



**CHARGER** 1055

***SERIAL RANGE: 19244001 - 20257999***

## **PRODUCT MANUAL**

Model Numbers & Serial Numbers

Manuals

Country Clipper Safety Instructions and Operation

Country Clipper Repair Parts

Kawasaki Engine Owner Manual

ROPS Safety Information

Warranty

Country Clipper Warranty

Kawasaki Engine Warranty

Hydro-Gear Warranty

Battery Warranty

Additional Information

Country Clipper Product Specifications

Notes/Service Records

P-13459 (03/20)

## MODEL NUMBER'S & SERIAL NUMBER'S

**Date of Purchase:** \_\_\_\_\_

**Mower Model Number:** \_\_\_\_\_

**Mower Serial Number:** \_\_\_\_\_

**Engine Spec Number:** \_\_\_\_\_

**Hydro Serial Number (RH):** \_\_\_\_\_

**Hydro Serial Number (LH):** \_\_\_\_\_

# Safety Instructions & Operation

# COUNTRY CLIPPER® ZERO TURN MOWER

# CHARGER™

# 1055

**SERIAL RANGE: 19244001 - 20257999**

Congratulations for buying a **Country Clipper** product. Your **Country Clipper** Zero Turn Radius Riding Mower was designed and built to provide long and trouble free service. Keep in mind that it, like any other mechanical device, can be potentially dangerous if used improperly, and hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the equipment. Study this manual and pay special attention to the important Safety Precautions on pages 3-5. Following these instructions will help you continue to enjoy the trouble-free performance expected of the **Country Clipper** product.

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## SAFETY

### ACCIDENT PATTERNS TO AVOID

- I. **CONTACT WITH THE ROTATING BLADE** -- This accident usually happens when the operator is clearing the discharge chute of grass, (especially when the grass is wet), or when the operator adjusts the machine without turning it off and waiting for the blades to completely stop.
- II. **PROPELLED OBJECTS** -- Sticks, rocks, wires, and other objects can be propelled out through the discharge chute or from under the mower housing. Bystanders are particularly vulnerable.
- III. **GRASS CATCHER OR GUARD** -- The mower shall not be operated without either the entire grass catcher or guard in place.
- IV. **OVERTURNING** -- This happens when riding mowers are used on steep slopes, embankments or hills. The operator in these cases can come in contact with the blades or sustain injuries during a fall.
- V. **MOWER RUNNING OVER THE VICTIM** -- This usually happens when a riding mower is driven in reverse. The accident victims are most often young children whom, unseen by the operator of the mower, were in the area being mowed.

AT **COUNTRY CLIPPER**, WE SHARE YOUR DESIRE TO PROTECT YOURSELF, YOUR FAMILY, YOUR FRIENDS AND YOUR NEIGHBORS FROM ACCIDENTAL INJURY. OBSERVING AND ENFORCING THE FOLLOWING GUIDELINES WILL HELP TO ENSURE THE SAFETY OF EVERYONE.

**PLEASE BE CAREFUL!**

### SAFETY INSTRUCTIONS AND RECOMMENDATIONS

1. **PEOPLE WHO OPERATE, SERVICE, OR ARE OTHERWISE ASSOCIATED** with the **Country Clipper** Zero Turn Radius Mower should be trained in its proper use and warned of its dangers. Before operating, adjusting, or servicing the **Country Clipper** Zero Turn Radius Mower they should read and understand this entire manual and the engine owner's manual.
2. **AVOID CONTACT WITH MOVING PARTS.** Keep hands and feet from under mower deck and away from blades at all times. Turn engine (motor) off if you must unclog the chute.
3. **AVOID HILLS AND SLOPES.** Use extreme caution when mowing up or down slopes. NEVER mow across the face of a slope. If a slope must be ascended, back up the slope; drive forward when descending. Reduce speed and use caution to start, stop and maneuver. To prevent loss of control on a slope avoid sharp turns, sudden changes in direction, and sudden stops and starts.
4. **DISENGAGE POWER TO MOWER BEFORE BACKING UP.** Do not mow in reverse unless ABSOLUTELY necessary and then only after turning around and observing the entire area behind the mower. Go slowly. Most "running over victim" accidents occur in reverse.
5. **BEGINNING OPERATORS SHOULD LEARN HOW TO STEER** the **Country Clipper** Zero Turn Radius Mower before attempting to mow. Start with slow engine speed and drive without the blades engaged in an open area until comfortable with the machine.
6. **KNOW HOW TO STOP QUICKLY.** Know the location and operation of every control, especially how to brake and how to disengage the mower blades.
7. **DO NOT MOVE CONTROL LEVER(S)** from forward position to reverse position rapidly. The speed and/or direction of travel is affected instantly by movement of the Control Lever(s).

8. **DO NOT ALLOW CHILDREN TO OPERATE MOWER.** Do not allow others who have not had instruction to operate mower.
9. **ALWAYS TURN ENGINE OFF AND REMOVE KEY** before leaving the mower to prevent children and inexperienced operators from starting the engine. Never leave the mower unattended with engine running. Always wait for all moving parts and all sounds to stop before leaving operator's seat.
10. **WEAR STURDY, ROUGH-SOLED WORK SHOES AND CLOSE-FITTING SLACKS AND SHIRTS.** Never operate mower in bare feet, sandals or sneakers.
11. **KNOW THE AREA YOU ARE TO MOW.** Watch for hidden danger such as rocks, roots, sticks, holes, bumps, and drop-offs, etc. Before mowing, pick up all debris in area to be mowed. Sharp and hard objects can be propelled at a high speed and can act like shrapnel. Walk through tall grass **BEFORE MOWING** to make sure there are no hidden dangers. Mow higher than desired in tall grass to expose any hidden objects and/or obstacles, clean the area, and then mow to the desired height.
12. **NEVER REFUEL A MOWER INDOORS.** Allow the engine time to cool before refueling. Unseen vapors may be ignited by a spark. Always clean up spilled gasoline. Never run the engine indoors in a garage or any other closed building. Allow engine to cool before storing in any enclosure. The engine exhaust and gasoline fumes are dangerous.
13. **DISENGAGE BLADES BEFORE DRIVING ACROSS WALKS** or projecting objects.
14. **NEVER REMOVE THE FUEL CAP** or add gasoline to a running or hot engine that has not been allowed to cool for several minutes after running. Always make sure the gas cap is in place.
15. **NEVER CARRY PASSENGERS.**
16. **DO NOT SMOKE AROUND THE MOWER** or the gasoline storage container. Gasoline fumes can easily ignite.
17. **KEEP GASOLINE IN A WELL-VENTILATED AREA** away from your living quarters and in tightly-capped safety cans. Never store mower with gasoline in the tank inside a building where fumes may reach open flame or spark.
18. **DISENGAGE BLADES, STOP ENGINE AND REMOVE IGNITION KEY** before any servicing. Be sure all moving parts and all sounds have stopped. Let engine cool and disconnect the spark plugs so the engine cannot start by accident. A SLIGHT ROTATION OF THE BLADES COULD START THE ENGINE.
19. **KEEP ALL NUTS, BOLTS, AND SCREWS TIGHT** to be sure equipment is in safe working condition, especially blade mounting bolts.
20. **MOWER SHOULD BE STOPPED AND INSPECTED FOR DAMAGE** after striking a foreign object and the damage should be repaired before restarting and operating the equipment. Stop immediately and check for damage or loose parts if mower should start vibrating.
21. **KEEP SAFETY DEVICES AND GUARDS IN PLACE.** If any of the safety switches become inoperable, have them repaired immediately.
22. **FOR PROPER USE OF ROLL OVER PROTECTION SYSTEM (R.O.P.S.)** reference the R.O.P.S. manufactures instruction. (If equipped)
23. **DO NOT STEP OR STAND ON THE MOWER HOUSING.** Step or stand only on the foot deck.
24. **WATCH OUT FOR TRAFFIC** near roadways and when crossing roads.

25. **DO NOT USE MOWER WHEN GRASS IS WET OR SLIPPERY.**
26. **THIS MACHINE IS NOT MEANT FOR HIGHWAY OR STREET USE.** It is not a recreational vehicle and it should not be operated as such.
27. **ALWAYS DISENGAGE THE MOWER BLADE CLUTCH** when transporting.
28. **KEEP ALL SAFETY LABELS IN LEGIBLE CONDITION.** Remove grease, dirt, grass, etc. that may cover safety labels. Replace any safety label that is missing or damaged.
29. **WEAR PERSONAL PROTECTIVE EQUIPMENT.** Eye, ear, feet and head protection is recommended.
30. **ONLY USE COUNTRY CLIPPER APPROVED ACCESSORIES.**
31. **DO NOT CHANGE THE ENGINE GOVERNOR SETTING** or over speed the engine.
32. **BEWARE OF MOWER DISCHARGE DIRECTION** and do not point it at anyone.
33. **DO NOT OPERATE THE MOWER UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.**
34. **USE CARE WHEN LOADING OR UNLOADING MACHINE INTO A TRAILER OR TRUCK.**
35. **USE CARE WHEN APPROACHING BLIND CORNERS,** shrubs, trees, or other objects that may obscure vision.
36. **CLEAN ALL GRASS AND DEBRIS FROM MACHINE TO PREVENT FIRES.** Remove spilled oil or gasoline.
37. **KEEP HANDS AND FEET AWAY FROM MOVING PARTS.** If possible do not make adjustments with the engine running.
38. **NEVER MOW WHEN OTHER PEOPLE OR PETS ARE IN THE AREA.**

39. **CAREFULLY RELEASE PRESSURE FROM COMPONENTS WITH STORED ENERGY.**
40. **USE CARE WHEN REPLACING BLADES.** Wrap the blade(s) or wear gloves, and use caution when servicing them. Only replace blade(s). Never straighten or weld blade(s).
41. **USE JACK STANDS TO SUPPORT COMPONENTS** when required.
42. **KEEP BODY AND HANDS AWAY FROM PIN HOLES OR LEAKS IN HIGH PRESSURE HYDRAULIC LINES.** Always use paper or cardboard to search for leaks, **NEVER** use hands. Make sure all hydraulic connections are tight and that hydraulic lines are in good condition before starting the engine.

## **SAFETY INTERLOCK SYSTEM**

Your *Country Clipper* Zero Turn Radius Mower is equipped with switches interlocked for your safety.

**ON JOYSTICK MODELS** GROUND DRIVE NEUTRAL IS WHEN THE JOYSTICK (CONTROL LEVER) IS IN THE “**DOWN**” POSITION.

**ON TWINSTICK MODELS** GROUND DRIVE NEUTRAL IS WHEN BOTH CONTROL LEVERS ARE IN THE “**OUT**” POSITION.

1. The mower blades must be disengaged and the Control Lever(s) must be in the neutral position before the engine will start.
2. The engine will stop if the mower blade clutch is engaged when the operator leaves the driver's seat.
3. The engine will stop if the Control Lever(s) are not in the neutral position when the operator leaves the driver's seat.
4. The engine will stop if the brake is “**SET**” and the Control Lever(s) are not in the neutral position.
5. The engine will stop if the brake is “**SET**” and the mower blade clutch is engaged.

**DO NOT OPERATE MOWER IF SAFETY SWITCHES AND GUARDS ARE NOT OPERATING PROPERLY**

## START UP AND OPERATION

### CHECKLIST BEFORE OPERATION

1. Make sure fuel tank is full. Use regular unleaded gasoline (see engine owner's manual for more details).



### **WARNING**

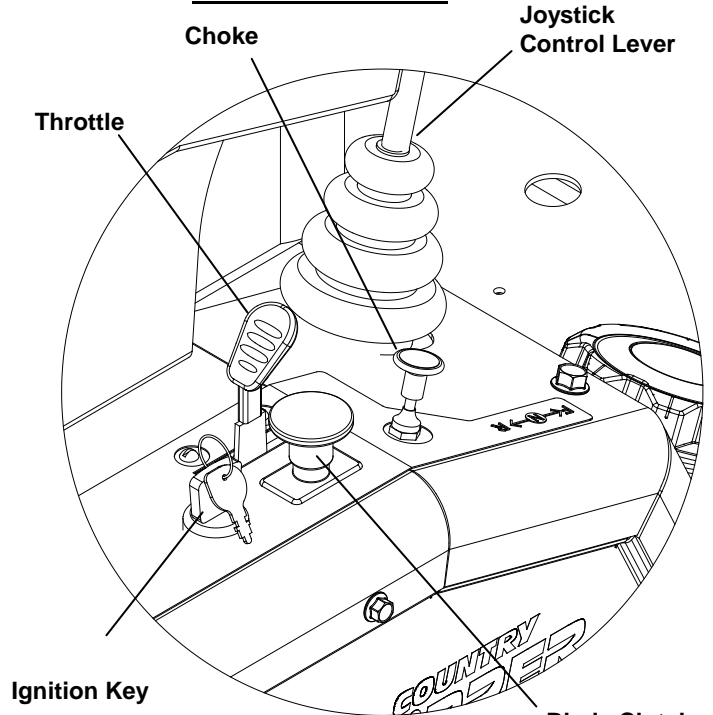


**HANDLE GASOLINE WITH CARE -- IT IS HIGHLY FLAMMABLE. DO NOT SMOKE. ENGINE SHOULD BE OFF AND COOL. USE APPROVED GAS CONTAINER. NEVER FILL TANK INDOORS. WIPE UP ANY SPILLS. REPLACE CAP TIGHTLY.**

2. Make sure dirt and foreign matter is kept out of gas tank. Use a clean funnel and gas can.
3. Do not mix oil with gasoline.
4. Do not use white, high test or premium gasoline. Do not use de-icers, carburetor cleaners, or other such additives.
5. Check the crankcase oil level. Make sure the engine is off. The mower should be parked on a level area. Do not overfill. (See your engine manual for more detailed instruction.)
6. Check battery fluid level.
7. Inspect V-belts.
8. Check tire pressure:
9. Make sure underside of mower deck is free of grass.
10. Make sure mower blades are sharp and secured tightly.
11. Clean the air intake screen on the engine if necessary.
12. Perform any other maintenance as it becomes necessary. (See the "Maintenance" section of this manual.)
13. If equipped with R.O.P.S. (Roll Over Protection System) reference manufactures instructions.

**IMPORTANT:** Before cutting grass, clutch must be broken-in as follows: With engine at full RPM engage deck until blades come to full speed and then disengage until blades come to a complete stop. Repeat 10 times to "break-in" the clutch properly.

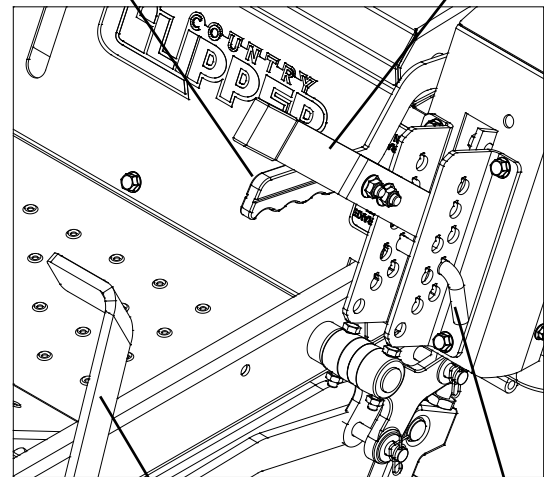
### CONTROL LOCATIONS JOYSTICK MODELS



Blade Clutch Switch

Parking Brake Lever

Cut Height Adjust.



Cut Height Foot

Cut Height Stop Pin



### **WARNING**



**AVOID INHALING EXHAUST FUMES! CARBON MONOXIDE GAS IS COLORLESS, ODORLESS AND CAN CAUSE UNCONSCIOUSNESS AND IS POTENTIALLY LETHAL. DO NOT RUN LAWN MOWER IN GARAGE OR OTHER CONFINED AREAS.**



## **OPERATION**

### **JOYSTICK MODELS**

1. **MOVE JOYSTICK CONTROL LEVER** to neutral “DOWN” position.
2. **SET PARKING BRAKE.** Pull up to set.
3. **DISENGAGE MOWER BLADE CLUTCH** by moving clutch switch to “OFF” position.
4. **PULL ENGINE CHOKE CONTROL** to full position for cold starts (Not applicable on Fuel Injected models).
5. **SET ENGINE THROTTLE TO 1/2 THROTTLE.**
6. **TURN IGNITION KEY** to “START” position and release to “RUN” as soon as engine starts. NOTE: Prolonged cranking will damage starter motor and shorten the battery life
7. **ADJUST ENGINE THROTTLE** for desired engine smoothness and speed. However, use full throttle while mowing.
8. **RELEASE PARKING BRAKE.** Push brake lever down to release.

#### **IMPORTANT:**

Until the operator is familiar with the **Country Clipper** Zero Turn Radius Mower, he/she should follow these recommendations: **1)** Disengage the mower blades. **2)** Go very slowly until thoroughly familiar with the machine. **3)** Keep away from fences, buildings, and other obstructions. **4)** Move the Joystick Control Lever smoothly and slowly. **5)** Practice until operation is smooth and efficient.

#### **9. TO DRIVE:**

- A. Move the Joystick Control Lever to the “UP” position.
- B. Move the Joystick Control Lever forward to move forward. Increasing forward movement of the Joystick Control Lever will increase the speed of travel.
- C. To reverse the direction, pull the Joystick Control Lever slightly back.
- D. To turn, move the Joystick Control Lever toward the direction you want to turn.

- E. To turn on a zero radius axis, go slowly and move the Joystick Control Lever to the side you wish to turn and slightly to the rear at the same time.



### **CAUTION**



**FOR SMOOTH, SAFE OPERATION, MOVE THE JOYSTICK CONTROL LEVER IN A GENTLE, SLOW MOTION. NEVER PULL OR PUSH THE JOYSTICK CONTROL LEVER RAPIDLY, ESPECIALLY ON GRADES.**

10. **BRAKING:** To brake mower, gently move the Joystick Control Lever in the direction opposite to travel. Note: If the parking brake is engaged with the Joystick Control Lever in the “UP” position the engine will stop.
11. **CUTTING HEIGHT ADJUSTMENT:** While holding the Cut Height Adjustment Lever with enough hand pressure to freely move the Cut Height Pin, rotate the Cut Height Stop Pin so the key on the pin aligns with the key slot, then pull it out and move the Cut Height Adjustment Lever to the desired cut height. Reinsert the Cut Height Stop Pin.
12. **ENGAGE MOWER BLADE CLUTCH:** Set engine throttle to 1/2–3/4 throttle, engage the Blade Clutch Switch to the “ON” position, set throttle to full. Note: The engine will not start with the blade clutch switch in the “ON” position. Engine will stop if the clutch switch is “ON” and the Operator is not in the seat.



### **CAUTION**

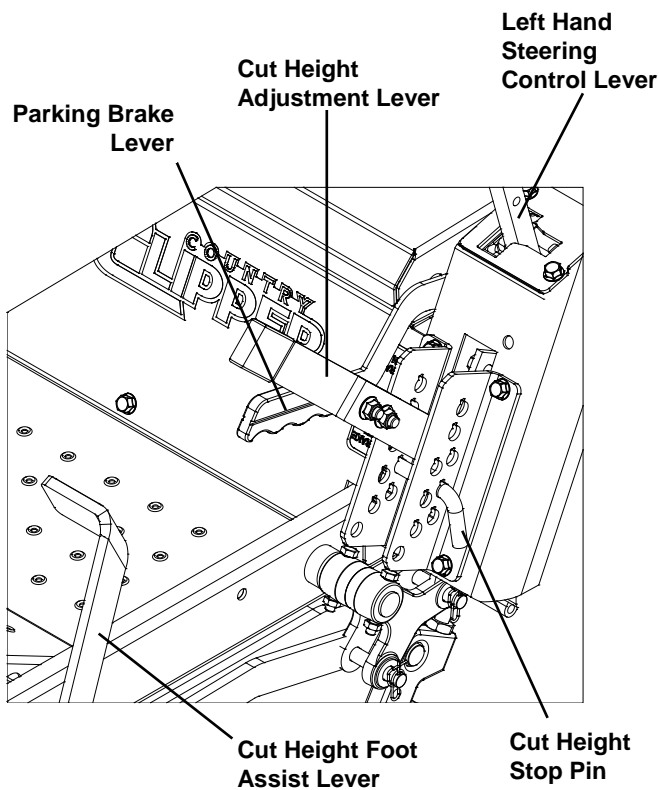
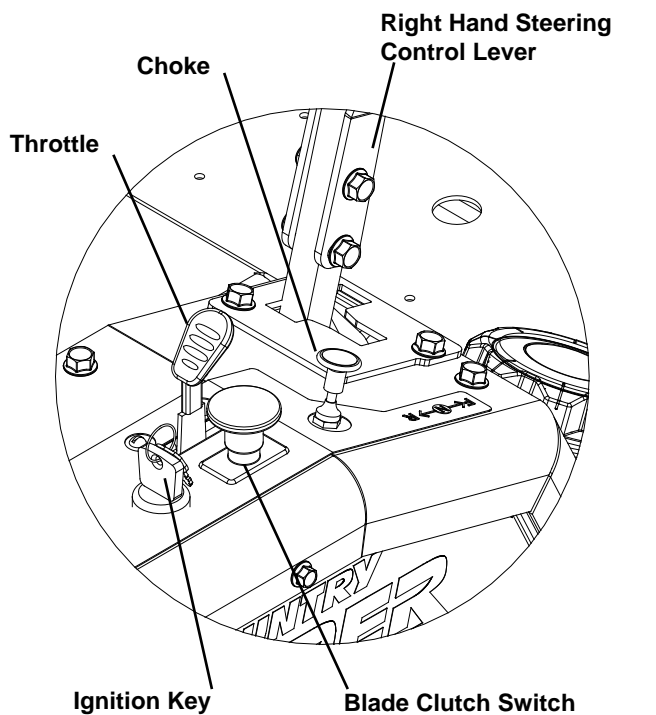


**AVOID HILLS AND SLOPES. USE EXTREME CAUTION WHEN MOWING UP OR DOWN SLOPES. NEVER MOW ACROSS THE FACE OF A SLOPE. IF A SLOPE MUST BE ASCENDED, BACK UP THE SLOPE; DRIVE FORWARD WHEN DESCENDING.**

#### **13. TO STOP:**

- A. Move Joystick Control Lever to neutral position and then to the “DOWN” position.
- B. Disengage the mower blade clutch by moving the clutch to the “OFF” position.
- C. Set the parking brake.
- D. Turn ignition key to “OFF” position.
- E. Remove the key and wait for all movement and sound to cease before dismounting.

## CONTROL LOCATIONS TWINSTICK MODELS



## **WARNING**



**AVOID INHALING EXHAUST FUMES -- CARBON MONOXIDE GAS IS COLORLESS AND ODORLESS, AND CAN CAUSE UNCONSCIOUSNESS, AND IS POTENTIALLY LETHAL. DO NOT RUN LAWN MOWER IN GARAGE OR OTHER CONFINED AREA.**

## OPERATION TWINSTICK MODELS

1. **MOVE STEERING CONTROL LEVERS** to neutral "OUT" position.
2. **SET PARKING BRAKE.** Pull up to set.
3. **DISENGAGE MOWER BLADE CLUTCH** by moving clutch switch to "OFF" position.
4. **PULL ENGINE CHOKE CONTROL** to full position for cold starts.
5. **SET ENGINE THROTTLE TO 1/2 THROTTLE.**
6. **TURN IGNITION KEY** to "START" position and release to "RUN" as soon as engine starts. NOTE: Prolonged cranking will damage starter motor and shorten the battery life.
7. **ADJUST ENGINE THROTTLE** for desired engine smoothness and speed. However, use full throttle while mowing.
8. **RELEASE PARKING BRAKE.** Push brake lever down to release.

### **IMPORTANT:**

Until the operator is familiar with the **Country Clipper** Zero Turn Radius Mower, he/she should follow these recommendations: **1)** Disengage the mower blades. **2)** Go very slowly until thoroughly familiar with the machine. **3)** Keep away from fences, buildings, and other obstructions. **4)** Move the Steering Control Lever smoothly and slowly. **5)** Practice until operation is smooth and efficient.

9. **TO DRIVE:**
  - A. Move the Steering Control Levers to the "IN" position.
  - B. Move the Steering Control Levers forward to move forward. Increasing forward movement of the Steering Control Levers will increase the speed of travel.

- C. To reverse the direction, pull the Steering Control Levers slightly back.
- D. To turn, move one Steering Control Lever slightly ahead of the other.
- E. To turn on a zero radius axis, go slowly and move one Steering Control Lever forward and one Steering Control Lever rearward. (For a right hand turn the left hand Steering Control Lever will be ahead of the right hand Steering Control. For a left hand turn the right hand Steering control will be ahead of the left hand Steering Control.)

**! CAUTION !**

FOR SMOOTH, SAFE OPERATION, MOVE THE STEERING CONTROL LEVER(S) IN A GENTLE, SLOW MOTION. NEVER PULL OR PUSH THE STEERING CONTROL LEVER(S) RAPIDLY, ESPECIALLY ON GRADES.

- 10. **BRAKING:** To brake mower, gently move the Steering Control Levers in the direction opposite to travel. **NOTE:** If the parking brake is engaged with the Steering Control Lever(s) in the "IN" position the engine will stop.
- 11. **CUTTING HEIGHT ADJUSTMENT:** While holding the Cut Height Adjustment Lever with enough hand pressure to freely move the Cut Height Pin, rotate the Cut Height Stop Pin so the key on the pin aligns with the key slot, then pull it out and move the Cut Height Adjustment Lever to the desired cut height. Reinsert the Cut Height Stop Pin.
- 12. **ENGAGE MOWER BLADE CLUTCH:** Set engine throttle to 1/2-3/4 throttle, engage the Blade Clutch Switch to the "ON" position, set throttle to full. **Note:** The engine will not start with the blade clutch switch in the "ON" position. Engine will stop if the clutch switch is "ON" and the Operator is not in the seat.

**! CAUTION !**

AVOID HILLS AND SLOPES. USE EXTREME CAUTION WHEN MOWING UP OR DOWN SLOPES. NEVER MOW ACROSS THE FACE OF A SLOPE. IF A SLOPE MUST BE ASCENDED, BACK UP THE SLOPE; DRIVE FORWARD WHEN DESCENDING.

**13. TO STOP:**

- A. Move Steering Control Levers to neutral position and then to the "OUT" position.
- B. Disengage the mower blade clutch by moving the clutch to the "OFF" position.
- C. Set the parking brake.
- D. Turn ignition key to "OFF" position.
- E. Remove the key and wait for all movement and sounds to cease before dismounting.

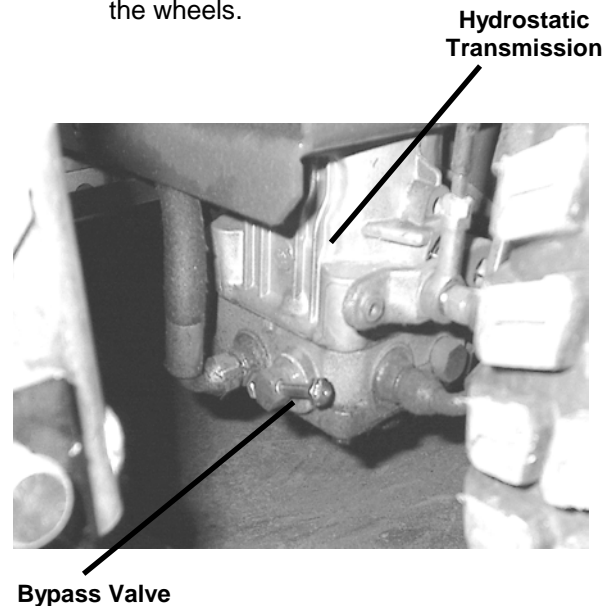
**! CAUTION !**

WHEN LEAVING THE MOWER UNATTENDED, ALWAYS REMOVE THE KEY AND SET THE PARKING BRAKE, EVEN IF JUST FOR A FEW MOMENTS. HELP PROTECT CHILDREN AND OTHER UNAUTHORIZED PERSONS FROM ACCIDENTS.

**OPERATION  
FREE WHEEL**

**1. TO FREE WHEEL:**

- A. **Unlock Transmission:** Unscrew the bypass valve between 1/2 -1 full turn counterclockwise. **NOTE:** Both sides must be done in order to free wheel.
- B. To re-engage the transmissions screw the bypass valve clockwise until tight (**DO NOT OVER TIGHTEN**). **NOTE:** Both sides must be done in order to lock the wheels.



**NOTE:** The tractor should never be pulled at more than 2 miles per hour or for any appreciable distance.



## **CAUTION**



**NEVER OPERATE MOWER WITHOUT  
DISCHARGE CHUTE IN PLACE.**

### **MOWING RECOMMENDATIONS**

1. Keep mower blades sharp.
2. Make sure deck and discharge are clean.



## **CAUTION**



**TURN ENGINE OFF AND WAIT FOR ALL  
MOVING PARTS TO STOP BEFORE  
CLEANING DISCHARGE CHUTE.**

3. When mowing tall grass, make two passes. Mow off  $\frac{1}{2}$  of the desired cut on the first pass, and then the desired height the second pass. Check for hidden dangers.
4. Go slowly for trimming.
5. Always cut grass with the engine at full throttle speed.

**NOTE:** Operating the engine at full throttle assures that the cutting blades are operating at optimum cutting speed. Control ground speed with the Control Lever(s).

6. Vary ground speed to suit conditions (i.e. go slower in tall thick grass, on hills, wet conditions, etc.).

## MAINTENANCE



### CAUTION



**BEFORE PERFORMING ANY MAINTENANCE, TURN OFF ENGINE  
REMOVE KEY AND DISCONNECT SPARK PLUGS. USE EXTREME CARE WHEN WORKING ON  
MACHINERY. DO NOT WEAR WATCHES OR JEWELRY. DO NOT WEAR LOOSE FITTING  
CLOTHES, AND OBSERVE ALL COMMON SAFETY PRACTICES WITH TOOLS.**

### MAINTENANCE SCHEDULE

Maintenance Service Interval	Maintenance Procedure
Before Each Use or Daily	<input type="checkbox"/> Check Engine Oil Level. <input type="checkbox"/> Check Mower Blades. <input type="checkbox"/> Check Operator Presence Control System. <input type="checkbox"/> Check for Loose Hardware. <input type="checkbox"/> Clean Engine Cooling System. <input type="checkbox"/> Remove Debris From Engine. <input type="checkbox"/> Remove Debris Build-Up Hydrostatic Transmission & Cooler
After Each Use or Daily	<input type="checkbox"/> Clean Grass Build-Up from Deck Cutting Chamber.
After First 5 Hours	<input type="checkbox"/> Change Engine Oil. <input type="checkbox"/> Check Wheel Lug Nuts. (75 ft/lbs or 102 Nm)
After First 75 Hours	<input type="checkbox"/> Change Hydrostatic Transmission Oil & Filter (see pg. 16)
Every 10 Hours	<input type="checkbox"/> Check Tire Pressure. (12-15 Psi / 83-103 kPa) <input type="checkbox"/> Check Battery Fluid <input type="checkbox"/> Sharpen Mower Blades
Every 25 Hours	<input type="checkbox"/> Service Air Cleaner. (Increase Frequency Under Severe Conditions. See Engine Owner's Manual for additional information.) <input type="checkbox"/> Check Wheel Lug Nuts. (75 ft/lbs or 102 Nm)
Every 50 Hours	<input type="checkbox"/> Check Hydraulic Oil Level. <input type="checkbox"/> Check Drive Belt Condition. <input type="checkbox"/> Check Engine RPM (3500-3600 rpm)
Every 100 Hours	<input type="checkbox"/> Change Engine Oil & Filter. (Increase Frequency Under Severe Conditions. See Engine Owner's Manual for Additional Information.) <input type="checkbox"/> Remove Engine Shrouds & Clean Cooling Fins. <input type="checkbox"/> Check Spark Plug
Every 400 Hours	<input type="checkbox"/> Change Hydrostatic Transmission Oil & Filter (see pg. 16)
Every 500 Hours Or Annually	<input type="checkbox"/> Grease Front Caster Pivots <input type="checkbox"/> Replace Air Filter Element <input type="checkbox"/> Check Spark Plugs <input type="checkbox"/> Service Battery

**Replace Safety decals when illegible. Write factory for free replacement.**

# MAINTENANCE INSTRUCTIONS

## 1. ENGINE:

For complete maintenance and operating information for your engine, please refer to your engine operating and maintenance instructions furnished by the engine manufacturer and included in your **Country Clipper** Zero Turn Radius Mower information packet.

NOTE: Air intake screen must be kept clean. If plugged, engine may be seriously damaged by overheating.

## 2. BATTERY:

**CAUTION**

**BATTERY ELECTROLYTE IS A POISONOUS AND CORROSIVE SULFURIC ACID SOLUTION. AVOID SPILLING ON SKIN, EYES, AND CLOTHING.**

Keep the electrolyte level above the plates in each cell by adding distilled water as it becomes necessary. Add water just before operating the mower to mix the water with the solution. Be careful not to overfill the battery -- the electrolyte solution is corrosive and can cause damage to surrounding metal parts if it should spill. When taking the battery out of the mower for servicing, make sure to connect the cables to the battery exactly as they were prior to removal. Always disconnect the ground ( - ) wire **first** and always reconnect the ground ( - ) wire **last**.

Keep the battery clean. Remove the corrosion around the battery terminals by applying a solution of one part baking soda to four parts water. Coat all exposed terminal surfaces with a light layer of grease or petroleum jelly to prevent corrosion.

NOTE: At temperatures below 32 degrees F (0 degrees C) the full charge state must be maintained to prevent cell electrolyte from freezing and causing permanent battery damage.

## 3. TIRES:

Correct tire pressure is essential for efficient operation of the mower. Check tire pressure as requested in the maintenance schedule. Inflate tires to the pressures listed below:

Model	Front tires	Rear tires
All Models	12-15 psi 83-103 kPa	12-15 psi 83-103 kPa

Lug nuts should be torqued to 75 ft/lbs and checked regularly for tightness.

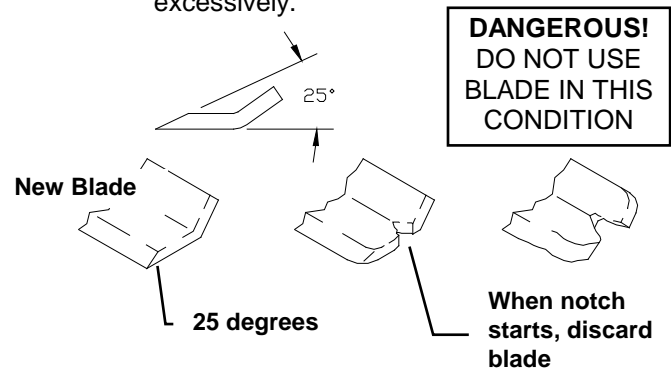
## 4. MOWER BLADES:

Check sharpness of mower blades after every 10 hours of operation. To sharpen blades proceed as follows:

**CAUTION**

**STOP ENGINE, REMOVE IGNITION KEY AND SPARK PLUGS FOR SAFETY.**

- A. Remove bolt and blade washer mounting blade on shaft. Remove blade.
- B. Blades should be discarded when worn excessively.



- C. Sharpen blades with a hand file, electric grinder or blade sharpener. Wear gloves and eye protection when sharpening. Grind blade at original 25 degree bevel.
- D. Check balance of blade by positioning the blade on a nail or blade balance pedestal. Grind the blade on the end that is heavier until both sides balance.
- E. Install blade, blade washer and bolt. Make sure to torque bolt to 100 ft-lbs.

## 5. V-BELTS:

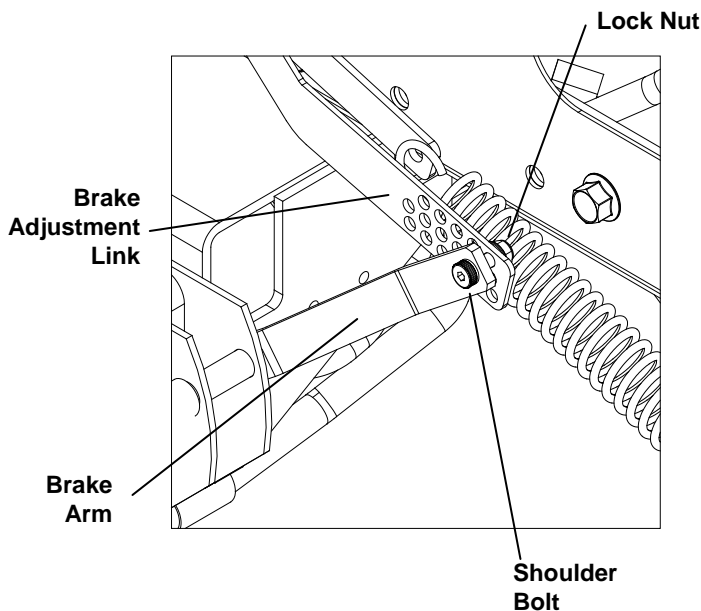
All belts should be checked every 50 hours. Replace any belts found to be in poor condition. All belts are equipped with spring loaded belt tighteners and do not require tightening adjustments.

## 6. LUBRICATION:

- A. Engine: Follow engine manufacturer's recommendation.
- B. Front Caster Pivots: Lubricate fittings with several pumps of multi-purpose grease from a grease gun. (See pg. 18)

## 7. PARKING BRAKE ADJUSTMENTS:

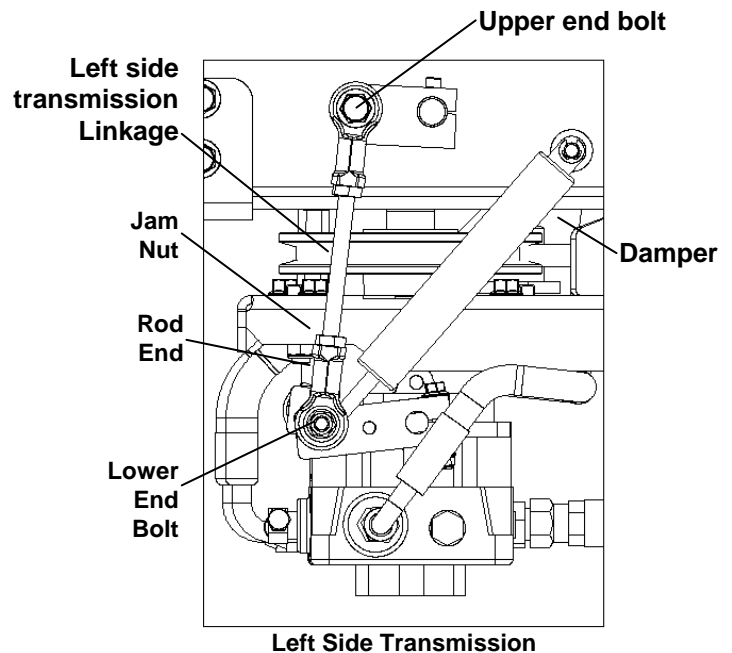
- A. Move Parking Brake Lever to the "OFF" position.
- B. Firmly hold the Brake Arm forward and line up the Shoulder bolt with nearest hole in the Brake Adjustment Link and tighten the Shoulder Bolt and Lock Nut. Repeat for other side. The Park Brake Handle should require around 45lbs to pull it on. If the Handle force is too high move the Shoulder bolt(s) to the next lighter setting. If too light, move to next heavier setting.



