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30907-1 & 30907-8

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FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30907-1 & 30907-8
Fuel Injector Offset vs Battery Voltage vs VAC

LS1	MANIFOLD VACUUM (kPa)																
Voltage	0*	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
4.5	3.670	3.685	3.700	3.715	3.730	3.745	3.760	3.775	3.790	3.805	3.820	3.835	3.850	3.865	3.880	3.895	3.910
5.0	3.445	3.459	3.473	3.487	3.501	3.515	3.529	3.543	3.557	3.571	3.586	3.600	3.614	3.628	3.642	3.656	3.670
5.5	3.234	3.247	3.260	3.273	3.287	3.300	3.313	3.326	3.339	3.352	3.366	3.379	3.392	3.405	3.418	3.432	3.445
6.0	3.035	3.048	3.060	3.073	3.085	3.097	3.110	3.122	3.135	3.147	3.159	3.172	3.184	3.197	3.209	3.221	3.234
6.5	2.849	2.861	2.873	2.884	2.896	2.908	2.919	2.931	2.942	2.954	2.966	2.977	2.989	3.001	3.012	3.024	3.035
7.0	2.675	2.686	2.697	2.707	2.718	2.729	2.740	2.751	2.762	2.773	2.784	2.795	2.806	2.817	2.828	2.838	2.849
7.5	2.511	2.521	2.531	2.541	2.552	2.562	2.572	2.582	2.593	2.603	2.613	2.623	2.634	2.644	2.654	2.664	2.675
8.0	2.357	2.366	2.376	2.386	2.395	2.405	2.415	2.424	2.434	2.443	2.453	2.463	2.472	2.482	2.491	2.501	2.511
8.5	2.212	2.221	2.230	2.239	2.248	2.257	2.266	2.276	2.285	2.294	2.303	2.312	2.321	2.330	2.339	2.348	2.357
9.0	2.077	2.085	2.094	2.102	2.111	2.119	2.128	2.136	2.144	2.153	2.161	2.170	2.178	2.187	2.195	2.204	2.212
9.5	1.949	1.957	1.965	1.973	1.981	1.989	1.997	2.005	2.013	2.021	2.029	2.037	2.045	2.053	2.061	2.069	2.077
10.0	1.830	1.837	1.845	1.852	1.860	1.867	1.875	1.882	1.890	1.897	1.905	1.912	1.919	1.927	1.934	1.942	1.949
10.5	1.718	1.725	1.732	1.739	1.746	1.753	1.760	1.767	1.774	1.781	1.788	1.795	1.802	1.809	1.816	1.823	1.830
11.0	1.612	1.619	1.626	1.632	1.639	1.645	1.652	1.658	1.665	1.672	1.678	1.685	1.691	1.698	1.705	1.711	1.718
11.5	1.514	1.520	1.526	1.532	1.538	1.544	1.551	1.557	1.563	1.569	1.575	1.581	1.588	1.594	1.600	1.606	1.612
12.0	1.421	1.427	1.432	1.438	1.444	1.450	1.456	1.461	1.467	1.473	1.479	1.485	1.490	1.496	1.502	1.508	1.514
12.5	1.334	1.339	1.345	1.350	1.355	1.361	1.366	1.372	1.377	1.383	1.388	1.394	1.399	1.404	1.410	1.415	1.421
13.0	1.252	1.257	1.262	1.267	1.272	1.277	1.283	1.288	1.293	1.298	1.303	1.308	1.313	1.318	1.323	1.329	1.334
13.5	1.175	1.180	1.185	1.190	1.194	1.199	1.204	1.209	1.214	1.218	1.223	1.228	1.233	1.237	1.242	1.247	1.252
14.0	1.103	1.108	1.112	1.117	1.121	1.126	1.130	1.135	1.139	1.144	1.148	1.153	1.157	1.162	1.166	1.171	1.175
14.5	1.035	1.040	1.044	1.048	1.052	1.057	1.061	1.065	1.069	1.074	1.078	1.082	1.086	1.090	1.095	1.099	1.103
15.0	0.972	0.976	0.980	0.984	0.988	0.992	0.996	1.000	1.004	1.008	1.012	1.016	1.020	1.024	1.028	1.032	1.035
15.5	0.912	0.916	0.920	0.924	0.927	0.931	0.935	0.938	0.942	0.946	0.950	0.953	0.957	0.961	0.965	0.968	0.972
16.0	0.856	0.860	0.863	0.867	0.870	0.874	0.877	0.881	0.884	0.888	0.891	0.895	0.898	0.902	0.905	0.909	0.912
16.5	0.804	0.807	0.811	0.814	0.817	0.820	0.824	0.827	0.830	0.833	0.837	0.840	0.843	0.847	0.850	0.853	0.856
17.0	0.755	0.758	0.761	0.764	0.767	0.770	0.773	0.776	0.779	0.782	0.785	0.789	0.792	0.795	0.798	0.801	0.804
17.5	0.708	0.711	0.714	0.717	0.720	0.723	0.726	0.729	0.732	0.734	0.737	0.740	0.743	0.746	0.749	0.752	0.755
18.0	0.665	0.668	0.670	0.673	0.676	0.679	0.681	0.684	0.687	0.689	0.692	0.695	0.698	0.700	0.703	0.706	0.708

*Pick which table that best fits in your ECU



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30907-1 & 30907-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

LS2	MANIFOLD VACUUM (kPa)																
Voltage	-80	-70	-60	-50	-40	-30	-20	-10	0*	10	20	30	40	50	60	70	80
4.5	3.445	3.473	3.501	3.529	3.557	3.586	3.614	3.642	3.670	3.700	3.730	3.760	3.790	3.820	3.850	3.880	3.910
5.0	3.234	3.260	3.287	3.313	3.339	3.366	3.392	3.418	3.445	3.473	3.501	3.529	3.557	3.586	3.614	3.642	3.670
5.5	3.035	3.060	3.085	3.110	3.135	3.159	3.184	3.209	3.234	3.260	3.287	3.313	3.339	3.366	3.392	3.418	3.445
6.0	2.849	2.873	2.896	2.919	2.942	2.966	2.989	3.012	3.035	3.060	3.085	3.110	3.135	3.159	3.184	3.209	3.234
6.5	2.675	2.697	2.718	2.740	2.762	2.784	2.806	2.828	2.849	2.873	2.896	2.919	2.942	2.966	2.989	3.012	3.035
7.0	2.511	2.531	2.552	2.572	2.593	2.613	2.634	2.654	2.675	2.697	2.718	2.740	2.762	2.784	2.806	2.828	2.849
7.5	2.357	2.376	2.395	2.415	2.434	2.453	2.472	2.491	2.511	2.531	2.552	2.572	2.593	2.613	2.634	2.654	2.675
8.0	2.212	2.230	2.248	2.266	2.285	2.303	2.321	2.339	2.357	2.376	2.395	2.415	2.434	2.453	2.472	2.491	2.511
8.5	2.077	2.094	2.111	2.128	2.144	2.161	2.178	2.195	2.212	2.230	2.248	2.266	2.285	2.303	2.321	2.339	2.357
9.0	1.949	1.965	1.981	1.997	2.013	2.029	2.045	2.061	2.077	2.094	2.111	2.128	2.144	2.161	2.178	2.195	2.212
9.5	1.830	1.845	1.860	1.875	1.890	1.905	1.919	1.934	1.949	1.965	1.981	1.997	2.013	2.029	2.045	2.061	2.077
10.0	1.718	1.732	1.746	1.760	1.774	1.788	1.802	1.816	1.830	1.845	1.860	1.875	1.890	1.905	1.919	1.934	1.949
10.5	1.612	1.626	1.639	1.652	1.665	1.678	1.691	1.705	1.718	1.732	1.746	1.760	1.774	1.788	1.802	1.816	1.830
11.0	1.514	1.526	1.538	1.551	1.563	1.575	1.588	1.600	1.612	1.626	1.639	1.652	1.665	1.678	1.691	1.705	1.718
11.5	1.421	1.432	1.444	1.456	1.467	1.479	1.490	1.502	1.514	1.526	1.538	1.551	1.563	1.575	1.588	1.600	1.612
12.0	1.334	1.345	1.355	1.366	1.377	1.388	1.399	1.410	1.421	1.432	1.444	1.456	1.467	1.479	1.490	1.502	1.514
12.5	1.252	1.262	1.272	1.283	1.293	1.303	1.313	1.323	1.334	1.345	1.355	1.366	1.377	1.388	1.399	1.410	1.421
13.0	1.175	1.185	1.194	1.204	1.214	1.223	1.233	1.242	1.252	1.262	1.272	1.283	1.293	1.303	1.313	1.323	1.334
13.5	1.103	1.112	1.121	1.130	1.139	1.148	1.157	1.166	1.175	1.185	1.194	1.204	1.214	1.223	1.233	1.242	1.252
14.0	1.035	1.044	1.052	1.061	1.069	1.078	1.086	1.095	1.103	1.112	1.121	1.130	1.139	1.148	1.157	1.166	1.175
14.5	0.972	0.980	0.988	0.996	1.004	1.012	1.020	1.028	1.035	1.044	1.052	1.061	1.069	1.078	1.086	1.095	1.103
15.0	0.912	0.920	0.927	0.935	0.942	0.950	0.957	0.965	0.972	0.980	0.988	0.996	1.004	1.012	1.020	1.028	1.035
15.5	0.856	0.863	0.870	0.877	0.884	0.891	0.898	0.905	0.912	0.920	0.927	0.935	0.942	0.950	0.957	0.965	0.972
16.0	0.804	0.811	0.817	0.824	0.830	0.837	0.843	0.850	0.856	0.863	0.870	0.877	0.884	0.891	0.898	0.905	0.912
16.5	0.755	0.761	0.767	0.773	0.779	0.785	0.792	0.798	0.804	0.811	0.817	0.824	0.830	0.837	0.843	0.850	0.856
17.0	0.708	0.714	0.720	0.726	0.732	0.737	0.743	0.749	0.755	0.761	0.767	0.773	0.779	0.785	0.792	0.798	0.804
17.5	0.665	0.670	0.676	0.681	0.687	0.692	0.698	0.703	0.708	0.714	0.720	0.726	0.732	0.737	0.743	0.749	0.755
18.0	0.624	0.629	0.634	0.640	0.645	0.650	0.655	0.660	0.665	0.670	0.676	0.681	0.687	0.692	0.698	0.703	0.708
18.5	0.586	0.591	0.596	0.600	0.605	0.610	0.615	0.619	0.624	0.629	0.634	0.640	0.645	0.650	0.655	0.660	0.665
19.0	0.550	0.555	0.559	0.563	0.568	0.572	0.577	0.581	0.586	0.591	0.596	0.600	0.605	0.610	0.615	0.619	0.624
19.5	0.516	0.521	0.525	0.529	0.533	0.537	0.542	0.546	0.550	0.555	0.559	0.563	0.568	0.572	0.577	0.581	0.586
20.0	0.485	0.489	0.493	0.497	0.500	0.504	0.508	0.512	0.516	0.521	0.525	0.529	0.533	0.537	0.542	0.546	0.550
20.5	0.455	0.459	0.462	0.466	0.470	0.474	0.477	0.481	0.485	0.489	0.493	0.497	0.500	0.504	0.508	0.512	0.516

