

# **XTREME** Mechanical Steering System

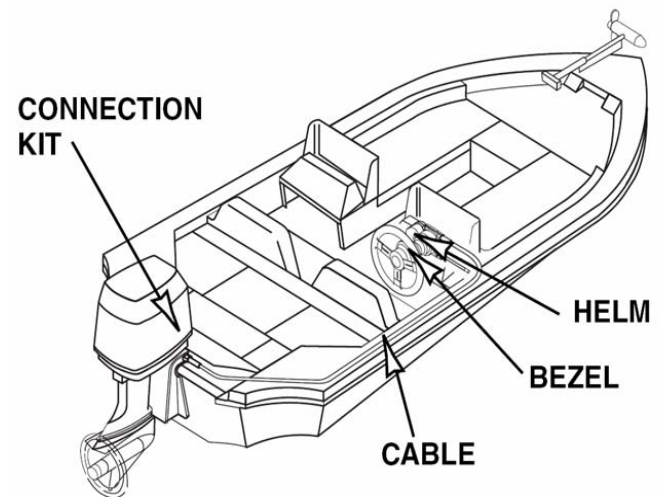
*Steering Systems*

## Feature and Benefits

# Mechanical Steering Systems

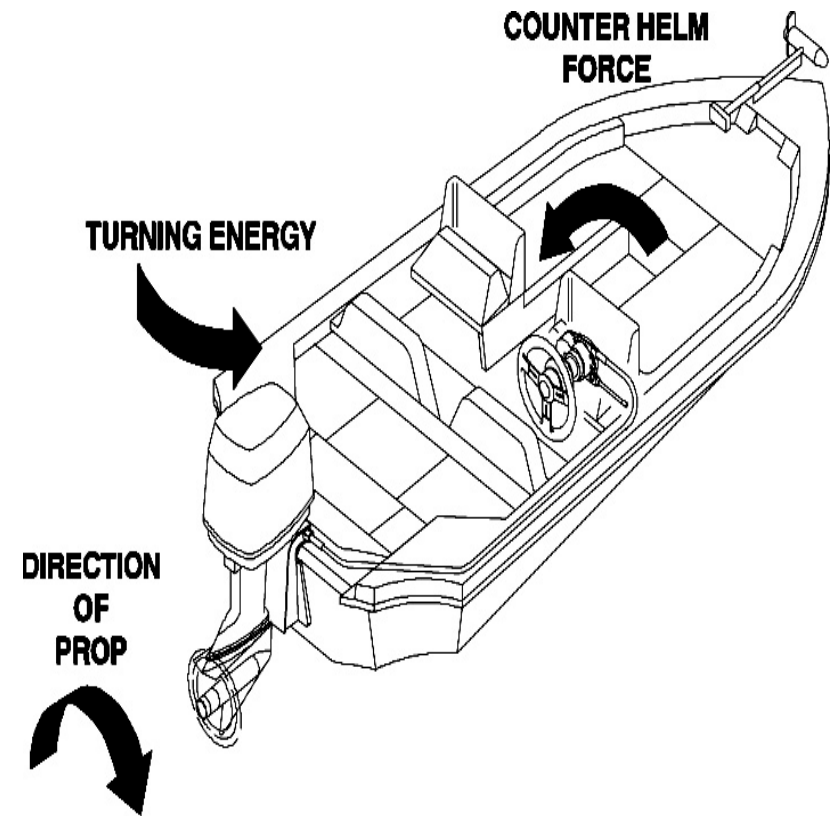
## *Mechanical Steering System Components:*

- **Helm**
  - Dashboard mounted gearbox to which Steering wheel is mounted.
- **Bezel**
  - Dashboard trim that covers Helm mounting Hardware
- **Steering Cable**
  - Push-pull Cable transferring motion from Helm to tiller arm / rudder.
- **Connection Kit**
  - Hardware that connects either, and/or:
    - Cable to engine/tiller arm
    - other mounting point
    - One engine / rudder to the other (in multiple applications)



# Mechanical Steering Systems

- Hull Design
  - Deep V
  - Pontoon / Twin Hull
- Steering loads
  - Propeller rotation generates a load on the outboard engine in the direction of its rotation
  - The boat is propelled forward
  - Load is fed back to the Helm in the port direction
- Steering systems are designed to
  - Minimize the affects of this feed back
  - Minimize the effort on the operator to steer the craft
- **Teleflex XTREMETM** Steering is the best mechanical solution on the market



# Product Features and Benefits

- New system is designed to deliver the most efficient mechanical Steering possible. What is the measure? Least effort, least lost motion, smooth release of NFB clutch with the best holding power.
- 30% reduction in Steering wheel effort compared to the 4.2 Helm.
- Quick connect feature on both Cable and spent travel tube side. Normal Steering Cable installation side marked on casting.
- No tools required to snap Steering Cable or spent travel tube in place. Quicker install for the builder.
- Easy system installation, single Steering Cable to route with standard 8 inch bend radius for the Cable. No bleeding of hydraulic system or electrical wiring required.
- Fits standard Teleflex dash cut out with standard Safe-T and 4.2 bracket. Helm is available with the SH91800/SH91900 tilt mechanism.
- Gear train is custom designed by Teleflex to allow the smallest foot print with the lowest effort available in a mechanical Helm.

# Product Features and Benefits

- New Helm has smaller footprint than the current 4.2 Helm.
- This highly efficient Helm also has an improved NFB clutch “feel” to allow smoother clutch release.
- New “XTREME” Steering Cable designed for this Helm. This Cable offers lower backlash and is more efficient than a standard Steering Cable. The Helm is part of a system and must use the XTREME SSCX64 Steering Cable..
- New bezel design for standard Helm.
- Helm is available as a NFB or non NFB design. Label with designation of clutch next to Steering Cable connection to identify the style of Helm.
- Outer Helm casting is a zinc alloy with new design for the clutch mechanism. All casting are designed to reduce weight while offering superior strength.

# 5 Main Selling Points



1. Smoothest and lowest Steering effort mechanical Helm offered in the market place yet still offers easy installation
2. Complete Steering system including new Helm, high efficiency XTREME Steering Cable design and updated bezel or available with Sport or Sport Plus tilt mechanism
3. Quick connect feature on both Steering Cable and spent travel tube for easy quick installation
4. Installs in same mounting pattern and bracket location as current Teleflex Steering systems.
5. Smallest footprint possible to accommodate small/tight dash Helm stations

# FAQs



Q: Will this Helm fit in the same cutout as my old rotary Helm?

A: Yes this new Helm fits the same cut out as a current standard Helm or tilt rotary Helm.

Q: Is the Helm available with both NFB clutch and non clutch versions?

A: Yes this Helm is available with both versions to the OEM market. The aftermarket will have only the NFB version. NFB Helm: SHX7606(standard) SHX97606(tilt). non NFB Helm: SHX7626(standard) SHX97626 (tilt)

Q: Will the SSC62 or SSC61 Steering Cable fit this new Helm?

A: No the SSCX64xx is the only Cable to fit this Helm

Q: Why do I need a new Cable?

A: The SSCX64 Steering Cable is required to provide the low ease of effort and minimum backlash. This Cable is an new improved Cable with higher efficiency and lower backlash with an XTREME design. The full system of Helm and Cable is required to realize the full advantage.

# FAQs



Q: What bend radius is needed for this new Cable?

A: The SSCX64xx Cable requires the standard 8 inch bend radius

Q: What is special about this Helm?

A: The new Helm has a custom designed gear train to offer the smallest footprint possible but also provide the best mechanical advantage.

Q: Don't other manufactures offer this design?

A: It is a custom design by Teleflex. The Helm alone will not provide the complete performance advantage, this is the reason Teleflex designed and built this new complete custom system including the Xtreme steering cable. The complete system is what offers all the benefits.

Q: What benefit will this new helm provide?

A: Lower effort to turn the Steering wheel in larger HP engines or boat types such as an outboard boat with a large amount of boat hull in the water.



# Part Number Scheme



Part Number	Description
SHX7606	XTREME NFB Helm
SHX97606	XTREME Tilt NFB Helm
SHX7626	XTREME Non- NFB Helm
SHX97626	XTREME Tilt Non-NFB Helm
SSCX64xx	XTREME Q.C. Steering Cable
SBX76061	XTREME Bezel and Hardware Kit NFB
SBX76261	XTREME Bezel and Hardware Kit non-NFB
SSX176	XTREME NFB Steering Kit
SSX177	XTREME Tilt NFB Steering Kit

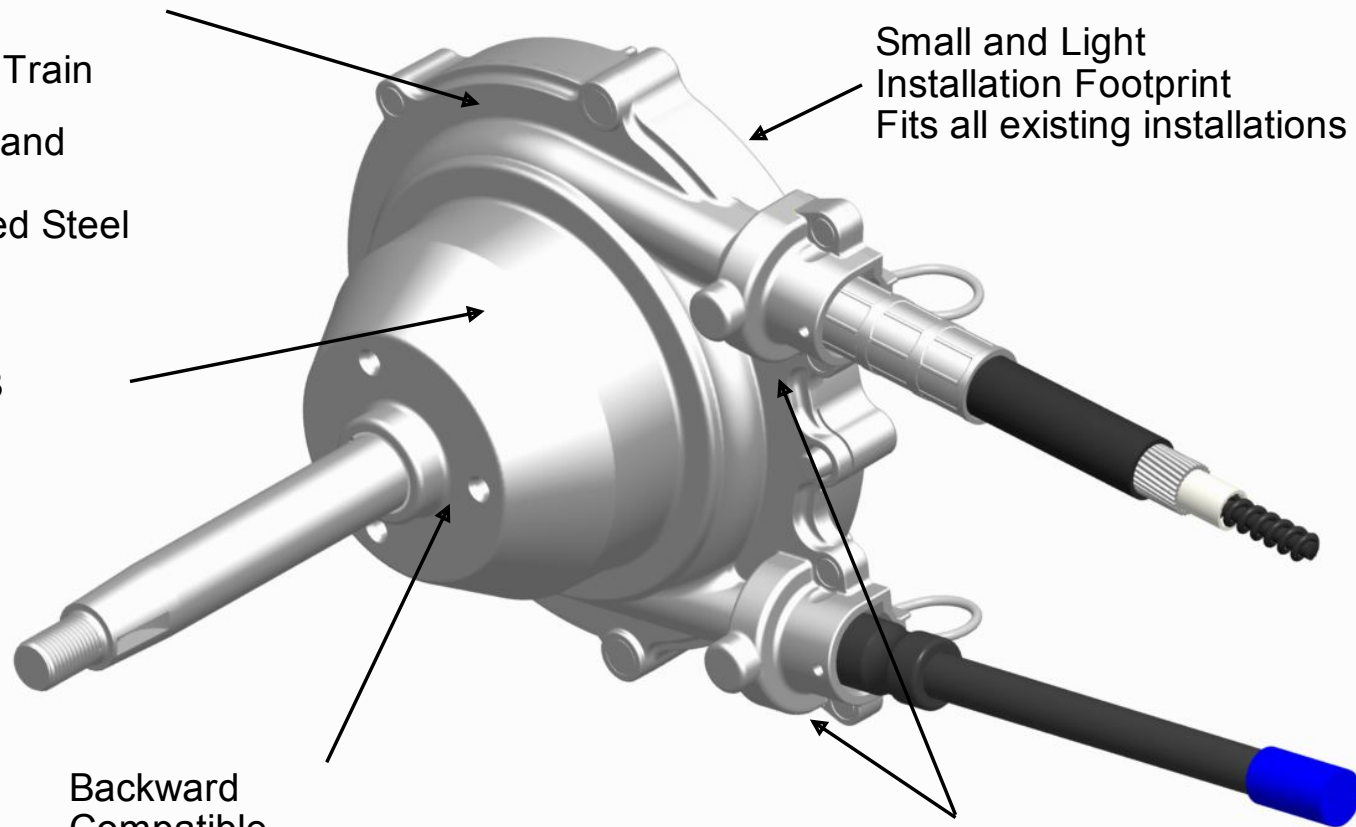
# SHX XTREME™ Steering Helm

## Features

Improved High Efficiency  
Custom Gear Train

Familiar Safe and Effective  
Zinc and Plated Steel Construction

Improved NFB function



Small and Light Installation Footprint  
Fits all existing installations

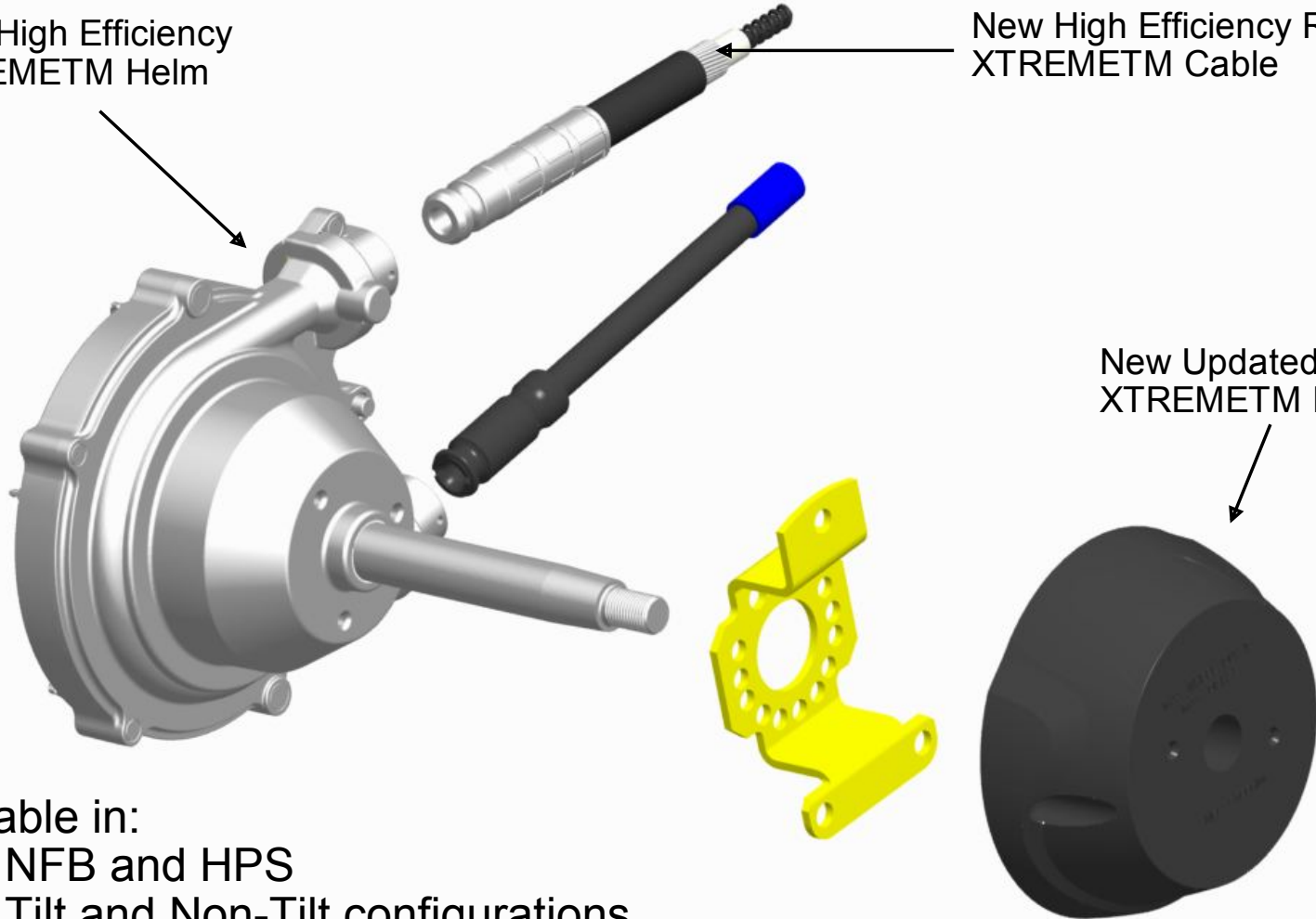
Backward Compatible Mounting pattern

Dual Quick Connect For Rapid Installation  
In any Market Location

# SSX XTREMETM Steering System (Patent Pending)

New High Efficiency  
XTREMETM Helm

New High Efficiency Robust  
XTREMETM Cable



New Updated Styling  
XTREMETM Bezel

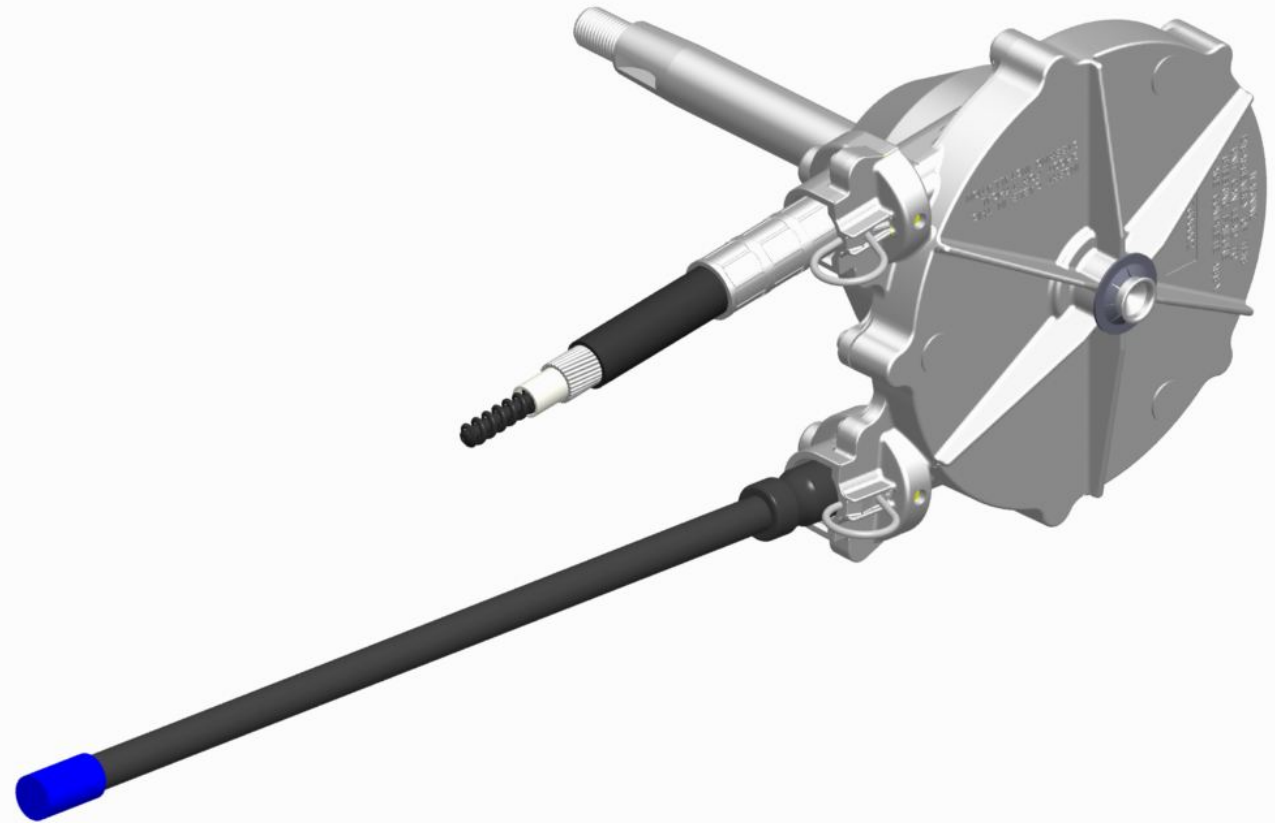
Available in:

- NFB and HPS
- Tilt and Non-Tilt configurations

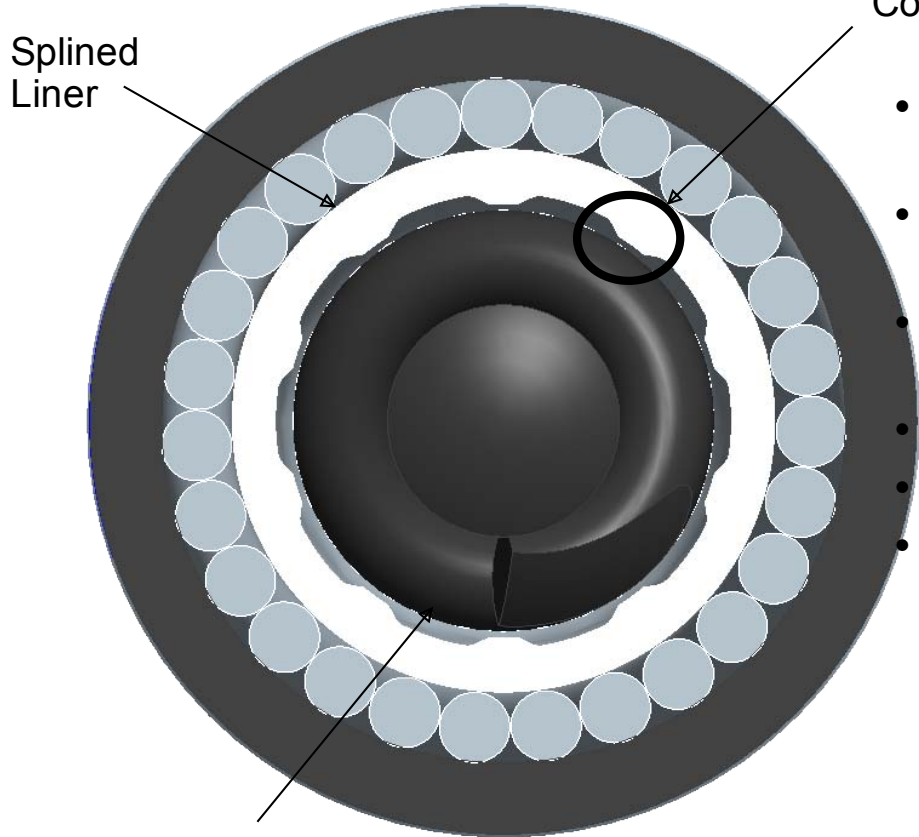
# SSCX XTREMETM Steering Cable (Patent Pending)



High Efficiency  
Robust Design



# SSCX XTREME™ Steering Cable (Patent Pending)



Splined Liner

Minimal Core to Liner Contact Area

- Based on the current industry leading XTREME™ Technology
- Splined ridges on the inner liner allow close contact with core
- With minimum contact the core glides freely
- Tight fit for minimal lost motion
- Reduced friction for extended cycle life
- Robust construction support highest Steering loads in the Mechanical range

Rotary Core

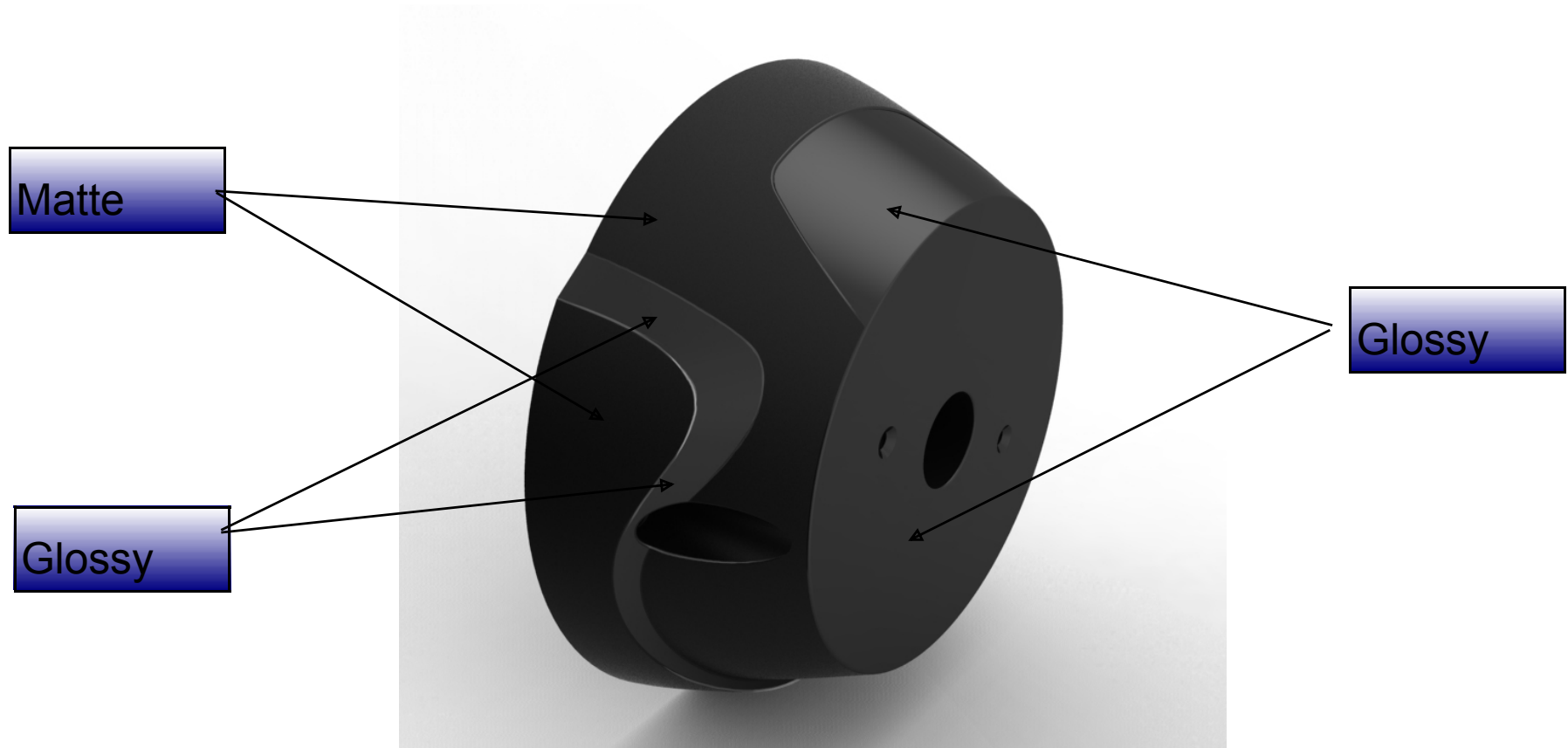
SSCX Cross Section



Minimal Core to Liner Contact Area

Liner

# XTREME Bezel



# Proudly Designed & Made In America

- Total system designed in the USA by Teleflex Marine engineers. These same engineers are members of the technical committees to A.B.Y.C.
- This total Steering system was designed, modeled and its performance confirmed on CAD software to ensure the best design practice.
- All molds, tools and assembly machinery built and assembled in North America by skilled machinists.
- Total Helm, bezel and Cable system assembled and shipped from our USA Limerick PA. plant.
- Customer and technical support staff in North America.