## JOYSTICK ADJUSTMENT

### 1. SETTING TRACKING AND FORWARD SPEED:

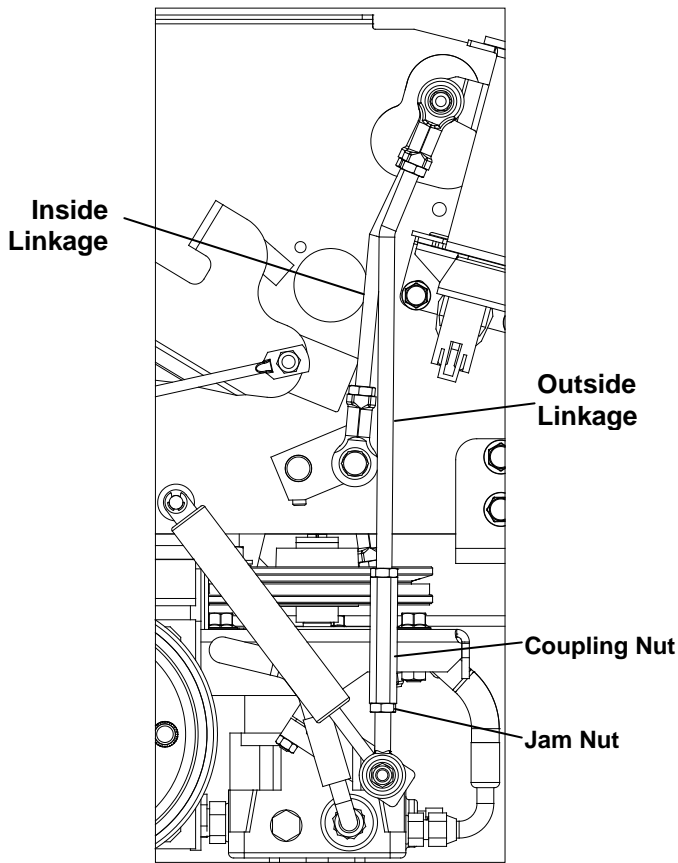
- A. The initial setting is done with the engine TURNED OFF.
- B. Remove both fender skirts.
- C. Start by setting the RH transmission speed. Disconnect the linkage that is connected to the left side transmission at the upper end.



- D. On the outside (long) linkage that goes from the joystick to the right side transmission, Loosen the jam nuts on both ends of the coupling nut. One of these is a left-hand thread. Rotate the coupling nut a couple turns to lengthen it.

### IMPORTANT:

Use two wrenches (one on the nut and one on the coupling nut or rod end housing) when loosening or tightening jam nuts to prevent damaging the rod end ball joints!



**Right Side Transmission**

- E. Lift the joystick control handle out of the neutral position and hold it firmly in the full forward position. Now, by hand, rotate the coupling nut shortening the linkage until resistance is felt from the transmission control bottoming out in the transmission. Rotate the coupling nut back and forth a couple times to confirm, and mark this position.
- F. Now rotate the coupling nut exactly **one full turn longer** and retighten the jam nuts. When retightening make sure that the ball joints on both top and bottom are well centered so that they do not bind up when moving the joystick handle to the extremes of its travel.

**NOTE:** This full turn longer is **required** to prevent internal damage to the transmission.

- G. Now set the LH transmission speed. Reconnect the linkage to the **left** side transmission. (see left side transmission illustration on previous page).

- H. Loosen the jam nuts on both ends of the **left** side transmission linkage. One of these is a left-hand thread. Now rotate the linkage rod a couple turns to lengthen it.
- I. Hold the joystick control handle firmly in the full forward position. Rotate the left side transmission linkage rod to shorten the linkage until resistance is felt from the transmission control bottoming out in the transmission. Rotate the rod back and forth a couple times to be sure, and mark this position.
- J. Now rotate the linkage rod exactly **one full turn longer** and retighten the jam nuts. Make sure that the ball joints on both top and bottom are centered.

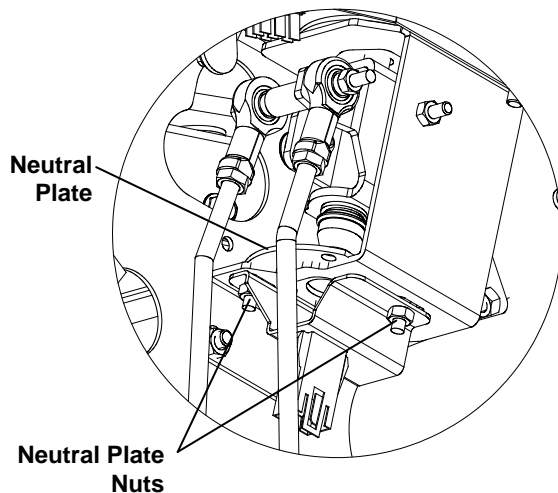
**NOTE:** This full turn longer is **required** to prevent internal damage to the transmission.

- K. Test drive the mower to check for tracking at full speed. If needed, slow the fast side by lengthening the control rod connected to the faster transmission. Use small adjustments of about ¼ turn. Replace the fender skirts when done.

**2. SETTING NEUTRAL:**

If, with the joystick handle in the DOWN or start position and the engine running the mower moves or travels, it is necessary to adjust neutral. Raise the drive wheels off the ground, secure the mower on blocks or jack stands and proceed as follows:

- A. Remove the fender skirt on the joystick side. Loosen the two nuts on the bottom of the joystick neutral plate just enough so that the plate can move freely.



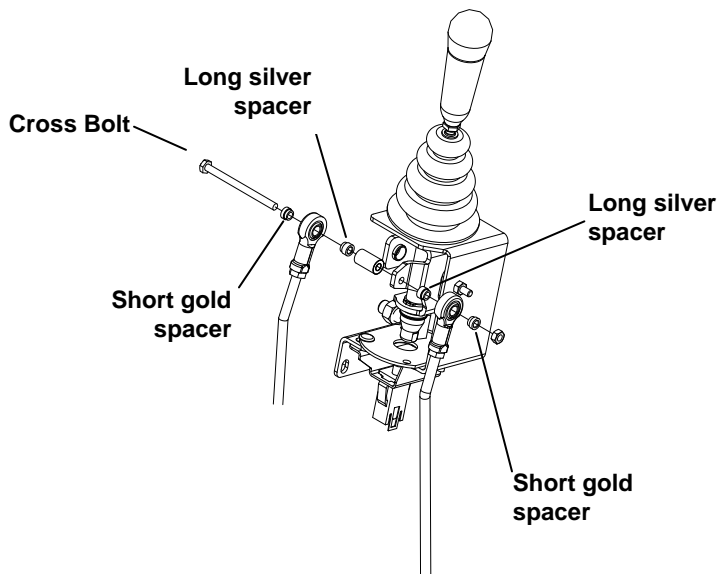


- B. Start the engine. With the joystick still down, position the handle so both wheels are stationary.
- C. Tighten the two nuts on the bottom of the neutral plate, being careful not to shift it out of position.
- D. Recheck neutral before placing the mower back on the ground. Then shut off the engine and remove the mower from the blocks. Replace the fender skirt.

**3. JOYSTICK CONTROL LEVER SENSITIVITY ADJUSTMENT:**

To change the sideways turning response, adjust as follows:

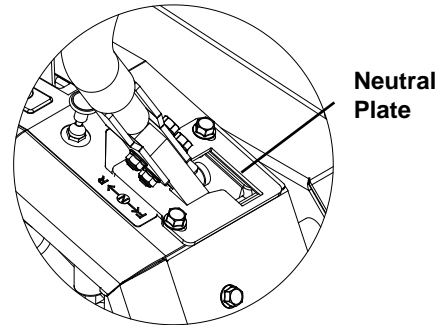
- A. Remove the right hand fender skirt exposing the Joystick Control Lever assembly.
- B. Remove the cross bolt, nut, & spacers.
- C. For quicker reacting steering place the long, silver colored spacers toward the inside of the rod end ball joints and the shorter, gold colored spacers on the outside of the ball joints. For slower reacting steering place the short, gold colored spacers on the inside and the longer, silver colored spacers on the outside. All 4 spacers must be used when reassembling.



**TWINSTICK ADJUSTMENT**

**1. TWINSTICK CONTROL LEVER NEUTRAL ADJUSTMENT:**

- A. Loosen the bolts holding the Neutral Plate.
- B. Pull back the control lever until the wheel spin is zero.
- C. Tilt the Control lever outward, using the lever, position and tighten the bolts holding the Neutral Plates.



**2. TWINSTICK CONTROL LEVER FORWARD TRACKING:**

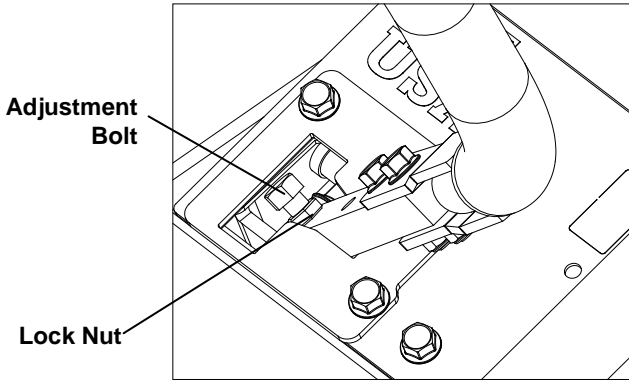
In a large open area, actuate the Twinstick Control levers into the full forward position. If the mower veers in either direction left or right some adjustment is necessary. If the mower veers to the right, then the left transmission needs to be slowed down. If the mower veers to the left then the right transmission needs to be slowed down.

- A. Stop the machine and shut off the engine.
- B. Slightly loosen the nuts around the turnbuckle on the faster side. Lengthen the lower linkage rod by ¼ turn increments, retighten and retest, until the mower tracks straight.
- C. Once the tracking is to the operators liking, completely tighten the nuts on the turnbuckle. Recheck and adjust the Neutral Plate if required.
- D. Reinstall the fender skirts and tighten all bolts.

**3. TO ADJUST “IN” OR OPERATING POSITION OF THE TWINSTICK STEERING CONTROL LEVERS:**

If the Control levers are too close in the center or the Control Levers Drag on the Neutral Plate, adjust as follows:

- A. Tilt the Control Lever outward, loosen the lock nut and adjust the bolt until the gap between the handles is correct or the Control lever does not rub on the Neutral Plate.
- B. Tighten the lock nut after the adjustment is made.



- A. Set the park brake.
- B. Remove the oil filter.
- C. After all the oil is drained out, replace the filter (use part # H-2026 when ordering from Country Clipper). Wipe off the filter base surface, apply a film of new oil to the gasket of the new filter and hand tighten  $\frac{3}{4}$  to one full turn after the filter gasket contacts the filter base surface.
- D. Refill the transmission with the recommended oil through the Hydraulic Oil Reservoir. continue filling until the "Full Cold" line is reached on the reservoir.
- E. Recheck oil level after running.

### HYDROSTATIC TRANSMISSION

Check oil level in Hydraulic Oil Reservoir after every 25 hours of use. Oil level should be checked when oil is COLD. If necessary add 20W-50 motor oil to the reservoir. **DO NOT OVERFILL.** Thoroughly clean the Hydraulic Oil Reservoir Cap and the surrounding area **PRIOR** to removal of the cap. Take caution to keep all foreign matter out of the Hydraulic Oil Reservoir.

**NOTE: NEVER WASH ACROSS VENTED CAP WITH WATER OR STEAM.**

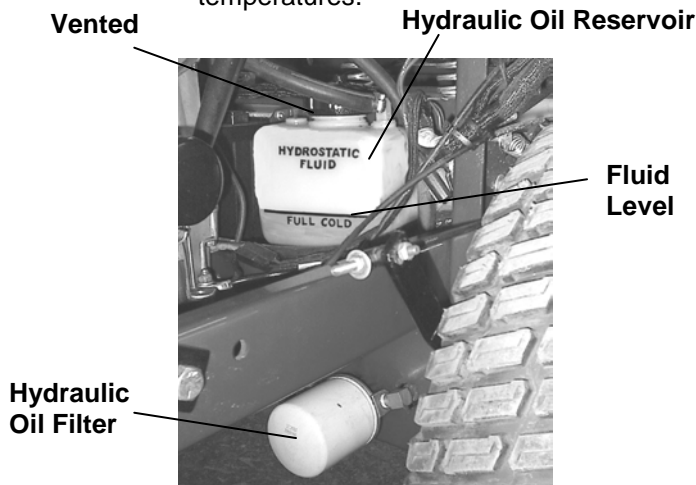
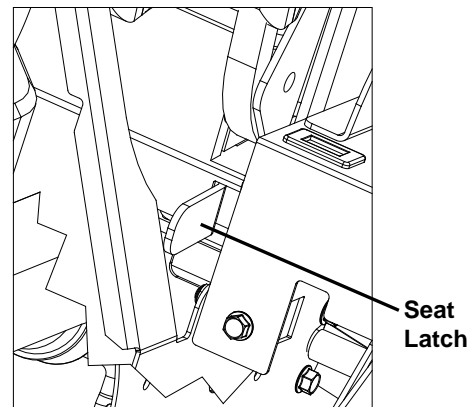
It is essential that the unit exterior be free from debris prior to doing any fluid maintenance.

#### 1. HYDROSTATIC TRANSMISSIONS FLUID CHANGE:

SAE 20W-50 engine oil has been selected for use by the factory and is recommended for normal operating temperatures.

### SEAT HOLD DOWN LATCH

To release the seat hold down latch, pull the latch handle to the right.



## **PROCEDURE FOR RAISING AND LOWERING THE DECK FOR SERVICING**

### **1. RAISING THE DECK TO THE SERVICING POSITION:**

- A.** Remove cut height adjustment pin and completely lower the cut height adjustment lever. Re-insert the cut height adjustment pin immediately above Cut Height Adjustment Lever (this will lock the cut height adjustment lever into the lowest position).
- B.** Carefully rotate the Deck Belt Tension Latch to release tension on the Deck Belt. Remove the engine to deck Drive belt from the clutch on the engine. Flip up the Front Step (if so equipped).
- C.** On the right side of the mower, lift and hold up on the hook keeper. Lift up on the release handle to disconnect the back of the deck. The latch plate should catch and hold the release handle rod in place. (To adjust the latch plate, see page 21.)
- D.** Position the front caster wheels so they are away from the deck (such as the tractor would be traveling in reverse).
- E.** Lift the nose of the deck until the deck is standing near vertical (lifting can be made easier if someone stands on the rear bumper of the tractor).
- F.** Release the deck prop from its stowed position and place the free end against the deck lift casting as shown on page 19. Make sure the point of the prop falls within the center clearance area.

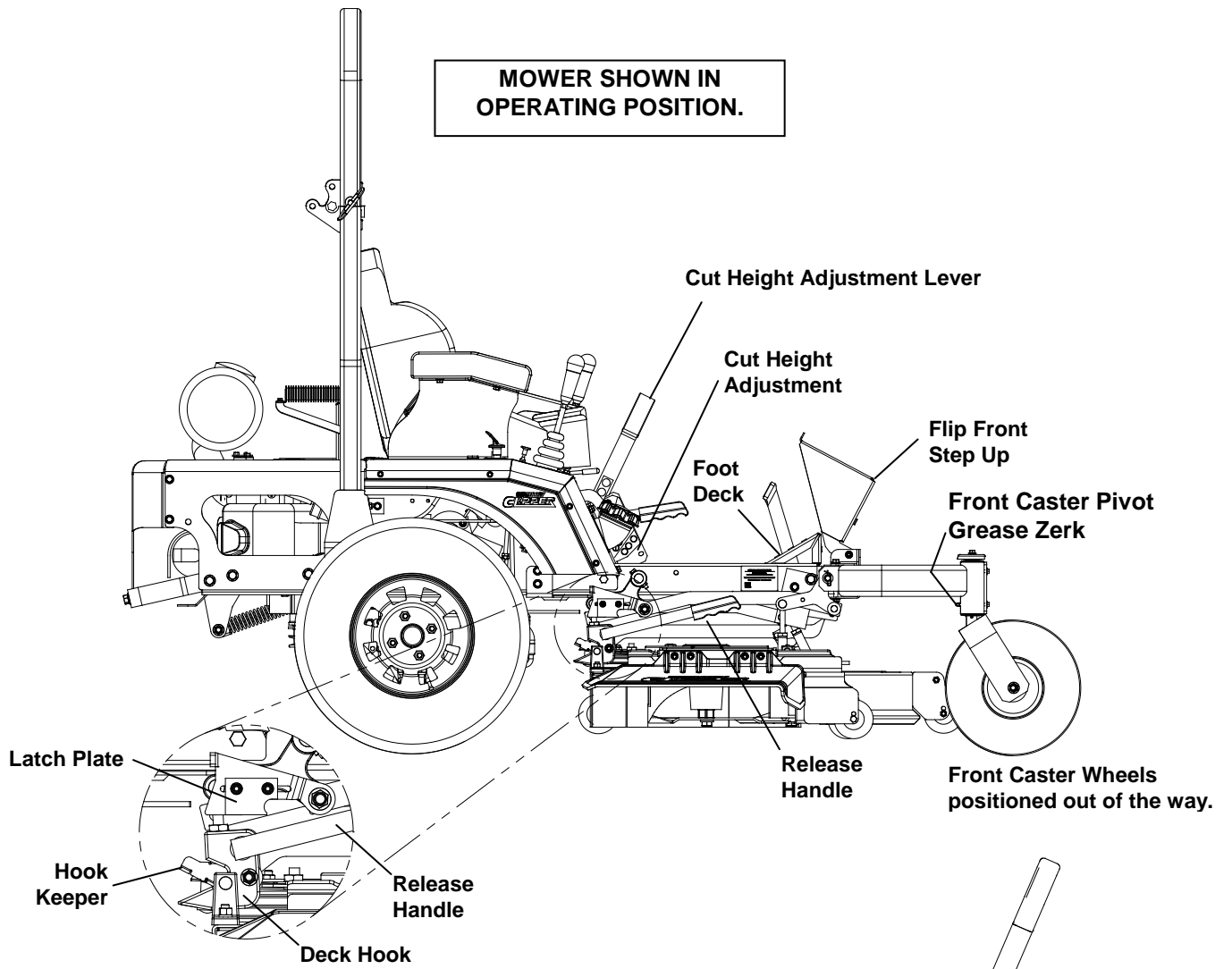
### **2. RETURNING THE DECK TO THE OPERATING POSITION:**

- A.** Place the deck prop back in the stowed position.
- B.** Push the bottom (back) of the deck towards the rear of the tractor. Lower the deck until it rests on the ground.
- C.** Lift up on the latch plate to release the release handle rod. Push down on the release handle until deck hooks lock into place.
- D.** Install the engine to deck belt onto the clutch on the engine.
- E.** Ensure that the engine to deck drive belt is installed onto all of the pulleys and idlers in the drive train. Carefully rotate the Deck Belt Tension Latch to re-tension the Deck Belt.
- F.** Lower the foot deck down into the operation position. On units so equipped, lower the front step.

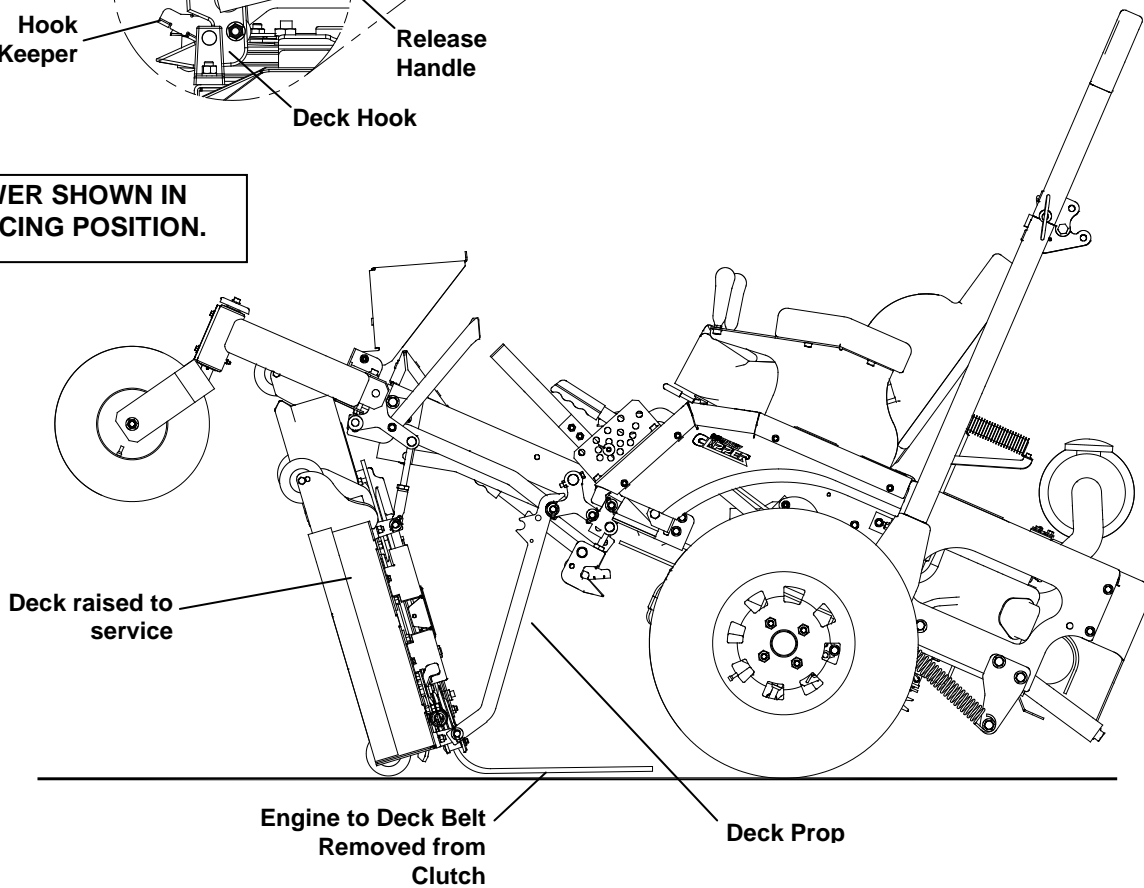
#### **IMPORTANT NOTE:**

TO SECURE THE DECK, MAKE SURE THAT THE DECK IS LIFTED FAR ENOUGH TO ALLOW THE DECK PROP TO ENGAGE THE DECK LIFT CASTING.

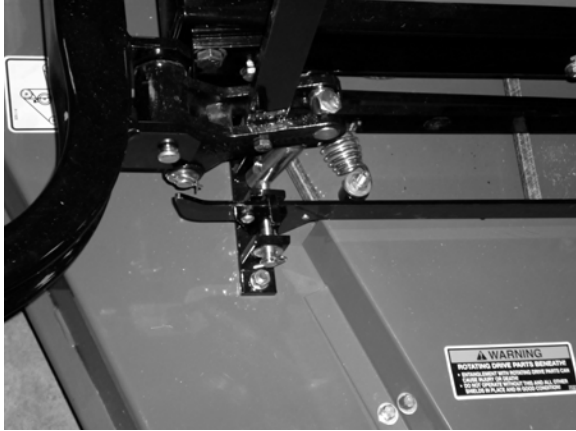
**MOWER SHOWN IN  
OPERATING POSITION.**



**MOWER SHOWN IN  
SERVICING POSITION.**



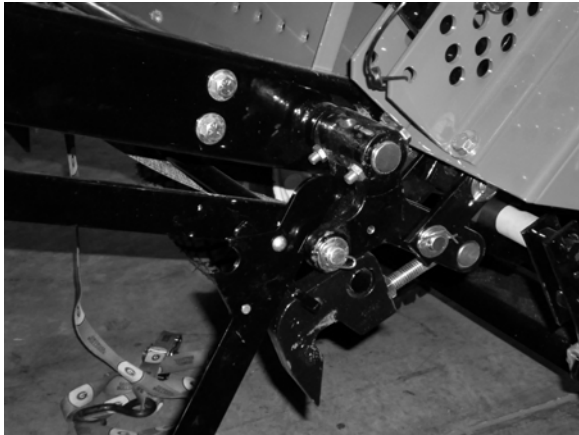
## SECURING THE DECK PROP



Deck Prop shown in the "Stowed" position.



Deck Prop being placed against the Deck lift casting.

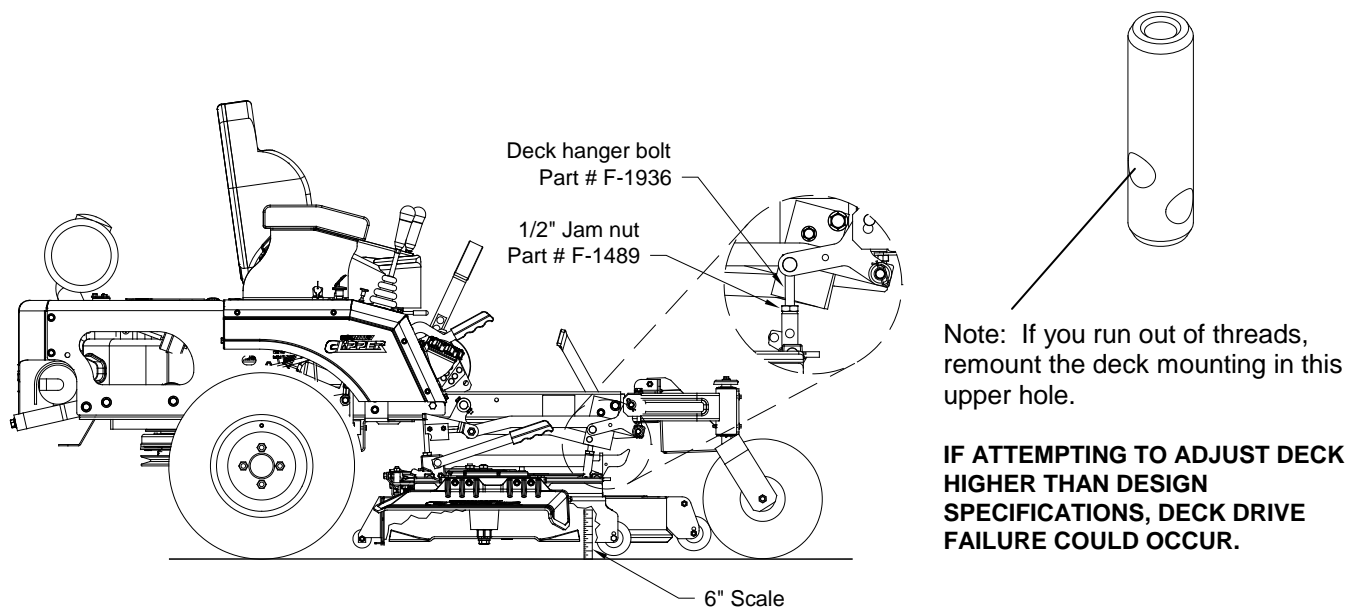


Deck Prop securely in place against Deck lift casting.

## LEVELING THE DECK

NOTE: *The Deck has been leveled at the Factory.  
If leveling is needed, use the following procedures.*

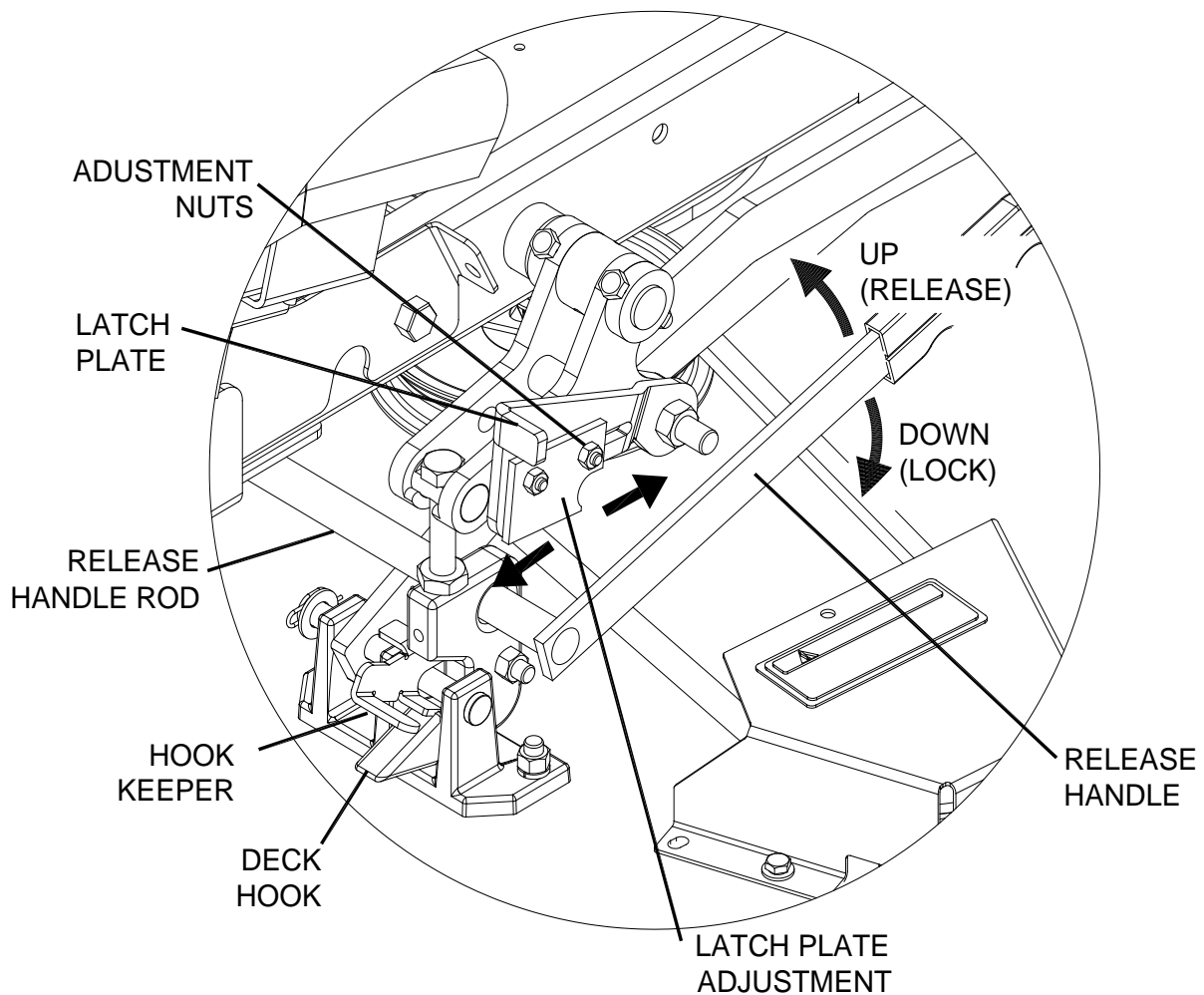
1. Move the tractor to a hard surface (i.e. concrete or blacktop).
2. Set the tire pressure on each of the four tires to 12-15 psi/83-103 kPa (make sure all four tires are equal).
3. Set the deck cutting height to the highest position and rotate the two outside blades by hand until one end of each outside blade points forward (toward the front of tractor).
4. Measure from the ground to the front blade tip of each outside blade. These measurements should be within 1/8" of each other. (NOTE: To simplify this measuring, an optional Blade Measuring tool, part Number 629-374A is available from your local "Country Clipper" Dealer).



5. If adjustment is needed, loosen the jam nut(s) of the Deck Hanger Bolt(s) and adjust the Deck Hanger Bolt(s) up or down accordingly. It may be necessary to adjust both the front and rear Deck Hanger Bolts for a given side.
6. Once the side to side cut height is within tolerance, measure from the ground to the blade tip at the rear of each outside blade. This measurement should be between 1/8" and 1/4" higher from the ground than the front of the blade from the ground on the corresponding side of the deck. Adjust rear and/or the front deck hangers accordingly to obtain the proper measurement Re-measure the side to side cutting height to confirm that they are still within 1/8" of each other At the front of the blade.
7. Confirm that the deck is hanging firmly on ALL four deck hanger bolts. Readjust any loose Deck Hanger Bolts accordingly.
8. Once all of the above measurements are confirmed, tighten ALL jam nuts on the Deck Hanger Bolts. Failure to tighten can result in an un-level cutting deck and/or lost Deck Hanger Components.

## ADJUSTING THE LATCH PLATE

1. Level the deck before proceeding to adjust the latch plate. (Follow instructions on previous page.) Pin the deck in the lowest position before proceeding to adjust the latch plate.
2. Lift up on the hook keeper, while pulling up on the release handle. This will disconnect the rear of the deck.
3. Loosen nuts on the adjustment of the latch plate using a 7/16 wrench. Pull up on the release handle as far as it will allow. Slide adjustment back or forward to where the latch plate will catch the release handle rod at its highest location. Tighten nuts back.
4. Lift up on latch plate and push down on the release handle to lock deck hooks in place.
5. Double check the latch plate adjustment by releasing the deck hangers and pulling up on the release handle. If the latch plate catches the release handle rod, no further adjustment needs to be made. If it does not, follow steps 3-5, as needed.



## TROUBLE SHOOTING CHECK LIST

1. ENGINE WON'T TURN OVER:
  - Mower blades engaged ----- disengage blades
  - Drive not in neutral ----- move Control Lever(s) to neutral position
  - Blown fuse ----- replace fuse
  - Dead battery ----- charge or replace
  - Solenoid ----- consult dealer
  - Ignition switch ----- consult dealer
  - Starter ----- consult dealer
  
2. ENGINE WILL TURN OVER BUT WON'T START:
  - No gas ----- refuel
  - clean or replace fuel filters
  - Over or under choked ----- adjust choke
  - Spark plug not firing ----- check spark plug
  - condition and reset gap\*
  - Carburetor maladjustment ----- reset carburetor adjustment\*
  - Ignition switch ----- consult dealer
  
3. HARD TO START ENGINE:
  - Fuel line clogged ----- clean fuel line and check fuel filter
  - Faulty fuel pump ----- consult dealer
  - Spark plug wire loose or grounded ----- check spark plug wires
  - Spark plug(s) faulty or improperly gapped ----- check spark plug
  - condition and reset gap\*
  - Electronic ignition defective ----- consult dealer
  - Dirty or maladjusted carburetor ----- readjust carburetor\*
  - consult dealer for carburetor service
  
4. ENGINE STARTS BUT CUTS OUT:
  - Water in gasoline ----- drain old gasoline and replace with new gasoline
  - clean carburetor bowl
  - Clogged fuel line ----- check fuel filter
  - clean fuel line
  - Vent in fuel cap plugged ----- check vent
  - Faulty fuel pump ----- consult dealer
  - Maladjusted carburetor ----- readjust carburetor\*
  - Engine dies when Control Lever(s) is move from "neutral" ----- parking brake set
  - release brake
  
5. ENGINE KNOCKS:
  - Low oil level ----- check and add oil
  - Ignition timing off ----- consult dealer
  - Fuel octane too low ----- drain and replace with
  - higher octane gasoline
  - Over heated engine ----- shut off engine and allow to cool

\* See engine manual for engine adjustments.

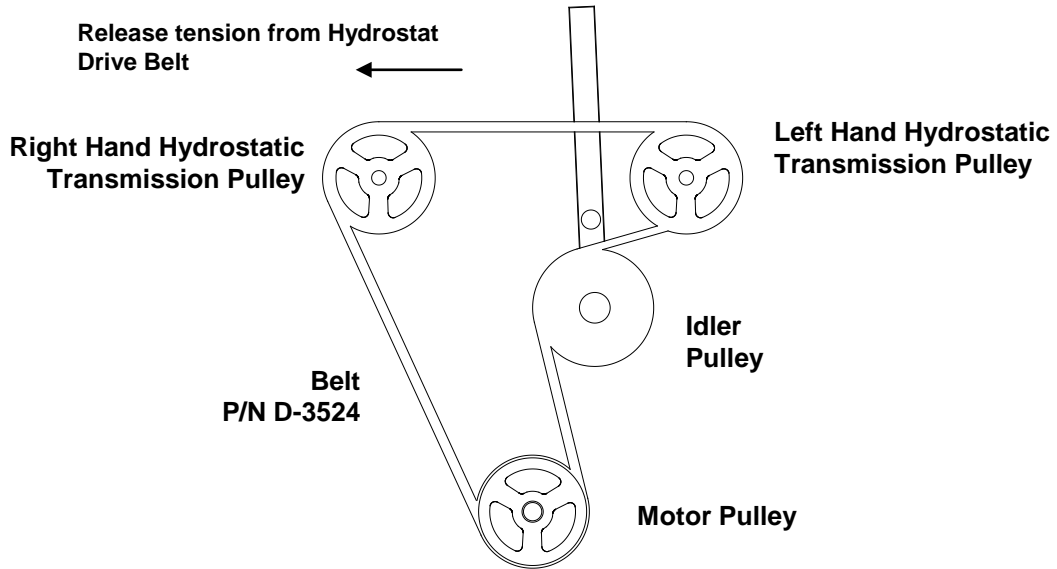


- 6. ENGINE SOMETIMES SKIPS AT HIGHER SPEEDS:**  
 Incorrect Ignition Timing ----- consult dealer  
 Carburetor maladjusted ----- readjust carburetor  
 Faulty spark plugs ----- check spark plug  
 condition and reset gap\*  
 Bouncing off seat safety switch ----- slow down on rough terrain
- 7. ENGINE OVER HEATED:**  
 Air intake screen or fins clogged ----- clean intake screen and fins  
 Fuel mixture too lean ----- readjust carburetor\*  
 Oil level too low or too high ----- adjust oil level  
 Improper ignition timing ----- consult dealer  
 Running engine too slow ----- run engine faster  
 (NOTE: Always mow at full throttle setting.)
- 8. ENGINE IDLES POORLY:**  
 Carburetor maladjustment ----- readjust carburetor  
 Improper spark plug gap ----- check and re-gap\*
- 9. ENGINE BACKFIRES:**  
 Carburetor maladjustment ----- readjust carburetor\*
- 10. ENGINE RUNS BUT MOWER WON'T MOVE FORWARD:**  
 Transmission locks in free wheel position ----- put in lock position (see pg. 10)  
 Drive belt broken or slipping ----- replace drive belt  
 Shift linkage disconnected ----- reconnect  
 Transmission oil low ----- consult dealer  
 Bad transmission ----- consult dealer
- 11. TRANSMISSION LOSES POWER OR TRANSMISSIONS OVER HEATS:**  
 Transmission damage ----- consult dealer
- 12. MOWER TRANSMISSION DOES NOT ENGAGE RIGHT AND/OR LEFT HAND:**  
 Transmission Free Wheel engaged ----- disengage Free Wheel  
 Loose or damage Control Linkage ----- consult dealer  
 Low Transmission oil ----- consult dealer
- 13. ENGINE STALLS WHEN BLADES ARE ENGAGED:**  
 Operator not on seat ----- sit on seat  
 Faulty interlock system ----- consult dealer  
 Bad blade spindle bearing ----- consult dealer  
 Deck drive belt not properly routed ----- reroute  
 Blades blocked by foreign material ----- clean under deck
- 14. DECK BLADES WILL NOT ENGAGE:**  
 Blown fuse ----- replace fuse  
 Faulty wiring ----- consult dealer  
 Faulty electric clutch ----- consult dealer

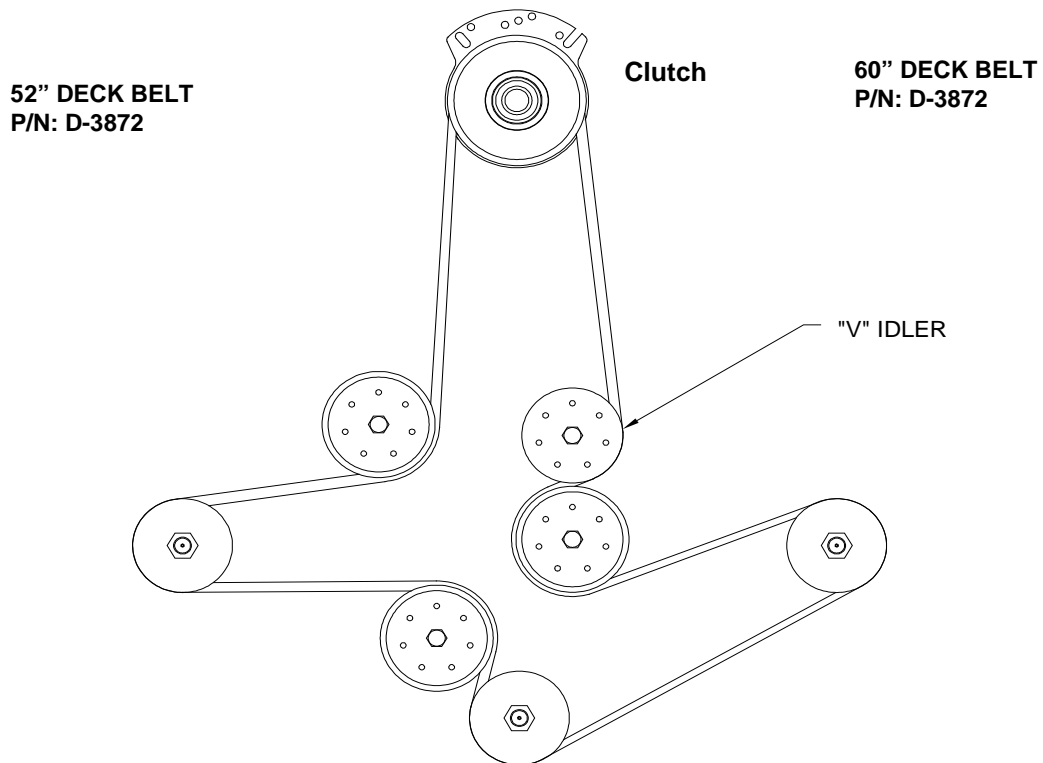
\* See engine manual for engine adjustments.

