

SCALE 1 : 15

NOTES:

1. USE LOCTITE 577 THREAD SEALANT ON ALL THREADS PER MFG. INSTRUCTIONS
2. LUBRICATION SYSTEM TO BE FLUSHED CLEAN PRIOR TO ASSEMBLY
3. LUBRICATION SYSTEM TO BE PRESSURE TESTED WITH GEARBOX OIL TO 5 BAR FOR 10 MINUTES. ZERO DECAY.
4. USE SUITABLE GREASE COMPATIBLE OIL AS INSTRUCTED
5. INSTRUMENTATION TO BE COMPLETED PRIOR TO ASSEMBLY PER LAYOUT DRAWINGS 1551-LY-311, 1551-LY-321, 1551-LY-401, 1551-LY-601, AND 1551-LY-711.
6. INSTRUMENTATION TO BE COMPLETED AFTER FINAL ASSEMBLY PER LAYOUT DRAWINGS 1551-LY-501, 1551-LY-502, 1551-LY-503, 1551-LY-701, 1551-LY-702, 1551-LY-703, AND 1551-LY-704.
7. SEE 1551-XL-001 FOR INSTRUMENTATION BILL OF MATERIALS. SEE 1551-XL-002 FOR INSTRUMENTATION SIGNAL LIST.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	254550	FR. HOUSING INLINE MACHINING & ASS'Y	1
2	254713	HOLLOW SHAFT ASSEMBLY	1
3	254593	HIGH SPEED SHAFT ASSEMBLY	1
4	254714	PLANET CARRIER BEARINGS AND PLANET ASS'Y	1
5	254549	INTERMEDIATE SHAFT ASSEMBLY	1
6	90490	SOC HD CAPSCREW, M16 x 45 GR 8.8	8
7	254718	FRONT BEARING RETAINER ASSY	1
8	254782	PILOT TUBE ASSEMBLY	1
9	251557	LUBRICATION BLOCK	2
10	98225	HEX HD CAPSCREW, M8x20, DRILLED HD, GRADE 5	4
11	97064	SNAP RING FH-195	1
12	90296	SOC HD CAPSCREW, M16 x 60 GR 10.9	12
13	251332	PLATE, BAFFLE	1
14	90651	WASHER, FLAT, PLAIN, STEEL, M16	12
15	254784	CARRIER ADAPTOR SUB ASS'Y	1
16	254922	SUMP DRAIN / WEIR LUBE SYST	1
17	254921	GEARBOX ASSEMBLY - LUBE SYST	1
18	90667	1/2 NPTF Pipe Size	1
19	95236	FITTING, STRAIGHT CONNECTOR, PARKER 8-F5OX-S	2
20	95237	FITTING, SWIVEL NUT TEE, PARKER #8-R6X-S	1
21	251870	ASSEMBLY, LUBRICATION FITTING	1
22	95235	FITTING, BRANCH TEE, PARKER 8-S50X-S	1
23	255221	ASSEMBLY, OIL SUPPLY TUBE	1
24	255222	ASSEMBLY, OIL SUPPLY TUBE	1
25	255223	ASSEMBLY, OIL SUPPLY TUBE	1
26	90964	SNAP RING, INTERNAL (SMALLEY DNH-180)	2

MAKE FROM MODEL: 1509-AS-007-C

REV	CHANGED FROM	BY	DATE	APRD
A	PRE-RELEASE	CPS	2/14/13	
B	RELEASE FOR PRODUCTION	CPS	5/10/13	
C	REPAIR DANGLING DIMENSION LEADERS	JMG	10/18/13	
D	CHANGES PER MANUFACTURER REVIEW AND INSTRUMENTATION	CPG	3/20/14	
E	CHANGES PER MFG REVIEW	CPG	3/22/16	

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X. ±1.0 .X ±0.5 .XX ±0.25	6.3 √ μm Ra	∠ ± 0.5°
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DRAWN	CPS	DATE: 2/14/13
CHECKED		THIRD ANGLE PRJ

National Renewable Energy Laboratory		
TITLE: GEARBOX ASSEMBLY		
SIZE B	DWG. NO. 254719	REV E
SCALE: 1:10	WEIGHT: 5153.56 kgs	SHEET 1 OF 5

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	254506	GEAR HOUSING ASS'Y	1
4	90939	STUD, THREADED, M24 x 500	26
5	97157	WASHER, SPECIAL M24	58
6	90800	NUT, M24, FULL HEAVY DUTY	58
8	93239	O-RING, 8mm x 1060 DIA	2
9	254552	DOWEL, SPECIAL, STEPPED AND NECKED	8
10	90940	STUD, THREADED, M24 x 450	5
11	90938	STUD, THREADED, M24 x 130mm	1
12	95425	SAE 12 - STR THRD PLUG w/ O-RING	1

