



And congratulations on your purchase of a new DR^{\otimes} TRIMMER/MOWERTM!

We have done our utmost to ensure that your DR[®] will be one of the most trouble-free and satisfying pieces of equipment you have ever owned.

Please let us know of any questions or problems you may have. We want to answer or correct them as quickly as possible. (When you do call or write, please have your serial number and/or order number handy—it will speed things up!) We also hope to hear from you on how much you like your new helper.

And please tell your friends about your new $DR^{\mathbb{R}}$ TRIMMER/MOWER^{\mathbb{M}}. Having $DR^{\mathbb{R}}$ Owners spread the word about our products and our way of doing business is the best advertising we can have, and it's the best way to help us provide even better service in the years to come. Thanks once again!



for all of us at...
COUNTRY HOME PRODUCTS®

Safety Instructions

We want you to enjoy years of productive use from your $DR^{\mathbb{R}}$ TRIMMER/MOWERTM. We don't want you to get injured, so please take a few moments to read the following guidelines for safely operating your new machine.

Dress Appropriately

- Always wear protective goggles (provided with your DR[®] TRIMMER/MOWER[™]) while mowing, to protect your eyes from possible thrown objects.
- Wear shoes with non-slip treads when using your DR® TRIMMER/MOWER™. If you have safety shoes, we recommend wearing them. Do not use the machine while barefoot or wearing open sandals.
- Wear long pants while trimming, and avoid wearing loose clothing or jewelry which might get caught on the mower's moving parts.
- Use ear muffs or ear plugs to protect your valuable hearing.

Preparation

- Read these *Assembly & Operating Instructions* and the engine manufacturer's owner's manual before you use the DR[®] TRIMMER/MOWER[™]. Become familiar with the controls, engine and service recommendations to ensure the best performance from your machine.
- Inspect the area you'll be working in for hidden objects such as large rocks, logs, rope, wire, garden tools, etc., and remove these obstacles before mowing. Do not attempt to mow over obstacles as this could damage the machine and cause injury.

Operating the Machine Safely

- Only use the DR[®] TRIMMER/MOWER[™] for trimming and mowing grass, weeds, and other growth as specified in this manual.
- Use only manufacturer-recommended replacement parts and accessories.
- Never bend, cut, fit, weld, or alter the DR[®] TRIMMER/MOWER™ in any way. Modifications
 to your machine could cause personal injuries and property damage, and may void your
 warranty.
- ALWAYS shut off the engine and remove the spark plug wire prior to making any
 adjustments to the machine. If you have to stop to remove grass or debris from the underside
 of the deck, ALWAYS disconnect the spark plug wire first.
- The exhaust area on the engine becomes very hot. Allow the engine to cool before doing maintenance or making adjustments.
- When operating over uneven terrain and slopes, use EXTREME CAUTION and ensure solid and firm footing at all times.
- Use extra caution when mowing in wet, slippery conditions.
- As with any trimmer, the tips of the cutting cords on the DR[®] TRIMMER/MOWER[™] can throw sticks, small stones, gravel, and bits of debris over long distances at great velocity. The faster the cutting cords are spinning, the farther debris may be thrown. Do not travel over loose materials such as gravel or mulch with the trimmer head spinning. Doing so could cause personal injury or property damage from thrown objects.

- Turn off the engine whenever you leave the operating position. Never leave the engine running when refueling, changing cords or checking, cleaning or working on the machine.
- Never allow children or animals near the work area. Keep at least 50 feet clear of bystanders, and always turn the machine off when someone approaches to avoid causing injury from thrown objects.
- Never allow children or people unfamiliar with these instructions to use the DR[®]
 TRIMMER/MOWER™
- Be cautious when using your DR[®] TRIMMER/MOWER[™] around fencing, wires, ropes, and hoses. It is possible that these and other debris can become wound around the line plates of the machine, potentially damaging the bearings or injuring the operator.
- Use the machine only in daylight or good artificial light.
- Never operate the machine with a damaged shield or without the shield in place.
- Do not operate the machine when under the influence of alcohol or medication.
- Watch for traffic when moving near roadways.

Safety with Gasoline-Powered Machines

- Do not run the engine in an enclosed area or without proper ventilation.
- Store all fuel in containers specifically designed for this purpose. Plastic containers are more likely to prevent sediment and condensation problems.
- Refuel outdoors only, and do not smoke while refueling or operating the machine.
- If gas is spilled, do not attempt to start the engine. Move the machine away from the area of the spill and avoid creating any source of ignition until the gas vapors have dissipated. Wipe up any spilled fuel to prevent a fire hazard, and properly dispose of the waste.
- Allow the engine to cool completely before storing in any enclosure. Never store the machine near an open flame or spark with gas in the tank.
- Do not change the engine governor settings or modify the engine speed.
- Some state and local regulations require the use of a spark arrester on gasoline powered engines. Contact your local fire marshal or forest service for specific information pertaining to your area. If you are required to use a spark arrester, please contact one of our Customer Service Representatives for assistance in obtaining and installing one.

Warning to All California and Other Users

Under California and Washington State laws, and the laws of some other states, you are not permitted to operate an internal combustion engine using hydrocarbon fuels without an engine spark arrester. All DR® TRIMMER/MOWERS shipped to California and Washington state are provided with spark arresters. Failure of the owner/operator to maintain this equipment in compliance with state regulations is a misdemeanor under California law and may be in violation of other state and/or federal regulations. Contact your local fire marshal or forest service for specific information in your area.

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Setting Up Your Trimmer

Step 1: Connect the Battery Wires (Electric-Starting models only)

To prevent the battery from discharging during shipment, all electric-starting trimmers are shipped with at least one battery wire disconnected.

Connect the black wire by pushing the plastic connector onto the negative (-) terminal (Figure 1). See the red wire for comparison.

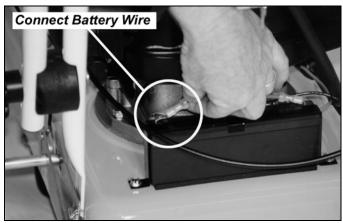


Figure 1

Step 2: Add Oil and Gas

Reminder: To avoid confusion, we recommend leaving the caps on the fuel and oil fills until you are ready to pour either gasoline or oil into the correct fill.

1. Use SAE30 High Detergent oil. Add approximately 15 ounces of oil and wait one minute for the oil to settle. Check the dipstick, then continue adding small amounts of oil and rechecking the dipstick until it reaches the full mark (Figure 2). Do not overfill.

Important! To get an accurate reading when checking the oil level the machine should be on a level surface, and the dipstick should be screwed down.

Please refer to your engine manufacturer's owner's manual for detailed oil information.

2. Fill the gas tank to within 1/4 inch of the top with fresh, unleaded gas. See your engine manufacturer's owner's manual for detailed fuel recommendations.

WARNING!

THIS MACHINE IS SHIPPED WITHOUT OIL!
TRACES OF OIL MAY BE IN THE
RESERVOIR FROM FACTORY TESTING, BUT
YOU MUST ADD OIL BEFORE STARTING
THE ENGINE. FILL THE RESERVOIR
SLOWLY, CHECKING THE DIPSTICK
FREQUENTLY TO AVOID OVERFILLING.



