



	PART NUMBER	DESCRIPTION	QTY.
1	254494	HOLLOW SHAFT - REMACHINED	1
2	254499	SPACER, LS SHAFT (UW)	1
3	254493	RING SPACER, TRB LS SHAFT	1
4	251331	UPPER SPHERICAL THRUST RING	1
5	251330	LOWER SPHERICAL THRUST RING	1
6	254514	GEAR, INTERMEDIATE (HOLLOW SHAFT)	1
7	96531	KEY, HOLLOW SHAFT GEAR	2
8	97065	RETAINING RING, EXTERNAL SPIRAL	1
9	254787	BEARING ASS'Y, HOLLOW SHAFT	1
10	254500	SPACER, LS SHAFT DW	1
11	251343	RING, OIL SUPPLY	1
12	90105	CAPSCREW, DRILLED HEX HEAD, M16-2 x 45 LONG, GRADE 8.8	4
13	90651	WASHER, FLAT, PLAIN, STEEL, M16	4
14	254495	GEAR, SUN	1
15	251334	SEAL SUN SHAFT - HOLLOW SHAFT	1
16	254501	LABYRINTH SEAL	1
17	254783	LSS END COVER SPACER	1
18	95218	PLUG, HOLLOW HEX, .125 NPT, ZINC PLATED	1
19	90845	ROLL PIN, 10 DIA X 18 LG	2
20	90666	PLUG, HOLLOW HEX, 1/4 -18 NPT, ZINC PLATED	1
21	90664	PIN, DOWEL, PULL, M6 x 24L, FLAT VENTED	3
22	90668	SPRING, COMPRESSION, MMC#9434K44	6
23	99903	NUT, LOCK, HM 3048	1
24	99904	CLIP, LOCK, MS 3052-48	1

NOTES:

- APPLY LOCTITE 577 THREAD SEALANT ON ALL THREADS PER MFG. INSTRUCTIONS.
- WIRE TIE ITEM 1 AFTER APPLYING PROPER TORQUE TO BOLTS. USE \varnothing 1mm 302/304 STAINLESS STEEL WIRE.
- ADJUST WIDTH OF 254783 SPACER, ITEM 18, AT FINAL ASSEMBLY TO SPECIFICATION ON DRAWING 254719.
- FIT GEAR WHEEL TO KEYS ON FINAL ASSEMBLY
- LUBRICATION SYSTEM TO BE FLUSHED CLEAN PRIOR TO ASSEMBLY.

MADE FROM: 1509-AS-003-B

REV	CHANGED FROM	BY	DATE	APRD
A	PRE-RELEASE	CPS	1/14/13	
B	RELEASE FOR PRODUCTION	CPS	4/19/13	
C	REMOVE BALANCING REQUIREMENT	CPS	5/20/13	
D	REPAIR DANGLING NOTES	JMG	10/18/13	
E	CHANGES REQUESTED PER MANUFACTURER DRW REVIEW	CPG	12/11/13	
F	CHANGES PER MFG REVIEW	CPG	3/14/16	

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 CPS DATE: 1/14/13
 CHECKED NJB THIRD ANGLE PRJ

National Renewable Energy Laboratory

TITLE: **HOLLOW SHAFT ASSEMBLY**

SIZE **B** DWG. NO. **254713** REV **F**

SCALE: 1:10 WEIGHT: 606.96 kgs SHEET 1 OF 1