

Applies To:

Talons configured with Slipstream (Slipstream1) downtubes.

Service Requirement:

Gliders requiring a Slipstream replacement downtube on the right side must be converted to accommodate either Slipstream 2 on the right side, or Litestream downtubes on both sides.

Tools Required:

Drill with 1/8 inch drill bit and #25 drill bit (0.149" diameter)

Phillips head screw driver

7/16" wrench

5/16" wrench – open end, ground to fit

70L-1561 SIDEWIRE BUSHING TOOL and a hammer (only if converting to Litestream Downtubes)

Parts Required:**For Either Conversion:**

1	20P-1237	PULLEY HARKEN 16MM AIRBLOCK CHEEK BLOCK
2	10M-1651	SCREW 8-32 X .375 SS THREAD CUTTING PAN PHIL
1	10C-2341	BOLT NAS 517-4-34
1	10C-5201	BOLT NAS 623-4-20
1	10N-1740	CLINCH NUT 1/4 MS21042-4
1	20P-1270	BEARING .5 OD .312 ID .156 TH
1	10U-5125	WASHER NYLON .75 X .316 X .020

For Conversion to Slipstream2:

1	20G-1492	CONTROL BAR PLUG SLPSTRM 2 TOP RIGHT
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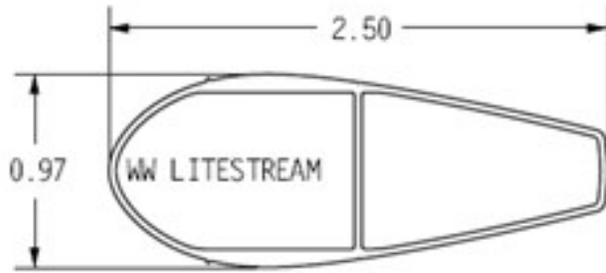
For Conversion to Litestream

1	20G-1467	CONTROL BAR PLUG SET OF 2 LITESTRM TOP
1	20G-1468	CONTROL BAR PLUG SET OF 2 LITESTRM BTM
4	10G-1290	CLEVIS PIN MS20392-2C29
2	10T-1103	SPACER AL .250 X .028 X .770

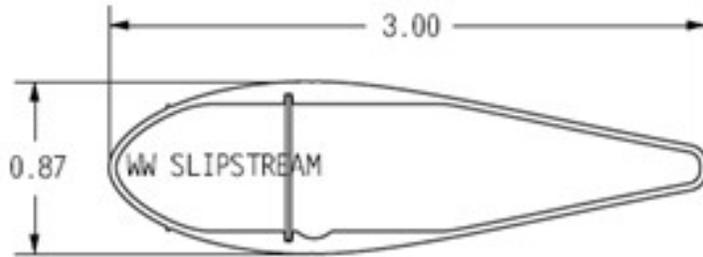
Background:

Refer to the photos and diagrams below. The Slipstream (now denoted as Slipstream1) downtube profile that was used on Talons is no longer available. Talons configured with Slipstream downtubes will need to be converted to Slipstream2 or to Litestream. For a left side downtube, Slipstream can be replaced by Slipstream2 – the current T2/T2C downtube profile – with no other parts or configuration changes necessary.

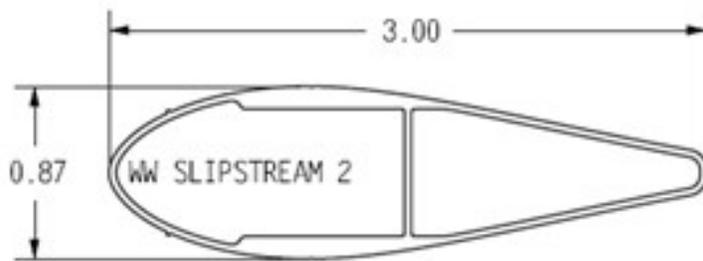
On the right side, in the Slipstream (Talon) profile, the VG cord enters the top of the downtube in the rear section. In Slipstream2 and Litestream profile, it enters in the front section. Therefore, on the right side, where the VG is located, it is necessary to change the location of the VG rope re-direction pulley on the keel, and change the top downtube plug to accommodate the different VG routing within the downtube.



