



HYDRO

WVHC36SZT710E

WVHC48SZT710E

WVLC52SZT730E

WVLC61SZT730E

Instruction Manual

Wright Manufacturing

4600X Wedgewood Blvd

Frederick, Md 21703

Velke PG serial 83291 and higher



WARNING: READ THIS MANUAL BEFORE USING

09/2015

Foreword

Welcome to the progressive group of mowing professionals who use Wright mowers. We are focused on giving you advanced engineering and quality construction in each mower we build.

This manual explains the features and promotes safer use of the mower. Please read it and follow the instructions carefully so you can have many years of productive mowing. *This manual may contain information pertaining to European models also. All information referencing "CE" only applies to European units.*

For service, remember that your Wright dealer knows your mower best and is interested in your satisfaction. He can provide you with quality maintenance and other assistance you may need.

Please give this manual to anyone who may use the mower for them to study before they operate it. Give the manual to anyone to whom you may sell the mower in the future. It is important for the next owner to receive this information also.

As Wright Manufacturing, Inc. is constantly seeking ways to improve its products, the mower you have may differ slightly from the information and specifications in this manual. Because of our continuous product improvement, Wright reserves the option to make changes at any time without notice.

Wright Manufacturing, Inc.



SAFETY ALERT

This is the safety alert symbol. It is used throughout this manual and on the mower's safety labels to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death. Read these instructions carefully. It is essential that you read the instructions and safety precautions before you attempt to work on or use this unit.



WARNING

This symbol with the word "WARNING" indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

This symbol with the word "CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

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PRE-DELIVERY SERVICE OF MOWER BY DEALER



Before proceeding with the Pre-Delivery Service of your mower, please read the safety instructions manual in its entirety. Only your authorized Wright dealer should perform the Pre-Delivery Service of the mower.

The Wright Velke Hydro is shipped completely assembled and has been adjusted and tested at the factory. However, due to the jostling of the shipping process and the delivery time lapse, the following items need to be repeated again before starting the mower. After you have uncrated the mower, follow these procedures in the order indicated:

- ☐ Inspect the mower for any damage, unusual conditions or missing parts.
- ☐ Inspect the mower for all of its decals, especially the warning decals. There should be one blade warning decal on each side of the deck, the “shield missing” decal under the blade belt cover, and the dash decal.
- ☐ Check service, parts and recall bulletins to ensure unit does not need any updates.
- ☐ Check (and fill if necessary) engine oil level according to the engine manufacturer’s recommendation.
- ☐ Check (and fill if necessary) hydraulic fluid level. Use fully SYNTHETIC oil: Mobil-1 15W-50 (see Hydro Check/Fill section of this manual).
- ☐ Check rear tire pressure – 18 – 22 psi. is recommended. Use the higher pressures for heavier operators. Front Casters are equipped with non-pneumatic tires and do not require any air. Lowering tire pressure will affect deck pitch. ***Always check pitch any time tire pressure is set below recommended pressures.***
- ☐ Lubricate all appropriate moving parts (see the Lubrication section of this manual).
- ☐ Check the battery to see that the cables are tight and connected properly. The battery is 12 volts and is a maintenance-free battery. Only charge the battery if it will not start the mower properly.
- ☐ Add regular unleaded gasoline to fuel tank. (use a minimum of 87 octane gasoline) (*You may use gasoline containing up to 10% ethanol and gasoline containing up to 5% of methanol.*)
- ☐ Check safety interlock.
 - ☐ Try starting the engine with the thumb lock released and the speed control in speed slot “1”. (Engine should not start. If engine starts, service the interlock system)
- ☐ Start the engine according to the engine manufacturer’s recommendation. Let the engine run at low - mid RPM for several minutes to ensure the engine oil reaches all of the engine parts and gets the hydraulic fluid circulating through the pumps, etc.
- ☐ Release the parking brake by moving speed control to slot “1” or “2”. Next, Release the neutral lock by slightly squeezing the control handles and slowly release the control levers to make the wheels move in forward rotation. Fully squeezing the control handles will move the mower in the reverse direction.
- ☐ Before testing the blade clutch/brake operation, make sure the area is clear and there is nothing vulnerable to possible thrown objects from under the mower. No one should be near the mower deck or in its line of discharge at this or at any time. The discharge chute deflector should be in the down position.
- ☐ Move the engine throttle control to $\frac{3}{4}$ RPM speed setting.

- ☐ Turn on the blade clutch switch. Run blades for approximately one minute. Next, engage and disengage the blades a few times about 10 seconds apart. If the blades do not start and stop in a few seconds each time, service the blade brake system.
- ☐ With the blades on, release the OPC paddles to test the Operator Presence Control switch (OPC). The engine should die and the blades should stop with-in 4-7 seconds after removing your hand from the OPC paddle. If not, service the OPC.
- ☐ Drive the mower around on a level parking lot. Check that the mower drives in a straight line when both hand controls are at the full speed position. (If not, refer to How to Perform The Tracking Adjustment section of this manual)
 - ☐ As you drive the mower, listen for any unusual noises and test for irregular operation and adjust or service as necessary.
- ☐ *Go over the safety information and operating procedures in this manual with the customer. Instruct each customer in proper operation and observe the customer during their initial operation on a level parking lot. Repeat until the customer is familiar and comfortable with the basic operation and use of the mower.*
- **Dealer:**
 - ☐ **Register the mower online within 14 days from the date of retail purchase.**
(If unable to use the online registration process, contact your Distributor to register for you)
 - ☐ **Registering the product indicates you have successfully completed the pre-delivery service checklist.**
 - ☐ **The limited warranty is considered invalid unless the unit is registered and the above steps are taken.**
 - ☐ **Remember, the purchaser is both your customer and our customer and his/her satisfaction is very important. Thank you for supporting our products.**

The mower is now ready for delivery to your customer

1 Introduction



This mower is built to the highest standards in the industry. However, carelessness or operator error may result in serious bodily injury or death. Accident and hazard prevention are dependent upon the awareness, concern, wisdom, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the equipment. Make sure every operator is properly trained and thoroughly familiar with all of the information in this manual before operating the equipment.

This machine is constructed only for mowing grass on lawns without obstacles such as stones, tree stumps etc. The machine can also be used for other tasks when equipped with special accessory attachments; Grass Gobbler, Velke Sulky and JRCO attachments. All other types of uses are incorrect. The manufacturer's directions concerning operation, maintenance and repairs must be carefully followed.

Lawn mowers and all power equipment, can be potentially dangerous if used improperly. Safety requires good judgment, careful use in accordance with these instructions and common sense.

The machine must only be operated, maintained and repaired by persons familiar with the machine's special characteristics and who are also knowledgeable about the safety instructions. Use only approved repair parts to maintain.

Accident prevention regulations, other general safety regulations, occupational safety rules, and traffic regulations must be followed without fail.

Unauthorized modifications to the design of the machine will absolve the manufacturer from liability for any resulting personal injury or property damage.

This machine is not intended for use in extreme environments, as a tow vehicle, on steep slopes or in an enclosed area without good ventilation.

1.1 Technical Data

Weight of overall machine

36" (91 cm) = 590 lbs (268 kg)
48" (122 cm) = 640 lbs (290 kg)
52" (132 cm) = 710 lbs (322 kg)
61" (155 cm) = 760 lbs (345 kg)

Machine dimensions

* Deflector down

36" (91 cm) = 74" (188 cm) L x 36.5" * 49" (92.7 cm * 124 cm) W
48" (122 cm) = 72" (183 cm) L x 49" * 61" (124 cm * 155 cm) W
52" (132 cm) = 80" (203 cm) L x 53" * 65" (135 cm * 165 cm) W
61" (155 cm) = 82" (208 cm) L x 62" * 74" (157 cm * 188 cm) W

Speeds

36" (91 cm) Fwd 5.5 mph (8.9 km/h), Rev 2.5 mph (4 km/h)
48" (122 cm) Fwd 5.5 mph (8.9 km/h), Rev 2.5 mph (4 km/h)
52" (132 cm) Fwd 5.5 mph (8.9 km/h), Rev 2.5 mph (4 km/h)
61" (155 cm) Fwd 5.5 mph (8.9 km/h), Rev 2.5 mph (4 km/h)

Power supply

12V DC (Electric Start only)

For service documents go to www.wrightmfg.com, select support, then, click service docs tab.

1.2 General Safety Rules



The Wright Velke Hydro is designed with your safety in mind. It has the following safety systems with which should become familiar:

- The warning decals on the mower including the parking brake and general warning decal.
- Do not disable any of the safety features.
- The blade switch must be “Off” before starting the engine.
- You must have your hand holding down the handle bar safety arm to engage the blades.
- If you let go of the handle bars while the blades are running the engine will stop and the blades will brake in seconds.
- If using a Velke Pro 1, X2 attachment, you must step off of the attachment when backing.
- If using a Velke Pro 1, X2 attachment on a slope, the stability of the machine is compromised by the operators weight.
- Spring loaded chute deflector will help reduce trajectory of thrown objects.
- Belt/Pulley covers on cutter deck.
- Low center of gravity (CG) to improve stability on hills.
- Never change deck cut height with blades running.

1.2.1 Do's and Don'ts

Do's	Don'ts
Read the operators manual before attempting to operate this machine	Don't disable safety switches
Use all PPE's, eye protection, ear protection and safety shoes	Don't operate when lightening is seen
Ensure all safety switches are operational	Don't lift with a forklift
Keep all shields and covers in place	Don't change RPMs outside of operating limits
Clean flammable material from machine	Don't tow or push
Inspect fuel system and fuel lines for cracks, leaks and dryrott	Don't operate on slopes when wet
Inspect area to be mowed for hazards	Don't leave a running machine unattended
Only operate in daylight	Don't change the engines governor setting or overspeed the engine
Mow safe distances away from drop-offs and other hazards	Don't operate the machine wearing sandals, sneakers or any loose fitting clothes
Maintain a safe distance from people and pets	Don't back up without being aware of what is behind the machine
Follow daily and weekly maintenance checklists	Don't suddenly change in forward direction while machine is in a rearward motion
Observe traffic laws while driving machine from one location to another	Don't operate a poorly maintain machine
Thoroughly inspect the machine after striking a foreign object	Don't allow persons to operate this machine without reading the operator manuals
Turn off blades when not mowing	Don't put hands or feet under any part of the machine while it is running
Slow down before turning	Don't ever carry passengers
Stop engine before removing Grass Gobbler or cleaning under deck	Don't discharge material towards anyone
Use caution when loading or unloading the machine onto a truck or trailer	Don't operate the machine if you are sick, fatigued or under the influence of alcohol or drugs
If using a Velke Pro 1, X2 or SuperPro attachment, you must step off of the attachment when backing.	



CALIFORNIA

Proposition 65 Warning

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

1.2.2 Warnings!

These warnings are provided to improve safety and should be carefully read before using or maintaining the machine.



WARNING

This symbol with the word “WARNING” indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

This symbol with the word “CAUTION” indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

1.3 Important Information



It is vital that these instructions are available to machine user. It is also important to retain with the machine if the machine is sold or transferred to another user.

1.4 Owner/User Notice



WARNING

The owner's/user's obligation is to instruct themselves and all potential users in the safe operation of this equipment and be sure they read and follow the instructions in this safety manual and other material provided by Wright Manufacturing, Inc. before using or allowing others to operate the equipment. Do not operate this unit unless you carefully read, understand and follow the assembly, installation, and safety instructions contained in this manual and the warning decals provided on the unit. Do not allow other persons to use this unit unless you make sure they carefully read, understand and follow these instructions. Never allow children to operate or play on the unit.

1.5 Safety for Operation



WARNING

The Velke Hydro should only be used by fully trained operators to prevent the risk of injury to themselves or other personnel. The owner's/user's obligation is to instruct themselves and all potential users in the safe operation of this equipment and be sure they read and follow the instructions in this safety manual and other material provided by Wright Manufacturing, Inc. before using or allowing others to operate the equipment. **DO NOT** operate this unit unless you carefully read, understand and follow the operation and safety instructions contained in this manual and the warning decals provided on the unit. **DO NOT** allow other persons to use this unit unless you make sure they carefully read, understand and follow these instructions. Never allow children to operate or play on the unit.

1.6 User Qualifications



WARNING

This product is designed for use by physically fit, experienced, professional commercial mower operators who have a minimum of 160 hours of experience operating twelve horsepower and greater industrial mowers. Operators must have read and understood this manual. **DO NOT** allow children to operate the mower. **Never allow passengers on the mower.** **DO NOT** allow adults to operate the mower without proper instruction as mentioned above.

1.7 User Clothing



DO NOT operate the mower while wearing sandals, tennis shoes, sneakers, or shorts. Always wear long non-baggy pants. Wear high-top leather steel-toed work boots with thick, textured tread, soft-rubber soled at all times. **NEVER** wear loose-fitting clothing or jacket pockets that can get caught on the handlebars or control levers of any mower you drive. Wearing safety glasses, ear protection and safety shoes is advisable and required by some local ordinances and insurance regulations.

1.8 Inspect the Mower Before Each Use



DO NOT use the mower if any parts are not maintained in good operating condition. Examine the moving parts prior to each use. Look for excessive wear, bald or worn tires, cracks in parts, loose or missing bolts, cotter pins, linchpins or “hair” pins or cable yoke pins, control system ball joints and replace before operating the mower. Make sure all safety equipment provided with the mower is in good operating order, including all the warning decals and the required operator-presence device which stops the engine and blades when the Operator Presence Control (OPC) switch is released. (To test the OPC, follow instructions in the [Operating Instructions](#) section of this manual.) Be sure that all parts of the hand-operated hydraulic control system are tight and secure. This is to reduce the possibility that the mower could have a loss of control during operation and compromise operator safety.

