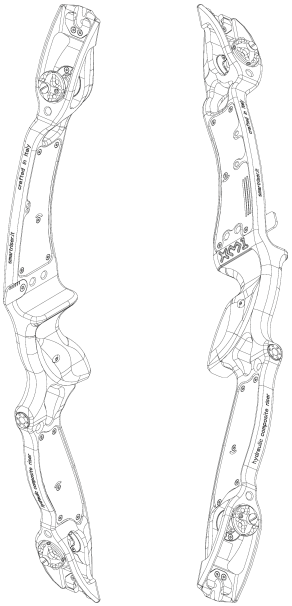
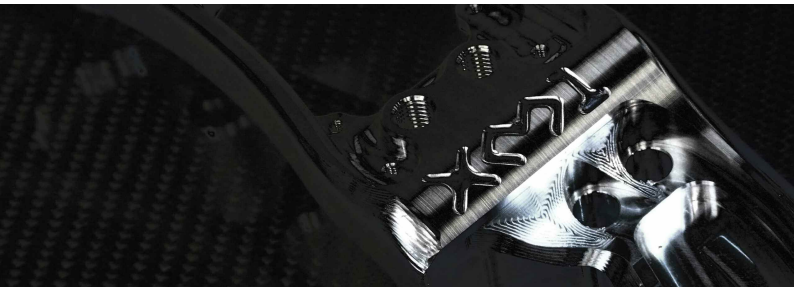
OWNER'S MANUAL



Smartriser®

THE HYDRAULIC COMPOSITE RISER



Dear Customer,
The SMARTRISER® XM1 represents a true innovation in the world of Bows. This project of sophisticated technical and manufacturing complexity has several specific features summarized here.

Thank you for having given us trust and for choosing one of our products. We invite you to take a moment to read the following short manual, where you will find information and tips that will allow you to make the most out of your new riser.
Here's wishing you the most satisfaction!

SMARTRISER® Team

Features

25 +1/4" Riser available in RH/LH.

Limb fitting:
- ILF (International Limb Fitting).

Structure:
- composite, 6000 series aluminum alloy and unidirectional carbon.

Manufacturing technology:
- Metal frame, solid CNC milled.
- Sheets of carbon plates CNC milled.

Grip material:
- CNC machined solid milled Iroko wood.

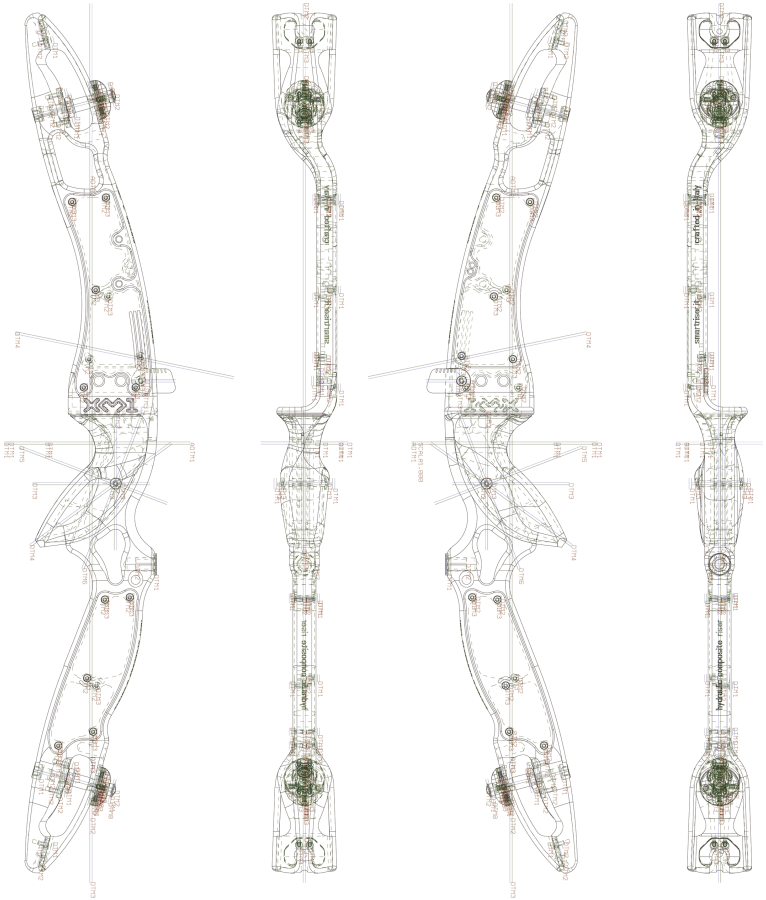
Coloring:
- Hand polished.
- Anodic oxidation color coating of the frame and accessories.

