

# HDAS-C-01

CAN-AM DEFENDER ADJUSTABLE TIE ROD



# HL

**HIGHLIFTER**

**SEIZMIK**

  
**FALCON RIDGE**

 **SNORKEL**  
YOUR ATV

**SYSTEM 3**  
OFF-ROAD  
Traction. Strength. Style.

**EPI**  
PERFORMANCE



[sales@highlifter.com](mailto:sales@highlifter.com)



800-699-0947 | 8:00am - 5:00pm CST



7455 Atkinson Drive, Shreveport, LA 71129



[www.highlifter.com](http://www.highlifter.com)

Parts Available For These Popular Brands and Others

**POLARIS**

**can-am**



**HONDA**

**Kawasaki**



**YAMAHA**

## PRODUCT DISCLAIMER

The installation of products sold or manufactured by High Lifter Products, Inc. including, but not limited to suspension components such as lift kits, gear reduction lifts, frame stiffener kits, snorkels, and tires that exceed the original specifications for the vehicle, may change the vehicle's center of gravity and handling characteristics both on- and off-road. You are aware that the installation of tires that are larger than original vehicle specifications may reduce the effectiveness of the braking system. Use of these products may place added stress to the original factory vehicle components which could cause them to weaken or possibly fail.

Products sold or manufactured by High Lifter Products, Inc. are intended for off-road use only. Operation of a vehicle modified with these products on a road could result in serious bodily injury or death, and such operation may violate the laws of your state or municipality. You agree to operate your vehicle exclusively in the manner intended by the vehicle manufacturer. You agree that failure to safely and reasonably operate your vehicle could result in serious bodily injury or death, and that, as a result of installation of this product(s) to your vehicle, extreme care must be taken to prevent vehicle rollover or loss of control, which may be more likely to occur as a result of said modifications. You will avoid unsafe maneuvers, including sudden sharp turns or other abrupt maneuvers, which could make a vehicular accident more likely. You understand that High Lifter Products, Inc. is not responsible or liable for any damages or any injuries to yourself or your passengers that could occur upon possible accidents due to driver error, incorrect installations, bad judgment, incompatibility with other aftermarket accessories or natural disasters to the fullest extent allowable by law.

You will have all vehicle occupants fasten seatbelts, if equipped, and wear proper safety equipment, such as DOT approved helmet and eye protection prior to operating the vehicle. You understand and acknowledge that failure to wear proper safety equipment may increase the risk of serious bodily injury or death to yourself and any passengers.

Proper installation of products sold or manufactured by High Lifter Products, Inc. requires knowledge of the factory recommended procedures for removal and installation of original equipment components. Installation of these products without proper knowledge and experience may affect the performance of these components and the safety of the vehicle and cause serious bodily injury or death. It is strongly recommended that a certified mechanic familiar with the installation of similar components perform the product(s) installation.

Prior to installing any products sold or manufactured by High Lifter Products, Inc., you will perform or cause to be performed an inspection of their vehicle to confirm its condition is suitable for the installation of these products. A proper inspection of the vehicle includes confirmation that the vehicle has not been in a collision and is free of corrosion. If the vehicle is suspected to have been in a collision or misused, or is otherwise unsuitable for modification, you will not install the product(s). You will continue to inspect the vehicle prior to each use to confirm its condition is suitable for its intended use, and you acknowledge that the failure to do so may result in serious bodily injury or death, as well as damage to the vehicle itself.

You will install any warning labels provided with the product so it may be prominently seen by yourself and all passengers. You will notify all passengers of the modifications performed to your vehicle prior to operation.

Insurance companies may handle coverage of a modified vehicle differently. Please check with your insurance carrier prior to modifying the vehicle to ensure your coverage remains sufficient.

Installation of this product(s) may void your vehicle warranty. If this is a concern, please check with the manufacturer or dealer before purchase or installation of this product(s).

# HIGHLIFTER



## HIGH LIFTER LIMITED LIFETIME WARRANTY

High Lifter offers a Limited Lifetime Warranty to the original purchaser that our product shall be free from defects in material and workmanship for the life of the product if utilized in accordance with the manufacturer's instructions for installation and operation of said products.