*Pick which table that best fits in your ECU



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30907-1 & 30907-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

COBALT	MANIFOLD VACUUM (kPa)																																
Voltage	-120	-114	-108	-101	-95	-89	-83	-76	-70	-64	-58	-51	-45	-39	-33	-26	-20	-14	-8	-1	5	11	18	24	30	36	43	49	55	61	68	74	80
4.5	3.039	3.055	3.070	3.089	3.105	3.121	3.137	3.155	3.171	3.187	3.203	3.222	3.238	3.253	3.269	3.288	3.304	3.320	3.336	3.354	3.370	3.386	3.405	3.420	3.436	3.452	3.471	3.487	3.503	3.519	3.537	3.553	3.569
5.0	2.894	2.909	2.924	2.942	2.957	2.972	2.987	3.005	3.020	3.035	3.050	3.068	3.083	3.098	3.113	3.131	3.146	3.161	3.176	3.194	3.209	3.224	3.242	3.257	3.272	3.287	3.305	3.320	3.335	3.351	3.368	3.383	3.399
5.5	2.753	2.767	2.781	2.798	2.813	2.827	2.842	2.858	2.873	2.887	2.902	2.918	2.933	2.947	2.962	2.978	2.993	3.007	3.022	3.039	3.053	3.067	3.084	3.099	3.113	3.127	3.144	3.159	3.173	3.187	3.204	3.219	3.233
6.0	2.616	2.630	2.643	2.659	2.673	2.687	2.700	2.716	2.730	2.744	2.758	2.773	2.787	2.801	2.815	2.831	2.844	2.858	2.872	2.888	2.901	2.915	2.931	2.945	2.958	2.972	2.988	3.002	3.015	3.029	3.045	3.059	3.073
6.5	2.483	2.496	2.509	2.525	2.538	2.551	2.564	2.579	2.592	2.605	2.618	2.633	2.646	2.659	2.672	2.687	2.700	2.713	2.726	2.741	2.754	2.767	2.783	2.796	2.809	2.822	2.837	2.850	2.863	2.876	2.891	2.904	2.917
7.0	2.355	2.367	2.380	2.394	2.407	2.419	2.431	2.446	2.458	2.470	2.483	2.497	2.509	2.522	2.534	2.548	2.561	2.573	2.585	2.600	2.612	2.624	2.639	2.651	2.663	2.676	2.690	2.703	2.715	2.727	2.742	2.754	2.766
7.5	2.231	2.243	2.254	2.268	2.280	2.291	2.303	2.317	2.328	2.340	2.352	2.365	2.377	2.389	2.400	2.414	2.426	2.437	2.449	2.463	2.474	2.486	2.500	2.511	2.523	2.535	2.548	2.560	2.572	2.583	2.597	2.609	2.620
8.0	2.111	2.122	2.133	2.146	2.157	2.168	2.179	2.192	2.203	2.214	2.225	2.238	2.249	2.260	2.271	2.284	2.295	2.306	2.317	2.330	2.341	2.352	2.365	2.376	2.387	2.399	2.411	2.422	2.434	2.445	2.457	2.469	2.480
8.5	1.995	2.006	2.016	2.028	2.039	2.049	2.060	2.072	2.082	2.093	2.103	2.116	2.126	2.136	2.147	2.159	2.170	2.180	2.190	2.203	2.213	2.224	2.236	2.246	2.257	2.267	2.279	2.290	2.300	2.311	2.323	2.333	2.344
9.0	1.884	1.894	1.904	1.915	1.925	1.935	1.945	1.956	1.966	1.976	1.986	1.997	2.007	2.017	2.027	2.038	2.048	2.058	2.068	2.080	2.089	2.099	2.111	2.121	2.130	2.140	2.152	2.162	2.172	2.181	2.193	2.203	2.213
9.5	1.777	1.786	1.795	1.806	1.815	1.825	1.834	1.845	1.854	1.863	1.873	1.883	1.893	1.902	1.911	1.922	1.932	1.941	1.950	1.961	1.970	1.980	1.990	2.000	2.009	2.018	2.029	2.039	2.048	2.057	2.068	2.077	2.087
10.0	1.673	1.682	1.691	1.701	1.710	1.719	1.727	1.738	1.746	1.755	1.764	1.774	1.783	1.792	1.800	1.811	1.819	1.828	1.837	1.847	1.856	1.865	1.875	1.884	1.892	1.901	1.911	1.920	1.929	1.938	1.948	1.957	1.965
10.5	1.574	1.583	1.591	1.601	1.609	1.617	1.625	1.635	1.643	1.651	1.660	1.669	1.677	1.686	1.694	1.704	1.712	1.720	1.728	1.738	1.746	1.754	1.764	1.772	1.781	1.789	1.798	1.807	1.815	1.823	1.833	1.841	1.849
11.0	1.480	1.487	1.495	1.504	1.512	1.520	1.527	1.536	1.544	1.552	1.560	1.569	1.576	1.584	1.592	1.601	1.609	1.617	1.624	1.633	1.641	1.649	1.658	1.666	1.673	1.681	1.690	1.698	1.706	1.713	1.722	1.730	1.738
11.5	1.389	1.396	1.404	1.412	1.419	1.427	1.434	1.442	1.450	1.457	1.464	1.473	1.480	1.487	1.495	1.503	1.510	1.518	1.525	1.533	1.541	1.548	1.556	1.564	1.571	1.578	1.587	1.594	1.601	1.608	1.617	1.624	1.632
12.0	1.303	1.310	1.316	1.324	1.331	1.338	1.345	1.353	1.360	1.366	1.373	1.381	1.388	1.395	1.402	1.410	1.416	1.423	1.430	1.438	1.445	1.452	1.460	1.466	1.473	1.480	1.488	1.495	1.502	1.508	1.516	1.523	1.530
12.5	1.221	1.227	1.233	1.241	1.247	1.254	1.260	1.267	1.274	1.280	1.287	1.294	1.300	1.307	1.313	1.321	1.327	1.333	1.340	1.347	1.354	1.360	1.367	1.374	1.380	1.387	1.394	1.401	1.407	1.413	1.421	1.427	1.434
13.0	1.143	1.148	1.154	1.161	1.167	1.173	1.179	1.186	1.192	1.198	1.204	1.211	1.217	1.223	1.229	1.236	1.242	1.248	1.254	1.261	1.267	1.273	1.280	1.286	1.292	1.298	1.305	1.311	1.317	1.323	1.330	1.336	1.342
13.5	1.069	1.074	1.080	1.086	1.092	1.098	1.103	1.110	1.115	1.121	1.127	1.133	1.139	1.144	1.150	1.156	1.162	1.168	1.173	1.180	1.185	1.191	1.197	1.203	1.209	1.214	1.221	1.226	1.232	1.238	1.244	1.250	1.255
14.0	0.999	1.004	1.010	1.016	1.021	1.026	1.031	1.037	1.043	1.048	1.053	1.059	1.064	1.070	1.075	1.081	1.086	1.092	1.097	1.103	1.108	1.113	1.119	1.125	1.130	1.135	1.141	1.146	1.152	1.157	1.163	1.168	1.173
14.5	0.934	0.939	0.943	0.949	0.954	0.959	0.964	0.970	0.974	0.979	0.984	0.990	0.995	1.000	1.005	1.010	1.015	1.020	1.025	1.031	1.036	1.040	1.046	1.051	1.056	1.061	1.067	1.071	1.076	1.081	1.087	1.092	1.097
15.0	0.872	0.877	0.882	0.887	0.891	0.896	0.901	0.906	0.911	0.915	0.920	0.925	0.930	0.934	0.939	0.944	0.949	0.953	0.958	0.963	0.968	0.972	0.978	0.982	0.987	0.991	0.997	1.001	1.006	1.010	1.016	1.020	1.025
15.5	0.815	0.820	0.824	0.829	0.833	0.837	0.842	0.847	0.851	0.855	0.860	0.865	0.869	0.873	0.877	0.882	0.887	0.891	0.895	0.900	0.904	0.909	0.914	0.918	0.922	0.926	0.931	0.936	0.940	0.944	0.949	0.953	0.958
16.0	0.763	0.767	0.771	0.775	0.779	0.783	0.787	0.792	0.796	0.800	0.804	0.809	0.813	0.816	0.820	0.825	0.829	0.833	0.837	0.842	0.846	0.850	0.854	0.858	0.862	0.866	0.871	0.875	0.879	0.883	0.888	0.892	0.896
16.5	0.714	0.718	0.721	0.726	0.730	0.733	0.737	0.741	0.745	0.749	0.753	0.757	0.761	0.764	0.768	0.773	0.776	0.780	0.784	0.788	0.792	0.796	0.800	0.804	0.807	0.811	0.816	0.819	0.823	0.827	0.831	0.835	0.839
17.0	0.669	0.673	0.676	0.681	0.684	0.688	0.691	0.695	0.699	0.702	0.706	0.710	0.713	0.717	0.720	0.724	0.728	0.731	0.735	0.739	0.743	0.746	0.750	0.754	0.757	0.761	0.765	0.768	0.772	0.775	0.779	0.783	



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30907-1 & 30907-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