Figure 2

Controls & Features

Note: 3.5 HP Model Shown

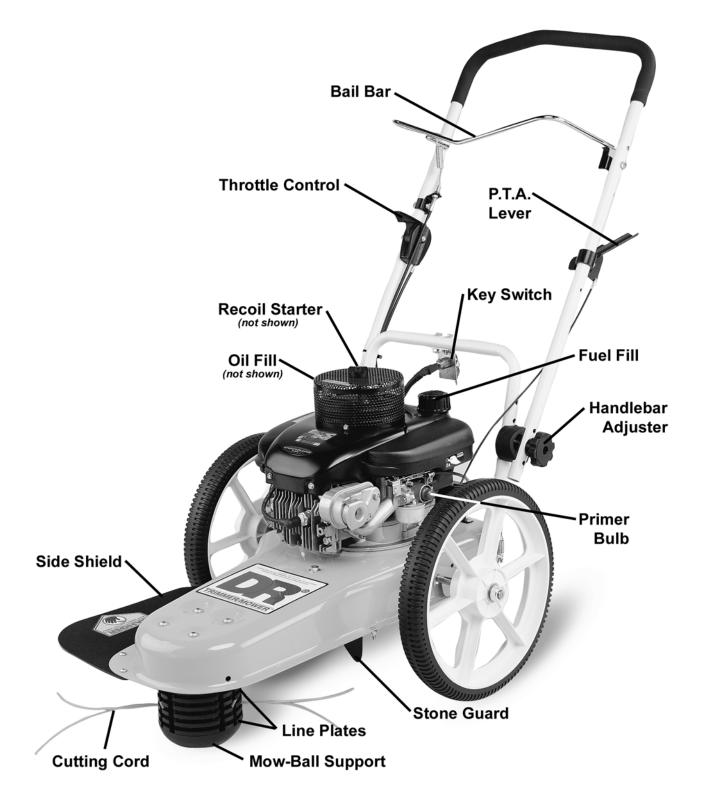


Figure 3

WARNING!

THIS MACHINE IS SHIPPED WITHOUT OIL! TRACES OF OIL MAY BE IN THE RESERVOIR FROM FACTORY TESTING, BUT YOU MUST ADD OIL BEFORE STARTING THE ENGINE. FILL THE RESERVOIR SLOWLY, CHECKING THE DIPSTICK FREQUENTLY TO AVOID OVERFILLING.

Electric-Starting

(Electric-Starting models only)

- 1. Push the throttle lever on the right side of the handlebar (*Figure 3*) all the way forward to the START position.
- 2. Prime the engine.

On the 5.0 HP model the primer bulb is located on the front of the engine. On the 3.5 HP model the primer bulb is located on the left side of the engine (*Figures 3 & 5*).

Push the primer bulb in for three seconds and completely release it, letting it pop back to its original position. Repeat three to four times.

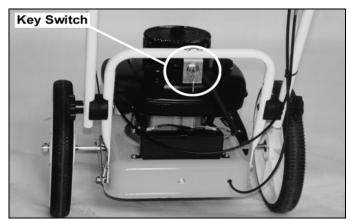


Figure 4

Note: Priming is usually unnecessary when restarting a warm engine. In cool weather priming may need to be repeated.

3. Turn the key (*Figure 4*) to the START position until the engine starts, then release. The key will snap back to the RUN position.

Manual-Starting

Can be used with both Manual- and Electric-Starting models.

- 1. Push the throttle lever on the right side of the handlebar (*Figure 3*) all the way forward to the START position.
- 2. Prime the engine.

On the 5.0 HP model the primer bulb is located on the front of the engine.

On the 3.5 HP model the primer bulb is located on the left side of the engine (Figures 3 & 5).

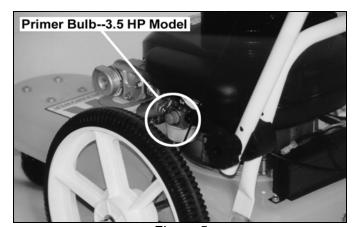


Figure 5

Push the primer bulb in for three seconds and completely release it, letting it pop back to its original position. Repeat three to four times.

Note: Priming is usually unnecessary when restarting a warm engine. In cool weather priming may need to be repeated

3. Grasp the recoil starter handle (*Figure 3*), and slowly pull until resistance is felt. Let the cord retract a little bit, then pull the cord rapidly to start the engine. One or two pulls usually starts the DR[®] TRIMMER/MOWERTM, but it may be necessary to repeat the priming.

Stopping the Engine

Move the throttle control lever (Figure 3) back to the STOP position.

Note that on Electric-Starting models the key does not stop the engine. You must throttle down.

The key has a pressure lock that prevents it from vibrating loose during operation. If you wish to remove the key, push it in and then quickly and firmly pull it out. If the key becomes difficult to remove, spray FLUID FILM® or a comparable lubricant into the keyhole.

Engaging the Trimmer Head

Bring the bail bar (*Figure 3*) toward you and grip it together with the handlebar. Keep holding the bail bar to the handlebar. The cutting cords will now be rotating and will continue to rotate until you release the bail bar.

Stopping the Cords Spinning

Release the bail bar from the handlebar. The trimmer head will stop spinning while the engine continues to run.

If the trimmer head keeps spinning after the bail bar is released you may need to adjust the trimmer control cable. See page 20.

Using the Parallel Trimming Action (PTA[™]) Feature

The DR[®] TRIMMER/MOWER'S PTA[™] Feature allows the machine to move in a straight line while the trimmer head is both pivoted and tilted to the left for better access to fence lines and other obstacles (*Figure 6*). This feature allows you to trim in difficult areas without having to pull the machine back and forth.

The cutting cords extend beyond the wheel base when in the PTA^{TM} mode, which allows you to easily cut under obstacles. The trimmer head and the cutting cords also tilt slightly when in the PTA^{TM} mode so you can edge and trim along gardens, paths and driveways.

IMPORTANT! When using PTA[™] mode, you should install the cutting cords in one of the <u>bottom four line plates only</u>. Using the upper line plates may cause the cords to hit the wheel.



Figure 6

When using your PTA[™] along garden edges, fences, and buildings, we recommend making your first pass with the DR[®] TRIMMER/MOWER[™] in the regular mowing position, staying 4 to 8 inches from the obstacle. Then, return for another pass with the machine in PTA[™] mode.

Note: Use caution when edging along gravel paths and driveways. Flying debris can cause serious damage.

To Engage Parallel Trimming Action

- 1. Before engaging PTA[™], be sure the cutting cords are installed in one of the bottom four line plates.
- 2. Pull the PTA[™] lever (Figure 7) against the handlebar and hold it there. This unlocks the axle (Figure 8).
- 3. Push down on the handlebar to tip the nose of the machine a few inches off the ground. (Balancing the weight of the machine on the wheels will make it is easier to pivot the front of the trimmer to the left.)
- 4. While continuing to hold the PTA[™] lever down, grip the sides of the handlebar pulling up with the right hand and pushing down with the left, swinging the front of the trimmer to the left.
- 5. Release the PTA^{\top} lever. This will lock the axle in PTA^{\top} mode (*Figure 8*).

