
From: David M. Trush
To: Laurie A. Decker
CC:
BCC:
Sent Date: 2009-01-27 15:02:08:000
Received Date:
Subject: X001 E7200
Attachments: [E7200 Cobalt Warranty reduction.pptx](#) , [Cobalt 2008MIS 5 phase 26JA09 update.pptx](#)



E7200 Cobalt Warranty reduction.pptx Cobalt 2008MIS 5 phase 26JA09 update.pptx

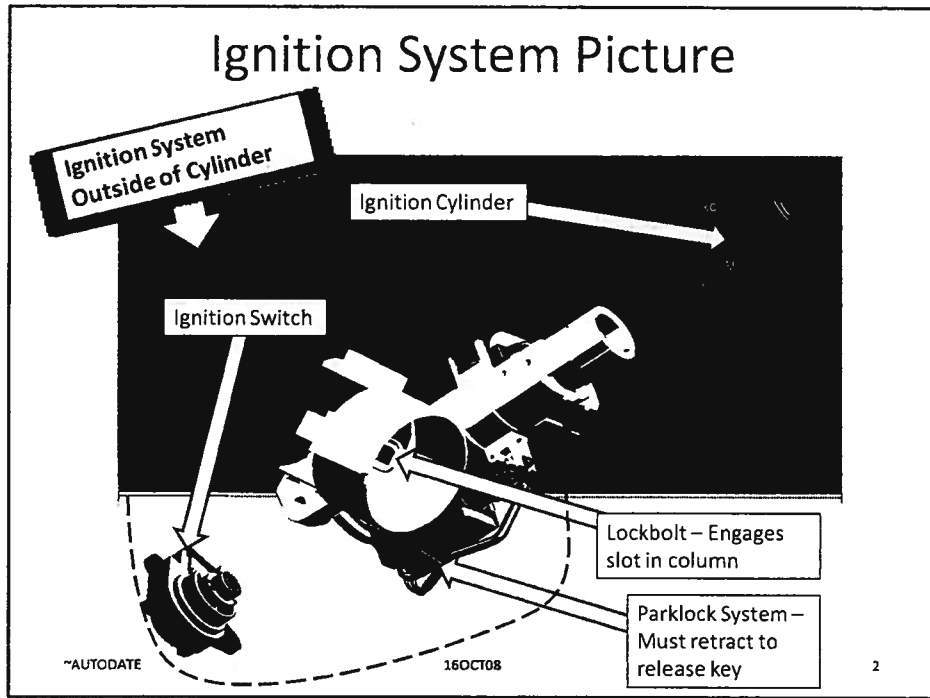
E7200 Cobalt Warranty reduction

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Ignition System Picture



E7200 Data for all GMNA (6MIS)

