COMBISTOP **TYPE 17-67M DOUBLE C-FACE SPRING-SET BRAKE**

INSTRUCTION MANUAL | **NEMA 56-145**

Original Manual
Document 20453274 US 01

1 Preface

The hardware, software and accessories described in this document are products of KEB America, Inc. The information contained in this document is valid at the time of publishing. KEB reserves the right to update this document in response to misprints, mistakes or technical changes.

1.1 Warning Signs and Key Symbols

Certain procedures within this document can cause safety hazards during the installation or operation of the device. Refer to the safety warnings in this document when performing these procedures. Safety signs are also located on the device where applicable. A safety warning is marked by one of the following warning signs:

⚠ DANGER

Type and/or source of hazard.
Indicates a hazardous situation which **will result in death or serious injury** if not avoided.

- ▶ Measures to avoid the hazard.
- ▶ Can be supplemented by an additional warning sign or symbol.

⚠ WARNING

Type and/or source of hazard.
Indicates a hazardous situation which **may result in death or serious injury** if not avoided.

- ▶ Measures to avoid the hazard.
- ▶ Can be supplemented by an additional warning sign or symbol.

⚠ CAUTION

Type and/or source of hazard.
Indicates a hazardous situation which **may result in minor or moderate injury** if not avoided.

- ▶ Measures to avoid the hazard.
- ▶ Can be supplemented by an additional warning sign or symbol.

NOTICE

Type and/or source of information.
Indicates a situation that **may result in damage to the product or other property** if not avoided.

- ▶ Measures to avoid the hazard.
- ▶ Can be supplemented by an additional symbol.

Used for informational messages or recommended procedures.

Reference to further documentation with link and QR Code:
https://www.kebamerica.com/products/load-brakes/

© 2026 KEB America, Inc.

1.2 More Symbols

Symbol	Description
▶	Action step
➡	Cross-reference to further information
•	Enumerations/unordered lists
1.	Procedure/ordered list
Link	Internal reference hyperlink
Link	External website hyperlink
	Mandatory: Refer to instruction manual/booklet
	General mandatory action sign
	General warning sign
	Warning: Electricity hazard
	Warning: Crushing by moving parts
	Warning: Hot surface

1.3 Laws and Requirements

KEB America, Inc. has certified the product against the US, Canadian and European standards. Additionally, KEB Automation KG provides the EC declaration of conformity that the product complies with the essential safety requirements.

The UL, CSA and CE marks are located on the name plate when applicable. The EC declaration of conformity can be downloaded on demand via our website.

© 2026 KEB America, Inc.

1.4 Warranty

KEB provides a limited warranty on all products. This warranty can be found in the terms and conditions at our website.

General sales conditions for North America:
https://www.kebamerica.com/terms-and-conditions

General sales conditons for Europe:
https://www.keb-automation.com/terms-conditions

Further agreements or specifications require written confirmation from KEB America, Inc.

1.5 Support and Liability

It is not possible to cover every potential application of our device in a single manual. If further information is required or if problems occur which are not covered in this document, the necessary information can be requested via KEB America, Inc. or the local KEB Automation KG agency.

The use of KEB products in the target application is beyond KEB control and therefore responsibility lies exclusively with the machine manufacturer, system integrator or customer.

The information contained in this document, as well as any user-specific advice in spoken or written form or generated through testing, is provided to the best of KEB knowledge and is considered for informational purposes only. KEB America, Inc. bears no responsibility or liability for the accuracy of the information listed above, nor for any violation of industrial property rights committed by a third-party in relation to this information.

Selection of the most suitable product for any given application is the responsibility of the machine manufacturer, system integrator or customer.

Evaluation of the product can only be performed by the machine manufacturer in combination with the application. Any tests performed must be repeated every time any part of the hardware or software is modified, or any time the unit adjustment is changed.

1.6 Copyright

The customer may use the instructions for use as well as further documents or parts from it for internal purposes. Copyrights are with KEB and remain valid in their entirety.

This KEB product or parts thereof may contain third-party software, including free and/or open-source software. If applicable, the license terms of this software are contained in the instructions for use. The instructions for use are already available to you, can be downloaded free of charge from the KEB website or can be requested from the respective KEB contact person.

Other wordmarks and/or logos are trademarks (™) or registered trademarks (®) of their respective owners.

© 2026 KEB America, Inc.

Table of Contents

1 Preface 3
1.1 Warning Signs and Key Symbols 3
1.2 More Symbols 4
1.3 Laws and Requirements 4
1.4 Warranty 5
1.5 Support and Liability 5
1.6 Copyright 5
List of Figures 8
List of Tables 9
Glossary 10
Standards for COMBISTOP Type 17 Double C-Face Brake 13
2 Safety Instructions 14
2.1 Target Audience 14
2.2 Specified Application 15
2.3 General Safety Guidelines 15
2.4 Electrical Safety Guidelines 15
2.5 Installation and Operation Safety Guidelines 16
2.6 Maintenance Safety Guidelines 17
2.7 Personal Protective Equipment 17
3 Product Description 18
3.1 Scope of this Manual 18
3.2 Description 19
3.2.1 Brake Components 19
3.2.2 Brake Assembly Model Number 20
3.3 Brake Specifications 21
4 Installation 22
4.1 Required Tools 22
4.2 Unpacking the Brake 23
4.3 Installing the Brake 23

© 2026 KEB America, Inc.

4.3.1 Preparation (Design A - Standard Brake with Set-screw Release) 23
4.4 Testing the Brake Function 26
4.5 Resetting Std. Manual Brake Release screws (Design A) 27
4.5.1 Using the Standard Screw Release 27
5 Operation 29
5.1 Normal Operation 29
6 Rectifiers 30
6.1 Example Wiring Diagrams 30
6.1.1 AC Side Switching 30
6.1.2 DC Side Switching 31
6.1.3 OEX Switch 32
6.1.4 Brake reaction times – approximate 32
7 Revision History 33

© 2026 KEB America, Inc.

List of Figures

Figure 3.1 Brake Components 19
Figure 3.2 Model number 20
Figure 4.1 Double C-Face brake with standard screw release 22
Figure 4.2 Installation standard design A 23
Figure 4.3 Brake assembly - design A installation 24
Figure 4.4 Release screw in normal operation 28
Figure 6.1 Rectifier wiring AC side switching - relay switching 30
Figure 6.2 Rectifier wiring DC side switching - independent contactor switching - phase to phase 31

© 2026 KEB America, Inc.

List of Tables

Table 3.1 Coil specifications 21
Table 3.2 Resistance ranges 21

© 2026 KEB America, Inc.

