Customer Notification

Subject: SIERRA Compressor Motor

CN-GLNAEN-001
Rev No: 4
April 26, 2018

Notification Type	
☐ New Product	☐ Operations Change
☒ Product Change	☐ Supplier Change

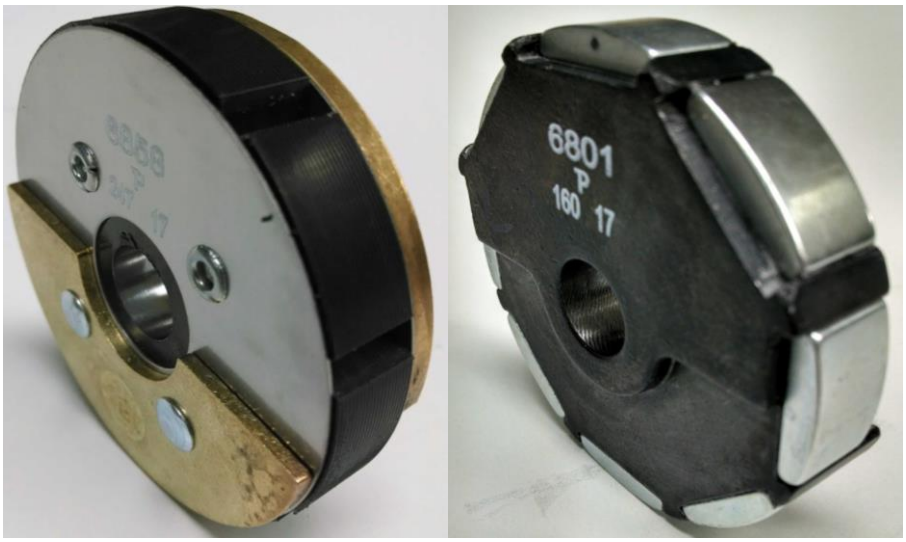
Description of Change

We would like to inform our valued customers of a motor change to our 12/24V, 24/48V, and 600V SIERRA compressor series. We have taken steps to update our motor design as well as increase our overall performance. We have eliminated the epoxy used to secure the magnets on the exterior of the rotor, moved them to the interior of the rotor, and added stainless steel end plates. This change will act as a more effective magnet retention system with the additional benefit of protecting the magnets during the assembly process. This is an improved assembly method that will also address an environmental safety concern at our facility caused by the epoxy. The information shown below will detail this change as well as address which compressor bill of materials will be effected.

Figure 1: Side by Side Comparison (Top View)

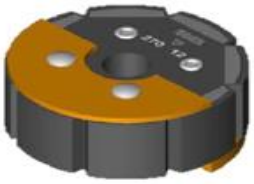
New Rotor Configuration **Current Rotor Configuration**

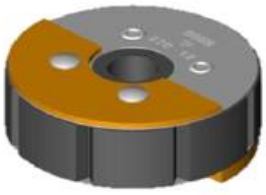
Figure 2: Side by Side Comparison (Side View)

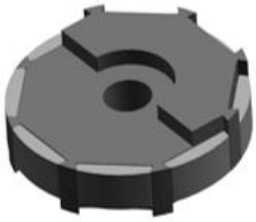


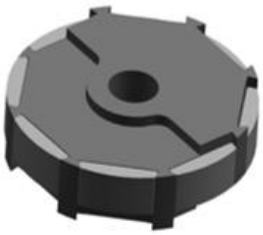
New Rotor **Current Rotor**

Figure 3: CAD File View









*View without stainless steel endcap

*Top View *Bottom View

New Rotor Configuration **Current Rotor Configuration**

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Production Timing:

Below is a comprehensive list of compressor part numbers that will be affected by this change. The current part numbers and model numbers will not be changed. The updated motor will be included within the part numbers shown below. This change will be implemented as a running change in the 4th quarter of 2017.

Compressor Model Number	*Compressor BOM*	*Connection Description*
SIERRA02-0434Y3	SIERRA00163	3⁄8" Suction, 5⁄16"; Discharge Copper Tubes
SIERRA02-0434Y3	SIERRA00164	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA03-0434Y3	SIERRA00150	3⁄8" Suction, 5⁄16"; Discharge Copper Tubes
SIERRA03-0434Y3	SIERRA00170	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA03-0434Y3	SIERRA00171	3⁄8" Suction, 5⁄16"; Discharge Copper Tubes, High Ambient
SIERRA06-0434Y3	SIERRA00182	3⁄8" Suction, 5⁄16"; Discharge Copper Tubes
SIERRA06-0434Y3	SIERRA00184	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA03-0982Y3	SIERRA00120	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA03-0982Y3	SIERRA00186	1⁄2" Suction, 5⁄16"; Discharge Copper Tubes
SIERRA03-0982Y3	SIERRA00225	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA03-0982Y3	SIERRA00230	#10 Suction, #8 Discharge; SAE MIO Fittings, Metric Terminal
SIERRA06-0982Y3	SIERRA00205	3⁄8" Suction, 5⁄16"; Discharge Copper Tubes
SIERRA06-0982Y3	SIERRA00206	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA06-0982Y3	SIERRA00221	M24 Suction, M22 Discharge; Metric MIO Fittings, Metric Terminal
SIERRA06-0982Y3	SIERRA00208	#10 Suction, #8 Discharge; SAE MIO Fittings / Dual
SIERRA10-0982Y3	SIERRA00072	#10 Suction, #8 Discharge; SAE MIO Fittings
SIERRA10-0982Y3	SIERRA00114	#10 Suction, #8 Discharge; SAE MIO Fittings / Dual