If engaging the PTA[™] Feature action is difficult, please see the section "To Adjust the PTA[™] Feature" on page 21.

Please Note: If you change the position of the handlebar, you will need to adjust the PTA[™] lever up or down to maintain proper PTA[™] function. Please see page 21.

To Return to Flat and Forward Mode

- 1. Pull the PTA[™] lever (Figure 7) against the handlebar and hold it there.
- 2. Push down on the handlebar to tip the nose of the machine a few inches off the ground.
- 3. While continuing to hold the PTA[™] lever down, grip the sides of the handlebar pulling up with the left hand and pushing down with the right, swinging the front of the trimmer to the right, stopping at center.
- 4. Release the PTA[™] lever. This will lock the axle in flat and forward mode.



Figure 7

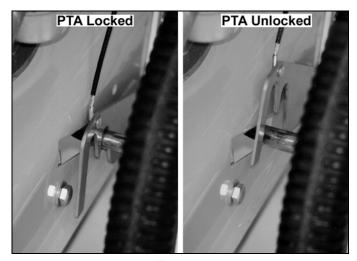


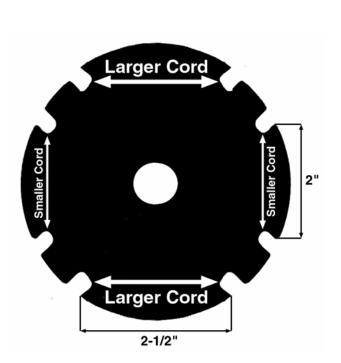
Figure 8

Cutting Cords

MARNING! Always turn the engine off when installing or changing cutting cords.

Figures 9 and 10 illustrate how the cords are installed on the line plates. It may look complicated, but once you've done it a couple of times it's really very easy. There are two sets of installation points on each line plate, 180 degrees apart. One set of holes is for larger cord (155 mil) and is marked with large arrows. The other set of holes accommodates smaller cord (130 mil) and is marked with small arrows. Always install two cords opposite each other for the best performance.

Caution! Running the trimmer with only one cord installed, or cords installed at other than 180 degrees can cause excessive vibration and may damage the machine.



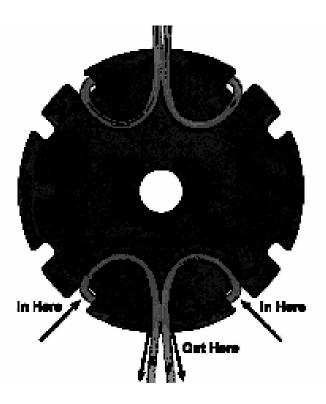


Figure 9

Figure 10

Cord Installation

The standard cord installation method is shown in Figures 11-13. This is how your trimmer is shipped from the factory.

1. Insert the ends of the cords into the openings in the line plate, as shown in Figures 10 and 11. There are different sized arrows at the insertion points to indicate what size cords fit the holes.

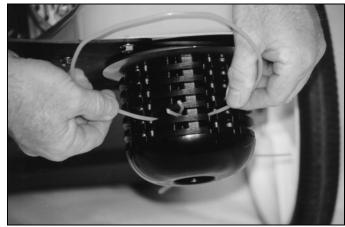


Figure 11

2. Push the cord through until it comes out the center hole in the line plate as shown in Figure 12. Adjust the cords so the tips are even.



Figure 12

3. Pull the cords through the loop and push the loop up into the line plate groove <u>above</u> them, as shown in Figure 13. Then pull the cords tight.

Note: Before trimming, engage the cutting head with the engine running and spin new cords for a few seconds so they pull tight and set.



Figure 13

Cord Tips

Two thicknesses of cutting cord ship with your DR[®] TRIMMER/MOWER[™]: Heavy-Duty (130 mil) and Extra Heavy-Duty (155 mil). Because conditions and vegetation vary so much, experiment with the different cord weights in order to discover what works best for your particular mowing and trimming situations. Here are a few things to keep in mind:

- If you buy cutting cord in rolls, cut it in 23" lengths.
- The best trimming performance will usually come from using the <u>smallest</u> diameter cord (which is still capable of cutting the material at hand), combined with the fastest engine speed. When more power is needed for thicker growth such as berry canes, brambles, thistles or ragweed, you may want to use the Extra Heavy-Duty (155 mil) cord in combination with the highest engine speed.
- Be careful not to move too fast through thick growth. If there are woody weeds in the material being cut, the cutting cords may wrap around the stalks they cannot cut, and pull away from the trimmer head. Ease the ends of the cord into heavy growth.
 - **Reminder:** The ends of the cutting cords do the cutting.
- IMPORTANT! When using the PTA[™] feature you should install the cutting cords in one of the bottom four line plates only. Installing cutting cords in the upper line plates may cause the cord to hit the wheel when in PTA[™] mode.
- To increase the cutting swath, install each cord slightly offset, with one end of the cord about an inch longer than the other. Be careful not to offset the cords by more than an inch. Doing so may cause the cords to hit the wheels.
- Please note that **installing more than two cords at a time does not improve trimming performance**—in fact, it can lessen it. Adding additional cords creates drag on the trimmer head, robs the engine of power and may cause wrapping. Installing two cords, 180 degrees apart, is the best method for optimal trimming performance.
- When replacing cords, do it one at a time and use the old cord to mark the position for the new cord to be installed.
- If the cord breaks off flush at the line plate, use the new cord to push the old cord out.
- Storing the cord in a plastic bag with a damp sponge or cloth will help keep it pliable. You can also soak your cutting cord in a bucket of room temperature water for a few days before use to make it more pliable.

Adjusting the Cutting Height

Adjusting the cutting height is easy. Simply install the cutting cords in the line plate that gives you the desired height.

Cutting heights range, in 1/2" increments, from 1-1/2" when using the bottom line plate, to approximately 4" when using the top line plate (*Figure 14*).

IMPORTANT! When using PTA^{TM} mode, you should install the cutting cords in one of the <u>bottom four line plates only</u>. Using the upper line plates may cause the cords to hit the wheel.

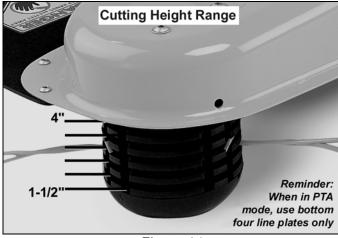


Figure 14

Mow-Ball[™] Support

Allow the front end of the machine to rest lightly on the Mow-Ball[™] Support as you are trimming. The Mow-Ball[™] Support should <u>glide</u> on the ground as you maneuver the machine

In order to achieve the best and smoothest cut, do not lift up on the handlebar while operating your DR® TRIMMER/
MOWER™. Lifting the handlebar causes weight to be forced down on the Mow-Ball™ Support. This uses more energy, slows down the cutting, and produces a less than satisfactory cut. Ideally, the Mow-Ball™ Support should lightly rest on the ground while the wheels balance most of the weight of the machine (*Figure 15*).