Detailed Model / Platform	AVS	IPTY	CPV	Total Cases	Total Cost	Plant	Currency
B3-Global Compact Vehicles-LGR	22,880	8.89	1.424	225	48,059,330LGR		USD
Cobalt-Global Compact Vehicles-LGR	119,093	3.61	1.039	893	166,619,670LGR		USD
Malibu-Global Compact Vehicles-RAM	64,973	4.20	0.855	347	54,581,420RAM		USD
Malibu A-Small Vehicles-ZAR	1,058	3.33	0.258	4	310,730ZAR		USD
Malibu C-Compact RWD Performance Vehicles-WIL	7,457	3.22	0.445	34	4,839,850WIL		USD
Vue-Global Compact Crossover Vehicles-RAM	69,128	2.73	0.261	251	23,248,460RAM		USD
6000 Series-Medium Duty Trucks-FLT	506	2.60	1.580	2	1,231,840FLT		USD
Chevy-C2-Global Small Vehicles-RAM	40,787	2.47	0.148	172	7,523,860RAM		USD
Terron-Small Utility-ING	20,006	2.38	0.241	65	6,551,960ING		USD
Equinox-Small Utility-ING	60,080	1.88	0.184	161	14,833,740ING		USD
Elvy-Compact RWD Performance Vehicles-WIL	7,486	1.85	0.232	21	2,618,770WIL		USD
Astra H-Compact Car-ANT	4,178	1.57	0.043	16	670,310ANT		USD
Astra-Global Mid-Size Vehicles-FAI	38,756	1.36	0.121	70	6,837,860FAI		USD
H2-Full-Size Utility-MIS	8,396	1.31	0.143	10	1,048,260MIS		USD
Terrado-LAAM Car Derived Small Pickup-SJC	9,184	1.29	0.070	15	0,182,220SJC		USD
ING	651	1.28	0.058	1	48,470ING		USD
Vibe-Small Vehicles-FRE	22,747	1.21	0.085	30	2,139,170FRE		USD
Cars-LAAM Small Car-SJC	7,778	1.13	0.108	9	868,450SJC		USD
Elle-Global Mid-Size Vehicles-ORI	115,973	1.05	0.114	153	16,410,760ORI		USD
H3-Mid-Size Sport Utility Vehicles-SHR	22,588	1.04	0.099	30	2,784,830SHR		USD
CTS-Global Luxury RWD Vehicles-LGR	40,018	0.87	0.101	61	6,385,890LGR		USD
SRV-Global Luxury RWD Vehicles-LGR	14,836	0.83	0.057	18	1,118,080LGR		USD
Cadillac-Mid-Size Trucks-SHR	38,523	0.85	0.070	53	4,228,150SHR		USD
Upland-Mid-Size Car-OSZ	4,257	0.85	0.132	6	978,030OSZ		USD
Canyon-Mid-Size Trucks-SHR	10,203	0.84	0.062	14	1,027,740SHR		USD
Malibu-Global Mid-Size Vehicles-FAI	89,783	0.83	0.078	86	8,113,330FAI		USD
Malibu-Global Mid-Size Vehicles-ORI	18,173	0.81	16Q6708	28	2,618,260ORI		USD

2008GMNA AT
E7200

Range of GMNA Ignition Systems

	Vol (6MIS)	IPTV (12 MIS)	CPV	Issues (6MIS)	
Cobalt-Global Compact Vehicles- LOR	125,358	10.90	2.066	899	Bad System, Bad Cylinder
Equinox-Small Utility-ING	61,715	3.96	0.388	155	Bad System, Good Cylinder, Switch
CTS-Global Luxury RWD Vehicles-LGR	49,446	1.92	0.201	61	Good System, Bad Cylinder
Outlook-Mid-Size Crossover Vehicles-DEL	21,288	0.00	0.000	0	Good System, Good Cylinder

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Solutions to Decrease Cobalt E700 Warranty

Item	IPV (12 MIS) Improvement	Warranty Savings/veh (12MIS)	piece price impact/veh	Total Savings/Veh	Tooling Cost	Timing (after approved EWG)	Payback (yr)
Change Ign Switch to higher detent force	5.02	\$0.944	\$2.000	\$0.000	\$300,000	30 weeks	Never
Change Ign cylinder on auto trans vehicles to Lambda design (all trans w/ lockbolt removed)	1.92	\$0.361	(\$0.050)	\$0.411	\$90,000	6 weeks	0.529
Retooling steering column shroud to add location feature by ignition cylinder - also change/retool lock housing to add pin for location feature	3.96	\$0.744	\$0.000	\$0.744	\$500,000	60 weeks	1.624
Column Lockbolt removal	1	\$0.188	(\$0.800)	\$1.080	\$30,000	8 weeks	0.067
Change Key from slot to hole	3.5	\$0.638	\$0.000	\$0.638	\$40,000	7 weeks	0.147

Warranty Solutions
DATE

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Recommendations

- Remove Lockbolt
 - Savings of 1 IPTV or \$0.188 CPV
- Change to Lambda style ignition
 - Savings of 1.92 IPTV or \$0.361 CPV
- Change key slot to hole
 - Savings of 3.5 IPTV or \$0.658 CPV

