HOYT
ARCHERY

CONCEPT XTS

# CONCEPT XTS IN-DEPTH

Technical Whitepaper

REVISION 4.20

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SECTION A

# Concept XTS Design Updates

**The Concept X has proven to be the one of the most winning and popular bows in Hoyt's 95-year history. It accomplished this with a synergistic design principle- rethinking core component elements and creating new designs that incorporated superior component interaction. The success that Hoyt shooters have delivered across global, regional and local competitions has been proof of that Hoyt Engineering Synergy Concept, and the popularity of the Concept X was the inevitable result.**

This synergistic approach to Concept X immediately demonstrated improved consistency, accuracy, feel and confidence. This full design philosophy took us well beyond our two decades of success in our Cam & ½ system and the target bows that utilized it, and initially, there were doubters. Doing away with the Spiral/SVX cam family was met with skepticism. But any doubts evaporated the moment shooters released their first shots with the original Concept X - and its synergy in design cemented its place among our most championship-worthy bows of all time.

As we embarked upon the design phase for the new Concept XTS, Hoyt's engineering team took the lessons of the success of the original Concept X to create Concept XTS- a refinement, with one added feature that will change the way archers tune their bows - The XTS limb pocket system.

The XTS limb pocket system is a tuning system that we have thoroughly tested and proven in our lineup of premiere hunting bows, with even greater benefits for the fine-tuning needed for peak performance in target archery.

Radical changes to the Concept series were not needed, nor wanted. The riser geometry proved ideal, the limb and cam system synergies were dialed in, and the total package was proven to have delivered the stability and feel needed to excel in the competitive archery arena.

Most companies would leave well enough alone, but that is not the Hoyt way. Like competitive archers, our engineers are always seeking a better system, and a way for their gear to improve the scores of any archer who places their trust in Hoyt.

The Concept XTS builds upon the foundation of Concept X, and brings refinements to the riser, cams, and the system as a whole with the XTS tuning system- continuing this proven synergistic approach without compromising on the foundational success of the existing platform.

SECTION B

# Concept XTS Specifications

| | Concept XTS 34 | Concept XTS 37 | Concept XTS 40 | Concept XTS 40 LD |
|---|---|---|---|---|
| **Axle-to-axle** | 34" | 37" | 40" | 40" |
| **Brace height** | 6.25" | 7.0" | 7.25" | 7.68" |
| **Draw length** | 23.5 – 29.5" | 25 – 31" | 26 – 32" | 32.25 – 34" |
| **Draw weight** | 30 – 70# | 30 – 70# | 30 – 70# | 30 – 70# |
| **Speed** | 334 fps @ 29.5" | 334 fps | 329 fps | 360 fps |
| **Mass weight** | 4.75 lb | 5.0 lb | 5.15 lb | 5.15 lb |
| **Let-off** | 65 / 67.5 / 70 / 72.5 / 75 / 77.5% | 65 / 67.5 / 70 / 72.5 / 75 / 77.5% | 65 / 67.5 / 70 / 72.5 / 75 / 77.5% | 65 / 67.5 / 70 / 72.5 / 75 / 77.5% |
| **Cam** | SCTR 2.0 | SCTR 2.0 | SCTR 2.0 | HBX |
| **Riser** | Shoot-through | Shoot-through | Shoot-through | Shoot-through |
| **Limbs** | 11.25" TXL | 11.25" TXL | 11.25" TXL | 11.25" TXL |

### READING THE TABLE

The Concept XTS 34 is rated at a 29.5" draw rather than the 30" ATA standard, because 29.5" is its maximum. Draw weights are available with max limb weight options of 40, 50, 55, 60, 65 and 70lbs. Draw weights are adjustable approximately 10 pounds down from max weight.

### THE 40 LONG DRAW (LD)

The Concept XTS 40 LD utilizes our HBX cam system and unique modules to go with it. It does not use the SCTR cam, CDM, TDM or Spec Modules. The module made for the HBX system offers 65-70-75% let-off, and is fully compatible with the Tweener module foot to achieve 67.5/72.5/77.5% let-off. All other features are shared with the Concept XTS 40.

B-I

# Speed

**The Concept XTS brings real speed ratings to the game. Every model in the line is faster than the Concept X it replaces, at the same draw length and the same measured standard.**

Performance was one of the key requirements of the SCTR 2.0 cam, and combined with the TXL limbs, gives fantastic speeds of 334 fps in the Concept XTS 37 and 329 fps in the Concept XTS 40. Optimized for performance at shorter draw lengths, Concept XTS 34 produces 334 fps at its maximum 29.5" draw length. But, the 34 offers significant speed advantages for archers under 27" of draw length.

Built for draw lengths from 32.25 to 34 inches, the Concept XTS 40 Long Draw produces 360 fps at its maximum 34" draw.

Unlike other companies, Hoyt tests to ATA speed guidelines. These include parameters of:

- 350 grain arrow weight
- 70lb draw weight
- Draw length of 30", +/- 1/4", unless otherwise noted

The ATA speed test gives speed numbers that are far more realistic once an archer gets the bow fully built and ready for competition.

> Note: The Concept XTS 34 doesn't reach 30" draw lengths. It is tested at 29.5" draw length.

Other companies utilize an "IBO" speed measurement system, which has much looser testing parameters that include:

- Draw weight up to 80lbs with 2 lb tolerance
- Arrow weight must be 5 grains per pound of draw weight
- No specified draw length standard

These “IBO” testing parameters, combined with verbiage that vaguely rate speeds such as "up to X fps" allow companies to publish speed numbers that are inflated. By testing up to 82lbs, efficiencies can be found that garner a few extra feet per second that real world archers won't see. The lack of a draw length standard can artificially boost the rating significantly. It becomes quite easy to show an “IBO” speed rating that won't hold up when compared to ATA guidelines. At Hoyt, we perform comprehensive tests on competitor products, giving us an accurate gauge of true specifications within the archery market, and revealing areas of deception that exist.

## ARROW VELOCITY BY MODULE POSITION

Hoyt velocity numbers are tested under Archery Trade Association (ATA) guidelines. Rated speeds are given at 30" draw length (unless otherwise noted) with a 350 grain arrow at 70 pounds of draw weight. In an effort to give archers an understanding of their performance numbers at their draw length, we test and provide speed ratings in every SPEC module draw length.

