2011- CURRENT FACTORY 136” YAMAHA 4-STROKE 136” M-10 / M-20 INSTALL-INSTRUCTIONS

These instructions are for the Yamaha APEX, ATTAK, VECTOR & RAGE sleds. Please call our Tech Department with any questions you may have. [218] 744-2107. 120616

1. Remove stock suspension. **CAUTION:** If the sled has extrovert drivers installed follow instructions below before proceeding with the installation. Failure to follow instructions will cause the drivers to come in contact with the front suspension arm. A Diagram is also attached.

2. At front of sled, on Left Hand side, locate the 10mm hole in the support plate on outside of tunnel (See Photo # 1). Drill this hole to 29/64” or 11.5mm. This will be the M-10 / M-20 front arm location. This hole can be accessed through the vent at bottom of belly pan. See Photo #2. **Models with EXTROVERT DRIVERS must move back .950” on centers from this location.**

3. In the hole drilled in Step #1, push a 7/16” bolt through from outside of tunnel. On the inside of tunnel, place one of the M-10 / M-20 front support plates over the hole drilled in tunnel. Top of front M-10 plate is parallel to top of tunnel. Mark the four 3/16” holes in the four corners of the plate and drill through tunnel. Rivet into place. Drill front mount hole through small support plate.

4. Perform the same steps/procedures for Right Hand side [RH] side of tunnel.

5. At the rear of sled, LH and the RH side of tunnel, locate and remove the **front** 10mm bolt in the rear factory outside support plate. Drill this hole out to 7/16” and remove the weld-nut on the inside of the tunnel. See photo #4

6. Install shaft and spacers on front M-10 / M-20 arm. Install shaft, wheels, and spacers on rear M-10 arm. (Be sure to check note on wheel). This is a good time to grease the [4] fittings with low temp grease.

7. The LH and RH rear M-10 / M-20 plates will be attached to the rear arm with the 7/16" bolts provided. The machined surface faces inside on the Rear M-10 / M-20 plates. The rear arm will use the front lower hole drilled in the plates. With the bolts partially installed, but not tight, turn the suspension upside down. With the suspension upside down, lay the flat edge of both LH and RH stock plates against garage floor to keep them parallel. Hold down on plates to keep them parallel to floor and each other, torque each bolt to 70 ft lbs. [Be sure to use lock washers **only** on these bolts].

8. If you have a brand new (2011/2012) suspension purchased directly from TeamFAST (and we have been alerted from the customer that extrovert drivers have been installed) you may skip this step. If you have a used suspension, a suspension bought from a Dealer or a suspension you already own and are transferring to a different sled using extrovert drivers, refer to the **EXTROVERT DRIVER MODIFICATION DIAGRAM. Failure to perform the needed modification for extrovert drivers will cause the drivers to come in contact with the front suspension arm.**

9. For M-20 see attached air line procedure. Place the M-10 / M-20 suspension inside of the track.

10. Install front M-10 / M-20 arm into the holes drilled in step #2. Using the7/16” Allen bolts, lock washers, and flat washers provided. Torque to 70 ft. lbs. The turned out upper edges of the stock front brackets need to ground flat for proper fitment of front M-10 shaft. **(BE SURE FUEL VALVE IS OFF).**

11. From inside of tunnel at the rear mount, grind the forward / front weld-nut off of factory support plate. **Make sure fuel is shut-off.** See Photo #5. Repeat on opposite side.

12. Lift up the rear of the M-10 / M-20 and align the holes in the M-10 / M-20 plates with the stock locating holes in the rear factory support plate. Install the longer (1.250”) 7/16” bolt into the upper hole in rear M-10 / M-20 support bracket. Install the shorter (.750”) 7/16” bolt in the lower rear hole in M-10 / M-20 rear support bracket [stock rear mount hole]. Torque all bolts to 70 ft. lbs. of torque. See Photo #5.