Riser type:
- Hydraulic Recurve Riser with 4 sealed chambers inserted in the structure containing technical fluids of high viscosity for the reduction of high-frequency passive vibrations.

Weight:
- 966 grams with the supplied standard Grip.

Visual Description

The XM1 Riser, even from a simple observation, immediately appears different from any other product on the market. The rest are only similar in functionality and performance. From a first aesthetics analysis you will notice the presence of two materials: the aluminum alloy for the frame base and the unidirectional carbon, with a structural function used for the four side plates. On the carbon plates, which hide the four hydraulic sealed chambers containing high viscosity fluid, there are twenty Torx screws. At the pockets, designed with flowing lines and let off on the side parts with the function of streamlining, there are QuickClick groups for the inserting of the limbs. All the bolts present on the XM1 are in Ergal, with the sole exception of the screws present on the carbon plates that are made of steel instead. The connecting socket of the stabilization and the plate of the screw holding pocket of the limb are also obtained by CNC machines using lightweight alloys of aeronautical use. The front threads of the pockets for attaching the dumper and/or weights are formed directly on the frame. These, however, compared to other risers, are obtained by rolling, thereby exhibiting a greater mechanical strength. The clicker extender plate is made of carbon and has simple notches for visual reference. The Grip, always in natural wood and obtained by CNC milling from solid Iroko, is offered in the standard version with a position of average height of the wrist.



Technical Description

The technical design of the XM1 riser is based on four key points:

- Composite frame structure in aluminum/carbon.
- Use of hydraulics to dampen vibrations.
- Decisive increase in the percentage performance of the riser and improvement of the limb's performance.
- Ease in the adjustment of the arc's power, the ideal measuring of the tiller and limb alignment.

1. The metal frame is obtained by CNC milling from a 10 kg bar of Anticorodal aluminum alloy. Once it is complete, an extremely lightweight piece is obtained, but still unusable without the addition of unidirectional carbon plates also CNC milled by the hundredths digit. After the coloring process is carried out by anodic oxidation, work on the frame is resumed by means of specific equipment on CNC machines in order to prepare the surface for bonding and to allow a centesimal tolerance of coupling to the carbon plates. These plates, glued to the riser by means of a bi-component epoxy structural adhesive, after a cycle of approximately sixty hours of pressure, become permanently joined to the metallic frame by material fusion and can no longer be disassembled. Araldite®, the adhesive used in the process, develops a bond strength of 20 N/mm². Because each plate rests on an area of 820 sq. mm, it results in 1,670 kg of axial bond strength developed for each element. The carbon parts, inserted in the structure with perfectly oriented fibers, have a tensile strength 15/20 times greater than that permitted by aluminum. Twelve of the twenty Torx screws in stainless steel present (see below) are blocked with Loctite™ adhesive. They are necessary for holding the carbon plates pressed firmly in position during the polymerization of the adhesive, and for fastening the carbon onto equipment during the milling process. The tightening of the Torx screws are performed with torque wrenches in order to obtain absolute uniformity of pressure.

2. HFVD System. The XM1 is a hydraulic/composite riser which, by exploiting both the laws of fluid mechanics and that of the higher capabilities of carbon, reduces the high frequency vibrations which develop on the arch structure at the moment of the arrow's release. There are four sealed chambers in the riser, two at the top and two at the bottom. These chambers, internally classified as "tubs", with a total capacity of 70 cc. and conveniently filled up to a level equal to 80% of the internal volume, contain technical fluids of high viscosity. During the release of the arrow the vibration which takes over the structure "shakes" the fluid present inside. This movement allows the dissipation in the wall-layers of the high-frequency vibration that is built up during the shot. The dissipation of the vibration is also favored by the presence of carbon elements in the structure. In fact, this material has much higher capabilities for this kind of performance than that of aluminum. The result achieved is a drastic reduction of vibrations in the release phase with consequent lower muscle fatigue of the athlete and a characteristic reduction of noise.

