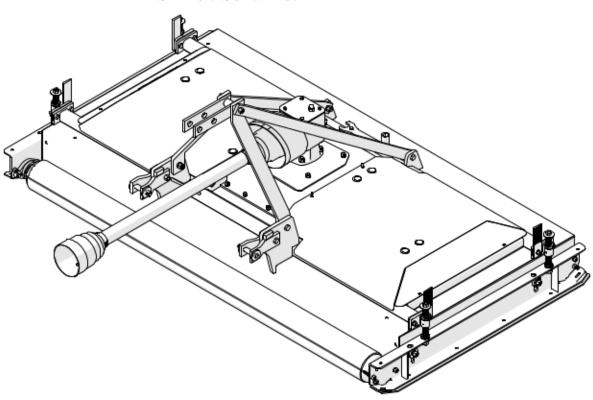


Operator's Manual and Parts List

SDR-65 & SDR-90

Single Deck Rotary Finishing Mower

SDR 65 Serial No. 10365046 To 14365072 SDR 90 Serial No. 10390051 To 16390105



PROGRESSIVE TURF EQUIPMENT INC. 137 WEST WILLIAM STREET SEAFORTH, ONTARIO CANADA NOK 1WO

PHONE:519-527-1080 SERIAL # _____
TOLL FREE: 800 668-8873 WEB: <u>www.progressiveturfequip.com</u>

ISSUE DATE: Sept 2015 P.N.120528



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

Tubic of Contents	
TO THE OWNER:	
GENERAL INFORMATION:	6
SAFETY	
OPERATING SAFELY:	
SDR MOWER SPECIFICATIONS	
SAFETY & MAINTENANCE DECAL LOCATIONS ON MACHINE:	
SDR DECAL LISTING	10
MAINTENANCE SAFETY:	12
PROPER TORQUE FOR FASTENERS:	
OPERATING THE MOWER:	13
DAILY CHECK LIST:	
HITCHING MOWER TO TRACTOR:	14
CONNECTING THE PTO SHAFT:	
Adjusting the PTO shaft to the correct length	
CUTTING HEIGHT ADJUSTMENT:	
TRANSPORTING MOWERS:	
POWER TAKE-OFF:	
MAINTENANCE	18
LUBRICATION:	
BLADE SPINDLE GREASING:	
GREASE COMPATIBILITY	
GEARBOX OIL LEVEL:	21
DECK GEARBOX:	
BLADE SERVICING:	
BLADE REMOVAL AND INSTALLATION:	
BLADE SHARPENING:	
SPINDLE INSPECTION:	
SPINDLE ASSEMBLY REMOVAL:	
SPINDLE ASSEMBLY INSTALLATION:	
SPINDLE REPAIR:	
ASSEMBLY OF SPINDLE:	
"V" BELT ADJUSTMENT:	
"V" BELT TENSION:	
TROUBLE SHOOTING:	27

Раде

Table of Contents



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.

MODEL:			_		
DATE PURCHASED: _					_
SERIAL NUMBER:					

For quick reference, record the following information.

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.

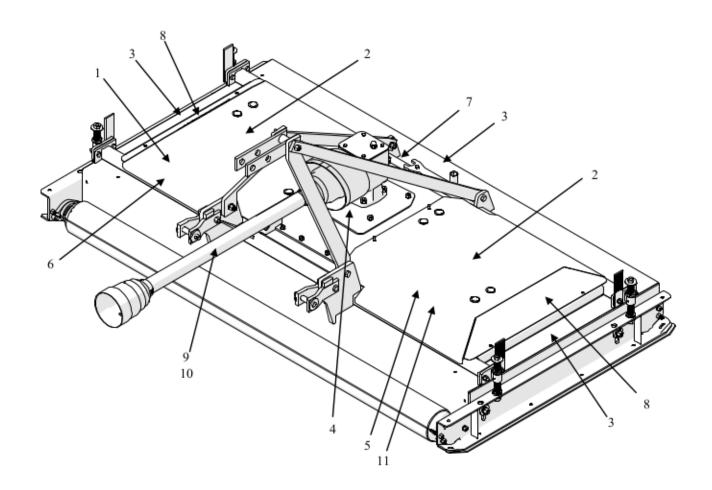
SDR MOWER SPECIFICATIONS

	SDR-65	SDR-90			
Cutting	65"	90"			
Dimensions					
Deck	Width Length Depth	Width Length Depth			
Dimensions	72" 51" 7"	97" 52" 7"			
Recommended	25 hp*	35 hp*			
HP					
Weight	975 LBS	1380 LBS			
Speeds	TRACTOR PTO – 540 rpm	TRACTOR PTO – 540 rpm			
	Blades – 3040 rpm	Blades – 2890 rpm			
	Blade tip speed - 18 287 rpm	Blade tip speed – 18 300 fpm			
Blades	3 - 23" Blades	4 - 24" Blades			
	5/16" x 2 1/2" heat treat				
Spindles	3 Spindles, 30 mm	4 spindles, 35 mm			
	Supported by 2 grease-able ball b	<u> </u>			
G 1 . 1 .	precision mach				
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	-			
	balance. Two 1/2" bolts hold blade rigid to provide a clean level				
	cut				
Deck	A single piece of 3/16" steel plants				
Construction					
Rollers	structural strength. 6" diameter with 0.188" wall thickness, supported by 1 1/4" two				
Koners	bolt ductile flan				
D-14		0			
	Easily made by loosening hold dow				
Adjustment	desired belt tension. Telescoping category #4 agricultural PTO drive shaft, with proper				
P.T.O. Shaft	safety sh				
	1 3/8" – 6 spline quick disconnect	-			
	lock co				
Lift Link	Catego				
	hts on the front of the tractor	1 y 1			

^{*}May require weights on the front of the tractor
**If equipped with greasable spindle assemblies

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
11	DECAL - PRO-EZ BLADE HARDWARE	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



CAUTION

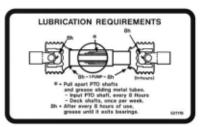
REPLACE ALL SHIELDS BEFORE
OPERATING THE MOWER



ITEM 1 (209172) ITEM 2 (209113) ITEM 3 (209173)



ITEM 4 (209115)



ITEM 6 (521119)

DISENGAGE PTO SHAFT BEFORE RAISING MOWER

ITEM 5 (521820)



ITEM 7 (521817)

PROGRESSIVE SDR-90 ROLLER MOWER

ITEM 8 – SDR-90 (209133)

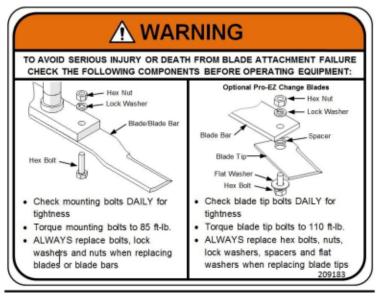
PROGRESSIVE SDR-65 ROLLER MOWER

ITEM 8 – SDR-65 (209135)





ITEM 9 (521451) ITEM 10 (521455)



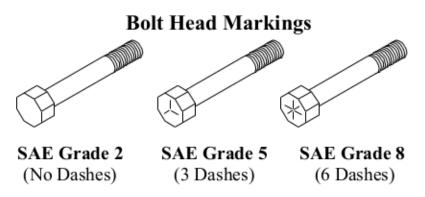
ITEM 11 (209183)

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.