13. Using nuts and bolts provided attach shocks to M-10 / M-20 arms and torque to 40 ft lbs. Attach lower end of limiter strap in hole specified on M-10 set-up card. Adjust limiter for safe cornering while on the trail. This will vary with rider and sled.

14. M-10 set-up. Refer to the owner's manual and ride set-up card to properly adjust the suspension for rider weight and riding conditions.

COMPONENT LIST:	Cross Shaft Front Torque Arm	[1]
	Cross Shaft Rear Torque Arm	[1]
	Spacer Front Shaft	[2]
	Spacer Rear Shaft	[2]
	M-10 Front Support Plate	[2]
	M-10 Rear Support Plate	[2]
	7/16" Lock Washer & flat washer	[8]
	7/16-14x 2" Bolt	[2]
	7/16”-14X3/4” Bolt	[2]
	7/16”-14X1.250” Bolt	[2]
	7/16” – 14 x 1.500” Bolt	(2)
	M-10 Owners' Manual	[1]

PHOTO #1

PHOTO #2

PHOTO #3

PHOTO #4

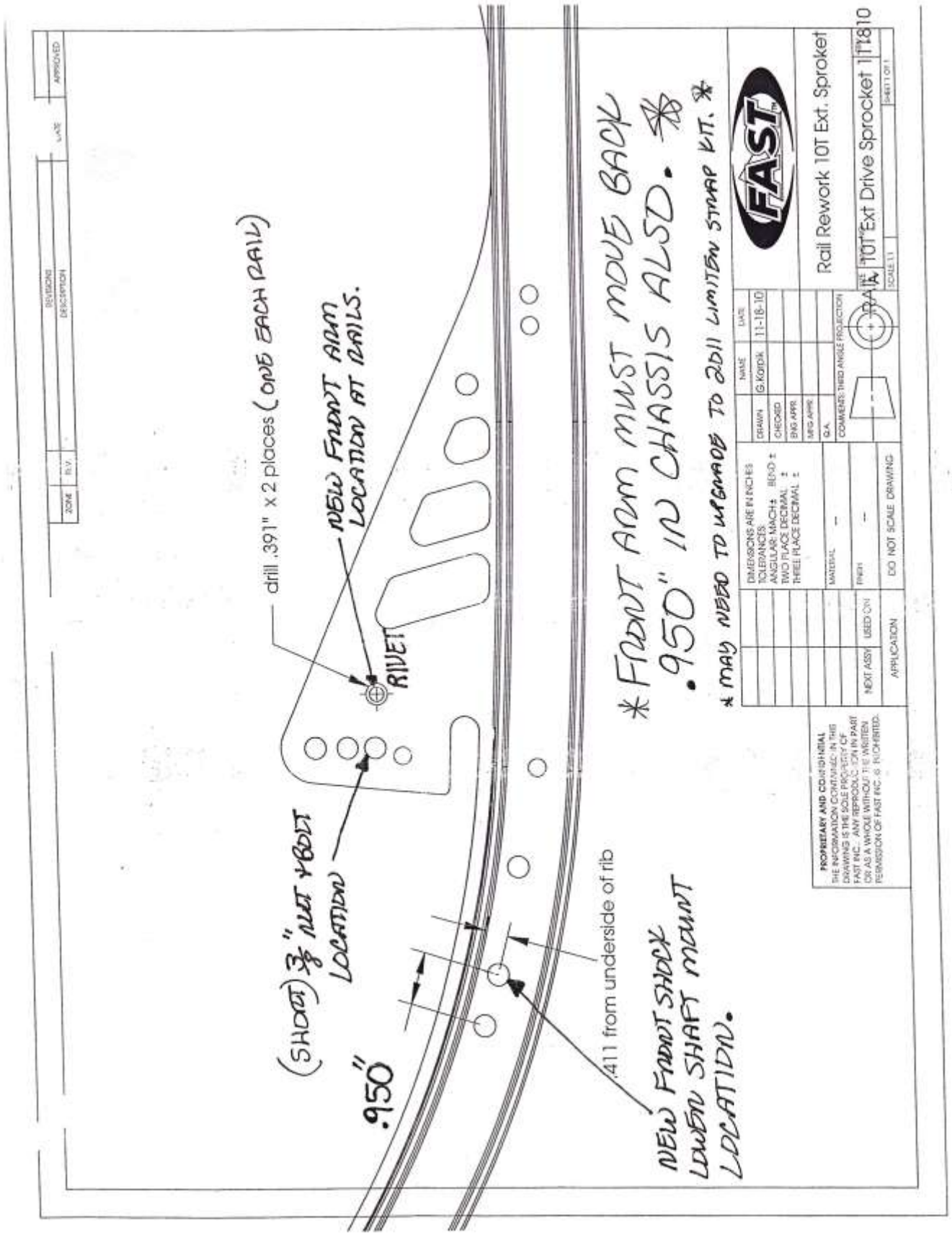
PHOTO #5[PLATE SHOWN W/OUT REAR ARM ATTACHED, RH SIDE]

