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### PARACHUTE INSTALLATION MANUAL BRS-6 1050 SP P & M Aviation Quik & Quik GT 450 Trike Aircraft

BRS Document Number: 020030-PM

Revision: A

Date: November 08, 2007

#### Abstract

These installation instructions were created in cooperation with P&M Aviation Ltd. and Atlanta Sport Aviation Inc. This Parachute Installation Manual (PIM) complies with *ASTM F 2316*, "Standard Specification for Airframe Emergency Parachutes for Light Sport Aircraft".

These instructions supplement the "BRS Owner's Manual" and the "BRS General Installation Guide". It provides additional direction relating specifically to the BRS-6 1050 SP parachute system installed in the P & M Aviation Quik and Quik GT 450 Trike aircraft.

#### **Proprietary Notice**

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The signatures below verify that both BRS, Inc. and P&M Aviation Ltd. certify and accept this manual, Document Number 020030-PM revision A, dated Jan. 29, 2008 as the "Parachute Installation Manual" (PIM) for the P&M Aviation Quik and Quik GT 450 Trike Aircraft, as required under ASTM Standard F2316.

Both parties agree that any deviations or changes to components affecting the functionality of the items listed in this Parachute Installation Manual will not be performed until the changes are reflected in a revised and accepted version of this document.

02/07/2008 BRS, Inc.

Frank Hoffmann

02/07/2008 P&M Aviation Ltd.

Roger Pattrick.

# **Revision Page**

Rev	Date	Approve	Description
Α	01-21-08		Initial Release



P & M Aviation Quik Series Trike

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#### BRS PARACHUTE INSTALLATION CHECKLIST

# P & M Aviation Quik & Quik GT 450 Trike Aircraft

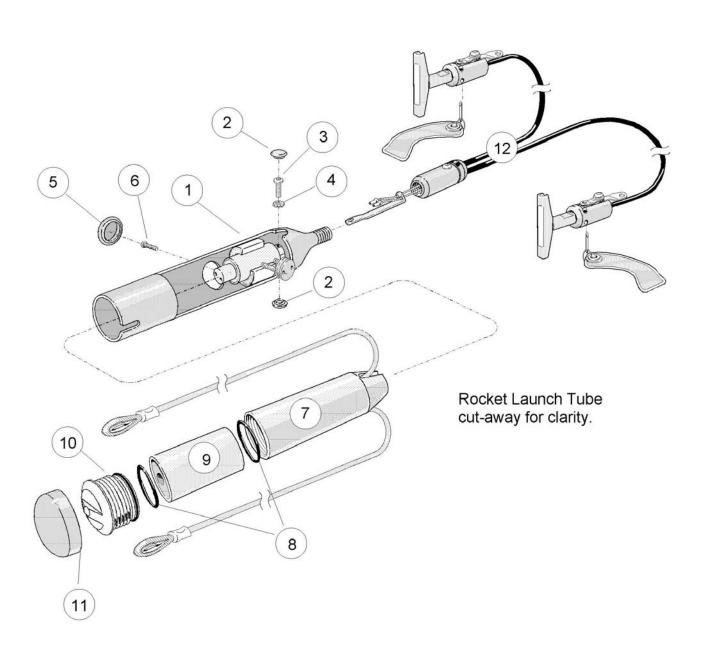
This checklist must be completed and signed by installing mechanic or certified aircraft assembly technician. Detach and return signed copy to BRS Inc. along with required installation photos for registration and quality control purposes.

Note: If parachute assembly and rocket are installed in separate locations, the first installers should sign and make copy for themselves. Send the uncompleted Installation Checklist along to the final installers, who will make the final signatures, make a copy and send to BRS.