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:

- 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.
- 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.
- Never permit any person other than the operator to ride or board the tractor at any time.
- Check that all lubrication points with grease fittings have been lubricated as per schedule.
- 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) <u>NOTE</u>: 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

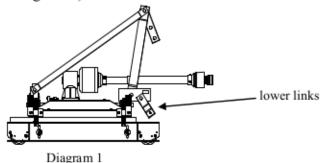


CAUTION - If the PTO shaft comes off during operation, it may cause personal injury and damage to the PTO shaft and tractor PTO. When checking, make sure the locking collar is locked, and that the shaft is not just jammed against the end of the tractor PTO shaft.

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.

 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).



- Shorten the driveline PTO shaft as follows:
 - 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.
 - Remove all burrs from shafts. Keep shaft ends square not rounded off. Clean all filings from drive shield tubes.
 - Once driveline has been reassembled, check to make sure the driveline does not bottom out in the shortest position.

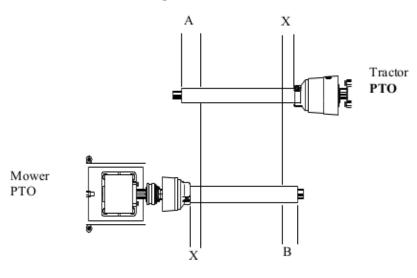


Diagram 2

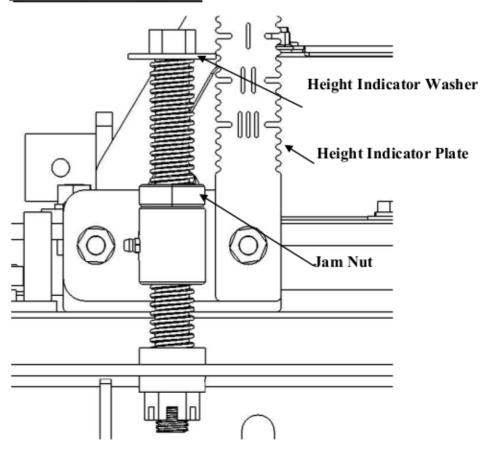
CUTTING HEIGHT ADJUSTMENT:

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 but, 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 sided 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.

WEIGHT OF <u>TOWING VEHICLE</u> 4500# or more Less than 4500# but More than 2300# Less than 2300#

MAXIMUM ALLOWABLE

ROAD SPEED

Up to 20 mph (32km/h)

Up to 10 mph (16km/h)

DO NOT TOW

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.



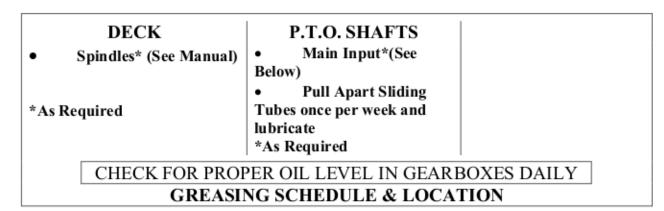
CAUTION - Always use personal protection devices such as eye and ear protectors when performing maintenance functions.

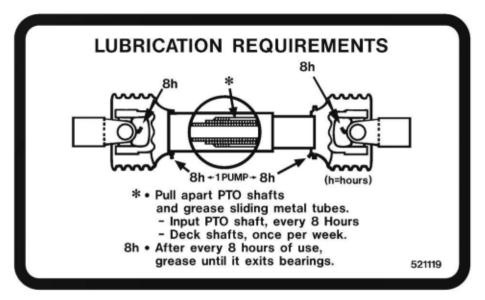


WARNING - When completing a maintenance or service function, make sure all safety shields are installed before placing mower in service.

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.





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)¹
- 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 grease²
- No synthetic grease³
- No High Temperature Grease⁴

Notes on grease compatibility:

- 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 <u>increase</u> 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.

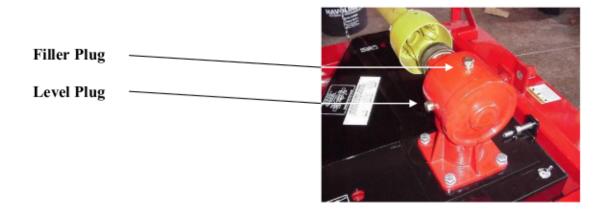
Grease with these features is considered to be a "General Purpose Grease". Use on all grease point locations on your Progressive Mower. Check the properties of the grease you wish to use with your supplier prior to use.

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.



BLADE SERVICING:



WARNING - Be sure safety locks are in place when working on decks in the raised position. The tractor hydraulic system could fail, causing decks to fall and crush anything under them.

- ❖ Do not handle mower blades with bare hands. Careless or improper handling may result in serious injury.
- ❖ 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 - Only original equipment blades should be used when replacing worn out mower blades. They are made of special steel alloys and subjected to rigid heat-treat and inspection requirements.

Substitute blades may not meet these rigid specifications and MAY BE DANGEROUS.

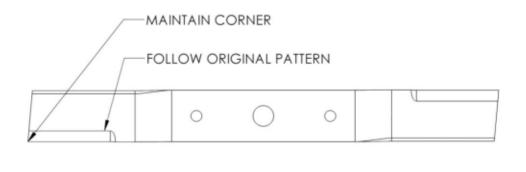
BLADE REMOVAL AND INSTALLATION:

Two, 1/2" X 1 3/4" grade 5 bolts with lock washers and nuts hold blade to blade spindle support bar. When changing blades, be sure that these fasteners are in good condition so they will not come loose during operation.

