

# 2017

## KEN LOWE RACE CARS



Ken Lowe

**Lowe Industries**

170426v1

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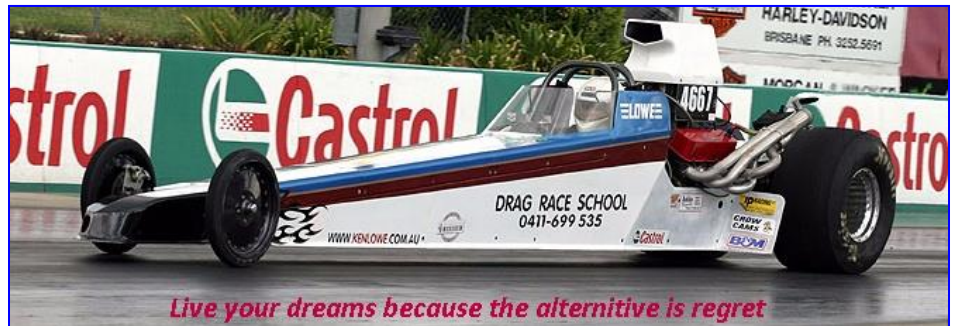
# KEN LOWE RACE CARS Technical Sheet 170426v1

## TAP DRILLS FOR AMERICAN STANDARD MACHINE SCREWS 75% THREADS

SIZE	TAP DRILL	BODY OR THROUGH DRILL
2-56	NO. 50 (.070)	NO. (.086)
3-48	NO. 47 (.078)	NO. (.099)
4-36	NO. 44 (.086)	NO. (.113)
4-40	NO. 43 (.089)	NO. (.113)
5-40	NO. 38 (.101)	1/8" (.125)
6-32	NO. 36 (.106)	NO. (.140)
6-40	NO. 33 (.113)	NO. (.140)
8-32	NO. 28 (.140)	NO. (.166)
10-24*	NO. 25 (.149)	NO. (.191)
10-32	NO. 21 (.159)	NO. 11 (.191)
12-24**	NO. 16 (.177)	7/32" (.218)
14-20	NO. 10 (.193)	D (.246)

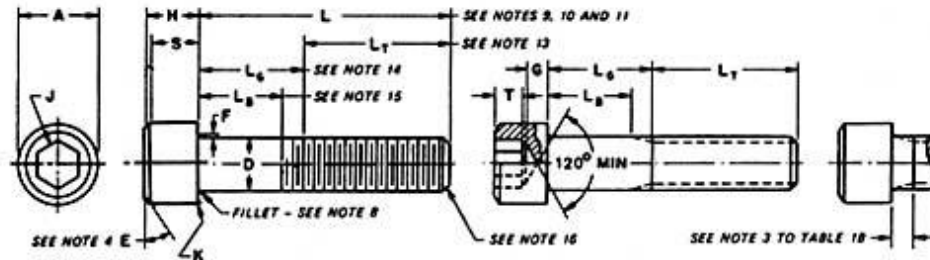
\*Note: Machine drill/tap with #19 .166 dia this gives good thread and can be power tapped on mill thru soft gooey alum fixtures. Use #20 (.161) drill for harder alumimun.

\*\*Note: Holley Float Bowl Screw Threads



## DRILL SIZES FOR TAPPING IMPERIAL THREADS (FRACTIONAL) KEN LOWE 141129

TAP SIZE	NATIONAL COARSE THREAD		NATIONAL FINE THREAD	
	THREADS/INCH	TAP DRILL	THREADS/INCH	TAP DRILL
1/4"	20=.0500/turn	NO. 7 (.201)	28=.0357/turn	NO. 3 (.213)
5/16"	18=.0555/turn	F (.257)	24=.0416/turn	I (.272)
3/8"	16=.0625/turn	5/16 (.312)	24=.0416/turn	Q (.332)
7/16"	14=.0714/turn	U (.368)	20=.0500/turn	25/64 (.390)
1/2"	13=.0769/turn	27/64 (.421)	20=.0500/turn	29/64 (.453)
9/16"	12=.0833/turn	31/64 (.484)	18=.0555/turn	33/64 (.515)
5/8"	11=.0909/turn	17/32 (.531)	18=.0555/turn	37/64 (.578)
3/4"	10=.1000/turn	21/32 (.656)	16=.0625/turn	11/16 (.687)
7/8"	9=	49/64 (.765)	14=.0714/turn	13/16 (.812)
1"	8=.1250/turn	7/8 (.875)	12=.0833/turn	59/64 (.921)



• Table 1 •  
Dimensions of Hexagon and Spline Socket Head Cap Screws (1960 Series)