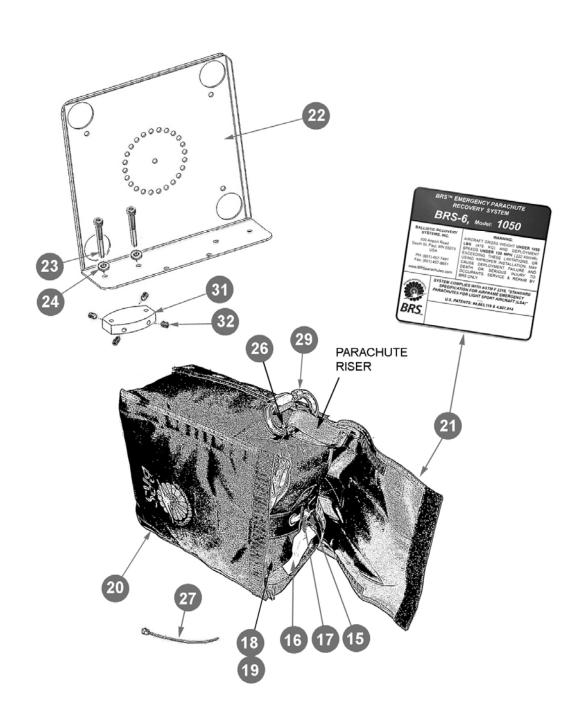
BRS Unit Serial Number:\_\_\_\_\_

	Aircraft N # :			
Parachute install completed by:		ute install completed by:		
	Rocket install completed by:			
		Photos taken of entire installation process, to include placard placement.		
		LINK and HARNESSES installed as per Installation Manual.		
		Rocket assembled as per BRS Doc # 6539 (Instructions shipped with rocket	fuel box).	
		Rocket installed into Launch Tube (Item 1) as per BRS Doc # 6539.		
		Rocket Lanyards attached to small Link (Item 15), gate closed secured wit	h blue 242 LOCTITE.	
		Rocket Lanyards coiled in fashion which promotes, "first in, last out", to a	avoid fouling of Lanyards.	
		Rocket Lanyards secured with small 4" CABLE TIE (Item 27)		
		Parachute soft pack installation secure.		
		MAIN KEVLAR VELCRO 144" BRIDLE installed and secured as per Installation	n Manual.	
		Dual ACTIVATION HANDLE assembly installed as per Installation Manual.		
		Ensure Safety Pins and Flags installed.		
		ACTIVATION HANDLE HOUSING assembly connected to Rocket as per BRS D	rwg. 020615-01	
		Both ACTIVATION HANDLE HOUSING assembly mounted securely and route along routing path.	d with no tight bend radius'	
		Placards applied to aircraft as per Installation Manual.		
		BRS Owners Manual (BRS # 020000) and Installation Guide (#020001) delive	ered with aircraft.	

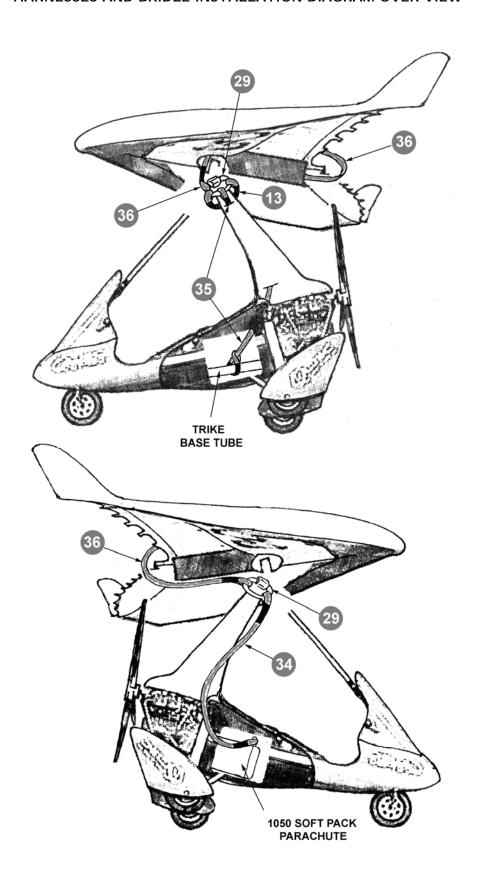
# PARTS - ROCKET AND ACTIVATION ASSEMBLY



# PARTS - P & M AVIATION QUIK TRIKE PARACHUTE 1050 SP ASSEMBLY



# HARNESSES AND BRIDLE INSTALLATION DIAGRAM OVER VIEW



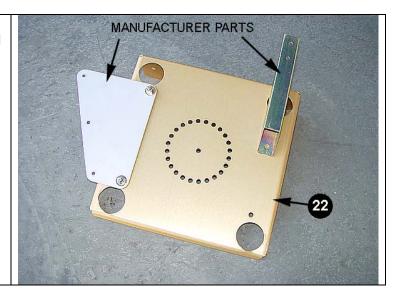
# PARTS LIST - P & M AVIATION QUIK TRIKE 1050 SP PARACHUTE