IPTV	CPV
10.90	\$1.286
↓	
3.00	0.564
With full implementation	

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From: <http://cryptome.org/nhtsa101408.htm>

Final Report of Theft Rates for Model Year 2006 Passenger Motor Vehicles Stolen in Calendar Year 2006

Manufacturer	Make/model (line)	Thefts 2006	Production (Mfr's) 2006	2006 Theft rate (per 1,000 vehicles produced)
1. DAIMLERCHRYSLER	DODGE MAGNUM	407	46501	8.7525
((Page 60635))				
2. DAIMLERCHRYSLER	DODGE CHARGER	963	130892	7.3572
3. DAIMLERCHRYSLER	DODGE STRATUS	569	79998	7.1127
4. GENERAL MOTORS	PONTIAC GRAND PRIX	802	116458	6.8866
5. LAMBORGHINI	MURCIELAGO	1	159	6.2893
6. GENERAL MOTORS	CHEVROLET MONTE CARLO	239	38136	6.2670
7. ROLLS ROYCE	PHANTOM	2	339	5.8997
8. DAIMLERCHRYSLER	CHRYSLER SEBRING		43115	5.7984
9. DAIMLERCHRYSLER	CHRYSLER SEBRING CONVERTIBLE		27685	5.4181
10. HONDA	ACURA RSX	69	5111	4.5662
11. DAIMLERCHRYSLER	CHRYSLER 300	991	21111	4.5510
12. GENERAL MOTORS	No Lockbolt GM	716	17039	4.2020
13. MITSUBISHI		118	28101	4.1991
14. GENERAL MOTORS	CHEVROLET MALIBU	740	177282	4.1746
15. SUZUKI	FORENZA	175	42550	4.1128
16. FORD MOTOR CO.	FORD TAURUS	638	156802	4.0668
17. GENERAL MOTORS	CHEVROLET IMPALA	1044	262823	3.9723
18. GENERAL MOTORS	CHEVROLET COBALT	844	229576	3.6762
19. NISSAN	RA	500	136351	3.6676
20. KIA	Lockbolt FI	29	8133	3.5425
21. HYUNDAI	SUNATA	605	170783	3.5251
22. MERCEDES-BENZ	215 (CL-CLASS)	79	22411	3.5251
23. MITSUBISHI	ENDEAVOR	51	14546	3.5061
24. SUZUKI	VERONA	7	2000	3.5000
25. HONDA	HONDA CIVIC	362	103981	3.4814
26. DAIMLERCHRYSLER	CHRYSLER PT CRUISER	457	131960	3.4632
27. DAIMLERCHRYSLER	JEEP GRAND CHEROKEE	303	88383	3.4283
28. BMW	M3	15	4394	3.4137
29. FORD MOTOR CO.	LINCOLN LS	29	8499	3.4122
30. NISSAN	MAXIMA	210	63663	3.2986
31. NISSAN	350Z	100	30640	3.2637

0.4983 TPTV Difference

No Lockbolt

Lockbolt FI

4.1746

Pictures



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		CARS														
		CHEVROLET							PONTIAC							
Commodity Initiative		Chevy Aveo (T250/T255, GMDAT)														
Locksets		GMT001 (HR)	GMX001 (Chevy Cobalt)	GMX386 (Chevy Malibu)	GMX211 (Impala)	GMX 511 Chevy Camaro Convertible	GMX 521 Chevy Camaro	GMX245 (Corvette)	3300 Saturn Astra	GMX384 (Saturn Aura)	GMX023 Saturn SKY	GMX001 G5 PU/SJLT	GMX 381 Pontiac G6	Pontiac G6 (Grand Prix, Australia)	GMX020 Solstice	GMT 125 VIBE
	Ign. Cylinder reset or only in "New key removal" - no (possible or other evidence)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Has one or more start locking columns design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0 = Possible but unproven															
	1 = Proven in laboratory tests in vehicle															
	2 = Proven in field, available															
	3 = N/A and applicable for this program OR agreement not to proceed on this program															
	4 = Proven but															




