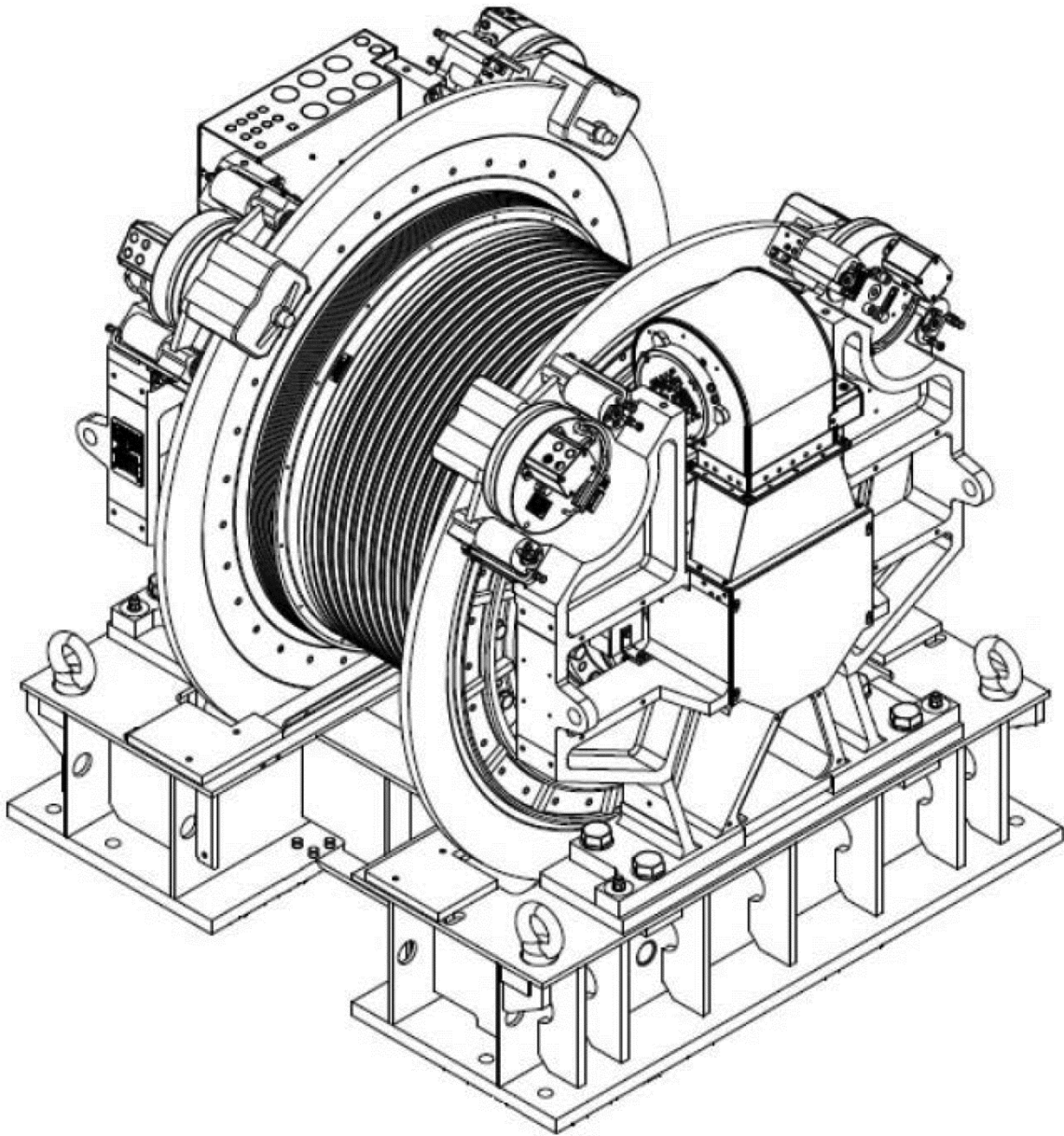


**Elevator Machine
SkyMotion® 400 (41T)**

Spare Parts Leaflet

06-AAA20220CH

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OTIS

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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History

06-AAA20220CH

Leaflet Description

This leaflet provides spare parts information for the PM gearless machine, type AAA20220CH (also known as SkyMotion 400 or 41T machine). AAA20220CH covers duty loads up to 5000 kg (11,000 lb) and elevator speeds up to 15.0 m/s (3000 FPM).

Leaflet Revisions

Date Revised	Subject Matter Expert	Reason for Revision
June 18, 2014	James Hubbard	Original document
September 20, 2017	James Hubbard and Gary Mendrala	Additional parts added including guarding, traction sheave, and DWT secondary sheave assembly
February 21, 2018	Gary Mendrala	Added manual brake release tool information on new p. 15
June 27, 2018	Cole Murphy	Updated filter p/n to AAA737AD10
Sept. 27, 2019	James Hubbard	Added traction sheave liners, p. 14
Sept 17, 2021	James Hubbard	Brake – Added brake switch lever Encoder – Added new support holder Deflector sheave – Revised assembly Terminal box assembly – Added revised assembly Traction sheave – Added new liner PN
June 1, 2022	James Hubbard	Traction sheave – Removed cast iron traction sheaves with undercut grooves which are obsolete.
June 8, 2023	James Hubbard	ENCODER ASSY – Revised Item 1 (Sensor Head) MANUAL BRAKE RELEASE TOOL – Added “China Local” versions
December 17, 2025	Kyle Connolly James Hubbard	CN2662444 BLOWER ASSY – Deleted the original blower used from April 2024 or earlier. Added new blowers used after April 2024. Added blower retrofit kits for machines produced from April 2024 or earlier. Added brake seals. Updated manual brake release part numbers.

Related Drawings

Drawing No.	Title	Drawing No.	Title
AAA20220CH	Machine Assembly	AAA20236Z	Brake
AAA20257A	Motors	AAA20700V	Deflector Sheave Assembly
AAA20850C	Isolation Arr.	AAA29509W	Guarding

Related Documents

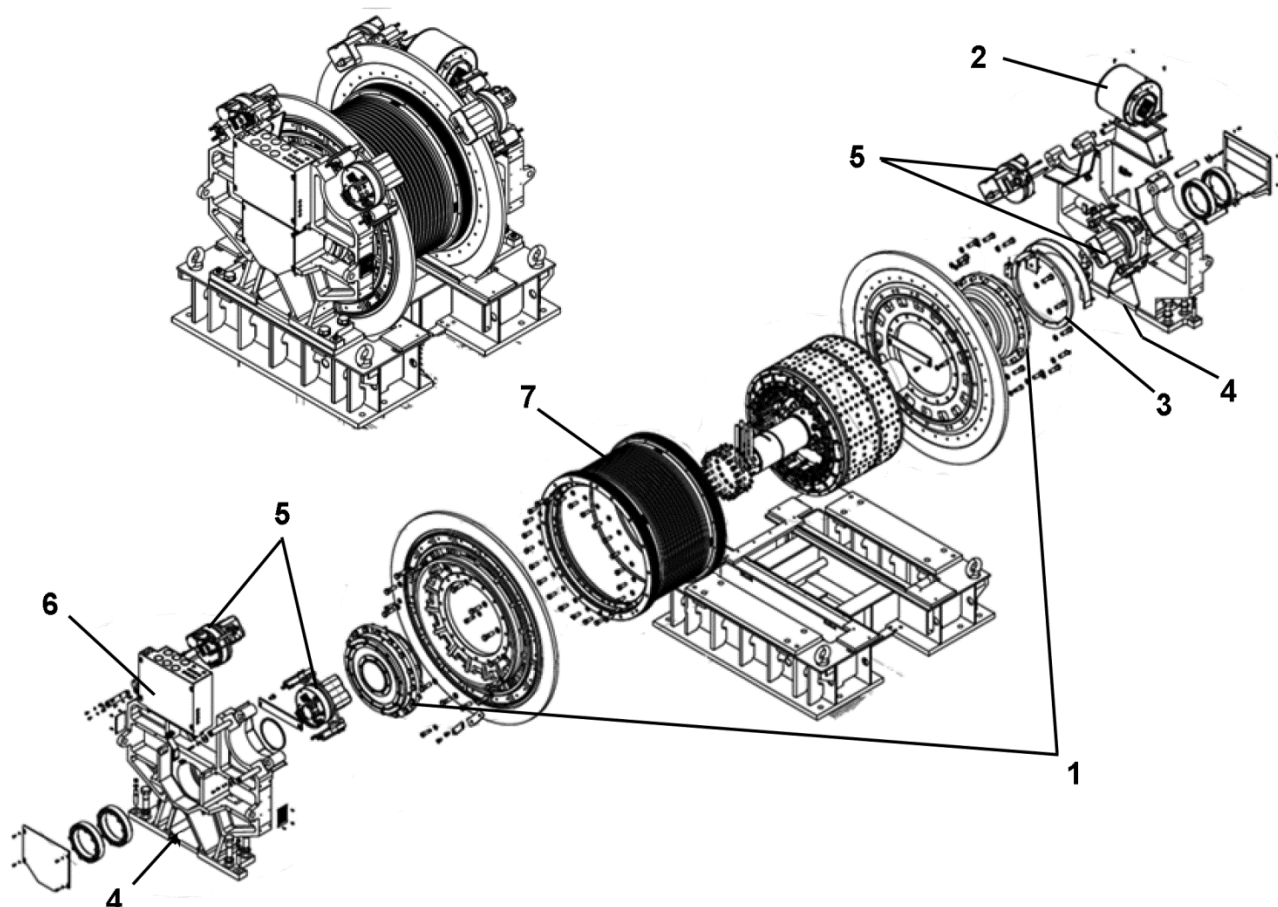
Document ID	Title
DO-O309CY	Order Data Sheet for SkyMotion 400 Machine
AAA20220CH_BD	Basic Data for SkyMotion 400 Machine

