



**BOSS<sup>XL</sup> 1525**

***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

Kohler Engine Owner Manual

ROPS Safety Information

Warranty

Country Clipper Warranty

Kawasaki Engine Warranty

Kohler Engine Warranty

Hydro-Gear Warranty

Battery Warranty

Additional Information

Country Clipper Product Specifications

Notes/Service Records

P-13460 (06/20)

## 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



# BOSS<sup>XL</sup>

# 1525

**SERIAL RANGE: 19244001 - 20257999**

Congratulations for buying a **Country Clipper** product. Your **Country Clipper** Zero Turning 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 2-3. Following these instructions will help you continue to enjoy the trouble-free performance

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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 deck 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 Turning Radius Mower should be trained in its proper use and warned of its dangers. Before operating, adjusting, or servicing the **Country Clipper** Zero Turning 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 mowing 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 Turning 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 the 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. **NEVER CARRY PASSENGERS.**
12. **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.

13. **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.
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. **DO NOT SMOKE AROUND THE MOWER** or the gasoline storage container. Gasoline fumes can easily ignite.
16. **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.
17. **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.
18. **KEEP ALL NUTS, BOLTS, AND SCREWS TIGHT** to be sure equipment is in safe working condition, especially blade mounting bolts.
19. **VEHICLE 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.
20. **DISENGAGE BLADES BEFORE DRIVING ACROSS WALKS** or projecting objects.
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 instructions. (If equipped)
23. **DO NOT STEP OR STAND ON THE MOWER DECK 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 AND SLIPPERY.**
26. **MOW ONLY DURING DAYLIGHT. 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.

## SAFETY INTERLOCK SYSTEMS

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

**ON JOYSTICK MODELS** NEUTRAL IS WHEN THE JOYSTICK IS IN THE “**DOWN**” POSITION.

**ON TWIN STICK MODELS** NEUTRAL IS WHEN BOTH HANDLES ARE IN THE “**OUT**” POSITION.

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

**DO NOT OPERATE MOWER IF SAFETY SWITCHES 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).
2. Make sure dirt and foreign matter is kept out of gas tank. Use a clean funnel and gas can.



### **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.**

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 the hydrostatic transmission oil level. (See “Maintenance” section of this manual.)
7. Check battery fluid level.
8. Inspect V-belts.

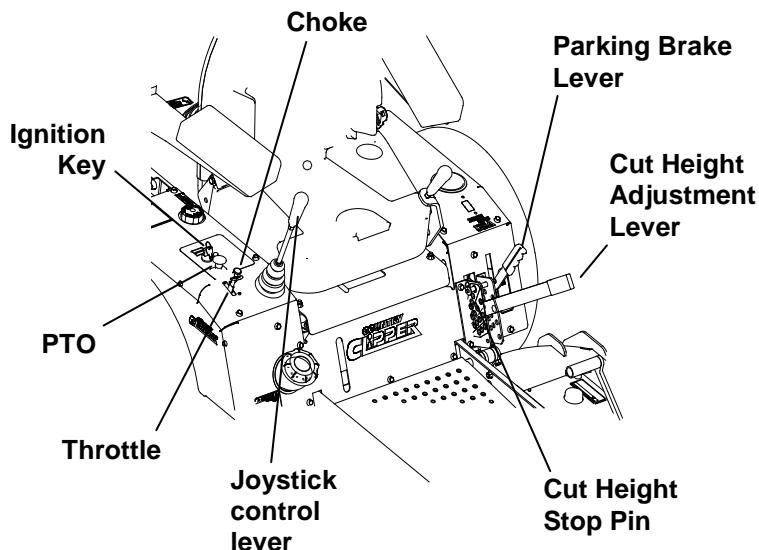
9. Check tire pressure:

Model	Front tires	Rear tires
All Models	12-15 psi	18 psi
	83-103 kPa	124 kPa

10. Make sure underside of mower deck is free of grass.
11. Make sure mower blades are sharp and secured tightly.
12. Clean the air intake screen on the engine if necessary.
13. Perform any other maintenance as it becomes necessary. (See the "Maintenance" section of this manual.)
14. 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 seat clutch properly.

## JOYSTICK CONTROL LOCATIONS



### **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 - JOYSTICK

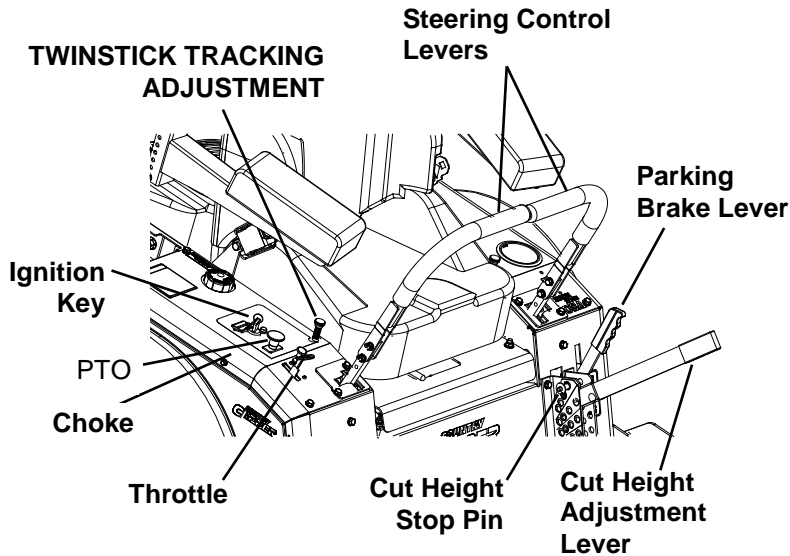
1. MOVE JOYSTICK CONTROL LEVER TO neutral "DOWN" position.
2. SET PARKING BRAKE. Pull up to set.
3. DISENGAGE MOWER BLADE CLUTCH by moving clutch switch to "OFF" position.
4. PULL ENGINE CHOKE CONTROL to full position for cold starts (non fuel injected models)
5. SET ENGINE THROTTLE TO ½ THROTTLE.

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 AND CHOKE for desired engine smoothness and speed. NOTE: When mowing always run engine at full throttle.
8. RELEASE PARKING BRAKE. Push brake lever down to release.

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

9. TO DRIVE: Move the Joystick Control Lever to the "UP" position. Move the Joystick Control Lever forward to move forward. Increasing forward movement of the Joystick Control Lever will increase the speed of travel. To reverse the direction, pull the Joystick Control Lever slightly back. To turn, move the Joystick Control Lever toward the direction you want to turn.. 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.
10. BRAKING: To brake mower, gently move the Control Lever(s) in the direction opposite to travel. If the parking brake is engaged with the Joystick Control Lever in the "UP" position or the Twin Sticks (if equipped) 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 the Blade Clutch Switch to the "ON" position. The engine will not start if the blade clutch is engaged. If the operator is not in the seat, the engine will stop if the clutch is engaged.

## TWINSTICK CONTROL LOCATIONS



### **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**

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 (on non-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 AND CHOKE for desired engine smoothness and speed.  
NOTE: When mowing, always run engine at full throttle.
8. RELEASE PARKING BRAKE. Push brake lever down to release.

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

9. TO DRIVE: Move the Steering Control Levers to the “IN” position. Move the Steering Control Levers forward to move forward. Increasing forward movement of the Steering Control Levers will increase the speed of travel. To reverse the direction, pull the Steering Control Levers slightly back. To turn, move one Steering Control Lever slightly ahead of the other. 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 CONTROL LEVER(S) IN A GENTLE, SLOW MOTION. NEVER PULL OR PUSH THE CONTROL LEVER(S) RAPIDLY, ESPECIALLY ON GRADES.**

10. BRAKING: To brake mower, gently move the Control Lever(s) in the direction opposite to travel. If the parking brake is engaged with the Joystick Control Lever in the “UP” position or the Twin Sticks (if equipped) 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 the Blade Clutch Switch to the “ON” position. The engine will not start if the blade clutch is engaged. If the operator is not in the seat, the engine will stop if the clutch is engaged.



### **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(1).** Move Joystick Control Lever to neutral position and then to the “DOWN” position.
- A(2).** Move the Twinstick handles to the neutral position and then push both handles out as far as they will go.
- 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” (left) position.
- E.** Remove the key and wait for all movement and all sound to cease before dismounting.

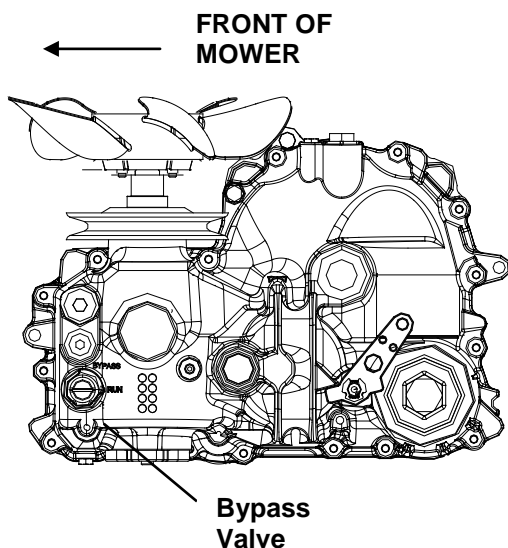


**CAUTION**



**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.**

- 14. TO FREE WHEEL MACHINE:** Unscrew the bypass valves (1/4 turn counter clockwise) found on the left front of the right pump and the valve on the right front of the left pump. Use a wide blade straight screwdriver.



**CAUTION**



**NEVER OPERATE MOWER WITHOUT DISCHARGE CHUTE**

**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, mowing off 1/2 of the desired cut on the first pass, and then the desired height the second pass. Check for hidden dangers first.
- 4. Go slowly for trimming.
- 5. Always cut grass with the engine at full throttle speed. This “ENGINE” speed allows the cutting blades to operate 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 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"/> Grease Front Caster Pivots <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.8-9)
Every 10 Hours	<input type="checkbox"/> Check Tire Pressure. (12-15 Psi / 83-103 kPa Front 18 Psi / 124kPa Rear) <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"/> Grease Front Caster Pivots <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.8-9)
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 Turning 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	12-15 psi	18 psi
Models	83-103 kPa	124 kPa

Lug nuts should be checked regularly for tightness.

### 4. MOWER BLADES:

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



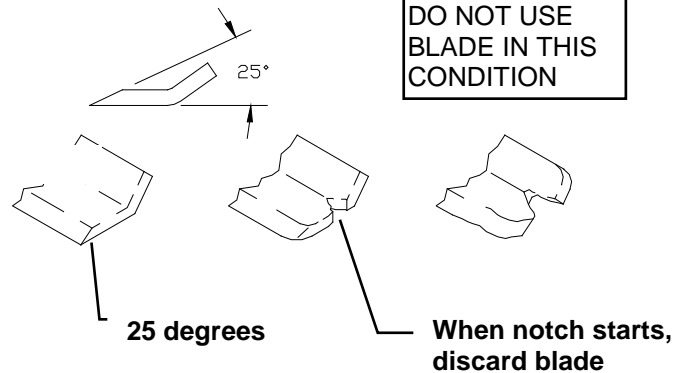
#### CAUTION



**STOP ENGINE, REMOVE IGNITION KEY FOR SAFETY.**

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

**DANGEROUS!**  
DO NOT USE  
BLADE IN THIS  
CONDITION



- 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.
- 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.
- Install blade, blade washer, and bolt. Make sure to tighten 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.

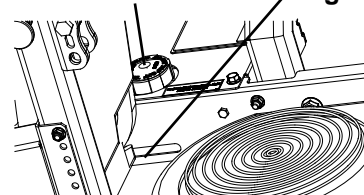
### 6. LUBRICATION:

- Engine: Follow engine manufacturer's recommendation.
- Hydrostatic Transmission & Filter: Follow instructions listed below.

#### DIRT OR WATER IN OIL CAN RUIN THE HYDROSTATIC TRANSMISSIONS

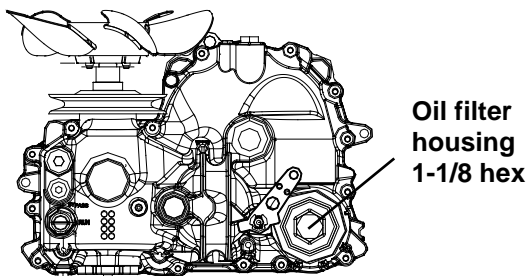
Oil Reservoir Cap

Sight window



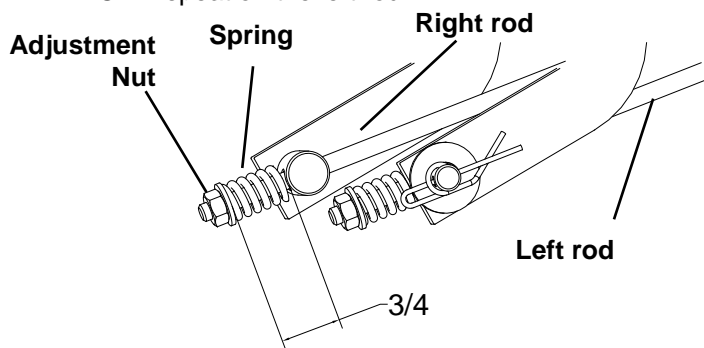
Check the oil level in hydrostatic transmission oil reservoirs after every 25 hours of usage. Check that the level of both reservoirs is visible through the sight window in the side panel. The level should be checked cold. (Slide the seat as far forward as possible for better visibility.) Replenish as needed with 20W-50 Motor Oil. **DO NOT OVER FILL.** When replenishing the oil level, be very careful to keep the reservoir clean.

Change the oil in the reservoir and hydrostatic transmission filter after the first 75 hours of use, then every 400 hours after that. Remove the filter and be sure all oil has drained from the reservoir. Replace with new filter and 20W-50 Motor Oil.



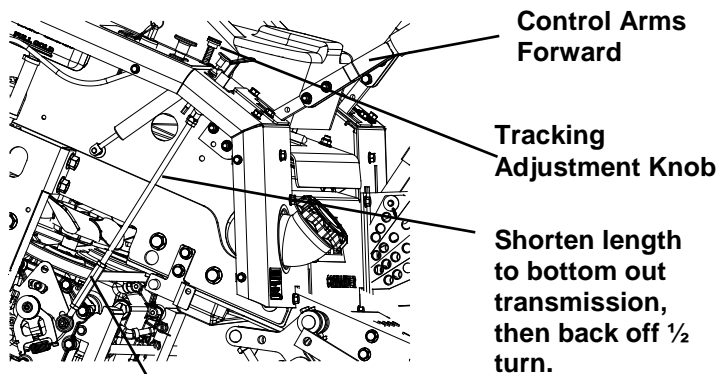
## 7. PARKING BRAKE ADJUSTMENT:

- Pull brake handle up until brakes engage.
- Tighten the adjustment nut on the right rod until spring is compressed to  $\frac{3}{4}$ ".
- Repeat on the left rod.



## 8. TWINSTICK CONTROL LEVER FORWARD ADJUSTMENT:

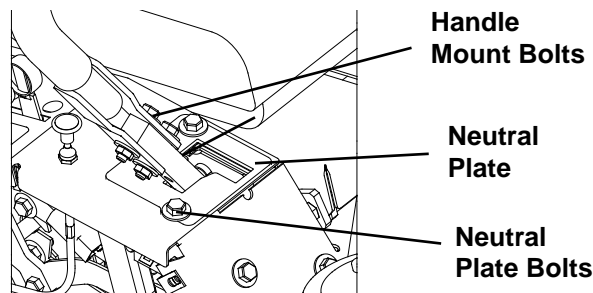
- Remove the fender skirts from each side of the machine.
- Block up the unit so that the Drive Wheels are off the ground.
- Loosen the locknuts on the turnbuckle on the upper linkage on each side.
- Push both control levers forward until they hit the stops on the control arms.
- Bungee cord the arm at this position and lengthen the upper linkage rods until they bottom out the transmissions.
- Back off the turnbuckles  $\frac{1}{2}$  turn and lock in place with the locknuts.



Note Mark, LH  
Thread End

## 9. TWINSTICK CONTROL LEVER NEUTRAL ADJUSTMENT:

- Loosen the bolts holding the Neutral Plate.
- With the engine running, pull back the control lever until the wheel spin is zero.
- Tilt the Control lever outward, using the lever, position and tighten the bolts holding the Neutral Plates.



## 10. TWINSTICK CONTROL LEVER FORWARD TRACKING:

Drive mower in a large open area, & actuate the 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.

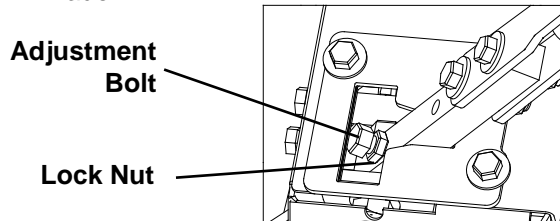
- Stop the machine and shut off the engine.
- Slightly loosen the nuts around the turnbuckle on the faster side. Lengthen the linkage rod by  $\frac{1}{4}$  turn increments, retighten and retest, until the mower tracks straight.
- Once the tracking is to the operator's liking, completely tighten the nuts on the turnbuckle. Recheck and adjust the Neutral Plate, if required.
- Reinstall the side plates and tighten all bolts.
- If the forward tracking still requires "fine tuning", use the on-the-fly tracking adjustment knob on top of the fender cap, next to the Control lever. Make small adjustments to full forward as needed.



**11. 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 locknut and adjust the bolt until the gap between the handles is correct or the Control lever does not rub the Neutral Plates.
- B. Tighten the locknut after the adjustment is made.



**NOTE:** To prevent damage to Control Linkages the Control Lever must always hit on the Stop Screws. Never adjust Stops out so that the Control Lever "bottoms" out on other parts of the linkage.

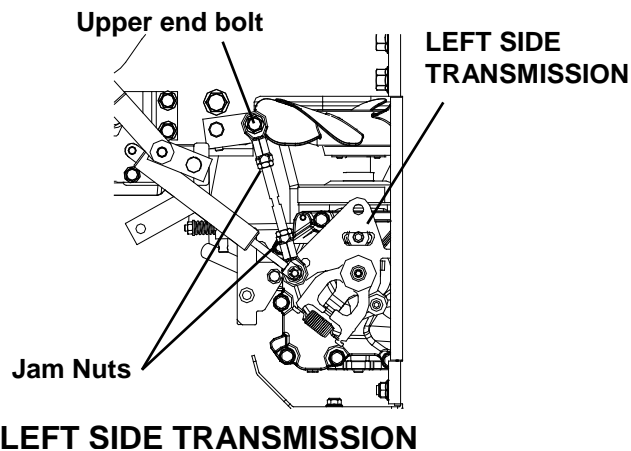
**12. ALIGNING THE HANDLES:**

Once forward tracking and neutral are set, the handle position may be adjusted for operator comfort and alignment. Loosening the handle mount bolts, move the levers into the desired position and re-tighten the mounting bolts securely.

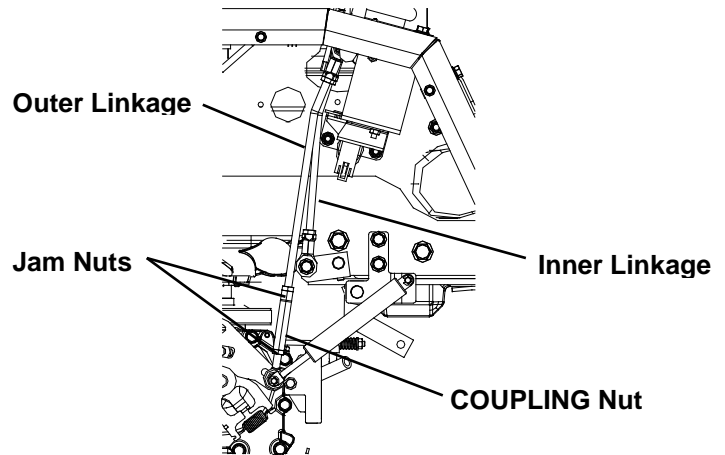
## JOYSTICK ADJUSTMENT

**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 links the joystick to the **right** side transmission, Loosen the jam nuts on both ends of the coupling nut. (Upper is a left-hand thread.) Rotate the coupling nut several turns to lengthen it.



## RIGHT SIDE TRANSMISSION

**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!

- 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.

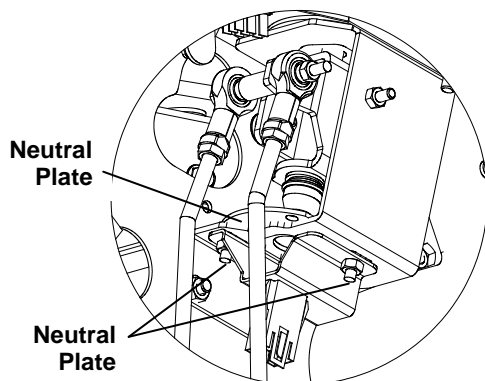
**NOTE:** This full turn longer is **required** to prevent internal damage to the transmission.

- 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.

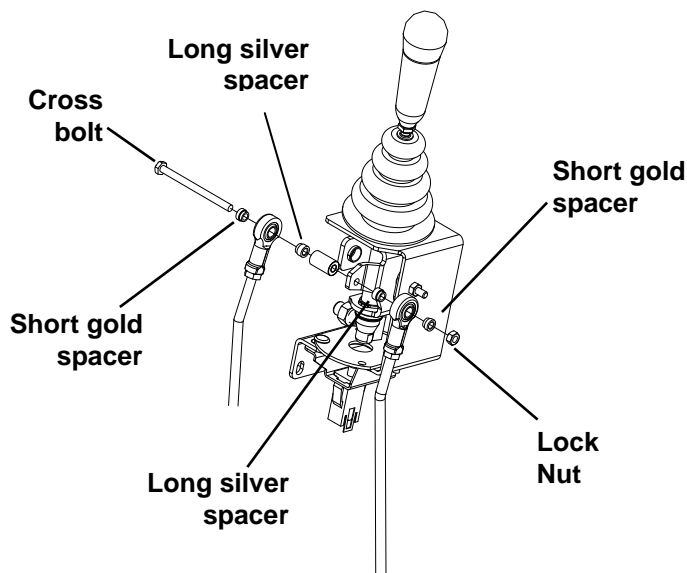


- B. Start the engine. With the joystick still down, position the handle so both wheels are stationary.
- C. Tighten the two nuts on the bottom of the neutral plate, being careful not to shift it out of position.
- D. Recheck neutral before placing the mower back on the ground. Then shut off the engine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

## 3. JOYSTICK CONTROL LEVER SENSITIVITY ADJUSTMENT:

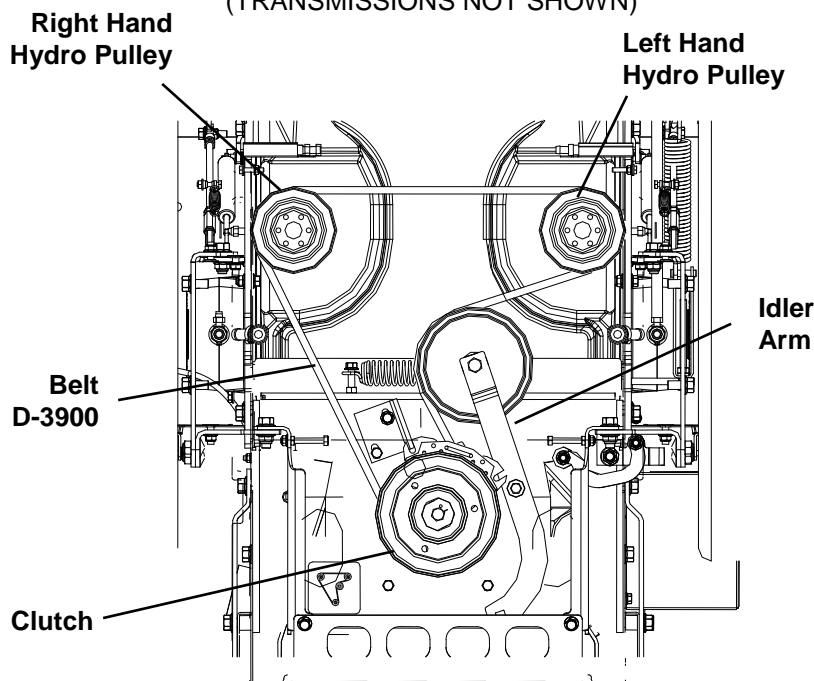
To change the sideways turning response, adjust as follows:

- 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.

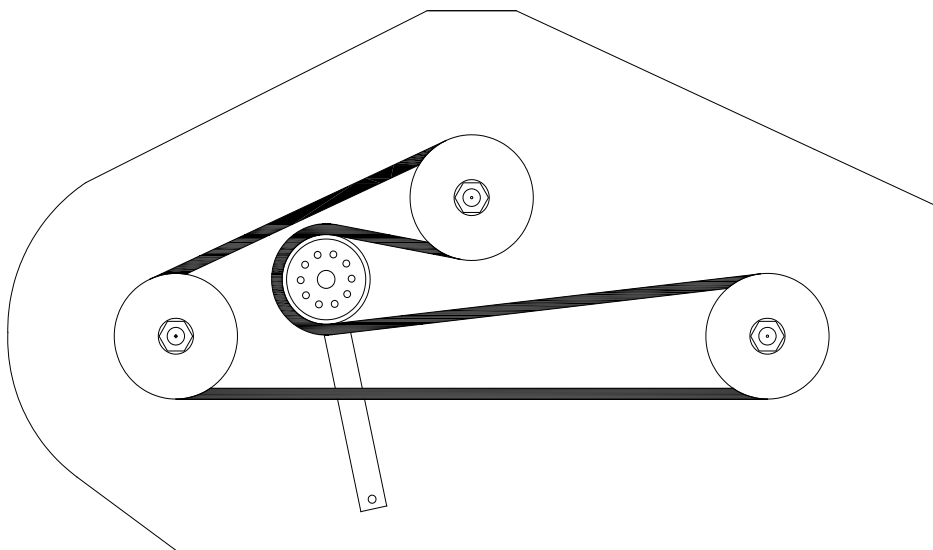


## HYDRO DRIVE BELT CONFIGURATION

VIED FROM FLOOR LOOKING UP  
(TRANSMISSIONS NOT SHOWN)

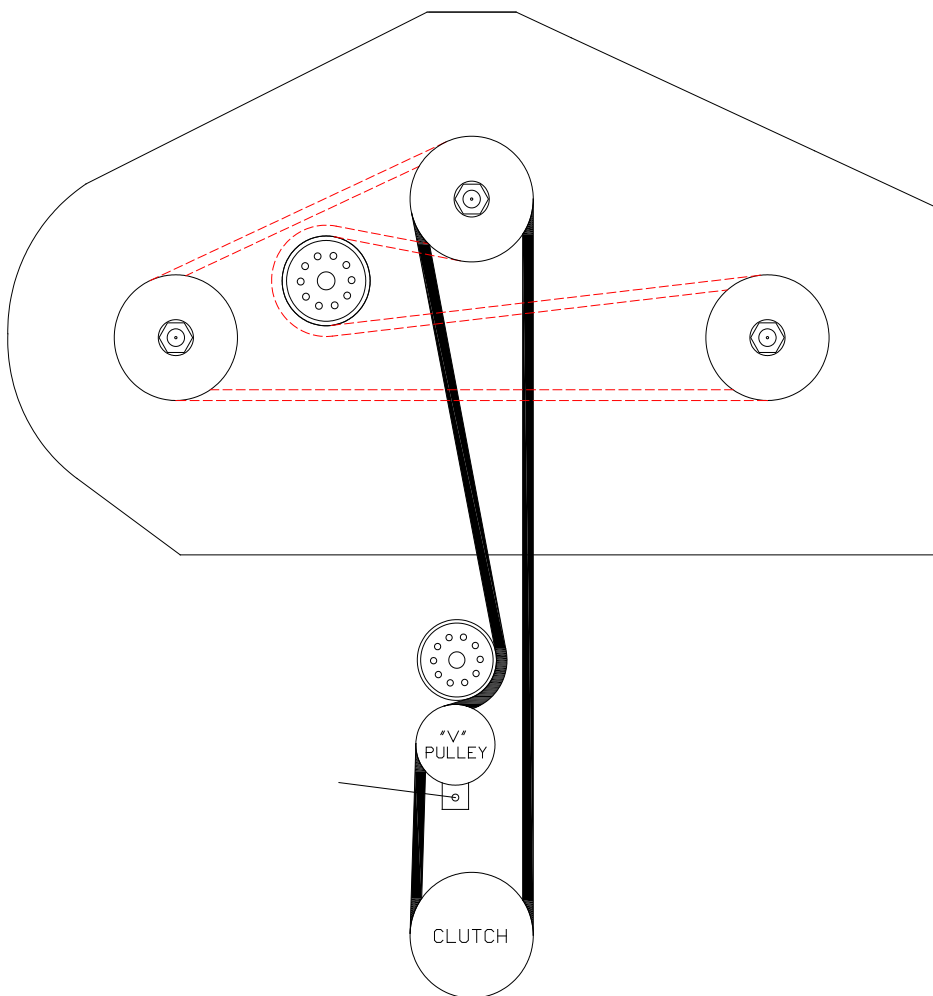


## DECK BELT ROUTING



DECK BELT		
60"	D-3796	B-124
72"	D-3797	B-142

## ENGINE TO DECK BELT ROUTING

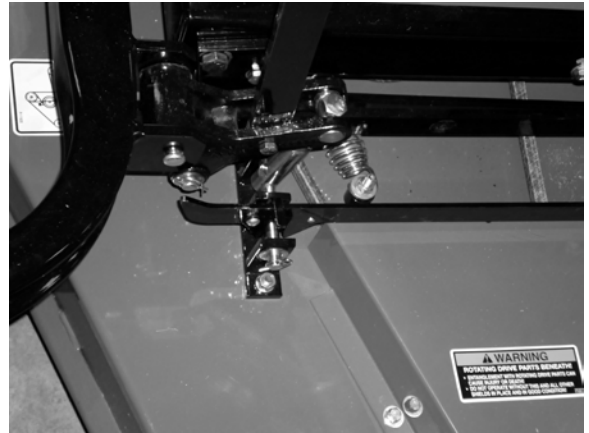


ENGINE TO DECK BELT		
60"	D-3901	B-112
72"	D-3902	B-116

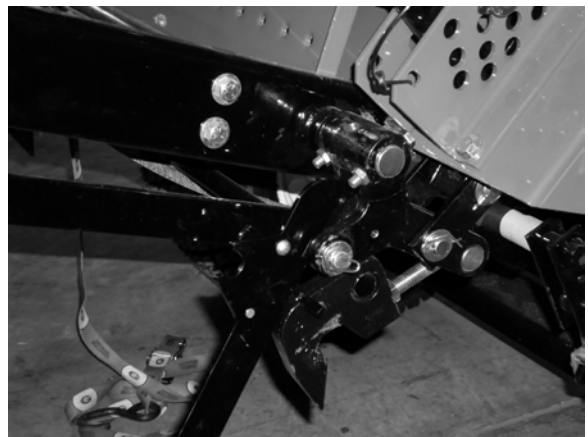
## RAISING AND LOWERING THE DECK FOR SERVICING

1. RAISING THE DECK TO THE SERVICING POSITION (60" Decks):
  - A. Remove cut height adjustment pin and completely lower the cut height adjustment lever. Re-insert the cut height adjustment pin into the 3" cut height position (this will lock the cut height adjustment lever into the lowest position).
  - B. Release engine to deck belt tightener located behind the left rear tire. (See page 20) Flip up the foot deck to allow access to the engine to deck belt. Roll the belt off the center spindle. Hook the belt onto the bolt protruding from lower lip of the foot deck support angle.
  - C. On the right side of the mower, lift and hold up on the hook keeper. (see page 23) 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 23.)
  - 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 vertical (lifting can be made easier if someone stands on the rear bumper of the tractor). **IMPORTANT NOTE: MAKE SURE THAT THE DECK IS LIFTED FAR ENOUGH TO GO COMPLETELY "OVER-CENTER".** This will prevent the deck from falling down when servicing the underside of the mower deck.
  - F. Release the deck prop from its stowed position and place the free end against the deck lift casting as shown on page 18. Make sure the point of the prop falls within the center clearance area.
2. RETURNING THE DECK TO THE OPERATING POSITION:
  - A. Place the prop back in the stow position. (See page 18)
  - 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. Re-install the Engine to Deck Drive belt onto ALL of the pulleys, including the clutch. **Ensure that the Engine to Deck Drive Belt is properly routed onto all of the pulleys and idlers in the drive train.**
  - E. Carefully rotate the Deck Belt Tension Latch to re-tension the Engine to Deck Drive Belt.

## SECURING THE DECK PROP



Deck Prop shown in the "Stowed" position

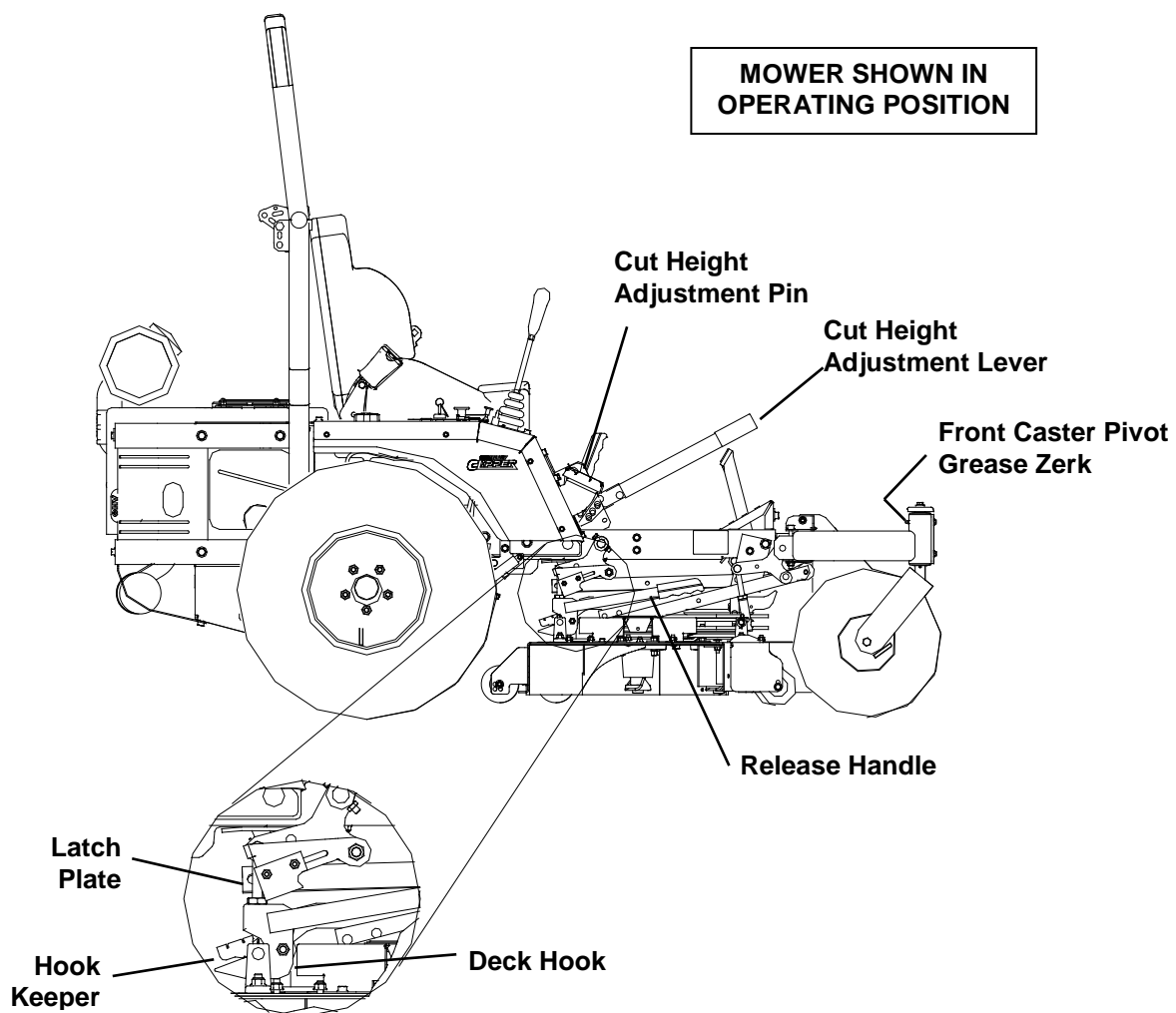


Deck Prop securely in place against Deck lift casting.

