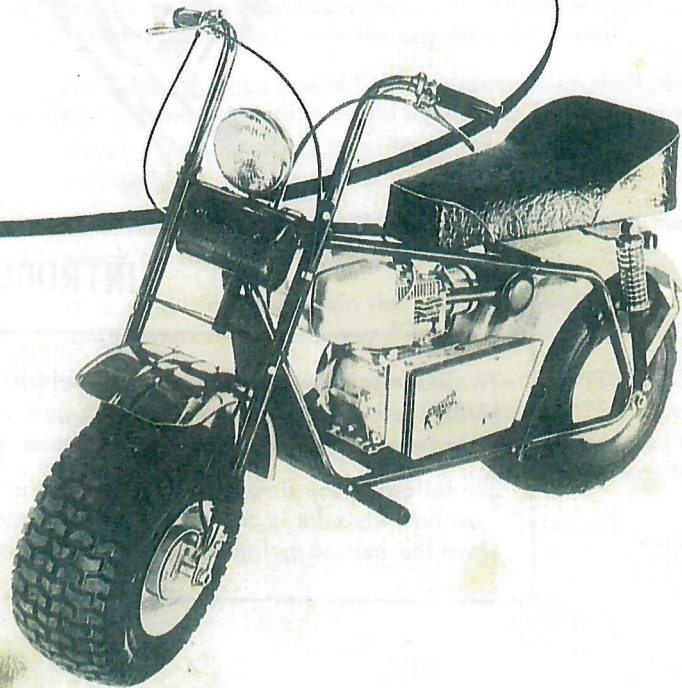


# KITS BY HEALD<sup>®</sup>

**OWNERS MANUAL**

**TRAIL BIKE**

All Models





## INTRODUCTION

Welcome to a new world of fun and relaxation. By your purchase of the Heald Trail Bronc, you will enjoy the fun and new experience of being able to reach those "hard-to-get-to" places on a rugged and well-engineered vehicle.

By following the simple step by step instructions, you will also be able to understand just how the bike is constructed and operates, thereby making it easy for you to perform the routine maintenance that is required on all such vehicles.

## ASSEMBLY NOTES

### TOOLS

Your Trail Bike can be assembled with two 10" adjustable wrenches, a pair of pliers, a regular screwdriver, Phillips screwdriver, Allen wrenches (3/32, 1/8" and 5/32"). As with any mechanical project, a set of good tools will make the job much easier. A set of socket wrenches with ratchet handle and 7/16", 1/2", 9/16" and 15/16" open end or box wrenches will be more convenient to use and make construction more enjoyable.

### UNPACKING THE KIT

Unpack the kit carefully, check the parts against the Parts List and the large Pictorial. The hardware is numbered in the Parts List with corresponding numbers adjacent to the part in the Parts Pictorial. Separate the hardware in groups by size: 1/4", 5/16", etc.

### CONSTRUCTION

A logical step by step sequence is provided to make construction of your bike simple and easy. Read each step carefully and follow any additional instructions that may be given.

First, locate all parts that are necessary to complete each step. Do not use lockwashers unless called for as they are not necessary when a locknut is used. If there is a question on what size hardware to use, compare the actual part with the numbered part as shown on the Parts Pictorial. All hardware is drawn to actual size. If reference is made to a particular detail there will be additional instructions relating to the sequence of assembly.

For example, when assembling the transmission shaft, the first (1) step (in detail) would be to install the retaining rings. The second (2) thing to do would be to install a collar etc.

Complete and check off all steps in each detail and then check off the main step before proceeding.

It is suggested you retain the Engine Manual, Pictorial and Owners Manual in your files for future reference.

AFTER CHECKING THE PARTS, START WITH STEP NO. 1 ON THE LARGE PICTORIAL. NOTE: If you have purchased accessories they should be mounted as you assemble the Bike. Refer to accessory sheet for instructions.

## CHECKOUT PROCEDURE

Check off the following list before starting engine.  
(See Large Pictorial).

- ( ) 1. Have you filled the engine crankcase with the proper oil?
- ( ) 2. Does the throttle control return freely to idle position?
- ( ) 3. Has all hardware been tightened securely?
- ( ) 4. Have tires been deflated to 5 pounds pressure?
- ( ) 5. Have you completely read operating instructions?