Subject Matter Expert

Name	Department
James Hubbard	Lead Design Center - Farmington

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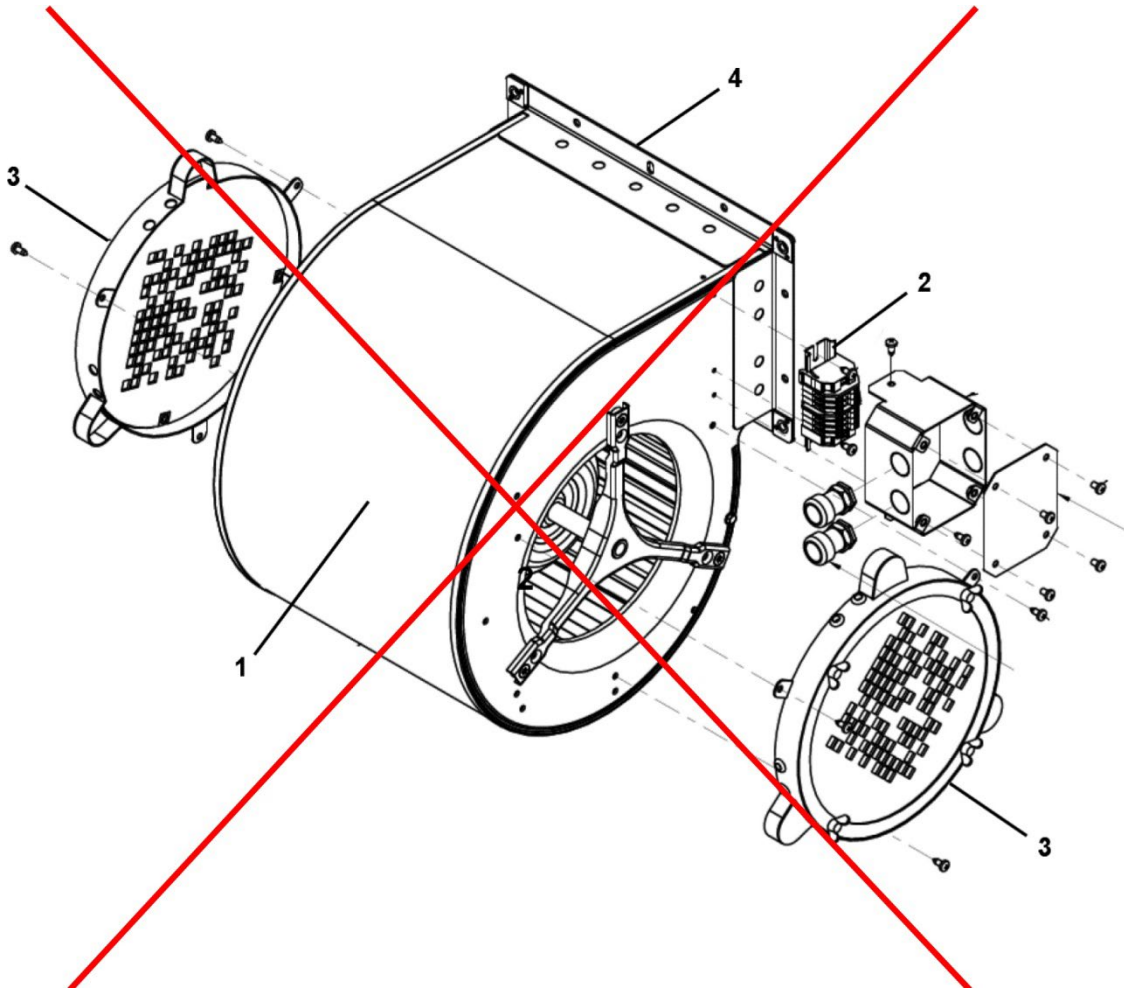
06-AAA20220CH



REF. No.	PAGE	DESCRIPTION
1	13	Bearing Cartridge
2	4-6	Blower Assembly
3	7	Encoder Assembly
4	8	Oil Reservoir
5	9	Brake Assembly
6	10-12	Terminal Box Assembly
7	18	Traction Sheave and Rotor Assembly
8	16	Isolation Assembly
9	17	Guarding
11	19	Brake Release Tool Assembly
	20	Brake Seal

Blower Assembly

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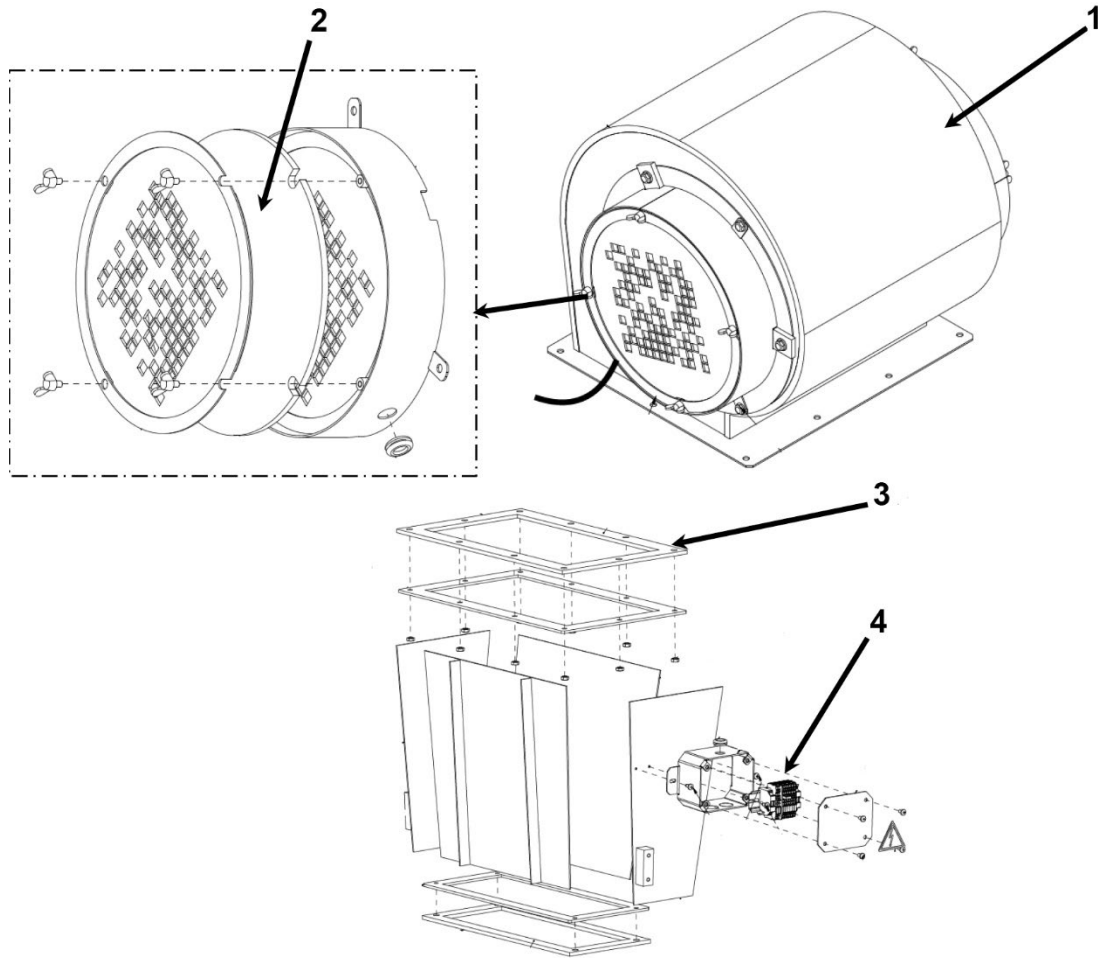


