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A portion of the sale of every Leatt-Brace® worldwide is donated to the Wings for Life Spinal Cord Research Foundation. www.wingsforlife.com

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Leatt[®] Kart User Manual

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A WARNING A

Motor Sports and racing can be dangerous. Participation in these activities can result in severe brain, head and neck injuries which may result in paralysis or death. Although the Leatt-Brace[®] is designed to help reduce the risk of such injuries, there is no guarantee that any injury will be prevented by the use of this or any other safety equipment. Read all instructions prior to use. Before putting on your Leatt-Brace[®] each time, please review and comply with the following cautions and instructions below.

The Leatt-Brace[®] cannot protect against all possible impacts and/or injuries. Although the Leatt-Brace[®] is designed to help reduce the risk of such injuries, there is no guarantee that any injury will be prevented by the use of this equipment. Perform any motor sport activity with caution and use/wear appropriate safety equipment.

For maximum performance, the Leatt-Brace[®] must be properly fitted and attached according to the instructions in the user manual. It is recommended that this product be used only in conjunction with a helmet with a permanent fixed chin part (e.g full-face helmet, kart helmet, DO NOT USE WITH A JET HELMET). Use at your own risk.

For maximum performance, the Leatt-Brace[®] must be inspected prior to each use. **STOP** using the Leatt-Brace[®] if any components show signs of damage or are worn, cracked, and/or deformed, or if the inside padding is deteriorated. Leatt[®] Corporation recommends that the Leatt-Brace[®] be replaced every 2 years under normal racing conditions.

Should you experience a collision or if the Leatt-Brace[®] or any component shows any signs of damage, cracking, deformity and/or the inside padding is deteriorating, return the Leatt-Brace[®] to the seller for inspection or destroy and replace the Leatt-Brace[®].

Common substances applied to this brace (solvent, cleaners, hair tonics, etc.) can cause damage that may be invisible to the user and compromise the effectiveness/safety of the Leatt-Brace[®]. Wash only with gentle soap or detergent in cold water, rinse in cold water and dry with a soft cloth.

Do not drill holes, paint, cut, heat, bend, apply decals or stickers, or make any other modifications to the Leatt-Brace[®] unless authorized in advance by the Seller. Doing so may compromise the effectiveness/safety of the Leatt-Brace[®].

The brace has been tested using various static and dynamic tests, but has not been tested on riders under race conditions for instrumented impact assessment; this product is of a new design.

The brace has been tested on a wide range of users and vehicle types and should fit you and your vehicle, if not, minor adjustments may be required for proper fit. Failure to properly adjust the brace before use may compromise rider safety and brace effectiveness.

Always attach your helmet correctly according to seller's guidelines. Ensure that all of your safety equipment has not passed beyond its recommended life span. Travel/race with safety as your primary principle.

If you have any questions regarding this product or its proper use, please contact Leatt[®] Corporation at:

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Leatt-Brace® Moto Kart

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QIY		QIY
1	14 - Shim	2
1	15 - Back Screw Plate	2
1	16 - Back Lower Plastic	1
4	17 - Serrated Washer	4
7	18 - Nylon Washer 2mm	2
8	19 - Button Head Cap Screw M4 x 22mm	1
2	20 - Button Head Cap Screw M4 x 20mm	2
2	21 - Kart Back Upper Plastic	1
2	22 - Kart Back Padding	1
1	23 - Circlip Rivet 2,9 x 17mm	4
1	24 - Front Screw Plate	1
1	25 - Button Head Cap Screw M4 x 18mm	2
2		
	1 1 1 4 7 8 2 2 2 1 1 1 1 2	1 14 - Shim 1 15 - Back Screw Plate 1 16 - Back Lower Plastic 4 17 - Serrated Washer 7 18 - Nylon Washer 2mm 8 19 - Button Head Cap Screw M4 x 22mm 2 20 - Button Head Cap Screw M4 x 20mm 2 12 - Kart Back Upper Plastic 2 22 - Kart Back Padding 1 23 - Circlip Rivet 2,9 x 17mm 1 24 - Front Screw Plate 1 25 - Button Head Cap Screw M4 x 18mm

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Instruction manual introduction Leatt-Brace® Kart

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Welcome to the world of Leatt-Brace[®] and thank you for choosing our product. The Leatt-Brace[®] you have purchased is based on years of academic research, extensive evaluation of the mechanisms of head and neck injuries, together with testing, both in test facilities and with simulation software, and also in conjunction with top drivers and riders.

