

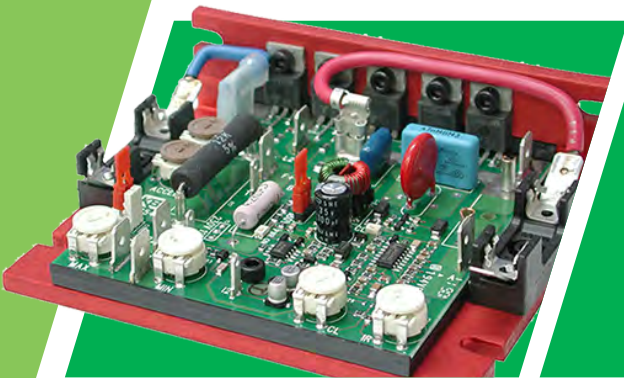


Drives

# DC Drives

KB Electronics

Compact DC Drives



# KBTC SCR Torque Control DC Drive

## Chassis

The KBTC controls are designed to control a motor's torque by controlling motor current. Unlike a traditional KBIC, which controls voltage and limits current, the main potentiometer of the KBTC sets current. The KBTC connections are the same as a KBIC control and can use the same accessories, such as the Barrier Terminal Board and Barrier Terminal Kit. The SI-5 signal isolator can also be used to allow a remote voltage or milliamp current signal to set motor torque. The control includes a fixed value of a Plug-in Horsepower Resistor (0.015 ohm) for all motor sizes.



### Options:

- SI-5 Signal Isolator (Item Number 9443)
- Barrier Terminal Board (Item Number 9884)
- Barrier Terminal Kit (Item Number 9863)
- Auxiliary HeatSink (Item Number 9861)
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- KBRF-300 CE Approved AC Line Filter (Class B) (Item Number 9484)
- KBRF-250 CE Approved AC Line Filter (Class A) (Item Number 9509)
- KBRF-350 CE Approved AC Line Filter (Class B) (Item Number 9511)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)
- Knob and Dial Kit - Large Dial Plate (2.25" x 2.06") (Item Number 9832)
- Knob and Dial Kit - Small Dial Plate (1.62" x 1.50") (Item Number 9815)
- Din Rail Mounting Kit, for "L" bracket Controls (Item Number 9995)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW						Lbs.	kg	
1	0.75	115	KBTC-125	9100	0-130	0-8	1	0.3	A
2	1.5	208/230	KBTC-225	9101	0-180	0-8	1	0.3	A
<b>Ratings with Auxiliary Heat Sink (Item Number 9861)</b>									
1	0.75	115	KBTC-125	9100	0-130	0-10	1	0.3	B
2	1.5	208/230	KBTC-225	9101	0-180	0-10	1	0.3	B

# KBIC SCR Drive

## Chassis

The KBIC Series of DC Drives includes six models rated for 1/100 to 3 horsepower motors. All models can be operated on a wide range of motor horsepower by inserting a Plug-In Horsepower Resistor®, which is required to operate the drive. Speed range is 50:1 with load regulation of 1% of base speed. These chassis drives include MOV transient protection, trimpot adjustments for MIN, MAX, ACCEL, IR, CL, and a 5k ohm potentiometer. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line.



### Options:

- SI-5 Signal Isolator (Item Number 9443)
- Barrier Terminal Board (Item Number 9884)
- Barrier Terminal Kit (Item Number 9863)
- Reversing Switch (Item Number 9844)
- Combination Fuse Kit (Item Number 9849)
- Auxiliary HeatSink (Item Number 9861)
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- KBRF-300 CE Approved AC Line Filter (Class B) (Item Number 9484)
- KBRF-250 CE Approved AC Line Filter (Class A) (Item Number 9509)
- KBRF-350 CE Approved AC Line Filter (Class B) (Item Number 9511)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)
- Knob and Dial Kit - Large Dial Plate (2.25" x 2.06") (Item Number 9832)
- Knob and Dial Kit - Small Dial Plate (1.62" x 1.50") (Item Number 9815)
- Din Rail Mounting Kit, for "L" bracket Controls (Item Number 9995)

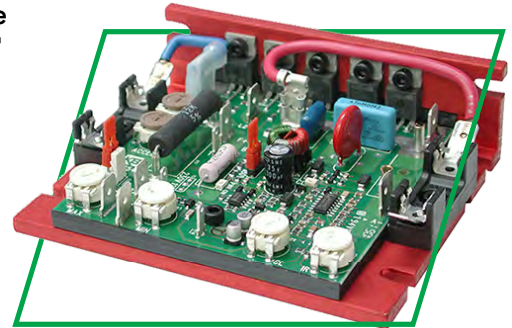
Plug-in Horsepower Resistor sold separately.

