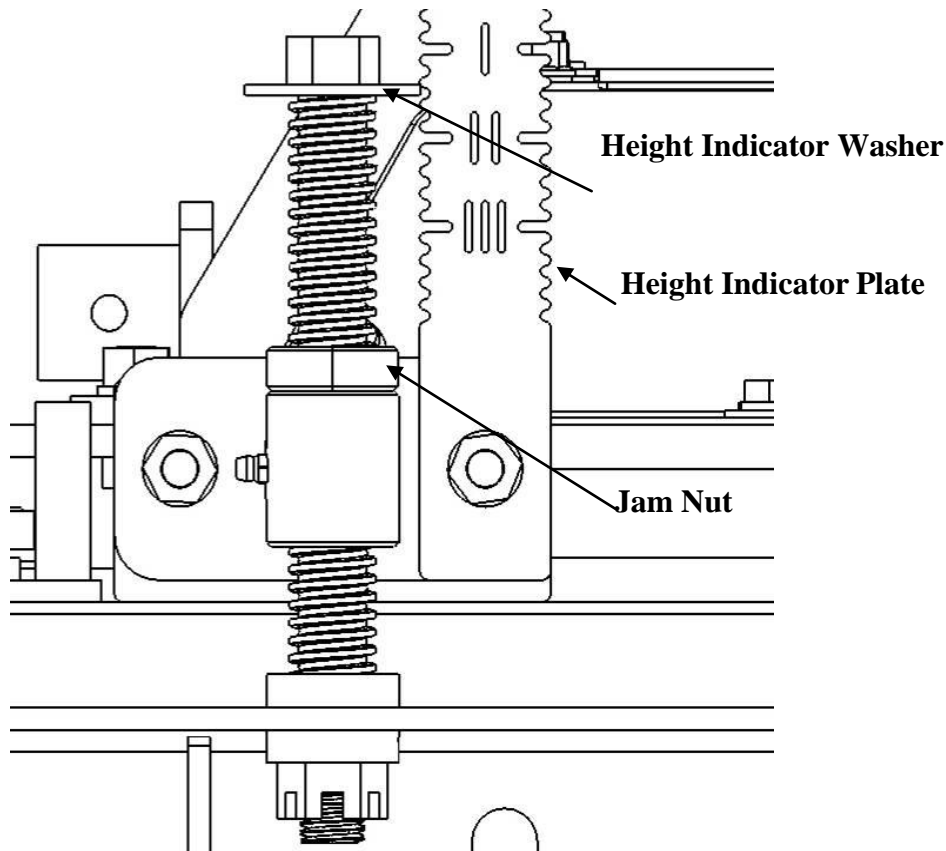
## **CUTTING HEIGHT ADJUSTMENT:**

There are four height adjusters per mowing deck. Each adjuster (located in each corner of the deck) must be adjusted to the same height to ensure a smooth even cut. A wrench for this purpose is provided. Mower cutting height adjustment is made by turning a 5/8" nut on top of an acme threaded rod which makes up the height adjuster. A washer under the nut indicates the height against the decal. There are an infinite number of adjustments available from 1/2" to 4". Moving the adjuster up and down moves a side channel that mounts the front and rear rollers. The height decals at the back of the deck are set 1/4" lower, so that the back actually cuts 1/4" higher, this will provide a better cut, prolong the life of the blades, and reduce horsepower requirement.

To make a height adjustment, follow these steps:

- 1) Loosen the 2 locking bolts on the side channel
- 2) Loosen the ACME jam nut
- 3) Turn the 5/8" nut on top of the ACME threaded rod to desired height
- 4) Tighten ACME jam nut
- 5) Tighten the side channel locking bolts

### **SDR HEIGHT ADJUSTER**





## TRANSPORTING MOWERS:



**CAUTION** - When traveling on public roadways, use flashing amber lights and S.M.V. emblem on rear of mower to provide greater visibility to other traffic.



**WARNING** - When towing this mower the following information concerning road speed should be strictly adhered to.

<u>WEIGHT OF TOWING VEHICLE</u>	<u>MAXIMUM ALLOWABLE ROAD SPEED</u>
4500# or more	Up to 20 mph (32km/h)
Less than 4500# but More than 2300#	Up to 10 mph (16km/h)
Less than 2300#	DO NOT TOW



**CAUTION** - Always have safety chain attached to towing vehicle.

## POWER TAKE-OFF:



**CAUTION** - Keep all safety shields in place.



**CAUTION** - When operating the power take-off, be sure the tractor shield is always in place, covering the exposed power take-off shaft.



**WARNING** - Before dismounting from the tractor, stop the power take-off, put tractor in neutral, set brakes in lock position and shut off engine.



**CAUTION** - When ready to engage PTO shaft, be sure engine RPM is at idle speed. Engaging PTO at full throttle will cause high shock loads to driveline, with the potential for future failure.

**NOTE:** Do not exceed the recommended PTO speed of 540 RPM.

## MAINTENANCE



**WARNING** - Turn tractor engine off before performing any maintenance.



**CAUTION** - Always use personal protection devices such as eye and ear protectors when performing maintenance functions.



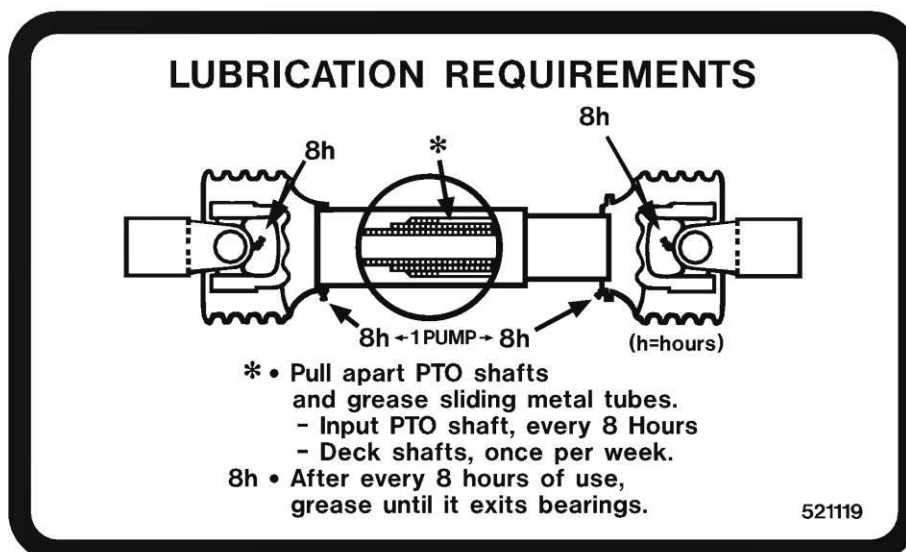
**WARNING** - When completing a maintenance or service function, make sure all safety shields are installed before placing mower in service.

## LUBRICATION:

A properly maintained lubrication schedule will provide a smooth running machine for many years. The following information shows and describes where all lubrication points are located.

<b>DECK</b> <ul style="list-style-type: none"><li>• Spindles* (See Manual)</li></ul> <p>*As Required</p>	<b>P.T.O. SHAFTS</b> <ul style="list-style-type: none"><li>• Main Input*(See Below)</li><li>• Pull Apart Sliding Tubes once per week and lubricate</li></ul> <p>*As Required</p>	
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**CHECK FOR PROPER OIL LEVEL IN GEARBOXES DAILY**  
**GREASING SCHEDULE & LOCATION**



## **BLADE SPINDLE GREASING:**

All SDR models prior to SDR65 s#14365073 and SDR90 S#14390080 are equipped with greaseable spindle assemblies. The top bearing on all spindle assemblies has a shield only. This allows grease to exit and relieves any pressure build up inside spindle housing, when greasing. Greasing of blade spindles should continue until grease can be seen exiting between the top bearing and the bottom of hub on pulley. Some working conditions will require this operation to take place every 4 to 5 running hours because of hot working areas. Cooler working areas will only require greasing every 8 to 10 hours. A proper greasing schedule can only be determined by operator, depending on working conditions in your particular area.

## GREASE COMPATIBILITY

All greases are not compatible. Grease incompatibility will decrease the lubrication ability of the grease, and can cause premature part failure.

