

NOTES:

1. MATERIAL: SAE E9310; ALT. E9310H, 4320, 4820, 4320H, 4820H, 18 CrNiMo 6-7, 17 CrNiMo 7 STEEL BAR OR FORGING. CLEANLINESS PER ASTM A543.
2. HEAT TREAT: CARBURIZE GEAR TEETH 1.5/2.0 EFFECTIVE CASE DEPTH, HARDEN TO 58/61 Rc. CORE HARDNESS 28 Rc. MIN. @ Ø186mm, CARBURIZE SPLINE TEETH .8/1.2 EFFECTIVE DEPTH HARDEN 57/62 Rc. REMAINDER OF SURFACES OPTIONAL. PROCESS PER AGMA 2001 D-04 GRADE 2. CASE DEPTH IS ON FINISHED GEAR TEETH, AFTER GRINDING. KEEP THREADS SOFT.

3. IDENTIFY WITH PART NUMBER, SUPPLIER CODE NUMBER, MANUFACTURERS LOT NUMBER, AND REV. LEVEL.

4. REMOVE SHARP EDGES AND BURRS.

5. GROUND TOOTH FLANKS AND FULL ROOT FILLET MUST BLEND WITHOUT GRIND NOTCH.

6. HELICAL GEAR TEETH MUST MEET GRIND TEMPER REQUIREMENTS OF AGMA 2007 CODE GRADE FB-1.

7. RADIAL ALIGNMENT OF GEAR TEETH AND SPLINE TEETH TO OTHER FEATURES NOT REQUIRED.

REV	CHANGED FROM	BY	DATE	APVD	REPORT ERRORS & CHANGES REMOVE ALL SHARP EDGES DIMENSIONS ARE IN MM UNSPECIFIED TOLERANCES: DECIMALS: FINISH: ANGLES:	Powertrain Engineers Inc W293 N3819 Round Hill Circle Pewaukee Wi, 53072			
F	ADDED MISSING DIMENSION	PEI	5/08/08		X, ±1.0 Ra 3.2 µm ≤ ±0.5 .X ±0.5 .XX ±0.25 COPYRIGHT © NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY.	TITLE			
G	OPERATING PITCH DIAMETER 215.6000 WAS 400.4000	PEI	7/07/08			GEAR, SUN			
H	REVISED GEAR DATA TABLE "B", AND LEAD MODIFICATION GRAPHICS	PEI	8/11/08			SIZE	FIRST USED ON	DWG NO.	REV
J	LEAD MODIFICATION DIMENSION .020 WAS .055	PEI	9/16/08			B		251246	K
K	LEAD MODIFICATION DIMENSION .055 WAS .020	PEI	9/22/08		DRAWN	PEI	DATE 10/17/07	SCALE: 0.250	WEIGHT: 181.6 Kgs
E	CROWN RADIUS: 11,304.34 WAS 10,160	PEI	4/22/08		CHECKED				SHEET 1 OF 2