# BELT ROUTINGS

## Hydrostatic Transmission Drive Belt (Viewed from ground looking up)

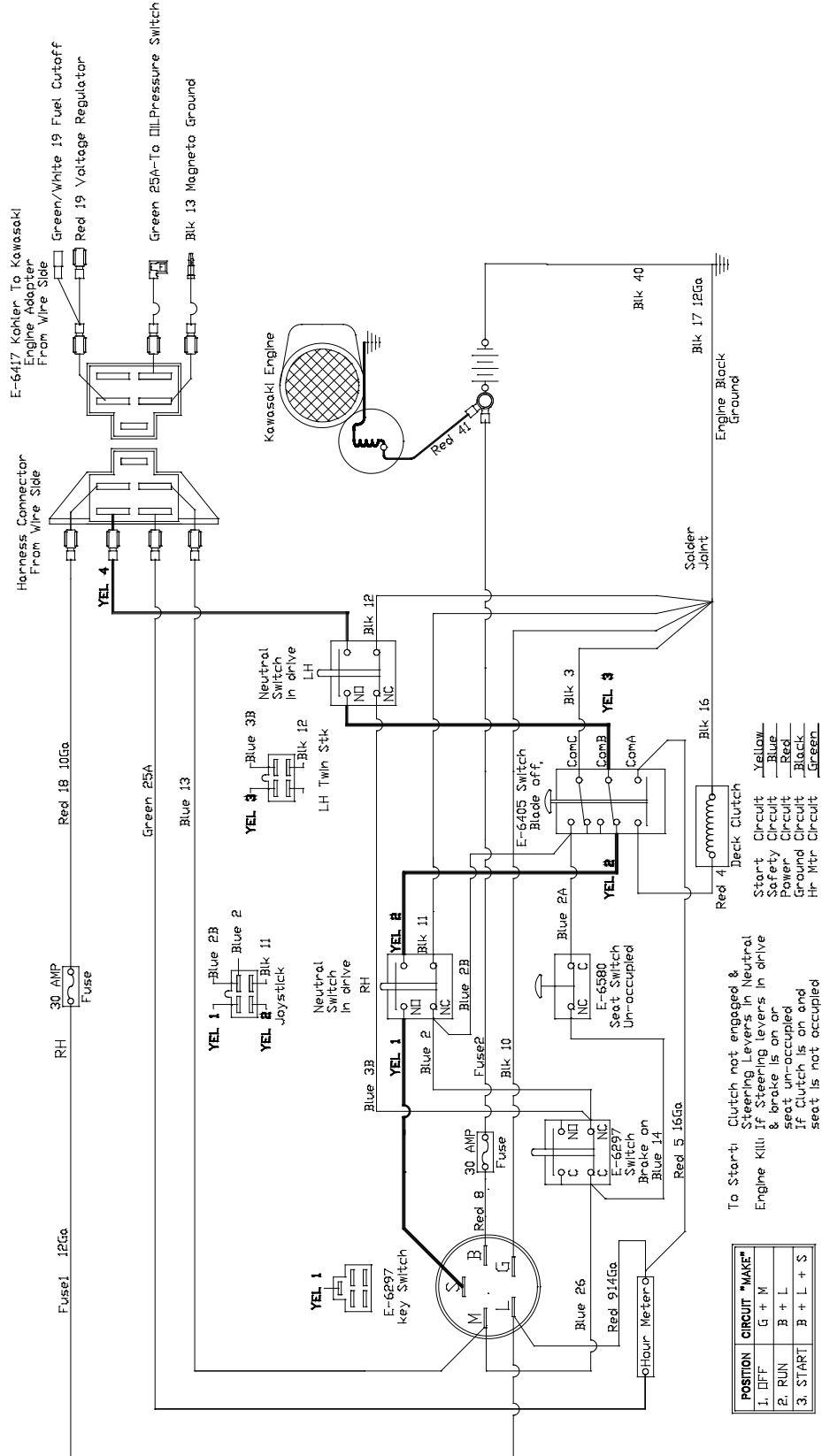


## Deck Drive Belt

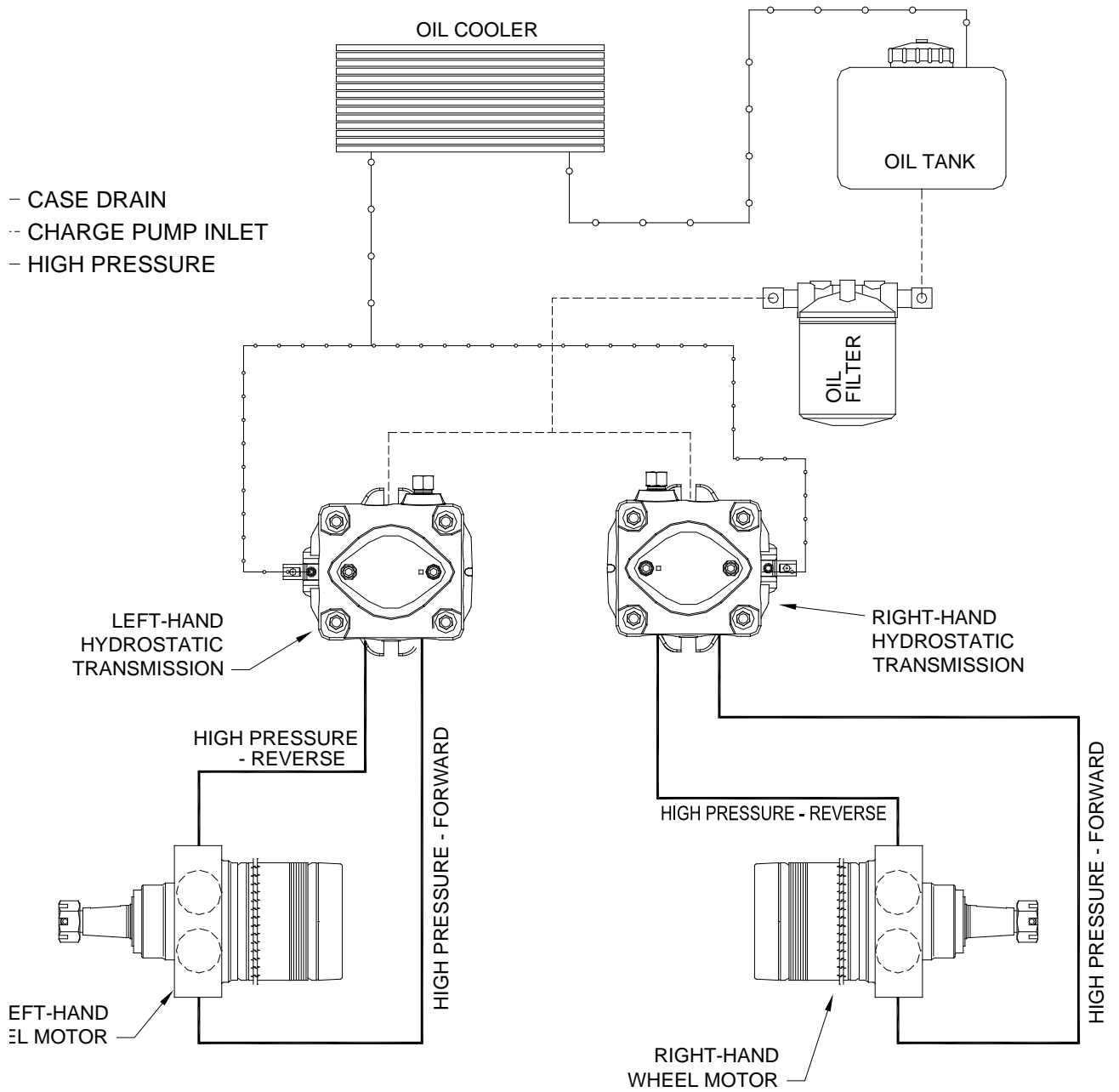




# WIRING SCHEMATIC FOR KAWASAKI TWINSTICK (E-6416) PLUS (E-6417) ADAPTER



# HYDRAULIC SCHEMATIC:



Repair Parts

**C O U N T R Y**  
**CLIPPER**®  
**Z E R O T U R N M O W E R**

**CHARGER**™

1055

**SERIAL RANGE: 19244001 - 20257999**

# COUNTRY CLIPPER CHARGER

1055

SERIAL RANGE: 19244001 - 20257999

ZERO TURN RADIUS MOWER

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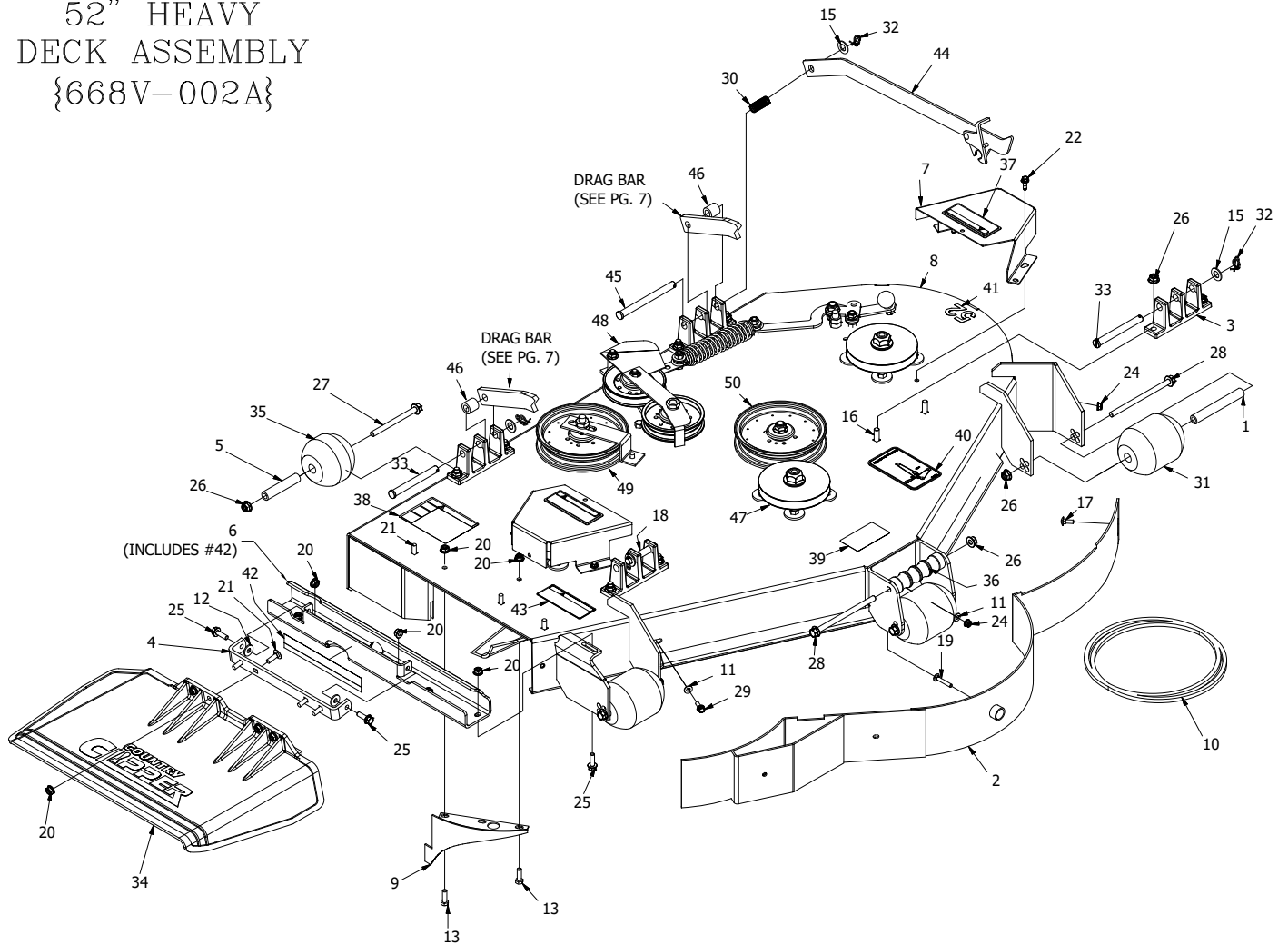
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30. E-6547 WIRE HARNESS ADAPTER & RELATED PARTS

# 52" HEAVY DECK ASSEMBLY {668V-002A}



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	609-183P	3	BUSHING	27	F-2160	2	FHCS, 3/8-16 x 4 1/2", YZ, GR5
2	629-229W	1	DUST BAFFLE, 52"	28	F-2161	4	FHCS, 3/8-16 x 6", YZ, GR5
3	643-016W	4	Hanger Weldment	29	F-2162	1	FHCS, 1/4-20 x 3/4", GR5, YZ
4	643-110P	1	CHUTE HINGE	30	F-2575	1	SPRING, COMP .656 X .052 X 1.97
5	643-126P	2	BUSHING	31	H-1948	3	Roller, 3-3/4 DIA. x 4-13/16L
6	643-135A	1	OUTLET STIFFENER w/DECAL	32	H-2239	4	1/2" Rue Ring
7	660-146A	2	PULLEY COVER w/DECALS	33	H-2240	2	1/2" x 4-1/2" Clevis Pin
8	668-075A	1	52" HEAVY DECK w/DECALS	34	H-2723	1	Chute, Discharge, Small
9	686-006W	1	SPLITTER BAFFLE	--	643-111A	1	CHUTE ASSEMBLY
10	D-3872	1	BELT, B-184	35	H-2772	2	Roller, 3-3/4 DIA. x 3 1/4"L
11	F-1009-01	2	1/4" Flat Washer	36	H-2787	1	GRIP, DECK HANDLE
12	F-1009-02	2	5/16" Flat Washer	37	P-10935	2	Decal, WARNING
13	F-1015-15	2	5/16-18 x 1" Capscrew	38	P-10941	1	DECAL "DANGER ROTATING BLADES"
14	F-1394	3	3/8-16 x 1" Capscrew	39	P-11413	1	DECAL, HOIST POINT
15	F-1521	8	1/2" WASHER, CUSTOM	40	P-11932	1	DECAL, JAZEE DECK BELT ROUTING
16	F-1672	8	3/8-16 x 1-1/4" Carriage Bolt	41	P-11951	1	DECAL, DECK SIZE, 52
17	F-1823	1	Carriage Bolt, 1/4 X 3/4"	42	P-12496	1	DECAL, MISSING CHUTE
18	F-1889	1	1/2 x 2-5/8" Clevis Pin	43	P-12706	1	WARNING DECAL, DISCHARGE CHUTE
19	F-1935	1	CARRIAGE BOLT, 1/4 X 1-1/2"	44	625-114A	1	DECK PROP ASS'Y, EDGE XLT
20	F-2063	13	Nut, 5/16-18 Nyloc, Flanged	45	H-2718	1	1/2" x 5-1/2" Clevis Pin
21	F-2066	8	5/16-18 x 1" CARRIAGE BOLT,	46	707-046P	2	SPACER
22	F-2119	4	FHCS, 1/4-20 x 0.75, YZ, LOCK PATCH, GR5	47	-----	3	SPINDLE ASS'Y (SEE pg.4)
23	F-2124	1	FHCS, 3/8-16 x 0.75, YZ, GR5	48	-----	1	DOUBLE IDLER ASS'Y (SEE pg.5)
24	F-2132	2	NUT, 1/4-20 NYLOC, FLANGED	49	-----	1	REAR IDLER ASS'Y (SEE pg.5)
25	F-2148	3	FHCS, 5/16-18 x 1.00, YZ, GR5	50	-----	1	FRONT IDLER ASS'Y (SEE pg.5)
26	F-2151	18	Nut, 3/8-16 Nyloc, Flanged				

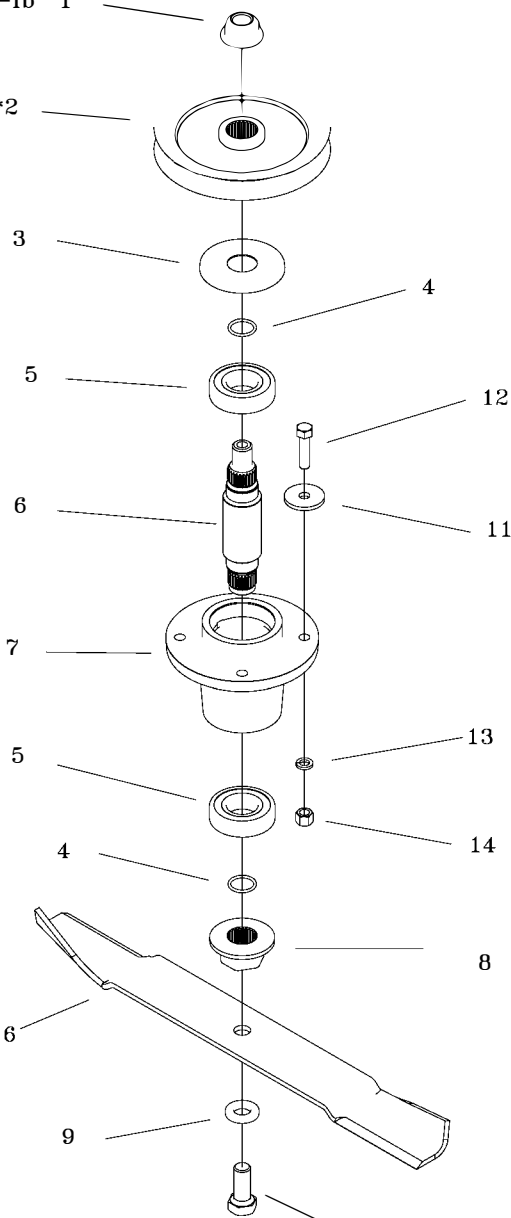




# DECK SPINDLE ASSEMBLY 629FN-001A

TORQUE TO 170-190 ft-lb 1

PULLEY NOT INCLUDED \*2  
IN ASSEMBLY



15 (APPLY THIN LAYER OF CHEVRON RYKOTAC GREASE TO THE TOP SURFACES OF THE BEARING AND HOUSING PRIOR TO INSTALLING ITEM #3 (BEARING CAP).

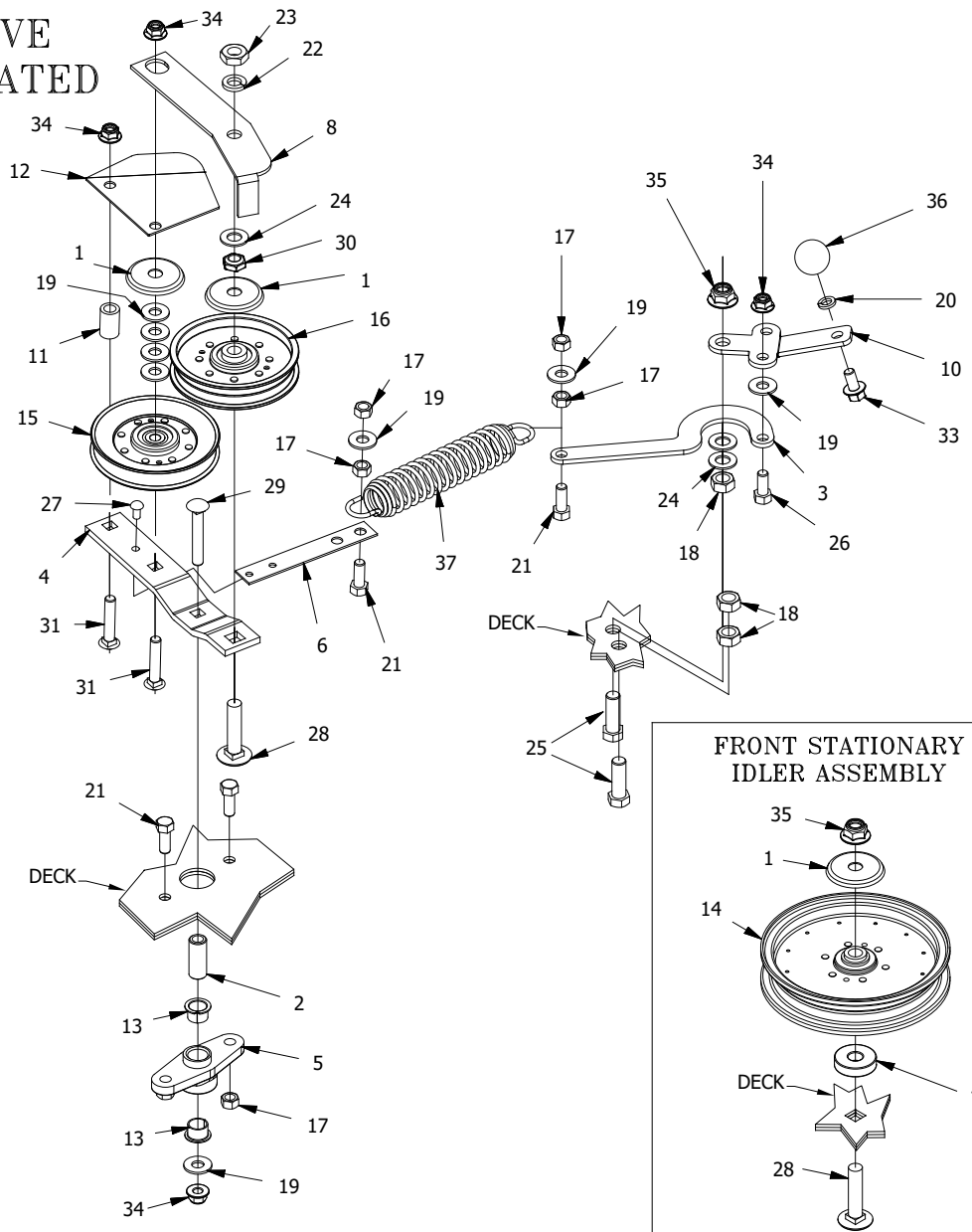
NEW MOWERS ARE SHIPPED WITH 3 to 4 oz OF CHEVRON SRI NLGI 2 GREASE INSIDE EACH SPINDLE HOUSING.

BLADE NOT INCLUDED \*16  
IN ASSEMBLY

10 TORQUE TO 100 ft-lb

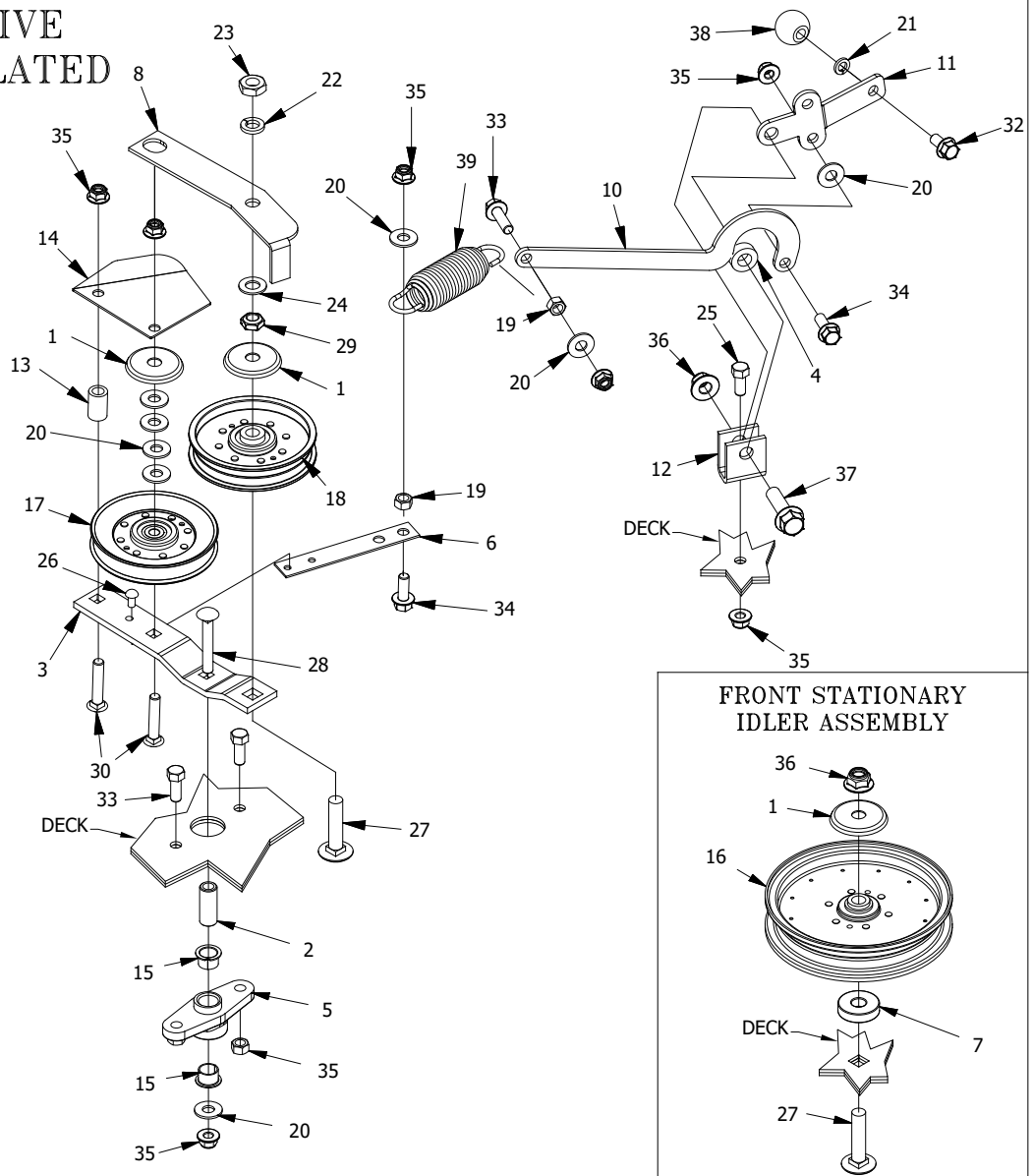
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	F-2078	1	3/4-6 TOP LOCK NUT	12	F-1572	4	3/8-24 X 1.5 CAP SCREW
2	668-050P	*	52" DECK CENTER PULLEY	13	F-1019-03	4	3/8 LOCK WASHER
*	668-042P	*	60" DECK CENTER PULLEY	14	F-1573	4	3/8-24 LOCK NUT
3	609-292P	1	CAP, BEARING	15	H-2707	1	GREASE PACKET
4	H-2639	2	O'RING, RUBBER	16	H-2884	-	FUSION, HIGH LIFT 18 3/8" CUT 52"
5	D-3867	2	BEARING, #6206	-	H-2886	-	FUSION, HIGH LIFT, 21" CUT 60"
6	609-289P	1	SHAFT, SPINDLE	OPTIONAL BLADES			
7	609-285P	1	HOUSING, SPINDLE				
8	609-288P	1	BLADE DRIVER	-	H-2660	-	BLADE, LOW LIFT, 18 3/8" CUT, 52"
9	660-099P	1	BLADE WASHER	-	H-2661	-	BLADE, LOW LIFT, 21" CUT, 60"
10	F-2073	1	5/8-11 X 1.5 HHCS GR. 8	-	H-2666	-	BLADE, GATOR, 18 3/8" CUT 52"
11	609-034P	4	SPINDLE SPACER, WASHER	-	H-2667	-	BLADE, GATOR, 21" CUT 60"

# DOUBLE IDLER DRIVE BELT IDLER & RELATED PARTS 52" DECK

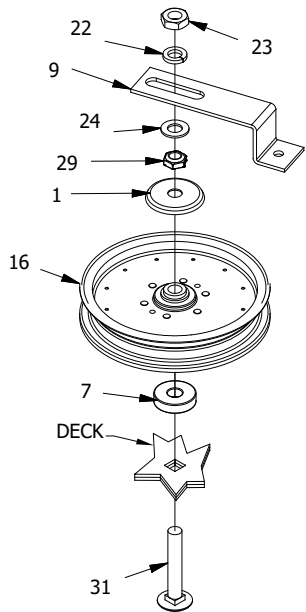


REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	620-201P	4	WASHER, BEARING CAP	20	F-1019-03	13	3/8" LOCKWASHER
2	659-085P	1	Mounting Pin	21	F-1394	4	3/8-16 x 1" Capscrew
3	660-031P	1	Belt Tightner Arm	22	F-1464	2	1/2" LOCKWASHER
4	660-036P	1	Idler Arm	23	F-1489	2	1/2-13 Hex Jam Nut
5	660-039P	1	Double Idler Mount	24	F-1521	8	1/2" WASHER, CUSTOM
6	660-081P	1	EXTENSION FOR SPRING	25	F-1526	2	1/2-13 x1-1/2" Capscrew
7	660-082P	2	SPACER	26	F-1558	1	3/8-16 x 7/8" Capscrew
8	660-107P	1	BELT KEEPER	27	F-1733	1	1/4" x 1/2" DRIVE SCREW
9	660-114P	1	BELT KEEPER, SINGLE END	28	F-1822	2	1/2-13 X 2-1/4" CARRIAGE BOLT
10	660-184P	1	HANDLE, BELT TENSIONER	29	F-1865	1	3/8-16 x 2-1/2" Carraige Bolt
11	668-021P	1	SPACER, BELT GUARD	30	F-1966	2	1/2-13 THIN NYLOC NUT
12	668-029P	1	BELT GUARD	31	F-1976	2	3/8-16 x 2" Carraige Bolt
13	D-3730	2	Flanged Bushing 5/8" Bore	32	F-2047	1	1/2-13 X 3" CARRIAGE BOLT
14	D-3903	2	PULLEY, FLAT IDLER, 6" (NTN)	33	F-2124	1	FHCS, 3/8-16 x 0.75, YZ, GR5
15	D-3923	1	PULLEY, V-IDLER, 4.59 OD, AB, NTN	34	F-2151	18	Nut,3/8-16 Nyloc, Flanged
16	D-3924	1	PULLEY, FLAT IDLER, NTN, DBL INSERT	35	F-2152	2	Nut,1/2-13 Nyloc, Flanged
17	F-1005-03	6	3/8-16 Stover Nut	36	H-2405	1	BALL, 1-1/4"
18	F-1005-05	3	1/2-13 Stover Nut	37	H-2619	1	SPRING,5 X 1-1/2,TAPERED ENDS
19	F-1009-03	8	3/8" Flat Washer				

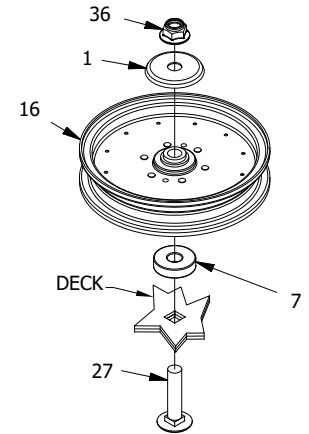
# DOUBLE IDLER DRIVE BELT IDLER & RELATED PARTS 60" DECK



REAR STATIONARY  
IDLER ASSEMBLY

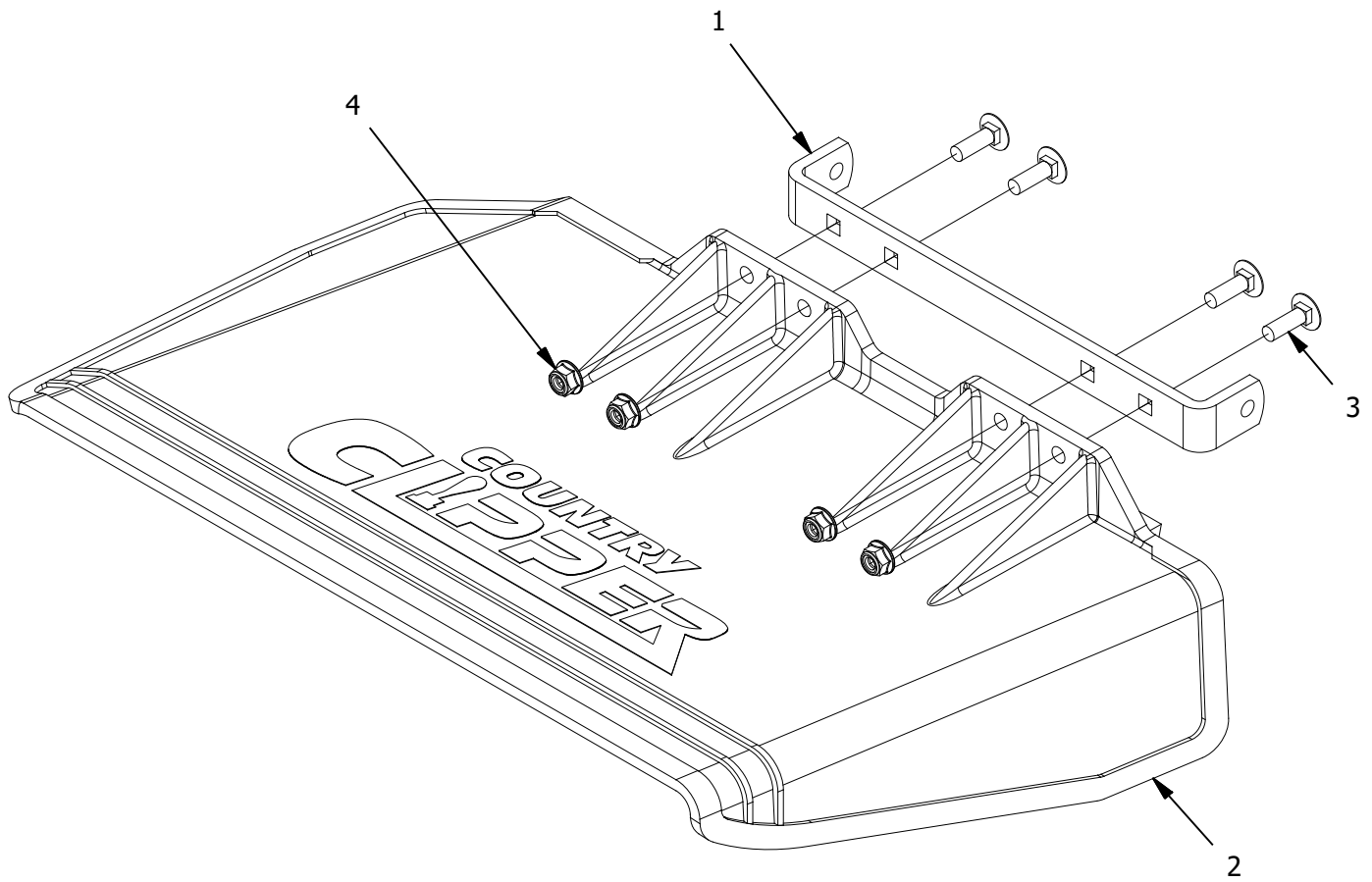


FRONT STATIONARY  
IDLER ASSEMBLY



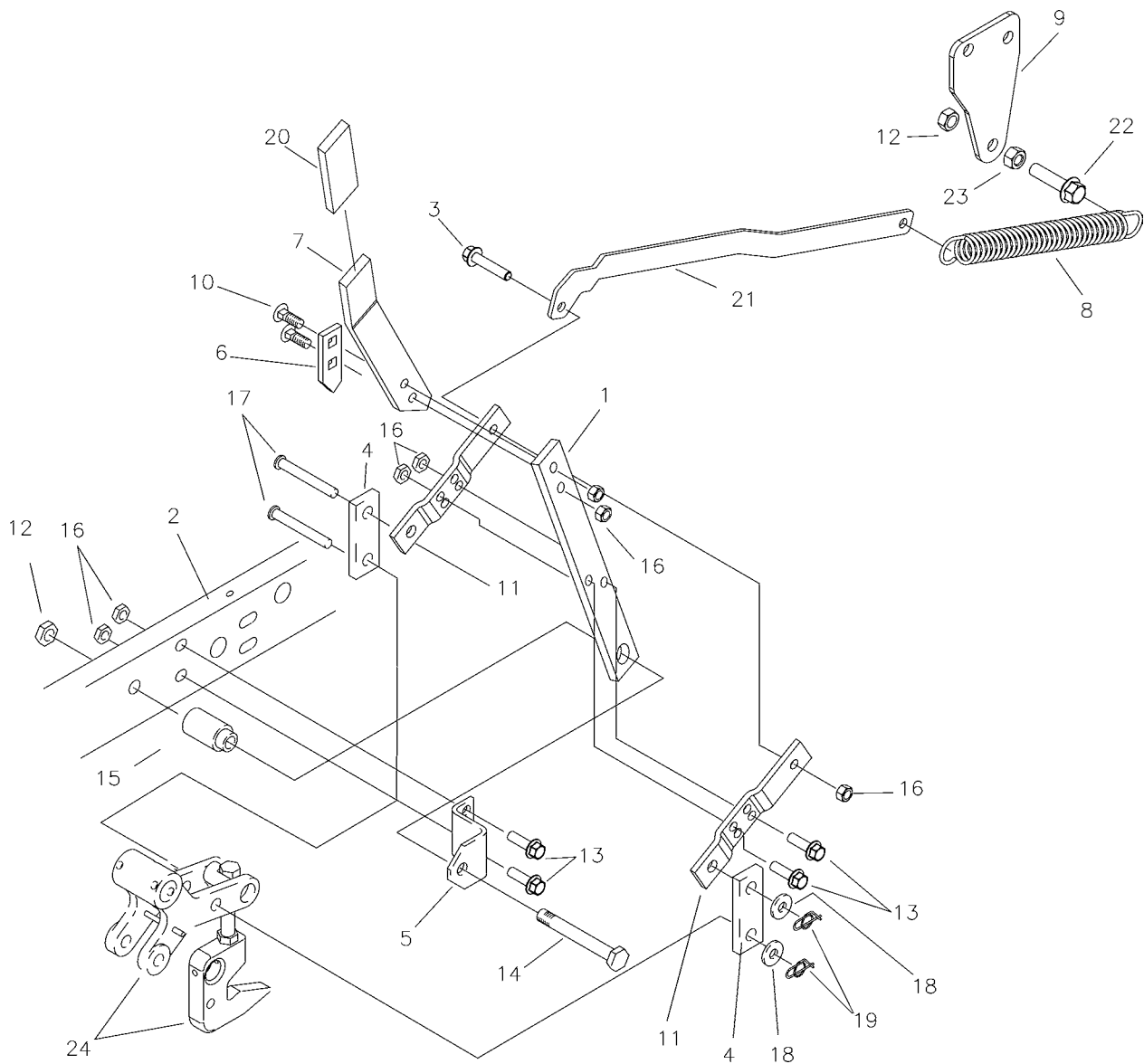
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	620-201P	4	WASHER, BEARING CAP	21	F-1019-03	13	3/8" LOCKWASHER
2	659-085P	1	Mounting Pin	22	F-1464	2	1/2" LOCKWASHER
3	660-036P	1	Idler Arm	23	F-1489	2	1/2-13 Hex Jam Nut
4	660-038P	1	3/8" Spacer	24	F-1521	6	1/2" WASHER, CUSTOM
5	660-039P	1	Double Idler Mount	25	F-1558	1	3/8-16 x 7/8" Capscrew
6	660-081P	1	EXTENSION FOR SPRING	26	F-1733	1	1/4" x 1/2" DRIVE SCREW
7	660-082P	2	SPACER	27	F-1822	2	1/2-13 X 2-1/4" CARRIAGE BOLT
8	660-107P	1	BELT KEEPER	28	F-1865	1	3/8-16 x 2-1/2" Carriage Bolt
9	660-114P	1	BELT KEEPER, SINGLE END	29	F-1966	2	1/2-13 THIN NYLOC NUT
10	660-182P	1	BELT TIGHTENER ARM	30	F-1976	2	3/8-16 x 2" Carriage Bolt
11	660-184P	1	HANDLE, BELT TENSIONER	31	F-2047	1	1/2-13 X 3" CARRIAGE BOLT
12	661-015P	1	SHACKLE	32	F-2124	1	FHCS, 3/8-16 x 0.75, YZ, GR5
13	668-021P	1	SPACER, BELT GUARD	33	F-2125	3	FHCS, 3/8-16 x 1.25, YZ, GR5
14	668-029P	1	BELT GUARD	34	F-2141	2	FHCS, 3/8-16 x 1", YZ, GR5
15	D-3730	2	Flanged Bushing 5/8" Bore	35	F-2151	24	Nut, 3/8-16 Nyloc, Flanged
16	D-3903	2	PULLEY, FLAT IDLER, 6" (NTN)	36	F-2152	2	Nut, 1/2-13 Nyloc, Flanged
17	D-3923	1	PULLEY, V-IDLER, 4.59 OD, AB, NTN	37	F-2154	1	FHCS, 1/2-13 x 1-3/4", YZ, GR5
18	D-3924	1	PULLEY, FLAT IDLER, NTN, DBL INSERT	38	H-2405	1	BALL, 1-1/4"
19	F-1005-03	2	3/8-16 Stover Nut	39	H-2619	1	SPRING, 5 X 1-1/2, TAPERED ENDS
20	F-1009-03	8	3/8" Flat Washer				