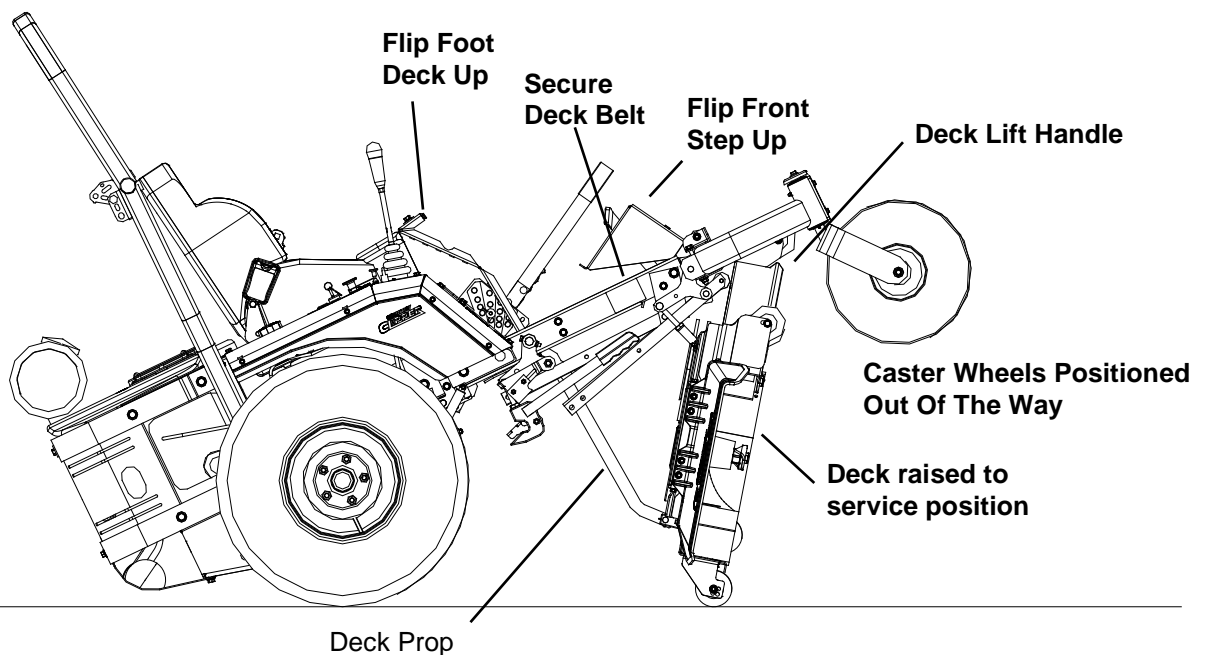


Deck Prop being placed against the Deck lift casting.

**MOWER SHOWN IN  
OPERATING POSITION**

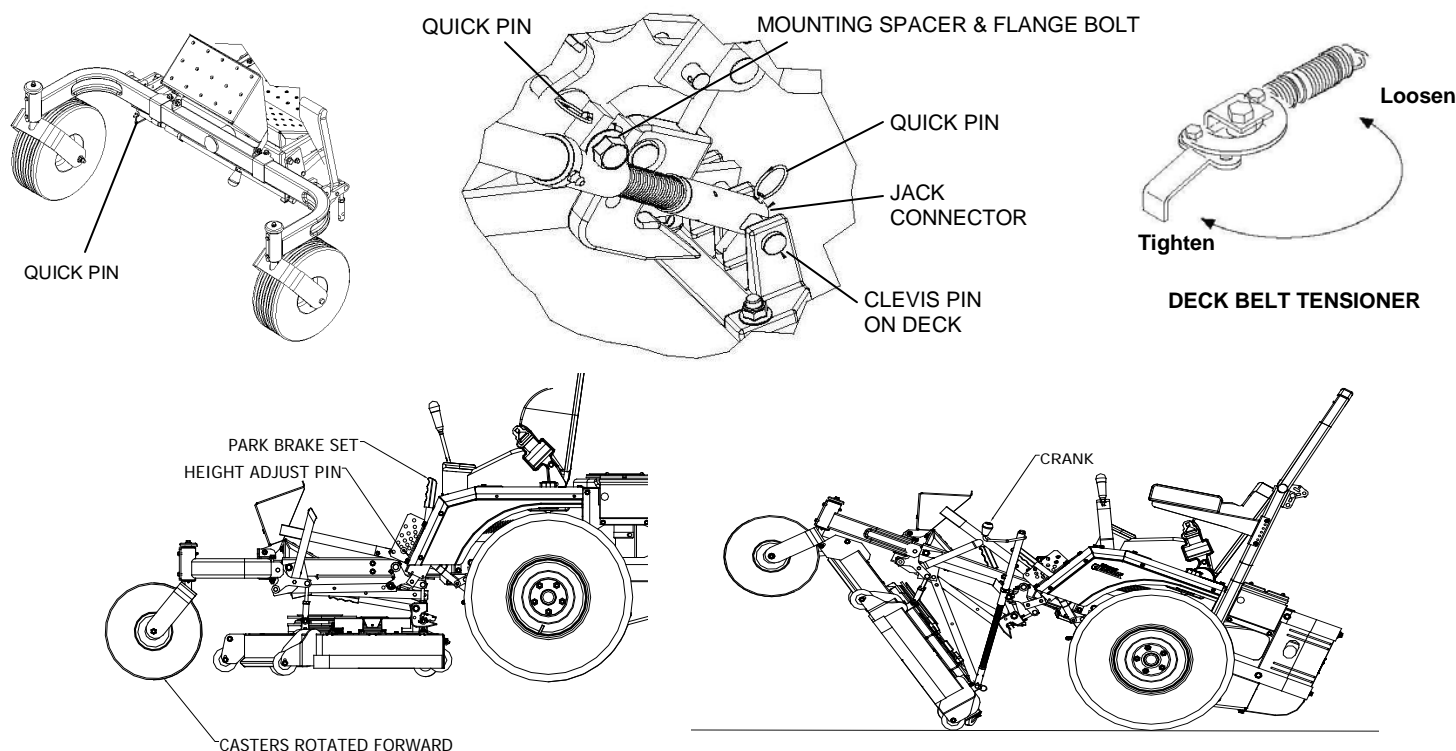


**MOWER SHOWN IN  
SERVICING POSITION**



## OPERATING INSTRUCTIONS FOR MANUAL DECK JACK

1. SHUT OFF ENGINE AND SET PARK BRAKE.
2. ROTATE FRONT CASTER WHEELS AWAY FROM DECK (SEE ILLUSTRATION)
3. REMOVE DECK HEIGHT ADJUSTMENT PIN.
4. LOWER DECK TO LOWEST POSITION & REINSERT PIN ABOVE DECK LIFT HANDLE LOCKING LEVER IN LOWEST POSITION.
5. ON THE RIGHT HAND SIDE OF MOWER LIFT & HOLD UP THE HOOK KEEPER. LIFT UP ON THE RELEASE HANDLE TO RELEASE THE REAR OF THE DECK FROM THE MOWER.
6. RELEASE BELT TENSION BY FLIPPING LEVER LOCATED BEHIND THE LEFT REAR TIRE.
7. ROTATE FRONT STEP UP & OUT OF THE WAY
8. REMOVE QUICK PIN FROM THE JACK ASSEMBLY AND REMOVE JACK FROM BRACKETS ON FRONT AXLE. (SEE ILLUSTRATION)
9. ATTACH JACK CONNECTOR TO CLEVIS PIN ON DECK WITH QUICK PIN REMOVED IN STEP 8 (SEE ILLUSTRATION)
10. REMOVE QUICK PIN IN JACK LIFT COLLAR WELDMENT.
11. ADJUST POSITION OF LIFT COLLAR WELDMENT TO ALLOW TABS TO MOUNT ON MOUNTING SPACER & FLANGE BOLT. THREAD COLLAR UP OR DOWN SHAFT AS NEEDED & ATTACH WITH QUICK PIN. THE GREASE FITTING MUST BE TOWARDS OUTSIDE OF MOWER (SEE ILLUSTRATION)
12. ROTATE HANDLE UP INTO CRANKING POSITION. TURN HANDLE CLOCKWISE TO BRING THE LEFT REAR TIRE OFF THE GROUND APPROX. 8". MOVE TO THAT WHEEL & PUSH IT BACK TO THE GROUND BRINGING THE FRONT OF THE DECK OFF THE GROUND. CONTINUE TURNING UNTIL DECK IS UP INTO POSITION TO WORK ON. (SEE ILLUSTRATION ) DO NOT OVER TURN CRANK! DAMAGE MAY OCCUR.
13. TO LOWER DECK, REVERSE THE PROCESS.
14. LIFT UP ON THE LATCH PLATE RELEASING THE HANDLE ROD. PUSH DOWN ON THE RELEASE HANDLE UNTIL THE DECK HOOKS LOCK INTO PLACE.
15. APPLY ONE OR TWO PUMPS OF GREASE TO ZERK OCCASIONALLY TO KEEP CRANK OPERATING FREELY.
16. NOTE: IT IS POSSIBLE TO OPERATE JACK WITH IMPACT WRENCH/GUN. TO DO SO, REMOVE CRANK HANDLE & KNOB BY REMOVING RUE RING. A  $\frac{3}{4}$ " WRENCH WILL FIT



### CAUTION



**CAUTION: KEEP FEET CLEAR FROM  
EDGE OF DECK WHEN LOWERING  
DECK FROM STAND-UP TO  
OPERATION POSITION.**



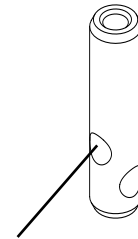
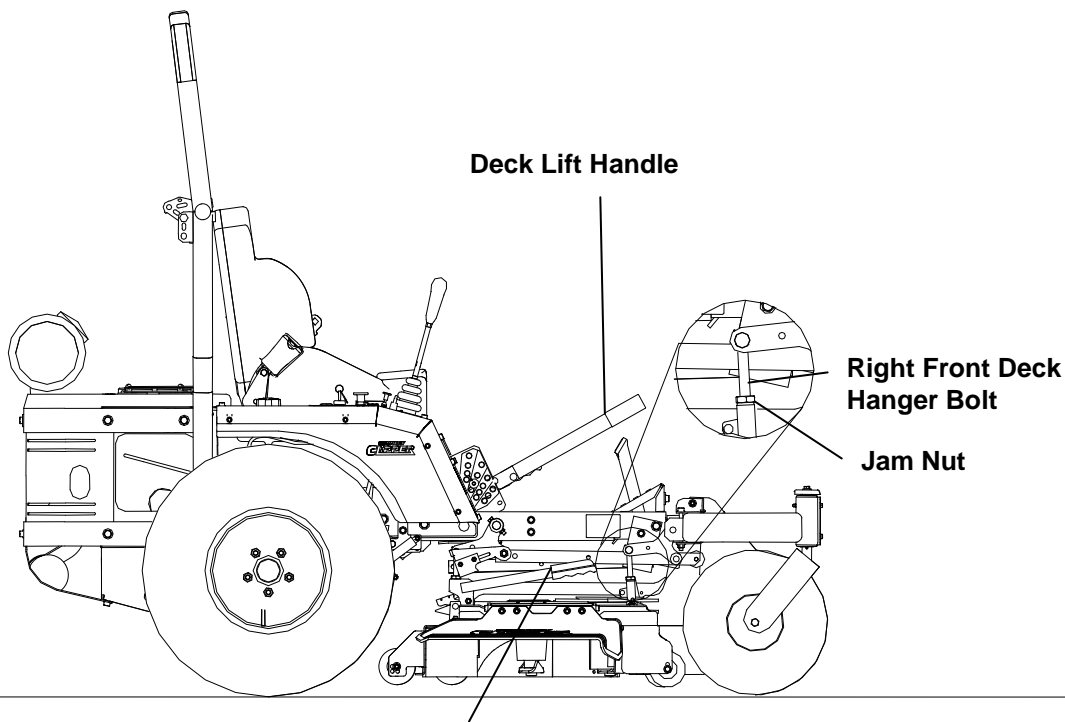
### CAUTION



**DECK FLIP TOOL MUST BE USED TO POSITION 72" MOWER  
DECKS TO THE STAND-UP SERVICE POSITION. ATTEMPTING  
TO MANUALLY RAISE 72" MOWER DECKS TO THE STAND-UP  
POSITION CAN RESULT IN SEVERE PERSONAL INJURY.**

## LEVELING THE DECK

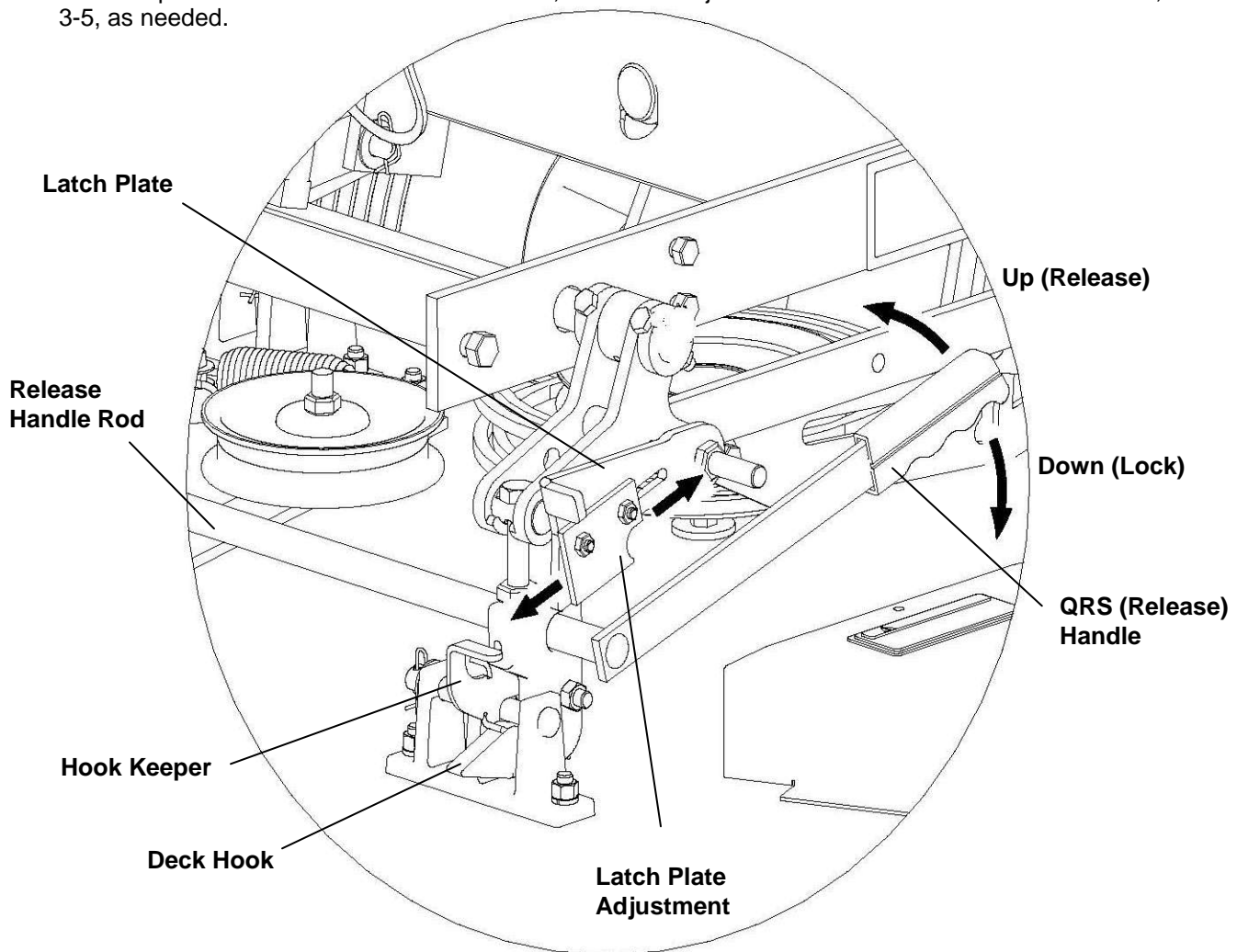
1. Move the tractor to a hard, level surface (i.e. concrete or blacktop).
2. Set the tire pressure to 12-15 psi/83-103 kPa (front) & 18 psi/124 kPa (rear), make sure front tires are equal & rear tires are equal.
3. Remove key from ignition switch.
4. Rotate the blade you are going to measure to run parallel with tractor frame, front to back.
5. Set the Deck Cut Height Lever to the 4' cutting position.
6. Loosen the Deck Hanger Bolt Jam Nuts.
7. Adjust the Front Left Hand Deck Hanger Bolt until the front edge of the Left Hand Blade is Approximately 4" from ground.
8. Adjust the Front Right Hand Deck Hanger Bolt until the front edge of the Right Hand Blade is within 1/8" of the Front Left hand Blade measurement. NOTE: "On 72" Decks" If the Front Right Hand blade measurement can not be obtained it will be necessary to shorten or lengthen the Adjustable Drag Bar Link on the right hand side of the deck suspension. Lengthening the Adjustable Drag link lowers the front end of the Right Hand blade and shortening the Adjustable Drag Bar Link raises the front of the Right Hand blade.
9. Adjust both Rear Deck Hanger Bolts until the back of the blades are 1/8" to 1/4" higher from the ground than the front of the blades. Inspect that the deck is solidly hanging on all four Deck hanger Bolts. Adjust rear Deck Hanger Bolts accordingly.
10. Inspect all of the above measurements. Tighten all four Deck Hanger Bolts Jam Nuts.



Note: If you run out of threads during the adjustment process, remount the deck mounting in this upper hole. IF ATTEMPTING TO ADJUST DECK HIGHER THAN DESIGN SPECIFICATIONS, DECK DRIVE FAILURE CAN OCCUR.

## 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.



## TROUBLESHOOTING CHECKLIST

### 1. ENGINE WON'T TURN OVER:

- |                            |   |
|----------------------------|---|
| Mower blades engaged ----- | disengage blades  |
| Drive not in neutral ----- | move <b>Joystick Control Lever</b> to neutral <b>"DOWN"</b> position  |
|                            | move <b>Twinstick Control Levers</b> to neutral <b>"OUT"</b> 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                            |

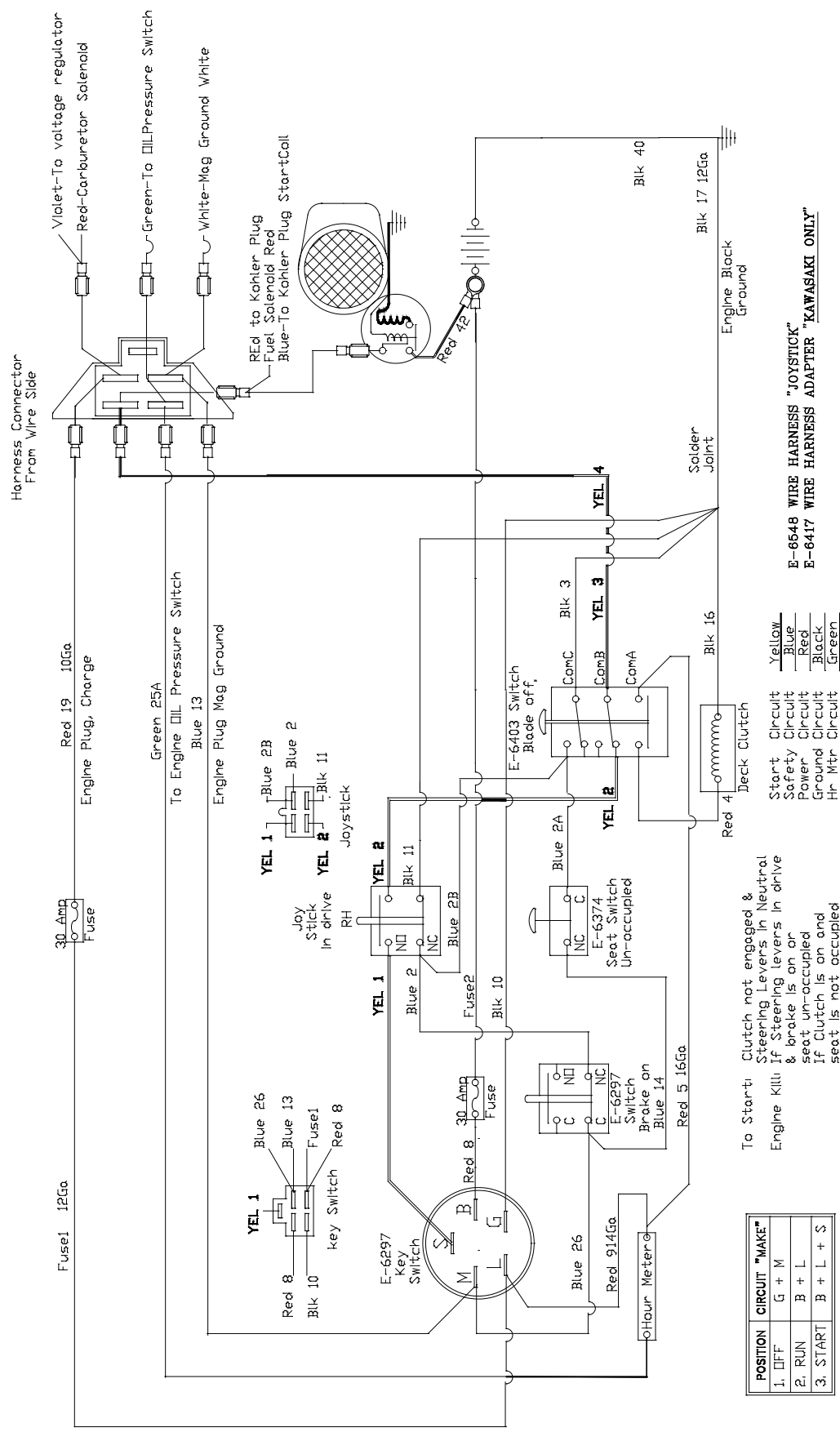


## TROUBLESHOOTING CHECKLIST CON'T

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 Hose Pinched or Restricted\*----- check vent hose
  - Faulty fuel pump ----- consult dealer
  - Maladjusted carburetor ----- readjust carburetor\*
  - Engine dies when: ----- **Joystick Control Lever is pulled "UP"** --- parking brake set, release brake  
**Twinstick Control levers are pulled "IN"**
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
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 plug\*
9. ENGINE BACKFIRES:
  - Carburetor maladjustment ----- readjust carburetor\*
10. ENGINE RUNS BUT MOWER WON'T MOVE FORWARD:
  - Drive belt broken or slipping ----- replace drive belt
  - Transmission shift arm disconnected ----- reconnect
  - Transmission oil low ----- add oil
  - Transmission in free wheel position ----- tighten bypass valves (see pg. 7)
  - Hydrostat oil filter plugged ----- replace filter
  - Bad transmission ----- consult dealer
11. MOWER LOSES POWER OR TRANSMISSIONS OVER HEATS:
  - Hydrostat transmission oil too low or too high ----- add oil OR drain oil as needed
  - Transmission damage ----- consult dealer
  - Transmission blowing oil out cap ----- overfilled or water contaminated
12. 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

\*See engine manual for engine adjustments

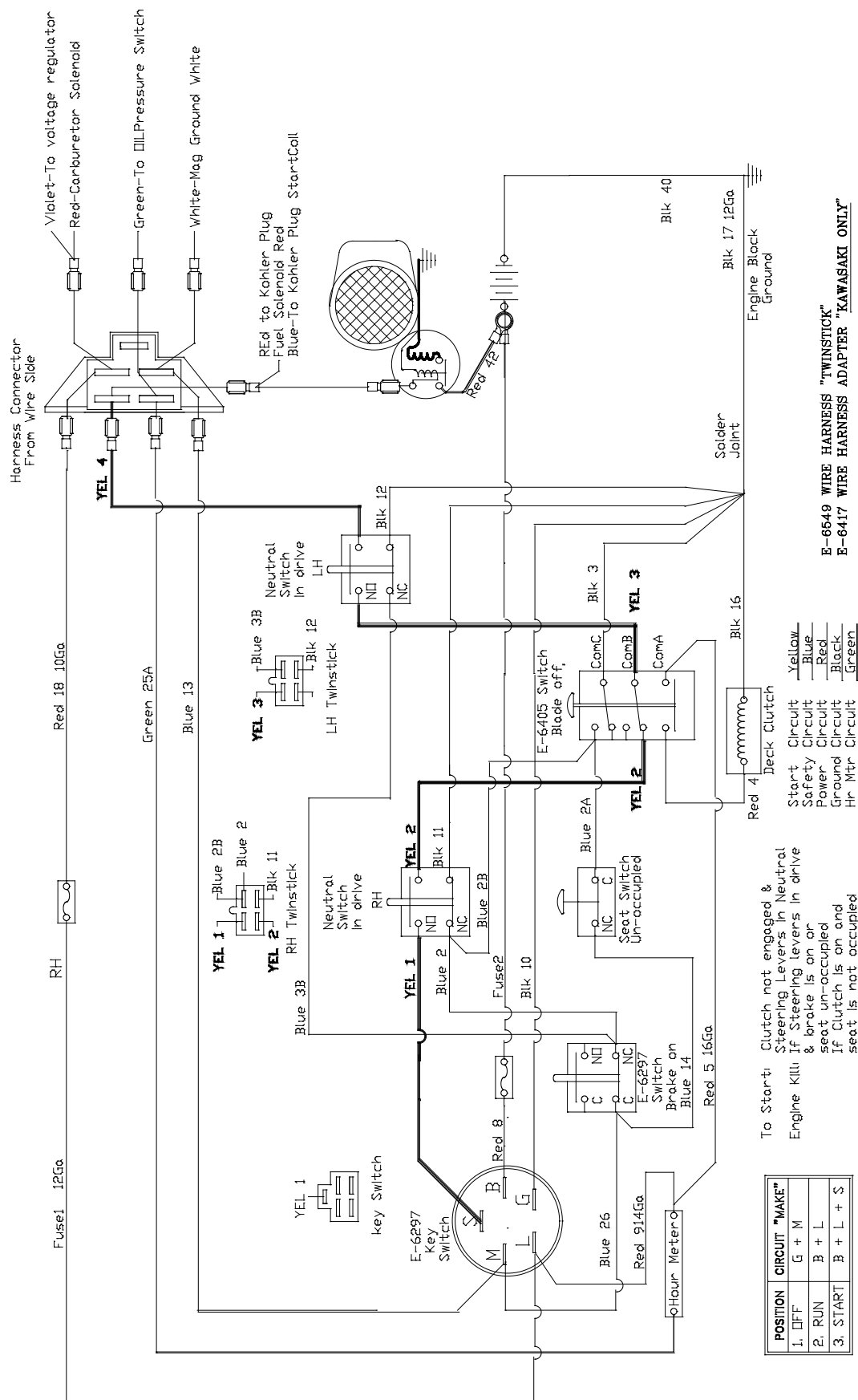
# WIRING SCHEMATIC JOYSTICK



POSITION	CIRCUIT "MAKE"
1. OFF	G + M
2. RUN	B + L
3. START	B + L + S

E-6548 WIRE HARNESS "JOYSTICK"  
E-6417 WIRE HARNESS ADAPTER "KAWASAKI ONLY"

# WIRING SCHEMATIC TWINSTICK



Repair Parts

**COUNTRY**  
**CLIPPER®**  
**ZERO TURN MOWER**

**BOSS<sup>XL</sup>**

1525

**SERIAL RANGE: 19244001 - 20257999**

# COUNTRY CLIPPER **BOSS<sup>XL</sup>** 1525

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

### **ZERO TURN RADIUS MOWER**

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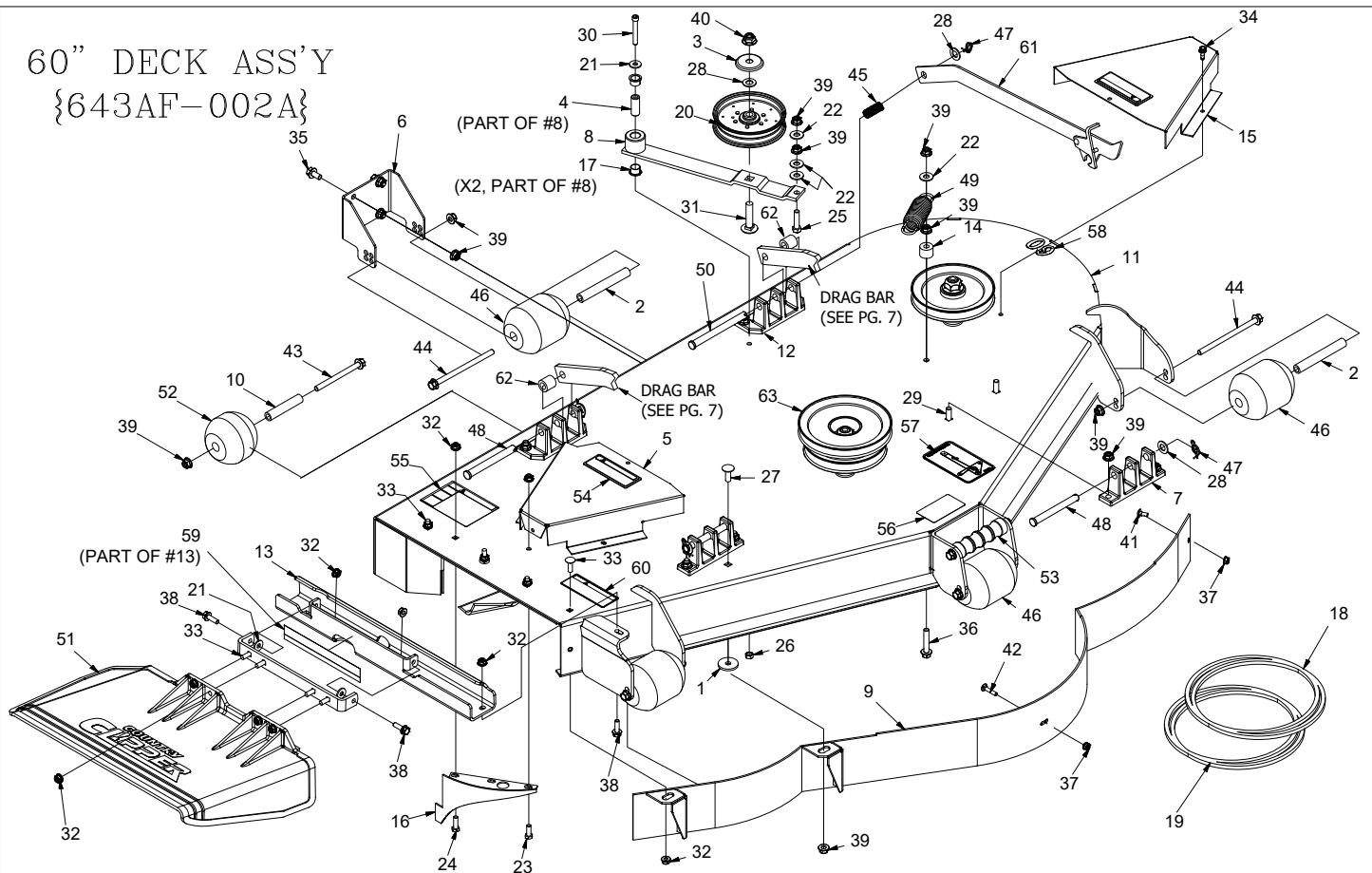
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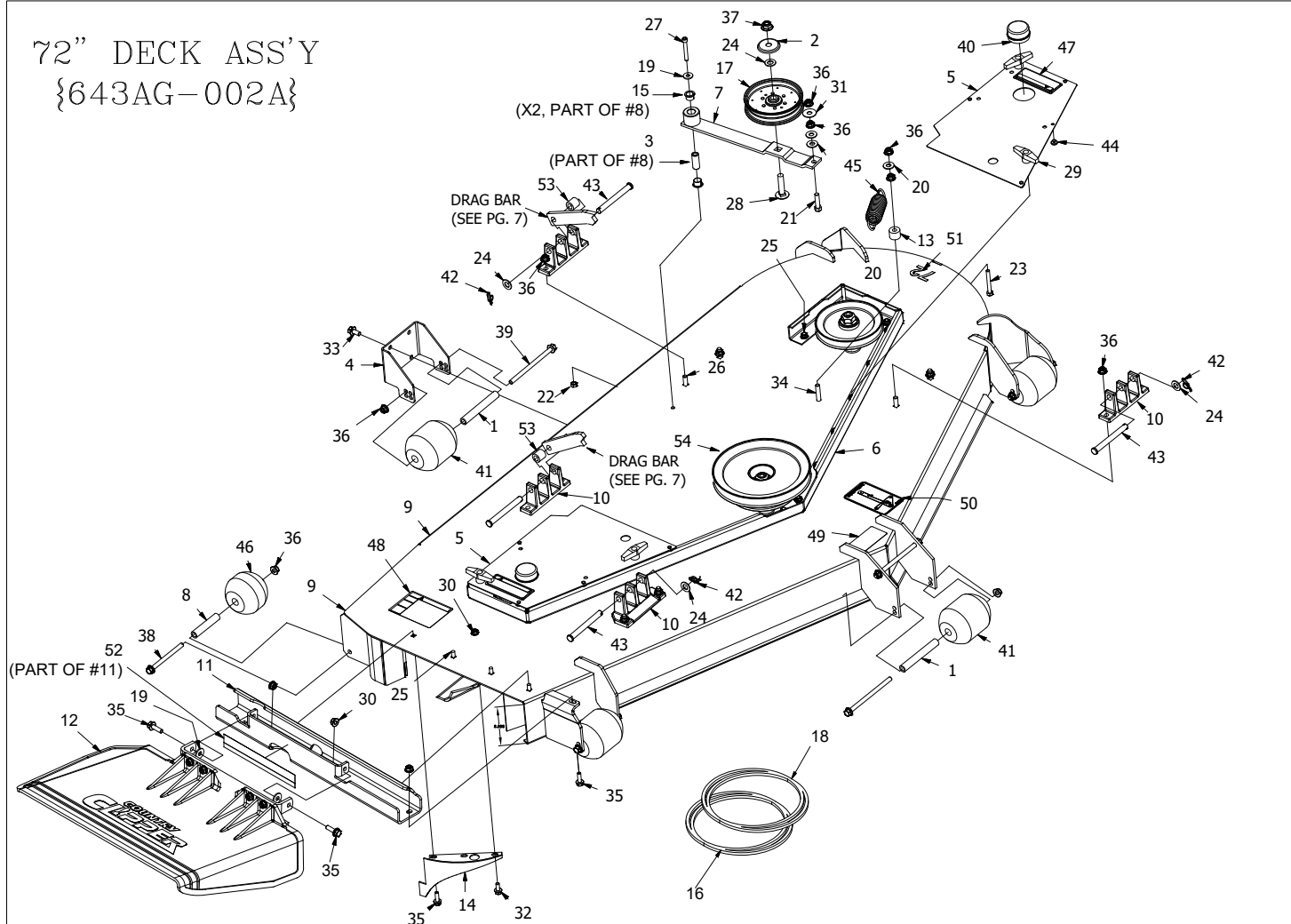
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# 60" DECK ASS'Y {643AF-002A}