Nominal Size or Basic Screw Diameter		D Body Diameter		A Head Diameter		H Head Height		S Head Side Height	J Hex Socket Size		T Key Engagmt	G Wall Thkns	K Chamfer or Radius
		Max	Min	Max	Min	Max	Min	Max	Nominal		Min	Min	Max
0	0.0600	0.0600	0.0568	0.096	0.091	0.060	0.057	0.054	0.050		0.025	0.020	0.003
1	0.0730	0.0730	0.0695	0.118	0.112	0.073	0.070	0.066	1/16	0.062	0.031	0.025	0.003
2	0.0860	0.0860	0.0822	0.140	0.134	0.086	0.083	0.077	5/64	0.078	0.038	0.029	0.003
3	0.0990	0.0990	0.0949	0.161	0.154	0.099	0.095	0.089	5/64	0.078	0.044	0.034	0.003
4	0.1120	0.1120	0.1075	0.183	0.176	0.112	0.108	0.101	3/32	0.094	0.051	0.038	0.005
5	0.1250	0.1250	0.1202	0.205	0.198	0.125	0.121	0.112	3/32	0.094	0.057	0.043	0.005
6	0.1380	0.1380	0.1329	0.226	0.218	0.138	0.134	0.124	7/64	0.109	0.064	0.047	0.005
8	0.1640	0.1640	0.1585	0.270	0.262	0.164	0.159	0.148	9/64	0.141	0.077	0.056	0.005
10	0.1900	0.1900	0.1840	0.312	0.303	0.190	0.185	0.171	5/32	0.156	0.090	0.065	0.005
1/4	0.2500	0.2500	0.2435	0.375	0.365	0.250	0.244	0.225	3/16	0.188	0.120	0.095	0.008
5/16	0.3125	0.3125	0.3053	0.469	0.457	0.312	0.306	0.281	1/4	0.250	0.151	0.119	0.008
3/8	0.3750	0.3750	0.3678	0.562	0.550	0.375	0.368	0.337	5/16	0.312	0.182	0.143	0.008
7/16	0.4375	0.4375	0.4294	0.656	0.642	0.438	0.430	0.394	3/8	0.375	0.213	0.166	0.010
1/2	0.5000	0.5000	0.4919	0.750	0.735	0.500	0.492	0.450	3/8	0.375	0.245	0.190	0.010
5/8	0.6250	0.6250	0.6163	0.938	0.921	0.625	0.616	0.562	1/2	0.500	0.307	0.238	0.010
3/4	0.7500	0.7500	0.7406	1.125	1.107	0.750	0.740	0.675	5/8	0.625	0.370	0.285	0.010
7/8	0.8750	0.8750	0.8647	1.312	1.293	0.875	0.864	0.787	3/4	0.750	0.432	0.333	0.015
1	1.0000	1.0000	0.9886	1.500	1.479	1.000	0.988	0.900	3/4	0.750	0.495	0.380	0.015
See Notes	1	2,15		3				4	21				6

# KEN LOWE RACE CARS Technical Sheet 170426v1

## COMBINED TABLE OF VALUES LETTER DRILLS, NUMBER DRILLS, FRACTIONS, THOUSANDS OF AN INCH AND MILLIMETERS

\* = EVEN mm KEN LOWE 920325 \* 141129 .3937=1.0mm

Letter Drill	Number Drill	FRACTIONS OF AN INCH	THOUSANDS OF AN INCH	MILLIMETERS
			.00100	0.0254
			.00500	0.1270
			.01000	0.2540
	80		.01350	0.3429
	79		.01450	0.3683
		1/64	.01563	0.3969
	78		.01600	0.4064
	77		.01800	0.4572
	76		.02000	0.5080
			.02000	0.5080
	75		.02100	0.5334
	74		.02250	0.5715
	73		.02400	0.6096
	72		.02500	0.6350
			.02500	0.6350
	71		.02600	0.6604
	70		.02800	0.7112
	69		.02920	0.74168
	68		.03100	0.7874
		1/32	.03125	0.7938
	67		.03200	0.8128
	66		.03300	0.8382
	65		.03500	0.8890
	64		.03600	0.9144
	63		.03700	0.9398
	62		.03800	0.9652
	61		.03900	0.9906
			.03930	1.0000
	60		.04000	1.0160
	59		.04100	1.0414
	58		.04200	1.0668
	57		.04300	1.0922
	56		.04600	1.1684
		3/64	.04688	1.1906
	55		.05200	1.3208
	54		.05500	1.3970



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	53		.05900	1.4986
		1/16	.06250	1.5875
	52		.06300	1.6002
	51		.06700	1.7018
	50		.07000	1.7780
	49		.07300	1.8542
	48		.07600	1.9304
	47		.07800	1.9812
		5/64	.07813	1.9844
			.07860	<b>2.0000</b>
	46		.08100	2.0574
	45		.08200	2.0828
	44		.08600	2.1844
	43		.08900	2.2606
	42		.09300	2.3622
		3/32	.09375	2.3813
	41		.09600	2.4384
	40		.09800	2.4892
	39		.09900	2.5146
			.10000	2.5400
	38		.10100	2.5654
	37		.10400	2.6416
	36		.10600	2.6924
		7/64	.10938	2.7781
	35		.11000	2.7940
	34		.11100	2.8194
	33		.11300	2.8702
	32		.11600	2.9464
			.11790	<b>3.0000</b>
	31		.12000	3.0480
		1/8	.12500	3.1750
	30		.12800	3.2512
	29		.13600	3.4544
	28		.14000	3.5560
		9/64	.14063	3.5719
	27		.14400	3.6576
	26		.14700	3.7338
	25		.14900	3.7846
	24		.15200	3.8608
	23		.15400	3.9116
		5/32	.15625	3.9688
	22		.15700	3.9878
			.15748	<b>4.0000</b>