1.9 Regular Mower Safety



Keep your Wright mower in good operating condition, and keep safety devices and shields in place and in working condition. Replace worn tire(s) with less than 3/32” of any tread groove left. Use tires with the tread pattern specified by Wright Mfg., Inc. only. **DO NOT** change the engine governor settings or over-rev the engine contrary to engine manufacturer specifications. Failure to comply can compromise operator safety, shorten equipment life and void your manufacturer’s warranty. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition. Check the blade mounting bolts for proper tightness every eight (8) hours of operation. Check the blades for excessive wear and sharpness every four to eight (4-8) hours of operation. Sharpen dull blades. Replace blades when they become excessively worn. The mower **should not be used** after the blades or other part of the mower strikes a foreign object, until conducting a thorough inspection and any damage is repaired. Make sure the chute deflector is always in place and operating properly. Replace if the deflector becomes worn or ceases to properly deflect the grass in a safe manner. See the instructions in the [Recommended Maintenance](#) section of this manual for other items of required maintenance.

1.10 Prevent Fires



Machine fires and structural fires can occur if a machine is stored before allowing it to cool, if debris is not removed from critical areas of the machine, or if the machine is stored near combustible materials.

- Remove grass and debris completely from engine compartment and muffler area, and from on top of the mower deck, before and after operating machine, especially after mowing or mulching in dry conditions.
- Always shut off fuel when storing or transporting.
- Do not store Stander near an open flame or source of ignition, such as a water heater or furnace.
- Check fuel lines, tank, cap and fittings frequently for cracks or leaks. Replace immediately if necessary.

1.11 Work Area Conditions and Inspection



Prior to operating the unit, carefully inspect all lawn/ground areas where you plan to use the mower for hidden, hard-to-see objects or uneven ground that may be hidden in the grass. Clear the work area of moveable objects such as wires, rocks, glass, toys, etc. that might be picked up by the mower and

dangerously thrown. Remove, if possible, or mark the location of all immovable objects or irregular areas and be sure not to hit them with any part of the mower, its deck or the blades. Obstacles such as holes, abrupt changes in ground contour, tree trunks, stumps or roots, pipes protruding from the ground, paving edges, etc. in the path of operation can abruptly turn or stop the mower. This could possibly throw you into the control handles or even off the mower, causing serious injury or death. The faster you are moving the more potential there is for injury. Mow only in daylight or in good artificial light. Keep away from drop-offs, the edges of ponds, streams, pools, etc. especially at the bottom of slopes. **DO NOT** mow when children or others are nearby. When the Wright mower is in use, never direct the grass discharge toward bystanders, traffic, cars or buildings nor allow anyone within 50 feet of the machine while in operation. Thrown objects can pass through glass windows and some walls of buildings. There is extreme risk of danger from thrown objects or being cut by the blades of the mower. **Never** operate the mower in an enclosed area without good, approved ventilation. Exhaust fumes are dangerous.

1.12 Initial Operating Safety Guidelines



- Read and understand the warnings on the general warning decal on the mower.
- Regularly check and test the safety devices for correct function.
- Recommended PPE is safety shoes, safety glasses and ear protection.
- Know the controls and how to stop quickly.
- Before attempting to start the engine, follow all starting instructions below and in the engine operator's manual.
- Look behind before backing up.
- Before leaving the operator's area, even momentarily, turn off the blade clutch engagement switch, apply the thumb locks and apply the parking brake. Keep others from coming near the mower. Get back to the mower as soon as possible.
- Shut off fuel while transporting or storing. Do Not store fuel near flames.
- When leaving the Wright mower unattended, turn off the blade clutch engagement switch, apply the parking brake, stop the engine and remove the key. **Never** leave the machine unattended on a slope in case someone disengages the parking brake. This could create a rollover hazard.
- When transporting, driving onto transport vehicles, into buildings, across parking lots or otherwise not mowing grass, turn off the blade clutch engagement switch to reduce risk of thrown objects and rotating blade hazard. After coming to a stop apply the parking brake, stop the engine and remove the key.
- Before performing any maintenance or repair service, disengage power to blades, apply the parking brake, stop the engine, remove ignition key and spark plug wire from spark plug(s).
- All operators of this mower should exercise caution when driving this mower at high speeds. Sudden acceleration or deceleration may cause serious injury.
- **DO NOT** allow inexperienced persons to operate the mower until they have read and understood these safety instructions. Operate the mower at slower speeds while becoming familiar with it.
- The grass discharge chute deflector must be installed at all times and in the down position except that it may be raised when cleaning out the deck, or a grass catcher is installed or a mulch kit and block-off plate is properly installed.
- If the mower discharges grass clogs, turn off the blade clutch switch, apply the parking brake, stop the engine and remove the key before removing obstruction(s).
- Keep all shields and covers in place, namely, all blade and belt covers, engine shields, and grass discharge chute deflector.
- Keep hands, feet and clothing away from rotating parts, especially the rear wheels, blades, engine flywheel, belts and pulleys.
- **DO NOT** touch engine, muffler or hydraulic system while engine is running or soon after it is stopped. These areas can be so hot as to cause severe burns.
- **Clean grass, leaves and lubricant spills from surfaces after use to prevent fire hazard.**
- Be alert for traffic when crossing roads or operating near roadways.

- Before climbing curbs, crossing gravel drives, sidewalks or roads, turn off the blades and wait for them to stop.
- Never change deck cut height with blades running.

1.13 Safety for Maintenance



WARNING

- Repairs carried out by untrained or unauthorized personnel may result in personal injury or serious malfunction of the Velke Hydro.
- If Guarding is removed for inspection and component replacement, ensure the parking brake is applied and key is removed prior to inspecting or making repairs and that the guarding is replaced before operation.

1.14 Operation in Forward Direction



WARNING

Operate the mower slowly until you become familiar with how the mower operates. Do not operate the mower faster than conditions allow. For example, hills, wet or bumpy ground, dim light or high grass are all conditions requiring slower speeds. Never operate the mower at the highest speed unless you are on level, wide, open areas of clearly visible ground or transporting on paved areas. Speeding with any mower is dangerous, and so is traveling faster than conditions should permit on this mower. Sudden stops from excessive speed or falling off the mower may cause serious injury or death.

1.15 Operation in Reverse



WARNING

Use extreme caution when operating in reverse. DO NOT operate this mower in reverse while standing on the Velke or other sulky. Always keep a firm grip on the mower handles with both hands. Operate the mower very slowly, inching it backward until you become familiar with how the mower operates. Always operate slowly if in an awkward location or position. Look behind you before backing to prevent injuring yourself or anyone behind you. Operate at slow speeds in forward and reverse if not completely familiar with mower operation. See the “How to change the Speed Adjustment” section of this manual.

1.16 Zero-Radius Turn Operation



WARNING

During zero-radius turns (when one mower wheel rotates backwards while the other rotates forward) drive extra slowly to reduce the possibility of losing traction, or control, or becoming dizzy. Be aware that if you do a turn on a slope you may go through all of the orientations to a slope mentioned below and must handle the mower accordingly.

1.17 Operation on Slopes



WARNING

DO NOT operate on steep slopes. Do not operate the mower on slopes steeper than you can feel secure about the traction of the tires and the stability of the mower. Do not operate the mower on slopes at all when the grass is wet. There is a danger of suddenly sliding sideways or down the hill. **When operating on a slope, travel across the grade whenever possible, not in an up or down pattern.** Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing direction on slopes.

The Wright mower is capable of greater traction on slopes than typical riding mowers because of the benefits of a lower center of gravity. It is essential for you to know more about the handling characteristics of the mower so that you can enjoy more efficient mowing techniques and for increasing your safety.

The Wright mower handles differently at different angles of attack on a slope. It is important to understand the following differences so that you can use or avoid using the mower at different angles for the best advantage. Be aware that if the following orientations to a slope and must handle the mower accordingly. As you use the mower you will gain the technique to mow more lawn than ever before.

When pointing up a slope, the mower has the most weight on the drive wheels and therefore the most traction at the tires. However, this is the angle that it has the most tendency to tip back. (“pop-a-wheelie.”)

Recommendations for this angle:

- Do not accelerate quickly to avoid “popping-a-wheelie.”
- If backing down the hill, do not stop suddenly but slow down gradually and maintain an upward force on the handles to keep the front of the mower on the ground.

When pointing down a slope, the mower has the least weight on the drive wheels and therefore the least traction at the tires. This is the angle that the mower has the most tendency to slide. However, this is the angle that it has the least tendency to tip back. Avoid this angle, as it has the least advantage for the mower.

Recommendations for this angle:

- Do not change speed suddenly to minimize the tendency of going into a slide. Accelerate and slow down gently. If you ever go into an uncontrolled slide while pointing down a slope, the recommended procedure is to let go of the handles and move up-hill from the mower. Otherwise, control the mower gently and stay off slopes that tend to make the wheels slide at this orientation.

When crossing a slope sideways, the mower has the average amount of weight on the drive wheels versus the front wheels, similar to level ground. However, this angle leaves the least weight on the higher side drive wheel, tending to make it slip. This is the preferred angle for mowing large areas of gentle slopes.

Recommendations for this angle:

- Do not accelerate quickly to minimize the tendency of “popping-a-wheelie”. Accelerate gently. Note: Excessively worn tire tread is dangerous. Replace tire(s) with less than 3/32” of any tread groove left. Use tires with the tread pattern recommended by Wright Mfg., Inc. only. Keep the tire pressure in the drive tires at the recommended level. Higher pressures will cause the tires to have less traction, which will force you to go slower and with less safety.

1.18 Fuel Safety



WARNING

Handle gasoline with care – it is highly flammable. Do not smoke while handling gasoline. Use an approved gasoline container. Never remove the fuel cap or add gasoline to a running or hot engine or an engine that has not been allowed to cool for several minutes after running. Never fill the tank indoors and always clean up spilled gas. NEVER store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.



1.19 Hydraulic Safety



WARNING

Use paper or cardboard and not hands to search for leaks. Keep body and hands away from pin holes or fittings that eject hydraulic fluid under high pressure. Hydraulic fluid escaping under high pressure may have sufficient force to penetrate skin and cause serious injury. If foreign fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result. Seek medical attention immediately. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting your Wright mower. Hydraulic fluid is under high pressure. If you need service on your hydraulic system, please see your authorized Wright dealer.

1.20 Responsibly Handling Waste Product and Chemicals

Waste products, such as used oil, fuel, coolant, brake fluid and batteries, can harm the environment and people:

- Do Not use beverage containers for waste fluids – someone may drink from them.
- See your local Recycling Center or authorized dealer to learn how to recycle or get rid of waste products.

1.21 Using a Spark Arrester

The engine in this machine is not equipped with a spark arrester muffler. It is in violation of California Public Resources Code Section 4442 to use or operate the engine on or near any forest-covered, brush-covered, or grass covered land unless the exhaust system is equipped with a spark arrester meeting any applicable local or state laws. Other states or federal area may have similar laws.

1.22 Replacement Parts



Use of parts other than specified parts supplied by Wright Manufacturing, Inc. may compromise the safe use of the mower, are not recommended and their use could void the warranty. Always check with your Dealer or the Wright Mfg website for the latest Illustrated Parts List for your equipment. Unauthorized modifications to the original equipment could lead to serious injury or death. Unauthorized changes to the machine, engine, fuel or venting system, may void the warranty and violate applicable safety standards such as: ANSI, OSHA and NFPA and/or government regulations such as EPA and CARB.

For service documents go to www.wrightmfg.com, select support, then, click service docs tab.

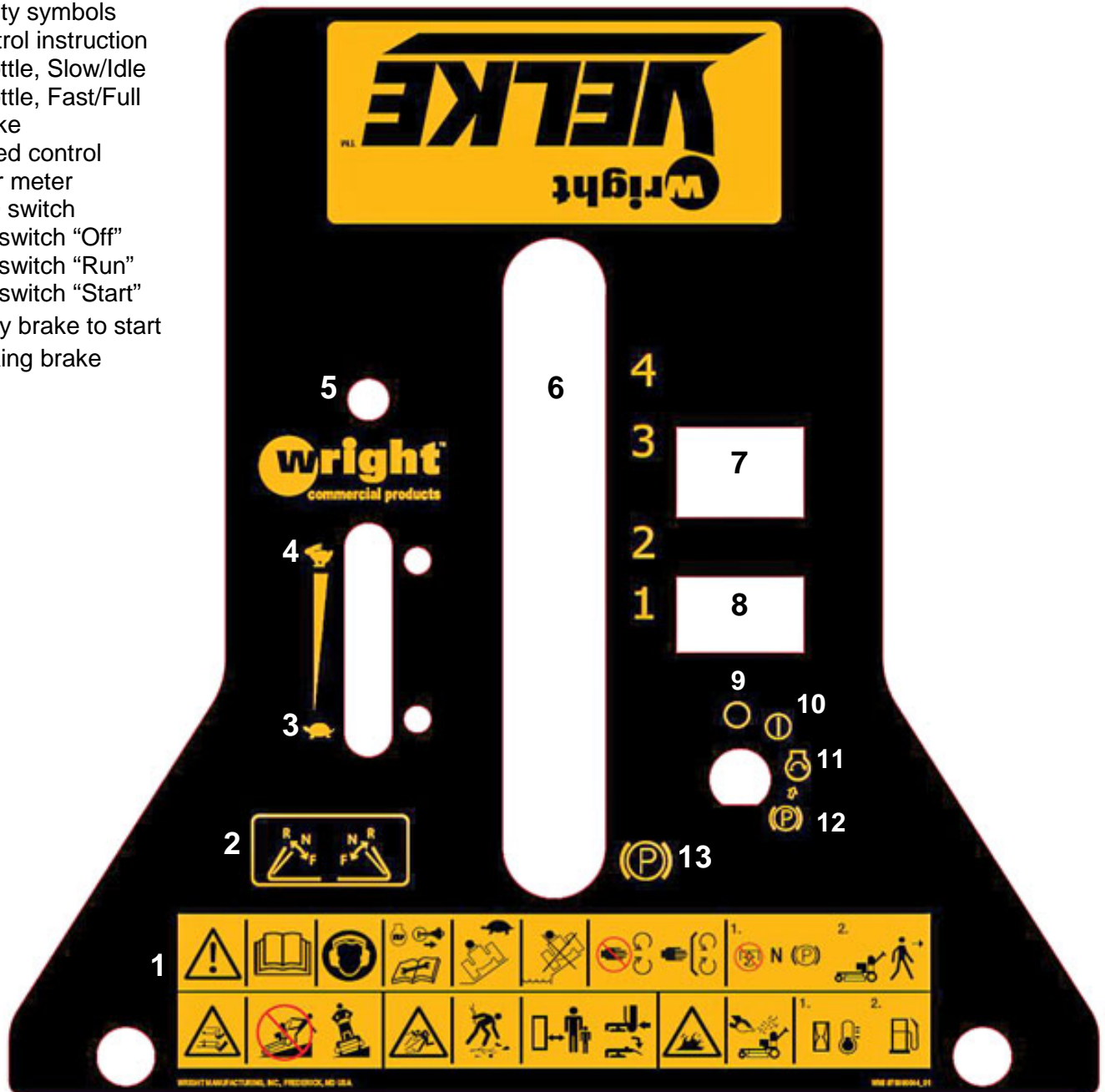
Wright is fully concerned with your safety. Please read the above again and again until you fully understand the methods to promote the safest operation possible.