Glossary

AC	Alternating current.
Aggressive Fumes/Liquids	Gasses or liquids that are chemically reactive and may cause corrosion in exposed machine parts.
Air Gap	The gap between the armature and the magnet. This air gap must be precisely calibrated to a specific width, denoted as X. If the air gap is too wide, the braking torque is reduced and the flat spring may be damged. If the air gap is too narrow, the brake may not release correctly.
Application	The machine/system in which the KEB device is to be used. For brakes the application is typically the motor to which the brake is attached.
Armature	The component of the brake which rotates with the driven shaft/surface and presses against the magnet to engage the brake. The armature consists of an armature plate which moves across the air gap to engage or disengage the brake, and a flat spring which connects the armature plate to a hub or driven surface.
AWG / Wire Gauge	American Wire Gauge. A measure of the thickness of a wire using standardized sizes.
Branch Circuit Protection	Circuit protection for the portion of the electrical distribution system that extends beyond the final branch circuit protection device. A branch circuit is used to run motors or other appliances, and is what is commonly found inside a building.
CE	European safety standards for products in the European Economic Area. Manufacturers self-test products against these standards to maintain CE certification. The CE mark indicates a product meets EEA safety standards.
CEC	Canadian Electric Code. Safety standard for electrical installations used in Canada.
Control Device / Interface	The COMBISTOP brake is controlled electronically by a control device. This can be as simple as a switch, or as complex as a full suite of control software.
CSA	Canadian Standards Authority, also known as CSA Group. Organization that tests and certifies products according to Canadian safety standards. The CSA mark indicates a product meets Canadian safety standards.

© 2026 KEB America, Inc.

Customer	The corporation or individual who purchased the COMBISTOP brake.
DC	Direct current.
Device / KEB Device	The COMBISTOP brake described in this manual.
Drive Shaft	A mechanical component for transmitting torque and rotation from a motor to other parts of a mechanical system.
Driven Shaft/Surface	A rotating component of a mechanical system which is driven by a drive shaft. Typically connected to the drive shaft via a clutch to allow the driven shaft/surface to be engaged when needed. The driven shaft/surface refers to the component directly connected to the drive shaft. Refer to *Load* for a broader term for all parts of the system driven by the motor.
Dry running	Operation in dry environments with no danger of dripping or splashing liquids.
EC Declaration of Conformity	Declaration that the device conforms to EU standards of safety.
Equipotential Bonding	A practice of intentionally electrically connecting all exposed metal items not designed to carry electricity in a room as protection from electric shock.
Flange	An external flat rim or ridge for attaching an external object to the device.
Flat spring	The component of the brake between the armature and the hub or load-side mounting surface. The flat spring pulls the armature away from the friction surface allowing free rotation of the armature and driven shaft/surface.
Friction Surface	The component of the brake which is attached to the fixed mounted magnet and presses against the armature to provide braking torque via friction.
KEB Automation KG	Parent company of KEB America, Inc. Also referred to as KEB.
Load	The components of a mechanical system driven by a motor. The load refers to the entire system powered by the motor. Refer to *Driven Shaft/Surface* for the individual component connected directly to the drive shaft.
Load-side Mounting Surface	The mounting surface to which the armature is attached; typically the load being driven by the motor. Opposite the motor-side mounting surface.

© 2026 KEB America, Inc.

Machine Manufacturer	The manufacturer of the application in which the COMBISTOP brake is installed. Not KEB America, Inc.
Magnet	The component of the brake which contains the magnetic components. The magnet is fixed to the motor-side mounting surface and does not rotate.
Motor-side Mounting Surface	The mounting surface to which the magnet side of the brake is attached. Commonly this mounting surface is the motor itself, but not always. Opposite the load-side mounting surface.
Mounting Surface	A surface to which the COMBISTOP device is physically attached. The COMBISTOP is typically attached to the mounting surface with the recommended socket-head screws, but other fastening methods may be used as appropriate to the application. Mounting surfaces are typically referred to as either motor-side or load-side.
NEC	US National Electric Code. Safety standard for electrical installations used in the United States.
Product / KEB Product	See Device.
Recommended tightening torque	The torque required to fully screw a socket head screw into a mounting surface. The recommended tightening torque depends on the type of screw used as well as the material, thread depth and locking components (if any) used in the mounting surface. Refer to the machine manufacturer for details on recommended tightening torques for specific mounting surfaces.
Run-out	An inacuracy of rotating mechanical systems whereby the shaft does not rotate precisely in line with the main axis. Always present but must be minimized.
Specified Application	The specific application for which the COMBISTOP device was ordered, is usually (but not always) the same as the Application in which the device is being used.
System Integrator	The technician installing the COMBISTOP brake into the application.
Torque Tab	Tab extending from the magnet which can be fastened to the motor-side mounting surface using a screw. An alternative to a flange.
UL	Independent Standardization Company that tests and certifies products according to defined and industry leading safety standards. The UL mark indicates a product meets UL safety standards.

© 2026 KEB America, Inc.

Standards for COMBISTOP Type 17 Double C-Face Brake

The COMBISTOP Type 17 Brake installation must comply with all relevant safety standards. The following standards are relevant to the installation and operation of the Brake.

Directive 2006/42/EC (annex I)

- Region: EU
- Essential health and safety requirements for the design and construction of machinery.

C22.1-18: Canadian Electric Code, Part 1 (CEC)

- Region: Canada
- Electric safety code detailing safety standards for electric installations in Canada.

NFPA 70: National Electric Code (NEC)

- Region: US
- Electric safety code detailing safety standards for electric installations in the United States.

NFPA 79: Electrical Standard for Industrial Machinery

- Region: US
- Industrial safety code detailing safety standards for industrial machinery to protect against fire and electrical hazards.

OSHA 1910.137

- Region: US
- Personal safety code detailing appropriate personal protective equipment for working on electrical installations.

OSHA 1910.269

- Region: US
- Occupational safety code detailing safety standards for electrical power generation, transmission, and distribution.

© 2026 KEB America, Inc.

2 Safety Instructions

The COMBISTOP Type XX1767X-XXXU Brake is designed and constructed with state-of-the-art technology in accordance with recognized safety rules and regulations. Improper use of this device may cause hazards to life and limb of the user or third-parties, or damage to the application and other material property.

The following safety instructions have been created by KEB America, Inc. for the double C-face brake. These instructions can be supplemented by local, country- or application-specific safety instructions where relevant.

Violation of the safety instructions in this manual will result in the loss of any liability claims.