SRA Chart

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Native File Provided
File Name: Microsoft_Office_Excel_Worksheet1.xlsx

Assembly Plant: N/A Model Year: 2008 Beg. MOB: N/A To End MOB: N/A Platform: N/A	Date Of Analysis: 06-10-2008 Exposure: 6 MIS Labour Ops: 1-E7200 Build Region: N/A	
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Model / Platform Breakdown

Detailed Model / Platform	AVS	IPTV	CPV	Total Cases	Total Cost	Plant	Currency
G6-Global Compact Vehicles-OR	22,880	6.99	1.424	225	46,058.330	LOR	USD
G8-Global Compact Vehicles-OR	119,093	5.51	1.036	883	166,510.570	LOR	USD
H3-Global Compact Vehicle-OR	64,923	4.20	0.655	347	54,591.420	RAM	USD
Meriva A-Small Vehicles-ZAR	1,068	3.33	0.258	4	310.730	ZAR	USD
Solstice-Compact RWD Performance Vehicle-WIL	7,457	3.22	0.445	34	4,838.850	WIL	USD
Vue-Global Compact Crossover Vehicles-RAM	69,128	2.73	0.251	251	23,249.400	RAM	USD
6000 Series-Medium Duty Trucks-FLT	506	2.60	1.590	2	1,231.940	FLT	USD
Chevy C2-Global Small Vehicles-RAM	40,797	2.47	0.149	122	7,523.860	RAM	USD
Torrent-Small Utility-ING	20,006	2.38	0.241	65	6,551.960	ING	USD
Equinox-Small Utility-ING	60,090	1.96	0.194	151	14,836.750	ING	USD
SAV-Compact RWD Performance Vehicle-WIL	7,496	1.95	0.232	21	2,618.770	WIL	USD
Astra H-Compact Car-ANT	4,178	1.57	0.043	16	670.310	ANT	USD
Aura-Global Mid-Size Vehicles-FAI	36,756	1.36	0.121	70	5,937.960	FAI	USD
H2-Full-Size Utility-MIS	6,396	1.31	0.143	10	1,046.260	MIS	USD
Tornado-LAAM Car Derived Small Pickup-SJC	9,164	1.29	0.079	15	916.220	SJC	USD
ING	651	1.26	0.059	1	46.470	ING	USD
Vibe-Small Vehicles-FRE	22,747	1.21	0.085	30	2,139.170	FRE	USD
Corsa-LAAM Small Car-SJC	7,726	1.13	0.108	9	866.450	SJC	USD
G6-Global Mid-Size Vehicles-ORI	115,973	1.05	0.114	153	16,410.700	ORI	USD
H3-Mid-Size Sport Utility Vehicles-SHR	22,589	1.04	0.099	30	2,794.930	SHR	USD
G6-Global Mid-Size Vehicles-ORI	48,048	0.97	0.101	61	6,385.690	LGR	USD
SRX-Global Luxury RWD Vehicle-LGR	14,836	0.93	0.057	18	1,118.080	LGR	USD
Colorado-Mid-Size Trucks-SHR	38,523	0.85	0.070	53	4,296.150	SHR	USD
Allure-Mid-Size Car-OS2	4,257	0.85	0.132	6	979.030	OS2	USD
Canyon-Mid-Size Trucks-SHR	10,203	0.84	0.062	14	1,027.740	SHR	USD
Malibu-Global Mid-Size Vehicles-FAI	89,793	0.83	0.078	96	9,113.330	FAI	USD
Malibu-Global Mid-Size Vehicles-ORI	18,173	0.81	0.072	28	2,518.260	ORI	USD
7000 Series-Medium Duty Trucks-FLT	1,767	0.80	0.354	2	830.590	FLT	USD
Corsa-LAAM Small Car-SCS	3,669	0.74	0.060	3	225.560	SCS	USD
G8-Global RWD-ELI	2,553	0.70	0.048	5	332.340	ELI	USD
LaCrosse-Mid-Size Car-OS2	24,508	0.68	0.097	23	3,367.540	OS2	USD
Savana-Full-Size Vans-WEN	14,678	0.68	0.119	15	2,416.200	WEN	USD
Montana SV6-Crossover Sport Vehicles-DOR	8,109	0.67	0.054	8	632.470	DOR	USD
DTS - Incomplete-Large Car-HAM	887	0.65	0.056	1	85.820	HAM	USD
DTS-Large Car-HAM	27,923	0.61	0.057	22	2,095.730	HAM	USD
Uplander-Crossover Sport Vehicles-DOR	63,090	0.59	0.057	48	4,621.430	DOR	USD
Silverado LD-Full-Size Trucks-TOL	6,581	0.57	0.065	7	760.350	TOL	USD
Sierra LD-Full-Size Trucks-SIL	9,673	0.57	0.072	11	1,360.970	SIL	USD
Lucerne-Large Car-HAM	37,955	0.55	0.055	31	3,232.460	HAM	USD
Aveo-T Car-BUP	40,500	0.54	0.050	35	3,309.120	BUP	USD
Silverado HD-Full-Size Trucks-PON	34,065	0.51	0.067	26	3,395.770	PON	USD
Impala-Mid-Size Car-OS1	181,849	0.51	0.066	95	12,345.790	OS1	USD
Sierra LD-Full-Size Trucks-FTW	20,278	0.48	0.052	17	1,731.030	FTW	USD
Sierra LD-Full-Size Trucks-OSH	39,156	0.47	0.058	31	3,911.510	OSH	USD
Grand Prix-Mid-Size Car-OS2	67,259	0.46	0.087	32	6,054.710	OS2	USD
Silverado ED-Full-Size Trucks-PON	9,350	0.46	0.077	6	979.220	PON	USD
Express-Full-Size Vans-WEN	62,262	0.44	0.056	37	4,491.130	WEN	USD
Impala-Mid-Size Car-OS2	66,221	0.44	0.052	54	6,538.370	OS2	USD
Sierra HD-Full-Size Trucks-PON	11,999	0.44	0.047	8	836.070	PON	USD
Sierra HD-Full-Size Trucks-FLT	21,628	0.42	0.040	13	1,253.810	FLT	USD
Trailblazer-Mid-Size Sport Utility Vehicles-MOR	67,628	0.41	0.036	36	3,150.590	MOR	USD
Silverado LD-Full-Size Trucks-OSH	73,331	0.40	0.059	47	6,989.150	OSH	USD