Impact of Changes:
This motor change will result in an improved efficiency. There will be no impact on sound or agency approvals. The charts shown below detail the comparison between the current motor configuration and the new motor design:

Figure 4: Performance Overview

SIERRA02-0434Y3

		Current Motor	*New Motor*
12V	*Max Speed (RPM)*	*3,300*	*3,137*
	Current (A)	*32.60*	*28.70*
	Power (W)	*391*	*334*
	Capacity (BTU/HR)	*3,205*	*3,028*
	EER	*8.19*	*8.79*
	Max Speed (RPM)	*6,520*	*6,495*
	Current (A)	*41.50*	*34.77*
	Power (W)	*996*	*834*
	Capacity (BTU/HR)	*6,536*	*6,609*
	EER	*6.56*	*7.92*

ARI Rating Conditions; 95°F (35°C) ambient, 45°F (7.2°C) evaporator, 130°F (54.4°C) condenser, 65°F (18.3C) suction

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SIERRA03-0434Y3

		Current Motor	New Motor
24V	Max Speed (RPM)	3,609	3,508
	Current (A)	15.8	14.73
	Power (W)	379	354
	Capacity (BTU/HR)	3,564	3,364
	EER	9.40	9.51
48V	Max Speed (RPM)	6,529	6,494
	Current (A)	17.8	16.27
	Power (W)	854	781
	Capacity (BTU/HR)	6,561	6,598
	EER	7.68	8.45

**ARI Rating Conditions; 95°F (35°C) ambient, 45°F (7.2°C) evaporator, 130°F (54.4°C) condenser, 65°F (18.3C) suction*

SIERRA06-0434Y3

		Current Motor	New Motor
150V	Max Speed (RPM)	2,900	2,887
	Current (A)	2.0	2.0
	Power (W)	300	300
	Capacity (BTU/HR)	2,687	2,675
	EER	8.96	8.92
300V	Max Speed (RPM)	6,000	5,979
	Current (A)	2.5	2.4
	Power (W)	750	720
	Capacity (BTU/HR)	5,887	6,022
	EER	7.85	8.36

**ARI Rating Conditions; 95°F (35°C) ambient, 45°F (7.2°C) evaporator, 130°F (54.4°C) condenser, 65°F (18.3C) suction*

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***SIERRA03-0982Y3**

		Current Motor	Current High Cap Motor	New Motor
24V	Max Speed (RPM)	3,665	4,240	3,439
	Current (A)	35.90	43.20	31.73
	Power (W)	862	1,037	762
	Capacity (BTU/HR)	8,232	9,947	7,669
	EER	9.55	9.59	10.07
48V	Max Speed (RPM)	6,520	6,525	6,495
	Current (A)	40.30	40.50	37.10
	Power (W)	1,934	1,944	1,781
	Capacity (BTU/HR)	15,164	15,032	15,243
	EER	7.84	7.73	8.56

*ARI Rating Conditions; 95°F (35°C) ambient, 45°F (7.2°C) evaporator, 130°F (54.4°C) condenser, 65°F (18.3C) suction

***SIERRA06-0982Y3**

		Current Motor	New Motor
150V	Max Speed (RPM)	3,200	3,364
	Current (A)	4.6	4.9
	Power (W)	690	730
	Capacity (BTU/HR)	6,649	7,548
	EER	10.1	10.3
300V	Max Speed (RPM)	6,450	6,496
	Current (A)	6.1	5.9
	Power (W)	1,830	1,770
	Capacity (BTU/HR)	15,166	15,024
	EER	8.3	8.5

*ARI Rating Conditions; 95°F (35°C) ambient, 45°F (7.2°C) evaporator, 130°F (54.4°C) condenser, 65°F (18.3C) suction

***SIERRA10-0982Y3**

		Current Motor	New Motor
600V	Max Speed (RPM)	6,500	6,482
	Current (A)	3.0	3.0
	Power (W)	1,800	1,800
	Capacity (BTU/HR)	15,121	15,121
	EER	8.4	8.4

*ARI Rating Conditions; 95°F (35°C) ambient, 45°F (7.2°C) evaporator, 130°F (54.4°C) condenser, 65°F (18.3C) suction

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Shipping and Logistics

This change will be implemented as a running change as inventory is depleted. The target changeover is set for the 4th quarter of 2017. We will not ship skids with mixed product.

Questions

Should you have additional questions that have not been addressed, please do not hesitate to contact your local Tecumseh Sales Representative or Technical Service Team (800.211.3427). For more information on our Masterflux compressor series, please visit our website masterflux.com. You can also follow us on twitter @masterflux.