

**Gen2® 5T AC Gearless Machine:  
ANSI- and EN81-Compliant  
(regenerative drive)**

**Spare Parts Leaflet**

**06-AAA20220AS**

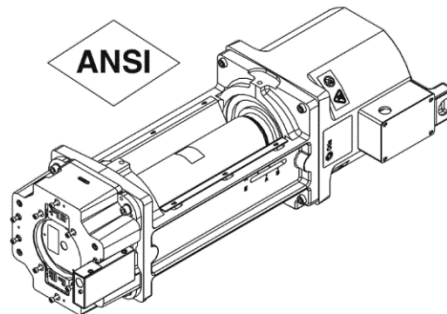
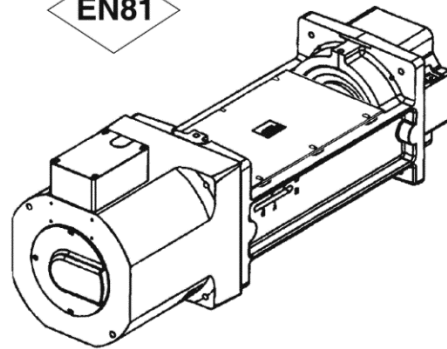
**February 1, 2023 / Page 1 of 15**

# OBSOLESCENCE NOTICE

The product covered in this SPL has been designated as obsolete and is no longer supported. See TIP 32.2-1, *Obsolete Components*, for potential upgrade. Replacement lower level parts listed within and unique to this design are not being restocked when depleted. Some of these parts, depending on availability and other factors, may be quoted through Customer Service, but most will have extended lead times and increased cost due to low volume production.

**Gen2® 5T (Regenerative Drive Application)**

06	AAA20220	AS
06	ABA20220	AS



This document does not contain any technical data subject to EAR or ITAR

**SERVICE ENGINEERING**

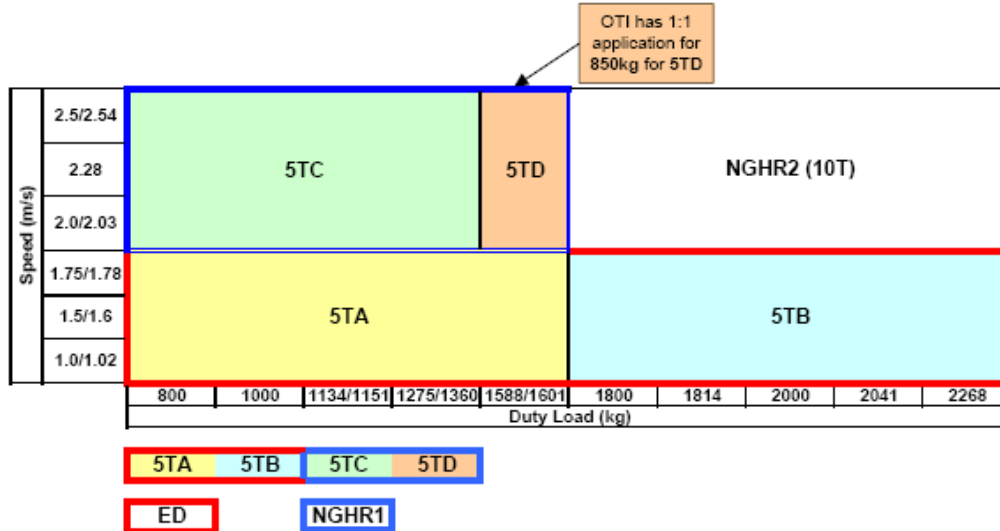
**Otis Elevator Company**

**Bloomfield, Connecticut USA**

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**Leaflet Description**

This leaflet details spare parts for the Gen2® R2 five ton (5T) sheave shaft load, extended duty, permanent magnet (PM) AC three-phase, high voltage (for regenerative drive) motor gearless machine for ANSI-compliant North and South American Area (NSAA) and EN81-compliant European and Asian markets.



**Leaflet Revisions**

Date Revised	Subject Matter Expert	Reason for Revision
March 10, 2005	Ben Watson	New SPL
March 25, 2006	Ben Watson	Updated parts list; Re-arranged layout
July 25, 2006	Ben Watson	Added AAA341BBV1 and AAA283AVA1.
January 15, 2007	Scott Boulanger	Added rationalized encoder.
April 10, 2007	Scott Boulanger	Changed views to show new sheave guard and update part numbers pp 9–11.
November 20, 2008	David Torlai	Update with Japan and Korea data
July 28, 2010	Val Sheynkman	Updated the history page with the correct SME name
June 22, 2011	Val Sheynkman	Corrected Ref. 3 on p. 12
August 17, 2011	Val Sheynkman	Added new p. 14
January 7, 2015	Kyle Pereira	Updated p. 13 by removing NOTES 1 through 3
August 3, 2016	Kyle Pereira	Updated p. 13, added new p. 14
September 14, 2022	Juan Murillo	Updated to include OBSOLESCENCE note on cover
February 1, 2023	Juan Murillo	Updated OBSOLESCENCE note on cover

Continued on next page.

**Related Drawings**

<b>Drawing No.</b>	<b>Title</b>	<b>Drawing No.</b>	<b>Title</b>
AAA20220AS	AC Gearless Machine Permanent Magnet 3 Phase Motor (5.0 T Regenerative—513V)	ABA20220AS	AC Gearless Machine Permanent Magnet 3 Phase Motor (5.0 T Regenerative—513V)
AAA633Z	Encoder (2-channel)	AAA633AE	Encoder (3-channel)

**Related Documents**

<b>Document ID</b>	<b>Title</b>
Otis Doc. 54694	Functional Requirements for Gen2 R2 (extended duties) PM AC Gearless Machine
Otis Doc. 55763	Gen2—5T Machine Basic Data
SPL 07-TBA20236K	5T NAA/ANSI Brake for Gen2 System
SPL 07-TBA20236H	5T EN Brake for Gen2 System
TIP 6.1.11-15	Gen2® Main and Rescue Encoder Retrofit