**REMEMBER – YOUR MOWER CAN BE ONLY AS SAFE AS THE OPERATOR.
FAILURE TO FOLLOW SAFE OPERATING PRACTICES MAY RESULT IN
SERIOUS INJURY OR DEATH.**

2 Warning, Safety and Instructional Decals

- Specific safety warning decals are located on the equipment near immediate areas of potential hazards.
- Keep all safety signs legible. Remove all grease, dirt and debris from safety signs and instructional decals.
- Replace worn, damaged or missing safety decals.
- If an attachment or accessory has been installed, make sure current safety decals are visible.

- 1-Safety symbols
- 2-Control instruction
- 3-Throttle, Slow/Idle
- 4-Throttle, Fast/Full
- 5-Choke
- 6-Speed control
- 7-Hour meter
- 8-PTO switch
- 9-Ign. switch "Off"
- 10-Ign. switch "Run"
- 11-Ign. switch "Start"
- 12-Apply brake to start
- 13-Parking brake



Dash Decal
76990044



76490205
Deck Warning



76490206
Entanglement Warning



76490207
Hot Warning



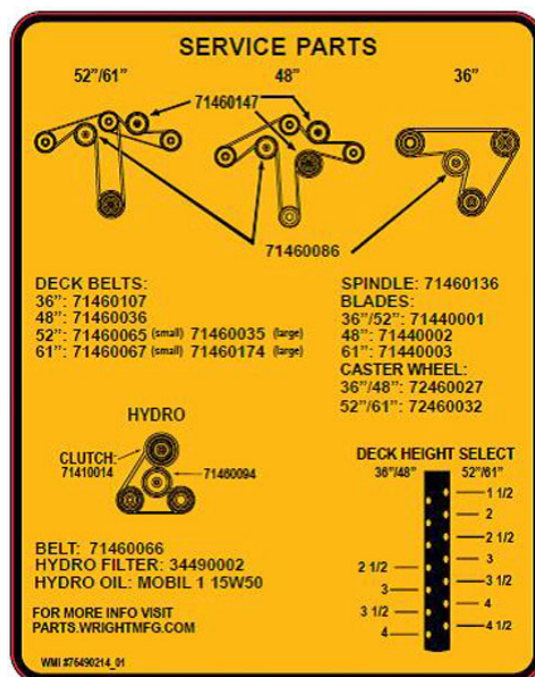
76490208
Keep Shields in Place Warning



76490209
Tracking Adjustment




76490211
Spark Arrester Warning












76490214
Service Parts / Belt Routing / Deck Height

	Warning, go across the slope, not up and down.
	Warning, maintain a safe distance from people and pets. Never operate the mower deck with the chute deflector removed or damaged unless using a Grass Gobbler.
	Warning, stay away from moving parts, keep guards in place.
1.  2. 	Warning, do not fuel a hot mower. Let it sit and cool before re-fueling.

	Warning, hot surface. Keep a safe distance from the machine
	Warning, rotating pulleys and belts. Keep guards and covers in place.
	Warning, rotating pulleys and belts. Keep guards and covers in place. Keep hands, feet and clothing clear of all moving parts.

1.  N (P) 2. 	Warning, disengage PTO, shift speed control to the neutral/brake position before leaving the operators position.
---	--

	Warning, denotes potential hazardous situation which, if not avoided, could result in minor to serious injury or death.
	Warning, read the operators manual. Each operator should fully read and understand the operation of the mower.
	Warning, wear hearing protection. Sound levels may be in excess of 85dba.
	Inspect the area to be mowed for sticks, rocks and other objects that can be thrown from the mower. Keep deflector in place.
	Warning, safely stop and park, remove ignition key and read the instructions before servicing or performing maintenance.
	Warning, reduce speed and exercise extreme caution on slopes and sharps turns to prevent tipping or loss of control.
	Warning, rollover. Do not use near water, drainage ditches, drop-offs or any hazards to avoid a wheel dropping over an edge.
	Warning, rotating blades. Keep hands, feet and clothing away from rotating blades.
	Warning, potential fire. Clean flammable material away from machine. Clean engine fins and exhaust from debris build up.
	Warning, thrown objects. Never operate mower with the chute deflector removed, damaged or altered unless using a Grass Gobbler.
	Use shop air or back pack blower to remove debris from machine as needed.

3 Specifications

Engine

- See your engine owner's manual
- RPM: Full speed 3600 +/- 50 RPM (no load) / Idle 1550 RPM

Electrical System (Electric Start)

- Charging System: Internal stator coil
- Battery Type: Maintenance Free
- Battery Voltage: 12 Volts
- Fuses: Two, 20 amp, blade type

Fuel System

- Capacity: 5.5 gal. (20.8 L)
- Type of Fuel: Unleaded regular gasoline, minimum 85 octane. Do not use gasoline containing more than 10% ethanol. Do not mix oil with gasoline.
- Fuel Filter: In line
- Fuel shut-off: On, Off located on tank

Safety Interlock System

- PTO switch must be disengaged, brake engaged or the control handles in the neutral and locked position to start the engine.
- Operator must be holding down OPC paddles to engage the PTO or the engine will stop.

Drive System

- Two Hydro Gear 10cc variable displacement piston pumps
- Two Hydro Gear 12 cu. in. wheel motors

Hydro Oil System

- Hydro oil: Fully SYNTHETIC motor oil: Mobil-1 15W-50
- Hydro Filter: Spin-on, 25 micron, no bypass / PN 34490002
- Total Capacity: 3 qts (2.8 L)

Torque Specifications		
Application	Thread Locker	Torque Range (ft-lbs)
Wheel motor bolts	Loctite 2760	40-50 / 54-68 Nm
Clutch to engine shaft	Loctite 2760	50-55 / 68-75 Nm
Wheel hub to wheel motor	N/A	138-158 / 187-214 Nm
Wheel lug nuts	N/A	80-90 / 108-122 Nm
Split Hub (Spindle & Drive) (Gr 8)	N/A	13-17 / 18-23 Nm
Blade Bolts	N/A	70-80 / 95-108 Nm

36" WWHC	
Width, deflector down	49 inches (124 cm)
Length	74 inches (188 cm)
Height	44 inches (112 cm)
Weight	589 lbs (267 kg)
48" WWHC	
Width, deflector down	61 inches (155 cm)
Length	72 inches (183 cm)
Height	44 inches (112 cm)
Weight	641 lbs (291 kg)
52" WWLC	
Width, deflector down	65 inches (165 cm)
Length	80 inches (203 cm)
Height	44 inches (112 cm)
Weight	716 lbs (325 kg)
61" WWLC	
Width, deflector down	74 inches (188 cm)
Length	82 inches (208 cm)
Height	44 inches (112 cm)
Weight	764 lbs (347 kg)

For service documents go to www.wrightmfg.com, select support, then, click service docs tab.

4 Machine Description & Overview

The Wright Velke Hydro is meant to solely cut, bag or mulch grass. The use for any other purpose is not recommended. Do not disconnect any safety switches or remove any decals.

- | | |
|-----------------------------|-----------------------------|
| 1. Flexible Chute Deflector | 2. Rear Drive Tires |
| 3. Battery / Battery Box | 4. Steering / Control Lever |
| 5. OPC Paddle | 6. Control Panel |
| 7. Fuel Tank | 8. Hydro Tank |
| 9. Muffler and Heat Shield | 10. Cutter Deck Covers |
| 11. Caster Tires | 12. Cutter Deck |



4.1 Operator's Area

- | | | |
|-----------------------------|----------------|-------------------------------|
| 1. Steering / Control lever | 2. OPC Paddle | 3. Neutral Latch Lock |
| 4. Dash Panel | 5. Hydro Pumps | 6. Pro1 / X2 Sulky Attachment |
| 7. Sulky lock / Release | 8. Brake | |



4.2 Model & Serial Location

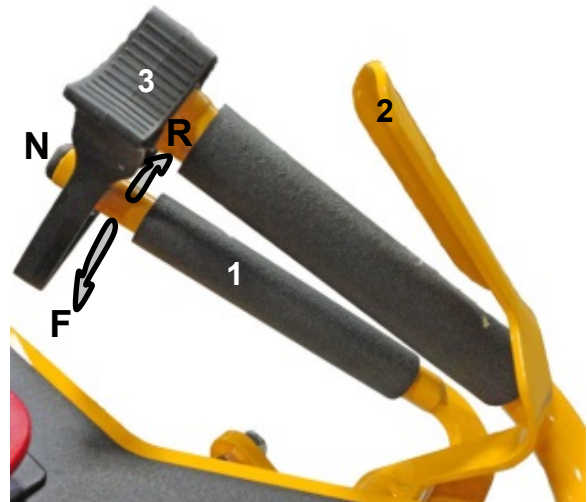
1. The plate is affixed to the right side of the engine deck.
2. Stated on the plate will be the Model, date of assembly and serial number, these will be needed when ordering parts.



4.3 Control Panel & Steering Control Levers

The Velke Hydro speed and direction are controlled by releasing and squeezing the control levers. The OPC paddles must be held down while releasing both neutral latches. Slowly release the levers to travel forward. Use the Speed Control knob to adjust max speed.

- | | | |
|------------------------------|---------------|--------------------------|
| 1. Steering / Control Levers | 2. OPC Paddle | 3. Neutral Latch Lock |
| 4. Throttle | 5. Choke | 6. Speed Control / Brake |
| 7. Hour Meter | 8. PTO Switch | 9. Ignition Switch |



4.4 Digital Hour Meter

The Velke Hydro is equipped with a digital hour meter. Refer to operating/reset instructions below.

The programming specified is:

Default display: Hours

Press once (TMR1): Timer 1, press for 3 sec to reset

Press twice (TMR2): Timer 2, press for 3 sec to reset

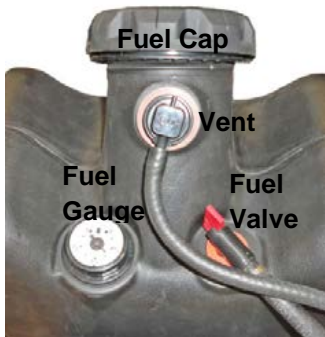
Press three times (svc ENG): Will display time remaining until next service point, hold down to reset. The first interval is 8hr, thereafter 100hr. Beginning 5hr before service point the meter will flash “svc ENG, in [remaining hours]” every 5 sec.

Shut off engine: Will display how many times the engine has started.



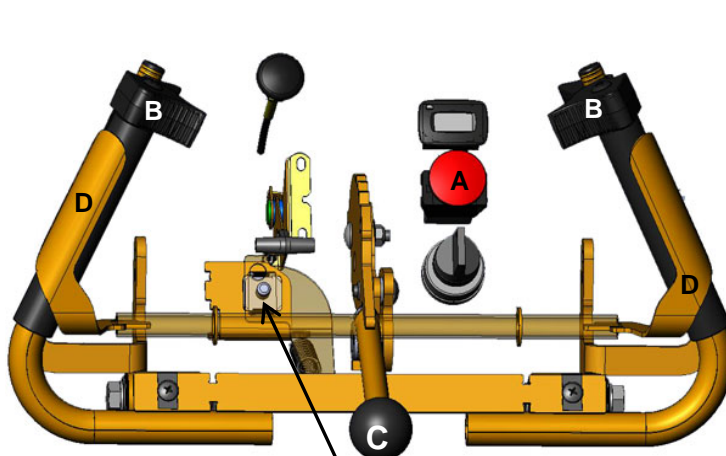
4.5 Fuel System / Shut-Off Valve

The fuel shut-off valve and fuel gauge is located on top of the fuel tank. The valve should be in the “OFF” position at all times when the mower is not in use. Do Not fill the tank completely. Fill level is 1 inch below the bottom of the fill neck. This will allow for the gas to expand.



