

OPERATION MANUAL



HTH-44T SERIES RIDE-ON POWER TROWEL

MODEL # _____

SERIAL # _____

Revision #3 (04/22/02)



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WARNING

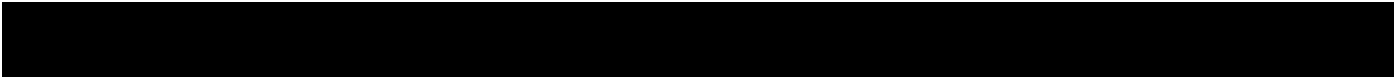


CALIFORNIA — Proposition 65 Warning

Engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks.
- Cement and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: **ALWAYS** work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.



HERE'S HOW TO GET HELP

*PLEASE HAVE THE MODEL AND SERIAL NUMBER
ON-HAND WHEN CALLING*

PARTS DEPARTMENT

800-427-1244 or 310-537-3700

FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE

800-478-1244 or 310-537-3700

FAX: 310- 537-4259

WARRANTY DEPARTMENT

888-661-4279, or 310-661-4279

FAX: 310- 537-1173

MAIN

800-421-1244 or 310-537-3700

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WHITEMAN — HTH-44T RIDE-ON POWER TROWEL

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HTH-44T— PARTS ORDERING PROCEDURES

- Dealer account number
- Dealer name and address
- Shipping address (if different than billing address)
- Return fax number
- Applicable model number
- Quantity, part number and description of each part
- Specify preferred method of shipment:
 - UPS Ground
 - UPS Second Day or Third Day*
 - UPS Next Day*
 - Federal Express Priority One (please provide us with your Federal Express account number)*
 - Airborne Express*
 - Truck or parcel post

**Normally shipped the same day the order is received, if prior to 2PM west coast time.*

Earn Extra Discounts when you order by FAX!

All parts orders which include complete part numbers and are received by fax qualify for the following extra discounts:

<u>Number of line items ordered</u>	<u>Additional Discount</u>
1-9 items	3%
10+ items**	5%

Get special freight allowances when you order 10 or more line items via FAX!**

- UPS Ground Service at no charge for freight
- UPS Third Day Service at one-half of actual freight cost

No other allowances on freight shipped by any other carrier.

**Common nuts, bolts and washers (all items under \$1.00 list price) do not count towards the 10+ line items.

DISCOUNTS ARE SUBJECT TO CHANGE

Fax order discount and UPS special programs revised June 1, 1995

**Extra Fax Discount
for Domestic USA
Dealers Only**

**Up to 5%
extra savings!**

**UPS
Special**
For faxed orders only

**Now! Direct TOLL-FREE access
to our Parts Department!**

Toll-free nationwide:

800-421-1244

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HTH-44T— TRAINING CHECKLIST

TRAINING CHECKLIST

This checklist will lists some of the minimum requirements for machine maintenance and operation. Please feel free to detach it and make copies. Use this checklist whenever a new operator is to be trained or it can be used as a review for more experienced operator's.

TRAINING CHECKLIST			
NO.	DESCRIPTION	OK?	DATE
1	Read Operator's Manual completely.		
2	Machine layout, location of components, checking of engine and hydraulic oil levels.		
3	Fuel system, refueling procedure		
4	Operation of spray and lights (if equipped).		
5	Operation of controls (machine not running).		
6	Safety controls, seat kill switch operation.		
7	Emergency stop procedures.		
8	Startup of machine, pre-heat (Kubota), engine choke.		
9	Maintaining a hover.		
10	Maneuvering		
11	Pitching		
12	Matching blade pitch between towers. Twin Pitch™		
13	Concrete finishing techniques.		
14	Shutdown of machine.		
15	Lifting of machine (lift loops).		
16	Machine transport and storage.		

Operator _____ Trainee _____

COMMENTS:

HTH-44T— DAILY PRE-OPERATION CHECKLIST

DAILY PRE-OPERATION CHECKLIST

DAILY PRE-OPERATION CHECKLIST	
1	Engine oil level.
2	Hydraulic oil level.
3	Radiator coolant level.
4	Condition of blades.
5	Blade pitch operation.
6	Kill switch (seat) operation.
7	Steering control operation.

COMMENTS:

HTH-44T— SAFETY MESSAGE ALERT SYMBOLS

FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.

NOTE

This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the MQ Whiteman HTH-44T Ride-On Power Trowel. For engine maintenance information, please refer to the engine manufacturers instructions for data relative to its safe operations.

Before using this Ride -On Power Trowel, ensure that the operating individual has read and understands all instructions in this manual.

SAFETY MESSAGE ALERT SYMBOLS

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The Safety Messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING**, or **CAUTION**.



DANGER: You **WILL** be **KILLED** or **SERIOUSLY** injured if you **DO NOT** follow directions.



WARNING: You **CAN** be **KILLED** or **SERIOUSLY** injured if you **DO NOT** follow directions.



CAUTION: You **CAN** be injured if you **DO NOT** follow directions.

Potential hazards associated with HTH-44T Ride-on Power Trowel operation will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

HAZARD SYMBOLS



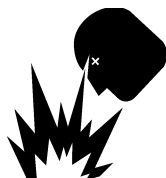
Lethal Exhaust Gases



Engine exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



Explosive Fuel



Gasoline is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.



Burn Hazards



Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operations. **NEVER** operate the engine with heat shields or heat guards removed.



Rotating Parts



NEVER operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.

HTH-44T— SAFETY MESSAGE ALERT SYMBOLS



Accidental Starting



OFF **ALWAYS** place the ON/OFF switch in the OFF position, and remove the key.



Respiratory Hazard



ALWAYS wear approved respiratory protection.



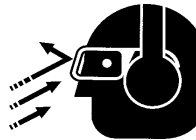
Over Speed Conditions



NEVER tamper with the factory settings of the engine governor or settings. Personal injury and damage to the engine or equipment can result if operating in speed ranges above maximum allowable.



Sight and Hearing hazard



ALWAYS wear approved eye and hearing protection.

NOTE

This Ride-On Power Trowel, other property, or the surrounding environment could be damaged if you do not follow instructions.



Equipment Damage Messages

Other important messages are provided throughout this manual to help prevent damage to your trowel, other property, or the surrounding environment.

HTH-44T— RULES FOR SAFE OPERATION

CAUTION



Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by **trained** and **qualified** personnel only! This equipment is for industrial use only and should not be regarded as a toy.

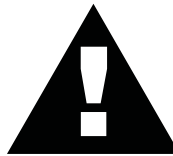
The following safety guidelines should always be used when operating the HTH-44T Ride-on Power Trowel:

GENERAL SAFETY

- **DO NOT** operate or service this equipment before reading this entire manual.
- This equipment should not be operated by persons under 18 years of age.
- **DO NOT** operate this equipment unless all guards and safety devices are attached and in place.
- **ALWAYS** use proper **heavy** lifting techniques when moving equipment. This ride-on trowel is very heavy. It should be lifted only with a lifting device (i.e. crane, forklift, etc.) with a lifting capacity of at least one ton.
- **ALWAYS** check to make sure that the operating area is clear before starting the engine.
- **ALWAYS** test the safety **kill switch** before operating the equipment.
- **NEVER** place your feet inside the guard rings while starting or operating this equipment.
- **NEVER** operate this equipment without proper **protective** clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job. Avoid wearing jewelry or loose fitting clothing that may snag on the controls or moving parts, this can cause a serious injury.
- **ALWAYS** keep clear of rotating or moving parts while operating this equipment.
- **NEVER** leave the machine **unattended** while running.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with **flammable liquids**. When refueling, **stop the** engine and allow it to cool. **DO NOT** smoke around or near the machine. Fire or explosion could result from flames or sparks, or if fuel is spilled on a hot engine.
- **Moving Parts** – Shut down the engine before performing service or maintenance functions. Contact with moving parts can cause serious injury.



Emergencies



■ **High Temperatures** – Allow the machine and engine to cool before adding fuel or performing service and maintenance functions. Contact with *hot* components can cause serious burns.

■ **ALWAYS** know the location of the nearest **fire extinguisher** and **first aid kit**. Know the location of the nearest telephone. Also know the phone numbers of the nearest **ambulance**, **doctor** and **fire department**. This information will be invaluable in the case of an emergency.

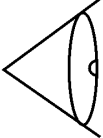
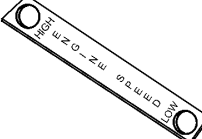
Maintenance Safety

- Disconnect the battery and spark plug wires before attempting any type of service.
- Securely support any machine components that must be raised.
- **NEVER** lubricate components or attempt service on a running machine.
- **ALWAYS** allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in proper running condition.
- Make sure that there is no buildup of concrete, grease, oil or debris on the machine.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.

HTH-44T— OPERATION AND SAFETY DECALS

Machine Safety Decals

The HTH-44T series Ride-on Power Trowel is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. Table 1 below illustrates these decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.

Table 1. HTH-44T Safety & Operating Decals			
	Symbol for CAUTION . When this symbol is displayed in the manual or on the machine be aware that there is a potential for personal injury or damage to the equipment. Always follow instructions for safe operation and use.		Lift point symbol. Symbol indicates where machine should be lifted.
	Symbol indicates that it is mandatory to wear safety glasses, safety helmet and ear protection. P/N 11247 (Part of decal kit 12619)		Lubrication symbol. Know that wherever you see this symbol on the machine, a lubrication point will be called out. P/N 11246 (Part of decal kit 12619)
	Symbol indicates that it is mandatory to wear gloves. P/N 11247 (Part of decal kit 12619)		Symbol indicates that it is mandatory to wear safety shoes, with extra protection (steel toed). P/N 11247 (Part of decal kit 12619)
	Radiating heat symbol. Symbol indicates equipment is hot. P/N 11246 (Part of decal kit 12619)	HYDROSTATIC P/N 20209	
	Symbol for examining or checking of the machine. Mostly used for maintenance. P/N 11246 (Part of decal kit 12619)	HTH SERIES P/N 20200 TURBO-CHARGED P/N 20207	
NAMEPLATE _____ _____ _____	CONTACT MULTIQUIP SERVICE DEPT.	DANGER DO NOT DISASSEMBLE SPRING INSIDE IS UNDER COMPRESSION P/N 2634	 P/N 13118
CAUTION PRESSURIZED TANK DO NOT REMOVE CAP WHEN HOT CHECK OIL LEVEL WITH ENGINE OFF		 P/N 10818 (WHITE/PANEL)	
CAUTION PRESSURIZED TANK DO NOT REMOVE CAP WHEN HOT CHECK OIL LEVEL WITH ENGINE OFF		 P/N 1499 (RED/TOWER)	
DECAL INSTRUMENT LIGHT PLATE OIL WATER CHARGE PRE HEAT P/N 12348		DECAL ENGINE SPEED PLATE  P/N 11712	IMPORTANT COLD WEATHER STARTING BELOW 40°F (4°C): RUN ENGINE 3-5 MINUTES WHILE MOVING STEERING CONTROLS BEFORE DEPRESSING BLADE CONTROL PEDAL P/N 20486

HTH-44T— SPECIFICATIONS

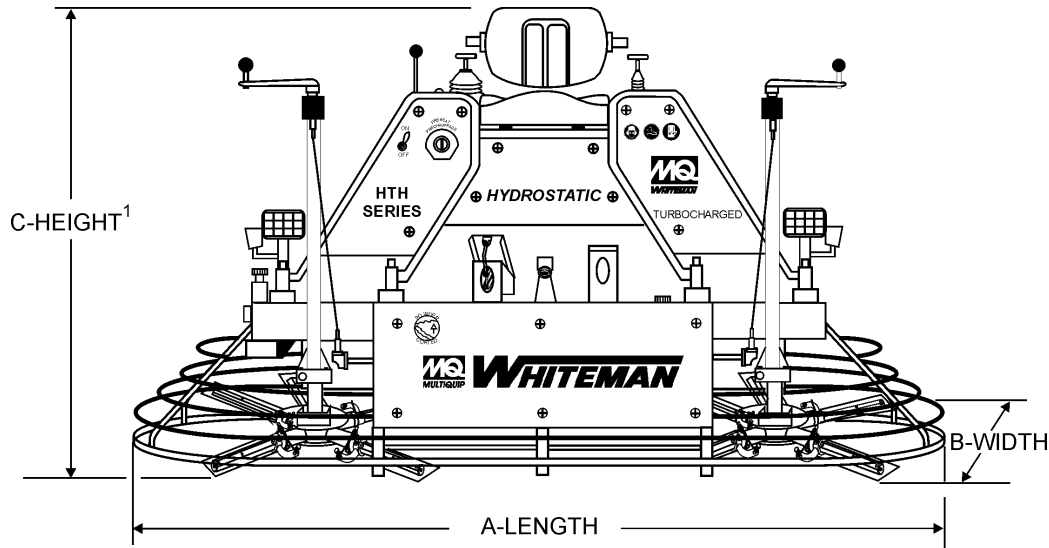


Figure 1. HTH-44T Dimension /Specifications

Table 2. HTH-44T Specifications

A-Length – in. (cm)	96.00 (243.8)
B-Width – in. (cm)	50.0 (127)
C-Height – in. (cm) ¹	56.0 (142)
Weight – lbs. (kgs.) Operating	1,545 (700)
Weight – lbs. (kgs.) Shipping	1,848 (838)
Sound Pressure – dBA ²	TBA
Vibration – ft/s ² (m/ s ²) ³	TBA
Blade Tip Speed – FPM (m/s)	1924 (9.9)
Engine – H.P.	44
Fuel Tank – gallons (liters)	12 (45)
Rotor – RPM	0 to 160
Path Width – in. (cm)	92 (233)
Hydraulic Oil ⁴	AW MV 68
Engine	Kubota Diesel V1505-TE

NOTE:

1. This value includes the seat height.
2. Sound pressure is a weighted measure. Measured at the operators ear position while the ride-on trowel is operating at full throttle on concrete in a manner most often experienced in “**normal**” circumstances. Sound pressure may vary depending upon the condition of the concrete. Hearing protection is always recommended.
3. The vibration level indicated is the maximum RMS (Root Mean Square) value obtained at the handle grip while operating the ride-on trowel on curing concrete in a

manner

most often experienced in “**normal**” circumstances. Values were obtained from all three axes of motion. The values shown represent the maximum RMS value from these measurements.

4. “AW” stands for **anti-wear** and “MV” stands for **multi-viscosity**. The 68 refers to the general viscosity range and is similar to 10W-30-motor oil. It is recommended that AW MV 68 hydraulic oil be used. If this type of hydraulic oil is not available then use 10W-30.

HTH-44T— GENERAL INFORMATION

HTH-44TRIDE-ON TROWEL FAMILIARIZATION

The HTH-44T series Ride-On Power Trowels are designed for the floating and finishing of concrete slabs.

Take a walk around the HTH-44T Ride-On Power Trowel. Take notice of all the entire major components (see Figures 2 and 3, pages 14 and 15) like the engine, blades, pitch towers, air cleaner, ignition switch etc. Check that there is always oil in the engine, and hydraulic oil in the hydraulic oil reservoir.

Read all the safety instructions carefully. Safety instructions will be found throughout this manual and on the machine. Keep all safety information in good, readable condition. Operators should be well trained on the operation and maintenance of the HTH-44T Ride-On Power Trowel.

Before using your HTH-44T Ride-On Power Trowel, test it on a flat watered down section of finished concrete. This trial test run will increase your confidence in using the trowel and at the same time it will familiarize you with the trowel's controls and indicators. In addition you will understand how the trowel will handle under actual conditions.

Engine

The HTH-44T Ride-On Power Trowel is available with a standard V1505-TE Kubota diesel engine. Refer to the engine owner's manual for specific instructions regarding engine operation. This manual is included with the ride-on trowel at the time of shipping from Whiteman. Please contact your nearest Multiquip Dealer for a replacement should the original manual disappear.

Blades

The blades of the Ride-on Power Trowel finish the concrete as they are swirled around the surface. Blades are classified as float (10 or 8 inches wide), and finish (6 inches wide). The HTH-44T is equipped with five blades per rotor equally spaced in a radial pattern and attached to vertical rotating shaft by means of a **spider assembly**.

Hydraulic Motor

Independent hydrostatic drive motors are coupled to the engine-powered hydrostatic pumps. Each motor drives a spider assembly.

Hydraulic Steering

Dual joystick controls located to the left and right of the operator are provided for steering the HTH-44T Ride-on Power Trowel. The joysticks are linked to three hydraulic steering cylinders located within the frame of the machine. When the right side steering joystick is moved either forward or backward it will cause that side of the Ride-on Power Trowel to move in either a forward or reverse direction. Moving the same joystick left or right causes the trowel to move in either the left or right direction.

When the left side steering joystick is moved, it will cause the left side of the Ride-on Power Trowel to travel in either a forward or reverse direction.

Hydraulic Pump

Delivers a continuous controlled flow of hydraulic fluid to the hydraulic motors.

CAUTION



This Ride-on Power Trowel is very **heavy** and awkward to move around. Use proper heavy lifting procedures and **DO NOT** attempt to lift the Ride-on Power Trowel by the guard rings

Moving the Ride-On Trowel

The HTH-44T series Ride-on Power Trowel is designed to be moved and handled several ways. The easiest way to lift the ride-on trowel is to utilize the lift loops that are welded to the frame. These lift loops are located to the left and right sides of the operator's seat (Figure 3, Page 15).

A strap or chain can be attached to these lift loops, allowing a forklift or crane to lift the Ride-on Power Trowel up onto a slab of concrete. The strap or chain should have a minimum 2,000 pounds (1000-kg) lifting capacity and the lifting gear must be capable of lifting at least this amount.

Training

For proper training, please use the "**TRAINING CHECKLIST**" located in the front of this manual (Page 6). This checklist will provide an outline for an experienced operator to provide training to a new operator

HTH-44T— CONTROLS AND INDICATORS

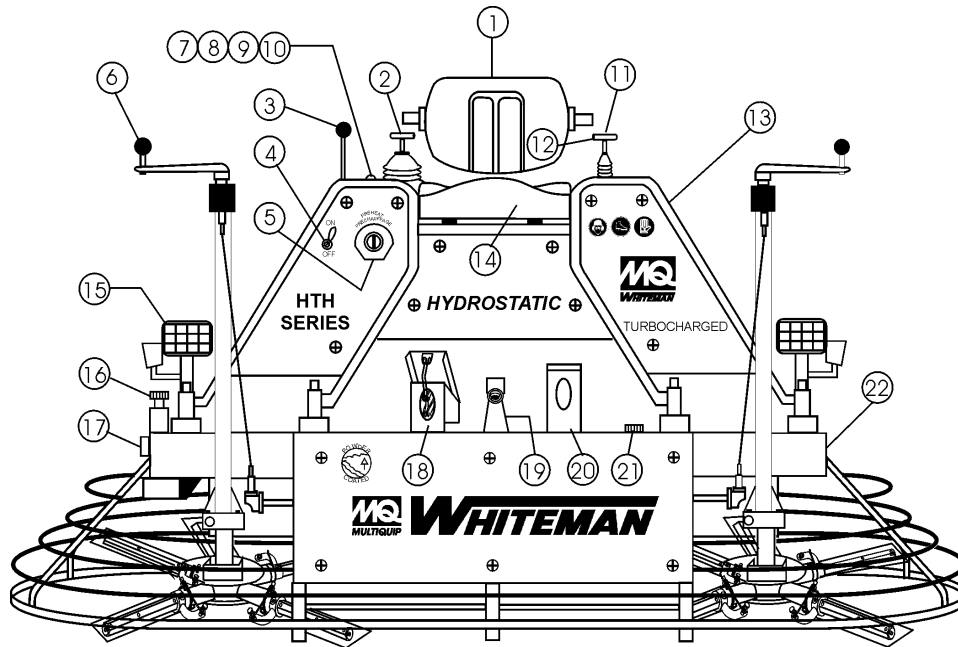


Figure 2. HTH-44T Controls and Indicators (Front)

Figures 2 and 3 (pages 12 and 13) show the location of the controls, indicators and general maintenance parts. The function of each control, indicator or maintenance part is explained below:

1. **Seat** – Place for operator to sit. Engine will not start unless operator is seated. Seat is adjustable.
2. **Steering Control (right side)** -Allows the unit to move in either a forward, reverse left or right direction.
3. **Throttle Control Lever** – Controls the speed of the engine. Move the hand lever forward to increase engine speed (high), backwards to decrease engine speed (low).
4. **Light Switch** – When activated, turns on six halogen lights. Lights offer better visibility when working indoors.
5. **Ignition Switch** – With key inserted turn clockwise to start engine.
6. **Twin Pitch Control** – Both pitch towers are linked together. One crank may be turned to adjust the blade pitch simultaneously or individually control for each set of blades.
7. **Pre-Heat Indicator Light** - Lights blue during engine start-up. Indicates that engine glow plugs are being pre-heated. Light will go off after approximately 10 seconds.
8. **Charge Indicator Light** - Lights red when electrical system is not charging properly.
9. **Water Indicator Light** - Lights red when water temperature is high.
10. **Oil Indicator Light** - Lights red when oil pressure is low.
11. **Steering Control (left side)** -Allows the unit to move in a forward or reverse direction only.
12. **Retardant Spray Control Button** – When pressed allows retardant spray to flow through the spray nozzle located at the front of the machine.
13. **Radiator/Filler Cap** –Holds coolant or water necessary to keep engine at a safe operating temperature. Remove this cap to add water or antifreeze.
14. **Kill Switch** - Shuts down engine when operator is not sitting in seat.
15. **Lights** – Low voltage halogen light.
16. **Hydraulic Oil Filler Cap** – Remove this cap to add hydraulic oil.
17. **Hydraulic Oil Sight Glass** - Indicates the level of the hydraulic oil in the reservoir.
18. **Right Foot Pedal** – Controls blade speed. Slow blade speed is accomplished by slightly depressing the foot pedal. Maximum blade speed is accomplished by fully depressing the foot pedal.
19. **Spray Nozzle** – Spray nozzle for retardant.
20. **Left Foot Riser** – Operator foot rest pedal.
21. **Fuel Gauge/Filler Cap** - Indicates the amount of fuel in the fuel tank. Remove this cap to add fuel.
22. **Hydraulic Reservoir** – Part of frame. Holds hydraulic oil necessary for pump operation.

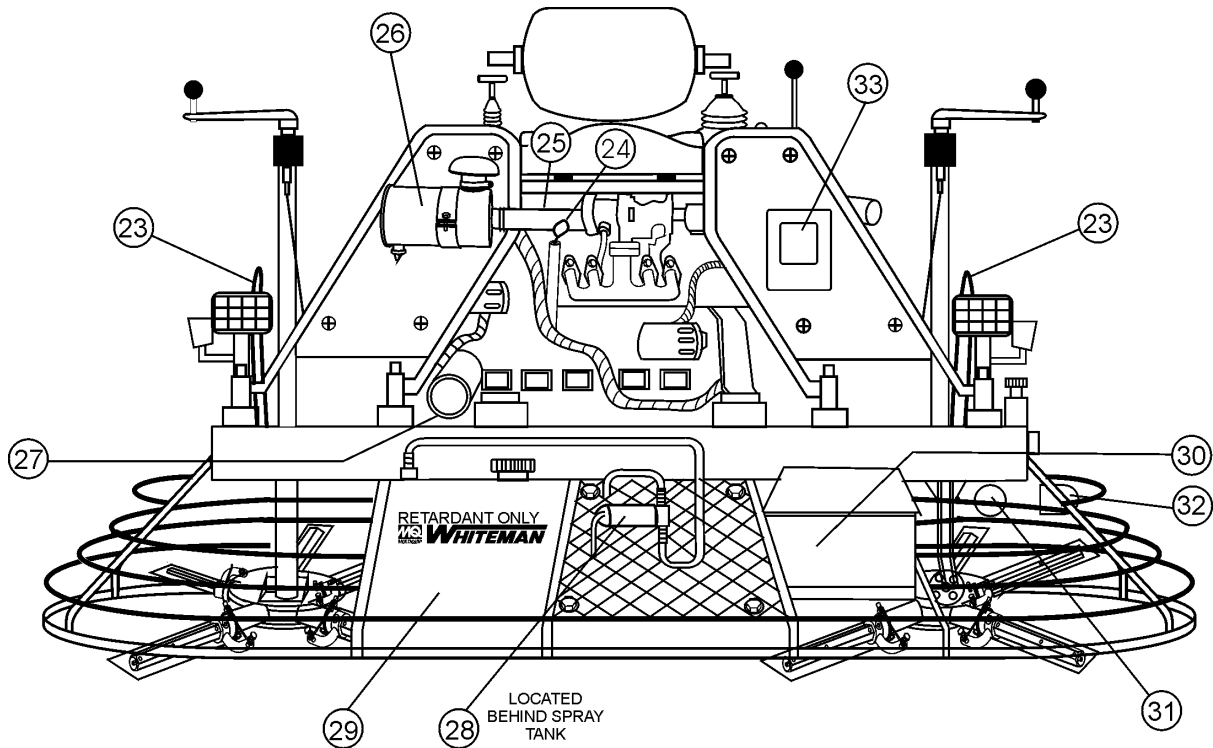


Figure 3. HTH-44T Controls and Indicators (Rear)

- | | |
|---|--|
| <p>23. Lift Loops –Located on both the left and right sides of the main frame. Used when the trowel must be lifted onto a concrete slab.</p> <p>24. Engine Oil Dipstick – Indicates engine oil level.</p> <p>25. Engine Oil Filler Cap - Remove this cap to add engine oil.</p> <p>26. Air Filter – Prevents dirt and other debris from entering the fuel system.</p> <p>27. Oil Filter – Provides oil filtering for the engine.</p> <p>28. Retardant Spray Motor – Used with the spray control button.</p> | <p>29. Retardant Spray Tank - Holds 5 gallons of retardant or water.</p> <p>30. Battery - Provides +12V DC power to the electrical system.</p> <p>31. Hydraulic Suction Filter - Filters hydraulic fluid prior to entering the system.</p> <p>32. Hydraulic Return Filter - Filters hydraulic returning to reservoir.</p> <p>33. Documentation Box - Contains information regarding the trowel.</p> |
|---|--|

NOTE

Read this entire instruction manual completely before attempting to operate this machine.

NOTE

The following section is intended as a basic guide to the Ride-On Power Trowel operation, and is not to be considered a complete guide to concrete finishing. It is strongly suggested that all operators (experienced and novice) read "**Slabs on Grade**" published by the American Concrete Institute, Detroit Michigan.

This section is intended to assist the operator with the initial start-up of the HTH-44T series Ride-On Power Trowel. It is extremely important that this section be read carefully before attempting to use the trowel in the field.

DO NOT use your Ride-On Power Trowel until this section is thoroughly understood

CAUTION



Failure to understand the operation of the HTH-44T series Ride-On Power Trowel could result in severe damage to the trowel or personal injury.

See Figures 2 and 3 (Pages 12 and 13) for the location of any control or indicator referenced in this manual.

Engine Oil

1. Pull the engine oil dipstick from its holder.
2. Determine if engine oil is low (Figure 4), add correct amount of engine oil to bring oil level to a normal safe level.

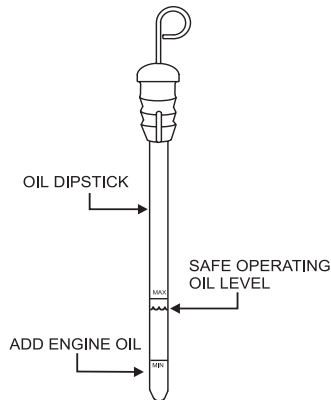


Figure 4. Engine Oil Dipstick

Hydraulic Oil

1. Determine if the hydraulic oil is low by observing the level of oil in the hydraulic Oil Sight Glass (Figure 5).

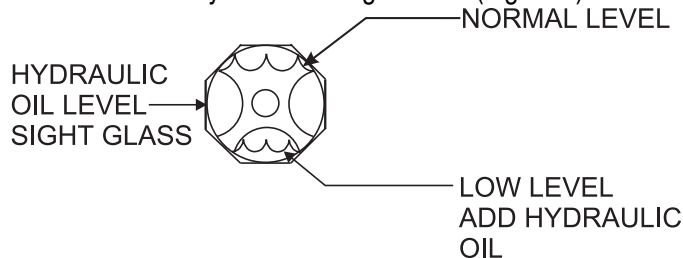


Figure 5. Hydraulic Oil Sight Glass

Fuel

1. Determine if the engine fuel is low (Figure 6). If fuel level is low, remove the fuel filler cap and fill with diesel fuel. Handle fuel safely. Motor fuels are highly flammable and can be dangerous if mishandled. **DO NOT** smoke while refueling. **DO NOT** attempt to refuel the ride-on trowel if the engine is hot or running.

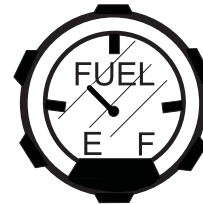


Figure 6. Fuel Gauge

CAUTION



NEVER store the Ride-On Power Trowel with fuel in the tank for any extended period of time. **ALWAYS** clean up spilled fuel immediately.

Starting the Engine

1. With one foot on the ground and the other foot placed on the trowel's platform, grab hold of any part of the frame and lift yourself onto the trowel. Then sit down in the operator's seat

CAUTION



DO NOT grab hold of the joysticks or pitch tower assemblies to lift yourself onto the trowel. Pulling on the joysticks or pitch towers assemblies repeatedly will weaken the units. Use any part of the frame to lift yourself on the trowel.

2. The Whiteman Ride-On Power Trowel is equipped with a safety **kill switch**. This switch is located beneath the seat assembly. Remember the engine will not start unless an operator is sitting in the operator's seat. The weight of an operator depresses an electrical switch, which will allow the engine to start.

CAUTION



NEVER disable or disconnect the kill switch. It is provided for the operators' safety and injury may result if it is disabled, disconnected or improperly maintained.

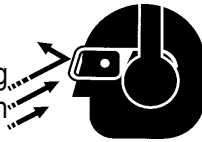
CAUTION



NEVER operate the trowel in a confined area or enclosed area structure that does not provide ample free flow of air.



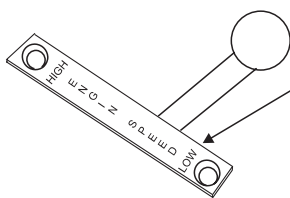
ALWAYS wear approved eye and hearing protection before operating the ride-on power trowel.



NEVER place hands or feet inside the guard rings while the engine is running. **ALWAYS** shut the engine down before performing any kind of maintenance service on the trowel.



3. It is recommended that the kill switch be used to stop the engine after every use. Doing this will verify that the switch is working properly and presents no danger to the operator. Remember to turn the key to the "OFF" position after stopping the machine. Not doing so may drain your units' battery
4. Place the **engine throttle lever** (Figure 7) in the **LOW** position.



WHEN STARTING ENGINE, PLACE THROTTLE CONTROL LEVER IN LOW POSITION

Figure 7. Engine Throttle Control Lever (Low)

5. Insert the **ignition key** into the ignition switch (Figure 8).

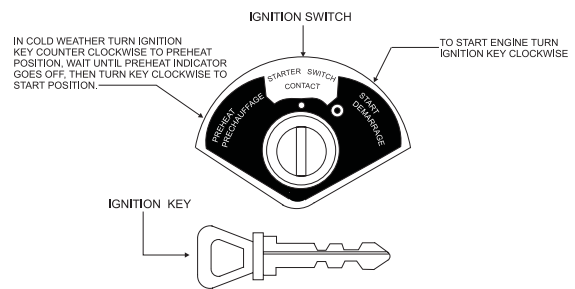


Figure 8. Ignition Switch and Key

6. Turn the ignition key clockwise to the (start) position. The **oil** and **charge** indicator lights (Figure 9) should be on.

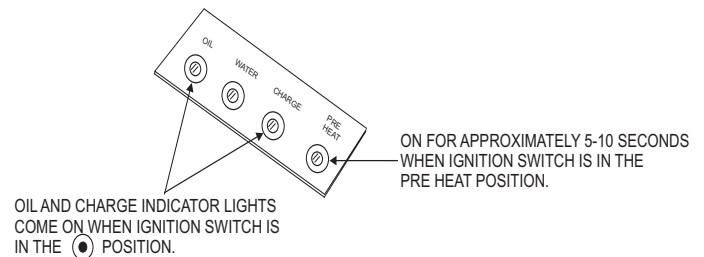


Figure 9. Oil and Charge Indicator Lights

NOTE

In **cold** weather turn the ignition key counter clockwise to the preheat position, wait until the **BLUE** preheat indicator goes off before turning the ignition key clockwise to the start position. Two or three preheat cycles may be necessary in very cold weather.

IMPORTANT

COLD WEATHER STARTING BELOW 40° F (4° C): RUN ENGINE 3-5 MINUTES WHILE MOVING STEERING CONTROLS BEFORE DEPRESSING BLADE CONTROL PEDAL

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7. Turn ignition key fully clockwise and listen for engine to start. Once engine has started release ignition key. Let engine warm for a few minutes.
8. Place the **engine throttle lever** (Figure 10) in the **HIGH** position.

PLACE THROTTLE CONTROL LEVER IN HIGH POSITION AFTER ENGINE HAS BEEN STARTED.

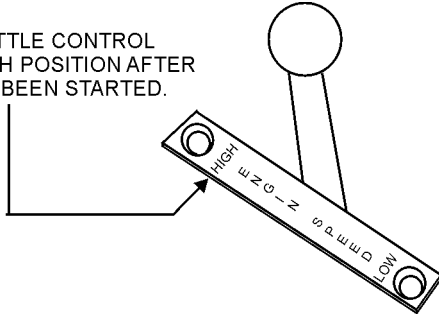


Figure 10. Engine Throttle Control Lever (High)

9. The engine should be running at full RPM.
10. Repeat this section a few times to get fully acquainted with the engine starting procedure.

NOTE

All directional references with respect to the joysticks are from the **operator's** seat position.

Steering

Two joysticks (Figures 11 and 12) located to the left and right of the operator's seat provide directional control for the HTH-44T Ride-On Power Trowel. Table 3 illustrates the various directional positions of the joysticks and their effect on the ride-on trowel.

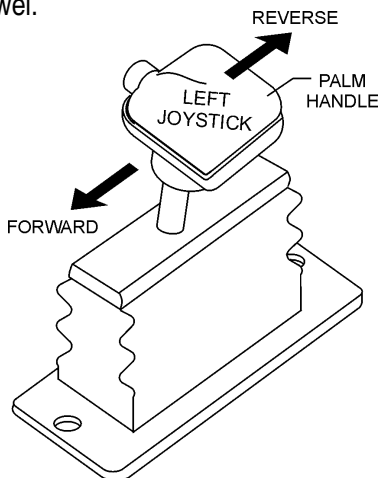


Figure 11. Left Joystick Control

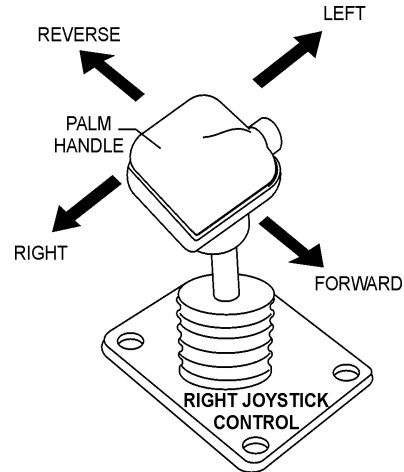


Figure 12. Right Joystick

Table 3. Joystick Directional Positioning

JOYSTICK	DIRECTION	RESULTS
Left	Move Joystick Forward	Causes only the left side of the ride-on trowel to move forward.
Left	Move Joystick Backward	Causes only the left side of the ride-on trowel to move backward.
Right	Move Joystick Forward	Causes only the right side of the ride-on trowel to move forward.
Right	Move Joystick Backward	Causes only the right side of the ride-on trowel to move backward.
Left and Right	Move Both Joysticks Forward	Causes the ride-on trowel to move forward in a straight line.
Left and Right	Move Both Joysticks Backward	Causes the ride-on trowel to move backward in a straight line.
Right	Move Joystick Right	Causes the ride-on trowel to move to the right.
Right	Move Joystick Left	Causes the ride-on trowel to move to the left.

1. The foot pedal (Figure 13) solely controls blade speed. The position of the foot pedal determines the blade speed. Slow blade speed is obtained by slightly depressing the pedal. Maximum blade speed is obtained by fully depressing the pedal.

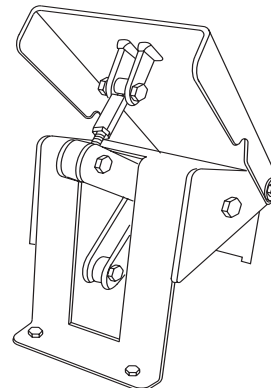


Figure 13. Blade Speed Control Foot Pedal

2. Push both the left and right joysticks forward (Figure 14).

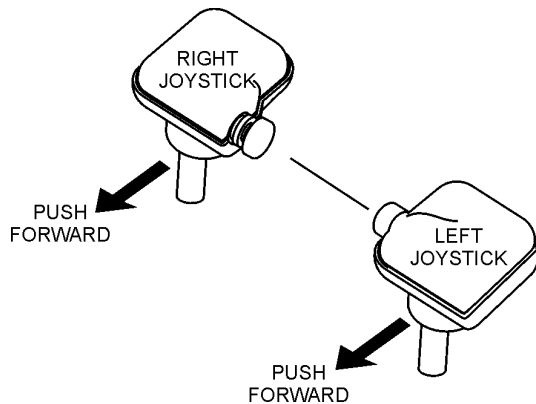


Figure 14. Joystick Control Forward Direction

3. With your right foot slowly depress the right foot pedal halfway. Notice that the ride-on power trowel begins to move in a forward direction. Release both joystick controls to stop forward movement then remove your right foot from the right foot pedal.
4. Practice holding the machine in one place as you increase blade speed. When about 75% of maximum blade speed has been reached, the blade will be moving at proper finishing speed. The machine may be difficult to keep in one place. Trying to keep the ride-on trowel stationary is a good practice for operation.
5. Practice maneuvering the Ride-on Power Trowel using the information listed in Table 3. Try to practice controlled motions as if you were finishing a slab of concrete. Practice edging and covering a large area
6. Try adjusting the pitch of the blades. This can be done with the ride-on trowel stopped or while the trowel is moving, whatever feels comfortable. Test the operation of optional equipment like retardant spray and lights if equipped.

7. Push both the left and right joysticks backward (Figure 15) and repeat steps 3 through 6 while substituting the word reverse for forward.

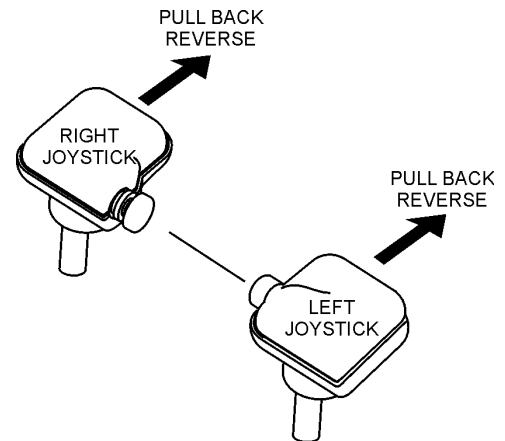


Figure 15. Joystick Control Reverse Direction

Engine Shut-Down

1. Return the speed control lever (Figure 7) to low idle, and allow the engine to idle for 5 minutes .

NOTE

Failure to allow the engine to idle for 5 minutes before shutting engine **OFF** may lead to turbocharger damage.

2. Turn the ignition key counter-clockwise to the "**starter switch contact**" position, then remove the key.
3. Clean and remove any foreign debris from the trowel.

NOTE

See the engine manual supplied with your machine for appropriate engine maintenance schedule and troubleshooting guide for problems.

At the front of the book (Page 7) there is a "Daily Pre-Operation Checklist". Make copies of this checklist and use it on a daily basis.

CAUTION!



Disconnect spark plug wires and battery cables before attempting any service or maintenance on the Ride-on Power Trowel.



ALWAYS allow the engine to cool before servicing. **NEVER** attempt any maintenance work on a hot! (muffler, radiator, etc.) trowel.

MAINTENANCE SCHEDULE

Change the **hydraulic oil** and **filter** after the first 100 hours of use, then change every 250 hours.

Daily (8-10 Hours)

1. Check the fluid levels in the engine and reservoir, fill as necessary.

Weekly (30-40 Hours)

1. Relube arms, thrust collar and clutch
2. Replace blades if necessary.
3. Check and clean or replace the engine air filter as necessary.
4. Replace engine oil and filter as necessary, see engine manual.

Monthly (100-125 Hours)

1. Remove, clean, reinstall and relube the arms and thrust collar. Adjust the blade arms.

Yearly (500-600 Hours)

1. Check and replace if necessary the arm bushings, and thrust collar bushings.
2. Check pitch control cables for wear.
3. Adjust blade speed.
4. Replace hydraulic fluid and both hydraulic filters.

NOTE

Change the **hydraulic oil** and **filter** after the first 100 hours of use, then change every 250 hours.

MAINTENANCE PROCEDURES

Checking/Adjusting Blade Speed

Because the two hydraulic drive motors operate independent of each other, the blade speed between them may vary. If the unit's steering is difficult to control, the blade speeds may need to be checked, or if the spider is spinning noticeably faster or slower than the other side, the blade speed may need to be checked. It is also recommended that the blade speed be checked at least once a year.

Blade speed adjustment is a two-step process. First, the left spider's speed should be checked and/or adjusted. Second, the right spider's speed should be adjusted to match the left.

Left Spider Speed Adjustment

The left spider's speed is adjusted by changing the length of the rod end spacing (Figure 16) at the front of the foot pedal. Lengthening the spacing increases the blade speed; shortening the spacing decreases the blade speed.

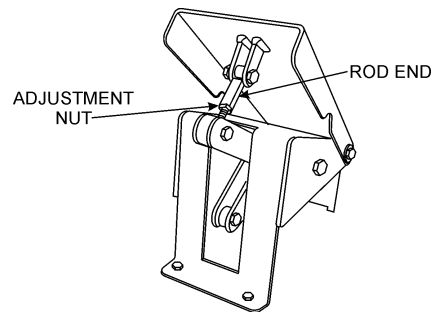


Figure 16. Blade Speed Control Foot Pedal

Right Spider Speed Adjustment

The right spider's speed is adjusted by changing the length of the connecting rod on the pump actuation levers (Figure 17, Page 21). This rod is basically a turnbuckle. Rotating it in one direction increases the length and corresponding spider speed. Rotating it the opposite direction decreases the length and spider speed. The right spider's speed should be within 3 rpm of the left.

A good starting point in the adjustment process is to adjust the rod such that both spiders begin to rotate at the same time when the foot pedal is slowly depressed. This will, generally, get the speeds fairly close. Close enough for use if instrumentation is unavailable (i.e. on the job site). From this point on, some form of instrumentation is required to verify that the right spider speed is within the tolerance specified above. A strobe or magnetic pickup type speed indicator is recommended to verify the speeds.

The speeds should be adjusted on a dry concrete floor with the blades pitched flat. Units with a Kubota turbocharged engine should be set at 155-160 rpm with the engine at full speed.

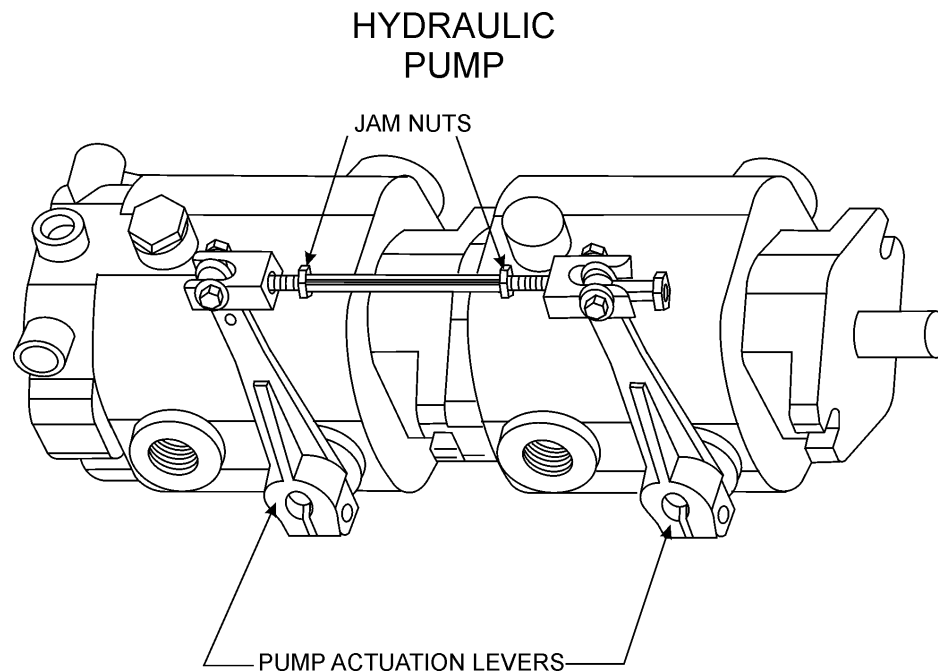


Figure 17. Pump Actuation Levers/Speed Control Rod

Matching Blade Pitch for Both Sets of Blades

Sometimes it may be necessary to match blade pitch between the two sets of blades. There are some signs that this may be necessary. For example, the differences in pitch could cause a noticeable difference in finish quality between the two sets of blades. Or, the difference in blade pitch could make the machine difficult to control. This is due to the surface area in contact with the concrete (the blade set with the greater contact area tends to stick to the concrete more).