**Subject Matter Expert**

<b>Name</b>	<b>Department</b>
Juan Murillo	OSC Service Engineering

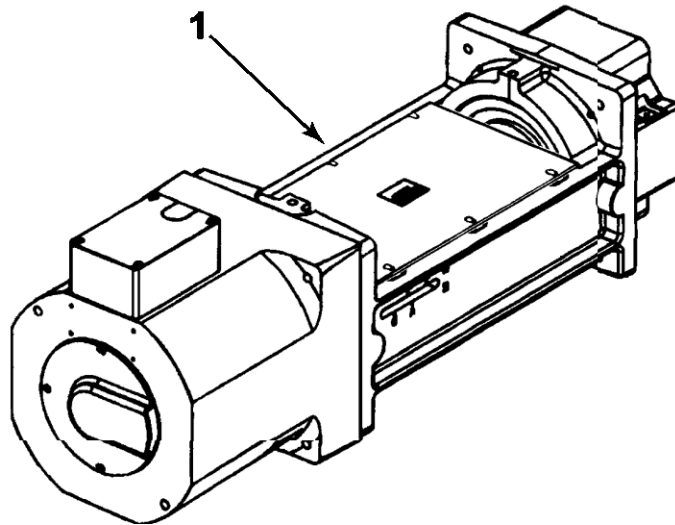
**About Spare Parts Leaflets...**

This document lists the lowest replaceable units (LRUs) for the standard version of the product. The LRUs are chosen by a team of Otis associates representing engineering and manufacturing.

While goal of this document is to make parts identification as easy as possible, the document cannot be all-inclusive. Elevator and escalator contracts classified as “special” or “custom” are not addressed here. For such contracts, please refer to specified information, the contract folder, TIPS, Field Education Articles, Construction Letters, etc. for further information.

If you have any suggestions about this document, please contact the subject matter expert listed on this page.

**EN81**  
**KOREA**



**AAA20220AS**  
**ABA20220AS**

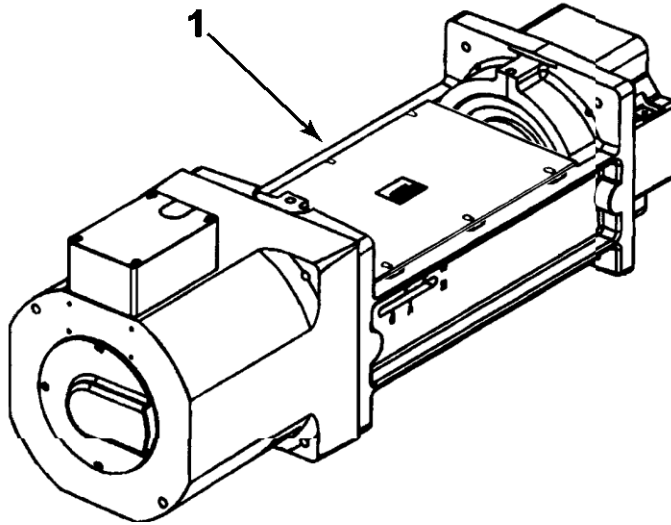
REF. No.	PART No.	APPLICATION	DUTY LOAD (kg)	SPEED (m/s)	DESCRIPTION	REMARKS
1	AAA20220AS11 AAA20220AS4 ABA20220AS11 ABA20220AS1	EN81	1135–1600	1.0–1.75	5 V 2-Channel Incremental Encoder w/ 6.0 Meter Cable (A_A633Z4) and 20 VDC Brake	5TA, Gen2, ED (REGEN)
	ABA20220AS5	Korea		1.0		
	ABA20220AS21		1150	1.0–1.75		
	ABA20220AS22		1600	1.0		
	ABA20220AS25		1150			
	ABA20220AS26		1600			
	AAA20220AS12 AAA20220AS2 ABA20220AS12 ABA20220AS2	EN81	1800–2000	1.0–1.6		5TB, Gen2, ED (REGEN)
	AAA20220AS13 AAA20220AS3 ABA20220AS13 ABA20220AS3			1.75		
	AAA20220AS64 AAA20220AS54 ABA20220AS64 ABA20220AS51			1275		2.0

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# EN81 Machine Assembly

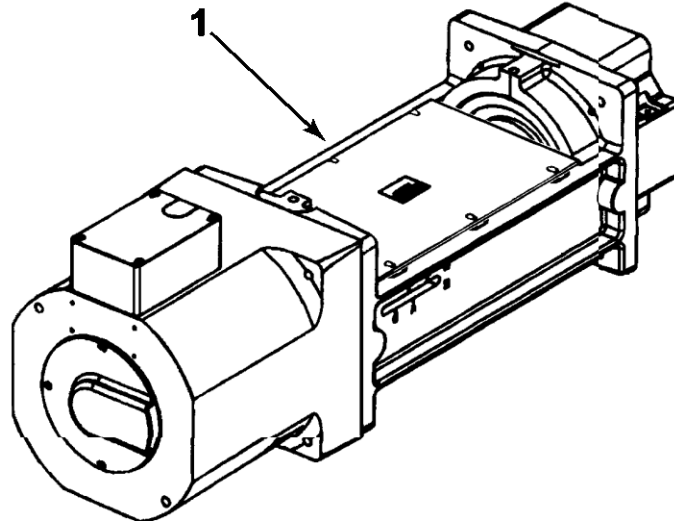
**06-AAA20220AS**

**EN81**  
**KOREA**



REF. No.	PART No.	APPLICATION	DUTY LOAD (kg)	SPEED (m/s)	DESCRIPTION	REMARKS
	<b>AAA20220AS</b> <b>ABA20220AS</b>					
1	ABA20220AS15	EN81	1135–1600	1.0	5V 2-Channel Incremental Encoder with 6.0 Meter Cable (A_A633Z4) and Brakeless, 20 VDC	5TA, Gen2, ED (REGEN)
	AAA20220AS62		1275	2.25–2.5		5TC, NGH, R1 (REGEN)
	AAA20220AS52					
	ABA20220AS62					
	ABA20220AS52					
	AAA20220AS63		1600	2		5TD, NGH, R1 (REGEN)
	AAA20220AS53					
	ABA20220AS63					
	ABA20220AS53					
AAA20220AS64	Korea	2.25–2.5	2			
AAA20220AS54						
ABA20220AS64						
ABA20220AS54	2	2.25–2.5				
ABA20220AS55						
ABA20220AS56						