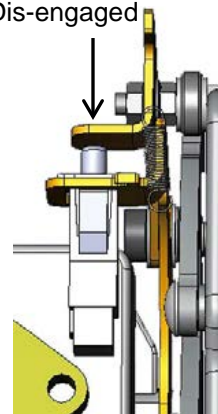
4.6 Safety Interlock System

The Wright Velke Hydro is equipped with a safety interlock system. The PTO must be disengaged (A) and the neutral latches in the “Locked” position (B) or the parking brake engaged (C) in order to start the machine. The OPC paddle (D) must be held down to engage the PTO switch.

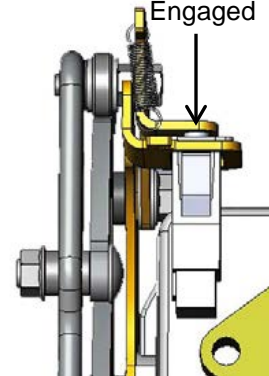


OPC Paddle Safety Switch,
located under the dash panel

Brake/Neutral Latch
Dis-engaged



Brake/Neutral Latch
Engaged



Parking Brake & Control Handle Safety Switches,
located between the Hydro Pumps

5 Operating Instructions



WARNING

If you are not completely familiar with the Safety Instruction Manual, read it now before proceeding with the operation of the mower. **REMEMBER THERE ARE CERTAIN PRECAUTIONS LISTED IN THIS MANUAL THAT YOU MUST NOW TAKE BEFORE STARTING THE MOWER.**

5.1 Inspect Mower Before Each Use

Do not use the mower if any parts are not maintained in good operating condition. Examine all moving parts prior to each use. Look for excessive wear, bald drive tires or worn out front tires (normally smooth), cracks in parts, loose or missing bolts, cotter, linchpin or “hair” pins and replace before operating the mower. Make sure all safety equipment provided with the mower is in good operating order, including all warning decals and the operator-presence device, which stops the engine and blades when the hand-operated Operator Presence Control (OPC) switch is released. To test the OPC, follow the instructions further down in this manual. Ensure that all parts of the hand-operated hydro control system are tight and secure. This is to reduce the possibility that the mower could have a loss of control or safety.

Basic Operation

The following procedures are to guide you through the basic operation of the mower. You should be a qualified mower operator according to the safety section of this manual. If this is your first time, operation should only be done with the assistance of your dealer on a level area. You should go through each step, in the order indicated, every time you start the mower.

5.2 How to Start and Operate the Mower



WARNING

Read and understand the [safety instructions](#) before attempting to operate your machine.

Use caution when operating this piece of equipment. Practice operating the mower at low speeds and without the blades engaged until familiar with the operation of the controls.

Before starting the engine:

- ☐ Check the oil level in the engine and the hydraulic reservoir
- ☐ Fill the fuel tank with clean, fresh, unleaded gasoline (use gasoline with an octane of 87 or greater)
- ☐ Ensure the fuel valve is in the full open position.
- ☐ The blade clutch (PTO) switch must be in the OFF position
- ☐ Position the speed adjustment lever to the Brake/Neutral position
- ☐ Position the neutral latches in the neutral lock position
- ☐ Ensure the hydraulic pump bypass valves are fully closed (turn clockwise until snug)

Start the engine – choke as needed

Engage the blades by first engaging the operator presence device and then pulling up on the blade clutch (PTO) switch. Push the switch down to disengage the cutting blades. ** For best equipment life, engage the blades between $\frac{3}{4}$ and full engine throttle.

Move the speed adjustment lever to the desired ground speed setting.

Slightly squeeze the control handles with both hands, the thumb lock latches are spring loaded and will automatically release. Slowly release the levers to travel forward. To make a right turn, squeeze the right hand lever. To make a left turn, squeeze the left hand lever. To travel in reverse, squeeze the levers up beyond the neutral point.

To STOP the mower, squeeze both levers up to the neutral point and engage the thumb lock latches.

5.3 How to Stop and Park the Mower



WARNING

Come to a complete stop. Make sure the control levers are in the neutral position with the thumb lock latches engaged with the levers. If the blades are on, turn them off using the switch on the instrument panel. Place the speed control lever to the brake on position, reduce the engine speed to idle, shut off the ignition switch to stop the engine and then remove the key from the ignition switch. The mower is now parked. Do not leave unit parked unattended without engaging the parking brake and do not leave the unit parked unattended on a sloped surface.



Brake ON



Brake OFF

5.4 How to Drive the Mower Over a Curb



WARNING

To climb a curb, first see the [Safety Instructions](#) section of this manual, especially the parts on:

- Initial Operating Safety Guidelines
- Operation In Reverse
- Operation In Forward Direction

It is recommended to use ramps for curbs 5" and higher. Using ramps, you can easily back on and off without damaging your mower or the curb.

For curbs 5" and shorter, drive the mower in reverse at a 45 degree angle to the curb (with the right side of the mower closest to the curb) until you are within an inch or two of the right-rear tire hitting the curb. Stop and then gradually bump into the curb with that tire until it is just on top of the curb. If the tire slips even while lurching the mower into the curb, then the curb is too high and you should use ramps or find another way. The mower should still be at a 45 degree angle to the curb. Now, while maintaining the same angle to the curb, continue to back up until the left-rear tire is close to the curb. Using the same technique lurch the left tire onto the curb. After both wheels are on top of the curb, turn the mower clockwise and back up so the right caster wheel comes over and last should be the left caster wheel as the mower is twisting to the left (counterclockwise). The technique works the best if you try not to drive backwards at a near 90 degree angle to the curb but get all of the wheels to go over while the mower is moving at least a 45 degree angle to the curb. To drive off a curb, first try driving up onto it to make sure the curb is not too high. If the curb is not too high, drive the left-front caster off first while driving toward the curb at a 45 degree angle (the curb should be to your left). Then, maintain that 45 degree angle so the right caster goes over, then the left-rear wheel, then the right rear wheel. NEVER stand on the Velke (sulky) while driving over a curb.

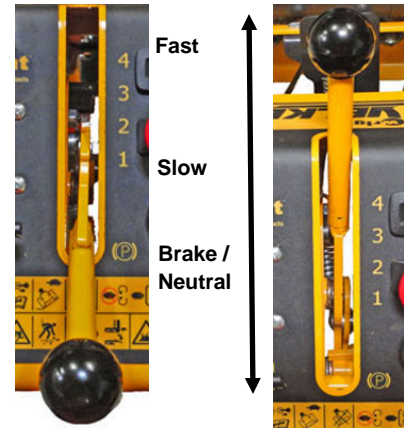
5.5 Mowing on Varying Terrain

See the [Safety Instructions](#) section of this manual, especially the parts on:

- Initial Operating Safety Guidelines
- Operation On Slopes
- Operation In Reverse
- Operation In Forward Direction
- Operation During Zero-Radius Turns

5.6 How to Adjust the Speed

Set the desired travel speed by moving the control lever forward or backwards.



5.7 How to Perform the Neutral Adjustment



- Find a secure location away from bystanders to perform the drive adjustments (preferably face the mower towards a wall).
- Raise the drive wheels off the ground and stabilize the mower.
- Start the engine as described in the “Mower Operation” section and let it warm up for a few minutes.
- Have a helper hold the OPC down so that both your hands are free to make the adjustments.
- Set the speed control lever to a forward speed greater than 2.
- The control levers should remain locked in the neutral position via the thumb locks.
- Observe the drive wheels.
- If either wheel rotates, loosen the upper and lower steering control rod jam nuts for that side and adjust the rod longer or shorter until the wheel stops. Find the midpoint adjustment in the range that the wheel remains stopped. Retighten the rod jam nuts.
- Cycle the speed control thru the speed settings.
- The wheels should now go to a neutral position if the steering control levers are locked using the thumb locks.

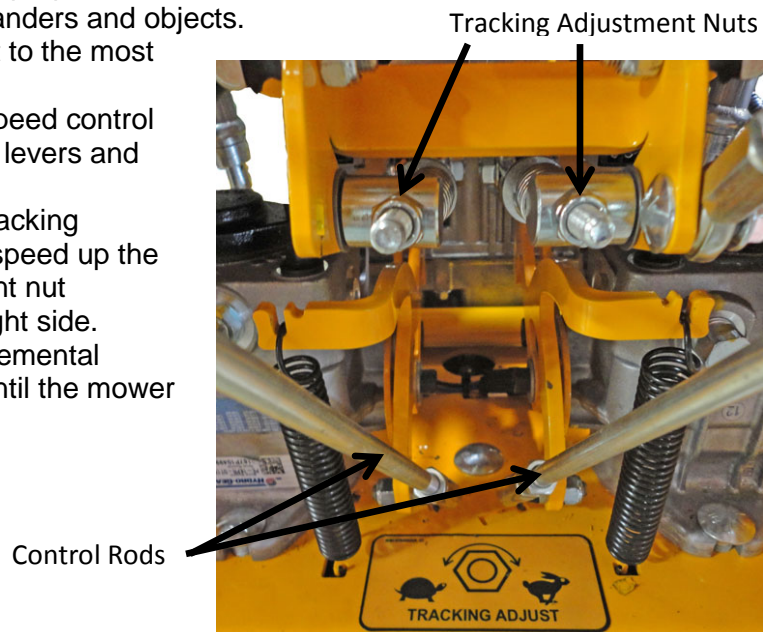
5.8 Straight Line Tracking Adjustments



Verify that both rear tires are inflated to the proper PSI. Find a wide open flat area away from bystanders and objects. Drive the mower with the speed control set to the most used position.

If the mower pulls to one side, return the speed control lever to the brake position, lock the control levers and shut off the engine.

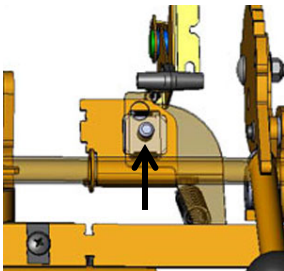
If the mower pulls to the left, turn the left tracking adjustment nut clockwise (right) ½ turn to speed up the left side or turn the right tracking adjustment nut counterclockwise (left) to slow down the right side. Repeat driving the mower and making incremental adjustments after shutting the engine off until the mower tracks straight.



5.9 How to Test/Use the Blade Clutch/Brake Switch

Before testing the blade clutch/brake operation, make sure the area is clear and there is nothing vulnerable to thrown objects from under the mower. No one should be near the mower deck or in its line of discharge. The discharge chute deflector should be in the down position. Move the engine throttle to the highest RPM speed setting. (When mowing, the engine speed should always be at its highest setting.) The engine governor will regulate the engine according to the different mowing conditions at that setting.) Engage the OPC switch and turn on the blade clutch switch. Run blades for a minute or so. Try engaging and disengaging the blades a few times about 10 seconds apart. If the blades do not start and stop in a few seconds each time, service the blade brake system or contact your local Wright dealer. Under mowing load, the clutch's longevity will be the greatest at the highest RPM setting.

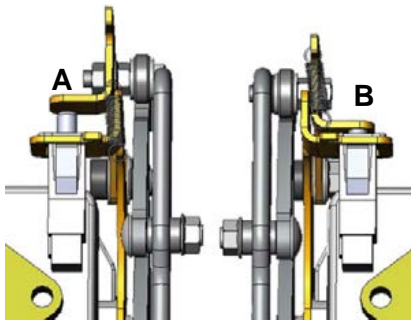
5.10 How to Test the Operator Presence Control (OPC) Switch



OPC for Paddles
PN 52410005

Before beginning this test, secure a large open area that is free of obstacles or hazards.

To test the OPC switch start the engine using the normal starting procedures, place the speed control in the slowest speed setting. While engaging the OPC lever(s) engage the blades by pulling up on the PTO blade clutch switch. Allow the mower to start moving forward and then release the mower handles. If the engine doesn't stop, then service the OPC system.



OPC for Brake, Control Handles
PN 52410005

To test the startup safety system, place the selector knob to speed setting "1" and unlock the control handles. Try to start the engine, if the engine starts, then service the safety switch system.

Speed select set to "1" or higher and control handles unlocked (A)

Speed select/brake set to on and/or control handles locked (B)

6 Service and Adjustments

For service documents go to www.wrightmfg.com, select support, then, click service docs tab.