Figure 15

Adjusting the Handlebar

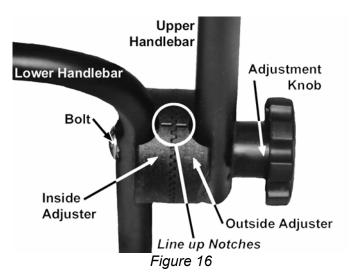
The correct handlebar height depends on many factors for each individual. However, it is crucial to find a height that allows the Mow-Ball[™] Support to glide along the ground and remain balanced without the operator having to push down or pull up on the handlebar.

At the proper height, your hands should rest at a comfortable level and the front end of the trimmer should roll easily on the Mow-BallTM Support as shown in Figure 15.

You may find you like different handlebar heights for different mowing conditions.

There are two ways to adjust the height of the handlebar:

- 1. Loosen both of the adjustment knobs and move the handlebar up or down as needed. It's important that the adjustment is the same on both sides. Use the notches on the adjusters (Figure 16) to measure how many teeth you've moved away from the center. When you've found a comfortable height, tighten the adjustment knobs securely.
- 2. For additional height adjustment options, there are two holes in the upper and lower handlebars where the adjustment knobs are located. Most people start with the handlebars set in



the lower holes of both the upper and lower handlebar. You can adjust the height up or down by removing the adjustment knob assembly and repositioning the handlebars to a higher or lower hole. Be sure the notches in the two adjusters line up when you reassemble them (Figure 16).

Please Note: When you change the position of the handlebar, you will need to adjust the PTA[™] lever up or down to maintain proper PTA function. Please see page 21.

Obstacles

Many Owners like to mow easy, open areas with their regular riding or walkbehind mower, then they finish trimming all the odd and hard-to-reach spots with the DR[®] TRIMMER/MOWER[™] (Figure 17).

The DR[®] TRIMMER/MOWER[™] discharges cut material to the right. Always try to cut and trim with the uncut tall grass or weeds on the left.

Suggestion: For the neatest appearance, do your trimming first, discharging clippings away from borders and shrubs, then do your mowing.



Figure 17

- Always check your work area before trimming and remove any debris that might tangle or damage the machine.
- If you do run into debris and the trimmer gets tangled, turn off the engine and disconnect the spark plug wire before attempting to untangle the machine.

• DO NOT run the machine over gravel driveways or over loose stones or mulch with the trimmer head spinning. The engine's power can easily throw stones, sticks and other debris at great velocity, which could cause personal injury or property damage.

Heavy Growth

Take your time in heavy growth. Be sure to keep the uncut material to your left, maintaining a clear discharge area to your right (Figure 18). If the machine can't do it all in one pass, overlap half of the cutting swath. And if the grass is very thick and heavy, try raising the trimmer head off the ground a few inches by pushing down on the handlebar. Cut the material at this height, and then make a second pass with the Mow-Ball™ Support on the ground.



Figure 18

EASE the DR[®] TRIMMER/MOWER™

into denser growth. If the material is too tough or woody and can't be cut, the cutting cords will wrap around it, wear down or even break off. Sometimes, growth is so heavy that it can't be mowed in rows. A back and forth "vacuum cleaner" motion often works better when tackling really tough material.

Wet Conditions

Because there is no housing to restrict the flow of cut material, you can also use your $DR^{\mathbb{B}}$ TRIMMER/MOWERTM to mow wet or heavy growth. The $DR^{\mathbb{B}}$ can be used in damp conditions—after a rain or in the early morning dew—without clogging or stalling. You can also mow wet areas such as ditches and around ponds (Figure 19).

Very Dry Conditions

When trimming and mowing in very dry conditions, be extra cautious of cut grass, chaff, weeds, seeds, etc., accumulating on the engine, especially around the recoilstarter housing and engine cooling fins. Frequently remove debris from the recoil guard on top of the engine and the cooling fins on the front of the engine to prevent overheating and engine damage. Please see the engine manufacturer's owner's manual for more detailed information on cleaning the air intake and cooling system on the engine.



Figure 19

Slopes

You can trim and mow on slopes up to 20 degrees. Continuous use on slopes steeper than 20 degrees may deprive the engine of adequate lubrication, and damage components.

Windrows

The DR® TRIMMER/MOWER'S cutting cords cut even tall grass in just one pass, so you can collect clippings and leaves for mulch without raking. The machine ejects cut material to its right, so you can use it like a lawn broom to make windrows for easy clean-up.

Firebreaks

Use the DR® as a labor-saving tool to cut material when creating firebreaks.

End-of-Season Garden Clean-Up

The DR^{\otimes} is perfect for cutting down dead perennials, annuals and wildflowers, saving you hours of hand pruning and deadheading. You can also re-cut downed material a second time to create mulch for garden beds.

Maintenance

*** For engine maintenance, please refer to the engine manufacturer's owner's manual. ***

IMPORTANT!: Because of the conditions the DR[®] TRIMMER/MOWER[™] is used in, air filters and oil should be changed more frequently than is recommended in your engine manufacturer's owner's manual. Please follow these recommendations:

<u>Paper Air Cartridge</u>: Should be replaced every 25 hours of operation. Replace more frequently if operating in extremely dry and dusty conditions.

Oil: Should be drained and replaced after the first 5 hours, and every subsequent 25 hours of operation.

Regular Maintenance

Regular maintenance is the way to ensure the best performance and long life of your machine. Below is a list of recommended maintenance procedures. Follow the instructions in this manual and your engine manufacturer's owner's manual.

WARNING: Always allow the engine to cool completely and remove the spark plug wire before performing any maintenance procedure.

- 1. Clean any debris from the top and bottom of the machine, cylinder head fins, blower housing, finger guard, debris guard, filter and muffler areas with a brush or rag.
- 2. Replace the paper air filter and clean the foam filter (Tecumseh engine only) every 25 hours of operation. More frequently if operating in extremely dry and dusty conditions.
- 3. Replace the oil after the first 5 hours and every subsequent 25 hours of operation.
- 4. Clean the spark plug and replace it if needed.
- 5. Check the Mow-Ball[™] Support assembly and clean out any debris.
- 6. Lubricate the engine throttle cable, trimmer control cable, and idler pulley with FLUID FILM® or a similar lubricant.
- 7. Check the Mow-Ball $^{\text{TM}}$ Support and line plates for wear.
- 8. Replace broken or frayed cutting cords.
- 9. Inspect the belt for fraying or stretching. Replace it if necessary.
- 10. Check the bolts and nuts on the bearing housing assembly. If they are loose, tighten them. Check all the bolts and nuts occasionally throughout the season to be sure they're secure.

Battery Care

(Electric-Starting Models Only)

Proper care can extend the life of a battery. Follow these recommendations to ensure your battery's best performance and long life:

- Do not continue to crank the engine with a low battery.
- Try to keep the battery at full charge to maximize its life. If the machine is not used, the battery should be charged every three months. See below for charging information.
- Store an unused battery in a dry area that does not freeze.
- Do not charge an already charged battery. In theory, our battery cannot be overcharged with a trickle charger; however, when a battery is fully charged and the charger is still on, it generates heat that could be harmful to the battery.