### LIMITED LIFETIME WARRANTY EXTENDS TO THE FOLLOWING PRODUCT LINES:

- Lift Kits (Signature, Standard and Big Lifts)
- Control Arms
- Trailing Arms
- Radiator Relocation Kits
- Portal Gear Lifts
- Wheel Spacers
- Tow Hooks
- Control Arm Link Kits

Damages to vehicle or any other object during the installation, use, or removal of High Lifter products are not covered under this warranty. Normal wear items included with any of the products covered under this Limited Lifetime Warranty are excluded from coverage. These items include, but are not limited to heim joints, tie rods, bearings, bushings, seals, gaskets, zinc plating, painted and powder coated finishes. Other exclusions of coverage under this warranty include, but are not limited to: damage or product failure due to improper installation, lack of maintenance, product modification, abuse, collision or use on vehicles for which product was not designed, repairs performed by anyone other than approved High Lifter personnel or made using non-High Lifter components. This warranty is valid for the original purchaser only and is non-transferable. High Lifter reserves the right to inspect any product before determining if the claim is valid and covered under this warranty. Claims determined to be caused by reasons other than a manufacturer defect will be rejected and an estimate for repair or cost of a replacement product if a repair is not possible, will be provided.

This warranty is exclusive and is in lieu of any implied warranty of merchantability, fitness for a particular purpose or other warranty of quality, whether express or implied, except the warranty of title.

### WARRANTY PROCESSING

If you suspect your product is defective, **DO NOT** disassemble the product to determine the cause without prior approval as it may void your warranty status. This is especially true with our Portal Gear Lift. To begin the claim process, please e-mail our warranty team at [warrantycare@highlifter.com](mailto:warrantycare@highlifter.com) and include the following in the e-mail:

- Your full name, address and contact phone number.
- The year, make and model of your vehicle
- The part number of the product
- Photos of the product installed, and vehicle product is installed on
- Proof of Purchase (Required for all warranty claims and you must be the original purchaser)

Once a claim is created, you will receive a return authorization number (RMA). Write this number on the outside of the box containing your defective product and include it along with your name and contact information inside the box. Product must be returned in the original box or a box of equal strength and packaging. Product sent without an RMA number visible on the outside of the box or sent COD will be refused. Ship your product to the following address:

**High Lifter Products, Inc.**  
**Attn: Returns 7455 Atkinson Dr, Shreveport, LA 71129**

Once your product is received, we often have your replacement or repaired product shipped back to you within 3-business days of receiving it. Please note that High Lifter is not responsible for shipping charges on product returned for warranty or repair, including duties and fees required by those residing outside the United States.

**THANK YOU FOR CHOOSING**  
**HIGHLIFTER**



# PARTS

79-15316

## CAN-AM DEFENDER ADJUSTABLE TIE ROD

79-15138



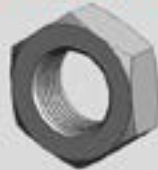
(2 EACH)

73-10618  
HEIM JOINT  
3/4-16 RH



2 (EACH)

54-60881  
3/4 JAM NUT RH



2 (EACH)

78-10225  
(16MM)  
INNER TIE ROD END



2 (EACH)

54-60930  
5/8- LH  
JAM NUT



2 (EACH)

54-60937  
BLUE LOCKTITE  
MED STRENGTH 1.8ML



1 (EACH)

79-14871  
HIGH MISALIGNMENT  
BUSHING



4 (EACH)

54-61334  
11" ZIP TIES



4 (EACH)

54-61038  
10MM  
NYLON LOCK NUT



2 (EACH)

54-60995  
MCS1075 HEX BOLT



2 (EACH)

54-61026  
10MM  
FLAT WASHER

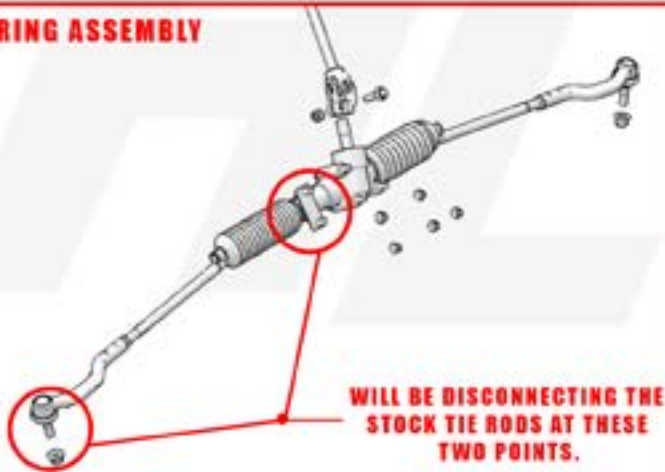


2 (EACH)

## STEP 1

## STOCK TIE ROD REMOVAL

### STEERING ASSEMBLY



PLACE JACK UNDER THE CENTER OF FRONT AND LIFT UNTIL THE WHEELS ARE OFF THE GROUND. BE CAREFUL TO SECURE PROPERLY SO IT IS STABLE ON THE JACK OR JACK STANDS. REMOVE WHEELS.