6.1 Tire Maintenance and Pressure



WARNING

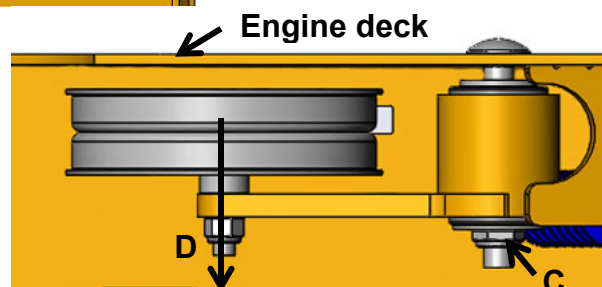
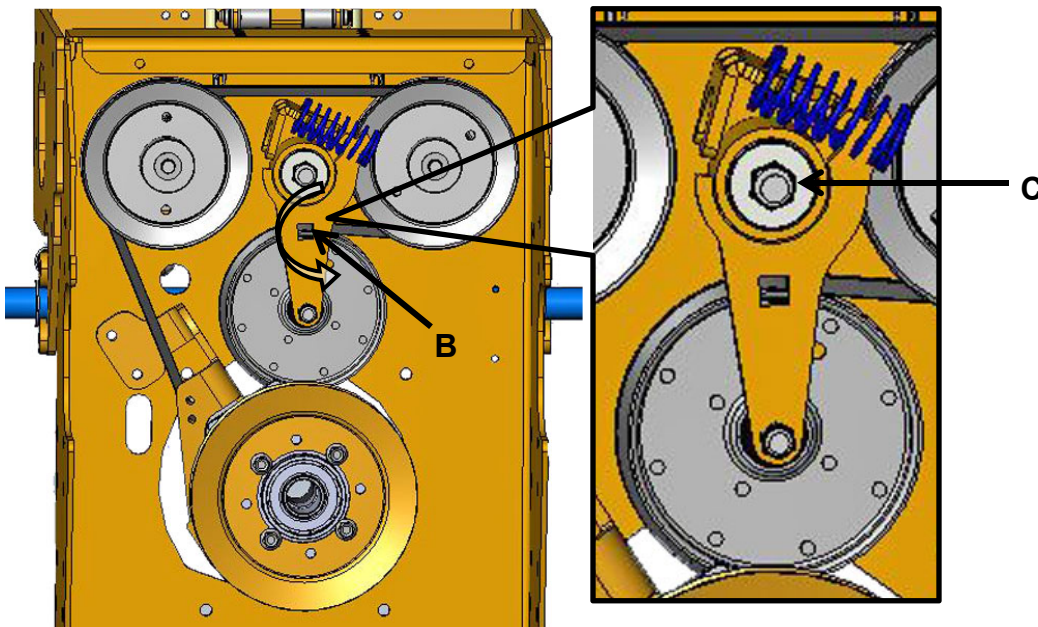
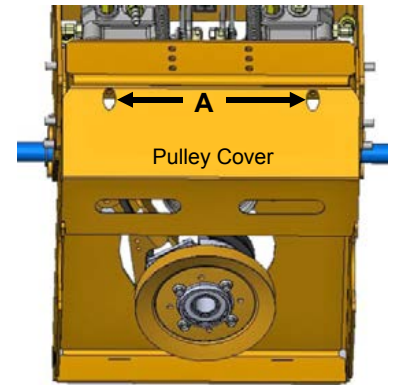
Excessively worn tire tread is dangerous on all hills. Replace drive tires with less than 3/32" of any tread groove left. Use tires with the tread pattern recommended by Wright Mfg., Inc. only. Keep the tire pressure at the proper level. Higher pressures will cause the tires to have less traction which will force you to go slower, with less safety and give you a harder ride. The front casters are equipped with non-pneumatic tires and do not require any air. They do not have any tread but should be replaced when excessively worn.

6.2 Belt Tension Adjustment

The pump drive belt is self-adjusting, and requires no adjustment, just replacement. The blade drive belt is self-adjusting also and requires no adjustment, just replacement.

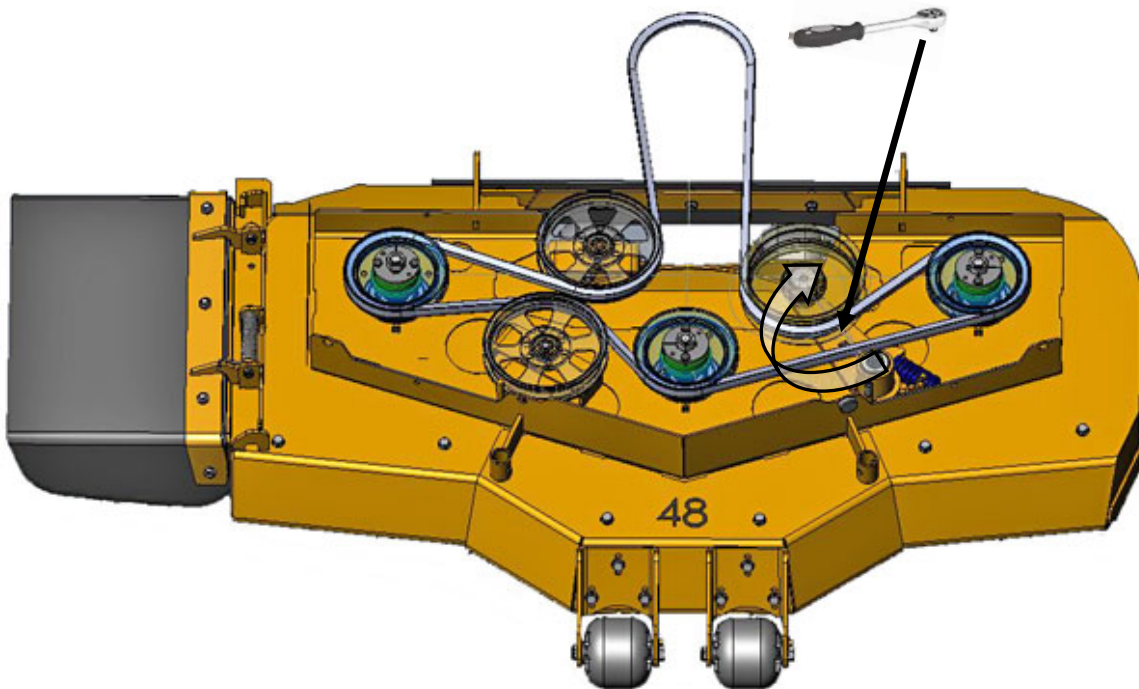
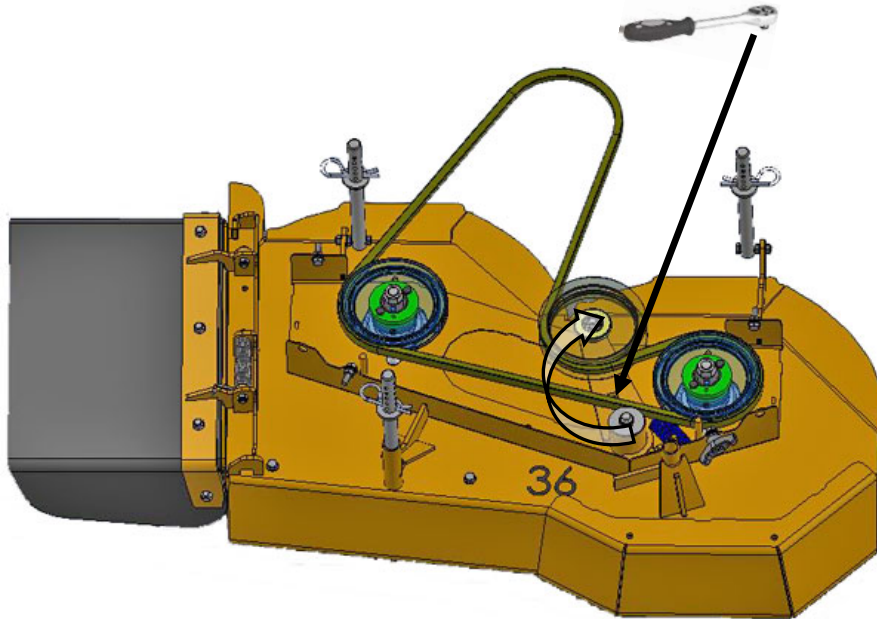
6.2.1 Replacing the Drive Belt

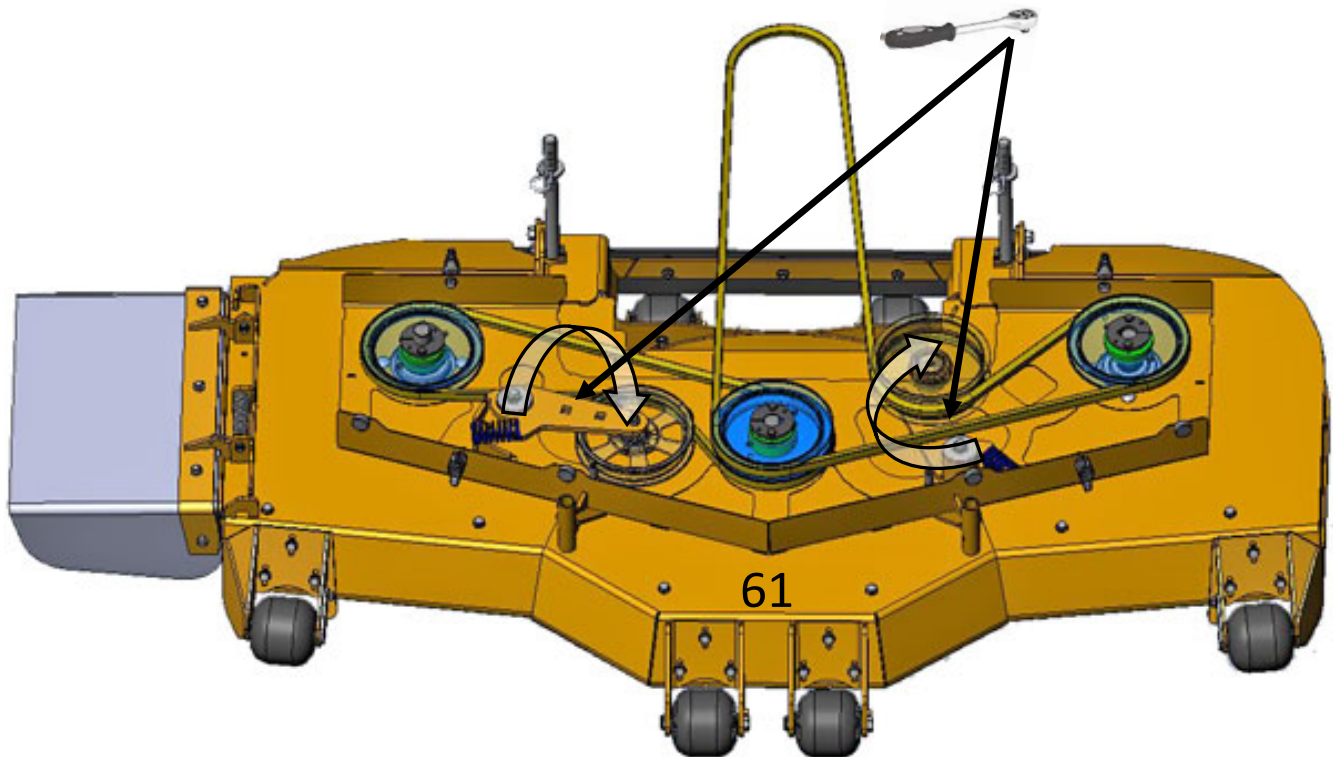
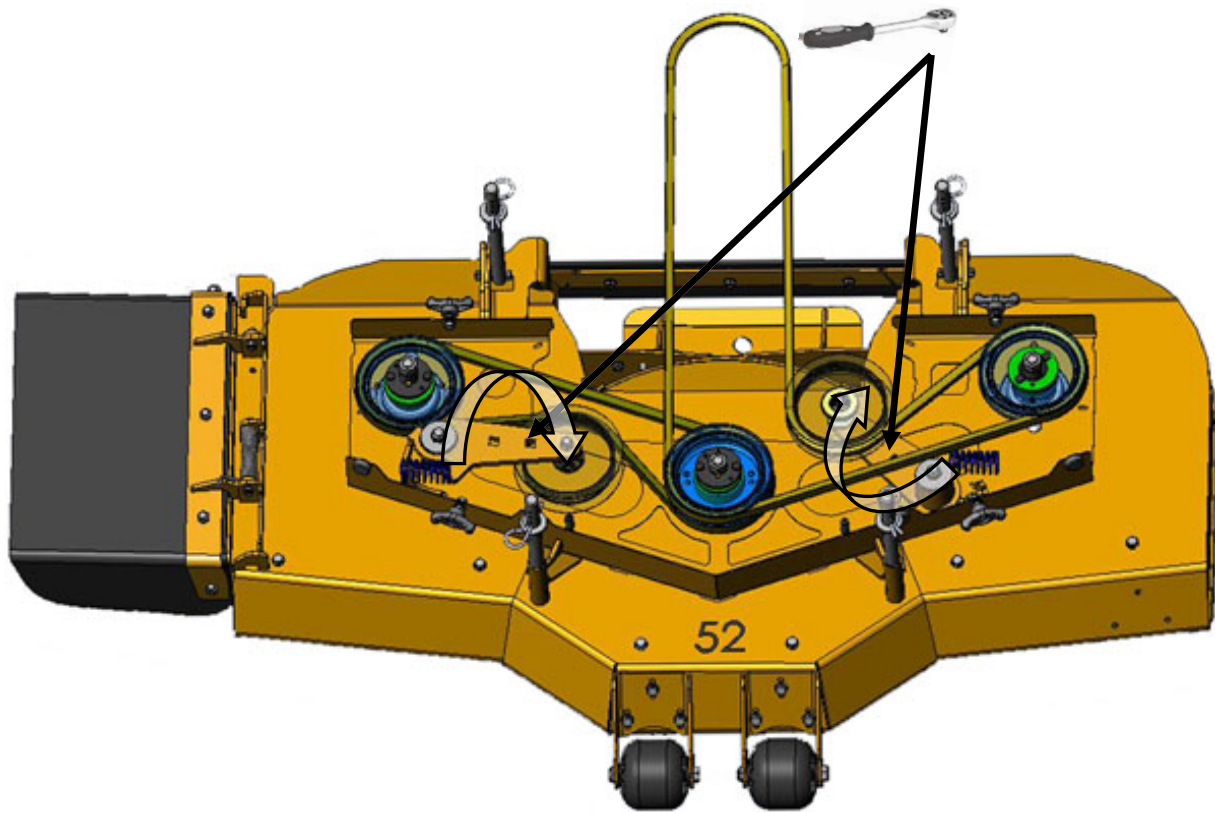
- Place the speed control in the Brake/Neutral position and lock control handles. Stop the engine, remove the key and wait for all moving parts to stop.
- Remove the deck cover and remove the engine to blade belt. (Refer to replacing the cutter deck belt section)
- Raise and secure the machine.
- Remove pulley cover by removing two Philips screws (A).
- Release belt tension by using a ½" ratchet and extension (B).
- With belt tension released, remove the belt from around pump pulleys.
- To remove the belt from around the idler pulley, it must pass between the bottom of the engine deck and the top of the idler pulley. It may be necessary to loosen the idler arm nut (C) and pull the idler arm/pulley in the downward motion (D) to allow clearance to remove the belt.
- Reinstall in reverse order. Figure shows belt routing and spring compression direction.