BLADE SHARPENING:

<u>IMPORTANT</u> - When sharpening blades be sure to balance them. Unbalanced blades will cause excessive vibration, which can damage blade spindle bearings. Vibration may also cause structural cracks in spindle housing.

Follow original sharpening pattern as shown. Sharpen blade to a razor edge. Protect hands when sharpening. Do not sharpen backside of blade.





BLADE SHARPENING

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:

Remove blade from spindle.

Remove belt shield. Loosen 4 bolts that hold gearbox to mount. Loosen 1/2" x 3 1/2" tap bolts and slide gearbox toward front until belt is easy to remove.

Remove belt.

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.

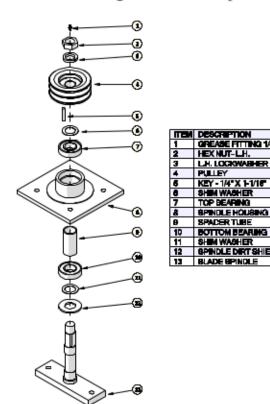
SPINDLE REPAIR:

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.



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 ftlbs. and then tighten set screws in pulley. Once the assembly is complete, 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.

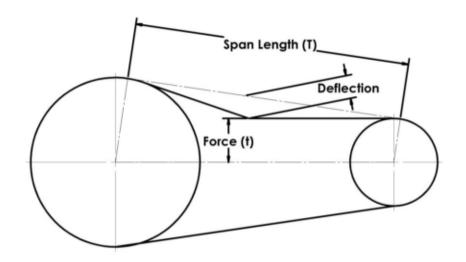
"V" BELT ADJUSTMENT:

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.

"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.

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

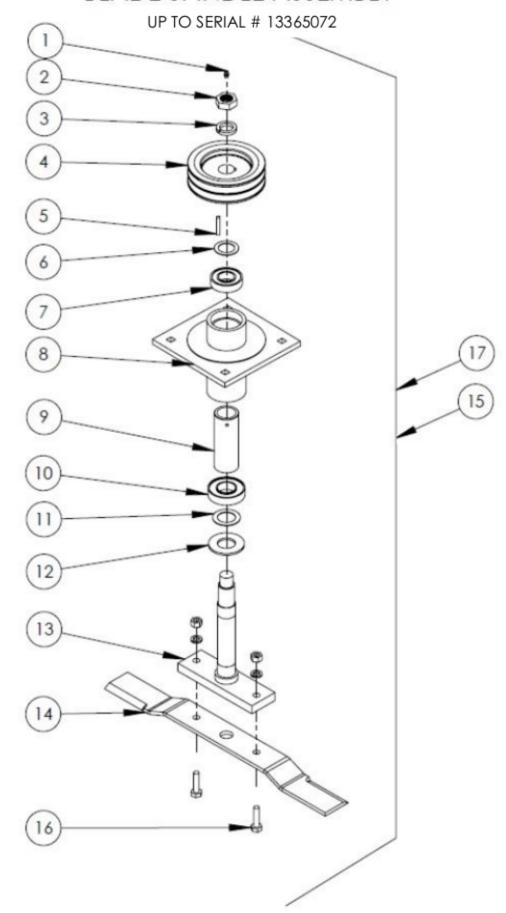
SDR-65 FINISHING MOWER PARTS MANUAL

TABLE OF CONTENTS

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

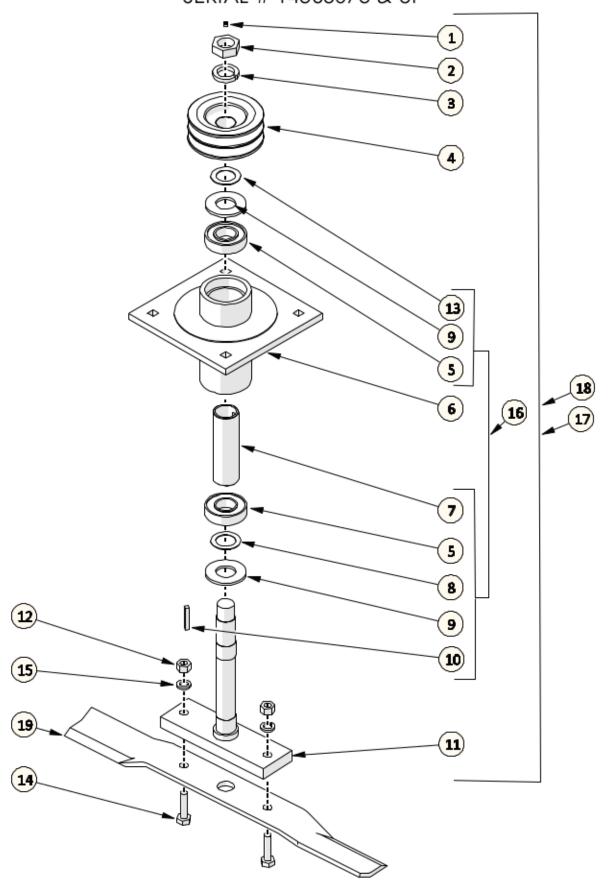


BLADE SPINDLE ASSEMBLY



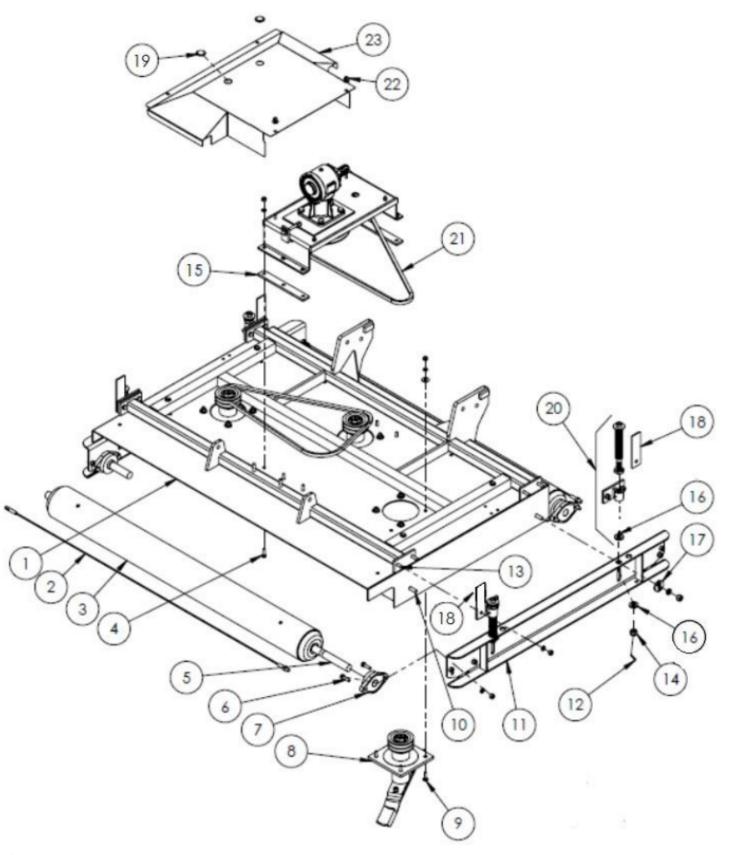
	BLADE SPINDLE ASSEMBLY				
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.		
1	O.L.	GREASE FITTING 1/4 - 28, STR	1		
2	521003	HEX NUT- L.H.	1		
3	521002	L.H. BLADE SPINDLE LOCKWASHER (3PER KIT)	1		
4	521790	5.9" BLADE SPINDLE PULLEY	1		
	521773	4.4" BLADE SPINDLE PULLEY	1		
5	O.L.	1/4" SQ. x 1 9/16" KEY	1		
6	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		
_	_	NOTE: QUANTITIES ARE FOR ONE	_		
_	_	COMPLETE SPINDLE ASSEMBLY			
-	-	O.L OBTAIN LOCALLY	-		