### STARTING ENGINE

Position the front wheel of the bike against a solid wall.

- ( ) Place a wooden or cement block under the rear part of the frame so that the rear wheel turns freely.
- ( ) Fill gas tank with regular grade gasoline.  
AVOID SPILLING. DO NOT OVER-FILL.

- ( ) Turn choke all the way on.
- ( ) Pull starter rope one or two times.
- ( ) Turn choke approximately 1/2 way.
- ( ) Pull starter rope.
- ( ) When engine starts, allow it to run for a few minutes and then push choke all the way off.
- ( ) Slowly rotate throttle control to full counter clockwise position. As the throttle control is advanced, the engine should speed up and engage the clutch, drive system and the rear wheel.
- ( ) Release throttle control and squeeze brake handle. Rear wheel should stop turning.
- ( ) Adjust the idle adjustment screw (see Carburetor Detail) so the engine idles just below clutch engagement.

NOTE: See Engine Owners Manual for other carburetor adjustments.

This completes the construction of your Trail Bike. Be sure to read the operating instructions before attempting your first ride.

## SAFETY PRECAUTIONS

- DO NOT RUN ENGINE INDOORS.
- DO NOT FILL GAS TANK WHEN ENGINE IS RUNNING.
- TAKE YOUR TIME AND LEARN HOW TO HANDLE BIKE.
- OPERATE YOUR BIKE AT SENSIBLE SPEEDS.
- ALWAYS GIVE INSTRUCTION BEFORE ALLOWING OTHERS TO OPERATE.
- BE CONSIDERATE OF OTHERS ON THE TRAIL.

## OPERATING INSTRUCTIONS

Your bike has been engineered to give you many hours of fun and trouble-free service. In order for you to realize all its potential, you should take the time to fully understand its complete operation so that top performance can be maintained.

For your first ride, find a large open area so you don't have to worry about running into any obstacles. Start the engine and slowly advance the throttle. Turning the throttle too fast can cause the bike to upset, sometimes resulting in personal injury.

As the throttle is advanced, the engine shaft will speed up causing the outer clutch side to slide in and engage the belt. The drive ratio from the engine to the driven pulley is approximately 3 to 1 at this point. As the engine shaft continues to turn faster the clutch side will slide in making the pulley diameter larger. This in turn causes the driven pulley to open up and get smaller in diameter. As long as there is not too much load applied to the rear wheel this process will continue until the driven pulley is fully open (approximately 1.1 to 1 ratio). When a heavier load is applied to the rear wheel, such as

climbing a hill, there will be reverse pressure applied to the driven pulley due to the 3 tapered races and nylon slides; this pressure will cause the driven pulley to close or get larger in diameter. This fully automatic torque sensitive drive system always keeps you in the correct drive ratio no matter what the terrain.

Power is transmitted from the transmission shaft to the rear wheel through a nine-tooth sprocket and heavy #40 chain, to the sixty tooth rear sprocket. As the brake drum is on the transmission shaft, you, in effect, have power braking due to the 6.6 to 1 sprocket ratio (4 to 1 on VT-2 & VT-2C). While you are riding, release the throttle control and gently apply the brake. Applying the brake too hard can lock the rear wheel causing a skid and possible upset.

You may want to experiment with tire pressure. The tires are shipped with approximately 20 pounds pressure. This is necessary to insure the initial rim seal on the tubeless tires. The recommended pressure that you should maintain for normal Trail riding is 5 pounds. If you are riding mostly on hard surfaces, you may want to increase this pressure to provide easier steering. CAUTION: Too

much pressure in the rear tire can cause it to hit the fender. If you are riding mostly in sand, snow or on rough trails, you may want to go lower than 5 pounds in order to provide a smoother ride and more traction. Do not go lower than 3 pounds as this may cause breakage of the rim seal and a flat tire.

You may also want to experiment with different settings of the carburetor needle valves. Always adjust the high speed adjustment, then the low speed. Turn the needle valves in 1/8 turn increments in both directions until you have obtained the proper setting. Adjust the idle adjustment last so that the engine idles just below clutch engagement.