6.2.2 Replacing the Cutter Deck Belts

- Place the speed control in the Brake/Neutral position and lock control handles.
- Stop the engine, remove the key and wait for all moving parts to stop.
- Remove the deck covers.
- Remove the belt by using a ½" ratchet and extension to relieve the belt tension.
- Reinstall in reverse order. Figure shows belt routing and spring compression direction.





6.3 How to Move the Mower if the Engine Won't Start

Using a 5/8 wrench rotate both of the hydro bypass valve levers on the side of each hydraulic pump about 3-4 turns counterclockwise. The bypass valves are now open and the mower will be easy to move. When tightening, it is important not to over tighten these valves. Damage may occur to the pump if this valve is over tightened.



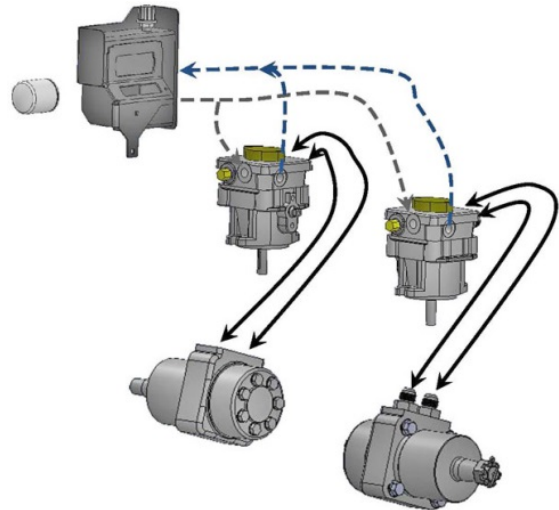
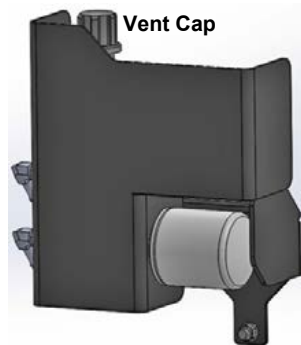
6.4 Hydraulic System



WARNING

Whenever servicing the hydraulic system, it is of the utmost importance to keep any dirt or debris from getting into the system. Clean off all parts before disassembly and assembly. When any of the hydraulic parts are disconnected or removed or when the oil is changed, air must be bled from the system.

- Low Pressure Hose (dashed line)
- High Pressure Hose ——— (solid line)
- Arrow Indicates Direction of Flow →



6.5 Bleeding Air from the Hydraulic System

If air is entrained in the system, loss of power, excessive heat, and damage to the hydraulic pumps may occur. First, make sure the oil level in the reservoir is correct. Use fully synthetic oil: Mobil1 15W-50. Lift the mower so that the rear wheels are off the ground. Be careful to support the mower so that it will not fall or tip while the system is bled of air. With the bypass valves open and the engine running, slowly move the control levers back and forth five or six times. Now close the bypass valves and with the engine running, slowly move the control levers back and forth five or six times. It may be necessary to repeat the above steps until all the air is purged and the rear wheels are turning at normal speed. After purging is complete, adjust the oil level in the reservoir if necessary.

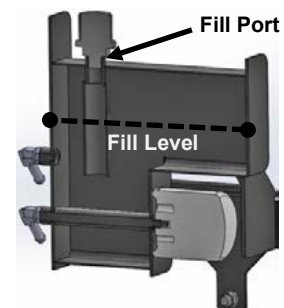
6.6 Hydraulic Oil Tank Check / Fill

Checking Oil Level

1. Ensure mower is on a level surface.
2. Remove vent cap.
3. Hydro oil should be 2-3 inches from the top of the fill port.

Filling Oil Level

1. Remove vent cap.
2. Using a funnel, fill tank through fill port until oil reaches 2-3 inches from the top of the fill port.



6.7 Lubrication

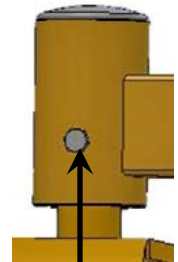
The Wright Velke Hydro is made with sealed bearings, oil based bushings and with limited grease fittings therefore only the front caster pivots and caster wheels need to be greased. Grease yearly by either, removing the 1/4-28 bolt and install a grease fittings or by removing the dust cap, disassembling and re-packing the wheel bearings. Use Mobil Polyrex-EM grease.

Use care filling with grease gun as too much pressure could blow out the grease seal.

- Set parking brake, stop the engine and remove the key.
- Clean grease fittings with a rag.
- Connect grease gun to fitting and pump until grease begins to ooze out from the bearings.
- Wipe off excess grease.
- *Do not use spray lube of any kind on choke and/or throttle cables.*



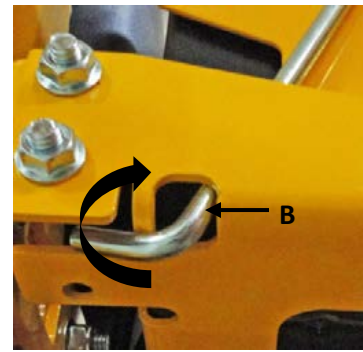
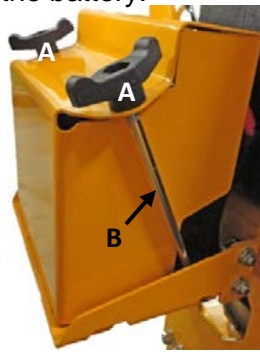
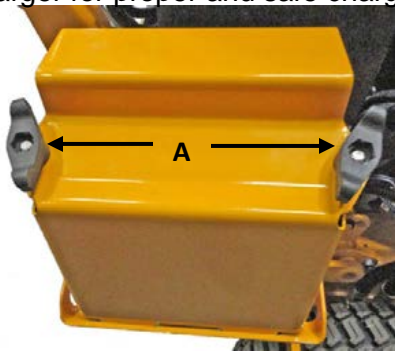
Grease Fitting
P/N 15990006
36/48 Velke Hydro



1/4-28 Bolt
Grease Fitting
P/N 15990006
52/61 Velke Hydro

6.8 Battery Service

The battery is 12V and is a maintenance free battery. Charge the battery only if it will not start the mower properly. Remove the battery from the mower before charging. Follow the instructions of the battery charger for proper and safe charging of the battery.



To remove battery cover, loosen wingnuts (A) enough to remove the hold-down rods (B) from each slot.

6.9 Cutting Blades

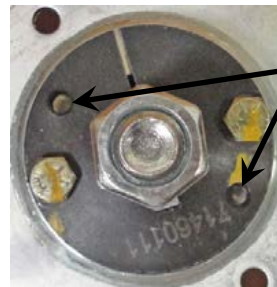
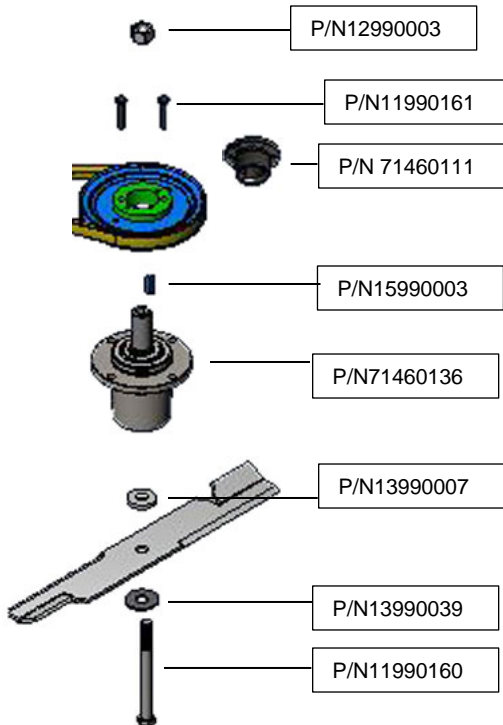
In order to maintain the best cut, it is important that the blades are well sharpened and not damaged. Bent or cracked blades or blades with large nicks need to be replaced. Blades must be balanced after sharpening.

To change the blades:

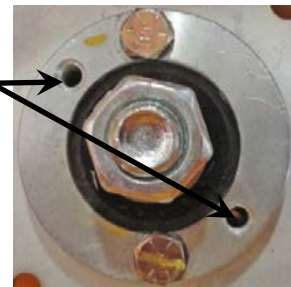
1. Stop engine, remove the key and wait for all moving parts to stop.
2. Engage the parking brake.
3. Lift the front of the mower and secure in the raised position with jack stands.
4. Remove the deck cover.
5. While securing the bolt head under the deck, remove the nut from the top of the spindle by rotating counter-clockwise.
6. Install new or re-sharpened blade. (Ensure the blade spacers are reinstalled with the same qty and location)
7. Torque nut to 70-80 ft lbs.

6.10 Spindle and Drive Pulley Split hub R&R

- Remove 2, 1/4" bolts from split hub and install in threaded holes in hub.
- Slowly tighten each bolt, alternating as you tighten bolts against the pulley.
- The hub will separate from the pulley.
- Replace grade 8 bolts and install in reverse order using the assembly holes to tighten hub onto pulley and spindle shaft.

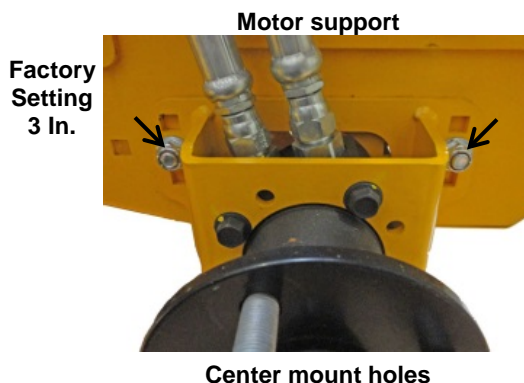


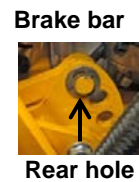
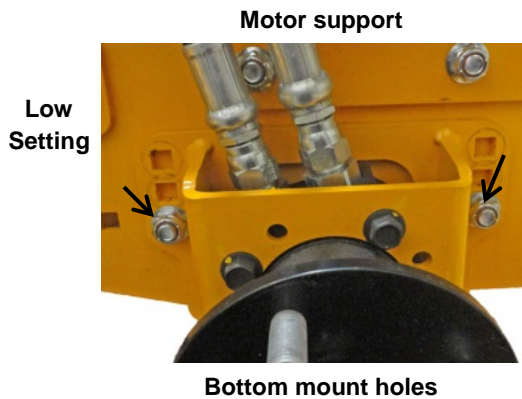
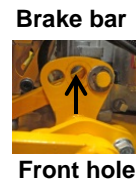
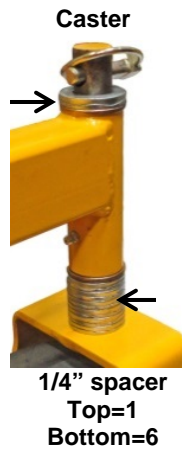
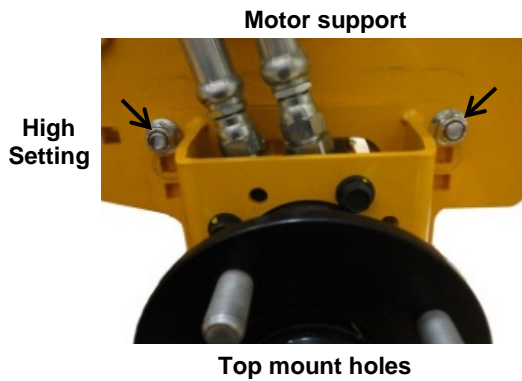
Threaded
Removal
holes



6.11 Hydraulic Motor Support Adjustment

The 36" and 48" models have three options to adjust the wheel motor support assembly for varied cutting heights. This adjustment should always be made in combination with the caster arm spacer adjustments and anti-scalp rollers (48" model only). The Velke hydro has a height of cut range from 1.5 – 4.5", it is only recommended adjusting wheel motor support mounts if desired cut height is at the low (2" or lower) or high range (4" or higher).

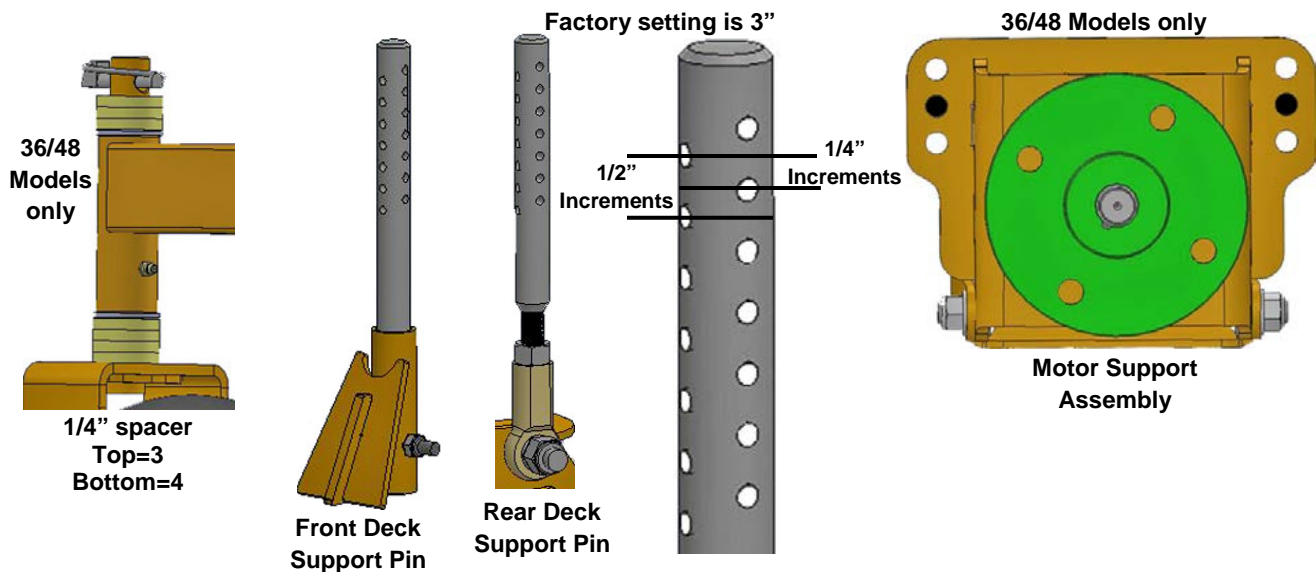




6.12 Adjusting Height-of-Cut

Before Adjusting the Height-of-Cut be sure of proper air pressure in the rear tires and check for even tire wear. The cutting height of the deck is adjustable from 1 1/2" – 4 1/2" in 1/4" increments.