BLADE SPINDLE ASSEMBLY – MAINTENANCE FREE SERIAL # 14365073 & UP

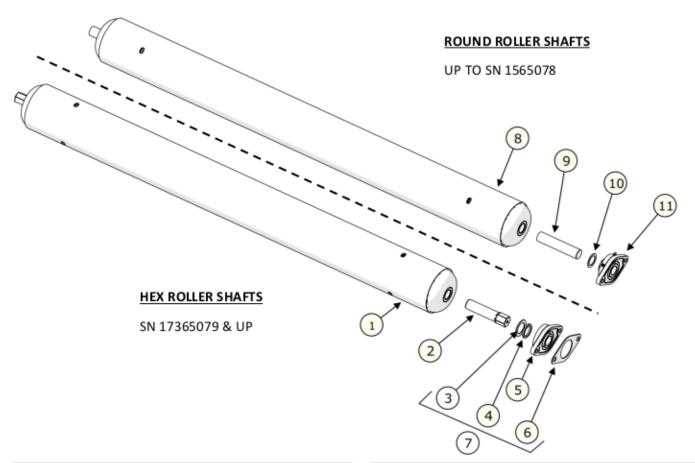


BLADE SPINDLE ASSEMBLY				
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	
1	O.L.	SET SCREW - 1/4-28 X 1-1/4	1	
3	521003	HEX NUT- L.H.	1	
3	521002	LOCKWASHER KIT - LH (3 PCS)	1	
	521773	4.4" BLADE SPINDLE PULLEY	1	
4	521790	5.95" BLADE SPINDLE PULLEY (EXPORT ONLY)	1	
5	521301	BEARING - SEALED	2	
6	524220	SPINDLE 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	
10	522603	BLADE KIT - HIGH LIFT (9 PCS)	1	
19	522606	BLADE KIT - LOW LIFT (9 PCS)	1	
-	-	NOTE: QUANTITIES ARE FOR ONE COMPLETE SPINDLE ASSEMBLY	-	
-	-	O.L OBTAIN LOCALLY	-	

DECK ASSEMBLY



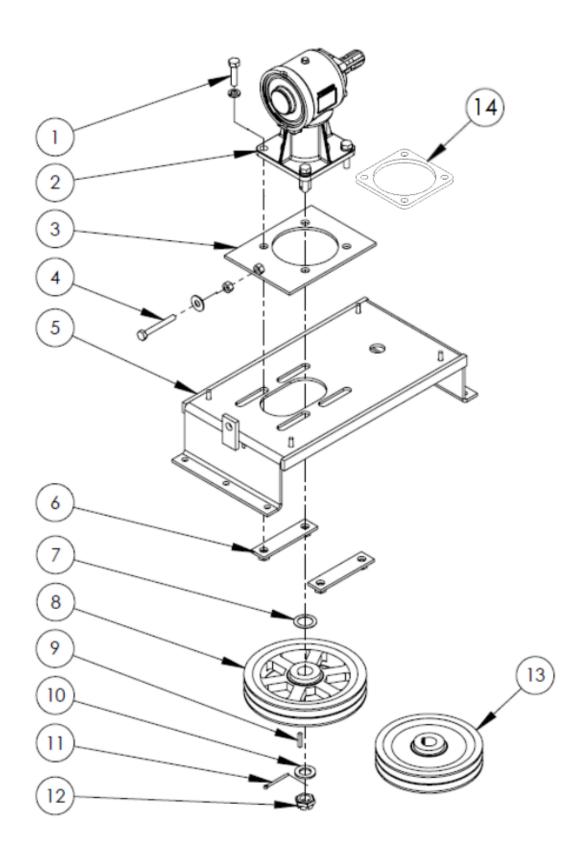
DECK ASSEMBLY				
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	
1	531114	DECK - SDR-65	1	
2	524221	TDR15 ROLLER WIPER ASSEMBLY	2	
3	PAGE 7A	DECK ROLLER WITH SHAFTS	2	
4	O.L.	7/16" x 1-1/2" NC GR5 BOLT, WITH LOCK AND NUT	6	
5	PAGE 7A	ROLLER SHAFT	4	
6	O.L.	1/2" x 1 1/2" GR5 HEX BOLT, LOCKWASHER AND NUT	8	
7	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	
۷1	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	
	NOTE:	QUANTITIES ARE FOR ONE DECK		
O.L OBTAIN LOCALLY				



ITEM	PART#	DESCRIPTION	QTY
1	607712	ROLLER - TDR15 HEX /W SHAFTS	1
2	607701	ROLLER SHAFT - HEX	1
3	607001	SHIM WASHER - 1.5 (9 PCS)	1
4	SEE ITEM 7	SPACER - ROLLER SHAFT (4 PCS)	1
5	213023	FLANGE BRG - 2 BOLT HEX	1
6	SEE ITEM 7	SPACER - BEARING	1

ITEM	PART#	DESCRIPTION	QTY
7	607726	KIT - ROLLER BRG SPACERS (STD) (2EA)	1
8	524216	DECK ROLLER /W SHAFTS	1
9	526229	ROLLER SHAFT	1
10	521004	SHIM WASHER - 1.25 (9 PCS)	1
11	213019	2 BOLT FLANGE BEARING	1