To fix this problem, each spider assembly can be pitched individually. With a Single Pitch machine, the operator is forced to constantly make adjustments on each pitch tower. On a Twin Pitch machine, the operator must lift up on one of the pitch control handles, disengaging the linkage between the towers. Once this is done, a pitch control crank can be turned to adjust the difference. Make sure to lock the linkage back in place when finished with adjustments.

There are some things to look for when checking to see if adjustment is necessary. Is the machine wearing out blades unevenly (i.e. one blade is completely worn out while the others look new)? Does the machine have a perceptible rolling or bouncing motion when in use? Look at the machine while it is running, do the guard rings “rock up and down” relative to the ground? Do the pitch control towers rock back and forth? These are some of the indications that the blade pitch may need to be adjusted using the adjustment bolts on the trowel blade finger.

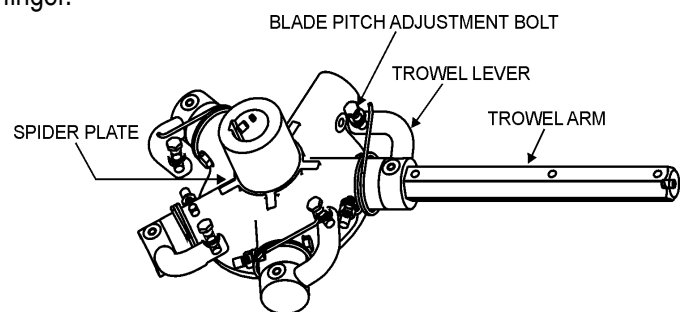


Figure 18. Blade Pitch Adjustment Bolt

Blade Pitch Adjustment Procedure

The maintenance adjustment of blade pitch is an adjustment that is made by a bolt (Figure 18) on the arm of the trowel blade finger. This bolt is the contact point of the trowel arm to the lower wear plate on the thrust collar. The goal of adjustment is to promote consistent blade pitch and finishing quality.

The easiest and most consistent way to make this adjustment is to use the Trowel Arm Adjustment Fixture (P.N. 9177) that is manufactured by Whiteman. This fixture will allow consistent adjustment of the trowel arm fingers. It comes with all the hardware necessary to properly accomplish this maintenance and instructions on how to properly utilize this tool. Adjusting the trowel arm fingers without a fixture requires a special talent.

If a trowel arm adjustment fixture is not available and immediate adjustment is necessary; we suggest the following procedure. If you can see or feel which blade is pulling harder, adjust the bolt that corresponds to that blade. Another way to determine which blades need adjustment is to place the machine on a flat surface and pitch the blades as flat as possible. Now, look at the adjustment bolts. They should all barely make contact with the lower wear plate on the spider. If you can see that one of them is not making contact; some adjustment will be necessary.

It will be possible to adjust the “high” bolts down to the level of the one that is not touching, or adjust the “low” bolt up to the level of the higher ones. If possible, adjust the low bolt up to the level of the rest of the bolts. This is the fastest way, but may not always work. Verify that after adjustment, the blades pitch correctly. Often times, if the blades are incorrectly adjusted, they will not be able to pitch flat. This occurs when the adjusting bolts have been raised too high. Conversely, sometimes the adjusting bolts are too low and the blades cannot be pitched high enough for finishing operations.

Changing A Blade

Whiteman recommends that all the blades on the entire machine be changed at the same time. If only one or some of the blades are changed at one time, the machine will not finish concrete consistently and the machine may wobble or bounce.

1. Place the machine on a flat, level surface. Adjust the blade pitch control to make the blades as flat as possible. Note the blade orientation on the trowel arm. This is important for ride-on trowels as the two sets of blades counter-rotate. Lift the machine up, placing blocks under the main guard ring to support it.
2. Remove the bolts and lock washers on the trowel arm, and then remove the blade.
3. Scrape all concrete and debris from the trowel arm. This is important to properly seat the new blade.
4. Install the new blade, maintaining the proper orientation for direction of rotation.
5. Affix the bolts and lock washers.
6. Repeat steps 2-5 for all remaining blades.

Checking Hydraulic Pressure

It should be mentioned that most hydraulic problems are a result of low fluid levels. Before checking any other possibilities, make sure the hydraulic fluid level is half way up the sight glass which is located at the right end of the frame.

Hydraulic pressure can be checked using a pressure gauge (Figure 19) with a range of at least 5,000 psi. Two male diagnostic quick couplers (one for each pump) are located in the elbow fittings (Figure 19) at the front of the pump. It is best to use two gauges simultaneously, but it is possible to use only one gauge and repeat the procedure for each side.

To fully test the hydraulic system, the spiders will need to be locked so that they cannot rotate. This can easily be done by wrapping a chain around an arm on each spider, thus chaining them together in the back of the trowel.

Once the pressure gauges are installed and the spiders chained together, the system can be checked.

With the foot pedal in the idle position and the engine at full speed, the pressure should be 200 to 300 psi. If the pressure is less than 200 psi, the charge system may need to be inspected and/ or serviced. In particular, the suction filter and charge pump relief valve should be checked. The suction filter may be plugged, or the relief valve may be stuck. Either condition may cause low charge pressure.

With the engine at 50% to 70% of full speed, and spiders chained together, slowly depress the foot pedal and read the gauges. The pressure should get to at least 3,100 psi. If the pressure will not attain 3,100 psi, the pump should be inspected and/or serviced by an authorized service representative.

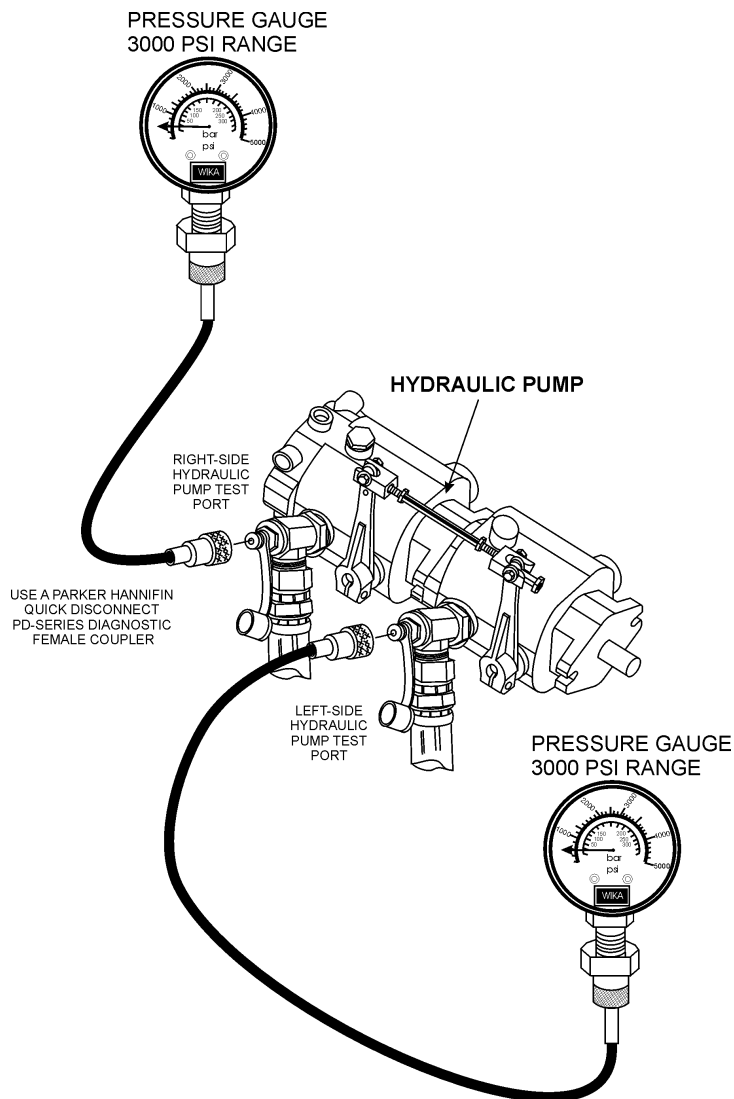


Figure 19. Pressure Gauge (Hydraulic Pump)

Checking Steering Pressure

Lift the hinged radiator access cover and insert the test pressure gauge (300 to 600 PSI) as shown in Figure 20 into the left steering valve's diagnostic quick coupler.

Run the engine at full RPM. The left steering valve's factory setting is 145 PSI, however some operators may prefer a more responsive steering (higher pressure required) and some operators may prefer a "softer feel" (lower pressure required).

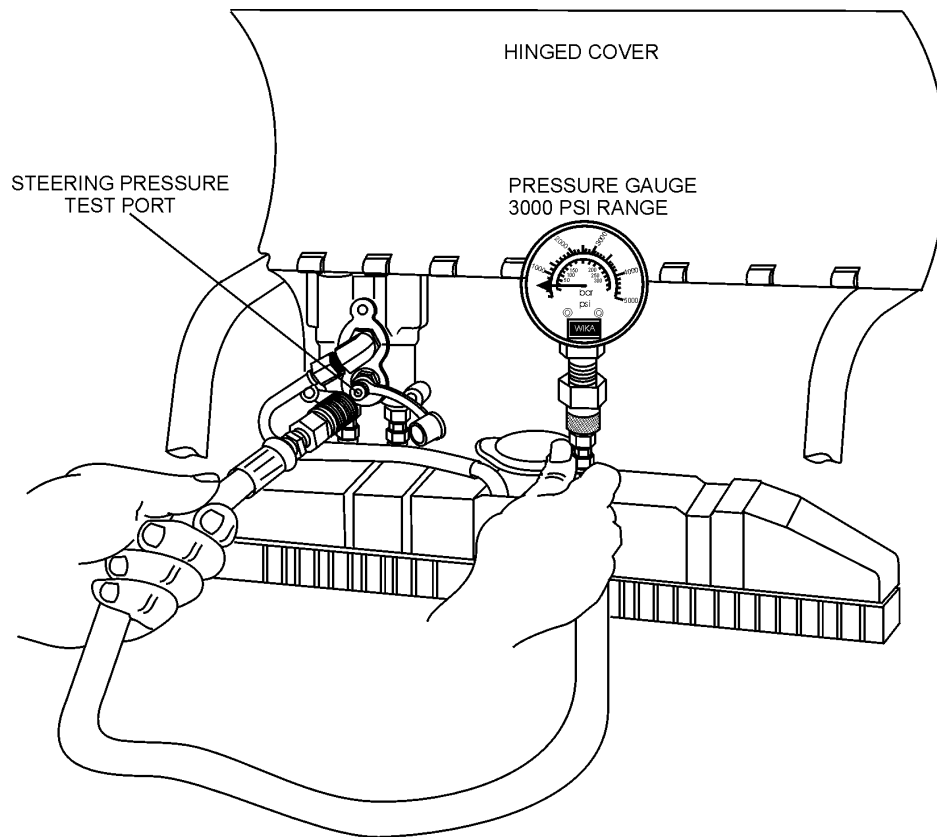


Figure 20. Pressure Gauge (Left Steering Valve)

Steering Pressure Adjustment

On the steering pressure relief valve use an open-end wrench to loosen the jam nut and an allen-wrench to adjust the steering pressure to the desired setting somewhere between 115 and 180 PSI. Retighten the jam nut.

The steering pressure should be checked with the engine at full RPM. It is not necessary to move either steering control during the pressure test.

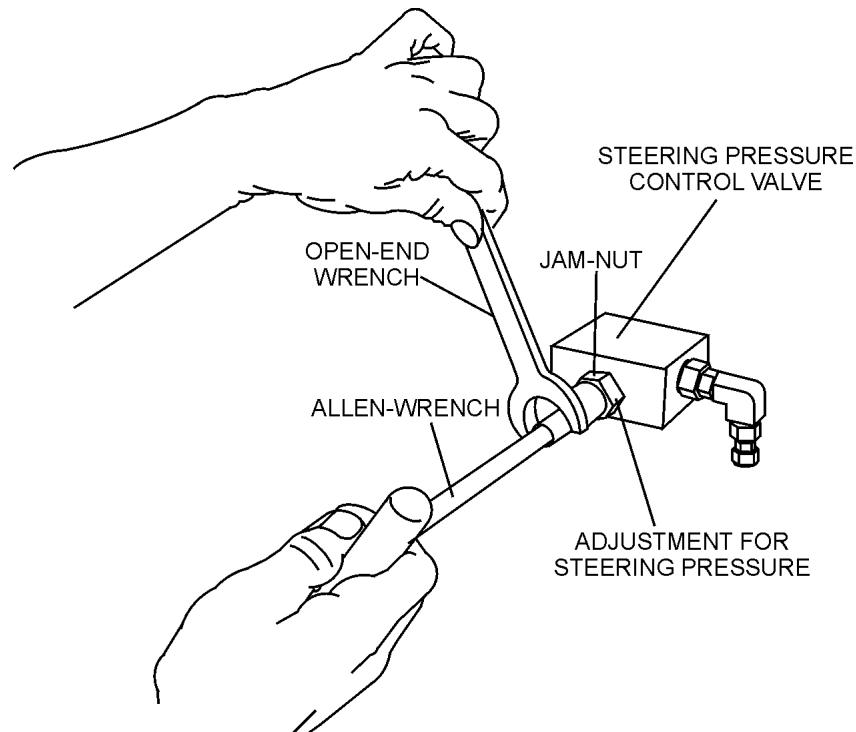


Figure 21. Steering Pressure Adjustment

TABLE 4. TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine running rough or not at all.	Kill switch malfunction?	Make sure that the kill switch is functioning when the operator is seated; replace switch if necessary.
	Fuel?	Look at the fuel system. Make sure there is fuel being supplied to the engine. Check to ensure that the fuel filter is not clogged.
	Ignition?	Check to ensure that the ignition switch has power and is functioning correctly.
Safety kill switch not functioning.	Other problems?	Consult engine manufacturer's manual.
	Loose wire connections?	Check wiring. Replace as necessary.
	Bad contacts?	Replace switch.
If trowel "bounces, rolls concrete, or makes uneven swirls in concrete".	Blades?	Make certain blades are in good condition, not excessively worn. Finish blades should measure no less than 2" (50mm) from the blade bar to the trailing edge, combo blades should measure no less than 3.5" (89mm). Trailing edge of blade should be straight and parallel to the blade bar.
	Spider?	Check that all blades are set at the same pitch angle as measured at the spider. A field adjustment tool is available for height adjustment of the trowel arms (see Optional Equipment).
	Bent trowel arms?	Check the spider assembly for bent trowel arms. If one of the arms is even slightly bent, replace it immediately.
	Trowel arm bushings?	Check the trowel arm bushings for tightness. This can be done by moving the trowel arms up and down. If there is more than 1/8" (3.2 mm) of travel at the tip of the arm, the bushings should be replaced. All bushings should be replaced at the same time.
	Thrust collar?	Check the flatness of the thrust collar by rotating it on the spider. If it varies by more than 0.02" (0.5 mm) replace the thrust collar.
	Thrust collar bushing?	Check the thrust collar by rocking it on the spider. If it can tilt more than 1/16" (1.6 mm) [as measured at the thrust collar O.D.], replace the bushing in the thrust collar.
	Thrust bearing worn?	Check the thrust bearing to see that it is spinning free. Replace if necessary.
	Blade pitch?	Check blades for consistent pitch. Adjust per Maintenance section instructions if necessary.
Machine has a perceptible rolling motion while running.	Main shaft?	The main output shaft of the gearbox assembly should be checked for straightness. The main shaft must run straight and cannot be more than 0.003" (0.08 mm) out of round at the spider attachment point.
	Yoke?	Check to make sure that both fingers of the yoke press evenly on the wear cap. Replace yoke as necessary.

TABLE 4. TROUBLESHOOTING (CONTINUED)

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Lights (optional) not working.	Wiring?	Check all electrical connections, including the master on/off switch and check to see if wiring is in good condition with no shorts. Replace as necessary.
	Lights?	Check to see if light bulbs are still good. Replace if broken.
Retardant spray (optional) not working.	Retardant?	Check the tank to make sure retardant is present. Fill tank as necessary.
	Wiring?	Check all electrical connections, including master on/off switch connections. Replace components and wiring as necessary.
	Bad switch?	Check the continuity of master on/off switch. Replace if broken.
	Bad spray pump?	If pump has a voltage present when the switch is turned on, but does not operate and electrical connections to the pump are good, replace the pump.
Steering is unresponsive.	Blade speed out of adjustment?	See section on blade speed adjustment.
	Worn components?	Check for wear of steering bearings and linkage components replace if necessary.
	Pivots?	Check to ensure free movement of hydraulic drive motors.
	Hydraulic pressure?	Check to ensure that hydraulic pressure is adequate. See section on checking hydraulic pressure.
Operating position is uncomfortable.	Seat adjust for operator?	Adjust seat with lever located on the front of the seat.
Linkage on Twin Pitch (optional) not working.	Crank handles?	Make sure that both crank handles are pushed down as far as possible. Doing this ensures that the linkage is engaged.
	Broken part?	Replace all broken parts immediately.

HTH-44T— EXPLANATION OF CODE IN REMARKS COLUMN

How to read the marks and remarks used in this parts book.

Items Found In the “Remarks” Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

Items Found In the “Items Number” Column

All parts with same symbol in the number column, *, #, +, %, or ■, belong to the same assembly or kit.

NOTE

If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.

NOTE

The contents of this parts catalog are subject to change without notice.

HTH-44T— SUGGESTED SPARE PARTS & SERVICE ITEMS

HTH44T SERIES - KUBOTA 44 HP TURBO ENGINE

1 Unit

Qty.	P/N	Description
5	2829	ARMS
2	9005	LEVER TROWEL ARM (L.S.)
20	0166A	WASHER
20	1876	JAM NUT
20	0164B	SCREW
5	11039	BUSHING
2	9111	SPRING (L.S.)
20	1875	WASHER
20	1322	SCREW ASM, ARM RETAINING
2	11419	SPIDER PLATE (WEAR)
20	1162A	CAP GREASE FITTING
20	16602	SCREW (HHC 3/8 -16 X 3/8)
2	2143	SPRING (R.S.)
2	1986	LEVER TROWEL ARM (R.S.)
2	12005	SAFETY-OFF ("KILL" SWITCH)
20	0181B	WASHER 1/4 IN
1	11418	FUEL CAP/GAUGE (ENG)
1	12010	FUEL SCREEN
2	19633	BUSHING, RUBBER FUEL
1	12332	CAP, HYDRAULIC RESEVOIR
1	11402	FILTER, HYDRAULIC RETURN
1	20567	FILTER, HYDRAULIC SUCTION
1	EATON 70142-938	SEAL KIT (EATON HYD PUMP)
1	12238	KEY, SHAFT
1	EATON 61295..	SEAL KIT, REAR (PORT END)
1	12313	SEAL, INPUT SHAFT
1	EATON 61338-000	SEAL KIT, (HYD MOTOR)
1	11874	GROMMET, (HYD PUMP LEVER)
1	20003	ROD END, FEM (HYD PUMP LEVER)
4	11577	PLATE, VIBRATION MOUNT (ENG)
1	11491	CABLE, THROTTLE (FOOT PEDAL)
1	11611	ROD END, FEM RH (HYD THROTTLE)
1	2153	ROD END, FEM RH(THROTTLE CABLE)
1	11643	ROD END, MALE (RH)
1	12548	SPRAY PUMP
1	392292	SPRAY NOZZEL
1	19633	BUSHING, RUBBER FUEL
1	2108	CAP, SPRAY TANK
1	12009	SCREEN FILTER
10	10031	WASHER, 1/4"

Qty.	P/N	Description
1	19638	BRACKET BATTERY
2	11693	BOLT BATTERY BRACKET
1	10314	CABLE, BATTERY+ (RED)
1	10313	CABLE, BATTERY-(BLACK)
1	1597	CABLE, (NEG 16.5")
6	2509	WING NUT
1	20511	SWITCH, IGNITION
1 SET	12627	KEYSET, IGNITION
2	12307	BULB, INDICATOR LIGHT
1	11585	INDICATOR PLUG (BLUE)
1	11382	INDICATOR PLUG (RED)
1	11098	CIRCUIT BREAKER 40 AMP, 12V
1	4682	TOGGLE SWITCH
1	8381	BOOT, TOGGLE SWITCH
1	11792	ACCESSORY SOLENOID
1	11694	HOUR METER

PARTS FOR KUBOTA 44 HP TURBO ENGINE

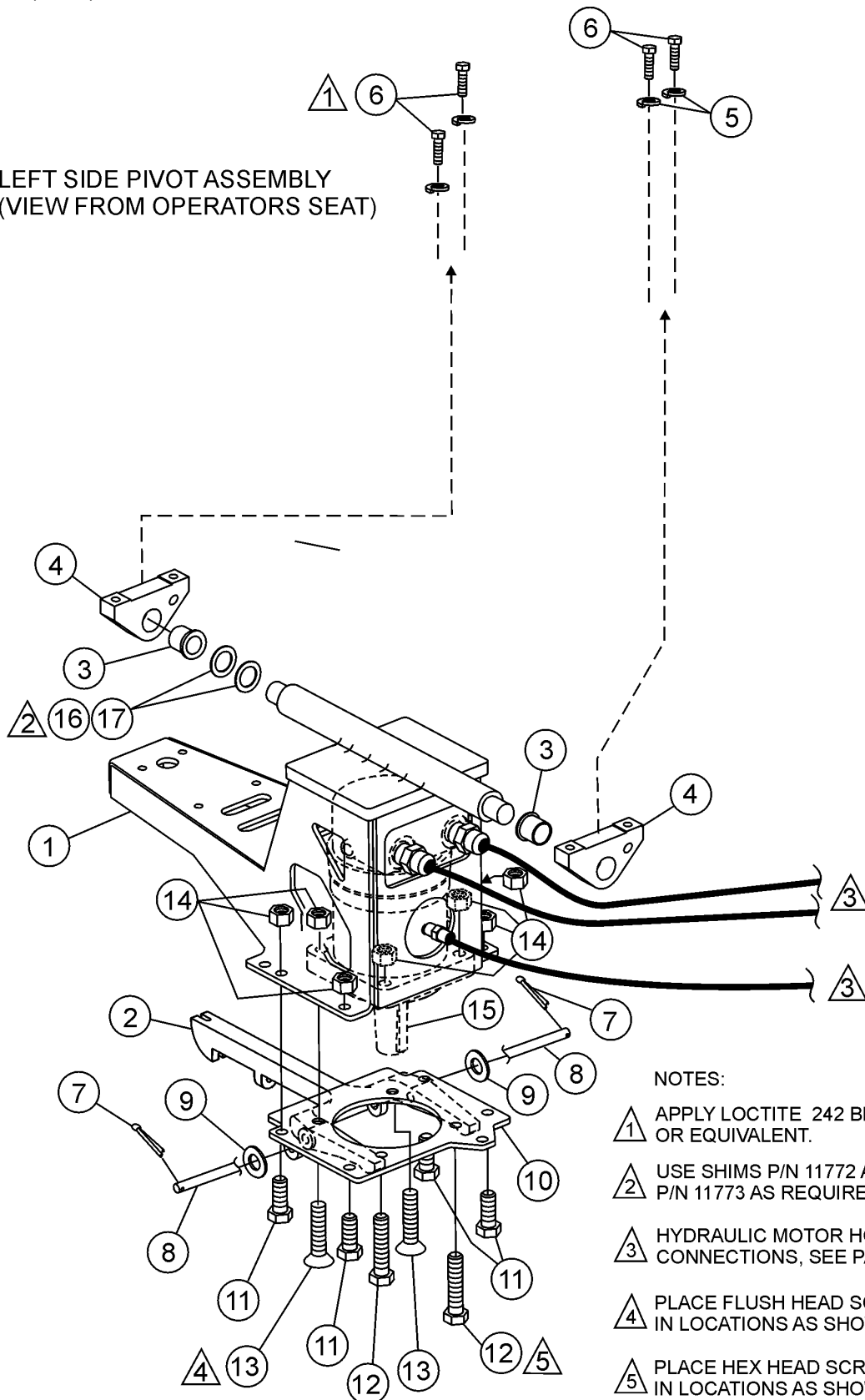
Qty.	P/N	Description
1	KUBOTA P/N 16271-32090	OIL FILTER
1	KUBOTA P/N 17351-11083	AIR FILTER ELEMENT
1	70000-43081	FUEL FILTER
1	16282-97010	FAN BELT
2	16241-72870	RADIATOR HOSE
4	36200-82720	HOSE CLAMP
1	20295	MUFFLER HTH44
1	20122	MUFFLER BLANKET
1	20318	MUFFLER KIT, KUBOTA VI505-TE
1	10434	CLAMP, HOSE 2"
1	20112	BRACKET, ENGINE THROTTLE CABLE
1	10568	THROTTLE CABLE (ENGINE)
1	11531	BELLHOUSING, KUBOTA VH 1305/150
1	11605	FLANGE, ENG KTR NYLON
1	20316	FAN, PUSHER, KUBOTA
1	20320	RADIATOR KIT, KUBOTA VI505-TE
1	11983	TANK, RADIATOR OVERFLOW
1	20327	AIR CLEANER KIT, KUBOTA VI505-TE
1	20566	HARNESS, WIRE 44HP ENGINE(HTH)
1	20322	HARNESS, WIRE KUBOTA 44T
1	20321	MANUAL, KUBOTA OWNERS, VI505-TE

NOTE

Part numbers on this Suggested Spare Parts List may supercede/replace the P/N shown in the text pages of this book.

PIVOT ASSY. (LEFT)

LEFT SIDE PIVOT ASSEMBLY
(VIEW FROM OPERATORS SEAT)



NOTES:

- ① APPLY LOCTITE 242 BLUE OR EQUIVALENT.
- ② USE SHIMS P/N 11772 AND P/N 11773 AS REQUIRED
- ③ HYDRAULIC MOTOR HOSE CONNECTIONS, SEE PAGE 54.
- ④ PLACE FLUSH HEAD SCREWS IN LOCATIONS AS SHOWN.
- ⑤ PLACE HEX HEAD SCREWS IN LOCATIONS AS SHOWN.

HTH-44T— PIVOT ASSY. (LEFT)

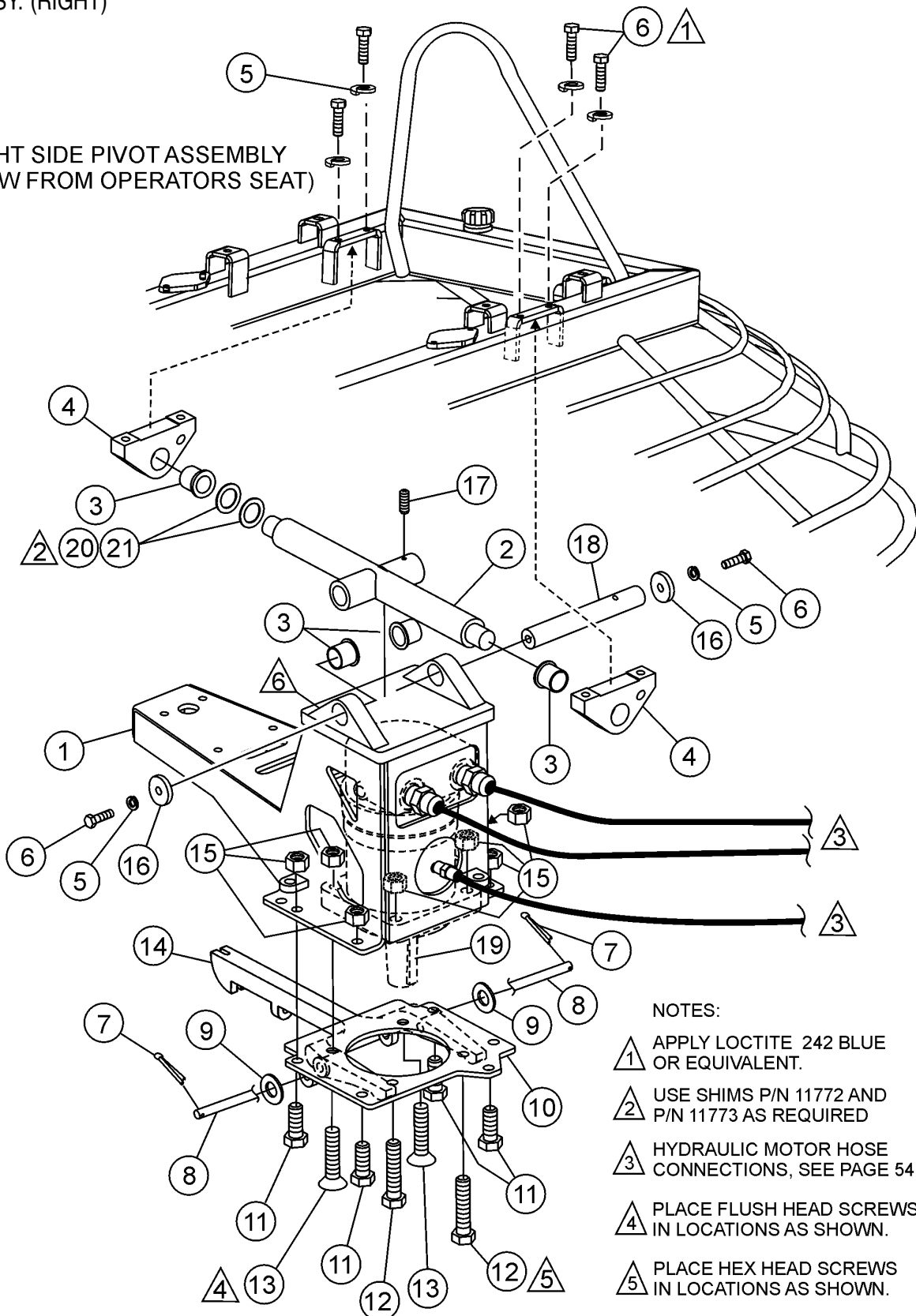
PIVOT ASSY. (LEFT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12968	MOUNT, HYD. MOTOR LEFT	1	
2	11499	YOKE	1	
3	10221	BUSHING	2	
4	11555	ROCKER BLOCK	2	
5	0166A	WASHER, LOCK 3/8 MED.	4	
6	1023	SCREW, HHC 3/8- 16 X 1- 1/4	4	
7	0183	PIN,COTTER 1/8 1- 1/4	2	
8	11648	PIN, PIVOT	1	
9	0448	WASHER, FLAT 7/16 SAE	2	
10	12983	MOUNT, HYD. MOTOR BOTTOM	1	DOES NOT INCL ITEM 2, YOKE
11	3214	SCREW, HHC 1/2- 13 X 1- 1/4	4	
12	13178	SCREW, HHC 1/2- 13 X 2 1/4	2	
13	11882	SCREW, FHSC 1/2- 13 X 2 1/4	2	
14	10176	NUT, NYLOC 1/2- 13	8	
15	20002	MOTOR, EATON VIS30 24CID	1	
16	11772	SHIM	AR	
17	11773	SHIM	AR	

HTH-44T— PIVOT ASSY. (RIGHT)

PIVOT ASSY. (RIGHT)

RIGHT SIDE PIVOT ASSEMBLY
(VIEW FROM OPERATORS SEAT)



NOTES:

- 1 APPLY LOCTITE 242 BLUE OR EQUIVALENT.
- 2 USE SHIMS P/N 11772 AND P/N 11773 AS REQUIRED
- 3 HYDRAULIC MOTOR HOSE CONNECTIONS, SEE PAGE 54.
- 4 PLACE FLUSH HEAD SCREWS IN LOCATIONS AS SHOWN.
- 5 PLACE HEX HEAD SCREWS IN LOCATIONS AS SHOWN.
- 6 SADDLE ASSY. IS WELDED TO MOTOR MOUNT.

HTH-44T— PIVOT ASSY. (RIGHT)

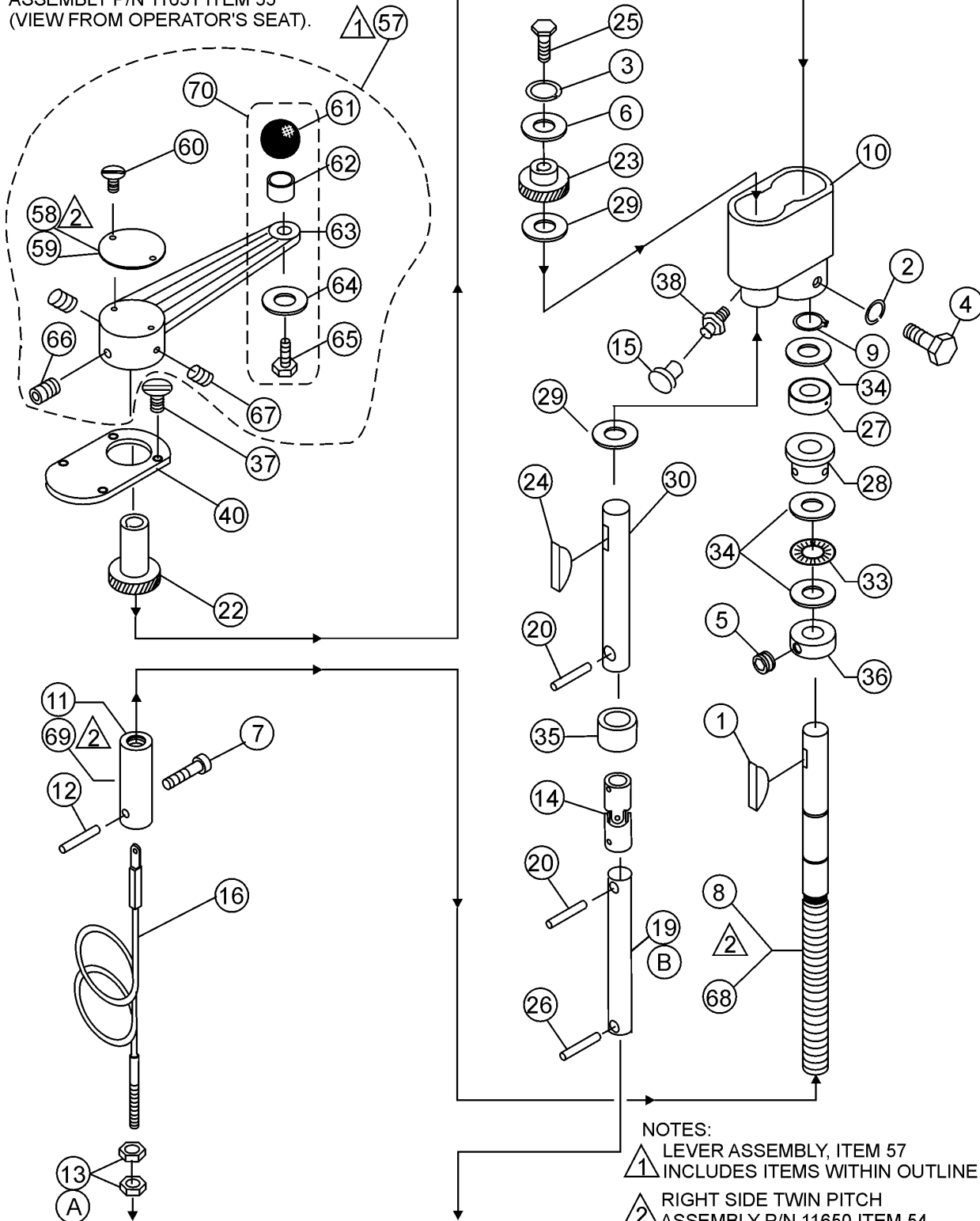
PIVOT ASSY. (RIGHT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12967	MOUNT, HYD. MOTOR RIGHT	1	
2	11450	TRUNNION	1	
3	10221	BUSHING	4	
4	11555	ROCKER BLOCK	2	
5	0166A	WASHER, LOCK 3/8 MED.	6	
6	1023	SCREW, HHC 3/8- 16 X 1- 1/4	6	
7	0183	PIN, COTTER 1/8 1- 1/4	2	
8	11648	PIN, PIVOT	1	
9	0448	WASHER, FLAT 7/16 SAE	2	
10	12983	MOUNT, HYD. MOTOR BOTTOM	1	DOES NOT INCLUDE ITEM 14
11	3214	SCREW, HHC 1/2- 13 X 1- 1/4	4	
12	13178	SCREW, HHC 1/2- 13 X 2 1/4	2	
13	11882	SCREW, FHSC 1/2- 13 X 2 1/4	2	
14	11499	YOKE	1	
15	10176	NUT, NYLOC 1/2- 13	8	
16	11154	RETAINER, CLUTCH	2	
17	10138	SCREW, SHS 1/4- 20 X 1/2, N.P.	1	
18	11420	SHAFT, PIVOT	1	
19	20002	MOTOR, EATON VIS30 24CID	1	
20	11772	SHIM	AR	
21	11773	SHIM	AR	

HTH-44T— TWIN PITCH ASSY. (LEFT/RIGHT)

LEFT/RIGHT TWIN PITCH ASSY.

LEFT SIDE TWIN PITCH TOWER
ASSEMBLY P/N 11651 ITEM 55
(VIEW FROM OPERATOR'S SEAT).



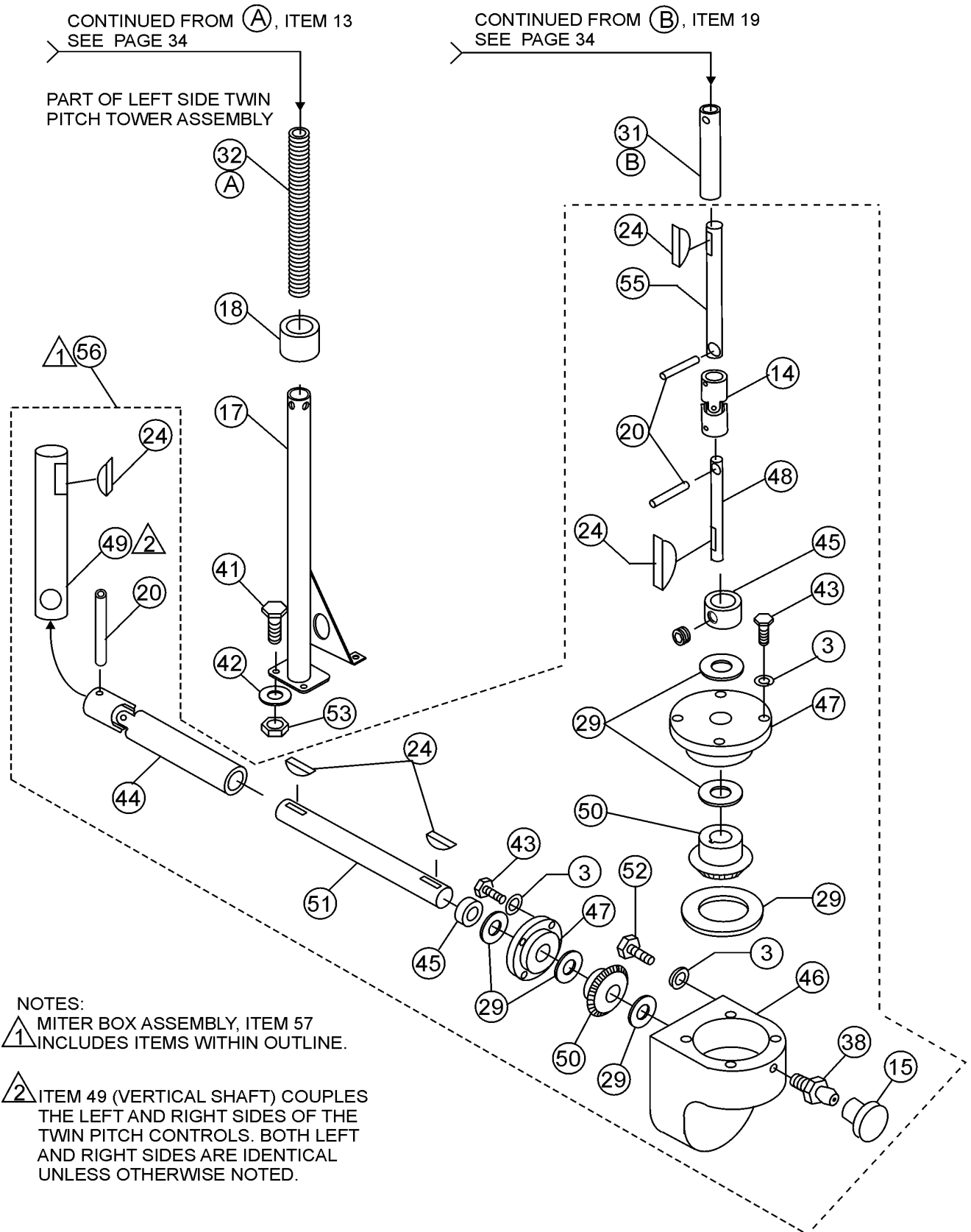
CONTINUED ON PAGE 35
SEE (A), ITEM 32.

CONTINUED ON PAGE 35
SEE (B), ITEM 31.

- NOTES:
- 1 LEVER ASSEMBLY, ITEM 57
INCLUDES ITEMS WITHIN OUTLINE.
 - 2 RIGHT SIDE TWIN PITCH
ASSEMBLY P/N 11650 ITEM 54
IS IDENTICAL TO LEFT SIDE
TWIN PITCH ASSEMBLY UNLESS
OTHERWISE NOTED.

HTH-44T— TWIN PITCH ASSY. (LEFT/RIGHT)

LEFT/RIGHT TWIN PITCH ASSY.



