

**Test report for Coating Change to Hex Cr free**

11.8.07

Mar	Apr	May
<i>[Signature]</i>	<i>[Signature]</i>	

1/2

For Honda use only

Tier 1 Company name and supplier number		AGC Automotive Canada, Inc. 500909-01	
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**1. Test sample**

Plating supplier name	ION Technologies	Location	Ridgway, PA
Type of plating (drawing spec #)	MfZn2-C HES 2003-03		
Part name / number	Insert Nut / 73200-SJC-A010-27		
Part or object tested (if not actual part)	Actual part		
Reason of choosing above object or substitute part	Actual part to meet requirements		
Plating line # or name	Electro Line		

**2. Plating system**

Item	Hex Cr free system	Reference (current system)
Type of process (barrel or rack)	Barrel	Barrel
Type of bath, name of line	Acid Chloride Zinc	Acid Chloride Zinc
Brightner name and supplier	Extreme 110	Columbia Chemical
Chromate chemical and supplier	Tri V 121	Columbia Chemical
Plating date of test samples	February 5th 2007	
Possible date to start conversion		

**3. Hex Chrome free condition**

Item	Sample cond.			M/P control range			Check method
	Lower	Typical	Upper				
Temp. (°C)	20	30	40	21	~	39	Heater Thermostat
Soaking time(sec)	45	60	90	46	~	89	Timer
*pH (Lower conc. is High pH #)	1.6	2	2.5	1.7	~	2.4	pH Meter
Chemical "A"	5%	8%	10%	6%	~	9%	Titration(Tri- v 121)
Chemical "B"					~		
Chemical "C"					~		
Drying temp. (°C)	45	55	65	46	~	64	Heater Thermostat
Drying time (sec)	120	180	300	121	~	299	Timer

\* pH will be determined by lowering/raising concentration levels

**4. Corrosion test data**

Double test term of red rust for Zn, X1.5 for Zn alloy plating

Test term:  ~

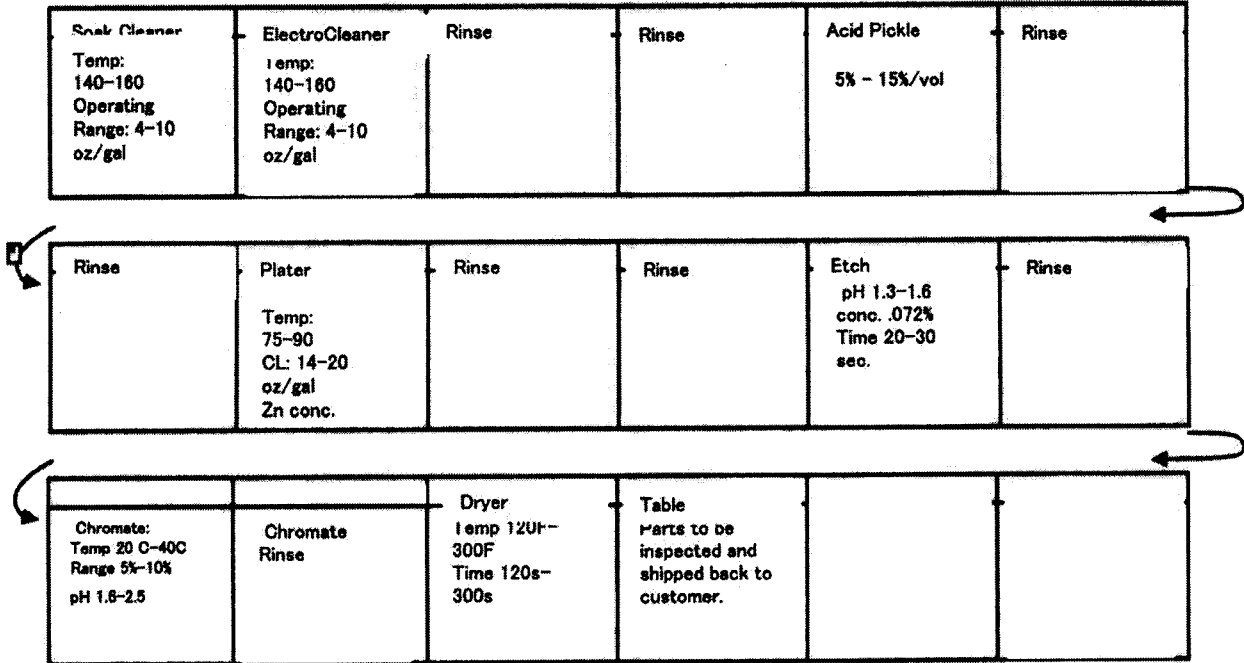
ex. If spec = 120 hrs to red rust, run to 240 hrs

	Time:	White Rust			Red Rust	Extended test
		Req.	72	120	144	
Hex Cr free Upper control range		S	S	A	C	
Hex Cr free Typical control range		S	S	A	C	
Hex Cr free Lower control range		S	S	A	C	
Current Hex Cr Typical		S	S	S	C	
Judgement	S: no White Rust, A: Slightly White Rust (<5%), B: White Rust over 5%, C: No Red Rust, D: Slightly Red Rust (<5%), E: Red					

< Summary, Conclusion >

Parts were ran 240 hours. There was an examination at 72 hours.

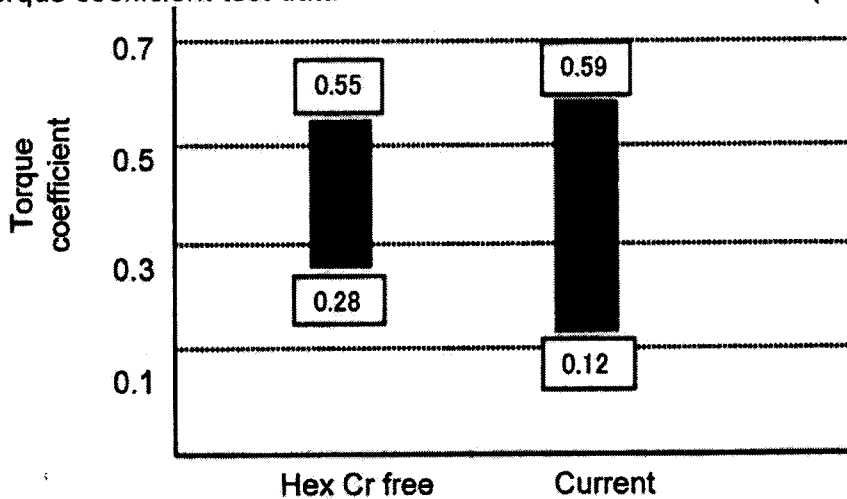
Hex chrome free plating process flow and control points



Addendum 2

Torque coefficient test data

n ≥ 20 (3 sigma data)



Attached detailed test results, current & new for all required tests (# of pgs 2)

Attached detailed process quality control (PQCT) of plating process (# of pgs)