

# *touring rudder cockpit kayak kit*

## Kit to fit rudder enabled cockpit kayaks with a 10mm rudder fixing point.

Note: This kit is to fit a rudder to a cockpit kayak only. If you have a sit-on top kayak that will take a rudder, then you need our sit-on top rudder kit instead. Please contact one of our dealers for advice.

This kit should contain the following:

1x rudder assembly with up-haul rope & split ring  
 1x plastic rudder pin sleeve (required for Vista only)  
 2x length of rudder hose  
 2x Dyneema control line - with cord end assembly  
 2x cable anchors - inc. screw, rubber backed washer & nut  
 1x pair of Tip-Toes control footrests

6x footrest screws  
 6x adhesive foam washer  
 4x deck fittings - inc. screw, o-ring, washer & nut  
 2x oval toggle  
 1x length of 4mm shock cord  
 1x rudder park - inc. hook, shock cord, fixing block & screw

You will also require some tools to fit this kit:

Drill with 3mm, 4.5mm and 6mm drill bits  
 Phillips screwdriver  
 Small adjustable spanner or pair of pliers  
 Tape measure

Marker pen  
 Wire cutters  
 Lighter

Please read these instructions carefully before fitting!

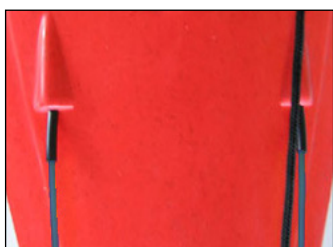
### Step 1 - Attaching rudder assembly

Take the rudder assembly and if already fitted, remove the split ring from the end of the rudder pin. Slide the rudder pin sleeve over the rudder pin (this helps the rudder move more freely, but is only required on the Vista and older models - use if it fits). Now slide the rudder pin into the rudder holder at the back of your kayak and attach the split ring to secure the rudder pin onto the kayak.



### Step 2 - Control line entry points

The rudder will need two control lines attached, each one running through a hose section inside the kayak from the rudder to the Tip-Toes footrests. Use the guide below to locate the entry points specific to your kayak model.



Most models have rudder control line entry points on top of the rear deck.



The Horizon has indents at the back of both rear handles. These entry points allow the lines to run through the inside of the rear handles rather than straight down into the boat.



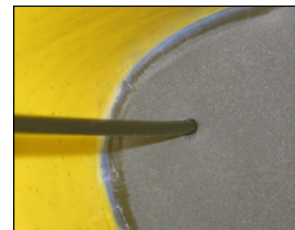
The Carolina 14 has rudder control line entry points located on each side at the rear.

### Step 3 - Inserting rudder hoses

Drill the rudder control line entry points at a 45° angle into the kayak. First use a 3mm drill bit to make pilot holes. Then use a 6mm bit to enlarge the holes. Take the rudder hoses and insert them into the holes. They will be a tight fit but pull them all the way through until the larger end of the hoses act as stoppers against the entry holes.

### Step 4a - Routing rudder hoses through kayak

The two hoses need to run, one down each side of the kayak, to a point level with the front of the seat (NB - for tandem models the hoses run to the front of the rear seat in the Horizon and to the front of the front seats in the Prodigy II and Vista). You will need to pass the hoses through the bulkhead by making holes on the left and right, close to the deck, but below the sealant (as shown on the right). The foam should be pierced using a 4.5mm drill bit or Phillips screwdriver. Make sure the hole in the bulkhead is not too large, otherwise it will allow water into the sealed compartment.



### Step 4b - Prodigy II & Vista only

Remove the end caps from each end of the aluminium side tubes running through the kayak. Run the rudder hose through the tubes and out near the front paddling position. You do not need to replace the end caps on the side tubes and can discard the end caps. Make sure there are no rough points on the ends of the side tubes that are now exposed. If so, rub down or use some electrical tape to make safe.

### Step 5 - Fixing rudder hoses

To fix the cable anchors in the rear compartment, drill a 4.5mm hole to the side of the rear hatch. If the hatch retainer is secured there, drill the hole 2cm to the rear of this point. Place a rubber backed washer over the screw provided and push the screw through the hole, keeping the washer on the outside of the kayak. Inside the rear compartment, take one of the cable anchors and clip it over the hose that runs down that side of the kayak. Then place the cable anchor over the end of the screw and use a nylon insert nut to keep it in place, holding the hose against the boat. At this stage only tighten the nut to be finger tight.