Grease can have mineral or synthetic base oils and thickening agents such as lithium, calcium, barium, sodium, or aluminum

What We Use:

- Progressive uses Shell Gadus S2 V220 2
- This grease has:
  - A mineral oil base
  - A lithium-12 hydroxy thickener (“lithium” thickener)
  - Extreme Pressure additives (EP)
  - An NLGI Grade 2

### Recommended Grease Properties

The grease you use for this machine must have these properties:

- NLGI grade 2
- Lithium thickener (NOT LITHIUM COMPLEX)<sup>1</sup>
- Kinematic Viscosity at 40°C is no greater than 220 cSt
- Dropping Point Less than 400° F
- General Purpose Grease, Not Heavy Duty
- **No MOLY (molybdenum disulphide) additives in the grease<sup>2</sup>**
- **No synthetic grease<sup>3</sup>**
- **No High Temperature Grease<sup>4</sup>**

Notes on grease compatibility:

- 1) If a thickener other than lithium is used (including lithium complex), the existing grease will be contaminated and the lubrication properties may be lost leading to component damage.
- 2) Molybdenum Disulfide (Moly) is an additive used in slow moving, extreme load applications. The particles in the “Moly” grease can actually increase bearing wear in a high speed mower application. Generally speaking Moly based greases will be grey in colour or have a metallic sheen.
- 3) If synthetic base oil is used rather than mineral base oil, the grease will be contaminated; the lubrication properties may be lost leading to component damage.
- 4) We do not recommend the use of “High Temperature” greases, mower component temperature should never reach temperatures above the level at which general purpose greases can operate. “High Temperature” greases may contain thickeners that are not compatible with Lithium-12 Hydroxy based thickeners.

Grease with these features is considered to be a “General Purpose Grease”. Use on all grease point locations on your Progressive Mower. Check the properties of the grease you wish to use with your supplier prior to use.

## GEARBOX OIL LEVEL:

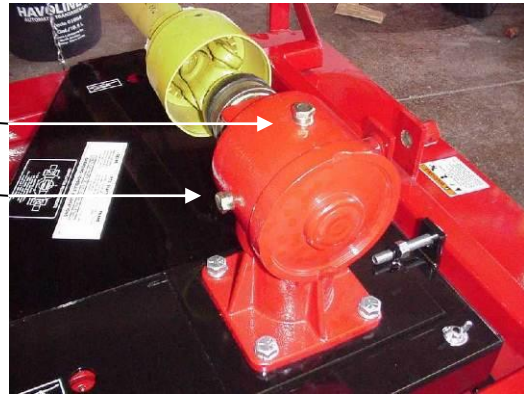
**IMPORTANT! DO NOT OVERFILL! MOWER MUST BE LEVEL WHEN CHECKING GEARBOX OIL LEVEL**

### DECK GEARBOX:

Gearboxes all have an oil level plug located on the side of the gearbox. Oil should reach the bottom of this hole. If oil level is low, add oil through top plug hole of casing until oil just starts to flow out of side oil level hole. Replace and tighten plugs. Use 80W90-gear oil or equivalent.

**Filler Plug**

**Level Plug**



## BLADE SERVICING

### **WARNING!**

Always observe proper lock-out procedures when performing any maintenance work including changing or servicing the blades. Always remove and retain the ignition switch key, ensure parking brake is engaged, and block and or support machine using equipment designed for the task.

Be sure deck safety locks are engaged when working on decks in the raised position.

Use gloves when handling mower blades. Blades can be very sharp.

Inspect blades before each use to determine that they are mounted tightly and are in good condition. Replace any blade that is bent, excessively nicked, worn or has any other damage. Small nicks can be ground out when sharpening.

### **WARNING!**

Use only original equipment blades when replacing worn or damaged mower blades. They are made of special steel alloys and subjected to rigid heat-treat and inspection requirements. Substitute blades may not meet these specifications and **MAY BE DANGEROUS.**

### **BLADE SELECTION (SDR-90 Only)**

We offer four blade styles for use with this mower:

#### Fixed high lift

Combined with Progressive's high tip speed, the fixed High-Lift blade 'stands' grass blades up for a clean cut, even in damp conditions or at high mowing speeds.

#### Fixed low lift

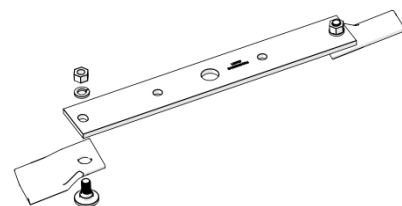
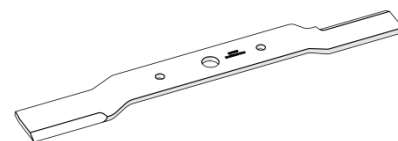
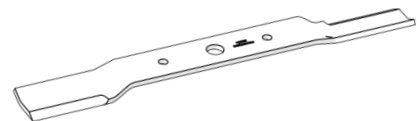
Developing less lift than the High-Lift blade, Progressive's Low-Lift fixed blade is ideal for both new growth or sandy soils where abrasion is a concern but superior cut quality can never be sacrificed. Also requires less tractor horse-power.

#### Pro-EZ Change System (Available in high or low lift)

Developed with turf professionals in mind:

- Economical as only the tips are changed
- Flat profile fastener extends life, reduces cost
- Standard hand-tools are used for reduced cost and easy change out
- Lower start-up torque requirement reduces stress on the complete drive train
- Thinner profile than a standard blade means the tips retain their sharpness after the equivalent number of mowing hours

Pro-Ez Change Blade System installs on the same blade support bar as a fixed blade. This allows users to easily swap blade types as growing conditions or mowing requirements change.



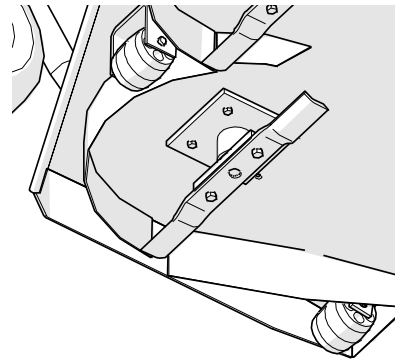
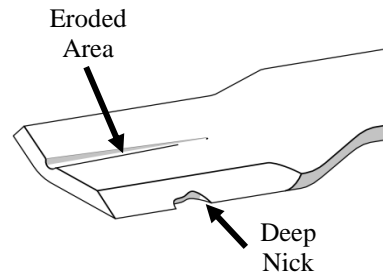
## BLADE REMOVAL AND INSTALLATION


A 1" diameter pilot centers the blade on the spindle with two 1/2" grade 5 fasteners. When changing blades, be sure that pilot is properly seated in the blade and the blade lies flat on the spindle bar.

Always replace bolts, lock washers and nuts when replacing blades. Tighten bolts to proper torque as listed on Page **Error!** **Bookmark not defined..**

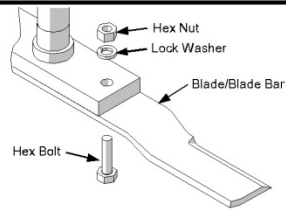
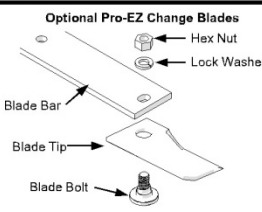
Replace any blade that is bent, nicked deeper than 1/4", excessively worn or has any other damage. Small nicks can be ground out during sharpening. Always balance blades before use.

In abrasive soil conditions, monitor condition of the blade wing. If erosion of the steel is evident at the base of the wing, replace blade.



 **WARNING**

**TO AVOID SERIOUS INJURY OR DEATH FROM BLADE ATTACHMENT FAILURE  
CHECK THE FOLLOWING COMPONENTS BEFORE OPERATING EQUIPMENT:**

 <p>Labels: Hex Nut, Lock Washer, Blade/Blade Bar, Hex Bolt</p> <ul style="list-style-type: none"><li>• Check mounting bolts <b>DAILY</b> for tightness</li><li>• Torque mounting bolts to 85 ft-lb.</li><li>• <b>ALWAYS</b> replace bolts, lock washers and nuts when replacing blades or blade bars</li></ul>	 <p>Labels: Hex Nut, Lock Washer, Blade Bar, Blade Tip, Blade Bolt</p> <p><b>Optional Pro-EZ Change Blades</b></p> <ul style="list-style-type: none"><li>• Check blade tip bolts <b>DAILY</b> for tightness</li><li>• Torque blade tip bolts to 110 ft-lb.</li><li>• <b>ALWAYS</b> replace blade bolts, nuts and lock washers when installing new blade tips</li></ul>
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209196

# BLADE SHARPENING

## WARNING!

**Use gloves when handling mower blades. Blades can be very sharp.**

When sharpening blades, be sure material removed is equal on both sides of the blade. Unbalanced blades will cause excessive vibration leading to cracks in machine components.

