Kari-Tek

Hydro Skeg® Installation Instructions

Instructions for installation of Hydro Skeg®

These instructions cover the installation of the Kari-Tek Hydro Skeg® into kayaks fitted with the Kari-Tek skeg and glide box.

There are four stages involved in installing the Hydro Skeg®:

1. Fit the glide cylinder and skeg cassette
2. Connect the Hydro Skeg® system
3. Bleed the Hydro Skeg® system
4. Adjust the Hydro Skeg® system

Component List

The Hydro Skeg® includes the following:

Skeg cassette assembly

Glide cylinder assembly

Bleed kit (feed tube, drain tube)

Two lengths of 4mm nylon tube (one green, one clear)

Two 1/8"BSP/4mm compression couplings

One long (M6x40) stainless steel countersunk socket head setscrew

Two short (M6x20) stainless steel button head set-screws

One M6 nyloc nut

Two M6 half nuts

Two 19mm diameter rubber-bonded washers

Hydro Skeg® stickers

Tube clips

Tools and Materials required

The following tools are needed to fit the Hydro Skeg® into your kayak:

4mm allen key

10mm, 11mm and 13mm spanners

2 small clamps (spring loaded clothes pegs or Bulldog clips are adequate)

Water bottle

Drill bits: 4mm, 6mm and countersinking bits

Marker pen

Anti-freeze

Masking tape

Basin

Duct tape

Sandpaper

Sharp knife

45 Hillhead
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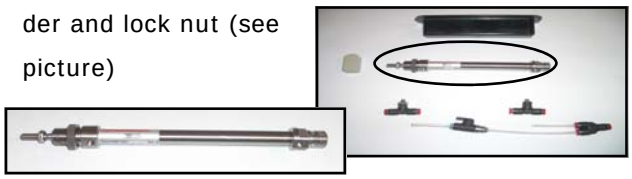
1. Fit the glide cylinder and skeg cassette

- Dismantle all the fittings from the glide cylinder including the glide button leaving only the cylinder and lock nut (see picture)

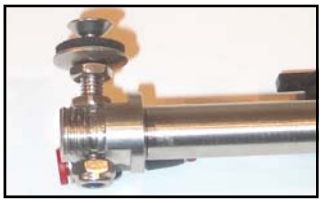


Tip! Press down on the coloured collar to release the pipes from the fittings. To reconnect, just push the end of the pipe back into the fitting.

- Push the piston rod of the cylinder from the inside of the cockpit out through the hole in the glide box
- Screw the glide button back on to the end of the piston rod and tighten up the locknut. Working from inside the cockpit, screw the glide piston into the brass insert in the end of the glide box so that the face of the cylinder just protrudes into the glide box by about 0.5mm (1/32"). Thread and tighten the cylinder lock nut, finger-tight only at this stage.

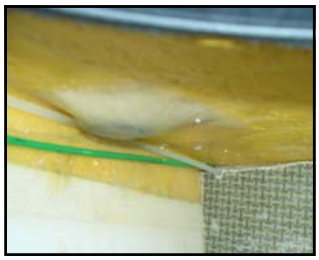
Glide cylinder inside cockpit

- Re-fit the two T connectors onto the cylinder, aligning them along the body of the cylinder. (*Tip!* Take care not to overtighten the connectors: tighten finger tight only then tighten a further quarter turn with a spanner).
- Rotate the cylinder so that the hole in the back end of the cylinder is perpendicular to the deck of the kayak at the point closest to the cylinder. From the inside of the kayak cockpit, drill a 6mm diameter hole through the kayak's deck using the hole in the end of the cylinder as a guide. Countersink the hole from the outside.
- Place the long stainless steel countersunk socket head setscrew through the kayak deck. From the inside of the cockpit, thread the 19mm rubber-bonded washer onto the setscrew with the rubber side facing out towards the inside of the kayak deck. Tighten the cylinder lock nut fully.
- Thread the 2 half nuts onto the setscrew, then pass the end of the screw through the hole in the back of the cylinder. *Tip! See picture for order in which items are threaded onto the setscrew.*



- Tighten up the outermost half nut onto the rubber-bonded washer to make a watertight seal against the kayak deck. Run the other half nut up against the side of the cylinder, then screw the M6 nyloc nut onto the end of the setscrew and tighten up against the side of the cylinder.
- With a junior hacksaw, cut any excess off the tail of the setscrew.
- Drill two 4mm diameter holes through the bulkheads between the cockpit and the rear hatch, and push the two 4mm nylon tubes through the holes.

Tip! You may be able to reuse holes from your previous skeg installation, but otherwise drill the holes high up in the corner of the bulkheads for a neat finish (see picture).



Example of pipe routing through bulkhead immediately below deck

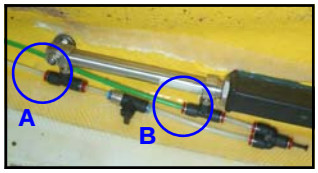
Take care when drilling the holes not to drill through the kayak deck!

- Screw the two 1/8"BSP compression couplings into the two holes on the nose of the skeg box. *Tip! Make sure not to lose the olives from inside the compression couplings.*

Green and clear pipes connected to skeg box

2. Connect the Hydro Skeg® system

- Reconnect the short lengths of tubing to the glide cylinder as shown on the picture. Do the same with the ends of the long lengths of tubing at the glide box end (in the cockpit). The clear tube connects to the T connector furthest from the glide box (A: see picture), the green tube to the other (B).