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW							Lbs.	kg	
0.5	0.37	115	KBIC-120	9429	9	0-90	6	0.6	0.3	A
0.75	0.55	115	KBIC-125	9433	12	0-90	8			
1	0.75	208/230	KBIC-240	9428	9	0-180	6			
1.5	1.1	208/230	KBIC-225	9432	12	0-180	8			
0.5	0.37	115	KBIC-240D	9464	9	0-90	6			
1	0.75	208/230				0-90, 180				
0.5	0.37	115 208/230	KBIC-240DS	9423	9	0-90	6	Ratings with Auxiliary Heat Sink (Item Number 9861)		
1	0.75	115	KBIC-120	9429	18	0-90	12	2.5	1.1	B
1.5	1.1	115	KBIC-125	9433	24	0-90	16			
2	1.5	208/230	KBIC-240	9428	18	0-180	12			
3	2.2	208/230	KBIC-225	9432	24	0-180	16			
1	0.75	115	KBIC-240D	9464	18	0-90	12			
2	1.5	208/230				0-90, 180				
1	0.75	115 208/230	KBIC-240DS	9423	18	0-90	12			

# KBMM SCR Drive with Fuse Holders

## Chassis

The KBMM Series of DC Drives includes three models rated for 1/100 to 3 horsepower motors. This chassis full-wave DC motor control is the ultimate in reliability and performance. The drive contains Direct-Fed™ CL that helps protect the SCR power bridge against shorts due to commutator arcing and prevents motor demagnetization. 25 Amp SCRs and AC line and armature fusing further enhance reliability. A Plug-in Horsepower Resistor® is required to operate the drive and eliminates the need for recalibration when used over a wide range of motor horsepower. They include an AC line fuse holder and an armature fuse holder, MOV transient protection, trimpot adjustments for MIN, MAX, ACCEL, DECEL, IR, CL, and a 5k ohm potentiometer. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line.



### Options:

- SI-6 Signal Isolator (Item Number 9444)
- Barrier Terminal Board (Item Number 9897)
- Barrier Terminal Kit (Item Number 9883)
- Reversing Switch (Item Number 9844)
- Run-Brake Module (Item Number 9952)
- Auxiliary Heat Sink (Item Number 9861)
- Finger Safe Cover (Item Number 9564)
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- KBRF-300 CE Approved AC Line Filter (Class B) (Item Number 9484)
- KBRF-250 CE Approved AC Line Filter (Class A) (Item Number 9509)
- KBRF-350 CE Approved AC Line Filter (Class B) (Item Number 9511)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)
- Knob and Dial Kit - Large Dial Plate (2.25" x 2.06") (Item Number 9832)
- Knob and Dial Kit - Small Dial Plate (1.62" x 1.50") (Item Number 9815)
- Din Rail Mounting Kit, for "L" bracket Controls (Item Number 9995)

AC line, armature fuse, and plug-in Horsepower Resistor sold separately.

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW							Lbs.	kg	
0.75	0.55	115	KBMM-125	9449	12	0-90	8	0.6	0.3	A
1.5	1.1	208/230	KBMM-225	9450	12	0-180	8			
0.75	0.55	115	KBMM-225D	9451	12	0-90	8			
1.5	1.1	208/230				0-90,180				
Ratings with Auxiliary Heat Sink (Item Number 9861)										
1.5	1.1	115	KBMM-125	9449	24	0-90	16	2.5	1.1	B
3	2.2	208/230	KBMM-225	9450	24	0-180	16			
1.5	1.1	115	KBMM-225D	9451	24	0-90	16			
3	2.2	208/230				0-90,180				



# KBMG SCR Regen Reversing DC Drive, 1/12 to 2 hp

## Chassis

The KBMG Series of DC Drives includes two models rated for 1/100 to 2 horsepower motors. This chassis ultra-compact, full-wave regenerative drive is capable of operating DC PM or Shunt motors in a bidirectional mode. Its 4-quadrant operation provides forward and reverse torque in both speed directions. Included is jumper selectable Input AC Line Voltage, Armature Current, Motor Armature Voltage, Analog Input Voltage, Control Mode (Speed or Torque) and Coast to Stop (CTS) or Regenerate to Stop (RTS). The Overspeed Protect Circuit prevents failure of the power bridge in extreme overhauling conditions. The reliability of the KBMG has further evolved with the use of a high-speed current limit circuit and MOV Transient Protection. Power on and motor overload LEDs are provided for diagnostics. Power connections are made via quick connect terminals and signal input connections are made via a removable terminal block. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line. A 5k ohm potentiometer is included.



### Options:

- SIMG Bipolar Signal Isolator (Item Number 8832)
- Multi-Speed Board (Item 8833)
- Auxiliary Heat Sink (Item Number 9861)
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- KBRF-300 CE Approved AC Line Filter (Class B) (Item Number 9484)
- KBRF-250 CE Approved AC Line Filter (Class A) (Item Number 9509)
- KBRF-350 CE Approved AC Line Filter (Class B) (Item Number 9511)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)
- Knob and Dial Kit - Large Dial Plate (2.25" x 2.06") (Item Number 9832)
- Knob and Dial Kit - Small Dial Plate (1.62" x 1.50") (Item Number 9815)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW							Lbs.	kg	
0.08	0.06	115	KBMG-21D	8830	1.5	0-90	1	1.0	0.4	N
0.15	0.11	208/230				0-90,180				
0.75	0.55	115	KBMG-212D	8831	12	0-90	8	1.0	0.4	N
1.5	1.1	208/230				0-90,180				
Ratings with Auxiliary Heat Sink (Item Number 9861)										
1	0.75	115	KBMG-212D	8831	16	0-90	11	2.9	1.3	0
2	1.5	208/230				0-90,180				

# KBRG SCR Regen Reversing DC Drive, 3/4 to 5 hp

## Chassis

The KBRG Series of DC Drives includes three models rated for 1/8 to 5 horsepower DC Permanent Magnet and Shunt motors. These are full-wave regenerative controls, which allow forward and reverse torque in both speed directions. Features include armature and tachometer feedback, built-in horsepower selection, an AC Line fuse and an armature fuse. Trimpots adjustments for Fwd CL, Rev CL, IR Comp, Resp, Max Spd, Offset, Deadband, Fwd Accel, Rev Accel, Timed Current Limit (TCL), and two torque modes. LED indicators for power on, current limit, Fwd Enable, and Rev Enable. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line. A 5k ohm potentiometer is included. The KBRG-255 is designed specifically for 5 HP shunt wound and PM DC motors. It is similar to the KBRG-225D (3 HP) but has higher SCR ratings and a larger heat sink.