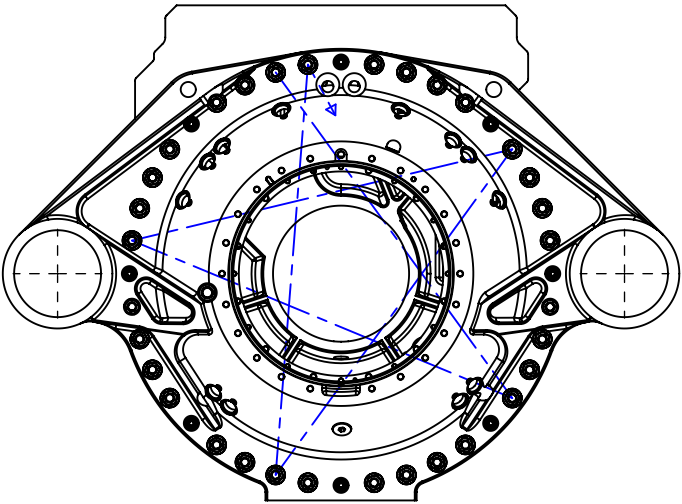
TORQUE CHART (LUBED)

M24: USE STUD TENSIONER ON EXTENDED END OF STUD.
SET FORCE TO 256 kN.

FRONT FASTENER NOTES:

1.
- USE A HYDRAULIC STUD TENSIONER PER MANUFACTURER INSTRUCTIONS.
2.