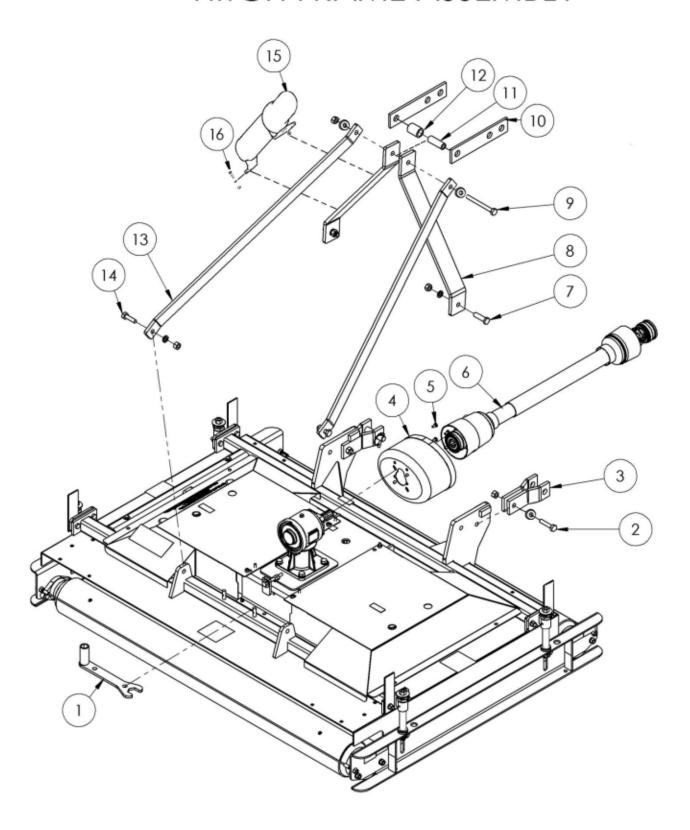
GEARBOX MOUNT ASSEMBLY



	GEARBOX MOUNT ASSEMBLY				
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		
	NOTE: QUANTITIES ARE FOR ONE DECK				
		O.L OBTAIN LOCALLY			

^{*524247} GEARBOX MOUNT SPACERS REPLACED WITH SINGLE SPACER 528657

HITCH FRAME ASSEMBLY

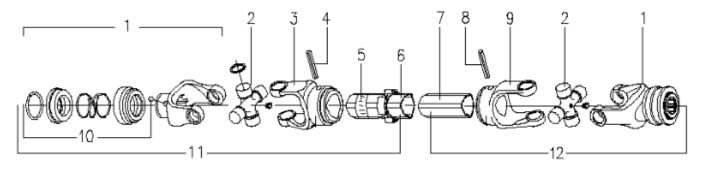


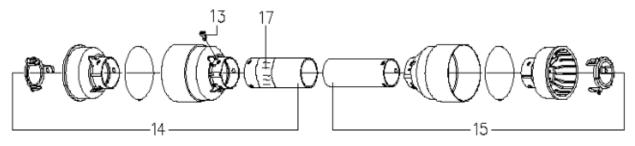
HITCH FRAME ASSEMBLY					
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.		
1	526094	TDR HEIGHT ADJ WRENCH	1		
2	O.L.	5/8" x 2-1/2" GR5 HEX BOLT WITH FLAT WASHER AND LOCK NUT	2		
3	524031	LOWER HITCH LINK - SDR	4		
4	210061	GEARBOX COUNTER CONE C.E. MODELS ONLY	1		
5	O.L.	M8 x 1.25 x 14MM HEX BOLT	4		
6	521718	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		
NOTE: QUANTITIES ARE FOR ONE COMPLETE MACHINE					
O.L OBTAIN LOCALLY					

PTO ASSEMBLY

4-WAY GEARBOX END

DECK GEARBOX END





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	COLLAR KIT (STEEL)	1
	521727	COLLAR KIT (PLASTIC)	
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
-	-	QUANTITY IS FOR ONE COMPLETE SHAFT	-