NOTICE

Stay safe! Stay informed!

- ▶ Read the instruction manual prior to operating the device!
- ▶ Follow all safety and warning instructions!
- ▶ If you are unsure of any part of these instructions, please contact KEB prior to operating the device!

2.1 Target Audience

This manual is intended exclusively for the use of qualified electrical/mechanical technicians. Qualified technicians for the purpose of this document must meet the following:

- Must have fully read and understood the safety instructions contained in this manual.
- Must be familiar with the installation and assembly of electrical products.
- Must be familiar with the installation and operation of the product as specified in this manual.

  Refer to the chapters *Installation* and *Operation* for details.
- Must fully understand the specified application of the product.

  Refer to section *Specified Application* for details.
- Must be familiar with the hazards and risks of mechanical braking technology.
- Must be familiar with appropriate electrical and safety codes:
  - **US:** NFPA 70 National Electric Code (NEC)
  - **Canada:** Canadian Electric Code, C22 Part 1 (CEC)
- Must be familiar with national safety regulations (e.g. OSHA Title 29 CFR).

  Refer to the *Standards for COMBISTOP Type 17 Double* C-Face Brake section for details.

© 2026 KEB America, Inc.

2.2 Specified Application

The operational reliability of the brake is only guaranteed when the device is used for the specified application. In this context, specified application means the purpose for which the brake was ordered and configured.

Any use of the brake outside of this specified application is considered at the user's own risk. Such unintended uses may pose unforeseeable risks or hazards. KEB America, Inc. retains no liability for any damage or injury resulting from the use of a COMBISTOP brake outside of the specified application.

2.3 General Safety Guidelines

Carefully observe the following safety guidelines before installation or operation of the device.

- Only trained personnel should operate the brake.
- Immediately remove the brake from operation in case of a malfunction.
- Malfunctions should be corrected by trained personnel before returning the brake to operation.
- Never use the brake in potentially explosive environments.
- The brake may not be modified or altered in any way not intended by KEB America, Inc.

2.4 Electrical Safety Guidelines

⚠ DANGER

Risk of electrical shock!

- ▶ Turn off the power supply and prevent is from switching on prior to any work on the device.
- ▶ Never bridge branch circuit protection devices.

Carefully observe the following safety guidelines during the electrical installation.

- Observe all relevant safety standards for the device.

  Refer to the section *Standards for COMBISTOP Type 17 Double* C-Face Brake for details specific to the product.
- Use only wire gauges and fuses rated for the power requirements of the device.
- Ensure new or existing circuits meet NEC or applicable local requirements.
- The device must be appropriately grounded by a connector from the magnet and the fixed installation.
- When using components without isolated inputs/outputs, equipotential bonding must be used between the connected components to prevent damage to the device.
- Do not exceed specified electrical voltage and current limits.

© 2026 KEB America, Inc.

2.5 Installation and Operation Safety Guidelines

⚠ WARNING

Moving parts can crush and cut!

- ▶ Contact with rotating or moving parts may cause serious injury. Ensure adequate protection around the brake to prevent accidental contact!

⚠ CAUTION

Hot surfaces!

- ▶ The heat generated during the operation of the brake may cause burns on contact with skin. Always wear appropriate protective equipment!

Do not start the device until you have confirmed that the installation complies with the following safety standards:

- Ensure there is sufficient protection against foreign particles entering the air gap. These particles may impede the motion of the armature.
- Ensure there is sufficient thermal protection such that the brake does not exceed or fall below the listed temperature limits for the device.
- Ensure there is protection against accidental contact with rotating or moving parts.
- Ensure there is sufficient protection from environmental factors such as moisture or aggressive gases that may compromise the integrity of the friction surface or armature.

© 2026 KEB America, Inc.

2.6 Maintenance Safety Guidelines

⚠ DANGER

Risk of electrical shock!

- ▶ Turn off the power supply and prevent it from switching on prior to any work on the device.
- ▶ Never bridge branch circuit protection devices.

⚠ WARNING

Moving parts can crush and cut!

- ▶ Contact with rotation or moving parts may cause serious injury. Wait until the drive has come to a complete stop before performing any maintenance.
- ▶ Secure the drive to prevent accidental movement prior to performing any maintenance.

⚠ CAUTION

Hot surfaces!

- ▶ The heat generated during the operation of the brake may cause burns on contact with skin. Always wear appropriate protective equipment!

Carefully observe the following safety guidelines before performing maintenance on the brake:

- Ensure the device is powered off and has come to a complete stop before performing any maintenance.
- Secure the brake so it cannot be switched on accidentally during maintenance.
- Disconnect the brake from the load before maintenance to avoid uncontrolled movements.
- Ensure there is sufficient protection against foreign particles entering the air gap during maintenance.
- Ensure there is sufficient protection against moisture or aggressive gasses that may compromise the integrity of the friction surface or armature.

2.7 Personal Protective Equipment

When installing or performing maintenance on the brake, use the following personal protective equipment:

- Long-sleeved protective clothing
- Safety gloves
- Safety shoes
- Safety goggles

The personal protective equipment must be provided by the operating company and must comply with any applicable safety regulations.

© 2026 KEB America, Inc.

3 Product Description

3.1 Scope of this Manual

This manual describes the installation and operation of the KEB Size 03 through 05 COMBISTOP Type 17 Double C-Face Brake. The brake is a specialized version of the COMBISTOP spring set brake designed for quiet running and heavy loads.

The Type 17 Double C-Face Brake is designed to be mounted between piloted flanges.

The Type 17 Double C-Face Brake has a single ball bearing on the output side of the brake. The brake relies on the input motor to provide shaft alignment and load support.