S2, U2 STANDARD
T2, TALON OPTION



TALON OPTION
S2, U2, T2 NOT AVAILABLE



S2, U2 NOT AVAILABLE
T2 OPTION



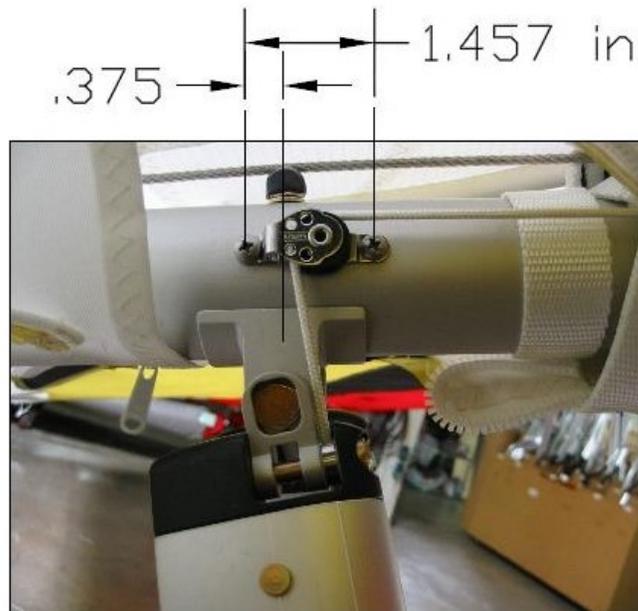
Talon with Slipstream



T2 with Slipstream2



U2 with Litestream



Talon with Litestream

Either conversion requires replacing the re-direction pulley located on top of the keel with the cheek block re-direction pulley located on the side of the keel. The simplest and least expensive conversion is to Slipstream2. This requires all parts listed on the first two groups above, plus one appropriate length Slipstream2 downtube. The Litestream conversion requires all parts listed in the first, and third groups above, plus two appropriate length Litestream downtubes.

Instructions for installing the check block re-direction pulley

Refer to the photo on the right above.

On the right side of the keel, using the 1/8 inch drill bit, drill a pilot hole on the vertical centerline of the keel at 3/8 of an inch behind the vertical centerline location of the bolt attaching the apex bracket to the keel.

Drill this hole again with the #25 drill bit.

Mount the cheek block pulley to this hole in the orientation shown. Rotate the pulley to the horizontal orientation shown and use the pulley as a guide to drill a pilot hole for the second screw with the 1/8" drill bit.

Move the pulley out of the way and re-drill this hole with the #25 drill bit. Use the second screw to finish securing the pulley in place.

Remove the nut that secures the old re-direction pulley to the top of the keel, and remove the pulley and bracket assembly.

Remove the bolt that secures the control bar apex bracket to the keel and replace it with the shorter bolt provided.

Re-install the nut on the new bolt.

Instructions for Installing a Slipstream2 Downtube - completing the assembly of the top right downtube plug

Dismount the right downtube from the top downtube plug. Retain the clevis pin and safety.

Disconnect the upper pulley from the upper VG line, and remove the upper line from the top downtube plug.

Remove the bolt that secures the downtube plug to the elbow. Set the plug and the screw aside – they will not be re-used.

Assemble the new Slipstream2 top right downtube plug to the elbow, using the bolt and clinch nut provided. Note: The tools required section above refers to a 5/16" open end wrench "ground to fit." Most off the shelf wrenches will not fit into the cavity in the top downtube plug where the clinch nut goes that attaches to the bolt securing the plug to the elbow. You will need to modify a wrench by grinding it to fit this cavity. Refer to the photo below – the wrench on the bottom has been ground to fit the cavity.

The assembly sequence, from left to right in the photo below, is the bolt inserted from the front of the plug, one plastic washer, the bearing, the second plastic washer, the elbow, and then the clinch nut inside the cavity. You may find this assembly easier to accomplish if you remove the elbow from the control bar apex bracket first, then reinstall it after this assembly is completed.



Route the upper VG rope around the inside of the bearing and through the slot in the downtube plug, and re-attach the pulley to the upper VG rope.

Instructions for Installing the Slipstream2 Downtube

Next, remove the Slipstream downtube from the bottom right plug, retaining the clevis pin and safety ring.

Remove the spacer that secures the front and rear wires and lower VG rope, and remove the wires from the plug and from the downtube.

Untie any knots in the lower VG rope to allow you to remove the rope from the lower plug and from the downtube.

At this point, the remainder of the assembly is essentially the same process as replacing a downtube. There is a tutorial video on the Wills Wing website that you can view for step by step instructions: <https://www.willswing.com/support/>

Re-assemble the VG system with the lower rope passing through the upper pulley, and returning towards the bottom plug. Lay the system out so there are not twists in the rope. Feed the rope and pulley system into the top of the new Slipstream 2 downtube, passing the system down through the forward cavity in the downtube and out the bottom. Once installed, check to see that there are no twists in the system.

Install the downtube onto the top plug, securing it with the clevis pin and safety.

Install the bottom front and rear wires into the slots in the new Slipstream2 downtube, and feed them out the bottom of the tube.

Re-install the fixed end of the lower VG rope and the bottom front and rear wires into the bottom downtube plug, retaining them with the spacer.

Thread the free end of the lower VG rope through the lower plug, making sure that it passes to the outside of the bottom front wire.

Verify that the lower VG rope, and bottom front and rear wires are captured and secure in the lower downtube plug.

Install the bottom plug into the downtube, retaining it with the clevis pin and safety.

Assemble and preflight the glider.

Check that all nuts you have installed are secure, and check the operation of the VG system.

Instructions for Converting to Litestream Downtubes

Follow all of the instructions above, except that you will change out all four downtube end plugs, which will also require re-mounting the bottom side wires on the new Litestream bottom plugs. For complete instructions on that process, see the Technical bulletin here:

http://willswing.com/wp-content/uploads/tech_bulletins/TB20110822.pdf

If you have questions or need assistance, please contact your dealer or Wills Wing.