MOLDED CHUTE ASSEMBLY  
 {643-111A}



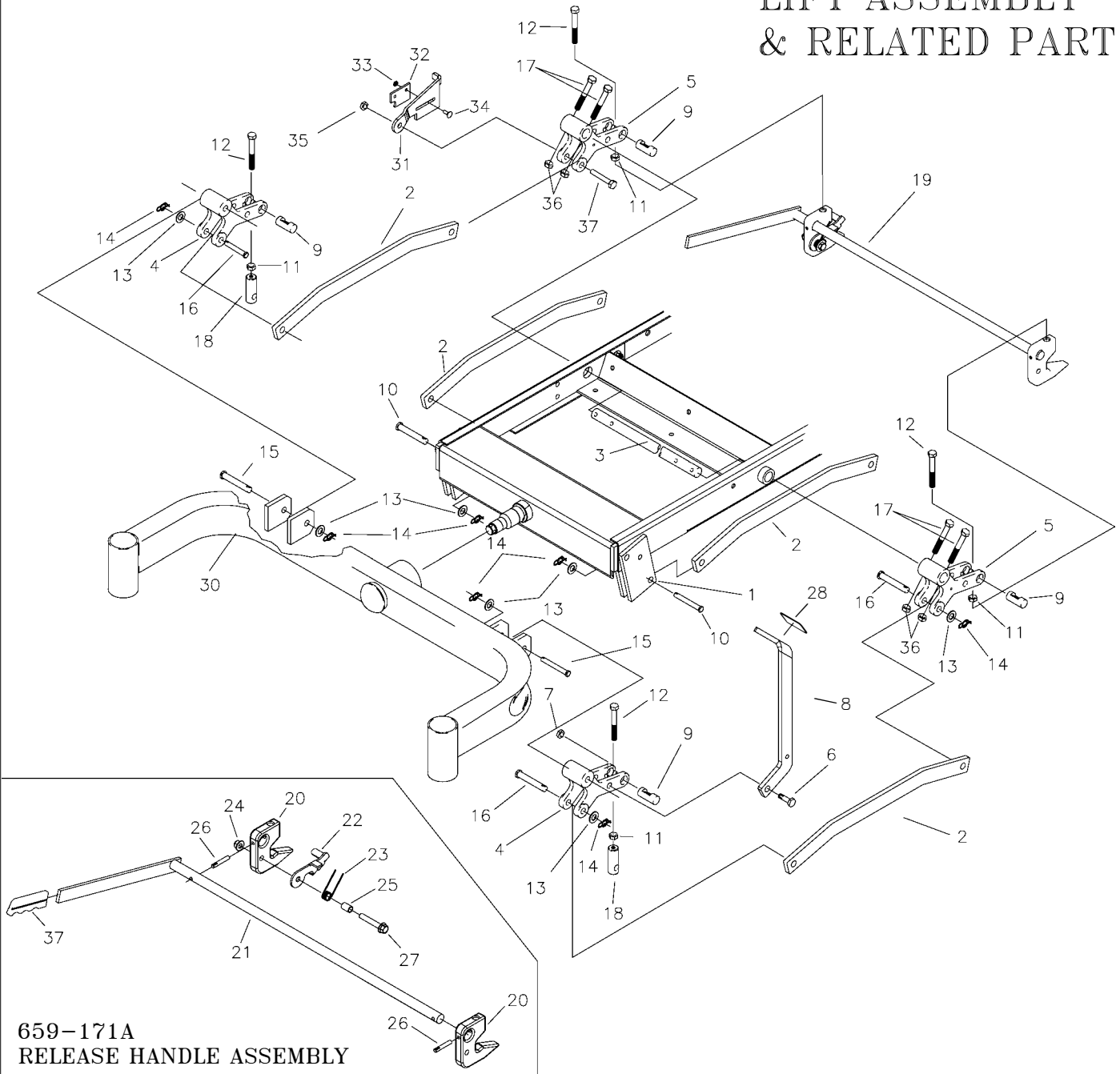
REF NO.	PART NO.	QTY.	DESCRIPTION
1	643-110P	1	CHUTE HINGE
2	H-2723	1	CHUTE, DISCHARGE, SMALL
3	F-2066	4	5/16-18 x 1" CARRIAGE BOLT,
4	F-2063	4	NUT, 5/16-18 NYLOC, FLANGED

# LIFT HANDLE ASSEMBLY & RELATED PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	709-102P	1	LIFT HANDLE, LOWER	13	F-2125	4	FHCS, 1/2-13 X 1 1/4", YZ GR5
2	659-022W	1	FRAME WELDMENT, LH.	14	F-1439	1	1/2-13 X 3" GR. 5
3	F-2126	1	3/8-16 X 2" CAPSCREW	15	642-095P	1	HANDLE PIVOT PIN
4	642-061P	2	HANDLE LINK	16	F-2151	7	NUT, 3/8-16, NYLOC FLANGED
5	642-041P	1	HANDLE PIVOT BRACKET	17	F-1889	2	CLEVIS PIN, 1/2 X 2 5/8"
6	642-127P	1	TOP PEG LATCH PLATE	18	F-1521	2	1/2" FLAT WASHER
7	659-355P	1	LIFY HANDLE, UPPER	19	H-2239	2	RUE RING, 1/2"
8	H-1610	1	SPRING, 1 1/2" OD. X 8"	20	H-2324	1	VINYL GRIP, 3/8 X 1 1/2"
9	663-120P	1	PLT, SPRING MOUNT	21	663-080P	1	BAR, SPRING EXT.
10	F-1672	2	CARRIAGE BOLT, 3/8-16 X 1 1/4"	22	F-2128	1	FHCS, 1/2-13 X 2", YZ GR5
11	642-060P	2	SPRING ANCHOR PLATE	23	F-1011-05	7	HEX NUT, 1/2-13
12	F-2152	2	NUT, 1/2-13, NYLOC FLANGED	24	-----	-	SEE PAGE 7

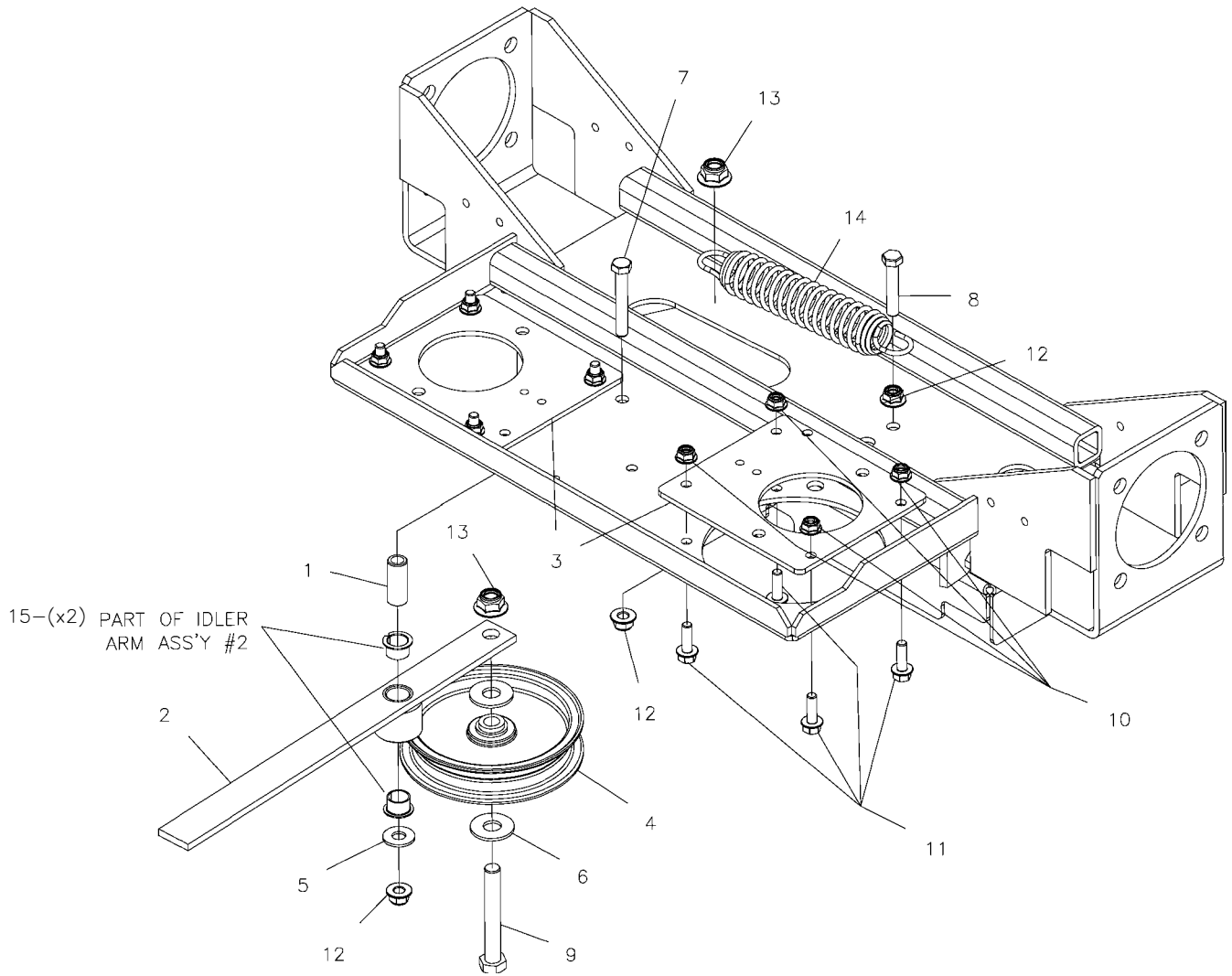
# LIFT ASSEMBLY & RELATED PARTS



**659-171A  
RELEASE HANDLE ASSEMBLY**

REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	642-063P	2	DRAG BAR TAB	20	659-140P	2	DECK HOOK
2	659-299P	4	DRAG LINK BAR	21	659-148W	1	RELEASE HANDLE WELDMENT
3	620-051P	1	LIFT BAR	22	659-372P	1	HOOK KEEPER
4	642-081P	2	LIFT SLEEVE, FRONT	23	H-3011	1	SPRING, TORSION
5	642-193P	2	LIFT SLEEVE, REAR	24	F-2151	1	NUT, 3/8-16, NYLOC FLANGED
6	F-1879	1	5/16-18 X 1 1/4" GR.5	25	707-073P	1	SPACER
7	F-1125	1	5/16-18 STOVER NUT	26	F-2187	2	PIN, GROOVED, "C", 1/4 X 1.50"
8	659-056P	1	DECK LIFT PEDAL	27	F-2218	1	FHCS, 3/8-16X2-1/4", YZ, GR5
9	642-177P	4	HANGER PIN	28	H-2401	1	TREAD PAD
10	F-1815	2	CLEVIS PIN, 1/2 X 1 1/2"	29	H-1926	1	1/4"x1" HANDLE GRIP
11	F-1489	4	NUT, 1/2" JAM	30	642-189W	1	FRONT AXLE WELDMENT
12	F-1936	4	1/2-13 X 3 1/2, 2" THREAD	31	663-089P	1	LATCH PLATE
13	F-1521	7	WASHER, 1/2 NARROW	32	659-170P	1	PLATE, CATCH
14	H-2239	7	RUE RING, 1/2"	33	F-2132	2	NUT, 1/4-20, NYLOC FLANGED
15	F-1890	2	CLEVIS PIN, 1/2 X 3 1/2"	34	F-1823	2	CARRIAGE BOLT, 1/4-20 X 3/4"
16	F-1898	3	CLEVIS PIN, 1/2 X 2 3/4"	35	F-2152	1	NUT, 1/2-13, NYLOC FLANGED
17	F-2039	4	5/16-24 x 2" HHCS	36	F-2041	4	5/16-24 JAM NUT
18	642-175P	2	ADJUSTABLE HANGER END	37	F-1828	1	1/2-13 x 3-1/2" CAPSCREW
19	659-171A	1	RELEASE HANDLE ASSEMBLY				

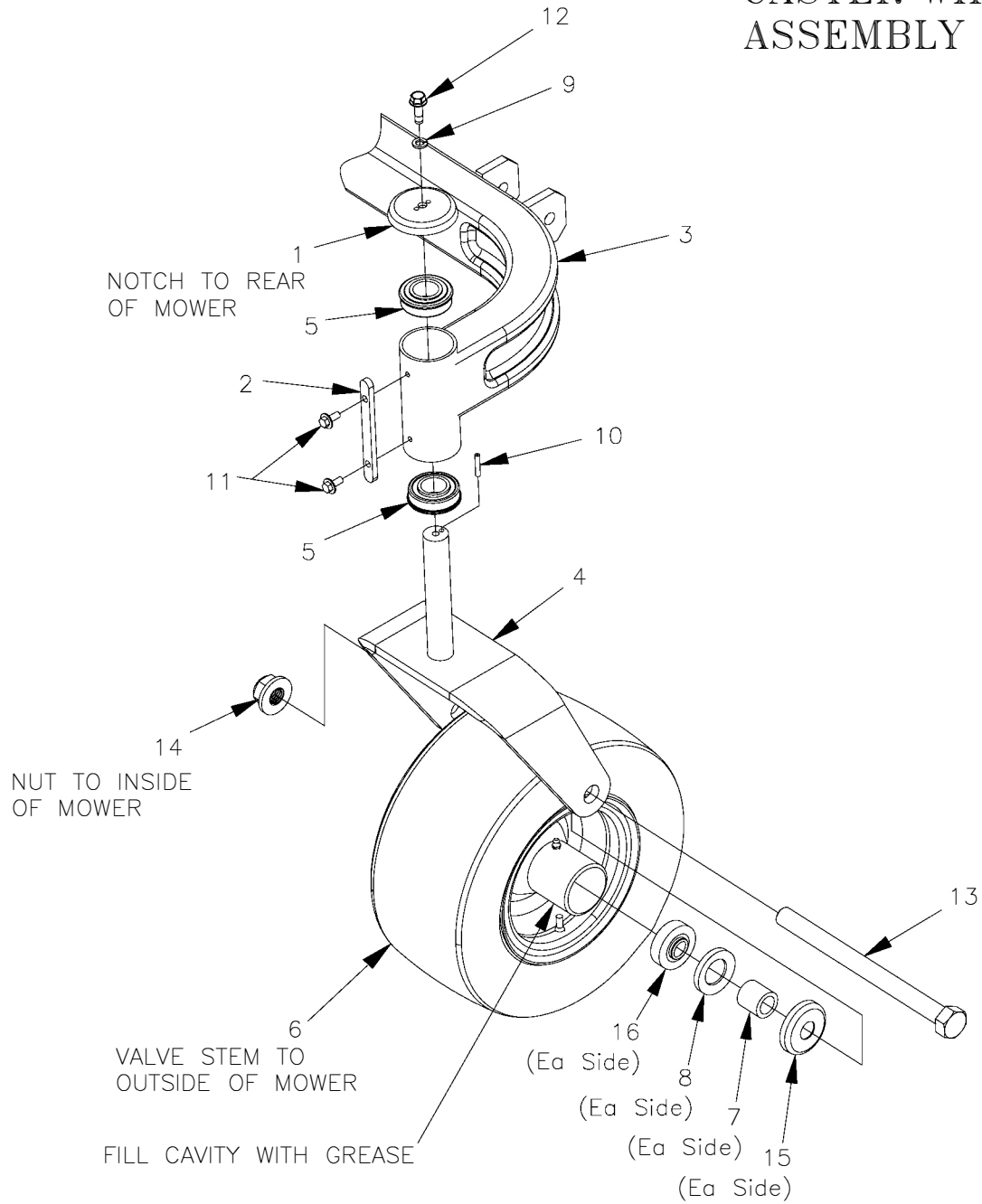
# TRANSMISSION IDLERS & RELATED PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	659-085P	1	Mounting Pin	9	F-1936	5	1/2-13 x 3-1/2" Capscrew
2	663-057A	1	Hydro Idler Arm Assembly	10	F-2063	66	Nut, 5/16-18 Nyloc, Flanged
3	663-146P	2	PLATE, PUMP ADAPTER	11	F-2148	10	FHCS, 5/16-18 x 1.00, YZ, GR5
4	D-3904	1	PULLEY, FLAT IDLER, 5"	12	F-2151	25	Nut, 3/8-16 Nyloc, Flanged
5	F-1009-03	2	3/8" Flat Washer	13	F-2152	31	Nut, 1/2-13 Nyloc, Flanged
6	F-1009-05	2	1/2" FLAT WASHER	14	H-2619	1	SPRING, 5 X 1-1/2, TAPERED ENDS
7	F-1015-30	1	3/8-16 x 2-1/2" Capscrew	15	D-3730	2	FLANGED BUSHING
8	F-1073	1	3/8-16 x 2" Capscrew				

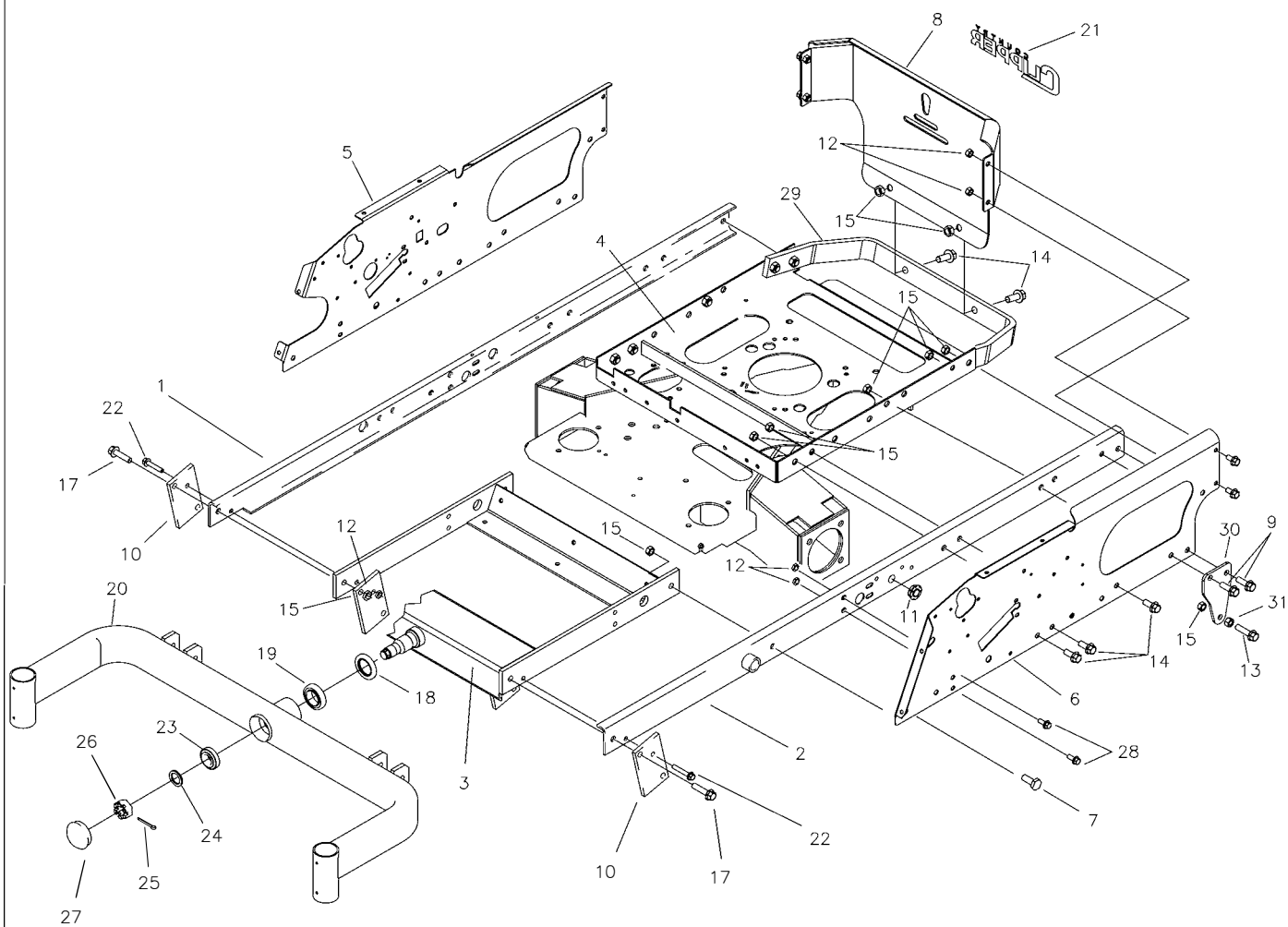


# CASTER WHEEL ASSEMBLY



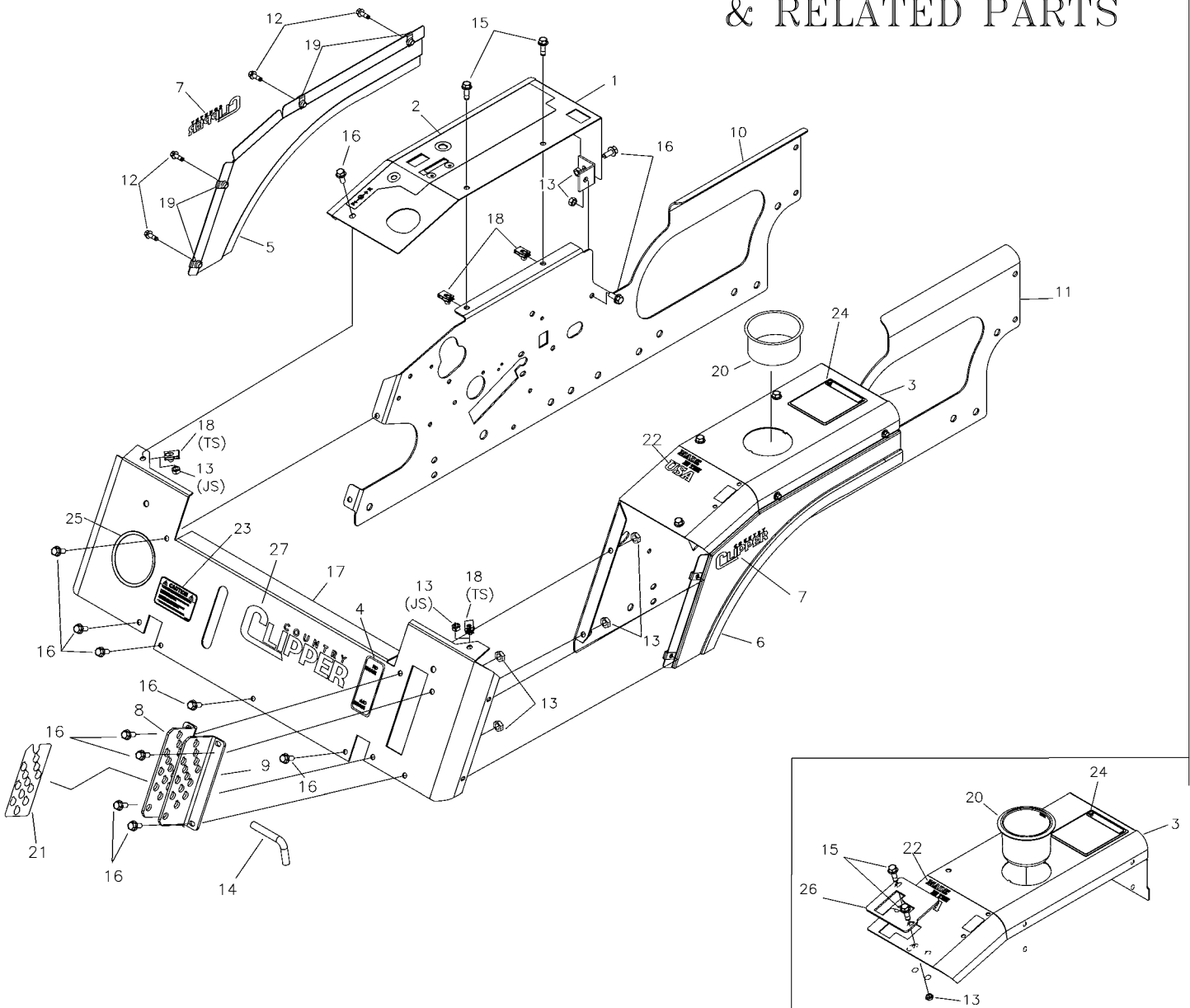
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	636-176P	2	BEARING CAP	9	F-1019-02	2	5/16" LOCK WASHER
2	659-185P	2	STOP TAB	10	F-1855	2	3/16 x 1" Roll Pin (Heavy Duty)
3	659-287W	1	WLDT, AXLE, FRONT	11	F-2030	4	1/4 x 5/8 Self Tapping Capscrew
4	663-217W	2	WLD'T, CASTER YOKE	12	F-2121	2	FHCS, 5/16-18x1.00, YZ, LOCK PATCH, GR5
5	D-2008-02	4	BEARING SF-16-32	13	F-2194	2	HHCS, 3/4-10 X 9-1/2", YZ, GR5
6	D-4021	2	TIRE ASS'Y, BLACK, SMOOTH, 13X6.5-6	14	F-2195	2	NUT, FLANGE NYLOC, YZ
7	D-4021-6	4	SPACER	15	663-221P	4	CAP FOR BEARINGS
8	D-4021-5	4	GREASE SEAL	16	D-4021-4	4	TAPER ROLLER BEARING

# FRAME SIDES & RELATED PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	663-185W	1	FRAME SIDE RH.	16	F-2124	4	FHCS, 3/8-16 X 3/4" GR.5
2	663-187W	1	FRAME SIDE LH.	17	F-2128	2	FHCS, 1/2-13 X 2", GR.5
3	709-157W	1	AXLE MOUNTING WLDT.	18	H-2812	1	SEAL SHAFT
4	663-176W	1	MOTOR MOUNT WLDT.	19	D-3825	1	BEARING, TAPARED SET
5	663-188P	1	SIDE PANEL RH. (JOYSTICK)	20	642-189W	1	FRONT AXLE WELDMENT
-	663-195P	1	SIDE PANEL RH. (TWINSTICK)	21	P-13312	1	DECAL, LOGO, CHROME w/BLK, LG
6	663-189P	1	SIDE PANEL LH. (JOYSTICK)	22	F-2126	2	FHCS, 3/8-16 x 2" GR.5
-	663-196P	1	SIDE PANEL LH. (TWINSTICK)	23	D-3826	1	BEARING, TAPARED SET
7	F-1386	2	1/2-13 X 1-1/4" GR.5	24	606-303P	1	1" WASHER
8	707-098A	1	ENGINE GUARD w/DECAL	25	F-1728	1	3/16 X 2" COTTER PIN
9	F-2140	4	FHCS, 1/2-13 x 1-1/2" GR.5	26	F-1724	1	1-14 SLOTTED NUT
10	642-063P	2	DRAG BAR TAB	27	H-1924	1	GREASE CAP
11	H-2773	2	BEARING, FLG-SPHERICAL, IGUS	28	F-2125	4	FHCS, 3/8-16 x 1-1/4", YZ, GR5
12	F-2151	10	NUT, 3/8-16, NYLOC FLANGED	29	707-003P	1	GUARD, BUMPER
13	F-2128	1	FHCS, 1/2-13 x 2 GR.5	30	663-120P	1	PLATE, SPRING MOUNT
14	F-2127	15	FHCS, 1/2-13 X 1-1/4" GR.5	31	F-1011-05	1	HEX NUT, 1/2-13
15	F-2152	18	NUT, 1/2-13, NYLOC FLANGED				

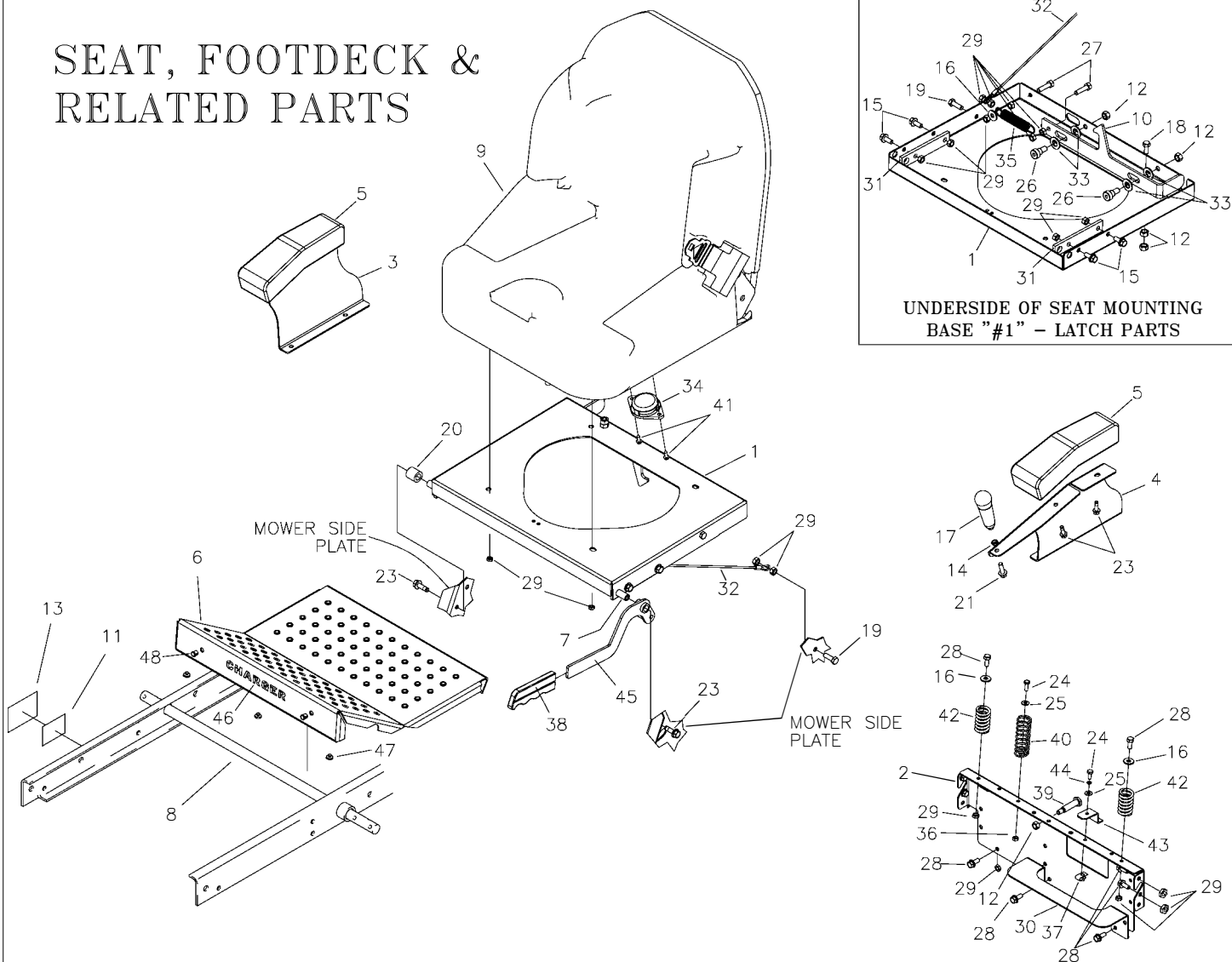
# FENDER ASSEMBLY & RELATED PARTS



TWINSTICK FENDER ASSY

REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	629-840A	1	FENDER CAP w/DECAL, RH, (JS)	12	F-2119	8	FHCS, 1/4-20x3/4", GR.5 w/PATCH
-	629-892A	1	FENDER CAP w/DECAL, EFI, RH, (JS)	13	F-1125	13	5/16-18 LOCK NUT
-	629-842A	1	FENDER CAP w/DECAL, RH, (TS)	14	H-3013	1	DECK HEIGHT PIN
-	629-893A	1	FENDER CAP w/DECAL, EFI, RH, (TS)	15	F-2121	8	FHCS, 5/16-18x1" GR.5 w/PATCH
2	P-12925	1	DECAL, CONTROL PANEL	16	F-2120	15	FHCS, 5/16-18 X 3/4" GR.5
-	P-13172	1	DECAL, CONTROL PANEL, EFI	17	707-107A	1	FRONT PANEL w/DECALS
3	629-841A	1	FENDER CAP w/DECAL, LH (JS)	18	F-1860	6	5/16-18 "U"-NUT
-	629-843A	1	FENDER CAP w/DECAL, LH (TS)	19	F-1858	8	1/4-20 "U"-NUT
4	P-11382	1	DECAL, PARK BRAKE	20	H-2228	1	CUP HOLDER
5	629-890A	1	FENDER SKIRT w/DECAL, RH	21	P-13325	1	DECAL, DECK LIFT
6	629-891A	1	FENDER SKIRT w/DECAL, LH	22	P-13000	1	DECAL, "USA"
7	P-13311	2	DECAL, LOGO, CHROME w/BLK, SM	23	P-12557	1	DECAL, "CAUTION"
8	647-259A	1	LATCH PLATE RH W/DECAL	24	P-11370	1	DECAL, WARNING
9	647-258P	1	LATCH PLATE LH.	25	H-1626	1	U CHANNEL TRIM
10	-----	1	SEE PAGE 11	26	659-262P	1	NEUTRAL PLATE
11	-----	1	SEE PAGE 11	27	P-13312	1	DECAL, LOGO, CHROME w/BLK, LG