SECTION B · CONCEPT XTS SPECIFICATIONS · CONTINUED

| | XTS 34<br>34" ATA / 6.25" BRACE | | XTS 37<br>37" ATA / 7.00" BRACE | | XTS 40<br>40" ATA / 7.25" BRACE | |
|---|---|---|---|---|---|---|
| POSITION | DRAW | FPS | DRAW | FPS | DRAW | FPS |
| A | 29.5" | 334 | 31" | 341 | 32" | 345 |
| B | 29" | 332 | 30.5" | 337 | 31.5" | 343 |
| C | 28.5" | 327 | 30" | 334 | 31" | 338 |
| D | 28" | 324 | 29.5" | 328 | 30.5" | 334 |
| E | 27.5" | 317 | 29" | 325 | 30" | 329 |
| F | 27" | 312 | 28.5" | 317 | 29.5" | 323 |
| G | 26.5" | 308 | 28" | 314 | 29" | 319 |
| H | 26" | 304 | 27.5" | 307 | 28.5" | 313 |
| I | 25.5" | 297 | 27" | 303 | 28" | 308 |
| J | 25" | 291 | 26.5" | 296 | 27.5" | 301 |
| K | 24.5" | 285 | 26" | 291 | 27" | 297 |
| L | 24" | 280 | 25.5" | 286 | 26.5" | 291 |
| M | 23.5" | 279 | 25" | 284 | 26" | 289 |
| PUBLISHED ATA RATING | 334 fps @ 29.5" | | 334 fps | | 329 fps | |

Hoyt velocity numbers are tested under ATA guidelines. Rated speeds are given at 30" draw length (unless otherwise noted) with a 350 grain arrow at 70 pounds of draw weight. The 34 is rated at 29.5", the 40 Long Draw at 34".

A is the longest draw on every model; M is the shortest. Each letter is a half-inch step.

**SPEC MOD** CDM and TDM speeds are not published.

ARROW SPEED FPS

279 345

B-II

# Axle-to-Axle Length

A bow's axle-to-axle measurement is no longer the deciding factor in bow fit or stability. In general, longer bows have traditionally been considered to be more stable. Some of this perception arises from the greater inertial moment of longer risers and their mass distribution. Another aspect of this perception of stability and full draw comfort is generated by the larger string angle and resulting closer peep-to-eye distance that longer bows can produce.

The Concept XTS 37 riser is 2.75" longer, and the Concept XTS 40 riser 1.75" longer, than the equivalent risers of the generation of bows pre-Concept. While two models might share the same axle-to-axle length, the longer riser design maximizes in-hand stability.

The longer riser design, combined with a decrease in total limb flex, and an increase in cam size, will have a positive effect on the string angle - the key component to the feel of a bow in a shooter's hands while at full draw.

For most shooters, a larger, more obtuse string angle will be preferred as it gives a more comfortable anchor point and brings the peep sight closer to the eye.

## CHOOSING A LENGTH

If you are unsure which length Concept XTS would be best for you, consider these guidelines:

### DRAW LENGTH

This is the main factor for deciding the axle-to-axle length of a bow:

- Sub 27" can expect to find optimal performance in the 34, with plenty of string angle to still provide a comfortable anchor point.
- 27-30" draw lengths would find a sweet spot of fit in the 37.
- Long draw length archers (30"+) will likely find 40 to be optimal.
- Archers drawing beyond 32" are served by the 40 Long Draw, which covers 32.25 to 34".

These factors explain why many archers have chosen to move from a 40" bow to a 37" bow, including archers such as The Vegas Shoot Champion and World Champion Mike Schloesser.

### FACE SHAPE

Those with flatter faces often feel the need to choose a longer axle-to-axle bow. This allows for a more obtuse string angle, allowing the string to reach the traditional anchor point on the nose- but selecting an optimal length bow eliminates excess draw length that positions the nock deep on the cheek. A correct length bow and string angle reduces string oscillation by avoiding excess face contact at the release. With the improved overall angle and string take-off position of the SCTR 2.0 cam, archers who would select a longer bow to allow for a proper anchor can now select a shorter bow, with the benefits of lower mass and higher performance inherent in a more compact package.

In short, those who had to compromise by going to a longer bow in the past to achieve a preferred anchor point may find that they do not need to do that with the Concept series.

B-III

## Brace Height

Brace height has long been considered to be a measurement of bow "forgiveness." While it certainly plays a factor in lock time (the time it takes to get an arrow out of the bow), it's debatable as to what the ideal brace height is, when considered as part of the overall system.

Brace height is only one component of bow accuracy and is viewed with less importance today than it was decades ago. Designs of the past relied on long brace heights upwards of 8", attempting to increase forgiveness by masking shortcomings in design, such as riser and limb instability. Competition results prove that the brace heights across the Concept XTS line give the best balance of performance, stability and accuracy.

Longer draw length archers may prefer a longer brace height, while shorter draw length archers may prefer a shorter brace height for mechanical reasons, such as power stroke optimization and eliminating string-to-arm contact. Concept XTS 37 puts the brace height at a balanced 7 inches, the Concept XTS 40 offers 7.25 inches, while Concept XTS 34 shortens that to 6.25 inches to help achieve superior short draw length performance.

The 40 Long Draw extends that to 7.68 inches, matched to its 32.25 to 34 inch draw range. All of these brace height geometries are optimized to the overall bow size and design synergy.

B-IV

## Weight & Stabilization

The Concept XTS carries approximately ~ 100 grams additional mass from the prior generation, largely due to the XTS pocket system. This additional mass at the end of the riser actually creates an additional amount of pitch resistance, much in the same way the weight on the distal end of a stabilizer works. In prototype testing many archers actually expressed that the bow felt lighter, and had an even steadier aim than the Concept X. This is partly due to the improved balance caused by the mass increase in the limb pockets.

What that hardware gives back is the most significant feature — the XTS Tuning System, allowing archers to adjust tune, nock travel, holding weight and tiller, and to optimize for arrow spine changes, without a press.

With archers often loading significant amounts of stabilizer weight onto the bow, mass weight of the built-out bow becomes the key factor.

Fully accessorized bows used by top level archers often have a mass weight in excess of 11 lbs / 5 kg. Properly balancing and distributing that mass weight is the key, and the Concept XTS gives archers a starting platform that is exceptionally well balanced, with a very natural point of aim.

Understanding the relationship between an archer's strength, day-to-day condition, mass weight of the bow and overall weight distribution is key to achieving an optimal aiming pattern.

Stabilization mounting points are identical to the Concept X, with a traditional central mounting location positioned below the grip, an extreme low CG position approximately 5" lower and 2" forward of the traditional location, and the option to mount back/side bars to the front or rear of the riser.

The Concept XTS features a lower stabilizer mounting point. This stabilizer bushing will allow shooters to mount their main stabilizer in a very low position, dropping the overall center of gravity (CG) on a fully rigged bow. Shooters may find this extremely low CG to be beneficial by creating a plumb-bob effect of the bow, with the weight of the bow being very distant to their hands and slowing shooter inputs.