- Clean all material from the blade prior to sharpening and balancing.
- Grind or file blades following original pattern as shown.
- Sharpen to a razor edge. Do not sharpen back side of blade.

Use the supplied cone balancer (pn 209000) to verify blade balance. When the blade is correctly balanced, the blade will remain horizontal.

## WARNING!

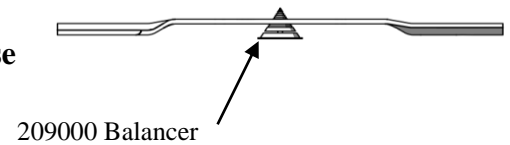
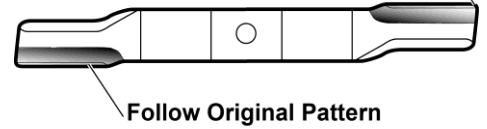
**Failure to properly balance blades after sharpening can cause vibration leading to premature component damage. Pro-EZ Change blades must be balanced as a complete assembly (blade bar, blade tips & blade tip hardware).**

## WARNING!

**Wear appropriate eye and face protection when sharpening blades.**



Maintain Corners





## **SPINDLE SERVICE**

**NOTE:** SDR series mowers have been equipped from the factory with two styles of blade spindles:

### **Up to SN 13365072 (SDR-65) / SN 13390079 (SDR-90)**

Blade spindles are factory equipped with greasable bearings. These spindles are identified by a grease fitting in the center of the drive pulley. Grease must be added to these spindles at least every 8 hours of running for a proper service life.

### **SN 14365073 (SDR-65) / SN 14360080 (SDR-90) and Above**

Blade spindles are factory equipped with sealed, maintenance free bearings. These spindles are identified by the absence of a grease fitting in the center of the drive pulley (early production & replacement maintenance free spindles have a set-screw in place of the grease fitting).

## **SPINDLE INSPECTION**

- Spindles are equipped with two roller ball bearings. Adjustment is set by tightening the 1” left hand nut to 60 ft-lbs. torque for proper setting.
- Periodically inspect blade spindles by grasping blade, and moving from side to side. If any free play is noted, replace or repair.

## **SPINDLE ASSEMBLY REMOVAL**

1. Remove blade from spindle.
2. Remove belt shield. Loosen 4 bolts that hold gearbox to mount.
3. Loosen 1/2” x 3 1/2” tap bolts and slide gearbox toward front until belt is easy to remove.
4. Remove belt.
5. Remove 4 bolts attaching spindle assembly to mower frame and remove as a unit, since pulley will come out through the hole in the deck.

## **SPINDLE ASSEMBLY INSTALLATION**

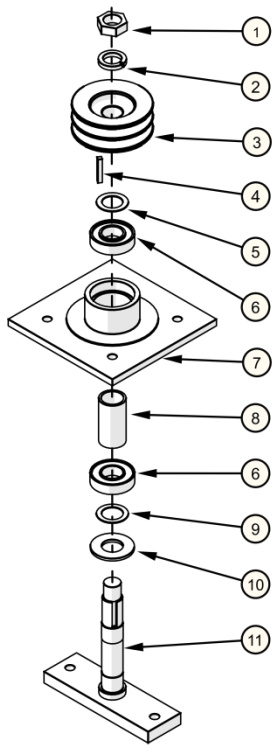
Reverse above procedure. Be sure spindle mounting area of deck is clean of any foreign material before attaching spindle assembly.

## **SPINDLE REBUILDING**

- Spindle repair requires special skills and tools. If your shop is not properly equipped or your mechanics are not properly trained in this type of repair, you may be time and money ahead to use a new spindle assembly.
- Remove pulley from spindle assembly. Place assembly in press and force spindle down through housing. Once pressed apart, replace bearings, as removal will have damaged bearings internally.

## ASSEMBLY OF SPINDLE

Only use a press that has the ram and bed 100% square to each other. If bearings are not square in housing, bearings will wear out prematurely. Press on outer race when inserting into hub and press on inner race when installing on spindle.



ITEM	DESCRIPTION
1	HEX NUT- L.H.
2	LOCK WASHER - LH
3	PULLEY /W SET SCREWS
4	KEY
5	SHIM WASHER - TOP
6	BEARING - SEALED
7	SPINDLE HOUSING
8	SPACER TUBE
9	SHIM WASHER - BOTTOM
10	SPINDLE DIRT SHIELD
11	BLADE SPINDLE

If bearings are being changed, be sure to check bearing spacer for wear. If wear is noticed, insert new spacer. This is critical because if spacer is short by only .010", the top bearing will start to bind and will result in premature failure.

Bearing with seal and shield combination\* will be pressed into the blade side of the hub first with the seal side facing out. Next, set spindle on press bed, install dirt shield and shim first (as per diagram) set hub, bearing end down, onto spindle. You must use a tube (Note: both ends must be square) which will slide over spindle and press on inner race of bearing, until seated against shim.

Insert bearing spacer tube with hole end up. Set remaining bearing with shield side up\*, open side on first, onto spindle. Press on inner race (this bearing will be a loose fit in the hub so it will seat itself properly).

When all parts have been installed on spindle, torque left hand nut to 60 ft-lbs. and then tighten set screws in pulley.

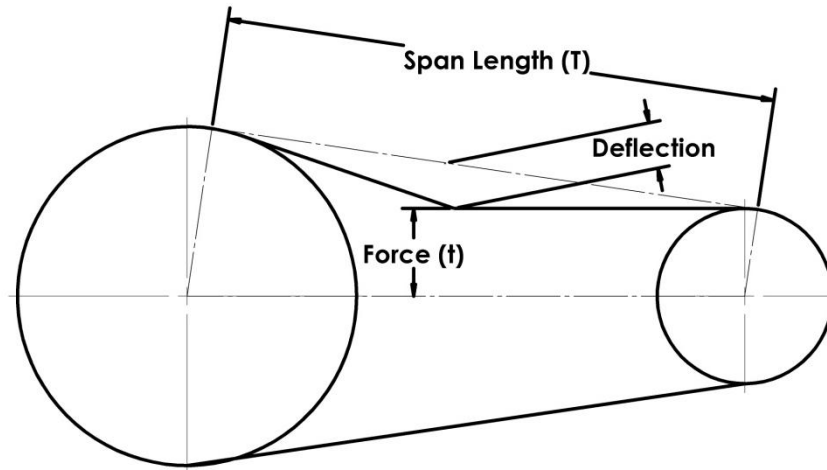
***For greasable spindles***, fill with quality grease until it can be seen exiting the top bearing. Rotate the housing six revolutions by hand so the bearings will have the grease worked into them, and at the same time check for free movement. The assembly is now ready for installation into the mower deck.

***For maintenance free spindles***, rotate the housing six revolutions by hand to check for free movement. The assembly is now ready for installation into the mower deck.

***\*- For maintenance-free spindle bearings, both top & bottom bearings are the same. Shield / seal orientation is the same on both sides of these bearings.***

## “V” BELT TENSION:

Proper belt tensioning is a fundamental factor in the successful V-belt operation. Lack of tension will cause slippage, and too much tension will cause excessive belt stretch as well as damage to the drive components, such as bearings and shafts. Therefore, to ensure proper belt tension, the following procedure is recommended.



### CHECKING BELT TENSION

At the mid-point of the span, apply a deflection force with a spring scale in the direction perpendicular to the span until the belt is deflected the 3/8”.

The recommended force to deflect the belt is a minimum of 4.9 lbs. to a maximum of 7.3 lbs.

The first 24 to 48 hours of operation is the belt “run in” period. To ensure satisfactory belt performance, belt tension should be checked during this time period.

## “V” BELT ADJUSTMENT:

### SDR-65

Begin by loosening 4 bolts at the base of the gearbox. Adjusting long threaded bolt slides the gearbox back, tightening belt. After proper tension is achieved, tighten 4 bolts at base of gearbox. You may have to place a ½” nut under the head of the long threaded bolt to increase your adjustment length.

When changing belts, removal of grease fitting from the top of the center spindle will make installation easier. Be sure belts run in proper groove.

### SDR-90

The mower deck has (2) belts to transmit power from the gear box to the blade spindles. Each drive belt utilizes an adjustable sliding tensioner idler to set belt tension.

In the event that belt adjustment must be made, follow these steps for each belt:

Loosen the jam nut on the adjusting screw.

Loosen the nut fixing the tensioning idler to the mower deck.