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	008411-01	IGNITER / TUBE ASSEMBLY
2	3	005033-01	PLUG, CAP, SMALL
3	1	004035-01	SCREW, 10-24 X 5/8
4	1	004055-01	WASHER, EXT. TOOTH, #10 S.S.
5	1	005040-01	PLUG, CAP, 1"
6	1	004081-01	SCREW, NYLON 8-32 X ½"
7	1	002151-01	CASE, MOTOR, T2-400
8	2	002569-01	O-RING, SPACERS
9	1	008450-01	CARTRIDGE, T2-400
10	1	002551-01	BULKHEAD, FORWARD
11	1	003216-01	CAP, ROCKET
12	1	8035	60/72" DUAL ACTIVATION ASSEMBLY
13	1	001705-01	*15" TRIKE HARNESS C37/15C (Bridle Extension)
14	-	-	-
15	1	005062-01	LINK, QUICK 1/8" S.S.
16	1	001644-01	INCREMENTAL BRIDLE, BRS 460
17	1	005037-01	PIN, CURVED, RELEASE
18	1	001004-01	PARACHUTE ASSEMBLY, 1050 LSA
19	1	001348-01	SLEEVE, DEPLOYMENT 7.5"x 230"
20	1	001321-01	BAG, SOFTPACK 13 x 10 x 6"
21	2	006241-02	LABEL, NAME PLATE, BRS 1050 LSA
22	1	003220-02	FRAME, SOFTPACK
23	2	003019-01	SCREW, 1/4-20 x 2"
24	4	004010-01	WASHER, FLAT 1/4"
25	1	004001-01	NUT, NYLOCK ¼"
26	17	004000-01	CABLE TIE, PLASTIC 10 ¾"
27	6	004025-01	CABLE TIE, PLASTIC 4"
28	-	-	-
29	3	005061-01	LINK, QUICK, ½" S.S.
30	1	004041-01	SCREW, ¼-20 X 5/8"
31	1	003201-01	PEDESTAL, ROCKET
32	4	004058-01	SCREW, SET 1/4-20 X 1/4"

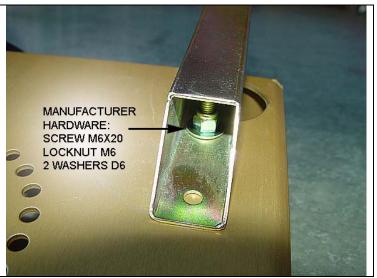
33	-	=	-
34	1	007295-21	144" VELCRO, MAIN BRIDLE C166/144C
35	2	007395-10	90" TRIKE HARNESS B115/90C
36	1	007195-13	96" WING HARNESS C118/96C
37	2	006230-01	LABEL "STAY CLEAR, DANGER"
38	2	006231-01	LABEL "BALLISTIC WARNING"
39	2	006206-11	LABEL, BRS 6 LOGO

### 1. PARACHUTE 1050 SOFT PACK INSTALLATION.

1.1 Mount P & M Manufactured parts: one 3 mm thick aluminum plate and one 25 mm X 25 mm X 300 mm square steel tube on Parachute Tray (item 22).



1.2 Use P&M Manufacturer supplied hardware: M6x20 screws, M6 locknuts, and D6 washers and secure aluminum plate and square tube.



1.3 Install Rocket Pedestal (item 31) on Parachute Tray through two aluminum bushings OD 17 mm X 40 mm length, supplied by P&M Manufacturer.



Use BRS parts: two Screws (item 23) and two Washers (item 24) to mount Rocket Pedestal.

Add **242 LOCTITE** to Screws threads.



1.5 Install Parachute Soft Pack (item20) on Parachute Tray.



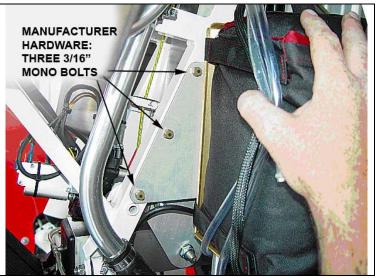
1.6 Insert retaining straps through their respective slots and secure.



1.7 Mount Parachute Assy. onto P&M Quik Trike Aircraft.



1.8 Secure Parachute to aircraft motor mount frame using P&M Manufacturer supplied hardware: three steel OD 3/16" mono bolts.



1.9 Secure Parachute Assy. to aircraft bottom base tube using manufacturer supplied hardware: M6X80mm bolt, M6 locknut, and two D6 mm washers.



### 2. 90" TRIKE HARNESS INSTALLATION.

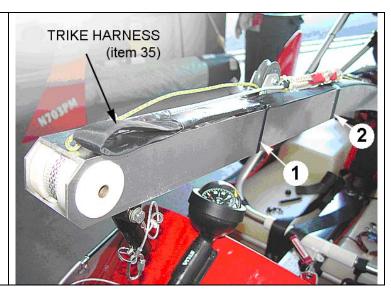
2.1 Install 90" Trike Harness onto trike bottom base tube at front at Parachute, by looping Harness Bend (bigger loop) around the base tube.



