perception®

touring rudder sit-on top kit

Kit to fit rudder enabled sit-on tops with a 10mm rudder fixing point.

Note: It is easier to fit the Touring Rudder System if you have a screw hatch fitted to the rear stowage area of the kayak. If your kayak does not have this screw hatch and you wish to fit one, please contact a Perception dealer for advice. These instructions explain how to fit the rudder kit to a kayak with or without a rear screw hatch in place. Please make sure you follow the correct steps for your version of sit-on top kayak.

This kit should contain the following:

1x rudder assembly with up-haul rope & split ring
4x length of rudder hose
2x Dyneema control line - with cord end assembly
1x pair of Tip-Toes control footrests with foam washers
6x footrest screws, washers and nuts - pre-fitted
4x deck fittings
5x self tapping screws
2x oval toggle
1x length of 4mm shock cord
1x rudder park - inc. hook, shock cord & fixing block

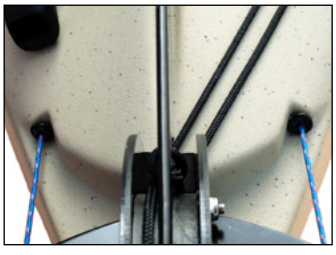
You will also require some tools to fit this kit:

Drill with 3mm, 5mm and 6mm drill bits
Short phillips screwdriver
Small adjustable spanner or pair of pliers
Tape measure
Marker pen
Wire cutters
Lighter
Small amount of sticky tape

Please read these instructions carefully before fitting!

Step 1 - Control line entry points

The rudder will need to have two control lines attached, each one running through hose sections inside the kayak from the rudder to the Tip-Toes footrests. This kit has four hose sections (two pairs) as two sections are needed per control line. Two sections will be inserted into the kayak just forward of where the rudder is fixed. The other two sections need to be inserted into the kayak near the recess for each footrest and run towards the back of the kayak. Use the pictures below to mark the entry point for each of the four hoses. Now drill the rudder hose 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.



Hose entry points at the rear of kayak by the rudder.

Forward entry points at the rear of the footrest recess.

Step 2 - Tip-Toes footrest positions

If your sit-on top kayak already has sliding footrest rails: you will need to remove them completely from the kayak. Use a screwdriver to undo the footrest rails whilst holding an 8mm spanner or small adjustable spanner to the nuts on the back of the rails. To reach the nuts on the back of the rails, reach into the kayak through the front oval hatch. You may need someone to help with this. Discard original fixings. Now skip to step 3.

If your sit-on top kayak does not have any sliding footrest rails fitted: Locate the flat recessed areas designed to take the sliding footrest rails above the moulded in footrests. Find the rear most fixing position (closest to the kayak seat) for each tip-toes footrest rail. These need to be marked 215mm along from the seating end of the recess and 14mm down from the top edge of the recess - You will need to measure and mark the kayak in exactly this point for both rails. The height of this position is extremely important, too low and the footrest pedal will catch when adjusting, too high and a washer will not fit on the back of the fixing screw. The position of the rail along the recess is the optimal distance allowing easy access through the front oval hatch to place washers and nuts to secure the rails. If you wish to alter this position, make sure you can reach the back of each screw inside the kayak before drilling any holes.

Use a 5mm drill bit to drill the rear most fixing point (closest to the seating area) for each tip-toes footrest rail.

Step 3 - Fixing tip-toes footrests

The rails will have been supplied with the screws, washers and nuts pre-attached - you will need to remove the three fixing screws, nuts and metal washers from the rails leaving the foam washers stuck in place on the back. Hold one of the rails in place making sure it is the right way round with the pedal facing the seating area of the kayak and with the rudder control on top. Push one of the screws through the first fixing point (closest to the seating area) and into the corresponding hole in the kayak. Reach into the kayak through the front oval hatch and place a metal washer followed by a nut on the back of the screw. Tighten using a screwdriver and an 8mm spanner or small adjustable spanner - you may need someone to help with this.

Next fix the opposite end of the rail in place in the same way, pushing through a screw and securing with a metal washer and nut on the back. If this position needs drilling - hold the rail up level and use a 5mm drill bit to drill through the hole in the rail and into the kayak. Again be very careful to make sure the rail is held level as you drill the hole, too low and the footrest pedal will catch when adjusting, too high and a washer will not fit on the back of the fixing screw.

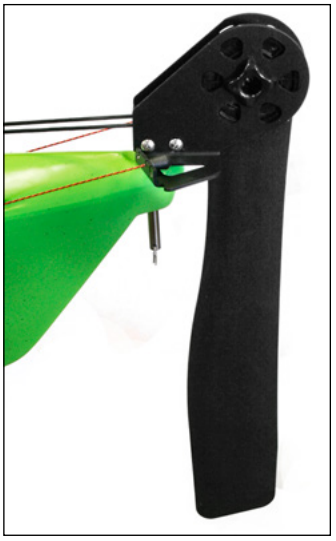
Repeat this step with the second tip-toes footrest rail making sure the rail is the correct way round.

Step 4 - Tip-Toes central fixing point

When using the tip-toes footrest pedals it is important that the third central fixing point on each rail is used. Slide the pedals away from the middle of each rail. Use a 5mm drill bit to drill the fixing hole by going through the central hole in each rail and into the kayak. Secure each position in the same way by inserting a screw through the rail and into the kayak. Place a metal washer followed by a nut on the back of each screw and tighten.