Our design philosophy has always been to produce an effective neck injury prevention device with practical appeal as determined by our test riders. We will therefore always appreciate your feedback with regards to comfort and practicality for your chosen application of our product.

Please e-mail any comments you might have to info@leatt-brace.com.

The Leatt[®] MotoKart brace (*Figure 1*) has been designed to be set up in stages to suit your requirements. Please follow the fitment process which should take you about 20 minutes to complete.



Please note: The product shown may vary in colour. Brace components are illustrated in contrasting colours to indicate individual identification

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Leatt-Brace® sizing chart

The size of the brace you have purchased should be correct for your body shape and allows for adjustability to ensure correct fitment and comfort, no matter what your application is.

Please follow the below mentioned sizing chart to ensure that you have purchased the correct size Leatt-Brace[®]. The sizing chart is based on your height as well as your chest circumference right below the arms therefore make sure that you take the correct measurements before utilizing the chart below.

Sizing Chart



* Chest circumference right below the arms

		Chest circumference				
υ [] 🕨		21.6 - 33.5	33.9 - 35	35.4 - 37	37.4 - 43.3+	
Height		55 - 85	86 - 89	90 - 94	95 - 110+	
3'6" - 4'7"	106 - 139	sml				
4'7" - 5'1"	140 - 155	sml	sml/med			
5'1" - 5'4"	156 - 163	sml	sml/med	med		
5'4" - 5'5"	164 - 166	sml	sml/med	med	med	
5'6" - 5'7"	167 - 169	sml	sml/med	med	med	
5'7" - 5'8"	170 - 172	sml	sml/med	sml/med	med	
5'8" - 5'9"	173 - 175	sml	sml	sml/med	med	
5'9" - 5'10"	176 - 178	sml	sml	sml/med	med	
5'10" - 5'11"	179 - 181	sml	sml	sml/med	med	
5'11" - 6'	181 - 183		sml	sml/med	med	
6' - 6'1"	183 - 185			sml/med	med	
6'1" - 6'3"+	185 - 190+				med	

cm

* sml/med refers to either a medium on the smallest setting or a small on the biggest setting .

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Leatt-Brace® fitment - step 1

Your Moto Kart brace is supplied with three pairs of different sized Pins for adjustment. The Medium Pin is fitted as standard. To begin with, fit your brace without the thoracic assembly on your shoulders and chest as shown below in *Figure 2*.



Adjustment with Pins

If the brace is too loose around your neck with the fitted Medium Pin and does not sit comfortably on your shoulders and chest, fit the Short Pin (see *Figure 3*). If the brace is too short and therefore too tight, simply fit the Long Pin.



Fitting the Pins

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Unscrew the 2 Buttonhead Cap Screws (see *Figure 4a*) with the supplied Allen key. Slide the Pin out once the Cap Screws are removed (see *Figure 4b*) and replace by sliding the desired Pin back in the same way. Now screw in the 2 Buttonhead Cap Screws with its washers in place to secure the newly fitted Pin.







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Padding inserts

When the 10, 20 and 30mm pin is used, fit padding insert to cover exposed pin on the inner brace structure.

1. Peel back rear padding to expose velcro

- 2. Place padding insert over exposed pin
- 3. Re-apply padding





Torque setings for screws

All screws except the clip hinge countersunk screws should be maintained at 2Nm. The clip hinge screws should be maintained at 1Nm.

Strut and thoracic assembly - step 2

Now attach the strut onto the thoracic assembly as shown in *Figure 5*.

7 Degree Wedge

Slender riders can insert the 7 Degree Wedge upright between the thoracic assembly and the strut (*Figure 6b*).



DO NOT USE THE WEDGE WITH THE 17 DEGREE STRUT. (The 17 degree strut is not supplied with the MotoKart).









