



AIRWAVE GOLD/DIAMOND INSTRUCTIONS

YAMAHA ATTAK, RAGE 136"

122811

TECHLINE (218) 744-2107

Follow Yamaha ATTAK M-10 / M-20 Installation instructions through step # 7.

1. The rear shaft lock bracket is part of the RH rear M-20 plate. This plate will be bolted to the rear torque arm and then be bolted into the tunnel. Same for the LH side (no lock bracket). See Photo #1.
2. Photo #2 shows into lock bracket / M-20 rear plate mounted on rear shaft. This will later be bolted to the factory plate. See Photo # 2.
3. Hose fitting procedure. Temporarily bolt the RH lock bracket / M-20 plate to the RH rear factory plate. Using paper template provided locate point where tunnel will be drilled for air fitting. Once the 7/16" hole is drilled in the tunnel, place air fitting through tunnel from the outside. Attach nut on inside of tunnel and tighten. Attach hose from air spring to fitting on inside of tunnel. The air fitting procedure is the same for Gold or Diamond. The difference is the Gold has a manual type valve and the Diamond will have a hose type fitting. **Making sure hose is positioned away from inside track lugs and carrier wheels.** See Photo #3&4.
4. Continue with Step# 8 of installation instructions. **There is a Limiter Strap on the AIRWAVE.**
5. Torque all mount points to 70 ft. lbs. Use Red Loctite on fasteners
6. Refer to AIRWAVE set-up pages for base line settings. There is not a manual for the AIRWAVE.

PHOTO # 1 (RH SIDE)



**PHOTO #2
(RH SIDE)**



PHOTO # 3



PHOTO # 4



NOTES:

1. TRACK ADJUSTMENT- Adjust track so there is ½" of free hang between track and hyphax. **No additional weight hanging from track.**
2. When Airspring is empty, do not let the sled completely collapse the suspension. Always support the rear of sled.
3. Initial air pressure settings must be done with rider off of the sled.
4. Use caution when routing air line. Make sure air line is routed away from exhaust systems, rotating shafts, rubbing on sharp surfaces, etc. It is recommended to not mount gauge and switch on hood due to excessive air line needed to open hood.

AIRWAVE DIAMOND COMPRESSOR, SWITCH, GAUGE INSTRUCTIONS.

YAMAHA 4-STROKE 12 VOLT BATTERY SYSTEMS

FOLLOW WIRING DIAGRAM AND PHOTOS PROVIDED.

PHOTO #1



PHOTO#2





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AIRWAVE INITIAL SET-UP

REV-

1 12/07/06

1. Please note that if your suspension is an Airwave Diamond with or without battery the needle on your Air-gauge should be vibrating while compressor operates. If it is not, then the compressor motor isn't turning. On sleds with batteries, please check for correct wiring installation.

On battery-less sleds it may be necessary to rev the sled's motor to just below clutch engagement to energize the compressor on low watt electrical systems. On such systems it may also help to shut the hand and thumb warmers off when making adjustments. If the gauge needle isn't vibrating when thumb input is made at the switch then the compressor isn't turning.

2. Please note that even though your sled's stock suspension may be advertised to have over 10" of rear travel it is likely that it has only 8-9 inches. To balance out the sleds it may be necessary to increase the ski shock preload to raise the front bumper by approximately 1.0 - 1.5 inches

3. Using either the onboard or a shop compressor fill the Air-spring until the suspension is at full extension (the point at which the rear shock tops out). This will require a Static Pressure (SP) setting from 50-70 psi., with the rider off the machine.

4. Take a measure from the ground to top of the rear bumper.

5. Have rider sit on sled (with or without gear) and bounce on the seat, then settle into the seat and take the bumper measurement again.

6. Subtract the second measurement from the first, the numbers for the initial settings should be 4.0" to 4.5". Adjust the Static Pressure (SP) pressure until within this range. Your suspension is now at a setting that will allow you to make your initial ride check.



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ADJUSTING THE AIRWAVE

REV-1 12/07/06

- A. Please note that a critical bit of information when tuning your suspension is the Static Pressure (SP) setting. This setting is checked with the rider off the sled after you have lifted the rear bumper to the top of travel and let the sled settle.
- B. Once the initial Air Pressure has been set to achieve 4.0" to 4.5" of Sag measured at the rear bumper, the rider is ready to take the sled out on a smooth trail and get the feel of the suspension.
- C. The rider can now make some acceleration runs to see if the Static Pressure or SP is sufficient to resist torque induced bottoming (if bottoming does occur an SP increase of approximately 5 psi should correct this).

Again, on battery-less sleds it may be necessary to rev the sled's motor to just below clutch engagement to energize the compressor on low watt electrical systems. On such systems it may also help to shut the hand and thumb warmers off when making adjustments. If the gauge needle isn't vibrating when thumb input is made at the switch then the compressor isn't turning.

- D. Next, find some slightly rougher terrain and ride through it and try to sense if the system is too soft or firm. Adjusting the Static Pressure (SP) either with hand pump, onboard compressor or shop compressor in 2 -3 psi increments will sufficiently change the suspensions reaction to the bumps to be noticeable.
- E. Next, find some rougher terrain and ride through it starting slowly and build up speed as knowledge of the suspensions bottoming resistance is accumulated. Ultimately set the suspension maximum resistance to bottoming at a level acceptable to your personal preferences. The higher the resistance to bottoming will also give the least comfort in other situations.

Note: Once you achieve your settings you will find a change of 2-3 psi will make a significant change and 5 psi should be the maximum change made in at one time for a single rider. When adding a second rider of 150 lbs a change of approximately 20 psi is a good starting place, but a low speed check ride should be used to validate correct Static Pressure before traveling at any speed.