While this low-CG position may be ideal for indoor and outdoor target archery contested on flat fields, shooters may find that it is not ideal in field archery scenarios where angular terrain becomes part of the game and shooters are needing to make corrections to keep the bow level in different shooting scenarios. Archers competing in disciplines requiring varying angles will likely find that the traditional stabilizer mounting location is the preferred point of attachment.

SECTION C

# Concept XTS Riser Updates

**Concept XTS riser geometry remains unchanged from the Concept X. The key fundamentals of geometry carry over, including axle-to-axle length, brace height and grip position. The overwhelming opinion from competitive archers was that the Concept series had struck a perfect balance in riser reflex, brace height, and overall riser length in relation to axle-to-axle length.**

C-I

## Updates

Two things were true in the relationship between the Concept X and archers:

1) A large percentage of archers who had traditionally used a 40" axle-to-axle bow shifted to the 37. This was expected and was caused by the combination of a very long riser with limbs that have very little translation from brace to full draw, yielding the string angle of a traditional "long" setup with a more manageable, lower-mass riser and limbs- the key being the takeoff position of the string from the Concept platform SCTR cam system. Archers could now get the string angle they needed in a bow that was "shorter" on paper, allowing them more use of the cam's full rotation and a bow that was nimbler and more manageable for the average archer. The average sized archer with a draw length between 27" and 30" was best suited with a Concept X 37, and that remains true in the Concept XTS 37.

This trend should have also favored a shift toward a shorter platform, such as the Concept FX.

2) Shorter draw length archers favored the Concept X 37 over FX because they wanted a shoot-through riser. We surveyed numerous sub-27" draw length archers, and discovered this preference. Competitive archers prefer Hoyt's iconic shoot-through riser. We accommodated this desire, and this resulted in the fully re-engineered riser on the Concept XTS 34.

The Concept XTS 34 is also now available with limbs up to a 70 pound max draw weight, giving averaged sized archers seeking maximum speed a 3D bow that is extremely potent.

The Concept XTS is available in 34, 37 and 40 inch axle-to-axle models, joined by the 40 Long Draw for archers drawing 32.25 to 34 inches, with engineered improvements to the riser design to further optimize planar and torsional flex. These updates contribute to further incremental improvements in sound and vibration.

Concept XTS 40

Concept XTS 37

Concept XTS 34

C-II

# Shooter Experience — Sound & Vibration

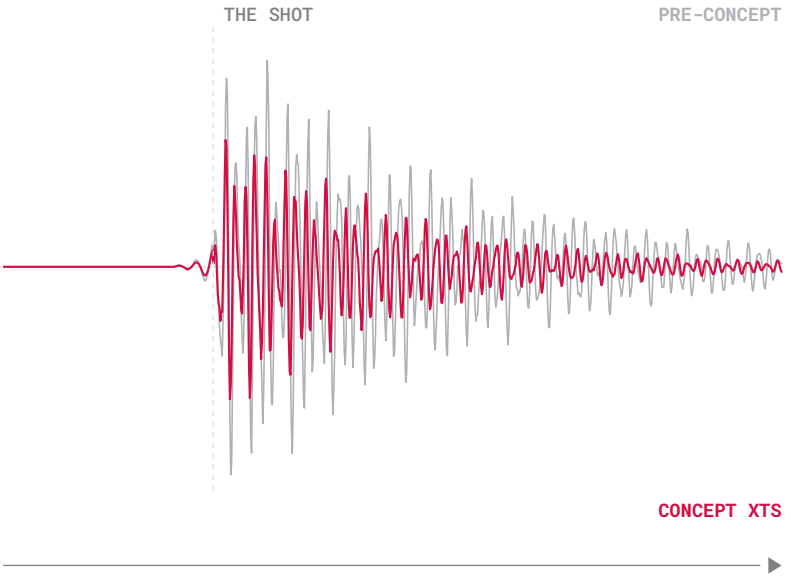
The Concept XTS brings improvements in noise and vibration over the already stellar Concept X. Against the pre-Concept generation, shooters experience a sound reduction of 27% compared to SVX cams and 13% compared to HBT cams, with vibration reduced by 35%.

This is largely accomplished due to cam and limb design, but the riser design also plays a significant part in reducing residual vibrations.

It's important to note that the classic target bow feedback has not gone away. Shooters will still be able to get the "feedback" of their shot execution based on the feel of the bow at the shot. However, that feedback will not come with the vibrations that causes premature wear on sights, loosening of bolts and other negative experiences that are generated by bows that have excessive vibration.

The new XTS models feature re-engineered riser machining, optimizing strain flex profiles, contributing to 10-15% less vibration on the shot when combined with the SCTR 2.0 cam.

WireWRX strings on the Concept XTS help to reduce sound and vibration, with 50% less sound energy due to optimized string weights, enhancing overall performance.




Time after the shot. Lower amplitude and a shorter ring-down are less shock and less noise.

**CONCEPT XTS, MEASURED**

**10–15%**
less vibration
riser cutouts, flex-profile optimized

**50%**
less sound energy
WireWRX strings, optimized weights

Measured 2026-05-26, gate C:
94.85 dB, 35.80 g's total vibration
1.81 g's residual after 0.5s

**CONCEPT PLATFORM**
AGAINST PRE-CONCEPT

| | |
|---|---|
| **27%** | less sound than SVX cams |
| **13%** | less sound than HBT cams |
| **35%** | less vibration |

SECTION D

# SCTR 2.0 Cam System

**The SCTR 2.0 cam is the culmination of 24 years of Hoyt cam design that was the standard of target archery, creating a new benchmark in performance and feel. The SCTR 2.0 offers a smooth draw, shot-to-shot consistency and the customizable feel required for an archer to extract their best results.**

Real world results produced by archers over the last two seasons prove the benefits of the SCTR cam system. Key features of the SCTR 2.0 cam include:

- High String Tension
- Easily adjustable wall firmness
- Indexed let-off adjustability
- Multiple module foot/draw stop positions allow archer to customize full-draw feel
- Proven ¼" threaded axle system for optimized stability and e-clip free maintenance
- Cam design that eliminates unwanted leverage, reducing cam twist and cam lean throughout entirety of cam's operating range
- Split Cable harness system to enhance stability and reduce rotational translation

SECTION D · SCTR 2.0 CAM SYSTEM · CONTINUED

**This section describes the SCTR 2.0 cam, which is fitted to the Concept XTS 34, 37 and 40. The Concept XTS 40 Long Draw uses the HBX cam system to reach its longer draw lengths; the riser, limbs, grip and XTS Tuning System described elsewhere in this whitepaper are common to all four models.**

SCTR 2.0 uses the same proven CDM and Spec mods as the SCTR cam, and now, we have added a TDM module to the equation to provide a unified, rotating module option for positions A through E. More info on that below.