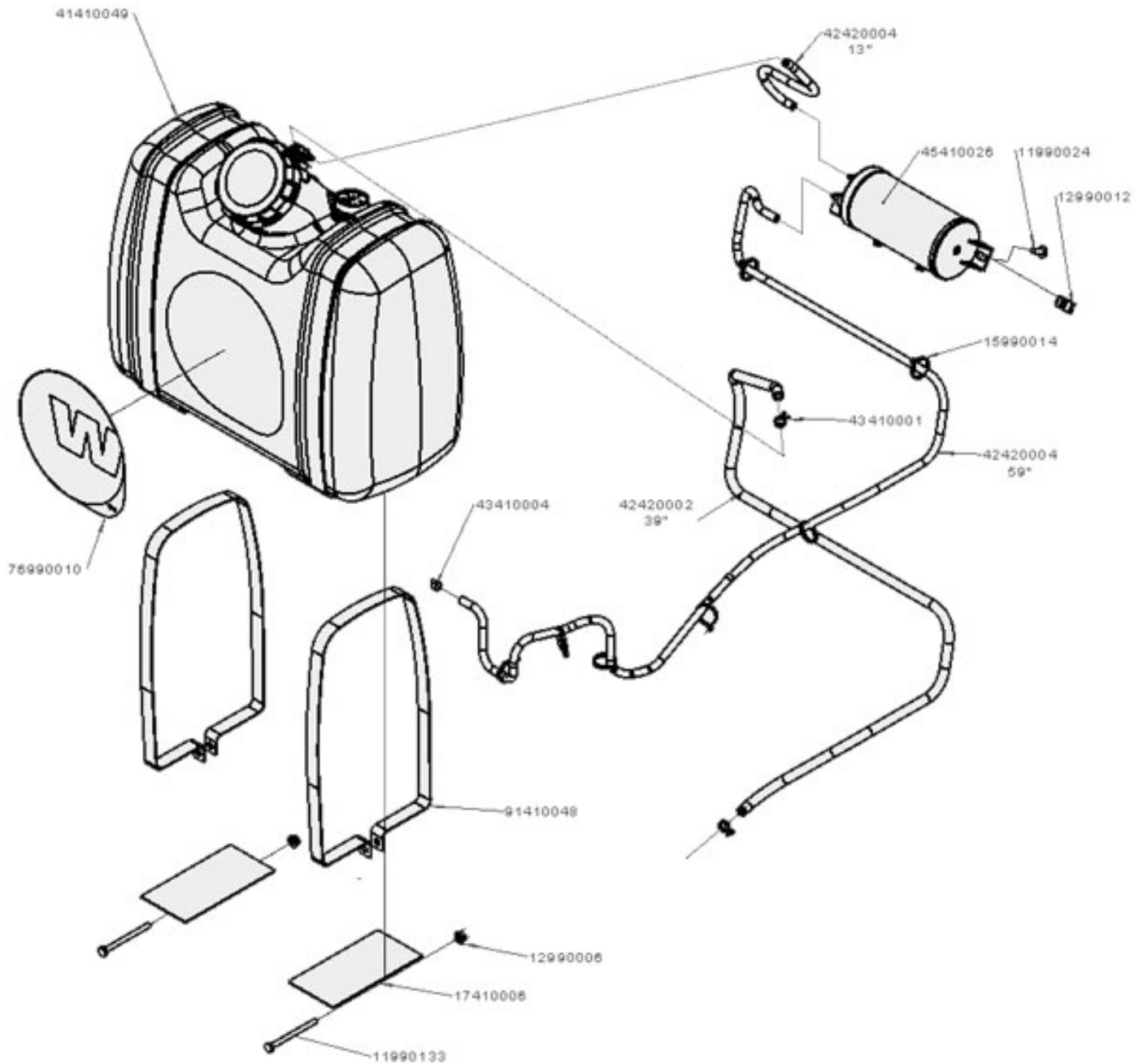
- Stop the machine and move the control handles to the neutral locked position.
- Disengage the PTO and move the speed control to the brake position.
- Stop the engine and remove the key.
- Install hairpin clips in the holes for the desired cutting height. Both front and rear hairpin clips should be in the same holes



6.13 Fuel Evaporation System

All Wright Velkes need to have this mandatory feature.

- Do Not alter or remove
- Do Not fill past the "Max Fill Level" line.
- Over-filling could result in clogging the roll-over vent and/or contaminating the purge canister.
- The vapor canister is located between the fuel tank and the upright.
- Inspect and clean dust filter every 500 hours or annually.



6.14 Transporting

Use a heavy duty trailer or truck when transporting the Velke Hydro PG. Lock brake and block wheels. Securely fasten the unit to the trailer or truck with straps, chains, cable or ropes.

6.15 Loading and Unloading



Use extreme caution when loading and unloading units on/off trailers or trucks. One full width ramp that extends beyond the rear tires is recommended rather than individual ramps for each side of the unit. The ramp should be long enough so that the angles between the ramp and the trailer or truck does not exceed 15 degrees. A steeper angle may cause the mower deck components to get caught as the unit moves from ramp to trailer or truck. Never attempt to turn the mower around on the ramp. Avoid sudden acceleration when driving up a ramp and sudden deceleration when backing down a ramp.

6.16 Cleaning the Mower

The underside of the mower deck should be checked and cleaned twice daily and more often if the grass being mowed is lush or wet. The entire mower should be cleaned daily at the end of the work day. Cleaning should be done with a leaf blower or low-pressure compressed air. Wash with water only when necessary and do not use a pressure washer or nozzle as the water can enter bearings and electrical connections causing an electrical short, rust and corrosion. When washing with water, avoid spraying near the hydro cap and do so when the unit has cooled down. Washing a hot machine can cause various unseen system damage. If water is used for cleaning, immediately dry it with a leaf blower or low-pressure compressed air and run with blades engaged for approximately 10 minutes. Once the wash is complete, always lubricate and grease all applicable areas.

6.17 Kohler Engine Manual / Maintenance

It is very important that all users of this unit read and understand the Kohler Engine Owner's Manual. This manual contains; safety awareness, emissions, maintenance and warranty information that is critical for the care of your Kohler engine. Below is the periodic maintenance chart directly from the Kohlers Owner's Manual, which is included with the sale of the Velke.

	 WARNING	Before working on engine or equipment, disable engine as follows: 1) Disconnect spark plug lead(s). 2) Disconnect negative (-) battery cable from battery.
	Accidental Starts can cause severe injury or death. Disconnect and ground spark plug lead(s) before servicing.	

Normal maintenance, replacement or repair of emission control devices and systems may be performed by any repair establishment or individual; however, warranty repairs must be performed by a Kohler authorized dealer.

MAINTENANCE SCHEDULE

Every 25 Hours¹

• Service/replace precleaner.	Air Cleaner/Intake
• Replace air cleaner element (if not equipped with precleaner).	Air Cleaner/Intake

Every 100 Hours¹

• Replace air cleaner element (if equipped with precleaner).	Air Cleaner/Intake
• Change oil and filter.	Lubrication System
• Remove cooling shrouds and clean cooling areas.	Air Cleaner/Intake

Every 100 Hours

• Check that all fasteners are in place and components are properly secured.	Reassembly
• Replace fuel filter.	

Every 500 Hours²

• Have valve clearance (lash) checked/adjusted.	Reassembly
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Every 500 Hours

• Replace spark plugs and set gap.	Electrical System
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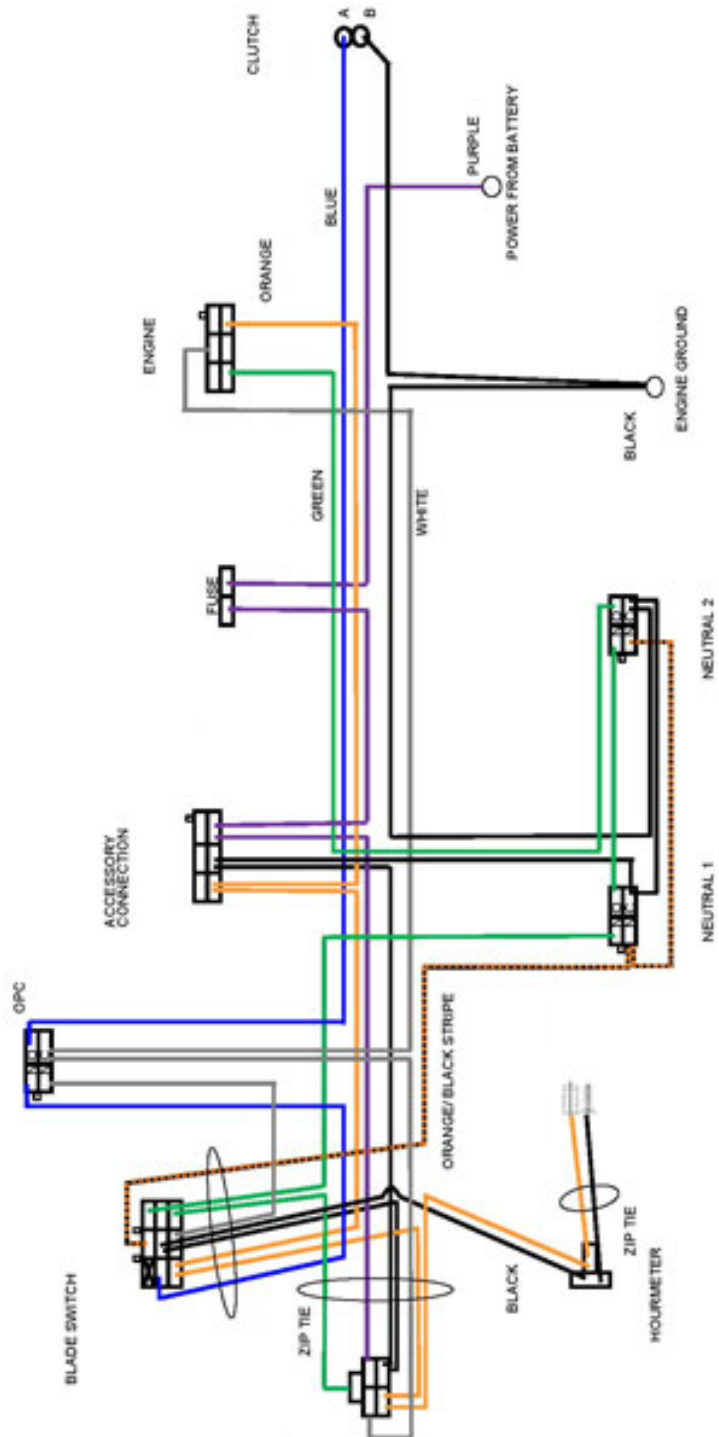
¹ Perform these procedures more frequently under severe, dusty, dirty conditions.

² Have a Kohler authorized dealer perform this service.

REPAIRS/SERVICE PARTS

Kohler genuine service parts can be purchased from Kohler authorized dealers. To find a local Kohler authorized dealer visit KohlerEngines.com or call 1-800-544-2444 (U.S. and Canada).