Clear and green pipes connected to glide cylinder

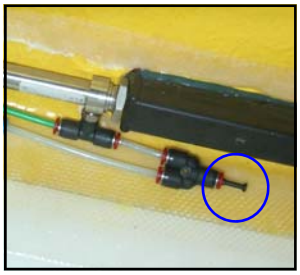
- Working inside the rear hatch, feed the other ends of the two long lengths of tubing through the compression couplings in the front of the skeg box as shown. The green tube should be run through the fitting nearest the bottom of the kayak hull.
- Feed tubing through the skeg box couplings until you are happy with the routing of the pipes, making sure that there is enough nylon tubing in each hatch to allow the tubing to follow a neat path along the side of the hull when it is finally secured later.
- Mark tubing with a marker pen at the face of the compression coupling, then temporarily pull the tubes back out from the coupling.
- With a sharp knife, cut the tubes 25.5cm (green tube) and 37cm (clear tube) beyond the points you have just marked. ***Take care not to cut tube too short!***
- Push the tubes back through their respective compression couplings, but do not tighten the fittings yet.
- The next step is to connect the bleed kit to the system. Firstly, connect the drain tube to the pipes at the skeg box end: simply take the two loose ends of the pipes, now sticking through the bottom of the skeg box, and push them into the holes on the 'Y' piece on the drain tube. Place the end of the drain tube into a receptacle suitable to catch excess fluid.


Bleed kit Y piece connected to pipes protruding from underneath skeg box

- At the glide box end, open the bypass valve. The valve is open when the operating lever is aligned along the pipe.


Closeup of bypass valve, shown in open position

- Remove the blanking plug from the 'Y' piece at the glide box (see picture)
- Put the blanking plug to one side – it will be needed again shortly!


Blanking plug at glide box end

- Fit the end of the bleed kit feed tube into the 'Y' piece in place of the blanking plug. Fit the other end onto a water bottle or similar. *Tip! The bleed kit feed tube is supplied with a fitting which connects directly onto a Platypus type water bottle drinking tube.*

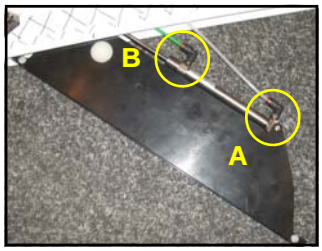

Blanking plug after removal: don't lose this!

- Place a clamp (a clothes peg or bulldog clip will do the trick) onto the soft part of the feed tube. Have a second clamp to hand ready for use on the drain tube.

The Hydro Skeg® is now ready for bleeding.

3. Bleed the Hydro Skeg® system

- Fill the water bottle with a solution of 75% water and 25% anti-freeze and secure above the kayak. *Tip! the higher up the water bottle, the more efficient will be the bleeding process.*
- Remove the clamp from the feed tube to allow the fluid to flow through the system, collecting in the receptacle at the drain tube end.
- While the fluid is flowing through both tubes, slide the glide button forwards and backwards to expel all air from the glide cylinder and tubes. Repeat if necessary until no more air bubbles are seen emerging from the drain tube.
- Place the clamps onto the soft parts of the drain tube first and secondly the feed tube.
- The final part of the bleeding process is to bleed the skeg operating cylinder, which is done before fitting to the kayak. Place the skeg cassette in a tub or basin of water and move the skeg blade up and down to expel all air out of the cylinder. When no more bubbles emerge, close the skeg blade while the cassette is still under the water.
- Remove the skeg cassette from the water and take to the kayak. Disconnect the green pipe from the drain tube 'Y' piece and immediately plug it into the elbow nearest the skeg hinge (port B: see picture) on the cassette cylinder.
- Repeat for the clear tube, plugging it into the other elbow (port A).



Sliding the skeg cassette into the box: note position of the green and clear tubes

- Slide the skeg cassette into the skeg box making sure that the tubes are not twisted. Secure in place with the two short stainless steel button-head setscrews. Manually move the skeg blade to the up (retracted) position.
- Remove the bleed kit feed tube from the glide cylinder 'Y' connector and replace the blanking plug. Slide the glide button to the up position (nearest the stern of the kayak). Close the by-pass valve by the glide cylinder: the valve is closed when the operating lever is at right angles to the pipe.
- Working from inside the rear hatch, gently push the two tubes through the compression couplings to their full extent, to ensure that they do not interfere with the operation of the skeg blade.
- Tighten the compression couplings, taking care not to overtighten: tighten by hand first, and then a further quarter turn with a spanner.
- Using tube clips supplied, attach the tubes to the inside of the hull to stop them from getting snagged when loading the hatches.

4. Adjust the Hydro Skeg® system

- Push the glide button forward to deploy the skeg and then move it fully back to retract it again. If the skeg blade does not fully return into the skeg box, then adjust as follows.

Operating the glide button

- Push the blade into the box manually, then temporarily open the bypass valve (The valve is open when the operating lever is aligned along the pipe.)
- Slide the glide button slightly forward towards the skeg down position and close the bypass valve again.
- Push the glide button forward to operate the skeg again and repeat the previous step if necessary.


Skeg blade deployed

The Hydro Skeg® is now ready for use.