LS3	MANIFOLD VACUUM (kPa)																																
Voltage	128	148	168	188	208	228	248	268	288	308	328	348	368	388	408	428	448	468	488	508	528	548	568	588	608	628	648	668	688	708	728	748	768
4.0	3.035	3.104	3.172	3.240	3.308	3.377	3.445	3.503	3.561	3.619	3.677	3.735	3.793	3.851	3.910	3.975	4.041	4.107	4.173	4.239	4.305	4.371	4.437	4.512	4.587	4.661	4.736	4.811	4.886	4.961	5.035	5.035	5.035
5.0	2.675	2.735	2.795	2.855	2.915	2.975	3.035	3.087	3.138	3.189	3.240	3.291	3.343	3.394	3.445	3.503	3.561	3.619	3.677	3.735	3.793	3.851	3.910	3.975	4.041	4.107	4.173	4.239	4.305	4.371	4.437	4.437	4.437
6.0	2.357	2.410	2.463	2.516	2.569	2.622	2.675	2.720	2.765	2.810	2.855	2.900	2.945	2.990	3.035	3.087	3.138	3.189	3.240	3.291	3.343	3.394	3.445	3.503	3.561	3.619	3.677	3.735	3.793	3.851	3.910	3.910	3.910
7.0	2.077	2.123	2.170	2.217	2.263	2.310	2.357	2.397	2.436	2.476	2.516	2.555	2.595	2.635	2.675	2.720	2.765	2.810	2.855	2.900	2.945	2.990	3.035	3.087	3.138	3.189	3.240	3.291	3.343	3.394	3.445	3.445	3.445
8.0	1.830	1.871	1.912	1.953	1.994	2.036	2.077	2.112	2.147	2.182	2.217	2.252	2.287	2.322	2.357	2.397	2.436	2.476	2.516	2.555	2.595	2.635	2.675	2.720	2.765	2.810	2.855	2.900	2.945	2.990	3.035	3.035	3.035
9.0	1.612	1.649	1.685	1.721	1.757	1.794	1.830	1.861	1.892	1.922	1.953	1.984	2.015	2.046	2.077	2.112	2.147	2.182	2.217	2.252	2.287	2.322	2.357	2.397	2.436	2.476	2.516	2.555	2.595	2.635	2.675	2.675	2.675
10.0	1.421	1.453	1.485	1.517	1.549	1.580	1.612	1.640	1.667	1.694	1.721	1.748	1.775	1.803	1.830	1.861	1.892	1.922	1.953	1.984	2.015	2.046	2.077	2.112	2.147	2.182	2.217	2.252	2.287	2.322	2.357	2.357	2.357
11.0	1.252	1.280	1.308	1.336	1.364	1.393	1.421	1.445	1.469	1.493	1.517	1.541	1.564	1.588	1.612	1.640	1.667	1.694	1.721	1.748	1.775	1.803	1.830	1.861	1.892	1.922	1.953	1.984	2.015	2.046	2.077	2.077	2.077
12.0	1.103	1.128	1.153	1.177	1.202	1.227	1.252	1.273	1.294	1.315	1.336	1.357	1.379	1.400	1.421	1.445	1.469	1.493	1.517	1.541	1.564	1.588	1.612	1.640	1.667	1.694	1.721	1.748	1.775	1.803	1.830	1.830	1.830
13.0	0.972	0.994	1.016	1.038	1.059	1.081	1.103	1.122	1.140	1.159	1.177	1.196	1.215	1.233	1.252	1.273	1.294	1.315	1.336	1.357	1.379	1.400	1.421	1.445	1.469	1.493	1.517	1.541	1.564	1.588	1.612	1.612	1.612
14.0	0.856	0.876	0.895	0.914	0.933	0.953	0.972	0.988	1.005	1.021	1.038	1.054	1.070	1.087	1.103	1.122	1.140	1.159	1.177	1.196	1.215	1.233	1.252	1.273	1.294	1.315	1.336	1.357	1.379	1.400	1.421	1.421	1.421
15.0	0.755	0.772	0.789	0.806	0.823	0.840	0.856	0.871	0.885	0.900	0.914	0.929	0.943	0.958	0.972	0.988	1.005	1.021	1.038	1.054	1.070	1.087	1.103	1.122	1.140	1.159	1.177	1.196	1.215	1.233	1.252	1.252	1.252
16.0	0.665	0.680	0.695	0.710	0.725	0.740	0.755	0.767	0.780	0.793	0.806	0.818	0.831	0.844	0.856	0.871	0.885	0.900	0.914	0.929	0.943	0.958	0.972	0.988	1.005	1.021	1.038	1.054	1.070	1.087	1.103	1.103	1.103
17.0	0.586	0.599	0.612	0.625	0.639	0.652	0.665	0.676	0.687	0.699	0.710	0.721	0.732	0.743	0.755	0.767	0.780	0.793	0.806	0.818	0.831	0.844	0.856	0.871	0.885	0.900	0.914	0.929	0.943	0.958	0.972	0.972	0.972
18.0	0.516	0.528	0.540	0.551	0.563	0.574	0.586	0.596	0.606	0.616	0.625	0.635	0.645	0.655	0.665	0.676	0.687	0.699	0.710	0.721	0.732	0.743	0.755	0.767	0.780	0.793	0.806	0.818	0.831	0.844	0.856	0.856	0.856
19.0	0.455	0.465	0.475	0.486	0.496	0.506	0.516	0.525	0.534	0.542	0.551	0.560	0.569	0.577	0.586	0.596	0.606	0.616	0.625	0.635	0.645	0.655	0.665	0.676	0.687	0.699	0.710	0.721	0.732	0.743	0.755	0.755	0.755
20.0	0.401	0.410	0.419	0.428	0.437	0.446	0.455	0.463	0.470	0.478	0.486	0.493	0.501	0.509	0.516	0.525	0.534	0.542	0.551	0.560	0.569	0.577	0.586	0.596	0.606	0.616	0.625	0.635	0.645	0.655	0.665	0.665	0.665

LS7	MANIFOLD VACUUM (kPa)																																
Voltage	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400*	416	432	448	464	480	496	512	528	544	560	576	592	608	624	640
4.0	3.035	3.095	3.155	3.215	3.275	3.334	3.394	3.445	3.490	3.534	3.579	3.624	3.668	3.713	3.758	3.808	3.859	3.910	3.959	4.008	4.058	4.107	4.157	4.213	4.269	4.325	4.381	4.437	4.636	4.836	5.035	5.035	5.035
5.0	2.675	2.727	2.780	2.833	2.885	2.938	2.991	3.035	3.075	3.114	3.154	3.193	3.232	3.272	3.311	3.356	3.400	3.445	3.488	3.532	3.575	3.619	3.663	3.712	3.761	3.811	3.860	3.910	4.085	4.261	4.437	4.437	4.437
6.0	2.357	2.403	2.450	2.496	2.542	2.589	2.635	2.675	2.709	2.744	2.779	2.813	2.848	2.883	2.917	2.957	2.996	3.035	3.074	3.112	3.151	3.189	3.227	3.271	3.314	3.358	3.401	3.445	3.600	3.755	3.910	3.910	3.910
7.0	2.077	2.118	2.158	2.199	2.240	2.281	2.322	2.357	2.387	2.418	2.448	2.479	2.510	2.540	2.571	2.605	2.640	2.675	2.708	2.742	2.776	2.810	2.844	2.882	2.920	2.959	2.997	3.035	3.172	3.308	3.445	3.445	3.445
8.0	1.830	1.866	1.902	1.938	1.974	2.010	2.046	2.077	2.104	2.131	2.157	2.184	2.211	2.238	2.265	2.296	2.326	2.357	2.387	2.416	2.446	2.476	2.506	2.539	2.573	2.607	2.641	2.675	2.795	2.915	3.035	3.035	3.035
9.0	1.612	1.644	1.676	1.708	1.739	1.771	1.803	1.830	1.854	1.877	1.901	1.925	1.948	1.972	1.996	2.023	2.050	2.077	2.103	2.129	2.155	2.182	2.208	2.238	2.267	2.297	2.327	2.357	2.463	2.569	2.675	2.675	2.675
10.0	1.421	1.449	1.477	1.505	1.533	1.561																											



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30907-1 & 30907-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

GM FLOW

LS1																	
Manifold Vacuum (kPa)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Flow Rate (lb/hr)	90.7	91.3	91.8	92.4	92.9	93.5	94.0	94.6	95.1	95.7	96.2	96.7	97.3	97.8	98.3	98.8	99.3
Scaled Flow Rate (lb/hr)	45.3	45.6	45.9	46.2	46.5	46.7	47.0	47.3	47.6	47.8	48.1	48.4	48.6	48.9	49.2	49.4	49.7

LS2																	
Manifold Vacuum (kPa)	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80
Flow Rate (lb/hr)	81.1	82.4	83.6	84.8	86.0	87.2	88.4	89.5	90.7	91.8	92.9	94.0	95.1	96.2	97.3	98.3	99.3
Scaled Flow Rate (lb/hr)	40.6	41.2	41.8	42.4	43.0	43.6	44.2	44.8	45.3	45.9	46.5	47.0	47.6	48.1	48.6	49.2	49.7

COBALT																															
Manifold Vacuum (kPa)	-120	-114	-108	-101	-95	-89	-83	-76	-70	-64	-58	-45	-39	-33	-29	-20	-14	-8	-1	5	11	18	24	30	36	43	49	55	61	68	74
Flow Rate (lb/hr)	77.0	77.6	78.3	79.1	79.8	80.4	81.1	81.9	82.6	83.2	83.9	84.7	85.4	86.0	86.7	88.1	88.8	89.5	90.3	90.9	91.6	92.4	93.1	93.7	94.4	95.2	95.9	96.5	97.2	98.0	98.6

LS3																																	
Differential Pressure (kPa)	128	148	168	188	208	228	248	268	288	308	328	348	368	388	408	428	448	468	488	508	528	548	568	588	608	628	648	668	688	708	728	748	768
Flow Rate (lb/hr)	51.3	55.2	58.8	62.2	65.4	68.5	71.4	74.2	77.0	79.6	82.1	84.6	87.0	89.3	91.6	93.8	96.0	98.1	100.2	102.2	104.2	106.1	108.1	110.0	111.8	113.6	115.4	117.2	118.9	120.7	122.3	124.0	125.7
Scaled Flow Rate (lb/hr)	25.7	27.6	29.4	31.1	32.7	34.2	35.7	37.1	38.5	39.8	41.1	42.3	43.5	44.7	45.8	46.9	48.0	49.0	50.1	51.1	52.1	53.1	54.0	55.0	55.9	56.8	57.7	58.6	59.5	60.3	61.2	62.0	62.8