- SEQUENCE TO TIGHTENING NUTS IS FIRST TIGHTEN TO 128 kN IN A PATTERN ILLUSTRATED BELOW, WITH IRRELEVANT STARTING POINT.

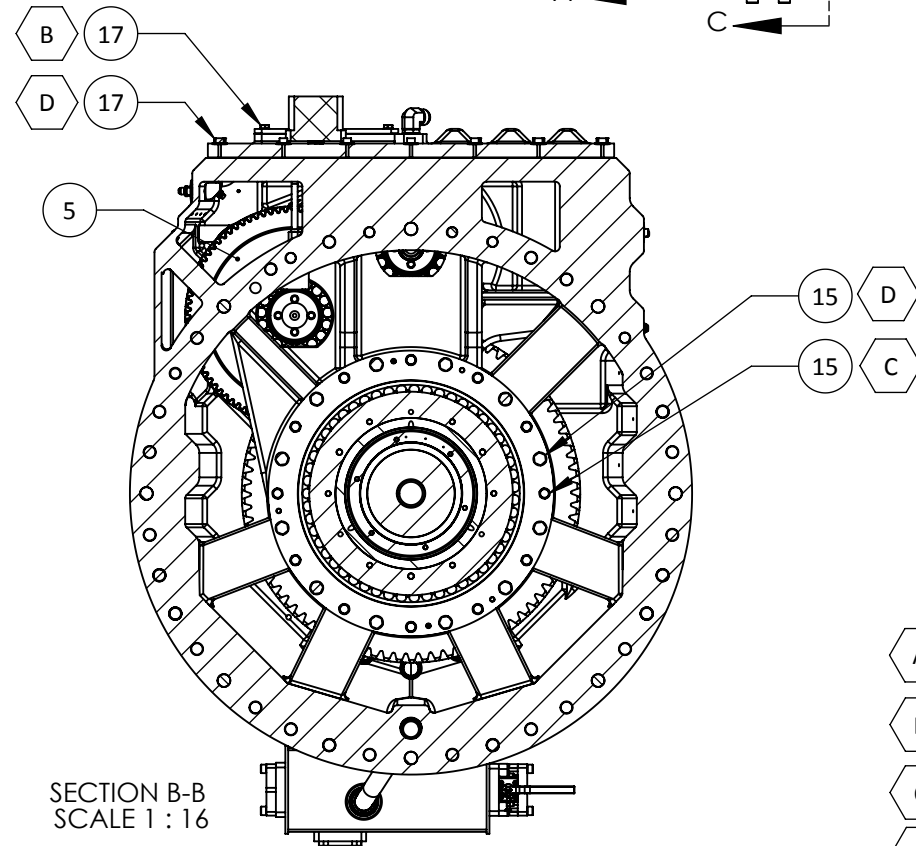
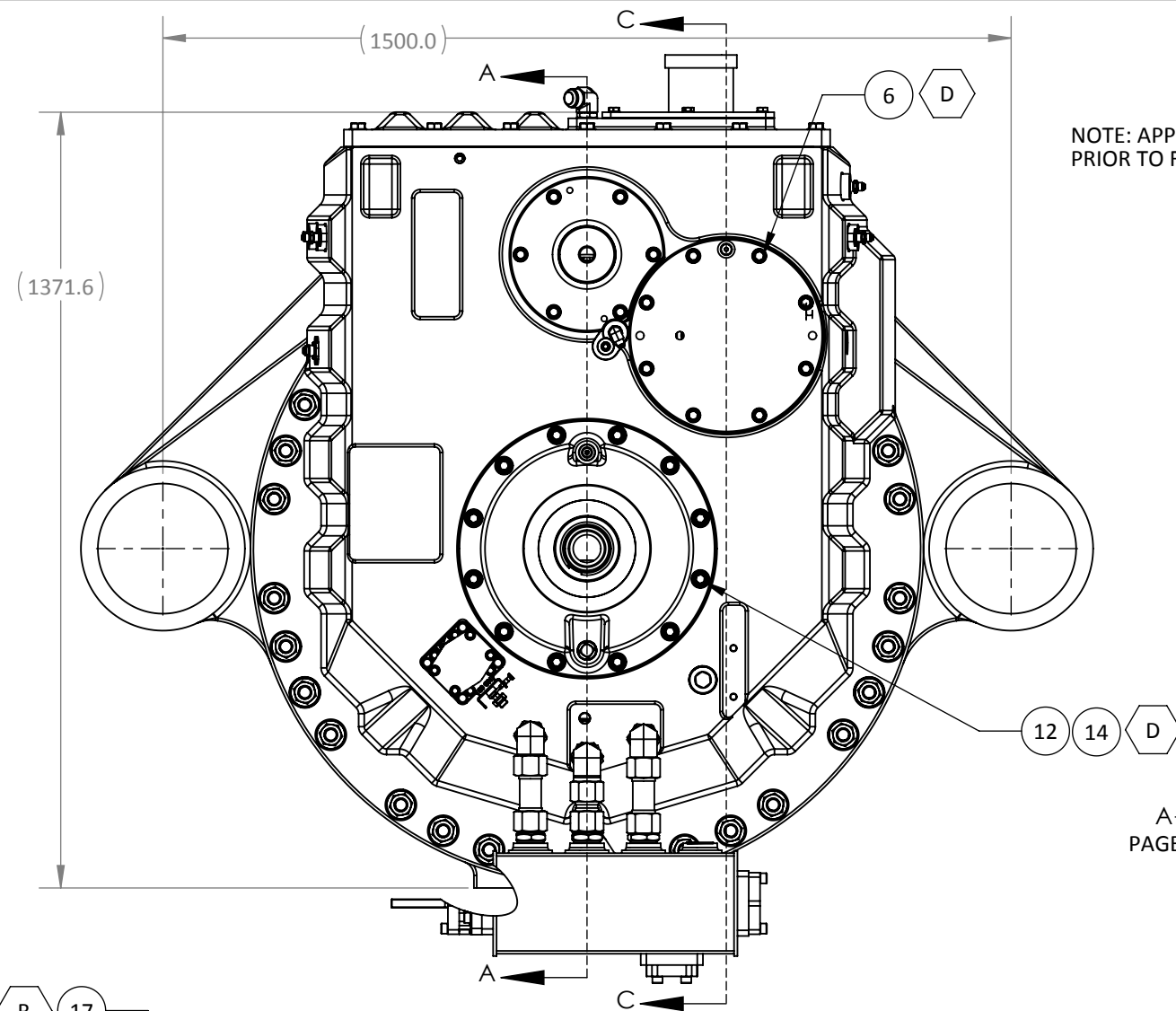
THEN TIGHTEN TO FINAL TORQUE REPEATING SAME PROCESS.