HTH-44T— TWIN PITCH ASSY. (LEFT/RIGHT)

LEFT/RIGHT TWIN PITCH ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1+%	0126 B	KEY, WOODRUFF #9	1	
2+%	0161C	WASHER, LOCK 5/16 MED	3	
3+%	0181 B	WASHER, LOCK, 1/4 MED	1	
4+%	0655	SCREW, HHC 5/16 – 18 X 3/4	3	
5+%	0685	SCREW, SHS 5/16 – 18 X 5/16	1	
6+%	0948	WASHER, FLAT, 1/4 SAE	1	
7+%	10382	BOLT, SHOULDER, 3/8 X 3/8 LONG	1	
8+	10511	SHAFT, PITCH CONTROL, LH TPC	1	
9+%	10512	RING, SNAP, TRUARC 5160 – 75	1	
10+%	10546	HOUSING, PITCH CONTROL, 1-3/4	1	
11+	10722	SLIDE BLOCK, LH PITCH CON	1	
12+%	10723	PIN, SPIROL 3/16 X 1 3/8 HD	1	
13+%	1116	NUT, BRASS JAM 5/16 – 18	2	
14+%	11583	U-JOINT, PITCH CONTROL	1	
15+%	1162 A	CAP, GREASE ZERK, #2 YELLOW	1	
16+%	11623	CABLE, PITCH ASM	1	
17	11630	TUBE, PITCH CONTROL	1	
18	11649	SPACER, PITCH SPRING	1	
19+%	11652	SHAFT, TWIN PITCH	1	
20+%	11654	PIN, ROLL 1/8 Z 1 PLATED	2	
22+%	1529	GEAR, MASTER, TPC	1	
23+%	1530	GEAR, SLAVE, TPC	1	
24+%	1578	KEY, WOODRUFF, #3	1	
25+%	1579	SCREW, HHC 1/4 – 20 X 1/2	1	
26+%	1586	PIN, ROLL 1/8 X 3/4	1	
27+%	1604	BEARING, BALL	1	
28+%	1612	BEARING, ALUM – PITCH CONTR	1	
29+%	1733	WASHER, 1/32 X 1/2 HARDENED	6	
30+%	2007	SHAFT	1	
31	2012	SLEEVE, ADJ – LONG, RIDER	1	
32	2156	SPRING, COIL	1	
33+%	2169	BEARING, THRUST, TORR #NTA 1220	1	
34+%	2170	BEARING, RACE, TORR #TRA 1220	3	
35+%	2311	SPACER, 3/4 X 1/2 X 8L	1	
36+%	2367	SET COLLAR	1	
37+%	2620	SCREW, BHC 10 – 24 X 5/8	4	
38+%	2621	ZERK, GREASE STR 1/4 – 28	1	
40+%	2649	COVER, PITCH CONT HOUSING	1	

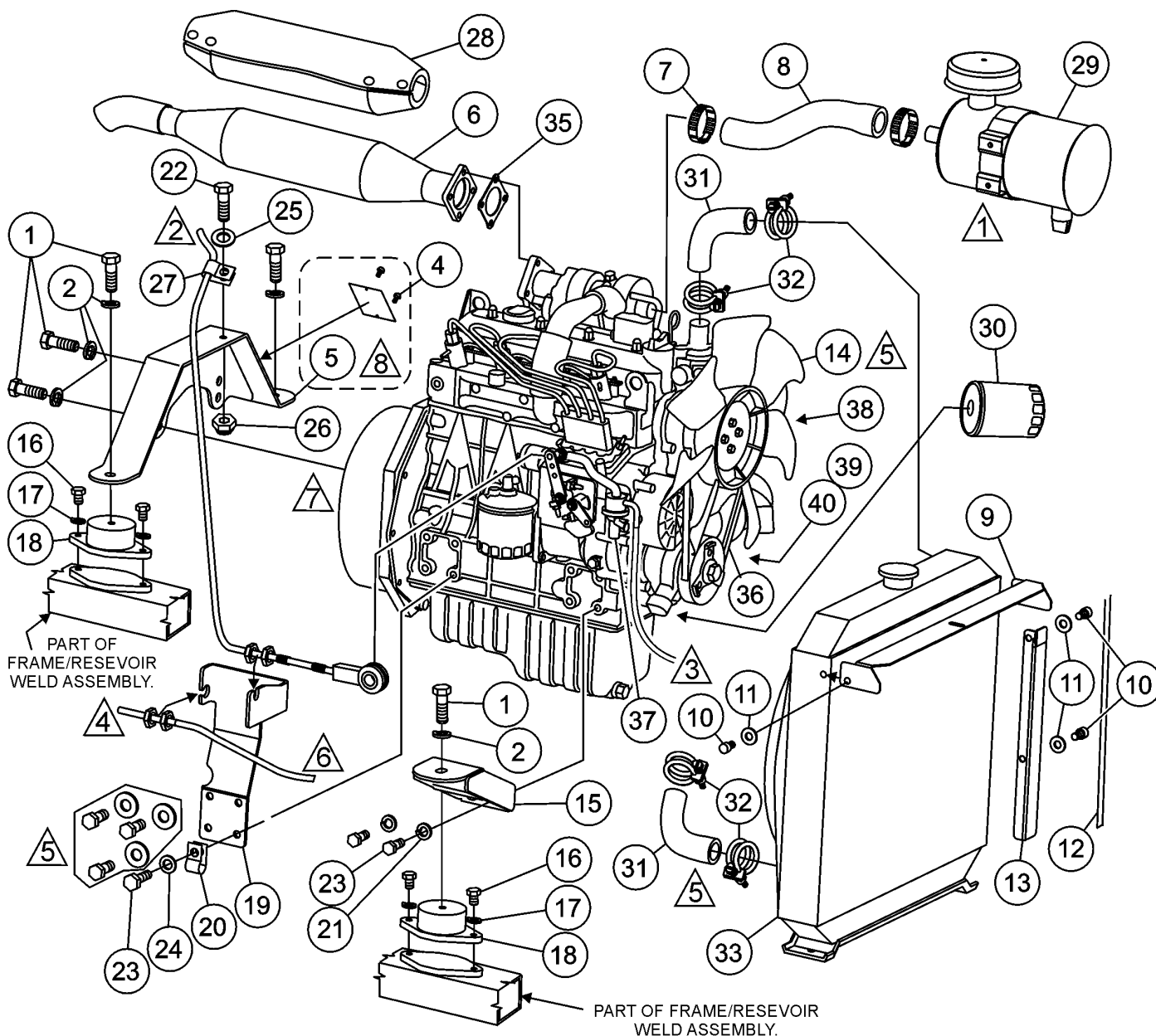
HTH-44T— TWIN PITCH ASSY. (LEFT/RIGHT)

LEFT/RIGHT TWIN PITCH ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
41	0202	SCREW, HHC 5/16 – 18 X 1	8	
42	0300 B	WASHER, FLAT, 5/16 SAE	8	
43*	0730	SCREW, HHC 1/4 – 20 X 1	16	
44*	11653	SLEEVE, W/U-JOINT	1	
45*	1577	SET COLLAR, 1/2	4	
46*	1987	MITER BOX, PITCH CONTROL	2	
47*	1988	MIT BOX, BEARING CAP RIDERS	4	
48*	2021	SHAFT, MITER VERT JRT	2	
49*	2022	SHAFT, MITER VERTICAL	3	
50*	2062	GEAR, MITER, TPC	4	
51*	2845	SHAFT, MITER BOX HORIZ	1	
52*	4514	SCREW, HHC 1/4 – 20 X 5/8	4	
53	5283	NUT, NYLOC 5/16 – 18	8	
54	11650	RIGHT SIDE TWIN PITCH CONT ASSY	1	INCLS ITEM W/%
55*	11651	LEFT SIDE TWIN PITCH TOWER ASSY	1	INCLS ITEM W/+
56	11655	MITER BOX ASSY	1	INCLS ITEM W/*
57	1617	LEVER ASSY, TROWEL ADJUSTMENT	2	INCLS ITEM W/#
58#	2300	DECAL, AL PITCH, RH	1	
59#	2332	DECAL, AL PITCH, LH	1	
60#	4014	SCREW, 2-3/16 P-K TYPE U DRIVE	4	
61#	4403	CRANK KNOB	1	
62#	3231	SPACER	1	
63#	1615	CRANK LEVER	1	
64#	1733	HARDEN WASHER	1	
65#	1616	SHOULDER BOLT	1	
66#	0185	SCREW, SHSS 3/8 – 16 X 3/8"	1	
67#	1528	SCREW, SHSS 1/4 – 20 X 5/16"	1	
68%	10510	SHAFT, PITCH CONTROL, RH TPC	1	
69%	10721	SLIDE BLOCK, RH PITCH CONTROL	1	
70	2737	KNOB KIT	1	

HTH-44T— ENGINE (KUBOTA)

ENGINE (KUBOTA)



△ 1 ATTACHES TO LEFT-REAR PANEL OF SEAT/FRAME ASSEMBLY

△ 2 ENGINE THROTTLE CABLE ASSEMBLY. SEE PAGE 70.

△ 3 SEE PAGE 42 FOR FUEL CONNECTIONS.

△ 4 HYDRAULIC MOTOR THROTTLE CABLE ASSEMBLY. SEE PAGE 56.

△ 5 REFER TO ENGINE PARTS MANUAL FOR PARTS NOT REFERENCED.

△ 6 TO RIGHT FOOT PEDAL. SEE PAGE 78.

△ 7 KTR FLANGE, SEE PAGE 40.

△ 8 S/N TAG MUST BE REMOVED FROM OLD BRACKET AND REINSTALLED ONTO NEW BRACKET. IF S/N TAG IS DAMAGED CONTACT PARTS DEPARTMENT.

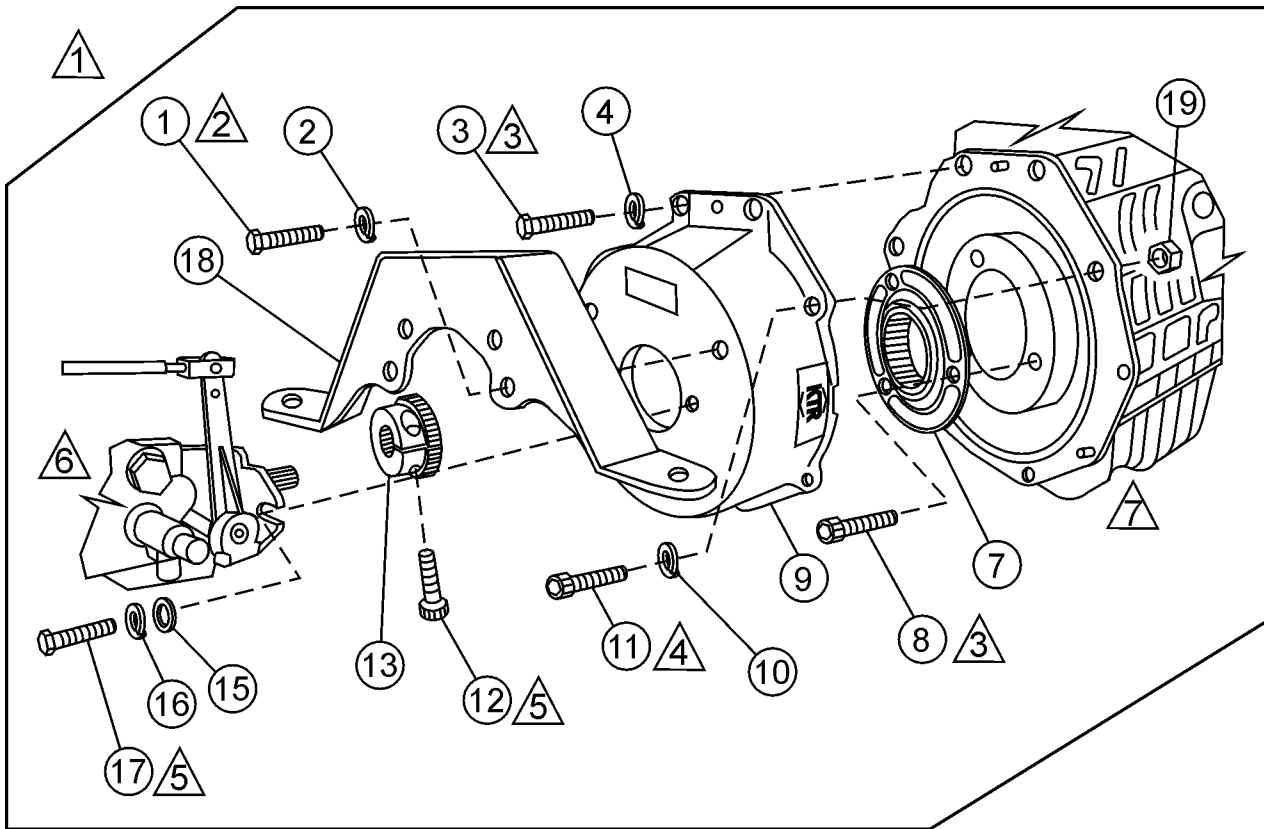
HTH-44T— ENGINE (KUBOTA)

ENGINE (KUBOTA)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	5218	SCREW, HHC 1/2- 13 X 1- 1/2	6	
2	5054A	WASHER, LOCK, 1/2 MED	6	
4	4014	SCREW, DRIVE #2- 3/16 U- DRIVE	2	
5	11517	MOUNT, RIGHT MOTOR	1	(REPLACE S/N TAG ONTO NEW MOUNT)
6	20295	MUFFLER, HTH44	1	
7	10434	CLAMP, HOSE 2 INCH ID	2	
8	20123	HOSE, AIR CLEANER	1	
9	20091	PLATE, AIR DAM TOP	1	
10	2198	SCREW, SHC M6- 1.0 X 10MM	3	
11	0948	WASHER, FLAT 1/4 SAE	3	
12	60049	TRIM EDGE, 1/32 (62B3- 1/32)	1	SOLD IN FOOT-LENGTHS
13	20093	PLATE, AIR DAM REAR	1	
14	20108	ENGINE PACKAGE KUBOTA 44HP TURBO	1	
15	12958	MOUNT, ENGINE LEFT W/ A	2	
16	6869	SCREW, HHC 3/8- 24 X 1/2	8	
17	0166A	WASHER, LOCK 3/8 MED.	8	
18	11577	PLATE, VIBRATION MOUNT	4	
19	20112	BRACKET, THROTTLE	1	
20	8125	CLAMP, HOSE SUPPORT, 5/8	1	
21	2955	WASHER, LOCK, 7/16 MED	4	
22	0202	SCREW, HHC 5/16- 18 X 1	1	
23	11662	SCREW, HHC M10- 1.25 X 25MM	5	
24	10136	WASHER, FLAT 3/8 SAE	1	
25	0300B	WASHER, FLAT 5/16 SAE	1	
26	5283	NUT, NYLOC 5/16-18	1	
27	8128	CLAMP, HOSE SUPPORT 5/16	1	
28	20122	BLANKET, MUFFLER	1	
29	17351-11083	ELEMENT, AIR CLEANER	1	
30	16271-32090	OIL FILTER, ENGINE	1	
31	16241-72870	HOSE, RADIATOR	2	
32	36200-82720	CLAMP, RADIATOR	4	
33	20320	RADIATOR KIT	1	
35	15263-12370	GASKET, MUFFLER	1	
36	16282-97010	FAN BELT	1	
37	16285-52032	FUEL PUMP, KUBOTA	1	
38	16241-64010	ALTERNATOR	1	
39	37560-63010	STARTER	1	
40	01123-50830	BOLT, STARTER	2	

HTH-44T— ENGINE FLANGE (KUBOTA)

ENGINE (KUBOTA)



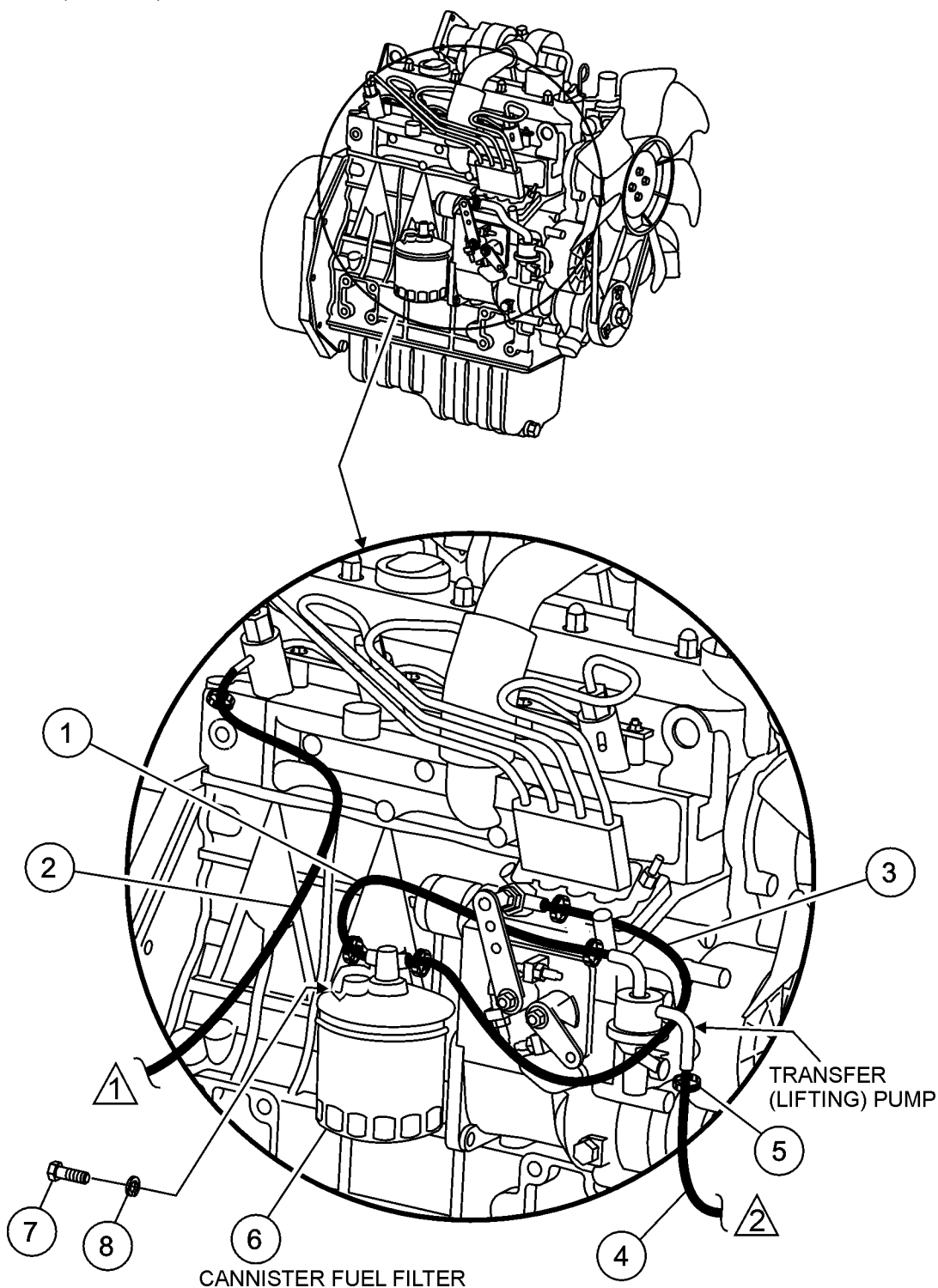
- △1 (ALL BOLTS), USE LOCTITE 242 BLUE OR EQUIVALENT.
- △2 TORQUE TO 80 LB/FT (108NM).
- △3 TORQUE TO 36 LB/FT (49NM).
- △4 TORQUE TO 19 LB/FT (25NM).
- △5 TORQUE TO 40 LB/FT (54NM).
- △6 HYDRAULIC PUMP, SEE PAGE 54.
- △7 ENGINE ASSEMBLY. SEE PAGE 38.

HTH-44T— ENGINE FLANGE (KUBOTA)

ENGINE (KUBOTA)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	5218	SCREW, HHC 1/2- 13 X 1- 1/2	2	
2	5054A	WASHER, LOCK, 1/2 MED	2	
3	N/A	SCREW, HHC M10 -1.25 X 35MM GRD10.9	2	SOURCE LOCALLY
4	N/A	WASHER, FLAT 10MM	2	SOURCE LOCALLY
7	11605	FLANGE, NYLON	1	
8	N/A	SCREW, SHC M10 -1.25 X 30MM GRD12.9	3	SOURCE LOCALLY
9	11531	BELL HOUSING, KTR	1	
10	N/A	WASHER, FLAT 8MM	4	SOURCE LOCALLY
11	N/A	SCREW, SHC M8 -1.25 X 30MM GRD12.9	4	SOURCE LOCALLY
12	N/A	SCREW, SHC M10-1.5 X 30MM GRD12.9	1	SOURCE LOCALLY
13	11378	HUB, HYDRAULIC PUMP	1	
15	10136	WASHER, FLAT 3/8 SAE	2	
16	0166A	WASHER, LOCK 3/8 MED	2	
17	1284	SCREW, HHC 3/8-16 X 1- 1/2	2	
18	11517	MOUNT, RIGHT MOTOR	1	
19	N/A	NUT, HEX, M8 - 1.25	1	SOURCE LOCALLY

ENGINE FUEL(KUBOTA)



- △1 TO FUEL TANK RETURN LINE
- △2 TO FUEL TANK SUPPLY LINE

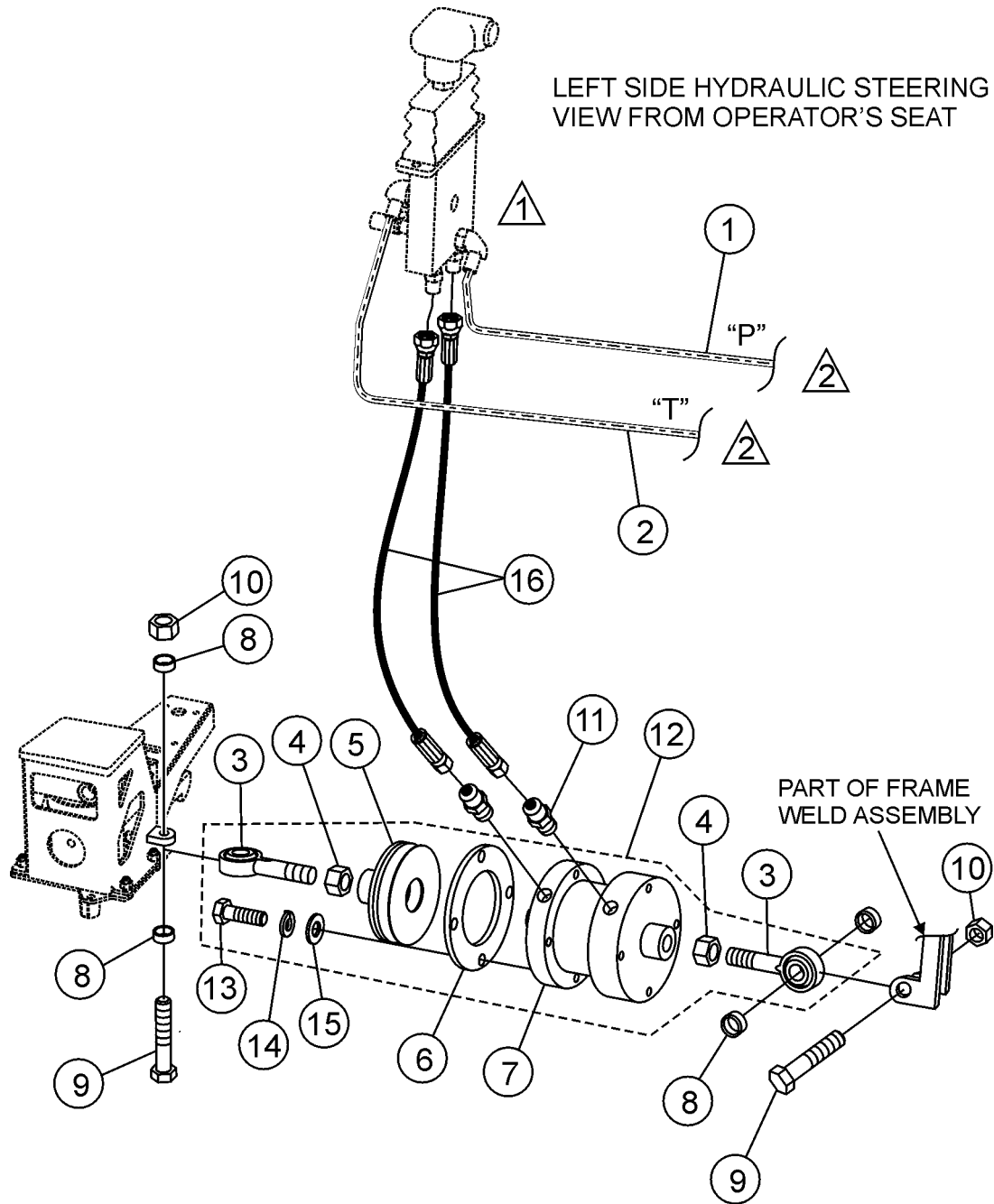
HTH-44T— ENGINE FUEL (KUBOTA)

ENGINE FUEL(KUBOTA)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	60028	HOSE, .312 ID RUBBER FUEL 14"	1	SOLD IN FOOT-LENGTHS
2	60004	HOSE, .187 ID RUBBER FUEL 30"	1	SOLD IN FOOT-LENGTHS
3	60028	HOSE, .312 ID RUBBER FUEL 17"	1	SOLD IN FOOT-LENGTHS
4	60028	HOSE, .312 ID RUBBER FUEL 25"	1	SOLD IN FOOT-LENGTHS
5	19473	CLAMP, WORM HOSE, #4 (1/4- 5/8)	6	
6	70000-43081	FILTER, CANNISTER FUEL	1	
7	11662	SCREW, HHC M10- 1.25 X 25MM	2	
8	2955	WASHER, LOCK, 7/16 MED	2	

HTH-44T— HYDRAULIC STEERING (LEFT)

HYDRAULIC STEERING (LEFT)



△ 1 STEERING VALVE (LEFT) AND
FITTINGS, SEE PAGE 48.

△ 2 TO HYDRAULIC STEERING (RIGHT),
SEE PAGE 46.

HTH-44T— HYDRAULIC STEERING (LEFT)

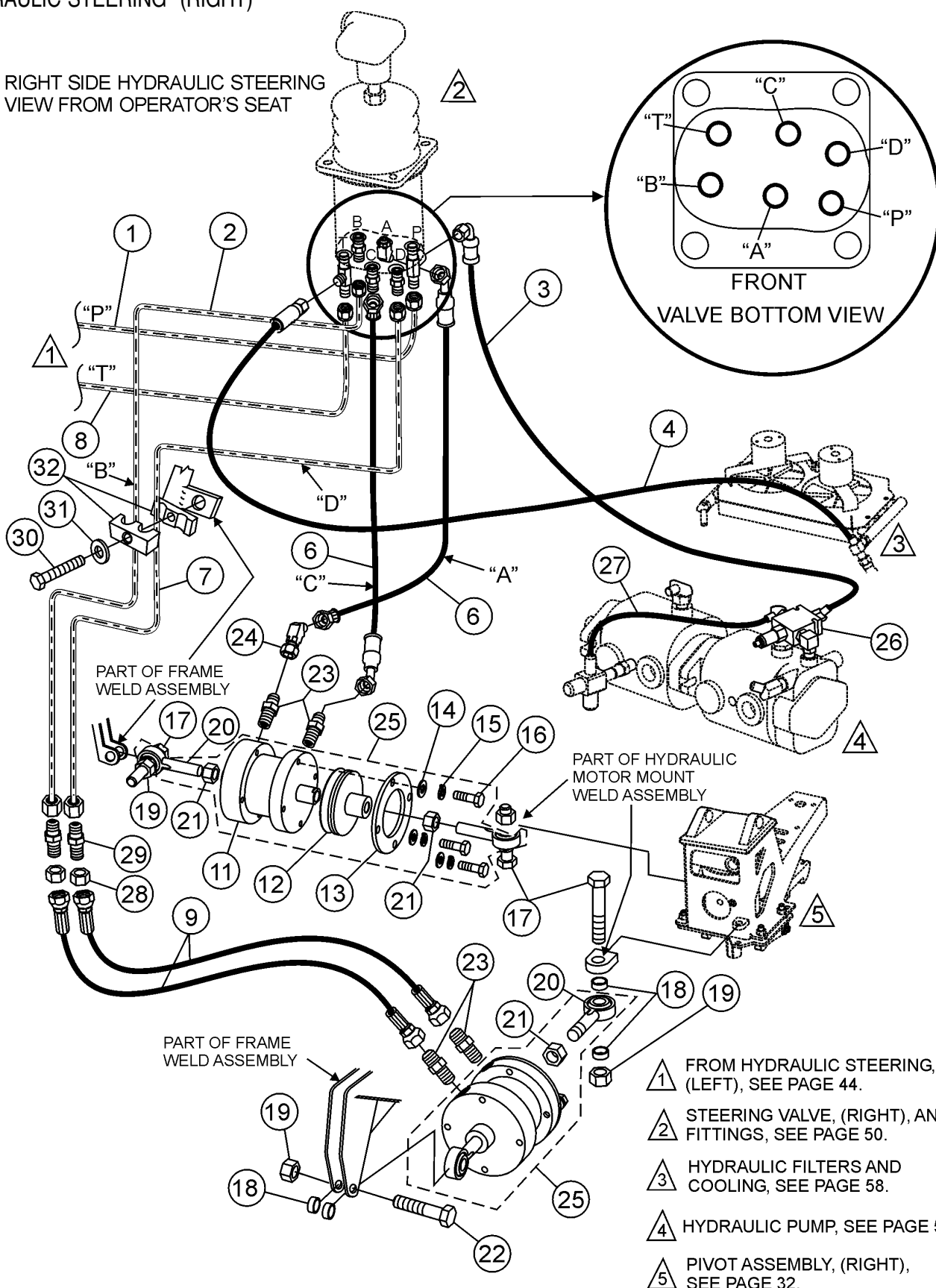
HYDRAULIC STEERING (LEFT)

1	20095	TUBE, HYD. STEERING PRESSURE	1	
2	20096	TUBE, HYD. STEERING RETURN	1	
3*	11142	ROD END, 1/2- 20 MALE RH	2	
4*	11146	NUT, HEX JAM 1/2- 20	2	
5*#	12038	BELLOWS, STG. CYLINDER	1	
6*#	12060	PLATE, BELLOWS MOUNTING	1	
7*	12056	CYLINDER, STEERING	1	INCL ITEMS W/ #
8	11141	SPACER, ROD END	4	
9	12318	SCREW, HHC 1/2- 13 X 2 3/4	2	
10	10176	NUT, NYLOC 1/2- 13	2	
11	11725	FITTING, STEERING 6MJ- 1/4MP	2	
12	12156	CYLINDER ASM, STEERING	1	INCLUDES ITEMS W/ * AND INSTRUCTION SHEET
13*#	10229	SCREW, HHC 5/16- 20 X 1	4	
14*#	0161C	WASHER, LOCK 5/16 MED	4	
15*#	0300B	WASHER, FLAT 5/16 SAE	4	
16	11696	HOSE ASM, .38 ID X 35.5 STR.ENDS	2	

HTH-44T— HYDRAULIC STEERING (RIGHT)

HYDRAULIC STEERING (RIGHT)

RIGHT SIDE HYDRAULIC STEERING
VIEW FROM OPERATOR'S SEAT



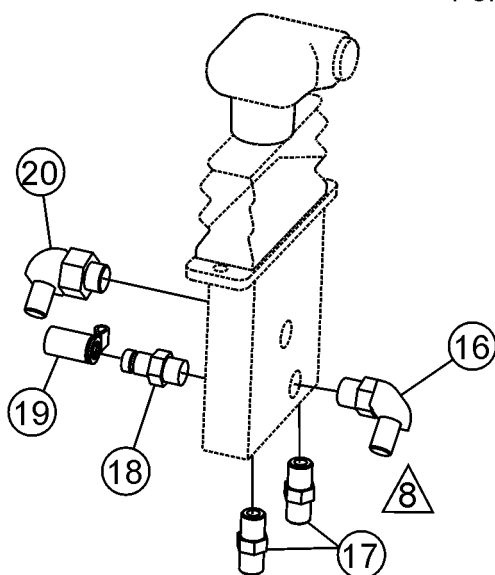
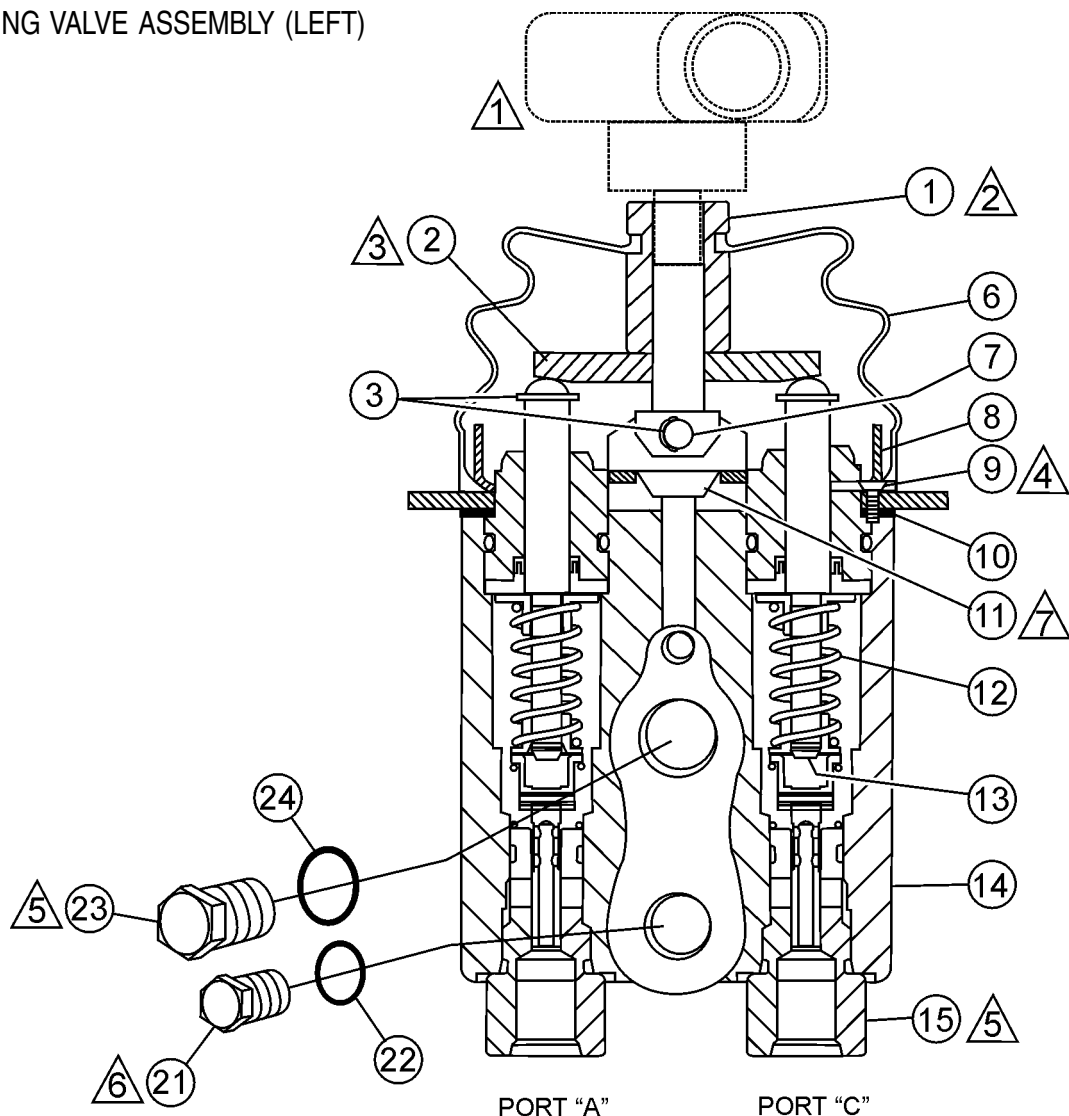
HTH-44T— HYDRAULIC STEERING (RIGHT)

HYDRAULIC STEERING (RIGHT)

1	20095	TUBE, HYD. STEERING PRESSURE	1	
2	20084	TUBE, HYD. STRG. CYC. ROD END HTH- T	1	
3	12213	HOSE ASM, .38 ID X 24 90 ONE END	1	
4	11949	HOSE ASM, 3/8 ID X 23 06 STR. ENDS	1	
5	12055	HOSE ASM, .38 ID X 36 45 ONE END	2	
7	20085	TUBE, HYD. STRG. CYL. BASE END HTH- T	1	
8	20096	TUBE, HYD. STEERING RETURN	1	
9	12079	HOSE ASM, .38 ID X 17 STR ENDS	2	
11*	12056	CYLINDER, STEERING	2	INCL ITEMS W/ #
12*#	12038	BELLOWS, STG. CYLINDER	2	
13*#	12060	PLATE, BELLOWS MOUNTING	2	
14*#	0300B	WASHER, FLAT 5/16 SAE	8	
15*#	0161C	WASHER, LOCK 5/16 MED	8	
16*#	10229	SCREW, HHC 5/16- 20 X 1	8	
17	12318	SCREW, HHC 1/2- 13 X 2 3/4	3	
18	11141	SPACER, ROD END	8	
19	10176	NUT, NYLOC 1/2- 13	4	
20*	11142	ROD END, 1/2- 20 MALE RH	4	
21*	11146	NUT, HEX JAM 1/2- 20	4	
22	13178	SCREW, HHC 1/2- 13 X 2 1/4	1	
23	11725	FITTING, STEERING 6MJ- 1/4MP	4	
24	12409	FITTING, 45 6MJ- 6MO	1	
25	12156	CYLINDER ASM, STEERING	1	INCLUDES ITEMS W/ * AND INSTRUCTION SHEET
26	20143	VALVE ASM, STEERING REGULATOR	1	
27	11698	HOSE ASM, .38 ID X 15.5 STR. ENDS	1	
28	16334	NUT, HEX JAM BLKHD .5625-18UNF	2	
29	16333	FITTING, STR 6MJ BLKHD UNION	2	
30	12275	SCREW, CLAMP STAUFF ASDS1	1	
31	12274	COVER, CLAMP STAUFF USDS1	1	
32	12273	CLAMP, 3/8 TUBE PLASTIC PAIR	1	

HTH-44T— STEERING VALVE ASSY. (LEFT)

STEERING VALVE ASSEMBLY (LEFT)



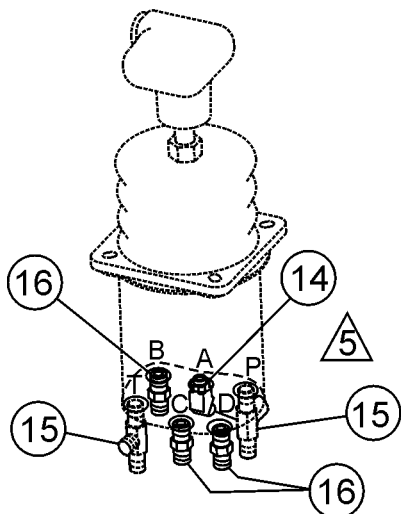
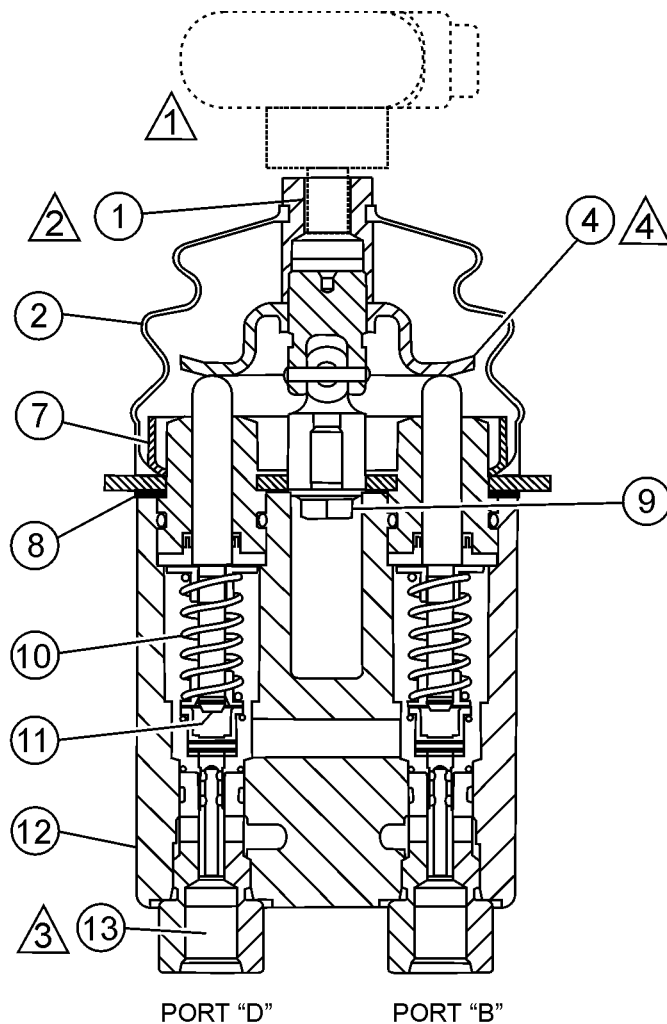
- ▲ 1 PALM HANDLE ASSEMBLY, SEE PAGE 52.
- ▲ 2 TORQUE TO 48 +/- 5 FT. LBS.
- ▲ 3 LUBRICATE PIVOT JOINT, ACTUATOR PLATE, AND PLUNGER CONTACT AS REQUIRED.
- ▲ 4 TORQUE TO 7 +/- 1.0 FT. LB.
- ▲ 5 TORQUE TO 33 +/- 3.5 FT. LBS.
- ▲ 6 TORQUE TO 18 +/- 2.0 FT. LBS.
- ▲ 7 TORQUE TO 14 +/- 1.5 FT. LBS.
- ▲ 8 HYDRAULIC STEERING CONNECTIONS (LEFT), SEE PAGE 44.

HTH-44T— STEERING VALVE ASSY. (LEFT)

STEERING VALVE ASSEMBLY (LEFT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	HU51494	NUT, SPECIAL	1	
2*	HU51941	PLATE, PIVOT	1	
3*	HU51770	RETAINING RING, - EXT	3	
6*	12519	BOOT, LEFT	1	
7*	HU51774	PIVOT PIN	1	
8*	HU51773-1	CLAMP, BOOT	1	
9*	HU51775	SCREW, CAP, FLAT HD	1	
10*	12536	GASKET	2	
11*	HU51761	SCREW, CAP, FLAT HD	1	
12*	HU53748	SPRING	2	
13*	12523	PLUNGER CAPSULE ASM	2	
14	11423	VALVE ASM, HTH44T STRG LEFT	1	INCLUDES ITEMS WITH *
15*	12521	METERING CAPSULE ASM	2	
16	11722	FITTING, 90 6MJ-6MO	1	
17	11721	FITTING, STR 6MJ-6MO	2	
18	12147	FITTING, QC DIAGN PARKER PD-361	1	
19	12148	CAP, DUST DIAG PARKER PD6-285	1	
20	11723	FITTING, 90 6MJ-8MO	1	
21*	HU3182	PLUG, SAE	1	
22*	HU53-906	O-RING	1	
23*	HU3108	PLUG, SAE	1	
24*	HU53-908	O-RING	1	

STEERING VALVE ASSEMBLY (RIGHT)



- 1 PALM HANDLE ASSEMBLY, RIGHT, SEE PAGE 52.
- 2 TORQUE TO 48 +/- 5 FT. LBS.
- 3 TORQUE TO 33 +/- 3.5 FT. LBS.
- 4 LUBRICATE BALL AND SOCKET JOINT, ACTUATOR PLATE, AND PLUNGER CONTACT AS REQUIRED.
- 5 HYDRAULIC STEERING CONNECTIONS, (RIGHT), SEE PAGE 46.