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Strut and thoracic assembly - step 2

(Continued)

Insert the strut into the back assembly of the brace (*Figure 7a*), starting with one Shim on either side (*Figure 7b*) of the strut. The strut and Shim will always be contained within the brace so that you can adjust the brace at any time. There is no need to fit the Locking Cap Screw at this time.

Now refit the brace. If the brace is pulled slightly backward, place the two Shims (*Figure 7b*) before the strut (towards the front portion of the brace), if the brace has become too loose, place the two Shims behind the strut (towards the back portion of the brace). If the lowermost portion of the thoracic assembly is located away from your back, use the 7 Degree Wedge. (*refer to Figure 6b*). You may now secure the Locking Cap Screw (see *Figure 7a*) that fastens the thoracic assembly to the back assembly.





Opening and closing the Leatt-Brace®

The Leatt-Brace[®] can be opened from the left or right (*Figure 8a*), or the front assembly can be completely removed (*Figure 8b*).





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Adjustment screws - step 3

With the brace sitting comfortably on your shoulders, sit on/in your vehicle to determine the range of movement you require to ride/drive comfortably.

Both the front and rear members are adjustable to your requirements in terms of range of head movement front to back (even at extremes, this range of movement is acceptable, as a general rule, set up the brace in the highest position comfortable).

Once you have determined this by moving the front member up and down, hand tighten the locking screws as shown in *Figure 8a* (front) and *Figure 8b* (rear).





Figure 8b





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Chest strap

Once your Moto Kart brace is set up correctly to your body size and shape, attach the chest strap (see Figure 10). The chest strap can provide additional stability and comfort.

The back portion of the Chest Strap has controlled stretch and should be attached with the Velcro® on the thoracic assembly (Figure 11a). The front portion of the Chest Strap has no stretch and should be attached with the Velcro® on the underside of the lower portion of the front assembly (Figure 11b).



adjustable tension strap

Looking after your Leatt-Brace®

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You may want to wash your Leatt-Brace® after hard driving. The brace and integrated padding can be washed with a gentle soap or detergent in cold water, rinsed in cold water and dried with a cloth. Common substances applied to this brace [solvent, cleaners, hair tonics, etc.) can cause damage that may be invisible to the user and compromise the effectiveness/safety of the Leatt-Brace®.

For maximum performance the Leatt-Brace® must be inspected prior to each use. Stop using the Leatt-Brace® if any of its components, including but not limited to, the Front Component, Hinge Lever Assembly, Pins, Strut, Nylon Washers and/or the Back Component (See Parts/Components List on page 3) are worn, cracked and/or deformed, or if the inside padding is deteriorated.

We wish you many safe hours of enjoyable racing and riding with your Leatt-Brace®. Please do not hesitate in contacting us with any questions or comments at info@leatt-brace.com. We recommend that you replace your Leatt-Brace® every two years of normal use and replace any components that are damaged in a serious accident.



Fasten the plastic clips on each side of the strap by clipping one into the other (Figure 11c).

You can tighten or loosen the excess tension strap for comfort and stability.







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Testing and approval of this product

The Leat-Brace[®] has been tested against the manufacturer's specifications and EC Type - Examination certification has been issued by SGS United Kingdom, Ellesmere Port CH65 3EN, England UK; Notified Body No. 0120. It is CE marked to denote compliance with the EU Personal Protective Equipment Directive 89/686/EEC.

for use of the Leatt-Brace[®]

Manufacturer's specifications

The Leatt-Brace[®] you have purchased is based on years of academic research, extensive evaluation of the mechanisms of head and neck injuries, together with testing, both in test facilities and with simulation software, and also in conjunction with top drivers and riders. The brace has been tested using various static and dynamic tests, but has not been tested on riders under race conditions for instrumented impact assessment.

