



Delivery Guide

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The purpose of this guide is to assist you in unpacking and preparing an Arrow kart, ready for delivery to its new owner, the all-important Arrow customer!

It is very important that every effort is made to ensure each Arrow is assembled in the pre-delivery stage to the highest standards possible, all areas involving issues of safety have been checked and the kart complies to the "Arrow Kart Set-up Guide" as far as starting seat position, chassis set-up etc. As the saying goes, there is never a second chance with a first impression!

IMPORTANT

These instructions and guidelines are prepared with the aim of ensuring your customer's experience with karting and Arrow in particular is a safe and enjoyable one. This will help to ensure when he is looking for his next kart or if he is telling his friends about karting, he can give the best reference possible, which is word of mouth.

Karting, like any form of motorsport can be a dangerous activity, especially when equipment is not properly assembled, serviced and/or maintained. DPE provides these assembly guidelines to act as a guide only to the assembly of an Arrow kart. There are many different models of Arrow karts and hundreds of various kart engines used in Australia and around the world. We have not attempted and do not claim to have provided instructions that cover the assembly of every part of every type of kart and/or kart engine.

Because of this, even if you follow these guidelines, your safety or that of your customers is not guaranteed by DPE. You must ensure that only suitably qualified and experienced staff are involved in kart assembly. At all times you must use your own knowledge, common sense and experience to determine what is required to assemble a kart safely.

If you are not sure about any part of assembly guidelines, you should seek further information from the Arrow Kart set up guide, the Australian Karting Association Manual, as amended from time to time, or the relevant rulebook for your country.

Please note that these guidelines are current at the date of this letter and are subject to change without notice.

To fit the plastic clip, place the two halves of the plastic bracket vertically in the centre of the two bars with the elongated slot on the pedal/lower bumper bar. The two halves are different. Make sure they are put on so that the bolt goes in from the front of the kart.

- (ii) The two metal clamps hold the front bumper down, clamping the nosecone/front spoiler onto the kart.

Put the nosecone/spoiler into position with the four spigots between the upper and lower bars. The plastic clip should fit between the two centre spigots of the nosecone/spoiler and the two metal clamps go in between the two outside spigots. Clamp the nosecone into place using the two metal clamps. The length/tension of these metal clamps is easily adjustable, simply by winding or unwinding the clamp.

Note: - *When working from above the kart, the levers push down to clip into place.*

For CIK homologated/US spec karts, no clips or clamp is required for the nosecone/front spoiler. The simple action of bolting the upper front bumper's two vertical struts down onto the lower front bumper (on all AX8-CIK, AX8-80 and 125) or lower pedal bar on US spec non-CIK homologated models, clamps the nosecone/spoiler in place.

Sidepods

For Australia, refer to Rule 25.02 before starting. This rule defines very clearly where the sidepods must be positioned.

Place the sidepod in position (in Australia ensuring they comply with all dimensions of rule 25.02), with the right angle bracket used on Arrow karts this is a fairly simple task. Use a texta colour or pen to mark the position of the holes. Remove the pods and drill 4 x 6mm holes. Attach the pods using the bolts and washers supplied.

Double check the entire kart

Now go back over the entire kart and check every bolt, nut etc. This will only take a few minutes and it is much better to find a loose bolt/nut before the kart goes out the door, rather than trying to calm down an angry customer after something has fallen off his new kart because you got interrupted or distracted during the assembly.

Finishing

The job is not finished until the paperwork is done! Make sure you supply your customer with a copy of the Arrow Kart's Setup Guide and get them to fill in the Owner's Registration card (page 23) while they are still there with you.

Mail this completed registration card back to us as soon as possible.

Unpacking a new Arrow

An Arrow Kart carton is designed to fit two karts. On the outside of the carton you'll find a label showing the kart model type/s packed inside, their corresponding serial numbers as well as indicating if spare parts have also been included.