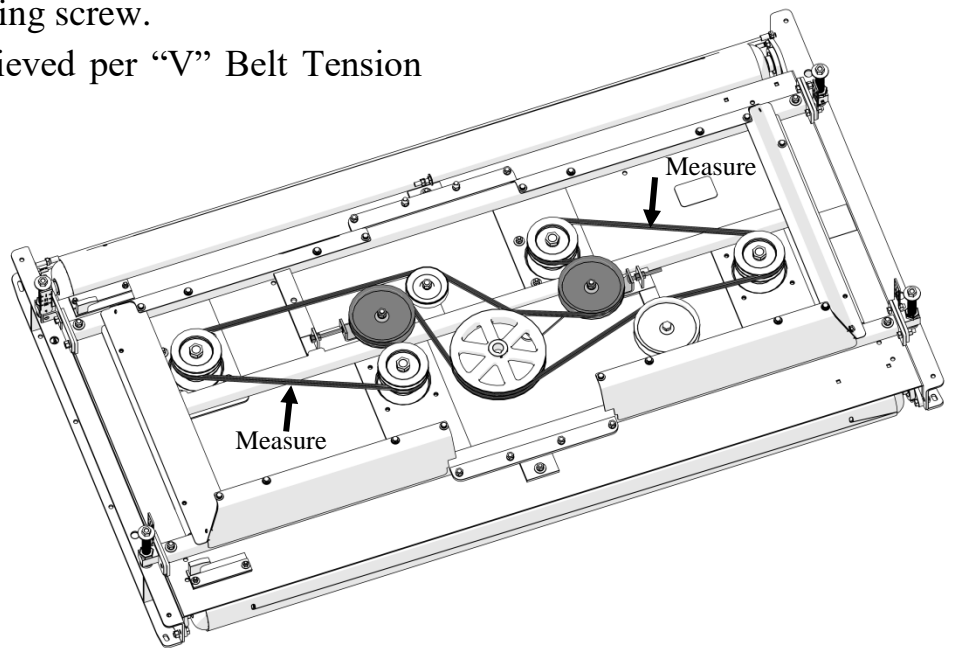
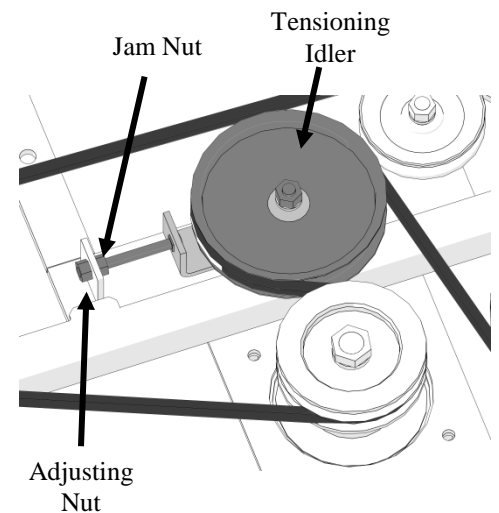
Set desired belt tension by turning the adjusting nut

- Clock Wise to tighten belts
- Counter Clock Wise to loosen belts

Tighten the nut fastening the tensioning idler to the mower deck.

Tighten jam nut on the adjusting screw.

Verify proper tension is achieved per “V” Belt Tension section above.



## TROUBLE SHOOTING:

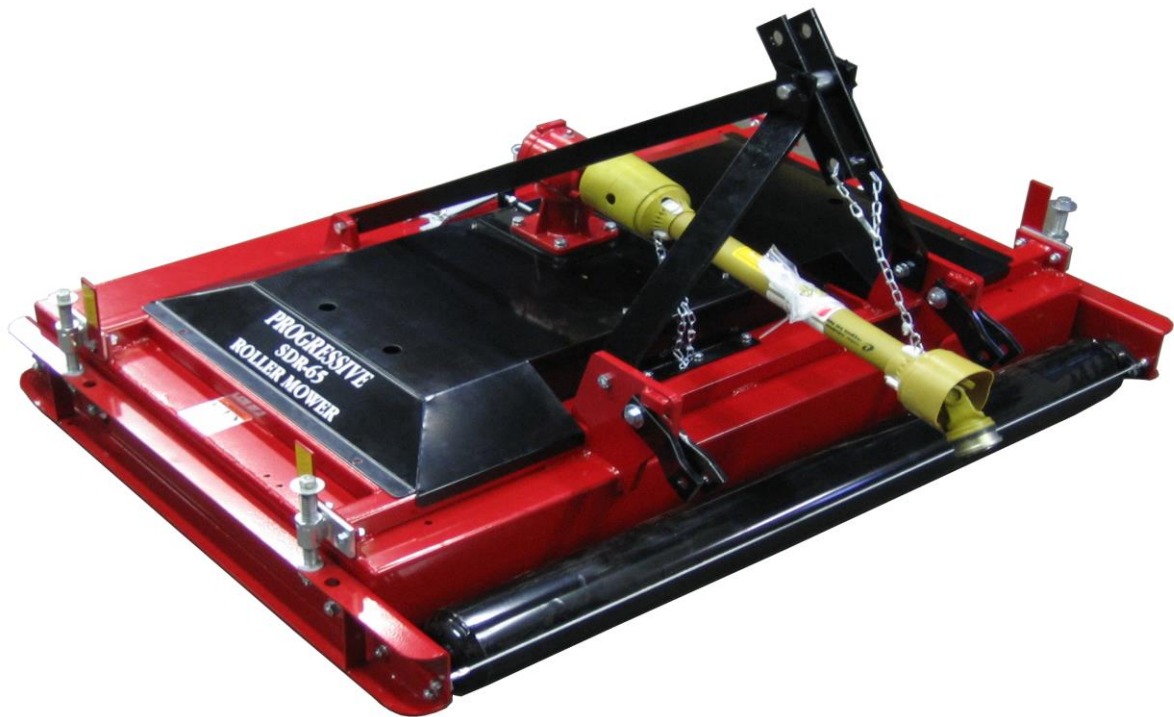
PROBLEM	CAUSE	REMEDY
Belt slippage	Lack of tension oily drive conditions	Increase tension Clean up drive
Rapid belt wear	Belt slippage belt not in proper groove	Increase tension Place in proper groove
Belt squeal	Belt slippage	Increase tension
Over-heated bearings	Belt slippage excessive drive tension	Increase Tension Tension drive properly
Input shaft does not collapse easily on turning.	Lack of grease at intermediate location of drive shaft	Remove driveshaft and pull apart. Grease splines. Grease every 8 hours.
Premature spindle bearing failure.	Lack of lubrication or grease is contaminated	See grease information and ensure grease being used is compatible. Grease per instructions