## STEP 2

## STOCK TIE ROD REMOVAL

DISCONNECT THE TIE ROD END FROM THE KNUCKLE BY REMOVING THE FACTORY NUT ON THE UNDERSIDE OF THE KNUCKLE.

NEXT, WHILE APPLYING UPWARD PRESSURE ON THE TIE ROD GENTLY TAP THE KNUCKLE WITH A HAMMER TO HELP SHOCK/EASE THE TIE ROD OUT.





## STEP 3

## STOCK TIE ROD REMOVAL

REMOVE CLAMPS AND/OR ANY ZIP TIES HOLDING THE BOOT IN PLACE. NOW, SLIDE THE BOOT DOWN THE TIE ROD.

WHEN THE TIE ROD IS REMOVED FROM THE UTV YOU WILL REUSE THE BOOT TO INSTALL THE NEW ADJUSTABLE TIE ROD.

**NOTE: INSPECT THE BOOT FOR ANY RIPS.**



NEXT, LOOSEN THE INNER TIE ROD END FROM THE RACK.

**NOTE: GO COUNTER CLOCKWISE TO LOOSEN.**



REMOVE THE STOCK TIE ROD.



## STEP 4

## MEASURING AND TIE ROD ASSEMBLY



### MEASURING

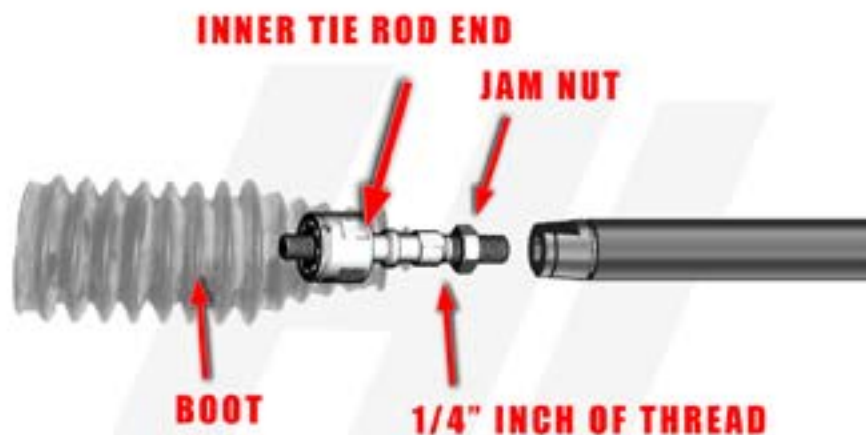
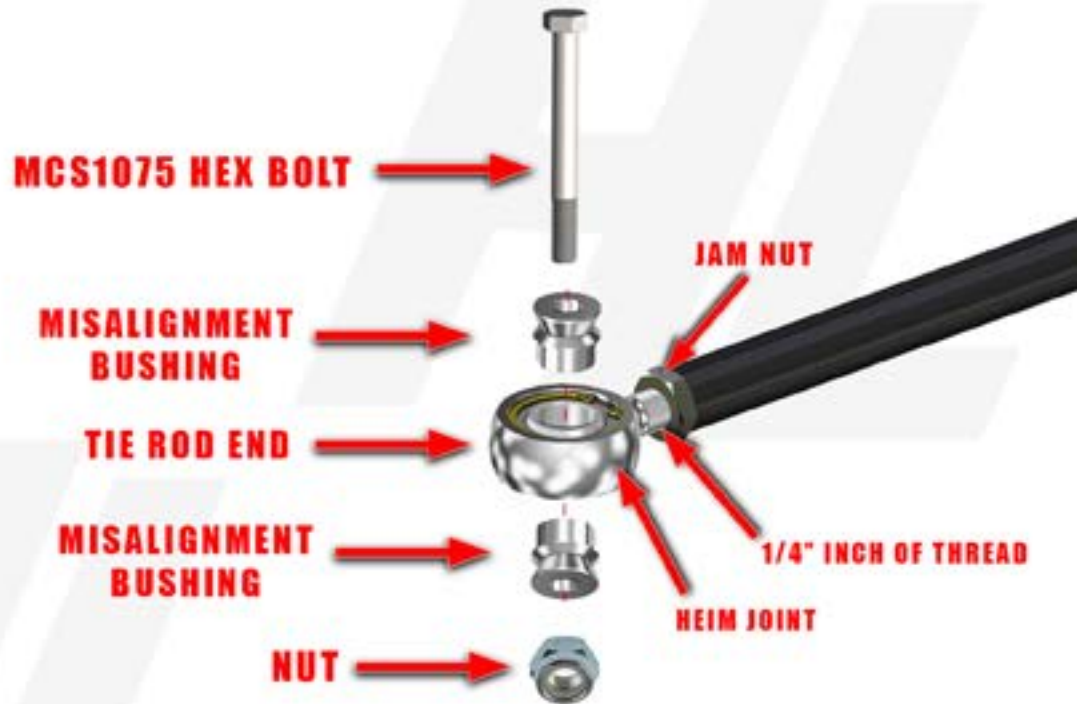
MEASURE THE STOCK TIE ROD FROM THE CENTER OF THE HEIM JOINT ON THE TIE ROD END TO THE END OF THE INNER TIE ROD END. USE THIS MEASUREMENT FOR THE NEW TIE ROD.