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	21		.15900	4.0386
	20		.16100	4.0894
	19		.16600	4.2164
	18		.16900	4.2926
		11/64	.17188	4.3656
	17		.17300	4.3942
	16		.17700	4.4958
	15		.18000	4.5720
	14		.18200	4.6228
	13		.18500	4.6990
		3/16	.18750	4.7625
	12		.18900	4.8006
	11		.19100	4.8514
	10		.19300	4.9022
	9		.19600	4.9784
			.19650	<b>5.0000</b>
	8		.19900	5.0546
			.20000	5.0800
	7		.20100	5.1054
		13/64	.20313	5.1594
	6		.20400	5.1816
	5		.20500	5.2070
	4		.20900	5.3086
	3		.21300	5.4102
		7/32	.21875	5.5563
	2		.22100	5.6134
	1		.22800	5.7912
A			.23400	5.9436
		15/64	.23438	5.9531
			.23580	6.0000
B			.23800	6.0452
C			.24200	6.1468
D			.24600	6.2484
E		1/4	.25000	6.3500
F			.25700	6.5278
G			.26100	6.6294
		17/64	.26563	6.7469
H			.26600	6.7564
I			.27200	6.9088
			.27510	<b>7.0000</b>
J			.27700	7.0358
K			.28100	7.1374
		9/32	.28125	7.1438

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L			.29000	7.3660
M			.29500	7.4930
		19/64	.29688	7.5406
			.30000	7.6200
N			.30200	7.6708
		5/16	.31250	7.9375
			.31440	<b>8.0000</b>
O			.31600	8.0264
P			.32300	8.2042
		21/64	.32813	8.3344
Q			.33200	8.4328
R			.33900	8.6106
		11/32	.34375	8.7313
S			.34800	8.8392
			.35370	<b>9.0000</b>
T			.35800	9.0932
		23/64	.35938	9.1281
U			.36800	9.3472
		3/8	.37500	9.5250
V			.37700	9.5758
W			.38600	9.8044
		25/64	.39063	9.9219
			.39300	<b>10.0000</b>
X			.39700	10.0838
			.40000	10.1600
Y			.40400	10.2616
		13/32	.40625	10.3188
Z			.41300	10.4902
		27/64	.42188	10.7156
			.43230	<b>11.0000</b>
		7/16	.43750	11.1125
		29/64	.45313	11.5094
		15/32	.46875	11.9063
			.47160	<b>12.0000</b>
		31/64	.48438	12.3031
		1/2	.50000	12.7226
			.51090	<b>13.0000</b>
		33/64	.51563	13.0969
		17/32	.53125	13.4938
		35/64	.54688	13.8906
			.55020	<b>14.0000</b>
		9/16	.56250	14.2875
		37/64	.57813	14.6844



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			<b>.58950</b>	<b>15.0000</b>
		19/32	<b>.59375</b>	15.0813
			<b>.60000</b>	15.2400
		39/64	<b>.60938</b>	15.4781
		5/8	<b>.62500</b>	15.8750
			<b>.62880</b>	<b>16.0000</b>
		41/64	<b>.64063</b>	16.2719
		21/32	<b>.65625</b>	16.6688
			<b>.66810</b>	<b>17.0000</b>
		43/64	<b>.67188</b>	17.0656
		11/16	<b>.68750</b>	17.4625
			<b>.70000</b>	17.7800
		45/64	<b>.70313</b>	17.8594
			<b>.70740</b>	<b>18.0000</b>
		23/32	<b>.71875</b>	18.2563
		47/64	<b>.73438</b>	18.6531
			<b>.74670</b>	<b>19.0000</b>
		3/4	<b>.75000</b>	19.0839
		49/64	<b>.76563</b>	19.4469
			<b>.77860</b>	19.7764
		25/32	<b>.78125</b>	19.8438
			<b>.78740</b>	<b>20.0000</b>
		51/64	<b>.79688</b>	20.2406
			<b>.80000</b>	20.2400
		13/16	<b>.81250</b>	20.6743
			<b>.82530</b>	<b>21.0000</b>
		53/64	<b>.82813</b>	21.0344
		27/32	<b>.84375</b>	21.4313
		55/64	<b>.85938</b>	21.8281
			<b>.86460</b>	<b>22.0000</b>
		7/8	<b>.87500</b>	22.2250
		57/64	<b>.89063</b>	22.6219
			<b>.90000</b>	22.8600
			<b>.90390</b>	<b>23.0000</b>
		29/32	<b>.90625</b>	23.0188
		59/64	<b>.92188</b>	23.4156
		15/16	<b>.93750</b>	23.8125
			<b>.94320</b>	<b>24.0000</b>
		61/64	<b>.95313</b>	24.2094
		31/32	<b>.96875</b>	24.6063
			<b>.98250</b>	<b>25.0000</b>
		63/64	<b>.98438</b>	25.0031
		1	<b>1.00000</b>	25.4000