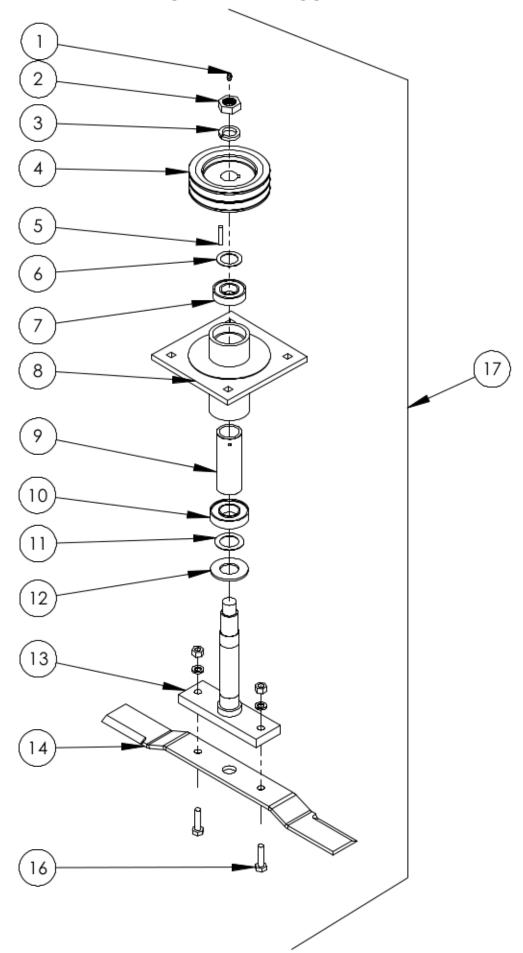
SDR-90 FINISHING MOWER PARTS MANUAL

TABLE OF CONTENTS

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

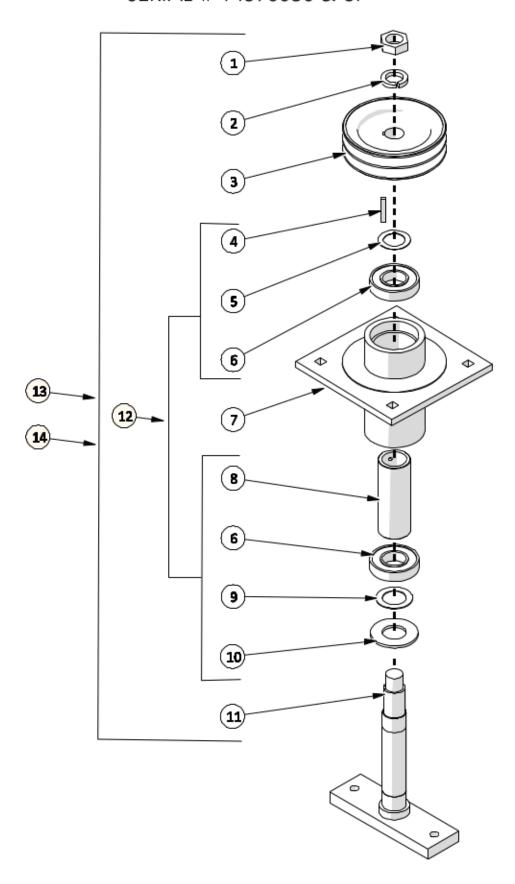


BLADE SPINDLE ASSEMBLY



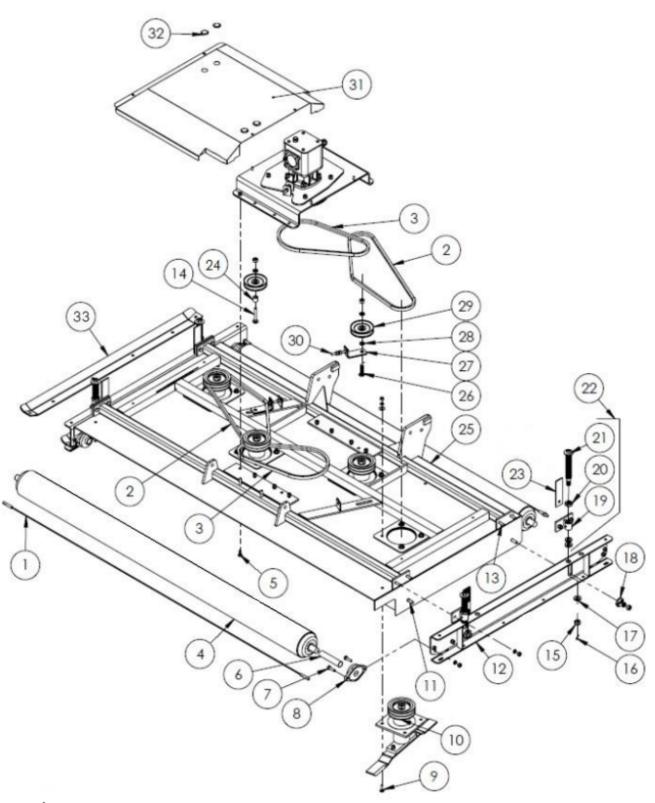
BLADE SPINDLE ASSEMBLY			
ITEM	PART	DESCRIPTION	QTY.
NO.	NUMBER	DESCRIPTION	ا العا
1	O.L.	GREASE FITTING 1/4 - 28, STR	1
2	521003	HEX NUT- L.H.	1
2	501000	L.H. BLADE SPINDLE	١,
3	521002	LOCKWASHER (3 PER KIT)	'
4	521775	5.9" BLADE SPINDLE PULLEY	1
5	O.L.	1/4" SQ. x 1 9/16" KEY	1
6	521004	SHIM WASHER - 1.250" (9 PC KIT)	1
7	521005	BEARING - TOP	1
8	526092	SPINDLE HOUSING	1
9	526096	BEARING SPACER TUBE	1
10	521445	BEARING - BOTTOM	1
11	521008	1 3/8" SHIM WASHER (9 PER KIT)	1
12	521009	DIRT SHIELD (3 PER KIT)	1
13	526098	BLADE SPINDLE	1
14	522618	24" LOW LIFT BLADE KIT (6 PCS)	1
15	522610	24" HIGH LIFT BLADE KIT (6 PCS)	1
1,	0.1	1/2" x 1 3/4" GR5 HEX BOLT, WITH	
16	O.L.	LOCKWASHER AND NUT	2
17	526278	BLADE SPINDLE ASSEMBLY TDR-22	1
		NOTE: QUANTITIES ARE FOR ONE	
-	-	COMPLETE SPINDLE ASSEMBLY	-
-	-	O.L OBTAIN LOCALLY	-

BLADE SPINDLE ASSEMBLY – MAINTENANCE FREE SERIAL # 14390080 & UP

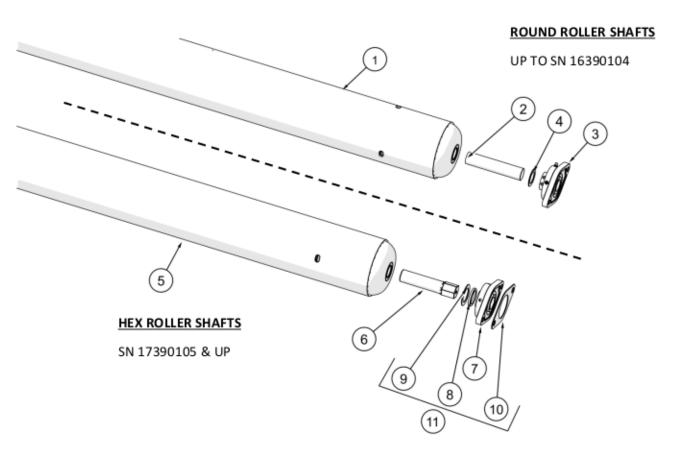


BLADE SPINDLE ASSEMBLY			
ITEM	PART#	DESCRIPTION	QTY.
1	521003	HEX NUT- L.H.	1
2	521002	L.H. BLADE SPINDLE	1
	321002	LOCKWASHER (3 PER KIT)	'
3	521775	5.9" BLADE SPINDLE PULLEY	1
4	O.L.	1/4" SQ. x 1 9/16" KEY	1
5	-	SHIM WASHER - 1.250"	1
6	-	BEARING	2
7	526092	SPINDLE HOUSING	1
8	-	BEARING SPACER TUBE	1
9	-	1 3/8" SHIM WASHER	1
10	-	DIRT SHIELD	1
11	526098	BLADE SPINDLE	1
12	526980	SPINDLE REBUILD KIT	1
13	526748	BLADE SPINDLE ASSEMBLY - COMPLETE	1
14	528750	BLADE SPINDLE ASSEMBLY - LESS PULLEY	1
		NOTE: QUANTITIES ARE FOR ONE	
_	-	COMPLETE SPINDLE ASSEMBLY	_
-	-	O.L OBTAIN LOCALLY	-