LS7																																	
Differential Pressure (kPa)	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480	496	512	528	544	560	576	592	608	624	640
Flow Rate (lb/hr)	51.3	54.4	57.4	60.2	62.8	65.4	67.9	70.2	72.5	74.8	77.0	79.1	81.1	83.1	85.1	87.0	88.9	90.7	92.5	94.2	96.0	97.7	99.3	101.0	102.6	104.2	105.8	107.3	108.8	110.3	111.8	113.3	114.7
Scaled Flow Rate (lb/hr)	25.7	27.2	28.7	30.1	31.4	32.7	33.9	35.1	36.3	37.4	38.5	39.5	40.6	41.6	42.5	43.5	44.4	45.3	46.2	47.1	48.0	48.8	49.7	50.5	51.3	52.1	52.9	53.7	54.4	55.2	55.9	56.6	57.4

note: If you are using a regulator with a return set at 58 psi., Populate the table with the value in the grey cells

Input Scale value IF needed	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
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*Pick which table that best fits in your ECU

GM SHORT PULSE ADDER

PW ms	0.0000	0.0608	0.1216	0.1824	0.2432	0.3040	0.3648	0.4256	0.4864	0.5472	0.6080	0.6688	0.7296	0.7904	0.8512	0.9120	0.9728	1.0336	1.0944	1.1552	1.2160	1.2768	1.3376	1.3984	1.4592	1.5200	1.5808	1.6416	1.7024	1.7632	1.8240	1.8848	1.9456	2.0064
PW Adder	0.000	0.116	0.095	0.075	0.054	0.034	0.020	0.006	-0.008	-0.022	-0.027	-0.030	-0.033	-0.035	-0.036	-0.038	-0.039	-0.036	-0.034	-0.031	-0.034	-0.037	-0.041	-0.045	-0.046	-0.048	-0.050	-0.044	-0.038	-0.031	-0.031	-0.031	-0.031	-0.028

PW ms	2.0672	2.1280	2.1888	2.2496	2.3104	2.3712	2.4320	2.4928	2.5536	2.6144	2.6752	2.7360	2.7968	2.8576	2.9184	2.9792	3.0400	3.1008	3.1616	3.2224	3.2832	3.3440	3.4048	3.4656	3.5264	3.5872	3.6480	3.7088	3.7696	3.8304	3.8912	3.9520	4.0128
PW Adder	-0.026	-0.024	-0.022	-0.020	-0.018	-0.016	-0.014	-0.012	-0.010	-0.008	-0.006	-0.004	-0.002	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PW ms	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000
PW Adder	0.000	0.094	0.052	0.017	-0.011	-0.028	-0.034	-0.037	-0.038	-0.032	-0.036	-0.044	-0.048	-0.046	-0.032	-0.031	-0.030	-0.026	-0.022	-0.018	-0.014	-0.010	-0.006	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Most V8's

PW ms	0.000	0.100	0.300	0.400	0.500	0.600	0.800	0.900	1.000	1.100	1.300	1.400	1.500	1.600	1.800	1.900	2.000	2.100	2.300	2.400	2.500	2.600	2.800	2.900	3.000	3.100	3.300	3.400	3.500	3.600	3.800	3.900	4.000
PW Adder	0.000	0.102	0.035	0.012	-0.011	-0.027	-0.035	-0.037	-0.038	-0.033	-0.039	-0.045	-0.048	-0.049	-0.031	-0.031	-0.030	-0.027	-0.020	-0.017	-0.011	-0.007	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Cobalt Specific

SHORT PULSE LIMIT (ms)	4.000
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DEFAULT PULSEWIDTH	0.297
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*Pick which table that best fits in your ECU

GM MINIMUM PULSE

RPM	0	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000
Minimum Inj. PW	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969

RPM	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
Minimum Inj. PW	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969	0.2969

*Pick which table that best fits in your ECU

*If you are only needing a single Minimum pulse use the grey values



FUEL INJECTOR CHARACTERIZATION
FORD INJECTOR DATA 30907-1 & 30907-8
For 2011+ applications, for older applications scroll down.

FLOW RATE	
Fuel Injector Breakpoint (lb)	0.0000120
Fuel Injector Hi Slope (lb/sec)	0.0251892
Fuel Injector Low Slope (lb/sec)	0.0295118
Fuel Injector Minimum Pulse Width (sec)	0.0002648
LIMITS	PERCENTAGE
Max Allowed Inj Duty Cycle	1.999
Max Allowed Inj Duty Cycle on Alcohol	2.000

OFFSET VS. VOLTAGE	
Battery Voltage	PW (ms)
6.0	3.0355
7.0	2.6747
8.0	2.3568
9.0	2.0767
10.0	1.8299
11.0	1.6124
12.0	1.4207
13.0	1.2519
13.5	1.1751
14.0	1.1031
14.5	1.0355
15.0	0.9720

FLOW RATE LOW MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000

FLOW RATE HIGH MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000

BREAKPOINT MULT		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000

OFFSET MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000
42	0.8101	1.0000

If you are running the factory fuel system plumbing use the Factory Multipliers.
If you are running a reuglator with a return to the tank us the Return Multipliers. Base fuel pressure must be set to 58psi.

39 PSI Fuel Systems
For 2010 and older applications below

If you are running the factory fuel system plumbing use the Factory Multipliers. If you are running a regulator with a return to the tank us the Return Multipliers. Base pressure must be set to 39psi.

FLOW RATE	
Fuel Injector Breakpoint (lb)	0.0000107
Fuel Injector Hi Slope (lb/sec)	0.0210410
Fuel Injector Low Slope (lb/sec)	0.0246517
Fuel Injector Minimum Pulse Width (sec)	0.0002648
LIMITS	PERCENTAGE
Max Allowed Inj Duty Cycle	1.999
Max Allowed Inj Duty Cycle on Alcohol	2.000

OFFSET VS. VOLTAGE	
Battery Voltage	PW (ms)
6.0	2.5875
8.0	2.0882
10.0	1.6552
11.0	1.4636
12.0	1.2885
13.0	1.1301
14.0	0.9882
15.0	0.8630

FLOW RATE LOW MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1290	1.0000
54.96	1.0984	1.0000
50.03	1.0682	1.0000
39.15	1.0000	1.0000
30.02	0.9465	1.0000
20.01	0.8856	1.0000

FLOW RATE HIGH MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1290	1.0000
54.96	1.0984	1.0000
50.03	1.0682	1.0000
39.15	1.0000	1.0000
30.02	0.9465	1.0000
20.01	0.8856	1.0000

BREAKPOINT MULT		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1290	1.0000
54.96	1.0984	1.0000
50.03	1.0682	1.0000
39.15	1.0000	1.0000
30.02	0.9465	1.0000
20.01	0.8856	1.0000

OFFSET MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1290	1.0000
54.96	1.0984	1.0000
50.03	1.0682	1.0000
39.15	1.0000	1.0000
30.02	0.9465	1.0000
20.01	0.8856	1.0000



FUEL INJECTOR CHARACTERIZATION

DODGE/CHRYSLER/JEEP INJECTOR DATA 30907-1 & 30907-8

INJECTOR PULSE WIDTH (ms)	FUEL MASS (Grams)
0.000	0.00000
0.000	0.00000
0.265	0.00345
0.465	0.00641
0.665	0.00880
0.865	0.01114
1.065	0.01333
1.265	0.01577
1.465	0.01812
1.665	0.02018
1.865	0.02247
2.865	0.03353
8.865	0.10208
48.865	0.55912

INJECTOR MIN PW	0.265
-----------------	-------

START UP SCALER	11.426
-----------------	--------

IGNITION VOLTAGE (all in ms)									
kPa	6	7	8	10	12	14	15.8	15.8	15.8
0	3.102	2.746	2.427	1.898	1.491	1.172	0.954	0.954	0.954
20	3.151	2.789	2.464	1.927	1.513	1.190	0.968	0.968	0.968
40	3.200	2.832	2.503	1.957	1.536	1.207	0.982	0.982	0.982
80	3.301	2.921	2.581	2.017	1.584	1.244	1.011	1.011	1.011
100	3.352	2.966	2.621	2.049	1.608	1.263	1.026	1.026	1.026

IGNITION VOLTAGE (all in ms)									
kPa	8	9.5	11	12	12.8	13.5	14	14.7	15.5
-80	2.282	1.900	1.584	1.404	1.282	1.173	1.104	1.012	0.926
0	2.427	2.020	1.683	1.491	1.361	1.245	1.172	1.073	0.982
40	2.503	2.083	1.735	1.536	1.402	1.283	1.207	1.106	1.011
62	2.545	2.118	1.764	1.562	1.426	1.304	1.227	1.124	1.027
84	2.589	2.154	1.794	1.588	1.450	1.326	1.248	1.142	1.044

IGNITION VOLTAGE (all in ms)									
kPa	5	6	7	8	9	10.1	12.1	14.1	15.8
250	3.128	2.763	2.447	2.163	1.913	1.681	1.322	1.042	0.855
300	3.251	2.872	2.542	2.248	1.988	1.746	1.372	1.081	0.886
400	3.513	3.102	2.746	2.427	2.146	1.884	1.479	1.164	0.954
500	3.797	3.352	2.966	2.621	2.317	2.033	1.595	1.254	1.026
550	3.947	3.484	3.083	2.724	2.407	2.112	1.657	1.302	1.065

IGNITION VOLTAGE (all in ms)									
kPa	5	6	7	8	9	10.1	12.1	14.1	15.8
130	2.851	2.519	2.231	1.974	1.747	1.535	1.208	0.954	0.784
244	3.114	2.750	2.435	2.153	1.905	1.673	1.316	1.037	0.851
400	3.513	3.102	2.746	2.427	2.146	1.884	1.479	1.164	0.954
586	4.059	3.583	3.170	2.800	2.475	2.171	1.703	1.338	1.094
660	4.299	3.795	3.357	2.965	2.620	2.298	1.801	1.414	1.155

IGNITION VOLTAGE (all in ms)									
kPa	5	5.7	6.3	7	8	10	12	14	15.8
8	3.513	3.205	3.013	2.746	2.427	1.898	1.491	1.172	0.954
80	3.726	3.399	3.195	2.911	2.581	2.017	1.584	1.244	1.011
117	3.872	3.532	3.320	2.966	2.621	2.049	1.608	1.263	1.026
150	3.947	3.600	3.384	3.083	2.724	2.112	1.657	1.302	1.065
200	4.073	3.715	3.492	3.181	2.810	2.483	2.179	1.709	1.342