April 2024 and Earlier

AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W→
1	AAA29509X10	Assembly, Blower, see NOTE	4	AAA29509X1
2	AAA21303EC5	Assembly, Terminal Block, Blower	4	
3	AAA737AD10	Filter, Blower	2	
4	AAA376HV1	Gasket, Blower	4	

Blower Assembly

06-AAA20220CH



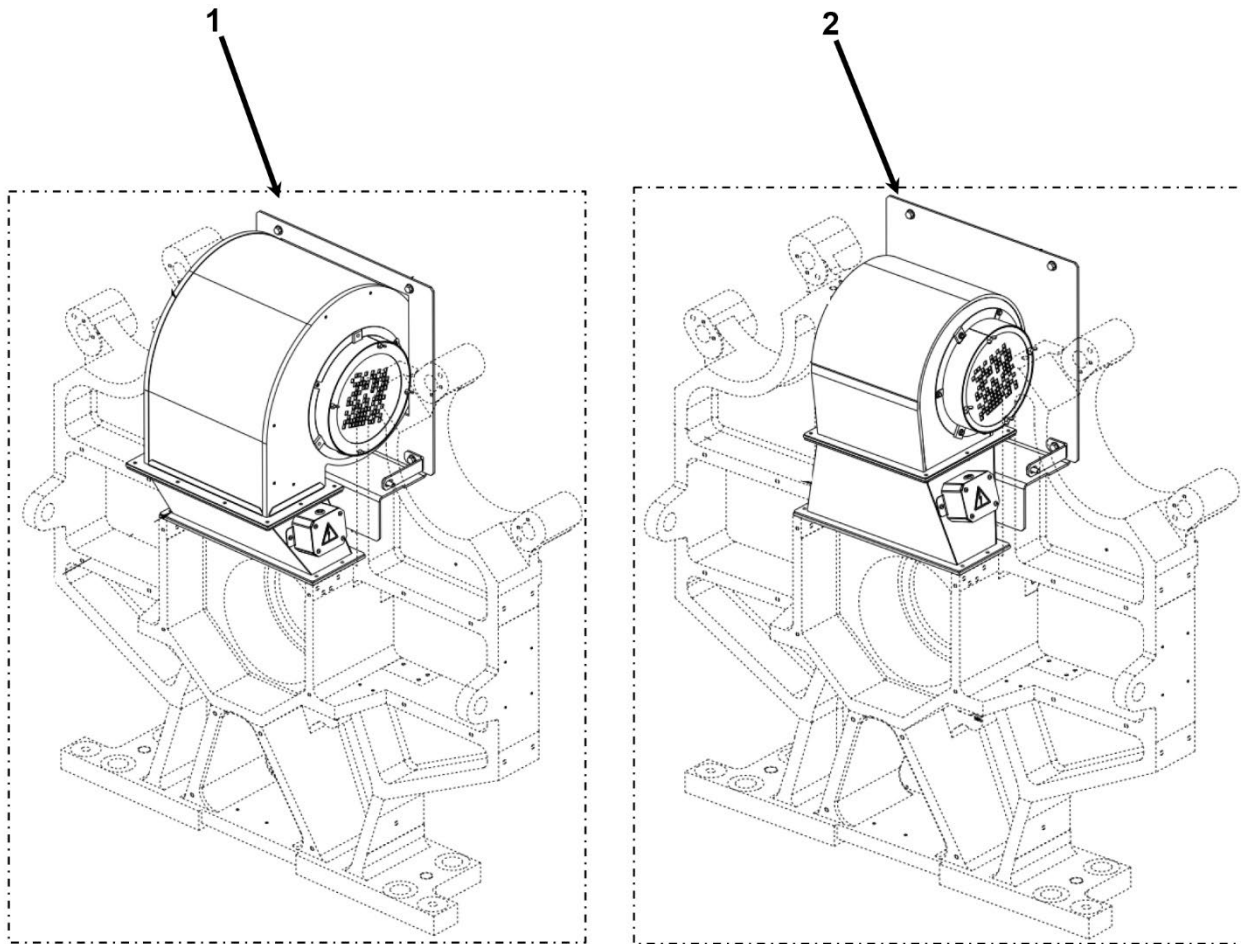
After April 2024

AAA20220CH					
REF. No.	PART No.	DESCRIPTION	QTY.	W→	
1	AAA29509BP20	Blower – 400 v Supply	1	AAA29509BP2 (400 V Supply)	
	AAA29509BP30	Blower – 460 v Supply	1		
2	AAA737AF10	Filter, Blower	2		
3	AAA376JS2	Gasket, Blower – 400 v Supply	1		AAA29509BP3 (460V Supply)
	AAA376JS1	Gasket, Blower – 460 v Supply	1		
4	AAA21303EW12	Terminal Block Assy, Blower – 400 v Supply	1		
	AAA21303EW11	Terminal Block Assy, Blower – 460 v Supply	1		

NOTE: When the blower (ref. 1) is replaced, it is recommended to replace the gasket (ref. 3) at the same time.

Blower Kit

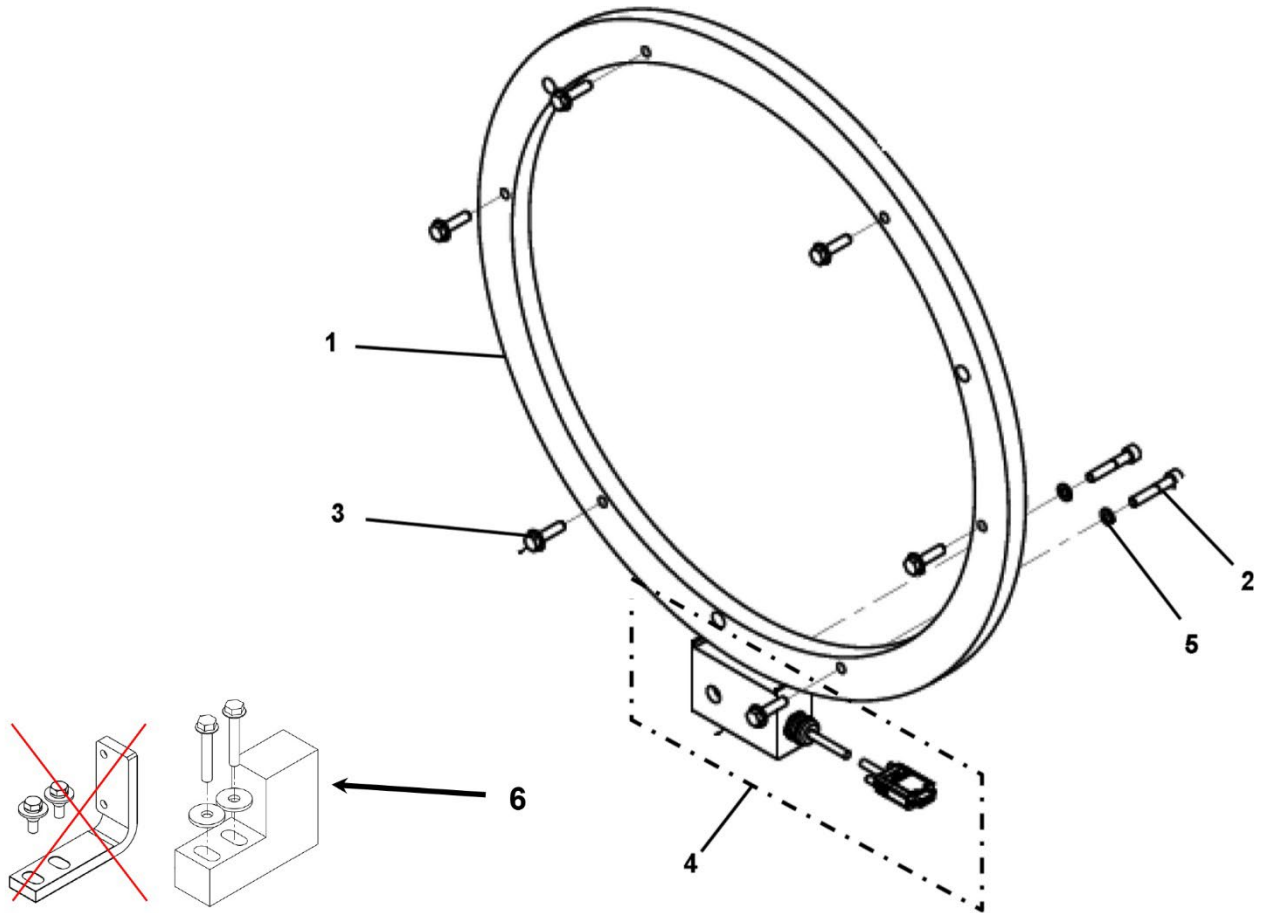
06-AAA20220CH



AAA20220CH				
REF. No.	PART No.	DESCRIPTION	VOLT	QTY.
1	AAA29509BR510	Blower Retrofit Kit for Machines Produced April 2024 or Earlier	400	1
2	AAA29509BR511		460	1