WARNING: The Static Pressure or SP should never exceed 100 psi on a rider-less machine.



AIRWAVE INITIAL AIRSPRING FILL

TECHLINE (218)744-2107

1. The rear of sled must be supported when filling system with air.
2. Airspring must be in proper position for initial filling. Airspring must be in a column with bottom of Airspring rolled over the piston. See Photo #1 & #2.
3. Photo #3 & #4 show the improper position of airbag for filling with air. The Airspring **must not** be folded over, compressed or have the ring on bottom of piston exposed. See photo #3 & #4.
4. Proper position of Airspring is important to prevent failures.
5. **NOTE:** Do not use high pressure cleaning devices (car wash, pressure washer, etc.) on the AIRWAVE Suspension. High pressure water spray can damage the air springs.

PHOTO #1



PHOTO #2



PHOTO #3

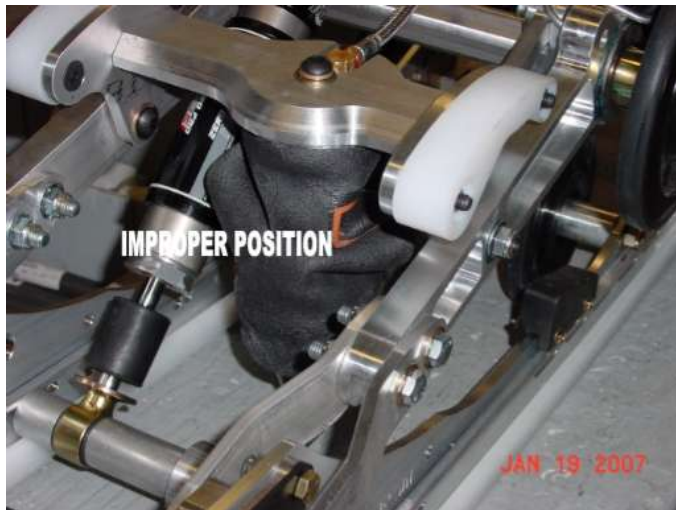
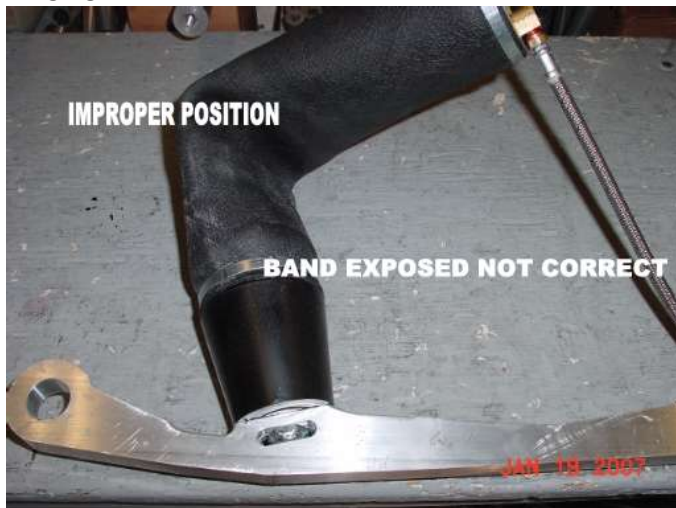


PHOTO #4





Airwave Electrical Battery - 12 Volt DC Systems
Instruction 07/30/07

NOTE: Along with general hand tools and supplies the following procedures, components, tools, supplies and knowledge are required to accomplish this installation:

1. Scotchloks are provided for joint connections (while soldered joints are preferred).
2. Leads have intentionally been left long and installer has the option of custom fitting lead lengths to the sled or to coil up extra lead and tie wrap them into small coil that can be used on other lengthier applications in the future. Tuck and tie wrap coils into secure areas.
3. Ohm/Volt meter and Circuit Tester and the basic skills to use them.
4. Soldering gun, solder and flux (when using soldered joints).

I. Wiring the Air-gauge

- A. It is the owners option as to where they want the Air-gauge (and Air-switch). Whether mounting on the bars, fascia or hood it will be necessary to find a constant 12 volt lead and a ground lead near that area (leads for back handlebar controls or instrument work well). They must be constant power and can not be affected by switch operation (such as Hi/Lo beam).
- B. Mount the Air-gauge and complete the wiring to it at this time using the Scotchloks to tap in.

II. Locate the 12volt DC power output.

- A. Determine where the best access to the 12 volt power supply will be on your sled. The power output can be taken directly from the battery or can be taken from auxiliary power leads if available.
- B. With motor on/off switches in the on position, use a volt meter to identify which is the +12 volts DC battery terminal or +12 volt Lead you will use to access power. The Ground terminal/lead will register 0 volts. Use masking tape to mark each lead accordingly.

III. Tapping the Airwave into the sleds wire harness.

- A. See the attached wiring sketch for 12 volt Battery System. Attach the 10 amp fused lead to the +12 volts DC battery or auxiliary power lead. Use a Ring/Eye terminal, Scotchlok or soldered joint.
- B. Repeat procedure attaching the black Ground Lead from the Air-compressor to the battery ground terminal or auxiliary ground lead.

IV. Wiring the Air-Switch.

- A. After selecting a suitable location, mount the Airwave Switch. Refer to the attached wiring sketch for the 12 volt Battery System and plug the switch into the system.
- B. With all the air lines connected, fire up the sled and while revving the sled to just below engagement push the Air-switch and check if the Air-gauge needle is vibrating which indicates the compressor is functioning.