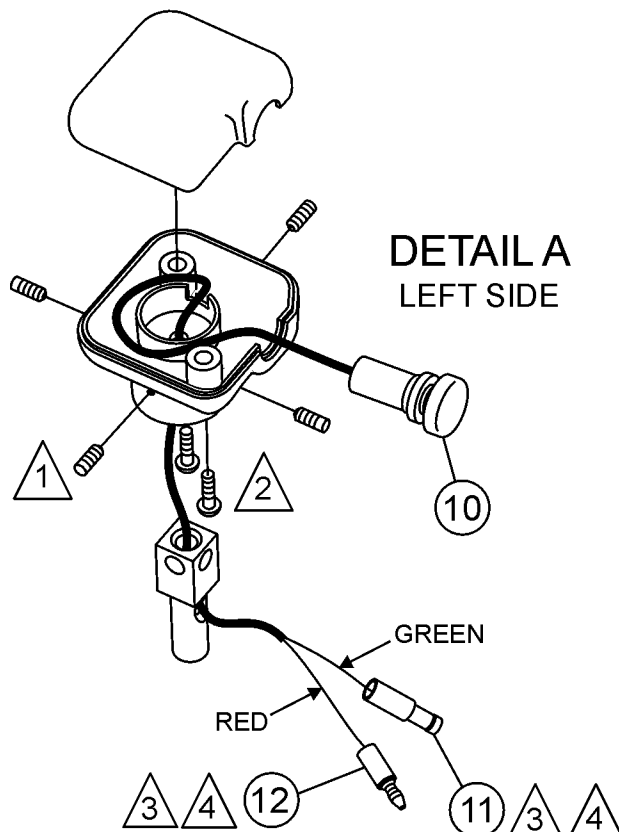
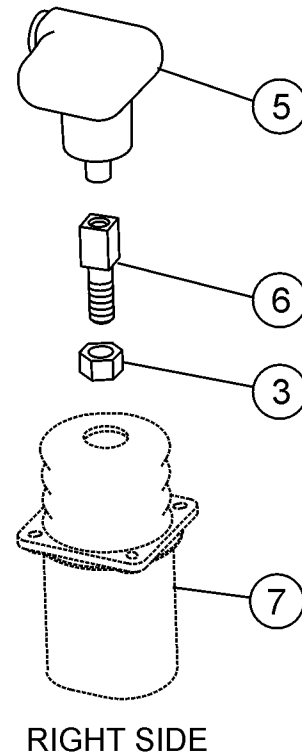
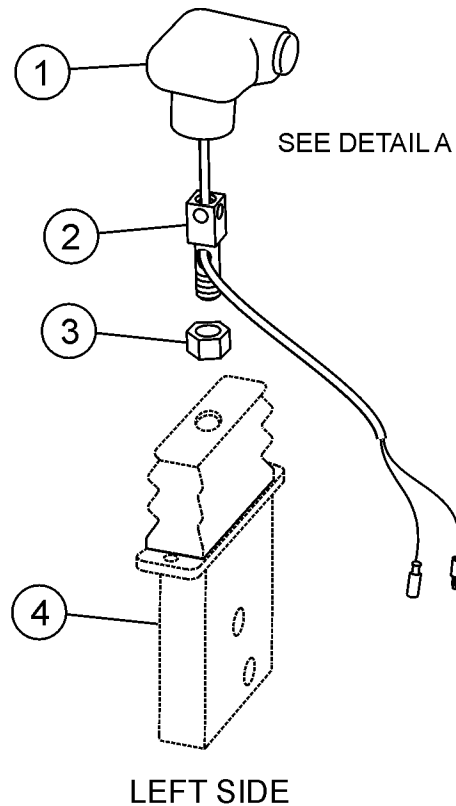
HTH-44T— STEERING VALVE ASSY. (RIGHT)

STEERING VALVE ASSEMBLY (RIGHT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	HU51494	NUT, SPECIAL	1	
2*	12518	BOOT, RIGHT	1	
4*	515026	PLATE, PIVOT	1	
7*	12790	RETAINER, STRG VALVE BOOT	1	
8*	12524	GASKET	4	
9*	11146	NUT, HEX JAM 1/2- 20	1	
10*	HU53748	SPRING	6	
11*	12523	PLUNGER CAPSULE ASM	6	
12	11422	VALVE ASM, HTH44T STRG RIGHT	1	INCLUDES ITEMS WITH *
13*	12521	METERING CAPSULE ASM	6	
14	11780	FITTING, 45 6MJ-6MO	1	
15	12159	FITTING, TEE 6MJ-6MO-6MJ	2	
16	11721	FITTING, STR 6MJ-6MO	3	

HTH-44T— PALM HANDLES (LEFT AND RIGHT)

PALM HANDLES (LEFT AND RIGHT)



- 1 APPLY LOCTITE P/N 1477 OR EQUIVALENT TO ALL 4 SET SCREWS.
- 2 REUSE PALM HANDLE HARDWARE WHEN REPLACING SWITCH.
- 3 TERMINALS SUPPLIED (UNCRIMPED) WITH ITEM 10.
- 4 ATTACH MALE BULLET TERMINAL TO FEMALE BULLET TERMINAL OF WIRE HARNESS. (LEADS ARE NON-POLAR)

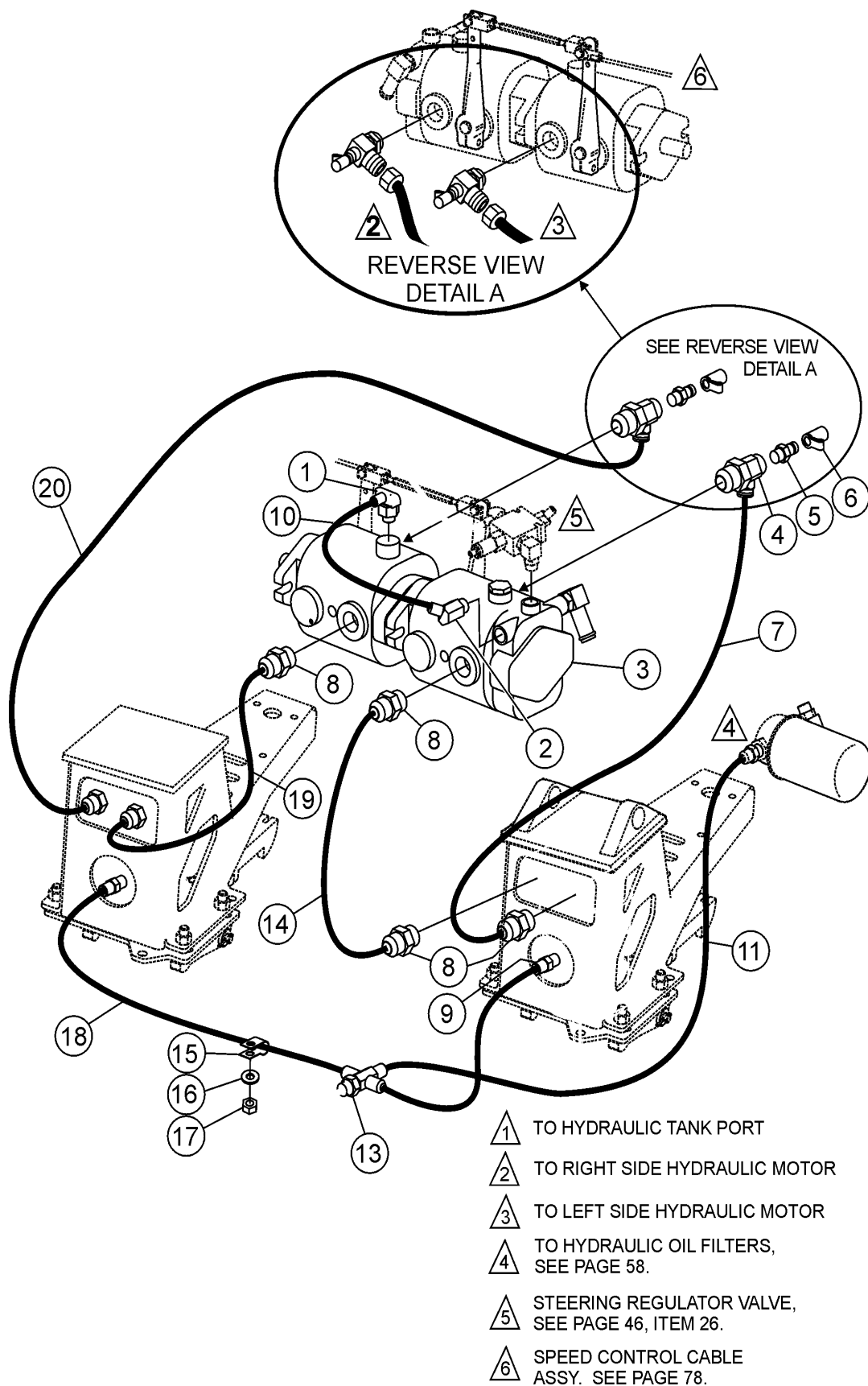
HTH-44T— PALM HANDLES (LEFT AND RIGHT)

PALM HANDLES (LEFT AND RIGHT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	22001	HANDLE, PALM W/ SWITCH, LEFT	1	
2	22003	TUBE, HANDLE SWITCH	1	
3	11146	NUT, HEX JAM 1/2 - 20	2	
4	11423	VALVE ASM, STEERING (LEFT)	1	
5	22002	HANDLE, PALM W/O SWITCH, RIGHT	1	
6	22004	TUBE, HANDLE SOLID	1	
7	11422	VALVE ASM, STEERING (RIGHT)	1	
10	20314	SWITCH ASM	1	
11	1318	TERMINAL, BULLET, FEMALE 18-22	1	
12	4692	TERMINAL, BULLET, MALE 14-16	1	

HTH-44T— HYDRAULIC DRIVE ASSEMBLY

HYDRAULIC DRIVE ASSEMBLY



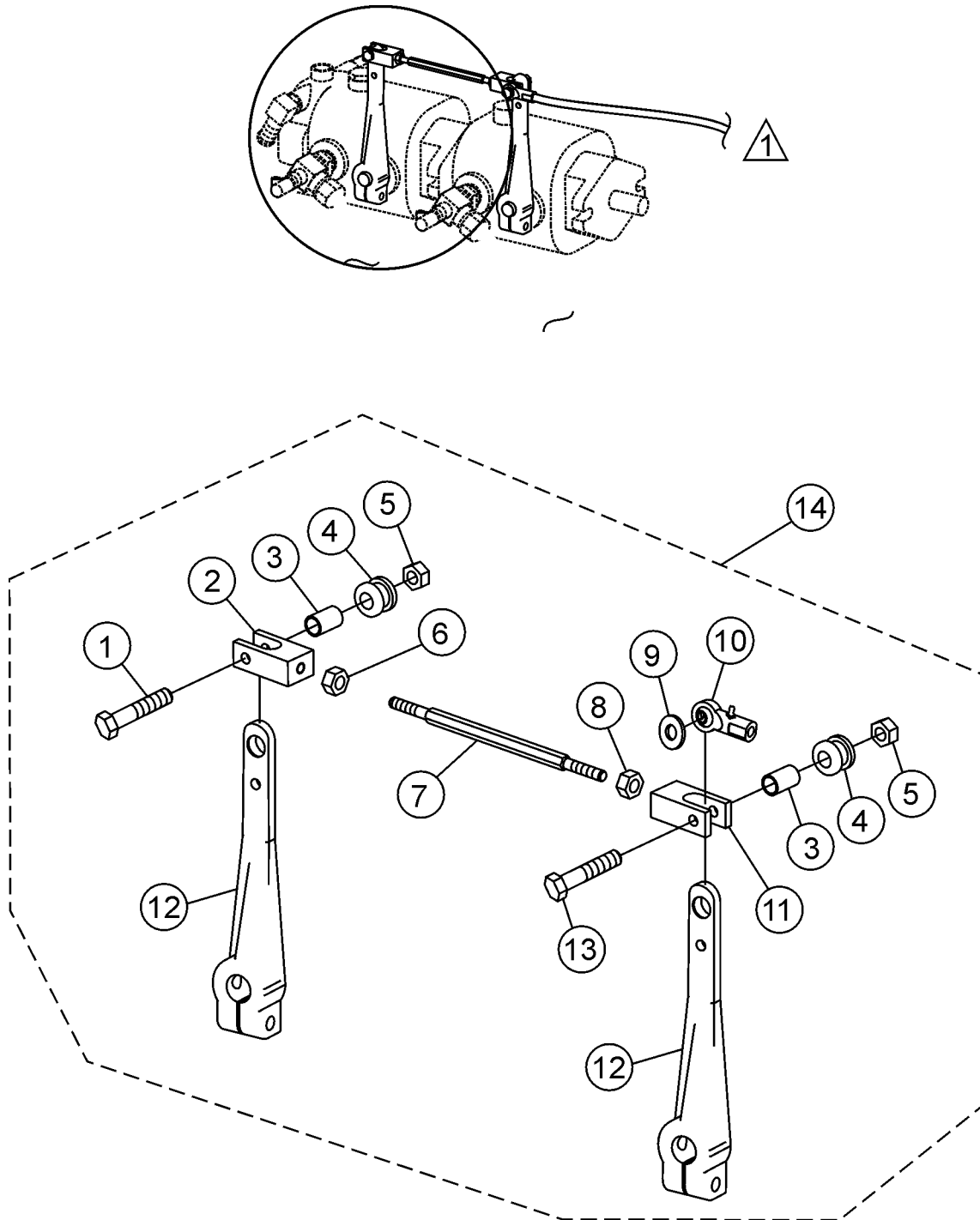
HTH-44T— HYDRAULIC DRIVE ASSEMBLY

HYDRAULIC DRIVE ASSEMBLY

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11723	FITTING, 90 6MJ- 6MO	1	
2	11892	FITTING, 90 IMP- 3/4FP SWIVEL	1	
3	12804	PUMP ASM,TANDEM HTH	1	
4	12433	FITING,TEE 12MJ- 12MO- 6FO	2	
5	12147	FITTING, QC DIAGN PARKER PD- 361	2	
6	12148	CAP, DUST DIAG PARKER PD6- 285	2	
7	11590	HOSE ASM, .75ID X 24 90 DEG. ENDS	1	
8	11386	FITTING, STR. 12MJ- 12MO	6	
9	11721	FITTING, STR. 6MJ- 6MO	3	
10	11698	HOSE ASM, .38ID X 15.5 STR. ENDS	1	
11	20191	HOSE ASM, .51ID X 14LG 90 DEG. ONE END	1	
13	20190	FITTING, CROSS 6MJ- 8MJ- 6MJ- 8MJ	1	
14	11588	HOSE ASM, .75ID X 27 90 DEG. ONE END	1	
15	8125	CLAMP, HOSE SUPPORT 5/8	1	
16	0300B	WASHER, FLAT 5/16 SAE	1	
17	5283	NUT, NYLOC 5/16- 18	1	
18	11699	HOSE ASM, .38ID X 52.5 STR. ENDS	1	
19	11591	HOSE ASM, .75ID X 41 90 DEG. ENDS	1	
21	11589	HOSE ASM, .75ID X 50 90 DEG. ONE END	1	

HTH-44T— HYDRAULIC DRIVE PUMP LEVER ASSY.

HYDRAULIC DRIVE PUMP LEVER ASSEMBLY



△ SPEED CONTROL CABLE ASSY,
SEE PAGE 78.

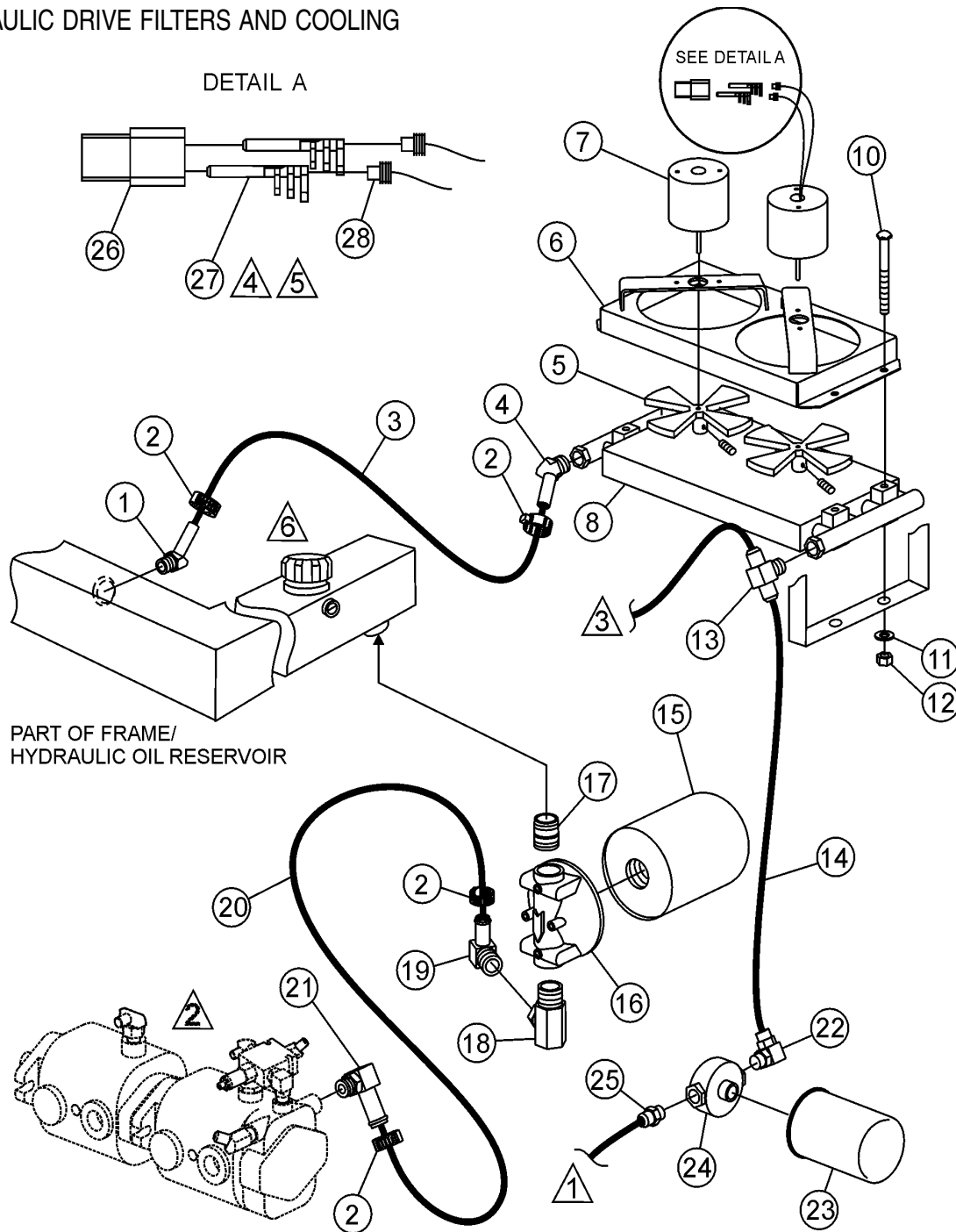
HTH-44T— HYDRAULIC DRIVE PUMP LEVER ASSY.

HYDRAULIC DRIVE PUMP LEVER ASSEMBLY

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0424	SCREW, HHC 1/4- 20 X 1 1/4	1	
2	12357	CLEVIS, PUMP ACTUATOR, LEFT HAND	1	
3	11875	SPACER, PUMP LEVER GROMMET	2	
4	11874	GROMMET, LEVERMINOR #Z- 2064	2	
5	10024	NUT, NYLOC 1/4- 20	2	
6	11613	NUT, HEX FULL 1/4- 28 LEFT HAND	1	
7	11610	ROD, PUMP ACTUATOR	1	
8	6904	NUT, HEX FINISH 1/4- 28	1	
9	0948	WASHER, FLAT 1/4 SAE	1	
10	20003	ROD END, 1/4 - 28 FEM RH W/ZERK	1	
11	12356	CLEVIS, PUMP ACTUATOR, RT. HAND	1	
12	12580	LEVER, PUMP TL SPEN SP791- 11	2	
13	26250	SCREW, HHC 1/4- 20 X 1- 3/4	1	
14	12593	KIT, PUMP LEVER CLEVIS		

HTH-44T— HYDRAULIC DRIVE FILTERS AND COOLING

HYDRAULIC DRIVE FILTERS AND COOLING



△ 1 TO "TEE" FITTING. SEE PAGE 54, ITEM 13.

△ 2 FOR FURTHER HYDRAULIC MOTOR CONNECTIONS, SEE PAGE 54.

△ 3 TO HYDRAULIC STEERING (RIGHT) SEE PAGE 25, ITEM 4.

△ 4 REQUIRES HAND CRIMP TOOL
WAYTEK P/N 402,
OR PACKARD P/N GM 12014254.

△ 5 TO REMOVE WIRE USE
TERMINAL EXTRACTION TOOL
WAYTEK P/N 421.

△ 6 HYDRAULIC RESERVOIR CAP,
SEE PAGE 76.

HTH-44T— HYDRAULIC DRIVE FILTERS AND COOLING

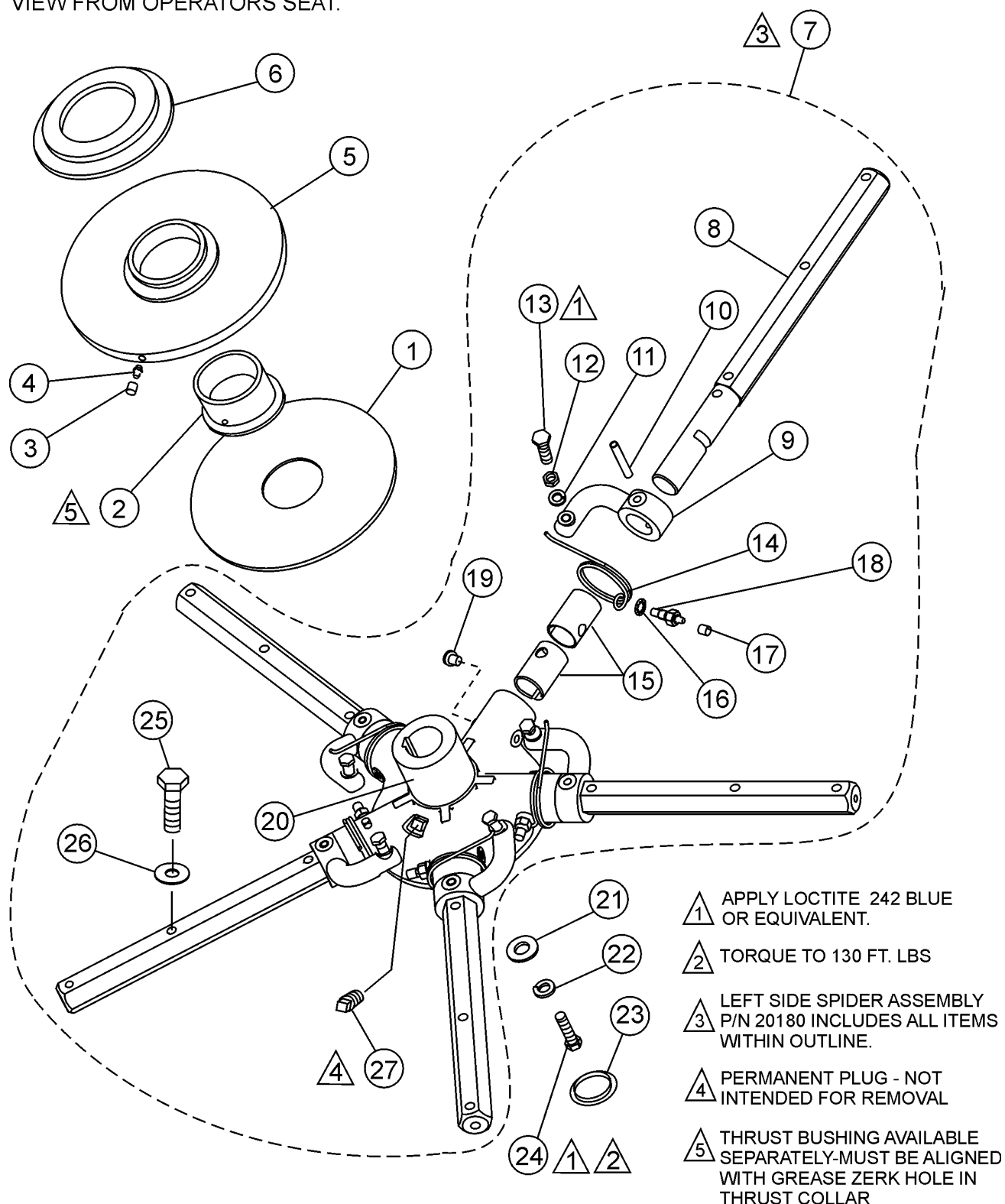
HYDRAULIC DRIVE FILTERS AND COOLING

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12575	FITTING, 45 8 BARB X 3/8 MP	1	
2	3333	CLAMP, 1.1/4 HOSE	4	
3	20251	HOSE, .5ID 100R3 21 LONG	1	
4	12537	FITTING, 45 8BARB X 1/2 MP	1	
5	11580	FAN, COOLING BLADE	2	
6	12114	SHROUD, OIL COOLING FAN	1	
7	11579	MOTOR, 12 VOLT FAN	2	
8	11297	COOLER, OIL	1	
10	11783	BOLT, CARRIAGE 5/16- 18 X 3	4	
11	0300B	WASHER, FLAT 5/16 SAE	4	
12	5283	NUT, NYLOC 5/16- 18	4	
13	20237	FITTING,TEE 08MJ X 08MJ X .5MP	1	
14	20238	HOSE ASM, .51ID X 16.5 STR. ENDS	1	
15	20567	ELEMENT, FILTER SUC. STAUFF SF6710	1	
16	11883	HOUSING, FILTER SUC. ZINGA SF- 100	1	
17	11893	FITTING, NIPPLE IMP CLOSE	1	
18	11892	FITTING, 90 IMP- 3/4FP SWIVEL	1	
19	3367	FITTING, 12 BARB- 3/4MP	1	
20	3462	HOSE ASM, .75ID 100R4 16.5 LONG	1	
21	11870	FITTING, 90 12 BARB- 8MO	1	CHARGE PUMP INLET
22	11396	FITTING, 8MJ X 8MO	1	
23	11402	FILTER	1	STAUFF SF-6520, ZINGA AE-10
				OR EQUIVALENT
24	11754	HOUSING, FILTER	1	
25	11749	FITTING, STR. 8MJ- 8MO	1	
26	12176	CONNECTOR, WEATHERPACK 2 PIN	1	
27	12179	TERMINAL, W'PACK MALE 14-16 GA	2	
28	12171	SEAL, WEATHERPACK 16-18 GA	2	

HTH-44T— FIVE BLADE SPIDER ASSY. (LEFT)

FIVE BLADE SPIDER ASSEMBLY (LEFT SIDE)

LEFT SIDE SPIDER ASSEMBLY (5-BLADE).
VIEW FROM OPERATORS SEAT.



HTH-44T— FIVE BLADE SPIDER ASSY. (LEFT)

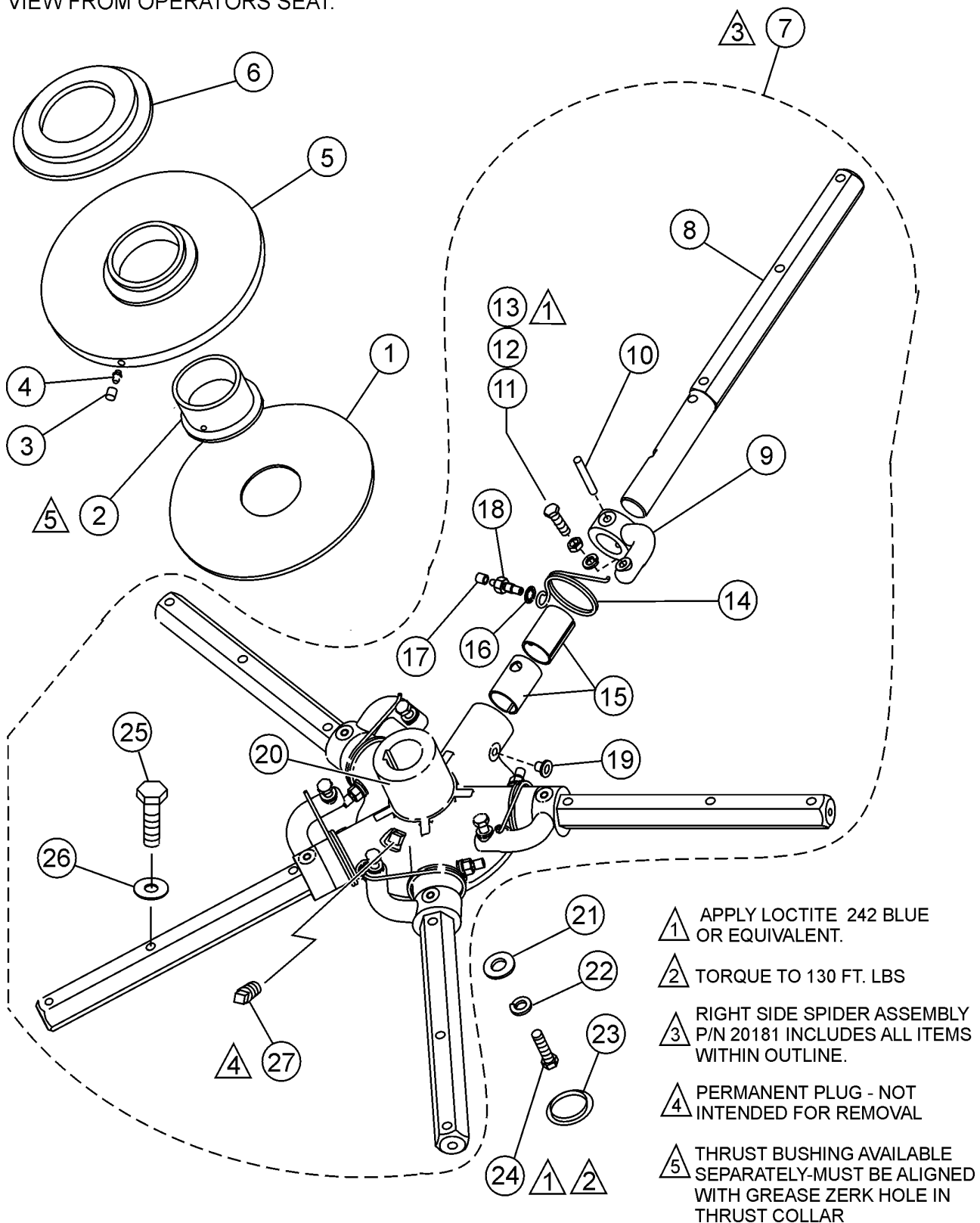
FIVE BLADE SPIDER ASSEMBLY (LEFT SIDE)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11419	PLATE, WEAR	1	
2	20426	BUSHING, THRUST MACHINED	1	ORIENT HOLE WITH GREASE HOLE IN THRUST COLLAR
3	1162A	CAP, GREASE ZERK #2	1	
4	2621	ZERK, GREASE STR 1/4- 28	1	
5	11431	THRUST COLLAR W/ BUSHING	1	
6	12779	BEARING, THRUST 6017 2RS W/FLANGE	1	
7	20180	SPIDER ASM, LEFT SIDE	1	
8	2829	ARM, TROWEL, HD EXTENDED	5	
9	9005	LEVER, TROWEL ARM LEFT SIDE	5	
10	9006	PIN, ROLL 5/16 X 2	5	
11	0166A	WASHER, LOCK, 3/8 MED	5	
12	1876	NUT, HEX JAM 3/8 X 16 CLASS 2B	5	
13	0164B	SCREW, TROWEL ADJUSTMENT	5	
14	9111	SPRING, LS ARM RETURN HD/HT, SM BOSS	5	
15	11039	BUSHING, ARM 2 PIECE	10	
16	1875	WASHER, INT. SHKP. 3/8	5	
17	1162A	CAP, GREASE ZERK #2	5	
18	1322	SCREW ASM, ARM RETAINING	5	
19	2218	CAP PLUG	5	REPLACES P/N 11602
20	20041	SPIDER, HTH TAPER 5 BL	1	
21	20073	RETAINER, SPIDER	1	
22	4388	WASHER, LOCK 3/4 MED	1	
23	20121	PLUG, SPIDER SNAP IN	1	
24	20179	SCREW, HHC 3/4- 16 X 2, GR8	1	
25	0105	SCREW, HHC 5/16 -18 X 1 1/2	15	
26	0161C	WASHER, LOCK 5/16	15	
27	0121A	FITTING, PLUG 3/8MP SQ HEAD	1	

HTH-44T— FIVE BLADE SPIDER ASSY. (RIGHT)

FIVE BLADE SPIDER ASSEMBLY (RIGHT SIDE)

RIGHT SIDE SPIDER ASSEMBLY (5-BLADE).
VIEW FROM OPERATORS SEAT.



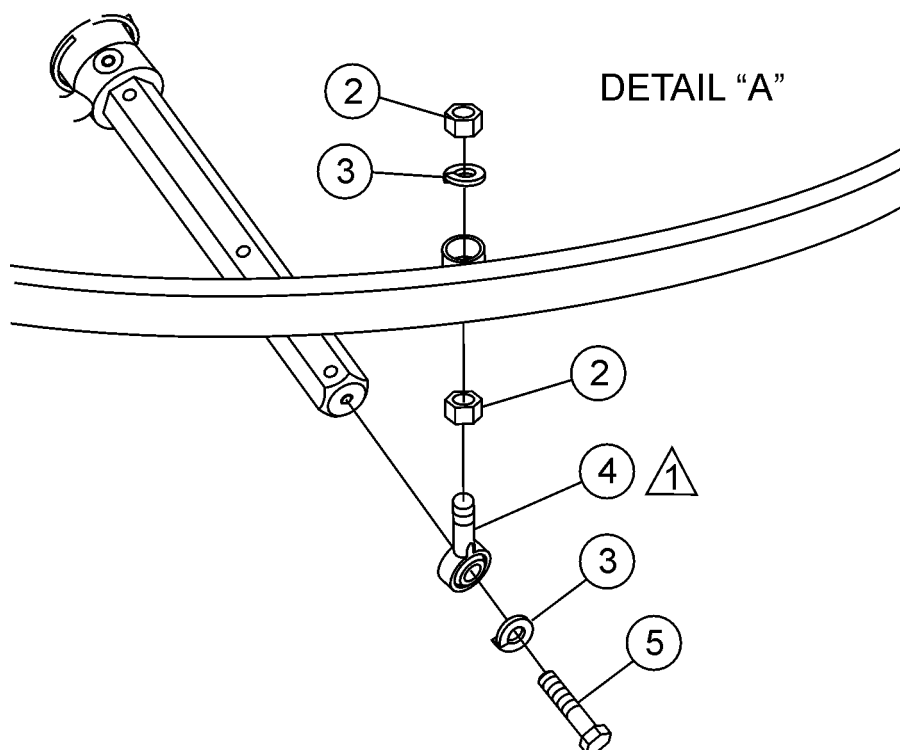
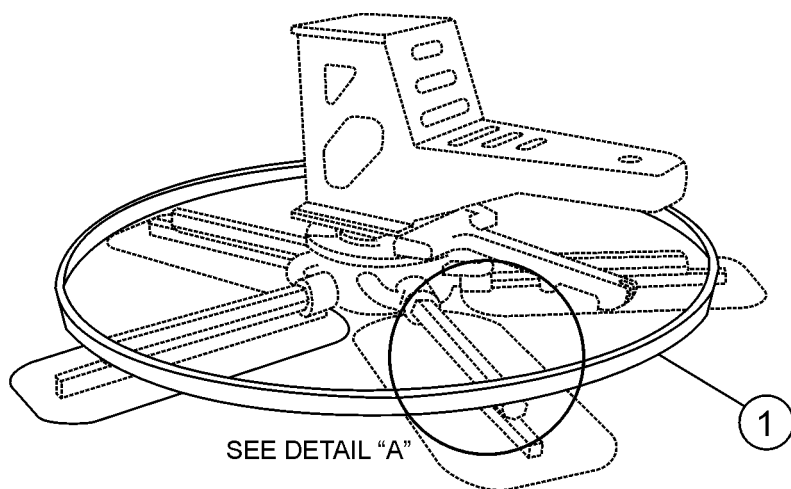
HTH-44T— FIVE BLADE SPIDER ASSY. (RIGHT)

FIVE BLADE SPIDER ASSEMBLY (RIGHT SIDE)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11419	PLATE, WEAR	1	
2	11464	BUSHING, THRUST MACHINED	1	ORIENT HOLE WITH GREASE HOLE IN THRUST COLLAR
3	1162A	CAP, GREASE ZERK #2	1	
4	2621	ZERK, GREASE STR 1/4- 28	1	
5	11431	THRUST COLLAR, W/ BUSHING	1	
6	12779	BEARING, THRUST 6017 2RS W/FLANGE	1	
7	20181	SPIDER ASM, RIGHT SIDE	1	
8	2829	ARM, TROWEL, HD EXTENDED	5	
9	1986	LEVER, TROWEL ARM RIGHT SIDE	5	
10	9006	PIN, ROLL 5/16 X 2	5	
11	0166A	WASHER, LOCK, 3/8 MED	5	
12	1876	NUT, HEX JAM 3/8 X 16 CLASS 2B	5	
13	0164B	SCREW, TROWEL ADJUSTMENT	5	
14	2143	SPRING, RIGHT TROWEL	5	
15	11039	BUSHING, ARM 2 PIECE	10	
16	1875	WASHER, INT. SHKP. 3/8	5	
17	1162A	CAP, GREASE ZERK #2	5	
18	1322	SCREW ASM, ARM RETAINING	5	
19	2218	CAP PLUG	5	REPLACES P/N 11602
20	20041	SPIDER, HTH TAPER 5 BL	1	
21	20073	RETAINER, SPIDER	1	
22	4388	WASHER, LOCK 3/4 MED	1	
23	20121	PLUG, SPIDER, SNAP IN	1	
24	20179	SCREW,HHC 3/4- 16 X 2, GR8	1	
25	0105	SCREW, HHC 5/16 -18 X 1 1/2	15	
26	0161C	WASHER, LOCK 5/16	15	
27	0121A	FITTING, PLUG 3/8MP SQ HEAD	1	

HTH-44T— STABILIZER RING ASSY.

STABILIZER ASSEMBLY



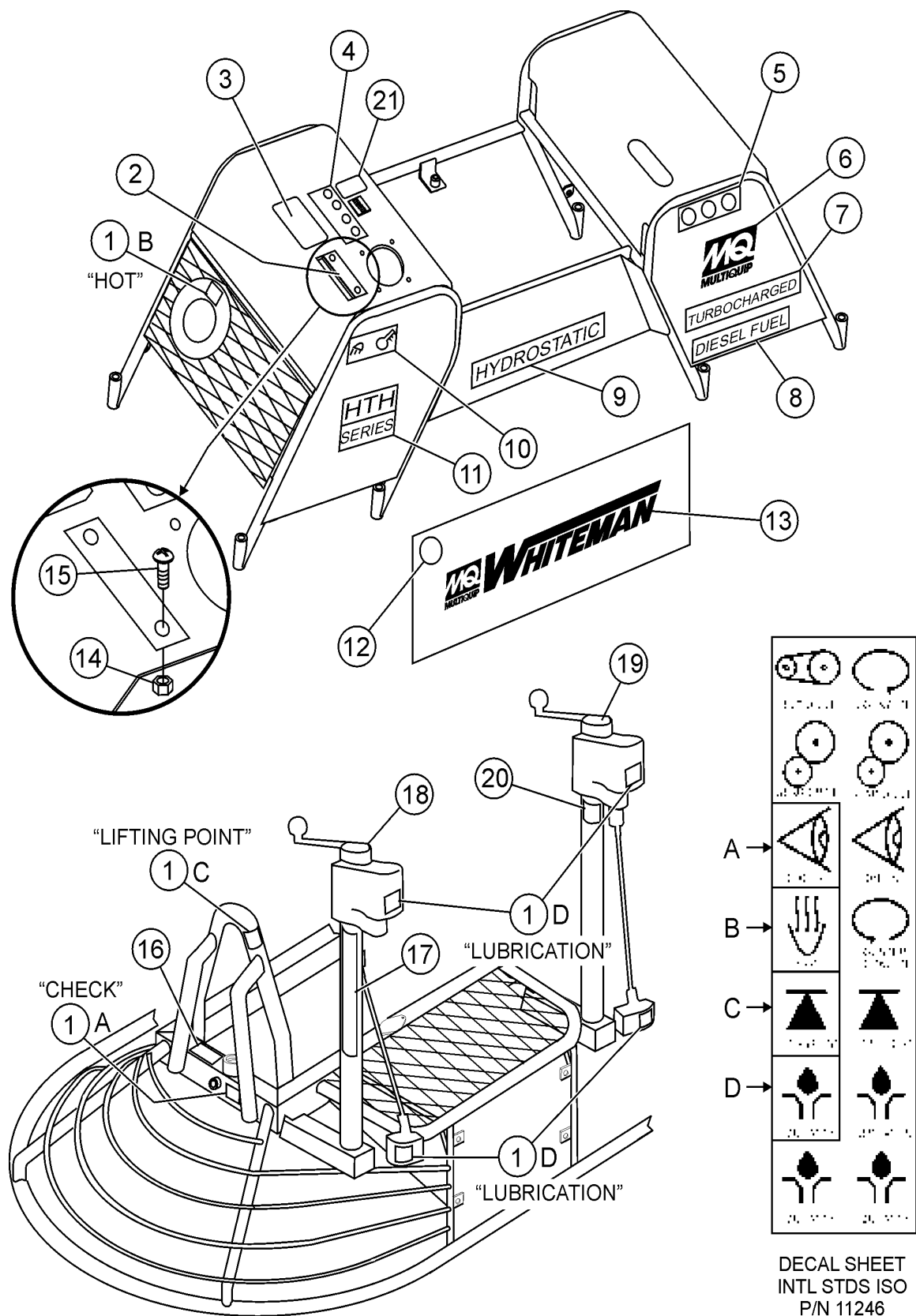
△ 1 APPLY LOCTITE 242 BLUE OR EQUIVALENT.

HTH-44T— STABILIZER RING ASSY.

STABILIZER ASSEMBLY

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12185	RING, STABILIZER, EXT ARM, HD	1	
2	6014C	NUT, HEX FINISH 5/16-24	10	
3	0161C	WASHER, LOCK, 5/16 MED	10	
4	1723	ROD END, 5/16-24 MALE	5	
5	1237	SCREW, SCH 5/16-18 X 7/8	5	

LOCATOR DECALS

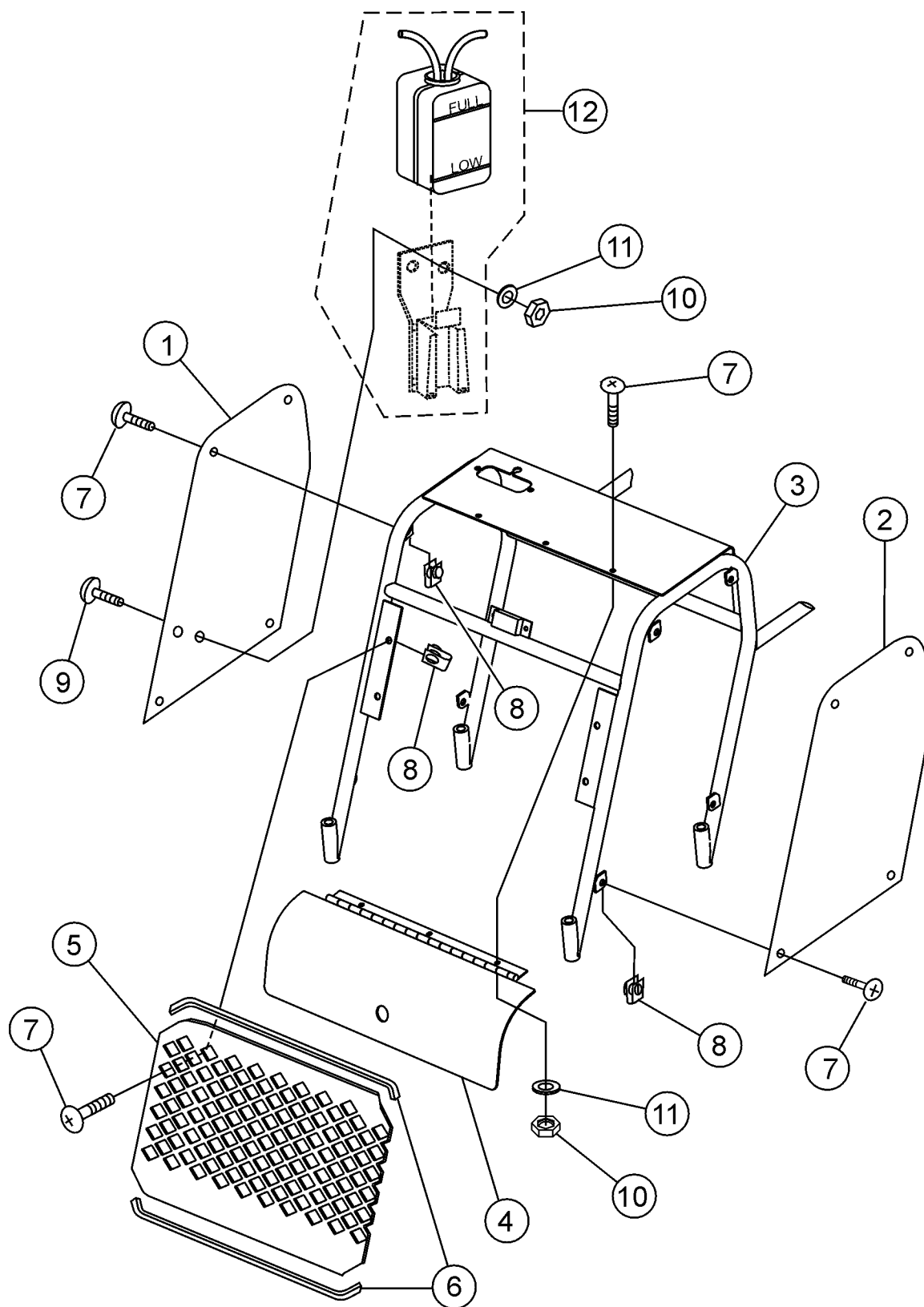


LOCATOR DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11246	DECAL, INTL STDS, ISO	1	SEE DECAL SHEET PAGE 66
2	11712	DECAL, ENGINE SPEED	1	
3	20486	DECAL, HYD RIDER COLD START	1	
4	11711	DECAL, INSTRUMENT LIGHT	1	
5	11247	DECAL, SAFETY CLOTHING, ISO	1	
6	20196	DECAL, "MQ" 6.22 X 5.00	1	
7	20207	DECAL, "TURBOCHARGED" 0.80 X 9.00	1	
8	11811	DECAL, DIESEL FUEL	1	
9	20209	DECAL, "HYDROSTATIC" 16.00 X 1.73	1	
10	2814	DECAL, KEY SWITCH LIGHTS	1	
11	20200	DECAL, "HTH SERIES" 5.00 X 3.30	1	
12	13118	DECAL, POWDER COATED	1	
13	10818	DECAL, "MQ WHITEMAN" 24 X 3	1	
14	10024	NUT, NYLOC 1/4- 20	2	
15	12288	SCREW, THP 1/4- 20 X 1 SS	2	
16	12401	DECAL, PRESSURIZED TANK CAUTION	1	
17	1499	DECAL, "MQ WHITEMAN"	2	
18	2300	DECAL, AL PITCH RH	1	
19	2332	DECAL, AL PITCH LH	1	
20	2634	DECAL, SPRING SAFETY	2	

HTH-44T— TOP PANEL (LEFT) ASSY.