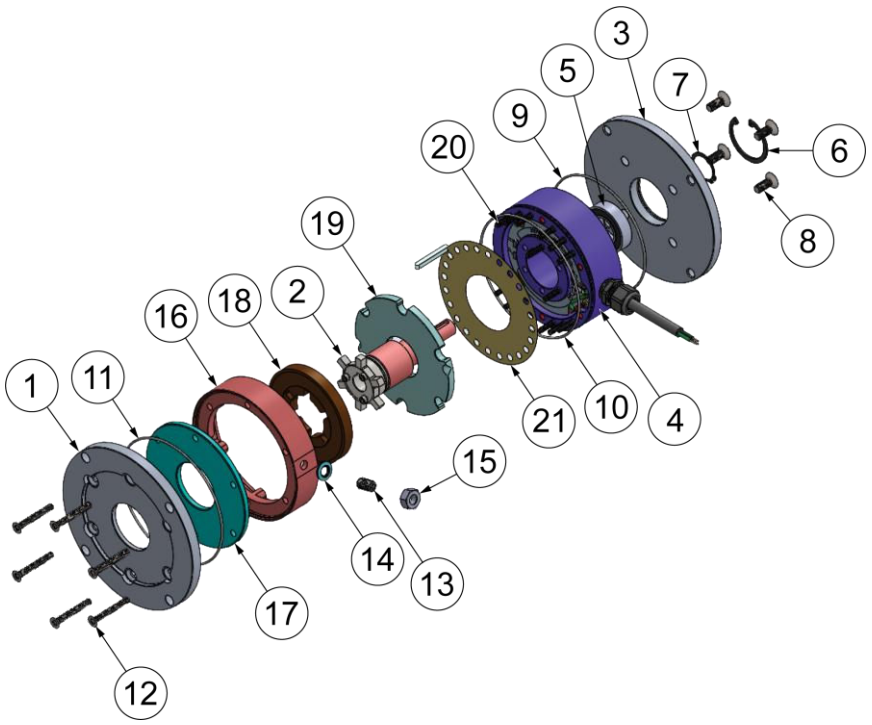
Standard Design Style A

Refer to section *Preparation (Design A - Standard Brake with Screw Release)* for details.

© 2026 KEB America, Inc.

3.2 Description

3.2.1 Brake Components



Component	Name	Quantity included
1	Input flange	1
2	Shaft assembly	1
3	Output flange	1
4	Magnet assembly	1
5	Bearing, 6005 2RS	1
6	Retaining ring, 47 mm x 1.75 mm	1
7	Retaining ring, 25 mm x 1.2 mm	1
8	Screw, M8 x 20 mm, Flat Hd.	4
9	O-ring, 115 mm x 2 mm	1
10	O-ring, 120 mm x 2 mm	1
11	O-ring, 125 mm x 2 mm	1
12	Screw, M6 x 45 mm, flat Hd.	6
13	Set screw, M10 x 20 mm, cone point	2
14	Sealing washer	2
15	Hex nut, M10	2
16	Spacer ring	1
17	Friction surface	1
18	Friction lining	1
19	Armature	1
20	Pressure springs	Torque-dependent
21	Isolation sheet	1

Figure 3.1 *Brake Components*

© 2026 KEB America, Inc.

3.2.2 Brake Assembly Model Number

The part number for a COMBISTOP Double C-Face brake describes the device type as well as options specified for the device. It is important to order the correct brake for your specified application. Consult the following table for a description of the Double C-Face brake part numbers and their meanings.

XX	17	67	X	-	C	D	E	U		
									Region	**U:** KEB USA
									Input / Output	**0:** Standard NEMA inch input
										1: Standard IEC metric input
									Flange Size: Input Bore / Output Shaft	**1:** 56C / 56C
										2: 145C / 145C
										6: 56C / 145C
										7: 145C / 56C
										E: IEC 80 / IEC 80 200 mm B5
										F: IEC 80 / IEC 90 200 mm B5
										G: IEC 80 / 145C 200 mm B5
										H: 145C / IEC 80 200 mm B5
										J: 145C / IEC 90 200 mm B5
									Coil Voltage	**0:** 12 VDC
										1: 24 VDC
										2: 48 VDC
										3: 95 VDC
										4: 105 VDC
										5: 170 VDC
										6: 205 VDC
										7: 115 VAC * 0.9 with 02.91.020-CE07 (105 V coil) [1]
										8: 230 VAC * 0.45 with 02.91.010-CE07 (105 V coil) [1]
										9: 460 VAC * 0.45 with 04.91.010-CE07 (205 V coil) [1]
										A: 230 VAC * 0.9 with 02.91.020-CE07 (205 V coil) [1]
										B: 460 VAC * 0.45 with 05.91.010-CE09 (205 V coil) [1]
										[1] Rectifiers installed separately by the customer
									Accessories Type	**M:** New Design with Bolt Release
										L: New Design with Lever Release [1]
										S: New Design with Bolt Release & Microswitch [1]
										T: New Design with Lever Release & Microswitch [1]
										X: Special Custom Unit Indicator
										[1] Limited availability. Consult KEB.
										67: Double C-Face Brake
										17: Double C-Face Spring-Set Brake – Wash Down Type
									Size	**XX:** 03 = 8.0Nm [6ft-lb] 04 = 16.5Nm [12ft-lb] 05 = 24.5Nm [18ft=lb]

***Figure 3.2** Model number*

NEMA 56C = 5/8“ shaft & 4.5“ pilot Ø
IEC 80 B5 = 19 mm shaft & 130 mm pilot Ø
NEMA 145C = 7/8“ shaft & 4.5“ pilot Ø
IEC90 B5 = 24 mm shaft & 130 mm pilot Ø

© 2026 KEB America, Inc.

3.3 Brake Specifications

Coil Specifications	
Specification	**Value**
Voltage (V)	Variable
Power (P)	30 W
Current (I)	Variable (I = P/V)
Mounting	Can be mounted vertically or horizontally
Max operating speed	3600 RPM
Table 3.1 *Coil specifications*	

Resistance Range	
Coil Voltage	**Resistance (Ω)**
12 VDC	4.46 – 5.14
24 VDC	17.9 – 20.5
48 VDC	71.4 – 82.2
95 VDC	280 – 322
105 VDC	342 – 393
170 VDC	896 – 1031
205 VDC	1303 – 1499
Table 3.2 *Resistance ranges*	

Brake Weight	
Specification	**Value**
Nema 56C/145C std. screw release	6.05 Kg
IEC 80/90 std. screw release	6.65 Kg
Table 3.3 *Brake weight*	

Rotating Inertia - approximate	
Specification	**Value**
Rotating components	0.000228 Kgm²
Table 3.4 *Inertia*	

© 2026 KEB America, Inc.

4 Installation

NOTICE

Stay safe! Stay informed!

- Read and follow all safety instructions prior to installing the double C-face brake.

The following sections detail the steps for unpacking and installing the COMBISTOP Type 17 Double C-Face Brake (shown below). Read this chapter thoroughly before beginning the installation process.