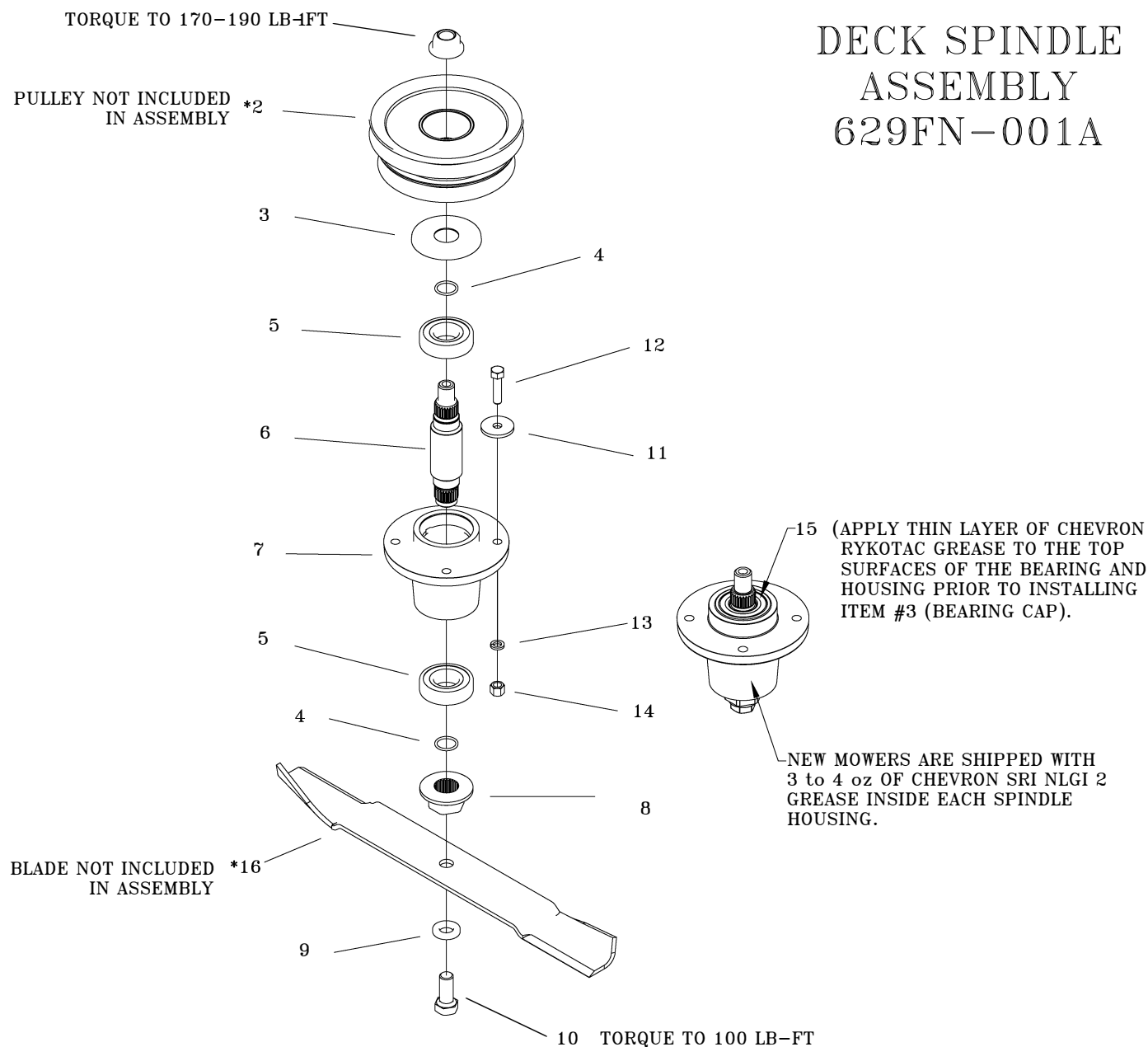
REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	609-034P	13	Spindle Spacer Washer	33	F-2066	8	5/16-18 x 1" CARRIAGE BOLT,
2	609-183P	4	BUSHING	34	F-2119	2	FHCS, 1/4-20 x 0.75, YZ, LOCK PATCH, GR5
3	620-201P	1	WASHER, BEARING CAP	35	F-2124	4	FHCS, 3/8-16 x 0.75, YZ, GR5
4	621-103P	1	MOUNTING PIN	36	F-2126	1	FHCS, 3/8-16 x 2.00, YZ, GR5
5	668-077A	1	PULLEY COVER w/DECALS	37	F-2132	2	NUT, 1/4-20 NYLOC, FLANGED
6	637-006P	1	SCALPER BRKT.	38	F-2148	3	FHCS, 5/16-18 x 1.00, YZ, GR5
7	643-016W	2	Hanger Weldment	39	F-2151	24	Nut, 3/8-16 Nyloc, Flanged
8	643-079A	1	SINGLE IDLER ARM LONG ASS'Y	40	F-2152	1	Nut, 1/2-13 Nyloc, Flanged
9	643-104W	1	60" DUST BAFFLE WELDMENT	41	F-2155	1	Carriage Bolt, 1/4 X 5/8"
10	643-126P	2	BUSHING	42	F-2157	1	CARRIAGE BOLT, 1/4 X 1-1/4"
11	643-143A	1	60" DECK w/DECALS	43	F-2160	2	FHCS, 3/8-16 x 4 1/2", YZ, GR5
12	651-009W	2	CASTING,HANGER,WIDE BASE	44	F-2161	5	FHCS, 3/8-16 x 6", YZ, GR5
13	643-135A	1	OUTLET STIFFENER, w/DECAL	45	F-2575	1	SPRING, COMP .656 X .052 X 1.97
14	668-045P	1	SPACER, SPRING MTG	46	H-1948	4	Roller, 3-3/4 DIA. x 4-13/16L
15	668-061A	1	PULLEY COVER w/DECALS	47	H-2239	4	1/2" Rue Ring
16	686-006W	1	SPLITTER BAFFLE	48	H-2240	3	1/2" x 4-1/2" Clevis Pin
17	D-3730	2	FLANGED BUSHING	49	H-2619	1	SPRING, 5 X 1-1/2, TAPERED ENDS
18	D-3796	1	V-BELT B-124 (DECK)	50	H-2718	1	1/2" x 5-1/2" Clevis Pin
19	D-3901	1	V-BELT, B-112", (CLUTCH TO DECK)	51	H-2723	1	Chute, Discharge, Small
20	D-3904	1	PULLEY, FLAT IDLER, 5" (NTN)	--	643-111A	1	CHUTE ASSEMBLY
21	F-1009-02	3	5/16" Flat Washer	52	H-2772	2	Roller, 3-3/4 DIA. x 3 1/4"L
22	F-1009-03	4	3/8" Flat Washer	53	H-2787	1	GRIP, DECK HANDLE
23	F-1015-14	1	5/16-18 x 7/8" Capscrew	54	P-10935	2	Decal, WARNING
24	F-1015-15	1	5/16-18 x 1" Capscrew	55	P-10941	1	DECAL "DANGER ROTATING BLADES"
25	F-1015-27	1	3/8-16 x 1-1/2" Capscrew	56	P-11413	1	DECAL, HOIST POINT
26	F-1125	1	5/16-18 Stover Nut	57	P-11935	1	Decal, Belt Routing
27	F-1274	1	3/8-16 X 1" CARRIAGE BOLT	58	P-11952	1	DECAL, DECK SIZE, 60
28	F-1521	5	1/2" WASHER, CUSTOM	59	P-12496	1	DECAL, MISSING CHUTE
29	F-1672	8	3/8-16 x 1-1/4" Carraige Bolt	60	P-12706	1	WARNING DECAL, DISCHARGE CHUTE
30	F-1800	1	5/16-18 SHSC 2-1/4"	61	625-114A	1	DECK PROP ASSEMBLY
31	F-1822	1	1/2-13 X 2-1/4" CARRIAGE BOLT	62	707-046P	2	SPACER
32	F-2063	13	Nut, 5/16-18 Nyloc, Flanged	63	-----	3	SPINDLE ASS'Y (SEE pg.3)

# 72" DECK ASS'Y {643AG-002A}



REF NO.	PART NO.	QTY.	DESCRIPTION	REF NO.	PART NO.	QTY.	DESCRIPTION
1	609-183P	4	BUSHING	28	F-1822	1	1/2-13 X 2-1/4" CARRIAGE BOLT
2	620-201P	1	WASHER, BEARING CAP	29	643-072A	4	T HANDLE ASS'Y W/ NUT
3	621-103P	1	MOUNTING PIN	30	F-2063	29	Nut, 5/16-18 Nyloc, Flanged
4	637-006P	1	SCALPER BRKT.	31	F-2083	1	WASHER, 3/8 FENDER
5	643-095A	1	PULLEY COVER w/DECALS (RH)	32	F-2120	1	FHCS, 5/16-18 x 0.75, YZ, GR5
--	643-132A	1	PULLEY COVER w/DECALS (LH)	33	F-2124	4	FHCS, 3/8-16 x 0.75, YZ, GR5
6	643-068P	1	TOP STIFFNER 72" DECK	34	F-2126	1	FHCS, 3/8-16 x 2.00, YZ, GR5
7	643-079A	1	SINGLE IDLER ARM LONG ASS'Y	35	F-2148	4	FHCS, 5/16-18 x 1.00, YZ, GR5
8	643-126P	2	BUSHING	36	F-2151	25	Nut, 3/8-16 Nyloc, Flanged
9	643-145A	1	72" DECK w/DECALS	37	F-2152	1	Nut, 1/2-13 Nyloc, Flanged
10	643-016W	4	HANGER	38	F-2160	2	FHCS, 3/8-16 x 4 1/2", YZ, GR5
11	643-135A	1	OUTLET STIFFENER w/DECAL	39	F-2161	5	FHCS, 3/8-16 x 6", YZ, GR5
12	643-111A	1	CHUTE ASSEMBLY	40	H-1798	2	2 GREASE CAP
13	668-045P	1	SPACER, SPRING MTG	41	H-1948	4	Roller, 3-3/4 DIA. x 4-13/16L
14	686-006W	1	SPLITTER BAFFLE	42	H-2239	4	1/2" Rue Ring
15	D-3730	2	FLANGED BUSHING	43	H-2240	4	1/2" x 4-1/2" Clevis Pin
16	D-3797	1	"V"-BELT B-142 (DECK)	44	H-2461	8	Rubber bumper
17	D-3904	1	PULLEY, FLAT IDLER, 5" (NTN)	45	H-2619	1	SPRING, 5 X 1-1/2, TAPERED ENDS
18	D-3902	1	"V"-BELT B-116 (CLUTCH TO DECK)	46	H-2772	2	Roller, 3-3/4 DIA. x 3 1/4"L
19	F-1009-02	3	5/16" Flat Washer	47	P-10935	2	Decal, WARNING
20	F-1009-03	3	3/8" Flat Washer	48	P-10941	1	DECAL "DANGER ROTATING BLADES"
21	F-1015-27	1	3/8-16 x 1-1/2" Capscrew	49	P-11413	1	DECAL, HOIST POINT
22	F-1125	1	5/16-18 Stover Nut	50	P-11935	1	Decal, Belt Routing
23	F-1518	4	5/16-18 x 2-1/2" Capscrew	51	P-11953	1	DECAL, DECK SIZE, 72
24	F-1521	5	1/2" WASHER, CUSTOM	52	P-12496	1	DECAL, MISSING CHUTE
25	F-1671	21	5/16-18 x 3/4" CARRIAGE BOLT	53	707-046P	2	SPACER
26	F-1672	10	3/8-16 x 1-1/4" Carraige Bolt	54	---	3	SPINDLE ASSY (SEE pg.3)
27	F-1800	1	5/16-18 SHSC 2-1/4"				

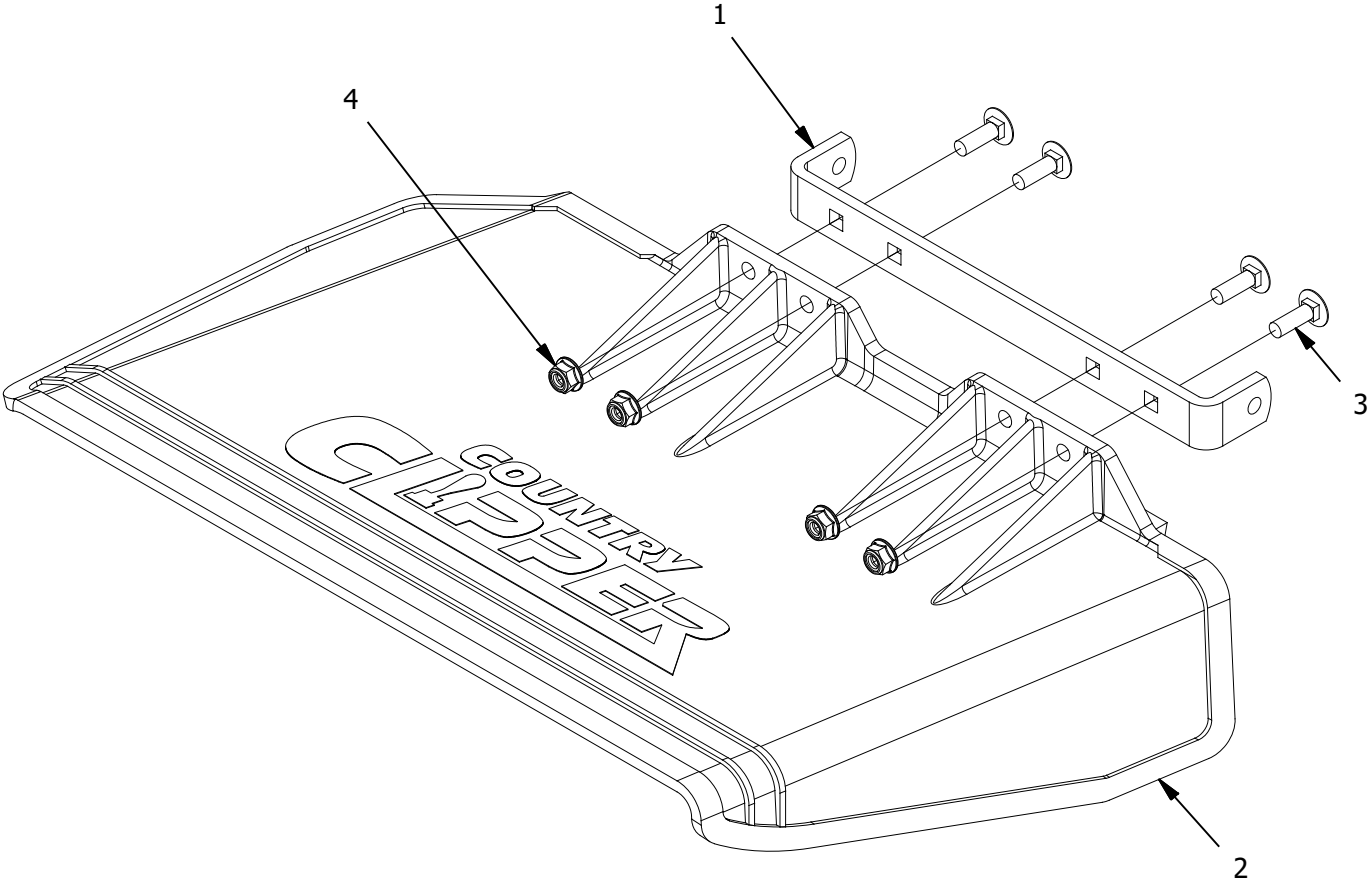
# DECK SPINDLE ASSEMBLY 629FN-001A



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	F-2078	1	3/4-6 TOP LOCK NUT	15	H-2707	1	GREASE PACKET
2	668-043P	*	60" DECK CENTER PULLEY (SHOWN)	16	H-2886	*	FUSION, HIGH LIFT, 60" DECK
*	668-044P	*	72" DECK CENTER PULLEY	-	H-2887	*	FUSION, HIGH LIFT, 72" DECK
*	668-042P	*	60" & 72" DECK OUTSIDE PULLEY	OPTIONAL BLADES			
3	609-292P	1	CAP, BEARING				
4	H-2639	2	O'RING, RUBBER				
5	D-3867	2	BEARING, #6206				
6	609-289P	1	SHAFT, SPINDLE				
7	609-285P	1	HOUSING, SPINDLE				
8	609-288P	1	BLADE DRIVER				
9	660-099P	1	BLADE WASHER	*	H-2655	*	BLADE, HIGH LIFT 60" DECK
10	F-2073	1	5/8-11 X 1.5 HHCS GR. 8	*	H-2656	*	BLADE, HIGH LIFT 72" DECK
11	609-034P	4	SPINDLE SPACER, WASHER	*	H-2661	*	BLADE, LOW LIFT 60" DECK
12	F-1572	4	3/8-24 X 1.5 CAP SCREW	*	H-2662	*	BLADE, LOW LIFT 72" DECK
13	F-1019-03	4	3/8 LOCK WASHER	*	H-2667	*	BLADE, GATOR 60" DECK
14	F-1573	4	3/8-24 LOCK NUT	*	H-2877	*	BLADE, GATOR 72" DECK

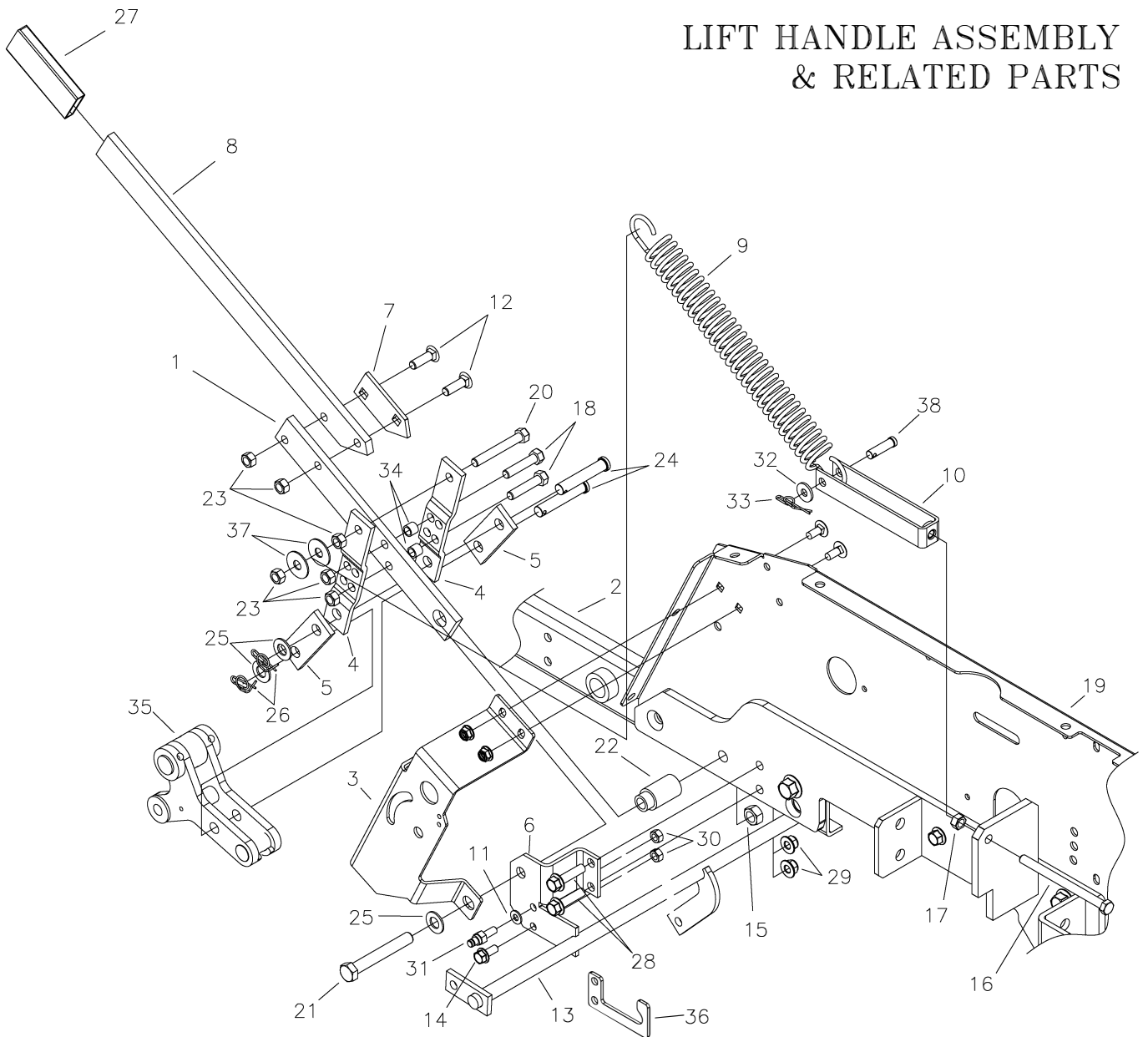


MOLDED CHUTE ASSEMBLY  
{643-111A}



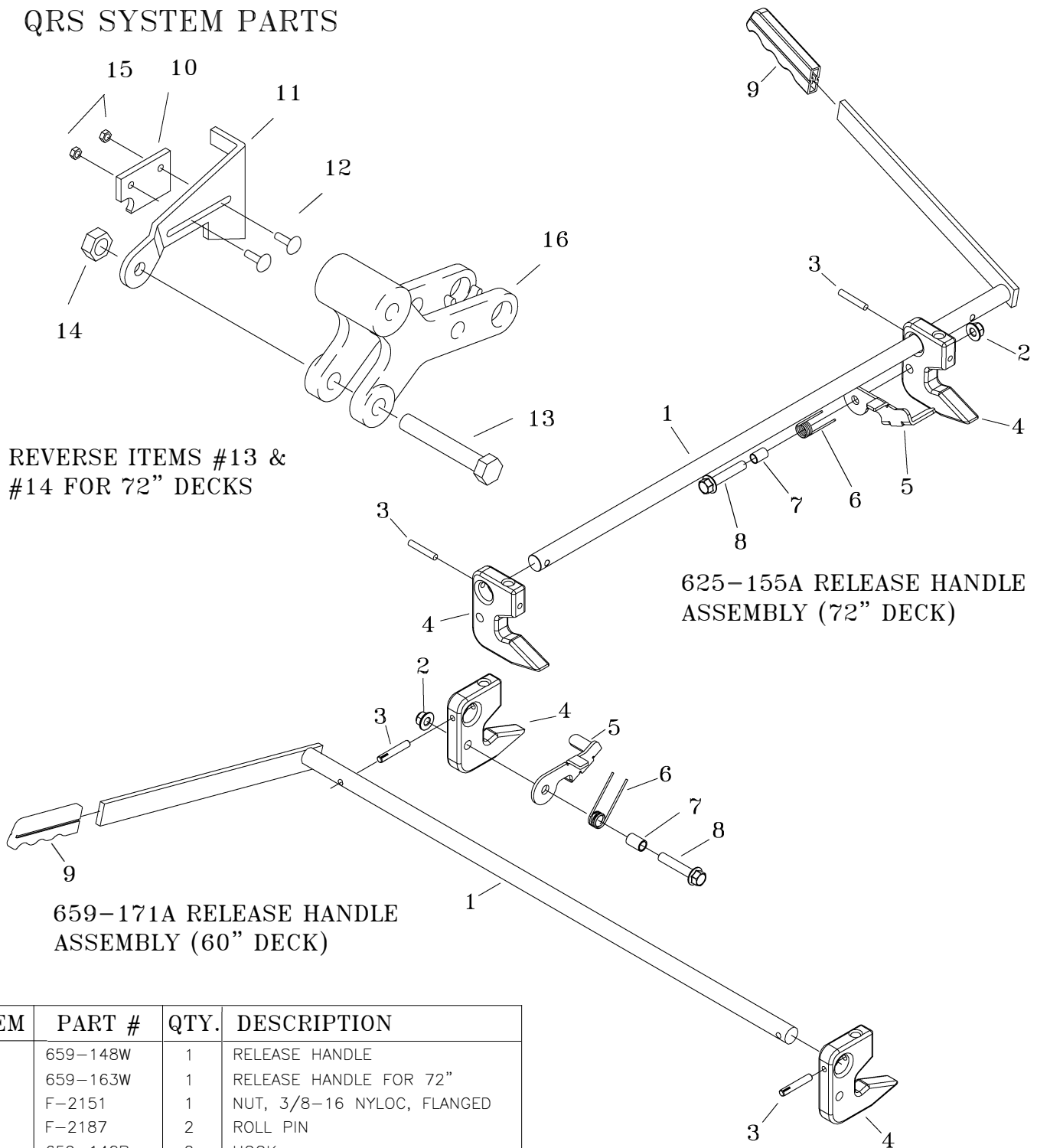
REF NO.	PART NO.	QTY.	DESCRIPTION
1	643-110P	1	CHUTE HINGE
2	H-2723	1	CHUTE, DISCHARGE, SMALL
3	F-2066	4	5/16-18 x 1" CARRIAGE BOLT,
4	F-2063	4	NUT, 5/16-18 NYLOC, FLANGED

# LIFT HANDLE ASSEMBLY & RELATED PARTS



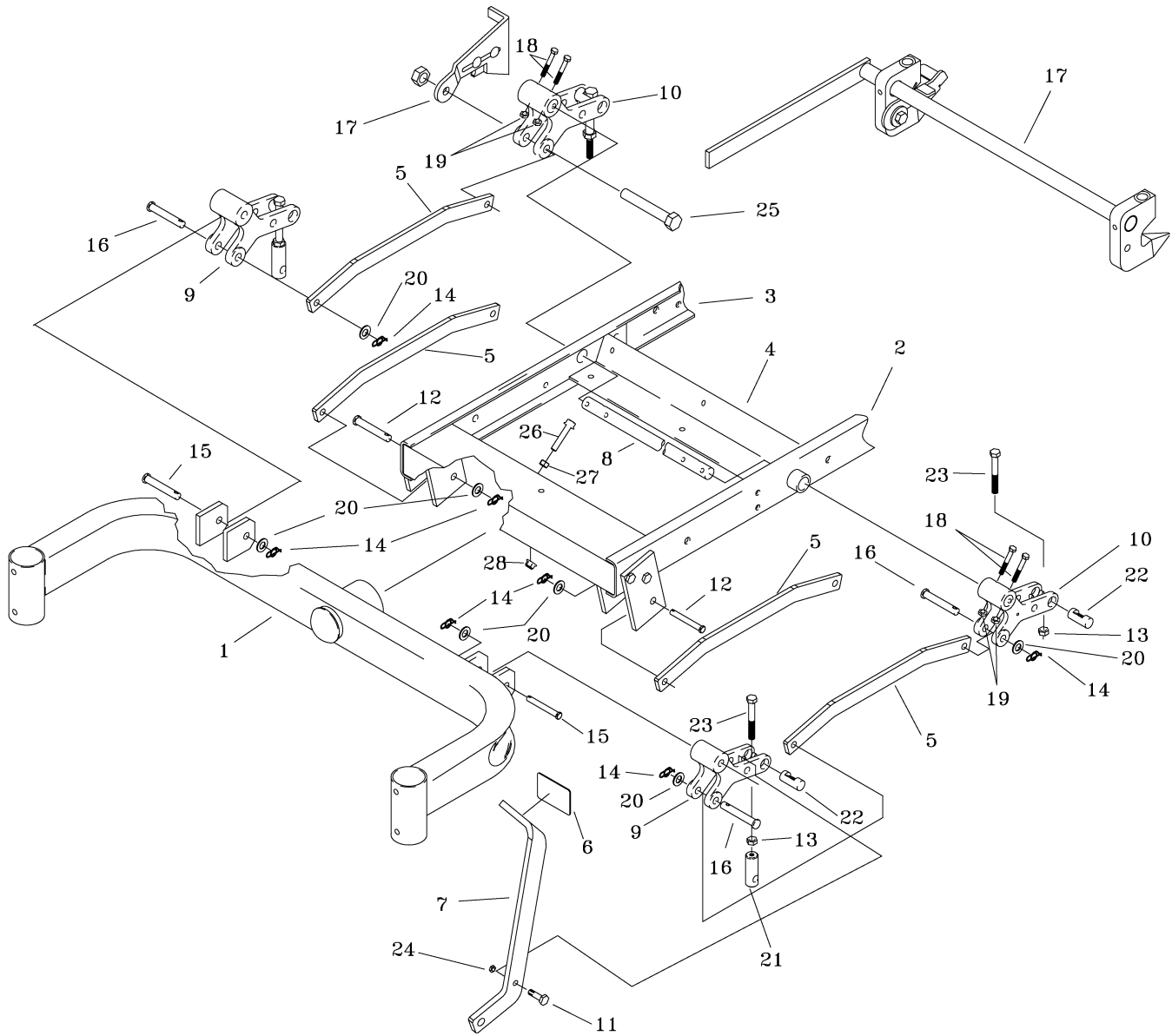
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-139P	1	BAR, LIFT HANDLE, LOWER	20	F-1542	1	CAPSCREW, 3/8-16x2 3/4" GR5
2	709-054W	1	FRAME SIDE WELDMENT, LH.	21	F-1828	1	1/2-13 X 3-1/2" GR. 5
3	709-184P	1	BRACKET, INNER BRAKE MNT	22	642-095P	1	HANDLE PIVOT PIN
4	642-060P	2	SPRING ANCHOR PLATE	23	F-1005-03	6	NUT, 3/8-16 LOCKNUT (STOVER)
5	642-061P	2	HANDLE LINK	24	F-1889	2	CLEVIS PIN, 1/2 X 2-5/8"
6	709-075P	1	BRACKET, HANDLE PIVOT	25	F-1521	3	1/2" FLAT WASHER
7	709-140P	1	PLATE, TOP PEG CATCH	26	H-2239	2	RUE RING, 1/2"
8	709-101P	1	BAR, LIFT HANDLE, UPPER	27	H-2324	1	VINYL GRIP, 3/8 X 1-1/2"
9	H-1610	1	SPRING, 1-1/2" OD. X 8"	28	F-2147	2	FHCS, 3/8-16x1-1/2", YZ, GR5
--	H-1868	1	SPRING, HEAVY 8" (72" DECK)	29	F-2151	2	NUT, 3/8-16, NYLOC, FLANGED
10	709-062W	1	YOKE, SPRING WLDT	30	F-1125	2	5/16-18, STOVER NUT
11	F-1009-01	1	FLAT WASHER, 1/4"	31	638-028P	1	DAMPER BOLT, 5/16-18x3/4"
12	F-1672	2	3/8-16 X 1-1/4" CARRIAGE BOLT	32	F-1009-02	1	FLAT WASHER, 5/16"
13	709-116W	1	BRAKE ROD WLDT	33	F-1492	1	5/16-3/8 RUE RING
14	F-2120	1	FHCS, 5/16-18x3/4", YZ, GR5	34	629-532P	2	SPACER
15	F-1005-05	2	NUT, 1/2-13 LOCKNUT	35	642-193P	1	REAR LIFT SLEEVE
16	F-1646	1	3/8-16 X 5" FULL THREAD	36	709-117P	1	BRACKET, BRAKE LINK
17	F-1011-03	1	HEX NUT, 3/8-16 UNC-2B	37	F-2083	2	WASHER, 3/8" FENDER
18	F-1015-28	2	CAPSCREW, 3/8-16x1-3/4" GR5	38	F-1444	1	CLEVIS PIN, 3/8 DIA X 1-5/16"
19	709-016P	1	SIDE PANEL, LH				

# QRS SYSTEM PARTS



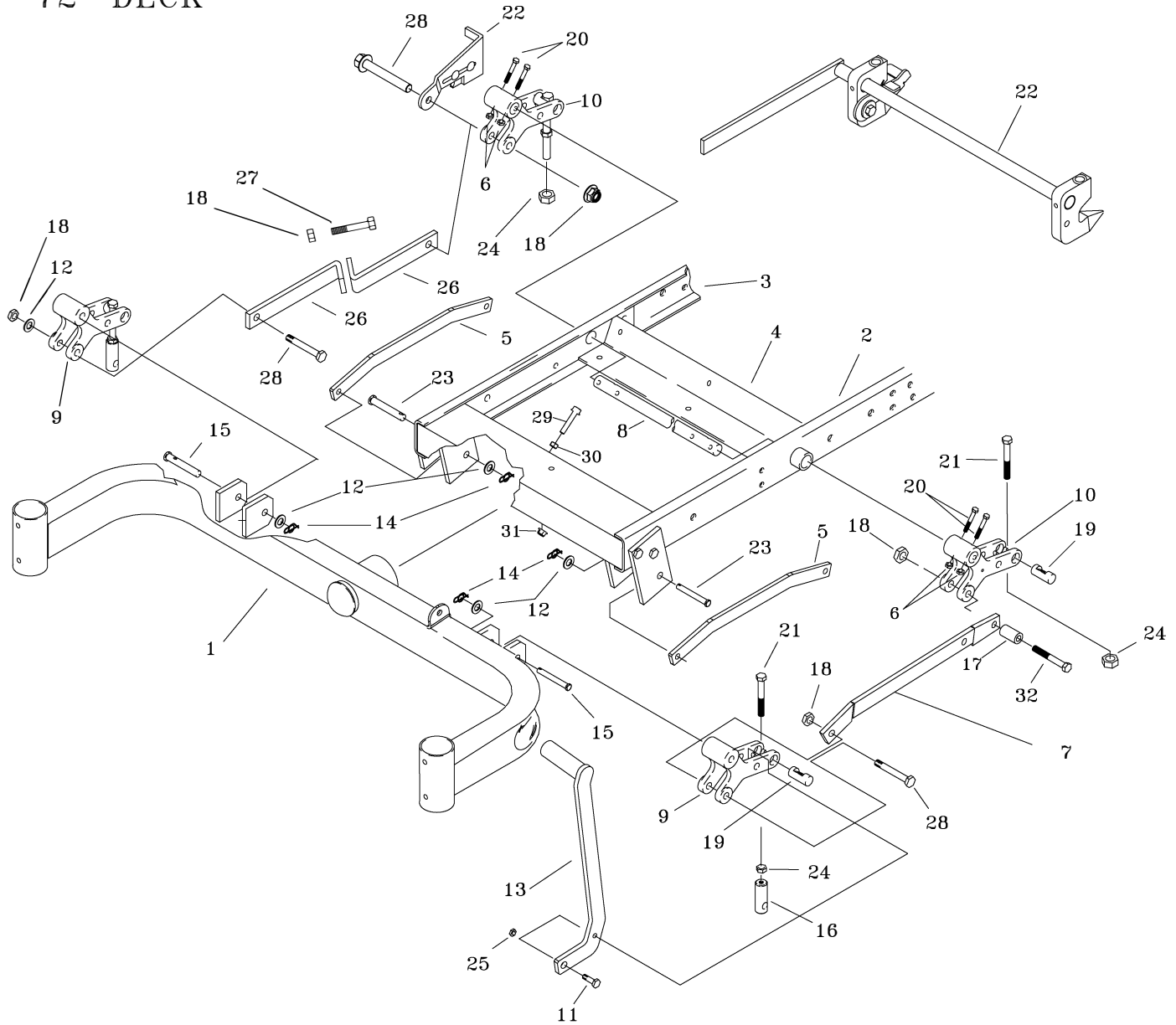
ITEM	PART #	QTY.	DESCRIPTION
1	659-148W	1	RELEASE HANDLE
-	659-163W	1	RELEASE HANDLE FOR 72"
2	F-2151	1	NUT, 3/8-16 NYLOC, FLANGED
3	F-2187	2	ROLL PIN
4	659-140P	2	HOOK
5	659-372P	1	HOOK KEEPER
6	H-3011	1	SPRING
7	707-073P	1	SPACER
8	F-2218	1	FHCS, 3/8-16x2-1/4", YZ, GR5
9	H-1926	1	1/4x1 HANDLE GRIP
10	659-170P	1	CATCH
11	663-089P	1	LATCH PLATE
12	F-1823	2	1/4 X 3/4" CARRIAGE BOLT
13	F-1828	1	CAPSCREW, 1/2-13x3-1/2", YZ GR5 (60")
-	F-2163	1	FHCS, 1/2-13x3-1/2", YZ GR5 (72")
14	F-2152	1	NUT, 1/2-13 NYLOC, FLANGED
15	F-1158	1	1/4-20 STOVER NUT
16	642-193P	1	REAR LIFT SLEEVE