TOP PANEL (LEFT)



HTH-44T— TOP PANEL (LEFT) ASSY.

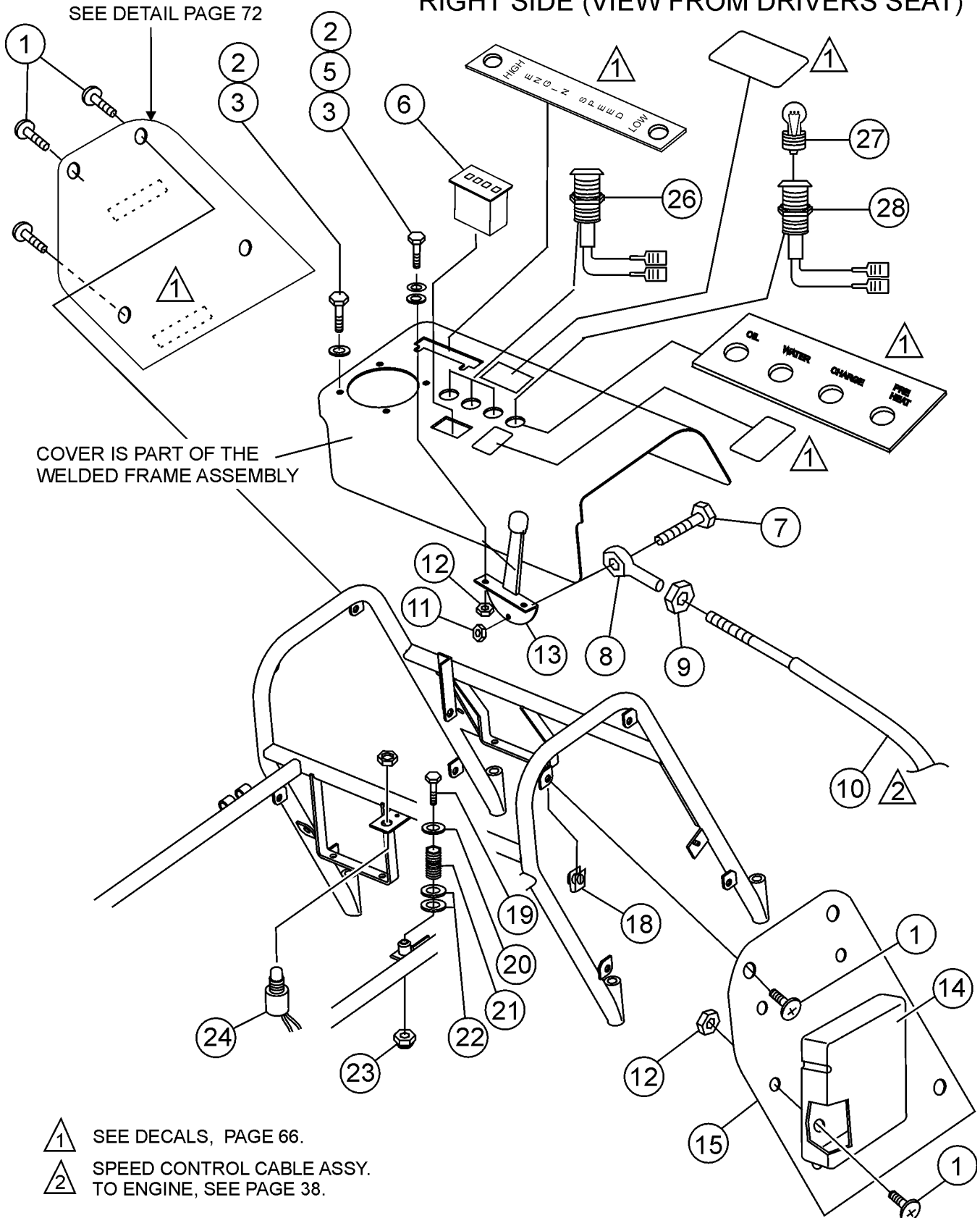
TOP PANEL (LEFT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	20022	PANEL, LEFT FRONT	1	
2	20047	PANEL, LEFT BACK	1	
3	20032	SEAT FRAME	1	
4	20063	PANEL, SEAT FRAME TOP LEFT	1	
5	20104	COVER, OIL COOLER	1	
6	60049	TRIM EDGE, 1/32 (62B3- 1732)	4	
7	12287	SCREW, THP1/4- 20 X 3/4 SS	12	
8	11534	NUT, U- TYPE 1/4- 20	12	
9	12288	SCREW, THP 1/4- 20 X 1 SS	6	
10	10024	NUT, NYLOC 1/4- 20	5	
11	0948	WASHER, FLAT 1/4 SAE	5	
12	11983	TANK, OVERFLOW (RADIATOR).....	1	INCLUDES BOTTLE, BRACKET AND HOSES

HTH-44T—TOP PANEL (RIGHT) ASSY.

TOP PANEL (RIGHT)

RIGHT SIDE (VIEW FROM DRIVERS SEAT)



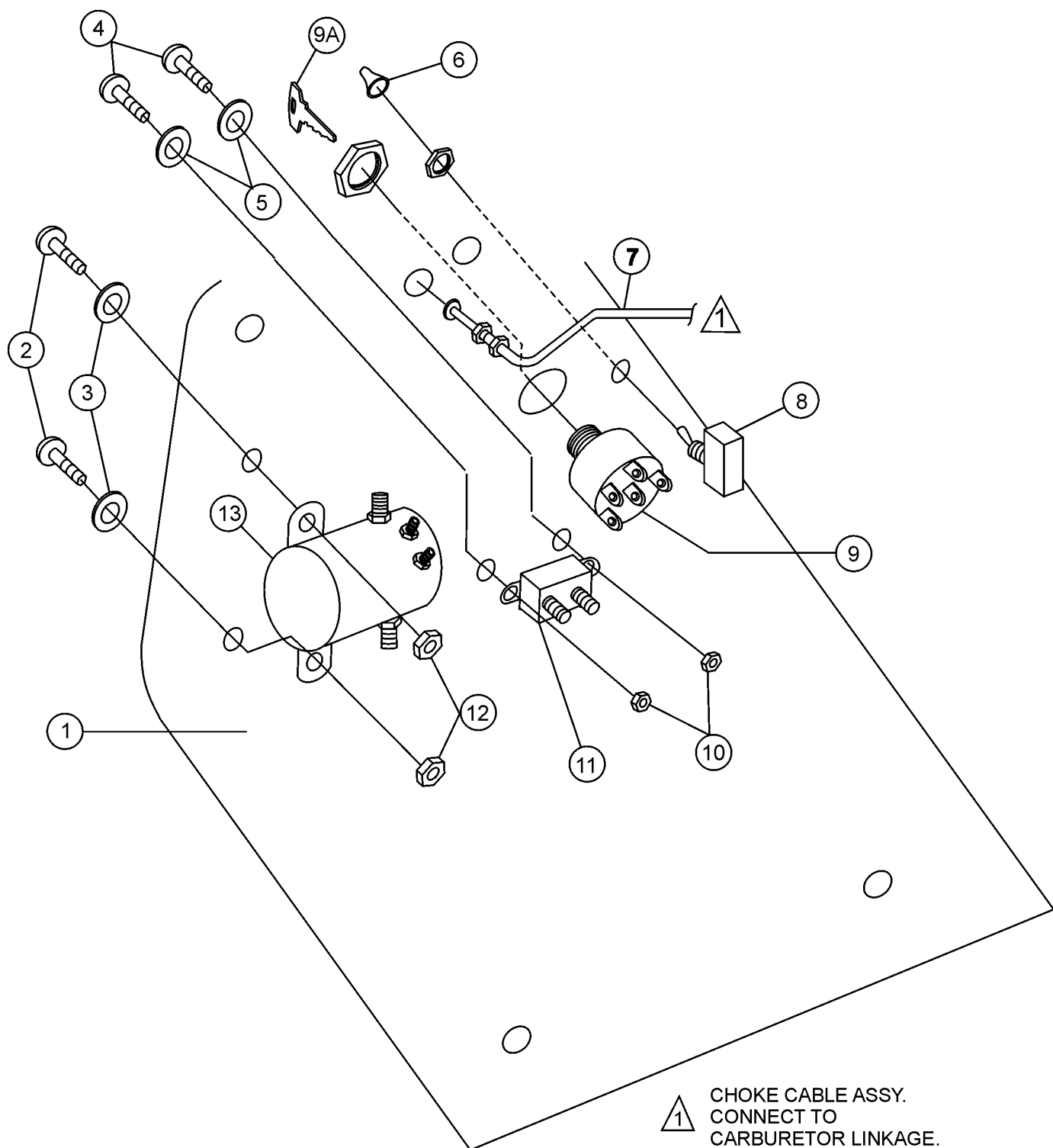
HTH-44T— TOP PANEL (RIGHT) ASSY.

TOP PANEL (RIGHT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12287	SCREW, THP1/4- 20 X 3/4 SS	16	
2	12288	SCREW, THP 1/4- 20 X 1 SS	6	
3	0948	WASHER, FLAT 1/4 SAE	6	
5	0181B	WASHER, LOCK 1/4 MED	1	
6	11694	HOUR METER	1	
7	3513	SCREW, HHC 10- 32 X 1	1	
8	2153	ROD END, 10- 32 FEMALE RH.	1	
9	0937	NUT, HEX #10- 32	1	
10	10568	CABLE, THROTTLE, HONDA RIDER	1	
11	10019	NUT, NYLOC 10- 32	2	
12	10024	NUT, NYLOC 1/4- 20	6	
13	11379	LEVER, ENGINE SPEED CONTROL	1	
14	29057	DOCUMENT BOX, (CP90007- 07)	1	
15	20021	PANEL, RIGHT BACK	1	
18	11534	NUT, U- TYPE 1/4- 20	8	
19	0169	SCREW, HHC 3/8- 16 X 3.0 LG	1	
20	4001	WASHER, FLAT 3/8 USS PLD	1	
21	11593	SPRING, SEAT (CENTURY #10321)	1	
22	11265	WASHER, STEERING HANDLE	2	
23	10133	NUT, NYLOC 3/8- 16	1	
24	12005	SWITCH, KILL COLE-HER #90036-2	1	
26	11382	PLUG, OIL, WATER, CHARGE (RED)	1	
27	12307	BULB, INDICATOR LIGHT	1	
28	11585	PLUG, PREHEAT LIGHT (BLUE)	1	

HTH-44T— FRONT PANEL (RIGHT) ASSY.

FRONT PANEL (RIGHT)



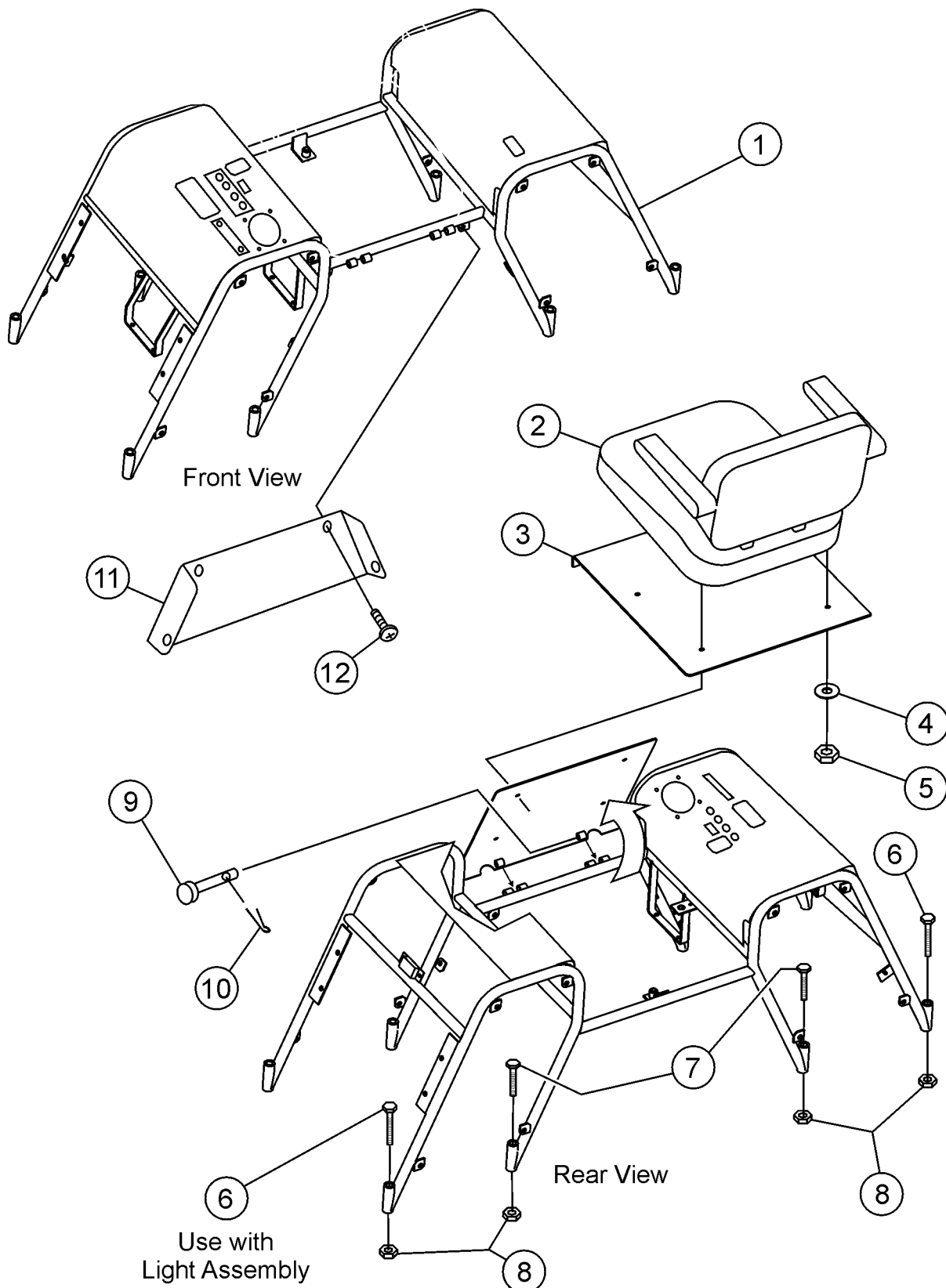
HTH-44T— FRONT PANEL (RIGHT) ASSY.

FRONT PANEL (RIGHT)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	20034	PANEL, RIGHT FRONT	1	
2	12287	SCREW,THP 1/4- 20 X 3/4 SS	2	
3	0948	WASHER, FLAT 1/4 SAE	2	
4	5065B	SCREW, RHM 10- 32 X 1/2	2	
5	2203	WASHER, FLAT #10 SAE	2	
6	8381	BOOT, TOGGLE SWITCH	1	
7	10568	CABLE, THROTTLE, HONDA RIDER	1	
8	4682	SWITCH, TOGGLE ELEC. #9061	1	
9	20511	SWITCH, IGNITION (W/KEYS)	1	
9A	12627	UNIVERSAL KEY SET	1	
10	10019	NUT, NYLOC 10 - 32	2	
11	11098	CIRCUIT BRKR.WAYTEK #46540 40 AMP	1	
12	10024	NUT, NYLOC 1/4- 20	2	
13	11792	ACCESSORY SOLENOID	1	

HTH-44T— SEAT AND FRAME ASSY.

SEAT AND FRAME



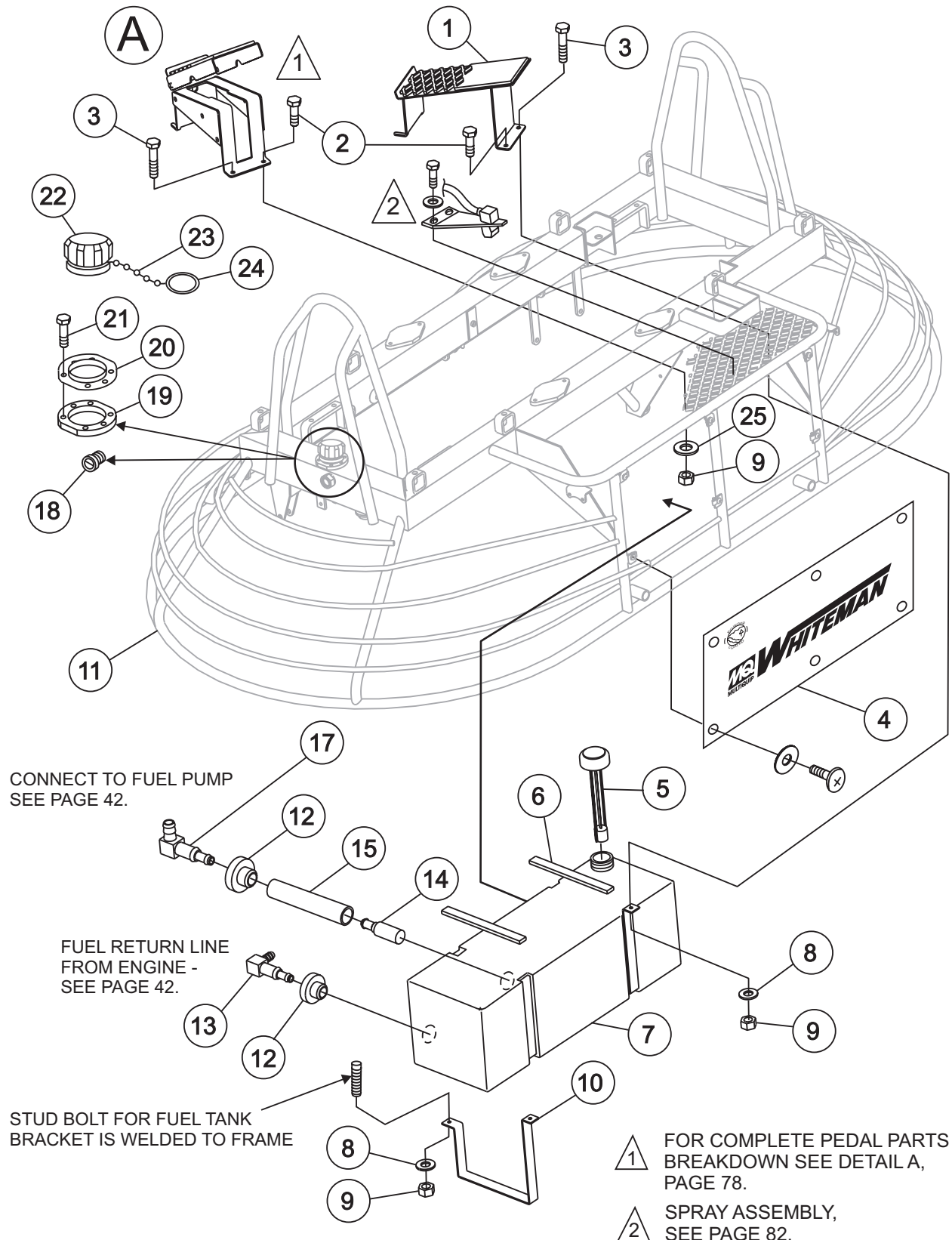
HTH-44T— SEAT AND FRAME ASSY.

SEAT AND FRAME

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	20032	FRAME, SEAT	1	
2	11632	SEAT W/ ARM REST	1	
3	20059	PLATE, SEAT HTH- 44T	1	
4	0300B	WASHER, FLAT 5/16 SAE	4	
5	5283	NUT, NYLOC 5/16- 18	4	
6	10306	SCREW, HHC 1/2- 13 X 4 1/2	4	
7	8087	SCREW, HHC 1/2- 13 X 4	4	
8	10176	NUT, NYLOC 1/2- 13	8	
9	8081	PIN, CLEVIS 1/2 X 2.75 EFF.	2	
10	0183	PIN, COTTER 1/8 1- 1/4	2	
11	20061	PANEL, FRONT CENTER SEAT FRAME	1	
12	12287	SCREW, THP1/4- 20 X 3/4 SS	4	

HTH-44T— FRAME AND FUEL TANK ASSY.

FRAME AND FUEL TANK ASSY.



HTH-44T— FRAME AND FUEL TANK ASSY.

FRAME AND FUEL TANK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11628	FOOT REST, LEFT	1	
2	0202	SCREW, HHC 5/16- 18 X 1	2	
3	0105	SCREW, HHC 5/16- 18 X 1 1/2	2	
4	11678	PANEL, FRONT HTH/STH	1	
5	11418	FUEL CAP/ GAUGE (10.5)	1	
6	12025	SPACER, FUEL TANK	2	
7	11922	TANK, 12 GALLON FUEL POLYETHYLENE	1	
8	0300B	WASHER, FLAT 5/16 SAE	4	
9	5283	NUT, NYLOC 5/16- 18	6	
10	12021	BRACKET, FUEL TANK SUPPORT	2	
11	20160	FRAME	1	
12	19633	BUSHING, RUBBER FUEL	2	
13	12006	FITTING, 90 03BARB- 4BARB FUEL	1	
14	12010	SCREEN, FUEL (DAPCO 11656)	1	
15	60058	HOSE, FUEL YELLOW 1/4 X 3/8 X 2"	1	
17	12023	FITTING, 90 05BARB- 4BARB FUEL	1	
18	11584	SIGHT GLASS, 3/4 MALE PIPE	1	
19	12489	FLANGE GASKET	1	
20	ZINFB04	BASE	1	
21	ZINPS0014	SCREW, #10 - 32 1/2	6	
22	12332	CAP, HYD 5PSI 10 MICRON	1	
23	ZINFB15	JACK CHAIN, #16 SINGLE	1	
24	ZINFB08	CHAIN RING	1	
25	3233	WASHER, FENDER 1.50D X 3/8 ID	2	

HTH-44T— FOOT PEDALS ASSY.

FOOT PEDALS ASSY.

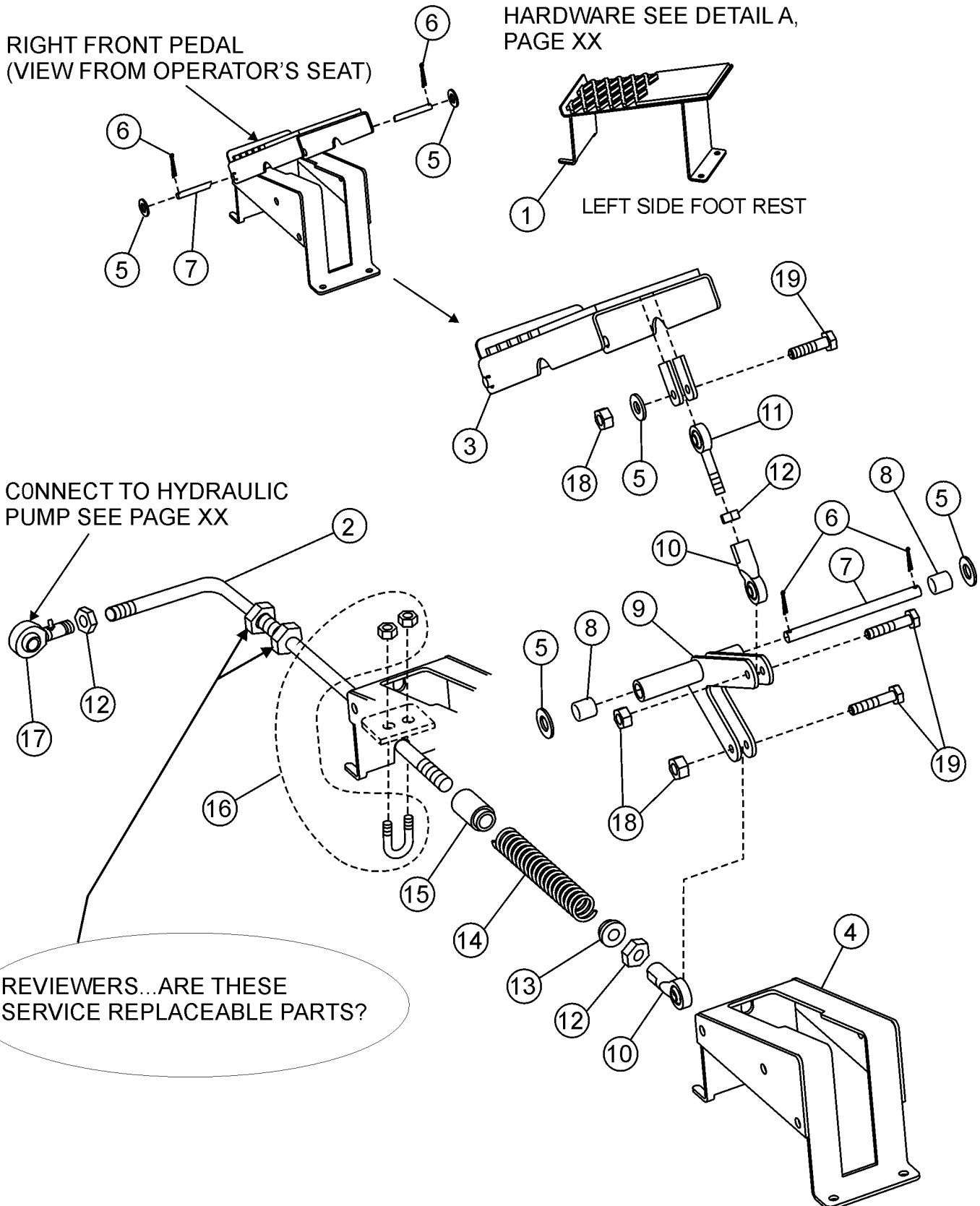
RIGHT FRONT PEDAL
(VIEW FROM OPERATOR'S SEAT)

FOR PEDAL MOUNTING
HARDWARE SEE DETAIL A,
PAGE XX

LEFT SIDE FOOT REST

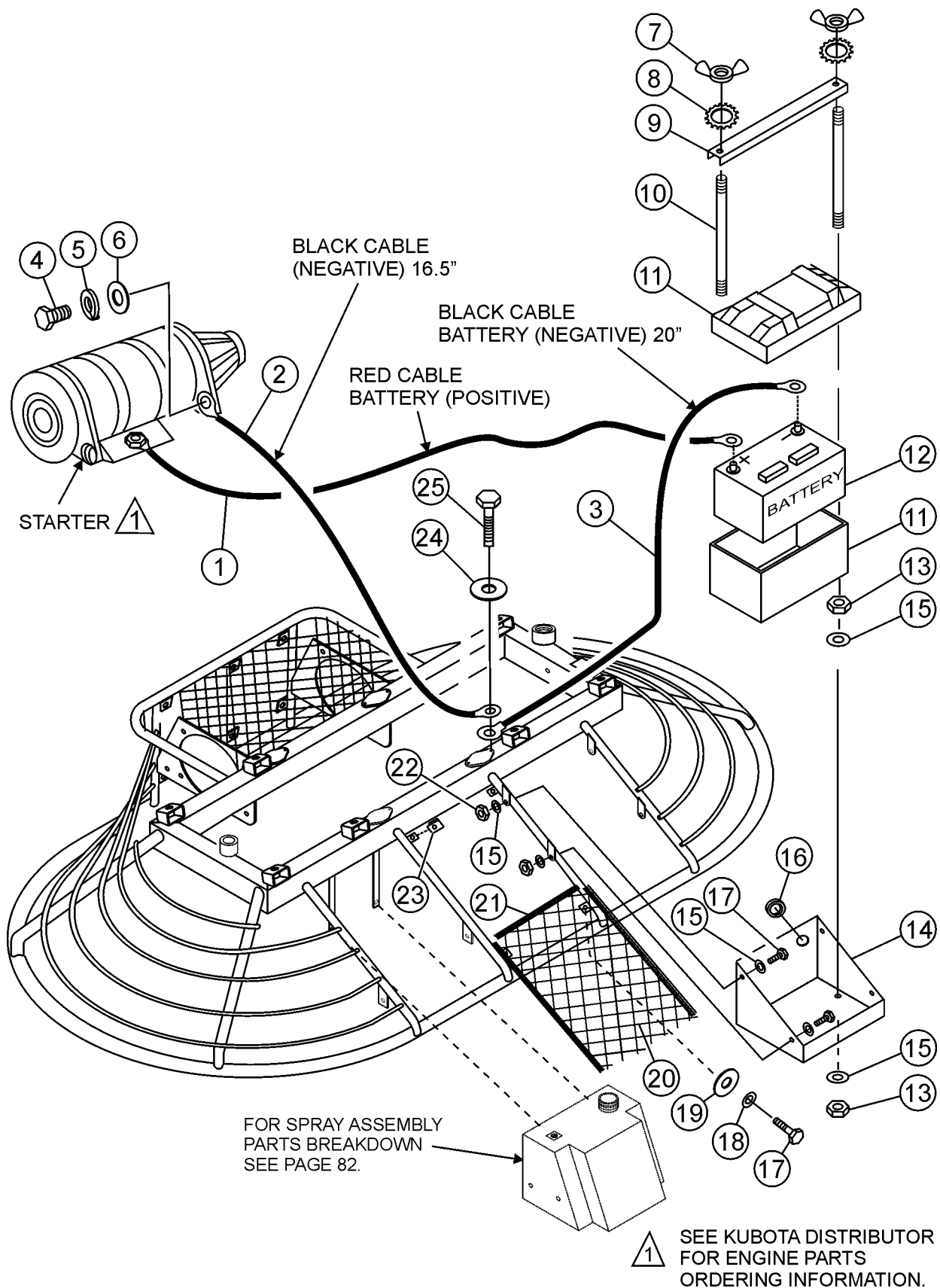
CONNECT TO HYDRAULIC
PUMP SEE PAGE XX

REVIEWERS...ARE THESE
SERVICE REPLACEABLE PARTS?



FOOT PEDALS ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11628	FOOT REST, LEFT W/A	1	
2	11491	CABLE, THROTTLE ASM	1	
3	11228	ACCELERATOR PEDAL	1	
4	11199	BASE, SPEED CONTROL PEDAL	1	
5	10136	WASHER, FLAT 3/8 SAE	5	
6	6014B	PIN, COTTER 3/32 X 1	4	
7	11677	PIN, SPEED CONTROL LEVER	2	
8	1484	BUSHING, BRONZE	2	
9	11656	ROCKER, SPEED CONTROL	1	
10	11611	ROD END, 1/4- 28 FEMALE RH	2	
11	11643	ROD END, 1/4- 28 MALE RH	1	
12	19378	NUT, HEX JAM 1/4- 28	3	
13	2755	ADAPTER, THROTTLE SPRING, SHORT	1	
14	11641	SPRING, THROTTLE RETURN	1	
15	11638	ADAPTER, SPEED CTRL SPRING	1	
16	11492	U- BOLT, CABLE	1	
17	20003	ROD END, 1/4- 28 FEMALE RH W/ZERK	1	
18	10024	NUT, NYLOC 1/4- 20	3	
19	0730	SCREW, HHC 1/4- 20 X 1	3	

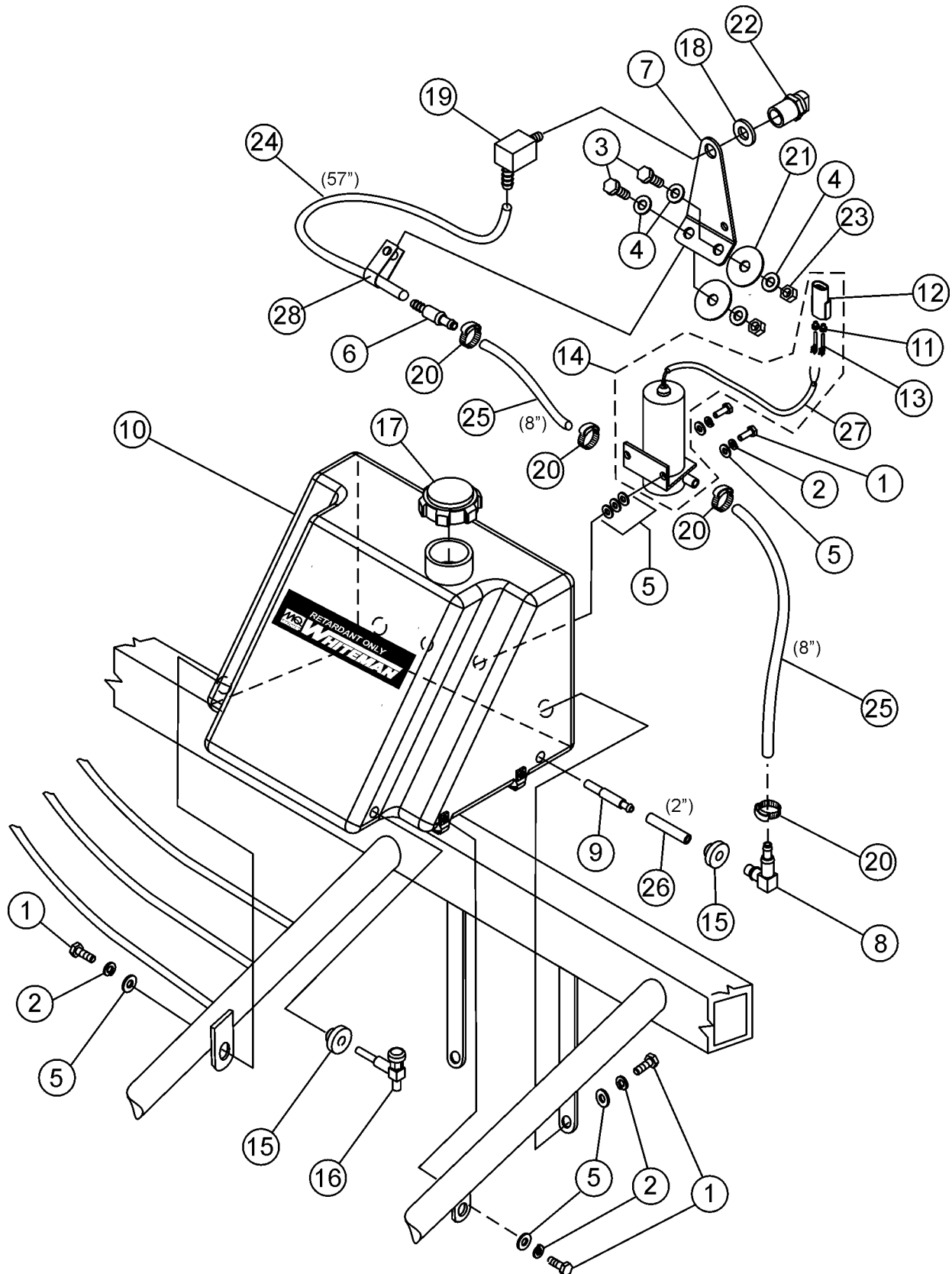


BATTERY ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	10314	BATTERY CABLE (RED)	1	
2	1597	CABLE ASM., BLK (NEG) 16.5	1	
3	10313	CABLE, NEG BATTERY BLACK 20	1	
4	1605	SCREW, HHC M8- 1.25 X 25MM	1	
5	0161C	WASHER, LOCK, 5/16 MED.	1	
6	0479	WASHER, EXT SHKP 3/8 PLTD	1	
7	2509	WING NUT PLATED	2	
8	10031	WASHER, EXT SHKP 1/4	2	
9	11692	BRACKET, BATTERY BOX	1	
10	11693	BOLT, BATTERY BRKT	2	
11	10318	BATTERY BOX, GROUP 24	1	
12	10315	BATTERY 12V WET GROUP	1	
13	0949	NUT, HEX FINISH 1/4- 20	4	
14	11362	BATTERY BOX	1	
15	0948	WASHER, FLAT, 1/4 SAE	12	
16	13212	GROMMET, 1- 1/4 ID (MINOR #Z- 7141)	2	
17	0730	SCREW, HHC 1/4- 20 X 1	6	
19	10930	WASHER, FENDER 1/4 X 1 1/4	4	
20	11680	COVER, REAR MAIN FRAME	1	
21	60052	TRIM EDGE, 3/16 (100B3-3/16)	4.0	SOLD IN FOOT-LENGTHS
22	10024	NUT, NYLOC 1/4- 20	4	
23	11534	NUT, U TYPE 1/4- 20	4	
24	0166A	WASHER, LOCK, 3/8 MED	1	
25	11691	SCREW, HHC 3/8 - 24 X 3/4	1	

HTH-44T— SPRAY ASSY.

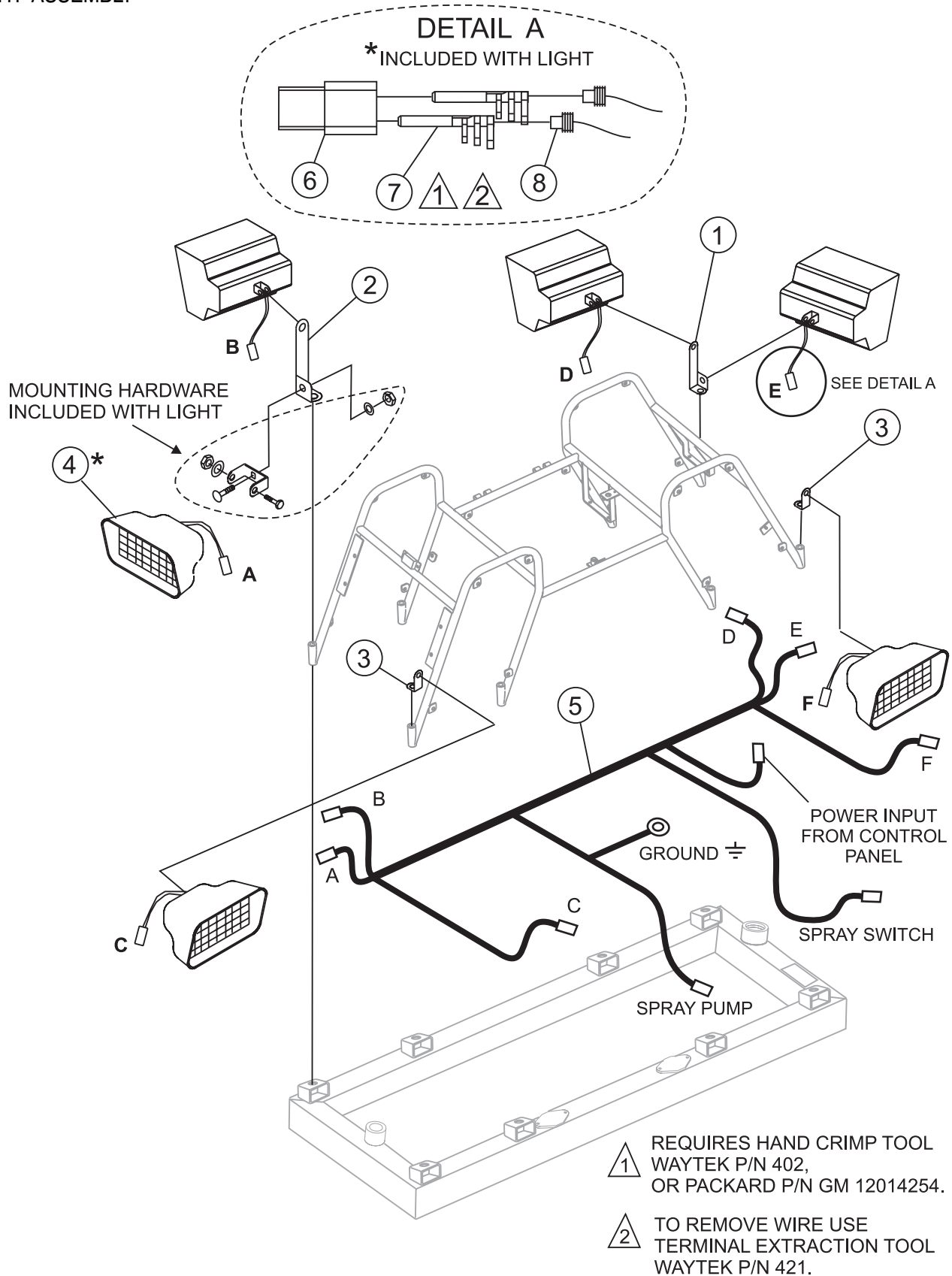
SPRAY ASSY.