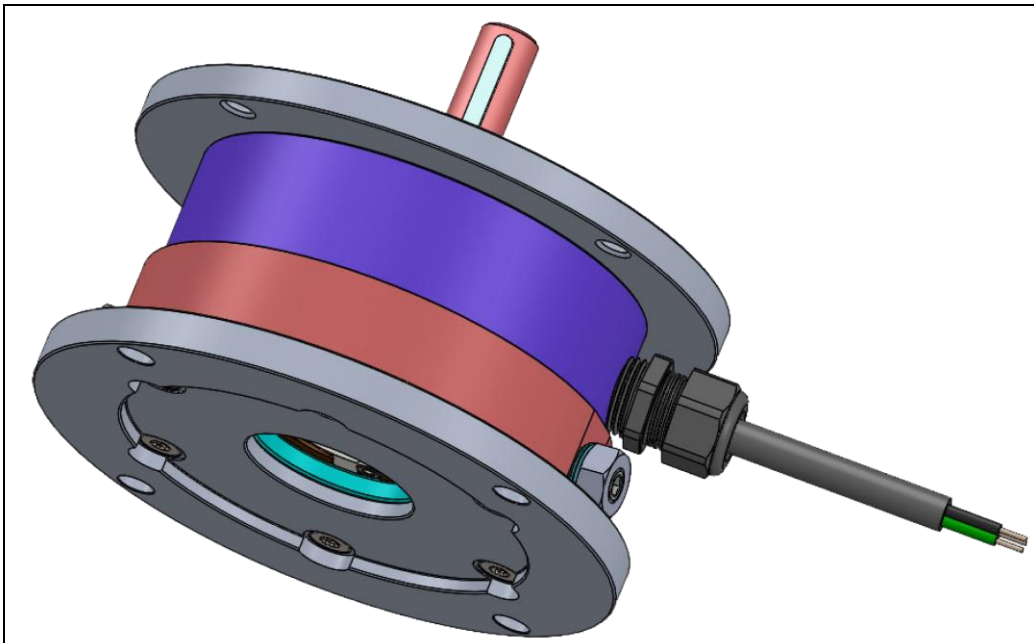


Figure 4.1 *Double C-Face brake with standard screw release*

4.1 Required Tools

You will need the following tools before you begin the double C-face brake installation:

- Mounting bolts for the input & output flanges.(3/8-16” = NEMA / M10x1.5 = IEC)
- Wrenches for the mounting bolts chosen.
- Gasket Sealant to make the flange connections watertight (if washdown is required).

Mounting bolts must be supplied by the customer.

© 2026 KEB America, Inc.

4.2 Unpacking the Brake

⚠ CAUTION

Heavy objects!

- ▶ Use appropriate lifting equipment to transport and install the brake.

1. Remove the packaging from the brake.
2. Inspect the complete brake assembly for damage or defect.

   Report any shipping damage to the device or packing to the shipping company and to KEB America, Inc.

3. Remove packaging that may have gotten on the flanges or into the input bore.

4.3 Installing the Brake

4.3.1 Preparation (Design A - Standard Brake with Screw Release)

1. Check both input and output brake flanges for dents or dings that would prevent proper mating of the flanges. Also check the motor and gearbox flanges.
2. For watertight applications: Apply sealant to the pilot diameters and the face of the flanges around the mounting bolts to block any path of water intrusion.

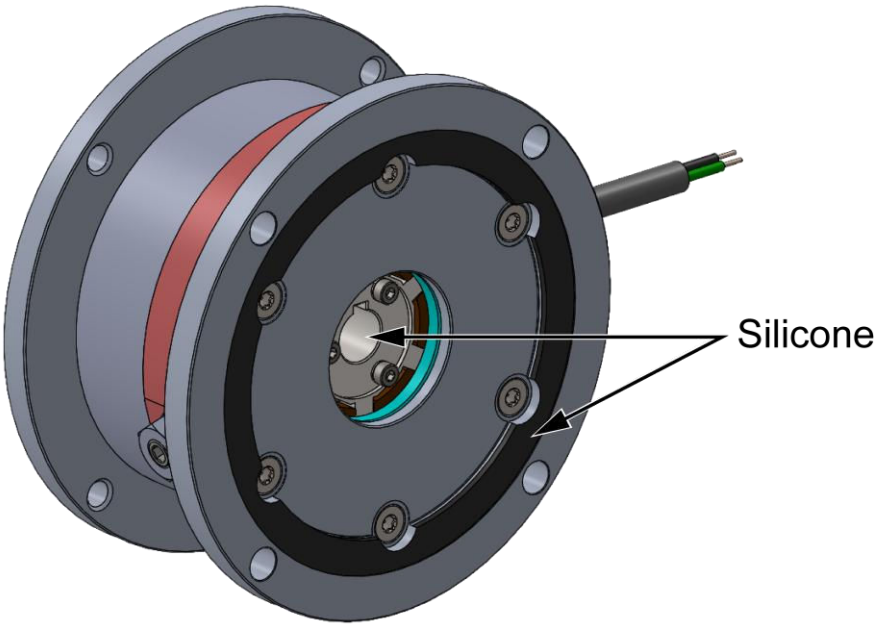


Figure 4.2 *Installation standard design A*

© 2026 KEB America, Inc.

3. To prevent fretting and rattle noise, apply a light coating of black silicone adhesive to the motor shaft and key. Also apply a light coating to the input bore and keyway of the brake.

NOTICE

Avoid brake torque interference!

- Too much silicone on the input shaft can interfere with the brake torque.

4.3.1.1 Install the Brake onto the Motor

1. Lift the brake assembly and align with the motor key.
2. Slide the brake assembly (1) over the motor shaft; position the brake such that the lead wire extends in the desired direction and the release hardware is in the desired location for future access.
3. Complete the install process until the flanges contact each other. Fasten with 3/8-16” (NEMA) or M10 (IEC) hardware (mounting hardware not included). Use lock washers or thread-lock liquid to prevent loosening. Ensure the brake assembly (1) fits snuggly against the mounting surface of the motor (2).

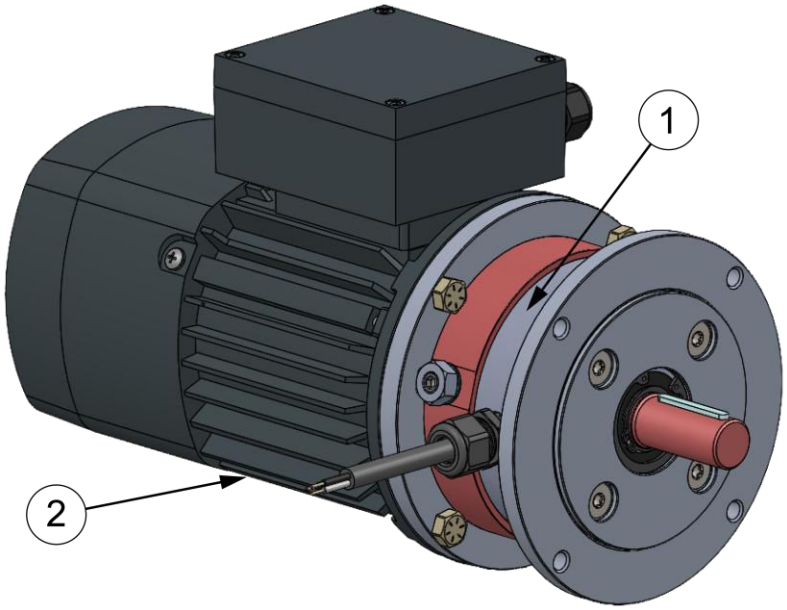


Figure 4.3 *Brake assembly - design A installation*

NOTICE

Avoid damage to the brake!