1. TAKE THE FACTORY BOOT AND PLACE IT ONTO THE NEW INNER TIE ROD.

2. NEXT, ATTACH THE HEIM JOINT TO THE OUTER END OF THE TIE ROD THAT WILL CONNECT TO THE KNUCKLE ASSEMBLY. SCREW IT ON WITH THE JAM NUT LEAVING 1/4" OF THREAD.

3. NOW CONNECT THE INNER TIE ROD END TO THE END THAT WILL CONNECT TO THE RACK. SCREW IT IN AND THEN SECURE IT WITH THE JAM NUT LEAVING 1/4" INCH OF THREAD.





5. SET THE LENGTH OF THE NEW ADJUSTABLE TIE ROD TO THE MEASURED LENGTH OF THE ORIGINAL TIE ROD. DO THIS BY ADJUSTING THE TWO TIE ROD HALVES.



**(LEFT HAND THREADED)**

**(RIGHT HAND THREADED)**

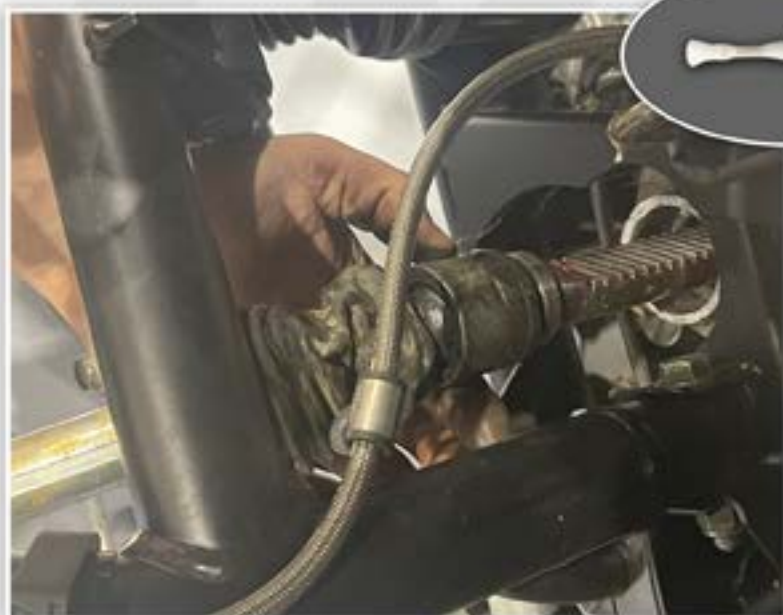


ONCE THE TIE ROD END AND THE INNER TIE ROD END ARE COMPLETED SET THE TIE ROD TO THE STOCK TIE RODS MEASUREMENT. NOW, USING AN ALLEN WRENCH AND THE PROVIDED LOCK-TITE SET THE FIRST SET SCREW ONCE IT IS ALIGNED ALONG THE CHANNEL ON THE TIE ROD AS SEEN IN THE IMAGE TO THE LEFT. NOW SET THE SECOND SET SCREW ON THE SIDE ALSO USING THE PROVIDED LOCK-TITE.