SPRAY ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0131A	SCREW, HHC 1/4- 20 X 3/4	5	
2	0181B	WASHER, LOCK, 1/4 MED	5	
3	0202	SCREW, HHC 5/16- 18 X 1	2	
4	0300B	WASHER, FLAT 5/16 SAE	4	
5	0948	WASHER, FLAT 1/4 SAE	8	
6	10022	FITTING, PLASTIC PLASTIC	1	
7	11222	MOUNTING BRACKET, SPRAY NOZZLE	1	
8	12008	FITTING, 90 FUEL	1	
9	12009	SCREEN, FILTER DAPCO 11604	1	
10	12036	TANK, RETARDANT 5 GALLONS	1	
11	12171	SEAL, W/ PACK 16- 18 (GRN)	2	
12	12176	CONNECTOR, W/ PACK 2 PIN SHROUD	1	
13	12179	TERMINAL, W/ PACK MALE 14- 16 GA	2	
14	12548	PUMP, SPRAY	1	
15	19633	BUSHING, RUBBER FUEL	2	
16	19661	VALVE, FUEL DAPCO PN 10531	1	
17	2108	CAP, SPRAY TANK	1	
18	2898	WASHER, BONDED NEOPRENE 1 X 1/2	1	
19	2912	FITTING, 90 DEGREE	1	
20	2918	CLAMP, HOSE .475- .536 ID	4	
21	3233	WASHER, FENDER 1.50 D X 3/8 ID	2	
22	392292	NOZZEL, SPRAY	1	
23	5283	NUT, NYLOC 5/16- 18	2	
24	60001	HOSE, .25 ID X .375 OD TYGON 4.75FT		SOLD IN FOOT-LENGTHS
25	60002	HOSE, .375 ID X .5 OD TYGON 1.34FT		SOLD IN FOOT-LENGTHS
26	60058	HOSE, 1/4 X 3/8 PVC FUEL YELLOW 0.17FT		SOLD IN FOOT-LENGTHS
27	60221	LOOM, .375 SPLIT 0.5FT		SOLD IN FOOT-LENGTHS
28	8128	CLAMP, HOSE SUPPORT, 5/16	1	

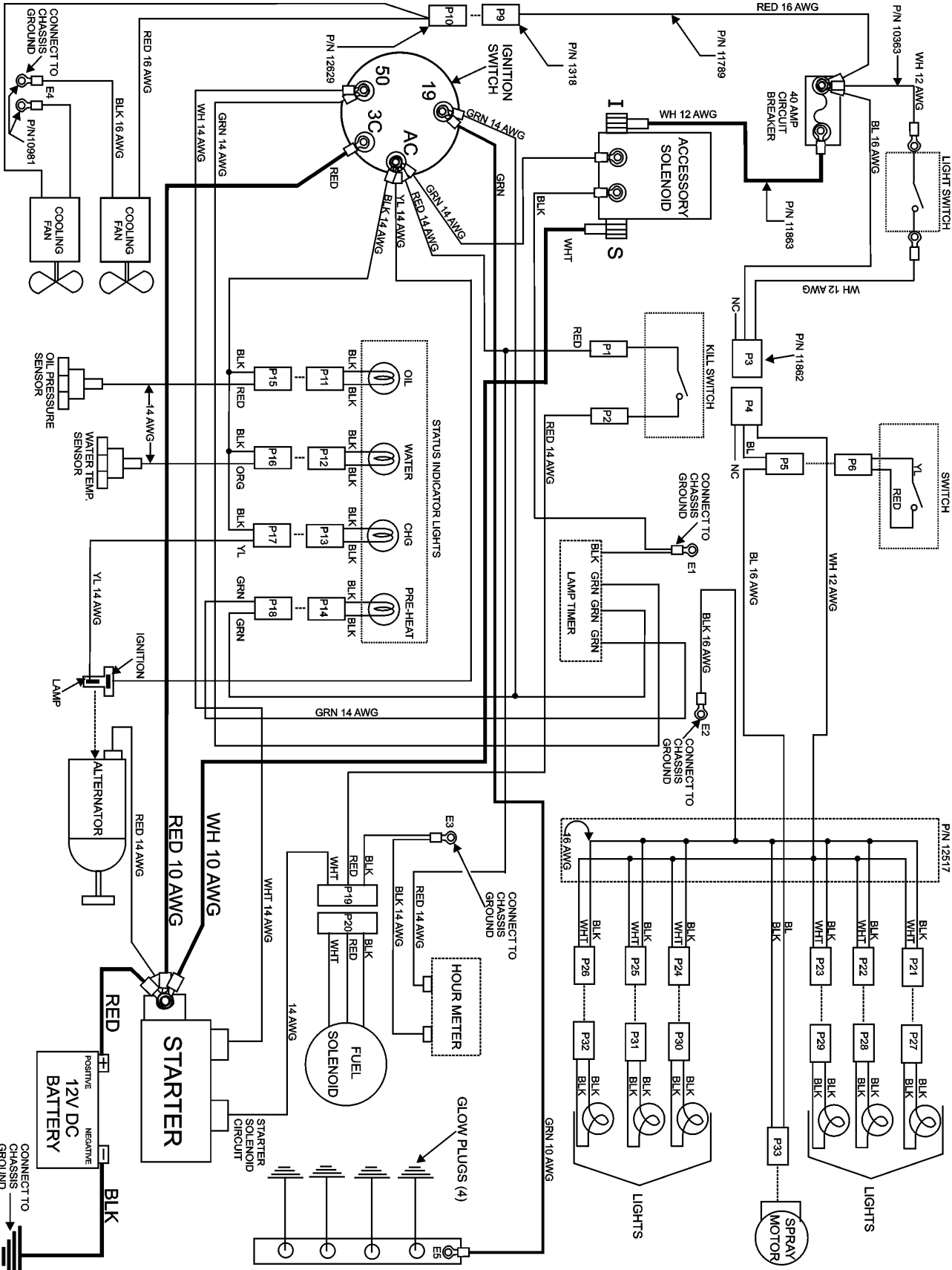
LIGHT ASSEMBLY



LIGHT ASSEMBLY

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11741	BRACKET, LIGHT, RIGHT SIDE	1	
2	11742	BRACKET, LIGHT, LEFT SIDE	1	
3	12355	BRACKET, LIGHT	2	
4	12377	KIT, LIGHT ASSEMBLY	6	INCLUDES ITEMS W/ *
5	12517	WIRE ASM, SPRAY & LIGHT	1	
6*	12176	CONNECTOR, W'PACK 2PIN SHROUD	6	
7*	12179	TERMINAL, W'PACK MALE 14 - 16 GA	12	
8*	12171	SEAL, W'PACK 16 - 18 (GRN)	12	

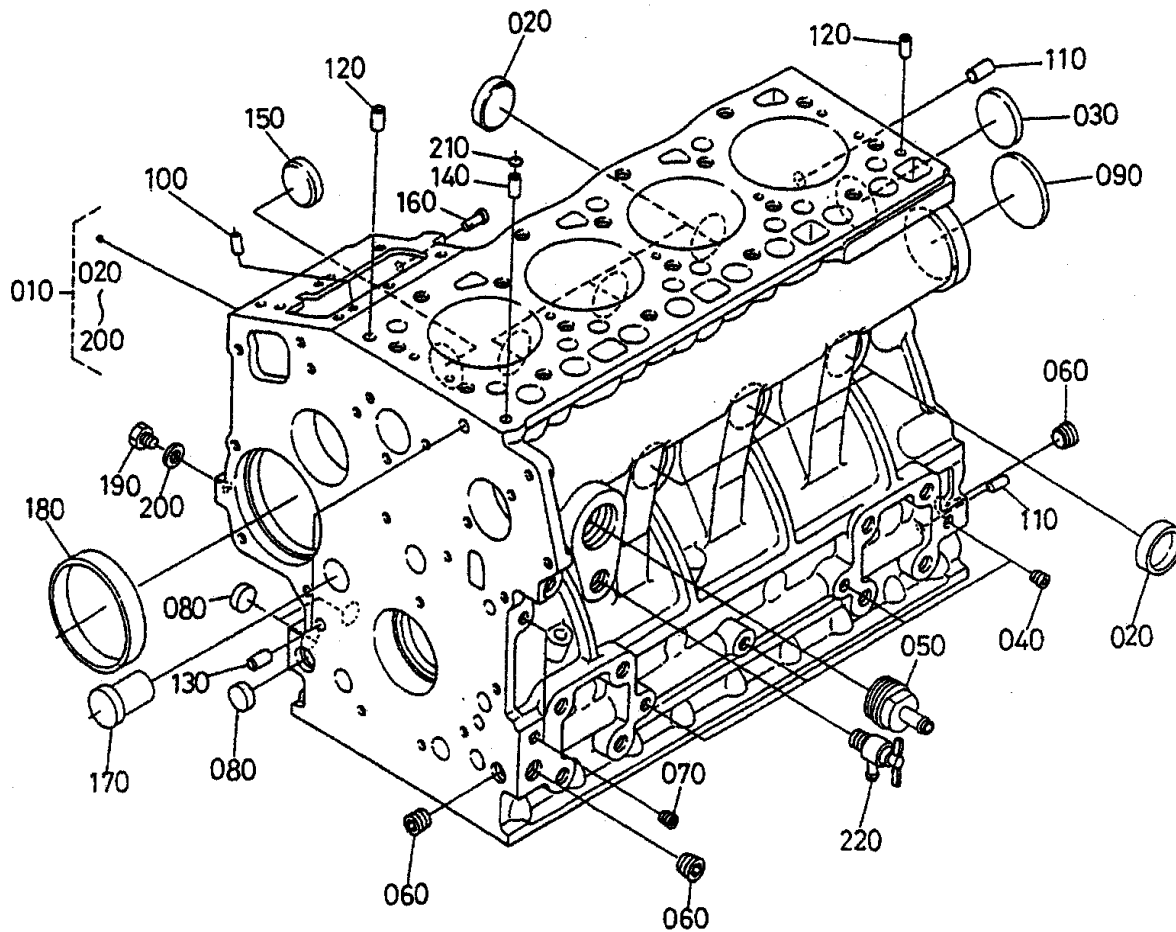
HTH-44T— WIRING DIAGRAM



[illegible]

KUBOTA V-1505 — CRANKCASE ASSY.

CRANKCASE ASSY.

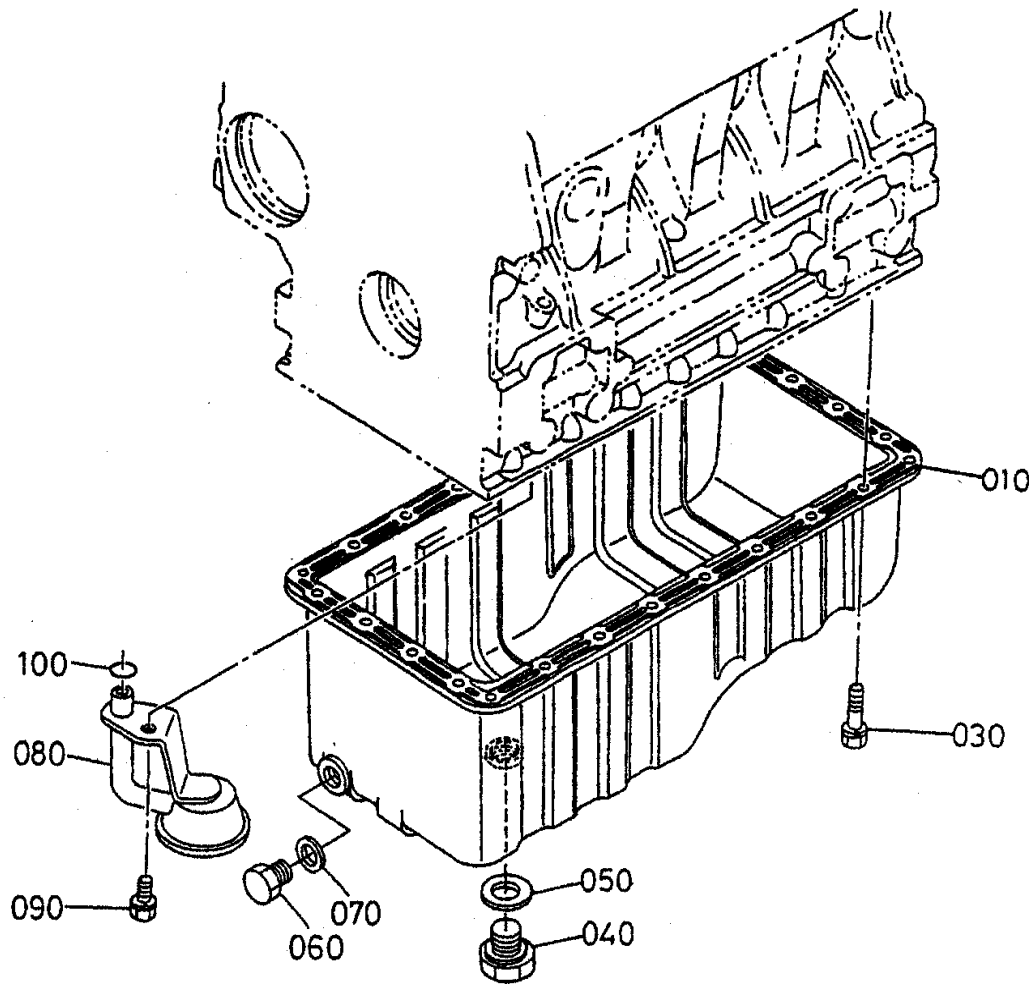


KUBOTA V-1505 — CRANKCASE ASSY.

CRANKCASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1E03501010	COMP. CRANKCASE	1	
020	1545196270	CAP, SEALING	6	
030	1522103490	CAP, SEALING	1	
040	1526196010	PLUG	4	
050	1624173170	JOINT, DRAIN PIPE	1	
060	1624196010	PLUG	3	
070	1552196020	PLUG	2	
080	1739196160	PLUG, EXPANSION	3	
090	1627196160	PLUG, EXPANSION	1	
100	0501200508	PIN, STRAIGHT	2	
110	0501200814	PIN, STRAIGHT	2	
120	0501200610	PIN, STRAIGHT	2	
130	1523133960	PIN, PIPE	2	
140	1624133650	PIN, PIPE	1	
150	1624196262	PLUG, FUEL CAMSHAFT	1	
160	1522156280	PIN, START SPRING	1	
170	1628296010	PLUG	1	
180	1627155350	BUSH, GOVERNOR GEAR	1	
190	1522133610	PLUG	1	
200	1502133660	GASKET	1	
210	1522133700	O- RING	1	
220	1584173020	ASSEMBLY COCK, DRAIN	1	

OIL PAN ASSY.



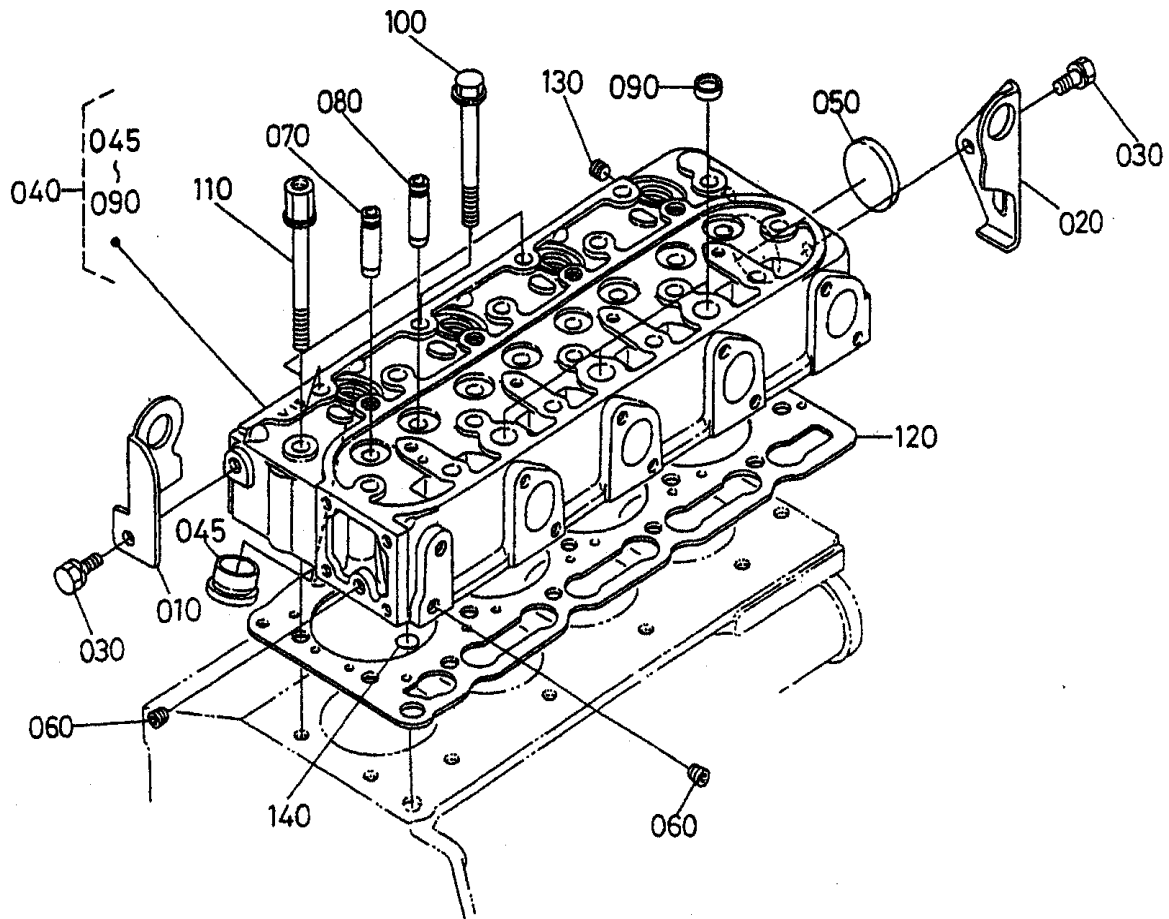
KUBOTA V-1505 — OIL PAN ASSY.

OIL PAN ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1661601500	COMP. OIL PAN	1	
030	0102350612	BOLT	26	
040	1654133750	PLUG, DRAIN	1	
050	1545196670	GASKET	1	
060	1522133750	PLUG	1	
070	6009058960	GASKET	1	
080	1624132114	FILTER, OIL	1	
090	0112360816	BOLT	1	
100	0481400160	O RING	1	

KUBOTA V-1505 — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.



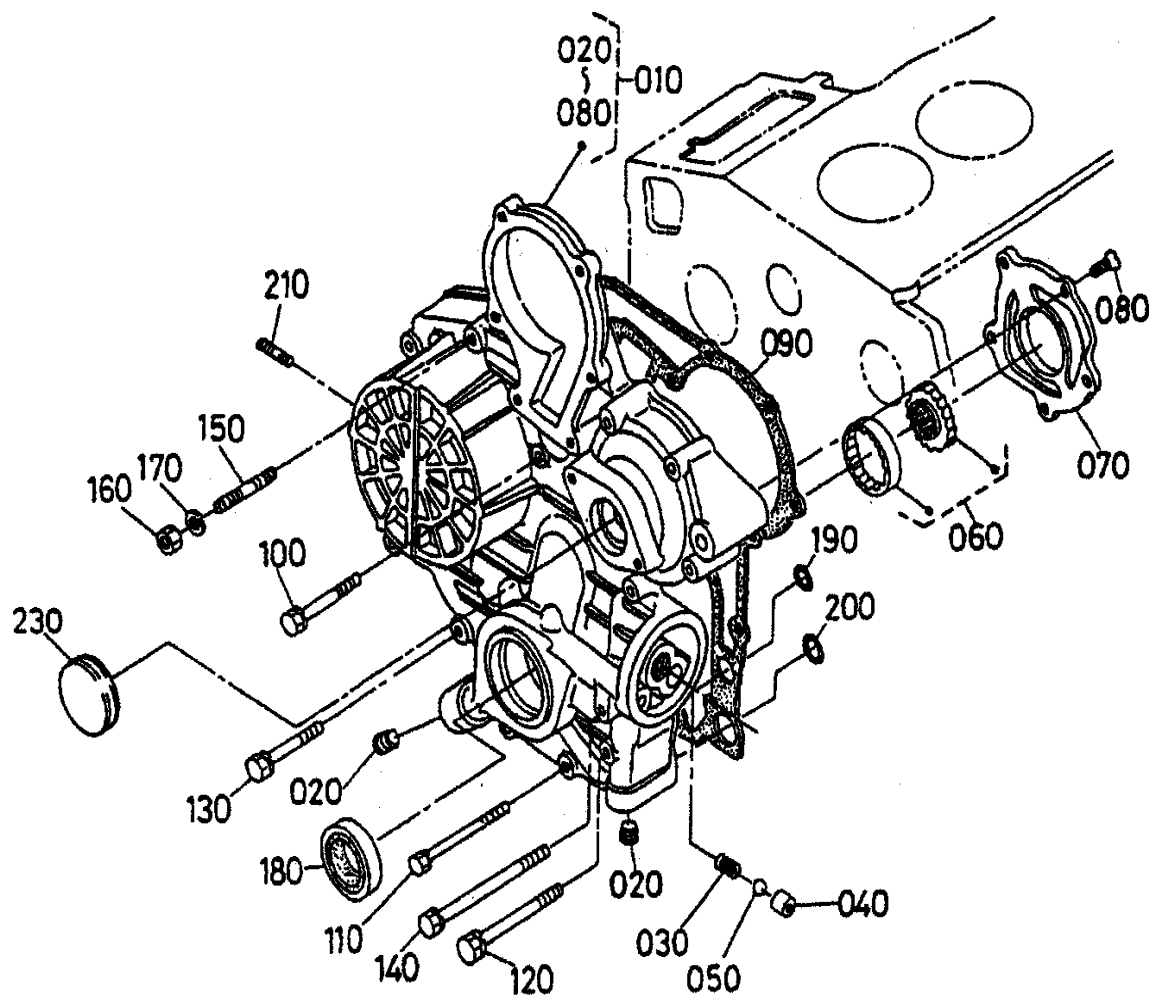
KUBOTA V-1505 — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624101750	HOOK ENGINE	1	
020	1624101770	HOOK ENGINE	1	
030	0112360814	BOLT	2	
040	1606503040	COMP. CYLINDER HEAD	1	
045	1606503140	COMBUSTION CHAMBER	4	
050	1532196260	CAP, SEALING	1	
060	1526196010	PLUG	2	
070	1624113540	GUIDE, INLET VALVE	4	
080	1624113560	GUIDE, EXHAUST VALVE	4	
090	1526103370	CAP, SEALING	3	
100	1624103450	BOLT, CYLINDER HEAD	15	
110	1627103450	BOLT, CYLINDER HEAD	3	
120	1629203310	GASKET, CYLINDER HEAD	1	
130	1584196020	PLUG	1	

KUBOTA V-1505 — GEAR CASE ASSY.

GEAR CASE ASSY.



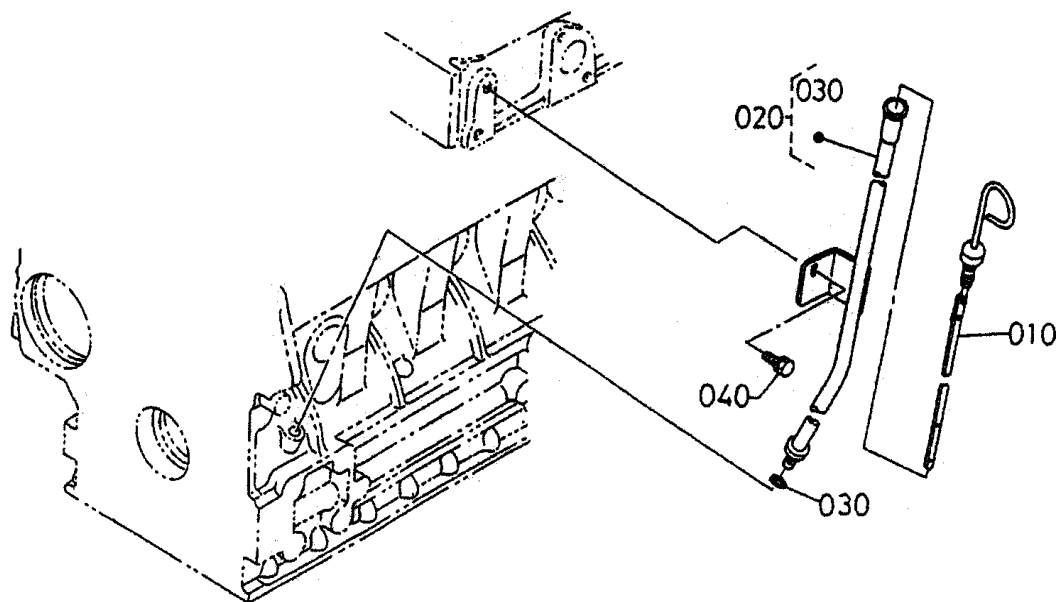
KUBOTA V-1505 — GEAR CASE ASSY.

GEAR CASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624104020	COMP. CASE, GEAR	1	
020	1624196020	PLUG	2	
030	1624136950	SPRING	1	
040	1624136930	SEAT, VALVE	1	
050	0771500201	BALL	1	
060	1624135070	ASSEMBLY ROTOR, OIL PUMP	1	
070	1624135130	COVER, OIL PUMP	1	
080	1624193120	SCREW, CSK- HD	5	
090	1626404130	GASKET, GEAR CASE	1	
100	0102350645	BOLT	3	
110	0102360650	BOLT	6	
120	0102350655	BOLT	2	
130	1584191040	BOLT	1	
140	1624191040	BOLT	1	
150	1624591530	STUD	1	
160	0205650060	NUT	1	
170	0451260060	WASHER, SPRING	1	
180	1624104212	SEAL, OIL	1	
190	0481406100	O RING	2	
200	0481400150	O RING	2	
210	1624591540	STUD	2	
230	1626483342	COVER, GEAR CASE	1	

KUBOTA V-1505 — DIPSTICK AND GUIDE ASSY.

DIPSTICK AND GUIDE ASSY.



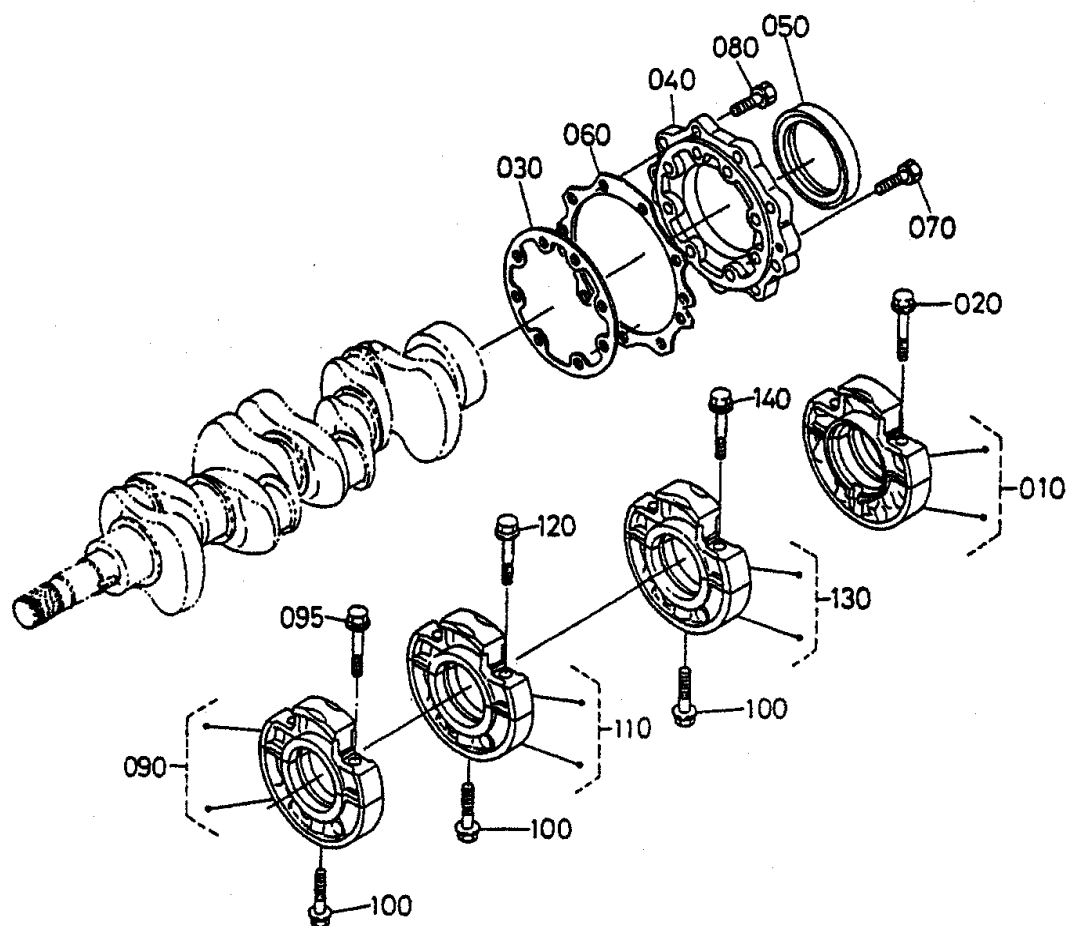
KUBOTA V-1505 — DIPSTICK AND GUIDE ASSY.

DIPSTICK AND GUIDE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1661136412	GAUGE, OIL	1	
020	1628236500	ASSEMBLY GUIDE, OILGAUGE	1	
030	0481400090	O RING	1	
040	0112360814	BOLT	1	

KUBOTA V-1505 — MAIN BEARING CASE ASSY.

MAIN BEARING CASE ASSY.



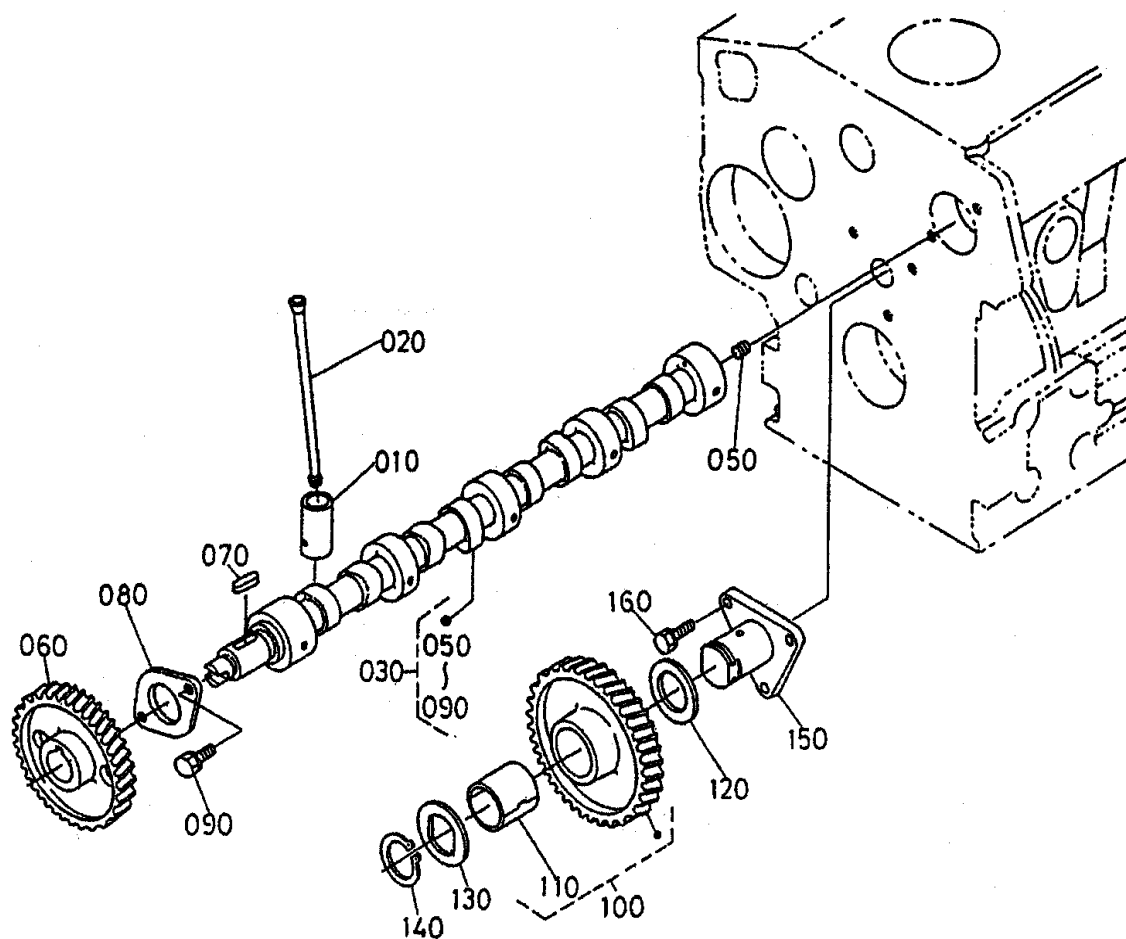
KUBOTA V-1505 — MAIN BEARING CASE ASSY.

MAIN BEARING CASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624104092	ASSEMBLY CASE, MAIN BRG.	1	
020	1624104540	BOLT, BEARING CASE	2	
030	1626404360	GASKET, BRG. CASE	1	
040	1624104813	COVER, BEARING CASE	1	
050	1624104460	SEAL, OIL	1	
060	1626404820	GASKET	1	
070	0102350625	BOLT	8	
080	0102350620	BOLT	9	
090	1629204040	ASSEMBLY CASE, MAIN BRG.	1	
095	1624104540	BOLT, BEARING CASE	2	
100	1624104560	BOLT, BEARING CASE	3	
110	1629204050	ASSEMBLY CASE, MAIN BRG.	1	
120	1624104540	BOLT, BEARING CASE	2	
130	1629204060	ASSEMBLY CASE, MAIN BRG.	1	
140	1624104540	BOLT, BEARING CASE	2	

KUBOTA V-1505 — CAMSHAFT AND IDLE GEAR SHAFT ASSY.

CAMSHAFT AND IDLE GEAR SHAFT ASSY.



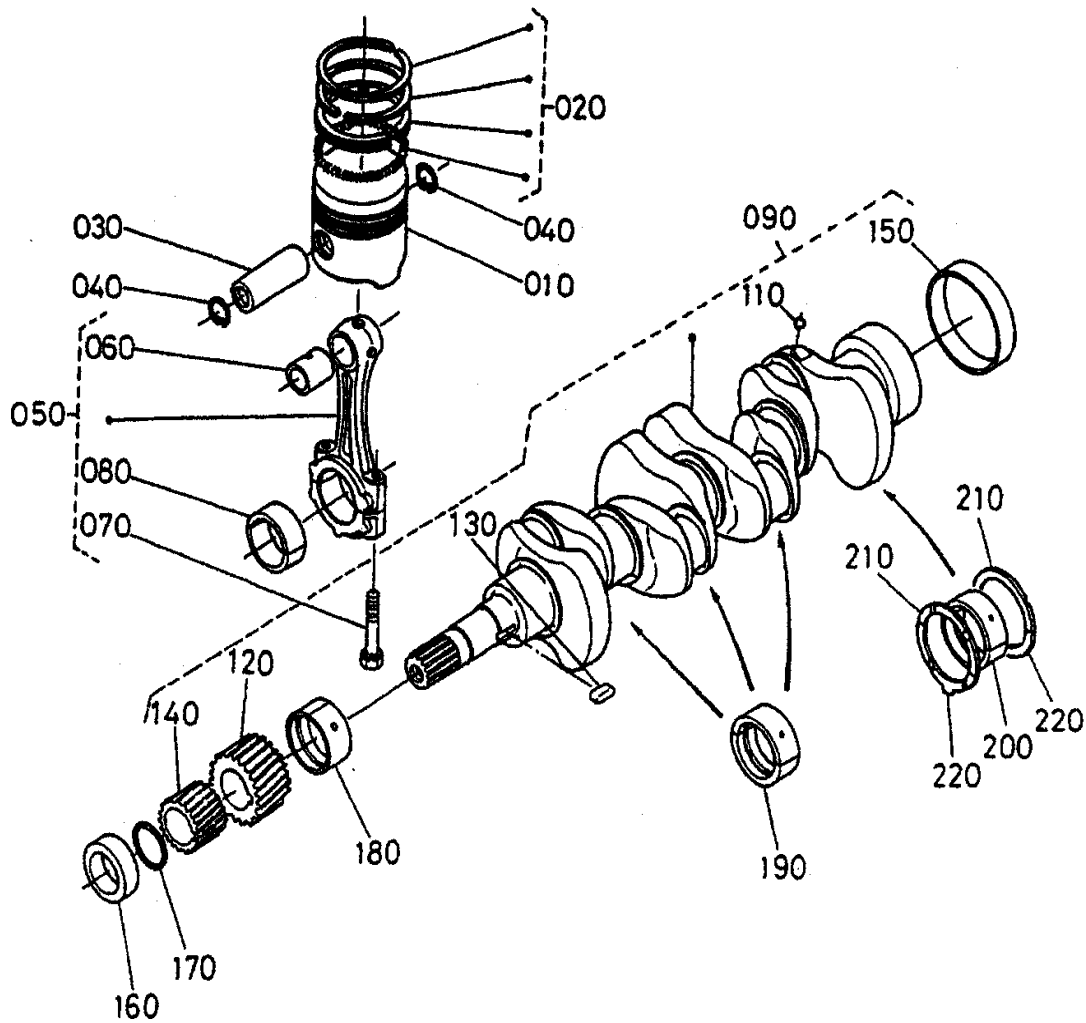
KUBOTA V-1505 — CAMSHAFT AND IDLE GEAR SHAFT ASSY.

CAMSHAFT AND IDLE GEAR SHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1626115550	TAPPET	8	
020	1624115110	PUSH ROD	8	
030	1629216010	ASSEMBLY, CAMSHAFT	1	
050	1552193610	SCREW, SET	1	
060	1624116510	GEAR, CAM	1	
070	0571200518	KEY, FEATHER	1	
080	1624116270	STOPPER, CAMSHAFT	1	
090	0102350614	BOLT	2	
100	1627124010	COMP. GEAR, IDLE	1	
110	1627124980	BUSH, IDLE GEAR	1	
120	1624124360	COLLAR, IDLE GEAR	1	
130	1624124370	COLLAR, IDLE GEAR	1	
140	1624124320	CIR. CLIP, IDLE GEAR	1	
150	1624124250	SHAFT, IDLE GEAR	1	
160	0102350616	BOLT	3	

KUBOTA V-1505 — PISTON AND CRANKSHAFT ASSY.

PISTON AND CRANKSHAFT ASSY.

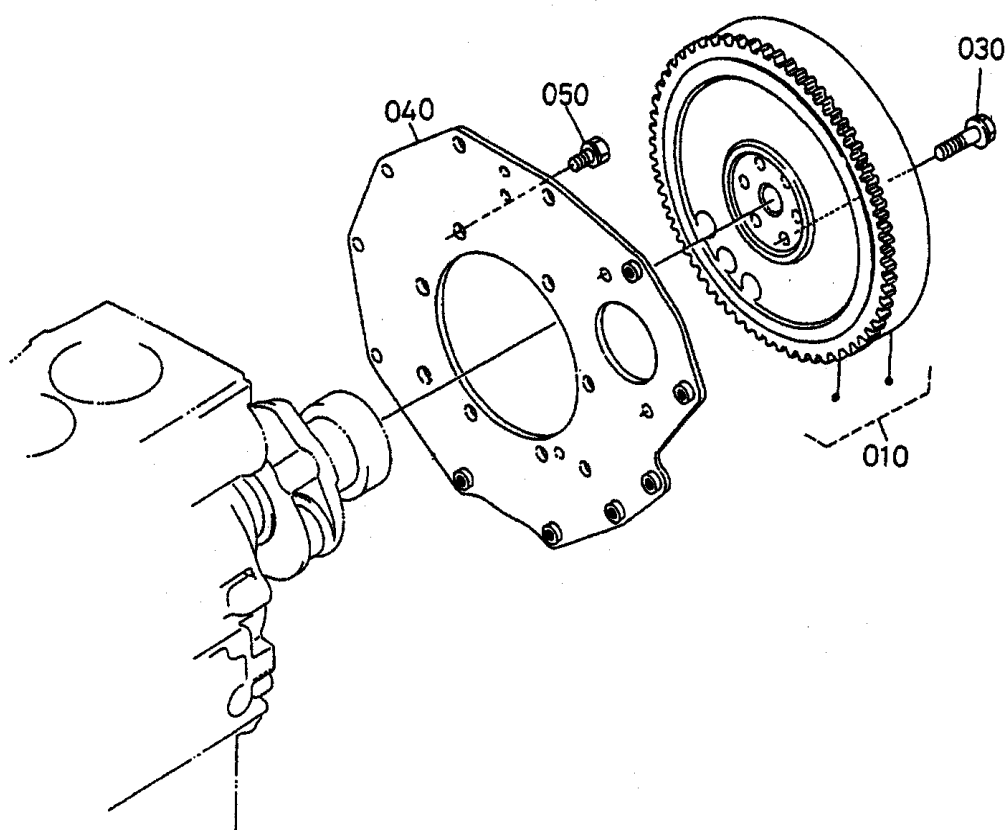


KUBOTA V-1505 — PISTON AND CRANKSHAFT ASSY.

PISTON AND CRANKSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1629221110	PISTON	4	STANDARD
010	1606021910	PISTON	4	+0.50MM
020	1629221050	ASSEMBLY, PISTON RING	4	STANDARD
020	1626121090	ASSEMBLY, PISTON RING	4	+0.50MM
030	1624121310	PIN, PISTON	4	
040	1624121330	CIR. CLIP, PISTON PIN	8	
050	1629222010	ASSEMBLY ROD, CONNECTING	4	
060	1624121980	BUSH, PISTON PIN	4	
070	1624122140	BOLT, CONNECTING ROD	8	
080	1629222310	METAL, CRANKPIN	4	STANDARD SET
080	1624122970	METAL, CRANKPIN	4	- 0.2MM SET
080	1624122980	METAL, CRANKPIN	4	- 0.4MM SET
090	1628223013	COMP. CRANKSHAFT	1	
110	0771500401	BALL	4	
120	1624124110	GEAR, CRANK	1	
130	1627195230	KEY	1	
140	1624135630	GEAR, OIL PUMP DRIVE	1	
150	1624123280	SLEEVE, CRANKSHAFT	1	
160	1624123250	COLLAR, CRANKSHAFT	1	
170	0481410280	O RING	1	
180	1629223470	METAL, CRANKSHAFT	1	STANDARD
180	1624123910	METAL, CRANKSHAFT	1	- 0.2MM
180	1624123920	METAL, CRANKSHAFT	1	- 0.4MM
190	1629223480	METAL, CRANKSHAFT	3	STANDARD SET
190	1624123930	METAL, CRANKSHAFT	3	- 0.2MM SET
190	1624123940	METAL, CRANKSHAFT	3	- 0.4MM SET
200	1629223490	METAL, CRANKSHAFT	1	STANDARD SET
200	1624123860	METAL, CRANKSHAFT	1	- 0.2MM SET
200	1624123870	METAL, CRANKSHAFT	1	- 0.4MM SET
210	1552123530	METAL, SIDE	2	STANDARD
210	1552123950	METAL, SIDE	2	+0.2MM
210	1552123960	METAL, SIDE	2	+0.4MM
220	1920223540	METAL, SIDE	2	STANDARD
220	1920223970	METAL, SIDE	2	+0.2MM
220	1920223980	METAL, SIDE	2	+0.4MM

FLYWHEEL ASSY.



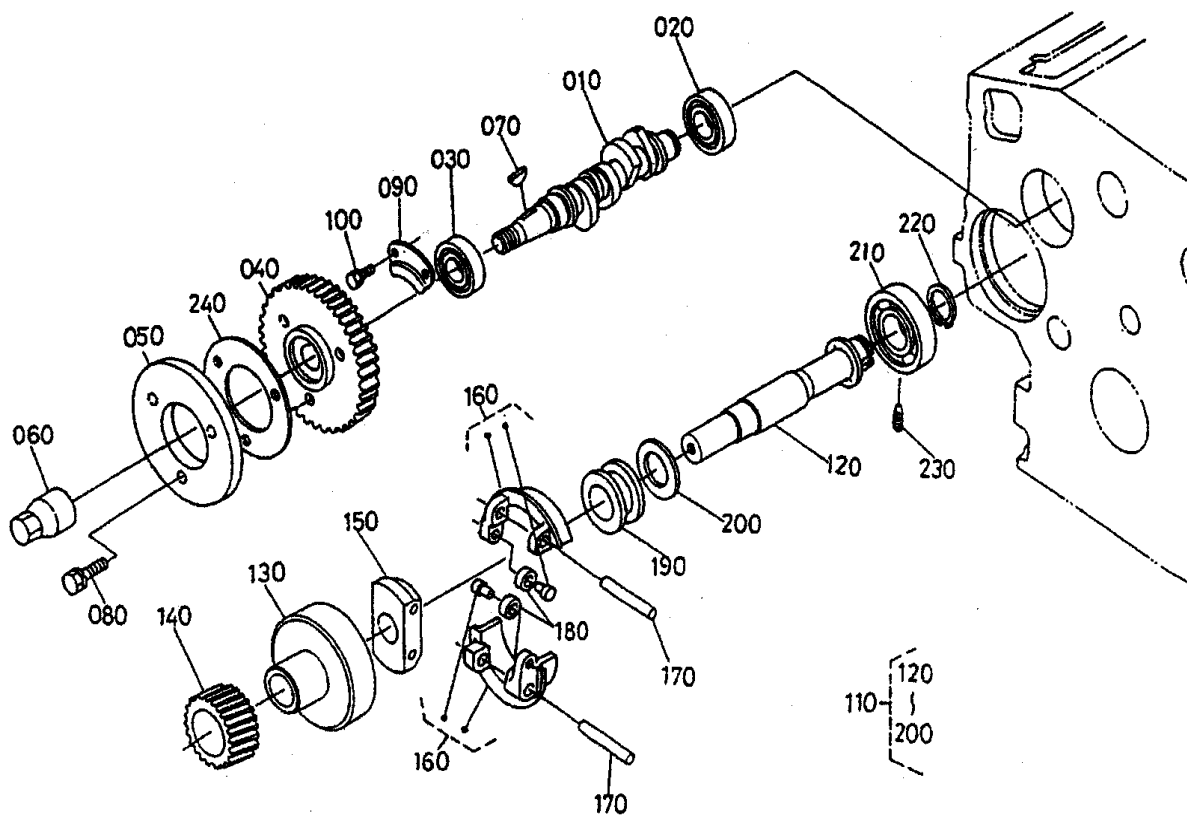
KUBOTA V-1505 — FLYWHEEL ASSY.

FLYWHEEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1661425012	COMP. FLYWHEEL	1	
030	1624125160	BOLT, FLYWHEEL	6	
040	1E01904620	PLATE, REAR END	1	
050	1526191190	BOLT	8	

KUBOTA V-1505 — FUEL CAMSHAFT AND GOV. SHAFT ASSY.

FUEL CAMSHAFT AND GOVERNOR SHAFT ASSY.