*Pick which table that best matches your ECU’s pressure and voltage values



FUEL INJECTOR CHARACTERIZATION
HONDA/ACURA INJECTOR DATA 30907-1 & 30907-8

2002 AND NEWER		INJECTOR FLOW	
3.5 BAR, 350 KPa, 51 PSI. System		891	
BATTERY OFFSET			
Voltage		Offset:	
0		2.918	
6		2.892	
8		2.265	
10		1.759	
12		1.366	
14		1.052	
16		0.815	
24		0.279	
AFM FUEL			
Air Mass (mg)		51 PSI System	
0		0.000	
70		1.505	
100		1.696	
120		1.823	
200		2.331	
300		2.967	
400		3.603	
750		5.827	
1000		7.416	
1250		9.005	
1500		10.593	
1750		12.182	
2000		13.771	
2250		15.360	
2500		16.949	
2750		18.538	
FUEL ECONOMY			
Inj. Flow for FE		884	
Inj. Flow for Dash		884	

2001 AND OLDER		INJECTOR FLOW	
3.0 BAR, 300 KPa, 43.5 PSI. System		828	
BATTERY OFFSET			
Voltage		Offset:	
0		2.805	
6		2.780	
8		2.178	
10		1.691	
12		1.313	
14		1.012	
16		0.791	
24		0.268	
AFM FUEL			
Air Mass (mg)		43.5 PSI System	
0		0.000	
70		1.498	
100		1.703	
120		1.840	
200		2.387	
300		3.071	
400		3.755	
750		6.148	
1000		7.858	
1250		9.568	
1500		11.277	
1750		12.987	
2000		14.697	
2250		16.407	
2500		18.116	
2750		19.826	
FUEL ECONOMY			
Inj. Flow for FE		888	
Inj. Flow for Dash		888	



FUEL INJECTOR CHARACTERIZATION
MAZDA INJECTOR DATA 30907-1 & 30907-8

INJECTOR BASE PW

3.920

INJECTOR MINIMUM PW

0.297

INJECTOR FLOW RATE

852.4

INJECTOR SCALING GLOBAL

1.00

INJECTOR OPENING TIME

Pressure (kPa)		-15.86	-7.866	0	7.866	15.86	23.73	31.73	39.6	47.46	55.46	63.33	71.19	79.19	87.06	95.06	102.9
Voltage	6.5	2.814	2.832	2.849	2.867	2.885	2.903	2.922	2.940	2.958	2.977	2.996	3.014	3.034	3.052	3.072	3.091
	7.75	2.402	2.417	2.433	2.448	2.463	2.479	2.494	2.510	2.526	2.542	2.557	2.573	2.590	2.606	2.622	2.639
	9	2.051	2.064	2.077	2.090	2.103	2.116	2.129	2.143	2.156	2.170	2.183	2.197	2.211	2.225	2.239	2.253
	10.25	1.751	1.762	1.773	1.784	1.795	1.806	1.818	1.829	1.841	1.852	1.864	1.876	1.887	1.899	1.911	1.923
	11.5	1.495	1.504	1.514	1.523	1.533	1.542	1.552	1.562	1.571	1.581	1.591	1.601	1.611	1.621	1.632	1.642
	12.75	1.276	1.284	1.292	1.300	1.308	1.317	1.325	1.333	1.342	1.350	1.358	1.367	1.376	1.384	1.393	1.402
	14	1.089	1.096	1.103	1.110	1.117	1.124	1.131	1.138	1.145	1.153	1.160	1.167	1.174	1.182	1.189	1.197
	15.25	0.930	0.936	0.942	0.948	0.954	0.960	0.966	0.972	0.978	0.984	0.990	0.996	1.003	1.009	1.015	1.022
	16.5	0.794	0.799	0.804	0.809	0.814	0.819	0.824	0.830	0.835	0.840	0.845	0.851	0.856	0.861	0.867	0.872

VOLUMETRIC EFFICIENCY LOAD MULTIPLIER

RPM	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
0	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033	1.033
0.0625	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018
0.125	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003
0.1875	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.3125	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.375	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.4375	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5625	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.625	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.6875	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.8125	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.875	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.9375	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



FUEL INJECTOR CHARACTERIZATION
MITSUBISHI INJECTOR DATA 30907-1 & 30907-8
43.5 PSI / 3 BAR / 300 KPa

INJECTOR SIZE (cc/min)	828
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BATTERY VOLTAGE LATENCY COMPENSATION							
Voltage	4.69	7.99	9.97	12.02	14.00	15.98	18.77
Latency	3.310	2.180	1.697	1.309	1.019	0.793	0.557



FUEL INJECTOR CHARACTERIZATION
MERCEDES/BOSCH INJECTOR DATA 30907-1 & 30907-8

INJECTOR CONSTANT	
MS/%	0.03985

OFFSET VS. VOLTAGE					
Volts	7.5	10.6	12.1	15.1	16.6
ms	2.499	1.687	1.410	0.963	0.796

INJECTOR FLOW RATE FACTOR										
250	300	350	400	450	500	550	600	650	700	750
1.265	1.155	1.069	1.000	0.943	0.894	0.853	0.816	0.784	0.756	0.730

INJECTOR PULSE MULT																
	1	1.3	1.6	1.9	2.2	2.5	3	3.5	4	5	6	8	10	12	14	16
520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
760	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1240	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6520	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7000	0.9622	0.9700	0.9695	0.9838	0.9894	0.9945	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



FUEL INJECTOR CHARACTERIZATION

NISSAN/INFINITI INJECTOR DATA 30907-1 & 30907-8

INJECTOR LATENCY	
Injector Scalar	1.103
Injector Offset	-0.135
MIN. PULSEWIDTH:	297 μs
INJECTOR SCALAR	
350 KPa (cc/min)	890.7
300 KPa (cc/min)	827.8
NON-LINEAR INJ. COMP. MAX IPW	
3.000 ms	

DIFFERENTIAL FUEL PRESSURE DELTA PERCENT (Cobb/EcuTek)								
*Note Use this table if using stock style fuel system								
MAP	-40	-30	-20	-10	0	10	20	30
Comp %	118	114	110	105	100	95	89	84
*Note If using a vacuum referenced regulator use this table								
MAP	-40	-30	-20	-10	0	10	20	30
Comp %	100	100	100	100	100	100	100	100

PRIMARY INJECTOR BATTERY OFFSET (Cobb/EcuTek)								
Battery voltage								
psi	9	10	11	12	13	14	15	16
20.0	1.688	1.487	1.311	1.155	1.018	0.897	0.790	0.696
25.2	1.737	1.530	1.348	1.188	1.047	0.923	0.813	0.716
31.6	1.798	1.585	1.396	1.230	1.084	0.955	0.842	0.742
39.9	1.881	1.658	1.461	1.287	1.134	0.999	0.881	0.776
50.2	1.990	1.753	1.545	1.361	1.200	1.057	0.931	0.821
63.1	2.135	1.881	1.658	1.461	1.287	1.134	0.999	0.881
79.5	2.335	2.057	1.813	1.597	1.407	1.240	1.093	0.963
100.0	2.610	2.300	2.026	1.786	1.573	1.386	1.222	1.076

INJECTOR LOW PW COMPENSATION (Cobb/EcuTek)																
Effective Pulse Width (ms)																
psi	0.30	0.48	0.66	0.84	1.02	1.20	1.38	1.56	1.74	1.92	2.10	2.28	2.46	2.64	2.82	3.00
20	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
25	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
32	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
40	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
50	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
63	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
79	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100
100	112	99	96	96	96	97	97	97	98	98	99	99	99	100	100	100



FUEL INJECTOR CHARACTERIZATION
SUBARU INJECTOR DATA 30907-1 & 30907-8

INJECTOR CONSTANT
3487.8 μs

FLOW RATE
9.96 g/s

INJ. PULSEWIDTH LIMIT
0.381 ms

FUEL INJECTOR TRIM (Max Small IPW)
3.000 ms

FUEL INJECTOR TRIM (Max RPM, Small IPW)
10000 rpm

FUEL INJECTOR LATENCY						
Voltage		6.05	9	11.5	14	16.5
MAP (psi.):	-19.34	2.37	1.73	1.26	0.92	0.67
	0	2.63	1.92	1.40	1.02	0.74
	19.34	2.93	2.13	1.55	1.13	0.83

02-05 WRX SPECIFIC						
Voltage		6.05	9	11.5	14	16.5
MAP (psi.):	-19.34	1.96	1.52	1.18	0.92	0.71
	0	2.18	1.69	1.31	1.02	0.79
	19.34	2.42	1.88	1.46	1.13	0.88

FUEL INJECTOR TRIM (SMALL IPW) 05-05 WRX SPECIFIC						
PW	0.275	0.820	1.365	1.910	2.455	3.000
%	0.016	-0.037	-0.046	-0.031	-0.015	0.000

FUEL INJECTOR TRIM (small IPW)								
PW	0.275	0.665	1.054	1.443	1.832	2.222	2.611	3.000
%	4.23	-4.47	-2.84	-3.18	-1.63	-0.96	-0.37	0.00

VEHICLES WITH GDI AND PORT INJECTION USE BELOW

Note* This is for vehicles like the FRS/BRZ/GT86/GR86

INJECTOR SCALING
950 cc/min

LOW PW INJ. COMP	
0.381	1.0423
0.755	0.9553
1.129	0.9716
1.503	0.9682
1.877	0.9837
2.252	0.9904
2.626	0.9963
3.000	1.0000

INJ. MIN. OPEN TIME
0.3808 ms

PFI MANIFOLD RELATIVE PRESSURE COMP.		
Manifold Relative Pres. (BAR)	-0.933	0.876
	-0.800	0.894
	-0.667	0.913
	-0.533	0.931
	-0.400	0.949
	-0.267	0.966
	-0.133	0.983
	0.000	1.000
	0.133	1.016
	0.267	1.033
	0.400	1.049
	0.533	1.065
	0.667	1.080
	0.800	1.095
	0.933	1.111
	1.067	1.125

LOW PW COMP MAX IPW
3.000 ms

LOW PW COMP MAX RPM
10000 rpm

INJECTOR OPENING TIME						
Voltage:		8	10	12	14	16
MAP (psi.):	-1000	2.357	1.830	1.421	1.103	0.856
	0	2.357	1.830	1.421	1.103	0.856
	1000	2.357	1.830	1.421	1.103	0.856