EXTERNAL INVOLUTE SPLINE DATA, HS PINION

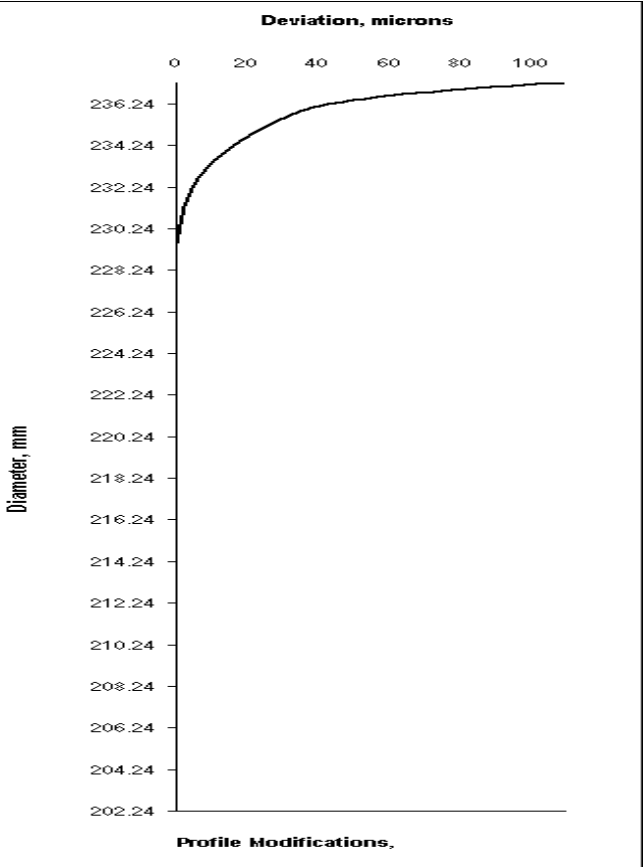
SPUR GEAR DATA

NUMBER OF TEETH	48
NORMAL MODULE	4.2333
NORMAL PRESSURE ANGLE	20.0000°
WHOLE DEPTH CONSTANT	2.250
OPERATING PITCH DIAMETER	203.2000
GENERATING PITCH DIAMETER	203.2000
PROFILE SHIFT COEFFICIENT	.250
BASE DIAMETER	190.9455
MAJOR DIAMETER (MAX)	213.783
FORM DIAMETER	198.110
ROOT DIAMETER	192.781
TOOL TIP RADIUS (MIN)	1.682
NUMBER OF TEETH IN MATE	48
CENTER DISTANCE	0.000
NORMAL CIRCULAR BAKLASH WITH MATE (MIN/MAX)	.3 / .35
QUALITY PER AGMQ 2015-1, DATUM SURFACE	A-B
GRADE	6
SIZE OVER 8.00 PINS (MAX/MIN)	217.38/217.323
SPAN OVER 6 TEETH (MAX/MIN)	72.164/72.141
TRANS. CIR. TT. ON GEN. DIA. (MIN)	7.245
TRANS. CIR. TT. ON GEN. DIA. (MAX)	7.270

TABLE "A"

Dia, mm	Diameter in.	Relief, tenths	Relief, microns
202.24	7.962	0.0	0
229.10	9.020	0.1	0
229.53	9.037	0.1	0
230.41	9.071	0.4	1
230.85	9.089	0.6	1
231.30	9.106	0.9	2
232.19	9.141	1.8	5
232.64	9.159	2.4	6
233.10	9.177	3.3	8
233.56	9.195	4.3	11
234.01	9.213	5.6	14
234.48	9.231	7.2	18
234.94	9.250	9.0	23
235.41	9.268	11.2	28
235.87	9.286	13.7	35
236.01	9.292	14.7	37
236.08	9.294	15.3	39
236.15	9.297	16.0	41
236.22	9.300	16.8	43
236.35	9.305	18.6	47
236.42	9.308	19.7	50
236.49	9.311	20.8	53
236.56	9.313	22.1	56
236.70	9.319	25.0	64
236.77	9.322	26.7	68
236.84	9.324	28.4	72
236.91	9.327	30.4	77
237.04	9.332	34.7	88
237.11	9.335	37.2	95
237.18	9.338	39.9	101
237.25	9.341	42.9	109