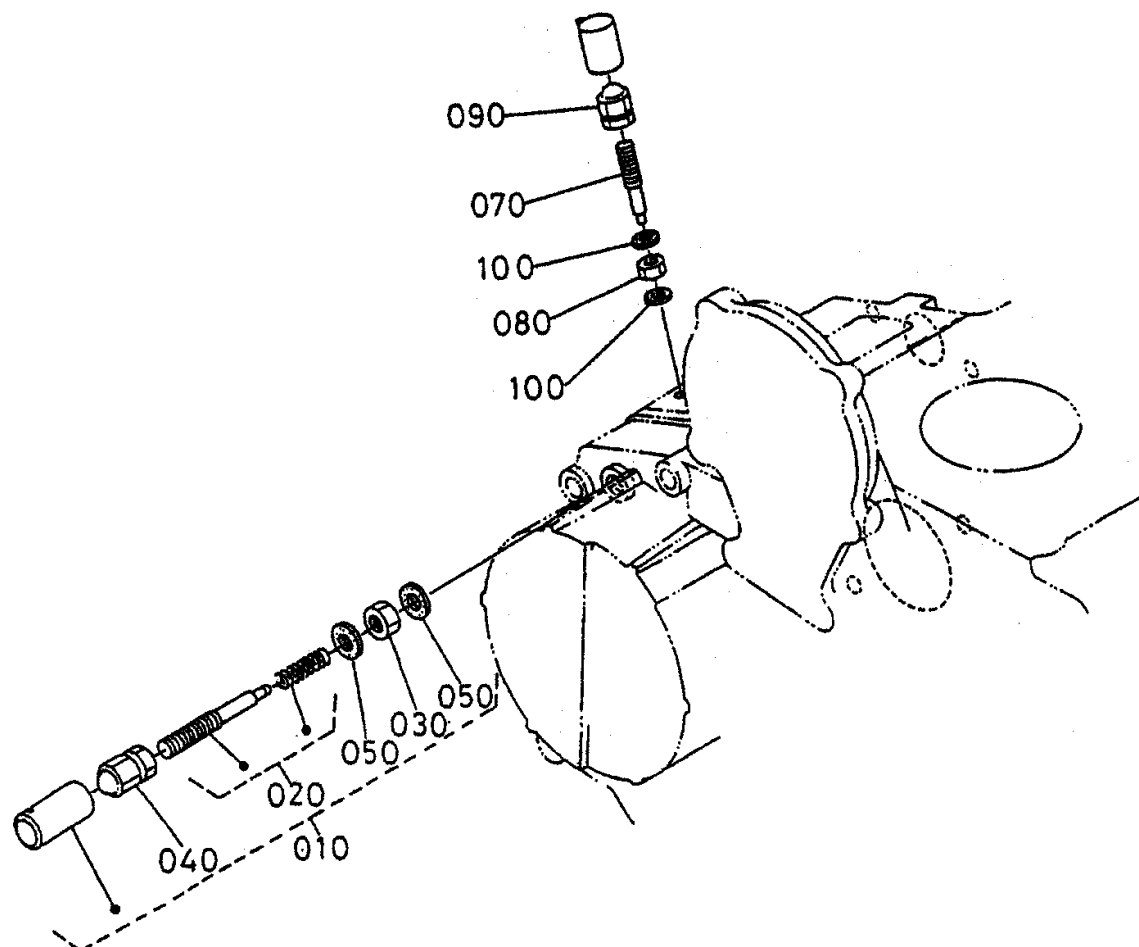
KUBOTA V-1505 — FUEL CAMSHAFT AND GOV. SHAFT ASSY.

FUEL CAMSHAFT AND GOVERNOR SHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1604016170	CAMSHAFT, FUEL	1	
020	0810306202	BEARING, BALL	1	
030	0810306204	BEARING, BALL	1	
040	1627251150	GEAR, INJECTION PUMP	1	
050	1624151113	CAM, FUEL	1	
060	1624192330	NUT, CAP	1	
070	1624195230	KEY, WOODRUFF	1	
080	0102350618	BOLT	3	
090	1624116320	STOPPER, FUEL CAMSHAFT	1	
100	0102350612	BOLT	2	
110	1628255013	ASSEMBLY SHAFT, GOVERNOR	1	
120	1627155313	SHAFT, GOVERNOR	1	
130	1624155392	HOLDER, GOVERNOR GEAR	1	
140	1628255320	GEAR, GOVERNOR	1	
150	1624155270	HOLDER, GOVERNOR WEIGHT	1	
160	1624155062	COMP. WEIGHT, GOVERNOR	2	
170	1624155260	SHAFT, GOVERNOR WEIGHT	2	
180	1948455440	ROLLER	2	
190	1624155450	SLEEVE, GOVERNOR	1	
200	1624155463	WASHER, THRUST	1	
210	0810106304	BEARING, BALL	1	
220	1627155410	CIR. CLIP, GOVERNOR SHAFT	1	
230	1624155554	SCREW, SET	1	
240	1624151190	WASHER	1	

KUBOTA V-1505 — ENGINE STOP LEVER ASSY.

ENGINE STOP LEVER ASSY.



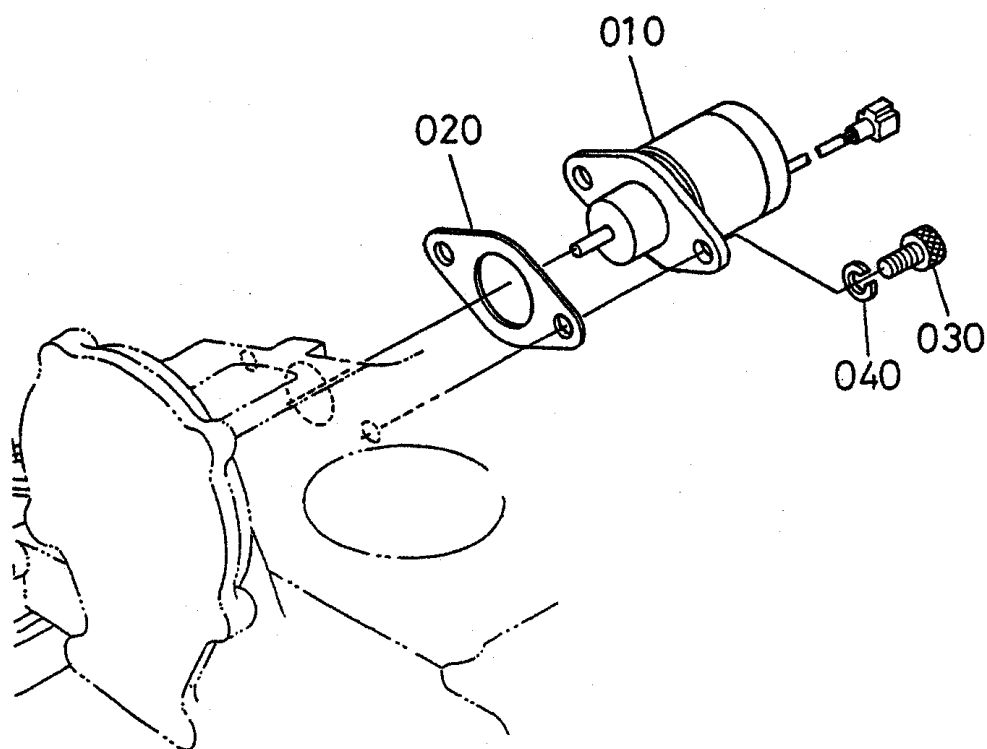
KUBOTA V-1505 — ENGINE STOP LEVER ASSY.

ENGINE STOP LEVER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1628554090	ASSEMBLY APPARATUS, IDLE	1	
020	1628554102	ASSEMBLY BOLT, ADJUSTING	1	
030	1584192020	NUT	1	
040	1584192330	NUT, CAP	1	
050	1560196650	GASKET	2	
070	1624154120	BOLT, ADJUSTING	1	
080	1584192020	NUT	1	
090	1584192330	NUT, CAP	1	
100	1560196650	GASKET	2	

KUBOTA V-1505 — STOP SOLENOID ASSY.

STOP SOLENOID ASSY.



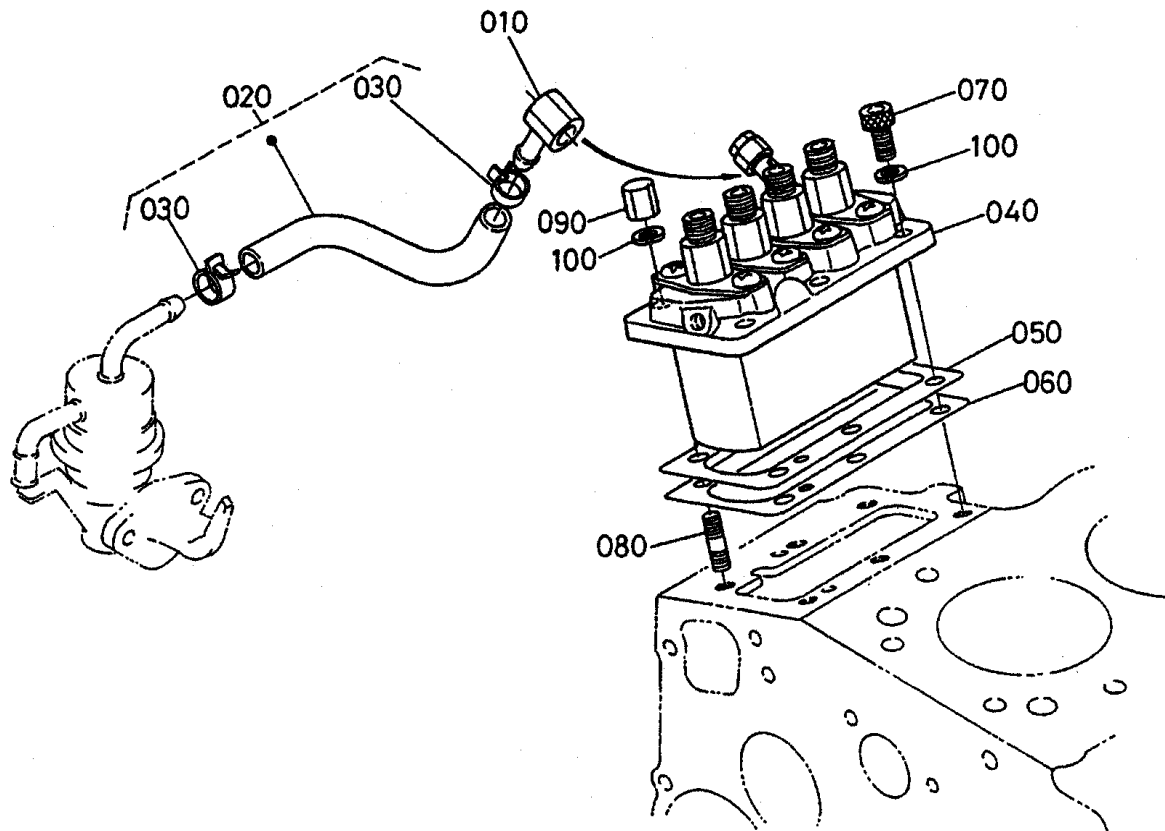
KUBOTA V-1505 — STOP SOLENOID ASSY.

STOP SOLENOID ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1745460010	SOLENOID, STOP	1	
020	1629960150	GASKET	1	
030	0131110614	BOLT, HEX- SOC- HD	2	
040	0451260060	WASHER, SPRING	2	

KUBOTA V-1505 — INJECTION PUMP ASSY.

INJECTION PUMP ASSY.



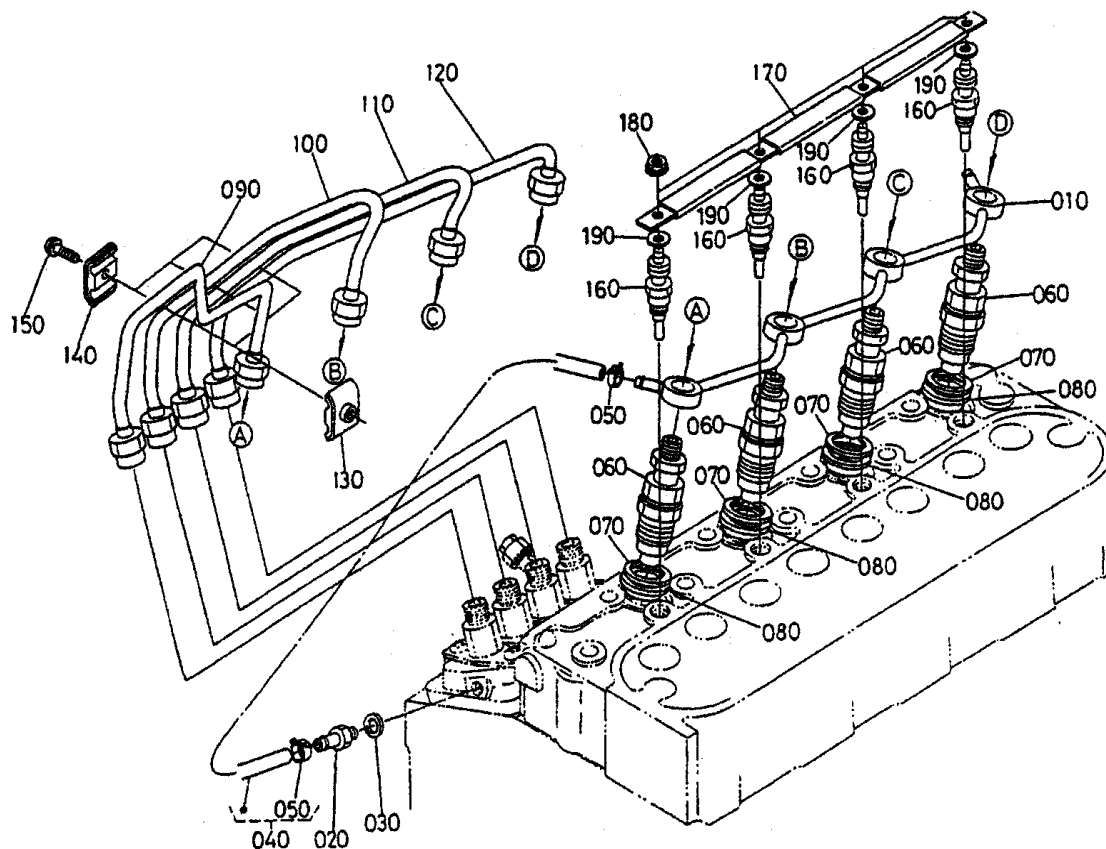
KUBOTA V-1505 — INJECTION PUMP ASSY.

INJECTION PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624195690	JOINT, EYE	1	
020	1624142010	ASSEMBLY PIPE, FUEL	1	
030	1491142750	CLIP, PIPE	2	
040	1606051010	ASSEMBLY PUMP, INJECTION	1	
050	1604052092	SHIM, INJECTION PUMP	1	0.20MM
050	1604052112	SHIM, INJECTION PUMP	1	0.25MM
060	1604052122	SHIM, INJECTION PUMP	1	0.30MM
070	0131110620	BOLT, HEX- SOC- HD	3	
080	1584191500	STUD	3	
090	1584192320	NUT, CAP	3	
100	0451260060	WASHER, SPRING	6	

KUBOTA V-1505 —NOZZLE AND GLOW PLUG ASSY.

NOZZLE HOLDER AND GLOW PLUG ASSY.



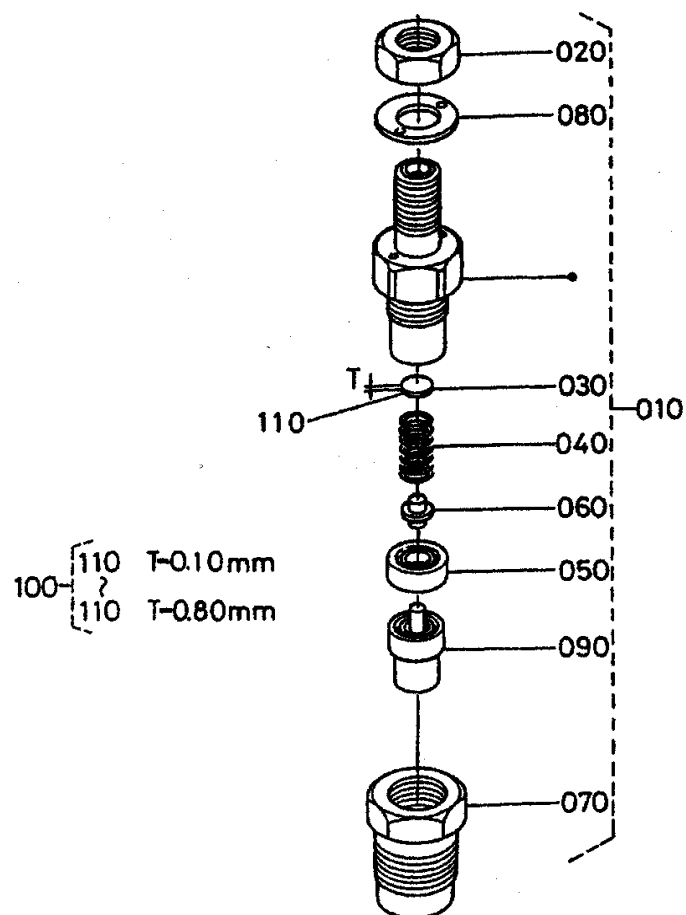
KUBOTA V-1505 —NOZZLE AND GLOW PLUG ASSY.

NOZZLE HOLDER AND GLOW PLUG ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1627142502	ASSEMBLY PIPE, OVER FLOW	1	
020	1584151360	SCREW, AIR BREEDER	1	
030	1560196650	GASKET	1	
040	1584142500	ASSEMBLY PIPE, OVER FLOW	1	
050	1497142750	CLIP, PIPE	2	
060	1603253000	ASSEMBLY HOLDER, NOZZLE	4	
070	1584153622	GASKET	4	
080	1907753650	SEAL, HEAT	4	
090	1628253712	PIPE, INJECTION	1	
100	1627153722	PIPE, INJECTION	1	
110	1627153732	PIPE, INJECTION	1	
120	1627153742	PIPE, INJECTION	1	
130	1584153850	CLAMP, PIPE	3	
140	1584153860	CLAMP, PIPE	3	
150	0302450520	SCREW, WITH WASHER	3	
160	1606565510	GLOW PLUG	4	
170	1627165560	CORD, GLOW PLUG	1	
180	0276150040	NUT, FLANGE	4	
190	0401360040	WASHER, PLAIN	4	

KUBOTA V-1505 — NOZZLE HOLDER (COMPONENT PARTS) ASSY.

NOZZLE HOLDER (COMPONENT PARTS) ASSY.



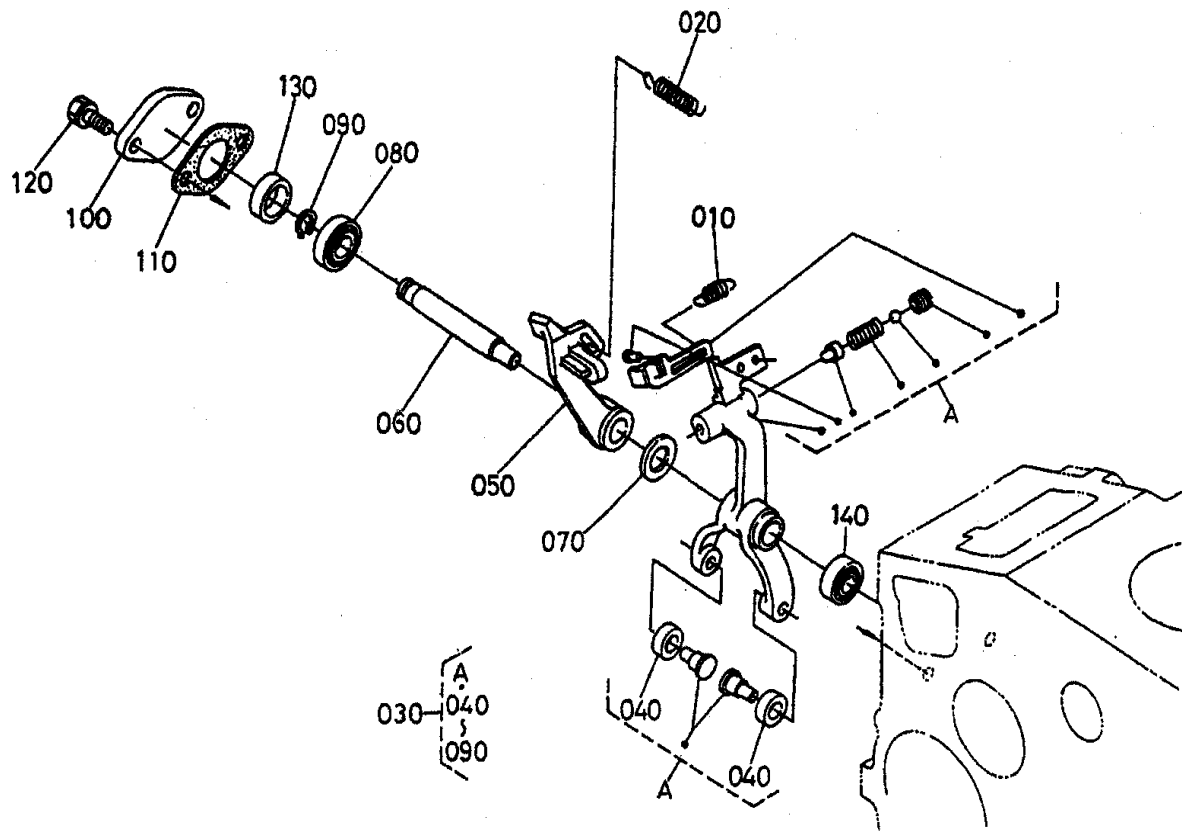
KUBOTA V-1505 — NOZZLE HOLDER (COMPONENT PARTS) ASSY.

NOZZLE HOLDER (COMPONENT PARTS) ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1603253000	ASSEMBLY HOLDER, NOZZLE	4	
020	1603292030	NUT	4	
030	1603253230	WASHER, ADJUSTING	4	
040	1603253170	SPRING, NOZZLE	4	
050	1603253350	SPACER, DISTANCE	4	
060	1603253160	PUSH ROD	4	
070	1603253280	NUT, NOZZLE	4	
080	1603294040	WASHER, PLAIN	4	
090	1603253610	PIECE, NOZZLE	4	
100	1603298100	ASSEMBLY WASHER, ADJUST	4	OPTION
110	1603298500	WASHER, ADJUSTING	4	0. 10MM
110	1603298510	WASHER, ADJUSTING	4	0. 20MM
110	1603298520	WASHER, ADJUSTING	4	0. 30MM
110	1603298530	WASHER, ADJUSTING	4	0. 40MM
110	1603298540	WASHER, ADJUSTING	4	0. 50MM
110	1603298550	WASHER, ADJUSTING	4	0. 52MM
110	1603298560	WASHER, ADJUSTING	4	0. 54MM
110	1603298570	WASHER, ADJUSTING	4	0. 56MM
110	1603298580	WASHER, ADJUSTING	4	0. 58MM
110	1603298590	WASHER, ADJUSTING	4	0. 80MM

KUBOTA V-1505 — FORK LEVER (GOVERNOR) ASSY.

FORK LEVER (GOVERNOR) ASSY.



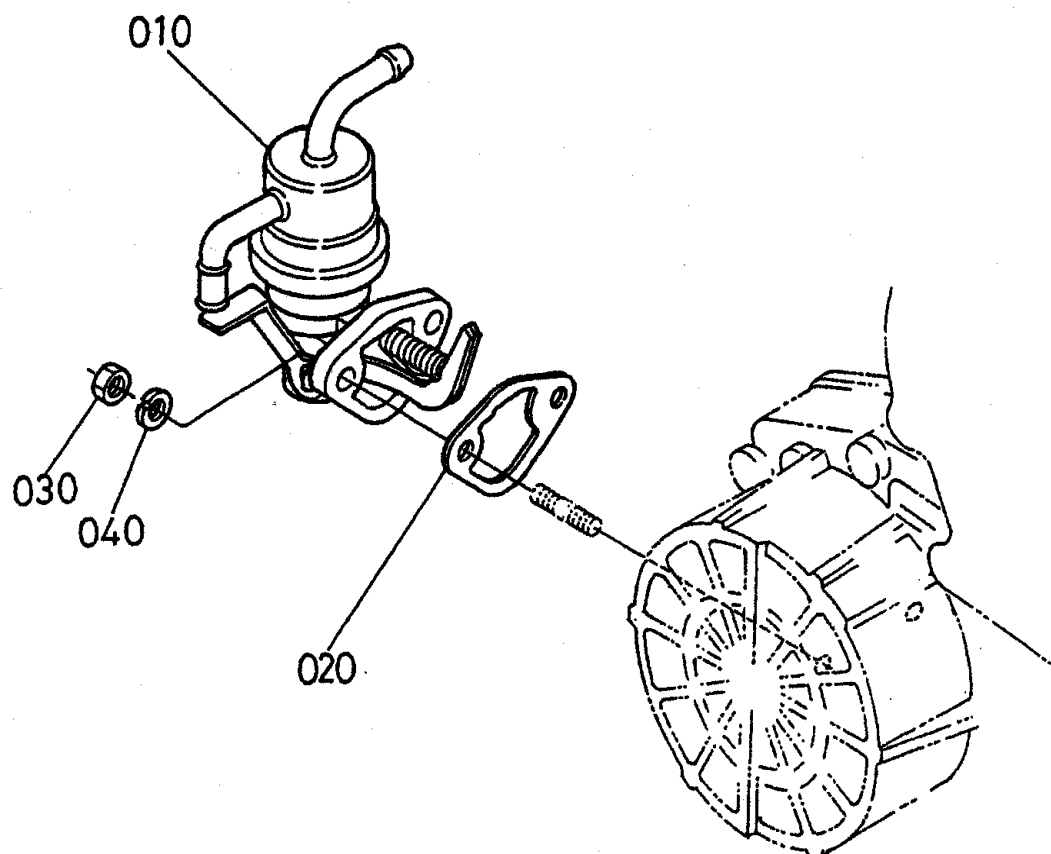
KUBOTA V-1505 — FORK LEVER (GOVERNOR) ASSY.

FORK LEVER (GOVERNOR) ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1627156480	SPRING, START	1	
020	1628556412	SPRING, GOVERNOR	1	
030	1629256052	ASSEMBLY LEVER, FORK	1	
040	1948455440	ROLLER	2	
050	1622256130	LEVER, FORK	1	
060	1624256153	SHAFT, FORK LEVER	1	
070	1624194010	WASHER, PLAIN	1	
080	1624156330	BEARING, MINIATURIZE	1	
090	0461200090	CIR. CLIP, EXTERNAL	1	
100	1624156250	COVER, FORK LEVER SHAFT	1	
120	0102350614	BOLT	2	
130	1624156210	COLLAR	1	
140	1624156340	BEARING MINIATURIZE	1	

KUBOTA V-1505 — FUEL PUMP (MECHANICAL) ASSY.

FUEL PUMP (MECHANICAL) ASSY.



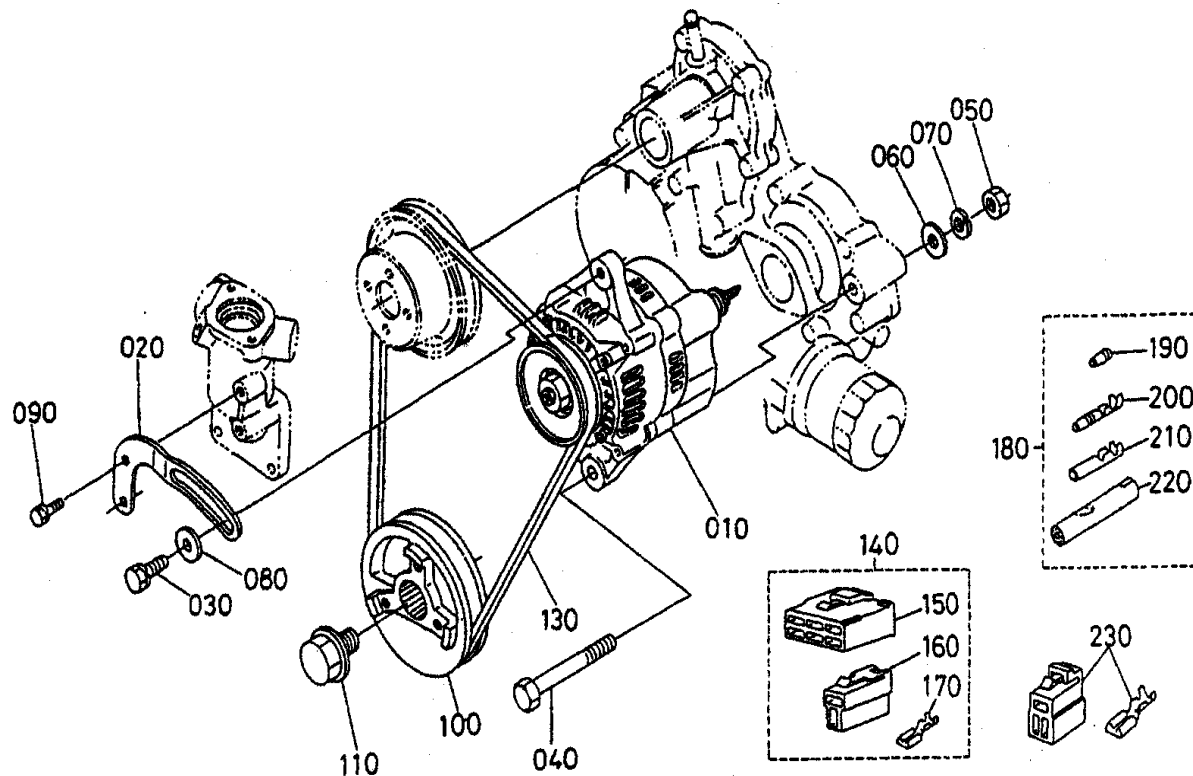
KUBOTA V-1505 — FUEL PUMP (MECHANICAL) ASSY.

FUEL PUMP (MECHANICAL) ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1628552032	ASSEMBLY PUMP, FUEL	1	
020	1626452140	GASKET, FUEL PUMP	1	
030	0205650060	NUT	2	
040	0451260060	WASHER, SPRING	2	

KUBOTA V-1505 — ALTERNATOR AND PULLEY ASSY.

ALTERNATOR AND PULLEY ASSY.



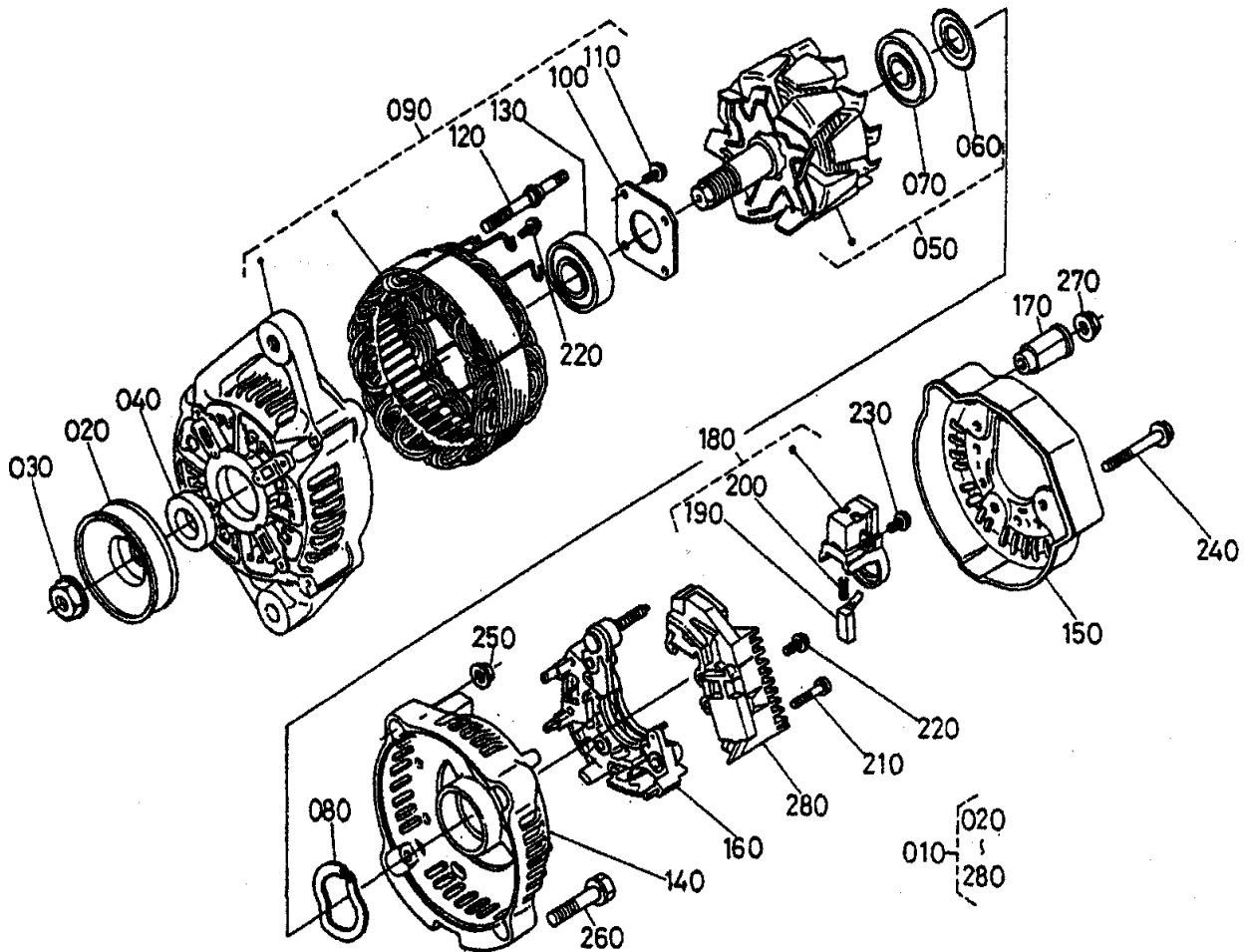
KUBOTA V-1505 — ALTERNATOR AND PULLEY ASSY.

ALTERNATOR AND PULLEY ASSY.

NO.	PART NO.	PART NAME	QTY.	REMARKS
010	1624164010	ASSEMBLY ALERNATOR	1	12V/40A
020	1624164420	STAY, DYNAMO	1	
030	0112350830	BOLT	1	
040	0117351085	BOLT	1	
050	0217650100	NUT	1	
060	0401150100	WASHER, PLAIN	1	
070	0451260100	WASHER, SPRING	1	
080	0401560080	WASHER, PLAIN	1	
090	0102350616	BOLT	1	
100	1624975280	PULLEY, FAN DRIVE	1	
110	1624191020	BOLT, FAN DRIVE	1	
130	1628297010	V BELT	1	37.5 IN.
140	1988365830	ASSEMBLY COUPLER	1	
150	1987265840	CONNECTOR	1	
160	1987265880	CONNECTOR	1	
170	1923765910	TERMINAL	7	
180	1926865780	ASSEMBLY TERMINAL	1	
190	6827165910	TERMINAL	1	
200	6827165920	SLEEVE	1	
210	1926865930	TERMINAL	1	
220	1926865870	SLEEVE	1	
230	1625965830	ASSEMBLY COUPLER, LOCK	1	

KUBOTA V-1505 — ALTERNATOR (COMP. PARTS) ASSY.

ALTERNATOR (COMONENT PARTS) ASSY.



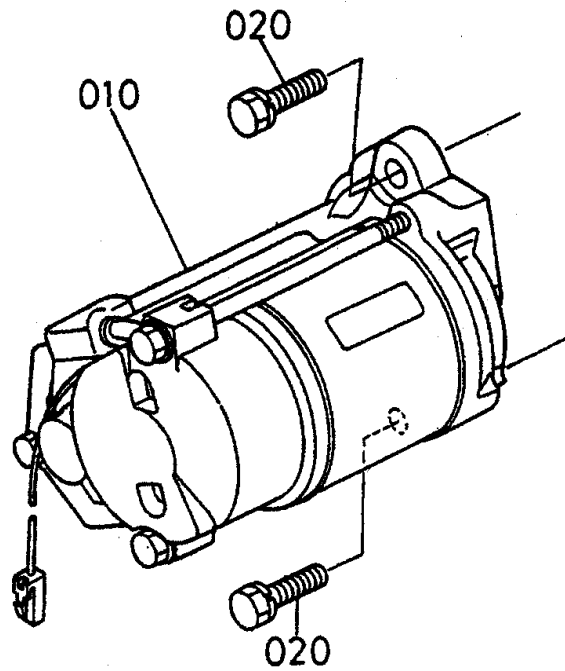
KUBOTA V-1505 — ALTERNATOR (COMP. PARTS) ASSY.

ALTERNATOR(COMPONENT PARTS) ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624164010	ASSEMBLY ALERNATOR	1	
020	1588164110	PULLEY, DYNAMO	1	
030	1588192010	NUT	1	
040	1588164150	COLLAR	1	
050	1588164040	ROTOR	1	
060	1588164800	COVER, BEARING	1	
070	1588164770	BEARING, BALL	1	
080	1588164810	WASHER, THRUST	1	
090	1588164020	FRAME, DRIVE END	1	
100	1588184710	PLATE, RETAINER	1	
110	1588193010	SCREW, ROUND HEAD	4	
120	1588164260	BOLT, THROUGH	2	
130	1588164780	BEARING, BALL	1	
140	1624164060	FRAME, END	1	
150	1624164230	COVER, END	1	
160	1624164850	ASSEMBLY RECTIFIER	1	
170	1624164900	BUSH, INSULATION	1	
180	1588164310	HOLDER, BRUSH	1	
190	1588164090	BRUSH	2	
200	1588164330	SPRING, BRUSH	2	
210	1588193020	SCREW, ROUND HEAD	2	
220	1588193030	SCREW, ROUND HEAD	6	
230	1588193040	SCREW, ROUND HEAD	1	
240	1588191040	BOLT	3	
250	1588192020	NUT	2	
260	1588191050	BOLT	2	
270	1418292030	NUT	1	
280	1588164600	ASSEMBLY REGULATOR	1	

KUBOTA V-1505 — STARTER ASSY.

STARTER ASSY.



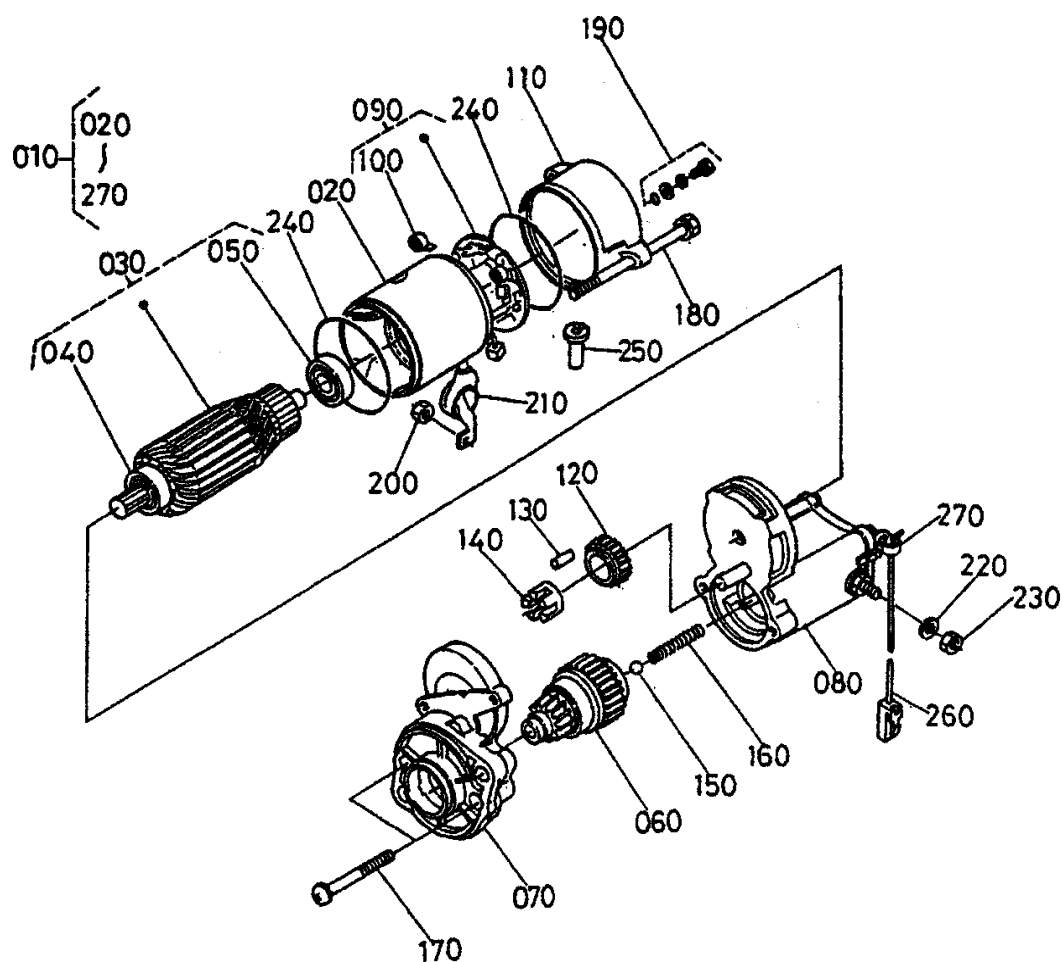
KUBOTA V-1505 — STARTER ASSY.

STARTER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	2756063010	ASSEMBLY STARTER	1	
020	0112350830	BOLT	2	

KUBOTA V-1505 — STARTER (COMPONENT PARTS) ASSY.

STARTER (COMPONENT PARTS) ASSY.



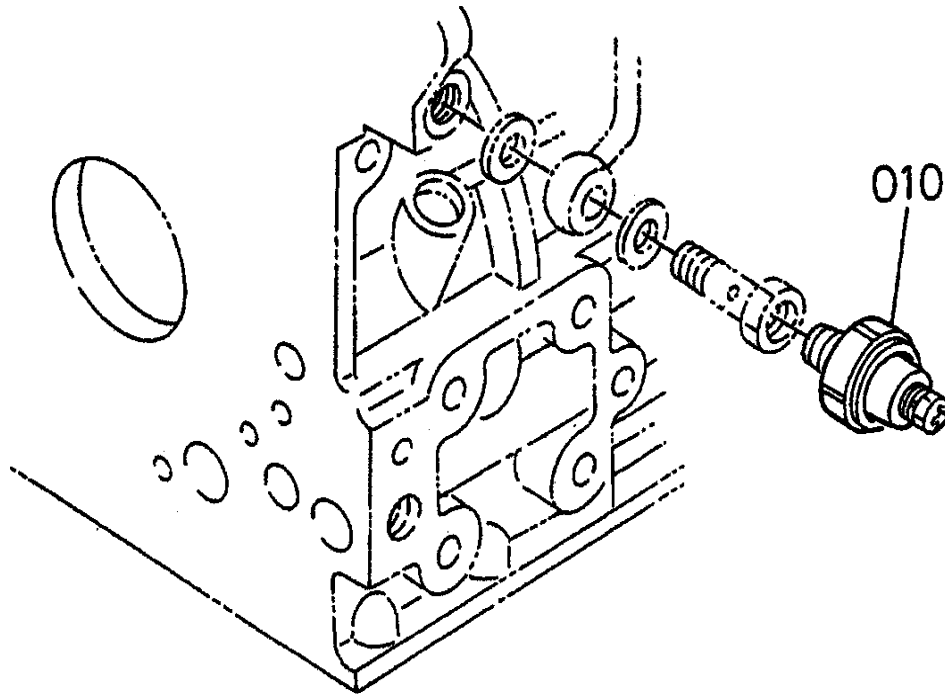
KUBOTA V-1505 — STARTER (COMPONENT PARTS) ASSY.

STARTER (COMPONENT PARTS) ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	2756063010	ASSEMBLY STARTER	1	
020	3756063080	ASSEMBLY YOKE	1	
030	1146063070	ARMATURE	1	
040	1146063500	BEARING	1	
050	1146063530	BEARING	1	
060	1628563040	ASSEMBLY CLUTCH	1	
070	1628563030	ASSEMBLY HOUSING	1	
080	1661163020	ASSEMBLY SWITCH, MAGNETIC	1	
090	1147063380	ASSEMBLY HOLDER, BRUSH	1	
100	1146063390	SPRING, BRUSH	4	
110	1628563200	ASSEMBLY FRAME, END	1	
120	1146063270	GEAR	1	
130	1921263100	ROLLER	5	
140	1146063110	RETAINER	1	
150	1921297130	BALL	1	
160	1146063120	SPRING	1	
170	1146093310	BOLT	2	
180	1146063320	BOLT, THROUGH	2	
190	1551163760	ASSEMBLY BOLT	2	
200	1628592010	NUT, HEXAGON	1	
210	1661163450	COVER	1	
220	1380194100	WASHER, SPRING	1	
230	1661192020	NUT, HEXAGON	1	
240	1551196660	O RING	2	
250	1628563570	PIPE, DRAIN	1	
260	1661163660	CORD, STOP SOLENOID	1	
270	1661263100	BAND, COVER	1	

KUBOTA V-1505 — OIL SWITCH/THERMO AND PLUG ASSY.

OIL SWITCH/THERMOMETER AND PLUG ASSY.