Automobile batteries last for years because they are recharged every time you drive your car—usually on a daily basis. An Electric-Starting DR® TRIMMER/MOWER™ will recharge its battery while you operate it continuously for about 45 minutes or more. However, if you run your DR® infrequently, less than 45 minutes with each use or let it sit during the off-season without recharging, the battery life will be dramatically shortened. If the battery loses its charge, use the DR® Battery Charger (available from Country Home Products®) or other trickle charger, to recharge it. The charger should have an output of 12 Volts at 1-2 amps.

- At 1 amp the battery may need to be charged for as long as 48 hours.
- At 2 amps the battery may need to be charged for as long as 24 hours.

Note: Using the recoil starter and then running the engine will not recharge a dead or significantly discharged battery.

To Connect a Battery Charger

- 1. Detach the two battery wires going to the wiring harness on your DR[®] TRIMMER/MOWER[™].
- 2. Next, attach the black (-) battery charger wire to the black (-) wire. Then attach the red (+) battery charger wire to the red (+) wire.
- 3. Plug the battery charger into an outlet.
- 4. When the battery is charged, disconnect the charger from the battery <u>before</u> unplugging it from the outlet.

Battery Troubleshooting

Symptoms of a battery needing a charge:

- The engine won't start with the key but will start with the recoil starter.
- A whirring noise coming from the starter.
- A grinding noise coming from the starter.
- No noise at all.

What to do:

- Check that the battery is fully charged. A fully charged battery should read about 12 volts. Disconnect the battery from the wiring harness and then put a volt tester on the battery. If you need to charge the battery, follow the directions above.
- Check all cable connections.
- The wiring harness consists of a set of wires that lead from the ignition switch to the battery. Disconnect and reconnect the battery wires (black to black and red to red) and check the wire connections at the key switch.
- Call one of our Technical Service Representatives TOLL-FREE 1(800)DR-OWNER(376-9637) for assistance.

To Remove the Mow-Ball[™] Support Assembly

Tool Needed:

• #3 Phillips head screwdriver or one with at least a 6" shank

MARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

- 1. Insert the screwdriver into the hole in the frame, then rotate the Mow-Ball[™] Support until the screwdriver fits into a second hole in the shaft, locking it into place (Figure 20).
- 2. Turn the Mow-Ball[™] Support assembly as you would a light bulb (counterclockwise) until it unscrews completely from the bearing housing (Figure 21).

Note: If the Mow-Ball[™] Support assembly continues to turn, but does not come off, check to be sure the screwdriver is locked into the shaft.

To reinstall the Mow-Ball[™] Support assembly, reverse the above instructions.

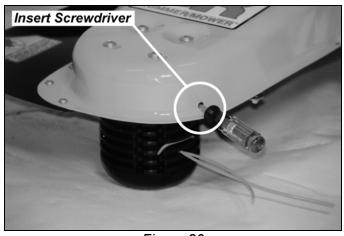


Figure 20



Figure 21

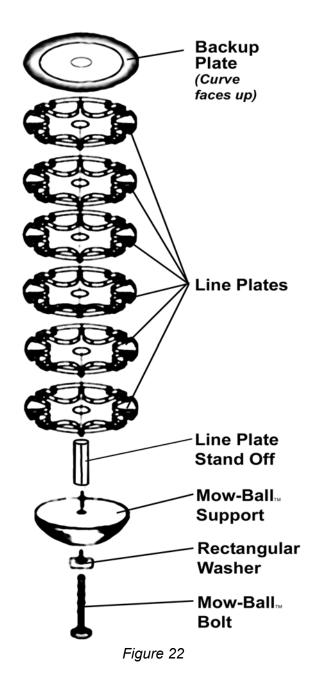
To Reassemble the Mow-Ball[™] Support Assembly

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

Caution: Improper installation may cause damage to the bearings. Please follow these directions carefully.

Reassemble the components in the order shown in Figure 22.

- The backup plate should be positioned with the curve facing up.
- The line plates stack on top of one another with the bumps on the bottom locking into the grooves on the top of each plate.
- The head of the Mow-Ball[™] bolt should sit in the groove of the rectangular washer at the bottom of the Mow-Ball[™] Support. Hold the bolt head in place with one finger and turn the Mow-Ball[™] Support assembly clockwise until it's finger tight.



To Remove the Stone Guard Flap

Tools Needed: • 3/8" wrench or socket

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

- 1. Remove the nuts on either side of the stone guard and drop it from the frame.
- 2. Keep the nuts and bolts together with the stone guard.

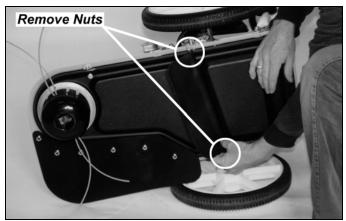


Figure 23

To Remove the Bottom Shield

Tools Needed: • 7/16" wrench or socket

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

Note: You do not need to remove the side shield or any of its hardware when removing the bottom shield.

- Remove the Mow-Ball[™] Support Assembly. See page 15.
- 2. Remove the two mounting bolts and washers at the rear of the frame.
- 3. Remove the third mounting bolt and washer from the front of the frame, on the outer edge, near the bearing housing.

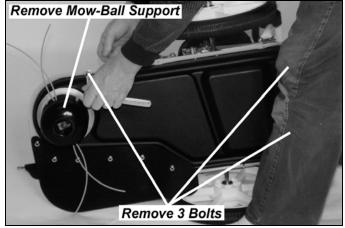


Figure 24

4. Slide the bottom shield out from under the lip of the side shield and remove.

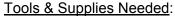
When reinstalling the bottom shield, <u>be sure you tuck it under the lip of the side shield first</u>, then finish positioning it and mount the hardware.

To Remove and Replace the Belt

Figures 25 & 26 show the belt and pulley system with the belt disengaged and engaged.

Please Note: We turned the Trimmer on its side to take these pictures. To do so, we had to remove the gas and oil from the machine. You can access the underside of the Trimmer without having to drain the gas and oil by tilting it back on its handlebar.

Important! Use only DR[®] Belts for replacement parts. Do not use hardware store variety belts.



- 9/16" wrench or socket
- 3/16" Allen wrench
- Belt, Part #145721

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

- 1. Remove the Mow-Ball[™] Support assembly. See page 15.
- 2. Remove the stone guard. See page 17.
- 3. Remove the bottom shield. See page 17.

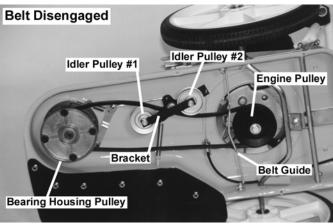


Figure 25

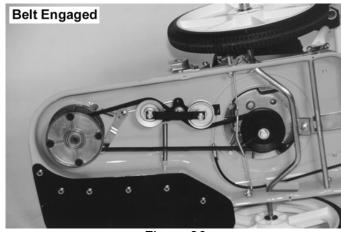


Figure 26

4. Remove the four Allen set screws on the underside of the lower bearing housing plate (*Figure 27*). The lower bearing should come off with the plate (*Figure 28*).