Continue to ride your bike out in the open until you are completely familiar with its operation.

## LICENSING

DO NOT OPERATE YOUR BIKE ON PUBLIC ROADS OR HIGHWAYS UNLESS YOU HAVE OBTAINED A LICENSE. Each state has different requirements that must

be met before you can obtain a license. It will be necessary to check with your local authorities to determine just what these requirements are. For example, some states require adequate lighting only; others require horns, front wheel brake, rear view mirror and helmet. In any case you must apply for a special permit at your license bureau stating that you have a self-constructed motor driven cycle with 7 horsepower (246 CC) engine or the horsepower and CC of the engine in your model. Do not use the words "mini-bike". Most states will require that you have the self-constructed bike inspected by your local law enforcement agency in order to certify that you have met all requirements.

#### TRANSPORTING BIKE

Your bike may be transported in your car trunk or station wagon. Remove the two bolts and slide the handle bars down. You should also drain out most of the gasoline to avoid spilling.

#### MAINTENANCE

Your Trail Bike has been engineered to provide many hours of trouble-free performance. Heavy duty compon-

ents are used throughout. Locknuts are provided in order to reduce the possibility of parts loosening due to vibration and rugged use. Simple preventive maintenance is required, however, to insure continued top performance and safety. A chart is provided to enable you to make systematic checks on each item throughout the life of your bike. It is a good practice to check to be sure that all hardware is tightened securely after each ride. Keep chain lubricated and tight. Lubricate the nylon buttons and inner hub on the driven pulley frequently.

If you have a problem with the engine, check with your local service representative. Do not attempt to modify or repair the engine, especially, do not try to defeat the governor as you will thereby void your warranty.

#### TIRES

Keep the tires inflated to the proper pressure. Nail punctures can be repaired just like any other tubeless tire. 1/2 cup sealing type anti-freeze can be injected to seal minor punctures or rim leaks. If there is any adjustment to be made on the tires, you must consult your local tire representative.

## ENGINE

After the first two hours of operation, drain the engine oil and refill with top quality detergent oil. Use only S.A.E. 30 for summer operation or S.A.E. 10W for winter operation. Always maintain oil level. The air cleaner should be cleaned and the oil changed every 25 hours of operation. Use only regular grade gasoline. Do not mix oil with gas.

## TORQUE CONVERTER

The Torque Converter probably receives more punishment than any other part of the bike. A few drops of oil or grease should be placed on the nylon buttons and inner hub of the driven pulley regularly. Clean and lubricate clutch driven hub, weight assembly and idler bushing every 25 hours.

## BELT

Keep the belt adjusted to the correct tension. Keep oil, grease and dirt off of the belt. Check pulley alignment regularly. With proper care the belt will provide approximately 100 hours operation.

## CHAIN

Keep chain well lubricated. Use regular oil or special chain dressing. If the chain becomes rusty and tends to kink, you should remove it and soak in oil overnight.

## BRAKE

Adjust the brake cable as necessary in order to maintain proper brake tension. Make sure brake band releases properly.

## THROTTLE

Keep throttle cable from being kinked or frayed. Make sure throttle returns to idle before starting engine. A drop of oil on throttle linkage may be necessary. If throttle sticks it may cause a serious upset.

## WHEEL BEARINGS

The wheel bearings are sealed and require no lubrication.



HOURS			MAINTENANCE CHECK LIST
5	10	25	
X			THROTTLE AND BRAKE CABLES FOR WEAR.
X			THROTTLE AND BRAKE CABLE WIRE STOPS FOR TIGHTNESS.
X			CHAIN TIGHTNESS EVERY 5 HOURS.
X			CHAIN AND SPROCKET ALIGNMENT.
X			CHECK OIL LEVEL. ADD AS REQUIRED.
X			OIL CHAIN - MORE OFTEN IF DRY.
X			LUBRICATE NYLON BUTTONS AND INNER HUB ON DRIVEN PULLEY.
	X		TIRE PRESSURE.
	X		TIGHTEN ALL ALLEN SCREWS.
		X	CLEAN AIR CLEANER.
		X	CLEAN AND REGAP SPARK PLUG TO .030".
		X	CHECK ALL MOUNTING HARDWARE FOR TIGHTNESS AND WEAR.
		X	DRAIN AND REPLACE ENGINE OIL AFTER FIRST 2 HOURS, THEN EVERY 25 HOURS THEREAFTER. ABOVE 32 DEGREES F. USE SAE 30, BELOW 32 DEGREES F. USE SAE 10W. OIL MUST BE CLASSIFIED FOR SERVICE MS. DO NOT OVER FILL.
		X	LUBRICATE FRONT SHOCK TUBES. (BINDING CAN CAUSE BREAKAGE)
		X	CLEAN AND LUBRICATE CLUTCH DRIVER HUB, WEIGHT ASSEMBLY AND IDLER BUSHING