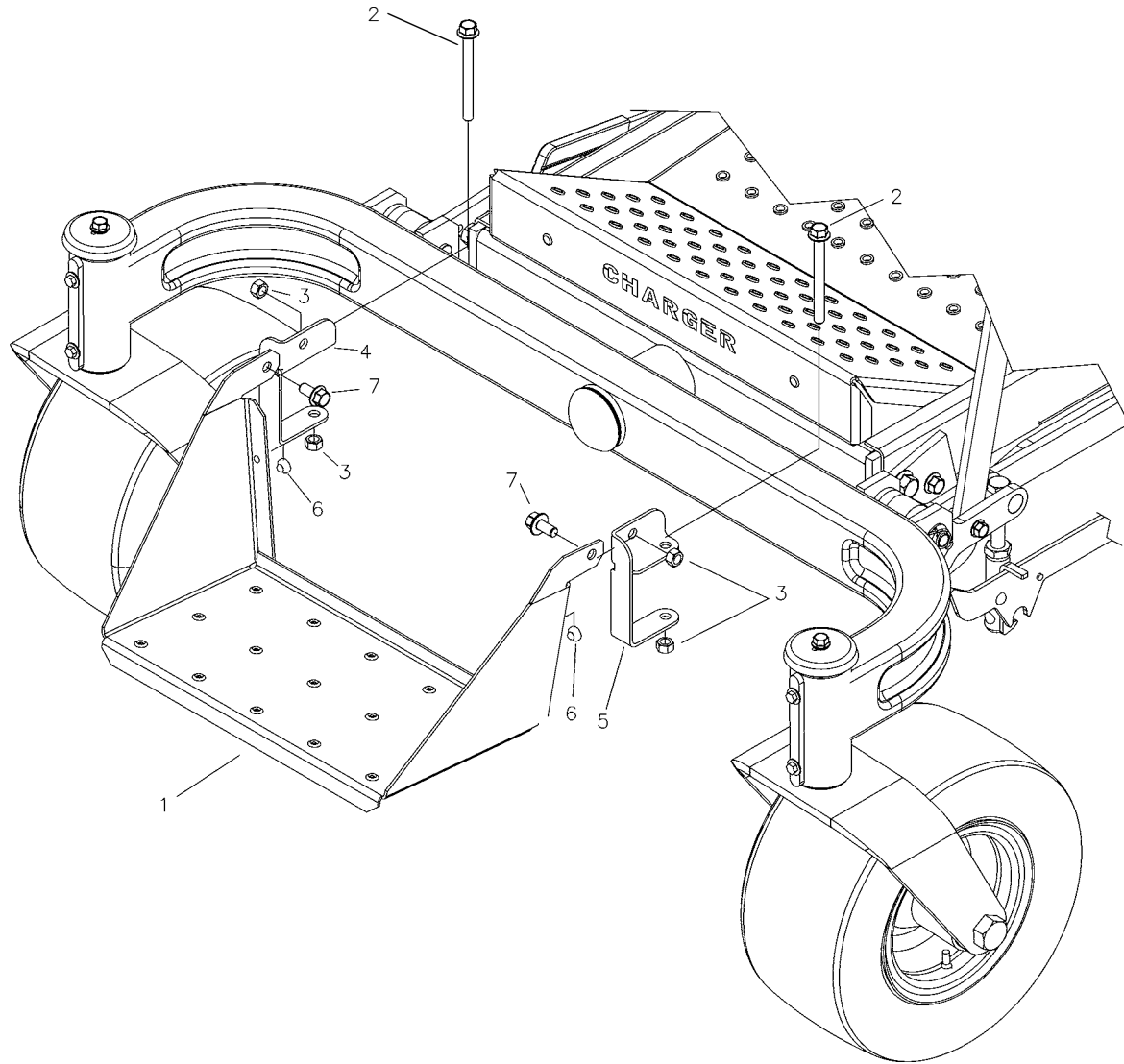
# SEAT, FOOTDECK & RELATED PARTS



UNDERSIDE OF SEAT MOUNTING  
BASE "#1" - LATCH PARTS

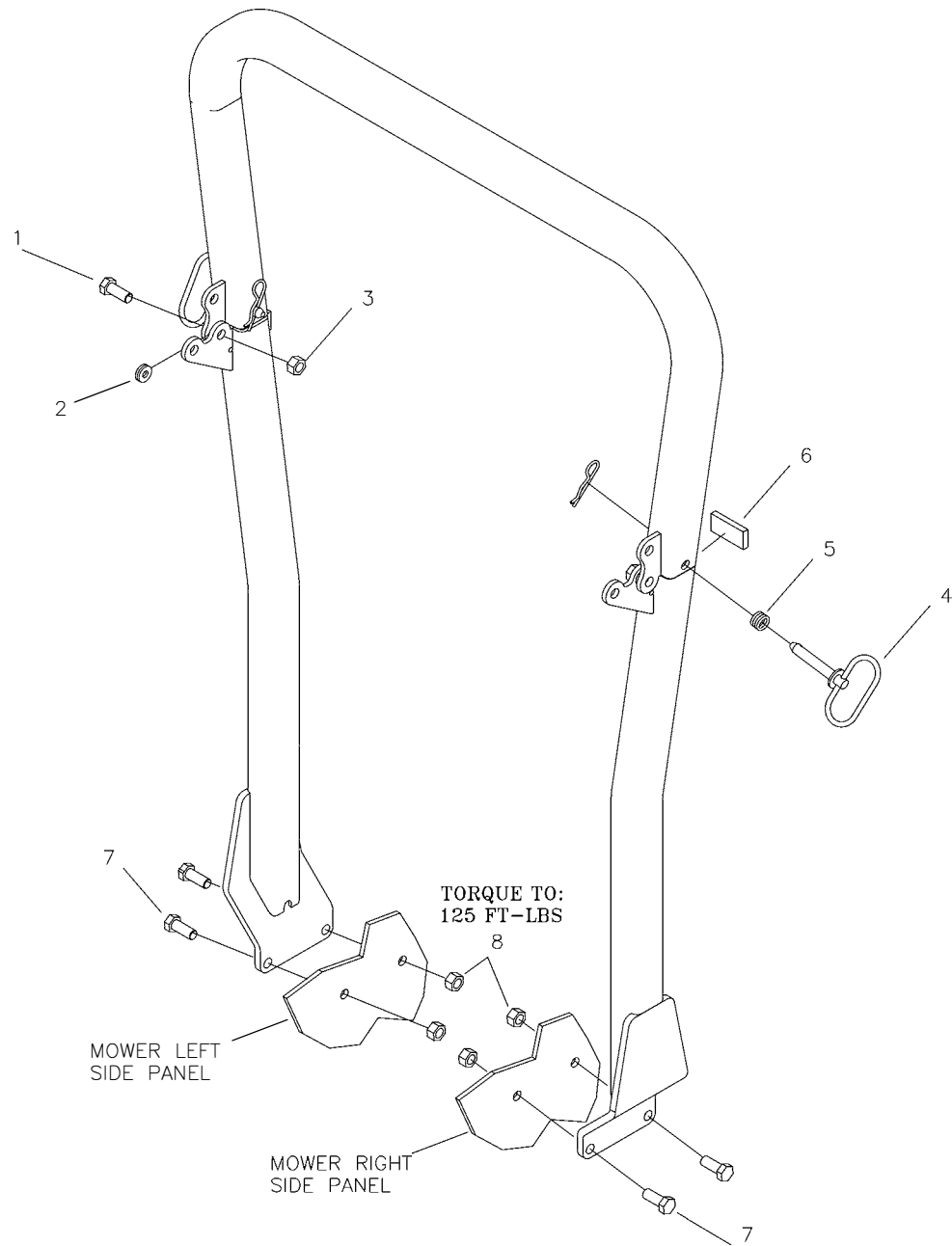
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	663-194P	1	PLATE, SEAT	24	F-2162	1	FHCS, 1/4-20 X 3/4", GR5, YZ
2	663-197P	1	PLT, REAR SEAT FILLER	25	F-1009-01	2	1/4" FLAT WASHER
3	707-047P	1	PLATE, ARM REST RH	26	F-2062	2	1/2"x3/8 SHOULDER BOLT, SOCKET
4	707-070P	1	PLATE, ARM REST LH (JOYSTICK)	27	F-2122	2	FHCS, 5/16-18 X 1-1/4 YZ, GR5
-	707-048P	1	PLATE, ARM REST LH (TWINSTICK)	28	F-2120	10	FHCS, 5/16-18x3/4" GR5
5	H-2763	2	PAD, ARM REST	29	F-2063	20	NUT, 5/16-18, NYLOC FLANGED
6	629-846A	1	FOOT DECK w/DECAL, CHARGER	30	707-066P	1	SHELF, REAR, FUEL TANK
7	707-043P	1	PIN, SEAT HINGE	31	707-045P	2	BAR, REINFORCEMENT, SEAT
8	620-051P	1	LIFT BAR	32	H-2460	1	CABLE
9	H-2755	1	SEAT	33	F-1521	4	1/2" WASHER
-	H-2910	1	COVER FOR SEAT H-2755	34	E-6374	1	SEAT SWITCH
10	663-081P	1	PLATE, LATCH SLIDE LONG	35	H-1635	1	3/4x4" EXTENSION SPRING
11	P-13142	1	SERIAL TAG	36	F-2132	1	NUT, 1/4-20, NYLOC FLANGED
12	F-1005-03	7	3/8-16 LOCK NUT	37	F-1858	1	1/4-20 "U" NUT
13	P-12473	1	SERIAL TAG LAMINATION DECAL	38	H-1926	1	HANDLE, GRIP
14	F-1486	1	3/8-16 JAM NUT	39	F-2061	1	1/2"x1 1/2" SHOULDER BOLT
15	F-2120	4	FHCS, 5/16-18x3/4" GR5	40	H-2608	1	SPRING, ASSIST
16	F-1009-02	3	5/16 FLAT WASHER	41	F-1785	2	SCREW, HX WASHER HD #14 X 3/4"
17	H-2764	1	HANDLE, JOYSTICK	42	H-2636	2	SPRING, CMPR, SEAT CHARGER
18	F-2141	1	FHCS, 3/8-16 X 1", YZ, GR5	43	659-137P	1	BATTERY HOLD DOWN
19	F-2148	2	FHCS, 5/16-18 X 1" YZ GR5	44	F-1019-01	1	1/4" LOCK WASHER
20	707-046P	1	SPACER, SEAT PAN	45	663-205W	1	WLDT, BRAKE HANDLE
21	F-2125	1	FHCS, 5/16-18x1-1/4" GR5	46	P-13317	1	DECAL, CHARGER
22	F-2063	4	3/8-16 NYLOC NUT, FLANGED	47	H-2461	3	RUBBER BUMPER
23	F-2121	6	FHCS 5/16-18x1" w/PATCH	48	H-1280	2	PLASTIC PLUG

# FRONT STEP ASSEMBLY



REF NO.	PART NO.	QTY.	DESCRIPTION
1	663-134P	1	FRONT STEP
2	F-2142	2	FHCS, 3/8-16 X 4" GR.5
3	F-2151	4	NUT, 3/8-16, NYLOC FLANGED
4	659-241P	1	BRACKET, STEP MOUNT, RH
5	659-242P	1	BRACKET, STEP MOUNT, LH
6	H-2461	2	RUBBER BUMPER BUTTON
7	F-2124	2	FHCS, 3/8-16 X 3/4" GR.5

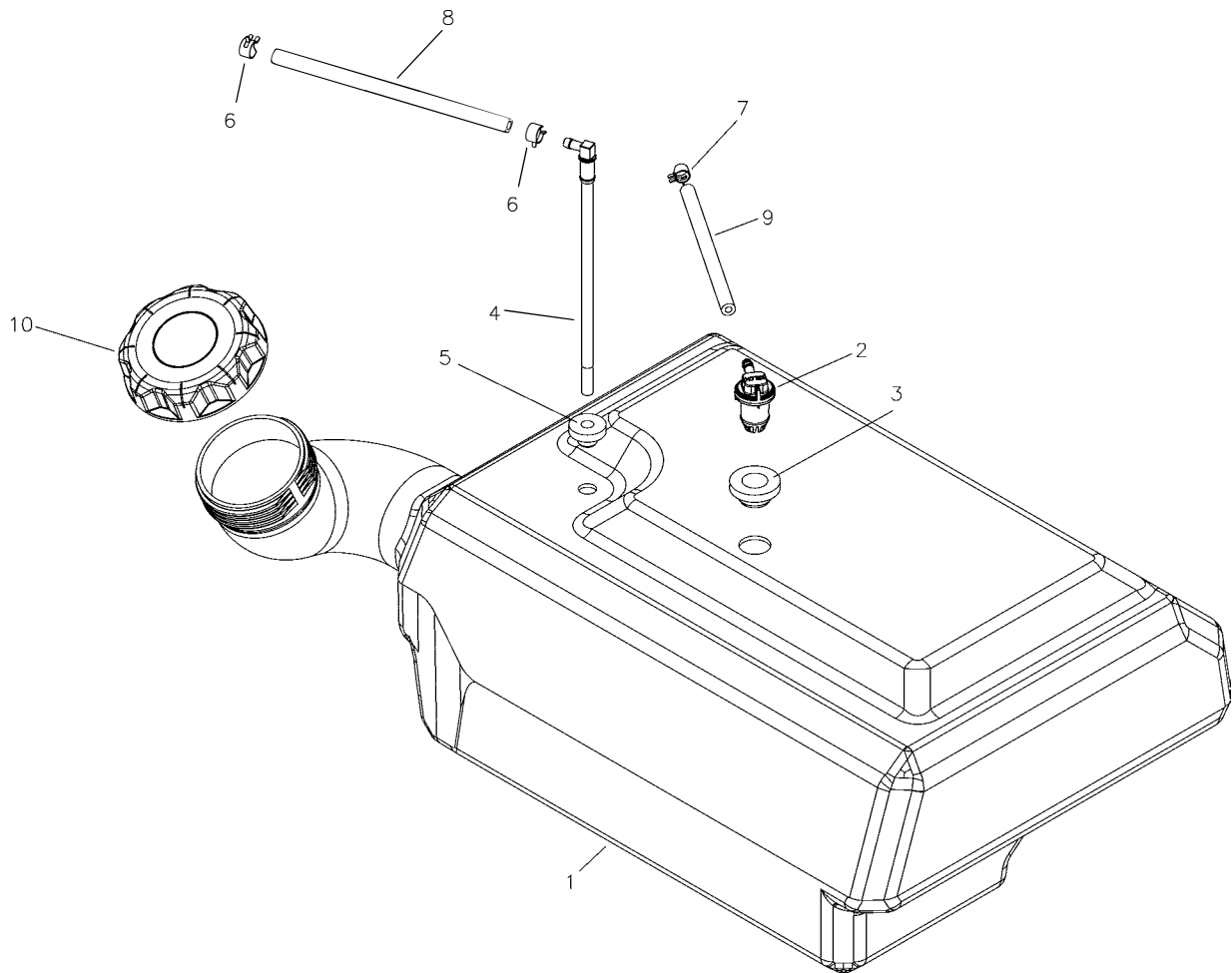
# ROPS ASSEMBLY (H-2682) AND RELATED PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION
1	F-2088	2	HHCS 1/2-13 x 1 1/4"
2	F-2089	2	FLAT WASHER 1/2"φ
3	F-2090	2	TOP LOCK NUT 1/2"φ
4	F-2093	2	PULL PIN-1/2 W/COTTER KEY
5	H-2701	2	SPRING
6	H-2700	2	POLYURETHANE CHANNEL
7	F-2091	4	HHCS 1/2-13 x 1 1/2"
8	F-2092	4	NLN 1/2-13 GR 8

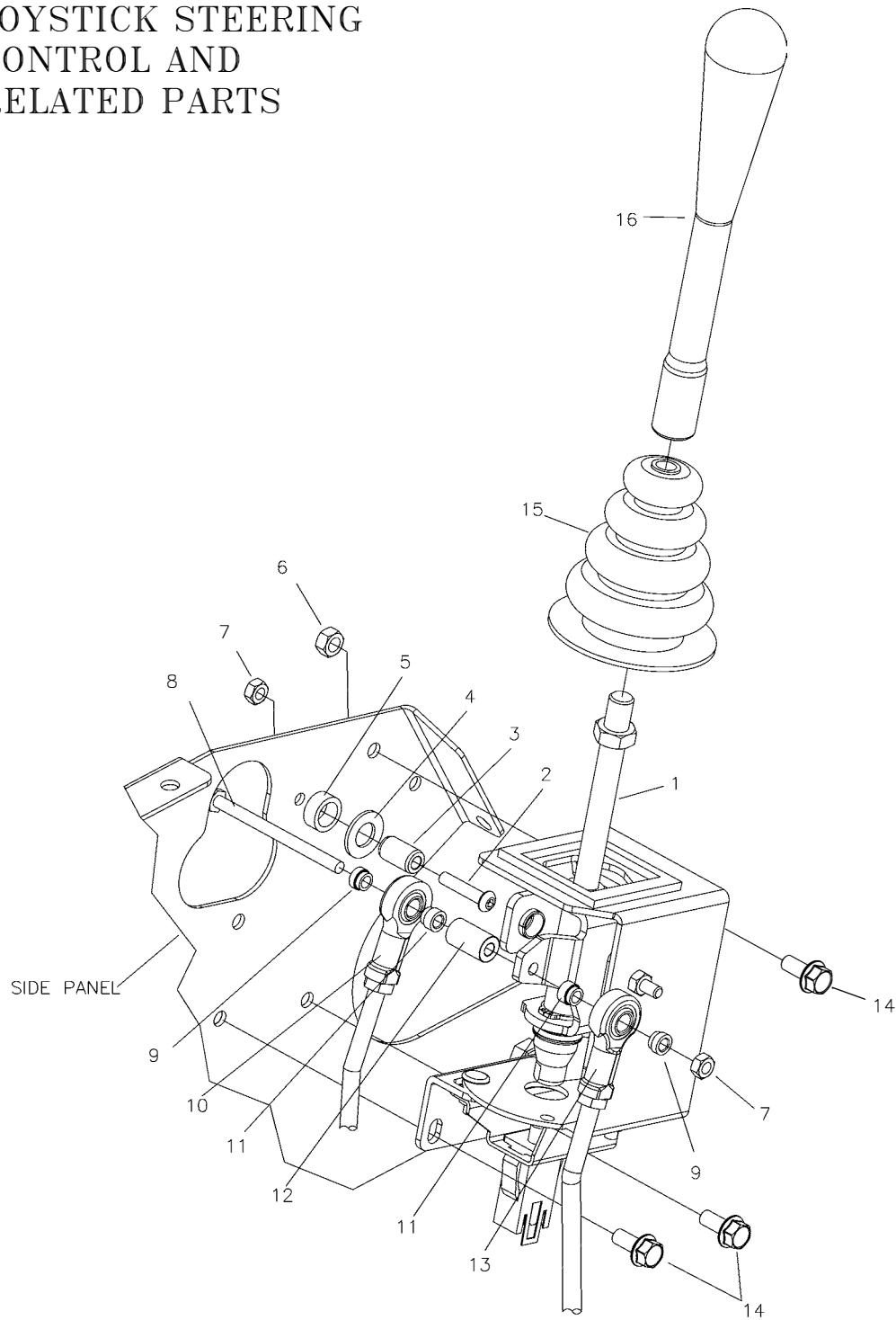
# FUEL TANK ASSEMBLY H-2944

(INCLUDES ALL PARTS EXCEPT #6-10)



REF NO.	PART NO.	QTY.	DESCRIPTION
1	-----	—	7 GALLON TANK, VENTED
2	H-2678	1	REMOTE VENT
3	H-2679	1	REMOTE VENT GROMMET
4	H-2742	1	PICK UP TUBE
5	H-2741	1	GROMMET, PICK UP TUBE
6	H-1687	2	HOSE CLAMP, 1/2"
7	H-2698	2	VENT LINE CLAMP
8	H-1648	4.0ft	FUEL LINE
9	H-2697	4.0ft	VENT LINE
10	H-2743	1	GAS CAP, RATCHET

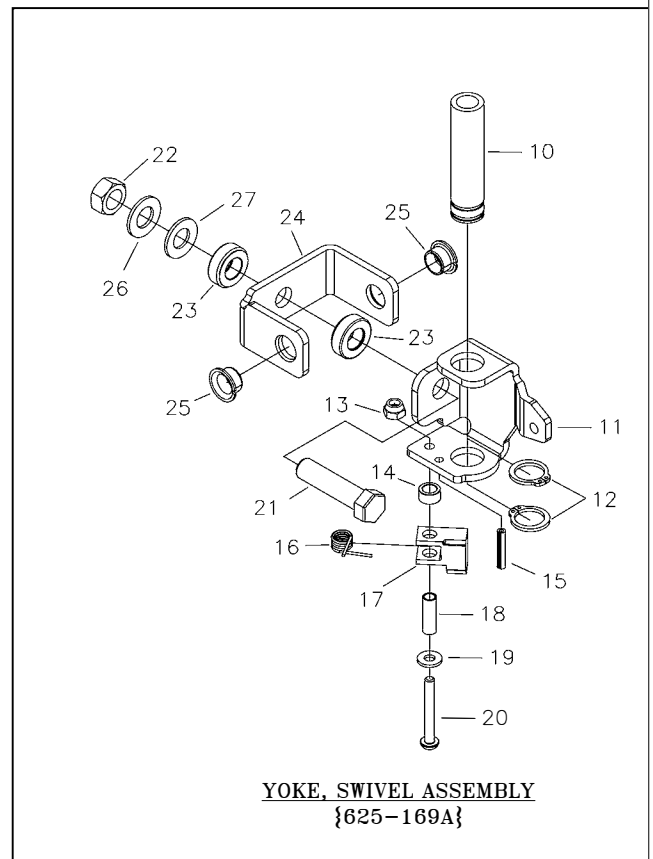
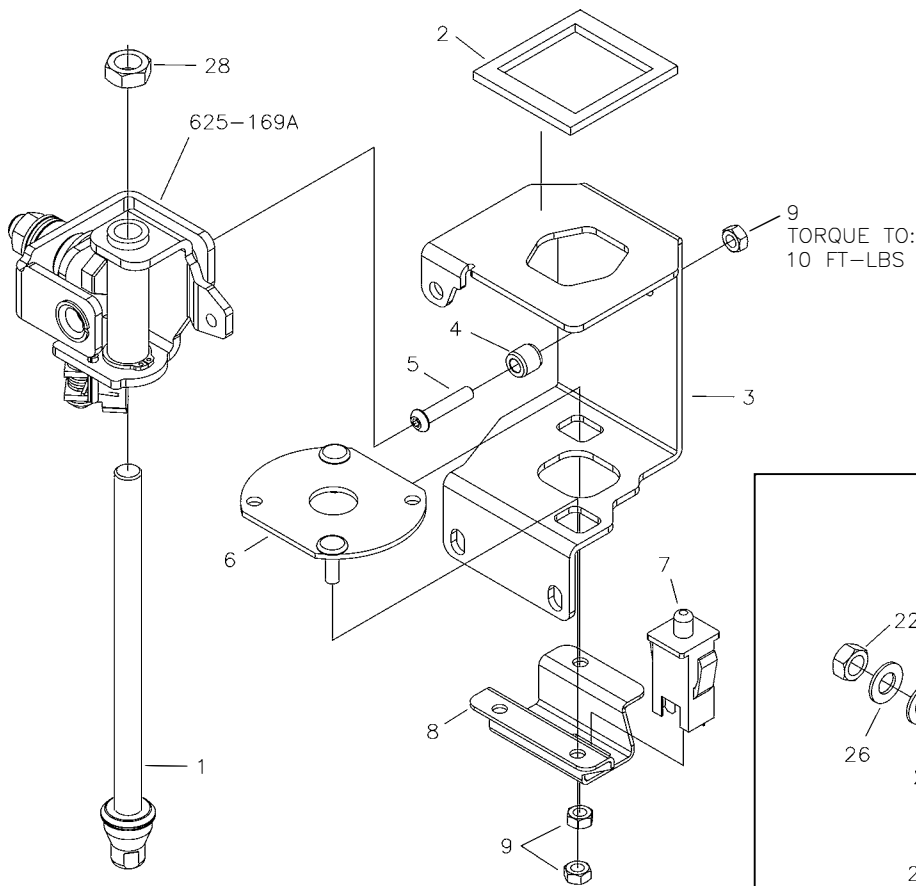
# JOYSTICK STEERING CONTROL AND RELATED PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	625-172A	1	JOYSTICK ASSEMBLY	10	707-082P	1	LINKAGE, INNER, JOYSTICK
2	F-2103	1	BUTTON SHCS, 1/4-20x1"	11	625-107P	1	BUSHING, .375 ROD END
3	625-119P	1	PIN, PIVOT, JS, LONG	12	625-100P	1	TUBE, PIVOT, JOYSTICK
4	F-1521	1	1/2" WASHER	13	707-083P	1	OUTER, LINKAGE, JOYSTICK
5	625-126P	1	SPACER, JOYSTICK PANEL	14	F-2120	3	FHCS, 5/16-18 x 3/4" GR5
6	F-2063	3	NUT, 5/16-18, NYLOC FLANGED	15	H-1991	1	BOOT
7	F-1158	2	NUT, 1/4-20, CENTERLOCKING	16	H-2964	1	HANDLE, JOYSTICK
8	F-1020-01	1	1/4-20 x 3-1/2" CAPSCREW				
9	625-116P	1	BUSHING, .375 ROD END, SHORT				

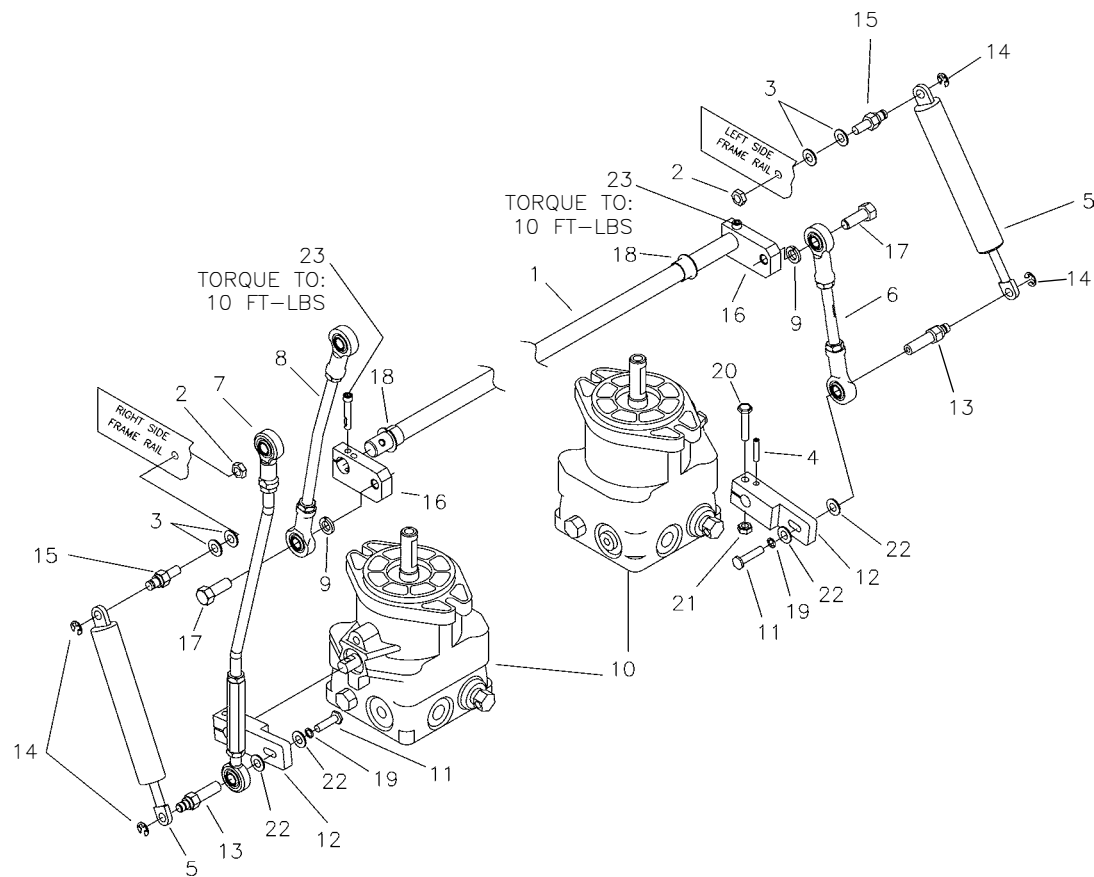


# JOYSTICK ASSEMBLY 625-172A



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-169A	1	ROD ASSEMBLY, SHORT	15	F-1503	1	3/16 x 1" SPIRAL PIN
2	H-1947	1	GASKET, FOAM, JOYSTICK	16	H-2710	1	SPRING, DETENT, JOYSTICK
3	625-095P	1	HOUSING, JOYSTICK	17	625-103P	1	TAB, CAM DETENT
4	625-106P	1	PIN, PIVOT, JOYSTICK	18	625-124P	1	TUBE-SPACER, DETENT CAM
5	F-2103	1	BUTTON SHCS, 1/4-20 x 1", CZ	19	F-2136	1	WASHER, FLAT, #12 PLAIN
6	625-127W	1	NEUTRAL PLATE, WLDT	20	F-2135	1	SCR, PANHD, PHLPS, #12-24x1-3/4"
7	E-6474	1	SWITCH, SNAP MOUNT	21	F-1293	1	1/2-13 x 2" CAPSCREW
8	659-285P	1	MOUNT, SWITCH	22	F-1005-05	1	1/2-13 STOVER NUT
9	F-1005-01	3	1/4-20 LOCK NUT	23	D-3931	2	THRUST BEARING
10	625-099P	1	TUBE, GUIDE, CONTROL ROD	24	625-097P	1	PIVOT, JOYSTICK (PART OF 625-128A)
11	625-096P	1	YOKE, SWIVEL, JOYSTICK	25	D-3784	2	BUSHING, FLANGED (PART OF 625-128A)
12	H-2705	2	RING, DETENT, .75 EXT.	26	F-1521	1	1/2" WASHER, CUSTOM
13	F-2137	1	NUT, #12-24, NYLOCK	27	H-2704	1	SPRING, BELLEVILLE, .50x1x.073
14	625-125P	1	SPACER, CAM DETENT	28	F-1462	1	NUT, JAM, 1/2-20, CZ

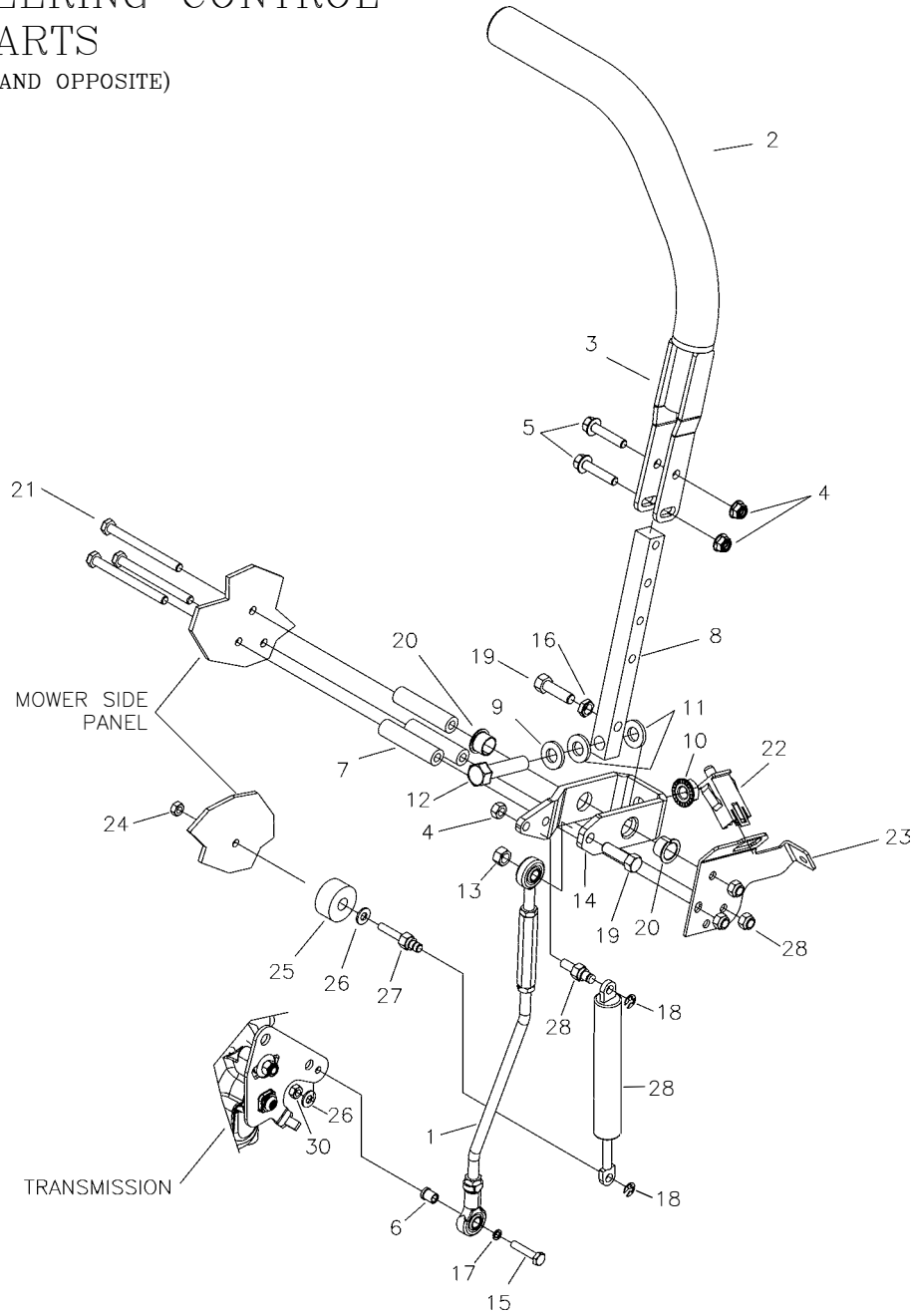
# JOYSTICK STEERING CONTROL AND RELATED PARTS (CON'T)



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	700-150P	1	HYDRO SHIFT ROD	13	663-051P	2	DAMPNER BOLT, FEMALE
2	F-2063	2	NUT, 5/16", NYLOC FLANGED	14	F-1610	4	E-RING
3	F-1009-02	4	5/16" FLAT WASHER	15	638-028P	4	5/16-18 X 3/4" DAMPNER BOLT
4	F-1725	2	5MM x 26MM ROLL PIN	16	700-151P	2	SWIVEL ARM
5	H-2467	2	DUAL ACTION DAMPER, LITE DUTY	17	F-1394	2	3/8-16 X 1" CAPSCREW
6	H-2468	1	LINKAGE, JOYSTICK	18	D-3730	2	BUSHING
7	707-083P	1	OUTER, LINKAGE, JS	19	F-1019-01	2	1/4" LOCK WASHER
8	707-082P	1	LINKAGE, INNER, JS	20	F-1539	2	1/4-20 x 1 1/4" CAPSCREW
9	F-1019-03	2	3/8" LOCK WASHER	21	F-1158	2	1/4-20 STOVER NUT
10	----	-	SEE PAGES 23 & 24	22	F-1009-01	4	1/4" FLAT WASHER
11	F-1015-05	2	1/4-20 X 1" BOLT GR 5	23	F-2131	2	SHCS, 12-24X1-1/4, YZ, LOCK PATCH
12	663-135P	2	LEVER, CONTROL				

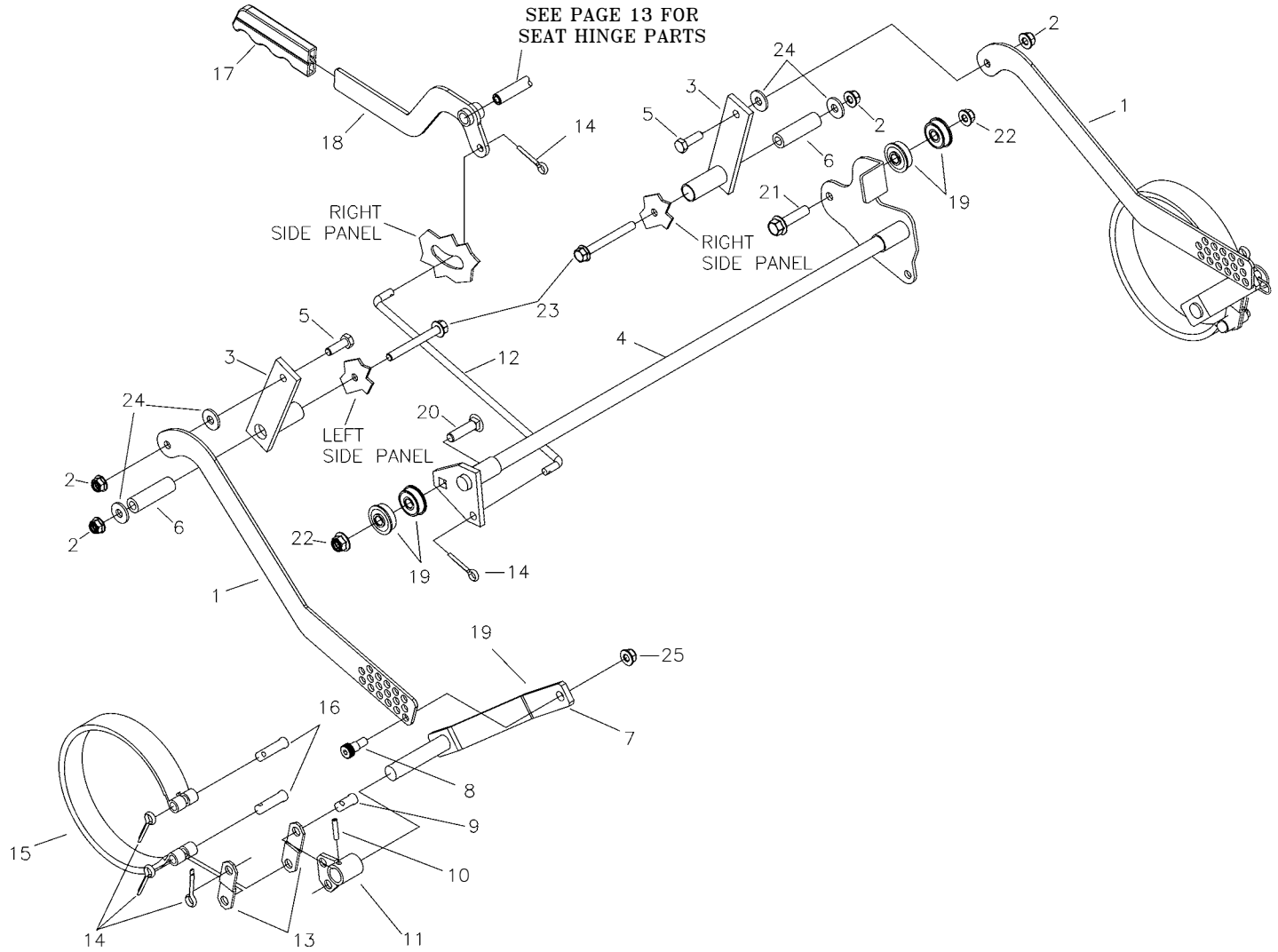
# TWINSTICK STEERING CONTROL & RELATED PARTS

(RIGHTHAND SHOWN, LEFTHAND OPPOSITE)



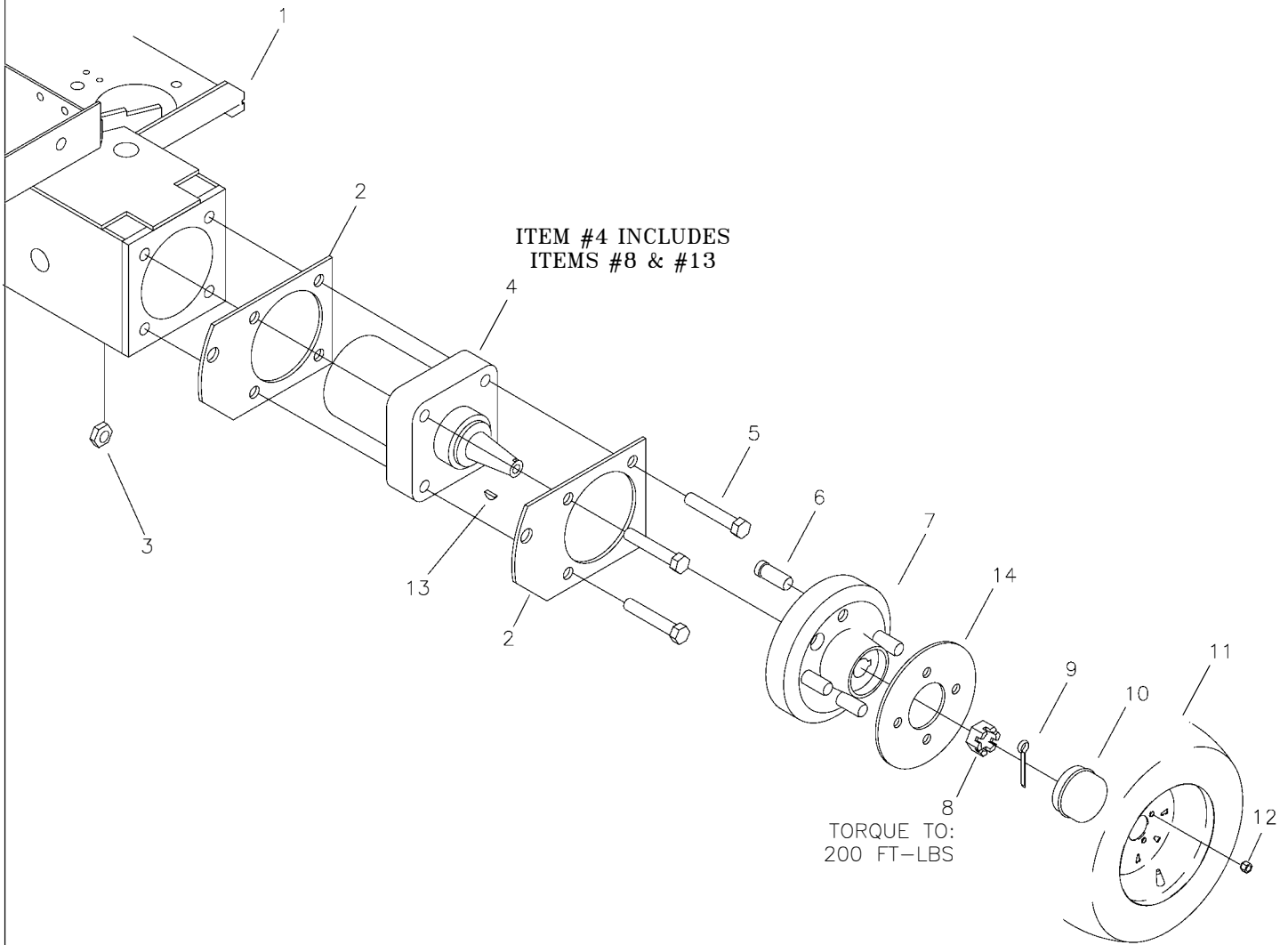
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	663-050P	1	LINK ROD ASSEMBLY	16	F-1486	1	3/8-16 JAM NUT
2	H-2739	1	GRIP, 15", CLOSED END	17	F-1019-01	4	1/4" LOCK WASHER
3	659-364W	1	DUAL LEVER CONTROL	18	F-1610	2	E-RING FOR 1/4" SHAFT
4	F-2063	8	NUT, 5/16-18, NYLOC FLANGED	19	F-1307	2	3/8-16 X 1 1/4" CAPSCREW
5	F-2129	2	FHCS, 5/16-18 X 1 1/2" w/PATCH	20	D-3730	2	FLANGED BUSHING 5/8" BORE
6	H-2465	1	ADAPTER, ROD END, LONG	21	F-2058	3	5/16-18 x 3 1/2" CAPSCREW
7	659-252P	3	TUBE SPACER	22	E-6474	1	SWITCH, SNAP MOUNT
8	659-365P	1	LOWER SHIFT BLOCK	23	647-242P	1	MOUNTING BRACKET (RH)
9	F-1521	1	WASHER	--	647-243P	1	MOUNTING BRACKET (LH)
10	F-2060	1	1/2-13 NUT, FLANGE LOCK	24	F-2132	1	NUT, 1/4-20, NYLOC FLANGED
11	606-151P	2	WASHER, NYLON 1/2 ID x 1/8"	25	F-2045	1	SPACER
12	F-1293	1	HHCS, 1/2-13 X 2", YZ GR5	26	F-1009-01	2	1/4" FLAT WASHER
13	F-2151	1	NUT, 3/8-16, NYLOC FLANGED	27	638-029P	1	DAMPER BOLT, 1/4-20
14	659-243P	1	SHIFTING YOKE	28	H-2843	1	DUAL ACTION DAMPNER, 750N
15	F-2182	1	FHCS, 1/4-20 X 1-1/4", YZ GR5	29	638-028P	1	DAMPER BOLT, 5/16-18 X 3/4"