Now repeat 'Step 5' using the remaining cable anchor to fix the other rudder hose to the opposite side of the rear hatch. Both hoses run down opposite sides of the kayak. Using wire cutters, cut the end of both hoses so they stop level with the front of the seat (NB - for tandem models the hoses run to the front of the rear seat in the Horizon and to the front of the front seats in the Prodigy II and Vista).

### Step 6 - Remove original footrests

For tandem kayaks the following only applies to one set of footrests. This must be the rear set in the Horizon and the front set in the Prodigy II and Vista.

First check that the appearance of the original footrest rails and pedals match the look of the Tip-Toes footrests. If they do, continue with this step. If not, you will need to check the distances between the fixing points and may need to contact a Perception Dealer for advice on sealing some of the original fixing holes.

The original footrests in your kayak only use two fixing points for each runner. The replacement 'Tip-Toes' need to use the third, middle fixing point as well as those at both ends of the runners. To mark this fixing point, keep the original footrests in place and slide the foot pegs as far down the runners as possible. Locate the fixing hole in the middle of each runner. Then using a 3mm drill bit, drill through this hole and through the kayak. Now unscrew and remove the original footrests. Once removed, drill out the two pilot holes you have just made with a 6mm drill bit. Alternatively, mark the location of the middle fixing hole with the original footrests in place. Remove the footrests and drill through the kayak at the marked locations. Then drill out the two pilot holes with a 6mm drill bit.

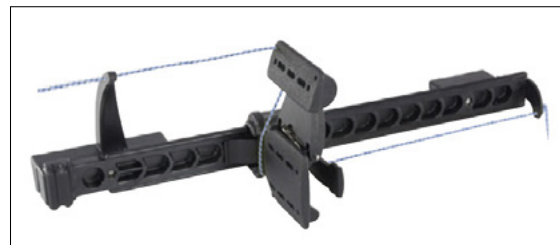
You now have three fixing holes on each side of the kayak. Any washers and screws from the original footrests can be discarded. The Tip-Toes footrests will be fitted at a later stage.

## Step 7 - Threading the rudder control lines

Thread a control line down through each of the rudder hoses until the lines appear out the far end of the hoses. The cord end assembly pre-fitted to one end of each control line will stop the ends from being lost into the hoses.

## Step 8 - Attach control lines to Tip-Toes control footrests

Take the replacement Tip-Toes control footrests, making sure you have the left and right footrests the right way round (Tip-Toes pedal at the top of the foot peg) and slide the pedals into a central position. From inside the kayak, thread the left and right control lines through the corresponding footrests as shown in the picture on the right. The line passes through the eye in the arm at the front of runner, then through the eye directly in line on the top corner of the pedal. Once through to the back of the pedal, place the line inside the half circle shaped groove and pass the line down and around the front of the main foot peg. The line should then continue freely under the foot peg to the small arm at the rear of the runners. Only pull 10cm of line through the back of the rear arm on the runner and tie several knots close to the back of the small arm to stop the line from pulling back through. Do not trim the extra 10cm of line off as this may be needed to make future adjustments.



## Step 9 - Fitting Tip-Toes control footrests in kayak

The Tip-Toes footrests have three fixing blocks on the back of the rails. Each block has two fixing positions. Decide whether to use the front or rear fixing points on each block. This allows the footrests to be set forward or back by 4cm. Use the footrest screws to screw through the kayak. Stick the adhesive foam washers to the inside of the kayak, one over each screw. You will need three screws for each footrest. Now line up the appropriate holes in the blocks with the screws and fix in position.

## Step 10 - Attach control lines to rudder

Pull any slack line back through the hoses at the rudder end and pass them through the corresponding middle hole on the wings of the rudder head as shown in the picture. To tie the lines off tight you will need to pop the small end cap from each cord end assembly - this can be done using your finger nail. Take each control line in turn and pull until you feel the resistance of the Tip-Toes footrest pedal being pulled fully towards you. Slide the plastic cone of the cord end assembly with the metal sleeve down the line so that the metal sleeve engages fully into the middle hole on the rudder head. Keeping the tension in the line and the rudder head dead central, tie a large knot approximately 4cm back from the back of the metal sleeve. When you release the tension, the knot should hold against the metal sleeve.



Check that the rudder is still in the central position and that the Tip-Toes footrest pedal has now stopped in the upright position as shown in the picture above (step 8). You will need to adjust the knot if the Tip-Toes footrest pedal is not in the upright position.