## TROUBLE-SHOOTING CHART

DIFFICULTY  
ENGINE WILL NOT START.

- POSSIBLE CAUSE
- A. Stop switch shorted.
  - B. Out of gas.
  - C. Air cleaner dirty.
  - D. Spark plug fouling.
  - E. Carburetor out of adjustment.
  - F. Points or capacitor (in engine) defective.

**NOTE:**

Refer all engine service to your local authorized Tecumseh dealer listed in the yellow pages of the telephone directory.

ENGINE HARD TO START.

- A. Old gasoline or water in gasoline.
- B. Spark plug loose or dirty.
- C. Air cleaner dirty or wet.
- D. Carburetor out of adjustment.
- E. Points (in engine) out of adjustment.

ENGINE IDLES TOO SLOW.

- A. Air cleaner dirty.
- B. Carburetor out of adjustment.

ENGINE IDLES TOO FAST.

- A. Carburetor out of adjustment.
- B. Throttle grip binding.
- C. Throttle control cable sheathing end pulled out from bushing on throttle control of engine.

ENGINE OPERATES TOO HOT.

- A. Head fins clogged.
- B. Crankcase low on oil.

## DIFFICULTY

ENGINE MISSES.

ENGINE LACKS POWER.

ENGINE WILL NOT TURN OVER.

ENGINE RUNS A FEW MINUTES  
AND STOPS.

STARTER WILL NOT TURN ENGINE  
OVER (Electric Start Model Only).

ALTERNATOR BURNED OUT (Electric  
Start Model Only).

## POSSIBLE CAUSE

- A. Stop switch too close to plug.
- B. Spark plug porcelain dirty.
- C. Spark plug fouling.
- D. Carburetor out of adjustment.
- E. Points (in engine) out of adjustment.

- A. Air cleaner dirty.
- B. Spark plug dirty.
- C. Carburetor out of adjustment.

- A. Belt guard bracket mounting bolt loose and hitting clutch pulley.
- B. Engine allowed to run low on oil.

- A. Plugged air vent hole in gas cap.
- B. Engine low on oil.

- A. Battery needs charging.
- B. Check for loose connections or improper wiring.
- C. Check fuse and rectifier.
- D. Bad starter switch caused from excessive moisture in switch.

- A. Improper battery polarity connection (+ and -).
- B. Improper switch wiring.
- C. Stop switch wiring shorted to + (positive) battery wiring.
- D. Starter switch shorted from excessive moisture.

## DIFFICULTY

BELT CLUTCH SLIPS, SMOKES.

EXCESSIVE BELT WEAR.

BIKE HARD TO PUSH.

BIKE HARD TO STEER.

TRANSMISSION DOES NOT  
SHIFT PROPERLY.

TRANSMISSION SHAFT WEAR  
UNDER BEARING.

TRANSMISSION BRACKET BENDS  
OR BEARING BREAKS.

SHOCK TUBES BIND.

BRAKE SLIPS TOO MUCH.

## POSSIBLE CAUSE

- A. Improper belt tension.
- B. Oil or grease on belt.