- Do not force the brake assembly onto the motor! Doing so may damage the brake.
- Do not use the mounting bolts to pull the flanges together – use hand force only.

© 2026 KEB America, Inc.

4.3.1.2 Install the Motor/Brake into the Gearbox (Optional)

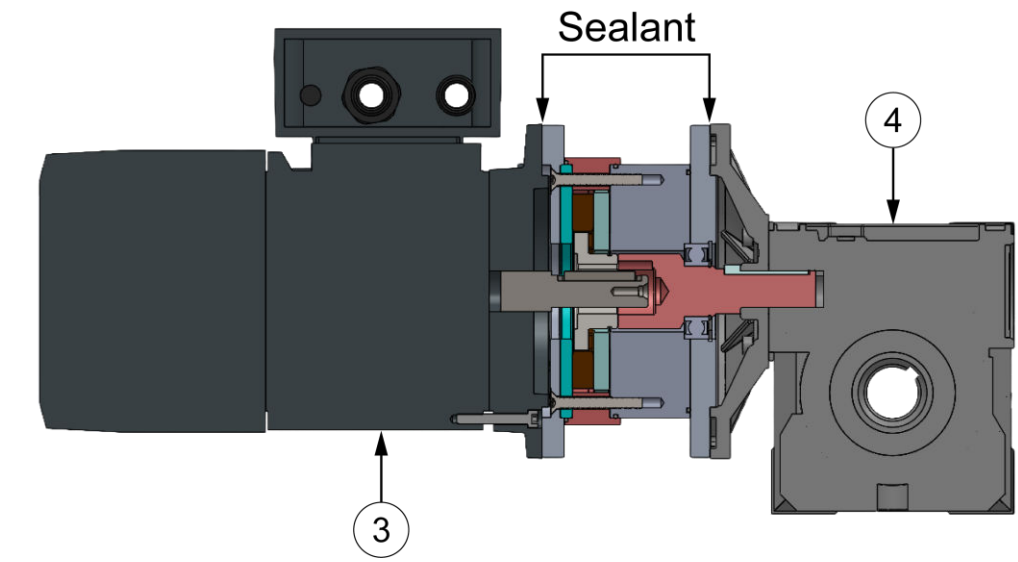


Figure 4.4 *Brake/motor/gearbox assembly installation Design A*

1. For Watertight applications: Apply sealant to the pilot diameters and the face of the flanges around the mounting bolts to block a path of water intrusion.
2. To prevent fretting and rattle noise, apply a light coating of black silicone adhesive to the Brake shaft and key. Apply a light coating also to the input bore and keyway of the gearbox.
3. Lift the brake - motor assembly and align with the gearbox key.
4. Slide the assembly (3) into the gearbox (4); position the assembly so that it is in the desired direction.
5. Complete the install until the flanges contact each other. Fasten with 3/8-16” (NEMA) or M10 (IEC) hardware (mounting hardware not included). Use lock washers or thread-lock liquid to prevent loosening. Ensure the brake assembly (1) fits snugly against the mounting surface of the motor (2).
6. Wire the brake to the DC control voltage for the chosen magnet. If a rectifier is used, refer to chapter 6 *Rectifiers* for possible wiring options.

NOTICE

Avoid damage to the brake!

- Do not force the brake into the gearbox! Doing so may damage the brake.
- Do not use the flange bolts to pull the flanges together – use hand force only.

© 2026 KEB America, Inc.

4.4 Testing the Brake Function

After installing the brake, it is recommended to test the brake function to ensure the installation was performed successfully.

1. Power on the brake with nominal voltage and verify the armature disengages by listening for a ‘click’ sound.
2. Check for free rotation of the shaft while the brake is powered on.
3. Power off the brake and verify the armature engages by listening for a ‘click’ sound.
4. Check for NO rotation of the shaft while the brake is powered off. The shaft should NOT rotate with power off.

⚠ WARNING

Inspect brake!

- ▶ After performing an emergency stop, inspect the brake components and test the brake performance before continued use.
- ▶ A run-in or burnish step may be needed before brake develops full torque.

© 2026 KEB America, Inc.

4.5 Resetting Std. Manual Brake Release screws (Design A)

⚠ DANGER

Loss of torque due to incorrect manual release screw setting!

- Manual release screws on the brake require they be reset before putting brake back into normal operation.
- Incorrect screw setting could cause the brake armature to fail to engage the linings, causing a large reduction in torque!

4.5.1 Using the Standard Screw Release

The brake torque can be released manually by screwing in the two standard M10 set screws using a 5 mm hex key.

To release torque:

1. Loosen or remove the two lock nuts with a 17 mm wrench or 17 mm socket.
2. Turn in the two cone point set screws using a 5 mm hex key.
3. Once resistance is felt, turn the screw an additional ½ turn. Do not exceed 5 Nm on the 5 mm hex key. After both screws have been turned in, the brake will NOT apply torque, it will be free spinning.

The brake WILL NOT reset itself after power up. It must be manually reset!