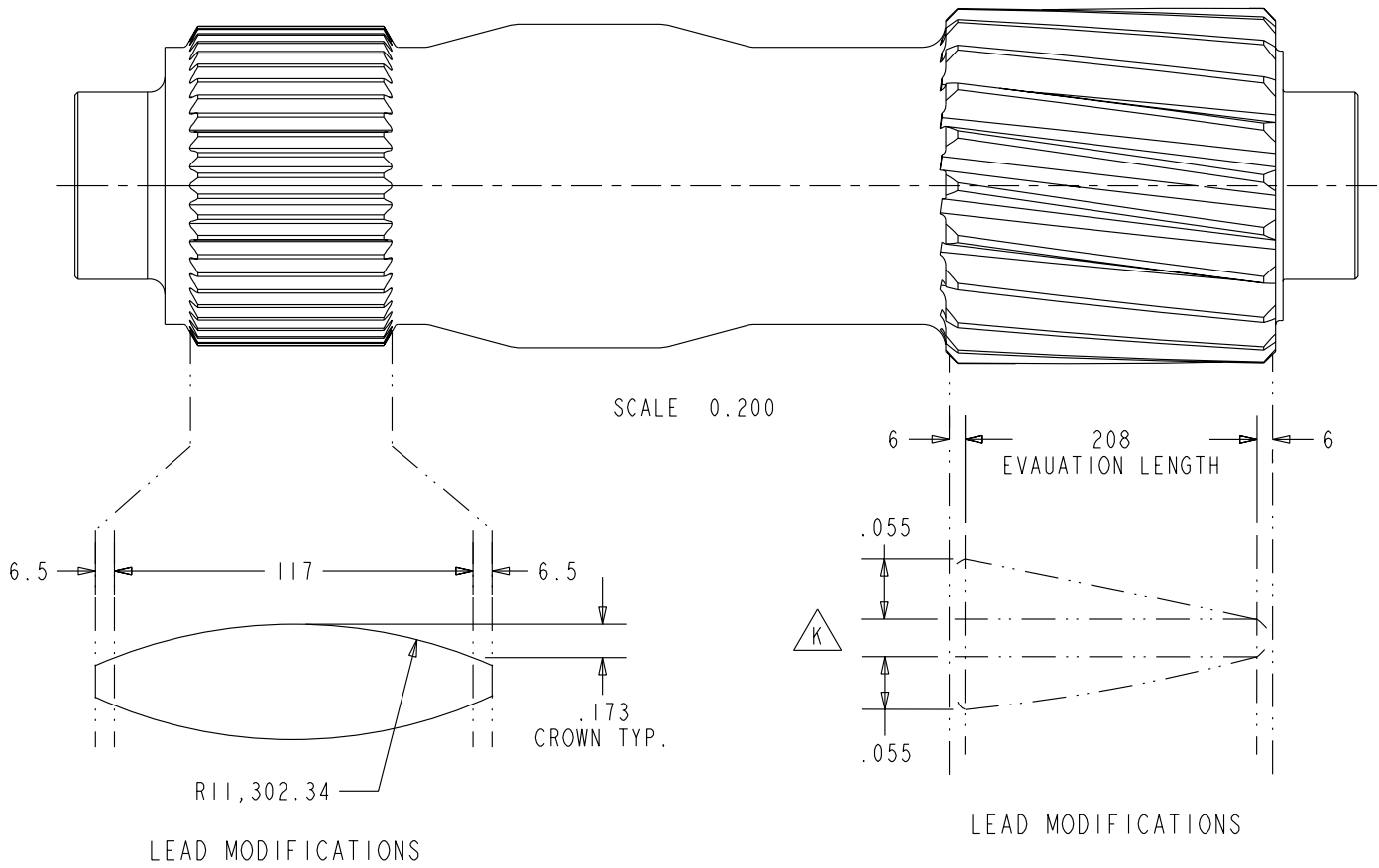
START OF INVOLUTE (ROOT)	202	m m
END OF INVOLUTE (TIP)	237	m m



HELICAL GEAR DATA

NUMBER OF TEETH	21
NORMAL MODULE	10.0000
NORMAL PRESSURE ANGLE	20.0000°
WHOLE DEPTH CONSTANT	2.400
OPERATING PITCH DIA.	215.6000
GENERATING PITCH DIA.	211.8095
PROFILE SHIFT COEFFICIENT	.186
BASE DIAMETER	198.8346
MAJOR DIAMETER MAX.	237.25
FORM DIAMETER	202.243
ROOT DIAMETER (REF)	185.98
TOOL TIP RAD. MIN.	4.25
HELIX ANGLE, GENERATED	7.4947
HELIX HAND	RIGHT
LEAD	5057.976
NUMBER OF TEETH IN MATE	39
OPERATING CENTER DISTANCE	308.000
BACKLASH W/ MATE (MIN/MAX)	.25 / .29
QUALLITY PER AGMA 2015-1, DATUM SURFACE	A-B
ACTIVE FLANK GRADE	5
TRAN. CIR. TT. @ GEN DIAMETER (MIN)	16.804
TRAN. CIR. TT. @ GEN DIAMETER (MAX)	16.883
SIZE OVER 19.2 BALLS (MAX/MIN)	243.621 / 243.464
SPAN OVER 4 TEETH (MAX/MIN)	107.307 / 107.234

TABLE "B"



REPORT ERRORS & CHANGES REMOVE ALL SHARP EDGES DIMENSIONS ARE IN MM. UNSPECIFIED TOLERANCES: DECIMALS: FINISH: ANGLES:		Powertrain Engineers Inc W293 N3819 Round Hill Circle Pewaukee Wi, 53072			
X, ±1.0 Ra 3.2 µm ≤ ±0.5 .X ±0.5 .XX ±0.25		TITLE GEAR, SUN			
COPYRIGHT © NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY.		SIZE B	FIRST USED ON	DWG NO. 251246	REV K
DRAWN CHECKED	PEI	DATE 10/17/07	SCALE: 0.250	WEIGHT: 181.6 kgs	SHEET 2 OF 2