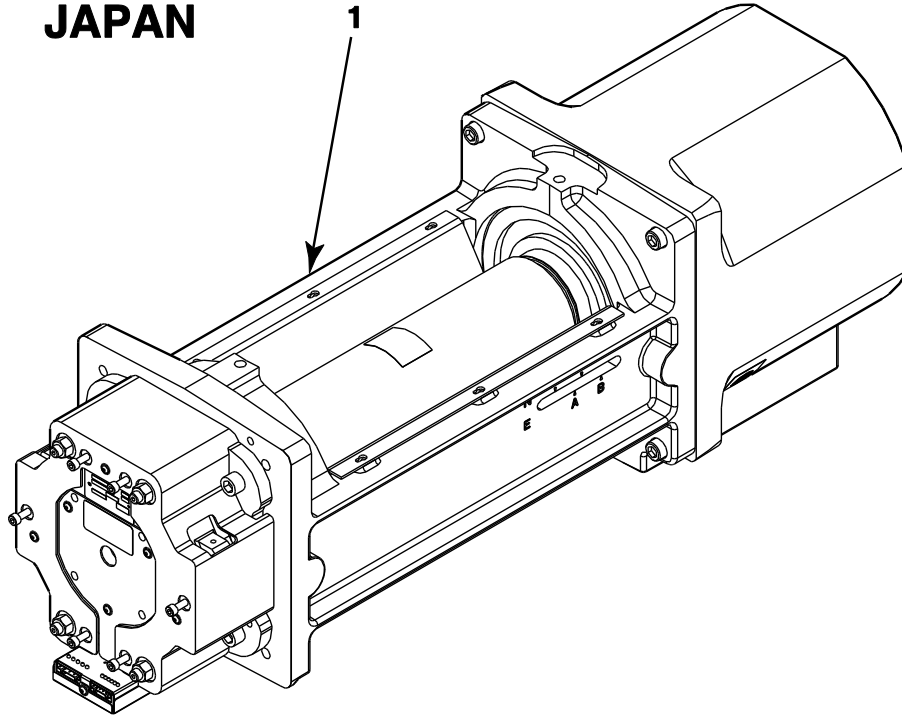
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**AAA20220AS**  
**ABA20220AS**

REF. No.	PART No.	APPLICATION	DUTY LOAD (kg)	SPEED (m/s)	DESCRIPTION	REMARKS	
1	ABA20220AS101	EN81 (Korea)	1135–1600 (1150)	1.75	5V 2-Channel Rationalized Encoder with 6.0 Meter Cable (A_A633Z4) and 48 V Brake	5TA, Gen2, ED (REGEN)	
	ABA20220AS105			1.0		5TC, NGH, R1 (REGEN)	
	ABA20220AS151		1275 (1150)	2.0			
	ABA20220AS152			2.25–2.5			
	ABA20220AS122	Korea	1600	1.75		5TA, Gen2, ED (REGEN)	
	ABA20220AS126			1.0		5TD, NGH, R1 (REGEN)	
	ABA20220AS155			2.0			
	ABA20220AS156			2.25–2.5			
	ABA20220AS102	EN	1800–2000	1.0–1.6		5TB, Gen2, ED (REGEN)	
	ABA20220AS103			1.75			
	ABA20220AS153		1600	2.0			5TD, NGH, R1 (REGEN)
	ABA20220AS154			2.25–2.5			

**JAPAN**

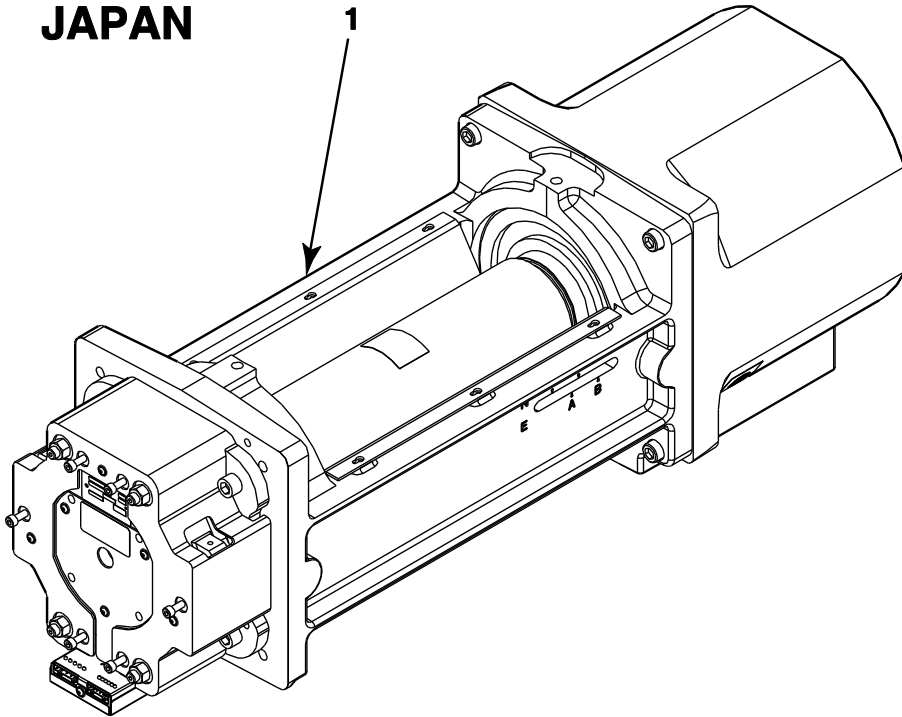


**AAA20220AS  
ABA20220AS**

REF. No.	PART No.	APPLICATION	DUTY LOAD (kg)	SPEED (m/s)	DESCRIPTION	REMARKS
1	AAA20220AS71 ABA20220AS71	EN81 / Japan	1275	2	5V 2-Channel Incremental Encoder with 6.0 Meter Cable (A_A633Z4) and 20 VDC Brake	5TC, NGH, R1 (REGEN)
	AAA20220AS72 ABA20220AS72			2.25–2.5		
	AAA20220AS73 ABA20220AS73		1600	2		5TD, NGH, R1 (REGEN)
	AAA20220AS74 ABA20220AS74			2.25–2.5		
	AAA20220AS75 ABA20220AS75		850 (1:1 roping)	2		
	AAA20220AS76 ABA20220AS76			2.25–2.5		
	ABA20220AS77		600 (1:1 roping)	2		
	ABA20220AS78			2.25–2.5		5TC, NGH, R1 (REGEN)