Once you have opened the carton and removed the top kart you will see:

1. All of the sidepod supporting bars at the rear of the bottom kart.
2. One of the two nosecones at the front of the bottom kart.
3. The second nosecone in the centre of the box between the two karts.
4. A carton on each side of the kart. These two cartons each contain:
 - (i) The sidepods,
 - (ii) Sidepod bolt kits,
 - (iii) Rear wheel hubs, (plus front wheel hubs on applicable models.)
 - (iv) Front and rear wheels,
 - (v) Arrow steering wheel,
 - (vi) Arrow cap,
 - (vii) Nosecone clips and clamp set for the applicable kart models,
 - (viii) Fuel line,
 - (ix) Fuel tank overflow bottle,
 - (x) Overflow bottle strap kit,
 - (xi) Plastic rear number plate,
 - (xii) Adhesive front number plate,
 - (xiii) Throttle cable,
 - (xiv) Arrow Kart Setup Guide (together with suggested starting setup and seat position chart)
 - (xv) Assembly instructions,
 - (xvi) Extra breather bottle for karts supplied with Rotax Max fitting kit,
 - (xvii) CIK rear wheel protectors for the applicable models.
5. The front Nassa panel and chain guard, (excluding AX8 - 80 & 125 karts,) on top of each of these kart accessory cartons.

Note: *The relevant seat for each kart is packed in a separate carton, one for each order of karts, which may also contain some spare parts if an order is being shipped together with karts.*

Having un-packed the karts from their carton, strapped onto the engine mount area are:

AX8 – Cadet/Rookie, Junior, 28/30 & 30/32

- Complete exhaust cradle and its springs,
- Exhaust cradle support bracket,
- Seat bolt kit,
- Front wheel spacers.

AX8 – CIK

- Complete exhaust cradle and its springs,
- Exhaust cradle support bracket,
- Seat bolt kit,
- Front wheel spacers.

AX8 – 80

- Gear lever & knob,
- Seat bolt kit,
- Front wheel spacers,
- Chain guard strap.

AX8 - 125

- Gear lever & knob,
- Seat bolt kit,
- Chain guard strap,
- Rear wheel protector clamps, (not included with US spec karts.)

Checking the Rear Axle

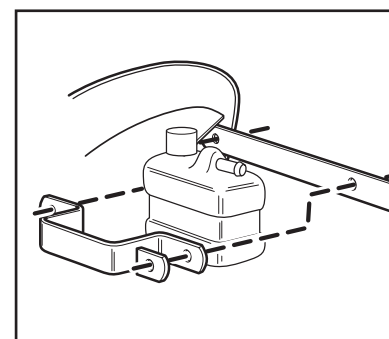
It is important that you do check that the axle retaining grub screws are all tight.

Please note: on all Arrow AX8-80 and 125 karts the axle retaining grub screws are left loose. We do this to make the job of removing the axle easier for those karts that are being prepared for use with an engine package requiring an external axle pulley driven water pump. It is therefore extremely important that you do remember to tighten-up the grub screws before delivery.

make sure the steering spade at the bottom of the steering shaft (where the two steering tie rods are bolted on) is horizontal (the Sniper B4 Professional alignment kit has a level specifically designed for this job) at which point you are ready to start doing the alignment.

For *Camber/Castor and Toe-in/toe-out setting*, please refer to the kart's supplied "Suggested Starting Setup Sheet", found in the back pocket of the kart's "Arrow Kart Setup Guide" or refer to our web site at www.dpeng.com.au.

Mounting the Fuel Tank Breather Bottle



The accessories for mounting the breather bottle are in a bag placed within the sidepod. You will need the black strap and two gold coloured shaped washers.

Using the diagram shown as a guide, place the strap on the inside of the nassa panel support bracket then a gold coloured shaped washer and the 6mm washer and nut. Place the breather bottle under the strap and repeat the same process for the lower bolt. It will be a tight fit.

Mounting the Bodywork

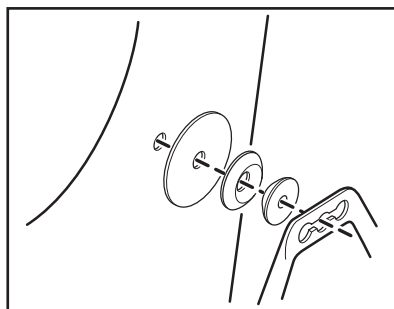
Nassa Panel

You will need to drill three 6mm holes to fasten the nassa panel to the kart, two for the upper mounts and one for the lower mounting bracket. For your convenience the position of these holes is marked faintly in the nassa with a *. Check these indicator holes are correct for the Arrow you're working on by placing the nassa and brackets in the desired location (for Australia, ensure this complies with Rule 25.03, clearance of steering wheel). Drill the 6mm holes and attach the nassa panel using the bolts and countersunk washers supplied.