3. SMARTRISER® LC (Limbsaver Cradle). The support area of the limb is superior to other risers on the market, and is shaped in such a way that it can obtain a riser/limb contact surface that is more wide and constant with the amount of area involved, regardless of the change of the limb's inclination. The particular design of the support surface thus allows a dual advantage: on the one hand, by avoiding passive forces from unloading on unnecessary areas during action, we obtain an increase of performance directly from the limb; while on the other hand, it best preserves the structural integrity. This will allow you to achieve a high efficiency of the structure that is also guaranteed by the extreme inherent rigidity of the XM1 riser. The overall performance, or rather the ratio between the potential elastic energy of the limbs and that actually released to the arrow, has been officially tested and its result was 79.44%, the highest value obtained so far among risers on the market. This value tends to increase, contrary to what occurs with other risers, when the installed power increases. The final performance achieved is a rare consistency in the values of maximum efficiency of ideal brace height, much higher compared to other projects.

4. With the QuickClick System you can easily find the correct setting of your power and tiller values, without the use of keys and without removing the limbs. The adjustment is achieved simply by rotating the upper disk of the QuickClick with your fingers, which has a rotation segmented by precise mechanical clicks. Each 90° click of the disk corresponds to a variation of +/- 0.5% of the load according to the power of the limb used. As an accessory, the QuickClick group is also available with an equipped safety lock by means of a locking grub screw.

Measurements and materials

RISER 25+1/4" XM1/XM1 Plus RH/LH	Flettenti Long (70")	Medium (68")	Short (66")
Limb fitting	ILF	//	//
Recommended brace height – Inc.	9 " - 9 ¾	8 ½ " - 9 ¼"	8" - 8 ¾ "
Recommended brace height – Cm.	22.9 / 24.8	21.6 / 23.5	20.3 /22.2
Preload setting	+11% / -7%	//	//
Cord length (artisan)	+7 mm / +1/4"	//	//
Dry weight	966 grams	//	//
Characteristics of the hardware present on the XM1	**Type screw/material**	**Thread pitch / Maximum depth**	**N° of pieces / Measuring key**
Locking screws for sight	Torx /Inox	M5x0.8/7 mm*	2 /T25
Screws for carbon plates	Torx /Inox	M3x0.5/6 mm**	20 /T10
Screws for pocket safety washers	Torx /Inox	M3x0.5/10 mm**	8 /T10
Screws for limb fitting plates	Torx /Inox	M3x0.5/8 mm**	4 /T10
Locking screws for behind the pocket	Torx in Ergal	M8x1/17 mm***	2 /T45
Stabilizer bushing	Ergal	M10x0.5/**/**	1
Grub screw for attachment plate	Torx/Inox	M4x0.7/8 mm**	1 /T20
Screw pitch for clicker attachment	Aluminum	M4x0.7/ 7 mm*	2
Locations of dumper attachment	Aluminum	UNF 5/16"-24/15 mm*	2
Screws for Grip attachment	Torx/Inox	M4x0.7/12/16 mm***/**	1+1 /T25

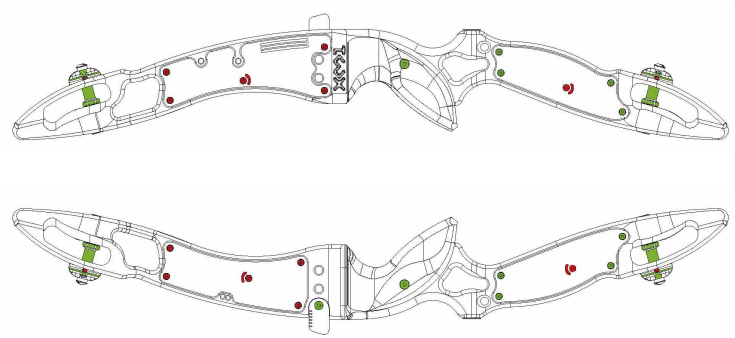
Note:
Some of the data for recommended brace height and tiller settings are subject to partial variability depending on the type of limbs used and the characteristic measures of each individual athlete. It is therefore recommended that a personal check should be carried out on the ideal arc setting according to the specific measures and assembled equipment of the riser.
* Maximum limit of usable internal depth.
** Screw lengths.
*** DIY type, not unified.
/ Minimum length allowed of the thread pin extension/stabilizer from a minimum of 12 mm to a maximum of 20 mm.
***/** Respectively according to the RH/LH versions length 12 mm of window side, 16 mm button side.