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			<b>1.02180</b>	<b>26.0000</b>
			<b>1.06110</b>	<b>27.0000</b>
			<b>1.10040</b>	<b>28.0000</b>
		<i>1 1/8</i>	<b>1.12500</b>	28.5750
			<b>1.13970</b>	<b>29.0000</b>
			<b>1.17900</b>	<b>30.0000</b>
		<i>1 1/4</i>	<b>1.25000</b>	31.7500
			<b>1.25760</b>	<b>32.0000</b>
			<b>1.29690</b>	<b>33.0000</b>
			<b>1.33620</b>	<b>34.0000</b>
		<i>1 3/8</i>	<b>1.37500</b>	34.9250
			<b>1.37550</b>	<b>35.0000</b>
			<b>1.41480</b>	<b>36.0000</b>
			<b>1.45410</b>	<b>37.0000</b>
			<b>1.49340</b>	<b>38.0000</b>
		<i>1 1/2</i>	<b>1.50000</b>	38.1000
			<b>1.53270</b>	<b>39.0000</b>
			<b>1.57200</b>	<b>40.0000</b>
		<i>1 5/8</i>	<b>1.62500</b>	41.2750
			<b>1.65060</b>	<b>42.0000</b>
			<b>1.68990</b>	<b>43.0000</b>
			<b>1.72920</b>	<b>44.0000</b>
		<i>1 3/4</i>	<b>1.75000</b>	44.4500
			<b>1.76850</b>	<b>45.0000</b>
			<b>1.80780</b>	<b>46.0000</b>
			<b>1.84710</b>	<b>47.0000</b>
			<b>1.88640</b>	<b>48.0000</b>
			<b>1.92570</b>	<b>49.0000</b>
			<b>1.96500</b>	<b>50.0000</b>
		<i>2</i>	<b>2.00000</b>	50.8000
			<b>2.00430</b>	<b>51.0000</b>
			<b>2.04360</b>	<b>52.0000</b>
			<b>2.08290</b>	<b>53.0000</b>
			<b>2.12220</b>	<b>54.0000</b>
			<b>2.16150</b>	<b>55.0000</b>
			<b>2.20080</b>	<b>56.0000</b>
			<b>2.24010</b>	<b>57.0000</b>
		<i>2 1/4</i>	<b>2.25000</b>	57.1500
			<b>2.27940</b>	<b>58.0000</b>
			<b>2.31870</b>	<b>59.0000</b>
			<b>2.35800</b>	<b>60.0000</b>
			<b>2.39730</b>	<b>61.0000</b>
			<b>2.43660</b>	<b>62.0000</b>

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			<b>2.47560</b>	<b>63.0000</b>
		2 1/2	<b>2.50000</b>	63.5000
			<b>2.51520</b>	<b>64.0000</b>
			<b>2.55450</b>	<b>65.0000</b>
			<b>2.59380</b>	<b>66.0000</b>
			<b>2.63310</b>	<b>67.0000</b>
			<b>2.67240</b>	<b>68.0000</b>
			<b>2.75100</b>	<b>70.0000</b>
		3	<b>3.00000</b>	76.2000
			<b>3.34000</b>	<b>86.0000</b>
			<b>3.34050</b>	<b>85.0000</b>
			<b>3.37000</b>	<b>87.0000</b>
			<b>3.40000</b>	<b>88.0000</b>
			<b>3.50000</b>	<b>89.0000</b>
			<b>3.53700</b>	<b>90.0000</b>
			<b>3.93000</b>	<b>100.0000</b>
		4	<b>4.00000</b>	101.6000
			<b>4.32300</b>	<b>110.0000</b>
		6	<b>6.00000</b>	152.4000
			<b>47.16000</b>	<b>1200.0000</b>
		48 (4 FOOT)	<b>48.00000</b>	1219.2000
		96 (8 FOOT)	<b>96.00000</b>	2438.4000
			<b>98.25000</b>	<b>2500.0000</b>
		102 (8 FOOT 6 INCHES)	<b>102.00000</b>	2590.8000
		144 (12 FOOT)	<b>144.00000</b>	3657.6000
			<b>188.64000</b>	<b>4800.0000</b>

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## Bolt Torque Information - HEX HEAD BOLTS

Imperial	Foot Pounds							
Bolt Size	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
1/4-20	4	6			10		12	14
1/4-28	4	7			11			16
5/16-18	8	12			20		25	28
5/16-24	9	14			22			31
3/8-16	14	22			36		45	50
3/8-24	16	25			40			57
7/16-14	22	35			57		71	81
7/16-20	25	39			64			90
1/2-13	34	54			87		109	123
1/2-20	38	61			98			139
9/16-12	49	78			126		157	177
9/16-18	55	87			140			198
5/8-11	68	107			173		217	245
5/8-18	77	122			196			277
3/4-10	120	191			308		385	435
3/4-16	134	213			343			485
7/8-9	194				496		619	700
7/8-14	214				547			773
Metric	Foot Pounds							
Bolt Size	Class	Zinc Plated			Non-plated			
M4x0.70	8.8	2.30			1.65			
M5x0.80	8.8	4.58			4.13			
M6x1.00	8.8	7.80			7.13			
M6x1.00	10.9	11.63			10.50			
M7x1.00	8.8	12.75			11.63			
M8x1.00	8.8	20.25			18.38			
M8x1.25	8.8	18.75			17.25			
M8x1.25	10.9	27.75			25.50			
M10x1.00	8.8	42.75			39.00			
M10x1.25	8.8	40.50			36.75			
M10x1.50	8.8	38.25			34.50			
M10x1.50	10.9	56.25			51			
M12x1.25	8.8	72			65.25			
M12x1.50	8.8	69			62.25			
M12x1.75	8.8	65.25			59.25			
M12x1.75	10.9	97.50			87.75			
M14x2.00	8.8	105			93.75			
M14x1.50	8.8	112.50			101.25			
M14x2.00	10.9	153.75			138.75			
M16x2.00	8.8	161.25			146.25			
M16x2.00	10.9	232.50			210			
M20x2.50	8.8	322.50			292.50			
M22x2.50	8.8	435			397.50			
M24x3.00	8.8	555			502.50			