Envoy-Mid-Size Sport Utility Vehicles-MOR	25,182	0.39	0.027	12	841.170 MOR	USD
Lacetti/Opra/Nubira-J Car-KUN	13,035	0.39	0.048	7	856.070 KUN	USD
4000 Series-Medium Duty Trucks-FLT	2,095	0.39	0.124	1	322.700 FLT	USD
Silverado HD-Full-Size Trucks-FTW	77,882	0.37	0.043	46	5,716.750 FTW	USD
Silverado HD-Full-Size Trucks-FLT	44,383	0.34	0.046	21	2,648.390 FLT	USD
Wave/G3-T Car-BUP	10,410	0.32	0.093	5	1,493.299 BUP	USD
Escalade ESV-Full-Size Utility-ARL	8,722	0.31	0.014	4	176.890 ARL	USD
Silverado HD-Full-Size Trucks-SIL	30,799	0.30	0.032	18	1,904.700 SIL	USD
SAAB 9-5-Saab 9000/9-5-THN	1,445	0.28	0.006	1	20.280 THN	USD
Sierra D-Full-Size Trucks-PON	3,186	0.28	0.039	1	140.300 PON	USD
Matiz-M Car-CHG	5,469	0.23	0.017	2	140.940 CHG	USD
Escalade Full-Size Utility-ARL	17,692	0.21	0.022	5	485.450 ARL	USD
Escalade EXT-Full-Size Utility-SIL	3,175	0.20	0.009	1	43.640 SIL	USD
Avalanche Full-Size Utility-SIL	22,159	0.19	0.027	7	950.660 SIL	USD
Suburban Full-Size Utility-ARL	8,588	0.18	0.008	2	98.130 ARL	USD
Yukon XL-Full-Size Utility-JAN	10,592	0.12	0.005	2	97.300 JAN	USD
Enclave-Mid-Size Crossover Vehicles-DEL	49,207	0.09	0.006	6	422.540 DEL	USD
Suburban Full-Size Utility-SIL	26,292	0.08	0.007	3	245.470 SIL	USD
Yukon Full-Size Utility-JAN	15,742	0.08	0.009	2	212.400 JAN	USD
Yukon Full-Size Utility-ARL	8,126	0.07	0.008	1	115.750 ARL	USD
Acadia-Mid-Size Crossover Vehicles-DEL	63,112	0.03	0.004	3	342.610 DEL	USD
Tahoe Full-Size Utility-JAN	22,048	0.03	0.001	1	48.570 JAN	USD
Tahoe Full-Size Utility-ARL	40,527	0.02	0.003	2	235.450 ARL	USD
Yukon XL Full-Size Utility-ARL	5,489	0.00	0.000	0	0.000 ARL	USD
Astra H-Compact Car-BOC	80	0.00	0.000	0	0.000 BOC	USD
Kodiak-Full-Size Trucks-BOG	23	0.00	0.000	0	0.000 BOG	USD
Captiva-C Car-BUP	48	0.00	0.000	0	0.000 BUP	USD
Epica-V Car-BUP	26	0.00	0.000	0	0.000 BUP	USD
Swift+-T Car-BUP	715	0.00	0.000	0	0.000 BUP	USD
Terrain-C Car-BUP	16	0.00	0.000	0	0.000 BUP	USD