# SDR-65 FINISHING MOWER PARTS MANUAL

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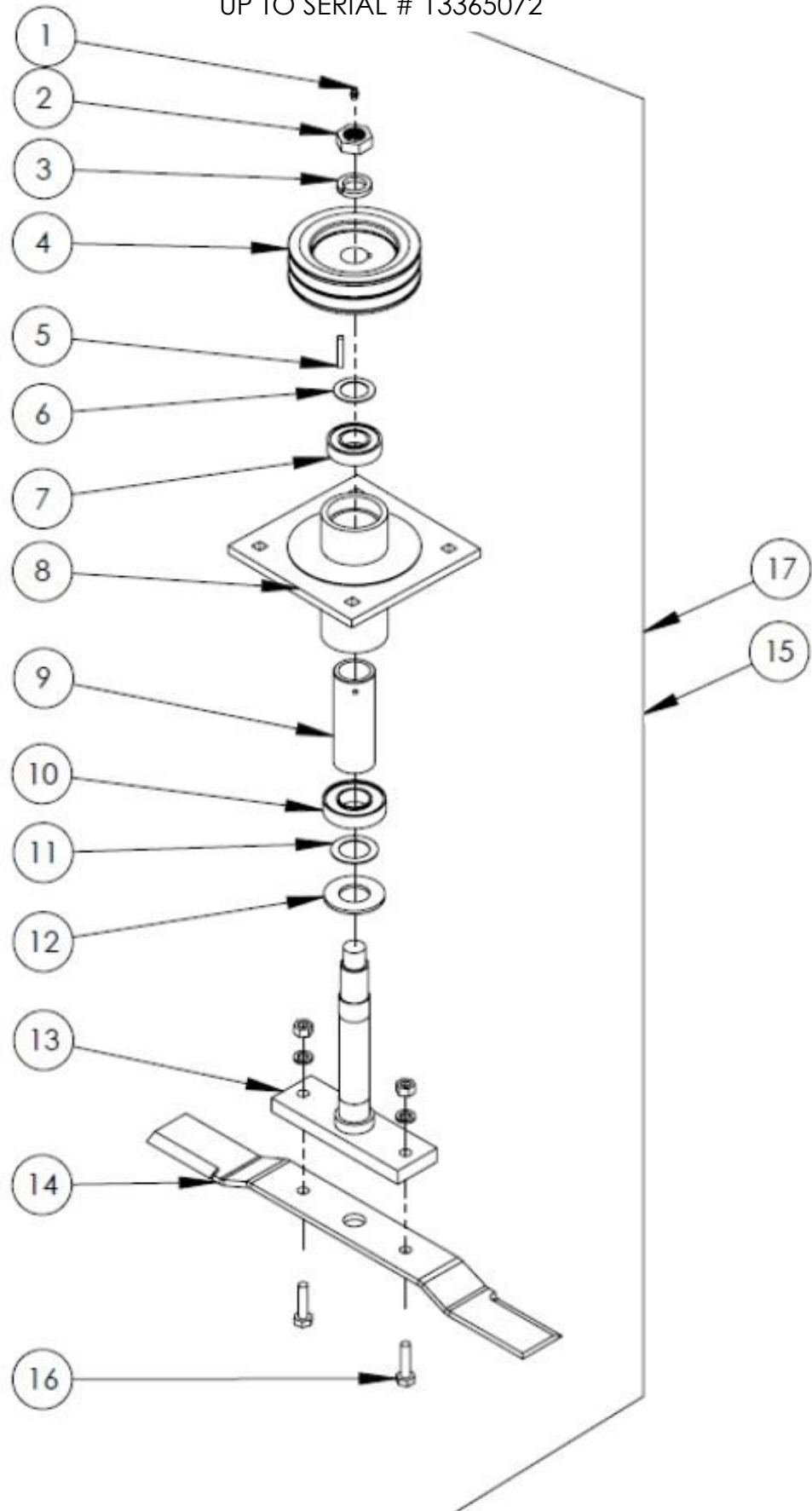
<u>DESCRIPTION</u>	<u>PAGE</u>
BLADE SPINDLE ASSEMBLY	2
DECK ASSEMBLY	6
GEARBOX MOUNT ASSEMBLY	8
HITCH FRAME ASSEMBLY	10
PTO SHAFT	12