BOLT TIGHTENING PATTERN
SCALE 1 : 20

REFER TO INSTRUMENTATION DRAWINGS FOR COMPLETE INSTALLATION DETAILS
FOR PROXIMITY SENSORS INSTALLED IN THE TORQUE ARM HOUSING.

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DRAWN	CPS	DATE: 2/14/13	SCALE: 1:8		WEIGHT: 2063.30 kgs	SHEET 2 OF 5
CHECKED		THIRD ANGLE PRJ				

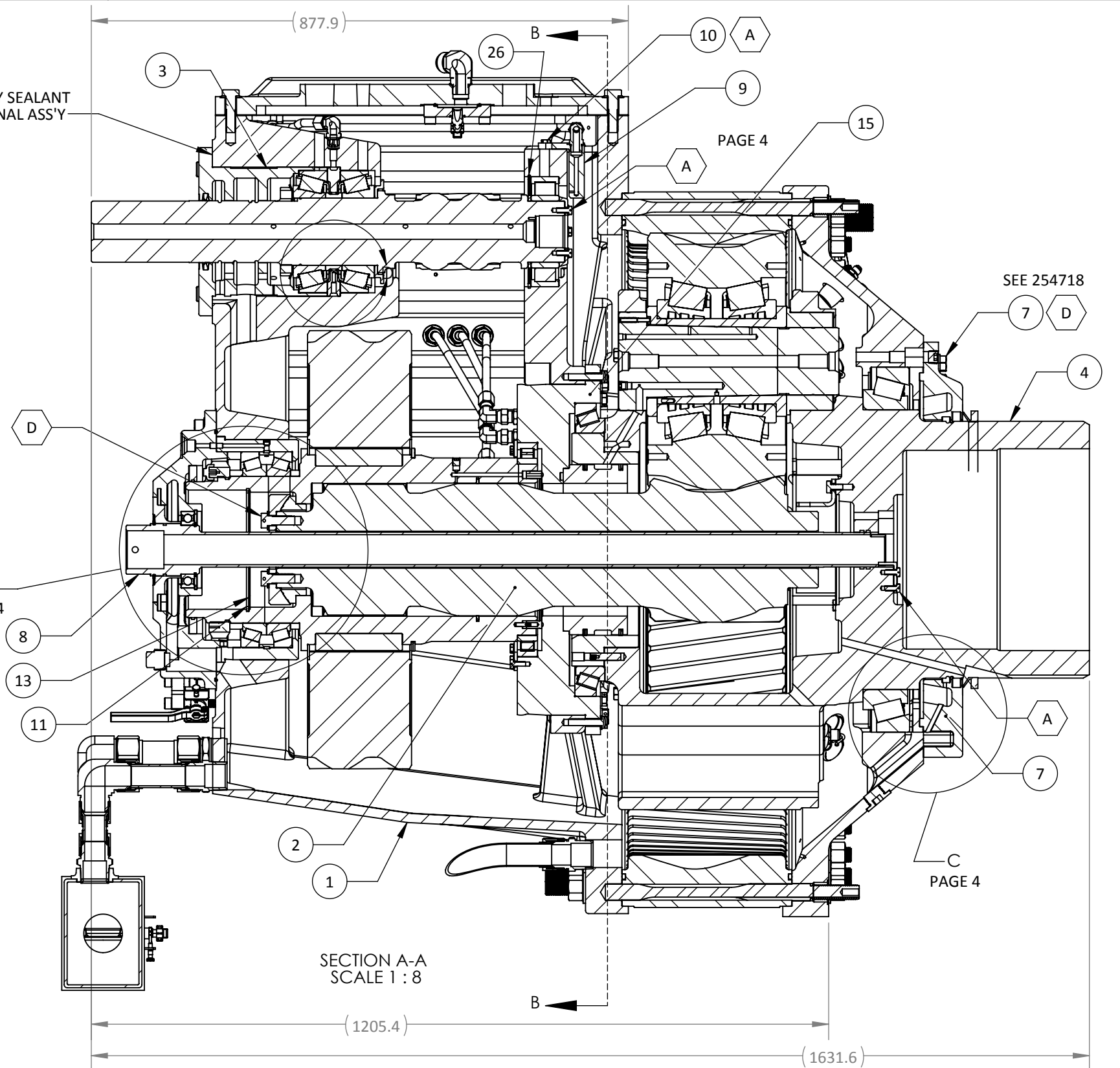


NOTE: APPLY SEALANT
PRIOR TO FINAL ASS'Y

A
PAGE 4

TORQUE CHART (LUBED)

