

S W H

1983 owner's guide

125 TL - NW

240 TL - NW

320 TL - NW

PWM USA

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Mesa, Arizona 85207

602/986-3060

FEB 1983

A COMMENT ON WARRANTY -

As is typical with most competition type motorcycles, there is no warranty either expressed or implied on any SWM model. It is the responsibility of the owner to assure that the motorcycle is properly prepared and maintained for the type of use intended.

The SWM TL series has proven to be one of the most durable trials bikes ever produced. It is fully expected that you will encounter this same experience.



SWM WINS!

- 1981 Scottish Six Days - Gilles Burgat
- 1981 World Championship - Gilles Burgat
- 1982 Scottish Six Days - Bernie Schreiber
- 1982 U.S. National Championship - Bernie Schreiber
- 1982 U.S. National Senior Championship - Guy Bodin
- 1982 U.S. National Super Senior Championship - Don Wilcox
- 1982 U.S.A. Manufacturer's Championship

INTRODUCTION -

The SWM TL trials motorcycle has been imported since 1978. The SWM factory in Milan, Italy prides itself in offering the finest quality machines built as near to "works" specifications as possible. While "works bike" performance is indeed a pleasure to experience, it also means that the bikes are constantly changing. Our experience is that each machine has some unique feature unlike all the others. This feature may be as small as a different screw or as large as a unique pair of rear shocks.

The 1983 TLNW models continue to utilize the geometry and performance characteristics with which Gilles Burgat won the 1981 World Championship and Bernie Schreiber placed second in the 1982 World Championship. The 1983 models are equipped with a new design aluminum swingarm which is much stronger torsionally than the old steel unit. This results in straighter tracking of the rear wheel when encountering the significant side loadings common to trials riding. In addition, a new "flameproof" plastic gas tank has become standard production for 1983.

GENERAL CHARACTERISTICS -

	320	240	125
Bore	76mm	70.5mm	54mm
Stroke	61mm	61mm	54mm
Displacement	276.6cc	237.9cc	123.7cc
Carburetor	26mm Dellorto	26mm Dellorto	22mm Dellorto
Wheelbase	52 inches	52 inches	51 inches
Ground Clearance	12.8 inches	12.8 inches	12.3 inches
Tank Capacity	1.06 gallons*	1.06 gallons*	1.06 gallons*
Timing	2.6 - 2.8mm BTDC	2.3-2.5mm BTDC	1.9-2.1mm BTDC
Plug	Champion N12-Y @ .026"	Champion N12-Y @ .026"	Champion N12-Y @ .024"

*1.5 Gallons with optional MW tank

LUBRICATION -

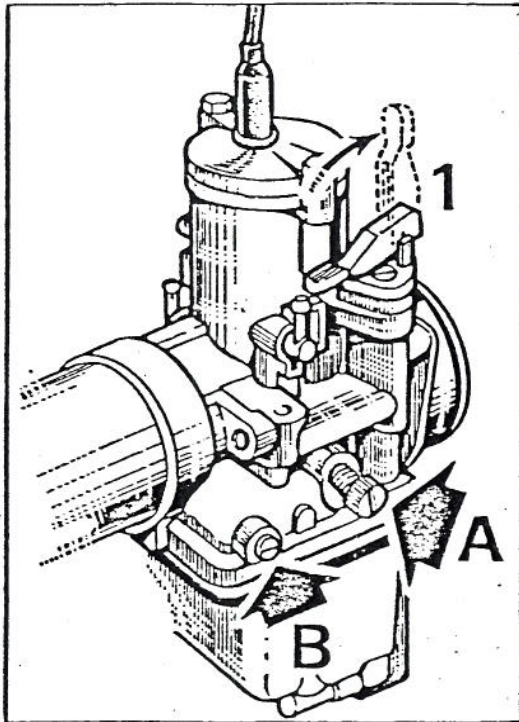
SWM-USA recommends that only a mix ratio of 50:1 be used. Use this from the start-up of your engine - don't use a heavier oil mix during break in. Experience has proven that the jetting will be almost perfect if you use 50:1 ratio. We strongly recommend that you use PJ1 Goldfire oil. We have had outstanding success with this product.