7 Electrical Schematic



8 Maintenance Chart

MAINTENANCE ITEM	ENGINE ITEMS	SEE NOTE BELOW	FIRST 8 HOURS	DAILY	EVERY 25 HOURS	EVERY 100 HOURS	EVERY 200 HOURS	EVERY 300 HOURS	ANNUALLY
Inspect for cracks in frame, cutter deck or other steel parts		*3	X						X
Inspect all belts for wear, adjustment and alignment			X		X				X
Check all bolts and nuts for tightness (tighten as necessary)			X	X					X
Lubricate hand control lever pivot shafts with waterproof grease			X						X
Check hydraulic oil reservoir level and fill as needed - Use SYNTHETIC oil - Mobil1 15W-50		*2	X	X					X
Grease caster wheel bearings			X	X					X
Check tire pressure; Rear tires 18-22 psi. Front tires are a non-pneumatic style and do not require air pressure			X	X					X
Check and clean engine cooling fins	Engine	*1	X		X				X
Lubricate Operator Presence Control pivots and control rod with waterproof grease			X		X				X
Replace fuel filter	Engine	*1	X			X			
Lubricate choke control cable (if equipped) with WD-40			X			X			X
Check engine and add as needed	Engine	*1		X					X
Check for fuel or oil leakage - correct as needed	Engine	*1		X					X
Check and clean air intake screen	Engine	*1		X					X
Clean engine blower screen and fins with compressed air	Engine	*1		X					X
Clean mower with compressed air-do NOT use a pressure washer				X					X
Check for loose hardware (e-clips, snap rings, nuts, etc.)				X					X
Check blades for wear and sharpness (sharpen and balance or replace as necessary)				X					X
Check and adjust tire pressures to no more than maximum pressure listed on tire and maintaining good traction and comfort				X					X
Clean out debris under blade belt cover				X					X
Scrape clean underside of cutter deck				X					X
Check blade mounting bolts for proper tightness				X					X
Check blade spindle mounting bolts for proper tightness				X					X
Clean air cleaner foam element	Engine	*1		X					X
Inspect tires, replace as needed					X				X
Inspect and tighten all hydraulic hoses					X				X
Adjust parking brake shoes to firmly stop wheels when engaged					X				X
Clean air cleaner paper element	Engine	*1		X					X
Clean and re-gap spark plug (replace as necessary)	Engine	*1				X			X
Change engine oil	Engine	*1	X			X			X
Change engine oil filter	Engine	*1					X		X
Replace air cleaner paper element	Engine	*1					X		X
Replace hydraulic oil filter with Original Wright filter									X
Completely inspect for excessive wear in all parts of mower, including control system (replace worn parts)							X		X
Inspect and replace (if necessary) worn main cutter deck idler pulleys or pulley bearings (if applicable)							X		X
Replace (if necessary) excessively worn caster wheels and roller bearings							X		X
Remove battery and clean battery, battery box and battery cable ends (if applicable)							X		X
Clean combustion chamber	Engine	*1						X	
Check and adjust valve clearance	Engine	*1						X	
Clean and lap valve seating surface	Engine	*1						X	
NOTES:									
*1 - Refer to Engine Manufacturers Owners Manual									
*2 - Hydraulic fluid level should be 1"-2" below the top of the oil fill									
*3 - Contact an authorized Dealer immediately if any cracks are found									
The service intervals indicated are to be used as a guide. Service should be performed more frequently as necessary by operating conditions									

Maintenance Record

[illegible]

WRIGHT MANUFACTURING, INC. POWER EQUIPMENT LIMITED WARRANTY

SUPERSEDES ALL PREVIOUS WARRANTIES. EFFECTIVE FOR UNITS RETAILED ON OR AFTER 1/1/2016

Limited Warranty:

Wright Manufacturing, Inc. (hereinafter: WMI) warrants to the original retail purchaser (Owner) and legitimate successors that any new WMI mower originally accompanied by this warranty with a retail sales date on or after the effective date above will be free from manufacturing defects in materials or workmanship subject to the following limitations and exclusions. Any part of the WMI commercial mower found, in the reasonable judgment of WMI, to be defective in materials or workmanship, will be repaired or replaced by an Authorized WMI Service Dealer without charge for parts and (except as excluded below) labor. This Warranty is transferrable with its remaining conditions to legitimate successor Owners to the original retail purchaser/owner. Dealer demo units with less than fifty hours when first retailed shall also be covered by this limited warranty. Proofs of Purchase will be required by the Authorized WMI Service Dealer to substantiate any warranty claims. All WMI warranty work must be performed by an Authorized WMI Service Dealer and mower must be delivered to the dealer prior to the expiration of the warranty period. This Warranty is limited to the following specified periods from the date of the original retail purchase for defects in materials or workmanship and will commence upon the date of original retail purchase. This warranty shall apply only if the warranty registration form has been completed on-line by an Authorized WMI Service Dealer and reflects the actual date of original retail purchase. This warranty includes only the cost of parts and labor (when applicable).

This warranty applies only to the replacement of defective or otherwise warrantable WMI OEM parts being replaced with WMI OEM parts.

- All parts and components (except as noted below)
 - 2 years/Unlimited Hours Commercial
 - 5 years/500 hours Non-Commercial*
- Belts – 90 days
- Battery – 90 days
- Engine – warranty covered by engine manufacturer and handled through the respective Authorized engine dealers

Exclusions:

Any damage or deterioration due to normal use, wear and tear or exposure
All filters, engine oil, hydraulic oil, tires and tubes
Bent, fractured or broken parts occurring through impact or hard use
Clutch: linings, anti-rotation failure or other failure due to improper replacement installation
Cost of regular maintenance service, parts or adjustments
Worn bearings
Worn bushings, cotters, clips, pins and retainers
Grease/zerk fittings
Paint, paint fading, cosmetic imperfections and steel surface imperfections
Fabric, cushion and rubber grip wear or damage
Cutting blades, light bulbs, fuses
Any damage due to previous improperly performed or unauthorized repairs
Fire or water damage
Abrasion, rust or corrosion wear or damage

Repair Parts Replaced During Original Warranty

All Repair parts (excluding wear or otherwise excluded items) installed during the original mower warranty period are warranted until the end of the respective original period according to the categories above except in the case that the respective original warranty period expires in less than ninety (90) days after the installation of the part(s). If this happens then the parts are warranted for a total of ninety (90) days from the time of their installation.

Rental Use

The above warranty periods are limited to maximum of ninety (90) days for mowers that are used for rental purposes.

Other conditions:

The WMI mower, including any defective part, must be returned to an Authorized WMI Service Dealer within the warranty period. The expense of lost production time and delivering the mower to the Authorized WMI Service Dealer for warranty work and the expense of returning it to the Owner after repair will be paid for by the Owner. WMI's responsibility is limited to making the required repairs and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any WMI mower. This Warranty does not cover any mower that has been subject to misuse, neglect, negligence, burning in any fire, flooded by water, damaged in an accident, or that has been operated or maintained in any way contrary to the operating and maintenance instructions as specified in the Owner's Manual. The Warranty does not apply to any damage to the mower that is the result of improper maintenance or to any mower or parts that have not been assembled or installed as specified in the Owner's Manual. The Warranty does not cover any mower that has been altered or modified changing performance or durability. In addition, the Warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the reasonable judgment of WMI, are either incompatible with the WMI mower or adversely affect its operation, performance or durability.

WMI reserves the right to change or improve the design of any mower without assuming any obligation to modify any mower previously manufactured.

All other implied warranties are limited in duration to the two (2) year warranty period or ninety (90) days for mowers used for rental purposes. Accordingly, any such implied warranties including merchantability, fitness for a particular purpose, or otherwise, are disclaimed in their entirety after the expiration for the appropriate two (2) year or ninety (90) day warranty period. WMI's obligation under this Warranty is strictly limited to the repair or replacement of defective parts and WMI does not assume, or authorize anyone to assume for them, any other obligation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply.

WMI assumes no responsibility for incidental, consequential or other damages including, but not limited to, expense for gasoline, expense of delivering the mower to an Authorized WMI Service Dealer and expense of returning it to the Owner, damage by fire, mechanic's travel time, telephone charges, rental of a like product during the time warranty repairs are being performed, travel, loss or damage to personal property, loss of revenue, loss of use of the power equipment, loss of time or inconvenience. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This Warranty applies to all WMI commercial mowers retailed and located in the United States of America and Canada.

*Non-Commercial: product is used only on one home lot. Use at multiple locations is considered commercial use in which the commercial warranty would apply.

For the location of the Authorized WMI Service Dealer nearest you or other information, such as, Parts Lists and Owner's Manuals visit our website at: wrightmfg.com

WRIGHT MANUFACTURING, INC.
4600 WEDGEWOOD BLVD STE X
FREDERICK MD 21703-7167

FEDERAL AND CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The United States Environmental Protection Agency (EPA), California Air Resources Board (CARB) and Wright Manufacturing, Inc. (WMI) are pleased to explain the evaporative emission control system (EECS) warranty on your 2014 - 2015 commercial mower. In the United States, new equipment that use small off-road engines must be designed, built and equipped to meet the Federal's stringent evaporative emissions standards. In California, new equipment that use small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. WMI must warrant the EECS on your commercial mower for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your equipment.

Your EECS may include parts such as the carburetor, fuel-injection system, the ignition system, catalytic converter, fuel tanks, fuel lines, fuel caps, valves, canisters, filters, vapor hoses, clamps, connectors, and other associated emission-related components.

Where a warrantable condition exists, WMI will repair your commercial mower at no cost to you including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your equipment is defective, the part will be repaired or replaced by WMI.

OWNER'S WARRANTY RESPONSIBILITIES:

- As the commercial mower owner, you are responsible for performance of the required maintenance listed in your owner's manual. WMI recommends that you retain all receipts covering maintenance on your commercial mower but WMI cannot deny warranty solely for the lack of receipts.
- As the commercial mower owner, you should however be aware that WMI may deny you warranty coverage if your commercial mower or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.
- You are responsible for presenting your commercial mower to WMI's distribution center or service center as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact WMI's warranty claims department at (301) 360-9810.

GENERAL EMISSIONS WARRANTY COVERAGE:

WMI warrants to the ultimate purchaser and each subsequent purchaser that the commercial mower is:

Designed, built and equipped so as to conform with all applicable regulations; and

Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to that part as described in WMI's application for certification.

The warranty period begins on the date the commercial mower is delivered to an ultimate purchaser or first placed into service. The warranty period is two years.

Subject to certain conditions and exclusions as stated below, the warranty on emission-related parts is as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions supplied, is warranted for the warranty period stated above. If the part fails during the period of warranty coverage, the part will be repaired or replaced by WMI according to subsection (4) below. Any such part repaired or replaced under warranty will be warranted for the remainder of the period.

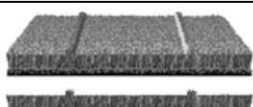
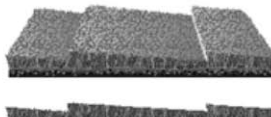
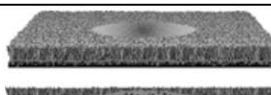
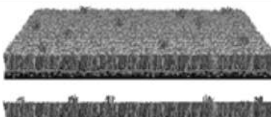
- (2) Any warranted part that is scheduled only for regular inspection in the written instructions supplied is warranted for the warranty period stated above. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
- (3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions supplied is warranted for the period of time before the first scheduled replacement date for that part. If the part fails before the first scheduled replacement, the part will be repaired or replaced by WMI according to subsection (4) below. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
- (4) Repair or replacement of any warranted part under the warranty provisions herein must be performed at a warranty station at no charge to the owner.
- (5) Notwithstanding the provisions herein, warranty services or repairs will be provided at all of our distribution centers that are franchised to service the subject engines or equipment.
- (6) The commercial mower owner will not be charged for diagnostic labor that is directly associated with diagnosis of a defective, emission-related warranted part, provided that such diagnostic work is performed at a warranty station.
- (7) WMI is liable for damages to other engine or equipment components proximately caused by a failure under warranty of any warranted part.
- (8) Throughout the commercial mower warranty period stated above, WMI will maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
- (9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of WMI.
- (10) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts by the ultimate purchaser will be grounds for disallowing a warranty claims. WMI will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

WARRANTED PARTS:

The following emission warranty parts listed below are covered:

- (1) Fuel Tank
- (2) Fuel Cap
- (3) Fuel Line
- (4) Fuel Line Fittings
- (5) Clamps
- (6) Pressure Relief Valves
- (7) Control Valves
- (8) Control Solenoids
- (9) Electronic Controls
- (10) Vacuum Control Diaphragms
- (11) Control Cables
- (12) Control Linkages
- (13) Purge Valves
- (14) Vapor Hoses
- (15) Liquid/Vapor Separator
- (16) Carbon Canister
- (17) Canister Mounting Brackets
- (18) Carburetor Purge Port Connector

Cut Quality and Mowing Tips

Problem	Description	Possible Cause	Solution
Streaking	<p>Streaking is when strips of uncut grass are left behind.</p> 	Blades are not sharp	Sharpen blades
		Blades are worn down too far	Replace blades
		Engine RPM is too low	Mow at full throttle
		GROUND SPEED IS TOO FAST	SLOW DOWN
		Deck is plugged with grass	Clean deck
Stepped Cutting	<p>Stepped cutting is sharp ridges left in the lawn surface. Stepped cutting is usually caused by deck damage or misadjustment, or blade damage</p> 	Deck is not leveled correctly	Level the deck
		Tires are not properly installed/inflated	Check and inflate tires
		Blades are damaged	Replace blades
		Deck shell is damaged	Repair or replace deck
		Spindle is bent or loose	Repair or replace spindle
		Blades are installed incorrectly	Reinstall the blades correctly
Scalping	<p>Scalping is when the deck comes close to or hits the ground. Scalping can be caused by the deck is misadjusted, unevenness in the lawn, or by deck bounce because ground</p> 	Lawn is uneven or bumpy	Roll or level the lawn
		Deck cutting height is set too low	Raise cutting height
		Deck is not leveled correctly	Level the deck
		Tire pressure is uneven	Check and inflate tires
Stringers	<p>Stringers are sparse patches of uncut grass left behind the mower.</p> 	Blades are not sharp or are nicked	Sharpen blades
		Blades are worn down too far	Replace blades
		Engine RPM is too low	Mow at full throttle
		GROUND SPEED IS TOO FAST	SLOW DOWN
		Deck is plugged with grass	Clean deck

Recommended Mowing Heights		
Grass	Minimum Height	Maximum Height
Tall Fescue	1 1/2"	3"
Kentucky Bluegrass	1 1/2"	2 1/2"
Bahia Grass	2"	3"
Bermuda Grass	1/2"	1"
St. Augustine Grass	1"	3"
Zoysia Grass	1/2"	1"
Mowing Tips		
Always mow at full throttle		
Check deck pitch, front blade tip MUST be 1/4" - 3/8" lower than the back of the blade tip.		
Cut 1/3 of the grass blade, cutting more is not recommended unless grass is sparse		
Use a slower ground speed when grass is wet and lush or when using a mulch kit.		
Clean the under side of the cutter deck after each use.		
Grass build up WILL eventually effect cut quality.		

NOTES:



4600X Wedgewood Blvd
Frederick, MD 21703
www.wrightmfg.com