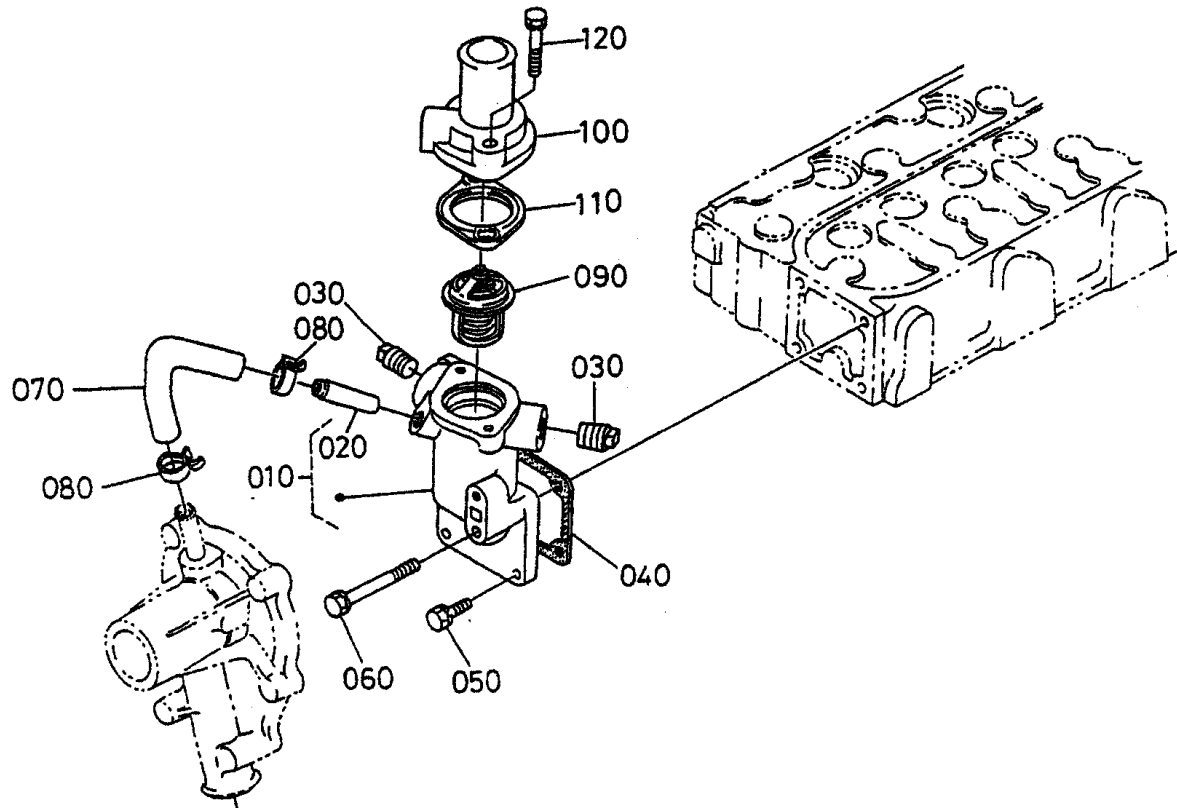
KUBOTA V-1505 — OIL SWITCH/THERMO AND PLUG ASSY.

OIL SWITCH/THERMOMETER AND PLUG ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1584139010	SWITCH, OIL	1	

KUBOTA V-1505 — WATERFLANG AND THERMOSTAT ASSY.

WATER FLANGE AND THERMOSTAT ASSY.



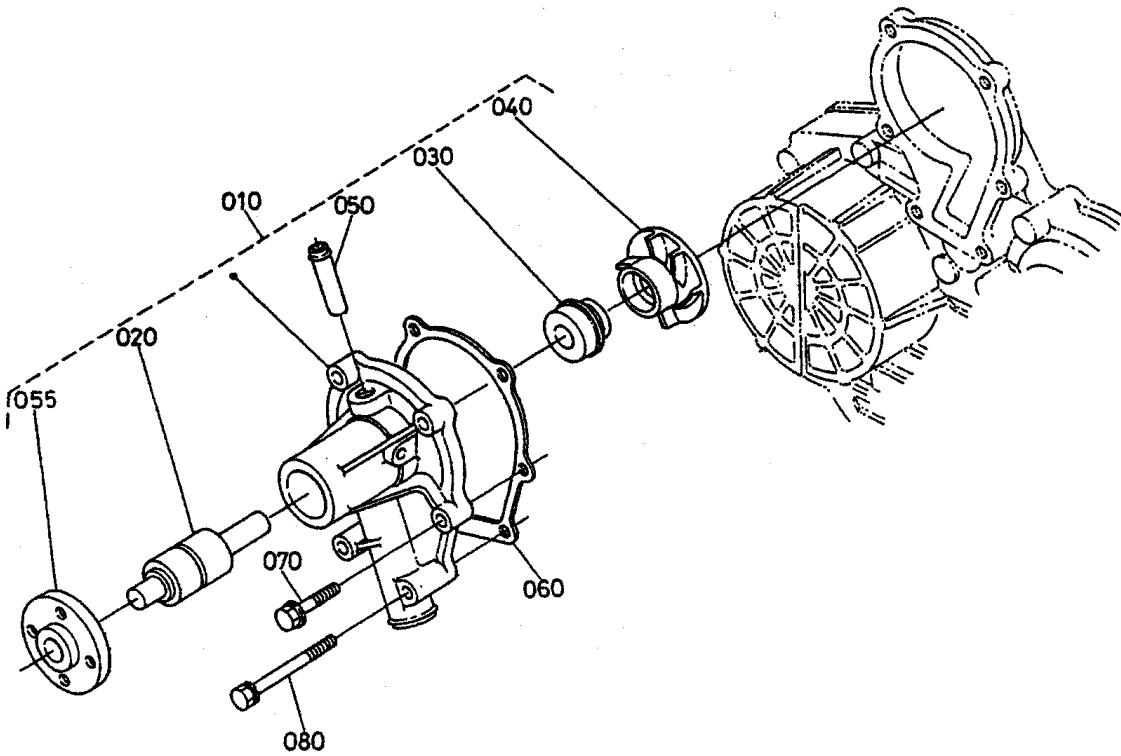
KUBOTA V-1505 — WATERFLANG AND THERMOSTAT ASSY.

WATER FLANGE AND THERMOSTAT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1661372700	COMP. FLANGE, WATER	1	
020	1624173370	PIPE, WATER RETURN	1	
030	1929896020	PLUG	2	
040	1626472920	GASKET, WATER FLANGE	1	
050	0102350616	BOLT	3	
060	0102350655	BOLT	1	
070	1624173350	PIPE, WATER RETURN	1	
080	1624173360	BAND, PIPE	2	
090	1943473010	ASSEMBLY THERMOSTAT	1	
100	1621973260	COVER, THERMOSTAT	1	
110	1531373270	GASKET, THERMOSTAT	1	
120	0112350835	BOLT	2	

KUBOTA V-1505 — WATER PUMP ASSY.

WATER PUMP ASSY.



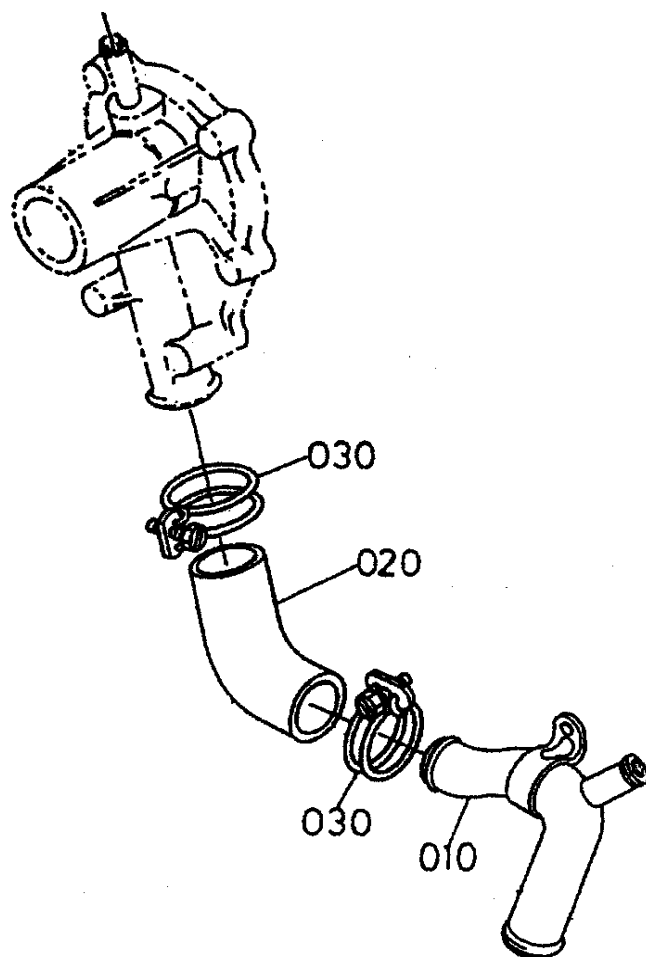
KUBOTA V-1505 — WATER PUMP ASSY.

WATER PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624173032	ASSEMBLY PUMP, WATER	1	
020	1624173550	BEARING	1	
030	1624173052	ASSEMBLY SEAL, MECHANICAL	1	
040	1624173510	IMPELLER, WATER PUMP	1	
050	1624173340	PIPE, WATER RETURN	1	
055	1624173520	FLANGE, WATER PUMP	1	
060	1626173430	GASKET, WATER PUMP	1	
070	0175450625	BOLT, FLANGE	4	
080	0102350680	BOLT	2	

KUBOTA V-1505 — WATER PIPE ASSY.

WATER PIPE ASSY.

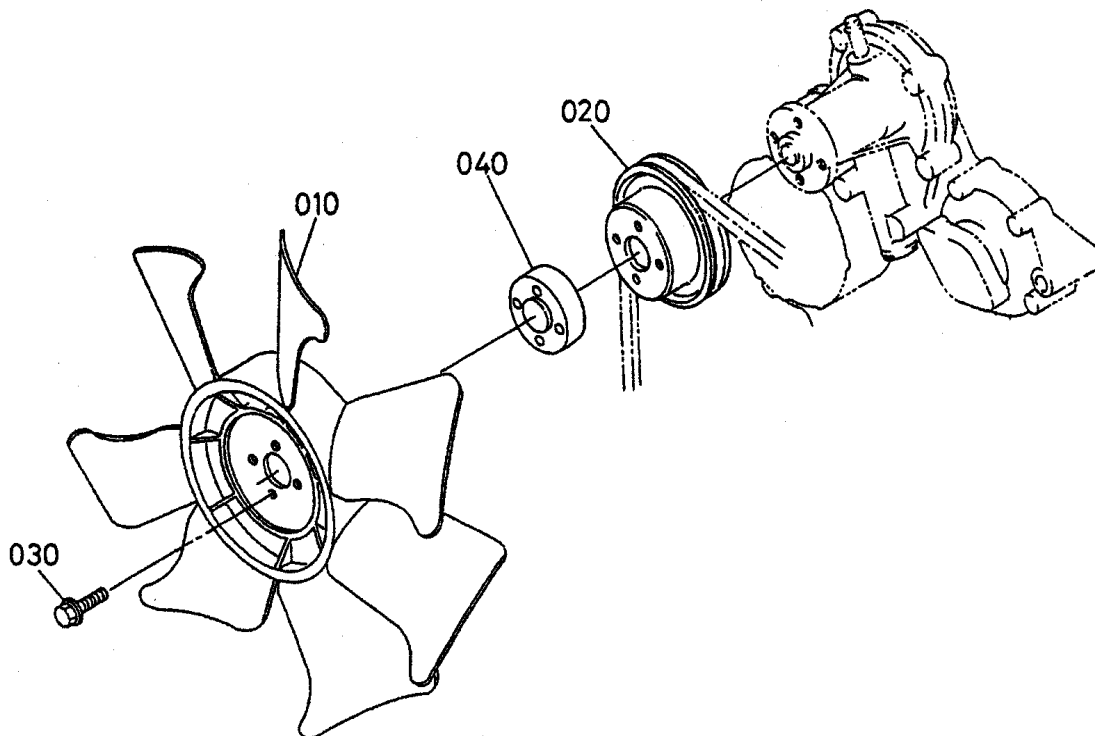


KUBOTA V-1505 — WATER PIPE ASSY.

WATER PIPE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624172860	PIPE, WATER	1	
020	1624172870	PIPE, WATER	1	
030	3620082720	CLAMP	2	

FAN ASSY.



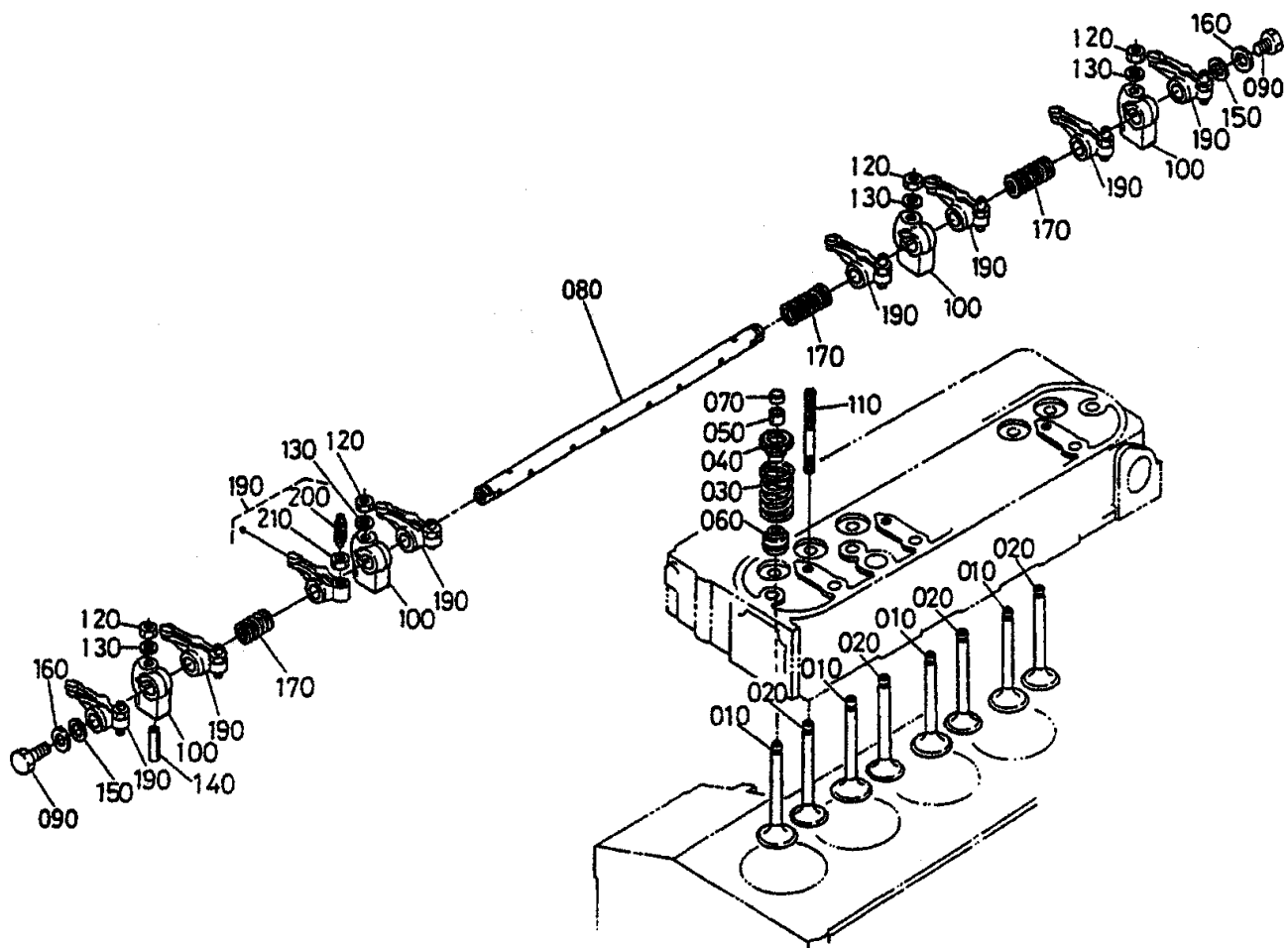
KUBOTA V-1505 — FAN ASSY.

FAN ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1629274110	FAN	1	
020	1624174250	PULLEY, FAN	1	
030	0175450820	BOLT, FLANGE	4	
040	1587674150	COLLAR, FAN	1	

KUBOTA V-1505 — VALVE AND ROCKER ARM ASSY.

VALVE AND ROCKER ARM ASSY.



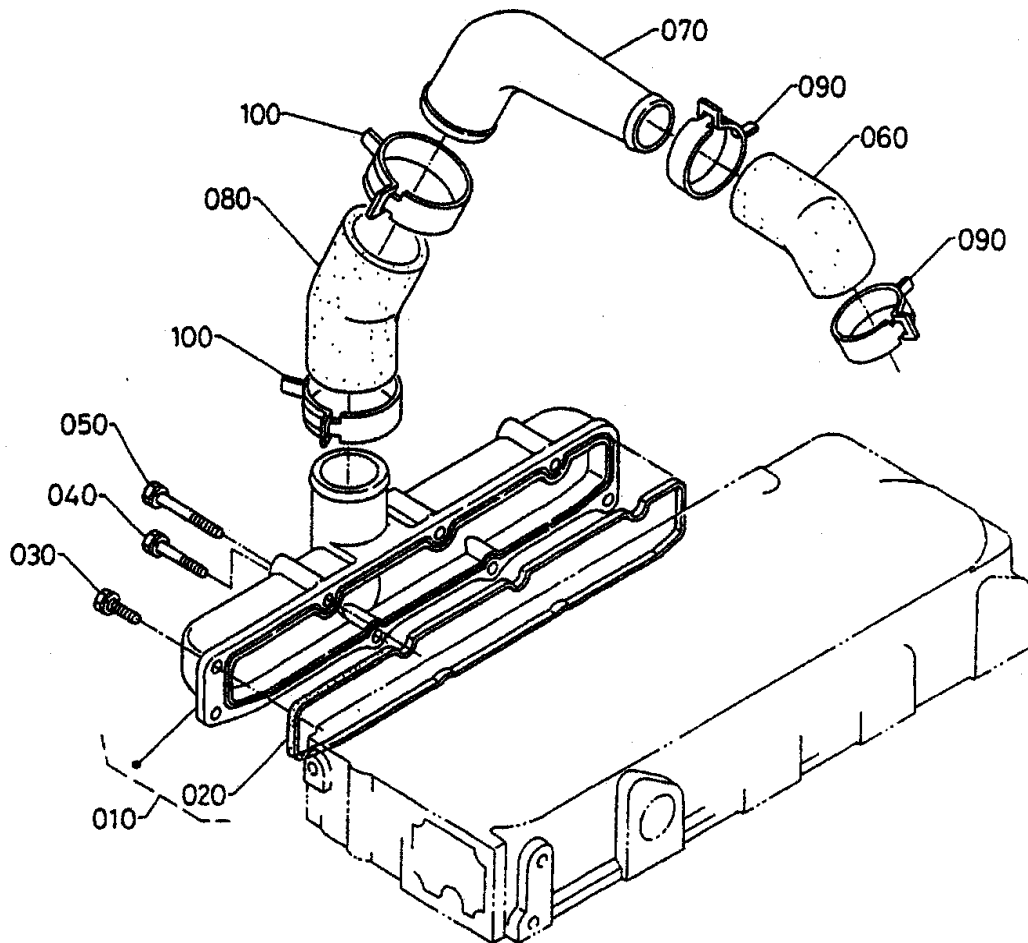
KUBOTA V-1505 — VALVE AND ROCKER ARM ASSY.

VALVE AND ROCKER ARM ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624113110	VALVE, INLET	4	
020	1629913120	VALVE, EXHAUST	4	
030	1526113240	SPRING, VALVE	8	
040	1624113330	RETAINER, VALVE SP.	8	
050	1526113360	COLLET, VALVE SPRING	8	 SET
060	1001013150	SEAL, VALVE STEM	8	
070	1624113280	CAP, VALVE	8	
080	1624114264	SHAFT, ROCKER ARM	1	
090	0102350610	BOLT	2	
100	1624114350	BRACKET, ROCKER ARM	4	
110	1624114410	STUD	4	
120	1526192010	NUT	4	
130	1526194010	WASHER, PLAIN	4	
140	0541100428	PIN, SPRING	1	
150	1624114430	WASHER, R- ARM, SHAFT	2	
160	1584194022	WASHER, PLAIN	2	
170	1624114310	SPRING, ROCKER ARM	3	
190	1624114032	ASSEMBLY ROCKER ARM	8	
200	1624114230	SCREW, ADJUSTING	8	
210	1624114240	NUT	8	

KUBOTA V-1505 — INLET MANIFOLD ASSY.

INLET MANIFOLD ASSY.



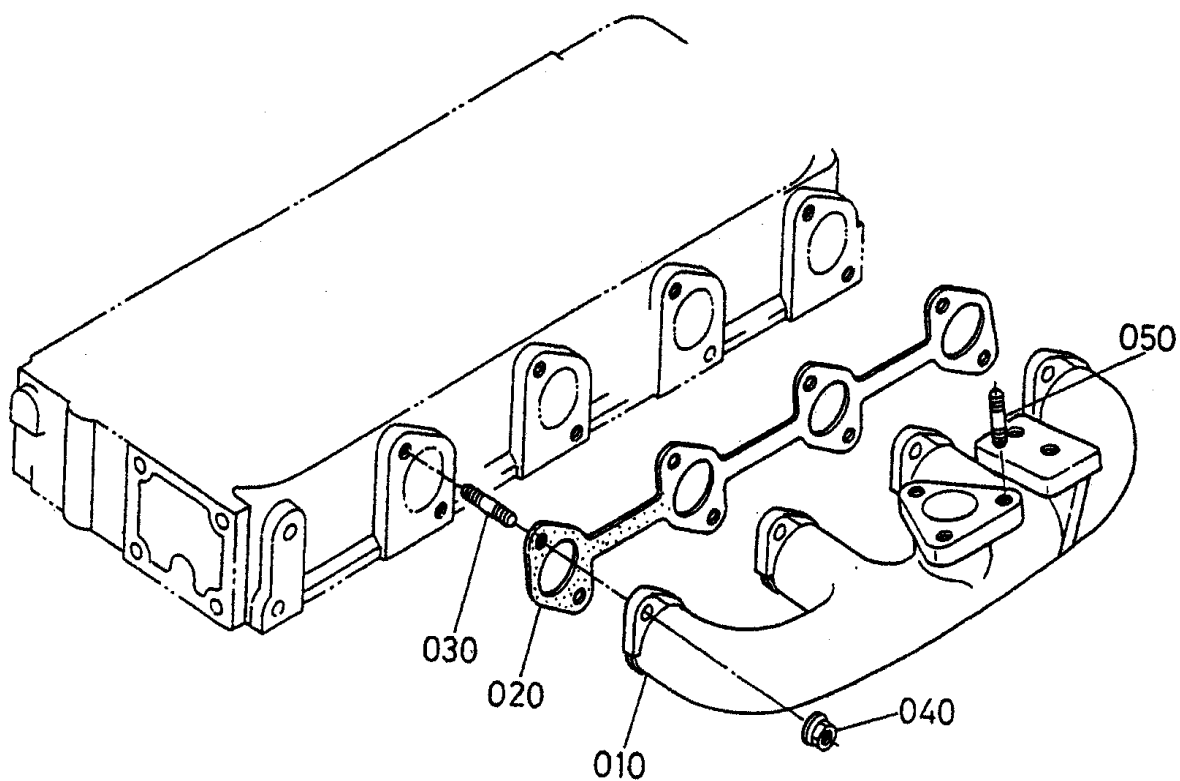
KUBOTA V-1505 — INLET MANIFOLD ASSY.

INLET MANIFOLD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624111770	ASSEMBLY MANIFOLD, INLET	1	
020	1624111820	GASKET, IN- MANIFOLD	1	
030	0102350618	BOLT	3	
040	0102350630	BOLT	2	
050	0102360650	BOLT	3	
060	1624111630	PIPE, INLET	1	
070	1624111640	PIPE, INLET	1	
080	1624111670	PIPE, INLET	1	
090	1624172970	BAND, PIPE	2	
100	1624111720	BAND, PIPE	2	

KUBOTA V-1505 — EXHAUST MANIFOLD ASSY.

EXHAUST MANIFOLD ASSY.



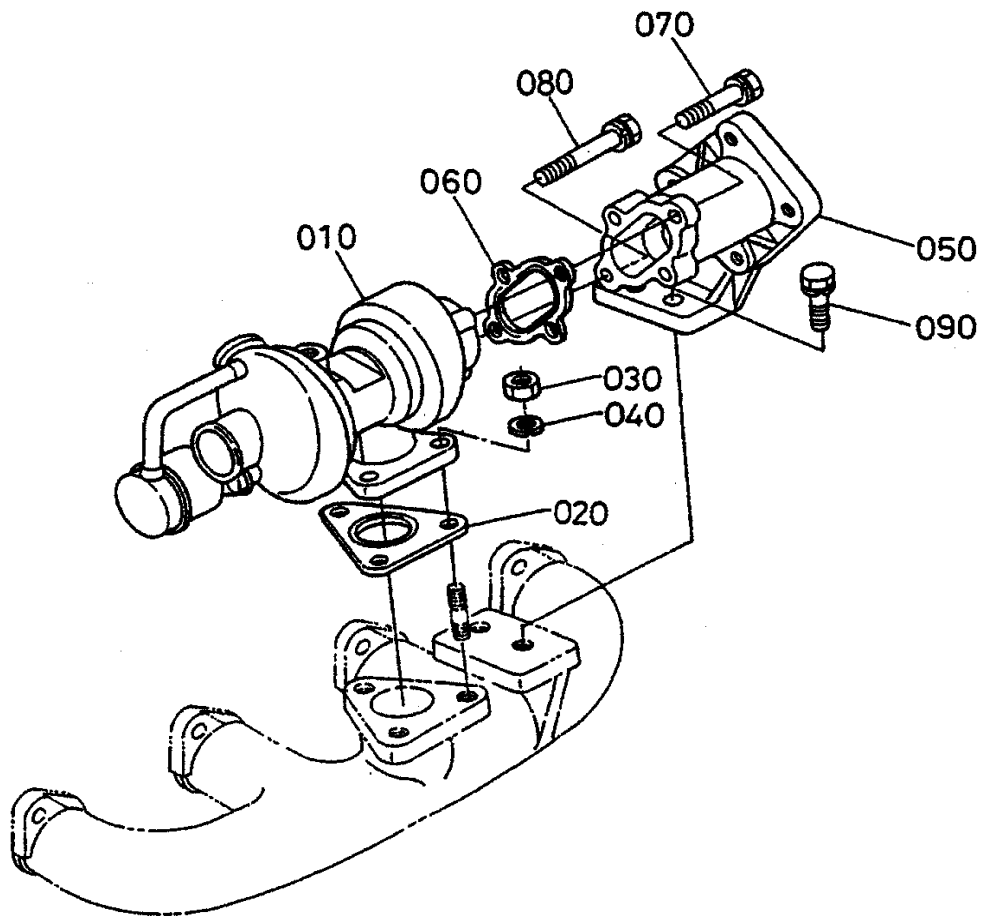
KUBOTA V-1505 — EXHAUST MANIFOLD ASSY.

EXHAUST MANIFOLD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624112310	MANIFOLD, EXHAUST	1	
020	1629912360	GASKET, EX- MANIFOLD	1	
030	1624292490	STUD	8	
040	1627192010	NUT	8	
050	0151360820	STUD	3	

KUBOTA V-1505 — TURBO CHARGER ASSY.

TURBO CHARGER ASSY.



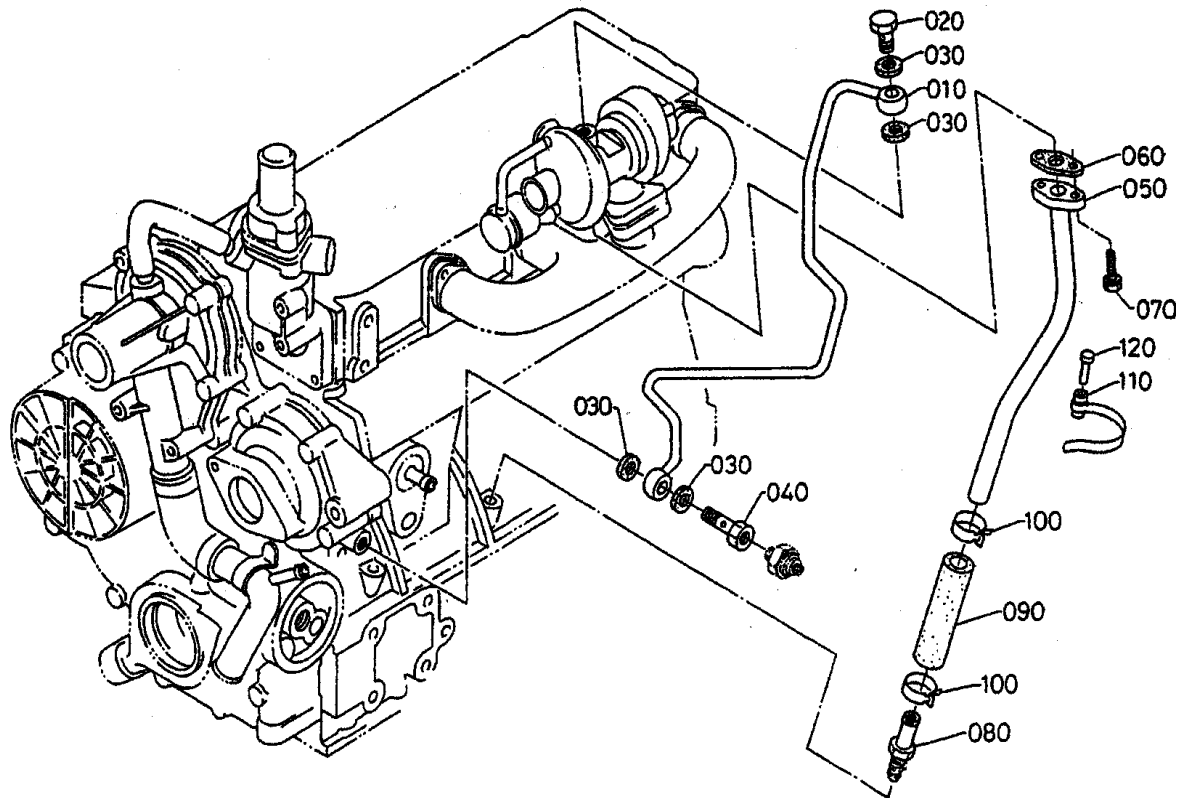
KUBOTA V-1505 — TURBO CHARGER ASSY.

TURBO CHARGER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1629217010	ASSEMBLY TURBO CHARGER	1	
020	1629917100	GASKET	1	
030	0215650080	NUT	3	
040	0451260080	WASHER, SPRING	3	
050	1755412320	FLANGE, MUFFLER	1	
060	1629917110	GASKET	1	
070	0112350830	BOLT	3	
080	0112350845	BOLT	1	
090	0112350822	BOLT	2	

KUBOTA V-1505 — OIL PIPE (TURBO CHARGER) ASSY.

OIL PIPE (TURBO CHARGER) ASSY.



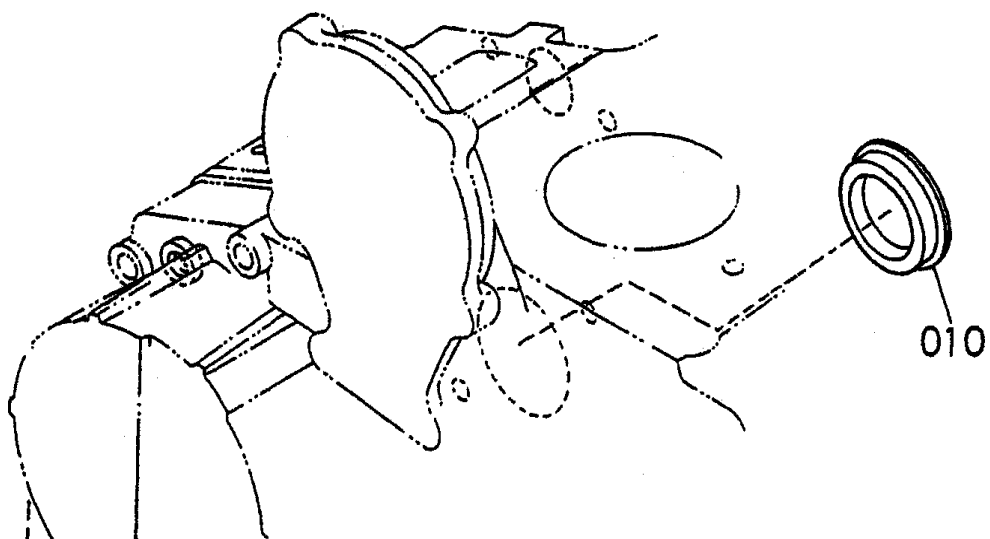
KUBOTA V-1505 — OIL PIPE (TURBO CHARGER) ASSY.

OIL PIPE (TURBO CHARGER) ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1624133210	COMP. PIPE, OIL	1	
020	1624195800	BOLT, EYE JOINT	1	
030	1547196650	GASKET	4	
040	1624133360	BOLT, EYE JOINT	1	
050	1624133220	COMP. PIPE, OIL	1	
060	1629933670	GASKET	1	
070	0102350620	BOLT	3	
080	1624133232	COMP. PIPE, OIL	1	
090	1624133240	PIPE, OIL	1	
100	0931888200	CLAMP, HOSE	2	
110	1544133520	CLAMP, PIPE	1	
120	3343082760	PIN, BAND	1	

KUBOTA V-1505 — HYDRAULIC PUMP ASSY.

HYDRAULIC PUMP ASSY.



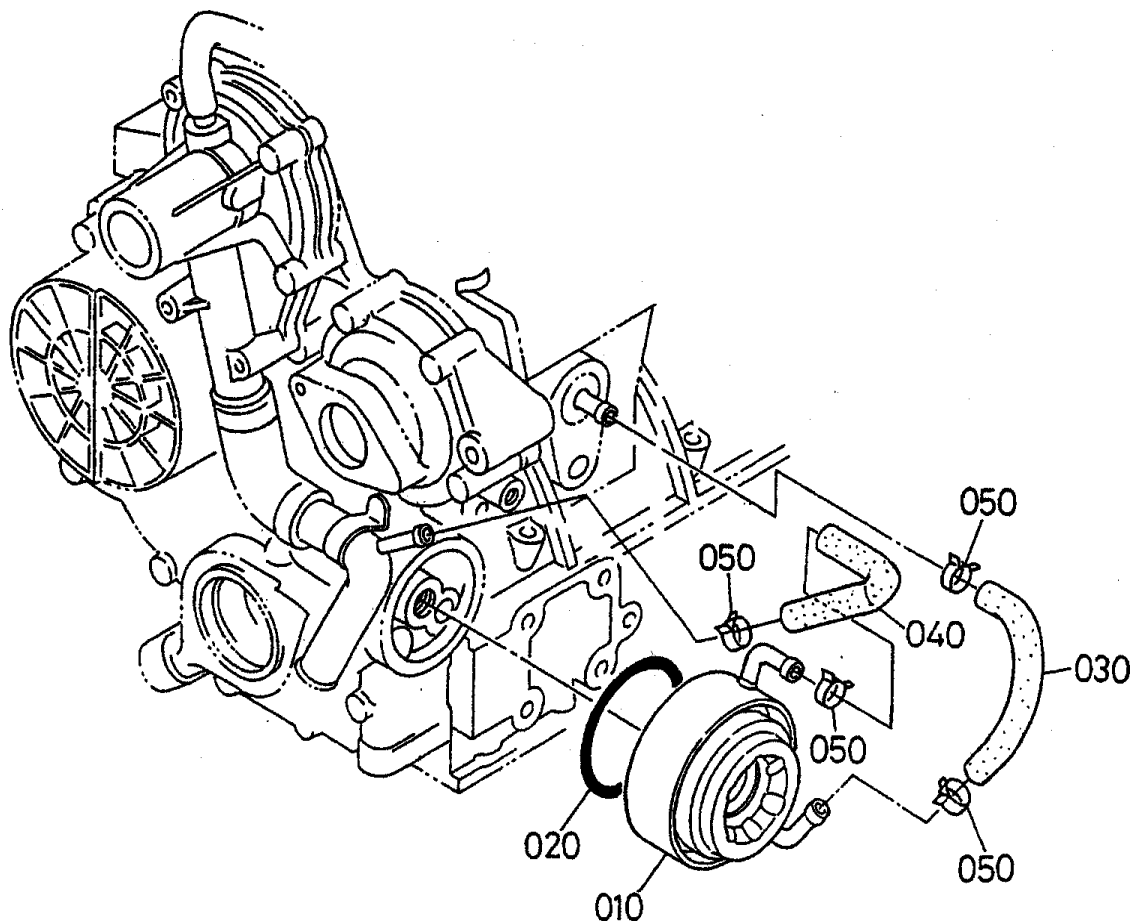
KUBOTA V-1505 — HYDRAULIC PUMP ASSY.

HYDRAULIC PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1626483152	COVER, HYDRAULIC PUMP	1	

KUBOTA V-1505 — OIL COOLER ASSY.

OIL COOLER ASSY.



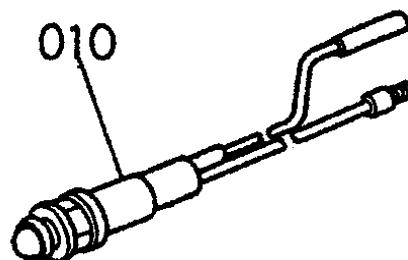
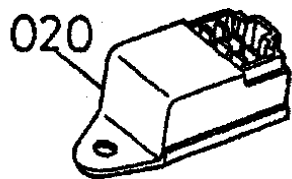
KUBOTA V-1505 — OIL COOLER ASSY.

OIL COOLER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1629937010	ASSEMBLY COOLER, OIL	1	
020	0481450600	O RING	1	
030	1624137150	PIPE COOLER, OIL	1	
040	1624173350	PIPE, WATER RETURN	1	
050	1624173360	BAND, PIPE	4	

KUBOTA V-1505 — GLOW PLUG/LAMP AND TIMER ASSY.

GLOW PLUG/LAMP AND TIMER ASSY.



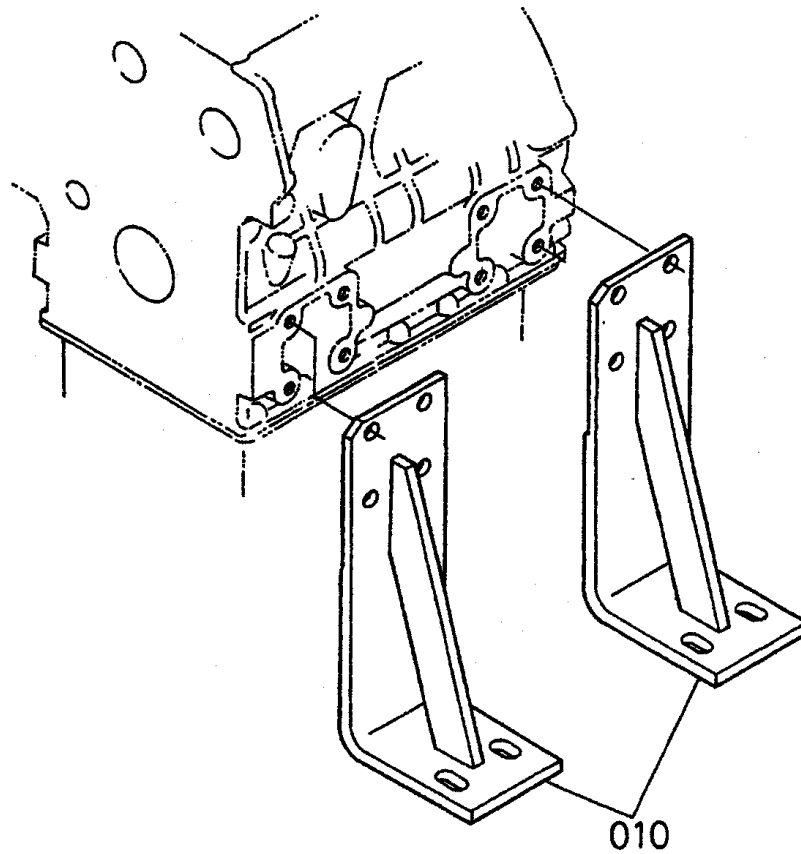
KUBOTA V-1505 — GLOW PLUG/LAMP AND TIMER ASSY.

GLOW PLUG/LAMP AND TIMER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1540364490	LAMP, INDICATOR	1	
020	1569465990	TIMER, GLOW LAMP	1	

KUBOTA V-1505 — ENGINE STAND ASSY.

ENGINE STAND ASSY.



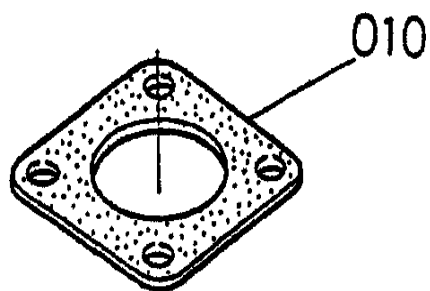
KUBOTA V-1505 — ENGINE STAND ASSY.

ENGINE STAND ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1661606110	STAND, ENGINE	4	

KUBOTA V-1505 — ACCESSORY AND SERVICE PARTS ASSY.

ACCESSORIES AND SERVICE PARTS ASSY.

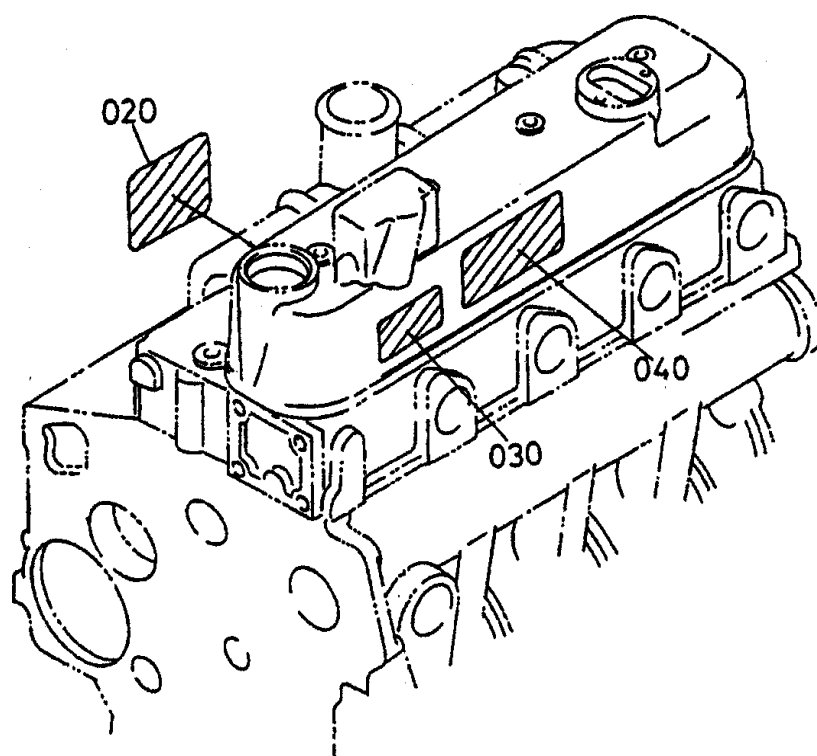


KUBOTA V-1505 — ACCESSORY AND SERVICE PARTS ASSY.

ACCESSORIES AND SERVICE PARTS ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1526312370	GASKET, MUFFLER NA	1	

LABEL AND OPERATOR'S MANUAL ASSY.



LABEL AND OPERATOR'S MANUAL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
020	1629287112	NAME PLATE, ENGINE	1	
030	1942687903	LABEL	1	
040	1942687880	LABEL, INSTRUCTION	1	

PAYMENT TERMS

Terms of payment for parts are net 10 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The part numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.

4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.
5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
 - a. Obsolete parts. (If an item is listed in the parts price book as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for 5 working days from notification, pending instructions. If a reply is not received within 5 days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$20.00 to \$50.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable here under for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. A part from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

[illegible]

OPERATION MANUAL

HERE'S HOW TO GET HELP

*PLEASE HAVE THE MODEL AND SERIAL NUMBER
ON-HAND WHEN CALLING*

PARTS DEPARTMENT

800-427-1244 or 310-537-3700

FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE

800-478-1244 or 310-537-3700

FAX: 310- 537-4259

WARRANTY DEPARTMENT

888-661-4279, or 310-661-4279

FAX: 310- 537-1173

MAIN

800-421-1244 or 310-537-3700

FAX: 310-537-3927



MULTIQUIP INC.

18910 WILMINGTON AVE.
CARSON, CALIFORNIA 90746
310-537-3700
800-421-1244
FAX: 310-537-3927

E-mail: mq@multiquip.com • **www:** www.multiquip.com

Atlanta • Boise • Dallas • Houston • Newark
Montreal, Canada • Manchester, UK
Rio De Janeiro, Brazil • Guadalajara, Mexico

PARTS DEPARTMENT:

800-427-1244
FAX: 800-672-7877

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE:

800-478-1244
FAX: 310-631-5032