DECK ASSEMBLY



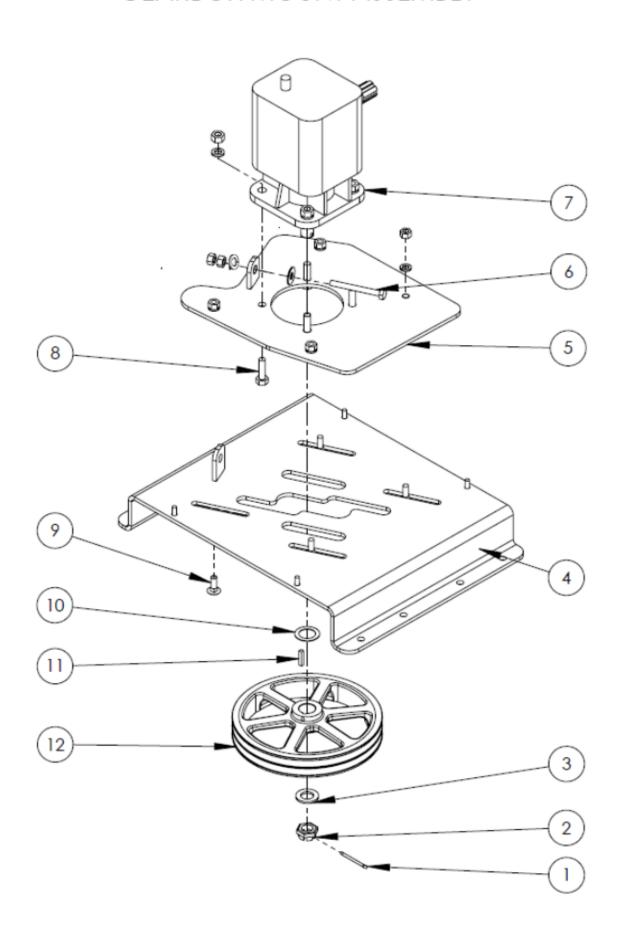
DECK ASSEMBLY				
ITEM NO.	PART #	DESCRIPTION	QTY.	
1	526276	ROLLER WIPER ASSEMBLY	2	
2	212035	BELT - B66	2	
3	212030	BELT - B50	2	
4	PAGE 7A	ROLLER WITH SHAFTS	2	
5	O.L.	7/16" x 1 1/4" GR5 CARRIAGE BOLT, LOCK AND NUT	8	
6	PAGE 7A	ROLLER SHAFT	4	
7	O.L.	1/2" x 1 1/2" HEX BOLT, LOCK AND NUT	8	
8	PAGE 7A	FLANGE BEARING 2 BOLT	4	
9	O.L.	7/16" x 1 1/2" GR5 CARRIAGE BOLT, FLAT WASHER, LOCKWASHER AND NUT	16	
	526278	UP TO SERIAL# 13390079 - BLADE SPINDLE ASSY	<u> </u>	
10	526748	SERIAL # 14890080 & UP - BLADE SPINDLE ASSY	4	
11	O.L.	5/8" x 2" GR5 CARRIAGE BOLT, LOCK AND NUT	4	
12	526186	TDR-22 DECK CHANNEL	2	
13	O.L.	1/2" x 1 3/4" GR5 HEX BOLT, LOCK AND NUT	8	
14	O.L.	5/8" x 3 1/2" GR5 CARRIAGE BOLT, LOCK AND NUT	1	
15	305715	3/4"NC SLOTTED NUT	4	
16	O.L.	5/32" x 1 1/2" COTTER PIN	4	
17	607580	HEIGHT ADJ. BUSHING KIT (8PCS)	1	
18	526148	CHANNEL CLAMP WASHER (4 PER KIT)	1	
19	526340	DECK ADJUSTMENT BRACKET	4	
20	526144	ACME JAM NUT	4	
21	526176	ACME HEIGHT ADJUSTMENT ROD	4	
22	526252	TDR HEIGHT ADJUSTMENT KIT (ITEMS 14,15,16,17,19,20,21)	4	
23	527606	TDR HEIGHT PLATE KIT	1	
24	600225	IDLER PULLEY BUSHING LONG	1	
25	531110	DECK - SDR-90	1	
26	O.L.	5/8" x 2 1/2" GR5 CARRIAGE BOLT, LOCK AND NUT	1	
27	526331	IDLER PULLEY BRACKET	2	
28	526335	IDLER PULLEY BUSHING SHORT	1	
29	212009	IDLER PULLEY 5"	2	
30	O.L.	1/2" x 3 1/2" NC GR5 TAP BOLT , WITH FLAT WASHER AND 2 NUTS	2	
31	531112	TDR-22 DECK SHIELD	2	
32	526492	SNAP IN HOLE PLUG (12 PER KIT)	1	
33	526404	OPTIONAL DECK SKID SHOE KIT	1	
33	320404	COMPLETE WITH HARDWARE		
	NOTE: G	QUANTITIES ARE FOR ONE DECK ASSEMBLY ONLY		
O.L. OBTAIN LOCALLY				



ITEM	PART#	DESCRIPTION	QTY
1	526188	ROLLER WITH SHAFTS	1
2	526229	ROLLER SHAFT	1
3	213019	2 BOLT FLANGE BEARING	1
4	521004	SHIM WASHER - 1.25 (9 PCS)	1
5	607706	ROLLER - TDR 22 HEX /W SHAFTS	1
6	607701	ROLLER SHAFT - HEX	1