## Big Block Torque Specs

Always Torque Bolts in Three Equal Increments

Bolts or Part	Lube or Sealer	Torque to:
Main Caps 396-427 (2 bolt)	Engine Oil	95 ft-lbs.
Main Caps 396-454 (4 bolt) Inner and Outer bolts	Engine Oil	Stock Main Cap Bolts Course Thread 110 ft-lbs. ARP Main Studs PN 135-5601 Fine Thread 110 ft-lbs
3/8 Connecting Rod Cap	Engine Oil	50 ft-lbs.
7/16 Connecting Rod Cap	Engine Oil	70 ft-lbs.
Cylinder Heads	Engine oil (blind hole) Sealer (water jacket)	75 ft-lbs. (long bolts) 65 ft-lbs. (short bolts) ARP Head Studs 235-4201 12pt Fine Thread 70 ft-lbs. ARP Head Studs 135-4001 6pt Fine Thread 70 ft-lbs.
Rocker Studs (screw-in)	Engine Oil	50 ft-lbs.
Oil Pump	Engine Oil	65 ft-lbs.
Oil Pan	Engine Oil	12 ft-lbs.
Cam Sprocket (upper gear)	Thread Locker	20 ft-lbs.
Timing Cover	Engine Oil	6 ft-lbs.
Intake Manifold (Cast Iron Heads)	Non- Hardening Sealer	25 ft-lbs.
Valve Cover	Engine Oil	3 ft-lbs.
Exhaust Manifold	Anti-Seize Lubricant	25 ft-lbs.
Spark Plugs	No Lube or Sealer	20 ft-lbs.
Flex plate (Automatic) Flywheel (Clutch)	Thread Locker	Stock Bolts 60 ft-lbs. Flywheel ARP 200-2802 85 ft-lbs Flexplate ARP 100-2901 75 ft-lbs
Clutch Pressure Plate	Thread Locker	35 ft-lbs.
Center bolt (Harmonic Damper)	Engine Oil	85 ft-lbs.
Bell housing (Transmission to Block)	Engine Oil	25 ft-lbs.

## Torque values – TAD

<b>Bolt</b>	<b>Torque (Foot Pounds)</b>
Cylinder Head Long Bolts	75
Cylinder Head Port Bolts	75
Cylinder Head Short Bolts	65
Main Cap Bolts RODECK ½" UNF	85
Rod Cap Bolts (Bill Miller Rods)	85
Crank Support Center Bolt	100
Crank Support Stand Bolts	35
Blower Idler Bolt	50
Blower Mounting Bolt	120 Inch Pounds – lube with antiseize
Eagle BBC CSR6135-S	63
ARP Main Studs	85

## Diff Torque Info

<b>Bolt</b>	<b>Foot Pounds</b>
3/8" UNF Diff Center Mount Nuts	30
7/16" UNF Diff Ring Gear Bolts	60
1/2" UNF Diff Ring Gear Bolts	100
7/16" UNF Diff Mounting Plate Bolts	65
1/2" UNF Wheel Nuts	65
5/8" Wheel Nuts for Small Floater	100
7/16" UNF Parachute Mounting Bolt	65
1/2" UNF Parachute Mounting Bolt	70
Flex Plate 7/16" UNF to Crankshaft	65
Intake Manifold Bolts 3/8" UNC	25
Short Head Bolts Along Bottom	65
Long Head Bolts	75
3/8" BBC Rod Bolts	50



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## PIPE DIMENSIONS

Size	Millimeters	Inch OD	mm OD	SCHEDULE	Inch Wall	mm Wall	Inch ID	mm ID
1/2"	15	.840	21.3	40	.840		.622	
1/2"	15			80				
3/4"	20	1.050	26.9	40	.113	3.2	.824	20.5
3/4"	20		26.9	80		4.0		18.9
1"	25	1.315		40	.133		1.049	
1 1/4"	32	1.660		40	.140		1.380	
1 1/2"		1.900		40	.145		1.610	
2"		2.375		40	.154		2.067	
2 1/2"		2.875		40	.203		2.469	
3"		3.5		40	.216		3.068	

## PIPE SIZES

Pipe Nominal Size O.D.			Wall (Schedule 40)		ID	
1/2	.840"	21.37mm	.109"	2.77mm	.622"	15.82mm
3/4	1.050"	26.71mm	.113"	2.87mm	.824"	20.96mm
1	1.315"	33.46mm	.133"	3.38mm	1.049"	26.69mm
1 1/4	1.660"	42.23mm	.140"	3.56mm	1.380"	35.11mm
1 1/2	1.900"	48.34mm	.145"	3.68mm	1.610"	40.96mm
2	2.375"	60.43mm	.154"	3.91mm	2.067"	52.59mm
2 1/2	2.875"	73.15mm	.203"	5.16mm	2.469"	62.82mm
3	3.500"	89.05mm	.216"	5.49mm	3.068"	78.06mm