Carrying over the existing SCTR Spec and CDM mod systems helps maintain the feel at full draw that shooters love in the original Concept X. The changes to the cam shape also optimize string path during the dynamic portion of the shot and post-shot, ensuring that a clean release of the nock is better controlled at a more narrow window at brace, and post-shot oscillation is contact-free with the cables and cable splitter.

SCTR 2.0's draw force curve features a softer front-end and back-end, with more energy stored in the center. The result is the SCTR 2.0 cam system — featuring slight shifts in energy storage creating a smoother front end and transition to the valley, while maintaining or improving speed at each draw length position. The result is a smoother draw cycle while achieving more performance and maintaining the wall feel of SCTR cams. The shape of the cam also improves string tracking, eliminating cable splitter contact issues.

**MODULE CARRYOVER**

SCTR CDM and Spec mods will carryover to the SCTR 2.0 cam. Dealers and Distributors will not need to inventory new modules to accommodate the Concept XTS.

Speed is maintained or improved at every draw length position, with the published ATA rating up 1 to 3 fps model for model against the Concept X — gains that come alongside the smoother draw cycle rather than at its expense.

At the E position the three systems separate measurably. On the Concept XTS 37, built to 61.5 pounds, the CDM records 325 fps at a measured 29.25" draw, the Spec mod 322 fps at 29.19", and the TDM 307 fps at 29.00". The TDM gives up around eighteen feet per second to the CDM at the same letter. A little of that is its slightly shorter measured draw length; the rest is the shape of the curve. That is the trade stated plainly — the softer full-draw feel described above is bought with speed, and the archer who chooses the TDM at E is choosing it deliberately.

D-I

## CDM & TDM vs the Spec Mod

The SCTR CDM Module gives users a 3-inch draw length range adjustment of module positions E through K, while the new TDM module covers a 2-inch range in module positions A through E. These modules are designed to easily cover a range of draw lengths with a simple rotational position change.

As an example, the Concept XTS 37 with a CDM mod will fit draw lengths from 26 to 29". Both rotating modules adjust in ½" steps at each position. This TDM module is perfect for the growing archer who is already on the long end of the draw length, or a longer draw archer seeking a slightly more linear draw force curve compared to the Spec module. It is also suitable for archers “dialing in” their final draw length under supervision of a coach. The TDM module is backwards compatible onto the original SCTR cam.

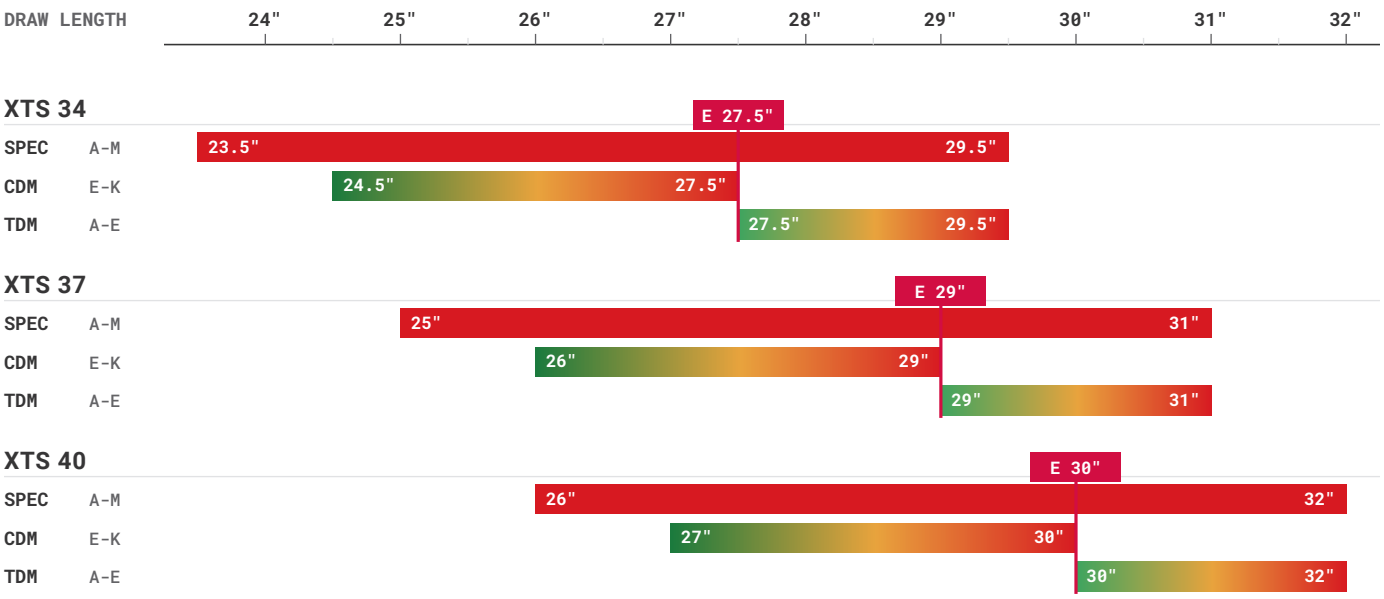
The SCTR Spec mods are a fully optimized, draw length specific version with +/− ¼" of adjustability (except size A, which allows −¼" adjustment), giving the preferred full draw feel that high-level archers seek, providing a hard wall and speed efficiency across every draw length position.

Typical rotating modules are often not as efficient as draw length specific modules, and can compromise feel during the draw cycle and at full draw. Hoyt's CDM and TDM modules are specifically engineered to provide impressive speeds by building energy in the early part of the draw force curve and providing performance that is similar to that of the Spec mods, with a differentiation in feel that some shooters may prefer over the Spec mod.

As with most everything in archery, shooter preference will be the deciding factor for those who have a choice between the CDM/TDM and the Spec mod, and those who test both will find different characteristics in each. For those who favored our popular Spiral/SVX cam, which existed in some form or another from 2003 to 2024, the Spec mod will be the mod of choice. The Spec mod will have a harder wall at full draw, and a feel that is more reminiscent of higher performance cam systems that load into the valley definitively. The CDM and TDM mods will be less aggressive as they pull more linearly into a slightly softer wall in most module positions.

**TDM MODULE**

The new rotating module, covering positions A through E. It overlaps the CDM and Spec mods at E, where it is the softer of the three at full draw.




**E** **MODULE POSITION E**

The one draw length all three modules reach, and the overlap is deliberate: the TDM is softer at full draw than the CDM or Spec mod there.