# LIFT ASSEMBLY & RELATED PARTS 60" DECK



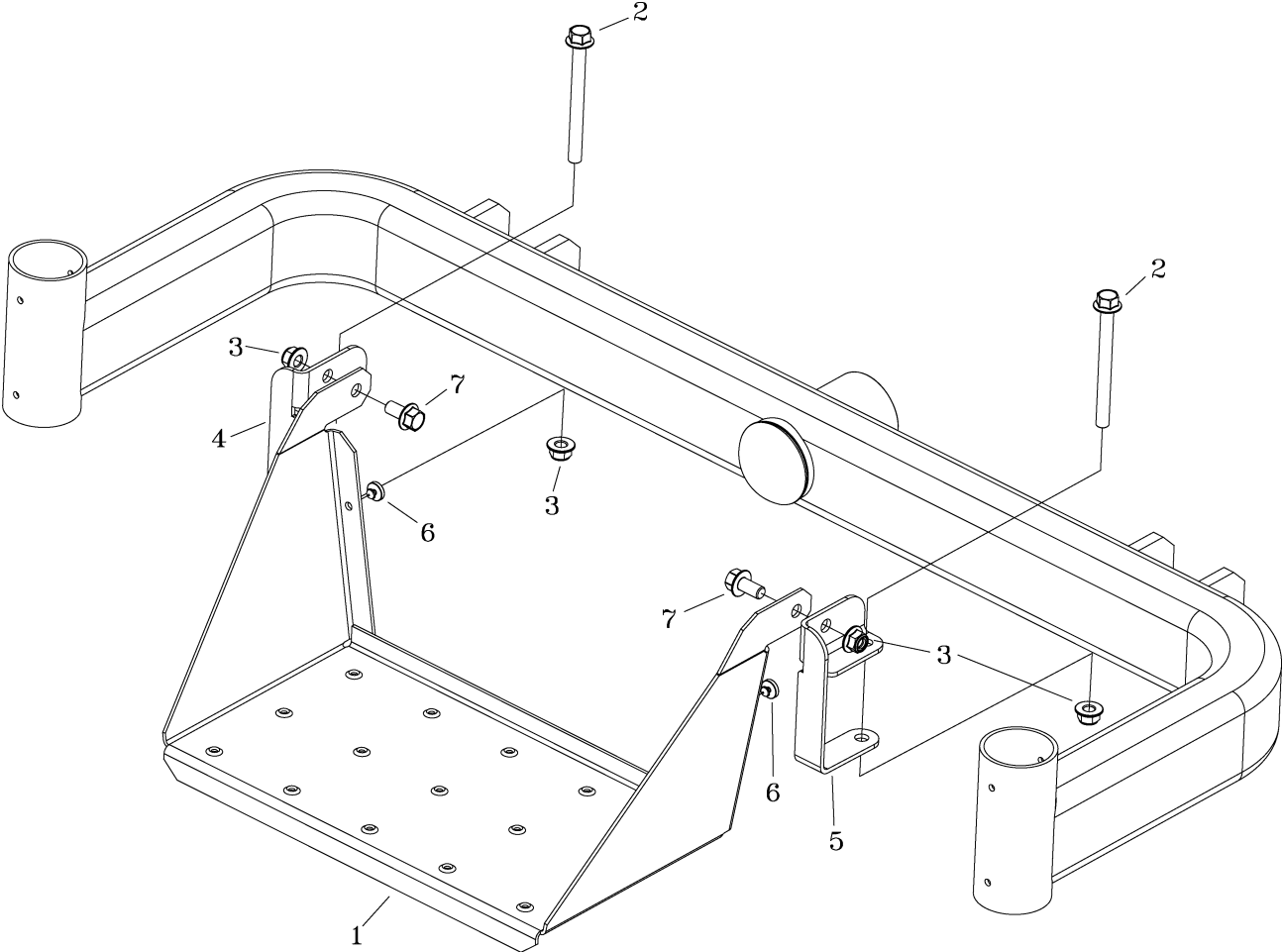
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	642-189W	1	FRONT AXLE WELDMENT	17	----	1	QRS SYSTEM, SEE PAGE #6
2	709-054W	1	FRAME SIDE WLDT, LH	18	F-2039	4	5/16-24 x 2" HHCS
3	709-055W	1	FRAME SIDE WLDT, RH	19	F-2041	4	5/16-24 LOCK NUT
4	709-157W	1	FRONT PIVOT CHANNEL	20	F-1521	8	WASHER, 1/2 NARROW
5	659-299P	4	LINK BAR	21	642-175P	2	ADJUSTABLE HANGER END
6	H-2401	1	1-1/2"x2-1/2" SAFETY TREAD	22	642-177P	4	HANGER PIN
7	659-056P	1	DECK LIFT PEDAL	23	F-1936	4	1/2-13 X 3-1/2, 2" THREAD
8	620-051P	1	LIFT BAR	24	F-1125	1	5/16 LOCKNUT
9	642-081P	2	LIFT SLEEVE, FRONT	25	F-1828	1	HHCS, 1/2-13x3-1/2", YZ, GR5
10	642-193P	2	LIFT SLEEVE, REAR	26	F-2126	1	FHCS, 3/8-16 x 2", YZ, GR5
11	F-1879	1	5/16-18 X 1 1/4", GR.5	27	F-1011-03	1	NUT, 3/8-16
12	F-1896	2	CLEVIS PIN, 1/2 X 1-3/4"	28	F-2151	1	NUT, 3/8-16 NYLOC, FLANGED
13	F-1489	4	NUT. 1/2" JAM				
14	H-2239	8	RUE RING, 1/2"				
15	F-1890	2	CLEVIS PIN, 1/2 X 3-1/2"				
16	F-1898	3	CLEVIS PIN, 1/2 X 2-3/4"				

# LIFT ASSEMBLY & RELATED PARTS 72" DECK



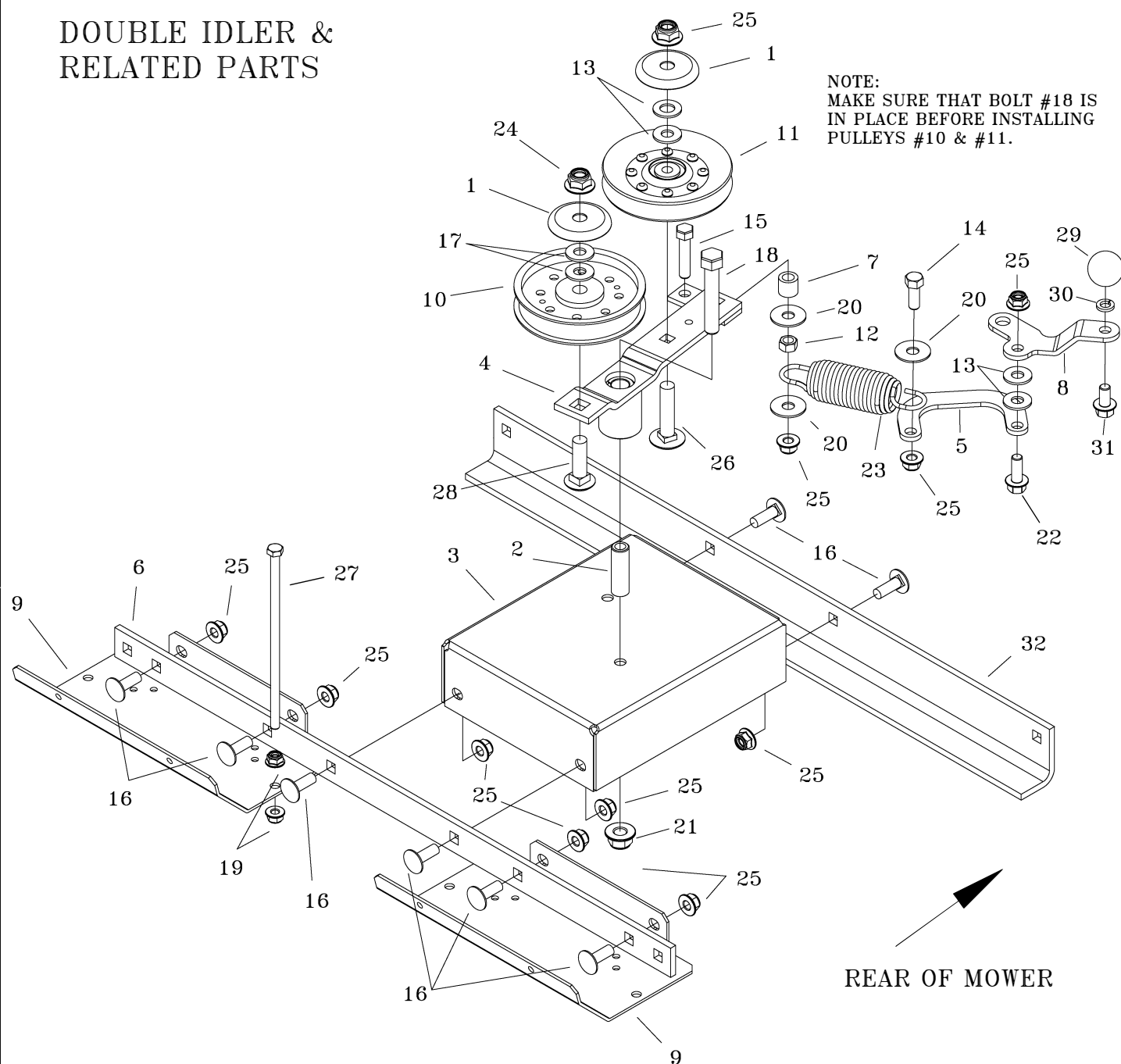
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-171W	1	WIDE FRONT AXLE WELDMENT	17	629-826P	1	SPACER
2	709-054W	1	FRAME SIDE WLDT, LH	18	F-2152	5	NUT, 1/2-13, NYLOC, FLANGED
3	709-055W	1	FRAME SIDE WLDT, RH	19	642-177P	2	HANGER PIN
4	709-157W	1	FRONT PIVOT CHANNEL	20	F-2039	4	5/16-24 x 2" HHCS BOLT
5	659-299P	2	LINK BAR	21	F-1936	4	1/2-13 X 3-1/2, 2" THREAD
6	F-2041	4	5/16-24 LOCKNUT	22	----	1	QRS SYSTEM, SEE PAGE #6
7	647-071P	1	DRAG BAR	23	F-1896	2	CLEVIS PIN, 1/2 X 1-3/4"
8	620-051P	1	LIFT BAR	24	F-1489	4	NUT, 1/2" JAM
9	642-081P	2	LIFT SLEEVE, FRONT	25	F-1125	1	5/16" LOCKNUT
10	642-193P	2	LIFT SLEEVE, REAR	26	647-144P	2	OFFSET LINK BAR ADJUSTABLE
11	F-1879	1	5/16-18 X 1-1/4" BOLT	27	F-2128	1	FHCS, 1/2-13 x 2", YZ, GR5
12	F-1521	6	WASHER, 1/2 NARROW	28	F-2163	3	FHCS, 1/2-13x3-1/2", YZ, GR5
13	629-249W	1	OFFSET DECK LIFT PEDAL	29	F-2126	1	FHCS, 3/8-16 x 2", YZ, GR5
14	H-2239	4	RUE RING, 1/2"	30	F-1011-03	1	NUT, 3/8-16
15	F-1890	2	CLEVIS PIN, 1/2 X 3-1/2"	31	F-2151	1	NUT, 3/8-16 NYLOC, FLANGED
16	642-175P	2	ADJUSTABLE HANGER END	32	F-2181	3	FHCS, 1/2-13x4-1/2", YZ, GR5

STEP & RELATED PARTS



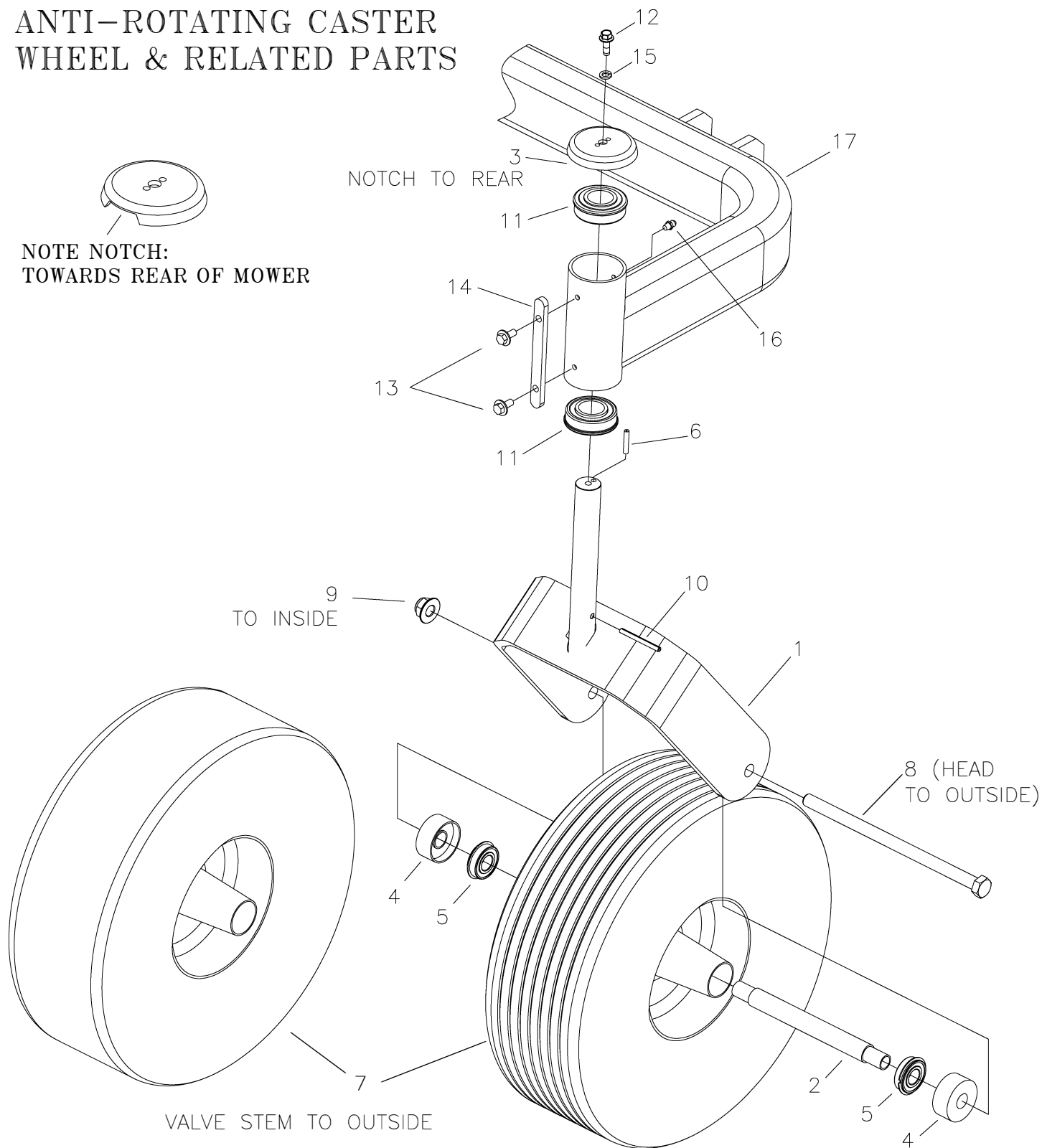
ITEM #	PART #	QTY	DESCRIPTION
1	663-134P	1	STEP, EXTENDED
2	F-2142	2	FHCS, 3/8-16x4", YZ, GR5 (60" ONLY)
3	F-2151	4	NUT, 3/8-16 NYLOC, FLANGED
4	659-241P	1	STEP MOUNT BRACKET, RH (60" ONLY)
5	659-242P	1	STEP MOUNT BRACKET, LH (60" ONLY)
6	H-2461	2	RUBBER BUMPER BUTTON
7	F-2124	2	FHCS, 3/8-16x3/4", YZ, GR5

# DOUBLE IDLER & RELATED PARTS



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	620-201P	2	WASHER, BEARING CAP	17	F-1521	2	1/2" WASHER, CUSTOM
2	709-224P	1	MOUNTING PIN	18	F-1439	1	HHCS, 1/2-13 X 3", YZ, GR5
3	709-225P	1	DECK DRIVE IDLER MOUNT	19	F-2063	2	NUT, 5/16-18 NYLOC, FLANGED
4	709-087A	1	IDLER ARM ASSEMBLY	20	F-2083	3	WASHER, 3/8 FENDER
5	709-088P	1	LINK, BELT TIGHTENING	21	F-2152	1	NUT, 1/2-13, NYLOC, FLANGED
6	709-091P	1	CROSS BRACE	22	F-2141	1	FHCS, 3/8-16 X 1", YZ, GR5
7	709-123P	1	SPACER, BELT TENSION	23	H-2619	1	SPRING, 5 X 1-1/2", TAPERED ENDS
8	709-177P	1	HANDLE, BELT TIGHTENER	24	F-2152	1	NUT, 1/2-13 NYLOC, FLANGED
9	709-126P	2	AIR DAM	25	F-2151	12	NUT, 3/8-16 NYLOC, FLANGED
10	D-3922	1	PULLEY, FLAT IDLER, 4.25 O.D.	26	F-1976	1	3/8-16 X 2" CARRIAGE BOLT
11	D-3923	1	PULLEY V-IDLER, 4.59 O.D.	27	F-2156	1	5/16-18 X 8-1/2" CAPSCREW
12	F-1005-03	1	3/8-16 STOVER NUT	28	F-1964	1	1/2-13 X 1-3/4" CARRIAGE BOLT
13	F-1009-03	5	3/8 FLAT WASHER	29	H-2405	1	BALL, 1-1/4", 3/8-16 THRD, BLK
14	F-1394	1	3/8-16 X 1" CAPSCREW	30	F-1019-03	1	LOCK WASHER, 3/8
15	F-1015-28	1	3/8-16 X 1-3/4" CAPSCREW	31	F-2124	1	FHCS, 3/8-16 X 3/4", YZ, GR5
16	F-1274	8	3/8-16 X 1" CARRIAGE BOLT	32	709-187P	1	CROSS BRACE

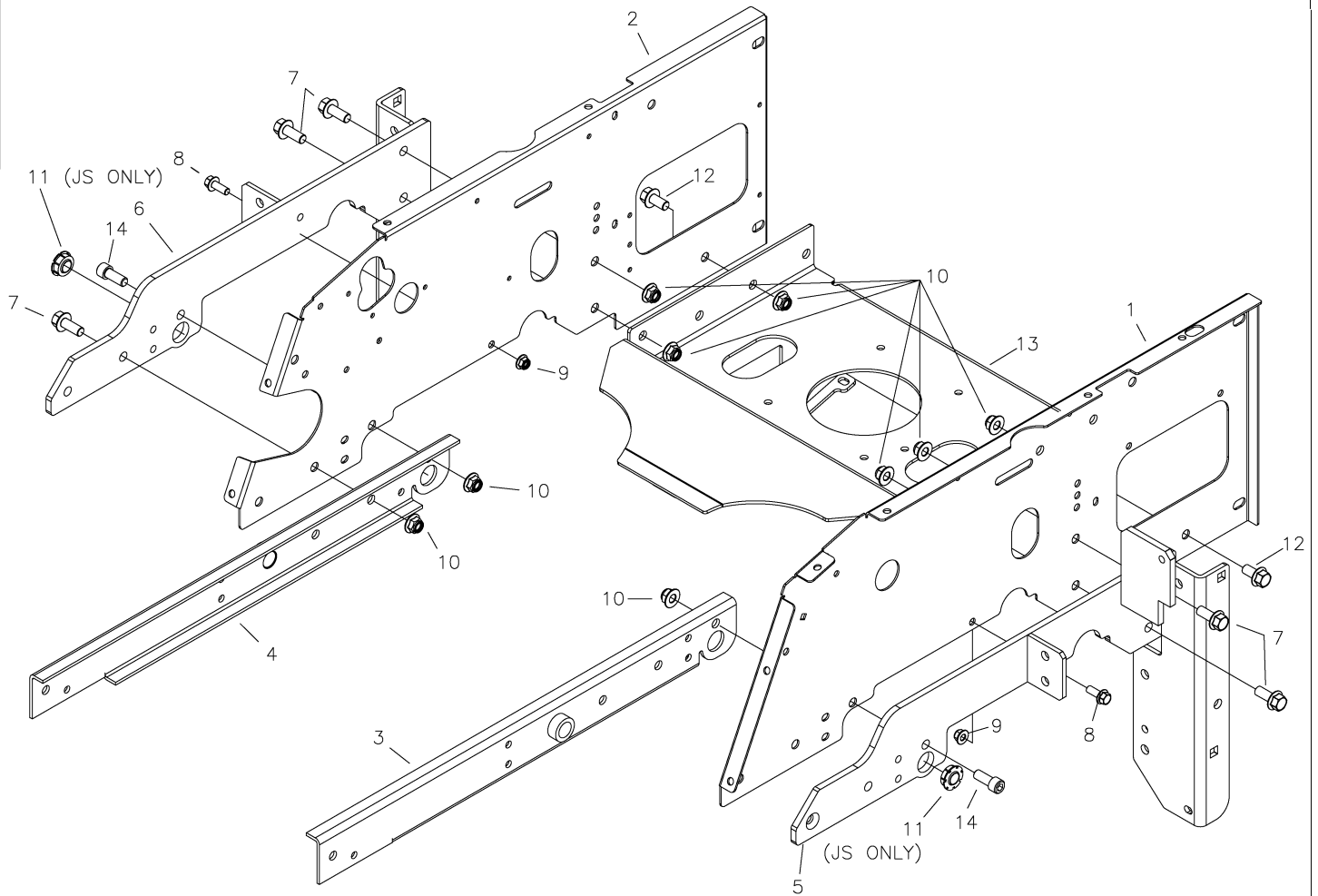
# ANTI-ROTATING CASTER WHEEL & RELATED PARTS



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-043W	1	CASTER WLDT	9	F-2152	1	NUT, 1/2-13 NYLOCK, GR5
2	647-038P	1	BEARING SPACER	10	F-1456	1	3/16 x 2" SPIRAL PIN
3	636-177P	1	BEARING CAP	11	D-2008-02	2	BEARING, SPD SF-16-32
4	611-135P	2	BEARING SHIELD	12	F-2121	1	FHCS, 5/16-18X3/4", LOCK PATCH
5	D-3432	2	BEARING, 5/8 ID X 1-3/8 OD	13	F-2030	2	1/4" x 5/8" SELF TAPPING SCREW
6	F-1855	1	3/16 x 1" ROLL PIN	14	659-187P	1	STOP TAB
7	D-4023	1	TIRE, 15 X 6.00-6 (RIBBED) (BLACK)	15	F-1019-02	1	LOCK WASHER, 5/16
-	D-4069	1	TIRE, 15 X 6.00-6 (SMOOTH) (BLACK)	16	H-1056	1	GREASE ZERK
8	F-2159	1	1/2-13 X 9-1/2" GR5	17	-----	1	FRONT AXLE WELDMENT (SEE pg.7 OR 8)

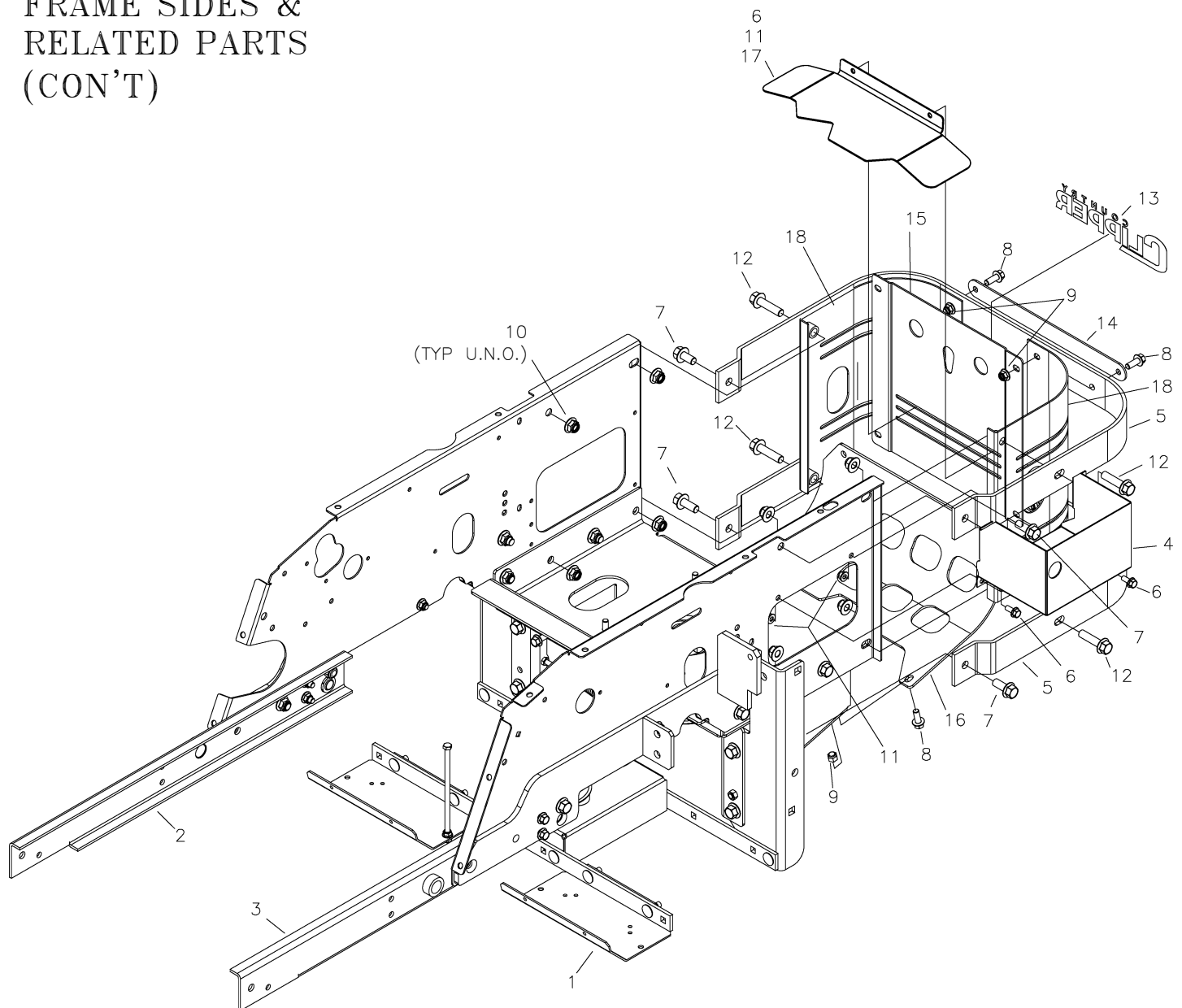


# FRAME SIDES & RELATED PARTS



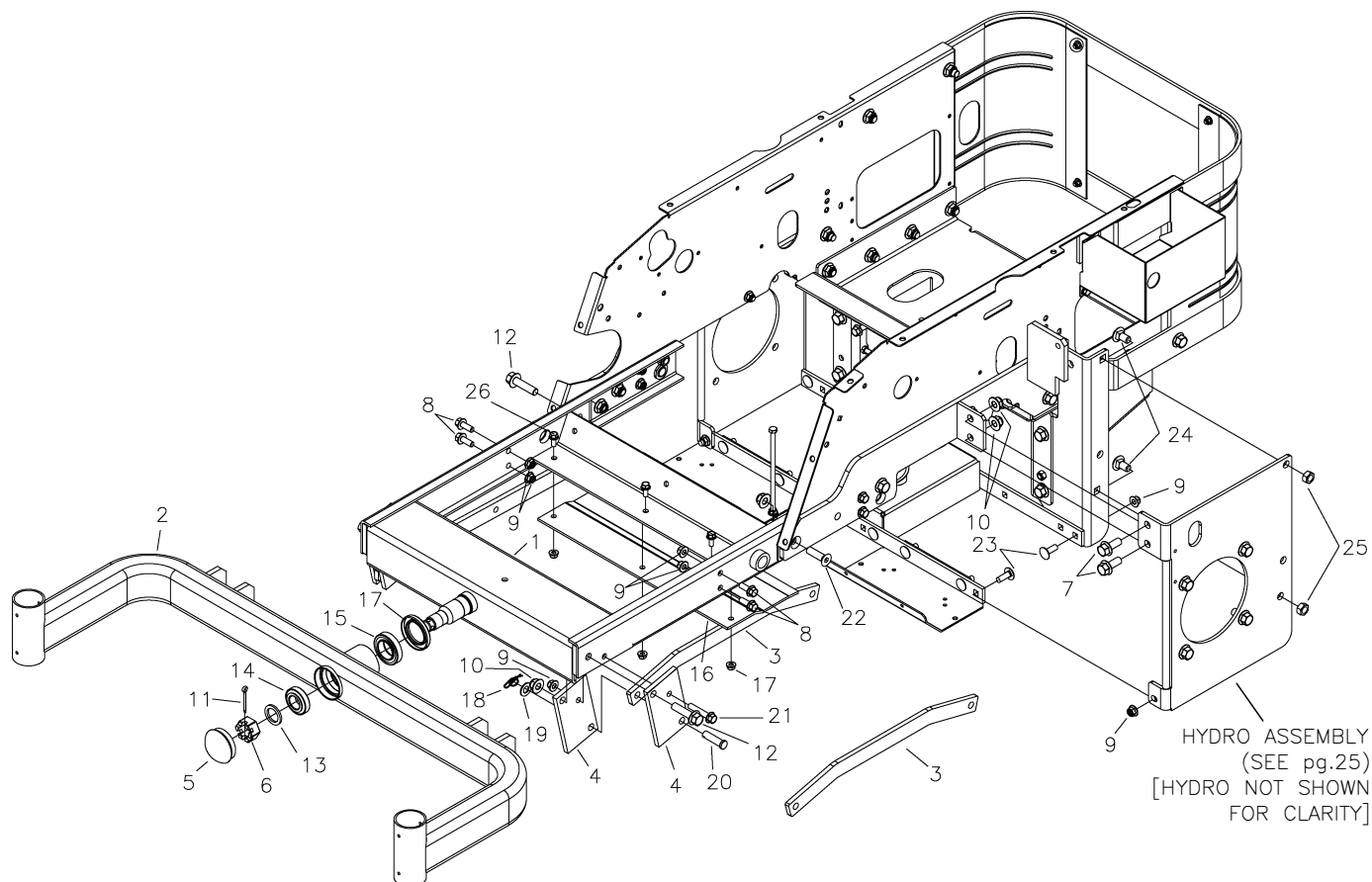
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-016P	1	SIDE PANEL, JS, LH	7	F-2127	5	FHCS, 1/2-13 X 1-1/4, YZ, GR5
-	709-056P	1	SIDE PANEL, TS, LH	8	F-2141	2	FHCS, 3/8-16 x 1", YZ, GR5
2	709-017P	1	SIDE PANEL, JS, RH	9	F-2151	2	NUT, 3/8-16 NYLOC, FLANGED
-	709-076P	1	SIDE PANEL, TS, RH	10	F-2152	9	NUT, 1/2-13 NYLOC, FLANGED
3	709-054W	1	FRAME SIDE WLDT LH	11	H-2773	2	BEARING, FLANGED-SPHERICAL, IGUS
4	709-055W	1	FRAME SIDE WLDT RH	12	F-2143	2	FHCS, 1/2-13x1", YZ, GR5
5	709-080W	1	SIDE PLATE WLDT LH	13	709-009W	1	MOTOR MOUNT WLDT
6	709-081W	1	SIDE PLATE WLDT RH	14	F-2227	2	SHCS, 1/2-13 X 1-1/4, ZINC

# FRAME SIDES & RELATED PARTS (CON'T)



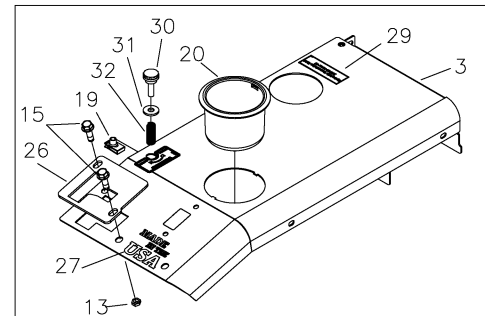
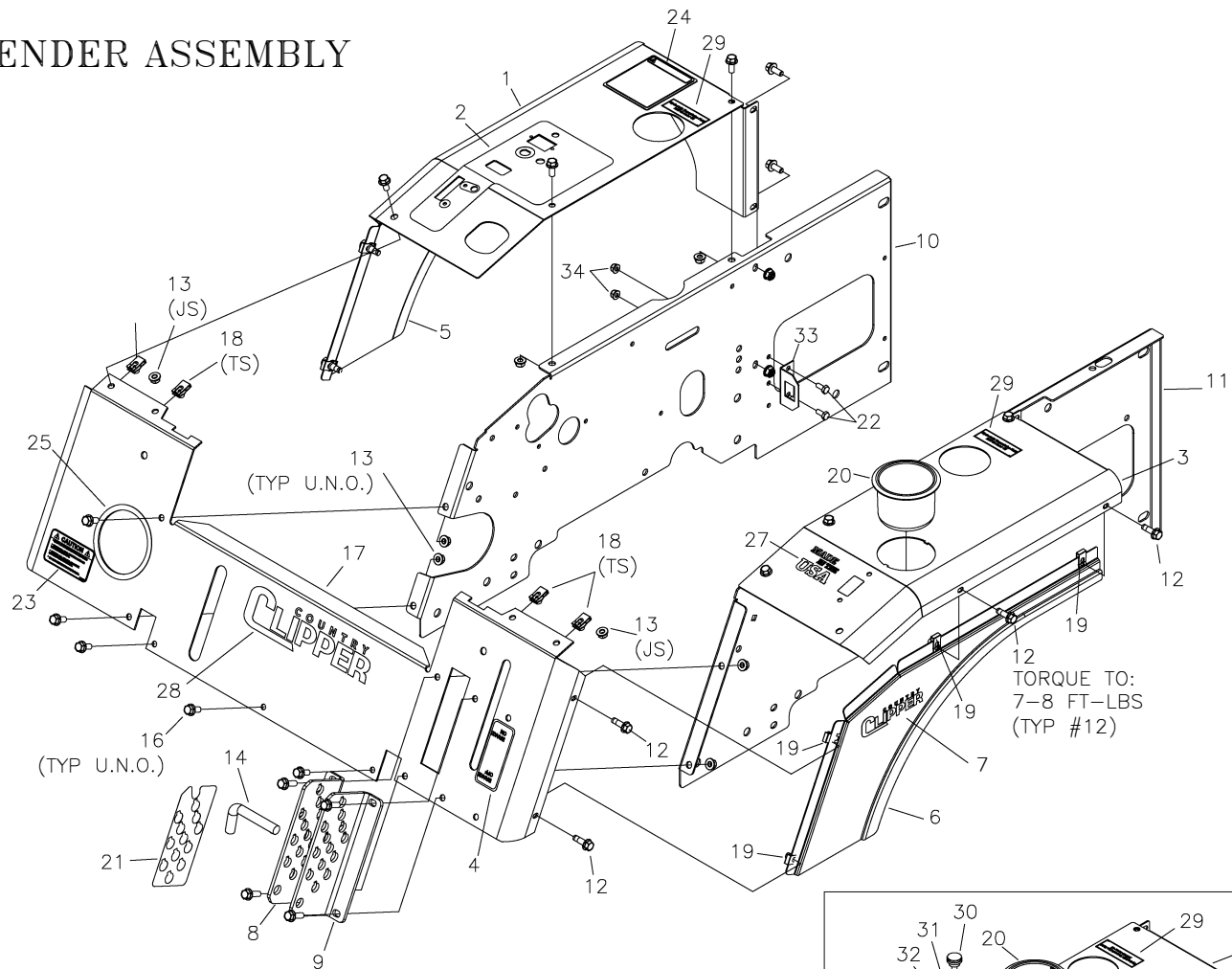
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	-----	1	DOUBLE IDLER MOUNT (SEE PG.10)	10	F-2152	8	NUT, 1/2-13 NYLOC, FLANGED
2	-----	1	FRAME SIDE (SEE PG.12)	11	F-2063	4	NUT, 5/16-18, NYLOC, FLANGED
3	-----	1	FRAME SIDE (SEE PG.12)	12	F-2128	2	FHCS, 1/2-13x2", YZ, GR5
4	709-022P	1	BATTERY MOUNT BOX	13	P-13312	1	DECAL, LOGO, CHROME w/BLK, LG
5	709-098P	2	BAR, REAR ENGINE GUARD	14	H-2912	1	PLACARD, BOSS XL
6	F-2120	4	FHCS, 5/16-18x3/4", YZ, GR5	15	629-895A	1	ENGINE GUARD, w/DECAL
7	F-2127	4	FHCS, 1/2-13x1-1/4", YZ, GR5	16	709-228P	1	PLATE, MUFFLER GUARD
8	F-2141	6	FHCS, 3/8-16 x 1", YZ, GR5	17	709-218P	1	HEAT SHIELD (KOHLER ONLY)
9	F-2151	6	NUT, 3/8-16 NYLOC, FLANGED	18	709-121W	2	ENGINE GUARD WELDMENT

# FRAME SIDES & RELATED PARTS (CON'T)



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-157W	1	FRONT PIVOT CHANNEL WLDT	14	D-3826	1	BRG, TAPERED, SET, L44643-L44610
2	642-189W	1	FRONT AXLE WLDT (60" DECK)	15	D-3825	1	BRG, TAPERED, SET, L68149-L68110
-	709-171W	1	FRONT AXLE WLDT (72" DECK)	16	709-100P	1	FUEL TANK SUPPORT
3	-----	-	LINK BAR (72" DECK, SEE pg.8)	17	H-2812	1	SEAL, SHAFT, 1.75x2.375x0.313
-	-----	-	LINK BAR (60" DECK, SEE pg.7)	18	H-2239	2	1/2" RUE RING
4	642-063P	4	DRAG BAR MOUNT TAB	19	F-1521	2	1/2" WASHER, CUSTOM
5	H-1924	1	GREASE CAP	20	F-1896	2	1/2" x 1-3/4", CLEVIS PIN
6	F-1724	1	SLOTTED HEX NUT, 1"-14	21	F-2126	2	FHCS, 3/8-16 x 2", YZ, GR5
7	F-2127	2	FHCS, 1/2-13x1-1/4", YZ, GR5	22	F-2149	1	HEX SCK FLT HD CAP, 1/2-13x1-3/4"
8	F-2141	4	FHCS, 3/8-16 x 1", YZ, GR5	23	F-1274	2	CARRIAGE BOLT, 3/8-16 x 1"
9	F-2151	7	NUT, 3/8-16 NYLOC, FLANGED	24	F-2146	2	CARRIAGE BOLT, 1/2-13 x 1"
10	F-2152	4	NUT, 1/2-13 NYLOC, FLANGED	25	F-1005-05	2	1/2-13 STOVER NUT
11	F-1728	1	3/16" x 2" COTTER PIN	26	F-2120	3	FHCS, 5/16-18 x 3/4", YZ, GR5
12	F-2128	2	FHCS, 1/2-13x2", YZ, GR5	27	F-2063	3	NUT, 5/16-18 NYLOC, FLANGED
13	606-303P	1	1" WASHER				