## Options:

- KBRG SI-4X Bipolar Signal Isolator (Item Number 8801)  
The isolator is compatible with all models except the KBRG-212D
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945) for Models 212D and 240D only
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)
- Knob and Dial Kit - Large DialPlate (2.25" x 2.06") (Item Number 9832)
- Knob and Dial Kit - Small Dial Plate (1.62" x 1.50") (Item Number 9815)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW							Lbs.	kg	
1	0.75	115	KBRG-240D	8802	16	0-90	12.2	3.0	1.4	Q
2	1.5	208/230				0-90,180				
1	0.75	115	KBRG-225D	8800	24	0-90	16	5.0	2.3	R
3	2.2	208/230				0-90,180				
5	3.7	208/230	KBRG-255	8821	38	0-180	25	5.9	2.7	S



# KBWM SCR Drive, Non-Reversing Drive

## NEMA 1 / IP20

The KBWM Series of DC Drives, housed in a NEMA 1 enclosure, includes two models rated for 1/100 to 3/4 horsepower motors. These drives are the compact version of the Multi Drive™ (KBMD). This unidirectional SCR drive utilizes the KBMM speed control module, which prevents motor failure due to demagnetization. It requires a Plug-in Horsepower Resistor® to operate and includes an AC line fuse and armature fuse holder. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line and a terminal block to facilitate wiring.



Plug-in Horsepower Resistor sold separately

### Options:

- KBSI-240D Signal Isolator (Item Number 9431)
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- KBRF-300 CE Approved AC Line Filter (Class B) (Item Number 9484)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW							Lbs.	kg	
0.33	0.25	115	KBWM-120	9380	5	0-90	3.5	1.0	0.5	T
0.75	0.55	208/230	KBWM-240	9381	5	0-90, 180	3.5			

# KBMD SCR Drive

## NEMA 1/ IP40

The Model KBMD-240D (also called Multi-Drive™) is rated for 1/100 to 2 horsepower motors and is an SCR drive housed in a NEMA 1 enclosure. It utilizes the KBMM speed control for its electronics. It operates with both 115 and 208/230 Volt AC line inputs by setting the built-in Dual Voltage Switch. The single model can be operated on a wide range of motor horsepower by inserting the appropriate Plug-In Horsepower Resistor® which is required to operate this drive. It includes an AC line fuse and an armature fuse holder. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line.



Plug-in Horsepower Resistor and armature fuse sold separately.

### Options:

- KBSI-240D Signal Isolator (Item Number 9431)
- Forward-Brake-Reverse Switch Kit (Item Number 9860)
- Auxiliary Heat Sink (Item Number 9861)
- For KBMD-240D with built-in Forward-Brake-Reverse Switch, order Item Number 9371
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW							Lbs.	kg	
0.75	0.55	115	KBMD-240D	9370	12	0-90	8	2.0	0.9	U
1.5	1.1	208/230				0-90,180				
<b>Ratings with Auxiliary Heat Sink (Item Number 9861)</b>										
1	0.75	115	KBMD-240D	9370	16	0-90	11	4.0	1.8	V
2	1.5	208/230				0-90,180				



# KBPC SCR DRIVE

NEMA 4X / IP65

The KBPC Series of DC Drives includes four models and are rated from 1/100 to 3 horsepower motors. These drives are housed in a NEMA 4X / IP 65 die-cast aluminum washdown/watertight enclosure for indoor or outdoor use. The exclusive Short Circuit and Timed Current Limit (TCL) circuitry prevents motor burnout and demagnetization of PM motors. Features, such as a selectable motor current, eliminate unnecessary calibration of the IR and CL trimpots. Other selectable features are Input Voltage, Output Voltage, Current Range, Input Signal, Armature or Tachometer Feedback, and Tachometer Voltage. Trimpot adjustments include MIN, MAX, ACCEL, DECEL, IR, CL and TCL. Standard features include an armature fuse, electronic Start-Stop, and diagnostic LED Indicator Array for “power on”, “stop” and “overload.” This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line.