Encoder Assembly

06-AAA20220CH



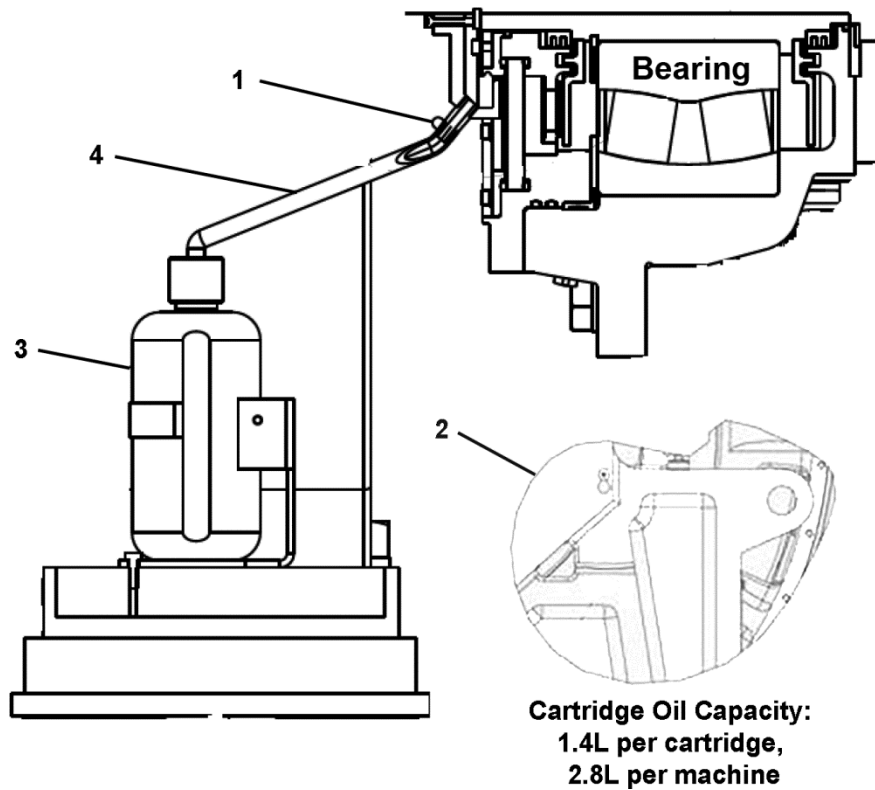
AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W →
1	AAA633AK2	Assembly, Encoder Wheel. See NOTE 1 .	1	AAA633AK5
2	ISO4762M8X40-8.8Z	Screw, Cap, M8 x 40	2	
3	NON1241M8X30-8.8Z	Screw, M8	6	
4	AAA633AK4	Sensor, Encoder Head. See NOTE 3 .	1	
5	DIN128A-M8-430HV-Z	Washer, Lock, M8	2	
6	AAA283BTL1 AAA180KP1	Holder, Encoder Support. See NOTE 2 .	1	AAA20220CH1

NOTES:

1. The encoder wheel should not need replacing unless there is obvious visible damage to the outer diameter surface.
2. The original steel bracket was replaced to address issues with isolation and electrical noise
3. The encoder sensor head was updated to a higher resolution to address low speed vibration issues in some units. this new sensor head is completely compatible with the existing encoder wheel (ref. 4). However, the "ENCODER PPR" needs to be changed from 6240 to 12480.

Oil Reservoir Assembly

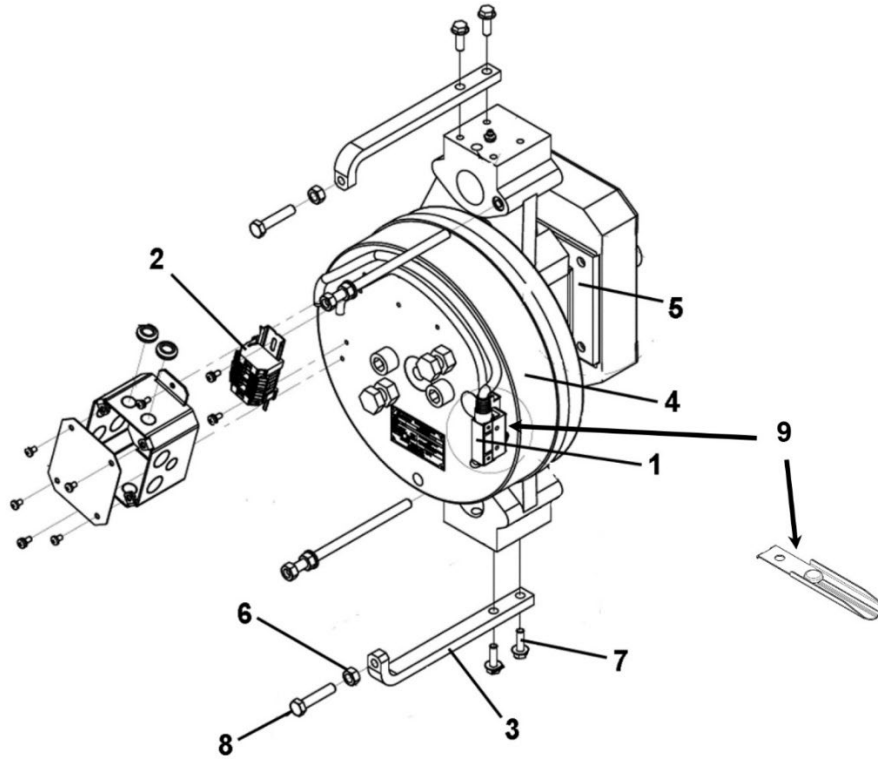
06-AAA20220CH



AAA20220CH		
REF. No.	PART No.	DESCRIPTION
1	AAA333SE1	Clamp
2	AAA518BB3	Mobil SHC Oil, 1 qt. Container
3	AAA148AW1	Tank, Oil Overflow
4	AAA137BY2	Tube

Brake Assembly

06-AAA20220CH



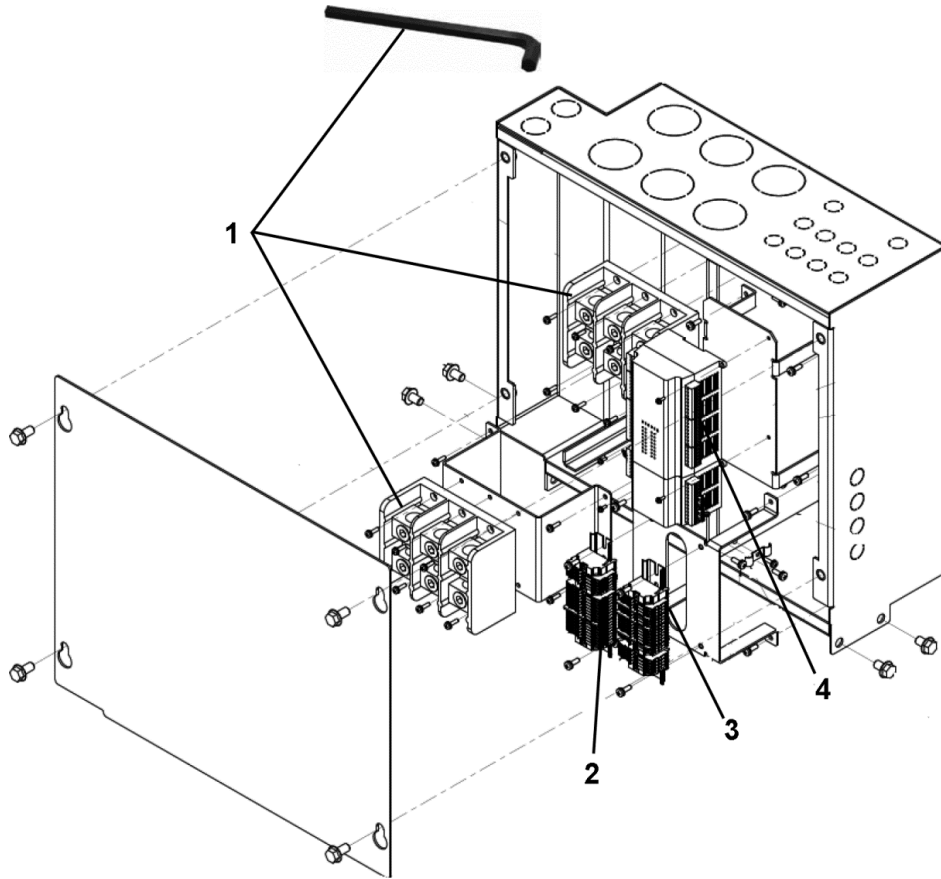
AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W→
1	AAA177EX1	Assembly, Switch	1	AAA20236Z1 AAA20236Z2
2	AAA21303EW3	Assembly, Terminal Block	1	
3	AAA316HYB1	Bracket (See NOTE 2)	1	
4	AAA20236Z10	Caliper, Brake, High Torque	1	AAA20220CH __ 1 AAA20220CH __ 2 AAA20220CH __ 5 AAA20220CH __ 6
	AAA20236Z11	Caliper, Brake, Low Torque	1	AAA20220CH __ 3 AAA20220CH __ 4
5	AAA415AV1	Kit, Pad (2 Pads)	1	AAA20236Z1 AAA20236Z2
* See NOTE 1	AAA102AYM1	Label, Emergency Brake (ASME)	1	AAA20220CH
	AAA102AYN1	Label, Brake (ASME)	1	
	DAA102WF1	Label, Brake (GB)	1	
6	ISO8673M10X1-8-Z	Nut	1	AAA20236Z1 AAA20236Z2
7	NON1241M8X25-8.8Z	Screw, M8 X 25 Hex HD	2	
8	AAA124JR1	Screw, Adjustment	1	
9	AAA287DL1	Lever, Brake Switch	1	

NOTES:

1. In case of brake caliper replacement, the "Emergency Brake" label, which include contract specific information, must be transferred to the new brake caliper.