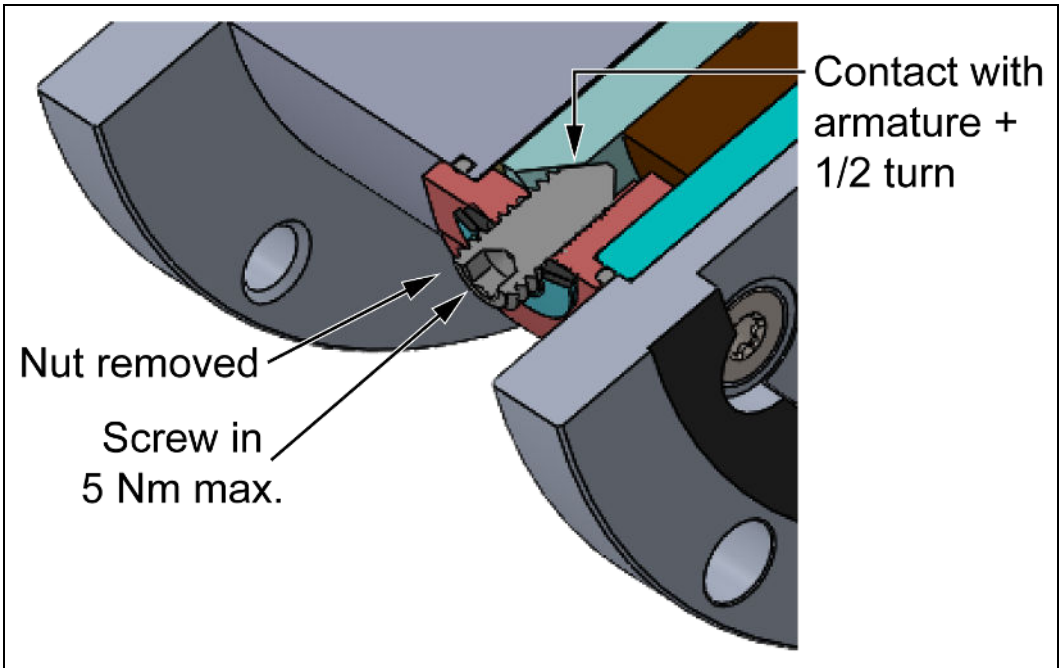


Figure 4.6 *Brake shown released with screws in*

To reset the brake for normal electrical operation:

1. Back out the set screws to be flush or +1 mm protruding from the M10 nuts 17 mm hex key.
2. Tighten the M10 nut to 5 to 8 Nm. This will compress the sealing washer and prevent loosening.

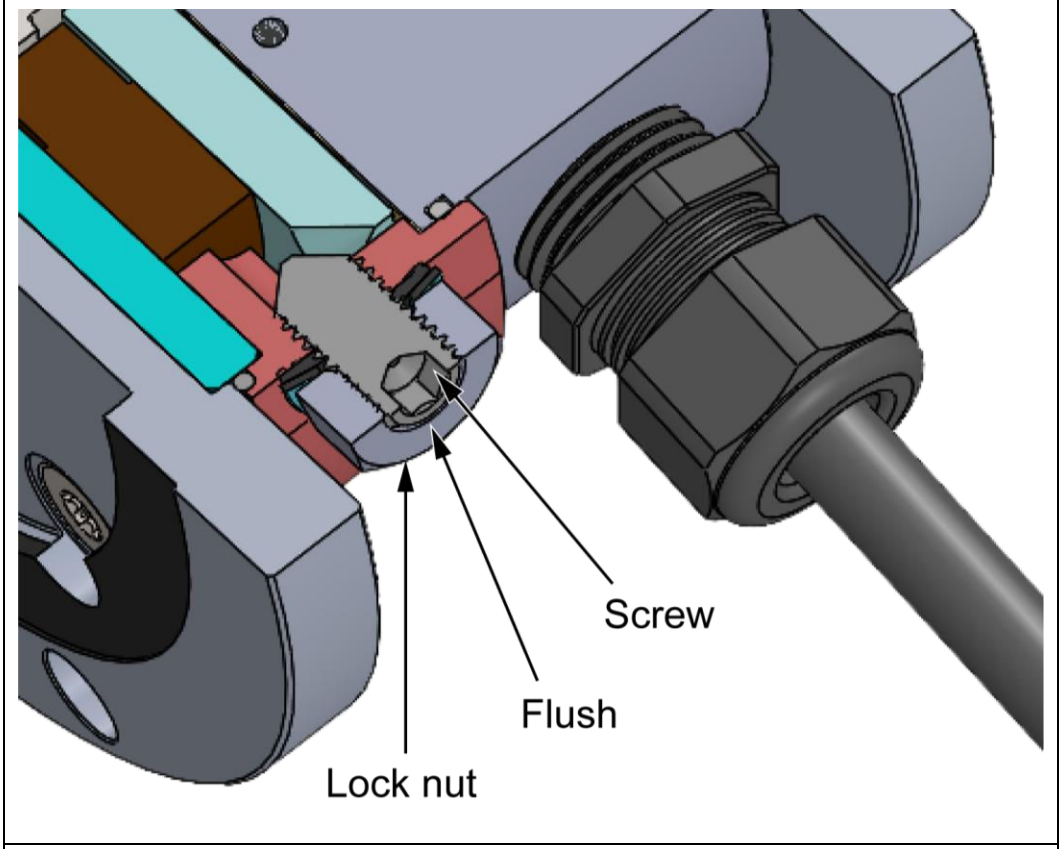


Figure 4.4 *Release screw in normal operation*

3. Repeat for the screw & nut on the other side of the brake.
4. The brake is now ready for normal electrical operation.

© 2026 KEB America, Inc.

5 Operation

5.1 Normal Operation

The COMBISTOP Type 17 Brake is an electrically released spring set brake. The brake is normally engaged with power off preventing rotation of the shaft.

When a nominal DC voltage is applied to the brake, the electromagnet disengages the brake allowing free rotation of the shaft.

Operation of the brake is typically performed automatically through a customer supplied control system. There is no manual operation of the double C-face brake unless the release screws have been tightened inward (5 Nm max).

Refer to section *Using the Standard Screw Release* for instructions on resetting the brake for normal electrical operation.

© 2026 KEB America, Inc.

6 Rectifiers

Several rectifiers are available for the COMBISTOP Brake. Rectifiers can be used on the AC side or for simultaneous AC and DC side switching.

An over-excitation or OEX switch is also available for simultaneous AC and DC side switching.

Simultaneous AC and DC side switching guarantees short disconnecting times and reduces contact erosion. For simultaneous switching, it is recommended to also use a MOV on the DC side.

AC side switching will yield slower switching times but requires no protective measures for the coil and switching contacts.