Note: We have had some complaints of improper low speed response that have, in all cases, been resolved by using 50:1 mix ratio. We cannot stress enough that 50:1 is to be used in all cases under all conditions.

BREAK-IN -

As with any new machine, care must be taken to avoid engine damage when new. We recommend that at least three (3) tankfulls of fuel be run through the engine before undertaking high speed operation. Unlike many bikes, the SWM engine does not "loosen up" but tends to remain smooth and crisp from the very beginning.

CARB & JETTING -



- A - Idle Speed
- B - Idle Mixture (see note)
- 1 - Choke (lift for choke)

Stock jetting has been fine in most cases. Dellorto jets are easily available. Ask your dealer.

CARB & JETTING (Continued)

NOTE: The mixture screw controls fuel not air as is common on most carbs. Screw IN to lean. Screw OUT to rich.

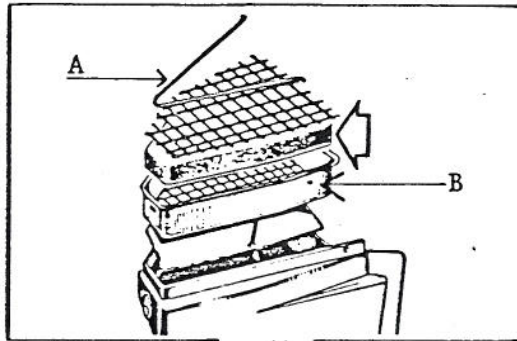
Comment - SWM rotary valve engines seem to be less sensitive to altitude changes. You may not have to rejet for adequate performance when going to a different location.

FUEL PETCOCK -

Screw type - Screw out for ON. Screw in for OFF. Tank has no reserve.

Lever type - Lever straight down for ON. Sideways for OFF.

AIR FILTER -

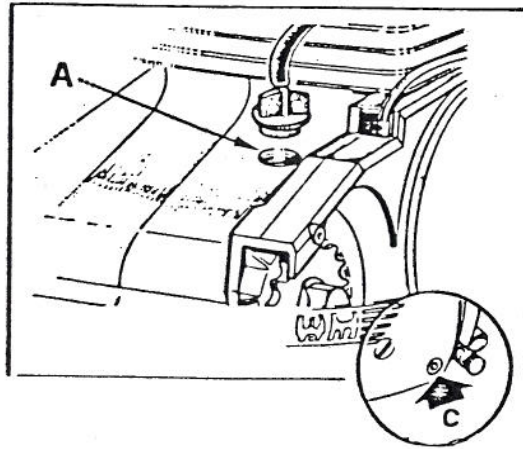


Remove the entire filter can when servicing the filter. Remove the retainer wire and screen and remove the element. Wash all the filter components in solvent. Use a quality filter oil to service the foam filter. NOTE: When re-installing the filter can into the airbox, grease all around the outer edges of the can.

Comment - The filter retainer spring (A) may protrude through the filter can hole (B) such that a "bind" exists when the can is pushed into the airbox. To correct, simply grind the excess metal from retainer spring (A).

Comment - Inspect the airbox thoroughly when bike is new. You will notice that the airbox is made in two halves and then "pop-riveted" together with a sealer between. If you suspect any point is not being sealed, apply silicon seal to the area. Pay particular attention to the upper rear areas of the box.

TRANSMISSION OIL -



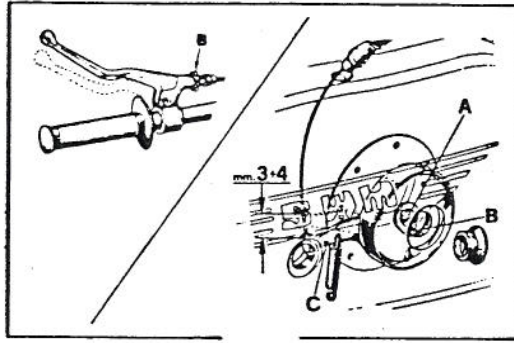
To drain oil, we recommend that the two black plastic plugs be removed from the clutch cover and the bike be laid on its side. The reason for this is quite simple--to reach the drain plug you must first remove the bash plate. After the bashplate becomes bent, it is a real chore to reinstall!! If you do remove the drain plug, be advised that it is the plug that requires a 6mm allen wrench to remove! Do not remove the large hex plug below the kickstart lever--that is the internal kickstart stop! If you accidentally remove this plug, give us a call before you reinstall it and we will save you much grief!