## TAP DRILLS FOR TAPER PIPE TAPS

Size	Thread/Inch	Drill Size	Decimal
1/16	27	D	.245
1/8	27	R	.339
1/4	18	7/16	.437
3/8	18	37/64	.578
1/2	14	45/64	.703
3/4	14	61/64	.968
1	11 1/2	1 5/32	1.156
1 1/4	11 1/2		
1 1/2	11 1/2		
2	11 1/2		
2 1/2	8		
3	8		

## Cutting Speeds and Feeds

Speed in RPM for High Speed Steel Drills (Reduce RPM by 1/2 for Carbon Steel Drills)				
Diameter of Drill	Material Being Drilled			
	Low Carbon Steel Soft Cast Iron	Medium Carbon Steel Hard Cast Iron	High Carbon Steel Alloy Steel	Aluminum Brass Bronze
	80-100"/min	70-80"/min	50-60"/min	200-300"/min
1/8	2445-3056	2139-2445	1528-1833	6112-9168
1/4	1222-1528	1070-1222	764-917	3056-4584
3/8	815-1019	713-815	509-611	2038-3057
1/2	611-764	534-611	382-458	1528-2292
3/4	407-509	357-407	255-306	1018-1527
1	306-382	267-306	191-229	764-846



**Feeds (Inches per Tooth) for Milling Roughing Cuts with High Speed Steel Cutters**

## KEN LOWE RACE CARS Technical Sheet 170426v1

Material	Plain Mills Heavy Duty	Plain Mills Light Duty	Face Mills	Side Mills	End Mills Mills	Form Relieved	Slitting Saws
Low Carbon Steel Free Machining	.010	.006	.012	.006	.006	.004	.003
Low Carbon Steel	.008	.005	.010	.005	.005	.003	.003
Medium Carbon Steel	.008	.005	.009	.005	.004	.003	.002
High Carbon Steel Annealed	.004	.003	.006	.003	.002	.002	.002
Stainless Steel Free Machining	.008	.005	.010	.005	.004	.003	.002
Stainless Steel	.004	.003	.006	.004	.002	.002	.002
Cast Iron	.012	.008	.014	.008	.008	.004	.004
Soft Cast Iron Medium	.010	.006	.012	.006	.006	.004	.003
Malleable Iron	.010	.006	.012	.006	.006	.004	.003
Brass and Bronze Medium Hardness	.010	.008	.013	.008	.006	.004	.003
Aluminum	.016	.010	.020	.012	.010	.007	.004



# KEN LOWE RACE CARS Technical Sheet 170426v1

## BRIDGEPORT GENERAL SPEED RECOMMENDATIONS

Feet per Minute											
Material to be Cut			Rough Cut			Rough and Finish Cut			Light and Finish Cut		
Cast Iron - Soft (under 150 Brinnell)			70			80-90			120		
Cast Iron - Medium (150-200 Brinnell)			55			60-70			90		
Cast iron - Hard (over 200 Brinnell)			40			50-60			70		
Steel (Chrome Nickel 40-50 Shore)			30			40			50		
Stainless Steel			60			80			90		
Low Carbon Steel			80			90			140		
High Carbon Steel			40			50			70		
Medium Bronze			90			120			150		
Hard Bronze			65			90			130		
Hard Brass			100			150			200		
Copper			150			200			300		
Duraluminum			400						600		
Aluminum			600						1000		
Table of Cutting Speeds and Feeds											
Ft/Min	15	20	25	30	40	50	60	70	80	90	100
Dia	Revolutions per Minute										
1/16	917	1222	1528	1833	2445	3056	3667	4278			
1/8	458	611	764	917	1222	1528	1833	2139	2445	2750	3056
3/16	306	407	509	611	845	1019	1222	1426	1630	1833	2037
1/4	229	306	382	458	611	764	917	1070	1375	1375	1528
5/16	183	244	306	367	489	611	733	856	978	1100	1222
3/8	153	204	255	306	407	509	611	713	815	917	1019
7/16	131	175	218	262	349	437	524	611	698	786	873
1/2	115	153	191	229	306	382	458	535	611	688	764
5/8	91	122	153	183	244	306	367	428	489	550	611
3/4	76	102	127	153	204	255	306	357	407	458	509
7/8	65	87	109	131	175	218	262	306	349	393	437
1	60	76	95	115	153	191	229	267	306	344	382
1 1/8		67	84	102	136	170	204	238	272	306	340
1 1/4		61	76	91	122	153	183	214	244	275	306
1 3/8			69	83	111	139	167	194	222	250	378
1 1/2			63	76	102	127	153	175	204	229	255
1 5/8			60	70	94	118	141	165	188	212	235
1 3/4				65	87	109	131	153	175	196	218
1 7/8				61	81	102	122	143	163	183	204
2					76	95	115	134	153	172	191