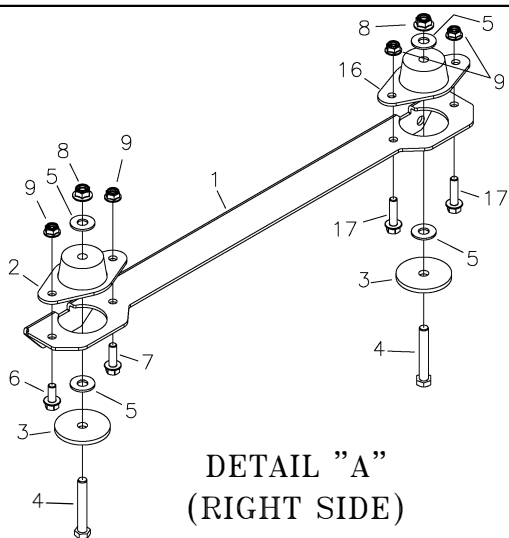
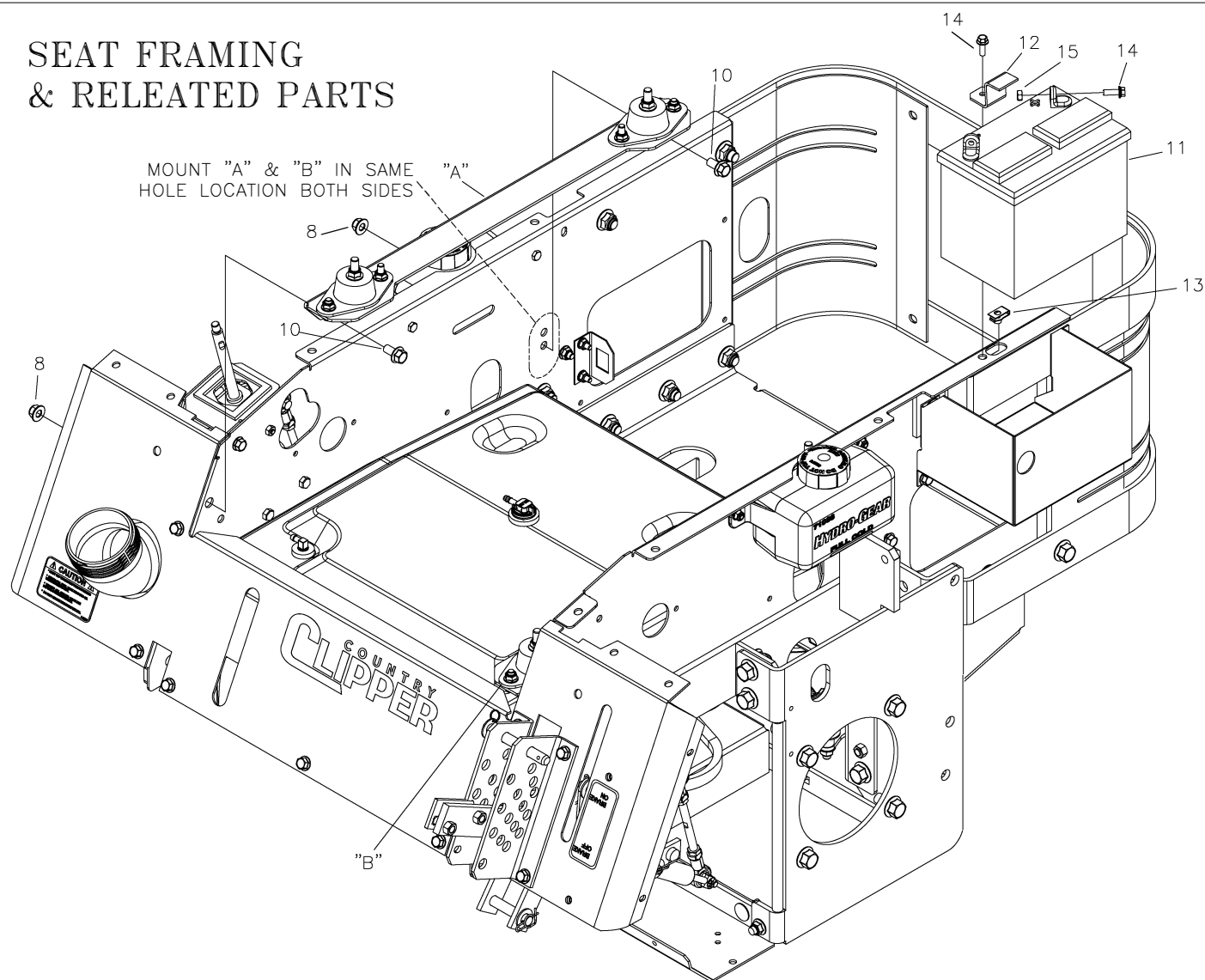
# FENDER ASSEMBLY



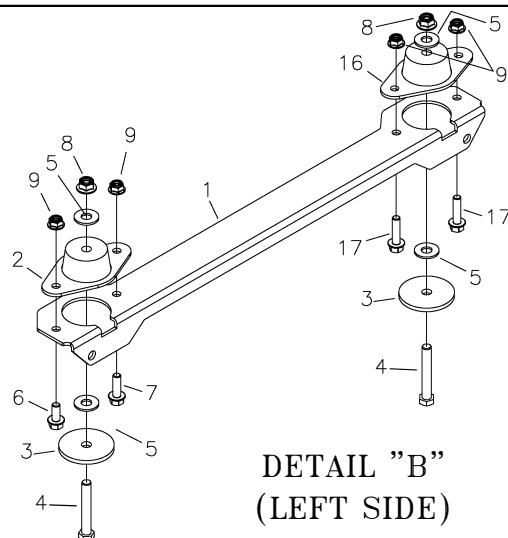
TWINSTICK FENDER ASSY

ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	625-157A	1	FENDER CAP w/DECAL, RH, (JS)	16	F-2120	17	FHCS, 5/16-18 X 3/4" GR.5
-	625-159A	1	FENDER CAP w/DECAL, RH, (TS)	17	709-220A	1	FRONT PANEL w/DECALS
-	625-165A	1	FENDER CAP, EFI w/DECAL, RH, (TS)	18	F-1860	4	5/16-18 "U"-NUT
2	P-11369	1	DECAL, CONTROL PANEL (JS)	19	F-1858	8	1/4-20 "U"-NUT
-	P-12682	1	DECAL, CONTROL PANEL (TS)	20	H-2228	1	CUP HOLDER
3	625-158A	1	FENDER CAP w/DECAL, LH (JS)	21	P-13325	1	DECAL, DECK LIFT
-	625-160A	1	FENDER CAP w/DECAL, LH (TS)	22	F-1015-02	2	CAPSCREW, 1/4-20 x 5/8"
4	P-11382	1	DECAL, PARK BRAKE	23	P-12557	1	DECAL, "CAUTION"
5	629-897A	1	FENDER SKIRT w/DECAL, RH	24	P-11370	1	DECAL, WARNING
6	629-898A	1	FENDER SKIRT w/DECAL, LH	25	H-1626	1	U CHANNEL TRIM
7	P-13311	2	DECAL, LOGO, CHROME w/BLK, SM	26	659-262P	2	NEUTRAL PLATE
8	647-259A	1	LATCH PLATE RH W/DECAL	27	P-13000	1	DECAL, "USA"
9	647-258P	1	LATCH PLATE LH.	28	P-13312	1	DECAL, LOGO, CHROME w/BLK, LG
10	-----	1	SEE PAGE 12	29	P-11052	2	HYDRO FLUID DECAL
11	-----	1	SEE PAGE 12	30	F-2081	2	KNOB, 5/16-18x1", 7/8" DIA HEAD
12	F-2119	8	FHCS, 1/4-20x3/4", GR.5 w/PATCH	31	F-1009-02	2	5/16" FLAT WASHER
13	F-2063	20	FLANGED NUT, 5-16-18, NYLOC	32	H-1776	2	SPRING, COMP .48 x .0445 x 1.25
14	H-3013	1	DECK HEIGHT PIN	33	647-146P	1	FUSE HOLDER
15	F-2121	4	FHCS, 5/16-18x1" GR.5 w/PATCH	34	F-2132	2	NUT, 1/4-20 NYLOC, FLANGED

# SEAT FRAMING & RELEATED PARTS



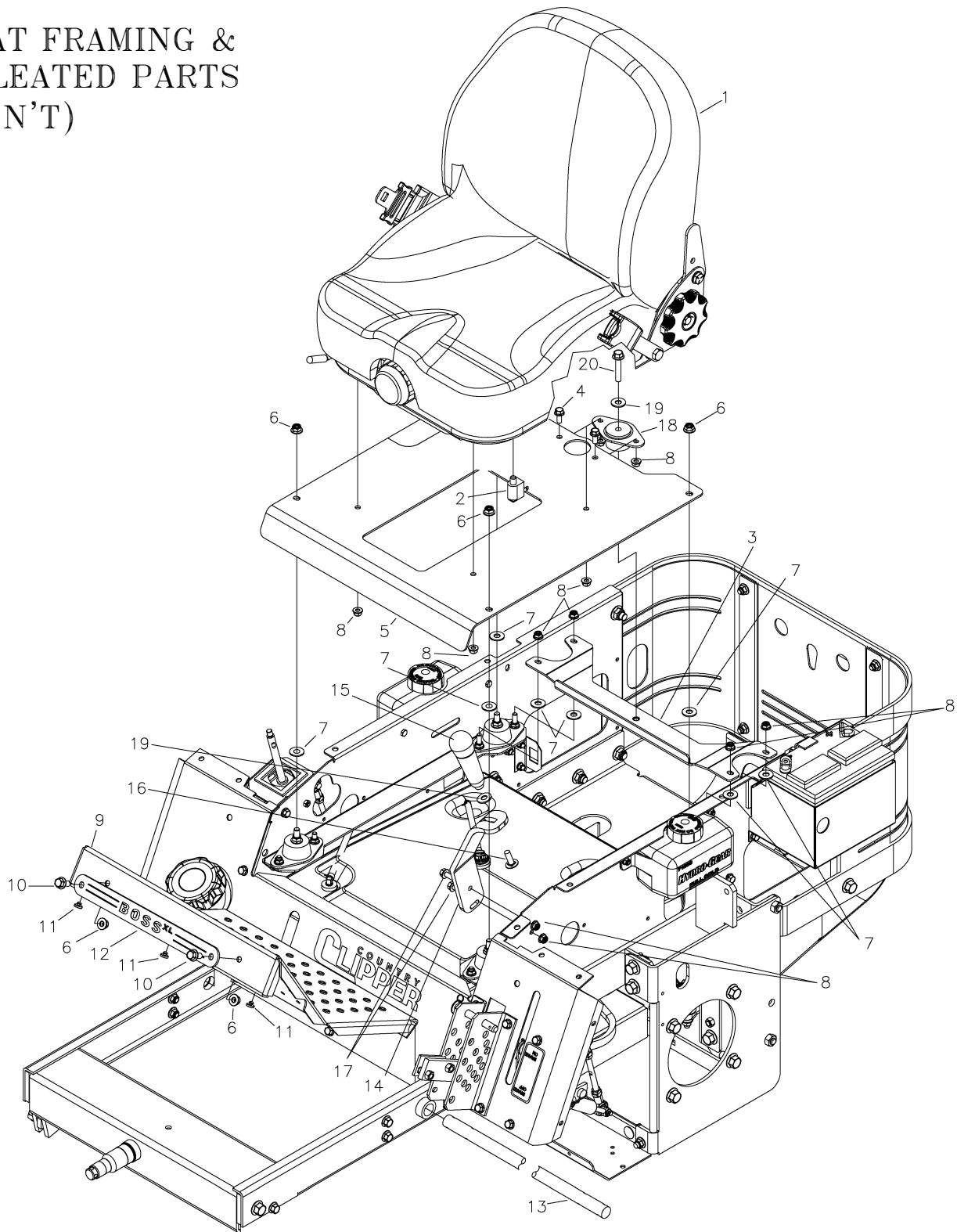
**DETAIL "A"**  
**(RIGHT SIDE)**



**DETAIL "B"**  
**(LEFT SIDE)**

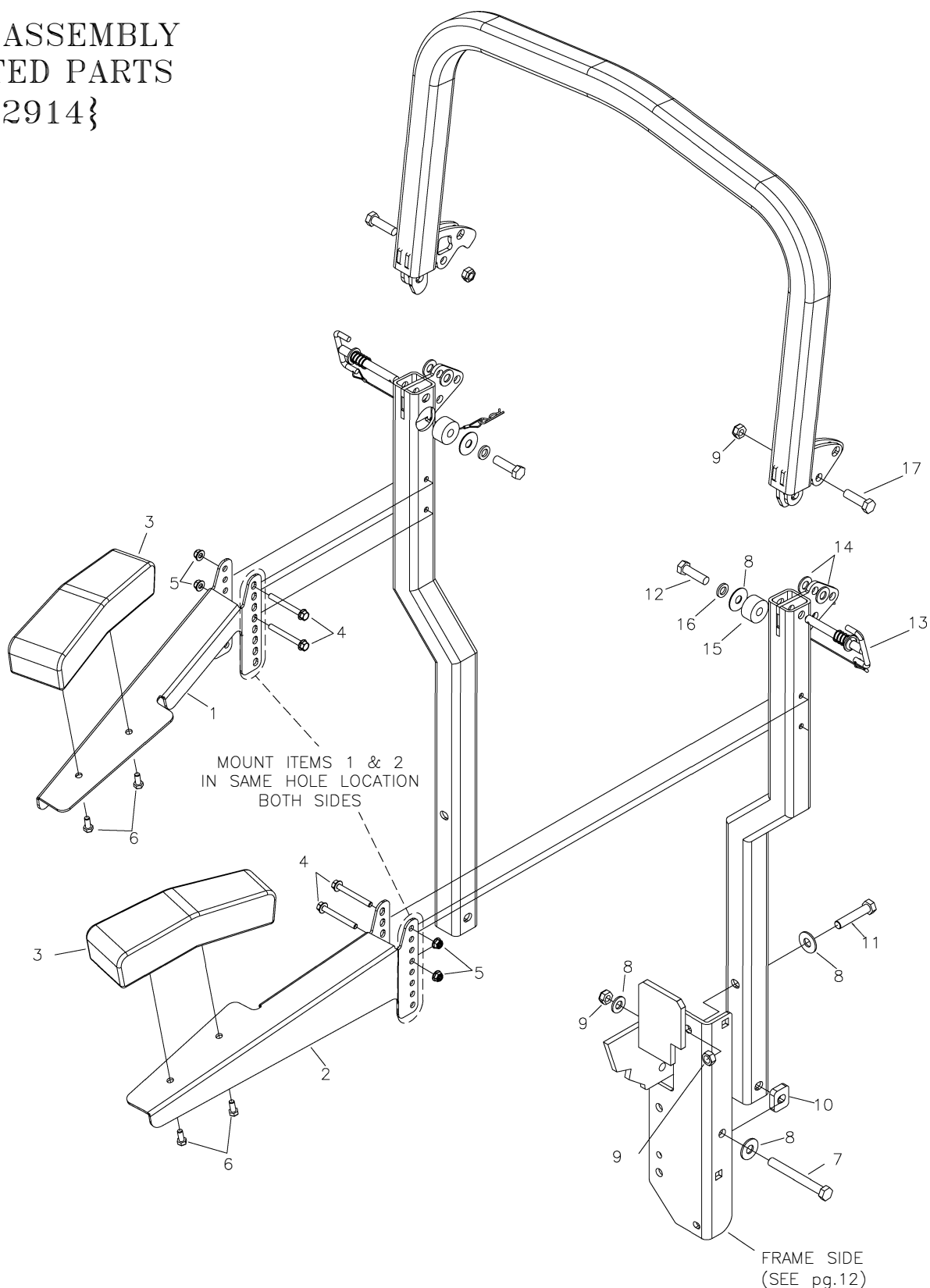
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-020P	2	SEAT MOUNT ANGLE	10	F-2124	4	FHCS, 3/8-16 x 3/4", YZ, GR5
2	H-2734	2	ISOLATOR, VIBRATION	11	E-6271	1	12 VOLT BATTERY, YSP 40 AMP
3	F-2102	4	WASHER .406 I.D.x2.25 O.D.x7GA	12	709-097P	1	BATTERY HOLD DOWN
4	F-1542	4	CAPSCREW, 3/8-16 X 2 3/4	13	F-1858	1	1/4-20 "U"-NUT
5	F-1009-03	8	3/8" FLAT WASHER	14	F-2162	3	FHCS, 1/4-20 x 3/4", YZ, GR5
6	F-2120	2	FHCS, 5/16-18 x 3/4", YZ, GR5	15	F-1158	2	1/4-20 STOVER NUT
7	F-2148	6	FHCS, 5/16-18 x 1", YZ, GR5	16	H-2830	2	ISOLATOR, VIBRATION
8	F-2151	4	NUT, 3/8-16 NYLOC, FLANGED	17	F-2122	4	FHCS, 5/16-18x1-1/4", YZ, GR5
9	F-2063	8	NUT, 5/16-18 NYLOC, FLANGED				

# SEAT FRAMING & RELEATED PARTS (CON'T)



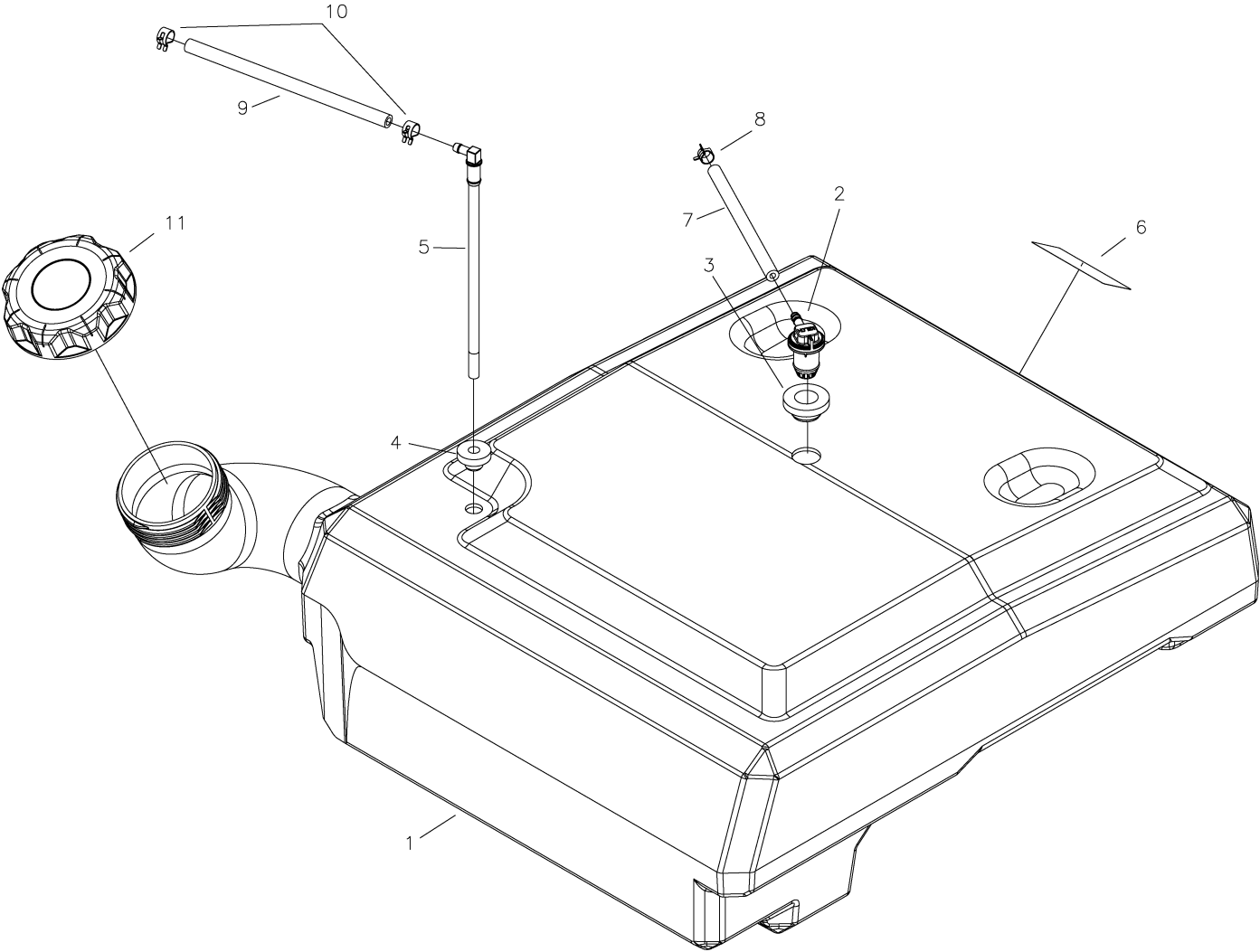
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	H-2788	1	SEAT	11	H-2461	3	RUBBER BUMPER
—	H-2916	1	COVER FOR SEAT H-2788	12	H-2912	1	PLACARD, BOSS XL
2	E-6580	1	SEAT SWITCH	13	620-051P	1	LIFT BAR
3	709-160P	1	CHANNEL, REAR SEAT PAN	14	709-107P	1	BAR, SECURITY HANDLE MOUNT
4	F-2120	1	FHCS, 5/16-18 x 3/4", YZ, GR5	15	H-2764	1	HANDLE, JOYSTICK
5	709-021P	1	SEAT PAN	16	F-1274	1	CARRIAGE BOLT, 3/8-16 x 1"
6	F-2151	6	NUT, 3/8-16 NYLOC, FLANGED	17	F-2148	1	FHCS, 5/16-18 x 1", YZ, GR5
7	F-1009-02	8	5/16" FLAT WASHER	18	H-2830	1	ISOLATOR, VIBRATION
8	F-2063	12	NUT, 5/16-18 NYLOC, FLANGED	19	F-1009-03	1	3/8" FLAT WASHER
9	663-208P	1	FOOT DECK	20	F-2126	1	FHCS, 3/8-16 x 2", YZ, GR5
10	F-2124	2	FHCS, 3/8-16 x 3/4", YZ, GR5				

# R.O.P.S. ASSEMBLY & RELATED PARTS {H-2914}



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-178P	1	ARM REST, RH	10	H-2826	2	PLATE, LOWER SPACER
2	709-179P	1	ARM REST, LH	11	F-2168	2	HHCS, 1/2-13 X 3", GR.5
3	H-2799	2	PAD, ARM REST	12	F-2211	2	HHCS, 1/2-13 X 1.75", GR.5
4	F-2153	4	FHCS, 5/16-18 X 2-3/4", YZ, GR.5	13	F-2208	2	PULL PIN ASS'Y, Ø1/2 T-HANDLE
5	F-2063	4	NUT, 5/16-18 NYLOC, FLANGED	14	F-2213	4	FW, Ø1/2 SAE
6	F-2120	4	FHCS, 5/16-18 X 3/4", YZ, GR.5	15	F-2209	2	POLYURETHANE CYLINDER
7	F-2167	2	HHCS, 1/2-13 X 3-1/2", GR.5	16	F-2210	2	LW, Ø1/2
8	F-2170	8	FW, Ø1/2	17	F-2212	2	HHCS, 1/2-13 X 2.00", GR.5
9	F-2090	6	TOP LOCK NUT, 1/2-13 GR.C				

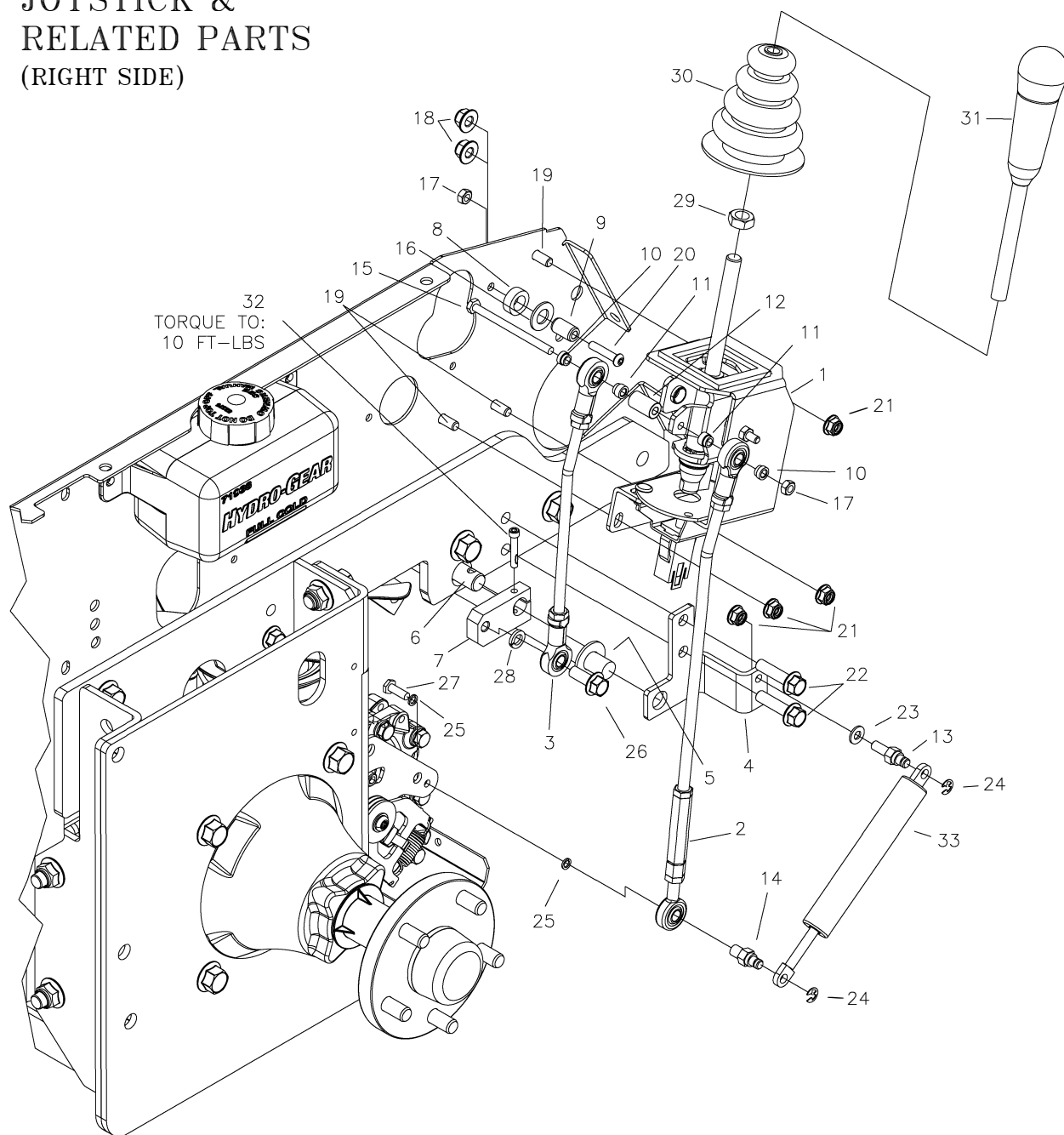
FUEL TANK ASSEMBLY H-2945  
(ALL PARTS EXCEPT #7-11)



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	-----	1	FUEL TANK, ASS'Y	7	H-2697	2.59	HOSE, FUEL, .188" I.D.x.406" O.D.
2	H-2831	1	KELCH REMOTE VENT	8	H-2698	1	CLAMP, .406" O.D. FUEL LINE
3	H-2679	1	KELCH REMOTE VENT GROMMET	9	H-1648	5	HOSE, FUEL, 1/4" I.D.x1/2" O.D.
4	H-2741	1	GROMMET, PICK UP TUBE	10	H-1687	2	CLAMP, 1/2" O.D. FUEL LINE
5	H-2742	1	PICK UP TUBE	11	H-2743	1	RATCHET CAP w/TETHER, 3.5 DIA
6	P-12922	1	CARB/EPA LABEL				

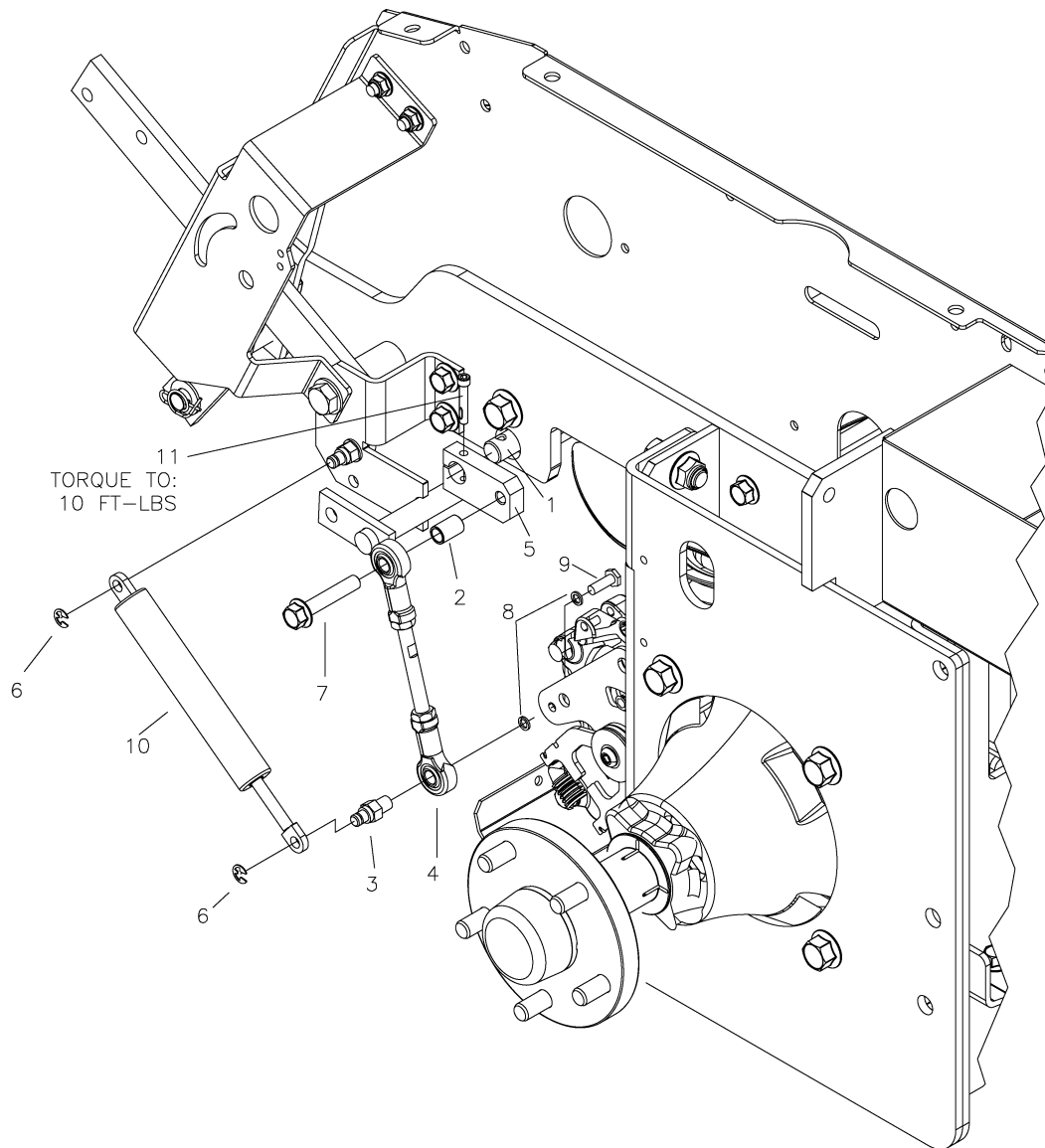


# JOYSTICK & RELATED PARTS (RIGHT SIDE)



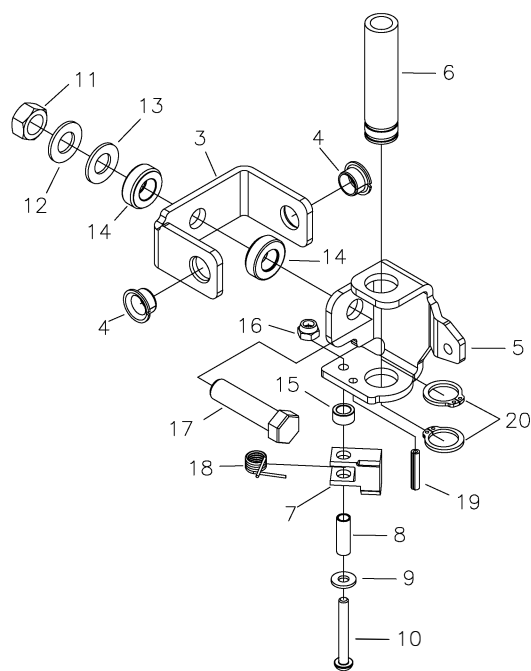
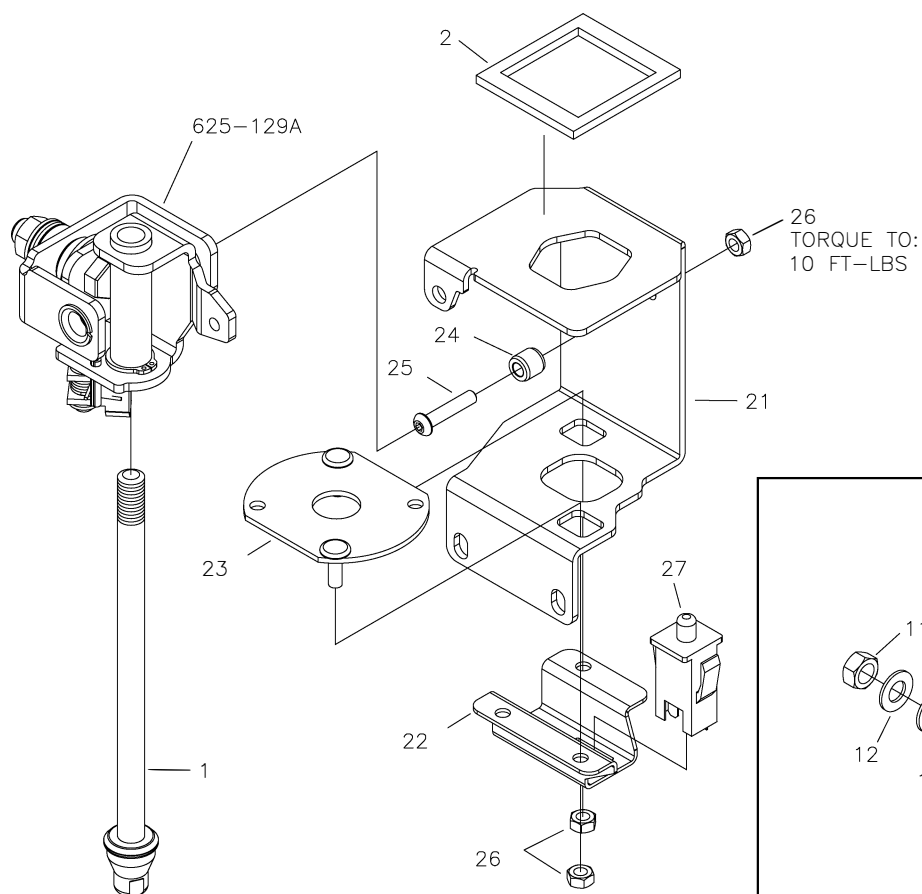
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	625-172A	1	JOYSTICK ASSEMBLY	17	F-1158	2	1/4-20 CENTERLOCKING LOCK NUT
2	709-131P	1	LINKAGE, OUTER, JS	18	F-2151	2	NUT, 3/8-16 NYLOC, FLANGED
3	709-132P	1	LINKAGE, INNER, JS	19	F-2120	3	FHCS, 5/16-18 x 3/4", YZ, GR5
4	709-083P	1	BRACKET-ANCHOR, DAMPER	20	F-2103	1	BUTTON SHCS, 1/4-20 x 1", CZ
5	709-116W	1	BRAKE ROD WLDT	21	F-2063	4	NUT, 5/16-18 NYLOC, FLANGED
6	709-229P	1	HYDRO SHIFT ROD	22	F-2147	2	FHCS, 3/8-16x1-1/2", YZ, GR5
7	700-151P	1	ARM, SWIVEL, S/A	23	F-1009-01	1	1/4" FLAT WASHER
8	625-126P	1	SPACER JOYSTICK, PANEL	24	F-1610	2	E-RING FOR 1/4" SHAFT
9	625-119P	1	PIN, PIVOT, JS, LONG	25	F-1019-01	2	1/4" LOCKWASHER
10	625-116P	2	BUSHING, .375 ROD END, SHORT	26	F-2141	1	FHCS, 3/8-16 x 1", YZ, GR5
11	625-107P	2	BUSHING, .375 ROD END, LONG	27	F-1015-03	1	1/4-20 x 3/4", CAPSCREW
12	625-100P	1	TUBE, PIVOT, JOYSTICK	28	F-1019-03	1	3/8" LOCKWASHER
13	638-028P	1	DAMPER BOLT	29	F-1462	1	1/2-20 HEX JAM NUT
14	663-051P	1	DAMPER STUD	30	H-1991	1	BOOT
15	F-1020-01	1	1/4-20 x 3-1/2" CAPSCREW	31	709-168A	1	EXTENSION ASSEMBLY
16	F-1521	1	1/2" WASHER, CUSTOM	32	F-2231	1	SHCS, 12-24 X 1-1/4, ZINC, LOCK PATCH
				33	H-2467	1	DUAL ACTION DAMPER