**WALL FEEL AT FULL DRAW**

SOFTER — FIRMER

**CHART · MODULE COVERAGE BY DRAW LENGTH**

All three modules are available in the commonly used E position. The Spec and CDM will feel very similar, with a hard wall feel. The TDM is softer by design, to provide a differentiation.

## Module position map

| Module | XTS 34 | XTS 37 | XTS 40 | XTS 40 LD |
|---|---|---|---|---|
| Spec (A–M, draw-length specific) | 23.5 – 29.5" | 25 – 31" | 26 – 32" | – |
| CDM (E–K, rotating) | 24.5 – 27.5" | 26 – 29" | 27 – 30" | – |
| TDM (A–E, rotating, new) | 27.5 – 29.5" | 29 – 31" | 30 – 32" | – |
| HBX (40 LD only) | – | – | – | 32.25 – 34" |

CDM and TDM mods have 1/2" adjustments. Spec mods are draw length specific with +/- 1/4" adjustments.

SECTION E

# Let-Off Adjustment & the Tweener Mod Foot

**The SCTR™ cam system makes use of Hoyt's adjustable draw stop, otherwise known as the "module foot" or "mod foot". We will refer to it here as simply the "Mod Foot".**

All Concept XTS™ bows will ship from the factory with a standard mod foot that allows let-off adjustment of 65%-70%-75%.

Available for purchase separately is a "Tweener Mod Foot" that allows the discerning user to precisely select "in-between" let-offs of 67.5%-72.5%-77.5%. This "tweener" mod foot is distinct from the standard by being gray anodized (as opposed to black for the standard) and is laser engraved to indicate 67-72-77.

The SCTR Cam let-off positions delivered by either mod foot are indexed on the module and allow for easy and concise adjustments that match between the top and bottom cam. Indexing these adjustments allows shooters to easily verify that their draw stops are in matching positions, and once set, users can easily time the cams to match.

Indexing these adjustments to precise locations ensures that the draw stops on the top and bottom cams do not have a slight deviation between each other - A condition that is difficult to detect without precision measuring tools and the knowledge to use them.

A simple approach to this might involve using an infinite track that allows for any adjustment within a range, but this loses the datum that allows shooters to dial in a known timing and synchronized let-off. The consequence - a rotational inequality between the two cams. Our precision system avoids this problem and ensures perfect synchronization.

The optional "Tweener" mod foot allows shooters to fine tune holding weight. The holding weight change for every 2.5% of adjustment equates to approximately 1.5 pounds when measured on a 60lb bow.

Additionally, the mod feet can be swapped between the top and bottom to change the feel of the wall. The feet are labeled as "H" (Hard) and "XH" (Extra-Hard) and flipping the mod feet from top to bottom will change their contact position on the cable, thereby giving shooters a firmer or softer feel of the wall as desired.

The approximate draw length change for each 2.5% of let-off adjustment is 1/16". Most archers will find that they can easily achieve a preferred feel at full draw by adjusting the mod foot between let-off positions, and/or adjusting wall feel. Advanced users with a good understanding of bow mechanics are enabled to precisely tune the bow's feel by utilizing the draw stop adjustments of the standard and Tweener mod foot, and applying micro adjustments to strings and cable lengths to fine tune draw length, valley and holding weight.

Highly technical archers will easily be able to make a let-off change and use string and cable twist adjustments, and/or utilize the modular grip system and its ⅛" grip plate differential to achieve preferred holding weight, preferred "valley" feel and exact draw length.

## THE MODULAR GRIP SYSTEM

The Concept XTS features Hoyt's patented Modular Grip System. Grip plates are offered at 0°, +4° and +8°, and each angle is also available in a −1/8" draw length plate — letting an archer fine-tune draw length without changing the tune of the bow.

The modular grip system is fitted across the entire lineup, including the Concept XTS 40 Long Draw.

The interaction of the cam, rigging, modular grip system and the new XTS system is another example of Hoyt's Engineered Synergy- giving shooters exactly what they need.

Important Note: Let-off and holding weight numbers are precision factors which archers should understand and note for their reference. However, it is important to remember that data which can be measured with archery scales that are available to consumers should not be treated as absolute. Hoyt's experience shows that commonly used consumer archery scales often have great variability from one draw to the next and can easily be unintentionally manipulated to an incorrect absolute reading if a scale is not drawn at the exact same angle and with the same tempo each time.

Additionally, variations in string and cable construction, serving diameters, and loop lengths can cause variations in draw length, cam timing, feel and efficiency. Hoyt Factory WireWRX™ strings and cables are specifically engineered for optimal performance on the SCTR 2.0 cam system. Dimensions required for aftermarket strings and cables are noted elsewhere in this white paper.

MODULAR GRIP SYSTEM · 0°, +4° AND +8° PLATES, EACH ALSO OFFERED IN A −1/8" DRAW LENGTH PLATE

SECTION F

# Rotational Torque Resistance

**The Concept Series was developed to specifically address bow alignment and the influences of rotational translation. This provides the shooter with natural alignment at full draw and less horizontal nock travel during the power stroke. Low rotational translation aids the shooter in maintaining natural bow-to-target alignment without the need to manipulate the grip or creating forces that work against the shooter's natural aiming pattern.**

Addressing how the bow aligns at brace, aims throughout the shot process, and drives the arrow nock through the shot cycle improves tunability across different spines and diameters. This also yields a bow that is more natural to hold when shooting at angles, and provides a more forgiving bow under competitive pressure.

All of these accomplishments were made possible by the design integration of the Concept XTS riser, TXL limbs and SCTR 2.0 cam system.

SECTION G

# TXL Limb System

With proven all-weather performance, durability earned over two years of continuous refinement, and stability that holds under load, Hoyt's TXL limbs fundamentally carry over for the Concept XTS, with the only changes being in limb deflection (stiffness) requirements for poundage with the new cam and pocket system compared to the original Concept X. Hoyt's continuous improvement efforts have elevated the manufacturing and production of these limbs over the past two years, and they continue to be a reliable energy storage system in the Concept lineup- and now they are ideally adapted to the new XTS tuning system.