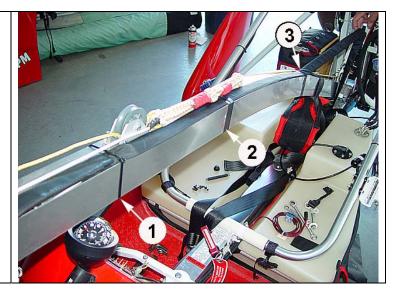
2.2 Disconnect trike mast fairing and lean trike mast tube all the way down.



Place another end of 90" Trike
Harness on trike mast tube and
secure with two10" Cable Ties
(item 26) in position 1 and position
2.



2.4 Secure Harness in position 3.



2.5 Review this installation.



2.6 Replace trike mast fairing.



2.7 Review this installation.



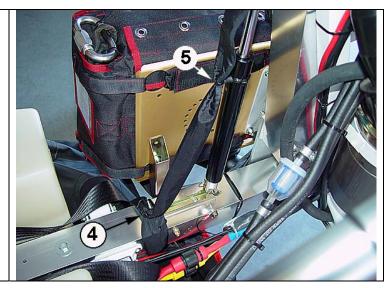
2.8 Raise trike mast up.



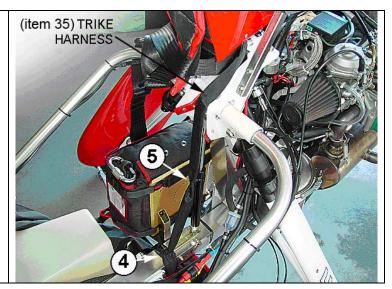
2.9 Apply one 10" Cable Tie (item 26) over the loop of 90" Trike Harness and secure in position 4.



2.10 Use one 10" Cable Tie (item 26) and one Stand Off (item 28) and secure 90" Trike Harness to aircraft gas strut in position 5.



2.11 Review this installation.



2.12 Review 90" Trike Harness routing when trike mast is in fully extended position.



Review 90" Trike Harness position on the top of the mast.

TRIKE HARNESS (item 35)

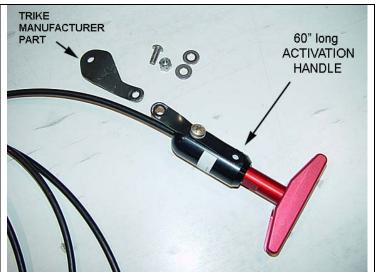
### 3. 60/72" DUAL ACTIVATION ISTALLATION.

3.1 Slide 72" Activation Handle end under trike seat frame and bottom of trike front fairing and mount it to trike base tube. Use manufactures supplied hardware to mount the Handle.

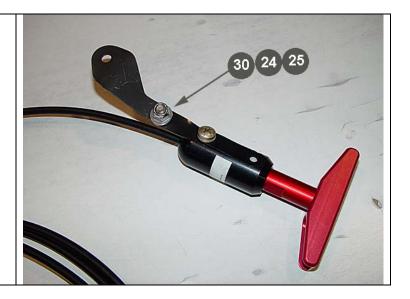
Place Safety Pin with Flag to Activation Handle.



3.2 P&M Manufacturer part (steel bracket) will be used to mount 60"
Activation Handle.



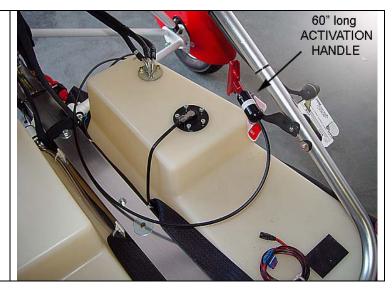
3.3 Connect 60" Activation Handle to the bracket. Used BRS supplied hardware: one Screw (items 30); one Lock Nut (item 25), and two Washers (item 24).



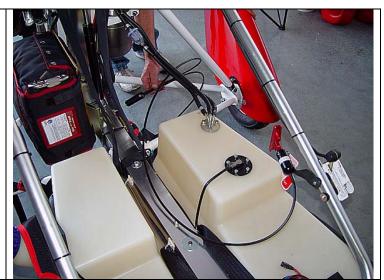
3.4 Install 60" Activation Handle to trike seat frame, on its left hand side.

Secure it to one of the bolts, which secures the trike throttle lever.

Place Safety Pin with Flag to Activation Handle.