Terminal Block Assembly (Before Nov. 2016)

06-AAA20220CH

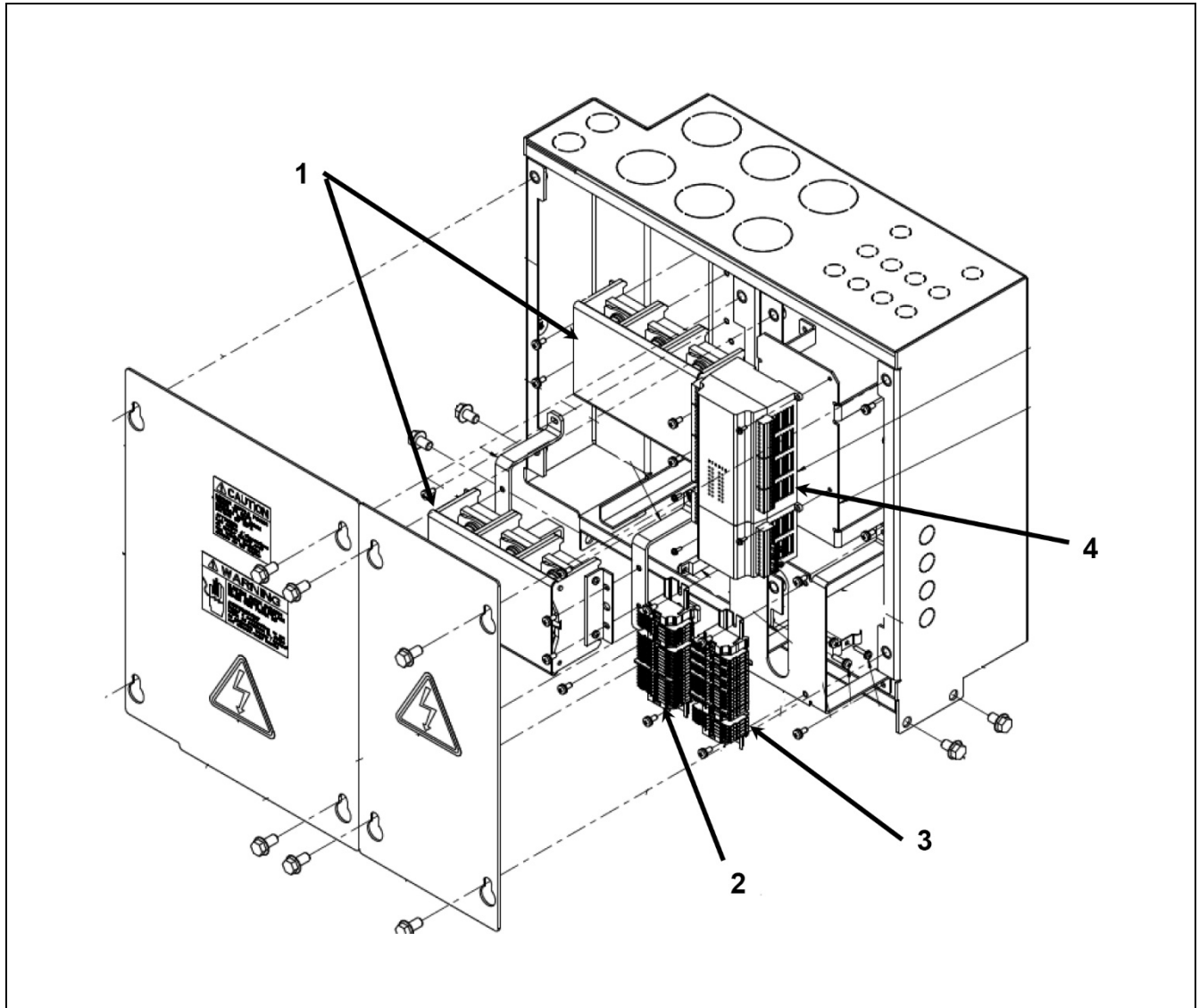


AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W→
1	AAA303GB1	Assembly, Motor, Terminal Block	1	AAA21305EC1 or 2
	AAA124FD5	Screw, Sems, M4 X 16	6	
	MT-105050-15 or MT-105044-11	L-Key, Hex 1/2 in. T-handle hex, 1/2 in	1	
2	AAA21303EW1	Assembly, Terminal Block, Brake and Blower	1	
	AAA124FD14	Screw, Sems, M5 X 16	2	
3	AAA21303EW2	Assembly, Terminal Block, Thermal Sensors	1	
	AAA124FD14	Screw, Sems, M5 X 16	2	
4	AAA816AV1	Module, Blower Controller	1	
	AAA124FD16	Screw, Sems, M3 X 10	4	

Terminal Box Assembly

06-AAA20220CH

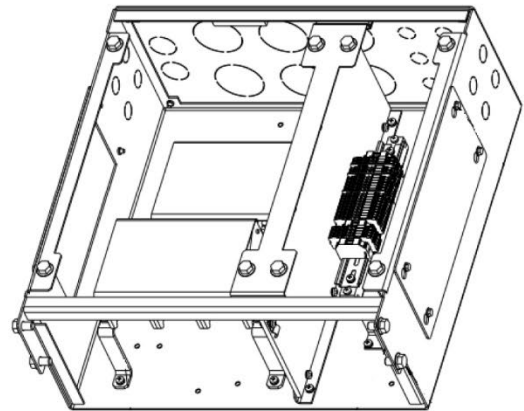
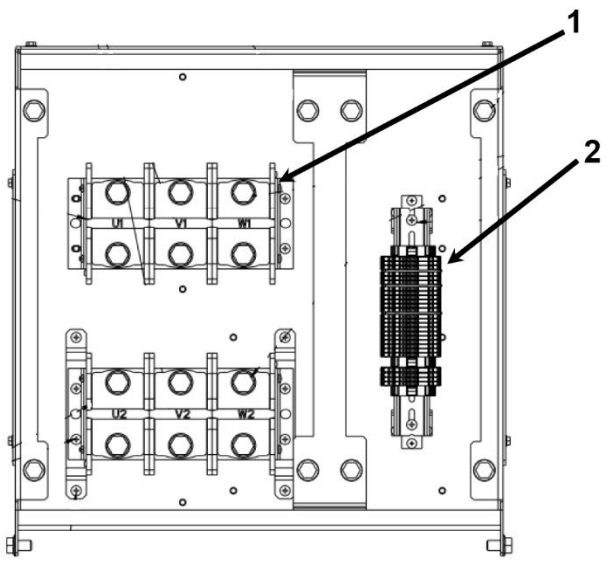
(From Dec. 2016 to March 2022)



AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W →
1	AAA303GL1	Assembly, Motor, Terminal Block	1	AAA21305EC3 or 4
	AAA124FD8	Screw, Sems, M5 X 12	4	
2	AAA21303EW1	Assembly, Terminal Block, Brake and Blower	1	
	AAA124FD14	Screw, Sems, M5 X 16	2	
3	AAA21303EW2	Assembly, Terminal Block, Thermal Sensors	1	
	AAA124FD14	Screw, Sems, M5 X 16	2	
4	AAA816AV1	Module, Blower Controller	1	
	AAA124FD16	Screw, Sems, M3 X 10	4	

Terminal Box Assembly (After March 2022)