# PARKING BRAKE ASSEMBLY & RELATED PARTS



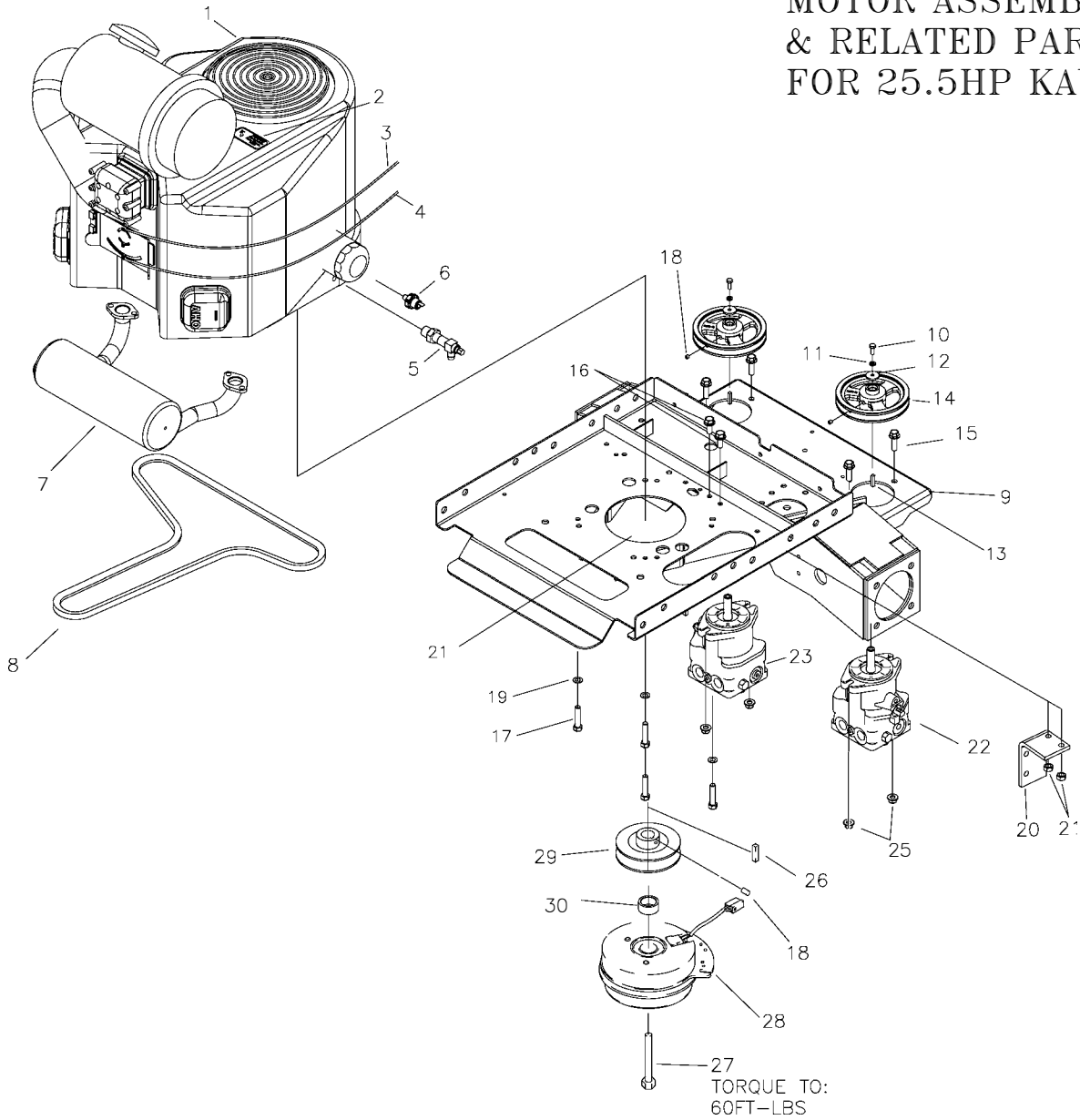
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	663-165P	2	LINK, ADJUSTABLE, BRAKE	13	647-010P	4	BRAKE ANCHOR LINK
2	F-2063	4	NUT, 5/16" FLANGED, NYLOC	14	F-1491	8	1/8 X 1" COTTER PIN
3	663-166W	2	WLDT, CAM LEVER	15	D-3668	2	BRAKE BAND 6" X 1" WIDE
4	663-169W	1	BRAKE ROD WLDT	16	F-1444	4	3/8 X 1 5/16" CLEVIS PIN
5	F-1015-15	2	5/16-18 x 1" CAPSCREW	17	H-1926	1	GRIP HANDLE
6	663-172P	2	PIN, PIVOT	18	663-205W	1	WLDT, BRAKE HANDLE
7	663-150W	2	BRAKE ARM WLDT	19	D-3911	4	3/8x1-1/8, FLG BALL BEARING
8	F-2173	2	SHOULDER BOLT, .37x.37, SOCKET	20	F-1177	1	3/8-16 x 1-1/2" CARRIAGE BOLT
9	F-1438	2	3/8 X 3/4" CLEVIS PIN	21	F-2147	1	FHCS, 3/8-16 x 1-1/2", YZ, GR5
10	F-1855	2	ROLL PIN, 3/16 X 1" HVY. DUTY	22	F-2151	2	NUT, 3/8", FLANGED, NYLOC
11	647-029W	1	SHORT BRAKE ARM (LH)	23	F-2153	2	FHCS, 5/16-18 X 2-3/4", YZ, GR5
--	647-028W	1	SHORT BRAKE ARM (RH)	24	F-1009-05	4	WASHER, 5/16"
12	663-122P	1	ROD, BRAKE LINK	25	F-1125	2	NUT, 5/16"

# GEAR MOTOR, WHEEL ASSEMBLY



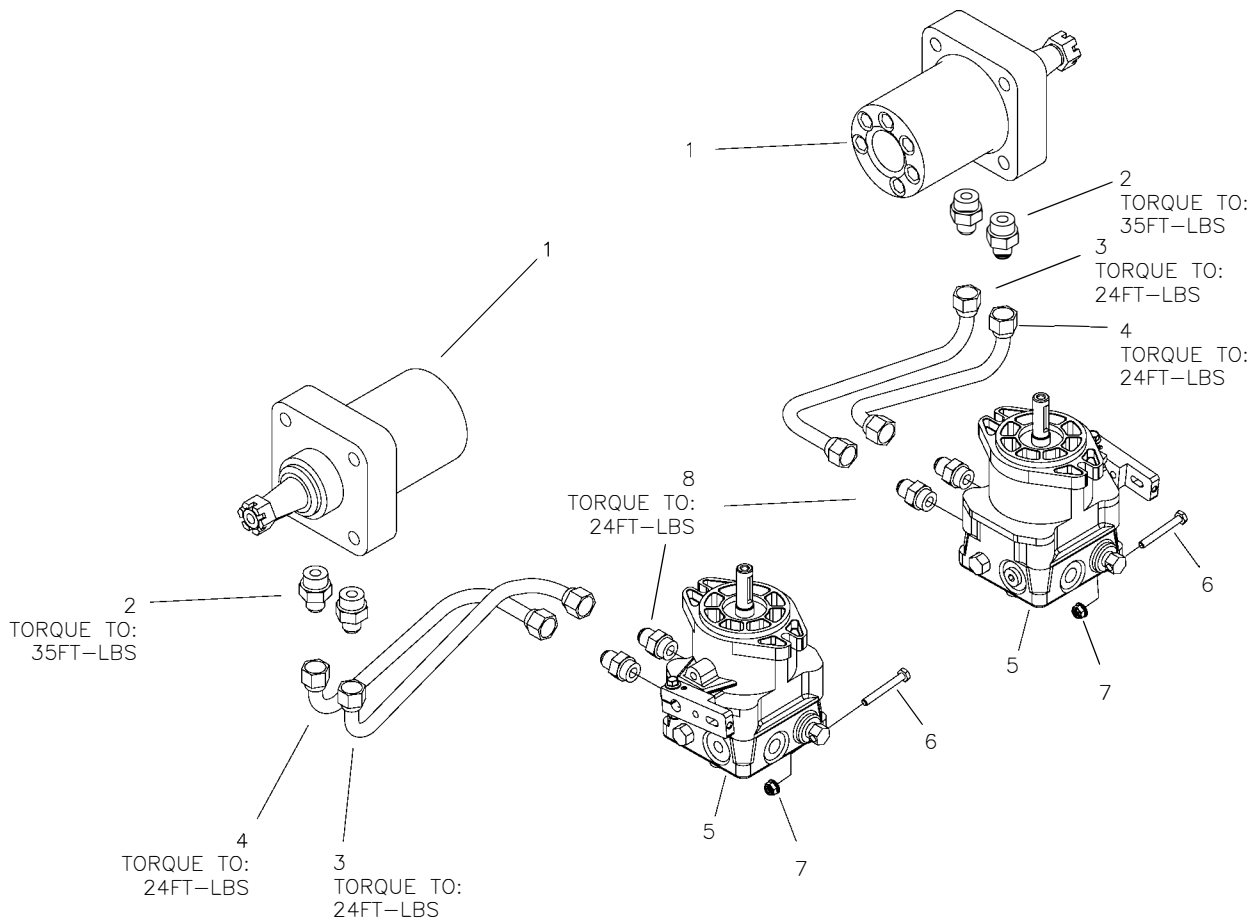
REF NO.	PART NO.	QTY.	DESCRIPTION
1	663-176W	1	MOTOR MOUNT
2	647-017P	4	BRAKE MOUNT
3	F-2152	8	NUT, 1/2-13, NYLOC FLANGED
4	D-3908	2	15.9 CIR PARKER WHEEL MOTOR
5	F-1668	8	1/2-13 X 2 3/4" BOLT GR. 5
6	F-1654	8	WHEEL STUD (REPLACEMENT)
7	663-207A	2	WHEEL HUB
8	F-1909	2	3/4-16 CASTLE NUT
9	H-1376	2	1/8 X 1 1/2" COTTER PIN
10	H-1798	1	GREASE CAP
11	D-4026	2	TIRE/WHEEL ASSEMBLY (BLACK)
12	F-1499	8	LUG NUT 1/2-20 X 60 DEG.
13	D-1004-01	2	1/4 X 1" WOODRUFF KEY
14	659-092P	2	WHEEL BACKING PLATE

# MOTOR ASSEMBLY & RELATED PARTS FOR 25.5HP KAWASAKI



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	M-5384	1	ENGINE, KAWASAKI, 25.5HP	16	F-2120	2	FHCS, 5/16-18 X 3/4" GR5
2	P-10077	1	DECAL, "CLEAN"	17	F-2125	4	FHCS, 3/8-16x1-1/4", YZ, GR5
3	H-2287	1	CHOKE CABLE	18	F-1228	3	1/4-20 NYLOC SETSCREW
4	H-2610	1	THROTTLE CABLE	19	F-1019-03	4	3/8" LOCK WASHER
5	H-2590	1	OIL DRAIN	20	707-033P	1	CLUTCH STOP
6	E-6307	1	OIL PRESSURE SWITCH	21	F-2063	2	NUT, 5/16-18, NYLOC FLANGED
7	H-2850	1	MUFFLER	22	D-3907-01	1	PUMP, 12CC, RH
8	D-3524	1	V-BELT A-71 KEVLAR	23	D-3907-02	1	PUMP, 12CC LH
9	663-176W	1	MOTOR MOUNT	24	F-1009-03	8	3/8" FLAT WASHER
10	F-1737	2	6mm X 16mm BOLT GR. 5	25	F-2151	4	NUT, 3/8-16, NYLOC FLANGED
11	F-1738	2	6mm SPRING WASHER	26	621-113P	1	KEY, 1/4" SQ. X 1 1/4"
12	F-1736	2	WASHER, .840 X .246 X .125	27	F-2113	1	7/16-20x2-1/2" CAPSCREW, GR8
13	D-3541	2	KEY - 5mm x 20mm	28	E-6532	1	1 1/8" CLUTCH BRAKE
14	647-147P	2	HYDRO PUMP PULLEY	29	647-148P	1	MOTOR PULLEY
15	F-2125	4	FHCS, 3/8-16 X 1 1/4" GR5	30	F-2043	1	SPACER

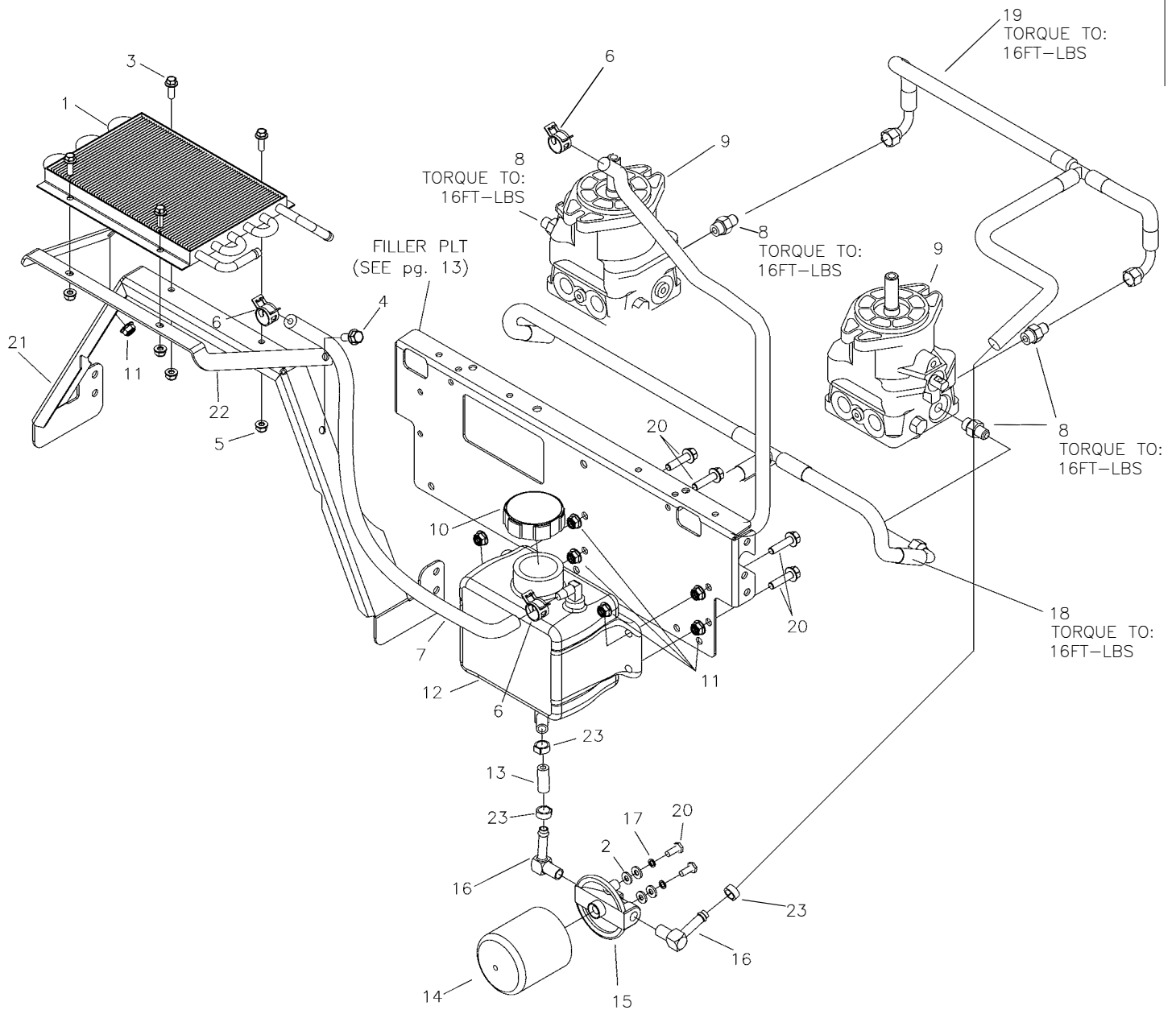
PLUMBING KIT  
HIGH PRESSURE  
LINES & FITTINGS  
{H-2846}



VIEWED FROM FRONT RIGHT

REF NO.	PART NO.	QTY.	DESCRIPTION
1	-----	2	SEE PAGE 22
2	H-2319	4	FITTING, STRIGHT, 7/8-14
3	H-2491	2	TUBE ASS'Y, LH. FORWARD
4	H-2492	2	TUBE ASS'Y, LH. REVERSE
5	-----	-	SEE PAGES 23 & 24
6	F-1015-09	2	1/4-20 X 2" BOLT GR. 5
7	F-2132	2	NUT, 1/4-20, NYLOC FLANGED
8	H-2436	4	FITTING, STRAIGHT, 3/4" X 1/2"

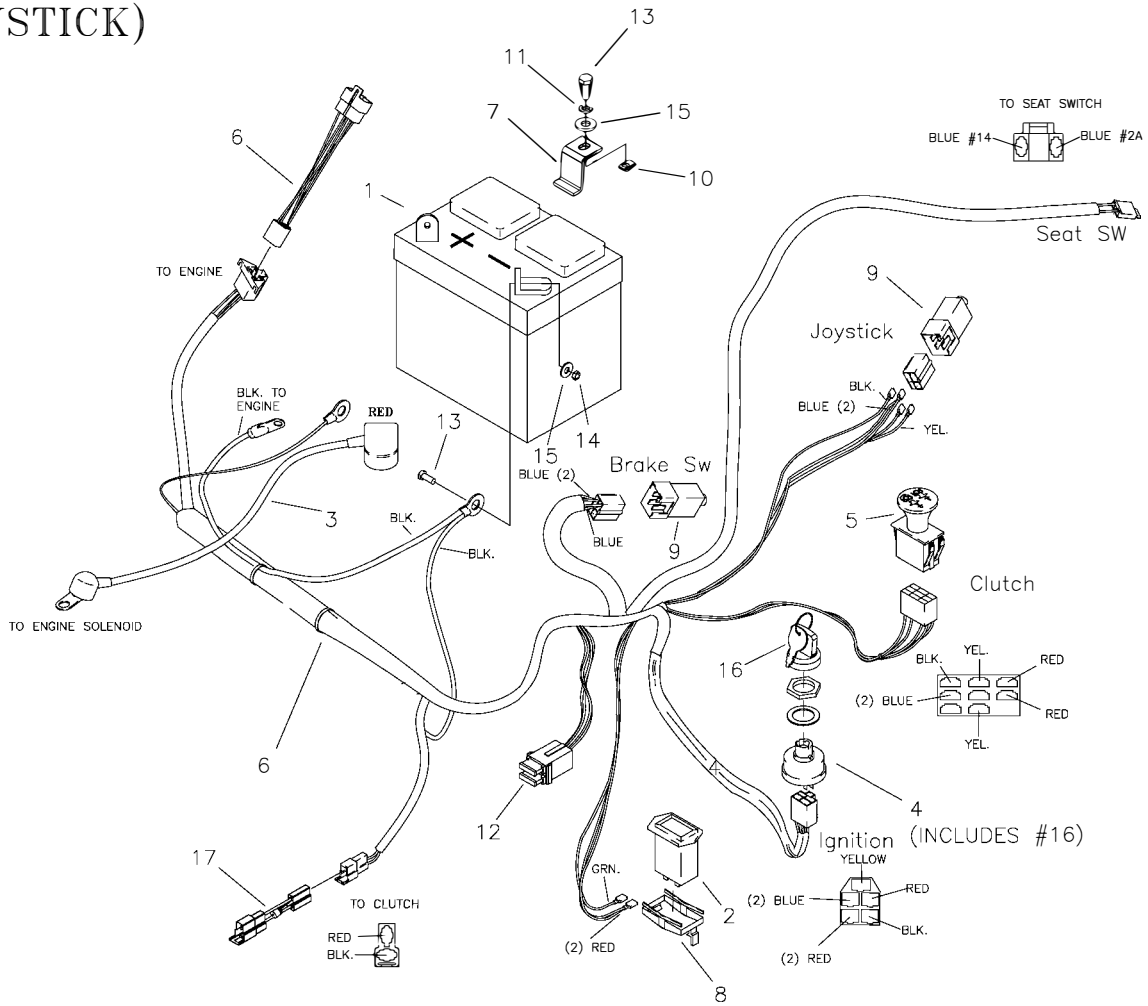
# PLUMBING KIT OIL RETURN LINES & COOLER ASSEMBLY {H-2846}



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	H-2908	1	OIL COOLER	13	H-2847	1	HOSE, 1/2"Ø X 6", HI-TEMP
2	F-1009-01	8	1/4" WASHER	14	H-2859	1	OIL FILTER
3	F-2162	6	FHCS, 1/4-20 X 3/4", YZ, GR5	15	H-2858	1	FILTER BASE
4	F-2120	2	FHCS, 5/16-18 X 3/4", YZ, GR5	16	H-2860	2	HOSE BARB 90 DEG. ELBOW
5	F-2132	4	NUT, 1/4-20, FLANGED NYLOC	17	F-1019-01	2	1/4" LOCK WASHER
6	H-3088	3	HOSE CLAMP	18	H-2849	1	RETURN HOSE TEE ASSEMBLY
7	H-2438	1	24" HOSE, 3/8" ID. HI TEMP.	19	H-2848	1	SUCTION HOSE TEE ASSEMBLY
8	H-2330	4	9/16" ADAPTER	20	F-2122	4	FHCS, 5/16-18 X 1-1/4"
9	-----	-	SEE PAGE 24	21	663-202P	1	BRACKET, COOLER
10	H-2917	1	CAP, 2.25" THREAD VENTED	22	663-203P	1	BRACE, COOLER
11	F-2063	8	NUT, 5/16-18, FLANGED NYLOC	23	H-2535	3	7/8" CLAMP
12	H-2805	1	OIL TANK				

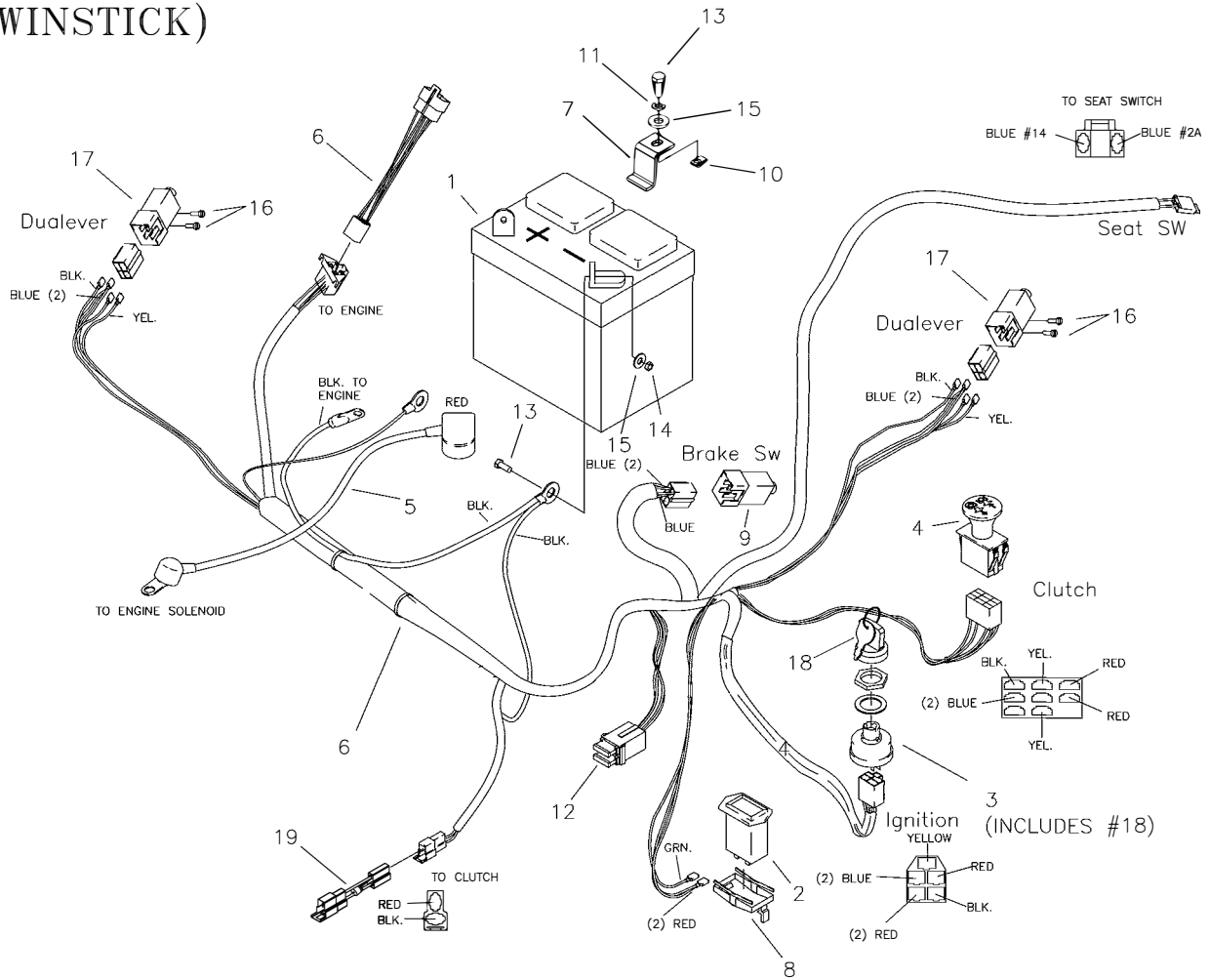


# E-6415 WIRE HARNESS & RELATED PARTS (JOYSTICK)



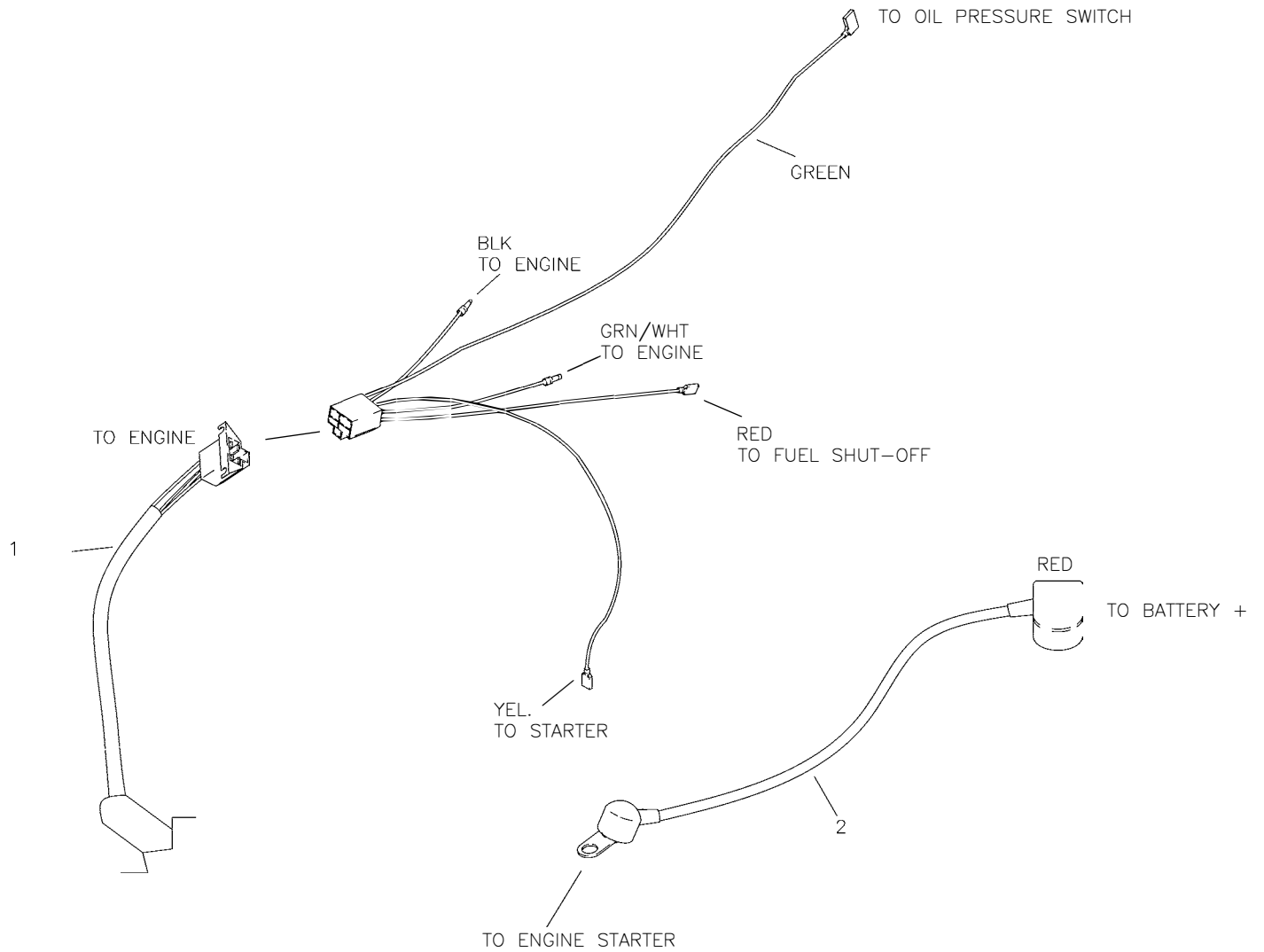
REF NO.	PART NO.	QTY.	DESCRIPTION
1	E-6271	1	BATTERY
2	E-5878	1	HOUR METER
3	E-6418	1	CABLE, BATTERY TO SOLENOID
4	E-5873	1	START SWITCH
5	E-6403	1	CLUTCH SWITCH
6	E-6417	1	WIRE HARNESS ADAPTER (KAWASAKI)
-	E-6547	1	WIRE HARNESS ADAPTER (KOHLER)
7	659-137P	1	BATTERY HOLD DOWN
8	E-6369	1	RETAINER CLIP
9	E-6297	2	BRAKE SWITCH
10	F-1858	1	1/4-20 U-NUT
11	F-1019-01	1	1/4" LOCK WASHER
12	E-6207	2	FUSE, #ATC-30
13	F-1538	3	1/4-20 X 3/4" GR. 5
14	F-1158	2	1/4-20 LOCK NUT
15	F-1009-01	5	1/4" FLAT WASHER
16	E-6445	1	KEY, SET
17	E-6461	1	CLUTCH SPIKE SUPPRESSOR (KOHLER)
*	E-6374	1	SEAT SWITCH (NOT SHOWN)

# E-6416 WIRE HARNESS & RELATED PARTS (TWINSTICK)



REF NO.	PART NO.	QTY.	DESCRIPTION
1	E-6271	1	BATTERY
2	E-5878	1	HOUR METER
3	E-5873	1	START SWITCH
4	E-6403	1	CLUTCH SWITCH
5	E-6418	1	CABLE, BATTERY TO SOLENOID
6	E-6417	1	WIRE HARNESS ADAPTER (KAWASAKI)
-	E-6547	1	WIRE HARNESS ADAPTER (KOHLER)
7	659-137P	1	BATTERY HOLD DOWN
8	E-6369	1	RETAINER CLIP
9	E-6297	3	BRAKE SWITCH
10	F-1858	1	1/4-20 U-NUT
11	F-1019-01	1	1/4" LOCK WASHER
12	E-6207	2	FUSE, #ATC-30
13	F-1538	3	1/4-20 X 3/4" GR. 5
14	F-1158	2	1/4-20 LOCK NUT
15	F-1009-01	5	1/4" FLAT WASHER
16	F-1994	4	#10 SCREW, 5/8" LONG
17	647-112A	2	SWITCH ARM ASSEMBLY
18	E-6445	1	KEY, SET
19	E-6461	1	CLUTCH SPIKE SUPPRESSOR (KOHLER)
*	E-6374	1	SEAT SWITCH (NOT SHOWN)

# E-6417 KAWASAKI ADAPTER HARNESS & RELATED PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION
1	E-6415	1	WIRE HARNESS (JOYSTICK)
-	E-6416	1	WIRE HARNESS (TWINSTICK)
2	E-6418	1	CABLE, BATTERY TO SOLENOID

**FX801V**  
**FX751V**

**4-Stroke Air-Cooled V-Twin Gasoline Engine**  
**Motor gasolina de 4 tiempos, V-gemelo y refrigerado por aire**

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**OWNER'S MANUAL**  
**MANUAL DEL PROPIETARIO**

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**Kawasaki**

**ENGLISH**

**General-purpose Engine**  
**Owner's Manual**

Original instructions

# SAFETY AWARENESS

Whenever you see the symbols shown below, heed their instructions! Always follow safe operating and maintenance practices.

## DANGER

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

## WARNING

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

## NOTICE

**NOTICE** is used to address practices not related to personal injury.

## NOTE

○ *NOTE* indicates information that may help or guide you in the operation or service of the vehicle.

# READ THIS FIRST

For your safety, read this Owner's Manual and understand it thoroughly before operating this ENGINE.

## DANGER

Exhaust gas contains carbon monoxide, a colorless, odorless poisonous gas. Inhaling carbon monoxide can cause serious brain injury or death.

**DO NOT** run the engine in enclosed areas. Operate only in a well-ventilated area. Gasoline is extremely flammable and can be explosive under certain conditions, creating the potential for serious burns. When refueling, servicing fuel system, draining gasoline and/or adjusting the carburetor:

Stop engine and allow it to cool before refueling.

**DO NOT** smoke.

Make sure the area is well-ventilated and free from any source of flame or sparks, including the pilot light of any appliance.

**DO NOT** fill the tank so the fuel level rises into the filler neck or level surface of level gauge. If the tank is overfilled, heat may cause the fuel to expand and overflow through the vents in the tank cap.

Wipe off any spilled gasoline immediately.

Engines can become extremely hot during normal operation.

To prevent fire hazard:

Keep the engine at least 1 m (3.3 ft) away from buildings, obstructions and other flammable objects.

**DO NOT** place flammable objects close to the engine.

**DO NOT** expose combustible materials to the engine exhaust.

**DO NOT** use the engine on any forest covered, brush covered or grass covered unimproved land unless spark arrester is installed on the muffler.

To avoid getting an electric shock, **DO NOT** touch spark plugs, plug caps or spark plug leads during engine running.

To avoid a serious burn, **DO NOT** touch a hot engine or muffler. The engine becomes hot during operation. Before you service or remove parts, stop engine and allow the engine to cool.

**DO NOT** place hands or feet near moving or rotating parts. Place a protective cover over pulley, V belt or coupling.

**DO NOT** run engine at excessive speeds. This may result in injury.

Always remove the spark plug caps from spark plugs when servicing the engine to prevent accidental starting.

Read warning labels which are on the engine and understand them. If any label is missing, damaged, or worn get a replacement from an authorized Kawasaki engine dealer and install it in the correct position.

# EMISSION CONTROL INFORMATION

## Fuel Information

THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED REGULAR GRADE GASOLINE ONLY. A minimum of 87 octane of the antiknock index is recommended. The antiknock index is posted on service station pumps in the U.S.A.

## Emission Control Information

To protect the environment in which we all live, Kawasaki has incorporated an exhaust emission control system in compliance with applicable regulations of the United States Environmental Protection Agency and the California Air Resources Board. Also, depending on when your engine was produced, it may have an assigned emissions durability period.

\* See below for the engine emissions durability period that may apply to your engine.

## Exhaust Emission Control System

The exhaust emission control system applied to this engine consists of a carburetor and an ignition system having optimum ignition timing characteristics. The carburetor has been calibrated to provide specific air/fuel mixture characteristics and optimum fuel economy with a suitable air cleaner and exhaust system.

A sealed-type crankcase emission control system is also used to eliminate blow-by gasses. The blow-by gasses are led to a breather chamber through the crankcase and from there to the air cleaner.

## Engine Emission Compliance Period

### California

**Engines Greater Than or Equal To 225 cc**  
Durability period - 1 000 hours

### All Other States

**Engines Greater Than or Equal To 225 cc**  
Durability Period - 1 000 hours (Category A)

\* **If your engine has an assigned emissions durability period it will be located on the certification label attached to the engine (IMPORTANT ENGINE INFORMATION).**

## High Altitude Performance Adjustment Information

To improve the EMISSIONS CONTROL PERFORMANCE of engines operated above 1000 meters (3300 feet), Kawasaki requires the following Environmental Protection Agency (EPA) and California Air Resources Board (CARB) approved modifications. High altitude adjustment requires replacement of carburetor main jets. Installation of these optional parts may be performed by an authorized Kawasaki engine dealer or equally qualified service facility, following repair recommendations specified in the appropriate Kawasaki Service document or parts catalog.

Operating with the wrong configuration at a given altitude may increase its emissions and decrease fuel efficiency and performance.

### NOTE

○ *When properly performed, these specified modifications only are not considered to be emissions system "tampering" and engine performance is generally unchanged as a result.*

## Maintenance and Warranty

Proper maintenance is necessary to ensure that your engine will continue to have low emission levels. This Owner's Manual contains those maintenance recommendations for your engine. Those items identified by the Periodic Maintenance Chart are necessary to ensure compliance with the applicable standards.

As the owner of the engine, you have the responsibility to make sure that the recommended maintenance is carried out according to the instructions in this Owner's Manual at your own expense.

The Kawasaki Limited Emission Control System Warranty requires that you return your engine to an authorized Kawasaki engine dealer for remedy under warranty. Please read the warranty carefully, and keep it valid by complying with the owner's obligations it contains.

### **Tampering with Emission Control System Prohibited**

Federal law and California State law prohibits the following acts or the causing thereof: (1) the removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new engine for the purposes of emission control prior to its sale or delivery to the ultimate purchaser or while it is in use, or (2) the use of the engine after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering, do not tamper with the original emission related parts below:

- Carburetor and their internal parts
- Spark Plug
- Magneto system
- Fuel filter element
- Air cleaner elements
- Crankcase
- Cylinder heads
- Breather chamber and internal parts
- Intake pipe and tube

## **FOREWORD**

We wish to thank you for purchasing this Kawasaki engine.

**Please read this Owner's Manual carefully before starting your new engine** so that you will be thoroughly familiar with the proper operation of your engine's control, its features, capabilities and limitations.

Also read the manual of the equipment to which this engine is attached.

To ensure a long, trouble-free life for your engine, give it the proper care and maintenance described in this manual. Always keep this manual at your fingertip so that you can refer to it whenever you need information. This manual should be considered a permanent part of the engine and should remain with the engine when it is sold.

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This publication includes the latest information available at the time of printing. However, there may be minor differences between the actual product and illustrations and text in this manual.

All products are subject to change without prior notice or obligation.