3.5 Route Handle Barrel end of 60/72" Dual Activation Assembly towards the trike aft.



3.6 Route Handle Barrel under trike base tube.

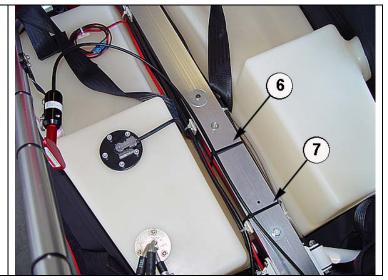


3.7 Leave it in this position for now.



3.8 Apply two 10" Cable Ties (item 26) and secure 60" Activation Housing to the trike base tube in position 6 and position 7.

Safety Pin with Flag not visible on this picture.



### 4. PARACHUTE ROCKET ISTALLATION.

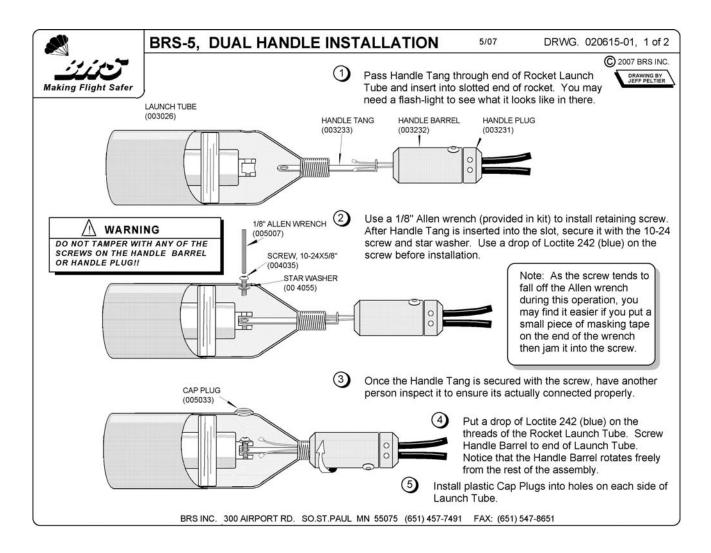
4.1 Place Safety Pin with Flag to 72" long Activation Handle.



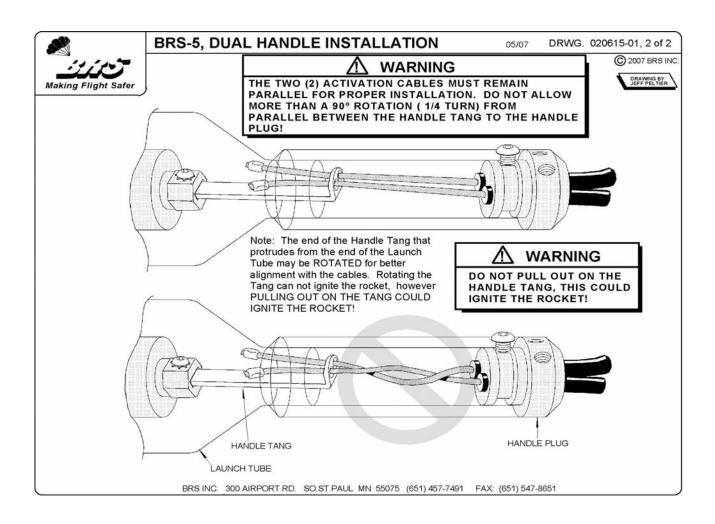
4.2 Place Safety Pin with Flag to 60" long Activation Handle.



Warning: Make Sure to insert Safety Pin with Flag into both Activation Handles before connecting Activation Cable to the Rocket.



Note: BRS-6 Dual Handle installation identical to BRS-5 illustration as shown.



Note: BRS-6 Dual Handle installation identical to BRS-5 illustration as shown.

4.3 Add **242 LOCTITE** to threads of Screw (item 3) and secure Handle Tang in place.



4.4 Apply **LOCTITE 242** (blue) to threads on Launch Tube. Screw rotating Handle Barrel to Launch Tube, being careful not to twist 1/16" cables inside.



4.5 Mount Rocket / Launch Tube Assy. onto Rocket Pedestal (item 31), add **242 LOCTITE** to threads of one Set-screw (item 32), adjust position of the Rocket and secure.

Note: To avoid stripping threads of Pedestal, do not over tighten Setscrews.



### 4.6 NOTE:

The Rocket deploy trajectory has to be 85-90 degrees to the trike base tube line.

Important: Rockets trajectory should clear wheel pant by at least 5".



4.7 Add **242 LOCTITE** to threads of all other three Screws (item 32) and secure the Rocket.



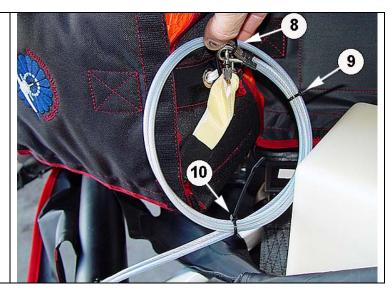
4.8 Coil Rocket Lanyards (cables) in a spiral pattern and connect them to small Link (item 15).