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**JAPAN**



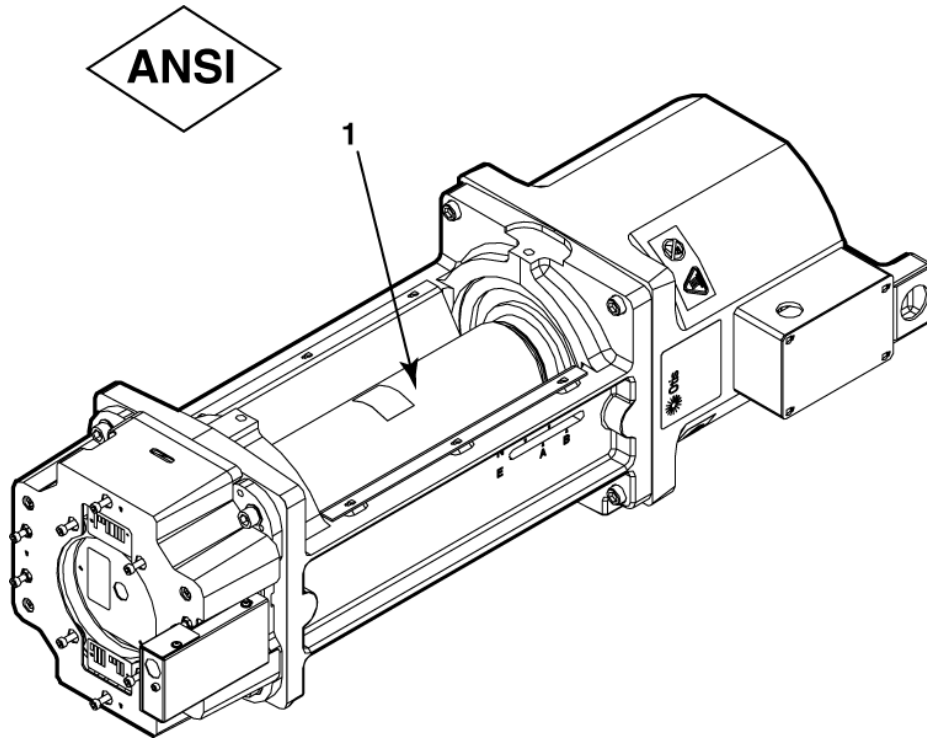
**AAA20220AS  
ABA20220AS**

REF. No.	PART No.	APPLICATION	DUTY LOAD (kg)	SPEED (m/s)	DESCRIPTION	REMARKS
1	ABA20220AS171	Japan	1275	2.0	5 V, 2-Channel Rationalized Encoder with 6.0 Meter Cable (A_A633Z4) and 48 V Brake	5TC, NGH, R1 (REGEN)
	ABA20220AS172			2.25-2.5		
	ABA20220AS173		1600	2.0		5TD, NGH, R1 (REGEN)
	ABA20220AS174			2.25-2.5		
	ABA20220AS175		850 (1:1 roping)	2.0		
	ABA20220AS176			2.25-2.5		
	ABA20220AS177		600 (1:1 roping)	2.0		5TC, NGH, R1 (REGEN)
	ABA20220AS178			2.25-2.5		



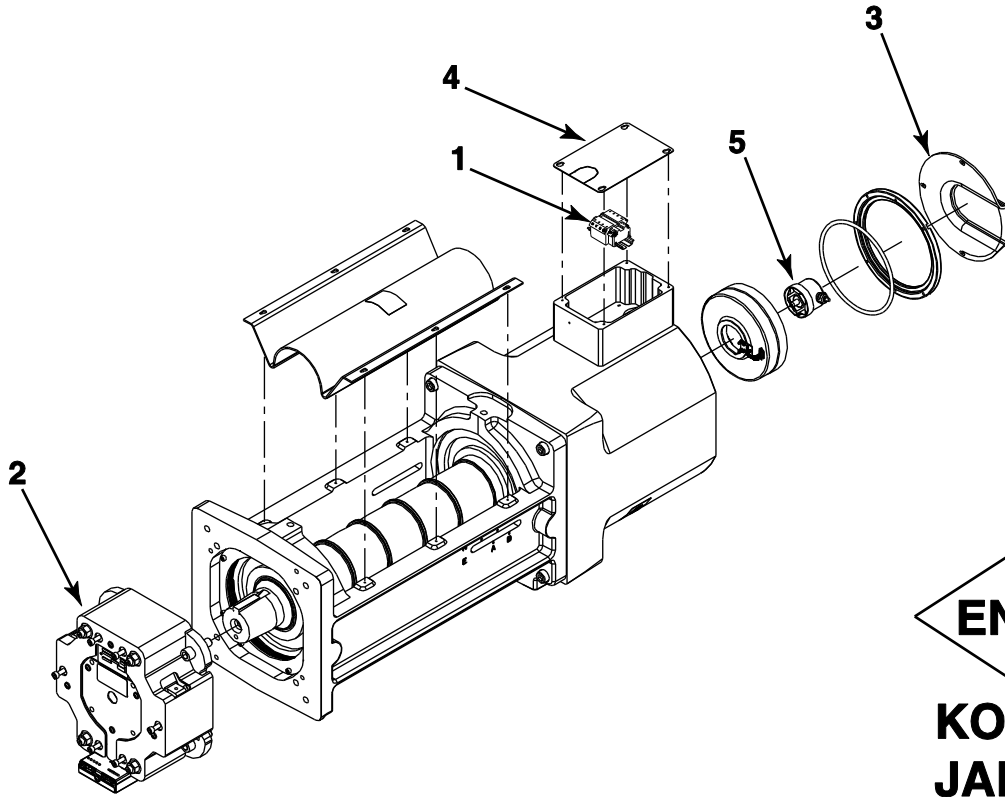
# NSAA Machine Assembly with ASME A17.1 Compliant Brake