To read with ATTENTION - IMPORTANT!

To avoid any problems with the hydraulic chambers, and consequently the integrity of the XM1 structure, protect the riser from low temperatures. Therefore, we do not recommend that the riser be stored and/or used for a long period of time at temperatures below -20°C/-4°F. Extreme cold weather may in fact lead to the occurrence of the freezing of the technical fluids contained in the riser, with the possible risk of ruptures to the sealed chambers due to the increase of the density inside.

RECOMMENDATIONS and SUGGESTIONS

1. Do not attempt to unscrew the Torx screws present on the carbon plates (shown in color red in the figure) other than those suitable for installation of the owner's weight kit, specifically for the XM1, and present on the lower plates of the riser (shown in color green). The carbon plates are not removable from the metal structure for they are permanently bonded through the use of Araldite® (bi-component epoxy structural adhesive). If this is attempted, the only possible outcome would be the assured damage of the riser's structure.



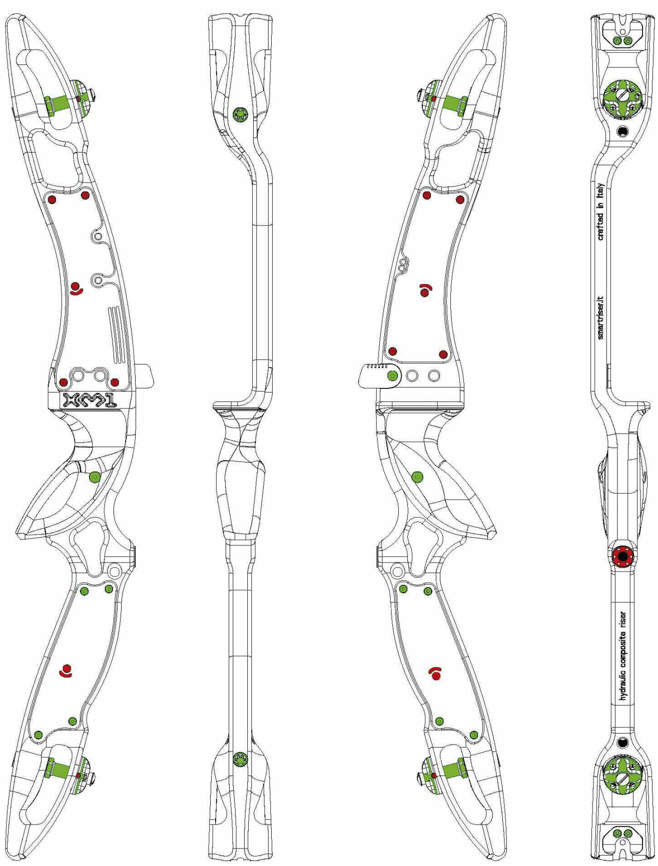
2. Do not attempt to open/pierce/tamper with the sealed chambers for it will lead to the leakage of the contained technical fluids. These attempts, as well as being useless, will immediately nullify the warranty.
3. As usual, when mounting the limbs always make sure the insertion of the limbs in their respective locations between the limb and riser are complete and secure.
4. When the cord is mounted, pull it back a couple of times in order to perfectly adjust the limbs. Never allow any wide releases, or arc discharges, without an arrow – it will result in the risk of damaging a limb and the QuickClick groups on the riser.
5. The bow comes with the preloads adjusted to the zero position. To set a different level of power of the limb compared to the level stated by the manufacturer, and a different measure of the bow tiller, it is not necessary to remove the limbs but just the cord. Therefore, it is necessary to manually rotate the QuickClick disks, in both directions, until the desired position is reached.
6. After any adjustments, to return to the zero position of both QuickClick groups proceed in the following way: rotate the upper QuickClick disk counterclockwise until the consolidated position of the last click is reached. From this fixed position (and not beyond the last available click), turn clockwise and count 14 clicks. When rotating the component, you get a click for every 90° turn of the disk. At the 14th click, the zero position of the power variation of the limb's face value and the desired measure of the tiller will be reached.