### NOTE:

The proper settings and location of the Rocket Lanyards will not allow them to become a "knot" on Rocket deployment.



4.9 Place three 4" Cable Ties (item 27) around Rocket Lanyards in position 8, 9 and 10, so that Rocket Lanyards remain stowed.

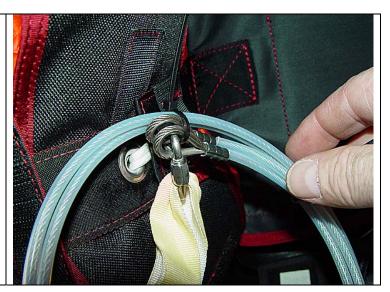


4.10 Secure Rocket Lanyards to small Link (item 15) in position 8.

Add 242 LOCTITE to Link threads.



4.11 Close the gate, but do not overtighten.



4.12 Close flap on Soft Pack.



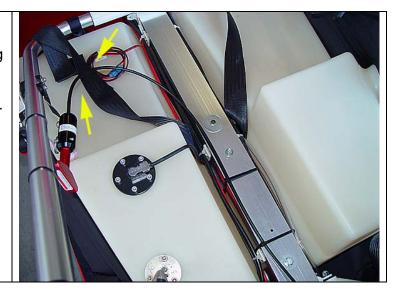
4.13 Apply one 10" Cable Tie (item 26) around both Activation Housings and secure in position 11.



### 5. TRIKE SEATS AND TRIKE FUSELAGE COVER REPLACEMENT.

5.1 Be sure that the left side of trike front seat belt is above the Activation Housing, before installing trike fiberglass seats.

Follow the yellow arrows on picture.



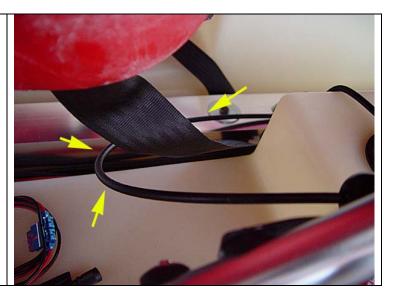
5.2 Slide left and right side of the front seat belt through their respective slots in fiberglass seats.

Follow yellow arrows to see the location of the seat belt and Activation Housing.



5.3 Firmly mount fiberglass seats on top of trike seat frame.

Follow yellow arrows to see the location of the seat belt.



5.4 Review location of Activation Handle and Activation Housing.

Follow yellow arrows on picture.



5.5 Slide left side of the rear seat belt through the slot in fiberglass seats.



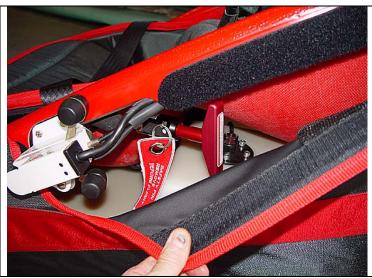
5.6 Slide right side of the rear seat belt through the slot in fiberglass seats



5.7 Review location of both Activation Housings on the back of the trike.



Double make sure that Safety Pin with Flag is located in rear 60" long Activation Handle.



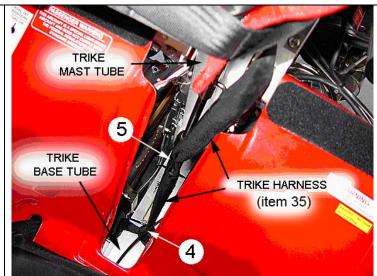
5.9 Completely attach trike fuselage cover on the left hand side.



5.10 Review location of Activation Dual Housings on the back of the trike.



5.11 Review location of 90" Trike Harness through the opening in the fiberglass seats.

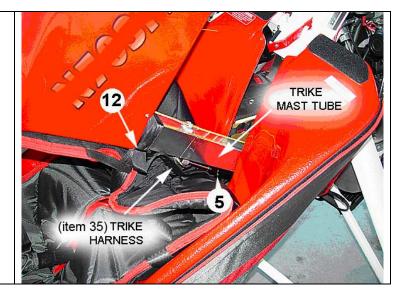


5.12 Use one 10" Cable Tie (item 26) and secure 90" Trike Harness to trike rear shoulder harness in position 12.



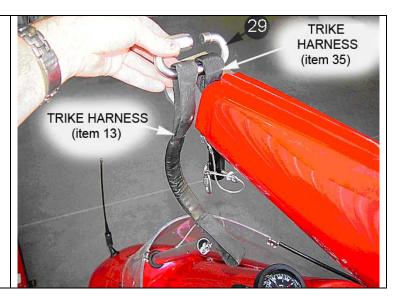
5.13 Lean the trike mast all the way down and review location of 90" Trike Harness.