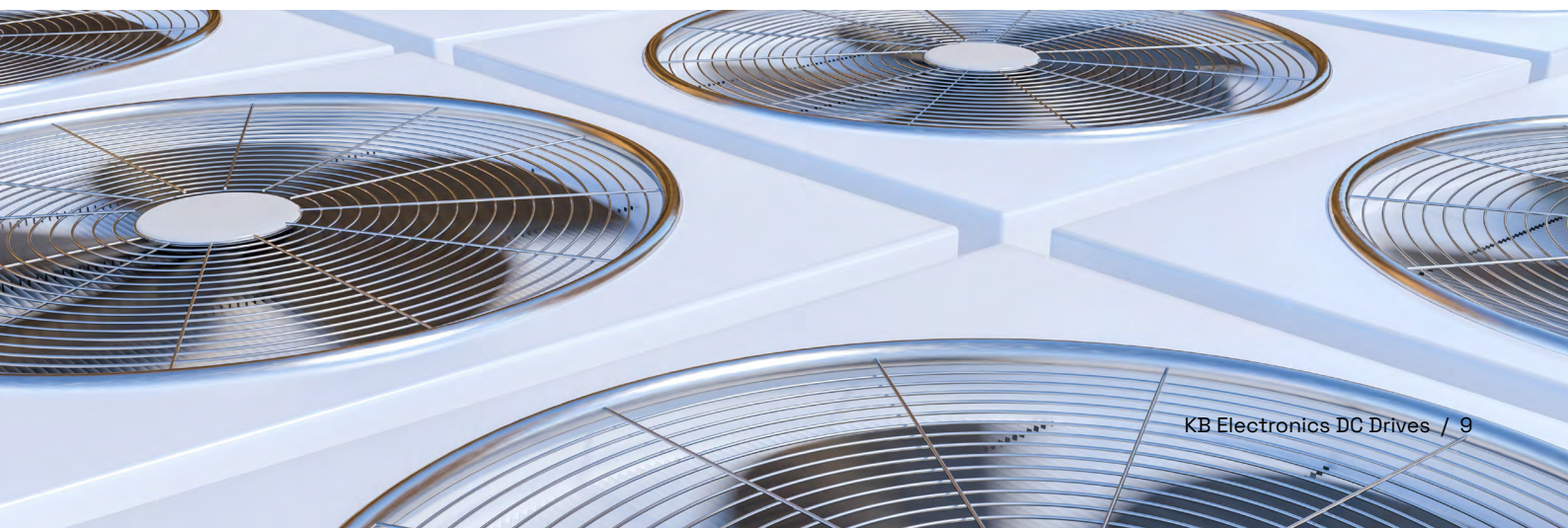
The KBPC-225D does not contain an Armature fuse and is not a reversing drive.

## Options:

- KBSI-240D Signal Isolator (Item Number 9431)
- KBPC-PW Start-Stop Switch (Item Number 9393)
- On/off AC Line Switch (Item Number 9341)
- Run-Stop-Jog Switch (Item Number 9340)
- Auto/Manual Switch (Item Number 9377)
- Forward-Brake-Reverse Switch (Item Number 9339)
- Replacement potentiometer kit for NEMA 4X controls (Item Number 9510)
- Seal kit for NEMA 4X controls (Item Number 9518)
- Anti-Plug Reversing Module (Item Number 9378) is designed for the KBPC-240D only
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number		Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW			Black	White*				Lbs.	kg	
1	0.75	115	KBPC-240D	9338	9342	15	0-90	10.2	4.6	2.1	W
2	1.5	208/230					0-90,180				
1.5	1.1	115	KBPC-225D	9391	9392	22	0-90	15			
3	2.2	208/230									

\*FDA approved (white cases only).



# KBRC SCR Regen Reversing Drive

NEMA 4X / IP65

The KBRC-240D DC Drive is a Full-Wave Regenerative Drive housed in a NEMA 4X / IP 65 washdown/watertight enclosure for indoor or outdoor use. The KBRC-240D is designed to operate Permanent Magnet and Shunt Wound DC motors from 1/100 to 2 horsepower, in a bidirectional mode. It has 4-quadrant operation, which provides forward and reverse torque in both speed directions. An important feature, Timed Current Limit (TCL), provides motor burnout protection. The KBRC-240D can be operated from a two or three wire start/stop circuit or can be started from the AC line. A set of dedicated normally open or normally closed relay contacts are provided, which are activated via the start/stop circuit. Main features of the KBRC-240D include speed or dual torque control modes. In addition, Regenerate-to-Stop (RTS) or Coast-to-Stop (CTS) modes can be selected. This drive also contains Auto Inhibit® which provides a smooth, safe start during rapid switching of the AC line.



**Options:**

- SIRC Bipolar Signal Isolator (Item Number 8842)
- KBRC Forward-Stop-Reverse Switch (Item Number 9485)
- KBRC Auto/Manual Switch (Item Number 9487)
- On/Off AC Line Switch (Item Number 9486)
- Replacement potentiometer kit for NEMA 4X controls (Item Number 9510)
- Seal kit for NEMA 4X controls (Item Number 9518)
- KBRF-200A CE Approved AC Line Filter (Class A) (Item Number 9945)
- Choke, 2 wire, AC line or DC Motor (Item Number 9993)

Maximum Power		AC Line Voltage (50/60 Hz)	Model Number	Item Number		Max AC Line Current (Amps AC)	Output Voltage Range (Volts DC)	Max. Load Current (Amps DC)	Net Weight		Dim Ref. Code
HP	kW			Black	White*				Lbs.	kg	
1	0.75	115	KBRC-240D	8840	8841	15	0-90	11	4.6	2.1	W
2	1.5	208/230		0-90, 180							

\*FDA approved (white cases only).