Nosecone/Front spoiler

For non-CIK homologated models, (the AX8-Rookie/Midget, Junior, 28/30 and 30/32,) the nosecone/front spoiler is supplied with a kit comprising of qty. 2 x metal clamps and one plastic clip;

- (i) The plastic clip connects the lower pedal bar and the chrome bumper bar but does not fix the nosecone to the kart.



The diagram at left shows how to fit the self-centering seat washers. If spacers are also required, they should be fitted between the self-centering washer system's outer conical ball washer and the chassis' seat support.

Under the front of the seat only use the plastic seat washers. These are used as packing between the seat and the welded chassis mounting tabs for obtaining the correct relevant measurements.

Pedal Adjustment

After fitting the seat, ensure the driver can activate both pedals comfortably. If not, adjust the brake rod and throttle cable as required. Remember to re-adjust the pedal stops after doing this.

Mounting the Steering Wheel

Using the three countersunk washers supplied, fit the steering wheel to the steering boss. The "Arrow" logo on the flat section of the steering wheel goes to the top. The height of the steering wheel can be adjusted by altering the position of the plastic steering shaft boss.

Front End Alignment

We do not do a front-end alignment on any of our karts prior to packing therefore it is extremely important all Arrow karts have a complete front-end alignment before they are delivered to their new owner. To maintain the kart's maximum performance potential, remember to tell the kart's new owner that they should do a wheel alignment check prior to each new day on the track.

Front-end alignment of a kart is critical to its on-track performance. We therefore strongly suggest that you use a "Sniper" laser alignment system to do the Arrow's pre-delivery alignment. Quite simply, the Sniper is the best system available on the market and well worth the investment for any Arrow dealer or serious racer.

The very first stage of doing a front end alignment is to make sure you have set the height of the Kart's steering column where its new owner finds it comfortable. Once that has been done,

Mounting the Tyres

Fitting tyres will depend upon the type of tyre the kart is being assembled with. When inflating the tyre to seat the bead, **do not over inflate**. *There is a very real risk of serious injury if the manufacturer's advice printed on the sidewall of all tyres is not followed.* To aid the seating of the bead, a light coating of soap applied on the bead before inflation and using external steel tyre rings around the tyre will help. Do ensure all tyres are wiped after this process and check for any damage or defects before fitting the wheels with tyres onto the kart. Refer to the third paragraph of "Front end alignment" on page 8 of this document.

Wheels

Front

After fitting the tyres to the wheels:

On Arrow AX8-Rookie/Cadet, Junior, 28/30 & 30/32, remove the stub axle nut (19mm nut) from the stub axle. A guide as to where you should set the front track can be found on page 9 of the *Arrow Kart Setup Guide*. Fit the wheel and wheel spacer/s then refit and tighten the stub axle nut. Do not over tighten the stub axle nut and ensure the wheel turns freely.

On Arrow AX8-CIK, 80 & 125, use an 8mm T-bar to remove the 3 wheel nuts. Refit the wheel and then the 3 wheel nuts. Ensure the wheel nuts are tight, as a loose wheel can be disastrous and dangerous.

Rear

After fitting the tyres, use an 8mm T-bar to remove the 3 wheel nuts. Refit the wheel and then the 3 wheel nuts. Ensure the wheel nuts are tight, as a loose wheel can be disastrous and dangerous.

Setting the Rear Track

The rear track is probably the most important single variable in setting up a kart. Please refer to the kart's supplied "Suggested Starting Setup Sheet", found in the back pocket of the kart's "Arrow Kart Setup Guide" or refer to our web site at www.dpeng.com.au for the best place to set the kart's rear track as a starting point for its new owner.

