

IMPROVING ON DETROIT Good or Bad? Warranted or Not?

Let us assume that you are working on your own engine. You are rebuilding it completely, or you are merely doing a valve job. But you do have the head off. Since you are putting a great deal of effort into the job, you want it to be right, or even better than just 'right.' When it comes to replacing the head bolts, you might consider new ones.

Replacing the old, used head bolts with new ones is a good idea. First of all, as discussed previously, a bolt 'stretches.' That's its job. Each time the bolt is torqued it stretches. But does it fully recover when the tension is released (when the bolt is removed)? I haven't been able to (yet) find a definitive answer to that question, but I am making an assumption that it does not. As discussed, if the bolt remains within the 'stress' range, it is likely to recover most of its original values, but over-stressing the bolt could move it to

These torque charts (in foot-pounds) may be used when specific torque values are not available in either a service manual, owners manual or repair manual such as Chiltons or Motors Auto Repair Manuals.

COARSE	STEEL (in Ft. Lbs.)									Brass	Bronze	Alum.
	SAE Grade 2			SAE Grade 5			SAE Grade 8					
	Plain	Zinc Plated	Waxed	Plain	Zinc Plated	Waxed	Plain	Zinc Plated	Waxed			
1/4	6	6	3	9	10	5	13	14	6	5.1	5.7	3.8
5/16	12	13	6		19	21	9	27	29	13	8.9	6.7
3/8	21	23	10	33	37	17	47	52	24	16	18	12
7/16	33	37	17	53	59	27	76	83	38	26	29	19
1/2	51	56	25	82	90	41	116	127	58	35	40	26
9/16	73	81	37	118	129	59	167	184	84	47	53	35.5

FINE	STEEL (in Ft. Lbs.)									Brass	Bronze	Alum.
	SAE Grade 2			SAE Grade 5			SAE Grade 8					
	Plain	Zinc Plated	Waxed	Plain	Zinc Plated	Waxed	Plain	Zinc Plated	Waxed			
1/4	7	7	3	10	12	5	15	16	7	6.4	7.3	4.8
5/16	13	14	6	19	21	9	27	29	13	9.7	10.9	7.2
3/8	24	26	12	38	42	19	54	59	27	18	20	13
7/16	37	41	19	60	66	30	85	93	42	27	31	20
1/2	57	63	29	92	101	46	131	144	65	37	42	27.3
9/16	82	90	41	131	144	66	186	205	93	51	58	38