Note: The new rear mount brackets are now machined from aluminum with the forward spacer built in to the brackets.

RH SIDE OF TUNNEL

RH SIDE OF SLED / SUSPENSION

EXTROVERT DRIVER SUSPENSION AND TUNNEL RELOCATION DIAGRAM



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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 Stactic 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 folder 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

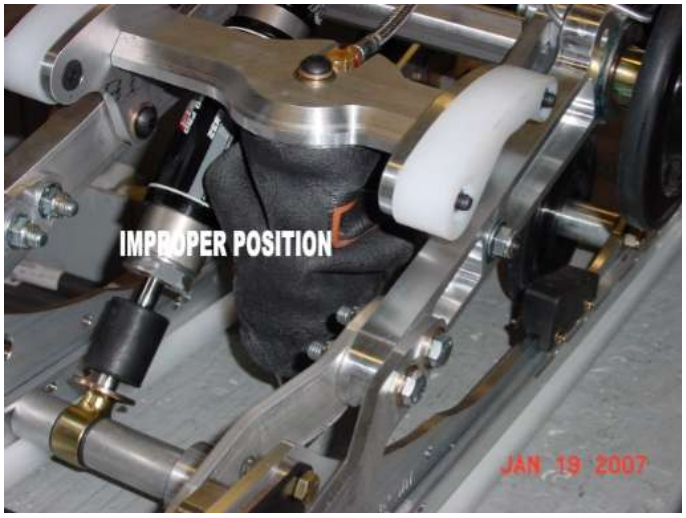
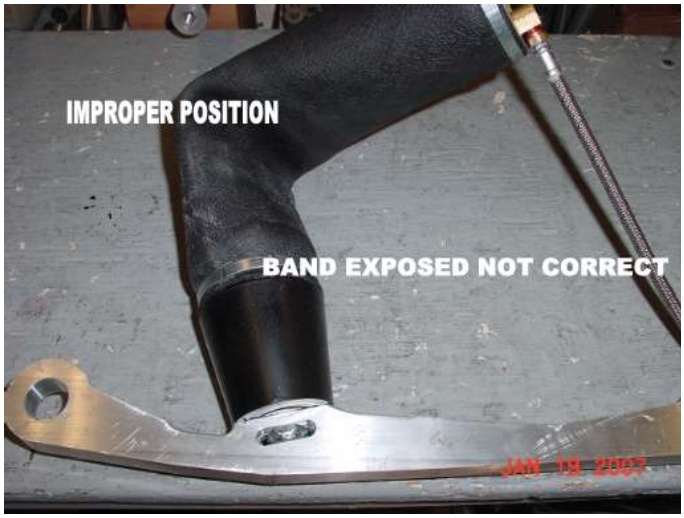


PHOTO #4



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.