FUEL INJECTOR CHARACTERIZATION
AEM INJECTOR DATA 30907-1 & 30907-8

AEM INFINITY	Injector Flow Rate (cc/min)								
Pressure	20	30	40	50	60	70	80	90	100
Flow	559	687	794	888	973	1052	1114	1183	1249

INJECTOR OFFSET [MS]		Battery (Volts)			
		10.0	12.0	14.0	16.0
Inj Pressure (psig)	100.0	2.25	1.75	1.36	1.05
	90.0	2.15	1.67	1.30	1.01
	80.0	2.05	1.59	1.24	0.96
	70.0	1.95	1.52	1.18	0.91
	60.0	1.85	1.44	1.12	0.87
	50.0	1.75	1.36	1.06	0.82
	40.0	1.65	1.28	1.00	0.77
	30.0	1.55	1.21	0.94	0.73
	20.0	1.45	1.13	0.88	0.68

AEM EMS, SERIES 1 AND 2	Battery Offset Primary										
Battery Volts	6	7	8	9	10	11	12	13	14	15	16
Batt Offset	2.80	2.49	2.18	1.93	1.69	1.50	1.31	1.16	1.01	0.90	0.79

INJ SIZE (CC'S/MIN)	828
INJECTOR MIN (USEC)	297
INJECTOR DUTY MAX	95%

* EMS, Series 1 And 2 Data Formated At 3BAR (43.5 PSI)



FUEL INJECTOR CHARACTERIZATION
ECU MASTERS INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR SIZE (cc/min)	828
------------------------	-----

FUELING INJECTORS CAL (Battery Offset)												
Volts	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
Modifier	2.665	2.399	2.150	1.919	1.704	1.507	1.327	1.164	1.018	0.889	0.777	0.682

58 PSI / 4 BAR / 400 kPa

INJECTOR SIZE (cc/min)	950
------------------------	-----

FUELING INJECTORS CAL (Battery Offset)												
Volts	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
Modifier	2.884	2.596	2.327	2.077	1.845	1.631	1.436	1.260	1.101	0.962	0.841	0.738



FUEL INJECTOR CHARACTERIZATION
FAST XFI 2.0 INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR FLOW RATE (lbs/hr)								
79.1								
INJECTOR OPENING OFFSET VS BATTERY VOLTAGE								
Volts	8	9	10	11	12	13	14	16
Offset (ms)	2.15	1.92	1.7	1.51	1.33	1.16	1.02	0.78

58 PSI / 4 BAR / 400 kPa

INJECTOR FLOW RATE (lbs/hr)								
90.7								
INJECTOR OPENING OFFSET VS BATTERY VOLTAGE								
Volts	8	9	10	11	12	13	14	16
Offset (ms)	2.52	2.25	2.00	1.77	1.55	1.36	1.19	0.91

FAST XFI SPORTSMAN & STREET INJECTOR DATA

43.5 PSI / 3 BAR / 300 kPa	
Injector Flow Rate (lbs/hr)	79
Injector Opening Tims (ms)	1.0

58 PSI / 4 BAR / 400 kPa	
Injector Flow Rate (lbs/hr)	91
Injector Opening Tims (ms)	1.2



FUEL INJECTOR CHARACTERIZATION
HALTECH DATA 30907-1 & 30907-8

HALTECH ELITE AND NEXUS

DEAD TIME TABLE				
Volts\PSI	29.000	43.500	58.000	72.500
16.0	0.709	0.777	0.841	0.910
14.0	0.929	1.018	1.101	1.192
12.0	1.212	1.327	1.436	1.554
10.0	1.557	1.704	1.845	1.997
8.0	1.964	2.150	2.327	2.519
6.0	2.433	2.665	2.884	3.121

INJECTOR FLOW TABLE				
PSI	29.0	43.5	58.0	72.5
Flow(cc)	712	828	950	1062

SHORT PULSE WIDTH ADDER (ms)																															
0.000	0.100	0.200	0.300	0.400	0.500	0.600	0.700	0.800	0.900	1.000	1.100	1.200	1.300	1.400	1.500	1.600	1.700	1.800	1.900	2.000	2.100	2.200	2.300	2.400	2.500	2.600	2.700	2.800	2.900	3.000	3.100
0.000	0.079	0.069	0.038	0.012	-0.011	-0.025	-0.031	-0.035	-0.037	-0.038	-0.033	-0.034	-0.039	-0.045	-0.048	-0.046	-0.046	-0.032	-0.030	-0.030	-0.027	-0.023	-0.020	-0.017	-0.014	-0.010	-0.007	-0.004	-0.002	0.000	0.000

HALTECH SPORT AND PLATINUM
43.5 PSI / 3 BAR / 300 kPa

INJ FLOW RATE (cc/min)	828
------------------------	-----

Voltage	8.300	8.500	8.800	9.000	9.300	9.500	9.800	10.000	10.300	10.500	10.800	11.000	11.300	11.500	11.800	12.000	12.300	12.500	12.800	13.000	13.300	13.500	13.800	14.000	14.300	14.500	14.800	15.000	15.300	15.500	15.800	16.000
Offset ms	2.113	2.048	1.983	1.919	1.862	1.805	1.748	1.691	1.640	1.590	1.540	1.490	1.446	1.401	1.357	1.313	1.274	1.235	1.196	1.157	1.122	1.088	1.054	1.019	0.989	0.959	0.928	0.898	0.871	0.845	0.818	0.791

58 PSI / 4 BAR / 400 kPa

INJ FLOW RATE (cc/min)	950
------------------------	-----

Voltage	8.300	8.500	8.800	9.000	9.300	9.500	9.800	10.000	10.300	10.500	10.800	11.000	11.300	11.500	11.800	12.000	12.300	12.500	12.800	13.000	13.300	13.500	13.800	14.000	14.300	14.500	14.800	15.000	15.300	15.500	15.800	16.000
Offset ms	2.287	2.217	2.147	2.077	2.015	1.953	1.892	1.830	1.775	1.721	1.667	1.612	1.564	1.517	1.469	1.421	1.379	1.336	1.294	1.252	1.215	1.177	1.140	1.103	1.070	1.038	1.005	0.972	0.943	0.914	0.885	0.856



FUEL INJECTOR CHARACTERIZATION

HOLLEY TERMINATOR/DOMINATOR INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

RATED FLOW PER INJECTOR (lb/hr)		79.06		INJECTOR TYPE				High Impedance		MIN INJECTOR OPENING TIME				0.297		
INJECTOR OFF TIME																
Voltage	8.0	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0
Off Time	2.18	1.97	1.78	1.61	1.45	1.31	1.19	1.07	0.97	0.88	0.79	0.72	0.65	0.58	0.53	0.48

58 PSI / 4 BAR / 400 kPa

RATED FLOW PER INJECTOR (lb/hr)				90.69		INJECTOR TYPE				High Impedance		MIN INJECTOR OPENING TIME (ms)				0.297	
INJECTOR OFF TIME																	
Voltage	8.0	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0	
Off Time	2.36	2.13	1.92	1.74	1.57	1.42	1.28	1.16	1.05	0.95	0.86	0.77	0.70	0.63	0.57	0.52	



FUEL INJECTOR CHARACTERIZATION
LINK ECU INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)										828					MINIMUM PULSE WIDTH (ms)										0.297								
INJECTOR DEAD TIME (ms)																																	
Voltage	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																	
Dead Time	2.399	2.150	1.919	1.704	1.507	1.327	1.164	1.018	0.889	0.777	0.682	0.604	0.544	0.500	0.473	0.464																	
SHORT PULSE WIDTH ADDER (ms)																																	
PulseWidth	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000
Modifier	0.000	0.094	0.052	0.017	-0.011	-0.028	-0.034	-0.037	-0.038	-0.032	-0.036	-0.044	-0.048	-0.046	-0.032	-0.031	-0.030	-0.026	-0.022	-0.018	-0.014	-0.010	-0.006	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

58 PSI / 4 BAR / 400 kPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)										950					MINIMUM PULSE WIDTH (ms)										0.297								
INJECTOR DEAD TIME (ms)																																	
Voltage	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																	
Dead Time	2.596	2.327	2.077	1.845	1.631	1.436	1.260	1.101	0.962	0.841	0.738	0.654	0.588	0.541	0.512	0.502																	
SHORT PULSE WIDTH ADDER (ms)																																	
PulseWidth	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000
Modifier	0.000	0.094	0.052	0.017	-0.011	-0.028	-0.034	-0.037	-0.038	-0.032	-0.036	-0.044	-0.048	-0.046	-0.032	-0.031	-0.030	-0.026	-0.022	-0.018	-0.014	-0.010	-0.006	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



FUEL INJECTOR CHARACTERIZATION
MEGASQUIRT/TUNERSTUDIO INJECTOR DATA 30907-1 & 30907-8

You may input one or both curves, but only select the one that matches your base fuel system spressure.
Injector Parameters should be set to SAME

43.5 PSI / 3 BAR / 300 kPa

INJECTOR SIZE EACH (cc)		828
BATTERY OFFSET		
Curve 1		
7.2		241.0
9.6		177.9
12.0		131.3
14.4		96.9
16.8		71.5
19.2		52.8
BANK 1 Dead-Time @ 100%(ms)		1.000

58 PSI / 4 BAR / 400 kPa

INJECTOR SIZE EACH (cc)		950
BATTERY OFFSET		
Curve 2		
7.2		260.8
9.6		192.5
12.0		142.1
14.4		104.9
16.8		77.4
19.2		57.1
BANK 1 Dead-Time @ 100%(ms)		1.000

INJECTOR SMALL PULSEWIDTHS						
New (ms)	0.000	0.397	0.751	1.158	1.546	2.000
Original (ms)	0.000	0.381	0.786	1.190	1.595	2.000

USE BELOW IF USING A PNP ECU

43.5 PSI / 3 BAR / 300 kPa

BATTERY OFFSET	
Voltage	Offset (ms)
6.0	2.665
8.0	2.150
10.0	1.704
12.0	1.327
14.0	1.018
16.0	0.777

58 PSI / 4 BAR / 400 kPa

BATTERY OFFSET	
Voltage	Offset (ms)
6.0	2.884
8.0	2.327
10.0	1.845
12.0	1.436
14.0	1.101
16.0	0.841



FUEL INJECTOR CHARACTERIZATION
EMTRON INJECTOR DATA 30907-1 & 30907-8

REF INJECTOR SIZE (Primary)	
Ref injector size (300 kPa)	828 cc/min
Ref injector size (400 kPa)	950 cc/min
Ref injector size (500 kPa)	1062 cc/min