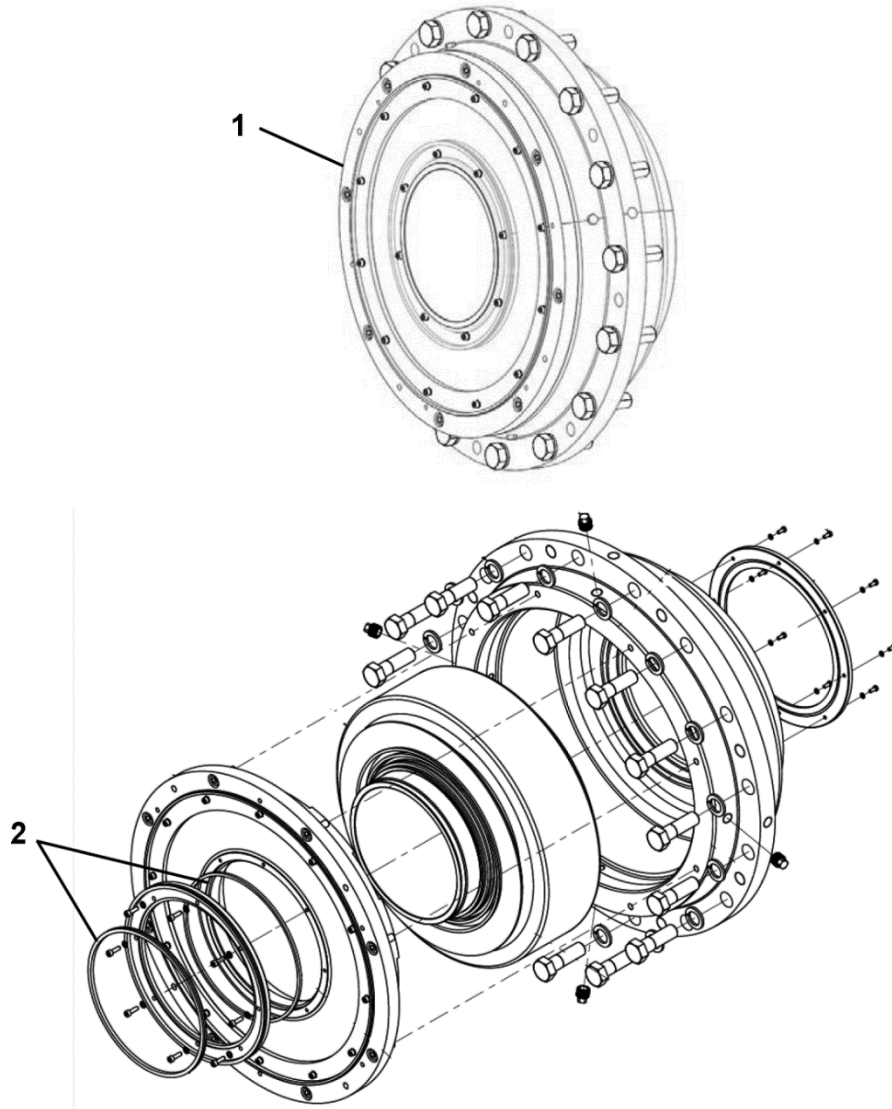
06-AAA20220CH



AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W →
1	AAA303GL1	Assembly, Motor, Terminal Block	1	AAA21305GD
	AAA124FD8	Screw, Sems, M5 X 12	4	
2	AAA21303EW9	Assembly, Terminal Block, Brake and Blower	1	
	AAA124FD8	Screw, Sems, M5 X 12	2	

Bearing Cartridge Assembly

06-AAA20220CH



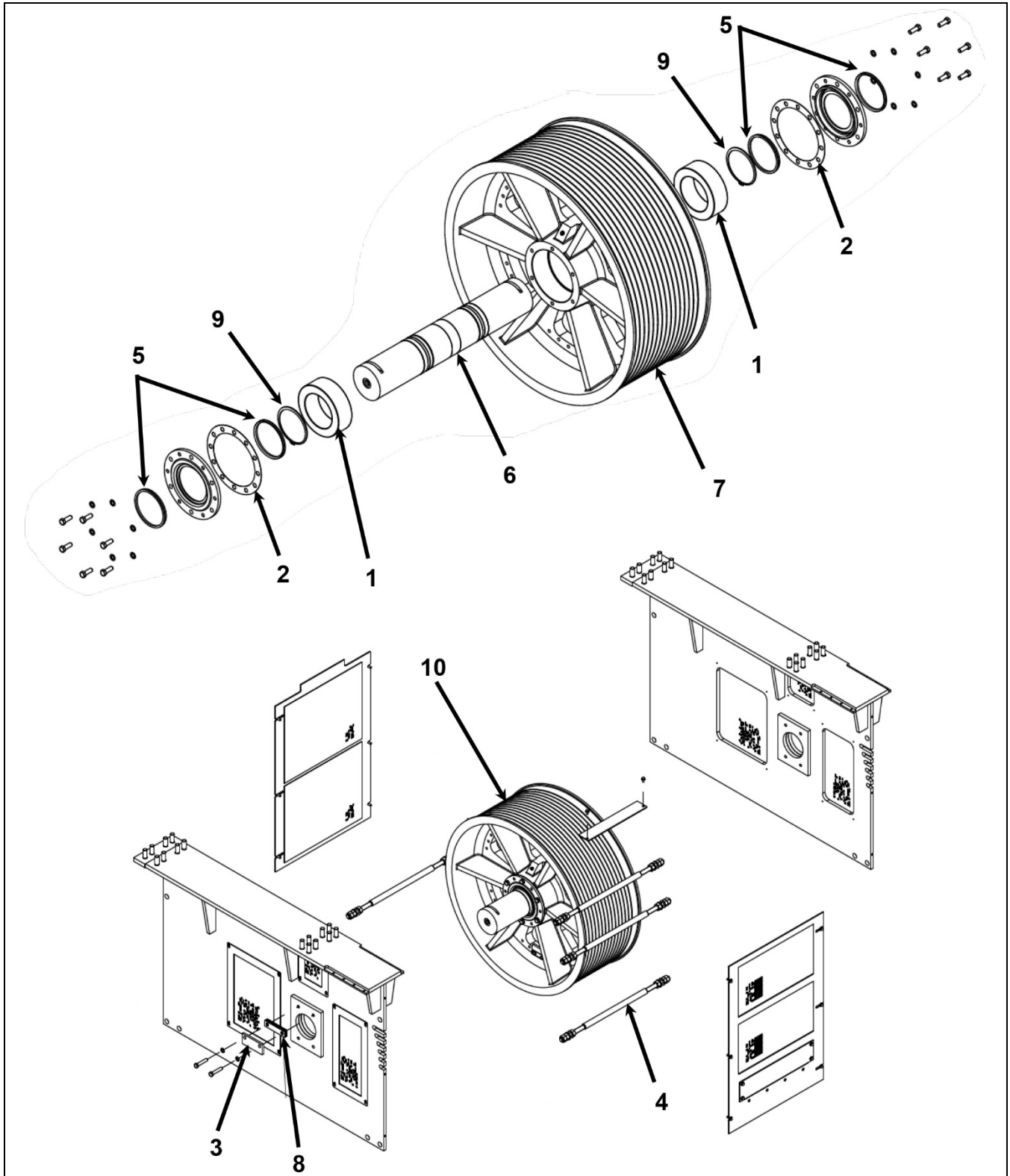
AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W →
1	AAA20220CG1	Assembly, Bearing Cartridge	1	AAA20220CH__
2	AAA33BM1	Seal, Outer	2	AAA20220CG1

NOTES:

1. Lubricant used in bearing cartridge is Otis type AAA518BB1 (Mobile SHC 634)
2. In case of a defective bearing or leaking bearing, the entire bearing cartridge must be replaced. It is not possible to replace the bearings alone.
3. Replace the seal alone only in the unusual case of oil leaking with relatively new bearings.