**06-AAA20220AS**




REF. No.	PART No.	APPLICATION	DUTY LOAD (kg)	SPEED (m/s)	DESCRIPTION
	<b>AAA20220AS</b> <b>ABA20220AS</b>				
1	ABA20220AS131	ANSI	3500 lb. (1588)	200 FPM (1.02)	5 V Three-Channel Incremental Encoder with 6.0 M Cable (A_A633AE2) and 48 V Brake
	ABA20220AS132		2500–3000 lb. (1135–1360)		
	ABA20220AS30 ABA20220AS133		3500 lb. (1588)	350 FPM (1.78)	
	ABA20220AS34 ABA20220AS134		2500–3000 lb. (1135–1360)		
	ABA20220AS32 ABA20220AS135		4000–5000 lb. (1814–2268)	200–315 FPM (1.02–1.60)	
	ABA20220AS33 ABA20220AS136			350 FPM (1.78)	
	ABA20220AS84 ABA20220AS181		3000 lb. (1360 kg)	400 FPM (2.03)	
	ABA20220AS82 ABA20220AS182			450–500 FPM (2.29–2.54)	
	ABA20220AS83 ABA20220AS183		3500 lb. (1588 kg)	400 FPM (2.03)	
	ABA20220AS84 ABA20220AS184			450–500 FPM (2.29–2.54)	

# Gen2 5T Machine Components (EN81)



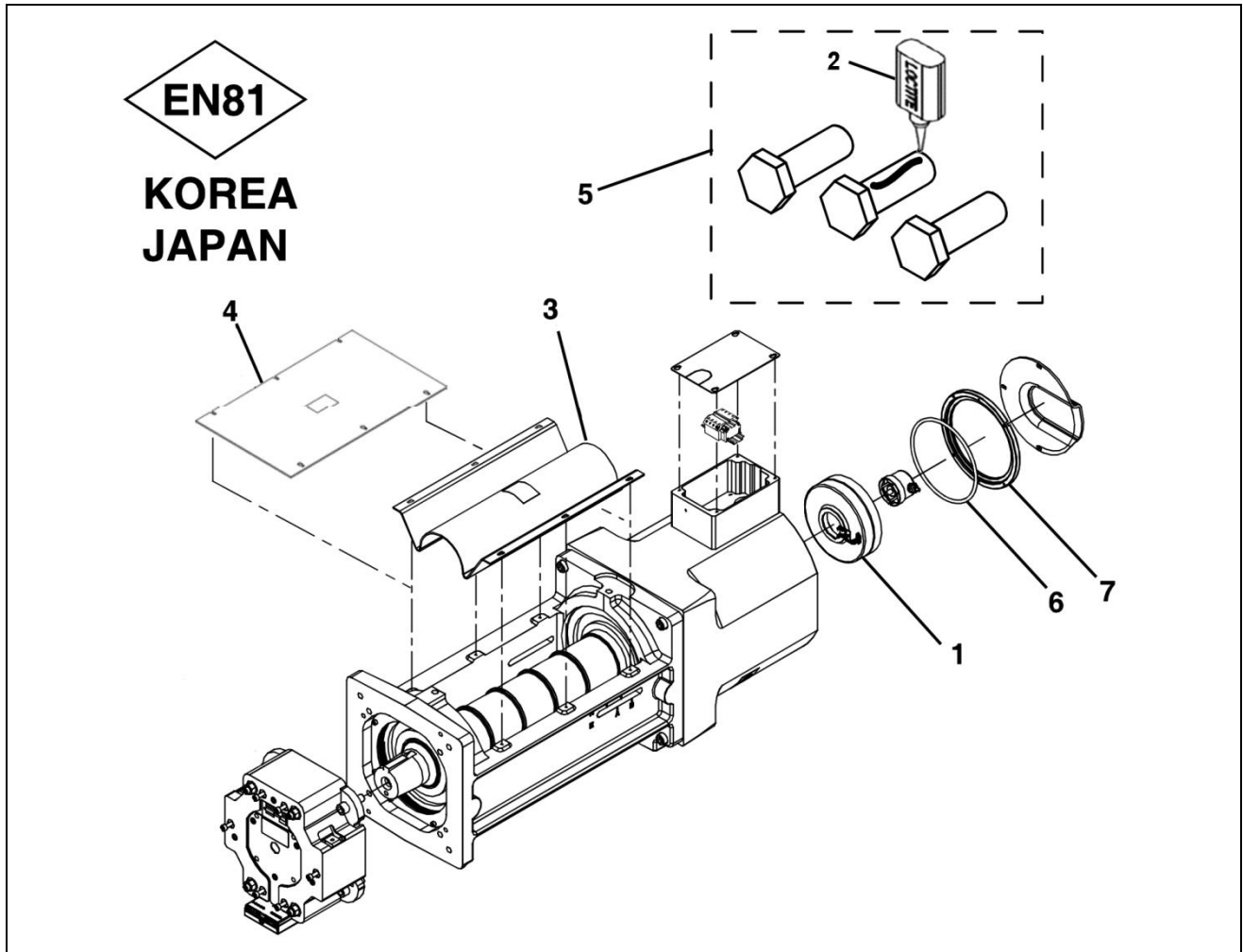
**AAA20220AS  
ABA20220AS**

REF. No.	PART No.	DESCRIPTION	REMARKS
1	AAA21303CW1	Assembly, Terminal Block	---
2	---	Brake, Single Coil (torque per EN81 requirements)	 SPL 07-TBA20236H for Details
3	AAA346BBT1	Cover, End	5TA, B, C Machines
	AAA346BBT2		5TD Machine
4	AAA346BBS1	Cover, Terminal Block	EN81
5	AAA633Z4	Encoder, Main	5 V Two-Channel Incremental Encoder with 6.0 m Cable (REGEN)