The Harness became loose in between points of attachment 5 and 12. It is normal for this operation.



### 6. 15" TRIKE HARNESS INSTALLATION.

6.1 Thread Link (item 29) through the loop of the end of installed 90"
Trike Harness, and thread one end of 15" Trike Harness on the Link.



6.2 Route 15" Trike Harness around trike mast and connect it to the same Link.



6.3 Review this installation.

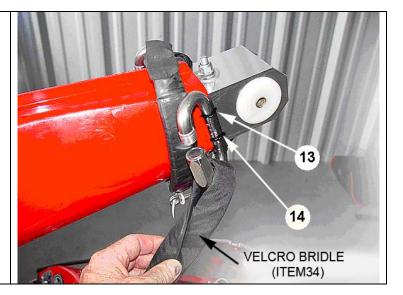


#### 7. 144" VELCRO BRIDLE INSTALLATION.

7.1 Install another Link (item 29) to the trike mast fairing, on its right hand side.

Use two 10" Cable Ties (item 26) and secure the Link to the mast fairing in position 13 and 14.

Thread one end of 144" Velcro Bridle to the Link.

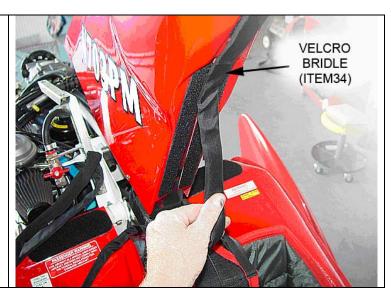


7.2 Raise the trike mast up.

Attach 144" Velcro Bridle to the front of the trike mast.



7.3 Attach 144" Velcro Bridle to the trike mast fairing all the way to the bottom.



7.4 Apply one 10" Cable Tie (item 26) and secure 144" Velcro Bridle to trike seat belt in position 15.



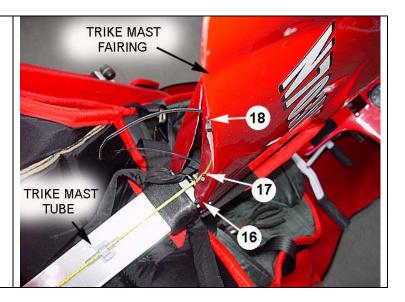
7.5 Lean trike mast down.

144" Velcro Bridle will be now connected to the bottom of the trike mast fairing.



7.6 Insert three 4" Cable Ties (item 27) through the small holes in the mast fairing.

See positions: 16, 17 and 18.



7.7 Secure 144" Velcro Bridle in position 16 and position 17.



7.8 Secure 144" Velcro Bridle in position 18.



7.9 Lean trike mast all the way down.

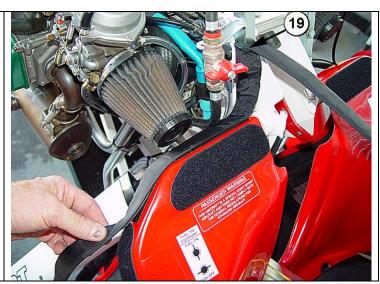
Bring 144" Velcro Bridle strait from Bridle attachment point 18 to the engine cover bracket on the right hand side of the aircraft.



7.10 Use one 10" Cable tie (item 26) and secure Bridle to the bracket in position 19.



7.11 Attach 144" Velcro Bridle to the top right edge of fiberglass seats.



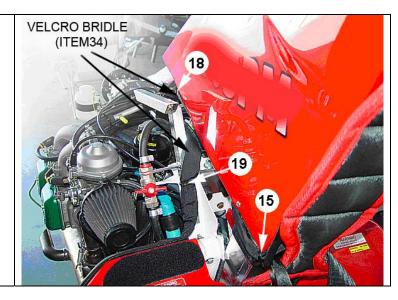
7.12 Begin to raise trike mast up.

Important: Observe the Bridle in the area between points 18 and 19 to ensure it won't get pinched or get caught on structure.



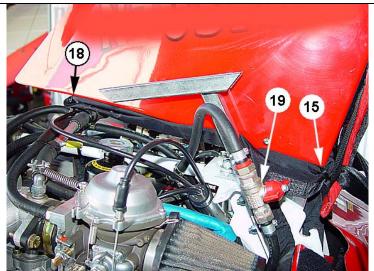
7.13 Raise the mast to its full extended position.