Checking and Bleeding the Brakes

We do bleed the brakes here at the factory before packing a new Arrow however it is important that you do check the brake system over before delivering an Arrow to its new owner.

- 1) *Always check the feel of the brake pedal making sure it feels hard without any sponginess.*

If the pedal does feel a little spongy, bleed the system only using racing Dot-4 grade hydraulic brake fluid, (we recommend Shell.) **Do not use Silicon brake fluid.** Before attempting to bleed the brake, retract the dust boot on the master cylinder for the rear brake caliper to check if the piston is against the circlip (adjust the pushrod if necessary.) To bleed the brake, depress master cylinder lever. Whilst keeping pressure on the lever, open the bleed screw in the brake caliper. Keep pressure on the master cylinder lever until the bleed screw is tightened. Release the lever. Repeat this process while maintaining the reservoir fluid level, until the new fluid has been flushed through the system. Repeat for the other side of the caliper.

In the case of the AX8-125, adjust the brake bias bar to full front brakes. Repeat the above process again for the front calipers. ***Having completed this, it is important you remember to re-adjust the brake bias bar to equal front-to-rear brake bias.***

- 2) *Ensure the master cylinder lever always has free play. If the brake rod is adjusted in such a way that no free play exists and the master cylinder lever has pressure on it, adjust either the pedal stop or the brake rod length.*
- 3) *On an Arrow AX8-125, check the front-to-rear brake bias.* The best way of adjusting the brake bias is to do it when the kart is up on a kart stand. Adjust the brake bias bar where, with pressure applied on the pedal, both front and rear wheels can just be turned by hand.
- 4) *Ensure all owners of AX8-125 karts know that they do need to “bed-in” their front brakes as well as new front pads when replaced.*

The front brakes “bedding-in” process should be:

- Firstly adjust the brake bias bar to full front brakes.
- For approximately 2 laps lightly apply brakes only, gradually increasing pressure used to approximately 40% of full braking.
- Going *slowly*, do a lap without using the brakes at all so that they may cool off totally.
- For approximately 2 laps, gradually increase pedal pressure so that braking is occurring at approximately 75% of full braking by the last half of lap 5.

- Going *slowly*, do a lap without using the brakes at all so that they may cool off totally.
- Do 2 laps at 75% full braking and then for the next 2 laps work the brakes hard. Ride the brakes then let off the pedal for 2 seconds and ride them again. Continue this until the front brakes become very hot and the start to fade away and lose stopping power. From this point for the next 2 laps, ***driving around very slowly***, do not use the brakes, allowing them to cool down.
- Return to the pits and allow the brakes to cool down completely before returning back onto the track.

Brake Shims

Most models of Arrow karts are supplied with extra brake shims, which should be removed prior to running the kart. **Remove the extra pad shims but remember to refit the brake pad safety retaining pin/s.** Don't forget to give the spare shims to your customer.

Choosing and Mounting the Seat

Choosing the correct size seat and then fitting it properly are critical to the performance of any kart. Also, as the flex characteristic of a seat plays an influencing role in a kart's performance, with all Arrows we strongly recommend that Kartech seats be used.

The best way to make sure the seat fits the kart's new owner well is to place the chosen seat on the floor and have the customer sit in it. Ask that they sit with their legs and arms held out, as they would be when driving their kart. The seat should hold their hips **firmly without discomfort** while you must be able to place your flat hand in between the seat and the new owner's rib cage without using force.

Once the correct seat has been chosen, it is very important that you use the relevant “***Seat Position diagram and chart***” that are included in the back pocket of the “***Arrow Kart Setup Guide***” or refer to our web site at www.dpeng.com.au.

When fitting the seat, it is essential that the frame is not stressed or forced in order to tighten up the seat fixing bolts. There are a range of Arrow seat spacers that do help in making the job of fitting the seat easier. Make sure you use a large diameter seat washer against each side of the seat, as this is very important in spreading cornering loads. The AX8 range of karts are supplied with Arrow's unique self-centering seat washer system. Fitting between the chassis seat support and the seat, these washers ensure that there are no torsional loads placed on the seat through mis-matching angles between the seat and the chassis.