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# Gen2 5T Machine Components (EN81)

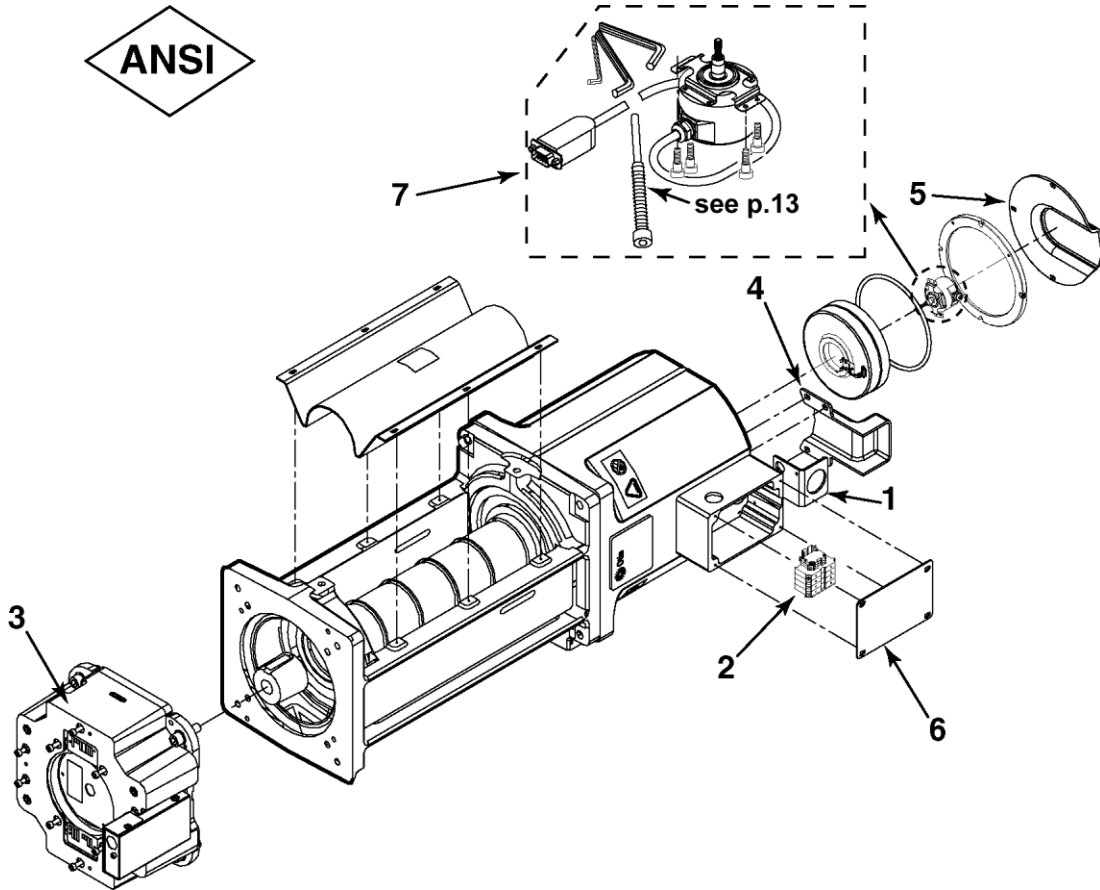
**06-AAA20220AS**



**AAA20220AS  
ABA20220AS**

REF. No.	PART No.	DESCRIPTION	REMARKS
1	AAA20220AQ1	Encoder, Rescue Sensor Assembly	---
2	AAA180JB1	Glue, Loctite® 243 Threadlocker, 10 ml Bottle	Sealant
3	AAA384AHX4 AAA384AHX20	Guard, Sheave (seismic)	Japan
4	AAA384AHX10	Guard, Sheave	EN81, Korea
5	AAA27076AJ3	Kit, Hardware, Including (3) M20 x 55 Hex Head Screws, (1) Ref. 2	Torque to 120 Nm
6	AAA182AZ1	Packing, O-Ring	---
7	AAA172UJ1	Ring, Clamp	---