Refill oil through plug "A" in above figure. Screw "C" on clutch cover is a level indicator. Fill until oil comes out hole when bike is setting straight. Transmission requires ~ 1200 cc. We recommend only oil compatible with wet clutch operation.

SWINGARM LUBRICATION -

The swingarm bushings require frequent greasing. Install a metric zerk (available at your local auto parts store) into each side of the swingarm axle. Using a greasegun, lubricate until grease is seen coming around edges of bushing. We recommend greasing at least every two weeks--more frequently if riding in extremely muddy conditions. Be sure to re-install the "flat" plugs into the ends of the swingarm axle.

CLUTCH ADJUSTMENT -



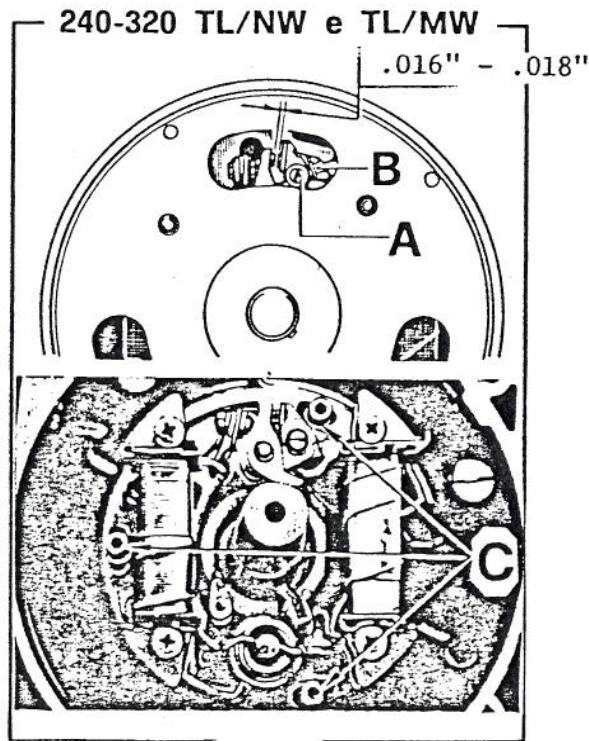
Adjust clutch lever freeplay by cable adjuster "B" so as to provide ~ 6-8mm of free lever movement.

Periodically, remove the plastic screws on the clutch cover and check for proper clutch release adjustment. To adjust, follow this sequence.

1. Completely loosen clutch cable at handlebar.
2. Move lever "C" upward until contact with clutch throwout bearing is felt.
3. If lever "C" moves upward more than 3-4mm, adjustment is required.
4. Loosen small screw "B" and turn screw "A" in 1/4 turn. Again repeat Step 2. Continue to turn screw "A" until proper movement of lever "C" is attained.
5. Snug down screw "B". Don't overtighten!
6. Replace plastic screws. Caution - these screws crossthead very easily. Be very careful when installing.
7. Readjust clutch cable.

Special Note: The new "trick riding" style requires much use of the clutch. We have done quite a bit of experimentation with the SWM clutch and have arrived at some suggestions which result in a much reduced pull effort and improved feel. Please discuss this with your dealer.

IGNITION TIMING -



Experience has been that the SWM magneto holds its timing very well. It does not need constant attention and adjustment. If adjustment is deemed necessary, follow this sequence (320 & 240).

1. Remove flywheel cover.
2. Use a feeler gage to determine point gap. If adjustment is necessary, loosen screw "A" and move point assembly by inserting a screwdriver blade in slot "B" and twisting. Tighten screw "A" completely.
3. To adjust timing, it is necessary to rotate the backing plate. The three screws "C" can be reached through the access hole in the flywheel--it is not necessary to remove the flywheel.
4. Loosen screws "C" and move backing plate. Retighten screws "C" completely. Check timing. Repeat as necessary to attain correct timing.