INJECTOR DEADTIME TABLE (ms)							
Voltage		6.0	8.0	10.0	12.0	14.0	16.0
Fuel Pressure 1 Diff (kPa)	300.0	2.665	2.178	1.691	1.313	1.019	0.791
	310.2	2.685	2.194	1.704	1.323	1.027	0.797
	344.7	2.764	2.259	1.754	1.362	1.057	0.821
	379.2	2.842	2.323	1.804	1.400	1.087	0.844
	413.7	2.921	2.387	1.854	1.439	1.117	0.868
	448.2	3.000	2.452	1.904	1.478	1.147	0.891
	482.7	3.079	2.516	1.953	1.517	1.178	0.914
	517.2	3.157	2.580	2.003	1.556	1.208	0.938
	551.7	3.236	2.645	2.053	1.594	1.238	0.961
	587.2	3.317	2.711	2.105	1.634	1.269	0.985
	620.7	3.394	2.773	2.153	1.672	1.298	1.008

INJECTOR LINEARISATION TABLE (ms)															
0.000	0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	3.000	3.250
0.000	0.094	0.052	0.017	-0.011	-0.034	-0.038	-0.036	-0.048	-0.032	-0.030	-0.022	-0.014	-0.006	0.000	0.000



FUEL INJECTOR CHARACTERIZATION
MAXX ECU INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)	828
MINIMUM PULSE WIDTH (ms)	0.297

INJECTOR DEAD TIME (ms)						
Voltage	8	10	12	14	16	18
Dead Time	2.178	1.691	1.313	1.019	0.791	0.604

SHORT PULSE WIDTH ADDER (ms)																													
Modifyer	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2	2.125	2.250	2.375	2.500	2.625	2.75	2.875	3.000	3.125	3.250	3.375	3.5
Pulse Width	0.000	0.094	0.052	0.017	-0.011	-0.028	-0.034	-0.037	-0.038	-0.032	-0.036	-0.044	-0.048	-0.046	-0.032	-0.031	-0.030	-0.026	-0.022	-0.018	-0.014	-0.010	-0.006	-0.002	0.000	0.000	0.000	0.000	0.000

58 PSI / 4 BAR / 400 kPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)	950
MINIMUM PULSE WIDTH (ms)	0.297

INJECTOR DEAD TIME (ms)						
Voltage	8	10	12	14	16	18
Dead Time	2.357	1.830	1.421	1.103	0.856	0.654

SHORT PULSE WIDTH ADDER (MS)																													
Modifyer	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2	2.125	2.250	2.375	2.500	2.625	2.75	2.875	3.000	3.125	3.250	3.375	3.5
Pulse Width	0.000	0.094	0.052	0.017	-0.011	-0.028	-0.034	-0.037	-0.038	-0.032	-0.036	-0.044	-0.048	-0.046	-0.032	-0.031	-0.030	-0.026	-0.022	-0.018	-0.014	-0.010	-0.006	-0.002	0.000	0.000	0.000	0.000	0.000



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30907-1 & 30907-8

RESISTANCE (Ω)	12.00 Ohm
PEAK CURRENT	4.00 Amp
HOLD CURRENT	0.30 Amp
PEAK TIME	7.00 ms
OFF TIME	Not Available
PIN DRIVE	Saturated
MINIMUM VOLUME	1.00 µl
REF FLOW (300 kPa)	37.73 ml/s
REF FLOW (400 kPa)	16.04 ml/s
REF FLOW (500 kPa)	18.03 ml/s
REF FLOW (600 kPa)	19.71 ml/s

Pulse widths (ms), depended on voltage (V), fuel differential pressure (horizontal, kPa) and fuel volume (vertical, µl)

8 VOLT

M1	v2	Fuel Pressure Differential			
Body	ms	Fuel Cylinder 1 Output Pulse Volume			
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume			
Rows	ul	Fuel Cylinder 1 Output Pulse Volume			
	300	400	500	600	
1.00	2.643	2.982	3.521	3.347	
2.50	2.734	3.061	3.636	3.400	
4.00	2.817	3.120	3.700	3.435	
5.50	2.890	3.210	3.759	3.513	
7.00	3.004	3.287	3.817	3.562	
8.50	3.096	3.377	3.889	3.634	
10.00	3.197	3.470	3.972	3.698	
11.50	3.301	3.557	4.070	3.773	
13.00	3.409	3.643	4.153	3.849	
14.50	3.522	3.736	4.232	3.915	
16.00	3.636	3.832	4.316	3.986	
17.50	3.750	3.927	4.405	4.064	
19.00	3.861	4.022	4.494	4.138	
20.50	3.972	4.116	4.583	4.216	
22.00	4.083	4.211	4.669	4.294	
23.50	4.194	4.305	4.754	4.362	
25.00	4.307	4.405	4.839	4.453	
26.50	4.420	4.505	4.924	4.520	
28.00	4.534	4.605	5.020	4.596	
29.50	4.647	4.707	5.118	4.672	

10 VOLT

M1	v2	Fuel Pressure Differential			
Body	ms	Fuel Cylinder 1 Output Pulse Volume			
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume			
Rows	ul	Fuel Cylinder 1 Output Pulse Volume			
	300	400	500	600	
1.00	1.853	1.999	2.163	2.383	
2.50	1.919	2.067	2.237	2.475	
4.00	2.020	2.115	2.287	2.528	
5.50	2.114	2.189	2.362	2.579	
7.00	2.201	2.298	2.444	2.645	
8.50	2.297	2.377	2.515	2.717	
10.00	2.398	2.473	2.596	2.785	
11.50	2.499	2.568	2.678	2.857	
13.00	2.608	2.662	2.757	2.933	
14.50	2.715	2.750	2.836	3.016	
16.00	2.823	2.838	2.918	3.088	
17.50	2.930	2.926	3.000	3.161	
19.00	3.042	3.020	3.086	3.235	
20.50	3.153	3.117	3.172	3.314	
22.00	3.264	3.214	3.254	3.393	
23.50	3.374	3.312	3.336	3.471	
25.00	3.486	3.411	3.418	3.551	
26.50	3.599	3.510	3.500	3.631	
28.00	3.711	3.609	3.596	3.710	
29.50	3.823	3.703	3.692	3.796	

12 VOLT

M1	v2	Fuel Pressure Differential			
Body	ms	Fuel Cylinder 1 Output Pulse Volume			
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume			
Rows	ul	Fuel Cylinder 1 Output Pulse Volume			
	300	400	500	600	
1.00	1.453	1.538	1.637	1.749	
2.50	1.513	1.598	1.692	1.815	
4.00	1.618	1.650	1.731	1.860	
5.50	1.702	1.739	1.794	1.898	
7.00	1.782	1.828	1.906	1.996	
8.50	1.895	1.910	1.972	2.058	
10.00	2.001	2.006	2.052	2.124	
11.50	2.105	2.092	2.131	2.199	
13.00	2.205	2.178	2.212	2.282	
14.50	2.315	2.272	2.292	2.359	
16.00	2.426	2.367	2.375	2.431	
17.50	2.537	2.461	2.458	2.504	
19.00	2.647	2.554	2.541	2.577	
20.50	2.756	2.646	2.624	2.656	
22.00	2.865	2.738	2.707	2.734	
23.50	2.975	2.831	2.791	2.813	
25.00	3.088	2.931	2.874	2.892	
26.50	3.198	3.031	2.958	2.969	
28.00	3.308	3.127	3.049	3.060	
29.50	3.418	3.223	3.144	3.160	



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30907-1 & 30907-8
(continued)

14 VOLT

M1	v2			
Body	ms	Fuel Pressure Differential		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul			
	300	400	500	600
1.00	1.201	1.267	1.337	1.413
2.50	1.256	1.316	1.383	1.472
4.00	1.364	1.363	1.420	1.511
5.50	1.445	1.456	1.539	1.536
7.00	1.517	1.536	1.599	1.655
8.50	1.625	1.624	1.660	1.716
10.00	1.726	1.714	1.740	1.780
11.50	1.826	1.801	1.820	1.973
13.00	1.936	1.887	1.898	2.006
14.50	2.044	1.981	1.977	2.040
16.00	2.152	2.075	2.061	2.089
17.50	2.261	2.169	2.145	2.165
19.00	2.372	2.262	2.229	2.242
20.50	2.483	2.356	2.313	2.319
22.00	2.594	2.449	2.396	2.396
23.50	2.705	2.542	2.479	2.472
25.00	2.813	2.638	2.562	2.549
26.50	2.920	2.734	2.646	2.625
28.00	3.030	2.829	2.730	2.702
29.50	3.148	2.925	2.817	2.778

16 VOLT

M1	v2			
Body	ms	Fuel Pressure Differential		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul			
	300	400	500	600
1.00	1.021	1.072	1.129	1.186
2.50	1.069	1.121	1.180	1.238
4.00	1.174	1.172	1.224	1.273
5.50	1.251	1.278	1.310	1.351
7.00	1.341	1.338	1.369	1.401
8.50	1.448	1.418	1.432	1.472
10.00	1.546	1.510	1.507	1.536
11.50	1.640	1.596	1.590	1.611
13.00	1.753	1.684	1.668	1.687
14.50	1.860	1.775	1.747	1.754
16.00	1.977	1.869	1.830	1.824
17.50	2.082	1.964	1.915	1.903
19.00	2.183	2.060	2.000	1.976
20.50	2.298	2.151	2.083	2.054
22.00	2.424	2.241	2.168	2.132
23.50	2.536	2.335	2.249	2.200
25.00	2.636	2.445	2.330	2.291
26.50	2.739	2.543	2.414	2.358
28.00	2.847	2.637	2.514	2.434
29.50	2.953	2.727	2.601	2.511



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30907-1 & 30907-8
(continued)

Pulse widths (ms), depended on voltage (V), fuel differential pressure (horizontal, kPa) and fuel volume (vertical, µl)