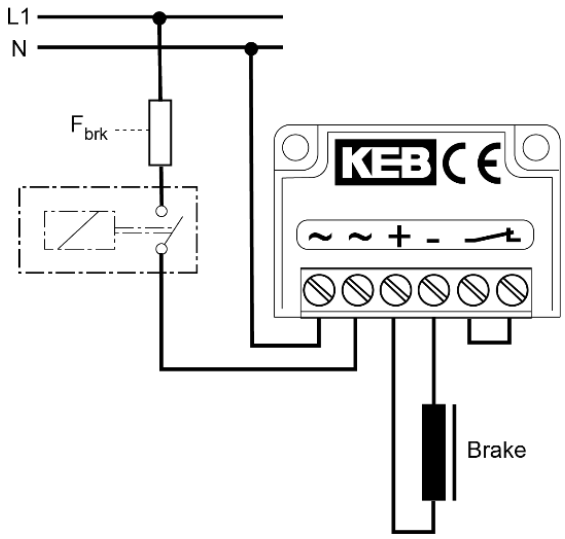
6.1 Example Wiring Diagrams

Refer to the KEB COMBITRON 91 Instruction Manual for more of the possible switching devices and wiring diagrams.

KEB COMBITRON 91 Instruction Manual:
https://www.kebamerica.com/wpcontent/uploads/2023/06/manual_keb_rectifier91_2021.pdf

6.1.1 AC Side Switching

AC Side – Relay Switching – Phase to Neutral



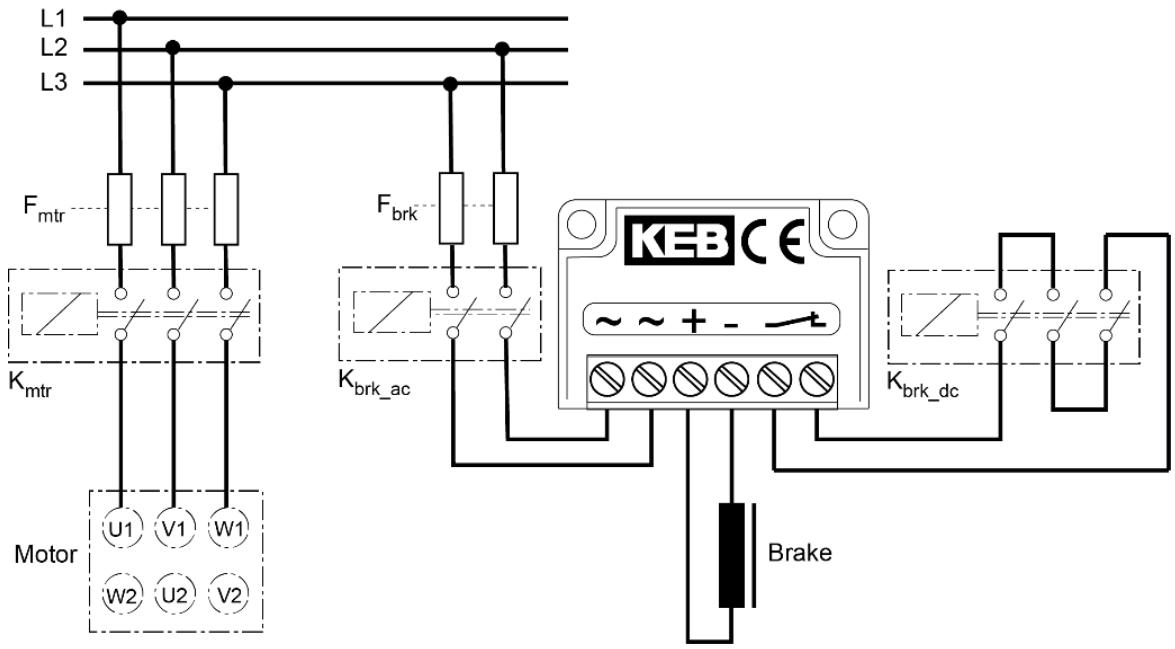
Switching: AC Side	**Rectifier: Full-wave**	**Model Number: 0291020-CE07**
Line Voltage: 115-120 VAC	Input Voltage: 120 VAC	Coil Voltage: 105 VDC
F_{brk} = Class CC fuse max. 5 A	Relay Contact: 120 VAC 5 A	

Figure 6.1 *Rectifier wiring AC side switching - relay switching*

© 2026 KEB America, Inc.

6.1.2 DC Side Switching

DC Side – Independent Contactor Switching – Phase to Phase



Switching: DC Side	**Rectifier: Half-wave**	**Model Number: 0491010-CE07**
Line Voltage: 208 VAC	Input Voltage: 208 VAC	Coil Voltage: 95 VDC
Line Voltage: 230 VAC	Input Voltage: 230 VAC	Coil Voltage: 105 VDC
	Rectifier: Full-wave	**Model Number: 0491020-CE07**
Line Voltage: 208 VAC	Input Voltage: 208 VAC	Coil Voltage: 170 VDC
Line Voltage: 230 VAC	Input Voltage: 230 VAC	Coil Voltage: 205 VDC
F_{brk} = Class CC fuse max. 5 A	K_{brk_dc} = min 300VDC 9 A AC3	
Optional redundant contactor for safety	K_{brk_ac} = min 300 VAC 5 A AC1	

Figure 6.2 *Rectifier wiring DC side switching - independent contactor switching - phase to phase*

© 2026 KEB America, Inc.

6.1.3 OEX Switch

Two possible use examples:

- The OEX Rectifier excites the brake magnet with the nominal voltage and then reduces the voltage by 50% for reduced holding. This reduced holding voltage significantly reduces the power consumption and speeds up the engagement of the brake when the voltage is switched off.
- The OEX Rectifier excites the brake magnet with double the nominal brake voltage and then reduces the voltage by 50% for normal voltage holding. This is used to reduce the brake release time and/or allow for more wear caused from dynamic brake applications.

Refer to the KEB COMBITRON 91 Instruction Manual for more of the possible switching devices and wiring diagrams.

KEB COMBITRON 91 Instruction Manual:
https://www.kebamerica.com/wpcontent/uploads/2023/06/manual_keb_rectifier91_2021.pdf

6.1.4 Brake reaction times – approximate

Brake size	DC Brake engage = Off	AC Brake engage = Off	Brake release = On	Brake release OEX = On
0317	45 ms	460 ms	60 ms	35 ms
0417	25 ms	275 ms	115 ms	35 ms
0517	20 ms	220 ms	150 ms	35 ms

© 2026 KEB America, Inc.

7 Revision History

Version	Description	Date
00	Preliminary version	10/2025
01	• Updated front cover image. • Updated information in Brake Assembly Model Number figure (*Figure 3.2*). • Updated inside back cover content.	07/2026

© 2026 KEB America, Inc.

MORE KEB PARTNERS WORLDWIDE:

www.keb-automation.com/contact

Automation **with Drive** **www.kebamerica.com**

KEB America, Inc. 5100 Valley Industrial Blvd S Shakopee, MN 55379 Tel. +1 952-224-1400 E-Mail: info@kebamerica.com