Repeat this step with the other control line, again making sure that the rudder stays central and that the Tip-Toes footrest pedal ends up in the upright position. Once you are happy, test that the Tip-Toes footrest pedals work and turn the rudder head. Check that the knots are large enough not to pull through the metal sleeves. You can now cut the excess control line 1cm past the back of each knot and seal the ends up by carefully using a lighter and then replacing the small end caps. Make sure each end cap clicks fully into place. You can adjust the responsiveness of the rudder by moving the control lines to the outer positions for more response, or to the inner positions for less response.

Now tighten up the nylon insert nuts that were previously fitted in 'step 5' to hold the cable anchors in place inside the rear hatch area. Do not overtighten as this will hinder the control lines from moving.

## Step 11 - Adjust rudder angle

To prevent the rudder blade from hitting the kayak every time it is lifted up and onto the kayak, adjust the rear most screw on the side of the rudder head. You will need a screwdriver and small adjustable spanner. This changes the angle of the rudder and should be set with the rudder blade up across the back deck of your kayak and so that the blade is held just off the kayak.

## Step 12 - Positioning of deck fittings

You should fix the deck fittings in the marked out indents moulded along the right hand side of your kayak. For most models there will be between 2-4 positions. If your kayak has these deck fitting points, skip to stage 12.

For other models of kayak you need to mark out the locations for the deck fittings on the right hand side of the kayak. Start by marking the centre point for the front most deck fitting. On the Vista measure 6.5cm out from edge of the right hand cockpit rim and mark the position level with the back of the rear seat. For older models of the Horizon (without the deck fitting points), you need to measure out 10cm from the right hand edge of the rear cockpit rim and mark level with the middle of the rear seat. (NB all tandem models have the up-haul controlled at the rear, even if they have front Tip-Toes footrest controls).

Now measure 55cm back from the first deck fitting point you have just marked. Measure in approximately the same distance from the edge of the kayak and mark, making sure it is in a location free from other fittings. This is where the second deck fitting will be fixed. Third and fourth deck fittings are not needed for these kayaks.

## Step 13 - Fixing deck fittings

Make sure each of the marked locations for the deck fittings are obstruction free on the inside of the kayak. You may need to slide a seat forward before drilling these points. Use a 4.5mm drill bit to drill a hole in the centre of each of the marked locations. Then push a screw through each deck fitting and place a rubber o-ring on the back of the deck fitting. Now place the deck fittings on the boat, securing from inside the kayak with a washer and a nylon insert nut.

## Step 14 - Fitting the rudder up-haul controllers

Take the two up-haul lines from the middle of the rudder head and thread them forward through the deck fittings you have just fitted, but not through the front most deck fitting next to the seat. Make sure the rope on the right hand side of the kayak is fed through the bottom half of the deck fittings and the left hand rope through the top half. The two ropes should not cross over each other.

Pull on the bottom rope (down-haul) to make the rudder go into it's active down position. Slide one of the oval toggles onto this rope and whilst pulling the rope towards the front deck fitting, tie a knot 7cm before the front deck fitting and slide the oval toggle over the knot.

Now pull the top rope (up-haul) so that the rudder lifts up onto the rear deck of the kayak. Slide the remaining toggle onto this rope and whilst pulling the rope towards the front deck fitting, tie a knot 7cm before the front deck fitting and slide the oval toggle on this rope over the knot. You should now have a toggle on each rope that when pulled forward, will lift and lower the rudder. The knots on the ropes should stop the toggles from reaching the front deck fitting.

Take the loose piece of shock cord and tie a knot in one end. Thread the shock cord through one of the toggles, through and round the front deck fitting and back to the other toggle. Tie the shock cord off to the second toggle leaving the line under tension. Cut away any remaining rope and cord and seal the ends carefully with a lighter.



## Step 15 - Fitting the rudder park

A rudder park is used to hold the rudder blade in situ during transportation and storage. On some models there is a recess for the plastic block to sit in (such as on the Prodigy, Carolina and Triumph). If there is not an obvious position then you can untie the block and tie off the bungee with hook to a close by deck fitting - this works well on the Essence and Expression by using the rear handle attachment point.

Alternatively, surface mount the plastic block: to do this first mark the position on the rear deck by measuring forward of the rudder pin hole by approximately 25-28cm and out from the centre line of the deck by 2cm - this must be a flat area. When fitting the plastic block, use a 4.5mm drill bit to drill the fixing hole. Push the screw through the block and place the rubber o-ring on the other side. Then put the block in place and secure inside the kayak with a washer and nylon insert nut.

With all attachment methods, adjust the length of the shock cord to give good tension when the hook is over the rudder blade so that it remains fixed during transportation.

Please check all fittings before first use and on a regular basis!