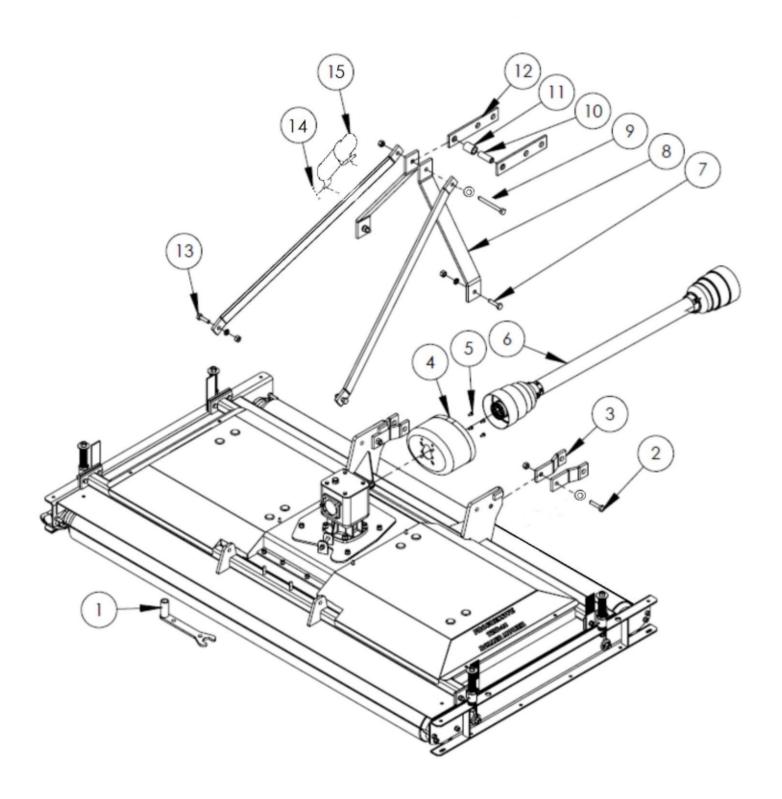
	ITEM	PART#	DESCRIPTION	QTY
[7	213023	FLANGE BRG - 2 BOLT HEX	1
[8	SEE ITEM 11	SPACER - ROLLER SHAFT - 4 PCS	1
[9	607001	SHIM WASHER - 1.5 (9 PCS)	1
[10	SEE ITEM 11	SPACER - BEARING	1
[11	607726	KIT - ROLLER BRG SPACERS (STD) (2 EA)	1

GEARBOX MOUNT ASSEMBLY

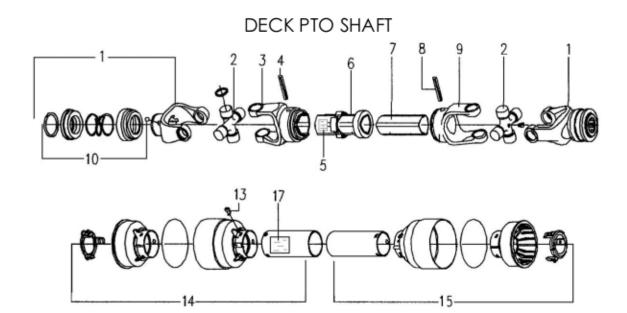


		GEARBOX MOUNT ASSEMBLY	
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	O.L.	3/16" X 1 1/2" COπER PIN	1
2	521130	CASTLE NUT - M24	1
3	521129	WASHER - 25 X 44 X 4 (3 PCS)	1
4	526134	TDR-22 GEARBOX MOUNT WELDMENT	1
5	526132	TDR-22 SLIDE PLATE WELDMENT	1
6	O.L.	1/2" X 4" TAP BOLT WITH WASHER AND 2 NUTS	1
7	521432	DECK GEAR BOX	1
8	O.L.	3/8" x 2" NC GR5 BOLT, WITH LOCK AND NUT	4
9	O.L.	1/2" X 1 1/4" GR5 CARRIAGE BOLT, LOCK WASHER, AND NUT	4
10	521004	SHIM WASHER - 1.250" (9 PC KIT)	1
11	521390	KEY 1/4" x 1 5/16 (3 PER KIT)	1
12	212021	MAIN DRIVE PULLEY	1
-	-	NOTE: QUANTITIES ARE FOR ONE DECK GEARBOX ASSEMBLY ONLY	1
-	-	O.L OBTAIN LOCALLY	-

HITCH FRAME ASSEMBLY



HITCH FRAME ASSEMBLY				
ITEM	PART	DESCRIPTION	QTY.	
1	526094	TDR HEIGHT ADJ WRENCH	1	
2	O.L.	5/8" x 2 1/2" GR5 HEX BOLT WITH FLAT WASHER & LOCK NUT	3	
3	524031	LOWER HITCH LINK - SDR	4	
4	210061	GEARBOX COUNTER CONE CE MODELS ONLY	1	
5	O.L.	M8 x 1.25 x 14MM GR8,8 HEX BOLT CE MODELS ONLY	4	
6	521474	PTO SHAFT	1	
6B	526052	PTO SHAFT - CE	1	
7	O.L.	5/8" x 2" GR5 HEX BOLT WITH LOCK NUT	1	
8	531103	SDR FRONT UPRIGHT LINK	2	
9	O.L.	5/8" x 6.00" GR5 HEX BOLT WITH FLAT WASHER & LOCK NUT	1	
10	524250	3RD LINK BUSHING	1	
11	524252	3RD LINK BUSHING SHORT	1	
12	524017	TOP HITCH LINK - SDR	2	
13	O.L.	5/8" x 2" GR5 HEX BOLT WITH LOCKWASHER AND NUT	2	
14	O.L.	1/4" X 1-1/4" CARRIAGE BOLT, LOCK WASHER AND HEX NUT	2	
15	120519	MANUAL HOLDER TUBE	1	
NOTE: QUANTITIES ARE FOR ONE COMPLETE MACHINE				
O.L OBTAIN LOCALLY				



16 5

		DECK PTO SHAFT	
ITEM	PART NO.	DESCRIPTION	QTY
1	521800	QD. YOKE 1 3/8" - 6 SPLINE (CO2)	2
2	521801	CROSS & BEARING KIT	2
3	521802	OUTER TUBE YOKE	1
4	521803	ROLL PIN FOR OUTER TUBE	1
5	521451	"DANGER" LABEL FOR OUTER TUBE	1
6	521468	OUTER TUBE	1
7	521469	INNER TUBE	1
8	521804	ROLL PIN FOR INNER TUBE	1
9	521805	INNER TUBE YOKE	1
10	210017	SLIDE COLLAR KIT - GOLD METAL	1
	521727	COLLAR KIT (CO2) BLACK PLASTIC	1
11	521470	1/2 FEMALE SHAFT WITH SHIELDING	1
12	521471	1/2 MALE SHAFT WITH SHIELDING	1
13	521463	PLASTIC SHIELD BOLT (6PC/KIT)	1 KIT
14	521472	1/2 FEMALE SHIELD WITH LABEL	1
14B	526049	1/2 FEMALE SHIELD – CE	1
15	521473	1/2 MALE SHIELD	1
15B	526053	1/2 MALE SHIELD – CE	1
16	521467	SAFETY CHAIN	2
17	521455	"DANGER" LABEL FOR OUTER SHIELD	1
18	521821	M67 GREASE FITTING	2
	521474	COMPLETE PTO SHAFT	1
	526052	COMPLETE PTO SHAFT - CE	1
	-	NOTE: QUANTITY IS FOR ONE COMPLETE MOWER	-
-	-	O.L OBTAIN LOCALLY	-