SECTION H

# XTS Tuning System

**The XTS Tuning System (herein referred to simply as XTS) is the most significant addition to the Concept XTS. Never before has a tuning system allowed for so much refinement to the overall tune of a bow, but also allowed for fine tuning feel while allowing an archer to achieve tighter groups through better, finer, and press-free dynamic tuning.**

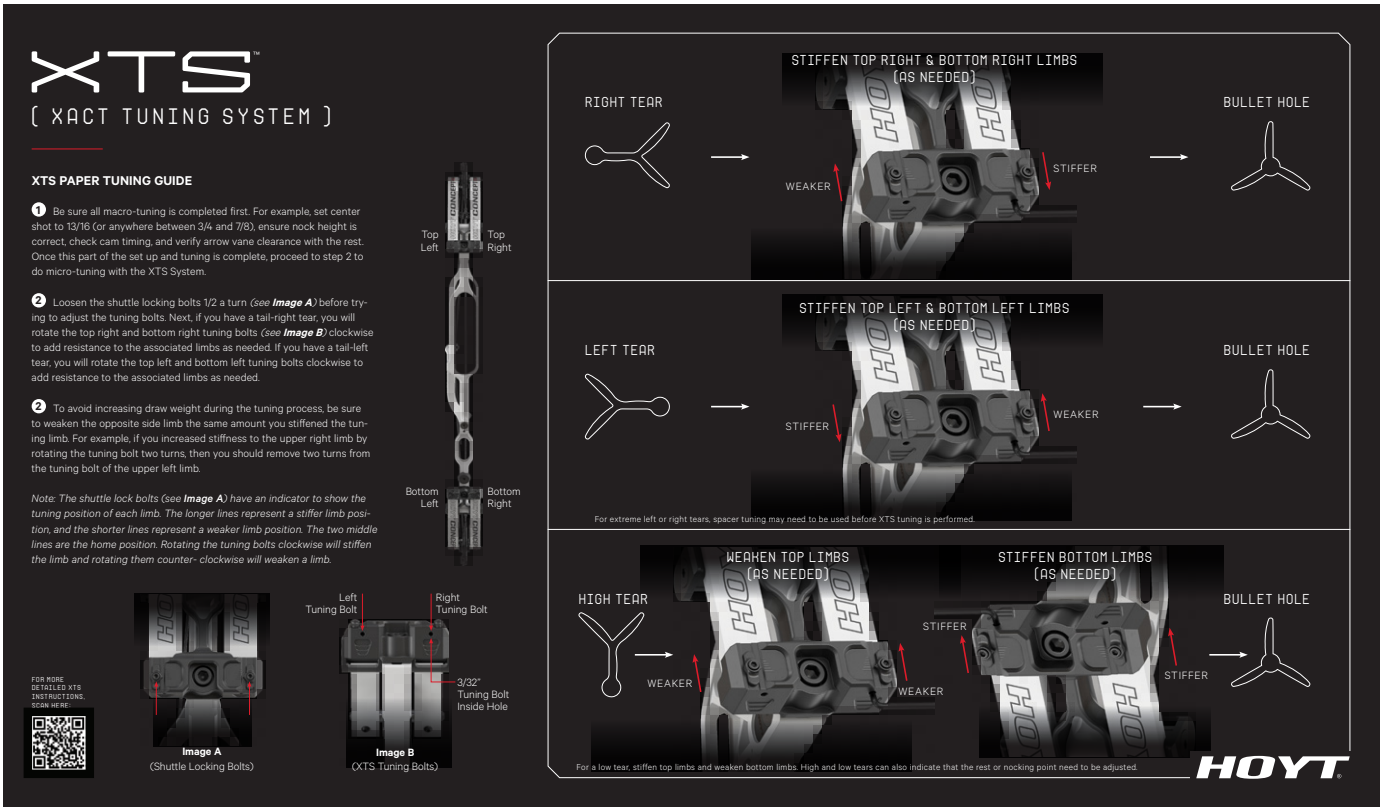
XTS was originally deployed on the 2026 premiere Hoyt hunting line, proving its stability and durability in the world's toughest conditions- as well as remaining rock-solid even in our legendary dry fire torture testing, with 90+ pound bows.

XTS is an even more powerful tool in the hands of target archers, opening the door to more advanced tuning methods- for the first time, without the need for a bow press. XTS can be used to quickly and easily achieve a clean baseline paper tune, and then, if desired, used at the most technical of levels to open a new dimension for archers to fine tune important factors such as holding weight, group tune, vertical and horizontal nock travel, and even micro-tune arrow dynamic reaction for ultimate accuracy. This is because an archer can choose to use XTS at a higher level to change both poundage and nock delivery in a highly precise manner- and once set, XTS remains rock-solid once adjustments are completed. It won't change unless you want it to.

A basic tune with the XTS will provide world championship level performance– the advanced nature of the system will also satisfy the archers who want to endlessly test and pursue every advantage. The system will be what you make it.

SECTION H · XTS TUNING SYSTEM · CONTINUED

## The Concept XTS features the patent-pending XTS Tuning System, delivering quick, simple, and precise tuning—no press required. Unlike most systems that only fix left & right tears, XTS also corrects high & low tears, making it a complete solution, and XTS won't change your point of impact after tuning adjustments are made. Tuning your bow has never been this easy—or this precise.




Tear correction – right, left and high tears · stiffen and weaken as indicated

H-I

# XTS Paper Tuning Guide

### STEP 1

Position your arrow rest “straight down the middle” where it looks good to you. We recommend starting at 13/16” of center shot, but anywhere from 3/4 to 7/8 is an acceptable center shot measurement. Confirm all other macro tuning elements are set such as a correct nocking point, cam timing, vane clearance, etc.

### STEP 2

Begin the tuning process by paper tuning your bow. Shoot an arrow through paper into a safe target/ backstop.

### STEP 3

If your arrow makes a tail-right tear in the paper (Image A), proceed to step 4.

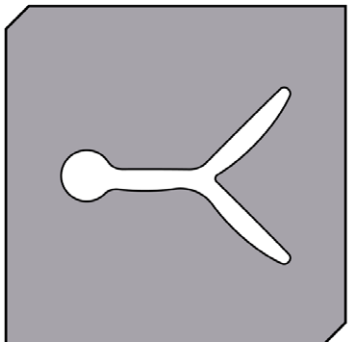


Image A · tail-right tear

> Note: Use a quality 3/32 allen wrench to prevent stripping of screws.

### STEP 4

Position the bow so you are looking at the front of the bow and you can see the tuning adjustment holes in the pockets (Image B).

> ***Note: This process will correct a paper tear of approximately 3cm or less. If your paper tear exceeds this, you may need to macro-tune using the spacer system or by moving the arrow rest. Refer to the SCTR 2.0 Cam Spacer Macro Tuning Guide to make initial adjustments, then return to the XTS Tuning System.***

To correct a tail-right tear, you will rotate the top right and bottom right tuning bolts clockwise to add resistance to the associated limb as needed depending on the size of the tear you are trying to correct. Begin by slightly loosening the shuttle block locking screws on the top of the top limb pocket with a 3/32 Allen wrench (Image C). Insert a 3/32 Allen wrench into the top right hole on the front of the pocket and engage the tuning bolt inside the pocket (Image D) and rotate it clockwise 1/2 turn to add resistance to the associated limb.