# JOYSTICK & RELATED PARTS (LEFT SIDE)



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-229P	1	HYDRO SHIFT ROD	7	F-2126	1	FHCS, 3/8-16 x 2", YZ, GR5
2	707-073P	1	STAND-OFF, LINKAGE MOUNT	8	F-1019-01	2	1/4" LOCKWASHER
3	663-051P	1	DAMPER STUD	9	F-1015-03	1	1/4-20 x 3/4" CAPSCREW
4	H-2468	1	LINKAGE ROD	10	H-2467	1	DUAL ACTION DAMPER
5	700-151P	1	ARM, SWIVEL, S/A	11	F-2231	1	SHCS, 12-24 X 1-1/4, ZINC. LOCK PATCH
6	F-1610	2	E-RING FOR 1/4" SHAFT				

# JOYSTICK ASSEMBLY 625-172A

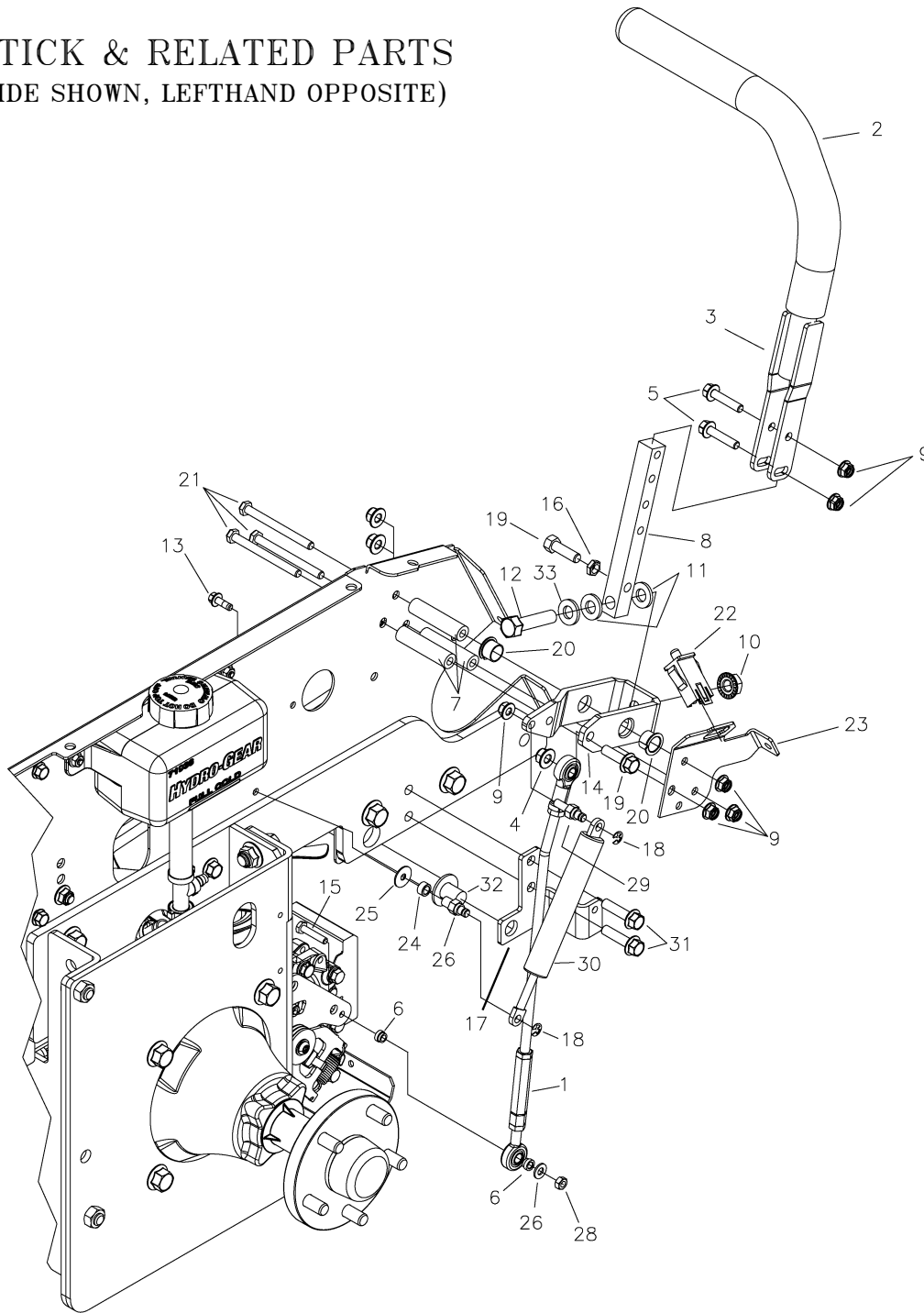


**YOKE, SWIVEL ASSEMBLY  
(625-169A)**

ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-169A	1	ROD ASSEMBLY	15	625-125P	1	SPACER, CAM DETENT
2	H-1947	1	GASKET, FOAM, JOYSTICK	16	F-2137	1	NUT, #12-24, NYLOCK
3	625-097P	1	PIVOT, JOYSTICK (PART OF 625-128A)	17	F-1293	1	1/2-13 x 2" CAPSCREW
4	D-3784	2	BUSHING, FLANGED (PART OF 625-128A)	18	H-2710	1	SPRING, DETENT, JOYSTICK
5	625-096P	1	YOKE, SWIVEL, JOYSTICK	19	F-1503	1	3/16 x 1" SPIRAL PIN
6	625-099P	1	TUBE, GUIDE, CONTROL ROD	20	H-2705	2	RING, DETENT, .75 EXT.
7	625-103P	1	TAB, CAM DETENT	21	625-154P	1	HOUSING, JOYSTICK
8	625-124P	1	TUBE-SPACER, DETENT CAM	22	659-285P	1	MOUNT, SWITCH
9	F-2136	1	WASHER, FLAT, #12 PLAIN	23	625-127W	1	NEUTRAL PLATE, WLDT
10	F-2135	1	SCR, PANHD, PHLPS, #12-24x1-3/4"	24	625-106P	1	PIN, PIVOT, JOYSTICK
11	F-1005-05	1	1/2-13 STOVER NUT	25	F-2103	1	BUTTON SHCS, 1/4-20 x 1", CZ
12	F-1521	1	1/2" WASHER, CUSTOM	26	F-1005-01	3	1/4-20 LOCK NUT
13	H-2704	1	SPRING, BELLEVILLE, .50x1x.073	27	E-6474	1	SWITCH, SNAP MOUNT
14	D-3931	2	THRUST BEARING				

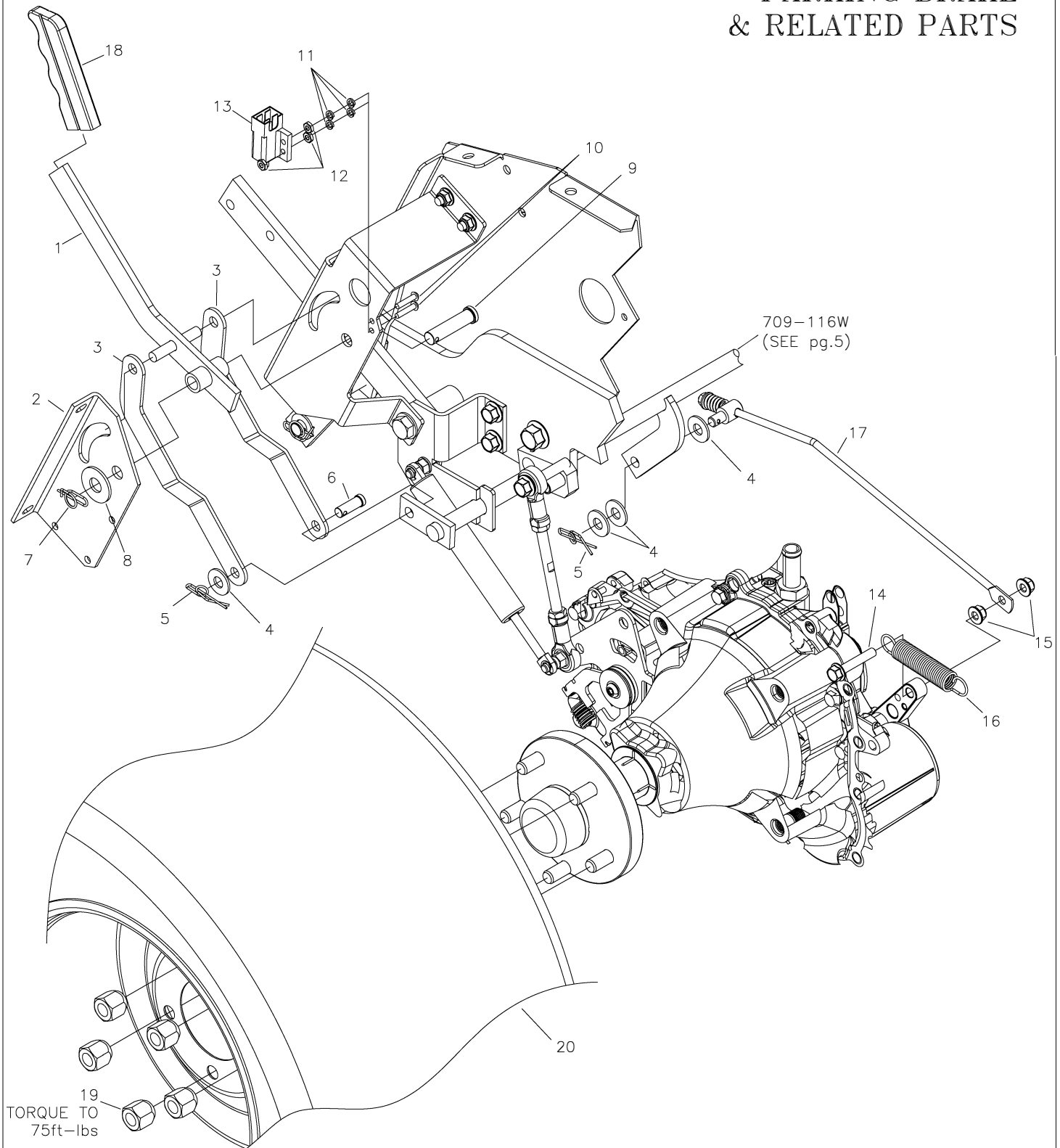
# TWINSTICK & RELATED PARTS

(RIGHT SIDE SHOWN, LEFTHAND OPPOSITE)



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	H-2794	1	LINKAGE, OUTER	18	F-1610	2	E-RING FOR 1/4" SHAFT
2	H-2739	1	GRIP, 15", CLOSED END	19	F-1307	2	3/8-16 X 1 1/4" CAPSCREW
3	659-364W	1	DUAL LEVER CONTROL	20	D-3730	2	FLANGED BUSHING 5/8" BORE
4	F-2151	1	NUT, 3/8-16 NYLOC, FLANGED	21	F-2058	3	5/16-18 x 3 1/2" CAPSCREW
5	F-2129	2	FHCS, 5/16-18x1-1/2" w/PATCH	22	E-6474	1	SWITCH, SNAP MOUNT
6	625-116P	2	BUSHING, .375 ROD END, SHORT	23	647-242P	1	MOUNTING BRACKET (RH)
7	659-252P	3	TUBE SPACER	—	647-243P	1	MOUNTING BRACKET (LH)
8	659-365P	1	LOWER SHIFT BLOCK	24	625-125P	1	SPACER, CAM DETENT
9	F-2063	6	5/16-18 NYLOC NUT	25	F-2097	1	1/4" FENDER WASHER
10	F-2060	2	1/2-13 NUT, FLANGE LOCK	26	663-051P	1	DAMPER STUD, FEMALE
11	606-151P	2	WASHER, NYLON 1/2 ID x 1/8"	27	638-029P	1	DAMPER BOLT, 1/4-20
12	F-1293	1	HHCS, 1/2-13 x 2" GR5	28	F-1005-01	1	1/4-20, LOCK NUT
13	F-2119	1	FHCS, 1/4-20x3/4", YZ, GR5	29	638-028P	1	DAMPER BOLT, 5/16-18 x 3/4"
14	659-243P	1	SHIFTING YOKE	30	H-2843	1	DUAL ACTION DAMPER
15	F-2182	1	FHCS, 1/4-20x1-1/4", YZ, GR5	31	F-2147	2	FHCS, 3/8-16x1-1/2", YZ, GR5
16	F-1486	2	3/8-16 JAM NUT	32	709-116W	1	BRAKE ROD, WLDT
17	709-083P	1	BRACKET-ANCHOR, DAMPER	33	F-1521	1	WASHER

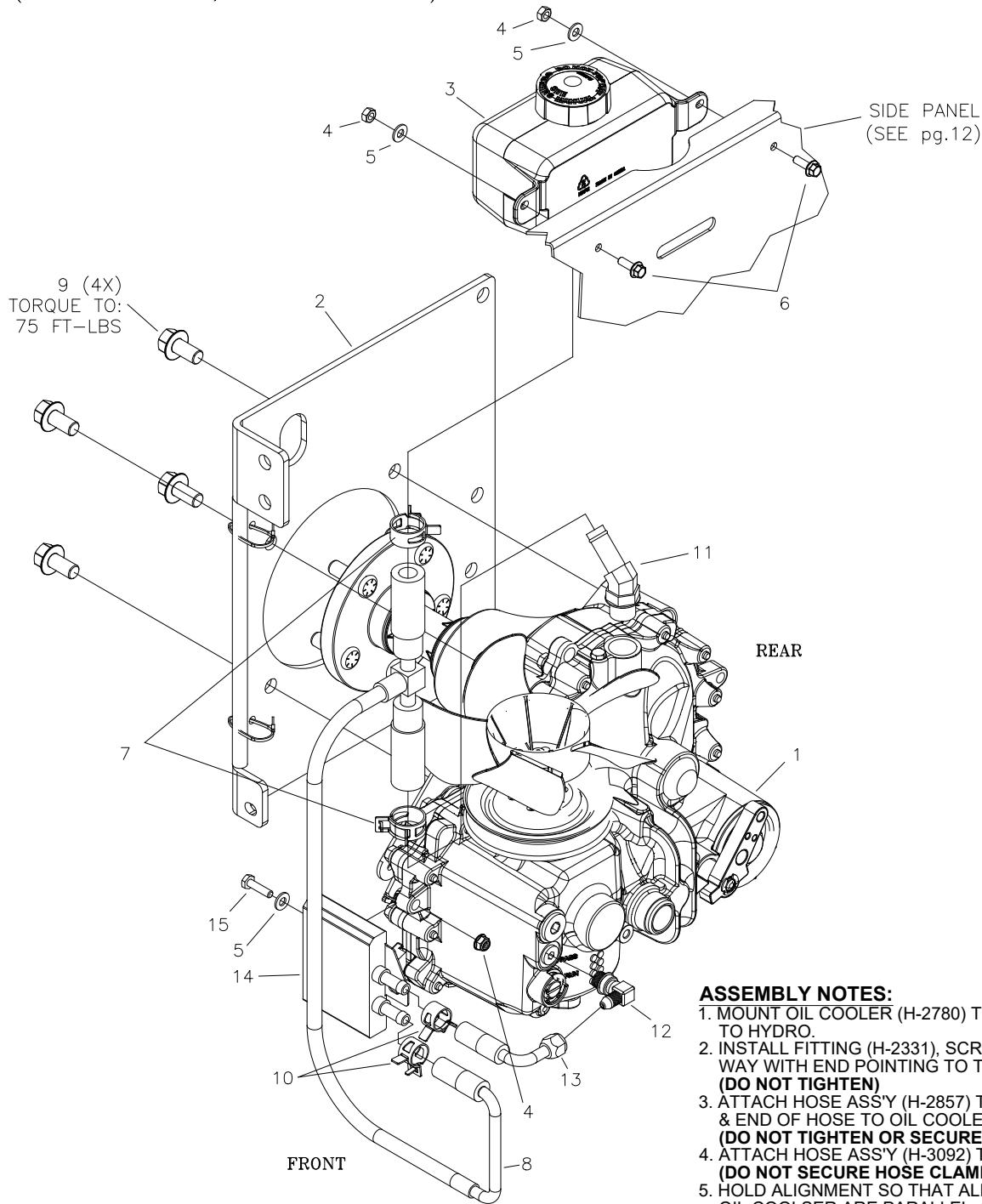
# PARKING BRAKE & RELATED PARTS



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-180W	1	BRAKE HANDLE WLDT	11	F-1112	4	LOCKWASHER, #10 SPRING
2	709-183P	1	BRAKE LEVER MOUNTING ANGLE	12	F-1448	3	10-32 NYLOC, NUT
3	709-114P	2	LINK, BRAKE	13	E-6297	1	BRAKE SWITCH
4	F-1009-02	4	5/16" FLAT WASHER	14	F-2123	2	FHCS, 5/16-18x1-3/4", YZ, GR5
5	F-1492	1	5/16-3/8 RUE RING	15	F-2063	4	NUT, 5/16-18 NYLOC, FLANGED
6	F-1691	1	3/8" x 1" CLEVIS PIN	16	H-1635	2	SPRING, EXT, 3/4"ODx4"OAL
7	H-2239	1	1/2" RUE RING	17	709-135P	2	BRAKE LINK ROD ASEMBLY
8	F-1521	1	1/2" WASHER, CUSTOM	18	H-1926	1	GRIP
9	F-1897	1	1/2" x 2-1/4" CLEVIS PIN	19	F-1499	5	1/2-20 LUG NUT
10	F-1022-28	2	10-32 x 7/8" MACHINE SCREW	20	D-4024	1	TIRE, 26x14.00-12

# TRANSMISSION & RELATED PARTS

(RIGHT HAND SHOWN, LEFT HAND OPPOSITE)

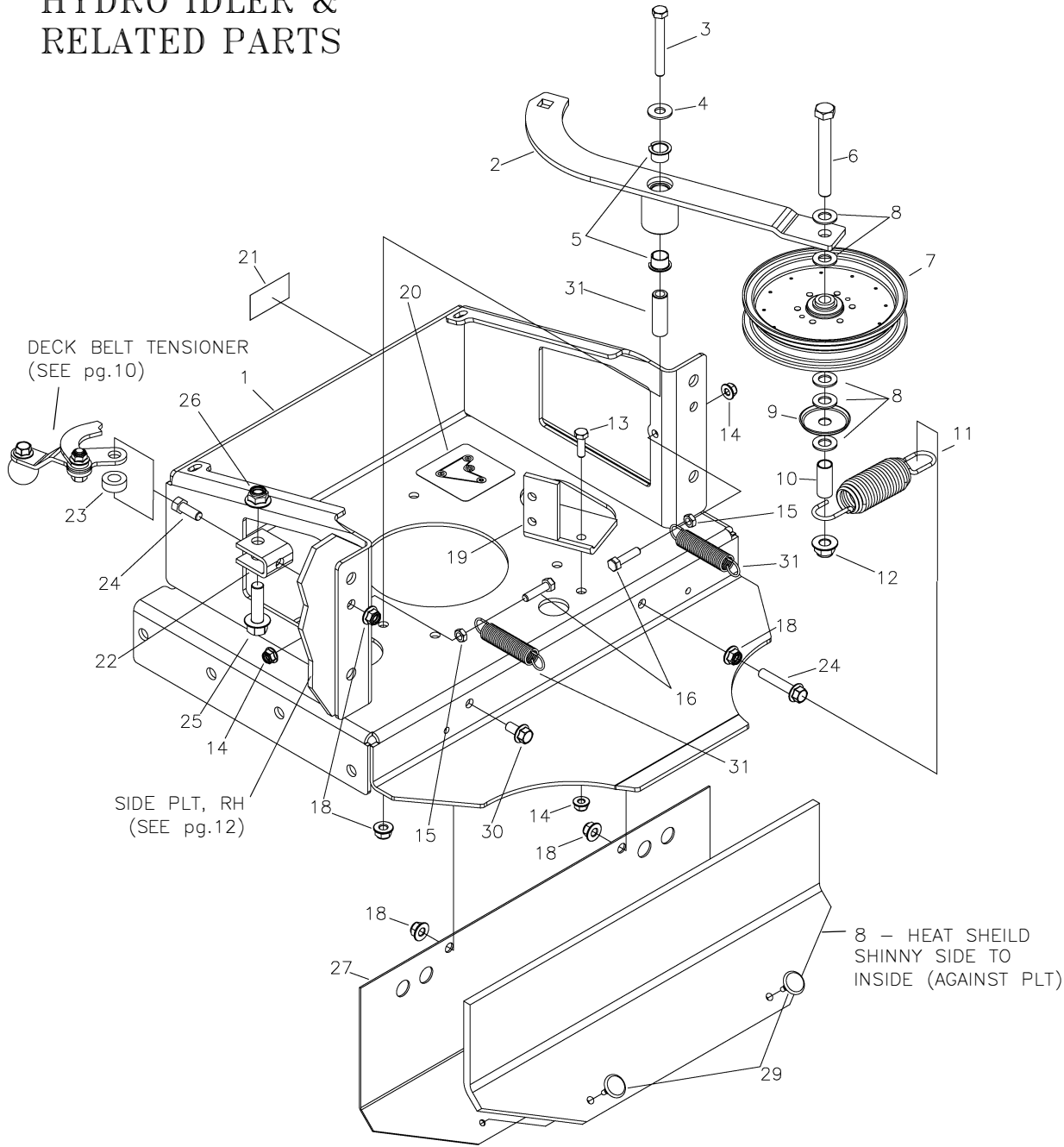


## ASSEMBLY NOTES:

1. MOUNT OIL COOLER (H-2780) TO BE PARALLEL TO HYDRO.
2. INSTALL FITTING (H-2331), SCREW IN ALL THE WAY WITH END POINTING TO THE FRONT.  
(DO NOT TIGHTEN)
3. ATTACH HOSE ASS'Y (H-2857) TO FITTING (H-2331) & END OF HOSE TO OIL COOLER (H-2780)  
(DO NOT TIGHTEN OR SECURE HOSE CLAMP)
4. ATTACH HOSE ASS'Y (H-3092) TO OIL COOLER (H-2780)  
(DO NOT SECURE HOSE CLAMP).
5. HOLD ALIGNMENT SO THAT ALL CONNECTIONS OFF OF OIL COOLER ARE PARALLEL, SECURE FITTING NUTS & THEN SECURE HOSE CLAMPS.

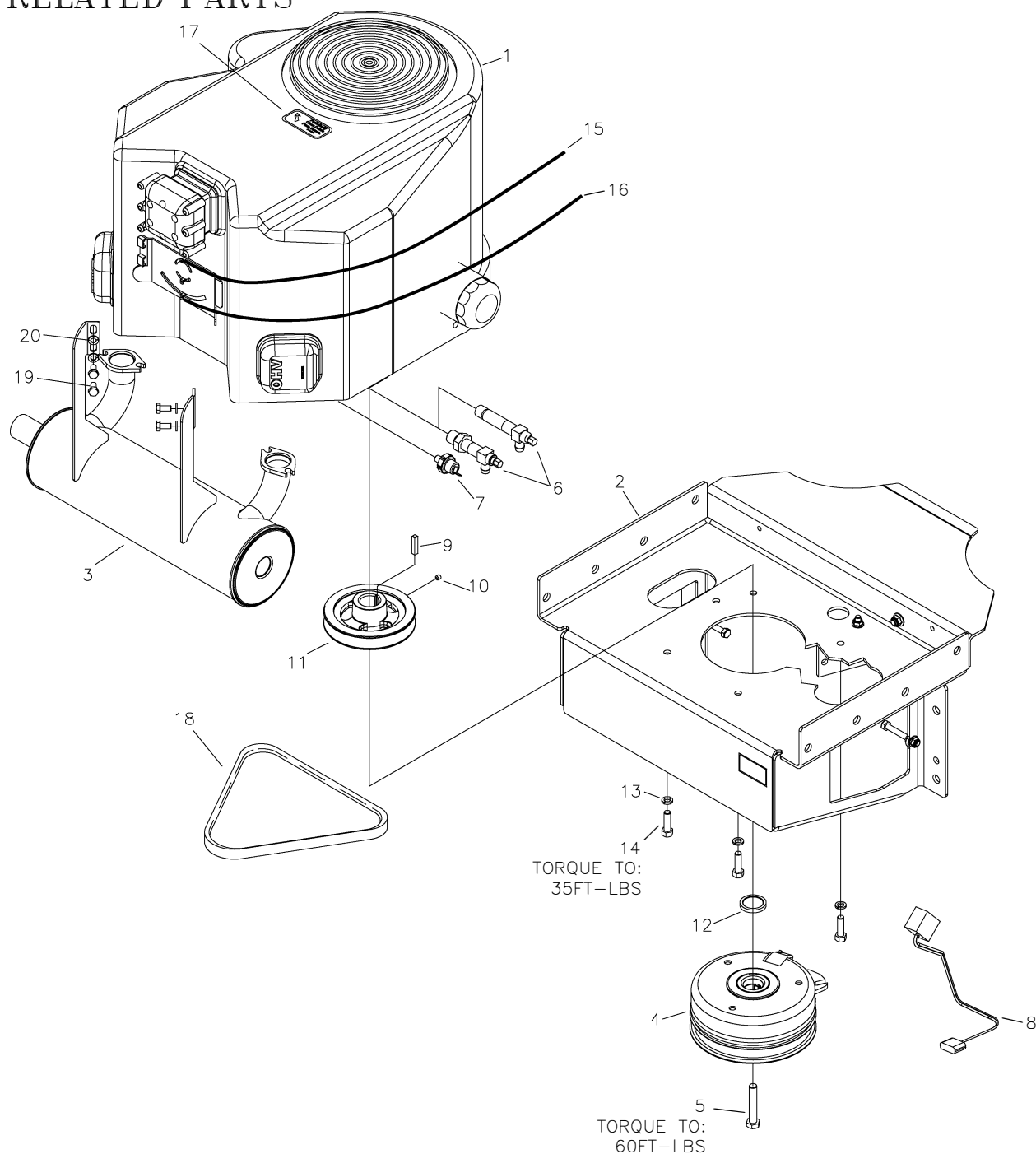
ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	D-3875-01	1	TRANSMISSION, ZT5400, LH	8	H-3092	1	HOSE ASS'Y, LOW PRESSURE, TEE
-	D-3875-02	1	TRANSMISSION, ZT5400, RH	9	F-2143	8	FHCS, 1/2-13x1", YZ, GR5
2	709-095W	1	HYDRO MOUNT WLDT, LH	10	H-3088	2	HOSE CLAMP, 3/4"
-	709-096W	1	HYDRO MOUNT WLDT, RH	11	H-2779	2	FITTING, 45 DEG., HOSE BARB
3	H-2735	2	TANK, HYDRO EXP., HYDROGEAR	12	H-2331	2	9/16", 90 DEG. EL
4	F-2132	6	NUT, 1/4-20 NYLOC, FLANGED	13	H-2857	2	HOSE ASS'Y, LOW PRESSURE, 3/8"
5	F-1009-01	6	1/4" FLAT WASHER	14	H-2780	2	COOLER, OIL, STACKED PLT, 3"x4"
6	F-2162	4	FHCS, 1/4-20 x 3/4", YZ, GR5	15	F-1015-05	2	1/4-20 x 1", CAPSCREW
7	H-3090	2	HOSE CLAMP, 1"				

# HYDRO IDLER & RELATED PARTS



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	709-009W	1	MOTER MOUNT WLDT	17	F-2124	1	FHCS, 3/8-16 x 3/4", YZ, GR5
2	709-048A	1	IDLER ARM ASSEMBLY	18	F-2151	5	NUT, 3/8-16 NYLOC, FLANGED
3	F-2207	1	HHCS, 3/8-16 X 3", YZ, GR8	19	709-106P	1	CLUTCH STOP
4	F-1009-03	1	3/8" FLAT WASHER	20	P-12918	1	DECAL, HYDRO BELT ROUTING
5	D-3730	2	BUSHING, FLANGED (PART OF 709-048A)	21	P-10777	1	PATENT NUMBER DECAL
6	F-1779	1	HHCS, 1/2-13 X 4", YZ, GR5	22	661-015P	1	SHACKLE
7	D-3903	1	PULLEY, FLAT IDLER, 6"	23	660-038P	1	3/8" SPACER
8	F-1521	3	1/2" WASHER, CUSTOM	24	F-1307	2	3/8-16 x 1-1/4", CAPSCREW
9	620-201P	1	WASHER, BEARING CAP	25	F-2154	1	FHCS, 1/2-13x1-3/4", YZ, GR5
10	629-826P	1	SPACER	26	F-2152	1	NUT, 1/2-13 NYLOC, FLANGED
11	H-2995	1	SPRING, 6.25 X 1.50.D. X 0.154ø	27	709-154P	1	PLATE, FILLER, REAR
12	F-2152	1	NUT, 1/2-13, NYLOC FLANGED	28	709-159P	1	HEAT SHIELD
13	F-1015-15	1	5/16-18 x 1" CAPSCREW	29	F-2165	2	FASTENER, PUSH IN FIR TREE .25x1x1
14	F-2063	3	NUT, 5/16-18 NYLOC, FLANGED	30	H-1635	2	SPRING (SEE pg.24)
15	F-1125	2	5/16-18 NUT	31	709-077P	1	MOUNTING PIN
16	F-1015-17	2	5/16-18 x 1-1/2", CAPSCREW				

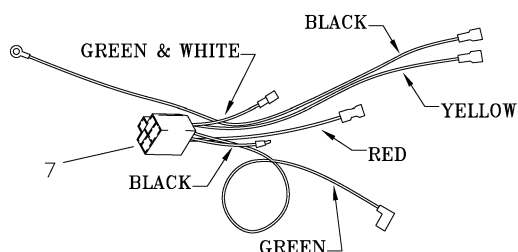
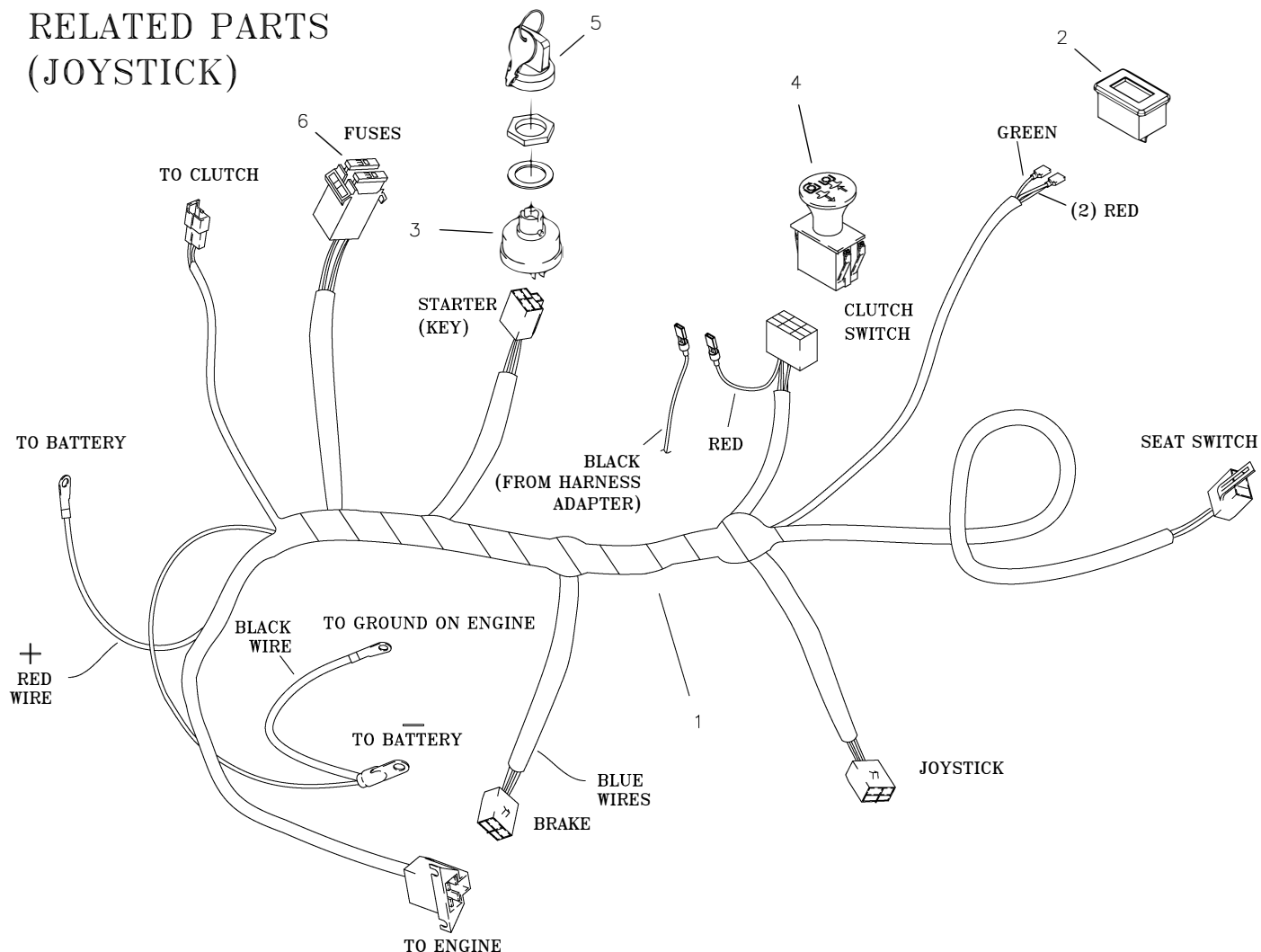
# ENGINE & RELATED PARTS



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	M-5360	1	ENGINE, 35HP KAWASAKI	10	F-1228	1	1/4-20x1/4" SET SCREW NYLOC
-	M-5400	1	ENGINE, 27HP KOHLER	11	709-134P	1	PULLEY, MOTOR, 5.245 DIA
2	709-009W	1	MOTOR MOUNT WLDT	12	709-161P	1	SPACER, ENGINE PULLEY (KOHLER)
3	H-3069	1	MUFFLER, 35HP KAWASAKI	13	F-1019-03	4	3/8" LOCKWASHER
-	H-2774	1	MUFFLER, 27HP KOHLER	14	F-2125	4	HCS, 3/8-16 x 1-1/4" (KAWASAKI)
4	E-6444	1	CLUTCH, 200ft/lb (KOHLER)	-	F-2238	4	HCS, 3/8-16x1-1/4" THD FORM (KOH)
-	E-6425	1	CLUTCH, 250ft/lb (KAWASAKI)	15	H-2611	1	THROTTLE CABLE
5	F-2113	1	CAPSCREW, 7/16-20x2-1/2", GR8	16	H-2404	1	CHOKE CABLE
6	H-2589	1	OIL DRAIN (KOHLER)	17	P-10077-11	1	DECAL "CLEAN DEBRIS"
-	H-2590	1	OIL DRAIN (KAWASAKI)	18	D-3900	1	HYDRO DRIVE BELT, B-71
7	E-6307	1	OIL PRESSURE SWITCH (KAWASAKI)	19	F-1834	4	HHCS, M8-1.25 X 16 (KAKWASAKI)
8	E-6575	1	WIRE HARNES, CLUTCH EXTENSION	20	F-1019-02	4	5/16" LOCK WASHER
9	621-113P	1	1/4"SQ x 1-1/4" KEY				