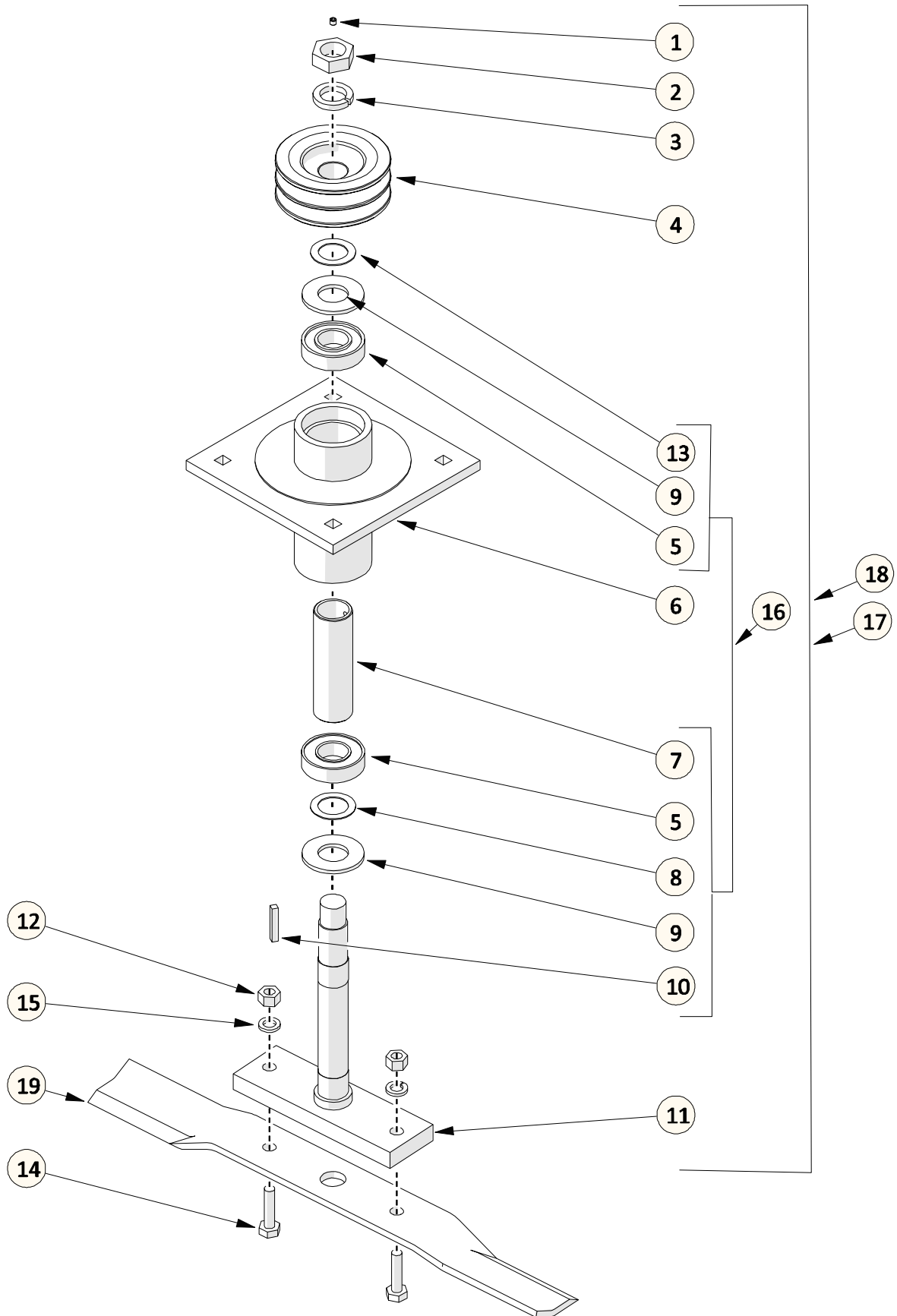
# BLADE SPINDLE ASSEMBLY

UP TO SERIAL # 13365072



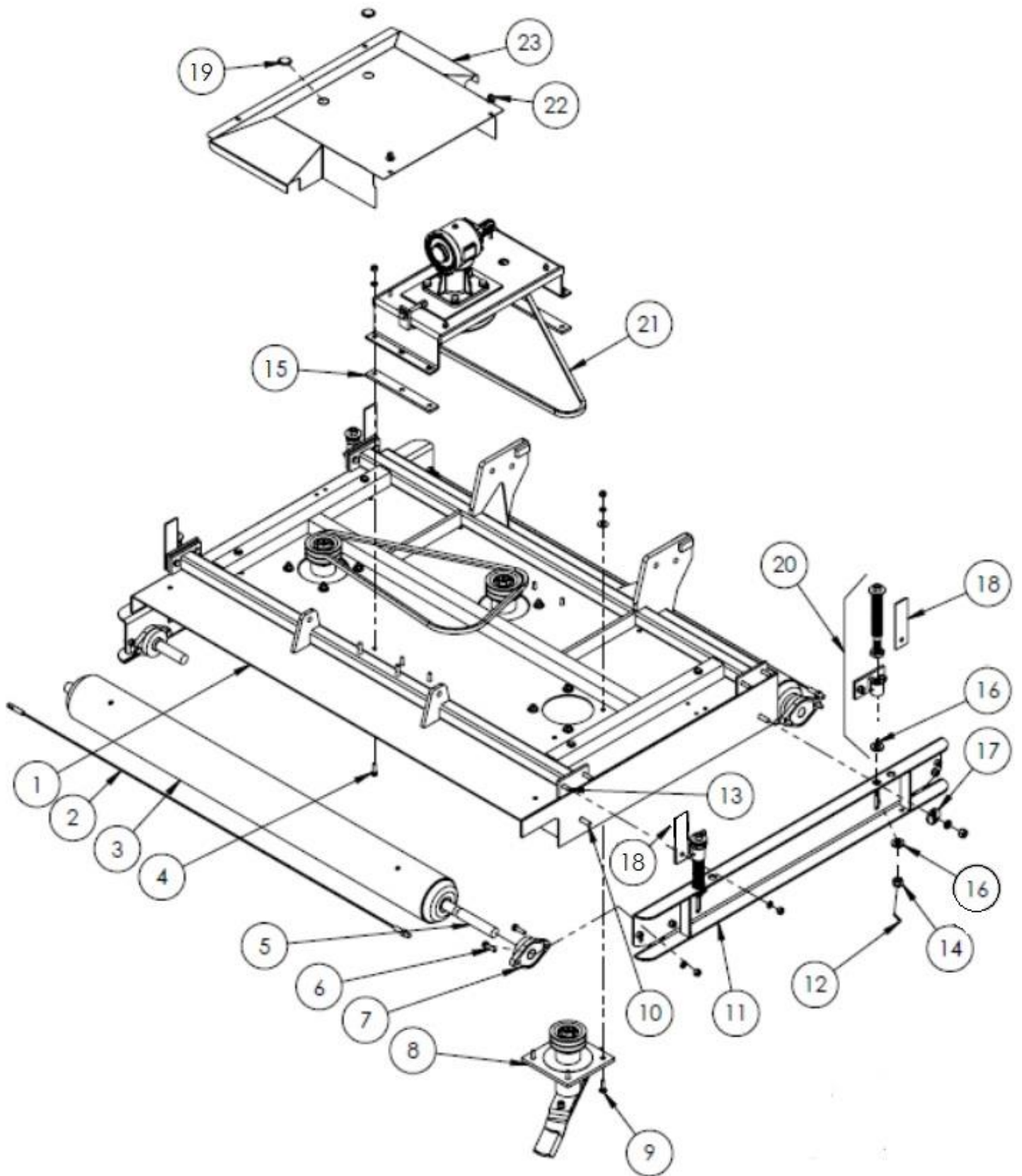
<b>BLADE SPINDLE ASSEMBLY</b>			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	O.L.	GREASE FITTING 1/4 - 28, STR	1
2	521003	HEX NUT- L.H.	1
3	521002	L.H. BLADE SPINDLE LOCKWASHER (3PER KIT)	1
4	521790	5.9" BLADE SPINDLE PULLEY	1
	521773	4.4" BLADE SPINDLE PULLEY	1
5	O.L.	1/4" SQ. x 1 9/16" KEY	1
6	521301	1.125" SHIM WASHER (9PCS)	1
7	521302	BEARING - TOP	1
8	524220	TDR-15 BLADE SPINDLE HUB	1
9	524222	BEARING SPACER TUBE	1
10	521701	BOTTOM BEARING	1
11	521305	SHIM WASHER 1.188" (9PCS)	1
12	521306	SPINDLE DIRT SHIELD (3PCS)	1
13	524224	TDR-15 BLADE SPINDLE	1
14	522603	BLADE 23" HIGH LIFT (9PCS)	1
	522606	BLADE 23" LOW LIFT (9PCS)	1
15	524390	SPINDLE REBUILD KIT (ITEMS 1, 5, 6, 8, 9, 10, 11 & 12)	1
16	O.L.	1/2" x 1 3/4" GR5 HEX BOLT, LOCKWASHER AND NUT	2
17	524230	COMPLETE BLADE SPINDLE ASSEMBLY 4.4" PULLEY	1
	524232	COMPLETE BLADE SPINDLE ASSEMBLY 5.9" PULLEY	1
-	-	<b>NOTE: QUANTITIES ARE FOR ONE COMPLETE SPINDLE ASSEMBLY</b>	-
-	-	<b>O.L. - OBTAIN LOCALLY</b>	-

# BLADE SPINDLE ASSEMBLY – MAINTENANCE FREE SERIAL # 14365073 & UP



<b>BLADE SPINDLE ASSEMBLY</b>			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	O.L.	SET SCREW - 1/4-28 X 1-1/4	1
2	521003	HEX NUT- L.H.	1
3	521002	LOCKWASHER KIT - LH (3 PCS)	1
4	521773	4.4" BLADE SPINDLE PULLEY	1
	521790	5.95" BLADE SPINDLE PULLEY (EXPORT ONLY)	1
5	521301	BEARING - SEALED	2
6	524220	SPINDLE HOUSING	1
7	-	SPINDLE SPACER TUBE	1
8	-	SHIM WASHER 1.188"	1
9	-	SPINDLE DIRT SHIELD	2
10	O.L.	KEY - SPINDLE - 1/4" X 1-9/16"	1
11	524224	BLADE SPINDLE W/SET SCREW	1
12	O.L.	HEX NUT - 1/2NC GR5 PL	2
13	-	1.125" SHIM WASHER	1
14	O.L.	HEX TAP BOLT - 1/2 X 1.75 NC GR5 PL	2
15	O.L.	LOCKWASHER - 1/2 PL	1
16	524400	SPINDLE REBUILD KIT	1
17	52432	COMPLETE BLADE SPINDLE ASSEMBLY 4.4" PULLEY	1
18	521975	COMPLETE BLADE SPINDLE ASSEMBLY W/O PULLEY	1
19	522603	BLADE KIT - HIGH LIFT (9 PCS)	1
	522606	BLADE KIT - LOW LIFT (9 PCS)	1
-	-	<b>NOTE: QUANTITIES ARE FOR ONE COMPLETE SPINDLE ASSEMBLY</b>	-
-	-	<b>O.L. - OBTAIN LOCALLY</b>	-

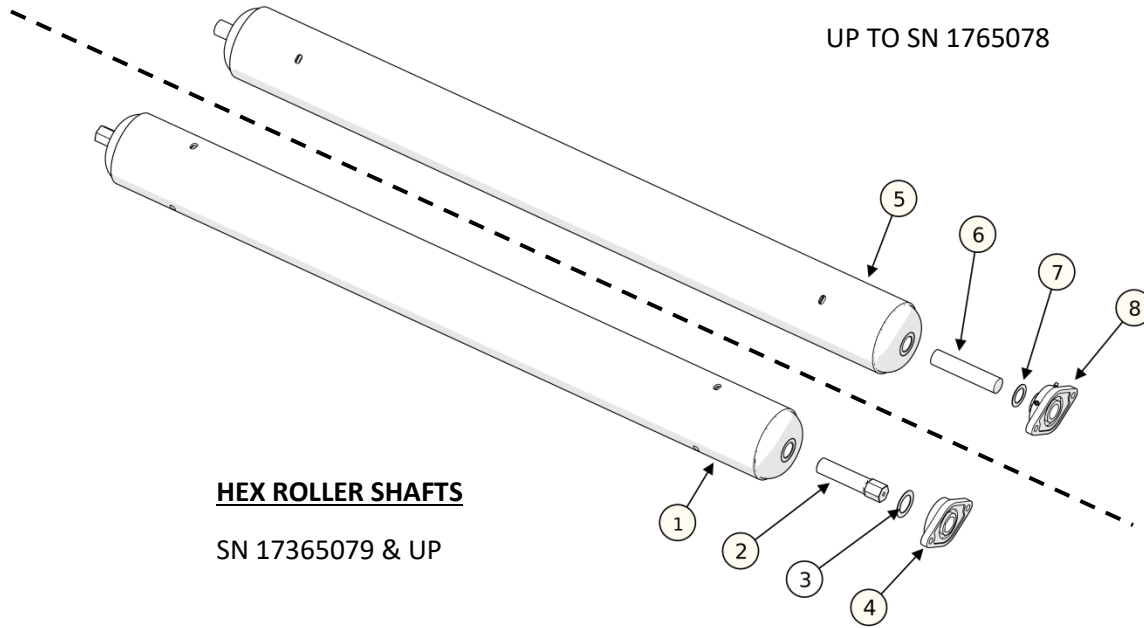
# DECK ASSEMBLY



<b>DECK ASSEMBLY</b>			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	531114	DECK - SDR-65	1
2	524221	TDR15 ROLLER WIPER ASSEMBLY	2
3	PAGE 7A	DECK ROLLER WITH SHAFTS	2
4	O.L.	7/16" x 1-1/2" NC GR5 BOLT, WITH LOCK AND NUT	6
5	PAGE 7A	ROLLER SHAFT	4
6	O.L.	1/2" x 1 1/2" GR5 HEX BOLT, LOCKWASHER AND NUT	8
7	PAGE 7A	FLANGE BEARING 2 BOLT	4
8	524232	BLADE SPINDLE ASSEMBLY 5.9" PULLEY (CE/EXPORT MACHINES)	3
	524230	BLADE SPINDLE ASSEMBLY 4.4" PULLEY	3
9	O.L.	7/16" x 1 1/2" GR5 CARRIAGE BOLT, LOCKWASHER AND NUT	12
10	O.L.	5/8" x 2" GR5 CARRIAGE BOLT, LOCKWASHER AND NUT	4
11	524190	TDR-15 DECK CHANNEL	2
12	O.L.	5/32" x 1 1/2" COTTER PIN	4
13	O.L.	1/2" x 1 3/4" GR5 HEX BOLT, LOCKWASHER AND NUT	8
14	305715	3/4"NC SLOTTED NUT	4
15	SEE 528657 ON PAGE 9	GEARBOX MOUNT SPACER - ( USE WITH 5.9" PULLEYS) REPLACED WITH 528657	2
16	607580	HEIGHT ADJ. BUSHING KIT (8PCS)	1
17	526148	CHANNEL CLAMP WASHER (4 PER KIT)	1
18	526125	HEIGHT DECAL PLATE - FRONT	4
19	526135	SNAP IN HOLE PLUG (8 PER KIT)	1
20	526252	HEIGHT ADJUSTMENT KIT (8PC KIT) COMES WITH ITEMS 13,14 AND 15.	4
21	212039	BELT - B74 ( USE WITH 5.9" PULLEYS)	2
	521315	BELT - B69 ( USE WITH 4.4" PULLEYS)	2
22	O.L.	3/8" HEX NUT & WASHER	8
23	528212	TDR-15 DECK SHIELD	2
<b>NOTE: QUANTITIES ARE FOR ONE DECK</b>			
<b>O.L. - OBTAIN LOCALLY</b>			