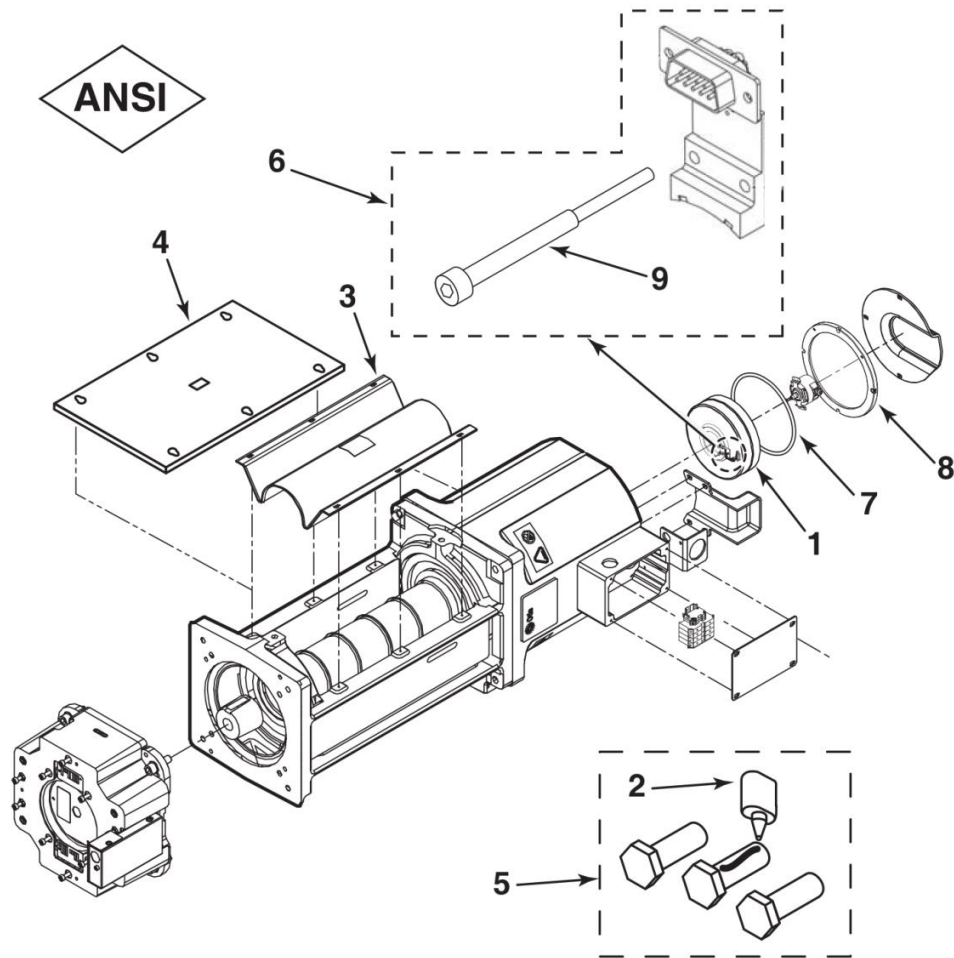
**Gen2 5T Machine  
Components (ANSI)**




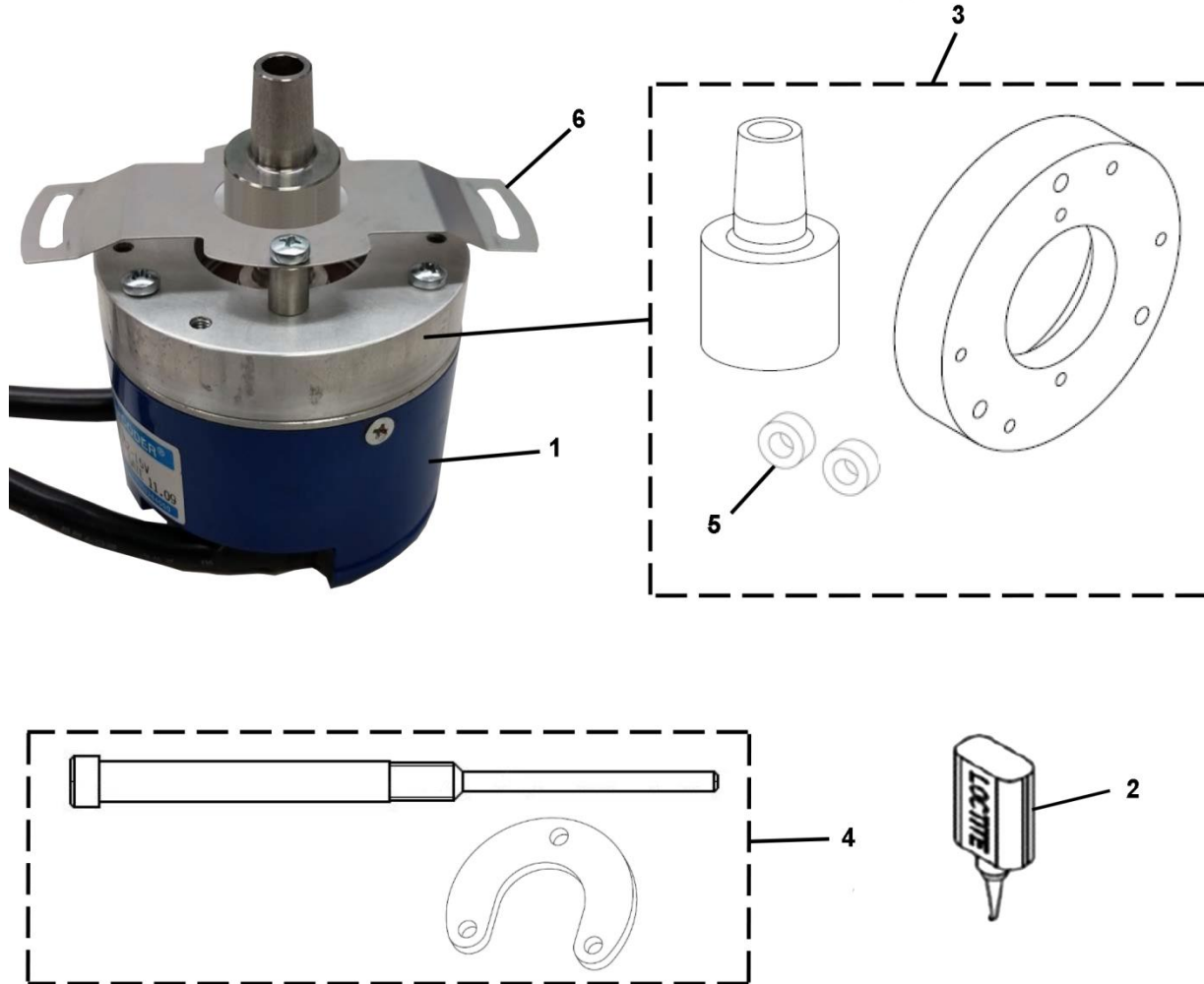
**AAA20220AS  
ABA20220AS**

REF. No.	PART No.	DESCRIPTION	REMARKS
1	AAA283AVA1	Angle, Formed	---
2	AAA21303CW1	Assembly, Terminal Block	---
3	---	Brake, ANSI 5T (48 V)	SPL 07-TAA20236K for Details
4	AAA346BBV1	Cover, Conduit	---
5	AAA346BBT1	Cover, End	5TA, B, C Machines
	AAA346BBT2		5TD Machine (1588 kg duty = 3500 lb., & 2.03-2.54 m/s = 400-500 FPM)
6	AAA346BBS2	Cover, Terminal Block	ANSI
7	AAA633AE2	Encoder, Main	5 V Three-Channel Incremental Encoder (REGEN)