Test specifications including the following have been used in the evaluation of this product:

- Eurotype Hybrid III instrumented sled tests (Land Mobility Technologies document No.P/2/00/00431, May 2004)
 BMW Pendulum Testing and Validation Model using Lifemod[™] BMW Test Facilities, Munich, Germany (2006)
- BMW Pendulum Testing and Validation Model using Lifemod BMW Test Facilities, Munich, Germany (2006)
 Innovations at BMW Motorrad in the development of equipment for motorcycle riders to reduce the risk of injuries based on
- the example of the Neck Brace System (proceedings of the 6th International Safety Environment Future Conference; Coloane, Germany, 9 – 10 October 2006)
- Side Impact Simulations Using a Validated Pendulum Test Methodology (Leatt[®] Corporation Biomechanics Division)
- Leatt[®] Manufacturing Test Specification Issue 2
- EN 340 "Protective clothing General Requirements"

The first five test specifications listed assess the ability of the Leatt-Brace[®] to reduce forwards and backwards movement of the wearer's head and neck in a collision, or when impacting the road surface. "Leatt[®] Manufacturing Test Specification Issue 2" includes evaluations of the resistance of the Leatt-Brace[®] fastenings to opening in the event of an impact. The chemical content of the materials and components used in the construction of the Leatt-Brace[®] has been assessed in accordance with the requirements of EN 340.

Protection provided by the Leatt-Brace®

Motor Sports and racing can be dangerous. Participation in these activities can result in severe brain, head and neck injuries which may result in paralysis or death. There is currently no other neck protection system available for kart riders that can effectively help prevent all of the above potential injuries.

The design rationale behind the Leatt-Brace[®] is to bring the head to a controlled stop. This is achieved by providing a padded rigid structure that acts as an alternate load path for neck forces. Helmet impacts otherwise transmitted from the helmet to skull and then to the neck are re-directed from the helmet to the brace to other body structures in a safe way. The design of the Leatt-Brace[®] prevents the helmet/head from projecting over the brace and therefore prevents a fulcrum action, which has been documented in literature pertaining to the use of collar devices. The Leatt-Brace[®] works with most types of body armour and chest protectors. Over long distances, the Leatt-Brace[®] will also offer some relief from neck fatigue.

The Leatt[®] Kart neck brace system prevents the following extreme movements:

- head, forward HyperFlexion
- head, rearward HyperExtension
- head, sideways Lateral HyperFlexion
- head/helmet, rearward on the neck Posterior HyperTranslation
- spinal column compression Axial loading, due to the effect of force on the helmet

Although the Leatt-Brace[®] is designed to help reduce the risk of such injuries, there is no guarantee that any injury will be prevented by the use of this or any other safety equipment. Read all instructions prior to use. Before putting on your Leatt-Brace[®] each time, please review and comply with the following cautions and instructions.

Perform any motor sport activity with caution and use/wear appropriate safety equipment.

For maximum performance, the Leatt-Brace[®] must be properly fitted and attached according to the instructions in the user manual. Use at your own risk.

Model range

Variant	Application
MotoGPX Club	Un-Restrained or Un-harnessed uses, such as: Motorcycles, ATV's. Bicycles: Downhill, BMX
• DBX Comp	Un-Restrained or Un-harnessed uses, such as: Bicycles, Downhill, BMX
MotoGPX Sport	Un-Restrained or Un-harnessed uses, such as: Motorcycles, ATV's, Jetskis. Bicycles: Downhill, BMX. Lighter than the "Club" model
 ADVenture™ 	Entry level motorcycle brace
DBX Ride	Un-Restrained or Un-harnessed uses, such as: Bicycles, Dowhill, BMX
• KART	Go-kart and karting

Size Range

Small: 4 - 16 years old (thin build) to fit wearer height: 97.5 - 165 cm Medium: 16 years + (average to bigger build) to fit wearer height: 165 cm +

The brace has been tested on a wide range of users and vehicle types and should fit you and your vehicle. If not, minor adjustments may be required for proper fit. Failure to properly adjust the brace before use may compromise rider safety and brace effectiveness. When correctly-adjusted and worn with the user's safety helmet, the Leatt-Brace[®] should allow the full range of normal head and neck movements (i.e. looking up, looking down and looking side-to-side, such as when performing an over-the-shoulder check); the Leatt-Brace[®] and the helmet only coming into contact with each other as the full range of normal movement is reached.