# FORMULAS and Info

231 Cubic Inches in a Gallon	
Circumference of a Circle	Diameter x Pi (3.1416)
Area of a Circle	(Radius <sup>2</sup> ) x Pi (3.1416)
Area of a Triangle	(Base x Height) x 0.5
1 Mile	5280 Feet
1 Cubic Inch	16.39 Cubic Centimeters
1 Cubic Centimeter	.06102 Cubic Inch
1 Inch	2.540 Centimeters
1 Inch	25.4 Millimeters
1 Millimeter	.0393 Inch
1 Meter	39.37 Inches
1 Pint	2 Fluid Ounces
1 Quart	2 Pints
1 Gallon	4 Quarts
Centigrade to Fahrenheit	$\frac{(Centigrade \times 9)}{5} + 32$
Fahrenheit to Centigrade	$\frac{(Fahrenheit - 32) \times 5}{9}$

THESE FORMULAS WERE TAKEN FROM AUTO MATH BOOK

$$MPH = \frac{RPM \times Tire Dia}{Gear Ratio \times 336}$$

$$RPM = \frac{MPH \times Gear Ratio \times 336}{Tire Dia}$$

$$Gear Ratio = \frac{RPM \times Dia}{MPH \times 336}$$

$$Dia = \frac{MPH \times Gear Ratio \times 336}{RPM}$$

$$Displacement = Bore^2 \times Stroke \times \# of Cylinders \times 0.7854$$



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# KEN LOWE RACE CARS Technical Sheet 170426v1

Sheet Metal Gauge Sizes						
Aluminum Sheets		Steel Sheets			Strip and Tubing	
Weight PSI	Gauge Decimal	Gauge Decimal	Weight PSI	Gauge No.	Gauge Decimal	Weight SO
	.5800					
	.5165				.500	20.40
	.4600				.454	18.52
	.4096				.425	17.34
	.3648				.380	15.50
	.3249				.340	13.87
	.2893			1	.300	12.24
	.2576			2	.284	11.59
	.2294	.2391	9.754	3	.259	10.57
	.2043	.2242	9.146	4	.238	9.71
	.1819	.2092	8.534	5	.220	8.975
2.286	.1620	.1943	7.926	6	.203	8.281
2.036	.1443	.1793	7.315	7	.180	7.343
1.813	.1285	.1644	6.707	8	.165	6.73
1.614	.1144	.1495	6.099	9	.148	6.038
1.438	.1019	.1345	5.487	10	.134	5.467
1.280	.0907	.1196	4.879	11	.120	4.895
1.140	.0808	.1046	4.267	12	.109	4.447
.905	.0720	.0897	3.659	13	.095	3.876
.806	.0641	.0747	3.047	14	.083	3.386
.717	.0571	.0673	2.746	15	.072	2.937
.639	.0508	.0598	2.440	16	.065	2.652
.569	.0453	.0538	2.195	17	.058	2.366
.507	.0403	.0478	1.950	18	.049	1.199
.452	.0359	.0418	1.705	19	.042	1.713
.402	.0320	.0359	1.465	20	.035	1.428
.357	.0285	.0329	1.342	21	.032	1.305
.319	.0253	.0299	1.220	22	.028	1.142
.284	.0226	.0269	1.097	23	.025	1.020
.253	.0201	.0239	0.975	24	.022	0.898
.224	.0179	.0209	0.853	25	.020	0.816
.200	.0159	.0179	0.730	26	.018	0.734
.178	.0142	.0164	0.669	27	.016	0.653
.160	.0126	.0149	0.608	28	.014	0.571
.141	.0113	.0135	0.551	29	.103	0.530
.126	.0100	.0120	0.490	30	.012	0.490
.113	.0089	.0105	0.428	31	.010	0.408
.100	.0080	.0097	0.396	32	.009	0.367
Continued on next page.						



## KEN LOWE RACE CARS Technical Sheet 170426v1

Continued from previous page.						
.089	.0071	.0090	0.367	33	.008	0.326
	.0063	.0082	0.335	34	.007	0.286
	.0056	.0075	0.306	35	.005	0.204
	.0050	.0067	0.273	36	.004	0.163
	.0045	.0064	0.261	37		
	.0040	.0060	0.245	38		

SAE O-Ring Thread Info (Dash Fitting Size)					
Hard Tube Size	Braided HOSE ID	Mount Thread	Dash Size	AN/JIC Wire Nut Size	Drill Size for Tapping
1/8"		5/16 - 24	Dash 2		I (.272)
3/16"	1/8"	3/8 - 24	Dash 3	7/16" or 1/2"	Q (.332)
1/4"	7/32"	7/16 - 20	Dash 4	9/16"	25/64 (.390)
3/8"	11/32"	9/16 - 18	Dash 6	11/16"	33/64 (.515)
1/2"	7/16"	3/4 - 16	Dash 8	7/8"	11/16 (.687)
5/8"	9/16"	7/8 - 14	Dash 10	1"	13/16 (.812)
3/4"	11/16"	1 1/16 - 12	Dash 12	1 1/4"	31/32 (.968)
1"	7/8"	1 5/16 - 12	Dash 16	1 1/2"	1 13/64 (1.203)
1 1/4"	1 1/8"	1 5/8 - 12	Dash 20	1 13/16"	1 35/64 (1.546)