**ROUND ROLLER SHAFTS**

UP TO SN 1765078



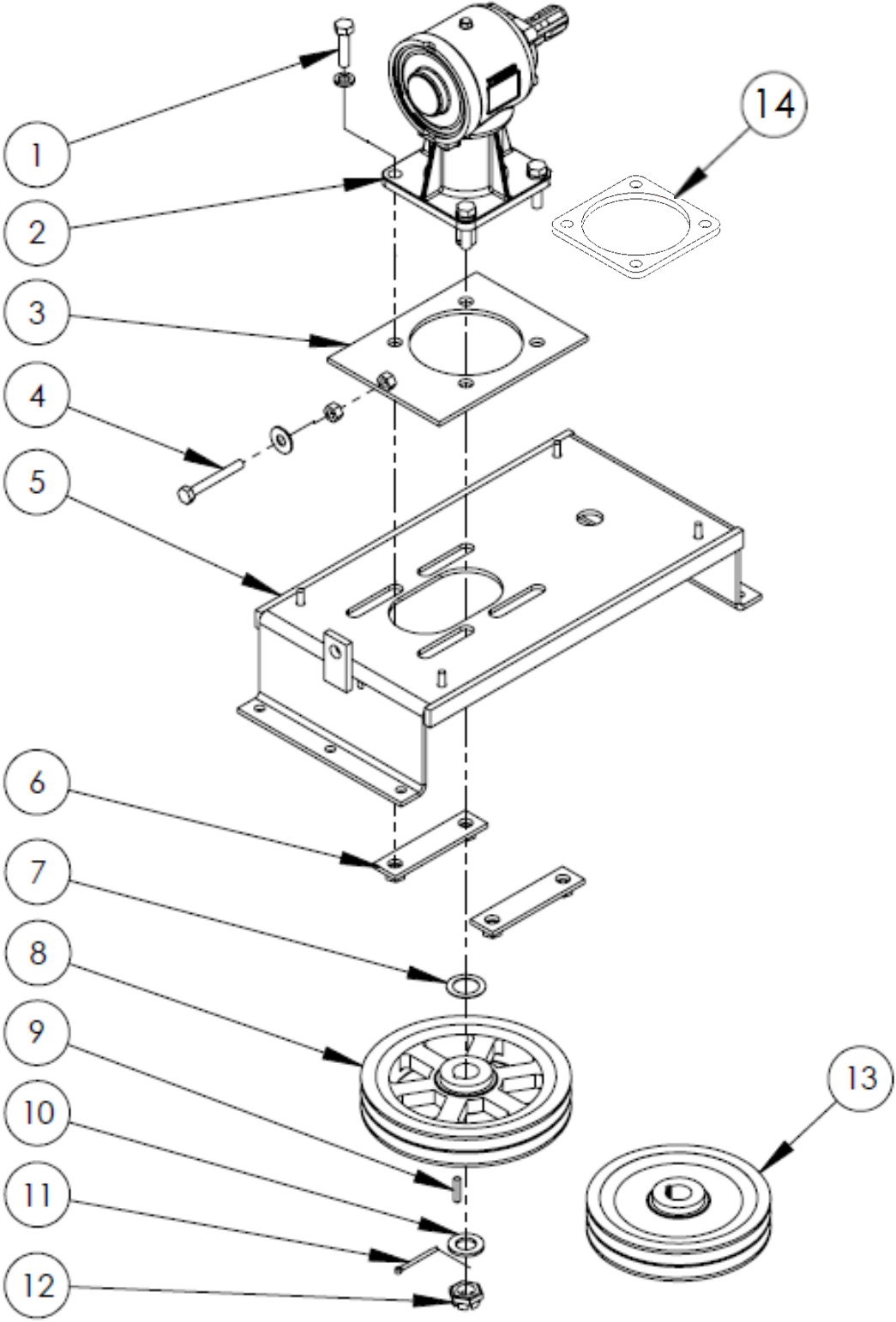
**HEX ROLLER SHAFTS**

SN 17365079 & UP

ITEM	PART #	DESCRIPTION	QTY
1	607712	ROLLER - TDR15 HEX /W SHAFTS	1
2	607705	HEX SHAFT REPLACEMENT KIT	1
3	607001	SHIM WASHER - 1.5 (9 PCS)	1
4	213029	2 BOLT FLANGE BEARING (HEX)	1
5	524216	DECK ROLLER /W SHAFTS	1

ITEM	PART #	DESCRIPTION	QTY
6	526494	ROLLER SHAFT REPLACEMENT KIT	1
7	521004	SHIM WASHER - 1.25 (9 PCS)	1
8	213019	2 BOLT FLANGE BEARING	1