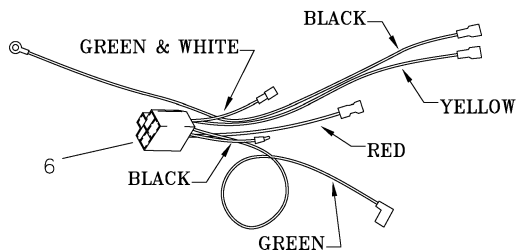
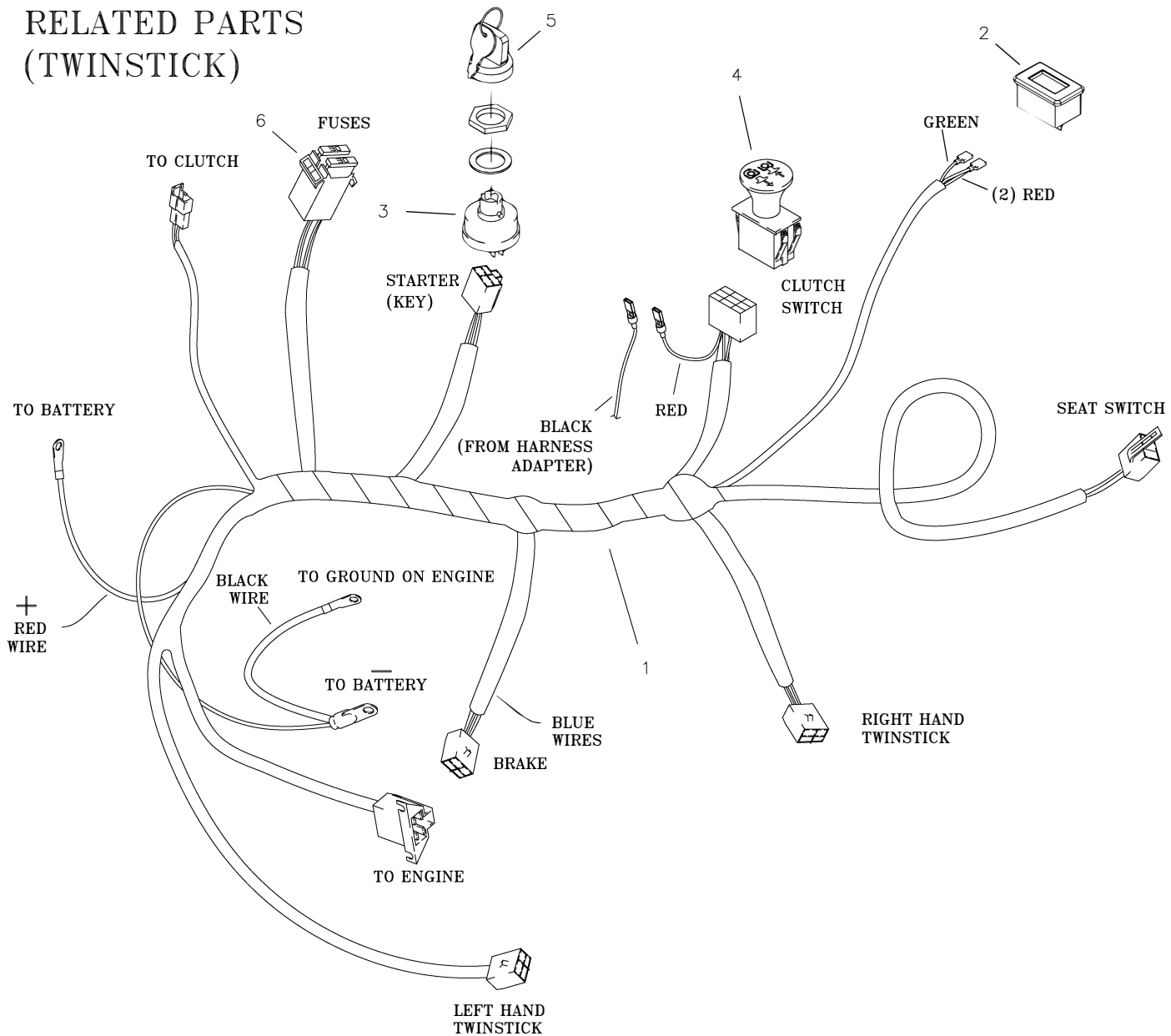
# WIRE HARNESS & RELATED PARTS (JOYSTICK)



**HARNESS ADAPTER**  
{ONLY REQ'D ON KAWASAKI ENGINES}

ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	E-6548	1	WIRE HARNESS, JS	5	E-6445	1	KEY, SET
2	E-5878	1	HOUR METER	6	E-6207	2	FUSE, #ATC-30
3	E-5873	1	KEY SWITCH (INCLUDES #5)	7	E-6417	1	KAWASAKI HARNESS ADAPTER
4	E-6403	1	PTO SWITCH				

# WIRE HARNESS & RELATED PARTS (TWINSTICK)

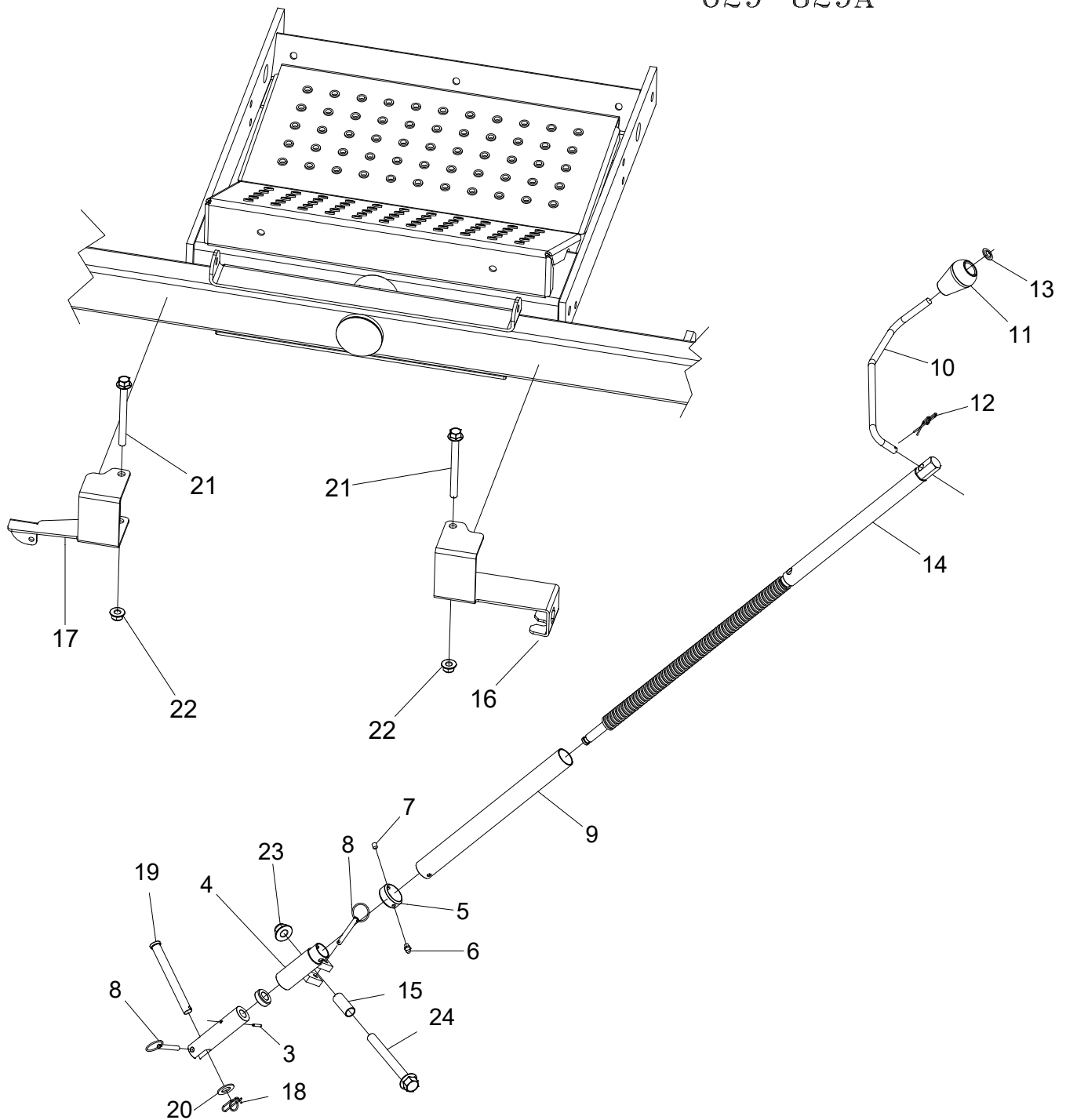


## HARNESS ADAPTER.

{ONLY REQ'D ON KAWASAKI ENGINES}

ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	E-6549	1	WIRE HARNESS, TS	5	E-6445	1	KEY, SET
2	E-5878	1	HOUR METER	6	E-6207	2	FUSE, #ATC-30
3	E-5873	1	KEY SWITCH (INCLUDES #5)	7	E-6417	1	KAWASAKI HARNESS ADAPTER
4	E-6403	1	PTO SWITCH				

# JACK ASSEMBLY 629-829A



ITEM	PART #	QTY.	DESCRIPTION	ITEM	PART #	QTY.	DESCRIPTION
1	629-825P	1	LOWER JACK CONNECTOR	13	F-1913	1	PUSH RETAINER 3/8 INCH
2	D-3857	1	THRUST BEARING	14	629-836W	1	SHAFT, JACK DRIVE WELDMENT
3	F-1458	1	ROLL PIN, 1/8 X 3/4	15	629-826P	1	SPACER, JACK
4	629-822W	1	DECK FLIP COLLAR WELDMENT	16	629-827P	1	JACK MOUNT BRACKET, LH
5	629-817P	1	JACK TUBE LOCKING COLLAR	17	629-873P	1	JACK MOUNT BRACKET, RH
6	H-1056	1	1/4" Grease Fitting	18	H-2239	1	1/2" Rue Ring
7	F-1467	1	Setscrew, 1/4-20 X 5/16 Nyloc	19	H-2240	1	1/2" x 4-1/2" Clevis Pin
8	F-2183	2	1/4 x 1-1/2" QUICK PIN	20	F-1521	1	1/2" WASHER, CUSTOM
9	629-823P	1	TUBE, GREASE COVER	21	F-2142	2	FHCS, 3/8-16 x 4", YZ, GR5
10	629-216P	1	CRANK HANDLE	22	F-2151	2	Nut, 3/8-16 Nyloc, Flanged
11	H-2343	1	KNOB	23	F-2152	1	Nut, 1/2-13 Nyloc, Flanged
12	F-1492	1	5/16-3/8 Rue Ring	24	F-2181	1	FHCS, 1/2-13 X 4.50, YZ, GR8

**FX921V  
FX1000V**

**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**

---

**Kawasaki**

**ENGLISH**

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

# SAFETY AWARENESS

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

## WARNING

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

## CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to, or destruction of equipment.

## NOTE

○ This note symbol indicates points of particular interest for more efficient and convenient operation.

# READ THIS FIRST

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

## WARNING

**DO NOT run the engine in a closed area. Exhaust gas contains carbon monoxide, an odorless and deadly poison.**

**Gasoline is extremely flammable and can be explosive under certain condition.**

Stop engine and allow the engine to cool before refueling.

**DO NOT** smoke. Make sure area is well ventilated and free from any source of flame or sparks including the pilot light of any appliance while refueling, servicing fuel system, draining gasoline and/or adjusting carburetor.

**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.

**To prevent fire hazard:**

Keep the engine at least 1 m (3.3 ft) away from buildings, obstructions and other burnable 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 on the engine and understand them. If any label is missing, damaged, or worn, get a replacement from your Kawasaki 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. 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

### Engines Greater Than or Equal To 225 cc

Model Year - 2015 and later

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) 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, or the consumer, 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.*
- *Engine models with fuel injection do not require high altitude performance adjustment.*

## 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 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 prohibit 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 are the acts listed below:

Do not tamper with the original emission related parts:

- Carburetor or DFI system and internal parts
- Spark Plug
- Magneto or electronic ignition system
- Fuel filter element
- Air cleaner element
- Crankcase
- Cylinder head
- 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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Aug. 2016 (1) (M)

Please note that the photographs and illustrations shown in this manual are based on Model FX1000V as a typical example among other similar models.

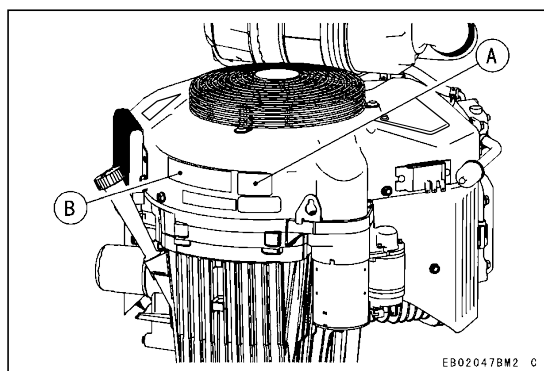
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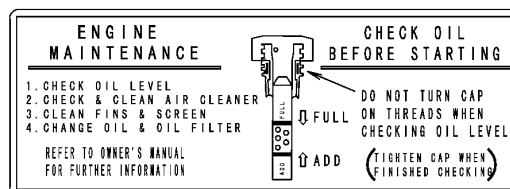
## 10 GENERAL INFORMATION

### GENERAL INFORMATION

#### Location of Safety Related Labels



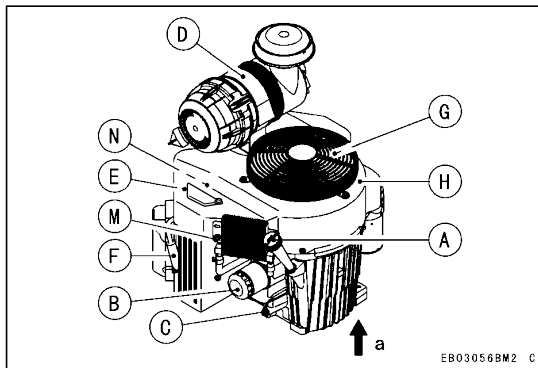
A. Warning Label  
B. Engine Maintenance



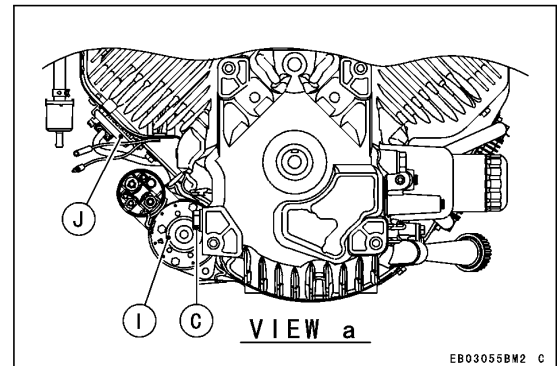
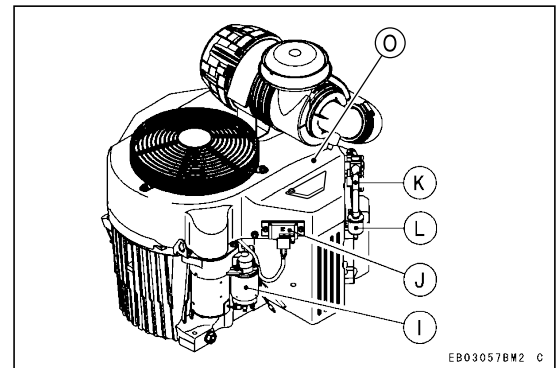
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### Location of Parts



- A. Oil Gauge Filler
- B. Oil Filter
- C. Oil Drain Plug
- D. Air Cleaner
- E. Carburetor
- F. Spark Plug Cap/Spark Plug
- G. Air Inlet Screen
- 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)

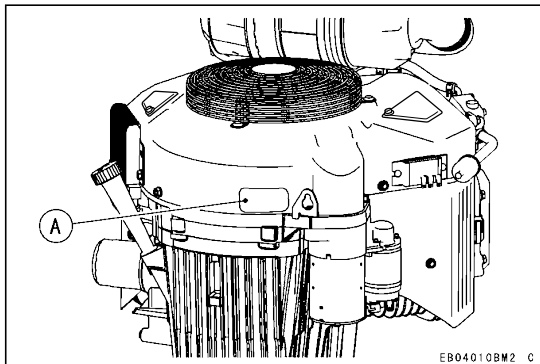


## 12 GENERAL INFORMATION

### 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 your dealer when ordering parts.



A. Engine Serial Number

### Tune-up Specifications

ITEM	Specifications
Ignition Timing	Unadjustable
Spark Plugs: Gap	NGK BPR5ES 0.75 mm (0.030 in)
Low Idle Speed	1 550 r/min (rpm)
High Idle Speed	3 600 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.

## Engine Oil Capacity

### Engine Oil Capacity

FX921V	1.7 L (1.8 US·qt)
FX1000V	1.9 L (2.0 US·qt)

## 14 FUEL AND OIL RECOMMENDATIONS

# FUEL AND OIL RECOMMENDATIONS

## Fuel

Use only clean, fresh, unleaded regular grade gasoline.

### CAUTION

**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.

## 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)

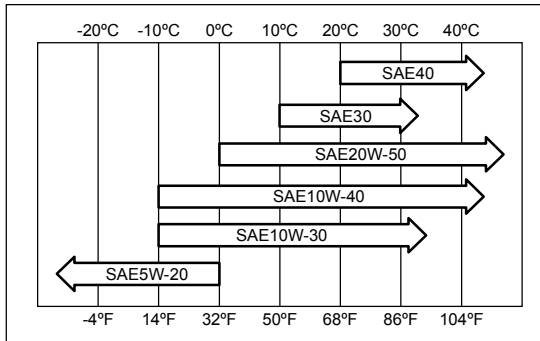
You may use gasoline containing up to 5% methanol by volume, as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts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

## Engine Oil

The following engine oils are recommended.  
API Service Classification : SF, SG, SH, 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.

## 16 PREPARATION

### PREPARATION

#### Fuel

#### **⚠ WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions.

Before refueling, turn the engine switch to the OFF position. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks, including any appliances with a pilot light.

Never fill tank so that fuel level rises into the filler neck. If tank is overfilled, heat may cause fuel to expand and overflow through vents in tank cap.

After refueling make sure tank cap is securely closed.

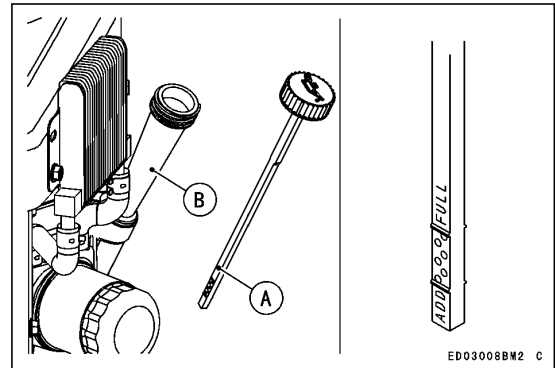
If gasoline is spilled, wipe it up immediately.

- 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 (A) and wipe it with a clean cloth.
- Pour the oil slowly to "FULL" mark on the oil gauge.
- Insert the oil gauge into tube (B) WITHOUT SCREWING IT IN.
- Remove the oil gauge (A) to check the oil level. The level should be between "ADD" and "FULL" marks. Do not overfill.
- Install and tighten the oil gauge (A).



A. Oil Gauge  
B. Tube

### CAUTION

The engine is shipped without engine oil.

## 18 STARTING

### STARTING

#### Start Engine

#### ⚠ WARNING

Exhaust gases contain carbon monoxide, a colorless, odorless, poisonous gas. Do not operate the unit in enclosed areas. Provide adequate ventilation at all times.

#### ⚠ 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

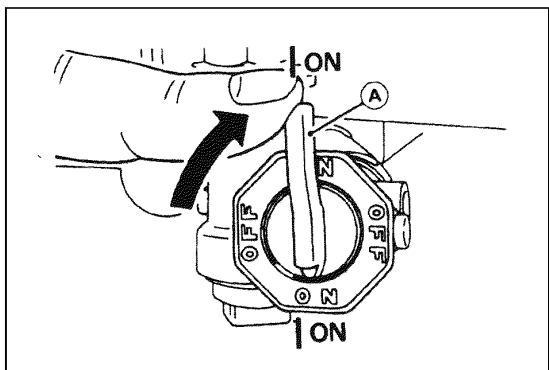
- Be aware of the following in order to start the engine easily in cold weather.

- 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 (A) on the equipment.
- Put the engine switch key into the engine switch. For Control Panel Switch Type, move the throttle lever on the equipment to its halfway position. Moving the lever away from its low speed end turns ignition on.
- Move the throttle lever to its halfway position between "SLOW" speed and "FAST" speed.

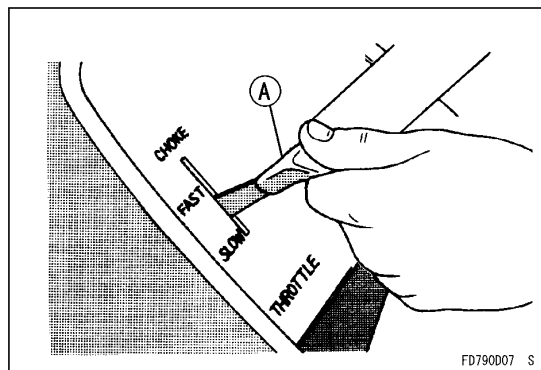
#### [Separate Choke type]

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

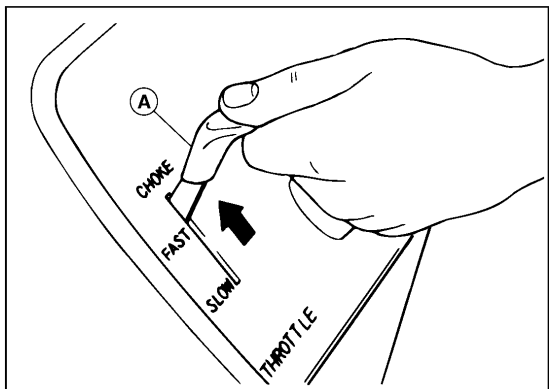
- After starting the engine, gradually return the choke control lever to the fully open position.



A. Fuel Valve



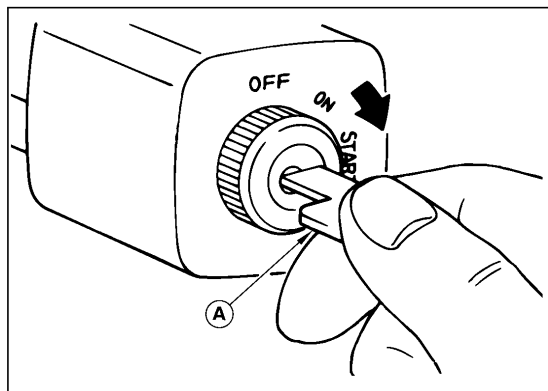
A. Throttle Lever



A. Throttle Lever

## 20 STARTING

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



### CAUTION

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.

### CAUTION

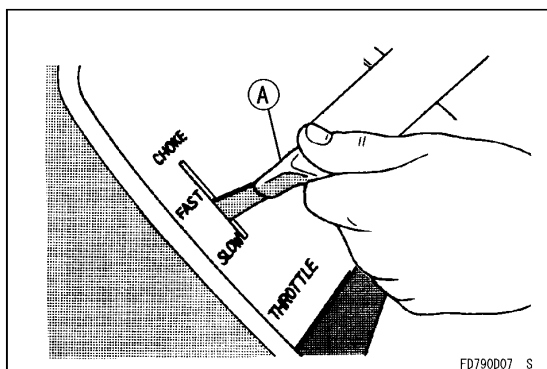
Whenever you start engine, make sure warning light is not illuminated after engine starts. If warning light comes on, stop engine immediately and check oil level (if equipped).

## OPERATING

### Warming Up

After the engine starts, move the throttle lever (A) 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 (A) on the equipment to its "FAST" position.



### CAUTION

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.

### CAUTION

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).

## 22 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.

### CAUTION

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 (A) to SLOW position.
- Lower the engine speed to the idle speed. Keep running at the idle speed for about one minute.

#### CAUTION

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.

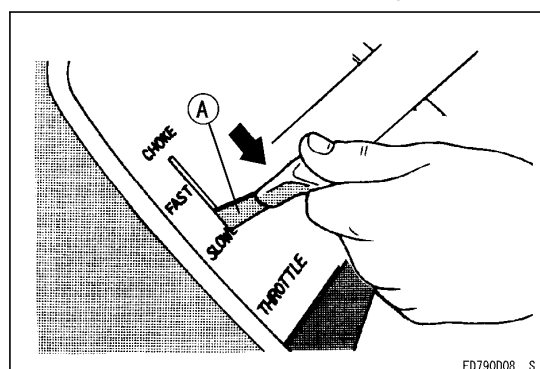
- Turn the engine switch or the switch key to "OFF" position.  
For Control Panel Switch Type, move the throttle lever against its low speed end to turn the ignition off.

#### Emergency Stop

- Immediately turn the engine switch or the switch key to "OFF" position.

- Close the fuel valve on the equipment.

For Control Panel Switch Type, move the throttle lever on the equipment to its low speed end. Moving the lever to its low speed end turns ignition off.



FD790008 S

#### WARNING

Always remove Engine Key from switch when leaving equipment unattended or when equipment is not in use.

## 24 ADJUSTMENT

## ADJUSTMENT

Separate choke type of choke control is used for FX921V and FX1000V Model Engines.

### Separate Choke Type

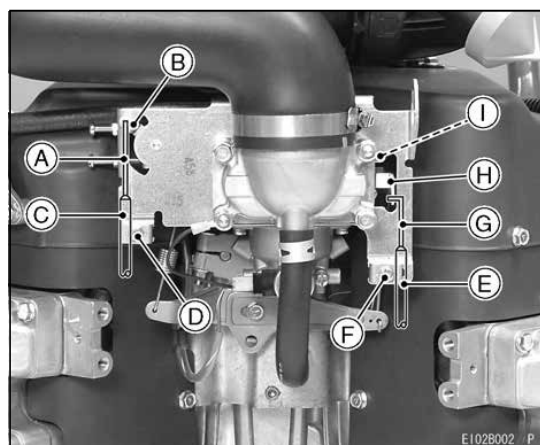
#### Throttle Cable Installation, Adjustment

- Link the throttle cable (A) to the speed control lever (B) and loosely clamp the throttle cable outer housing (C) with the cable clamp bolt (D).
- Move the throttle lever to "FAST" position.
- Pull up the outer housing (C) of the throttle cable until the inner wire (A) has almost no slack, and tighten the cable clamp bolt (D).
- Move the throttle lever to "slow" position. Make sure that the carburetor throttle valve pivot arm (I) is moved smoothly.

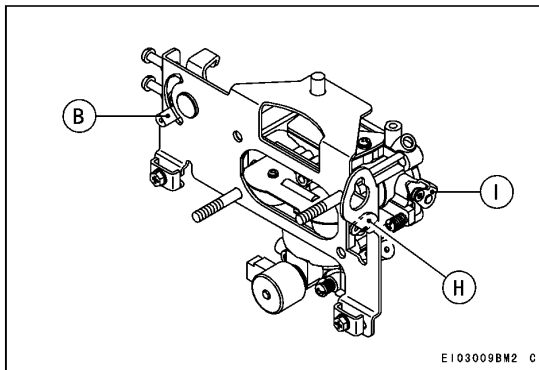
#### Choke Cable Installation, Adjustment

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

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



E102B002 P



B. Control Lever (Throttle)  
H. Choke Valve Pivot Arm  
I. Throttle Valve Pivot Arm

## Engine Speed Adjustment

### 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.

## 26 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

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

### NOTE

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

◆ : Service more frequently under dusty conditions.

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

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.	●						



MAINTENANCE	INTERVAL						
	Daily	Every 50 hr.	Every 100 hr.	Every 200 hr.	Every 250 hr.	Every 300 hr.	Every 500 hr.
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.							•

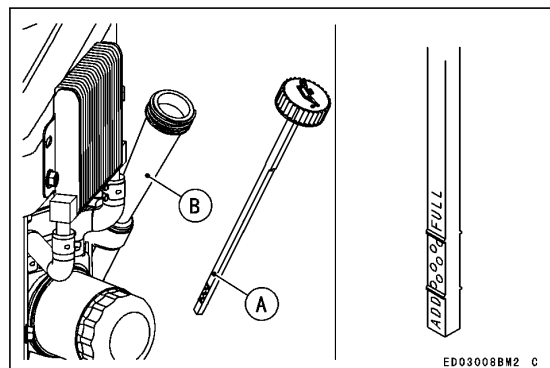
## 28 MAINTENANCE

### 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

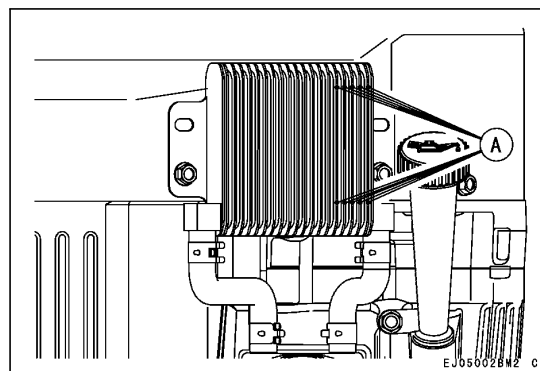
FX921V	1.7 L (1.8 US-qt)
FX1000V	[when oil filter is not removed]
	1.9 L (2.0 US-qt)
	[when oil filter is removed]



### Oil Cooler Service

Check and clean oil cooler fins every 100 hours.

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



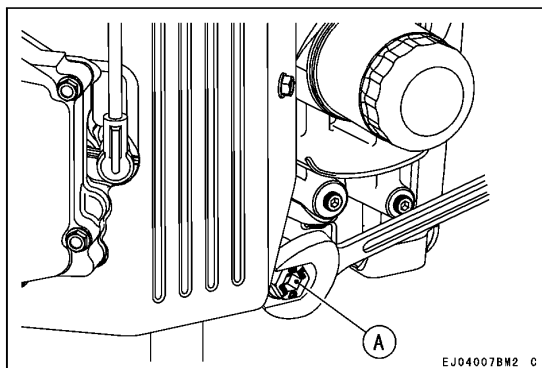
A. Oil Cooler Fins

## 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.**

## 30 MAINTENANCE

### Oil Filter Change

- Change the oil filter every 200 hours of operation.

### ⚠ WARNING

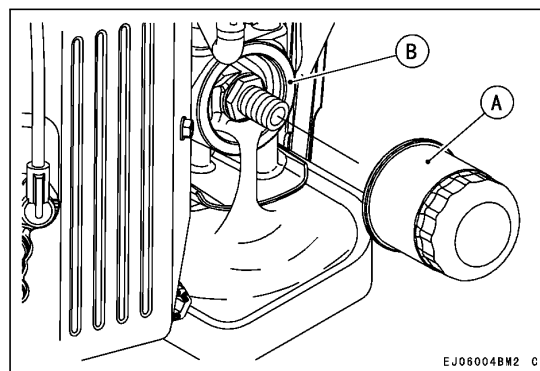
**Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before attempting to remove oil filter.**

- Drain the engine oil into a suitable container.

### CAUTION

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

- Rotate the oil filter (A) 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 (B). 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

### CAUTION

Do not run the engine with the air cleaner removed.

### Air Cleaner

This 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.

### CAUTION

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

### CAUTION

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 condition may require more frequent maintenance.

### Primary Element

Replace the primary element every 250 hrs.

### Secondary Element

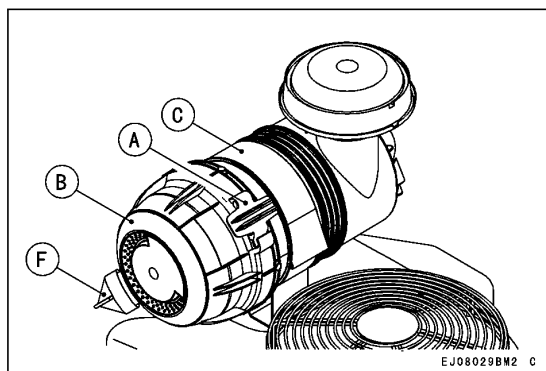
- Replace the secondary element with a new one, if the secondary element is dirty when the primary element is checked.
- Replace the secondary element with a new one every 500 hrs.

### Cap (Dust Ejector Valve)

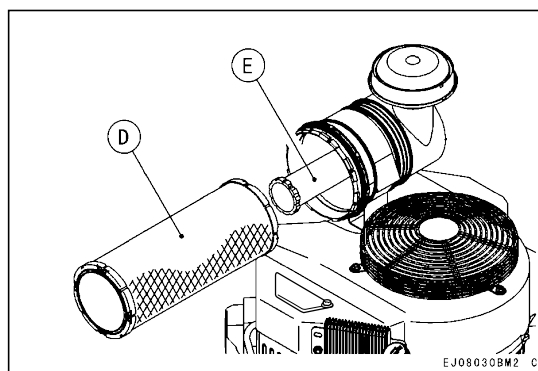
Push and open the cap on the case of the air cleaner body to expel dust and/or water accumulated inside.

- Unfasten the two retaining clamps (A) and remove the case (B) from the air cleaner body (C).
- Remove the primary element (D) and the secondary element (E) from the air cleaner body by pulling out them.

## 32 MAINTENANCE



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



- D. Primary Element
- E. Secondary Element

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

## Fuel Filter and Fuel Pump Service

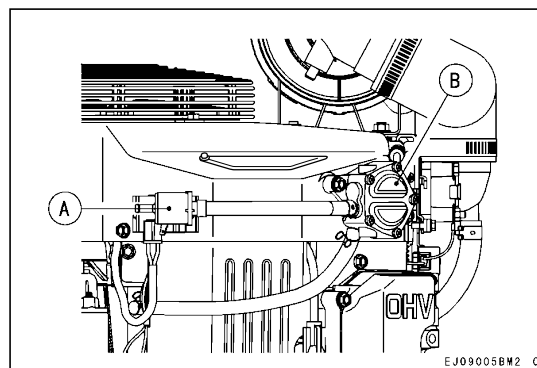
### ⚠ WARNING

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



## 34 MAINTENANCE

### Spark Plug Service

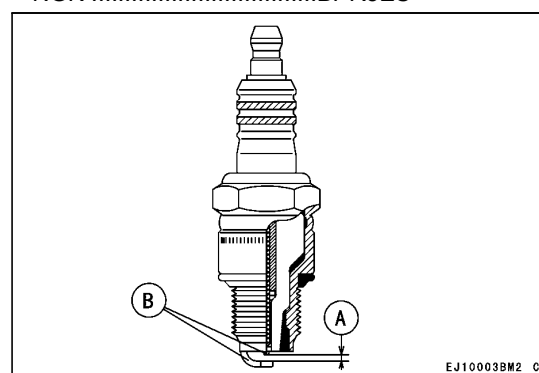
### ⚠ WARNING

Hot engine components can cause severe burns.  
Stop engine and allow it to cool before checking spark plugs.

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

- Disconnect the spark plug caps from the spark plugs and remove the spark plugs.
- Clean the electrodes (B) 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 .....BPR5ES



A. Spark Plug Gap  
B. Electrodes

Cooling System Cleaning

Before each operation, check that the air inlet (ro-tary) screen (C) is free from grass and debris. Clean the screen if necessary. Every 50 hours of operation, check dust or debris inside fan housing. To check inside, remove the cleanout cover and see inside from the inspection ports of fan housing. Clean or blow the dust if needed. If it is difficult to clean the dust with the ports, remove the fan housing and clean the dirt completely. Every 100 hours of operation, check and clean the cooling fins and the inside of engine shrouds (H) to remove grass, chaff or dirt clogging the cooling system and causing overheating. When cleaning, remove the guard (A), air inlet screen (C) and the cooling fan (G), then remove the fan housing (E) and engine shrouds (H) (includes removing the air cleaner, fuel pump, oil cooler and the voltage regulator parts) if necessary.