Corvette-RWD Performance Vehicles-BWL	18,163	0.00	0.000	0	0.000 BWL	USD
XLR-RWD Performance Vehicles-BWL	790	0.00	0.000	0	0.000 BWL	USD
Matiz/Spark-M Car-CHG	6	0.00	0.000	0	0.000 CHG	USD
Outlook-Mid-Size Crossover Vehicles-DEL	20,758	0.00	0.000	0	0.000 DEL	USD
Caprice-Global RWD-ELI	8	0.00	0.000	0	0.000 ELI	USD
Lumina-Global RWD-ELI	2	0.00	0.000	0	0.000 ELI	USD
Astra H-Compact Car-ELL	7	0.00	0.000	0	0.000 ELL	USD
5000 Series-Medium Duty Trucks-FLT	3,971	0.00	0.000	0	0.000 FLT	USD
8000 Series-Medium Duty Trucks-FLT	412	0.00	0.000	0	0.000 FLT	USD
4500 Series-Medium Duty Trucks-FUJ	50	0.00	0.000	0	0.000 FUJ	USD
5000 Series-Medium Duty Trucks-FUJ	148	0.00	0.000	0	0.000 FUJ	USD
Astra H-Compact Car-GLI	605	0.00	0.000	0	0.000 GLI	USD
SAAB 9-3-Global Mid-Size Vehicles-GRZ	1,294	0.00	0.000	0	0.000 GRZ	USD
Suburban Full-Size Utility-JAN	6,090	0.00	0.000	0	0.000 JAN	USD
Forenza-J Car-KUN	6,006	0.00	0.000	0	0.000 KUN	USD
Reno-J Car-KUN	1,662	0.00	0.000	0	0.000 KUN	USD
STS-Global Luxury RWD Vehicles-LGR	11,565	0.00	0.000	0	0.000 LGR	USD
9-7x-Mid-Size Sport Utility Vehicles-MOR	2,613	0.00	0.000	0	0.000 MOR	USD
Captiva-Global Compact Crossover Vehicles-RAM	265	0.00	0.000	0	0.000 RAM	USD
Captiva Maxx-Global Compact Crossover Vehicles	1,801	0.00	0.000	0	0.000 RAM	USD
Tracker-LAAM SUV-ROS	1,476	0.00	0.000	0	0.000 ROS	USD
Vectra C-Mid-Size Car-RUS	53	0.00	0.000	0	0.000 RUS	USD
H3-Mid-Size Sport Utility Vehicles-STR	4	0.00	0.000	0	0.000 STR	USD
BLS-Global Mid-Size Vehicles-THN	57	0.00	0.000	0	0.000 THN	USD
SAAB 9-3-Global Mid-Size Vehicles-THN	6,626	0.00	0.000	0	0.000 THN	USD
6000 Series-Medium Duty Trucks-TOL	21	0.00	0.000	0	0.000 TOL	USD
7000 Series-Medium Duty Trucks-TOL	1,427	0.00	0.000	0	0.000 TOL	USD
Silverado HD-Full-Size Trucks-TOL	786	0.00	0.000	0	0.000 TOL	USD
G2X-Compact RWD Performance Vehicles-WIL	0	0.00	0.000	0	0.000 WIL	USD
Combo C-Small Vehicles-ZAR	2	0.00	0.000	0	0.000 ZAR	USD
Corsa D-Small Vehicles-ZAR	1	0.00	0.000	0	0.000 ZAR	USD



