

# TORX PARALOBE™

## HIGH TORQUE TRANSFER DRIVE SYSTEM

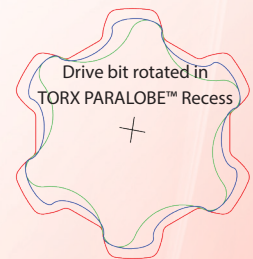
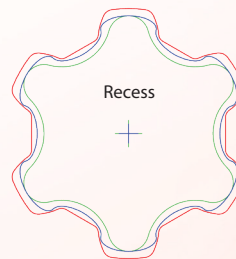
OUTPERFORMING EVERY OTHER DRIVE SYSTEM.

The TORX PARALOBE™ Drive System was developed by Camcar Innovations, born as a result of listening to our customers' needs and concerns with other drive systems. It also improves upon the benefits of our TORX® and TORX PLUS® Drive Systems by offering increasing drive bit strength, life, and increasing torque 20% over TORX PLUS® Drive System; 50% over TORX® Drive System!



### FEATURES

- ▶ Unique geometry, patentable drive system
- ▶ Greater drive system cross-sectional area versus TORX® and TORX PLUS® Drive Systems
- ▶ 'Full surface drive contact' with reduced drive bit/recess contact stresses versus TORX® and TORX PLUS® Drive Systems
- ▶ Vertical straight sidewalls and reduced bit/recess wobble producing a more solid 'fit'
- ▶ Controlled gaging and oversized recess lobe option



- TORX PARALOBE™
- TORX PLUS®
- TORX®

TORX PARALOBE™ Drive System has greater cross-sectional area versus TORX® and TORX PLUS® Drive Systems

### BENEFITS

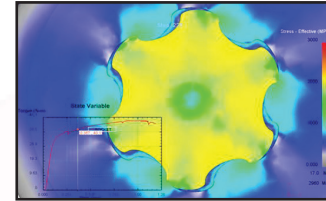
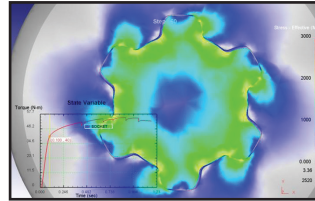
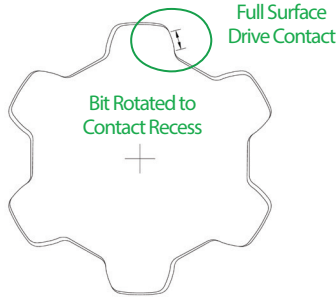
- ▶ Lobe geometry increased approximately 6% over TORX PLUS® Drive System producing:
  - Approximately 20% greater drive bit torsional strength and drive systems strength
  - Approximately 100% greater finite drive bit fatigue life
- ▶ Drive size consideration may improve dead strength ratio and weight reduction
- ▶ Potential for less coating damage during installation
- ▶ Oversized recess lobe option reduces effects of recess fill

### IDEAL APPLICATIONS

- ▶ Ultra high strength fasteners
- ▶ Aerospace fasteners
- ▶ Torque-to-yield applications
- ▶ Cutter screws
- ▶ Miniature screws
- ▶ Fasteners with heavy coatings

## TORX PARALOBE™ GEOMETRY AND DESIGN

The TORX PARALOBE™ Drive System features unique geometry resulting in 'Full Surface Drive Contact' to reduce drive bit/recess contact stresses.



40 N-m Torque (Mid Penetration)  
Performance - FEA Effective Stress



TORX PLUS <sup>®</sup>	
DRIVE SIZE	ULTIMATE TORQUE (N-m)
15IP	9.62
30IP	47.18
50IP	194.54

TORX PARALOBE™	
DRIVE SIZE	ULTIMATE TORQUE (N-m)
15SI	11.6
30SI	57.6
50SI	237

% INCREASE
20.6%
22.1%
21.8%

TORX PARALOBE™ APPROXIMATELY 20% GREATER DRIVE BIT TORSIONAL STRENGTH VS. TORX PLUS<sup>®</sup>

TORX <sup>®</sup>	
DRIVE SIZE	ULTIMATE TORQUE (N-m)
T15	7.69
T30	37.4
T50	158.75

TORX PARALOBE™	
DRIVE SIZE	ULTIMATE TORQUE (N-m)
15SI	11.6
30SI	57.6
50SI	237

% INCREASE
50.8%
54.0%
49.3%

TORX PARALOBE™ APPROXIMATELY 50% GREATER DRIVE BIT TORSIONAL STRENGTH VS. TORX<sup>®</sup>

### STANDARD DESIGN GUIDELINES:

- ▶ Drive sizes: 1SI and 110SI
- ▶ Fastener sizes: M2 thru M25
- ▶ Head design: Can be used with all head designs