A	M8: 27.3 Nm
B	M10: 54 Nm
C	M12: 94 Nm
D	M16: 233 Nm



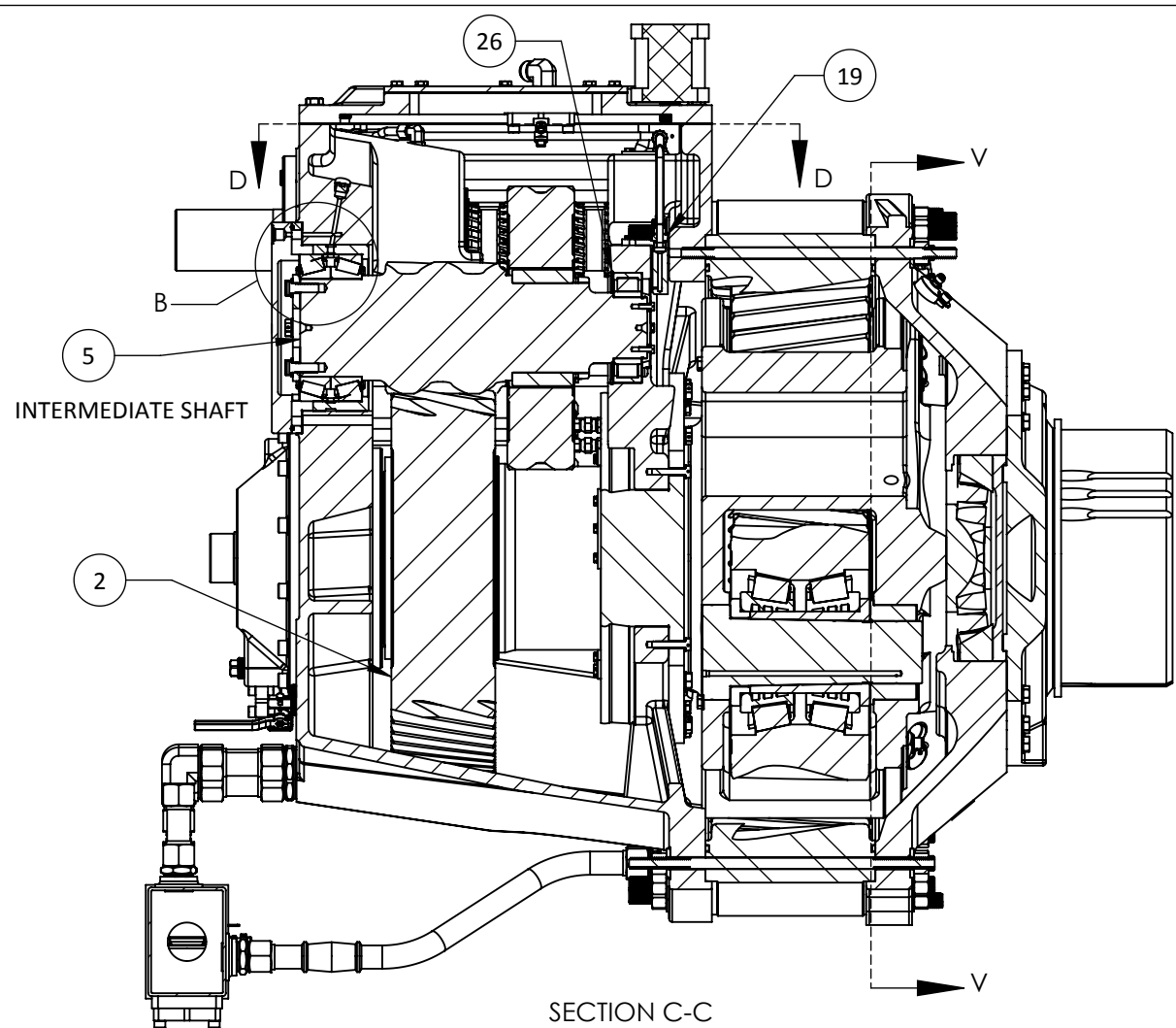
SECTION A-A
SCALE 1 : 8

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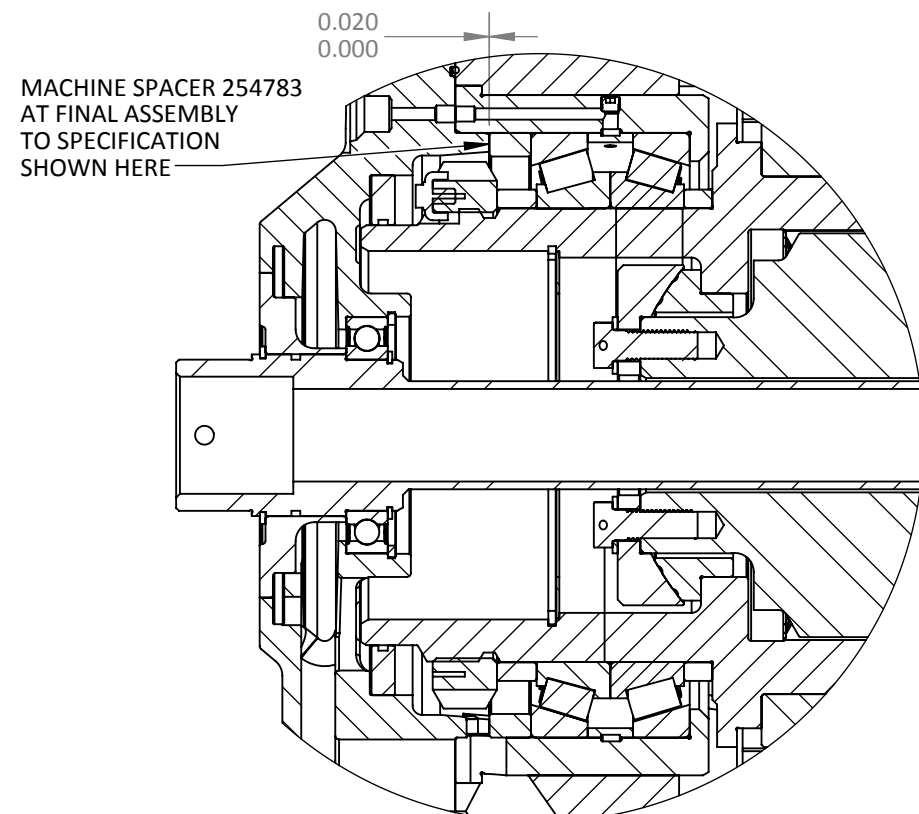
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TITLE:
GEARBOX ASSEMBLY