Figure 27



Figure 28

- 5. Loosen idler pulleys #1 and #2 (Figure 29). Remove the bracket from idler pulley #1 in order to remove the belt.
- 6. Remove the belt.
- 7. Install the new belt. Make sure the belt is on the INSIDE of idler pulley #2, the OUTSIDE of idler pulley #1 and correctly fitted around the engine pulley. Please refer to Figure 25 for proper belt placement.
- 8. Replace the bracket on idler pulley #1 and tighten both pulleys (*Figure 29*).
- 9. Replace the lower bearing housing plate and tighten the four set screws (*Figure 27*). Do not over tighten the set screws
- 10. Reinstall the bottom shield. See page 17.
- 11. Reinstall the stone guard flap. See page 17.
- 12. Reinstall the Mow-Ball[™] Support assembly. See page 15.

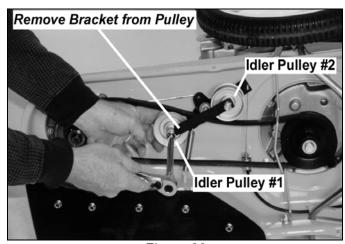


Figure 29

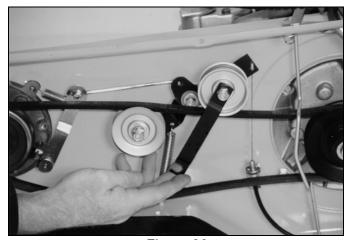


Figure 30

To Adjust the Belt Tension through the Trimmer Control Cable

If the trimmer head stops spinning when the bail bar is engaged and the machine is operating under a heavy load, the belt may be too loose and the trimmer control cable may need to be adjusted to put more tension on it. The adjuster is located on the right handlebar, just above the throttle control lever.

Before making any adjustments to the trimmer control cable, check that the belt is mounted on the correct side of the idler pulleys (see page 18, Figure 25), and is not frayed, worn or stretched.

Tools Needed:

• (2) 1/2" open-end or adjustable wrenches

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

To increase tension on the belt:

- 1. Loosen the upper control cable adjustment nut, leaving about 1/8" of space between the nut and bracket (*Figure 31*).
- 2. Gently grip the metal end of the black cable with pliers, making sure you DO NOT crimp it. At the same time, tighten the lower nut until it is flush and snug against the bracket (Figure 31).

If the trimmer head keeps spinning after the bail bar is released the belt may be too tight.

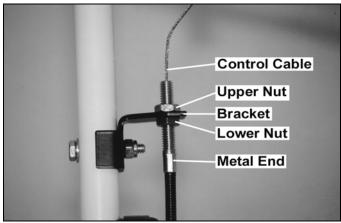


Figure 31

To decrease tension on the belt:

Repeat the above steps, except this time loosen the lower nut, then tighten the upper nut.

To Adjust the PTA[™] Lever

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

It should be easy to engage the PTA^{TM} Feature. If you've moved the handlebar up or down the PTA^{TM} lever may need to be adjusted.

- 1. Loosen the knob on the PTA[™] lever (Figure 32).
- 2. Move the assembly up the handlebar to tighten the cable, or down the handlebar to loosen it. There should be just a little slack in the cable when the PTA is properly adjusted.

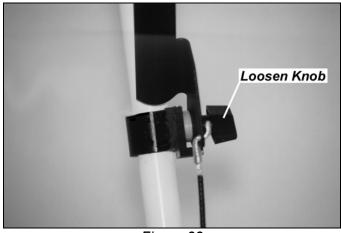


Figure 32

To Remove the Side Shield

Tools Needed: • 7/16" wrench or socket

• 5/32" Allen wrench

MARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

You should never operate the Trimmer without the side shield in place. If the side shield becomes damaged, replace it immediately.

- 1. Remove the six mounting bolts and discard the old shield.
- 2. Mount the new shield, insert the bolts and tighten.

To Remove the Wheels

Tool Needed: • adjustable wrench

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

- 1. Loosen the set screw and remove the retaining ring (*Figure 33*).
- 2. Slide the wheel off the axle.

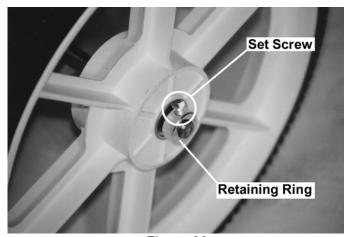


Figure 33

Troubleshooting

WARNING! Before performing any maintenance procedure, the engine should be stopped and the spark plug wire disconnected.

_		
Engine won't start manually	\Rightarrow	Are you priming? Push the primer bulb 3 to 5 times, releasing completely each time.
(Please refer to the engine manufacturer's owner's manual for	\Rightarrow	Are you using fresh, clean gas? If it's old, change it. Use a fuel stabilizer if you keep gas longer than two months or so.
	\Rightarrow	Does the engine have the right amount of clean oil? If it's dirty, change it following the procedure in the engine manufacturer's owner's manual.
engine-specific procedures.)	\Rightarrow	Is the spark plug clean? If it's fouled or cracked, change it. If it's oily, leave it out, hold a rag over the plug hole and pull the recoil cord several times to blow out any oil in the cylinder, then wipe off the plug and reinsert it.
	\Rightarrow	Is the air filter clean? If it's dirty, change it following the procedure in the engine manufacturer's owner's manual.
	\Rightarrow	Is the throttle cable attached to the engine and moving freely?
	\Rightarrow	If your engine still won't start, call 1(800)DR-OWNER(376-9637) for advice and assistance.
Engine won't start	\Rightarrow	Have you checked all the items under manual start above? If not, do so.
using electric-start (Please refer to the engine manufacturer's	\Rightarrow	Is your battery charged? Check it yourself or at a gas station. If it's low, charge it with a 12-volt, 1 to 2 amp trickle charger. If you don't use your DR® for 45 minutes or so at a time, the battery may need to be periodically charged. See the Battery Care section on page 14.
owner's manual for engine-specific procedures.)	\Rightarrow	If your battery is charged and your DR [®] still won't start, call 1(800)DR-OWNER(376-9637) for advice and assistance.
Engine lacks power or is not running	\Rightarrow	Are you using fresh, clean gas? If it's old, change it. Use a fuel stabilizer if you keep gas longer than two weeks or so.
smoothly	\Rightarrow	Does your engine have the right amount of clean oil? If it's dirty, change it following the procedure in the engine manufacturer's owner's manual.
(Please refer to the engine manufacturer's owner's manual for engine-specific	\Rightarrow	Is the spark plug clean? If it's fouled or cracked, change it. If it's oily, leave it out, hold a rag over the plug hole and pull your recoil cord several times to blow out any oil in the cylinder, then wipe off the plug and reinsert it.
procedures.)	\Rightarrow	Is the air filter clean? If it's dirty, change it following the procedure in the engine manufacturer's owner's manual.
	\Rightarrow	Is the throttle cable attached to the engine and moving freely?
	\Rightarrow	Are the blower housing, throttle linkage and cooling fins free of debris? Clean them following the instructions in the engine manufacturer's owner's manual.
	\Rightarrow	If your engine still lacks power, call 1(800)DR-OWNER(376-9637) for advice and assistance.
Trimmer head won't spin or lacks power	\Rightarrow	Is your v-belt properly aligned? Check it against the diagram in the Belt section on page 18.
	\Rightarrow	Is your v-belt worn or frayed? If so, replace it.
	\Rightarrow	If the head still will not spin, follow the procedure for "To Adjust the Belt Tension through the Trimmer Control Cable" on page 20.
	\Rightarrow	If none of the above helps, call 1(800)DR-OWNER(376-9637) for advice and assistance.