NOTE: Do not attempt to adjust timing by simply adjusting the point gap to obtain correct timing. This has an adverse affect on the point dwell and may cause weak spark, erratic starting, and spark scatter.

125 TLNW TIMING -

1. Remove plug in ignition cover.
2. Install dial indicator in spark plug hole and set crank position to desired timing.
3. Determine if mark on flywheel lines up with mark on backing plate. If not, adjust backing plate until marks align.

125 TLNW ignition is solid state and requires no maintenance or adjustment other than keeping components clean and dry.

GEARING -

Stock gearing has proven to work very well for most upper level riders. If your sections are very tight and somewhat flat in nature, you perhaps would benefit by reducing one tooth on the counter sprocket. Stock gearing is as follows: 320/13-38, 240/13-42, 125/12-42. If higher gearing is required for high speed operation, appropriate front and rear sprockets are available.

CHAIN ADJUSTMENT -

Extreme caution should be used to assure that the chain is not adjusted too tight! A properly adjusted chain should result in the chain 1/2 inch from the swing arm at tensioner when trans is in neutral and bike is on side stand. The SWM factory recommends over 2 inches of chain slack when tensioner is pulled down off chain! The chain will rattle and bang around--but this is normal.

Comment - On TLNW models, periodically lubricate the chain tensioner pivot with chain lube.

FORK OIL -

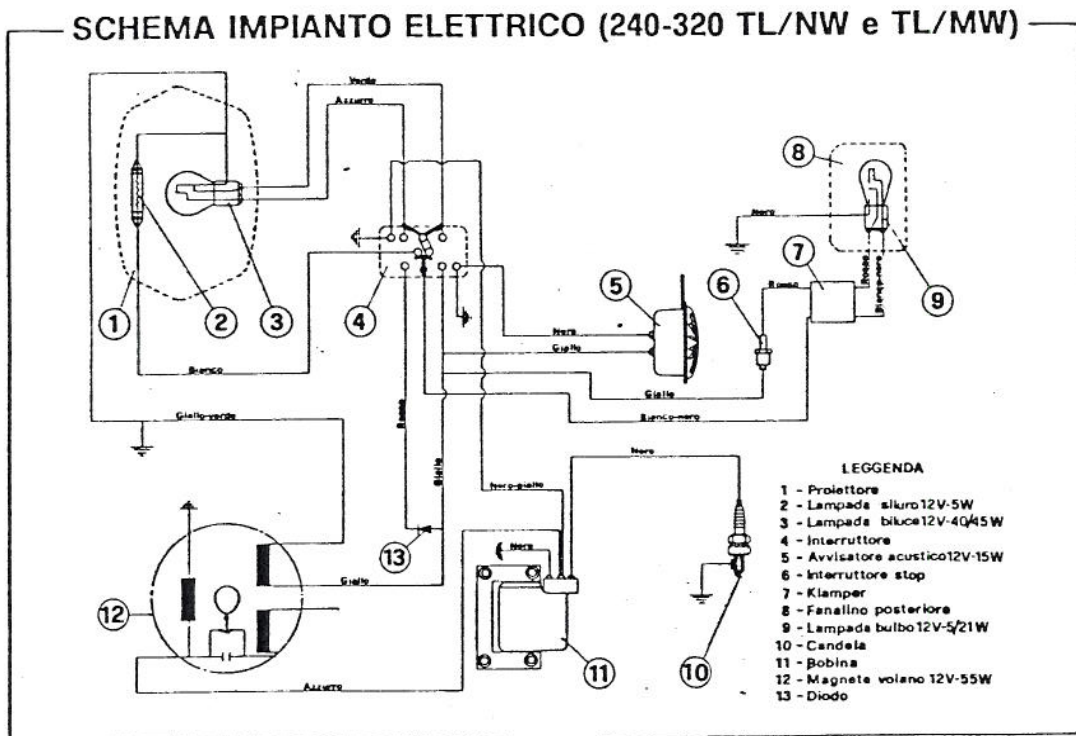
To drain fork oil, remove drain screw on lower rear of fork tube. To refill oil, remove top nut and add oil. Note - it may be necessary to loosen the top triple clamp bolt to allow easy removal of the top fork nut.