Secondary Sheave Assembly for SWT and DWT

06-AAA20220CH



Continued on Next Page

Secondary Sheave Assembly for SWT and DWT

06-AAA20220CH

See picture on previous page

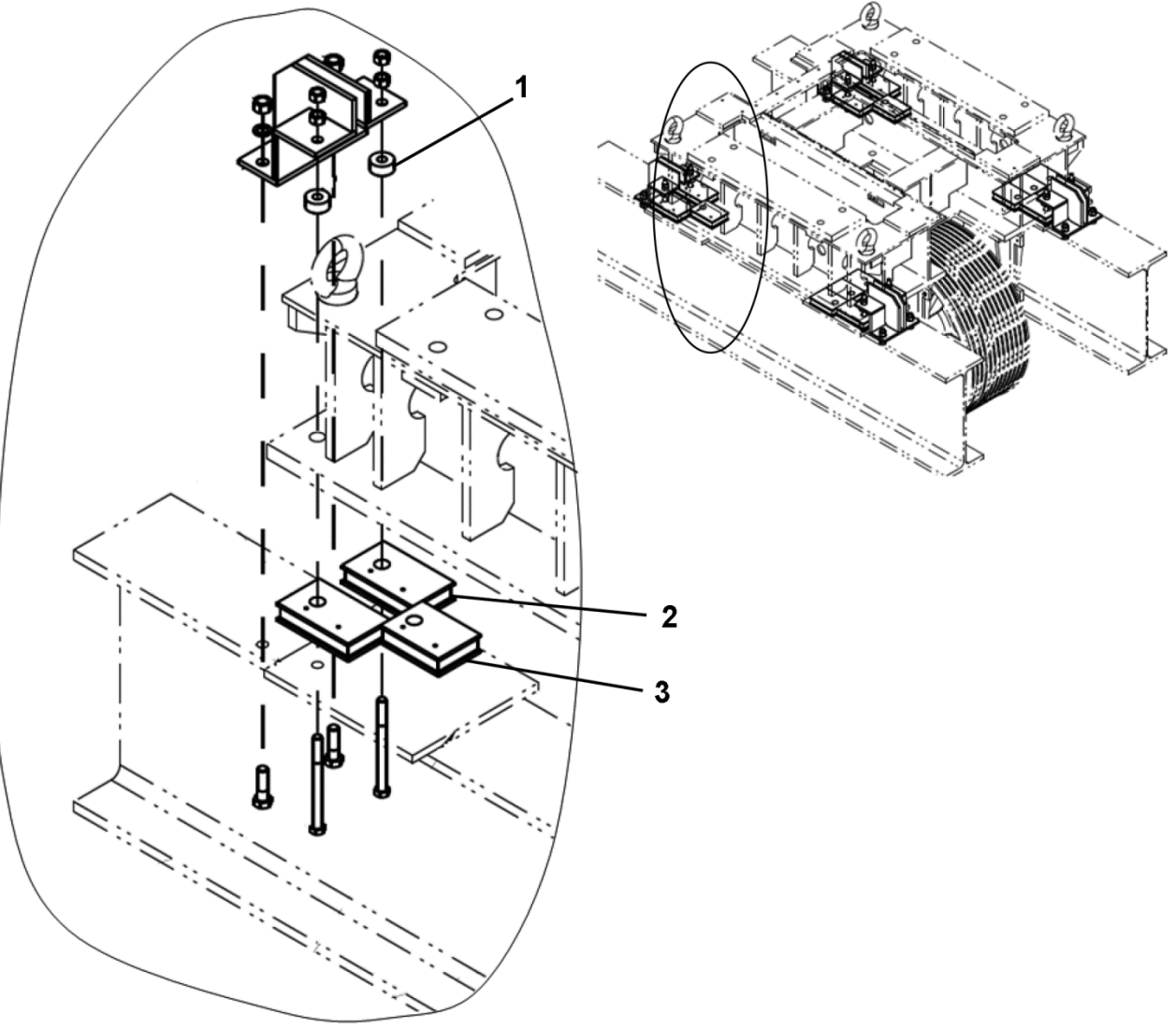
	AAA20220CH			
REF. No.	PART No.	DESCRIPTION	QTY.	W→
1	AAA212AD2	Bearing, Spherical	2	AAA20700V
2	AAA376JN2	Gasket	2	
3	AAA192AT1	Key	1	
4	AAA98QB1	Rod	1	
5	AAA33BG1	Seal	1	
6	AAA495FP2	Shaft	1	
7	AAA265HB1	Sheave (SWT), 12 Grooves x 22.4 mm Rope Dia.	1	
	AAA265HB2	Sheave (DWT), 14 Grooves x 22.4 mm Rope Dia.	1	
8	AAA255NW1	Shim	1	
9	DIN471N-160-440HV-B	∅160 Retaining Ring (Shaft)	2	
10	AAA20700V599	Sheave / Shaft / Bearing Assy. (SWT 22.4 mm Rope, 12 Grooves) (See NOTE)	1	
	AAA20700V598	Sheave / Shaft / Bearing Assy. (DWT 22.4 mm Rope, 14 Grooves) (See NOTE)	1	

NOTES:

1. **Secondary / deflector sheave assemblies produced before September 2021:**
The complete sheave / shaft / bearing assembly (ref. 10) must be replaced in case of issues with the sheave or bearings.

Isolation Assembly

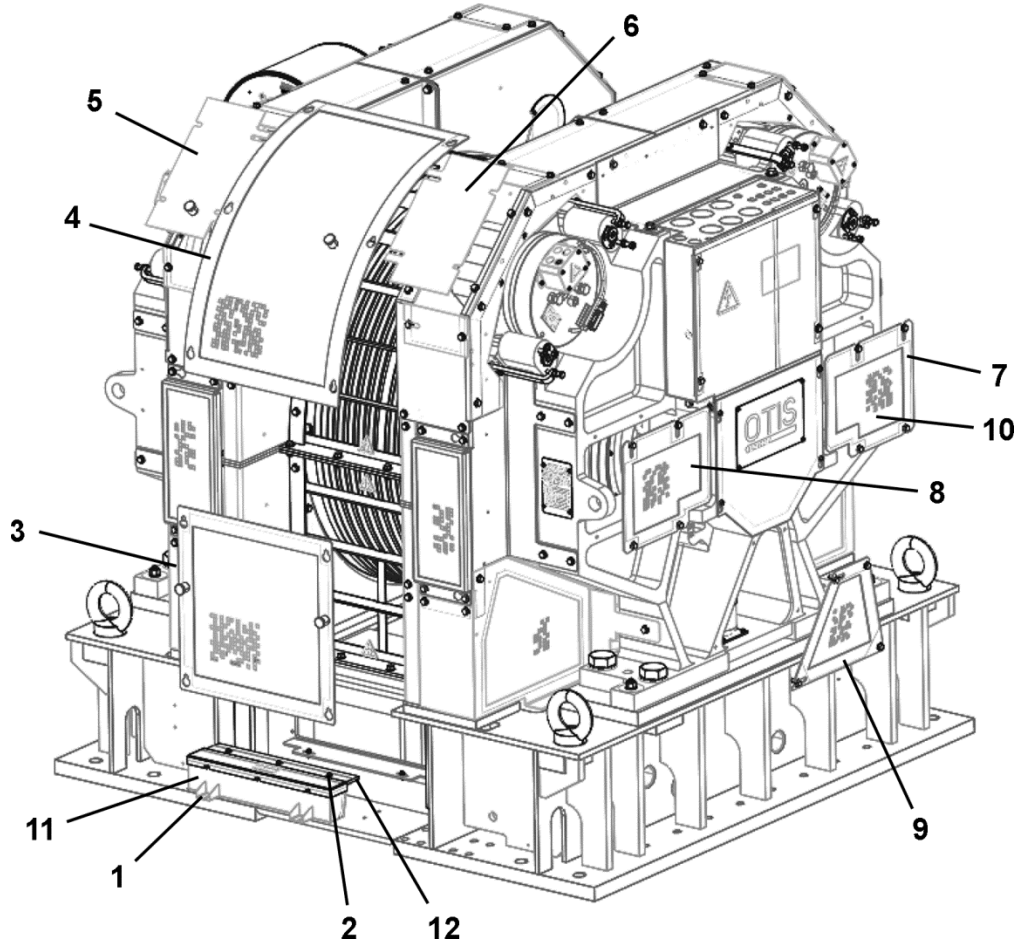
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AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W →
1	JAA321AET1	Bushing, Isolation, Rubber	1	AAA20850C
2	JAA310BGB1	Pad, Isolation, Rubber (220 mm X 130 mm)	1	
3	JAA310BGB2	Pad, Isolation, Rubber (170 mm X 130 mm)	1	