**KAWASAKI HEAVY INDUSTRIES, LTD.**  
**Motorcycle & Engine Company**

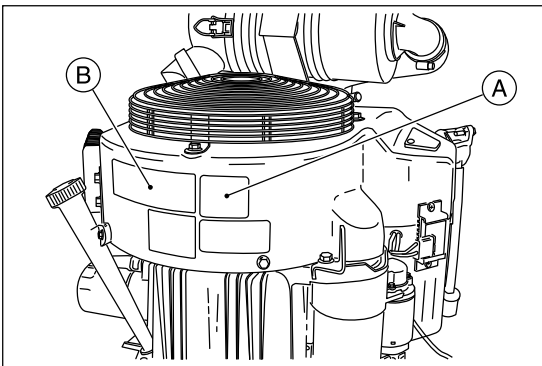
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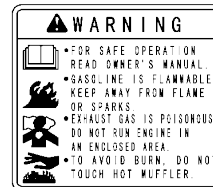
## 8 GENERAL INFORMATION

# GENERAL INFORMATION

### Location of Safety Related Labels



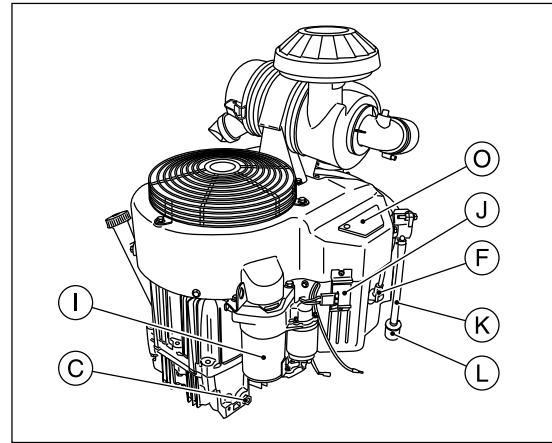
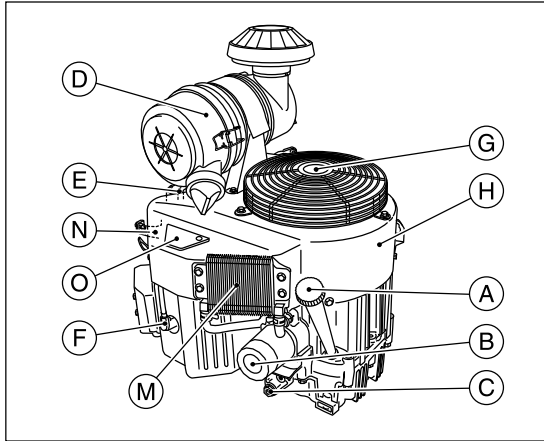
- A. Warning Label**
- B. Engine Maintenance**



<p style="text-align: center;"><b>ENGINE MAINTENANCE</b></p> <ol style="list-style-type: none"> <li>1. CHECK OIL LEVEL</li> <li>2. CHECK &amp; CLEAN AIR CLEANER</li> <li>3. CLEAN FINS &amp; SCREEN</li> <li>4. CHANGE OIL &amp; OIL FILTER</li> </ol> <p style="font-size: small;">REFER TO OWNER'S MANUAL FOR FURTHER INFORMATION</p>	<p style="text-align: center;"><b>CHECK OIL BEFORE STARTING</b></p> <p style="text-align: center;">DO NOT TURN CAP ON THREADS WHEN CHECKING OIL LEVEL.</p> <p style="text-align: center;">↑ ADD (TIGHTEN CAP WHEN FINISHED CHECKING)</p>
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Location of Parts



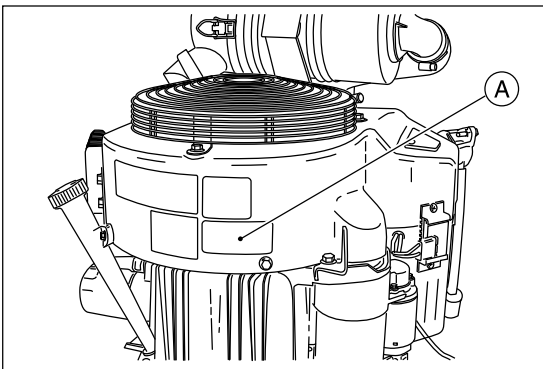
- A. Oil Gauge Filler
- B. Oil Filter
- C. Oil Drain Plug
- D. Air Cleaner
- E. Carburetor
- F. Spark Plug Cap/  
Spark Plug
- G. Guard
- H. Fan Housing
- I. Electric Starter
- J. Voltage Regulator
- K. Fuel Tube
- L. Fuel Filter
- M. Oil Cooler
- N. Control Panel
- O. Cleanout Cover  
(if equipped)

10 GENERAL INFORMATION

Engine Serial Number

The engine serial number is your only means of identifying your particular engine from others of the same model type.

This engine serial number is needed by an authorized Kawasaki engine dealer or equally qualified service facility when ordering parts.



A. Engine Serial Number

Tune-up Specifications

ITEM	Specifications
Ignition Timing	Unadjustable
Spark Plugs: Gap	NGK BPR4ES 0.75 mm (0.030 in)
Low Idle Speed	1550 r/min (rpm)
High Idle Speed	3600 r/min (rpm)
Valve Clearance	In 0.10 - 0.15 mm (0.004 - 0.006 in.) Ex 0.10 - 0.15 mm (0.004 - 0.006 in.)
Other Specifications	No other adjustment needed

NOTE

○ High and low idle speeds may vary depending on the equipment on which the engine is used. Refer to the equipment specification.

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**Engine Oil Capacity**


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**Engine Oil Capacity**

FX801V FX751V	2.1 L (2.2 US-qt) [when oil filter is not removed]
	2.3 L (2.4 US-qt) [when oil filter is removed]

**12 FUEL AND OIL RECOMMENDATIONS**


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**FUEL AND OIL RECOMMENDATIONS**


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**Fuel**

Use only clean, fresh, unleaded regular grade gasoline.

**NOTICE**

**Do not mix oil with gasoline.**

**Octane Rating**

The octane rating of a gasoline is a measure of its resistance to “knocking”. **Using a minimum of 87 octane by the antiknock index is recommended.** The antiknock index is posted on service station pumps in the U.S.A.

**NOTE**

- If “knocking” or “pinging” occurs, use a different brand of gasoline or higher octane rating.
- When not operating your Kawasaki engine more than once per month, you can mix a fuel stabilizer with gasoline in the fuel tank. Fuel stabilizer additive could inhibit oxidation of fuel.

**Oxygenated Fuel**

Oxygenates (either ethanol or MTBE) are added to the gasoline. If you use the oxygenates, be sure it is unleaded and meets the minimum octane rating requirement.

The followings are the EPA approved percentages of fuel oxygenates.

**ETHANOL: (Ethyl or Grain Alcohol)**

You may use gasoline containing up to 10% ethanol by volume.

**MTBE: (Methyl Tertiary Butyl Ether)**

You may use gasoline containing up to 15% MTBE by volume.

**METHANOL: (Methyl or Wood Alcohol)**

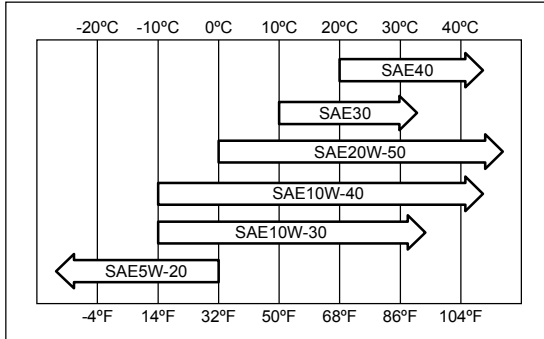
You may use gasoline containing up to 5% methanol by volume, as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

**Engine Oil**

The following engine oils are recommended.  
 API Service Classification: SJ or SL.

**Oil Viscosity**

Choose the viscosity according to the temperature as follows:



**NOTE**

- Although 10W-40 engine oil is the recommended oil for most conditions, the oil viscosity may need to be changed to accommodate atmospheric conditions. Using 20W-50 oil in higher ambient temperatures may reduce oil consumption.

**14 PREPARATION**

**PREPARATION**

**Fuel**

**⚠ WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions, creating the potential for serious burns. Turn the ignition switch to "OFF". Do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light. Never fill the tank completely to the top. If the tank is filled completely to the top, heat may cause the fuel to expand and overflow through the vents in the tank cap. After refueling, make sure the tank cap is closed securely. If gasoline is spilled on the fuel tank, wipe it off immediately.

- Place the engine on level surface before fueling.
- Remove the fuel tank cap.
- Slowly pour fuel into the tank through the fuel strainer.
- Close the tank cap securely.

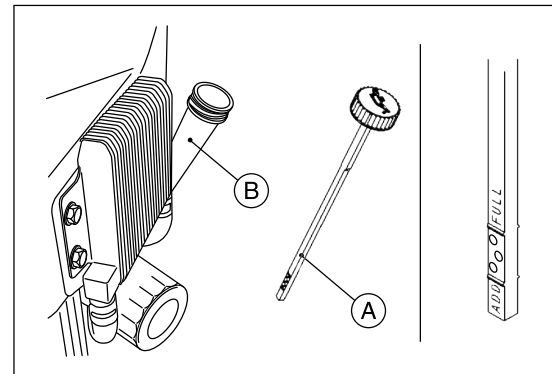
## Engine Oil

Check the engine oil daily before starting the engine otherwise shortage of the engine oil may cause serious damage to the engine such as seizure.

- Place the engine on level surface. Clean area around the oil gauge before removing it.
- Remove the oil gauge and wipe it with a clean cloth.
- Pour the oil slowly to “FULL” mark on the oil gauge.
- Insert the oil gauge into tube WITHOUT SCREWING IT IN.
- Remove the oil gauge to check the oil level. The level should be between “ADD” and “FULL” marks. Do not overfill.
- Install and tighten the oil gauge.

### Engine Oil Capacity

FX801V	2.1 L (2.2 US·qt) [when oil filter is not removed]
FX751V	2.3 L (2.4 US·qt) [when oil filter is removed]



A. Oil Gauge  
B. Tube

### NOTICE

The engine is shipped without engine oil.

## 16 STARTING

# STARTING

### Start Engine

#### **⚠ DANGER**

Exhaust gas contains carbon monoxide, a colorless, odorless poisonous gas. Inhaling carbon monoxide can cause serious brain injury or death. DO NOT run the engine in enclosed areas. Operate only in a well-ventilated area.

#### **⚠ WARNING**

Engine exhaust may ignite combustible materials and cause a fire. Keep the area around the exhaust outlet clear. Locate the unit so that the exhaust outlet points toward an open area and is located at least one meter (3.3 feet) from any obstructions.

#### NOTE

- Be aware of the following in order to start the engine easily in cold weather.

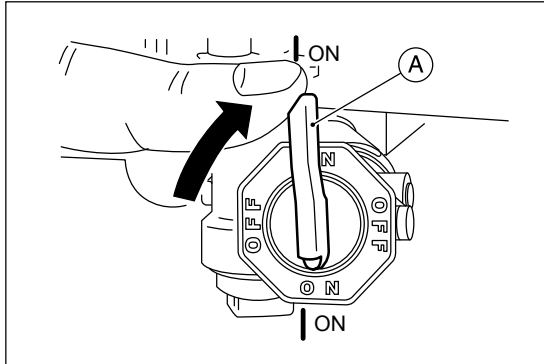
- Use proper oil for expected temperature (See FUEL AND OIL RECOMMENDATIONS chapter). Use fresh gasoline.
- Protect the engine or the equipment from direct exposure to weather when not in operation.
- Before starting the engine, disconnect all possible external loads.
- Open the fuel valve on the equipment.
- Put the key into the ignition switch. For Control Panel Switch Type, move the throttle lever on the equipment to its halfway position between “SLOW” speed and “FAST” speed. Moving the lever away from its low speed end turns ignition on.

## STARTING 17

### [Separate Choke type]

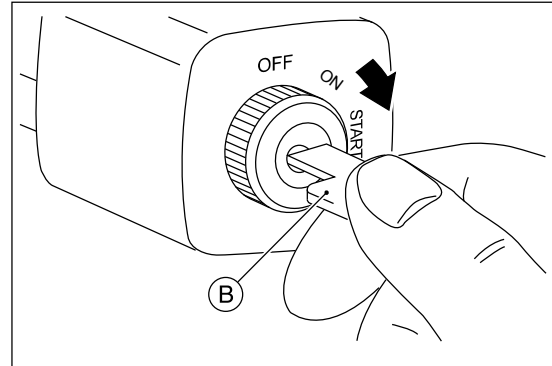
**For a Cold Engine** - Place the choke control lever into "CHOKE" position.

- After starting the engine, gradually return the choke control lever to the fully open position.



A. Fuel Valve

- Put the key into the ignition switch.
- Turn the key to the START position on the equipment. Normally the engine will start within 3 seconds.



B. Ignition Switch Key

## 18 STARTING

### **NOTICE**

Do not run the electric starter continuously for more than 5 seconds, otherwise the battery may discharge quickly. If the engine does not start right away, wait 15 seconds and try again.

### **NOTICE**

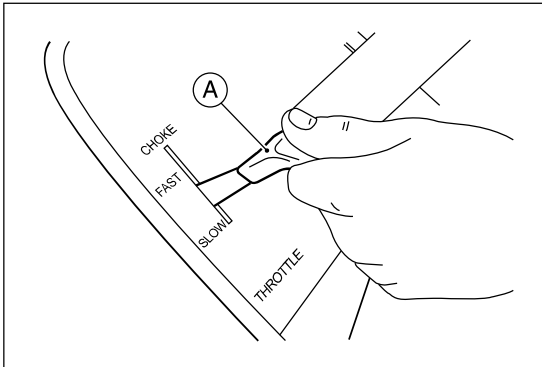
Whenever you start engine, make sure warning light is not illuminated after engine starts.  
If warning light comes on, stop engine immediately and check oil level (if equipped).

## OPERATING

### Warming Up

After the engine starts, move the throttle lever on the equipment to halfway between “FAST” and “SLOW”.

To warm up the engine, run it for 3 to 5 minutes with the throttle lever in the same load position (halfway) before putting the equipment under load. Then, move the throttle lever on the equipment to its “FAST” position.



A. Throttle Lever

### NOTICE

Allow engine to warm up sufficiently (3 to 5 minutes at idle) before applying a load. This will allow oil to reach all engine parts, and allow piston clearance to reach design specifications.

### NOTICE

While warming up the engine, make sure the warning light (oil pressure) on dash is not on. The warning light must not be illuminated during engine operation (if equipped).

## 20 OPERATING

### Engine Inclination

This engine will operate continuously at angles up to 25° in any direction.

Refer to the operating instructions of the equipment this engine powers. Because of equipment design or application, there may be more stringent restrictions regarding the angle of operation.

### NOTICE

Do not operate this engine continuously at angles exceeding 25° in any direction. Engine damage could result from insufficient lubrication.

## STOPPING

### Stopping the Engine

#### Ordinary Stop

- Move throttle lever to “SLOW” position.
- Keep running at the “SLOW” speed for about one minute.

#### NOTICE

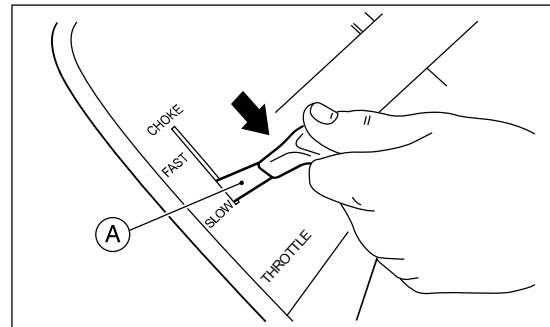
Engine damage can occur from run-on or after-burning if engine is stopped suddenly from high speed loaded operation. Reduce engine speed to idle for one minute before shutting engine off.

- Turn the ignition switch to “OFF” position.

#### Emergency Stop

- Immediately turn the ignition switch to “OFF” position.

- Close the fuel valve on the equipment.



A. Throttle Lever

#### WARNING

Leaving the equipment with the key hanging in the ignition can allow operation by someone who does not know how to operate it. It may cause serious accident with injury. Always remove the key from unattended equipment.

## 22 ADJUSTMENT

## ADJUSTMENT

### Separate Choke Type

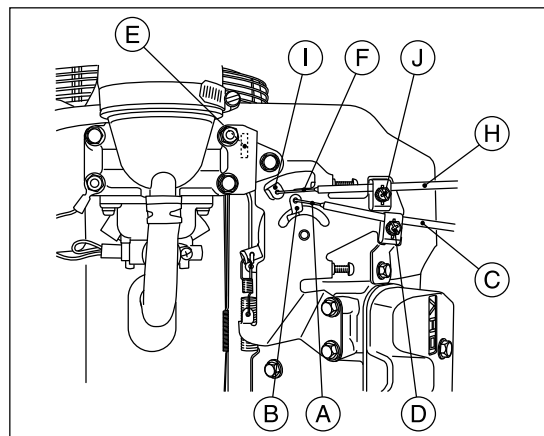
#### Throttle Cable Installation, Adjustment

- Link the throttle cable to the speed control lever and loosely clamp the throttle cable outer housing with the cable clamp bolt.
- Move the throttle lever to “FAST” position.
- Pull up the outer housing of the throttle cable until the inner wire has almost no slack, and tighten the cable clamp bolt.
- Move the throttle lever to “SLOW” position. Make sure that the carburetor throttle valve pivot arm is moved smoothly.

#### Choke Cable Installation, Adjustment

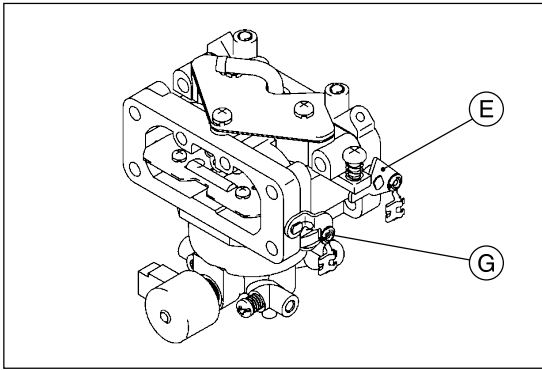
- Link the choke cable to the choke lever, and loosely clamp the choke cable outer housing with the cable clamp bolt.
- Move the equipment choke control to “OPEN” position. Make sure that the carburetor choke valve (pivot arm) is fully opened.
- Pull up the outer housing of the choke cable until the inner wire has almost no slack, and tighten the cable clamp bolt.

- Move the equipment choke control to “CHOKE” position. Make sure that the carburetor choke valve (pivot arm) is completely closed.
- Make sure that the choke valve turns from fully close position to fully open position when actuating the equipment choke control.



A. Throttle Cable  
 B. Speed Control Lever  
 C.H. Cable Outer Housing  
 D.J. Cable Clamp Bolt  
 E. Pivot Arm  
 F. Choke Cable  
 I. Choke Lever

## Engine Speed Adjustment



E. Throttle Valve Pivot Arm  
G. Choke Valve Pivot Arm

### NOTE

- Do not tamper with the governor setting or the carburetor setting to increase the engine speed. Every carburetor is adjusted at the factory and cap or stop plate is installed on each mixture screw.
- If any adjustment is necessary, see an authorized Kawasaki engine dealer or equally qualified service facility to perform the adjustment.

## 24 MAINTENANCE

# MAINTENANCE

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual.

### Periodic Maintenance Chart

#### **⚠ WARNING**

Prevent accidental starting during engine service by removing the spark plug caps.

### NOTE

- The service intervals can be used as a guide. Service more frequently as necessary by operating conditions.



MAINTENANCE	INTERVAL						
	Daily	Every 50 hr.	Every 100 hr.	Every 200 hr.	Every 250 hr.	Every 300 hr.	Every 500 hr.
Check and add engine oil.	●						
Check for loose or lost nuts and screws.	●						
Check for fuel and oil leakage.	●						
Check battery electrolyte level.	●						
◆ Check or clean air inlet screen.	●						
Check cleanout cover.		●					
◆ Clean dust and dirt from cylinder and cylinder ◇ head fins.			●				
Tighten nuts and screws.			●				
Change engine oil.			●				
◆ Check and clean oil cooler fins.			●				
Clean and regap spark plugs.			●				
Change oil filter.				●			
◆ Replace air cleaner primary element.					●		
◆ Check air cleaner secondary element.					●		
◇ Clean combustion chamber.						●	
◇ Check and adjust valve clearance.						●	
◇ Clean and lap valve seating surface.						●	
◆ Replace air cleaner secondary element.							●

◆: Service more frequently under dusty conditions.

◇: Service to be performed by an authorized Kawasaki engine dealer or equally qualified service facility.

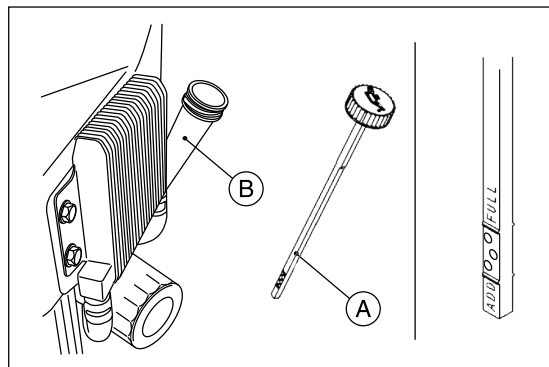
## 26 MAINTENANCE

### Oil Level Check

Check the oil level daily and before each time of operation. Be sure the oil level is maintained. See PREPARATION chapter.

### Engine Oil Capacity

FX801V FX751V	2.1 L (2.2 US-qt) [when oil filter is not removed]
	2.3 L (2.4 US-qt) [when oil filter is removed]

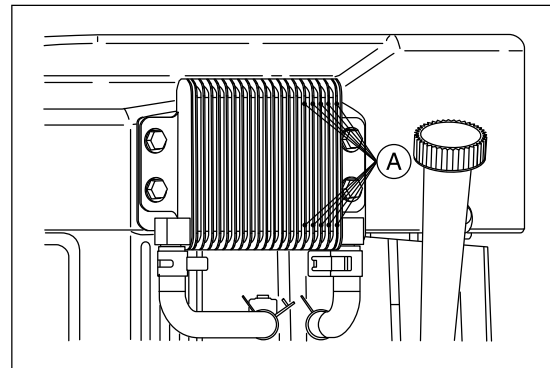


A. Oil Gauge  
B. Tube

### Oil Cooler Service

Check and clean oil cooler fins every 100 hours.

- Clean dirt off the outside fins with a brush or compressed air.



A. Oil Cooler Fins

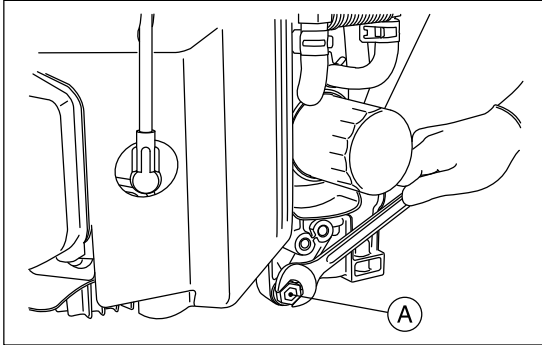
## Oil Change

Change oil every 100 hours.

- Run the engine to warm oil.
- Be sure the engine (equipment) is on level surface.
- Stop the engine.
- Remove the oil drain plug and drain the oil into a suitable container while engine is warm.

### ⚠ WARNING

Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before draining and handling oil.



A. Oil Drain Plug

- Install the oil drain plug.
- Remove the oil gauge and refill with fresh oil (See FUEL AND OIL RECOMMENDATIONS chapter).
- Check the oil level (see PREPARATION chapter).

### ⚠ WARNING

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.

## 28 MAINTENANCE

### Oil Filter Change

- Change the oil filter every 200 hours of operation.

### ⚠ WARNING

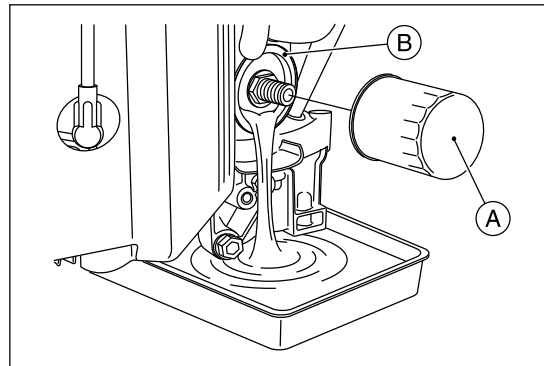
Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before attempting to remove oil filter.

- Drain the engine oil into a suitable container.

### NOTICE

Before removing the oil filter, place suitable pan under filter connection.

- Rotate the oil filter counterclockwise to remove it.
- Coat a film of clean engine oil on the seal of new filter.
- Install new filter rotating it clockwise until the seal contacts the mounting surface. Then rotate the filter 2/3 turn more by hand.
- Supply engine oil as specified.
- Run the engine for about 3 minutes, stop the engine, and check any oil leakage around the filter.
- Add oil to compensate for oil level drop due to oil filter capacity (see PREPARATION chapter).



A. Oil Filter  
B. Mounting Surface

### ⚠ WARNING

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.

**Air Cleaner Service**

**NOTICE**

**Do not run the engine with the air cleaner removed.**

**Air Cleaner**

These air cleaner elements are not recommended to be cleaned. Replace each air cleaner element with a new one at the maintenance time as shown in the maintenance chart.

**NOTICE**

**To prevent excessive engine wear, do not run the engine with the air cleaner removed.**

**NOTICE**

**Do not wash air cleaner elements.  
Do not oil air cleaner elements.  
Do not use pressurized air to clean air cleaner elements.**

**NOTE**

○ *Operating in dusty or dirty condition may require more frequent maintenance.*

**Primary Element**

Replace the primary element every 250 hrs.

**Secondary Element**

- Replace the secondary element with a new one, if the secondary element is dirty when the primary element is checked.
- Replace the secondary element with a new one every 500 hrs.

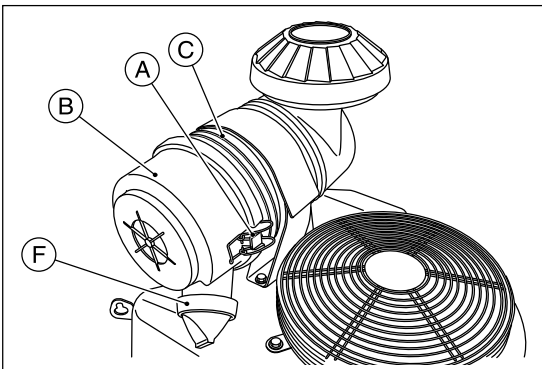
**Cap (Dust Ejector Valve)**

Push and open the cap on the case of the air cleaner body to expel dust and/or water accumulated inside.

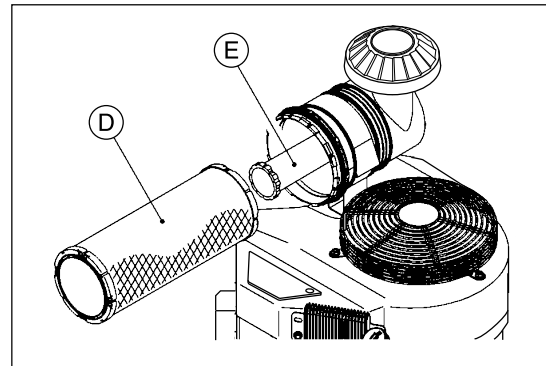
- Unfasten the two retaining clamps and remove the case from the air cleaner body.
- Remove the primary element and the secondary element from the air cleaner body by pulling them out.

**30 MAINTENANCE**

- Install the new air cleaner elements into the air cleaner body.
- Reinstall the case and the cap then securely fasten the two retaining clamps.



- A. Retaining Clamps
- B. Case
- C. Air Cleaner Body
- F. Cap (Dust Ejector Valve)



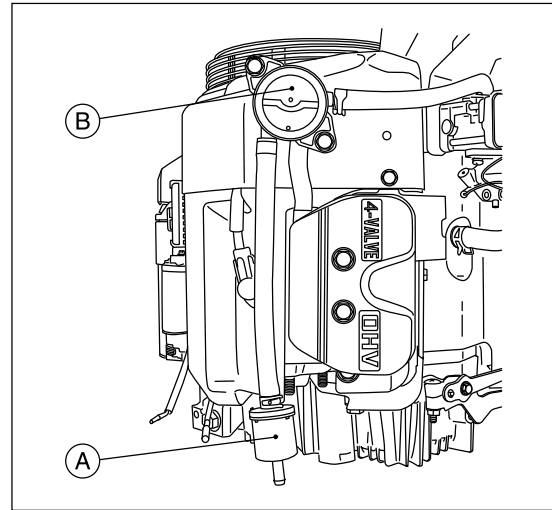
- D. Primary Element
- E. Secondary Element

### Fuel Filter and Fuel Pump Service

**⚠ WARNING**

Improper use of solvents can result in fire or an explosion.  
 Do not use gasoline or low flash-point solvents to clean the fuel filter and/or the fuel pump.  
 Clean only in a well ventilated area away from sources of sparks or flame, including any appliances with a pilot light.

- The fuel filter can not be disassembled. If the fuel filter gets clogged, replace it with a new one.
- The fuel pump can not be disassembled. If the fuel pump fails, replace it with a new one.



A. Fuel Filter  
 B. Fuel Pump

### 32 MAINTENANCE

#### Spark Plug Service

**⚠ WARNING**

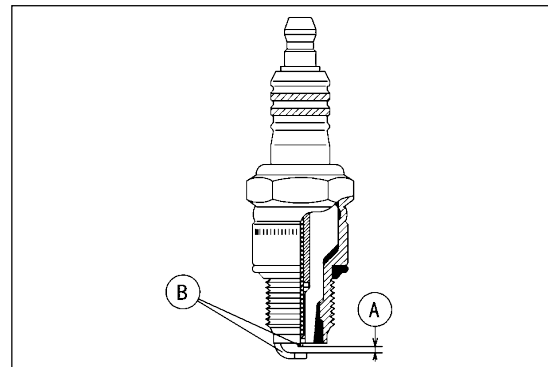
Engines can become extremely hot during normal operation. Hot engine components can cause severe burns. Stop the engine and allow it to cool before checking spark plugs.

Clean or replace the spark plugs and reset the gap every 100 hours of operation.

- Disconnect the spark plug caps from the spark plugs and remove the spark plugs.
- Clean the electrodes by scraping or using a wire brush to remove carbon deposits.
- Inspect for cracked porcelain, other wear or damage. Replace the spark plug with a new one if necessary.
- Check the spark plug gap and reset it if necessary. The gap must be 0.75 mm (0.030 in). To change the gap, bend only the side electrode, using a spark plug tool.
- Install and tighten the spark plugs to 22 N·m (2.2 kgf·m, 16 ft·lb).
- Fit the spark plug caps on the spark plugs securely.
- Pull up the spark plug caps lightly to make sure of the installation of the spark plug caps.

#### RECOMMENDED SPARK PLUG

NGK.....BPR4ES



A. Spark Plug Gap  
 B. Electrodes

### Cooling System Cleaning

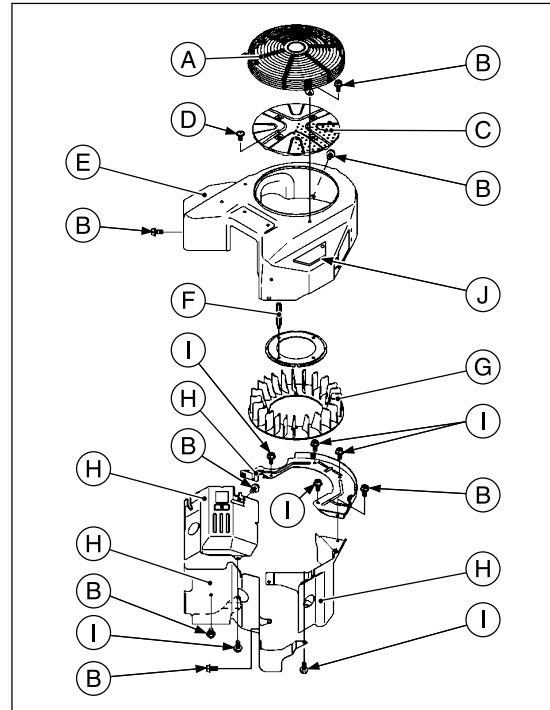
Before each operation, check that the air inlet (rotary) screen is free from grass and debris. Clean the screen if necessary. Every 50 hours of operation, check the inside fan housing from the cleanout covers. To inspect the inside, loosen bolts of the cleanout covers and remove them. Every 100 hours of operation, check and clean the cooling fins and the inside of engine shrouds to remove grass, chaff or dirt clogging the cooling system and causing overheating. When cleaning, remove the guard and air inlet screen, then remove the fan housing and engine shrouds (includes removing the air cleaner, fuel pump, oil cooler and the voltage regulator parts) if necessary.

#### NOTICE

**Do not run engine before all cooling system parts are reinstalled to keep cooling and carburetion as intended.**

#### [Bolts Size, Tightening Torque]

Bolts	Size	Length	Tightening torque
B	M6	12 mm	5.9 N·m (0.6 kgf·m, 4.3 ft·lb)
D	M6	10 mm	5.9 N·m (0.6 kgf·m, 4.3 ft·lb)
F	M6	81 mm	5.9 N·m (0.6 kgf·m, 4.3 ft·lb)
I	M6	12 mm	8.8 N·m (0.9 kgf·m, 6.5 ft·lb)



- A. Guard
- B.D.F.I. Bolt
- C. Air Inlet Screen
- E. Fan Housing
- G. Cooling Fan
- H. Shroud
- J. Cleanout Cover

### 34 STORAGE

## STORAGE

#### Engine Storage Procedure

When not operating your Kawasaki engine more than 30 days, add fuel stabilizer to fuel tank and run engine for 5 minutes then drain the fuel tank.

After draining the fuel tank, run the engine at low idle until engine stalls.

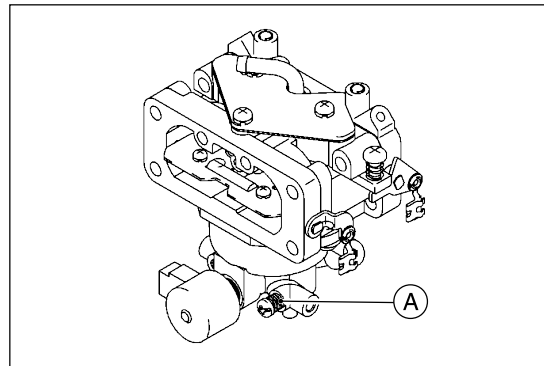
#### ⚠ WARNING

**Gasoline is extremely flammable and can be explosive under certain conditions. Drain fuel before storing the equipment for extended periods. Drain gasoline in a well ventilated area away from any source of flame or sparks, including any appliances with a pilot light. Store gasoline in an approved container in safe location.**

- Clean every part of the engine.
- Be sure that the engine switch or switch key is positioned at "OFF" position.
- Close the fuel valve and remove the sediment bowl.
- Put a pan under the fuel valve to receive the drained gasoline and open the fuel valve to drain

the gasoline from fuel tank completely.

- Install the sediment bowl.
- Put a pan under the carburetor and loosen the drain screw of the carburetor to drain the gasoline completely.
- Tighten the drain screw.

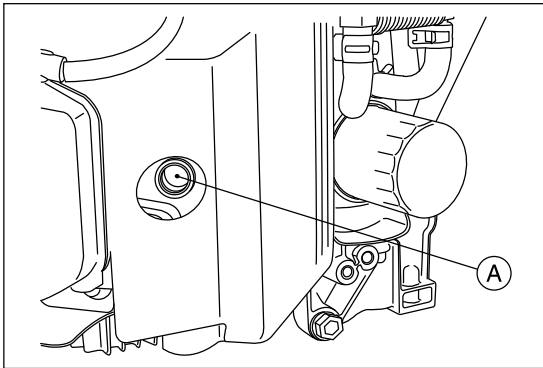


A. Fuel Drain Screw

#### ⚠ WARNING

**Gasoline is a toxic substance. Dispose of gasoline properly. Contact your local authorities for approved disposal methods.**

- Remove the spark plugs and pour approx 1-2 mL (1/2 teaspoon) of engine oil through the spark plug holes then screw the spark plugs in after turning the engine a few times. Slowly turn the engine until you feel the compression then leave it there. This traps the air inside the cylinders and prevents rust inside the engine.
- Wipe the body with oily cloth.
- Wrap the engine with plastic sheeting and store it in a dry place.
- Change engine oil for next use after period of storage. (Refer to MAINTENANCE chapter for Oil Change section).



A. Spark Plug Hole

36 TROUBLESHOOTING GUIDE

**————— TROUBLESHOOTING GUIDE —————**

If the engine malfunctions, carefully examine the symptoms and the operating conditions, and use the table below as a guide to troubleshooting.

Symptom	Probable Cause	Remedy	
Engine won't start or output is low	Insufficient compression	Loose spark plugs	Tighten properly
		Faulty pistons, cylinders, piston rings or head gaskets	◇
		Faulty valves	
		Loose cylinder head bolts	
	No fuel to combustion chamber	No fuel in fuel tank	Fill fuel tank
		Fuel valve is not in "ON" position.	Open fuel valve lever.
		Clogged fuel filter or tube	Change fuel filter or fuel tube
		Clogged air vent in tank cap	Clean fuel tank cap
		Faulty fuel system	◇
	Spark plugs fouled by fuel	Clogged air cleaner	Replace
		Incorrect grade/type of fuel	Change fuel
		Water in fuel	
		Over-rich fuel/air mixture	◇
Faulty fuel system			

Symptom		Probable Cause	Remedy
Engine won't start or output is low	No spark or weak spark	Faulty spark plugs	Replace spark plugs
		Engine switch is in "OFF" position	Turn engine switch to "START" position (See <b>M</b> )
		Faulty ignition coils	◇
Low output	Engine overheats	Clogged air cleaner	Replace
		Air inlet screen or cooling air path clogged with dirt	Clean
		Insufficient engine oil	Replenish or change oil
		Carbon build-up in combustion chamber	◇
	Engine speed won't increase	Faulty E-governor	◇

◇ : Service to be performed by an authorized Kawasaki engine dealer or equally qualified service facility.

**M** : For Control Panel Switch Type, move the throttle lever on the equipment away from its slow speed end to turn the engine switch to "START" position.

### 38 ENVIRONMENTAL PROTECTION

## ENVIRONMENTAL PROTECTION

To help preserve the environment, properly discard used batteries, oils and fluids, or other engine components. Consult an authorized Kawasaki engine dealer or equally qualified service facility or local environmental waste agency for their proper disposal procedure. This also applies to disposal of the entire engine at the end of its life.

# SPECIFICATIONS

	FX801V, FX751V
Type	Air-cooled, 4-stroke OHV 4Valves, V-twin cylinder, gasoline engine
Bore × Stroke	84.5 × 76 mm (3.33 × 2.99 in.)
Displacement	852 mL (52 cu.in.)
Ignition System	Solid-state ignition
Direction of rotation	Counterclockwise facing the PTO Shaft
Starting system	Electric starter
Dry weight : kg (lbs)	56.4 kg (124 lbs)

**NOTE**

- Specifications are subject to change without notice.
- Dry weight excludes that of the fuel tank and the muffler.

**40 WIRING DIAGRAM**

## WIRING DIAGRAM

**Wiring Diagram  
(With 12 V - 15 A Charging Coil)**

**▲ WARNING**

For electrical safety, always remove cable from negative (-) side of battery before attempting any repair or maintenance.