- Oil Quantity - 210cc per leg (Marz.)
 220cc per leg (Betor/SWM)
 180cc per leg (32mm Betor - 125 TLNW only)

Comment - The screws in the bottom of the hex on the fork caps retain a spring and ball check valve. However, these still allow the forks to pump up. About once a week, unscrew the valves to let any air escape to provide more constant fork performance.

LIGHTING -

Electrical power is available under the gas tank. Follow this guide if installing lights.



Verde = Green
 Bianco = White

Nero = Black
 Azzurro = Blue

Giallo - Yellow
 Rosso - Red (or pink)

KICK START -

More problems have been caused by improper use and maintenance of the kick starter than any other single item! To insure your own satisfaction, please follow these simple recommendations:

1. Keep the kick start boss pinch **bolt** tight at all times. If you let it get loose, you can break your kick shaft!
2. If ever the kick starter "folds" inward and sticks under the bash plate--do not let the engine die! Reach down and release the lever before the engine dies. If engine dies when lever is under the bash plate, serious damage to the kick gears can result due to the "kickback" of the engine.
3. Do not over kick the engine. These engines start very easily. It is not necessary to "jump" on the starter lever. Your bike is equipped with an external kick start stop to protect the clutch case and limit the starter level travel. Be sure to keep the stop in place and in good repair.

SEAT/TANK REMOVAL -

To remove plastic gas tank and seat assembly, we have found the following procedure works best.

1. Release seat straps.
2. Remove two front retaining bolts.
3. Release latch and pull up on tank only until unit is removed. "Wiggling" tank back and forth helps removal.

IMPORTANT - Do not pull up on rear of seat--you will break the seat base!

4. To install tank assembly, put bolts back into frame. Then mount front of gas tank over bolts and push down rear of tank until it locks.
5. Attach seat straps.

A COMMENT ON SPARK ARRESTORS -

According to US Forest Service guidelines, the stock exhaust system does not qualify as an approved spark arrester. It is your responsibility as a rider to assure your compliance with the rules in your locality. If a U.S.F.S. approved spark arrester is required, your dealer can provide the necessary parts and guidance.

NOTE: A new USFS spark arrester is being offered for all SWM TL series by Lewis Enterprises. This unit fits into the twin exhaust pipes of your stock muffler and is TRICK. Contact:

Lewis Enterprises
7740 East Mawson
Mesa, AZ 85207

Telephone: 602/986-9208
Ask for Keith or Mark

All 1983 SWM TL models delivered in California will be equipped with this spark arrester system when delivered by the dealer.

TOUCH-UP PAINT -

A very good match for the 1983 blue frame color is Duplicolor Datsun Blue, #645, Stock #DN-6. This paint can be found at your local auto parts store that stocks Duplicolor products.

REAR WHEEL -

On TLNW models, keep an eye on rear spokes and sprocket bolts. The "solid" rear hub on these units puts more impact loading into these parts and they can work loose. We recommend replacing sprocket bolts every six months. They can fatigue and break if used too long.

NOTE: When bike is new, check spokes and sprocket bolts after each riding session until wheel has "aged" properly and adjustments are no longer required.

GENERAL TIPS and COMMENTS -

1. Loctite the large head screw near the air box burp valve. Also loctite the rear brake pedal pivot bolt.
2. Engines have no head gasket. If you have what appears to be a gasket, it is in fact a head spacer used to adjust deck heights. It can be reused.
3. Torque headbolts to 14 ft. lb.
4. Clutch doesn't always release well when cold. We recommend that you push the bike forward when dropping into low gear first time to allow transmission a "running start".
5. Keep the screws on the front of the seat real snug or they disappear!
6. Comment on dates stamped on plate located on steering head. The date is the actual calendar year when the chassis was made. Bikes are built well in advance of shipment.
7. Use a good fuel filter. We recommend a AC GF-453. This is very important on plastic tank bikes due to difficulty in removing molding debris from tank.
8. If replacing the rear shocks, use a 13.9" unit. These are available from your dealer. Many people have thought that the stock rear shock setup was too soft. Using a 54# Girling spring to replace the chrome spring seemed to be just right. However, it was amazing to see the European riders using the stock set-up at the 1981 & 1982 World Rounds. After watching how incredibly slow they ride, it was obvious that the shocks had to be soft. Piero Kuciukian, SWM trials team manager, had these comments after watching us Americans ride on Saturday and Sunday: "You all ride too fast and use too much throttle to get over and up obstacles. Slow down and use your body more!" We've all been practicing "slowing down" and, guess what? - we've all gone back to the stock set-up! If you do tend to "banzai" sections, or weigh over 190 pounds, you might be happier with the 54# springs.