# GEARBOX MOUNT ASSEMBLY

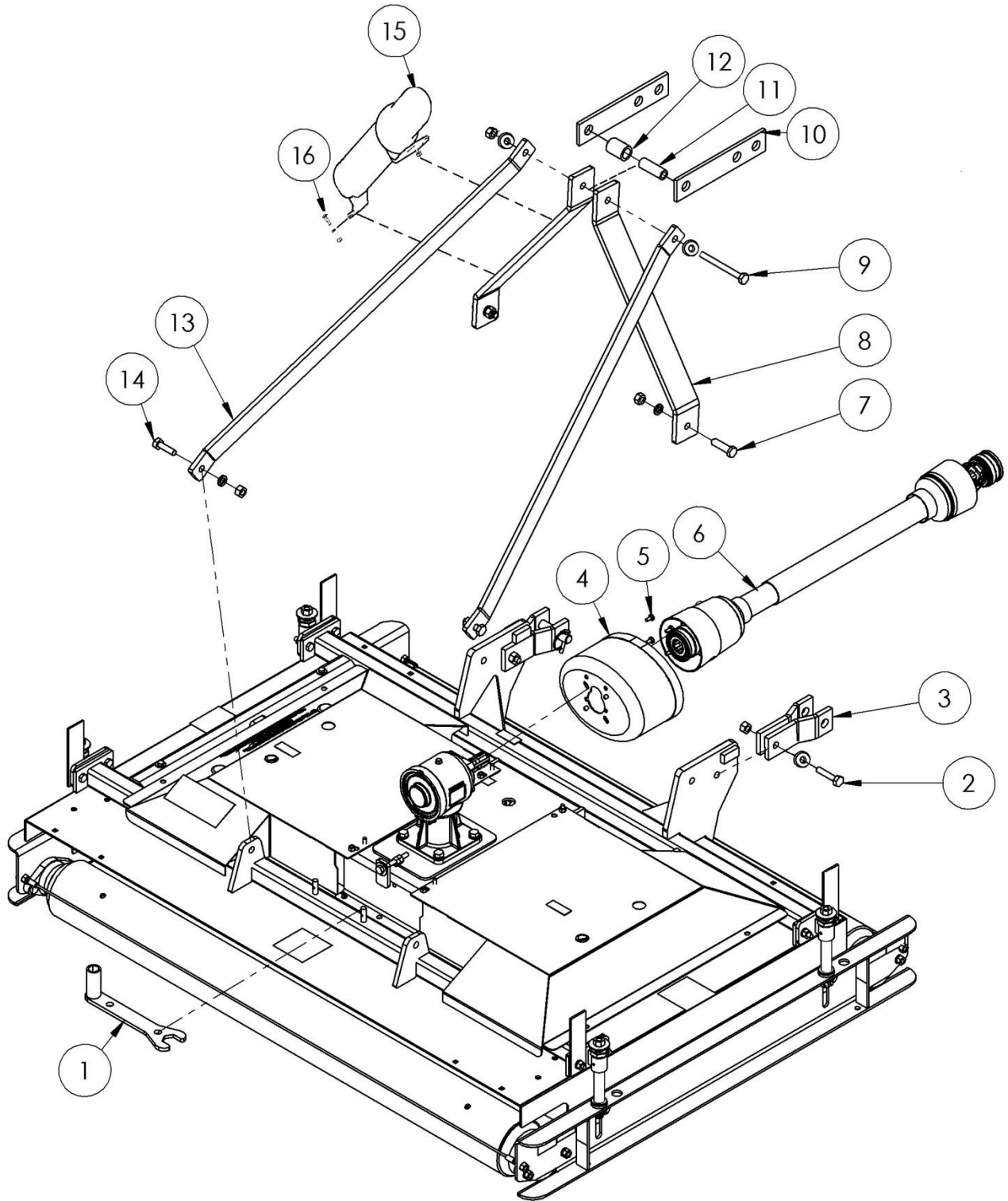




<b>GEARBOX MOUNT ASSEMBLY</b>			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	O.L.	9/16" x 2" GR5 HEX BOLT & LOCK WASHER	4
2	521012	DECK GEARBOX	1
3	521013	SLIDE PLATE	1
4	521020	1/2" x 3 1/2" GR5 TAP BOLT, (FLATWASHER AND NUT-O.L.)	1
5	521019	GEARBOX MOUNT	1
6	521018	STIFFENER NUT BRACKET	2
7	521004	SHIM WASHER - 1.250" (9PC KIT)	1
8	212021	MAIN DRIVE PULLEY 11 1/4" (USE WITH 5.9" SPINDLE PULLEYS)	1
9	521390	KEY 1/4" x 1 5/16 (3 PER KIT)	1
10	521129	WASHER - (3 PC KIT)	1
11	O.L.	3/16" x 1 1/2" COTTER PIN	1
12	521130	CASTLE NUT - M24	1
13	521774	MAIN DRIVE PULLEY 8.7" ( USE WITH 4.4" SPINDLE PULLEYS)	1
*14	528657	GEARBOX SPACER PLATE D MODELS SERIAL #13365066 & UP	1
<b>NOTE: QUANTITIES ARE FOR ONE DECK</b>			
<b>O.L. - OBTAIN LOCALLY</b>			

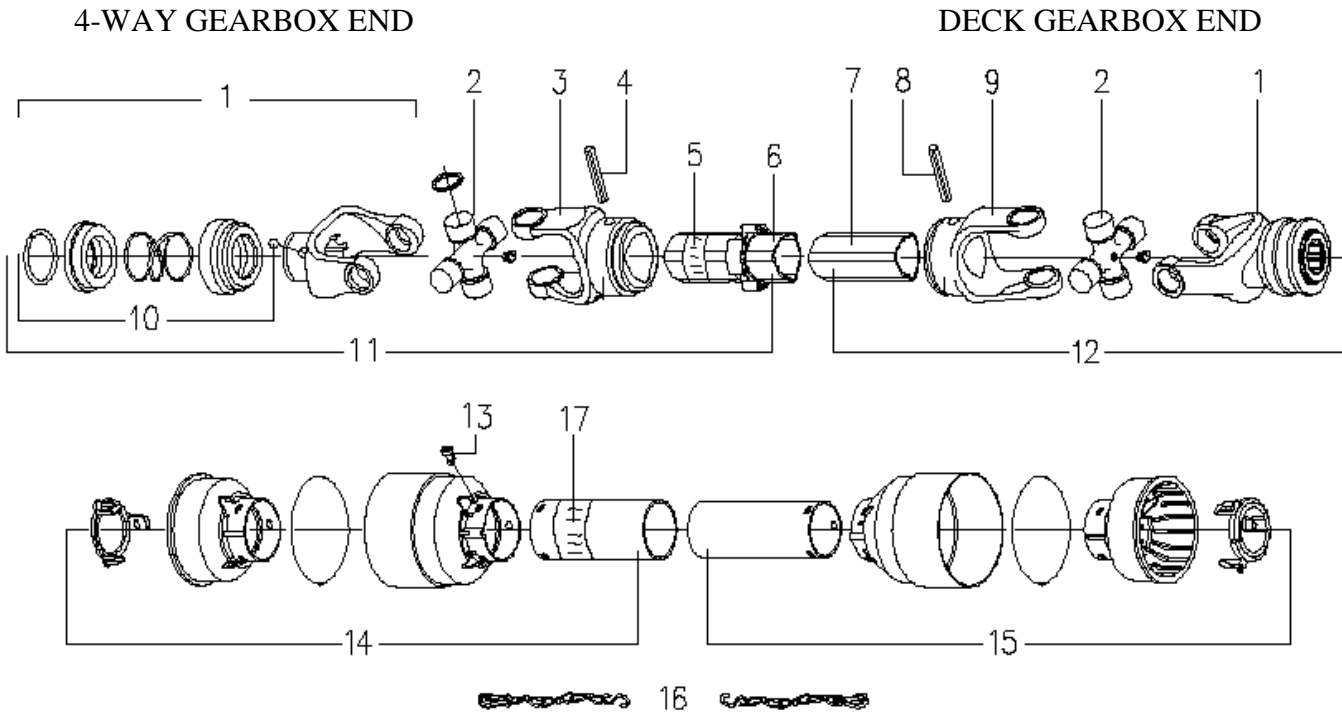
\*524247 GEARBOX MOUNT SPACERS REPLACED WITH SINGLE SPACER 528657

# HITCH FRAME ASSEMBLY



<b>HITCH FRAME ASSEMBLY</b>			
<b>ITEM NO.</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1	526094	TDR HEIGHT ADJ WRENCH	1
2	O.L.	5/8" x 2-1/2" GR5 HEX BOLT WITH FLAT WASHER AND LOCK NUT	2
3	524031	LOWER HITCH LINK - SDR	4
4	210061	GEARBOX COUNTER CONE C.E. MODELS ONLY	1
5	O.L.	M8 x 1.25 x 14MM HEX BOLT	4
6	521718	PTO SHAFT	1
6B	524235	PTO SHAFT - CE	1
7	O.L.	5/8" x 2 1/4" GR5 HEX BOLT WITH NUT AND LOCKWASHER	4
8	531103	FRONT UPRIGHT LINK	2
9	O.L.	5/8" x 6.00" GR5 HEX BOLT WITH LOCK NUT	1
10	524017	TOP HITCH LINK - SDR	2
11	524250	3RD LINK BUSHING	1
12	524252	3RD LINK BUSHING SHORT	1
13	531105	REAR LINK	2
14	O.L.	5/8" x 2 " GR5 HEX BOLT WITH NUT AND LOCKWASHER	2
15	120519	MANUAL TUBE HOLDER	1
16	O.L.	1/4" X 0.75" CARRIAGE BOLT WITH LOCK WASHER AND HEX NUT	2
<b>NOTE: QUANTITIES ARE FOR ONE COMPLETE MACHINE</b>			
<b>O.L. - OBTAIN LOCALLY</b>			

# PTO ASSEMBLY



ITEM	PART #	DESCRIPTION	QTY.
1	521778	QD. YOKE 1 3/8" - 6 SPLINE (CO2)	2
2	521779	CROSS & BEARING KIT	2
3	521780	OUTER TUBE YOKE	1
4	521781	ROLL PIN FOR OUTER TUBE	1
5	521451	"DANGER" LABEL FOR OUTER TUBE	1
6	521712	OUTER TUBE	1
7	521713	INNER TUBE	1
8	521782	ROLL PIN FOR INNER TUBE	1
9	521783	INNER TUBE YOKE	1
10	210017 521727	COLLAR KIT (STEEL) COLLAR KIT (PLASTIC)	1
11	521714	1/2 FEMALE SHAFT WITH SHIELDING	1
12	521715	1/2 MALE SHAFT WITH SHIELDING	1
13	521463	PLASTIC SHIELD BOLT (6PC/KIT)	6
14	521716	1/2 FEMALE SHIELD WITH LABEL	1
15	521717	1/2 MALE SHIELD	1
16	521467	SAFETY CHAIN	2
17	521455	"DANGER" LABEL FOR OUTER SHIELD	1
****	521718	COMPLETE PTO SHAFT	1/ MACH
-	-	<b>QUANTITY IS FOR ONE COMPLETE SHAFT</b>	-