EnginAll

Product tested **Popular Commercial Synthetic Brand 15w-40**

Test type **Falex Pin in Vee Block**

(in PSI)	Straight oil no additive				Oil with additive				Variance			
Direct Pressure	(min:sec) Run time	Time to next pressure mark	(lbs./in.) Torque	% change	(min:sec) Run time	Time to next pressure mark	(lbs./in.) Torque	% change	Run time difference	Variance	(lbs./in.) torque difference	Variance
Break-in start	11:02:00 AM		11.0		11:32:00 AM		11.0				0.0	0.00%
300	5.00		11.0	0.00%	5.00		11.0	0.00%			0.0	0.00%
500	5.00		12.0	9.09%	5.00		13.0	18.18%			1.0	8.33%
750	0.13	0.13	15.0	25.00%	0.15	0.15	15.0	15.38%	0.02	-13.33%	0.0	0.00%
1,000	0.29	0.16	20.0	33.33%	0.34	0.19	19.0	26.67%	0.05	-14.71%	1.0	5.00%
1,250	0.42	0.13	22.0	10.00%	0.43	0.09	20.0	5.26%	0.01	-2.33%	2.0	9.09%
1,500	1.04	0.22	29.0	31.82%	1.07	0.24	22.0	10.00%	0.03	-2.80%	7.0	24.14%
1,750	1.16	0.12	32.0	10.34%	1.19	0.12	23.0	4.55%	0.03	-2.52%	9.0	28.13%
2,000	1.32	0.16	35.0	9.38%	1.30	0.11	23.0	0.00%	-0.02	1.54%	12.0	34.29%
2,250	1.48	0.16	37.0	5.71%	1.55	0.25	24.0	4.35%	0.07	-4.52%	13.0	35.14%
2,500	2.08	0.20	39.0	5.41%	2.07	0.12	24.0	0.00%	-0.01	0.48%	15.0	38.46%
2,750					2.32	0.25	25.0	4.17%				
3,000					2.46	0.14	26.0	4.00%				
3,250					3.09	0.23	28.0	7.69%				
3,500					3.25	0.16	28.0	0.00%				
3,750					3.45	0.20	29.0	3.57%				
4,000					4.00	0.15	29.0	0.00%				
4,250					4.16	0.16	30.0	3.45%				
4,500					4.39	0.23	30.5	1.67% (1)				
End test	**2.08**		**39.0**	**225.00%**	**2.07**		**24.0**	**84.62%**				
					4.39		**30.5**	**134.62%**				
Ave. increase per second			**0.19**				**0.06**					

(1) Popular Commercial Synthetic Brand 15w-40 with additive was still running at the 4,500 PSI direct pressure mark.

Conclusion After break-in, at a direct pressure of 2,500 PSI, the torque for the oil tested without additive increased to 39.0 lbs./in. (a 225.00% increase)and failed 2 minutes eight seconds after break-in. At the same direct pressure, the torque for the oil tested with the additive increased to 24.0 lbs./in.(a 84.62% increase). Based on this information, The oil tested with the additive had a 38.46% reduction in torque at a direct pressure of 2,500 PSI.

The oil tested with the additive was able to continue and achieve the maximum direct pressure the test allows (4,500 PSI) in a period of 4 minutes and 39 seconds. In analyzing the results, it appears that after 1,000 PSI direct pressure, the additive provided significantly more benefit.