NOTE: You can add 1/4" preload to the stock set-up by simply turning over one of the chrome spacers on each shock.

9. If you install a lighting wiring harness that involves running wires through the rear fender, seal the hole. Experience indicates that even a small leak through the fender can fill the air intake area such that water is drawn into the airbox!

When it is time to replace your cables, Terrycable units are available at your dealer.

When revving your engine in fifth or sixth gear, you will pass through an engine harmonic period where a lot of "extra noise" is noticeable. This is normal - some engines do it more, some less.

About once every two weeks, take your bike out on a "high speed" ride to burn the carbon and oil residue out of the exhaust system. You'll lay down a real smoke screen but this helps performance a lot.

Once a year remove the cylinder head and decarbon the combustion chamber and piston crown.

When running fast through deep water, we have noticed that the front wheel sprays water against the front of your boots. Water then ricochets inward towards the side panels. The side panels channel the water upward and rearward toward the air box air intake. We have stopped any watering problems by putting a small piece of sponge in the upper rear area inside of the side panel. The sponge is then held in place by the side panel.

The stock spark plug cap must be pushed on very securely or it will pop off and kill the engine. We recommend replacement of the cap with a premium quality aftermarket item. Also, do not let your plug lead touch the head fins. If it is long enough to do so, cut it shorter when you replace the cap.

Keep the clutch cable well lubed with a teflon based lubricant such as Break-Free or Tri-Flow. This goes for Terrycables too! This will reduce the clutch pull effort significantly.

If you ride in a lot of water, we suggest you contact Lewis Enterprises, (See Spark Arrestor section), and inquire about their water proof brake linings. We have used these linings with great success.

If you encounter any difficulties, please contact your dealer immediately. If you feel it necessary, please do not hesitate to call us at SWM-USA. In most every case, we can advise you of a quick solution to your problem!

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SWM and

want to know your comments, experiences, trick ideas, etc. Please now so we can better serve all our riders.

TIPS FROM TRIALS TEAM SWM-USA:

Bernie Schreiber - 1982 U.S. National Champion

1. The 1983 SWM likes to be ridden with your weight back to the rear. Ride with the balls of your feet on the outer ends of the pegs. Keep the weight out of your arms.
2. Trim the front fender to be the same width as your front tire. You will be amazed how much better control you will have of your front wheel placement.
3. Do not move your handlebars back too far. Keep them well forward of the fork tube centerline.

Guy Bodin - 1982 U.S. National Senior Champion

1. You must take care to maintain your bike so that it is always the same . . . the same cable adjustments, the same brake feel, the same engine response. Otherwise, you will be, in effect, always riding a "different" bike.
2. A large factor in trials riding is mental preparedness. You must train your mind just as well as you train your body.

Don Wilcox - 1982 U.S. National Super Senior Champion

1. Good nutrition is a vital key to top performance in any sport. I have found that I can significantly influence my own performance by carefully planning my food intake prior to an event.
2. I use a small trampoline to help my physical conditioning. I feel this type of "re-bound" exercise is among the most effective activity to increase your stamina.

At SWM-USA we are constantly riding trials ourselves. We want our own bikes, and consequently your bike, to be the absolutely best bike available. Several changes made by the SWM factory have come about due to our efforts and feedback from riders like yourself. We hope that you will enjoy your new SWM and will continue to enjoy the fabulous sport of TRIALS.

Ron, Suzi, and Andy Saum
SWM-USA