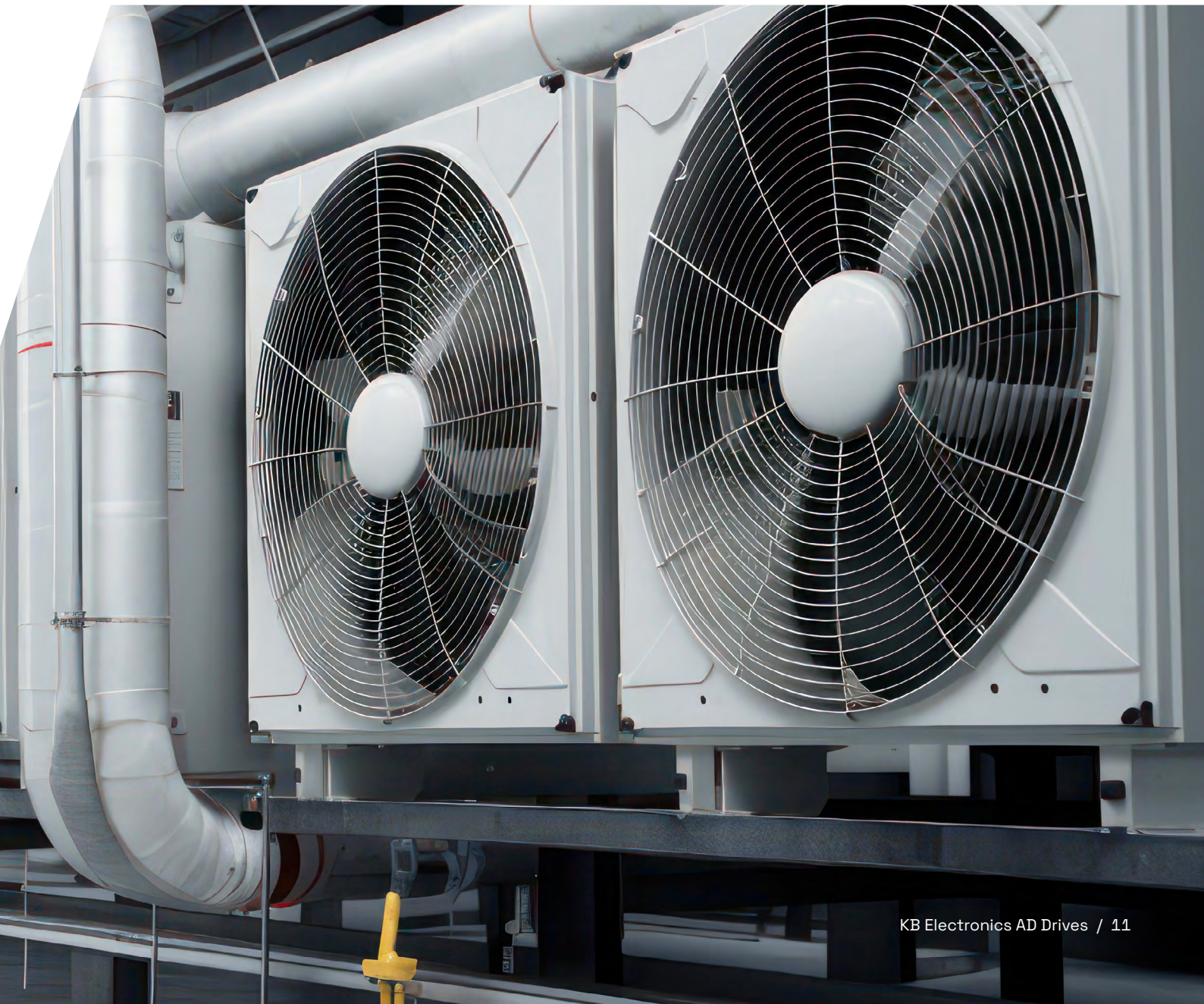


# DC Drive

## Dimensions

(Height x Width x Depth)

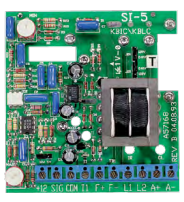
Ref. Code	Inches	Millimeters	Drives
A	4.3 x 3.6 x 1.3	109 x 91 x 33	KBTC Series, KBIC Series, KBMM Series
B	7.0 x 6.3 x 2.6	177 x 160 x 66	KBTC Series, KBIC Series, KBMM Series with Auxiliary Heatsink
N	4.3 x 3.6 x 1.8	109 x 91 x 46	KBMG-212D
O	7.0 x 6.3 x 3.2	177 x 160 x 81	KBMG-212D with Auxiliary Heatsink
Q	10 x 7.7 x 2.6	254 x 196 x 66	KBRG-240D
R	10 x 7.7 x 3.4	254 x 196 x 86	KBRG-225D
S	12 x 7.7 x 2.6	305 x 196 x 66	KBRG-255
T	6.8 x 3.7 x 3.0	173 x 94 x 76	KBWM-240D, KBWM-240
U	7.0 x 5.0 x 4.0	177 x 127 x 102	KBMD-240D
V	7.0 x 6.3 x 5.4	177 x 160 x 137	KBMD-240D with Auxiliary Heatsink
W	9.5 x 6.0 x 5.0	241 x 152 x 127	KBPC-240D, KBPC-225D, KBRC-240D







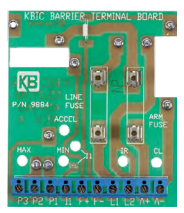
# DC Drive Accessories



### SI-5 & SI-6 Signal Isolators Item Numbers 9443, 9444

The Signal Isolators convert a standard control to an isolated input. By using external resistors, the input signal can be changed to 0-100VDC, 0-200VDC and 4-20mA. The output voltage is 0-10VDC which can be rescaled with the built-in MIN and MAX trimpots. Selectable AC line jumpers allow the SI-5 and SI-6 to be used either with 115 or 208/230 Volts AC controls. Installation is made by simply mating the unit to the speed control with the built-in quick-connect terminals.

For use with Drive Model: KBIC and KBTC, SI-5 (9443) and KBMM, SI-6 (9444)



### Barrier Terminal Boards Item Numbers 9884, 9897

The Barrier Terminal Accessory Kit converts a standard KBIC® or KBMM from 1/4" Q-D terminals to barrier terminals. It installs easily with its preformed wiring harness and is compatible with KB's 7" Auxiliary Heat Sink. The Kit contains AC line and Armature fuse holders (fuses supplied separately).