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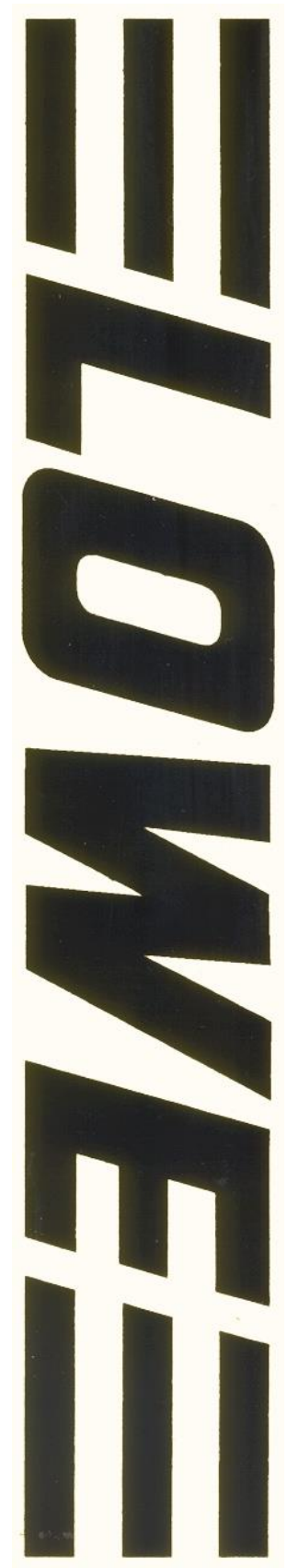
## **RACE CAR CHECK LISTS**

### **AFTER TIRE SHAKE**

- A) CHECK CLUTCH
- B) CHECK OVER CAR FOR CRACKS
- C) CHECK WING
- D) CHECK WING STRUCTS
- E) CHECK VALVE GEAR
- F) CHECK BRAKE LINES
- G) CHECK MOTOR MOUNTS & BRAIDED LINES
- H) CHECK ALL NUTS & BOLTS
- I) CHECK PILOT

### **BEFORE FIRST ROUND**

- A) WARM CAR
- B) FILL FUEL
- C) CHECK TIMMING
- D) RUN VALVES
- E) TAKE OUT WARM UP PLUGS
- F) PUT IN NEW PLUGS
- G) CHECK AIR IN TIRES
- H) CHECK BLOWER BELT
- I) CHECK FUEL FILTER
- J) TURN AIR BOTTLE ON
- K) CHECK CLUTCH
- L) CHECK CRANK SUPPORT BOLTS
- M) PUT STUFF IN BACK OF TRUCK
  - AIR TANK
  - TOW STRAP
  - WORK TRAY
  - FUEL
  - FUEL FUNNEL
  - STARTERS (2)
  - STARTER BATTERIES
  - HALON FIRE EXTINGUISHER
  - COOLER
- N) BACK SLAT OF TRUCK
- O) HELMET
- P) HELMET
- Q) FIRESUIT



## KEN LOWE RACE CARS Technical Sheet 170426v1

### BETWEEN ROUNDS

- A) RUN VALVES
- B) CHANGE PLUGS
- C) RUN AIR
- D) CHECK TIMEING
- E) FILL FUEL TANK
- F) PACK CHUTE
- G) CHECK AIR IN TIRES' (FRONT 45PSI REAR 4PSI) (REAR LINERS 45PSI)
- H) DRAIN OIL IF NEEDED (HEAT IN MOTOR)
- I) PUT COOL CLEAN OIL IN
- J) CHECK BLOWER BELT
- K) CHECK AIR BOTTLE NO LESS THAN 500PSI
- L) CHECK OIL PAN NUTS
- M) CHECK FUEL FITTINGS
- N) CHECK CLUTCH
- O) CHECK TRANS FOR LEAKING
- P) CHECK OIL FILTER
- Q) CHECK PLUG WIRES
- R) CHECK CRANK SUPPORT BOLTS (4 SMALL 45LBS)  
(1 BIG 120LBS)

# **ELOWE**

# KEN LOWE RACE CARS Technical Sheet 170426v1

## END OF RACE DAY

- A) CHECK TIMMING
- B) EMPTY ALCOHOL
- C) TURN OFF AIR
- D) DRAIN OIL
- E) REMOVE OIL PAN
- F) REMOVE BLOWER
- G) REMOVE MANIFOLD
- H) REMOVE HEADS
- I) CHECK HEADS
- J) PULL RODS & PISTONS
- K) CHECK RODS & PISTONS
- L) CHECK MAINS
- M) PULL TRANS
- N) CHECK TRANS
- O) REMOVE BELL HOUSING
- P) REMOVE CLUTCH
- Q) CHECK CLUTCH
- R) CLEAN UP CAR
- S) REMOVE RING
- 2s) PUT PISTONS & RODS IN
- T) PUT GASKETS ON
- 2t) PUT HEADS ON
- U) PUT VALVE GEAR ON
- 2u) PUT MANIFOLD ON
- V) PUT BLOWER ON
- 2v) PUT BLOWER BELT ON
- W) PUT FUEL LINES ON
- 2w) PUT CLUTCH ON
- X) PUT BELL HOUSING ON
- 2x) PUT TRANS IN
- Y) HOOK UP LINES
- 2y) PUT CAR IN BOX
- Z) PUT EVERYTHING ELSE IN
- 2z) LOCK UP TRALER