Step 5 - 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 into the rudder holder at the back of your kayak and attach the split ring to secure the rudder pin onto the kayak.



Step 6 - Rudder hoses & control lines

Uncurl and straighten the four rudder hose sections. Take one of these hose sections and thread the open end of one dyneema control line into the larger end of the hose. Slide this section of rudder hose all the way to the end of the dyneema control line so that the larger end of the hose meets the cord end assembly pre-fitted to the control line. Now take a 3mm drill bit and use sticky tape to secure it to the open end of the control line - this will weight the line and make it easier to pass through the kayak.

Place your kayak up on its side edge and locate the lower (now closer to the ground) hose entry points you drilled in step 1. Working at the rear of the kayak, push the 3mm drill bit with control line attached into this 'lower rear' hose entry point and keep feeding in the control line. Once you reach the rudder hose you had placed on the control line, start feeding that through the hole too. It will be a tight fit but push it all the way in until the larger end of the hose acts as a stopper against the hole. Feed any remaining control line into the fitted rudder hose until the pre-fitted cord end assembly acts as a stopper.

Lift the stern end of your kayak slightly and shake a little to encourage the line with 3mm drill bit to travel down the kayak towards the front end. Open the centre hatch and remove the bag so you can reach through to the line and 3mm drill bit from this location. It is important to make sure the kayak is stable on its side as you reach inside. Take the 3mm drill bit and if you can reach, pass it forward through the inside of the moulded in side handle (this helps keep the line up out the way) before pushing it out the front hose entry point previously drilled.

Pull through any slack in the line making sure it runs cleanly all the way through the kayak in a straight line and is not tangled round any internal parts of fixings such as rod holders. Take a second rudder hose and feed the control line into the smaller end of the hose. Keep feeding the line in until it appears out the other end of the hose. Taking care not to loose the end of the line back inside the hose - feed the new hose all the way into the front entry point until the large end acts as a stopper.

Do not fit the second control line at this stage.

Step 7 - Attach control line to rudder

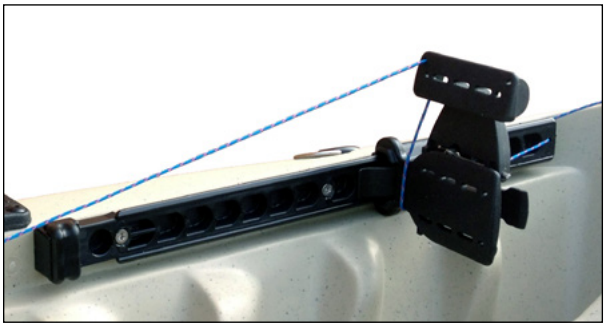
Pull a small amount of line back through the kayak at the rudder end and pass it through the corresponding middle hole on the wing of the rudder head as shown in the picture. The metal sleeve in the end of the cord assembly should engage fully into the hole in the rudder head.

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.

It is important in the next step that the rudder stays dead central. Lift the blade up on top od the deck so that the grove in the deck holds the rudder straight. You may want to use sticky tape or the up-haul rope to hold it firmly in the central position. Make sure the control line remains attached to the rudder head and free from any interference.

Step 8 - Attach control line to Tip-Toes control footrests

From the front end pull through any slack still left in the line making sure it stays connected to the rudder head. Slide the pedal on the corresponding footrest into a central position and thread the control line though as shown in the picture below.



The line passes through the eye on the top outside 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 hole at the rear of the runner. Pull through all slack in the line.

Keep tension on the line and push the top control part of the pedal so that it hinges forwards towards the seat and rear of the kayak. With the control pedal in this position and the control line under tension, tie a knot in the line 4cm past the last hole in the footrest rail. You will need to tie several knots to ensure the line can't slip back through the hole.

When you release the tension in the line the control pedal should sit in a vertical position. If the pedal is not vertical, adjust the knots in the line.

Step 9 - Fit remaining control line and rudder hoses

Repeat steps 6-8 to fit the second control line with remaining rudder hoses - making sure the rudder remains fixed in the central position when you reach step 8.

Once both control lines are fitted and connected, release the rudder and test the pedal controls work and move the rudder. When happy leave 10cm of extra control line past the knots on the footrest rails and trim any excess past this point and seal the ends with a lighter. The extra 10cm of line may be needed to make future adjustments.

Step 10 - Positioning of deck fittings

You should fix the deck fittings in the marked out indents moulded along the right hand side or your kayak. Use a 3mm drill bit to drill a pilot hole in the centre of each of these recesses. Then position each deck fitting in place and secure with a self tapping screw making sure you do not overtighten them.

Step 11 - 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 12 - 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 to use 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, so that the blade is held just off the kayak.

Step 13 - Fitting the rudder park

A rudder park is used to hold the rudder blade in situ during transportation and storage. Place the plastic fixing block in the purpose designed recess on the back deck of the kayak close to the centre line of the kayak. Use a 3mm drill bit to drill a pilot hole down through the fixing hole in the plastic block and through into the kayak. Use a self tapping screw to fix the block in place being careful not to over tighten.

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!