## STEP 5

## INSTALLATION

INSTALL THE INNER TIE ROD END BY FIRST APPLYING SOME LOCK-TITE TO THE THREADS THEN THREAD THE TIE ROD ONTO TO THE RACK AND TIGHTEN.





NOW SLIDE THE BOOT BACK AND SECURE IT TO THE RACK WITH 2 ZIP TIES.



## STEP 6

## INSTALLATION

NOW INSTALL THE TIE ROD END TO THE KNUCKLE USING THE PROVIDED HEX BOLT AND NUT.

ONCE ALL IS TIGHTENED REPEAT STEPS FOR OPPOSITE SIDE, REINSTALL WHEELS THEN LOWER THE JACK.

**MCS1075 HEX BOLT**

**MISALIGNMENT BUSHING**

**TIE ROD END**

**MISALIGNMENT BUSHING**

**NUT**

**JAM NUT**

**1/4" INCH OF THREAD**

**HEIM JOINT**

Thank You For Choosing  
**HIGHLIFTER**

THE TORQUE VALUES CAN ONLY BE ACHIEVED IF THE NUT (OR TAPPED HOLE) HAS A PROOF LOAD GREATER THAN OR EQUAL TO THE BOLT'S MINIMUM ULTIMATE TENSILE STRENGTH. CLAMP LOAD IS CALCULATED AS 75% OF THE PROOF LOAD WHEN SPECIFIED BY THE STANDARD. ASTM A307 UTILIZED 75% OF 36,000 PSI.

TORQUE VALUES FOR 1/4 AND 5/16 IN SERIES ARE IN INCH POUNDS.

ALL OTHERS ARE IN FOOT-POUNDS.

**TORQUE-TENSION RELATIONSHIP FOR A307, GRADE 5 & 8**

NOMINAL DIA. (In.)	THREADS PER INCH	TENSILE STRESS AREA (Sq. In.)	GRADE 5 - CLASS 5				GRADE 8 - CLASS 8			
			CLAMP LOAD (lbs.)	TIGHTENING TORQUE			CLAMP LOAD (lbs.)	TIGHTENING TORQUE		
				K=0.15	K=0.17	K=0.20		K=0.15	K=0.17	K=0.20
<b>UNFINISHED UNFUSED BOLTS</b>										
1/4	20	0.0318	2020	76 ft-lbs	86 ft-lbs	101 ft-lbs	2864	187 ft-lbs	221 ft-lbs	261 ft-lbs
5/16	18	0.0324	3342	187	212	249	4710	323	381	454
3/8	16	0.0375	4940	287 ft-lbs	327 ft-lbs	378 ft-lbs	6074	412 ft-lbs	492 ft-lbs	587 ft-lbs
7/16	14	0.0422	6777	427	483	561	9568	613	729	870
1/2	13	0.0478	9046	627	708	819	12771	863	1029	1226
9/16	12	0.0541	11500	823	928	1080	16375	1114	1328	1584
5/8	11	0.0618	14408	1118	1258	1460	20340	1488	1768	2121
3/4	10	0.0713	21322	1600	1827	2127	30101	2121	2538	3046
7/8	9	0.0827	29436	2221	2525	2939	41556	2884	3451	4096
1	8	0.0960	38616	3084	3497	4044	54517	3891	4621	5499
1-1/4	7	0.1291	53786	4190	4752	5521	87220	5282	6248	7477
1-1/2	6	0.1608	77991	5823	6627	7700	126473	7317	8738	10462
<b>FINISHED BOLTS</b>										
1/4	28	0.0254	2310	87 ft-lbs	99 ft-lbs	116 ft-lbs	3274	228 ft-lbs	278 ft-lbs	334 ft-lbs
5/16	24	0.0271	3702	124	142	161	5226	348	418	507
3/8	24	0.0278	5500	267 ft-lbs	307 ft-lbs	354 ft-lbs	7905	527 ft-lbs	632 ft-lbs	761 ft-lbs
7/16	20	0.0307	7568	41	47	55	10684	68	82	98
1/2	20	0.0315	10197	64	73	85	14306	101	122	147
9/16	18	0.0338	12940	91	104	121	18268	138	165	197
5/8	18	0.0346	16317	137	156	180	23036	198	238	288
3/4	16	0.0378	23776	208	238	277	33566	274	327	393
7/8	14	0.0426	32470	303	346	404	45853	393	472	568
1	14	0.0434	43343	432	494	573	61190	534	637	768
1-1/4	12	0.0478	59548	600	688	801	96565	738	888	1071
1-1/2	12	0.0486	87747	864	984	1144	142202	984	1188	1437

