



NOTES:

- MATERIAL: AISI 4140 QUENCH AND TEMPER 269/321 BHN STEEL BAR OR TUBE
- IDENTIFY WITH PART NUMBER, SUPPLIER CODE AND NUMBER, MANUFACTURERS LOT NUMBER, AND REVISION LEVEL
- AFTER FINAL GRINDING WIDTH TO SIZE, SURFACE CRACK TESTING MUST BE COMPLETED BY MAGNETIC PARTICLE TESTING OR DYE PENETRANT TEST ON GROUND SURFACES PER ISO 6336-5. NO CRACKS ALLOWED. (ALT: AGMA 2001-D04 GR. 3 - NO CRACKS ALLOWED)
- UNLESS SPECIFIED, FILLETS R3 AND CHAMFERS 1 x 45°

REV	CHANGED FROM	BY	DATE	APRD
A	INITIAL CREATION	JMG	9/20/12	
B	ADDED SPRING HOLES. REVIEWED PER 1509-ENC-004	JFC	10/26/12	
C	CHANGES PER REQUEST 1509-DDS-018-A AND NREL DRW REVIEW	CPS	3/5/13	
D	CHANGE LUBE HOLES PER 1509-DDS-018-A03	CPS	4/18/13	
E	GROOVE OD ADDED	CPG	1/14/16	

REPORT ERRORS & CHANGES REMOVE ALL BURRS AND SHARP EDGES DIMENSIONS ARE IN MILLIMETERS. UNSPECIFIED TOLERANCES:

DECIMALS: FINISH: ANGLES:

X. ±1.0 6.3  $\mu\text{m Ra}$   $\leq \pm 0.5^\circ$

.X ±0.5

.XX ±0.25

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NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY

DRAWN JMG DATE: 9/20/12

CHECKED NJB THIRD ANGLE PRJ

MAKE FROM MODEL: 1509-GS-025-A

**National Renewable Energy Laboratory**

TITLE: BEARING SPACER, UPPER HSS

SIZE **B** DWG. NO. 254516 REV **E**

SCALE: 1:2 WEIGHT: 2.51 kgs SHEET 1 OF 1