For use with Drive Model: KBIC (9884), KBMM (9897)



### Run-Brake Module (Includes DB Resistor) Item Number 9952

Used for applications that require rapid stopping of the motor. Contains a barrier terminal block.

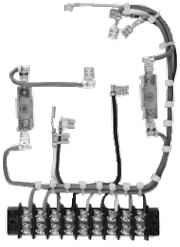
For use with Drive Model: KBMM



### Forward-Stop-Reverse Switch Kit Item Number 9844

The Forward-Stop-Reverse Switch assembly is designed to provide electronic reversing.

For use with Drive Model: KBIC, KBMM



### Barrier Terminal Kits Item Numbers 9863, 9883

The Barrier Terminal Accessory Kit converts a standard KBIC® or KBMM from 1/4" Q-D terminals to barrier terminals. It installs easily with its preformed wiring harness and is compatible with KB's 7" Auxiliary Heat Sink. The Kit contains AC line and Armature fuse holders (fuses supplied separately). Installed when using the 7" heatsink (Item Number 9861) and not quick disconnect terminals.

For use with Drive Model: KBIC (9863), KBMM (9883)

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### Combination Fuse Kit Item Number 9849

The AC Line/Armature Fuse Block Kit consists of two fuse blocks suitable for 1/4" x 1-1/4" 3AG type fuses (fuses supplied separately). Also included are (2) 6x32 screws for mounting and red and black leads with Q-D terminals.

For use with Drive Model: KBIC, KBWD, KBWS

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### 7" Auxiliary Heat Sink Item Number 9861

The Auxiliary Heat Sink is used to increase the rating of several KB control models. It is constructed of black anodized aluminum and has keyhole slots to facilitate mounting. When used with the KBIC® and KBMM™ models, the Auxiliary Heat Sink has provision for mounting the Barrier Terminal Accessory Kit.

For use with Drive Model: KBIC, KBMM, KBPB, KBMG-212D, KBMD

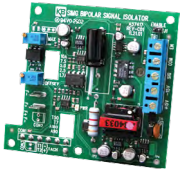
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### Finger Safe Cover Item Number 9564

The Finger Safe Cover converts the KBMM from an "open chassis" to the IP-20 standard. Constructed of high temperature ABS, it installs easily with the two screws provided. Note: the AC line and armature fuse holders must be removed before installing the Finger Safe Cover.

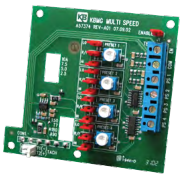
For use with Drive Model: KBMM



### SIMG Bi-Polar Signal Isolator Item Number 8832

The SIMG is used to isolate, amplify, and condition DC voltage signals from any source (power supplies, motors, tach-generators, transducers, and potentiometers) to control the KBMG Series of Regenerative Drive. Input connections (+15V, -15V, SIG, COM, and EN) are made with a barrier terminal block and are isolated from AC line and motor wiring. The SIMG is factory calibrated to accept a signal input voltage of -10V to +10V DC. OFFSET and MAX trimpots are provided in order to recalibrate the SIMG for a specific application.

For use with Drive Model: KBMG



### KBMG-MSB Multi-Speed Board Item Number 8833

The KBMG Multi-Speed Board provides 4-user selectable preset speeds to control a motor connected to the KBMG Series Regenerative Drive. A preset (PS 1, PS 2, PS 3, PS 4) is selected with a contact closure or open collector. Motor direction is set by the position of Jumper R/F (reverse/forward) which is provided for each preset. Connections to the Multi-Speed Board are made with a barrier terminal block. A connector is available for a tach-generator, if required.

For use with Drive Model: KBMG



### KBRG SI-4X Bipolar Signal Isolator Item Number 8801

The SI-4X provides complete electrical isolation between input voltage signals which are derived from programmable controllers, transducers and digital/analog converters and the KBRG. The Module contains two input ranges ( $\pm 25$ ,  $\pm 250$  VDC) which are jumper selectable. The input/output ratio can be scaled via the included "ZERO" and "MAX" trimpots. The SI-4X installs easily onto the KBRG chassis.

For use with Drive Model: All KBRG models except KBRG-212D



### APRM-PC Anti Plug Reversing Module, with Reversing Switch Item Number 9378

The APRM-PC is designed to provide anti-plug "instant" reversing and solid state dynamic braking for the KBPC and KBPW controls. The APRM-PC mounts inside the front cover of the control. It connects using the wiring harness (provided) with QD terminals and includes a three position Forward-Brake-Reverse switch which also mounts on the cover.

For use with Drive Model: KBPC-240D, KBPW-240D





### Forward-Brake-Reverse Switch Item Numbers 9339, 9860

The Forward-Brake-Reverse Switch Kit is designed to mount in the cover of the KBPC, KBPW and KBMD speed controls. It includes a “hesitation” feature which is designed to eliminate “plug reversing” which will prevent damage to the motor. A dynamic brake resistor is included, providing for up to 3 cycles per minute.

For use with Drive Model: KBPC and KBPW (9339), KBMD (9860)

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### Start-Stop Switch Item Number 9393

This is a replacement switch assembly for the Start-Stop Switch supplied with the drive. This is a single pole double throw (SPDT) switch. The switch is momentary when starting the drive and maintained when stopping the drive.