R and R Ignition Cylinder (E7200)

SMT: Body/Exterior
EGM: John Dobish
CPV: \$0.22@2MIS

Area: Handle/Locksets
DE: David Trush
IPTV: 1.3@2MIS

Initiation Date: Jan 2008
PRTS/PRR: 320883
JDPower:

Problem Description:

Trigger in ignition cylinder was breaking during hard key insertion. This resulted in a no turn condition

Root Cause:

Triggers were being damaged during the forming stage in the powder metal manufacturing process

Containment:

Sorting started at supplier to visually inspect for chipped component

Solution:

Material carbon content revised to make material robust in manufacturing process. Material changed from FN-0208-80HT to FN-0205-80HT. Also revised PFMEA to discard first and last parts that come off of molding tool.

Update 26JA09 – Changing to Lambda Design Cylinder

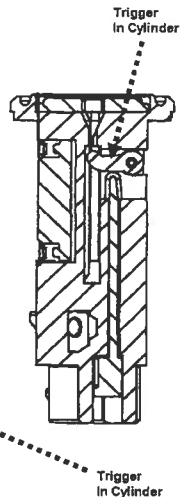
Impact Summary:

0.4 IPTV @2MIS, \$0.03 CPV@ 2MIS

Update 26JA09 – 1.92 IPTV@ 12MIS

Fix Confirmation:

Test developed to simulate issue. Revised material increases strength 4 times over original material with simulated crack from process.



Implementation Plan Breakpoints:

Sorting started: 09NG07

Carbon content change: 10JA08

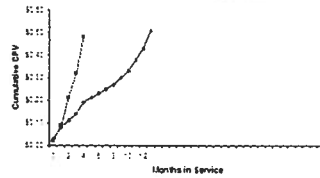




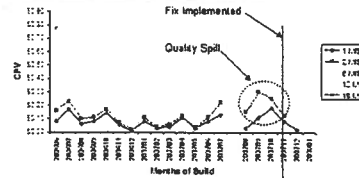
R and R Ignition Cylinder (E7200)

Program	Description	Pre-Change 2MIS			Post-Change 2MIS			TID	Comment
		CPV	IPTV	JDP	CPV	IPTV	JDP		
GMNA	R & R Ign	\$0.05	0.38		\$0.03	0.32			
GMX/TD01	R & R Ign	\$0.22	1.30		\$0.03	0.40		1/10/08	Supplier Quality Issue

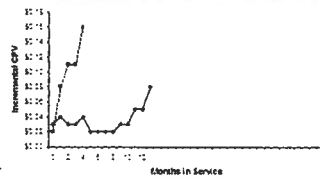
Cumulative Fan Chart - CPV (SOLD only)



Trend Chart - Cost Per Vehicle (SOLD only)



Incremental Fan Chart - CPV (SOLD only)



Trend Chart - Incidents per Thousand Vehicles (SOLD only)