7 In the necessary case where the limbs are not perfectly straight and must be aligned, with the limb inserted and the cord mounted, the procedure is as follows: after loosening the rear locking Torx screw, while holding the hexagon still with the supplied #14 key to prevent it from rotating, you must operate on the hexagon itself in order to rotate the eccentric pin to the right or left until the desired position is reached. It must be noted that the position of the exact center corresponds to the notch found at the base of the eccentric pin which, in the zero position, must point to and be aligned with the limb's pin. After centering, and while holding the hexagon, lock its position by tightening the Torx

screw outside/rear of the pocket with a force equal to about 11 Nm, which corresponds to a strong tightening, but without overdoing it!

8. Do not unscrew the grub screws of the spheres for the QuickClick clicks placed above the disk. The QuickClick groups must not be lubricated with anything. These actions are not required and, if carried out, they can compromise the functions of the component, whose optimal calibrations were defined and set at the factory during its assembly - see figure in color red.

9. As previously mentioned, for those who lived in areas with a particularly cold climate, do not leave the riser in places that can endure temperatures below -20°C/-4°F for several hours (for example, car trunk, non-heated garage, etc.). In fact, there is a remote possibility that the internal fluids may freeze and consequently increase in volume, forcing the carbon plates to crack and resulting in damage to the riser, which will lead to heavy costs of repair of the product.
10. To clean the riser use a conventional mild detergent product and a soft, clean cloth, preferably in cotton. The use of compressed air jet spray for the less accessible areas (QuickClick groups and threaded holes) is ideal.



- Parts in red - blocked.
- Parts in green - adjustable and removable.

WARNINGS

The bow should always be used in suitable facilities for archery sports and under conditions of maximum security. The user is responsible for the proper use of the product, avoiding any actual and/or potential situation that may cause harm or danger both to him/herself and to other people, animals or property. A user must always check the integrity of their equipment before each shooting session, verifying the perfect working order, and must not practice any shooting activity if he/she does not have normal psychological and physical conditions suitable for this activity. He/she is personally responsible for the proper use of this equipment, which was specifically produced for the sport of archery. Please keep in mind a bow is potentially a weapon. A careless, improper and fully irresponsible use of the item in question can therefore lead to situations of serious danger and grave damage to people, animals or objects. Although SMARTRISER® only produces part(s) of bows and non in its technical and functional entirety, it declines any liability for damage caused to people, animals or objects, and products from the non-conforming use of the equipment it built.

WARRANTY

Through its own sales network SMARTRISER® guarantees its products for a period of 2 (two) years from the date of purchase. The warranty begins from the date affixed to the proof of purchase of the product and the complete filled out registration of the present manual. Any request for warranty service on products that are possibly defective shall be addressed directly to the SMARTRISER® distributor/dealer from whom the product was purchased. The important condition necessary for the request of warranty assistance is presenting documentation of the proof of date of purchase together with the product in dispute to the dealer. The present warranty excludes any product that is technically tampered with, damaged and/or altered by any technical personnel not acknowledged and/or authorized to treat SMARTRISER® products as well as any circumstance that has led to the damage of the product in non-compliance with the recommendations and/or descriptions in the present manual. It must be specified that the present warranty only covers SMARTRISER® brand products, excluding parts thereof subject to normal wear and tear (such as anodizing and adding any surface finish, threaded parts if damaged by improper combinations and the plates connecting the limbs to the pockets), and other products usually assembled to "the bow system" such as, for example, limbs and all the technical accessories of such a system. SMARTRISER® reserves the right to not recognize, as covered under warranty, any damage caused by the improper or non-conforming use of the products it manufactures.

Smartriser
THE HYDRAULIC COMPOSITE RISER

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S/N

Date

Dealer

Dealer stamp