Guarding

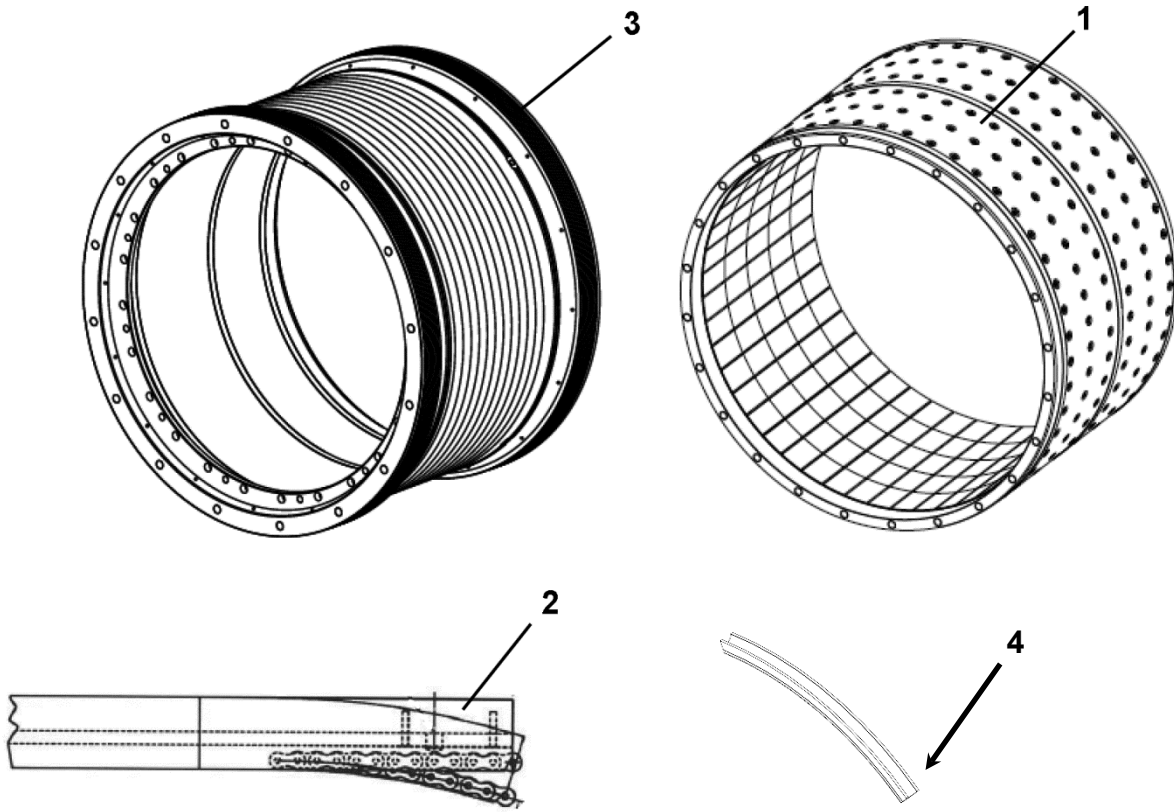
06-AAA20220CH



AAA20220CH				
REF. No.	PART No.	DESCRIPTION	QTY.	W→
1	DIN6921M6X16-8.8Z	Bolt, Hex Flange, M6 X 16	2	AAA508AS1
2	DIN6921M6X30-8.8Z	Bolt, Hex Flange, M6 X 30	3	
3	AAA346BLC1	Cover (Rope Inspection)	1	AAA20220CH_ AAA29509W
4	AAA346BLD1	Cover (Rope Inspection)	1	
5	AAA384AZS15	Cover (Brake Inspection)	2	
6	AAA384AZS21	Cover (Brake Inspection)	2	
7	AAA346BKZ3	Cover, Stand (Bearing Lubrication Access)	1	
8	AAA346BKZ1	Cover, Stand (Bearing Lubrication Access)	2	
9	AAA346BKX1	Cover, Stand (Bearing Lubrication Access)	2	
10	AAA346BKZ2	Cover, Stand (Adjacent to Encoder Connector)	1	AAA508AS1
11	JAA508AAP6	Lubricator, Rope	1	
12	JAA488AAD6	Wick, Rope Lubricator	1	

Traction Sheave

06-AAA20220CH



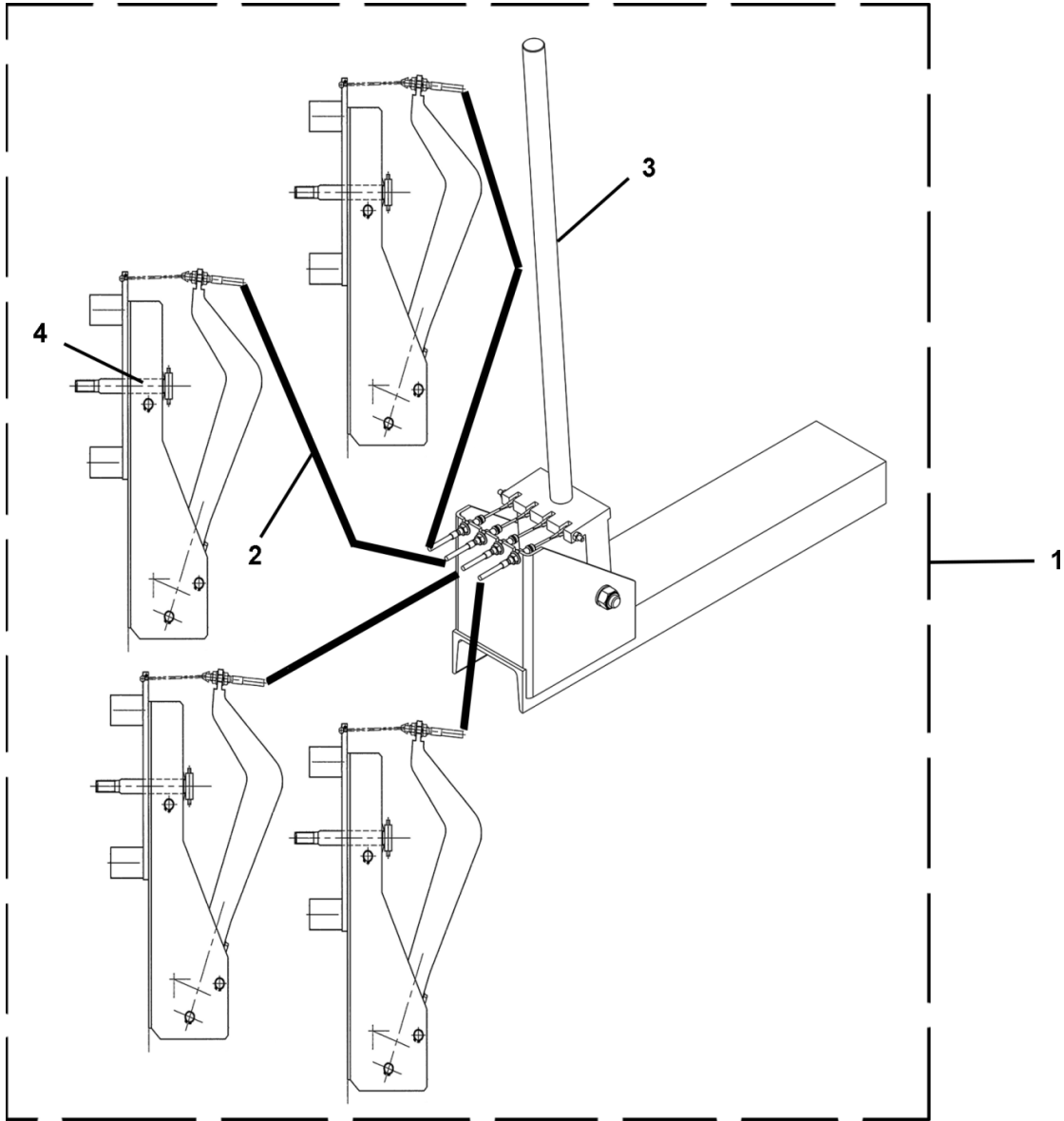
AAA20220CH		GROOVES				
REF. No.	PART No.	DESCRIPTION	NO.	PITCH	PITCH ∅	
1	AAA421AX1	Assembly, Rotor, Magnet (See NOTE 2)	---	---	---	
2	AAA251EX1	Liner, Polyurethane, Chained, ∅22 Rope (See NOTE 1)	---	---	---	
3	AAA265GE1	Sheave, 30° Undercut, SWT	22.4 mm Rope Dia.	42	35	1110
	AAA265GE2	Sheave, 45° Undercut, SWT		42	35	1110
	AAA265GE3	Sheave, 60° Undercut, SWT		42	35	1110
	AAA265GE4	Sheave, Round Seat, DWT		14	26.5	1110
	AAA261AL1	Sheave, Liner, 22 mm Rope Dia.		12	35	1115
4	AAA251FC400	Liner (Insert), Traction Sheave, ∅22 Rope (See NOTE 3)	---	---	---	

NOTES:

1. Liner (ref. 2) used for special contracts only.
2. The replacement traction sheave (ref. 3) must be ordered with the motor rotor (ref. 1) pre-assembled in the traction sheave.
3. Standard traction sheave liner insert (ref. 4). AAA251FC400 includes (8) liner segments for one full groove. The quantity required for one full machine equals the number of hoist ropes. It is recommended to order 1 extra liner set (AAA251FC400) per bank of machines in case of damage during installation.

Brake Manual Release

06-AAA20220CH



AAA20220CH		
REF. No.	PART No.	DESCRIPTION
1	AAA29515G1	Assembly, Brake Release Tool, Complete, 2-Caliper (NSAA)
	DAA29515H5	Assembly, Brake Release Tool, Complete, 2-Caliper (NSAA)
	AAA29515G2	Assembly, Brake Release Tool, Complete, 4-Caliper (NSAA)
	DAA29515H6	Assembly, Brake Release Tool, Complete, 4-Caliper (NSAA)
2	AAA29515G30	Cable
3	AAA29515G20	Lever, Hand
4	AAA29515G10	Lever, Caliper

Brake Seal

06-AAA20220CH



AAA20220CH		
REF. No.	PART No.	DESCRIPTION
1	WAA102DF1	Security Label (Qty. 2 per brake)