300 kPa

	8	10	12	14	15
1.00	2.643	1.853	1.453	1.201	1.021
2.50	2.734	1.919	1.513	1.256	1.069
4.00	2.817	2.020	1.618	1.364	1.174
5.50	2.890	2.114	1.702	1.445	1.251
7.00	3.004	2.201	1.782	1.517	1.341
8.50	3.096	2.297	1.895	1.625	1.448
10.00	3.197	2.398	2.001	1.726	1.546
11.50	3.301	2.499	2.105	1.826	1.640
13.00	3.409	2.608	2.205	1.936	1.753
14.50	3.522	2.715	2.315	2.044	1.860
16.00	3.636	2.823	2.426	2.152	1.977
17.50	3.750	2.930	2.537	2.261	2.082
19.00	3.861	3.042	2.647	2.372	2.183
20.50	3.972	3.153	2.756	2.483	2.298
22.00	4.083	3.264	2.865	2.594	2.424
23.50	4.194	3.374	2.975	2.705	2.536
25.00	4.307	3.486	3.088	2.813	2.636
26.50	4.420	3.599	3.198	2.920	2.739
28.00	4.534	3.711	3.308	3.030	2.847
29.50	4.647	3.823	3.418	3.148	2.953

400 kPa

	8	10	12	14	15
1.00	2.982	1.999	1.538	1.267	1.072
2.50	3.061	2.067	1.598	1.316	1.121
4.00	3.120	2.115	1.650	1.363	1.172
5.50	3.210	2.189	1.739	1.456	1.278
7.00	3.287	2.298	1.828	1.536	1.338
8.50	3.377	2.377	1.910	1.624	1.418
10.00	3.470	2.473	2.006	1.714	1.510
11.50	3.557	2.568	2.092	1.801	1.596
13.00	3.643	2.662	2.178	1.887	1.684
14.50	3.736	2.750	2.272	1.981	1.775
16.00	3.832	2.838	2.367	2.075	1.869
17.50	3.927	2.926	2.461	2.169	1.964
19.00	4.022	3.020	2.554	2.262	2.060
20.50	4.116	3.117	2.646	2.356	2.151
22.00	4.211	3.214	2.738	2.449	2.241
23.50	4.305	3.312	2.831	2.542	2.335
25.00	4.405	3.411	2.931	2.638	2.445
26.50	4.505	3.510	3.031	2.734	2.543
28.00	4.605	3.609	3.127	2.829	2.637
29.50	4.707	3.703	3.223	2.925	2.727



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30907-1 & 30907-8
(continued)

500 kPa

	8	10	12	14	15
1.00	3.521	2.163	1.637	1.337	1.129
2.50	3.636	2.237	1.692	1.383	1.180
4.00	3.700	2.287	1.731	1.420	1.224
5.50	3.759	2.362	1.794	1.539	1.310
7.00	3.817	2.444	1.906	1.599	1.369
8.50	3.889	2.515	1.972	1.660	1.432
10.00	3.972	2.596	2.052	1.740	1.507
11.50	4.070	2.678	2.131	1.820	1.590
13.00	4.153	2.757	2.212	1.898	1.668
14.50	4.232	2.836	2.292	1.977	1.747
16.00	4.316	2.918	2.375	2.061	1.830
17.50	4.405	3.000	2.458	2.145	1.915
19.00	4.494	3.086	2.541	2.229	2.000
20.50	4.583	3.172	2.624	2.313	2.083
22.00	4.669	3.254	2.707	2.396	2.168
23.50	4.754	3.336	2.791	2.479	2.249
25.00	4.839	3.418	2.874	2.562	2.330
26.50	4.924	3.500	2.958	2.646	2.414
28.00	5.020	3.596	3.049	2.730	2.514
29.50	5.118	3.692	3.144	2.817	2.601

600 kPa

	8	10	12	14	15
1.00	3.347	2.383	1.749	1.413	1.186
2.50	3.400	2.475	1.815	1.472	1.238
4.00	3.435	2.528	1.860	1.511	1.273
5.50	3.513	2.579	1.898	1.536	1.351
7.00	3.562	2.645	1.996	1.655	1.401
8.50	3.634	2.717	2.058	1.716	1.472
10.00	3.698	2.785	2.124	1.780	1.536
11.50	3.773	2.857	2.199	1.973	1.611
13.00	3.849	2.933	2.282	2.006	1.687
14.50	3.915	3.016	2.359	2.040	1.754
16.00	3.986	3.088	2.431	2.089	1.824
17.50	4.064	3.161	2.504	2.165	1.903
19.00	4.138	3.235	2.577	2.242	1.976
20.50	4.216	3.314	2.656	2.319	2.054
22.00	4.294	3.393	2.734	2.396	2.132
23.50	4.362	3.471	2.813	2.472	2.200
25.00	4.453	3.551	2.892	2.549	2.291
26.50	4.520	3.631	2.969	2.625	2.358
28.00	4.596	3.710	3.060	2.702	2.434
29.50	4.672	3.796	3.160	2.778	2.511

All MoTec data supplied is provided via from MoTec from their in-house testing.



FUEL INJECTOR CHARACTERIZATION
FUELTECH INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

INPUT AMOUNT OF CYLINDERS/ROTORS	4.00 Cyl/Rotors
PRIMARY/SECONDARY TOTAL FLOW	316.24 lb.hr
SINGLE INJECTOR FLOW	79.06 lb/hr

INJECTOR OFF TIME									
Voltage	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Off Time	2.178	1.919	1.691	1.490	1.313	1.157	1.019	0.898	0.791

58 PSI / 4 BAR / 400 kPa

INPUT AMOUNT OF CYLINDERS/ROTORS	4.00 Cyl/Rotors
PRIMARY/SECONDARY TOTAL FLOW	362.75 lb.hr
SINGLE INJECTOR FLOW	90.69 lb/hr

INJECTOR OFF TIME									
Voltage	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Off Time	2.357	2.077	1.830	1.612	1.421	1.252	1.103	0.972	0.856



FUEL INJECTOR CHARACTERIZATION
ACES INJECTOR DATA 30907-1 & 30907-8

43.5 PSI / 3 BAR / 300 kPa

RATED FLOW PER INJECTOR (MG/S):	9960.79
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INJECTOR MINIMUM PULSEWIDTH (MIN FUEL PW)								
Voltage	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
Time(μs)	296.90	296.90	296.90	296.90	296.90	296.90	296.90	296.90

INJECTOR OFF TIME								
Voltage	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
Time(μs)	2664.63	2529.67	2398.97	2272.55	2150.40	2032.52	1918.91	1809.57



FUEL INJECTOR CHARACTERIZATION
UNIVERSAL INJECTOR DATA 30907-1 & 30907-8

INJECTOR FLOW RATE VS. PRESSURE

Pressure Bar	1	2	3	3.5	4	5	6	7	8
Pressure kPa	100	200	300	350	400	500	600	700	800
Pressure psi	14.5	29	43.5	58	58	72.5	87	101.5	116
Flowrate cc/min	596	712	828	889	950	1062	1180	1297	1414
Flowrate lb/hr	56.9	68.0	79.1	84.9	90.7	101.4	112.7	123.9	135.0
Flowrate g/s	7.17	8.57	9.96	10.69	11.43	12.77	14.20	15.61	17.01

BATTERY OFFSET VS. VOLTAGE VS PRESSURE

Pressure Bar		1	2	3	3.5	4	5	6	7	8
Pressure kPa		100	200	300	350	400	500	600	700	800
Pressure psi		14.5	29	43.5	43.5	58	72.5	87	101.5	116
Voltage	4.0	2.687	2.965	3.247	3.514	3.804	4.078	4.356	4.635	4.913
	4.5	2.561	2.826	3.095	3.350	3.626	3.887	4.152	4.418	4.683
	5.0	2.439	2.692	2.947	3.190	3.452	3.702	3.954	4.207	4.459
	5.5	2.320	2.560	2.804	3.035	3.284	3.521	3.762	4.002	4.242
	6.0	2.205	2.433	2.665	2.884	3.121	3.347	3.575	3.803	4.031
	6.5	2.093	2.310	2.530	2.738	2.963	3.177	3.394	3.610	3.827
	7.0	1.985	2.191	2.399	2.596	2.810	3.013	3.218	3.424	3.630
	7.5	1.881	2.075	2.273	2.460	2.662	2.854	3.049	3.244	3.438
	8.0	1.779	1.964	2.150	2.327	2.519	2.701	2.885	3.069	3.253
	8.5	1.682	1.856	2.033	2.200	2.381	2.553	2.727	2.901	3.075
	9.0	1.588	1.752	1.919	2.077	2.248	2.410	2.574	2.739	2.903
	9.5	1.497	1.652	1.810	1.958	2.120	2.273	2.428	2.583	2.738
	10.0	1.410	1.557	1.704	1.845	1.997	2.141	2.287	2.433	2.579
	10.5	1.327	1.464	1.604	1.736	1.879	2.014	2.151	2.289	2.426
	11.0	1.247	1.376	1.507	1.631	1.765	1.893	2.022	2.151	2.280
	11.5	1.171	1.292	1.415	1.531	1.657	1.777	1.898	2.019	2.141
	12.0	1.098	1.212	1.327	1.436	1.554	1.666	1.780	1.894	2.008
	12.5	1.029	1.135	1.243	1.346	1.456	1.561	1.668	1.774	1.881
	13.0	0.963	1.063	1.164	1.260	1.363	1.462	1.561	1.661	1.761
	13.5	0.901	0.994	1.089	1.178	1.275	1.367	1.460	1.554	1.647
	14.0	0.842	0.929	1.018	1.101	1.192	1.278	1.365	1.453	1.540
	14.5	0.787	0.868	0.951	1.029	1.114	1.194	1.276	1.357	1.439
	15.0	0.735	0.812	0.889	0.962	1.041	1.116	1.192	1.268	1.345
	15.5	0.687	0.758	0.831	0.899	0.973	1.043	1.114	1.185	1.257
	16.0	0.643	0.709	0.777	0.841	0.910	0.976	1.042	1.109	1.175
	16.5	0.602	0.664	0.727	0.787	0.852	0.913	0.976	1.038	1.100
	17.0	0.564	0.623	0.682	0.738	0.799	0.856	0.915	0.973	1.032
	17.5	0.530	0.585	0.641	0.694	0.751	0.805	0.860	0.915	0.970
	18.0	0.500	0.552	0.604	0.654	0.708	0.759	0.811	0.862	0.914
	18.5	0.473	0.522	0.572	0.619	0.670	0.718	0.767	0.816	0.865
	19.0	0.450	0.496	0.544	0.588	0.637	0.683	0.729	0.776	0.822
	19.5	0.430	0.474	0.520	0.562	0.609	0.653	0.697	0.742	0.786
	20.0	0.401	0.442	0.485	0.524	0.568	0.609	0.650	0.692	0.733