Note: Observe where loose Harness lays as this is happening. Ensure it is not in position where it could get snagged on deployment.



7.14 Bring the mast all the way up.

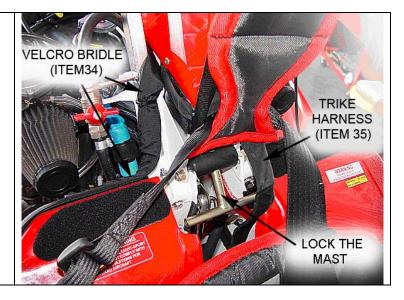
Review occupied position of 144" Velcro Bridle.



7.15 Review this installation from the back side of the aircraft.



7.16 Lock the mast.



7.17 Replace engine fairings.



7.18 Review position of 144" Velcro Bridle.



7.19 Connect trike cover on the aircraft right hand side but leave 1 foot of cover unconnected.

Bring another end of 144" Velcro Bridle through open egress flap from outside of the aircraft inside.



7.20 Connect loop of 144" Velcro Bridle onto the Link (item 29).



7.21 Apply **242 LOCTITE** to Link threads.



7.22 Close the gate on Link but do not over-tighten.



7.23 Review this installation.



7.24 Completely close trike cover on the right hand side of the aircraft.



7.25 S-fold the loose part of the Bridle.



7.26 Apply two 10" Cable Ties (item 26) over S-folded Bridle and secure in position 20 and 21.



7.27 Locate S-folded part of 144" Velcro Bridle on the top of Parachute Soft Pack.



7.28 Apply one 10" Cable Tie and secure Bridle to the Soft Pack in position 22.



7.29 Apply one 10" Cable Tie and secure Bridle to the Soft Pack in position 23.

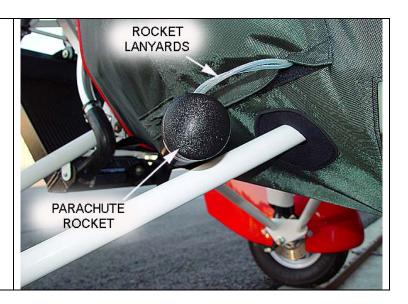


7.30 Close trike cover egress flap.

Review 144" Velcro Bridle location.



7.31 Review Rocket Lanyards location on the bottom of the trike cover egress flap.



## 8. 96" WING HARNESS INSTALLATION.

8.1 Prepare the wing to connect the trike.

Lean the trike mast down.



8.2 Connect trike front upright to the trike mast.



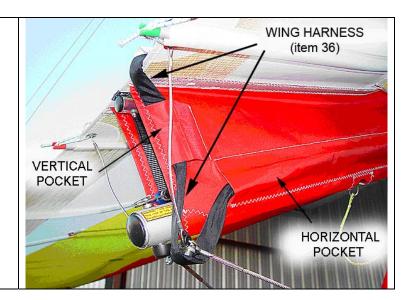
8.3 Connect the wing to the trike and raise the wing up.

Loop up one end of 96" Wing Harness to the Link (item 29) on the right hand side of the aircraft, and close the gate.

Insert the Harness through the horizontal wing keel pocket.



8.4 Bring Harness all the way through the pocket and slide it through the wing keel vertical pocket.



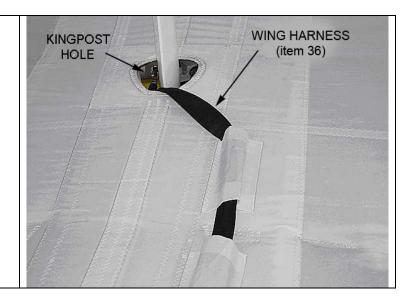
Be sure that the Harness is going in between two wing bottom wires.



8.6 Slide Harness through two pockets on the top of the wing.



8.7 Slide Harness through the wing kingpost hole, down to the Link (item 29) on the left hand side of the aircraft.



8.8 Connect 96" Wing Harness to the Link and close the gate.



## 9. PLACARD PLACEMENT.

9.1 Place Label "STAY CLEAR, DANGER" (item 37) on the top of the Rocket.



9.2 Place Label "STAY CLEAR, DANGER" (item 37) on the right hand side of the aircraft engine cover.



9.3 Place Label "BALLISTIC
WARNING" (item 38) on the right
hand side of the aircraft mast.



9.4 Place Label "BALLISTIC WARNING" (item 38) on the left hand side of the aircraft mast.

<u>DANGER:</u> REMOVE BOTH SAFETY PIN WITH FLAG OF ACTIVATION HANDLES BEFORE FLIGHT