If any resistance or discomfort is experienced when attempting to complete the full range of head and neck movements, or if the brace does not make contact with the helmet when the full range of movement is reached, further adjustment or an alternative size of Leatt-Brace[®] may be required.

In extreme circumstances, it may be necessary to purchase an alternative model of safety helmet in order to achieve the required level of compatibility and safety.

Please ask the retailer or contact Leatt-Brace® if you require further advice on sizing, adjustment or fitting.

Cleaning

Wash only with gentle soap or detergent in cold water, rinse in cold water and dry with a soft cloth. Common substances applied to this brace (solvent, cleaners, hair tonics, etc.) can cause damage that may be invisible to the user and compromise the effectiveness/safety of the Leatt-Brace[®].

Always refer to the material content label on the Leatt-Brace[®]. None of the materials used are known to contain anything that might cause an allergic reaction or be dangerous to health.

Storage and transportation

Place on a clean, dry surface and store in a dry, well-ventilated environment away from direct sunlight and extremes of temperature. Do not place heavy objects on top of the Leatt-Brace[®].

Maintenance and Obsolescence

For maximum performance, the Leatt-Brace[®] must be inspected prior to each use. Stop using the Leatt-Brace[®] if any components show signs of damage or are worn, cracked, and/or deformed, or if the inside padding has deteriorated. Leatt[®] Corporation recommends that the Leatt-Brace[®] be replaced every 2 years under normal use/conditions.

Should you experience a collision or if the Leatt-Brace[®] or any component shows any signs of damage, cracking, deformity and/or the inside padding is deteriorating, return the Leatt-Brace[®] to the seller for inspection or destroy and replace it. Please dispose of it in an environmentally friendly manner.

Do not drill holes, paint, cut, heat, bend, apply decals or stickers, or make any other modifications to the Leatt-Brace[®] unless authorized in advance by the Seller. Doing so may compromise the effectiveness/safety of the Leatt-Brace[®].

Use with other Personal Protective Equipment

The Leatt-Brace[®] is part of the protective equipment ensemble available for use by participants in cycle and motor sports activities. It is recommended that this product be used only in conjunction with a compatible full-face helmet. Always attach your helmet correctly according to manufacturer's guidelines. Ensure that all of your safety equipment has not passed beyond its recommended life span. Travel/race with safety as your primary principle.

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INDEMNITY

As a condition of purchase/receipt of the Leatt-Brace[®], the user has fully read and understood the User Manual and understands that although the brace is designed to help reduce brain, head and neck injuries when worn in conjunction with a full-face helmet, there is no guarantee that any injury will be prevented by the use of the brace. Each brace must be set up for the individual user and be of the correct size and fit.

As a condition of purchase and/or receipt of the Leatt-Brace[®], the user has read and familiarized himself/herself with the technical aspects, research and test results relating to the Leatt-Brace[®] provided at Leatt[®] Corporation's website (www.leatt-brace.com) and understands the nature of the brace and its intended use and correct fitment.

As a condition of purchse and/or receipt of the Leatt-Brace[®], the user understands and recognizes that the brace has not been tested on humans in race conditions for instrumented impact assessment and that this is a new design.

Should you not wish to accept the terms of this Indemnity, please return the Leatt-Brace[®].

Always attach your helmet correctly according to manufacturer's guidelines, ensure all your safety equipment has not passed its recommended lifespan and travel/race with safety as an important principal.

As a condition of purchase and/or receipt of the Leatt-Brace[®], the user waives any claims against Leatt[®] Corporation, the inventor, manufacturer, any subcontractor, agent or Global Distributor. Leatt[®] Corporation, the inventor, manufacturer, any subcontractor, agent of Global Distributor will under no circumstances be liable to any person for any damages, direct, indirect, bodily or otherwise including injury or death, that may be sustained by any person as a result of the use of the Leatt-Brace[®], any alleged defect therein or its alleged failure to afford the protection offered by it or for any consequential loss of profits or damages suffered by any person, however such loss or damage may arise or for any other reason of from any other circumstances of whatsoever nature.

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Notes:



