

Trident**Cluster Hole-Multihole****Key Features**

The Trident Acetabular System has been implanted throughout the world since 1999 and, while commercially available, has also been included in a clinical evaluation through an IDE study in the United States. All Trident® Acetabular Shells feature the Innerchange™ Locking Mechanism, which provides independent locking of polyethylene or ceramic inserts into the shell.

The Trident Acetabular System offers:

- Superior locking mechanisms for both polyethylene and ceramic inserts
- X3 polyethylene for improved wear performance
- Choice of shell geometries
- Arc-deposited roughened surface to help achieve immediate stability
- Purefix HA
- Eccentric and Constrained Inserts for revision options

Trident, an evolutionary shell design with over 10 years of clinical history, has demonstrated the lowest revision rate (2.4%) among cementless cups at five years according to the 2010 National Joint Registry of England and Wales.

Trident® PSL® HA Acetabular Shell

The Trident® PSL® Acetabular Shells are designed to maximize fixation in the peripheral lunare region of the acetabulum. Purefix™ HA coating is featured on all Trident® PSL® shells.

Trident® Hemispherical Acetabular Multihole

Trident® Hemispherical Acetabular Shells are a true hemispherical shape designed to achieve press-fit fixation by under-reaming the acetabulum.

Trident

X3 Polyethylene Insert

Polyethylene

Trident® polyethylene inserts are:

- Fully congruent to the shell
- Supported by extensive research on range of motion and head stability
- Available in neutral, 10°, elevated rim, eccentric and constrained designs



Shell fully supports the Trident insert

X3 Highly Crosslinked Polyethylene

X3 Highly Crosslinked polyethylene has demonstrated significant wear reduction compared to standard polyethylene. Stryker’s technology and conservative process have allowed increased crosslinking while maintaining the material properties of the polyethylene.

97% reduction in wear

X3 polyethylene demonstrates 97% reduction in wear over nitrogen sterilized polyethylene in joint simulation testing, thereby reducing the potential for osteolysis.

Material properties are retained

The material properties of X3 polyethylene are similar to those of standard polyethylene, as shown in (Figure 1).

Preserves the polymer structure of UHMWPE

The crystalline and amorphous regions of X3 are similar to standard polyethylene (C) (Figure 2).

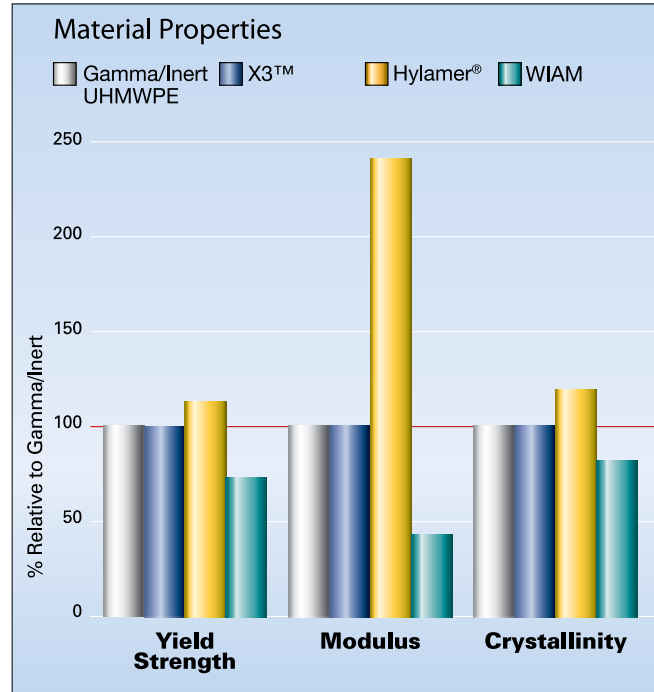


Figure 1: X3 polyethylene maintains similar yield strength, modulus and crystallinity as standard polyethylene. When these properties change significantly, the clinical wear performance cannot be predicted.

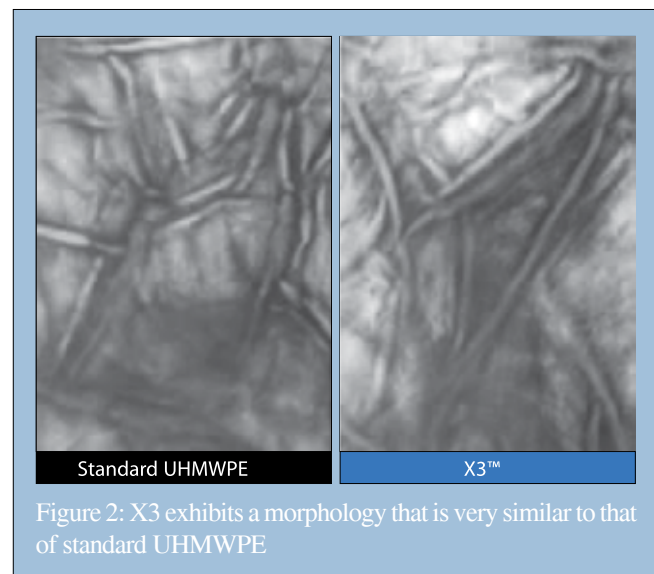
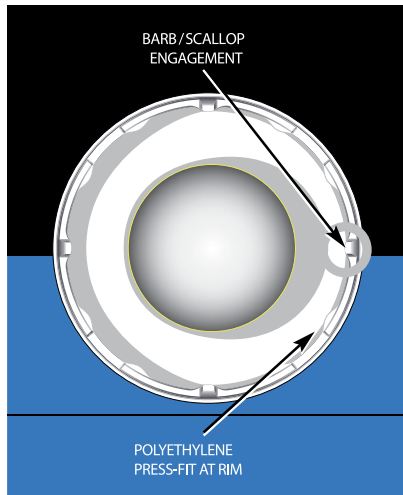


Figure 2: X3 exhibits a morphology that is very similar to that of standard UHMWPE

Trident

Locking Mechanism

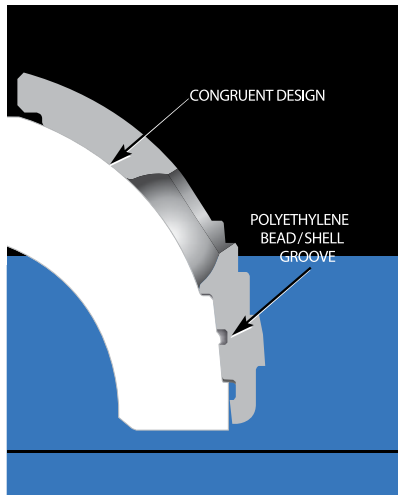
Innerchange Locking Mechanism



The Patented Innerchange Locking Mechanism allows for independent locking of polyethylene and ceramic inserts into the shell. This provides radial and tilting micromotion resistance.

The Trident® polyethylene insert allows for proper rotational alignment using 12 indexable scallops. Polyethylene inserts lock into the shell in three ways:

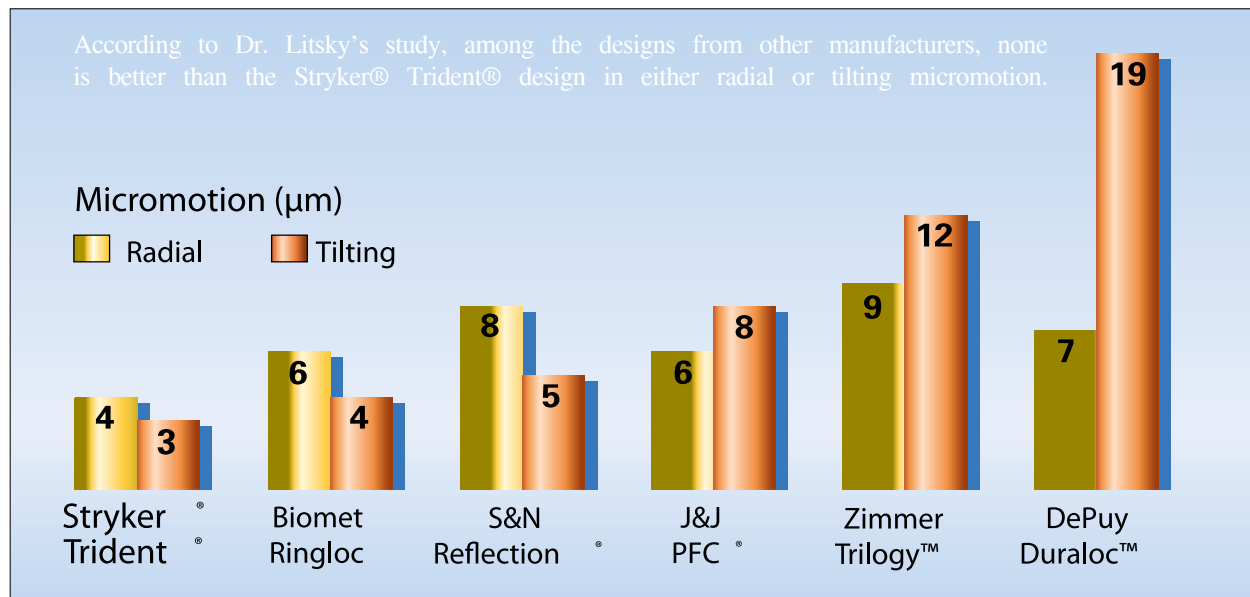
- Four alignment studs on the shell provide proper rotational and axial alignment
- Unique bead and groove mechanism
- Additional rim locking provides for exceptional insert stability



Extensively Tested Locking Mechanism

- Fully congruent design
- Independent testing by Alan Litsky, MD, PhD at Ohio State University
- Robust push-out and lever-out resistance
- Hip simulation testing with X3™ polyethylene has demonstrated improved wear performance

According to Dr. Litsky's study, among the designs from other manufacturers, none is better than the Stryker® Trident® design in either radial or tilting micromotion.



Acetabular System Compatibility Chart

Femoral Head, X3 Liner and Cup Compatibility Chart

Shell Size, Liner Alpha Code, and Liner Thickness (mm)											Orthopaedics
Trident PSL Shell	40	42	44	46, 48	50, 52	54, 56	58, 60	62, 64	66, 68	70, 72	
Trident Hemispherical Shell	42	44	46	48, 50	52, 54	56, 58	60, 62	64, 66	68, 70	72, 74	
Tritanium Hemispherical Shell*	44	46	48	50, 52	54, 56	58, 60	62, 64	66, 68	70, 72	74-80	
Liner Alpha Code	A	B	C	D	E	F	G	H	I	J	
Anatomic Heads	44mm					3.8	5.4	7.1	8.6	10.6	
	40mm					3.8	5.8	7.4	9.1	10.6	
	36mm				3.9	5.9	7.9	9.4	11.2	12.7	
Femoral Heads	32mm		3.9	4.9	5.9	7.9	9.9	11.4	13.2	14.7	
	28mm	4.9	5.9	6.9	7.9	9.9	11.9	13.4	15.2	16.7	
	26mm			7.9	8.9	10.9	12.9	14.4	16.2	17.7	
	22mm	7.8	8.8	9.8	10.8	12.8	14.8	16.3	18.1	19.6	

* Tritanium Solidback and Cluster-hole Acetabular Shells (500-03-xxx and 502-03-xxx) are available in sizes 44mm-66mm. Tritanium Multi-hole Acetabular Shells (509-03-xxx) are available in sizes 54mm-80mm.