T		
Trimmer head keeps spinning or spins when	\Rightarrow	Is your v-belt properly aligned? Check it against the figures in the Belt section on page 18.
bail bar is released	\Rightarrow	If the head keeps spinning when you release the bail bar, see "To Adjust the Belt Tension through the Trimmer Control Cable" on page 20.
	\Rightarrow	If none of the above works, call 1(800)DR-OWNER(376-9637) for advice and assistance.
Cutting cords are breaking		Are your cords too dry? Store cords in a plastic bag with a damp sponge or cloth to make them less prone to breaking. Or, soak them in a bucket of water for a few days.
	\Rightarrow	Try a lighter cord.
	\Rightarrow	Are you trying to do too much too fast? Ease into material to be cut; the cord tips do the work. Take small bites of tall or tough vegetation. Cut half a swath at a time, keeping the cut area to the discharge or right side of the DR [®] . Go over tall material twice, the first time with the head tilted up and back, the second time with the Mow-Ball TM Support on the ground.
	\Rightarrow	Are you hitting your cords against a stone or a chain-link fence? The cords just won't last as long as in the open. Work on controlling the cutting pattern; with practice you'll learn to cut closer to obstacles without hitting them.
Cutting cords are pulling out	\Rightarrow	Are you moving too fast into tough, woody growth? If so, cords may wrap on stalks and pull out. Check the operating tips in the section on breaking cords above.
	\Rightarrow	Are you trying to cut material too heavy for the cord? The DR [®] is designed to cut green material up to about the thickness of a pencil. For very heavy material, you may need the BEAVER BLADE [®] attachment.
	\Rightarrow	Are you installing the smaller (130 mil) cord in the larger (155 mil) cord slots?
Parallel Trimming Action is difficult	\Rightarrow	Have you adjusted the handlebar up or down? If so, you may need to adjust the PTA Lever. See page 21.
Mow-Ball™ Support is wearing too quickly	\Rightarrow	Are you pushing the trimmer head down into the ground? The DR [®] TRIMMER/MOWER™ works best with a light touch, with the Mow-Ball™ Support resting easily on the ground.
	\Rightarrow	Are you hitting the Mow-Ball™ Support against rocks, concrete driveways or other hard obstacles? Try approaching them slowly, and from different directions, to avoid unnecessary wear.
	\Rightarrow	Are you trimming in sand or other abrasive soils? The aluminum Mow-Ball™ Support may be more appropriate for your working conditions. Call 1(800)DR-OWNER(376-9637) for advice and assistance.

Parts List

Please refer to the schematic drawings on pages 26-27.

Ref#	Part#	Description	Ref# Part#		Description
01	143741	Axle Assembly	25	143511	Brake Arm Assembly
02	143541	Backup Plate	26	143521	Brake Connecting Rod
03	143651	Bail Bar	27	112141	Cable Tie, Nylon, Black, 6"
04	143671	Bail Bar Stop	28	143981	Cable, Clutch
05	143851	Battery Bracket	29	144001	Cable, PTA
06	143861	Battery Pad	30	143971	Cable, Throttle, Reverse Throw
07	143871	Battery, 12 V, 2.9 Ah, Rechargeable	31	110871	Clevis Pin, 1/4" x 5/8", Clutch Return Spring Anchor
80	143501	Bearing Plate, Lower	32	144731	Clip, Cable, Double, 7/8", Upper
09	143491	Bearing Plate, Upper			Handlebar, Right
10	143921	Bearing, Cutter Drive	33	143801	Clip, Mounting, Inner Lower
11	143591	Belt Guide, Clutch Arm	24	140504	Shield
12	143821	Belt Guide, Engine Pulley	34	143581	Clutch Arm
13	144511	Bolt, Carriage, 10-24 x 5/8", Gr	35	143601	Clutch Arm Standoff
		2, YZ, Debris Guard Rod, Left	36	143831	Clutch Cable Bracket, Deck
14	144541	Bolt, Carriage, 5/16" - 18 x 3", Gr	37	143681	Clutch Cable Bracket, Handlebar
15	114691	2, YZ, Right Handlebar Adjuster Bolt, HHCS, 1/4" - 20 x 1/2", Gr	38	119551	Collar, Wheel Retaining, 1/2", I.D.
		2 ZP, Bail Bar Stop	39	143781	Debris Guard
16	114681	Bolt, HHCS, 1/4" - 20 x 1-1/4",	40	143791	Debris Guard Rod
		Gr 2 ZP, Switch Bracket	41	100771	E-Clip, Clutch Cable, Deck
17	111481	Bolt, HHCS, 1/4" - 20 x 1-3/4" Gr			Clutch Cable Bracket
40	440004	2 ZP, Throttle Control	42		Engine
18	119831	Bolt, HHCS, 1/4" - 20 x 3/4", Gr 2 ZP, Inner Lower Shield	43	144111	Washer, Belleville, .406" ID x 1" OD x .062 THK", Engine Pulley
19	144691	Bolt, HHCS, 3/8" - 16 x 4-3/4",	44	143471	Frame, Trimmer - Steel
20	444554	Line Plate Stack, 6 or 7	45	143721	Handlebar Adjuster, Inside"
20	111551	Bolt, HHCS, 3/8" - 24 x 3/4", Gr 2 ZP, Engine Pulley	46	143731	Handlebar Adjuster, Outside
21	127701	Bolt, HHCS, 5/16" - 18 x 1-1/2",	47	143701	Handlebar, Lower, White
21	127701	Gr 5, Clutch Assembly to Frame	48	143711	Handlebar, Upper, White
22	111581	Bolt, HHCS, 5/16" - 18 x 1", Gr 2	49	113081	Ignition Switch E/S
		ZP	50	143661	Knob, Handlebar, Flush Nut
23	120101	Bolt, HHCS, Slotted, 10 - 24 x	51	143901	Knob, PTA Handlebar Clamp
		5/8", Gr 2, Brake Arm Pivot	52	143551	Line Plate Stand Off
24	144701	Bolt, HHCS, Serrated Flange-	53	143571	Line Spacer Plate
		Head, 5/16" - 18 x 3/4", Gr 5 YZ, Bearing Housing to Frame	54	144101	Mow Ball, Nylon