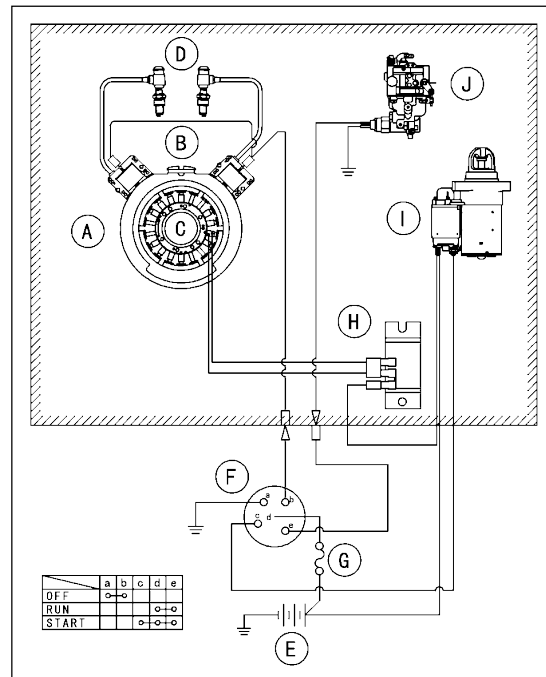
**Battery Capacity Recommended**

Minimum Recommended Battery Capacity
12 V 550 CCA Class

**NOTE**

- Portion surrounded by hatching shows Kawasaki procurement parts.

- |                   |                      |
|-------------------|----------------------|
| A. Flywheel       | F. Key Switch        |
| B. Ignition Coils | G. Fuse              |
| C. Charging Coil  | H. Voltage Regulator |
| D. Spark Plugs    | I. Electric Starter  |
| E. Battery        | J. Carburetor        |







3017 Full Vision Drive / Newton, Kansas 67114  
 PHONE (316) 283-3344

## GENERAL ROLL-OVER PROTECTIVE STRUCTURE (ROPS) SAFETY INFORMATION



This symbol means ATTENTION! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message.

**IMPORTANT:** This "General Safety Information" should be kept with the vehicle at all times as reference data.



This Roll Over Protective Structure (ROPS) has been certified to industry and or government standards. Any damage or alteration to the ROPS, mounting hardware, or seat belt voids the certification and will reduce or eliminate protection for the operator in the event of a roll-over. The ROPS, mounting hardware, (proper torque - see table) and seat belt should be checked after the first 100 hours of vehicle operation and every 500 hours thereafter for any evidence of damage, wear, or cracking. In the event of damage or alteration the ROPS must be replaced prior to further operation of the vehicle.

TORQUE			
Metric Fasteners	Class 8.8 lb-ft	Inch Fasteners	Grade 5 lb-ft
M10	29	7/16-14	37
M12	53	1/2-13	57
M14	87	9/16-12	82
M16	135	5/8-11	110
M18	195	3/4-10	200



This vehicle is equipped with a certified roll-over protective structure (ROPS). The seat belt must be worn during vehicle operation. Failure to do so will reduce or eliminate protection for the operator in the event of a roll-over.



Substitution of mounting hardware, seat belt, etc., with components not equal or superior to the original certified components will void the certification and will reduce or eliminate protection for the operator in the event of a roll-over.



All labels, caution decals, ROPS certification data, etc. must be kept intact and legible at all times.

## **COUNTRY CLIPPER LIMITED WARRANTY**

Models: Challenger, Charger, Boss XL

Effective October 1, 2017

### **Consumer Limited Warranty**

Country Clipper, a Division of Shivers Mfg., Inc. will Warrant on the terms and conditions herein, that we will repair, adjust, or replace parts found by examination by the factory or by an authorized Country Clipper dealer to be defective in material, workmanship, or both, and operated and maintained as shown by Country Clipper's instructions and manuals for a period of 5 years of Residential use\* from the date of original purchase. The first two years will include parts and labor. The third year will be parts only. The fourth and fifth year will be parts only on the mower deck weldment and frame weldment due to structural defect.

\*Residential use is defined as use of the equipment on property the same as your primary residence or farmstead. If the equipment is used on more than one property, this is considered Commercial use, and the Commercial Warranty will apply. If usage exceeds industry norms for Residential mowing, validation of usage maybe required to retain the Consumer Limited Warranty.

### **Commercial Limited Warranty**

When used for Commercial, business, production agriculture, horticultural or non-profit institutional use, the Limited Warranty term is 5 years from date of purchase. The first 2 years will provide allowance for parts and labor. The third year will be parts only for deck spindles, mower deck weldment and frame weldment. The fourth and fifth year will be parts only on the mower deck weldment and frame weldment due to structural defect. Mowers used for Rental purposes are not Warranted.

The Warranty applies to Country Clipper Challenger, Charger, Boss XL and subsequent revisions to these models sold in the United States and Canada until said warranty is revised. This Warranty applies to the original purchaser only and is non-transferable.

### **Warranty Exceptions**

Normal service parts are Warranted for 90 days from the original purchase date for defects in materials or workmanship (Belts, Tires, Deck Rollers, Mower Blades, Deck Chute, and Plastic/Cloth Seat Components).

Batteries have a 6 month Warranty by the battery manufacturer.

Related accessories are Warranted for 1 year from their original date of purchase.

The engine Warranty is covered by the engine manufacture and is not Warranted by Country Clipper. The engine manufacturer's Warranty statement is included in the literature packet.

The transmission Warranty is covered by the transmission manufacture and is not Warranted by Country Clipper. The transmission manufacturer's Warranty statement is included in the literature packet.

### **Items and Conditions Not Covered by this Warranty**

Items and conditions not covered include:

- Pickup and delivery charges to and from authorized Country Clipper dealer.
- Repair or replacement caused by accident, misuse, neglectful or improper maintenance, improper repairs performed or parts installed, use of After Market parts, unauthorized alteration or modification, and/or normal wear and deterioration for turf equipment.
- Routine maintenance services, adjustments, cleaning and / or expendables (i.e. mower blades, lubricants, fuel, fuel filters, spark plugs, oil, oil filters, and air filters)
- Damaged incurred due to a natural disaster or exposure to the elements.
- Repairs required due to use of incompatible parts, accessories, or supplies used on the equipment other than recommended in the operator's manual or other instructional guides provided by Country Clipper.

### **Replacement Parts**

Replacement parts for Residential and Commercial use mowers that have exceeded the Warranty period are Warranted for 90 days from the date of replacement against defects in material and workmanship. A proof of purchase, of the replacement part, is required at the time the claim is submitted. Labor on replacement parts is not Warranted. Replacement parts on mowers used for Rental operation are not Warranted.

There are no other express Warranties for this product in effect during this time period.

An authorized Country Clipper dealer must perform all Warranty work using Country Clipper approved parts.

### **Obtaining Warranty Service**

**A completed Warranty registration must be submitted within 10 days of the date of purchase. If the dealer does not register the product, the customer is responsible to complete the product registration card in the literature package and return it to Country Clipper.** The servicing dealer will require a proof of purchase if the product has not been registered.

### **Customer Responsibility**

- The owner is responsible for delivery of the mower to the Country Clipper approved servicing dealer, within the Warranty period, and its return after Warranty work is completed.

- The owner is responsible for maintaining and adjusting the equipment as outlined in the owner's manual.
- Prompt notification to an Authorized Country Clipper Dealer or Country Clipper representative of the need for warranty repair.
- Having the warranty work performed by an authorized Country Clipper Dealer.
- Contacting the desired Country Clipper servicing dealer to arrange the service through their shop.

Contact the desired Country Clipper servicing dealer to arrange the service through their shop. Use our dealer locator at [www.countryclipper.com](http://www.countryclipper.com) or U.S. and Canada customers can call 800-344-8237 to locate their nearest dealer.

### **General Conditions**

Country Clipper may change the design of its products from time to time. Nothing contained in this Warranty shall be construed as obligating Country Clipper to incorporate said design changes into previously manufactured products, nor shall said changes be construed as an admission that previous designs were defective.

All implied Warranties, including those of merchantability and fitness for a particular purpose are, unless specifically required by the law of the jurisdiction, hereby excluded. Where implied Warranties are required by law, including those of merchantability and fitness for a particular purpose, they are, where allowed by the law of the State, limited to the above stated term of this Warranty. Liability for consequential damages, under any and all Warranties, both express and implied are hereby excluded unless specifically required by the statutory law of the jurisdiction. No claim of breach of Warranty shall be cause for cancellation or rescission of the contract of sale of Country Clipper equipment.

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

### **To obtain the nearest servicing dealer:**

Dealer locator: [www.countryclipper.com](http://www.countryclipper.com)  
Email: [service@countryclipper.com](mailto:service@countryclipper.com)  
Phone: 800-344-8237 or 641-872-2544

Mail: Country Clipper a Division of  
Shivvers Manufacturing Inc.  
613 West English St.  
Corydon, IA 50060

# KAWASAKI LIMITED WARRANTY

## FOUR-CYCLE ENGINE

Kawasaki Motors Corp., U.S.A., P.O. Box 888285, Grand Rapids, MI 49588-8285 (hereinafter "Kawasaki") warrants to the initial purchaser of each new Kawasaki four-cycle engine purchased in any of the following regions: North, Central or South America, Caribbean, Australia, New Zealand, and all territories of the United States of America (collectively, the "Purchase Area") that it will repair or replace, free of charge, any engine parts found to be defective, under normal use and proper maintenance, for a period of thirty-six (36) months, subject to the following conditions, exclusions, obligations and limitations. If you have questions about warranty coverage in your region, please contact the local Kawasaki dealer.

### 1. COVERAGE.

- a. Any factory-installed engine part found to be defective by Kawasaki within the thirty-six (36) month warranty term shall be repaired or replaced without charge for parts or labor at any authorized Kawasaki engine dealer located within the purchase area.

### 2. OWNER'S OBLIGATIONS.

The following obligations must be fulfilled by owner to maintain the validity of the Kawasaki limited warranty:

- a. Owner must deliver the four-cycle engine to an authorized Kawasaki engine dealer or equally qualified service facility for inspection, maintenance services and adjustments according to the Periodic Maintenance Chart contained in the owner's manual. The inspection, maintenance services and adjustments are to be performed at owner's expense.
- b. Owner must present proof of initial retail purchase date to an authorized Kawasaki engine dealer at the time warranty repairs are performed on the four-cycle engine.

### 3. LIMITATIONS.

This limited warranty shall not apply to or include any of the following:

- a. Repair or replacement required as a result of (i) accident, (ii) misuse or neglect, (iii) lack of reasonable and proper maintenance, (iv) repairs improperly performed or replacements improperly installed, (v) use of replacement parts or accessories not conforming to Kawasaki specifications which adversely affect performance and/or durability, (vi) alterations or modifications not recommended or approved in writing by Kawasaki, and/or (vii) wear and deterioration occasioned by the use of the four-cycle engine.
- b. Routine maintenance services, adjustments, cleaning and/or expendables such as spark plugs, lubricants, oil filters, air filters, and fuel filters.

### 4. LIMITED LIABILITY.

- a. The liability of Kawasaki under the thirty-six (36) month warranty is limited solely to the remedying of defects in factory-installed engine parts by an authorized Kawasaki engine dealer at its place of business during customary business hours. This warranty does not cover inconvenience or loss of use of the four-cycle engine or transportation of the four-cycle engine to and from the Kawasaki dealer. **KAWASAKI SHALL NOT BE LIABLE FOR ANY OTHER EXPENSE, LOSS OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE KAWASAKI FOUR-CYCLE ENGINE FOR ANY PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**
- b. **NO EXPRESS WARRANTY IS GIVEN BY KAWASAKI WITH RESPECT TO THE KAWASAKI FOUR-CYCLE ENGINE EXCEPT AS SPECIFICALLY SET FORTH HEREIN. ANY WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE THIRTY-SIX (36) MONTH WARRANTY TERM SET FORTH HEREIN. THE FOREGOING STATEMENTS OF WARRANTY ARE EXCLUSIVE AND IN LIEU OF ALL OTHER REMEDIES. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.**
- c. No distributor, dealer or other four-cycle engine reseller is authorized to modify this Kawasaki Limited Four-Cycle Warranty.

### 5. LEGAL RIGHTS.

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE .**

## EMISSION CONTROL SYSTEM WARRANTY STATEMENT

This warranty statement outlines the emission warranty coverage provided by Kawasaki Motors Corp. U.S.A. ("Kawasaki") for small off-road engines sold in the U.S. and its territories, as well as the 13 provinces and territories of Canada. This warranty statement is divided into two parts. Part I warrants that a new Kawasaki small off-road engine complies with U.S. EPA and Environment Canada emissions regulations. Part II warrants that a new Kawasaki small off-road engine certified for sale in California also complies with the State of California's emissions regulations.

### Part I: United States and Canada

#### *Your Warranty Rights and Obligations*

Your new small off-road engine must be designed, built and equipped to meet the U.S. EPA emission standards for small off-road engines with maximum engine power at or below 19 kilowatts or an engine displacement less than 1 liter. Kawasaki must warrant the emission control system on your small off-road engine for the period of time listed below, provided there has been no abuse, neglect, or improper maintenance of your small off-road engine. Where a warrantable condition exists, Kawasaki will repair your small off-road engine at no cost to you including diagnosis, parts, and labor.

Your emission control system may include such parts as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, connectors, and other emission-related assemblies. For a list of the emission control system parts covered under this warranty, please contact your nearest Kawasaki Dealer or contact Kawasaki directly at 877-364-6404.

#### *Warranty Coverage*

Kawasaki warrants to the original retail purchaser, and each subsequent purchaser, that the small off-road engine, including all parts of its emission control system, is:

1. designed, built, and equipped to conform to the U.S. EPA and Environment Canada emission standards at the time of sale to the original retail purchaser; and
2. free from defects in materials and workmanship that may keep it from meeting the requirements under these emission standards.

This warranty begins on the date the small off-road engine is delivered to the original retail purchaser and extends for a period of three years. This warranty covers all components whose failure would increase the emissions of any regulated pollutant. This warranty does not cover components whose failure would not increase the engine's emissions of any regulated pollutants.

#### *Owner's Warranty Responsibility*

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Kawasaki recommends that you retain all receipts covering maintenance on your small off-road engine, but Kawasaki cannot deny warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should, however, be aware that Kawasaki may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

You are responsible for presenting your small off-road engine to a Kawasaki dealer as soon as a problem exists. The emission related warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your emission warranty rights and responsibilities, you should contact:

Kawasaki Motors Corp. U.S.A.  
Consumer Services Department 5080 36th Street S.E.  
Grand Rapids, MI 49512  
Telephone: (877) 364-6404 Email: kawpower-website@kmc-usa.com

#### *To Obtain Warranty Service*

You must, at your own expense, take your Kawasaki small off-road engine or the product on which it is installed, along with proof of original purchase date, to any Kawasaki Dealer who is authorized by Kawasaki to sell and service that Kawasaki product during the Dealer's normal business hours. Claims for repair or adjustments found to be caused solely by defects in material or workmanship will not be denied because the engine was not properly maintained and used.

If however, you reside more than 100 miles from an authorized service center in the contiguous states, excluding certain high-altitude areas, Kawasaki will either pay for shipping costs to and from an authorized service center, provide for a service technician to come to the owner to make the warranty repair, or pay for the repair to be made at a local non-authorized service center. If you are unable to obtain emission warranty service or are dissatisfied with the warranty service you received, contact the owner of the dealership involved. However, if you require further assistance, contact Kawasaki directly via the contact information above.

#### *Exclusions*

Failures other than those resulting from defects in material or workmanship are not covered by this warranty.

This warranty does not extend to emission control systems and parts that are affected or damaged by owner abuse, misuse, neglect, improper maintenance or repairs, misfueling, improper storage, collision, the use of unsuitable attachments, or the unauthorized alteration of any part.

This warranty does not cover replacement of parts or other services and adjustments necessary for required maintenance at and after the first scheduled replacement point.

#### *Disclaimer of Consequential Damages and Limitation of Implied Warranties*

Kawasaki Motors Corp. disclaims responsibility for incidental or consequential damages such as loss of time or the use of the power equipment, or any commercial loss due to the failure of the equipment; and any implied warranties are limited to the duration of this written warranty. This warranty is applicable only where the California, U.S. EPA, or Environment Canada emission control system warranty regulation is in effect.

### Part II: CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT

#### *Your Warranty Rights and Obligations*

The California Air Resources Board and Kawasaki are pleased to explain the emission control system warranty on your model year 2016/2017 small off-road engine. In California, new small off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. Kawasaki must warrant the emission control system on your small off-road engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system may include such parts as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors, and other emission-related assemblies.

Where a warrantable condition exists, Kawasaki will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

#### *Manufacturer's Warranty Coverage*

The 1995 and later small off-road engines are warranted for three years. If any emission-related part on your small off-road engine is defective, the part will be repaired or replaced by Kawasaki.

#### *Owner's Warranty Responsibility*

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Kawasaki recommends that you retain all receipts covering maintenance on your small off-road engine, but Kawasaki cannot deny warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that Kawasaki may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

You are responsible for presenting your small off-road engine to a Kawasaki distribution center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact:

Kawasaki Motors Corp. U.S.A.  
Consumer Services Department 5080 36th Street S.E.  
Grand Rapids, MI 49512  
Telephone: (877) 364-6404 Email: kawpower-website@kmc-usa.com

### **General Emissions Warranty Coverage**

Kawasaki warrants to the ultimate purchaser and each subsequent purchaser that the small off-road engine is:

1. designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and
2. free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in Kawasaki's application for certification.

The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser or first placed into service. The equipment or engine 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 Kawasaki warranty station

Engine parts outlined in the Periodic Maintenance Chart found in the Owners Manual provided with this engine, are warranted as follows:

1. Any warranted part that is not scheduled for replacement as required maintenance in the Periodic Maintenance Chart, is warranted for the warranty period stated above. If any such part fails during the warranty period, the part will be repaired or replaced by Kawasaki at no charge to the owner provided the repair or replacement is performed at a warranty station. Any such part repaired or replaced under the warranty will be warranted for the remaining warranty period.
2. Any warranted part that is scheduled only for regular inspection in the Periodic Maintenance Chart 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 Periodic Maintenance Chart 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 Kawasaki at no charge to the owner provided the repair or replacement is performed at a warranty station. 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.

Kawasaki is liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

Throughout the engine's warranty period defined above, Kawasaki will maintain a supply of warranted parts sufficient to meet the expected demand for such parts. Any replacement part may be used in the performance of any warranty maintenance or repairs and will be provided without charge to the owner. Such use will not reduce the warranty obligations of Kawasaki.

Add-on or modified parts, as defined in Section 1900(b)(1) and (b)(10), Title 13, 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 claim made in accordance with this article. Kawasaki will not be liable under this article to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

### **To Obtain Warranty Service**

Notwithstanding the provisions herein, warranty services or repairs will be provided at all Kawasaki distribution centers that are franchised to service the subject engines.

You must, at your own expense, take your Kawasaki small off-road engine or the product on which it is installed, along with proof of original purchase date, to any Kawasaki Dealer who is authorized by Kawasaki to sell and service that Kawasaki product during the Dealer's normal business hours. Claims for repair or adjustments found to be caused solely by defects in material or workmanship will not be denied because the engine was not properly maintained and used.

If you are unable to obtain emission warranty service or are dissatisfied with the warranty service you received, contact the owner of the dealership involved. However, if you require further assistance, contact the Kawasaki office in your region:

Kawasaki Motors Corp., U.S.A.  
9950 Jeronimo Road  
Irvine, CA 92618  
Telephone: (949) 770-0400 Email: kawpower-website@kmc-usa.com

### **Exclusions**

- (1) The repair or replacement of any warranted part otherwise eligible for warranty coverage as stated above may be excluded from such warranty coverage if Kawasaki demonstrates that the engine has been abused, neglected, or improperly maintained, and that such abuse, neglect, or improper maintenance was the direct cause of the need for repair or replacement of the part.
- (2) Kawasaki warrants your engine only for the warranty period specified above.
- (3) Except as provided above, any adjustment of a component that has a factory installed, and properly operating, adjustment limiting device (such as an idle limiter cap or plug) is eligible for warranty coverage as stated above.

### **Disclaimer of Consequential Damage and Limitation of Implied Warranties:**

Kawasaki Motors Corp. disclaims responsibility for incidental or consequential damages such as loss of time or the use of the power equipment, or any commercial loss due to the failure of the equipment; and any implied warranties are limited to the duration of this written warranty. This warranty is applicable only where the California, U.S. EPA, or Environment Canada emission control system warranty regulation is in effect.

### **Warranted Parts List:**

The following is the emission warranty parts list for your small off-road engine:

- (i) Fuel Metering System
  - (A) Carburetor and internal parts (and/or pressure regulator or fuel injection system)
  - (B) Cold start enrichment system
  - (C) Intake valve(s)
- (ii) Air Induction System
  - (A) Intake manifold
  - (B) Air filter
- (iii) Ignition System
  - (A) Spark plugs
  - (B) Magneto or electronic ignition system
  - (C) Spark advance/retard system
  - (D) Ignition coil and/or control module
- (iv) Lubrication System
  - (A) Oil pump and internal parts
- (v) Positive Crankcase Ventilation (PCV) System
  - (A) PCV valve
  - (B) Oil filler cap
- (vi) Catalyst or Thermal Reactor System
  - (A) Catalytic converter
  - (B) Exhaust manifold
  - (C) Exhaust valve(s)
- (vii) Miscellaneous Items Used in Above Systems
  - (A) Hoses, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware
  - (B) Pulleys, belts and idlers
  - (C) Vacuum, temperature, check, and time sensitive valves and switches
  - (D) Electronic Controls

Emissions related parts may vary from model to model. Certain models may not contain all of those parts and certain models may contain functionally equivalent parts.



**All Models**

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**Warranty**

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**Policies and Procedures**

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## Hydro-Gear® Warranty Policies and Procedures

### Limited Warranty

BLN-50225\_P18 March, 2019

Hydro-Gear Limited Partnership (hereinafter referred to as "Hydro-Gear") warrants to the original equipment manufacturer (OEM), authorized distributor, or authorized servicing dealer purchasing a Hydro-Gear product or replacement parts (such purchaser is hereinafter referred to as "Buyer") that the product or replacement parts will be free from defects in material and workmanship at the time of shipment from Hydro-Gear, and will conform to such drawings and specifications as are applicable to the product or replacement parts under Hydro-Gear's sales agreement with Buyer.

The duration of this limited warranty is as set forth in the section below under the heading "WARRANTY PERIODS." During the applicable period of warranty, Hydro-Gear shall repair or replace at its option those products or their parts which are found by Hydro-Gear to be defective in material or workmanship at time of shipment, provided that Hydro-Gear or its authorized representative is first advised in writing of Buyer's contention of such defect (during such warranty period) and provided further, that the product or, if applicable, the replacement part in question is made available for inspection by Hydro-Gear or its authorized representative. To facilitate inspection, Hydro-Gear may request return of the product and/or part which Buyer contends to be defective. Product or parts failures or malfunctions which are not attributable to defects in material and/or workmanship, and which are not covered by the said warranty include, but are not limited to:

- \* Inadequate, contaminated, or improper fluid.
- \* Accident, abuse, improper maintenance, or neglect.
- \* Stripped keyways, or splines stripped or worn on external shaft end.
- \* Improper mounting of external pulleys, gears, couplings, etc.
- \* Improper electrical connection or power supply.
- \* Corrosion, or other damage, resulting from battery acid leakage.
- \* Operating above those speeds, weights limits, pressures, or temperatures recommended by Hydro-Gear.
- \* Use of the product in a manner or for a purpose not originally intended for by Hydro-Gear or failure to use in strict accordance with Hydro-Gear's written instructions.
- \* Repairs or installation by personnel other than as authorized by Hydro-Gear.
- \* Transportation.
- \* Use of parts other than Genuine Hydro-Gear Parts or other parts authorized in writing by Hydro-Gear.
- \* Misdiagnosis of component failure.
- \* Maintenance items such as filters, oil, etc.

THE WARRANTIES SET FORTH HEREIN ARE IN LIEU OF AND TO THE EXCLUSION OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING BUT NOT BY WAY OF LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

HYDRO-GEAR'S LIABILITY, WHETHER OF WARRANTY, NEGLIGENCE, OR OTHERWISE, IS LIMITED TO THE REPAIR OR REPLACEMENT AS HEREIN PROVIDED OR, AT HYDRO-GEAR'S SOLE OPTION, TO A REFUND OF THE PURCHASE PRICE. **THIS SHALL BE HYDRO-GEAR'S SOLE AND MAXIMUM LIABILITY AND UNDER NO CIRCUMSTANCES SHALL HYDRO-GEAR BE LIABLE FOR LIQUIDATED, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

If Buyer grants warranty on Hydro-Gear products of greater scope than the warranties provided by Hydro-Gear, or extends any warranty period beyond the applicable period described in "**WARRANTY PERIODS**," Buyer does so at its sole risk and expense and Buyer will indemnify and hold Hydro-Gear harmless from any claims of any party based on such greater warranty or period, and any expenses incurred in the defense of such claims. This warranty only applies to OEM's, authorized distributors, authorized servicing dealers, and by its terms does not extend to any person buying the product from such OEM, authorized distributor, or authorized servicing dealer, for personal, family, or household use. If Buyer makes available the benefits of this warranty to its customer, and if the Magnuson-Moss Warranty Improvement Act (Pub. L. 93-637) or similar state laws should apply, Buyer assumes all responsibility for compliance with such laws and any expenses incurred in the defense of any such claims, thereunder.

**Note: Proof of purchase must be available if requested to assist in determining commencement of the warranty period. If proof of purchase is not available, the Hydro-Gear Serial Number will determine the commencement of the warranty period.**

## **I. ORIGINAL (OEM) INSTALLED PRODUCTS<sup>Δ</sup>**

### **A. REVIEWED TWO YEAR NONCOMMERCIAL\* USAGE** (See Figure 1, Hydro-Gear Warranty Time Frames)

The warranty period shall be limited to the earlier of:

- (i) 24 consecutive months (2 years) from the date of first sale\*\* of the product, or
- (ii) 24 consecutive months (2 years) from the date of manufacture if proof of purchase is not available upon request, and is subject to a limitation of 48 consecutive months (4 years) from the date of manufacture.\*\*\*

### **B. REVIEWED ONE YEAR COMMERCIAL USAGE** (See Figure 1, Hydro-Gear Warranty Time Frames)

The warranty period shall be limited to the earlier of:

- (i) 12 consecutive months (1 year) from the date of the first sale of the product, or
- (ii) 90 days from the date of the first sale of the product on Rental applications; or
- (iii) 12 consecutive months (1 year) from the date of manufacture if proof of purchase is not available upon request, and is subject to a limitation of 48 consecutive months (4 years) from the date of manufacture.

### **C. REVIEWED TWO YEAR COMMERCIAL USAGE** (See Figure 1, Hydro-Gear Warranty Time Frames)

The warranty period shall be limited to the earlier of:

- (i) 24 consecutive months (2 years) from the date of the first sale of the product, or
- (ii) 90 days from the date of the first sale of the product on Rental applications; or
- (iii) 24 consecutive months (2 years) from the date of manufacture if proof of purchase is not available upon request, and is subject to a limitation of 48 consecutive months (4 years) from the date of manufacture.

## **II. REPLACEMENT PARTS AND UNITS<sup>Δ</sup>**

### **A. HYDRO-GEAR REPLACEMENT PARTS**

- (i) All parts shall be warranted for 90 days from the date of first sale, or the balance of the original product warranty, whichever is longer.
- (ii) This warranty is subject to a limitation of 48 consecutive months (4 years) from the date of manufacture.

### **B. HYDRO-GEAR REPLACEMENT UNITS**

- (i) Replacement units shall be warranted for 180 days from the date of first sale, or the balance of the original product warranty, whichever is longer.
- (ii) Nevertheless, the warranty period for replacement units in Rental applications is limited to 90 days from the date of first sale.
- (iii) These warranties for replacement units are subject to a limitation of 48 consecutive months (4 years) from the date of manufacture.

<sup>Δ</sup> All Product repairs and replacements must be performed by an authorized dealer or service center to prevent Hydro-Gear's warranty from being voided.

\* Noncommercial - any vehicle not reviewed for commercial use by Hydro-Gear.

\*\* First sale - is considered the date a vehicle, replacement part or replacement unit is first sold by Buyer (OEM, authorized distributor, or authorized servicing dealer).

\*\*\* 48 consecutive months (4 years) from the date of manufacture – Any warranty period listed herein will remain in effect for its entire duration on any sale of the product by Buyer occurring up to 48 consecutive months (4 years) from the date of manufacture by Hydro-Gear. Hydro-Gear will not reimburse Buyer on warranty claims pertaining to products sold by Buyer more than 48 consecutive months (4 years) from the date of manufacture by Hydro-Gear. In the latter case, any warranty offered by Buyer is at the sole risk and expense of Buyer. In such case, Buyer will indemnify and hold Hydro-Gear harmless from the claims of any party based on such warranty, and from any expenses incurred in the defense of such claims.

# Warranty Claims Procedure

- A. Claims submitted to Hydro-Gear will require a Hydro-Gear, OEM, Outdoor Power Equipment Institute (OPEI) or equivalent claim form from the servicing dealer. Dealer claims must provide all pertinent information typical on OPEI claim forms, i.e., owner's name, servicing dealer, Hydro-Gear Serial Numbers, symptoms, repair date, and type of use, etc.
- B. Complete Hydro-Gear product Model Number and Serial Number must be provided.
- C. All claims must be filed within 45 days of unit failure.
- D. Warranty claims will be processed in accordance with: BLN-51371 for the United States and Canada; BLN-51373 for Europe, and BLN-51374 for Australia.
- E. Hydro-Gear reserves the right to reduce or reject a warranty claim which does not comply with the stated procedures.
- F. Warranty labor rate(s) will be set by Hydro-Gear.
- G. Labor rate time guidelines will be as follows:

Hydraulic Units		Electric Units	
Hydraulic Unit Replacement	Up to Two hours maximum	Electric Unit (Transaxle) Replacement	Up to Two hours maximum
Hydraulic External Repair	Up to One hour maximum	Electric Unit (Transaxle) External Repair	Up to One hour maximum
Hydraulic Internal Repair	Up to Three hours maximum	Electric Unit (Transaxle) Internal Repair	Up to Three hours maximum
		Electric Component Replacement or Repair	Up to One hour maximum

Hydro-Gear Warranty Time Frames			
Hydraulic Product Group	2 Year Noncommercial Usage	1 Year Commercial Usage	2 Year Commercial Usage
ZT-1800 / ZT-2100 / ZT-2200 (EZT) ZT-2800	Yes	No	No
ZT-3100 / ZT-3200	Yes	Yes	No
ZT-3400 / ZT-3600 / ZT-3800 / ZT-4400 / ZT-5400	Yes	-	Yes
SST	Yes	No	No
RT-310	Yes	Yes	No
T1 / T2 / T3	Yes	No	No
310-0510 / 310-0610 / 310-0710	Yes	No	No
310-2000 / G700 / 310-3000 / 310-3500	Yes	No	No
Pumps (PC)	Yes	Yes	No
Pumps (PJ, PE, PL, PG, PK, PR, PW, PY)	Yes	-	Yes
Piston Motor (HGM-H, PRM)	Yes	-	Yes

Figure 1: Hydraulic Warranty Time Frames

Smartec Warranty Time Frames			
Electric Product Group	2 Year Noncommercial Usage	1 Year Commercial Usage	2 Year Commercial Usage
Electric Drive - ZT	Yes	No	No
Electric Drive - LT	Yes	No	No

Figure 2: Smartec Warranty Time Frames

- a) All warranty times listed in Figures 1 & 2 are for products originally installed in a machine by an OEM manufacturer.
- b) See sections I(B), I(C), II(A) and II(B) on the **Warranty Periods** page for Rental Application, Replacement Part, and Replacement Unit warranty information.



## **Pump/Motor Operation Warranty Policy (Charger ONLY)**

Seller warrants goods sold here under to be free from defects in material and workmanship. The warranty applies only to defects in material or workmanship under normally recommended operating conditions **and start up procedures** within design limitations. Claims under the warranty not made in writing within the warranty period shall be considered waived. **(See POL 3 for return procedures.)**

This warranty extends only to components manufactured by the Seller. Parts incorporated in the Seller's products, but not of Seller's own manufacture, will carry the warranty of their manufacturer. Seller will endeavor to secure for the Buyer the benefits of such warranty, if inspection proves such parts to be defective.

This warranty does not apply to goods that have been damaged after shipment to Buyer where the damage is not directly due to a defect in material or workmanship of the goods, nor does it apply to goods that have been altered or repaired by anyone other than the Seller's authorized personnel, nor to goods furnished by Buyer or acquired at Buyer's request and/or Buyer's specifications. When goods are alleged to be defective, Seller may, at his option, inspect the same at their site or request that they be returned to Seller with transportation charges prepaid by Buyer. If Seller determines that the goods are warranty, Seller's sole obligation shall be to repair or replace, at his option, the goods without charge to Buyer. If returned goods are determined to be non-warranty, the Buyer will be notified in writing. **Goods returned within the applicable warranty period are not necessarily considered warrantable. This includes goods returned where no defect is found.**

The above warranty comprises Seller's sole and entire warranty obligations and liability to Buyer or his customers and assigns in connection with goods sold here under. All other warranties, express or implied, including but not limited to warranties of merchantability and fitness, are expressly excluded.

### **Warranty Period**

This warranty covers goods for a period of twelve (12) months from time first placed in service by the end user or eighteen (18) months from date of manufacture. Rebuilt goods will be covered for a period of six (6) months from date of first service by the end user or twelve (12) months from date of rebuild.

### **Extended Warranty**

The Hydraulic Pump/Motor Division fully participates in the Extended Warranty policy of the Motion & Control Group. This will extend our warranty to thirty-six (36) months from date of manufacture on all new products which are installed in Hydraulic Systems utilizing properly **applied**, installed, and maintained Parker Hydraulic Filters. Rebuilt goods are not covered under this extended warranty policy.



## **Interstate Batteries' Limited Warranty (effective on batteries purchased May 1, 2012, or later)**

**This limited warranty applies unless you return your battery within 30 days of purchase.**

*Important: Keep this Limited Warranty and sales receipt in glove compartment.*

**READ CAREFULLY:** This limited warranty contains mandatory and binding individual arbitration and class-action waiver provisions, and other provisions that limit your legal rights.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this limited warranty. Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

### **What Batteries Are Covered**

Interstate Batteries® (IB) provides this limited warranty to (1) the original retail purchaser, (2) of the Interstate Batteries branded battery models listed below, (3) when purchased from an IB Authorized Dealer or an All Battery Center Store in the 50 States of the United States or the District of Columbia.

### **IB's Performance Warranty**

IB warrants that your battery is free of defects in material and workmanship for the duration of the warranty periods listed for your battery model in the Chart below. IB's Performance Warranty has a Free Replacement Period, and some battery models have an additional Discount Period. If your battery fails due to a defect during the Free Replacement Period, you may obtain a free replacement battery. The free replacement period for the SP-30 & SP-40 battery is six (6) months from the date of the original purchase.

You will still need to pay any taxes and legislatively imposed fees on your replacement battery, and you may also need to pay labor and installation charges. Any warranty coverage that remains on your original battery (when you return it for a replacement battery under this Performance Warranty) will carry over to your replacement battery. Your replacement battery will not have any new or separate warranty coverage.

### **What You Must Do**

To obtain a replacement battery, you must present your original battery to an IB Authorized Warranty Dealer or All Battery Center Store that has an appropriate replacement battery in stock. That dealer will have a reasonable time to test your original battery and, if defective, replace it according to the terms of this limited warranty. To find the IB Authorized Warranty Dealer or All Battery Center Store nearest you, and to get the phone number of that dealer or store, visit [www.interstatebatteries.com](http://www.interstatebatteries.com), or call 800-CRANK IT (800-272-6548) for Automotive, Commercial, and Marine/RV batteries or 888-772-3600 for all other Starting, Lighting, and Ignition (SLI) batteries.

### **Date of Purchase**

Your Performance Warranty begins on your date of purchase and extends for six (6) months. You may establish your date of purchase by presenting the receipt for the purchase of your original battery. Otherwise, your dealer will estimate your date of purchase.

### **Warranty Exclusions and Limitations of Remedy**

This limited warranty does not cover batteries that are merely discharged, or that are damaged due to abuse, neglect, misuse, fire, accident, collision, explosion, freezing, theft, overcharging, alteration, improper installation, use of special additives, unauthorized attempt to repair, or failure to keep the battery properly maintained. IB's liability is limited to the replacement of the battery according to the terms of this limited warranty. IB will not be liable for any punitive, consequential, or incidental damages, such as the cost of installation, towing, electrical system tests, charging a battery, rental vehicles, labor, loss of time, loss of use of a vehicle, lost profits, or damage to property other than the battery. Some States do not allow the exclusion or limitation of these incidental or consequential damages, so the above limitations or exclusions may not apply to you.

## SPECIFICATIONS

### CHARGER – Joystick Steering

MODEL	25552KAJ-1050	25560KAJ-1050	26560KOEJ-1050
Engine	25.5 H.P. Kawasaki FX801 (852cc)	25.5 H.P. Kawasaki FX801 (852cc)	26.5 H.P. Kohler ECV749 (747cc)
Hydrostatic Transmissions	12CC Hydro Gear Pumps 15.9 CIR Parker Wheel Motors		
Steering Control	Single Joystick		
Fuel Capacity	7 Gallons		
Tires, Rear	24x12-12		
Tires, Front	13x6.5-6		
Turning Radius	Zero-Turn		
Ground Speed Forward Reverse	10.5 MPH (infinitely variable) 5 MPH (infinitely variable)		
Length	83½"		
Height,	30" (Seat Cushion), 48" (Seat Back), 55¼" (R.O.P.S. Folded), 71½" (Top of R.O.P.S.)		
Width, Tractor (outside rear tires)	51¼"		
Width, Deck (with deck chute up) (with deck chute down)	53" 65"	61" 73"	
Cutting Width	52"	60"	
Blade Length (3 per deck)	18-3/8"	21"	
Cutting Height	2" to 5" (¼" increments)		
Weight (actual)	1081#	1096#	
Standard Features	Hour Meter, Cup Holder, Electric Start, Deluxe Adjustable Seat, Sewn Arm Rests, Pivoting Front End, R.O.P.S. (Roll Over Protection System)		

### CHARGER – Twinstick Steering

MODEL	25552KAT-1050	25560KAT-1050	26560KOT-1050
Engine	25.5 H.P. Kawasaki FX801 (852cc)	25.5 H.P. Kawasaki FX801 (852cc)	26.5 H.P. Kohler ECV749 (747cc)
Hydrostatic Transmissions	12CC Hydro Gear Pumps 15.9 CIR Parker Wheel Motors		
Steering Control	Twinstick Controls		
Fuel Capacity	7 Gallons		
Tires, Rear	24x12-12		
Tires, Front	13x6.50-6		
Turning Radius	Zero-Turn		
Ground Speed Forward Reverse	10.5 MPH (infinitely variable) 5 MPH (infinitely variable)		
Length	83½"		
Height,	30" (Seat Cushion), 48" (Seat Back), 55¼" (R.O.P.S. Folded), 71½" (Top of R.O.P.S.)		
Width, Tractor (outside rear tires)	51¼"		
Width, Deck (with deck chute up) (with deck chute down)	53" 65"	61" 73"	
Cutting Width	52"	60"	
Blade Length (3 per deck)	18-3/8"	21"	
Cutting Height	2" to 5" (¼" increments)		
Weight (actual)	1081#	1096#	
Standard Features	Hour Meter, Cup Holder, Electric Start, Deluxe Adjustable Seat, Sewn Arm Rests, Pivoting Front End, R.O.P.S. (Roll Over Protection System)		

*Specifications subject to change without prior notice*





**PRODUCT MANUAL**

**CHARGER 1055**

**Country Clipper Division**

Shivvers Manufacturing, Inc.

613 W. English St.

Corydon, IA 50060-0467

Ph. 641-872-2544

Fax. 641-872-1593

P-13459 (03/20)