SIZE B	DWG. NO. 254719	REV E
SCALE: 1:12	WEIGHT: 5153.56 kgs	SHEET 3 OF 5

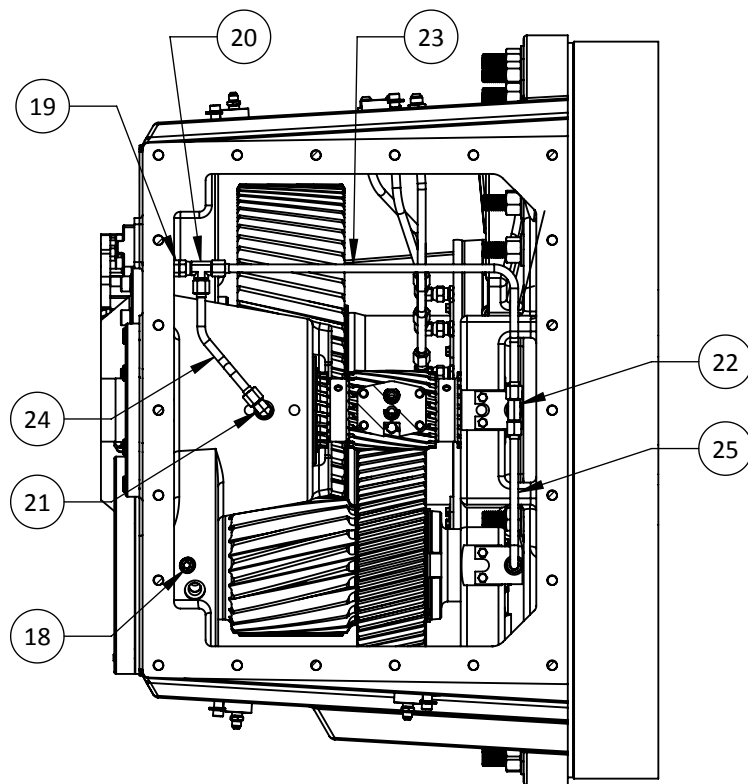


SECTION C-C

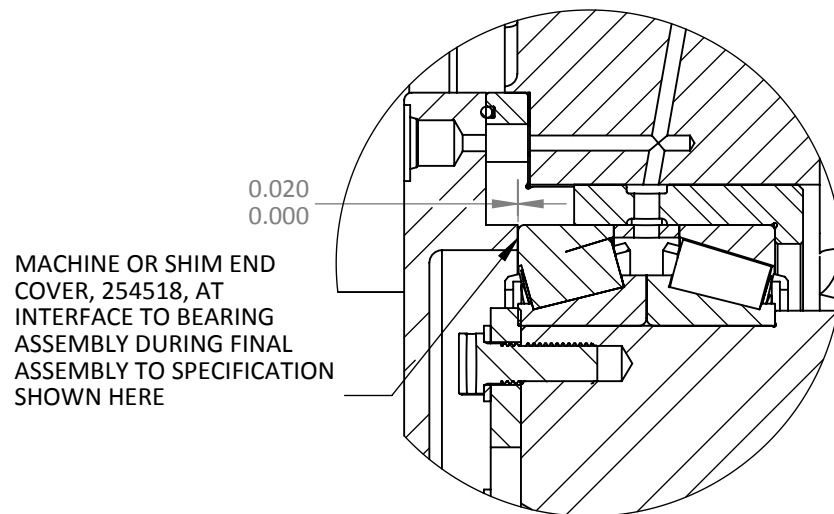


HOLLOW SHAFT BEARING ASSEMBLY

DETAIL A
SCALE 1 : 4

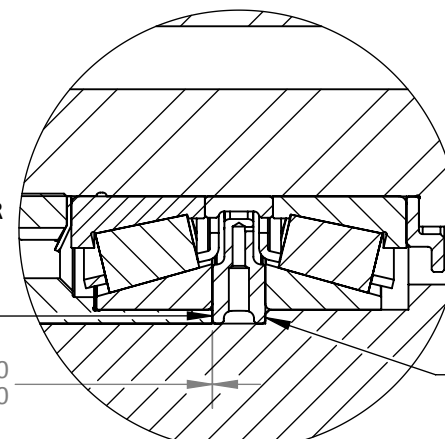


SECTION D-D
SCALE 1 : 12

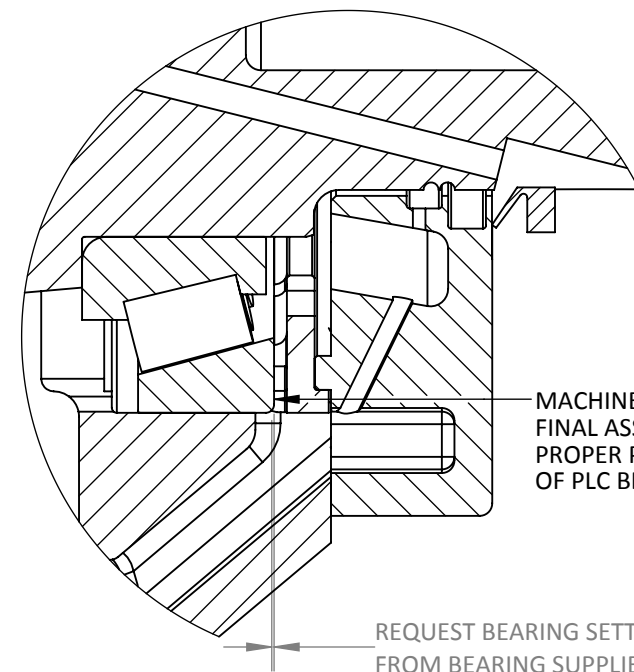