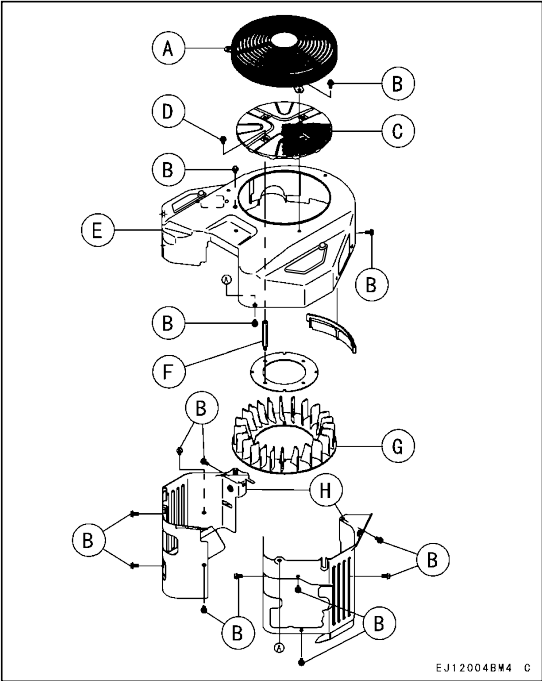
CAUTION

Do not run engine before all cooling system parts are reinstalled to keep cooling and car-buretion 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)

36 MAINTENANCE



## STORAGE

### Fuel System Draining

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 drain the fuel tank, run the engine at low idle until engine stalled.

#### **⚠ WARNING**

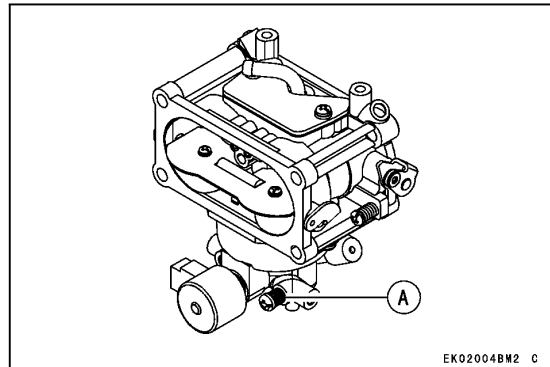
**Gasoline is extremely flammable and can be explosive under certain conditions.**

**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.



EK02004BM2 C

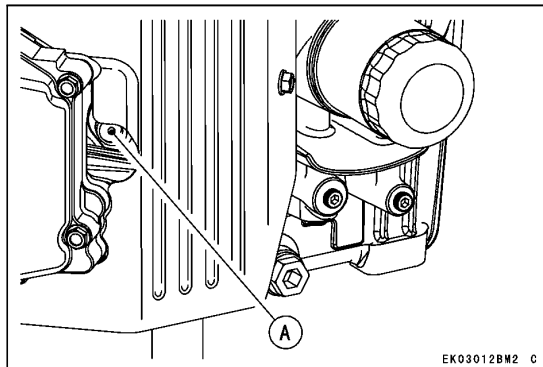
A. Fuel Drain Screw

#### **⚠ WARNING**

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

### 38 STORAGE

- Remove the spark plugs and pour approx 1 ~ 2 mL (0.06 ~ 0.1 cu in.) of engine oil through the spark plug holes [A] 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).



EK03012BM2 C

## 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	Faulty pistons, cylinders, piston rings, and head gaskets	◇
		Faulty valves	
		Loose spark plugs	Tighten properly
		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 carburetor	◇
	Spark plugs fouled by fuel	Over-rich fuel/air mixture	Open choke. Rotate engine with spark plugs removed to discharge excess fuel. Clean spark plugs.
		Clogged air cleaner	Clean
		Faulty carburetor	◇
		Incorrect grade/type of fuel	Change fuel
		Water in fuel	

### 40 TROUBLESHOOTING GUIDE

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

## ENVIRONMENTAL PROTECTION

To protect our environment, properly dispose of used batteries, engine oil, gasoline, coolant, or other components that you might discard.

Consult your an authorized Kawasaki engine dealer or equally qualified service facility or local environmental waste agency for the proper disposal procedures.

### 42 SPECIFICATIONS

## SPECIFICATIONS

	FX921V, FX1000V
Type	Air- cooled, 4-stroke OHV 6Valves, V-twin cylinder, gasoline engine
Bore x Stroke	89.15 × 80 mm (3.5 × 3.15 in.)
Displacement	999 mL (61 cu.in.)
Ignition System	Solid-state ignition
Direction of rotation	Counterclockwise facing the PTO Shaft
Starting system	Electric starter
Dry weight : kg (lbs)	62.6 kg (138 lbs)

### NOTE

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



# 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.

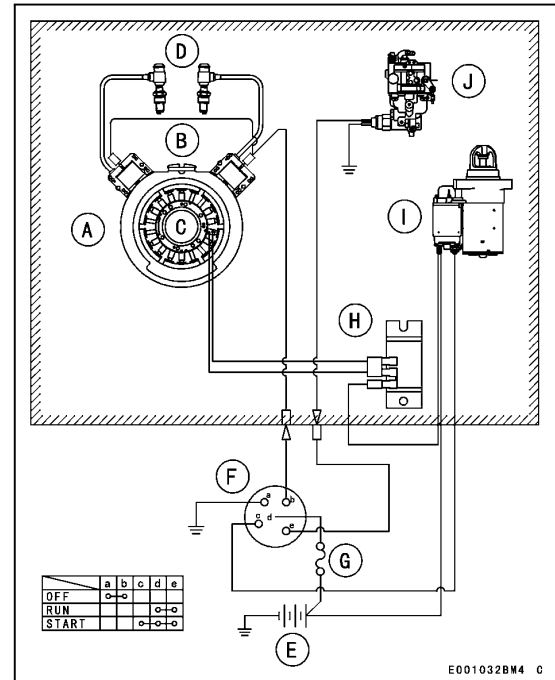
### Battery Capacity Recommended

Model	Battery Capacity
Lawn Mower	12 V 550 CCA Class
Snow Thrower	12 V 550 CCA Class

### NOTE

○ Portion surrounded by hatching shows Kawasaki procurement parts.

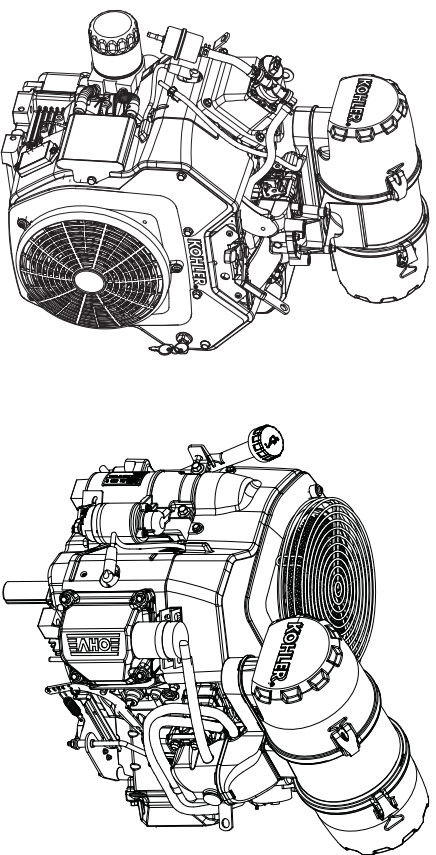
- |                   |                      |
|-------------------|----------------------|
| A. Flywheel       | F. Key Switch        |
| B. Ignition Coils | G. Fuse              |
| C. Charging Coil  | H. Voltage Regulator |
| D. Spark Plugs    | I. Electric Starter  |
| E. Battery        | J. Carburetor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



# KOHLER® Command PRO

EN  
ESS  
FRC

## CH682, CH732, CH742, CH752 CV682, CV732, CV742, CV752 Owner's Manual



### IMPORTANT: Read all safety precautions and instructions carefully before operating equipment. Refer to operating instruction of equipment that this engine powers.

Ensure engine is stopped and level before performing any maintenance or service.

Warranty coverage as outlined in warranty card and on KohlerEngines.com. Please review carefully as it provides you specific rights and obligations.

To maintain compliance with applicable emission regulations, exhaust system backpressure may not exceed limits which can be found on KohlerEngines.com. Search by Model No., select Read More, then select Specs tab.

Record engine information to reference when ordering parts or obtaining warranty coverage.

Engine Model \_\_\_\_\_  
Specification \_\_\_\_\_  
Serial Number \_\_\_\_\_  
Purchase Date \_\_\_\_\_

### Safety Precautions


**▲ WARNING:** A hazard that could result in death, serious injury, or substantial property damage.

**▲ CAUTION:** A hazard that could result in minor personal injury or property damage.


NOTE: is used to notify people of important installation, operation, or maintenance information.

	<b>▲ WARNING</b> Explosive Fuel can cause fires and severe burns. Do not fill fuel tank while engine is hot or running.
---	---

Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well ventilated, unoccupied buildings, away from sparks or flames. Spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition. Never use gasoline as a cleaning agent.

	<b>▲ WARNING</b> Carbon Monoxide can cause severe nausea, fainting or death. Avoid inhaling exhaust fumes.
---	--

Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless, colorless, and can cause death if inhaled.


	<b>▲ WARNING</b> Accidental Starts can cause severe injury or death. Disconnect and ground spark plug lead(s) before servicing.
---	---

Before working on engine or equipment, disable engine as follows: 1) Disconnect spark plug lead(s). 2) Disconnect negative (-) battery cable from battery.

	<b>▲ WARNING</b> Rotating Parts can cause severe injury. Stay away while engine is in operation.
---	--

Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate engine with covers, shrouds, or guards removed.

	<b>▲ CAUTION</b> Electrical Shock can cause injury. Do not touch wires while engine is running.
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	<b>▲ WARNING</b> Hot Parts can cause severe burns. Do not touch engine while operating or just after stopping.
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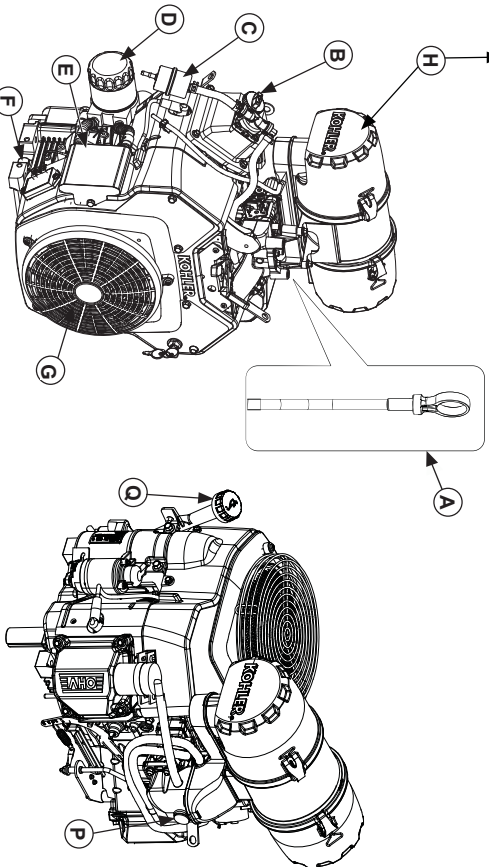
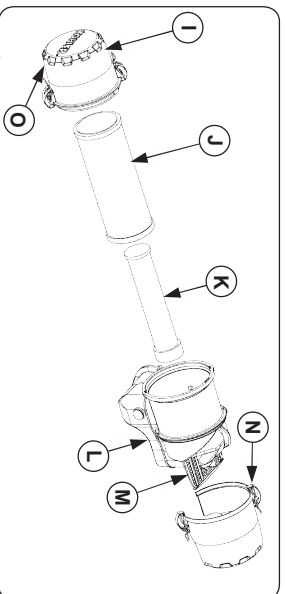
Never operate engine with heat shields or guards removed.

### California Proposition 65 Warning

Engine exhaust from this product contains chemicals known to State of California to cause cancer, birth defects, or other reproductive harm.

### California Proposition 65 Warning

This product contains chemicals known to State of California to cause cancer, birth defects, or other reproductive harm.



A	B	C	D
Dipstick	Oil Fill	Fuel Filter	Oil Filter
E	F	G	H
Oil Cooler	Oil Drain Plug	Debris Screen	Heavy-Duty Air Cleaner
I	J	K	L
End Cap	Element	Inner Element	Air Cleaner Housing
M	N	O	P
Inlet Screen	Retaining Clip	Ejector Area	Plug or Filter Winder
Q			
Oil Fill/Dipstick			

Visit [KohlerEngines.com](http://KohlerEngines.com) for service parts information and purchasing options.

#### Pre-Start Checklist

1. Check oil level. Add oil if low. Do not overfill.
2. Check fuel level. Add fuel if low. Check fuel system components and lines for leaks.
3. Check and clean cooling areas, air intake areas and external surfaces of engine (particularly after storage).
4. Check that air cleaner components and all shrouds, equipment covers, and guards are in place and securely fastened.
5. Check spark arrestor (if equipped).

#### Starting

##### WARNING



Carbon Monoxide can cause severe nausea, fainting or death. Avoid inhaling exhaust fumes.

Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless, colorless, and can cause death if inhaled.

##### WARNING



Rotating Parts can cause severe injury. Stay away while engine is in operation.

Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate engine with covers, shrouds, or guards removed.

**NOTE:** Do not crank engine continuously for more than 10 seconds. Allow a 60 second cool down period between starting attempts. Failure to follow these guidelines can burn out starter motor.

**NOTE:** Upon start-up, a metallic ticking may occur. Run engine for 5 minutes. If noise continues, run engine at mid throttle for 20 minutes. If noise persists, take engine to your local Kohler authorized dealer.

1. Place throttle control midway between slow and fast positions. Place choke control into ON position.
2. Turn key switch to START position. Release switch as soon as engine starts. If starter does not turn engine over, shut off key switch immediately. Do not make further attempts to start engine until condition is corrected. Do not jump start. See your Kohler authorized dealer for trouble analysis.

3. Cold engine: Gradually return choke control to OFF position after engine starts and warms up. Engine/equipment may be operated during warm-up period, but it may be necessary to leave choke partially on until engine warms up.  
Warm engine: return choke to OFF position as soon as engine starts.

#### Cold Weather Starting Hints

1. Use proper oil for temperature expected.
2. Disengage all possible external loads.
3. Use fresh winter grade fuel. Winter grade fuel has higher volatility to improve starting.

#### Stopping

1. If possible, remove load by disengaging all PTO driven attachments.
2. Position throttle control between half and full throttle, stop engine.

#### Angle of Operation

Refer to operating instructions of equipment this engine powers. Do not operate this engine exceeding maximum angle of operation; see specification table. Engine damage could result from insufficient lubrication.

#### Engine Speed

**NOTE:** Do not tamper with governor setting to increase maximum engine speed. Overspeed is hazardous and will void warranty.

#### Cold Weather Operation

Anti-icing kits can be installed to improve cold weather operation and are available through your local Kohler authorized dealer.

#### High Altitude Operation


If this engine is operated at an altitude of 4000 ft. (1219 meters) or above, a high altitude carburetor kit is required. To obtain high altitude carburetor kit information or to find a Kohler authorized dealer, visit [KohlerEngines.com](http://KohlerEngines.com) or call 1-800-544-2444 (U.S. and Canada).

This engine should be operated in its original configuration below 4000 ft. (1219 meters).

Operating this engine with the wrong engine configuration at a given altitude may increase its emissions, decrease fuel efficiency and performance, and result in damage to the engine.

## Maintenance Instructions

EN

 <b>WARNING</b> Accidental Starts can cause severe injury or death. Disconnect and ground spark plug lead(s) before servicing.	Before working on engine or equipment, disable engine as follows: 1) Disconnect spark plug lead(s). 2) Disconnect negative (–) battery cable from battery.
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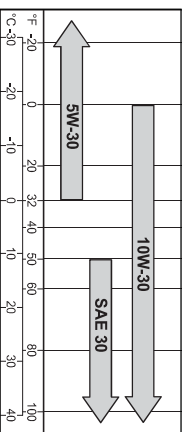
Normal maintenance, replacement or repair of emission control devices and systems may be performed by any repair establishment or individual; however, warranty repairs must be performed by a Kohler authorized dealer found at KohlerEngines.com or 1-800-544-2444 (U.S. and Canada).

### Maintenance Schedule

<b>Weekly</b> <ul style="list-style-type: none"> <li>• Check air cleaner element.</li> </ul>
<b>Every 100 Hours or Annually<sup>1</sup></b> <ul style="list-style-type: none"> <li>• Change oil.</li> <li>• Remove cooling shrouds and clean cooling areas.</li> <li>• Check oil cooler fins, clean as necessary (if equipped).</li> </ul>
<b>Every 200 Hours</b> <ul style="list-style-type: none"> <li>• Change oil filter.</li> <li>• Replace fuel filter.</li> </ul>
<b>Every 250 Hours<sup>1</sup></b> <ul style="list-style-type: none"> <li>• Replace air cleaner element and check inner element.</li> </ul>
<b>Every 500 Hours<sup>1</sup></b> <ul style="list-style-type: none"> <li>• Replace air cleaner inner element.</li> <li>• Replace spark plugs and set gap.</li> </ul>
<b>Every 500 Hours<sup>2</sup></b> <ul style="list-style-type: none"> <li>• Have crankshaft spline lubricated.</li> </ul>
<sup>1</sup> Perform these procedures more frequently under severe, dusty, dirty conditions.
<sup>2</sup> Have a Kohler authorized dealer perform this service.

### Oil Recommendations

We recommend use of Kohler oils for best performance. Other high-quality detergent oils (including synthetic) of API (American Petroleum Institute) service class SJ or higher are acceptable. Select viscosity based on air temperature at time of operation as shown in table below.



### Check Oil Level

**NOTE:** To prevent extensive engine wear or damage, never run engine with oil level below or above operating range indicator on dipstick.

Ensure engine is cool. Clean oil fill/dipstick areas of any debris.

1. Remove dipstick, wipe oil off.
  - a. Press-in cap: reinsert dipstick into tube; press completely down.
  - or
  - b. Thread-on cap: reinsert dipstick into tube; rest cap on tube, do not thread cap onto tube.
2. Remove dipstick; check oil level. Level should be at top of indicator on dipstick.
3. If oil is low on indicator, add oil up to top of indicator mark.
4. Reinstall dipstick and tighten securely.

## Change Oil and Filter


Change oil while engine is warm.

1. Clean area around oil fill cap/dipstick, drain plug/oil drain valve.
  - a. Remove drain plug and oil fill cap/dipstick. Allow oil to drain completely.
  - or
  - b. Open oil drain valve cap; if needed, attach a length of 1/2 in. I.D. hose to direct oil into appropriate container; twist valve drain body counterclockwise and pull. Remove dipstick. Allow oil to drain completely.
2. Clean area around oil filter. Place a container under filter to catch any oil and remove filter; Wipe off mounting surface.
  - a. Reinstall drain plug. Torque to 10 ft. lb. (13.6 N·m).
  - or
  - b. Close oil drain valve body, remove hose (if used), and replace cap.
3. Place new filter in shallow pan with open end up. Fill with new oil until oil reaches bottom of threads. Allow 2 minutes for oil to be absorbed by filter material.
4. Apply a thin film of clean oil to rubber gasket on new filter.
5. Refer to instructions on oil filter for proper installation.
6. Fill crankcase with new oil. Level should be at top of indicator on dipstick.
7. Reinstall oil fill cap/dipstick and tighten securely.
8. Start engine; check for oil leaks. Stop engine; correct leaks. Recheck oil level.
9. Dispose of used oil and filter in accordance with local ordinances.

### Oil Sentry™ (If equipped)

This switch is designed to prevent engine from starting in a low oil or no oil condition. Oil Sentry™ may not shut down a running engine before damage occurs. In some applications this switch may activate a warning signal. Read your equipment manuals for more information.

## Fuel Recommendations

 <b>WARNING</b> Explosive Fuel can cause fires and severe burns. Do not fill fuel tank while engine is hot or running.
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Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well ventilated, unoccupied buildings, away from sparks or flames. Spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition. Never use gasoline as a cleaning agent.

**NOTE:** E15, E20 and E85 are NOT approved and should NOT be used; effects of old, stale or contaminated fuel are not warrantable.

Fuel must meet these requirements:

- Clean, fresh, unleaded gasoline.
- Octane rating of 87 (R+M)/2 or higher.
- Research Octane Number (RON) 90 octane minimum.
- Gasoline up to 10% ethyl alcohol, 90% unleaded is acceptable.
- Methyl Tertiary Butyl Ether (MTBE) and unleaded gasoline blend (max 15% MTBE by volume) are approved.
- Do not add oil to gasoline.
- Do not overfill fuel tank.
- Do not use gasoline older than 30 days.

### Fuel Line

Low permeation fuel line must be installed on carbureted Kohler Co. engines to maintain EPA and CARB regulatory compliance.

## Spark Plugs

	<b>CAUTION</b>
Electrical Shock can cause injury. Do not touch wires while engine is running.	

Clean out spark plug recess. Remove plug and replace.

1. Check gap using wire feeler gauge. Adjust gap, see specification table for adjustment.
2. Install plug into cylinder head.
3. Torque plug to 20 ft. lb. (27 N·m).

## Air Cleaner

**NOTE:** Operating engine with loose or damaged air cleaner components could cause premature wear and failure. Replace all bent or damaged components.

**NOTE:** Paper element cannot be blown out with compressed air.

1. Unhook retaining clips and remove end cap(s).
2. Check and clean inlet screen (if equipped).
3. Pull air cleaner element out of housing and replace. Check condition of inner element; replace when dirty.
4. Check all parts for wear, cracks, or damage, and that ejector area is clean.
5. Install new element(s).
6. Reinstall end cap(s) with dust ejector valve/screen down; secure with retaining clips.


## Breather Tube

Ensure both ends of breather tube are properly connected.

## Oil Cooler (if equipped)

1. Clean fins with a brush or compressed air.
2. Remove two screws securing oil cooler, and tilt to clean back side.
3. Reinstall oil cooler.

## Air Cooling

	<b>WARNING</b>
Hot Parts can cause severe burns. Do not touch engine while operating or just after stopping.	

Never operate engine with heat shields or guards removed.

Proper cooling is essential. To prevent over heating, clean screens, cooling fins, and other external surfaces of engine. Avoid spraying water at wiring harness or any electrical components. See Maintenance Schedule.

## Repairs/Service Parts

We recommend that you use a Kohler authorized dealer for all maintenance, service, and engine parts. To find a Kohler authorized dealer visit [KohlerEngines.com](http://KohlerEngines.com) or call 1-800-544-2444 (U.S. and Canada).

## Storage

If engine will be out of service for 2 months or more follow procedure below.

1. Add Kohler PRO Series fuel treatment or equivalent to fuel tank. Run engine 2-3 minutes to get stabilized fuel into fuel system (failures due to untreated fuel are not warrantable).
2. Change oil while engine is still warm from operation. Remove spark plug(s) and pour about 1 oz. of engine oil into cylinder(s). Replace spark plug(s) and crank engine slowly to distribute oil.
3. Disconnect negative (-) battery cable.
4. Store engine in a clean, dry place.

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## Troubleshooting

Do not attempt to service or replace major engine components, or any items that require special timing or adjustment procedures. This work should be performed by a Kohler authorized dealer.

Problem	Possible Cause							
	No Fuel	Improper Fuel	Dirt In Fuel Line	Dirty Debris Screen	Incorrect Oil Level	Engine Overloaded	Dirty Air Cleaner	Faulty Spark Plug
Will Not Start	•	•	•		•		•	•
Hard Starting		•	•		•		•	
Stops Suddenly		•	•	•	•		•	•
Lacks Power		•	•	•	•		•	•
Operates Erratically		•	•	•			•	•
Knocks or Pings		•		•			•	
Skips or Misfires		•	•	•				•
Backfires		•	•				•	•
Overheats		•	•	•	•		•	
High Fuel Consumption							•	•

Engine Specifications					
Model	Bore	Stroke	Displacement	Oil Capacity (Refill)	Spark Plug Gap (@ full oil level)*
CH682	3.15 in. (80 mm)	2.72 in. (69 mm)	42.4 cu. in. (694 cc)	1.7-1.9 U.S. qt. (1.6-1.8 L)	0.03 in. (0.76 mm)
CV682					
CH732	3.27 in. (83 mm)		45.6 cu. in. (747 cc)		25°
CV732					
CH742					
CV742					
CH752					
CV752					

\*Exceeding maximum angle of operation may cause engine damage from insufficient lubrication.

Additional specification information can be found in service manual at [KohlerEngines.com](http://KohlerEngines.com).

Exhaust Emission Control System for models CH682-CH752 and CV682-CV752 is EM for U.S., EPA, California, and Europe.

Any and all horsepower (hp) references by Kohler are Certified Power Ratings and per SAE J1940 & J1995 hp standards. Details on Certified Power Ratings can be found at [KohlerEngines.com](http://KohlerEngines.com).





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 may be 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  
 Shivers 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.

# LIMITED WARRANTY, COMMAND PRO

Kohler Co. warrants to the original retail consumer that each new engine will be free from manufacturing defects in materials or workmanship for the applicable coverage period as set forth below, beginning on date of purchase; provided the engine is operated and maintained in accordance with Kohler Co.'s instructions and manuals.

Type of use

Residential	3 Years
Commercial/Rental	3 Years

Our obligation under this warranty is expressly limited, at our option, to the replacement or repair of such part or parts as inspection shall disclose to be defective at Kohler Co., Kohler, Wisconsin 53044, or at a service facility designated by Kohler Co.

## EXCLUSIONS:

Mufflers on engines used commercially (non-residential) are warranted for one (1) year from date of purchase, except catalytic mufflers, which are warranted for two (2) years.

The following items are not covered by this warranty.

- Damage caused as a result of an accident or casualty.
- Failures caused by faulty repairs made by others.
- Failures caused by use of non-Kohler replacement service parts.
- Transportation charges in connection with the repair or replacement of defective parts.
- Repairs caused from improper storage, old or contaminated fuel left within the fuel system (tanks, fuel lines or carburetor).
- Damage caused from unreasonable use or neglect, normal wear, or premature wear from improper maintenance.
- Engine accessories such as fuel tanks, clutches, transmissions, power drive assemblies, and batteries, unless supplied or installed by Kohler Co. These are subject to the warranties, if any, of their manufacturers.

IMPLIED OR STATUTORY WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. WE MAKE NO OTHER EXPRESS WARRANTY, OR IS ANYONE AUTHORIZED TO MAKE ANY ON OUR BEHALF. KOHLER CO. AND/OR THE SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND.

Some states or countries do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from country to country, or state to state within U.S.A.

## TO OBTAIN WARRANTY SERVICE:

Original retail consumer must bring the engine to an authorized Kohler dealer found by visiting [www.KohlerEngines.com](http://www.KohlerEngines.com) or telephone 1-800-544-2444 (U.S.A. and Canada).

### **Warranty Conditions-Australia**

The benefits given to you under this warranty are in addition to other rights and remedies that you have under Australian law in relation to the goods.

All costs associated with claiming under this warranty must be borne by the consumer, including transport costs incurred in the repair or replacement of any defective part. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Kohler Co. Service Agent in Australia:

EPG Engines

31 Powers Road

Seven Hills, NSW, 2147

61 2 9830 2295

61 1800 069 399

[www.epgengines.com.au](http://www.epgengines.com.au)

ENGINE DIVISION, Kohler Co., Kohler Wisconsin

## **B) CALIFORNIA AND FEDERAL EXHAUST AND EVAPORATIVE EMISSIONS CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board, US Environmental Protection Agency ("US EPA") and Kohler Co. are pleased to explain the exhaust and evaporative emissions control systems warranty on your 2018-2020 Small Off-Road Engine ("SORE") and engine powered equipment as applicable. In California and the USA, new equipment that use SORE must be designed, built and equipped to meet California and US EPA stringent anti-smog standards. Kohler Co. must warrant the emission control systems on your SORE and engine powered equipment for the period listed below provided there has been no abuse, neglect or improper maintenance of your SORE or engine powered equipment leading to the failure of the emission control systems.

Your exhaust emission control systems may include parts such as carburetors, fuel-injection systems, the ignition system, and catalytic converters. Also included may be an evaporative emission control system which may include parts such as fuel tanks, fuel lines (for liquid fuel and vapors), fuel caps, valves, carbon canisters, clamps, connectors, and other associated components.

### **MANUFACTURER'S WARRANTY COVERAGE:**

The 1995 and later SORE exhaust and evaporative emission control systems are warranted for three years. If any exhaust or evaporative emission-related part on your SORE or engine powered equipment is defective, the part will be repaired or replaced by Kohler Co.

### **OWNER'S WARRANTY RESPONSIBILITIES:**

As the SORE or engine powered equipment owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Kohler Co. recommends that you retain all receipts covering maintenance on your SORE or engine powered equipment, but Kohler Co. cannot deny warranty coverage solely for the lack of receipts. As the SORE or engine powered equipment owner, you should however be aware that Kohler Co. may deny you warranty coverage if your SORE or engine powered equipment or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your SORE or engine powered equipment to a Kohler Co. distribution or service 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 a question regarding your warranty coverage, you should contact a Kohler Dealer at 1-800-544-2444 or visit [www.kohlerengines.com](http://www.kohlerengines.com).

### **GENERAL EMISSIONS WARRANTY COVERAGE**

The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser. Kohler Co. warrants to the ultimate purchaser and each subsequent purchaser that the engine is: Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board and US EPA; and 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 the engine manufacturer's application for certification for the warranty period stated above.

The warranty on emissions-related parts is as follows:

- (1) Any warranted part that is not scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the warranty period stated above. If any such part fails during the period of warranty coverage, the part will be repaired or replaced by Kohler Co. at no charge to the owner. 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 owner's manual supplied, is warranted for the warranty period stated above. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
- (3) Any warranted part that is scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part will be repaired or replaced by Kohler Co. at no charge to the owner. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
- (4) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts by the ultimate purchaser will be grounds for disallowing a warranty claim. The manufacturer will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.



## **PARTS COVERED BY WARRANTY**

Listed below are the parts (if equipped) covered by the Federal and California Emission Control Systems Warranty. Some parts listed below may require scheduled maintenance and are warranted up to the first scheduled replacement point for that part.

- Oxygen sensor
- Intake manifold
- Exhaust manifold
- Catalytic muffler
- Thermal reactor muffler
- Spark advance module
- Crankcase breather
- Air Injection System
  - Air pump or pulse valve assembly
  - Control/distribution valve
  - Distribution manifold
  - Air hoses
  - Vacuum lines
- Ignition module(s) with high tension lead
- Gaseous fuel regulator
- Electronic control unit
- Carburetor or fuel injection system
- Fuel metering valve
- Air filter, fuel filter, and spark plugs (only to first scheduled replacement point)
- Evaporative System
  - Carbon canister and carbon canister mounting bracket
  - Carbon canister filter
  - Purge port/orifice connector
  - Fuel tank
  - Fuel cap and fuel cap gasket
  - Primer bulb canister
  - Fuel line (for liquid fuel and fuel vapors), fuel line fittings and clamps
  - Carburetor purge port connector

## **Limitations**

This Emission Control Systems Warranty shall not cover any of the following:

- a. Consequential damages such as loss of time, inconvenience, loss of use of the engine or equipment, etc.
- b. Diagnosis and inspection fees that do not result in eligible warranty service being performed.

## **C) CALIFORNIA AND FEDERAL EXHAUST EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board, US Environmental Protection Agency ("US EPA") and Kohler Co. are pleased to explain the exhaust emission control systems warranty on your 2018-2020 Off-Road Large Spark-Ignition engine displacing less than 1 liter ("LSI <1L") and engine powered equipment as applicable. In California and the USA, LSI <1L must be designed, built and equipped to meet California and US EPA stringent anti-smog standards. Kohler Co. must warrant the emission control systems on your LSI <1L for the period listed below provided there has been no abuse, neglect or improper maintenance of your LSI <1L.

Your exhaust emission control systems may include parts such as carburetors, fuel-injection systems, the ignition system, and catalytic converters.

### **MANUFACTURER'S WARRANTY COVERAGE:**

The 1995 and later LSI <1L exhaust emission control system is warranted for three years. If any exhaust emission-related part on your LSI <1L is defective, the part will be repaired or replaced by Kohler Co.

### **OWNER'S WARRANTY RESPONSIBILITIES:**

As the LSI <1L owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Kohler Co. recommends that you retain all receipts covering maintenance on your LSI <1L, but Kohler Co. cannot deny warranty solely for the lack of receipts. As the LSI <1L owner, you should however be aware that Kohler Co. may deny you warranty coverage if your LSI <1L or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your LSI <1L to a Kohler Co. distribution or service 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 a

question regarding your warranty coverage, you should contact Kohler Dealer at 1-800-544-2444 or visit [www.KohlerEngines.com](http://www.KohlerEngines.com).

## GENERAL EMISSIONS WARRANTY COVERAGE

The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser. Kohler Co. warrants to the ultimate purchaser and each subsequent purchaser that the engine is:

Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board and US EPA; and 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 the engine manufacturer's application for certification.

The warranty on emissions-related parts is as follows:

- (1) Any warranted part that is not scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the warranty period stated above. If any such part fails during the period of warranty coverage, the part will be repaired or replaced by Kohler Co. at no charge to the owner. 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 owner's manual supplied, is warranted for the warranty period stated above. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
- (3) Any warranted part that is scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part will be repaired or replaced by Kohler Co. at no charge to the owner. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
- (4) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts by the ultimate purchaser will be grounds for disallowing a warranty claim. The manufacturer will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

## PARTS COVERED BY WARRANTY

Listed below are the parts (if equipped) covered by the Federal and California Emission Control Systems Warranty. Some parts listed below may require scheduled maintenance and are warranted up to the first scheduled replacement point for that part.

- Oxygen sensor
- Intake manifold
- Exhaust manifold
- Catalytic muffler
- Thermal reactor muffler
- Fuel line, fuel line fittings and clamps
- Spark advance module
- Crankcase breather
- Air Injection System
  - Air pump or pulse valve assembly
  - Control/distribution valve
  - Distribution manifold
  - Air hoses
  - Vacuum lines
- Ignition module(s) with high tension lead
- Gaseous fuel regulator
- Electronic control unit
- Carburetor or fuel injection system
- Fuel metering valve
- Air filter, fuel filter, and spark plugs (only to first scheduled replacement point)

## Limitations

This Emission Control Systems Warranty shall not cover any of the following:

- a. Consequential damages such as loss of time, inconvenience, loss of use of the engine or equipment, etc.
- b. Diagnosis and inspection fees that do not result in eligible warranty service being performed.





**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.



## **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

### BOSS XL – Joystick Steering

MODEL	2760KOJ-1525	3560KAJ-1525	3572KAJ-1525
Engine	27 H.P. Kohler Command Pro CV752 (747cc)		35 H.P. Kawasaki FX1000 (999cc)
Hydrostatic Transmissions	Hydro-Gear ZT-5400		
Steering Control	Single Joystick		
Fuel Capacity	11 Gallons		
Tires, Rear	26x14.00-12		
Tires, Front	15x6.00-6		
Turning Radius	Zero-Turn		
Ground Speed Forward Reverse	12-1/2 MPH (infinitely variable) 7-1/2 MPH (infinitely variable)		
Length	83"		
Height,	33" (Seat Cushion)	49-1/4" (Top of Seat Back)	50-1/2" (Folded R.O.P.S.) 69 1/2" (Top of R.O.P.S.)
Width, Tractor (outside rear tires)	58-3/4"		
Width, Deck (with deck chute)	73"		85"
Cutting Width	60"		72"
Blade Length (3 per deck)	21"		25"
Cutting Height	2" to 5" (1/4" increments )		
Actual Weight (approx.)	1257#	1310#	1371#
Standard Features	Cup Holder, Electric Start, Arm Rests, R.O.P.S. (Roll Over Protection System)		

### BOSS XL – Twinstick Steering

MODEL	3560KAT-1525	3572KAT-1525
Engine	35 H.P. Kawasaki FX1000 (999cc)	
Hydrostatic Transmissions	Hydro-Gear ZT-5400	
Steering Control	Twinstick Controls	
Fuel Capacity	11 Gallons	
Tires, Rear	26x14.00-12	
Tires, Front	15x6.00-6	
Turning Radius	Zero-Turn	
Ground Speed Forward Reverse	12-1/2 MPH (infinitely variable) 7-1/2 MPH (infinitely variable)	
Length	83"	
Height,	33" (Seat Cushion)	49-1/4" (Top of Seat Back) 50-1/2" (Folded R.O.P.S.) 69 1/2" (Top of R.O.P.S.)
Width, Tractor (outside rear tires)	58-3/4"	
Width, Deck (with deck chute)	73"	85"
Cutting Width	60"	72"
Blade Length (3 per deck)	21"	25"
Cutting Height	2" to 5" (1/4" increments )	
Actual Weight (approx.)	1310#	1371#
Standard Features	Cup Holder, Electric Start, Arm Rests, R.O.P.S. (Roll Over Protection System)	

*Specifications subject to change without prior notice*

**NOTES / SERVICE RECORDS:**

[illegible]



## **PRODUCT MANUAL**

# **B O S S<sup>XL</sup> 1525**

### **Country Clipper Division**

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P-13460 (06/20)