For use with Drive Model: KBPC, KBPW

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### Run-Stop-Jog Switch Kit Item Number, 9340

The Run-Stop-Jog Switch provides selection between the Main Speed Potentiometer setting or a momentary jog speed, which can be used to index a machine into position.

For use with Drive Model: KBPC, KBPW

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### Auto/Manual Switch Kit Item Number 9377

The Auto/Manual Switch Kit provides the ability to select the control’s speed reference from either the Main Speed Potentiometer or a remote signal when used with the optional Signal Isolator (Item Number 9431). The switch mounts in the brake switch position, and a separate AUTO-MANUAL label is included.

For use with Drive Model: KBPC, KBPW

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### Replacement Potentiometer Kit for NEMA 4X Controls Item Number 9510

The Potentiometer Kits consist of a 5k Ohm linear potentiometer with wires and quick disconnect connectors assembled. Also included is the potentiometer shaft seal, insulator and knob

For use with Drive Model: KBPC, KBPI, KBRC, KBPW



**SIRC Bipolar Signal Isolator Item Number 8842**

The SIRC is used with the KBRC-240D to isolate, amplify and condition DC voltage signals from any source (tach-generators, transducers, PLCs and potentiometers). It also provides an isolated input to control motor direction and an isolated power supply or transducer or potentiometer operation.

For use with Drive Model: KBRC

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**KBRC Forward-Stop-Reverse Switch Kit Item Number 9485**

The Auto/Manual Switch assembly is designed for installation on the front cover of the KBRC-240D. It is used to select either the Main Speed Potentiometer for “manual operation” or a remote voltage following analog signal for “automatic operation.” It is suggested that the SIRC Bipolar Signal Isolator option (Item Number 8842) be used with the Auto/Manual Switch assembly to provide signal isolation between the signal source and the KBRC-240D.

For use with Drive Model: KBRC

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**KBRC Auto/Manual Switch Kit Item Number 9487**

The Auto/Manual Switch assembly is designed for installation on the front cover of the KBRC-240D. It is used to select either the Main Speed Potentiometer for “manual operation” or a remote voltage following analog signal for “automatic operation.” It is suggested that the SIRC Bipolar Signal Isolator option (Item Number 8842) be used with the Auto/Manual Switch assembly to provide signal isolation between the signal source and the KBRC-240D.

For use with Drive Model: KBRC

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**On/Off AC Line Switch Kit Item Number 9486, 9341**

The Power On/Off Switch assembly is designed to provide a positive AC line power disconnect. It can be installed in lieu of, or in addition to, the factory installed Start/Stop Switch assembly.

For use with Drive Model: KBPC-240D and KBPW-240D, (9341) – KBRC, (9486)

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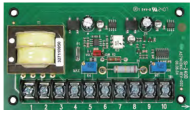
**KBBW Heatsink Item Number 9142**

The 4” Auxiliary Heat Sink Kit increases the drive’s current rating from 14 Amps DC to 20 Amps DC. Includes 4 10-32 x 1/2” screws and installation instructions.

Dimensions (Inches): 4.0 x 6.3 x 3.0 (H x W x D)

For use with Drive Model: KBBW

### **KBSI-240D Signal Isolator Item Number 9431**



The Model KBSI-240D Signal Isolator provides an isolated interface between non-isolated signals and KB motor speed controls. The maximum output voltage of the KBSI is 10 Volts DC, which is a linear function of the input. The unit is versatile, since a single model accepts a wide range of voltages (0-25, 0-120 and 0-550 Volts DC) and current signals (1-5, 4-20 and 10-50mA); multi-turn trimpots are provided for MIN and MAX. The KBSI can be operated from either 115V or 208/230 Volts AC, 50/60Hz.  
For use with Drive Model: All controls

### **Potentiometer Kits Item Number 9111, 9114, and 9831**



The Potentiometer Kits consist of a 5k ohm (1W) linear potentiometer with mounting hardware and front panel insulator. Item Number 9111 contains a conductive plastic element and is fitted with a nylon shaft and isolated brass mounting bushing. Item Number 9114 is the same as Item Number 9111 except that it contains an On/Off Switch. Item Number 9831 contains a 5 watt rated wire wound potentiometer with excellent linearity.  
For use with Drive Model: All controls

### **Knob & Dial Kits Item Number 9832 (Large) and 9815 (Small)**



Two Knob/Dial Kits are available. Both contain black knobs with silver inserts. Dial Plates are .040" aluminum with 3/8" mounting hole. Dimensions (L x W approx.): large dial plate: 2.25" x 2.06", small dial plate: 1.62" x 1.50".  
For use with Drive Model: All controls

### **KBRF-200A CE Approved AC Line Filter (Class A) Item Number 9945**



The KBRF-200A is an RFI filter used to suppress electronic interference caused by motor speed controls to within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to EMC. Rated 24 Amps AC Maximum – 115/230 VAC, 50/60 Hz. CE approved meets (Class A) industrial.  
For use with Drive Model: All controls

### **KBRF-300 CE Approved AC Line Filter (Class B) Item Numbers 9484**



The KBRF-300 is an RFI filter used to suppress electronic interference caused by motor speed controls to within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to EMC. Rated 16 Amps at 115 or 208/230 Volts AC – 115/230 VAC, 50/60 Hz. CE approved meets (Class B) residential.  
For use with Drive Model: All controls

**KBRF-250 CE Approved AC Line Filter (Class A) Item Number 9509**

The KBRF-250 is an RFI filter used to suppress electronic interference caused by motor speed controls. The KBRF-250 is designed as an integral mounting base for speed controls with industry standard mounting requirements such as the KBVF Series Inverter, PWM DC Speed Controls, and SCR Speed Controls. Installation is easily accomplished with quick-connect terminals. It is housed in a plated steel case which is to be grounded with the external ground screw or mounting tab. Rated 10 Amps at 230 Volts AC. CE approved meets (Class A) industrial.