A. Pulleys not aligned properly.

A. Belt too tight.

A. Front tire underinflated.

B. Steering fork bronze bearings need light oiling.

C. Steering bolt too tight.

A. Improper belt tension.

B. Worn belt.

C. Clutch or driven pulley not lubricated.

A. Shaft rotating inside bearing, add "locktite" bearing compound between shaft and bearing inner race.

A. Foreign object has gone between chain and sprocket.

B. Chain too loose allowing chain to ride up on small sprocket teeth.

C. Sprockets out of alignment.

A. Spacing on front axle incorrect.

B. Needs cleaning and lubrication.

A. Moisture or oil on brake band.

B. Brake lever or cable out of adjustment.

DIFFICULTY	POSSIBLE CAUSE
BRAKE WILL NOT RELEASE.	<ul style="list-style-type: none"> <li>A. Brake cable sheathing end pulled out of control lever.</li> <li>B. Screw on brake lever too tight.</li> </ul>
BRAKE WILL NOT ENGAGE.	<ul style="list-style-type: none"> <li>A. Wire stop missing.</li> <li>B. Broken inner wire of brake cable.</li> </ul>
BRAKE CABLE BREAKAGE.	<ul style="list-style-type: none"> <li>A. Brake bolt not lined up properly.</li> <li>B. Lubricate brake bolt hole.</li> </ul>
THROTTLE DOES NOT OPERATE FREELY.	<ul style="list-style-type: none"> <li>A. Cable binding or pinched.</li> <li>B. Dirt under the throttle grip.</li> </ul>
THROTTLE GRIP OR CABLE BREAKAGE.	<ul style="list-style-type: none"> <li>A. Crimped outer sheath.</li> <li>B. Excessive turning pressure on throttle control.</li> </ul>
TIRE COMES LOOSE FROM WHEEL - (BREAKS RIM SEAL)	<ul style="list-style-type: none"> <li>A. Tire underinflated.</li> <li>B. Seal minor punctures and rim leaks by removing valve core and injecting 1/2 cup sealing type anti-freeze.</li> </ul>
CHAIN HAS EXCESSIVE WEAR.	<ul style="list-style-type: none"> <li>A. Needs lubrication.</li> <li>B. Chain-sprockets not aligned with each other.</li> <li>C. Chain too tight.</li> </ul>
CHAIN JUMPS OFF SPROCKETS.	<ul style="list-style-type: none"> <li>A. Chain-sprockets not aligned with each other.</li> <li>B. Chain too loose - transmission bracket moved.</li> </ul>

## SERVICE & WARRANTY PARTS

Parts which are returned to factory for either replacement under warranty or factory repair, must be accompanied by the following information in written form included with the merchandise.

1. Date of purchase.
2. Copy or number of purchase invoice.
3. Description of difficulty.
4. Authorization to return repaired parts not covered by warranty on C.O.D. basis (shipping charges plus parts and labor).

Heald Inc. assumes no responsibility for parts damaged by misuse, carelessness, alterations, sub-standard repairs, or by not complying with assembly, operating and maintenance instructions as outlined in the manual. Heald Inc. also is not liable for any action of the bike operator or for any damage or personal injury he might cause or sustain.

TORQUE CONVERTER is warranted for 90 days against defects in material and workmanship. We do not cover damages caused by improper operation.

BROKEN FRAMES OR FORKS will be replaced or repaired free of charge for 90 days only if there is no evidence of a wreck or abuse.

BRAKES are covered for defective material or breakage. This does not cover normal brake drum or band wear.

BELT is covered for defective material or breakage. This does not cover normal wear or misuse such as oil, grease or misalignment.

CHAIN that shows lack of lubrication and is dry or rusty is not covered under the warranty.

## WARRANTY

Heald Inc. warrants that parts supplied in its kits shall be free from defects in material and workmanship, under normal usage and service for a period of 90 days after shipment. Under this warranty, Heald Inc. will exchange any defective part returned, prepaid within the 90 days. If a part is defective its replacement will be shipped prepaid to anywhere in the continental United States or to APO and FPO addresses. Shipments to all other areas are FOB factory. Heald Inc. obligation under this warranty is limited to such replacement or repair of said parts. The engine is covered by a warranty by its manufacturer. The tires are covered by the tire manufacturer. Adjustments should be made through the dealer handling that particular brand. Heald Inc. is not responsible under this warranty or otherwise for any damage or other loss in connection with the purchase, assembly, or use of the kit of parts.

## **Heald Inc.**

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==== 616-927-1366 ====

Plant Located 7 Miles North on U.S. 33