Ref	# Part#	Description	Ref	# Part#	Description
55	110731	Nut, Nylon Locking, 1/4"	73	120291	Screw, Thread Forming, 1/4" -
56	118731	Nut, Nylon Locking, 10 - 24"			20 x 3/4", Gr 2 ZP, Battery
57	110751	Nut, Nylon Locking, 3/8"	7.4	4.4004.4	Bracket
58	110761	Nut, Nylon Locking, 5/16"	74 	143811	Shield, Inner, Lower, Molded
59	143761	Pivot Support Assembly	75	143771	Shield, Outer, Lower
60	143881	PTA Lever	76	143931	Spring, Compression, Handlebar Adjuster
61	143891	PTA Lever Handlebar Clamp	77	143991	Spring, Extension, Brake Return
62	143621	PTA Locking Arm	78	143941	Spring, Extension, Clutch Arm
63	143611	PTA Spring Support	. •		Return
64	113071	Pulley, Idler #1, 2.250 Diameter	79	144011	Spring, Extension, PTA
65	144091	Pulley, Idler #2, 2-5/8", OD	80	143841	Stud, Pivot
66	119191	Pulley/Hub Assembly, Engine	81	121191	Switch Bracket
67	143531	Pulley/Shaft Assembly, Cutter Drive	82	145721	V-Belt, FHP "A", 1/2" x 45"
68	121681	Rectangular Washer, Nylon	83	112381	Washer, Flat, 1/4", ZP
00	121001	Mow-Ball	84	112371	Washer, Flat, #10, ZP
69	144711	Screw, Button-head, 1/4" – 20 x 3/4" Gr 2 ZP	85	121521	Washer, Nylatron, 3/4" x 3/8" x .020 Thick
70	144521	Screw, Flat Head, Allen Socket,	86	143751	Washer, Wear, Clutch Arm
		5/16" - 18 x 2-1/2", Bearing	07	4.40004	Mount, Nylon
		Housing	87	143961	Wheel, 14", Calcium Filled, Polypropylene, 2.45 Hub Length
71	145221	Screw, HHCS, Thread-forming,	88	143911	Wire Harness without positive
		Serrated Flange-Head, 3/8" - 16 x 1-1/2", Gr 5, Engine Mount	00	140011	Red Wire, Key Switch to Engine
72	120161	Screw, Set 1/4" - 20 x 3/8", SQ			Harness
' -	120101	Head, Wheel Retaining Collar	88	144741	Wire, Battery, Positive only
		•	88	146041	Wire Harness Assembly
					Complete

Schematic Drawings

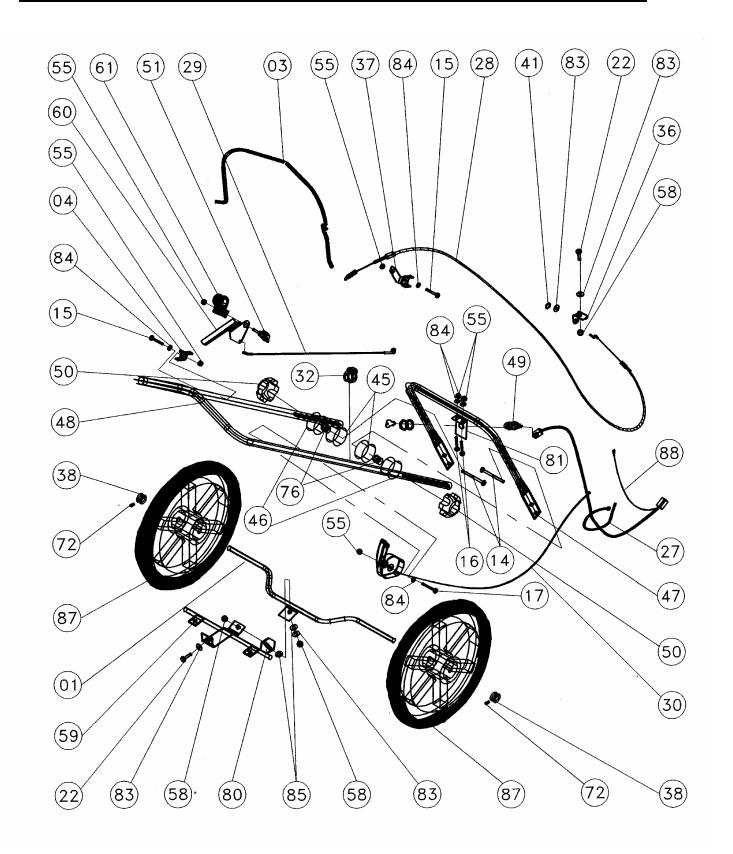


Figure 34

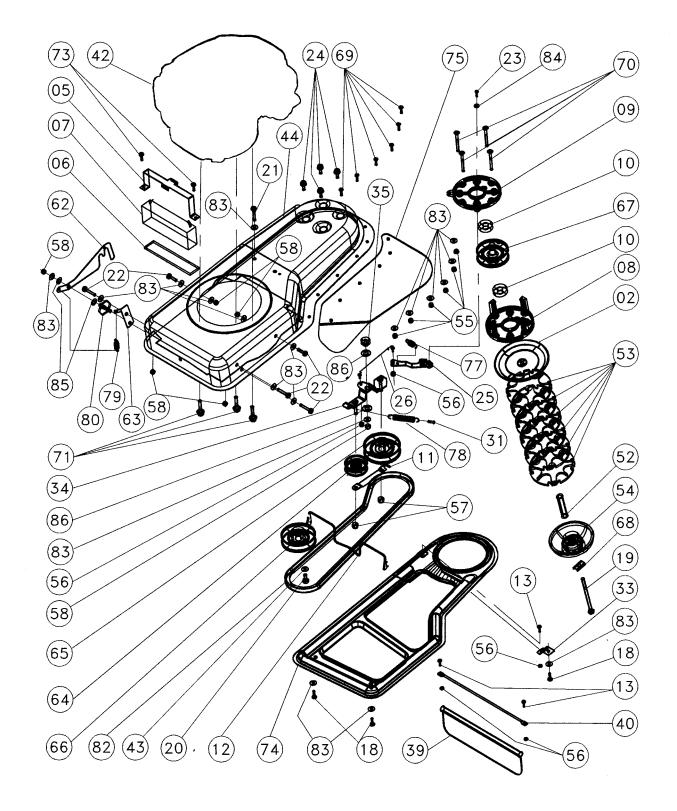


Figure 35

Notes

Daily Checklist for the DR[®] TRIMMER/MOWER™

To help maintain your DR® for optimum performance, we recommend you follow this checklist each time you use your machine.

- ✓ GAS: Fill the gas tank with clean, fresh, unleaded gas.
- ✓ OIL: Check the oil level with the dipstick and add more if necessary (only add oil to the level indicated on the dipstick—do not overfill). Use SAE30 high detergent oil.
- ✓ SPARK PLUG: Clean the spark plug and replace if needed.
- ✓ AIR FILTER: A clean air filter will mean a much easier-starting and better running engine. You should replace the paper air filter after every 25 hours of use, more frequently if you are trimming and mowing in dusty conditions.
- ✓ ENGINE AIR COOLING SYSTEM: It is very important to keep the engine clean of debris. Remove grass and other built-up materials from the air intake screen before, during and after you mow. Regularly remove debris from the blower housing and cooling fins. A dirty engine retains heat and can cause damage to the internal engine parts.
- ✓ BELT: Check the belt for wear, proper alignment and tension.
- ✓ CUTTING CORDS: Replace broken or frayed cords.
- ✓ MOW-BALL[™] SUPPORT: Check the Mow-Ball[™] Support for wear.



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