DETAIL B
SCALE 1 : 3
INTERMEDIATE SHAFT BEARING ASSEMBLY

MACHINE END COVER
254551 AT FINAL
ASSEMBLY TO
SPECIFICATION
SHOWN HERE

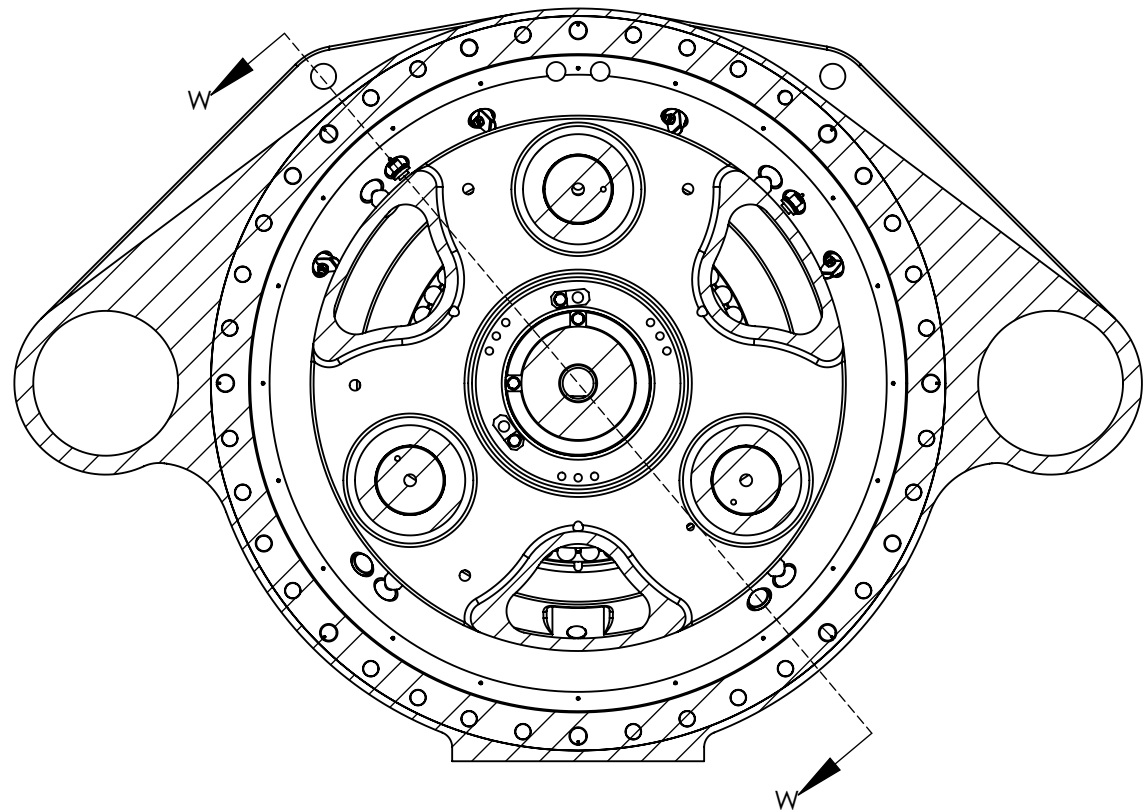


DETAIL D
SCALE 1 : 3
HS SHAFT BEARING ASSEMBLY

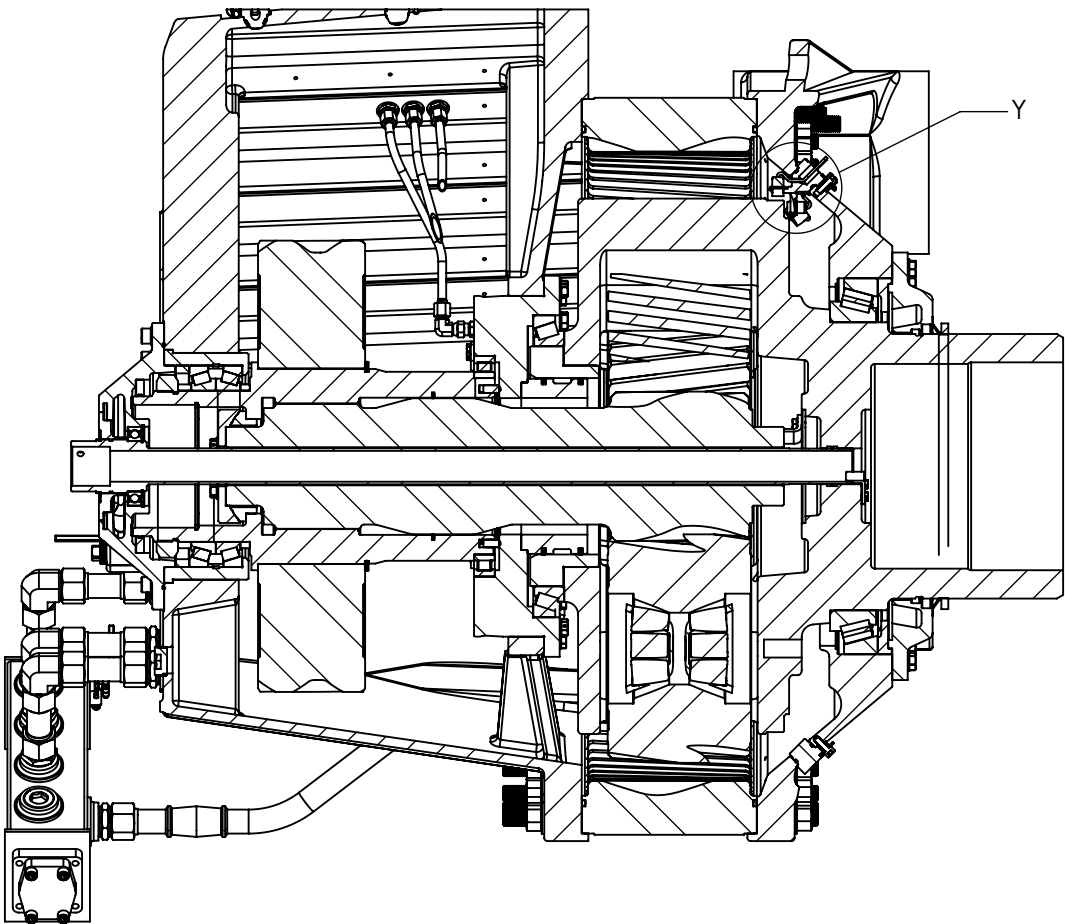


DETAIL C
SCALE 1 : 3
FRONT HOUSING ASSEMBLY DETAIL

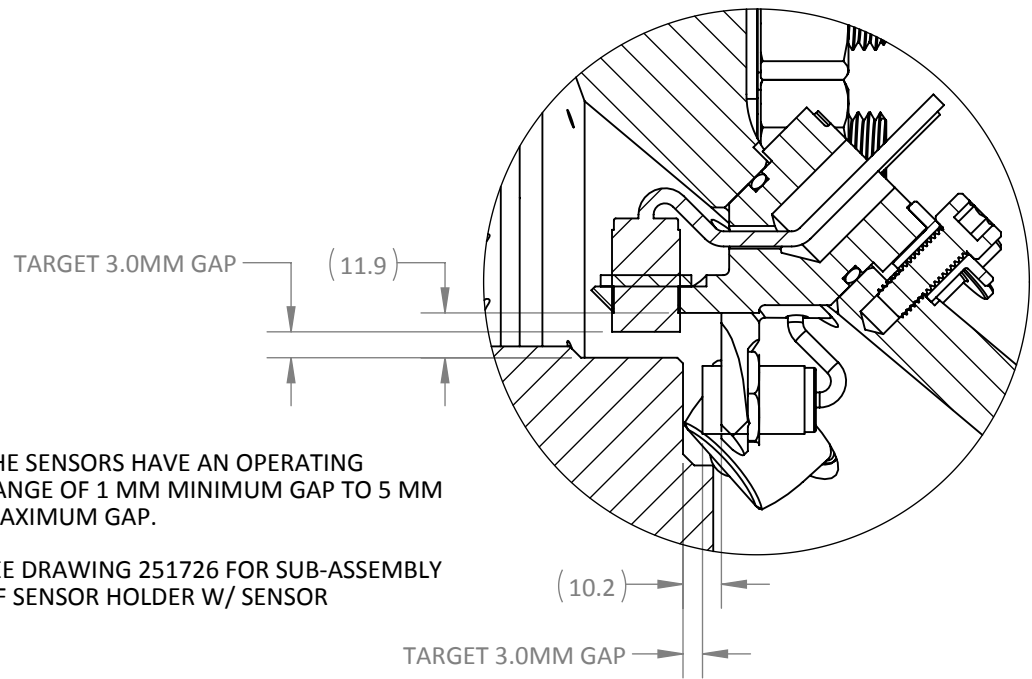
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SECTION V-V
SCALE 1 : 12



SECTION W-W
SCALE 1 : 12



THE SENSORS HAVE AN OPERATING
RANGE OF 1 MM MINIMUM GAP TO 5 MM
MAXIMUM GAP.

SEE DRAWING 251726 FOR SUB-ASSEMBLY
OF SENSOR HOLDER W/ SENSOR

DETAIL Y
SCALE 1 : 2

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