For use with Drive Model: KBIC, KBMM, KBWD, KBWS, KBMG

**KBRF-350 CE Approved AC Line Filter (Class B) Item Number 9511**

The KBRF-350 is an RFI filter used to suppress electronic interference caused by motor speed controls. The KBRF-350 is primarily designed as an integral mounting base for speed controls with industry standard mounting requirements such as the KBVF Series Inverter, PWM DC Speed Controls, and SCR Speed Controls. Installation is easily accomplished with quick-connect terminals. It is housed in a plated steel case which is to be grounded with the external ground screw or mounting tab. Rated 10 Amps at 230 Volts AC. CE approved meets (Class B) residential.

For use with Drive Model: KBIC, KBMM, KBWD, KBWS, KBMG

**Choke, 2 wire, AC Line or DC Motor Item Number 9993**

RFI Filters are used to suppress electronic interference caused by motor speed controls. They have been designed to limit the interference to within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to the Class A Industrial Standard and Class B Residential Standard. The AC Line / DC Motor Choke is used to provide supplemental RFI filtering, if required.

For use with Drive Model: All DC controls

**Din Rail Mounting Kit Item Number 9995**

The DIN Rail Mounting Kit consists of a mounting plate and two mounting clips. This accessory makes it possible to mount any "L" bracket control onto a DIN rail. The kit can be attached on the short side or long side of the "L" bracket. When used on the long side, it allows for either horizontal or vertical mounting of the control. For short side mounting, only one clip is used.

For use with Drive Model: All L-Bracket controls

# KB Plug-In Horsepower Resistor®

Motor Characteristics SCR Controls (KBIC, KBMM, KBPB, KBCC, KBWM, KBMD)		Plug-In Horsepower Resistor® Ordering Information				Motor Characteristics PWM Controls (KBWD, KBWS)				
Armature Voltage		Motor Current (approx. amps DC)	Plug-In Horsepower Resistor Value (ohms)	Individual Plug-In Horsepower Resistor Part No.	Reorder Kit 50 pcs. per Value Part No.	SCR Rated Motor Horsepower @ 90 VDC	SCR Rated Motor Horsepower @ 180 VDC	PWM Rated Motor Horsepower @ 130 VDC	PWM Rated Motor Horsepower @ 200 VDC	Motor Current (approx. amps DC)
90 - 130 VDC	180 VDC									
Motor Horsepower Range										
—	—	—	2.0	9949	9950	1/100 - 1/50	1/50 - 1/25	1/50 - 1/25	1/25 - 1/20	0.2
1/100 - 1/50	1/50 - 1/25	.1 - .2	1.0	9833	9885	1/30 - 1/20	1/15 - 1/10	1/20 - 1/15	1/8 - 1/6	0.4
1/50 - 1/30	1/25 - 1/15	.2 - .3	0.51	9834	9886	1/15 - 1/10	1/6 - 1/5	1/12 - 1/8	1/6 - 1/4	.7 - 1.0
1/30 - 1/20	1/15 - 1/10	.3 - .5	0.35	9835	9887	—	—	—	—	—
1/20 - 1/12	1/10 - 1/6	.5 - .7	0.25	9836	9888	1/8 - 1/6	1/4 - 1/3	1/6 - 1/4	1/3 - 1/2	1.3 - 2.0
1/12 - 1/8	1/6 - 1/4	.7 - 1.0	0.18	9837	9889	1/4	1/2	1/3	3/4	2.5
1/8 - 1/6	1/4 - 1/3	1.2 - 1.8	0.1	9838	9890	1/3 - 1/2	3/4 - 1	1/2 - 3/4	1 - 1½	3.3 - 6.0
1/4	1/2	2.5	0.05	9839	9891	3/4 - 1	—	1 - 1½	—	7.5 - 10.0
1/3	3/4	3.3	0.035	9840	9892	—	—	—	—	—
1/2	1	5.0	0.025	9841	9893	—	—	—	—	—
3/4	1 - 1/2	7.5	0.015	9842	9894	—	—	—	—	—
1	2	10.0	0.01	9843	9895	—	—	—	—	—
1½	3	15.0	0.006	9850	9896	—	—	—	—	—

# KB Plug-In Fuse Selection Chart

Fuse Selection Chart					
90 VDC Motor	180 VDC Motor	Approx. Motor Current (DC Amps)	Fuse Rating (AC Amps)	Individual Fuse Part No.	Reorder Kit 100 Pcs. Value
Horsepower					
1/30	1/15	0.33	1/2	9736	9871
1/20	1/10	0.5	3/4	9737	9872
1/15	1/8	0.65	1	9738	9873
1/12	1/6	0.85	1¼	9739	9874
1/8	1/4	1.3	2	9740	9875
1/6	1/3	1.7	2½	9741	9876
1/4	1/2	2.5	4	9742	9877
1/3	3/4	3.3	5	9743	9878
1/2	1	5.0	8	9744	9879
3/4	1½	7.5	12	9745	9880
1	2	10.0	15	9746	9881
1½	3	15.0	25	9747	9882



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