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AAA20220AS ABA20220AS			
REF. No.	PART No.	DESCRIPTION	REMARKS
1	AAA20220AQ1	Encoder w/ Rescue Sensors	---
	AAA20220AQ2	Encoder w/o Rescue Sensors	---
2	AAA180JB1	Glue, Loctite® 243 Threadlocker, 10 ml Bottle	Glue Holder
3	AAA384AHX20	Guard, Sheave (seismic)	with Label
4	AAA384AHX10	Guard, Sheave	with Label
5	AAA27076AJ3	Kit, Hardware (for new machine), Includes (3) M20 x 55 Hex Head Screws, (1) Ref. 2	---
6	AAA27076CJ4	Kit, Rescue Sensor Encoder Replacement w/ (1) M6 Jack Screw,  p. 14	---
7	AAA182AZ1	Packing, O-Ring	---
8	AAA172UJ1	Ring, Clamp	---
9	AAA27DP1	Screw, Jack, M6, 97 mm L	---

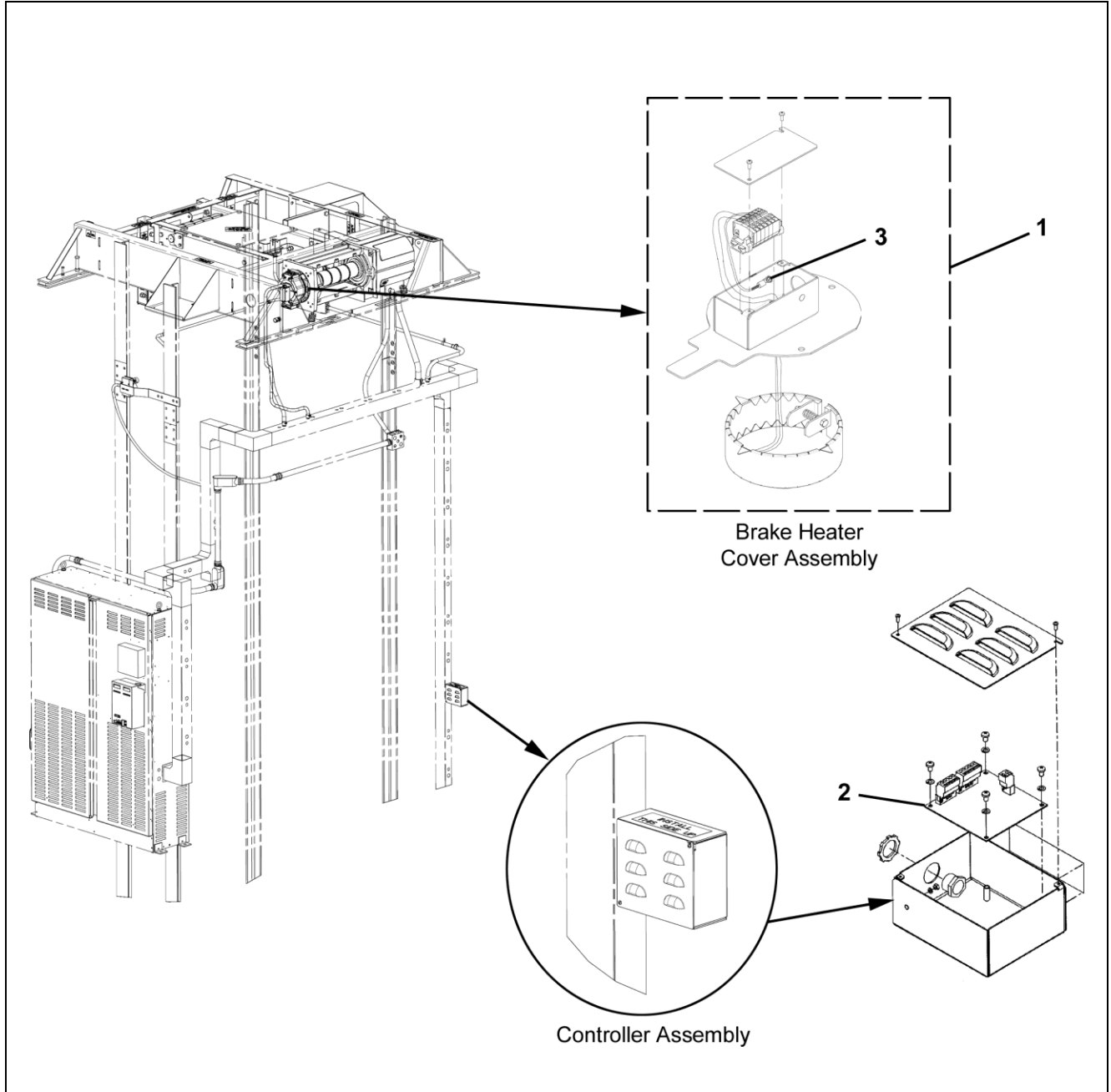


**AAA20220AS  
ABA20220AS**

REF. No.	PART No.	DESCRIPTION	REMARKS
1	AAA633AJ402	Encoder	 TIP 6.1.11-15 for installation instructions and further details.
2	AAA180JB1	Glue, Loctite® 243 Threadlocker, 10 ml Bottle	
3	AAA27076HD400	Kit, Adaptors and Hardware	
4	AAA27076HD402	Kit, Encoder Removal and Hardware	
5	AAA462FD1	Spacer, 8 mm	
6	---	Spring, Attaching (reuse existing from AAA633AE2)	

# Brake Heater Assembly

**06-AAA20220AS**



AAA20220AS ABA20220AS			
REF. No.	PART No.	DESCRIPTION	REMARKS
1	AAA24430T3	Assembly, Brake Heater Cover	ANSI / CSA
2	ABA26800ANC1	Assembly, Controller PCB	ANSI / CSA
3	AAA660A16	Thermistor	

**NOTE:** For details, see SWP N-1.1.18.0-3.