**TORQUE-TENSION RELATIONSHIP FOR ASTM FASTENERS**

NOMINAL DIA. (In.)	PITCH	2.8 CLASS 2.8			11.8 CLASS 11.8			12.9 CLASS 12.9					
		CLAMP LOAD (lbs.)	TIGHTENING TORQUE			CLAMP LOAD (lbs.)	TIGHTENING TORQUE			CLAMP LOAD (lbs.)	TIGHTENING TORQUE		
			LUBRICATED (ft-lbs)	ZINC PLATED (ft-lbs)	PLAIN DRY (ft-lbs)		LUBRICATED (ft-lbs)	ZINC PLATED (ft-lbs)	PLAIN DRY (ft-lbs)		LUBRICATED (ft-lbs)	ZINC PLATED (ft-lbs)	PLAIN DRY (ft-lbs)
4	8.7	85.6	1.7	1.8	2.0	1228	8.4	8.7	9.2	1426	8.8	9.2	9.6
5	8.8	128.7	2.4	2.6	3.0	1985	11.8	12.3	12.9	2219	12.2	12.8	13.3
6	1	196.6	3.6	3.8	4.4	2816	17.4	18.1	18.9	3291	18.2	19.0	19.8
7	1	282.2	5.2	5.5	6.3	4029	25.0	25.9	26.9	4720	26.8	27.9	29.0
8	1.05	359.0	6.6	6.9	8.0	5122	32.2	33.3	34.5	5987	33.8	35.1	36.4
10	1.3	567.1	10.0	10.6	12.3	8115	48.8	50.3	52.0	9484	50.7	52.4	54.2
12	1.75	824.0	14.2	14.9	17.1	11792	68.8	70.6	72.6	13761	71.6	73.6	75.7
14	2	1128.9	19.6	20.4	23.4	16154	97.1	99.1	101.4	18879	99.8	102.1	104.4
16	2	1522.0	27.1	28.1	32.1	21824	136	138	141	25822	138	141	144
18	2.5	1862.2	32.7	33.8	38.8	26924	162	164	167	31477	164	167	170
20	2.5	2292.8	39.8	40.9	46.9	34256	202	204	208	40024	204	208	212
22	2.5	2866.0	49.1	50.3	57.3	42437	248	251	255	49619	252	256	260
24	2	3447.1	59.7	60.9	69.9	49229	298	301	307	57649	304	308	312
27	2	4492.4	79.7	81.0	92.0	64288	394	398	405	75122	398	403	408
30	2.5	5481.9	96.8	98.1	111.1	78448	478	483	491	91630	483	488	494
32	2.5	6782.1	118.4	119.8	136.8	97655	586	591	599	112425	591	597	603
36	4	7966.0	142	144	164	114291	704	709	718	132569	709	715	721

TORQUE VALUES CALCULATED FROM FORMULA T=KDF:

K=0.15 FOR "LUBRICATED" CONDITIONS

K= 0.17 FOR ZINC PLATED AND DRY CONDITIONS, ALSO THE USE OF VARIOUS FORMS OF THREAD LOCKERS HAVE A SIMILAR K VALUE

K=0.20 FOR PLAIN DRY CONDITIONS

D= NOMINAL DIAMETER

F=CLAMP LOAD

NOTE: WHEN USING ZINC PLATED (LUBRICATED WITH WA) TOP LOCK NUTS, THE K VALUE CAN VARY FROM 0.12 TO 0.16.

CAUTION: ALL MATERIAL INCLUDED IN THESE CHARTS IS ADVISORY ONLY. EXTREME CAUTION SHOULD BE USED WHEN USING A FORMULA FOR TORQUE/TENSION RELATIONSHIPS. TORQUE IS ONLY AN INDIRECT INDICATION OF TENSION. UNDERCOVER TIGHTENING OF FASTENERS CAN RESULT IN COSTLY EQUIPMENT FAILURE OR PERSONAL INJURY.