Then insert the allen wrench into the top left hole and rotate the tuning bolt counter clockwise 1/2 a turn to decrease resistance in the associated limb. (Hint: The larger the tear, the more you will need to turn the pocket tuning bolts. You can turn them as much as 3 turns in each direction from the factory starting position.)

> Note: The XTS system is lubricated with a white lithium grease. Some of this lithium grease may escape the pocket system through the adjustment screw hole and the lock screw indicator. This is normal.

**STEP 5**

Shoot your arrow through paper again and check your tear. If you still have a tail-right tear, repeat the process in step 4. You can repeat this process on the top limbs again or move to the bottom limbs. You will repeat this process a little at a time until you achieve a bullet hole. Once tuning is complete, retighten all Shuttle Block locking screws.

**STEP 6**

To correct a tail-left tear (Image E), you will repeat steps 4 and 5 except you will rotate the left tuning bolts clockwise to add resistance on the left side and you will rotate the tuning bolts on the right side counter clockwise to decrease resistance on the right side.

**STEP 7**

If you have a small tail-high (Image F) or a tail-low tear (Image G), you can also correct this with the XTS tuning system. However, it is best to confirm nock height and cam timing are correct before using XTS to correct a vertical tear. Once you confirm cam timing, proceed with the following to correct your small vertical tear. If you have a tail-high tear for example, you can correct it by removing turns from both tuning bolts in the top pocket and adding turns to the tuning bolts in the bottom pocket. Do the opposite to correct a tail-low tear.

> ***Note: Large high or low tears indicate a macro tuning issue such as poor fletching clearance, poor nock and rest height, cams not timed, etc. Correct these issues and use XTS to micro tune and correct small high and low tears.***

> ***If you have both a horizontal AND a vertical tear, correct the horizontal tear before addressing the vertical tear.***

Image B · pocket front

Image D · tuning bolt inside the pocket

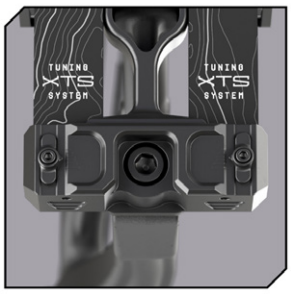


Image C · shuttle block locking screws

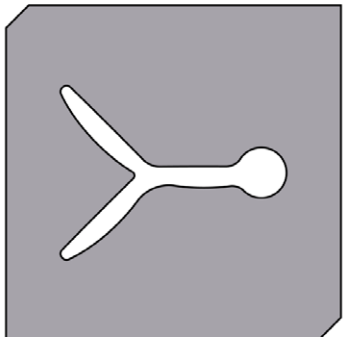


Image E · tail-left tear

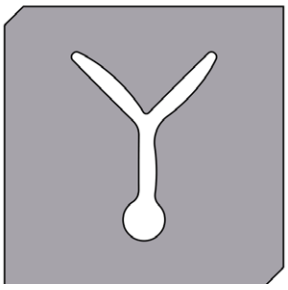


Image F · tail-high tear

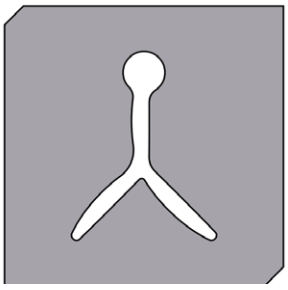


Image G · tail-low tear

H-II

## General Truths, Hints, and Tricks about the XTS Tuning System

• XTS works best when correcting paper tuning tears of approximately 3cm long or less. If you are tuning a bow with a tear greater than 3cm, it's best to start with a spacer swap to decrease the size of the tear and then proceed with the XTS tuning adjustments.

• When adjusting the pocket tuning bolts, you should always make the opposite adjustment to the left limb as you made to the right limb to avoid a change to your draw weight. For example, if you turn your top right tuning bolt half a turn clockwise to correct a tail-right tear, you should match that by turning your top left tuning bolt half a turn counterclockwise.

• The same is true when correcting a tail-high or tail-low tear. If you add one turn to your top tuning bolts to correct a tail-low tear, you should remove one turn from your bottom pocket tuning bolts to avoid a change in draw weight.

• If you have both a horizontal AND a vertical tear, correct the horizontal tear before addressing the vertical tear. Often after fixing the left or right tear, the high or low tear will go away.

• The XTS tuning system can be used for bare shaft tuning. If your bare shaft hits left of your fletched arrows, it's an indication the arrow is leaving the bow in a "tail-right" condition, and you can correct it by following the tail-right tear paper tuning instructions.

• If you end up "chasing your tail" while tuning the bow and you have found that you have made multiple adjustments to multiple pocket tuning bolts and you aren't sure where you are anymore, put everything back to home position by adjusting all pocket tuning bolts to the center line indicators (Image H) and start the tuning process again.

Image H · home position

SECTION I

# SCTR 2.0 Cam Spacer Macro Tuning Guide

**SCTR 2.0 cams can be macro tuned utilizing an aluminum cam spacer system. Below is a guide that will aid shooters in completing tuning shifts.**

### SPACER MACRO TUNING PROCEDURE

Three spacer sets are available, and the color tells you how far a swap will move the cam. Each set is a matched pair, one thin and one thick, and every pair sums to the same .200" — so the stack height never changes and the cam simply sits further along a fixed axle span. Silver spacers are .085" and .115", the least aggressive pairing and the smallest shift. Black spacers are .070" and .130", moving the cam twice as far. Red spacers are .055" and .145", the largest shift, for extreme configurations. Silver and black ship with the bow; red is available from Hoyt dealers.

> Note: Cam spacer configurations do not need to match from top cam to bottom cam. Example: Black spacers on top cam. Silver spacers on bottom cam. Both spacers on one axle must be the same color to achieve the .200" total thickness. Do not mix colors on the same axle.

It is also important to note that grip pressure, an archer's natural torque, and stabilizer bias will influence the way that a bow tunes. It is Hoyt's recommendation to set centershot at 13/16"-7/8" and use spacers to correct the paper tune as close as possible. If more correction is needed, then it can be found with arrow rest micro-adjustments. After macro tuning with spacers, micro tuning can easily be accomplished with the XTS Tuning System.

Left and right orientation is designated when looking at the cam from the rear of the bow, or the string side of the bow, not when looking at it from the front of the bow, or the riser side of the bow.

To correct a tail LEFT tear you want to move the cam to the LEFT by increasing the spacer thickness on the right side of the cam and decreasing spacer thickness on the left side of the cam. To correct a tail RIGHT tear you want to move the cam to the RIGHT by increasing the spacer thickness on the left side of the cam and decreasing spacer thickness on the right side of the cam.

It is best to adjust one cam at a time and test to see if the tear is corrected. If the tear is not corrected, make an adjustment to the other cam, too. If the tear still is not corrected, increase the spacing again. Continue increasing cam spacing until the tear is corrected to within 3cm, then move to the XTS Tuning System to finish tuning. Always use the same color spacers on an individual cam.

The chart below is an example of how to correct a tear by swapping spacers. The larger the tear, the further up or down the chart you may have to travel to correct the tear. This chart is for reference only and may not match the "baseline" or starting position of the spacers on your bow, but the concept is still the same – move the cam the direction of the tear.

> Note: On some spacer configurations at the far ends of the chart, inadequate cable clearance could be an issue. Inspect for cable rub on the cam after making spacer adjustments.

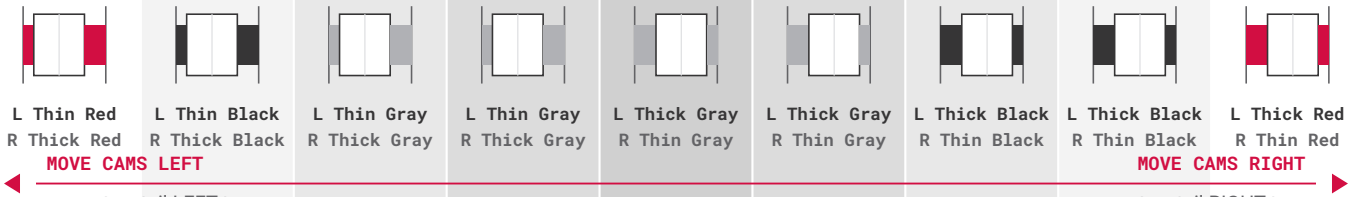
SECTION I · SCTR 2.0 CAM SPACER MACRO TUNING GUIDE · CONTINUED

## TO CORRECT A TAIL LEFT TEAR, MOVE THE CAMS TO THE LEFT

## TO CORRECT A TAIL RIGHT TEAR, MOVE THE CAMS TO THE RIGHT

**MACRO TUNE** All spacer configuration references are shown from shooter point-of-view.

**TOP CAM**

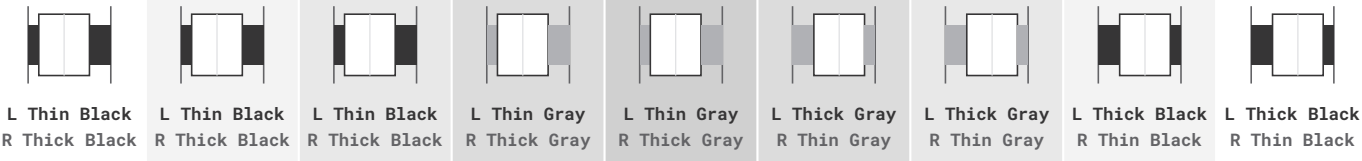


| L Thin Red<br>R Thick Red | L Thin Black<br>R Thick Black | L Thin Gray<br>R Thick Gray | L Thin Gray<br>R Thick Gray | L Thick Gray<br>R Thin Gray | L Thick Gray<br>R Thin Gray | L Thick Black<br>R Thin Black | L Thick Black<br>R Thin Black | L Thick Red<br>R Thin Red |
|---|---|---|---|---|---|---|---|---|

MOVE CAMS LEFT — corrects a tail LEFT tear

MOVE CAMS RIGHT — corrects a tail RIGHT tear

**BOTTOM CAM**



| L Thin Black<br>R Thick Black | L Thin Black<br>R Thick Black | L Thin Black<br>R Thick Black | L Thin Gray<br>R Thick Gray | L Thin Gray<br>R Thick Gray | L Thick Gray<br>R Thin Gray | L Thick Gray<br>R Thin Gray | L Thick Black<br>R Thin Black | L Thick Black<br>R Thin Black |
|---|---|---|---|---|---|---|---|---|

**SPACERS**

- RED 0.055/0.145 — shifts 0.090"
- BLACK 0.070/0.130 — shifts 0.060"
- SILVER 0.085/0.115 — shifts 0.030"

Silver and Black spacers included with bow. Red spacers available from Hoyt Dealers.

SECTION J

# WireWRX String and Cable Specifications

**The SCTR 2.0 cam system uses a 5-piece harness system and includes Hoyt WireWRX strings and cables. WireWRX represents a project two years in the making, along with a significant investment in state-of-the-art string making equipment that was purpose-designed by Hoyt Engineers. SCTR and SCTR 2.0 cam systems use a different string/cable system and are not cross-compatible. See your Hoyt dealer to ensure you are getting the correct strings and cables for your bow. WireWRX strings are designed as part of the bow system as a whole; and Hoyt bows are designed to operate at peak performance with WireWRX strings. WireWRX strings are designed to achieve maximum speed and tunability, with minimal noise and vibration, ensuring your Hoyt is competition ready straight from the factory.**

It is critical to note that aftermarket string systems can often influence the speed, sound, vibration and tunability of the bow. Factors such as string material, serving material, twist rate, serving tension, finished diameters and end-loop length all play critical roles in harness function.

Hoyt's WireWRX specifications are as follows:

| | |
|---|---|
| **Material** | BCY X99 |
| **String Strand Count** | 28 |
| **Cable Strand Count** | 28 |
| **Yoke Strand Count** | 28 |
| **Center Serving Diameter Service Range** | .108–.112" |
| **End Serving Diameter Service Range** | .100–.110" |

### DESIGNED TO SPEC

WireWRX strings are designed as a part of the bow, with materials and diameters that are matched to Hoyt's cam tracks and cable containment systems. WireWRX strings on the Concept XTS help to reduce sound, vibration and increase speed due to optimized string weights.

### PERFORMANCE

WireWRX strings are built to keep the system performing within specifications. WireWRX strings will ensure your bow meets its performance metrics in speed, sound and vibration.

### USED (WILLINGLY) BY MANY HOYT PROS

Hoyt does not require the Hoyt Pro Staff to use WireWRX strings, yet many choose to do so. Through their own performance testing, they have discovered that WireWRX strings are their best choice for maximum tournament performance.

SECTION K

# Conclusion

**The core components of the Concept XTS- the riser, the limbs, the cams and the new tuning capabilities of the XTS limb pocket all meld to improve upon a bow that set a nearly unbelievable performance standard.**

**The Concept XTS continues and further elevates our Hoyt Engineered Synergy approach to target archery design- providing competitors worldwide with the ability to extract their highest scores, with the most custom, ergonomic and performant target compound solution in the industry.**

## Concept XTS — your next Gold Standard.

AXCEL
YONEX

HOYT
HOYT