

Double C-Face Spring-Set Brakes



*KEB Combistop
Type 17*





KEB Double C-Face Brakes make saving time and money easy!!!

Do you have a NEMA frame motor but you just can't find the brake you need? The KEB Type 17 Spring Set Brake is the answer to all your motor braking problems! We have a simple solution to your braking headaches. This catalog will quickly and easily point you to the exact brake your looking for.

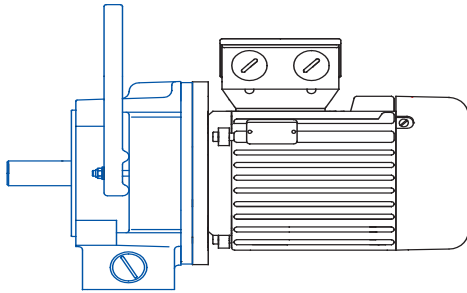
Why the Type 17 Spring Set Brake?

**GUARANTEED
ENGINEERING
PERFORMANCE**

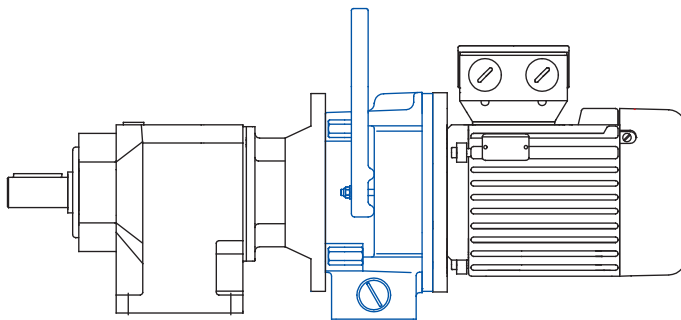
- Eliminates the need for expensive double shaft motors
- NEMA mounting available from 56C to 254C
- Reliable replacement for existing AC brake modules
- Standard washdown housing and hand release
- Rigid construction and long life
- Available torque from 3 to 75 ft lbs
- Convenient conduit box
- Mount vertically or horizontally with one brake

Mounting Examples

KEB

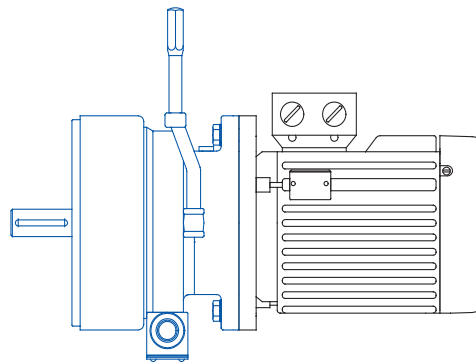


**Motor and
Small Brake**

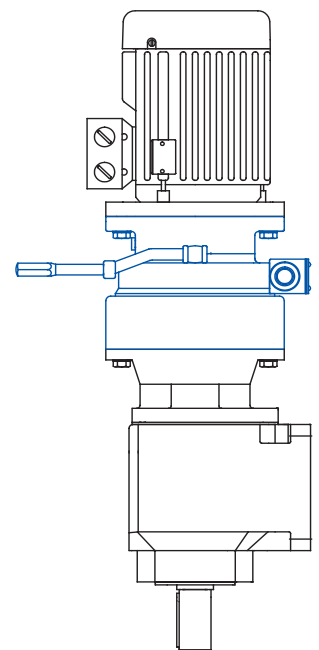


**Horizontally Mounted
with Gearbox**

**Motor and
Large Brake**



**Vertically Mounted
with Gearbox**

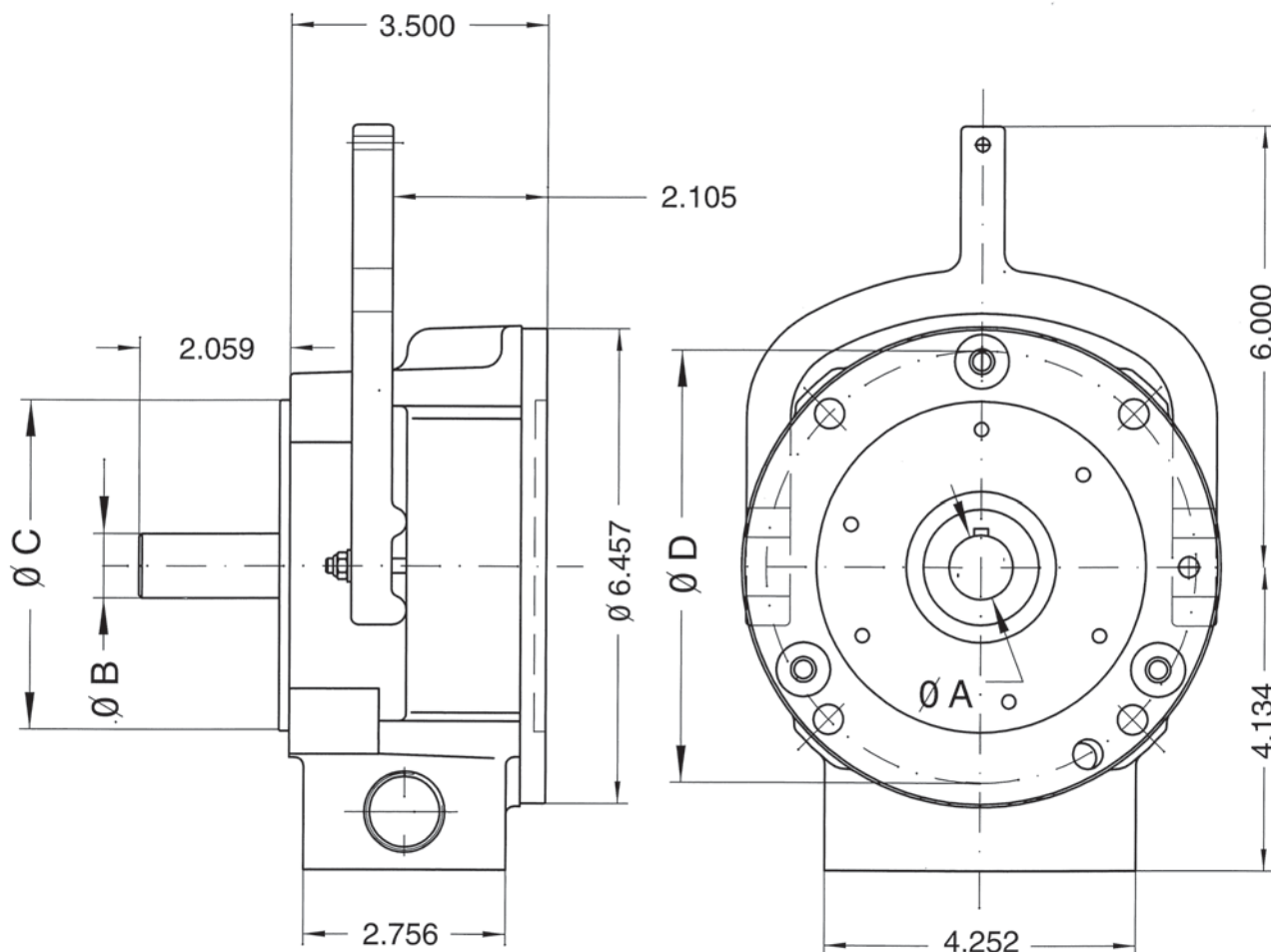


Options:

- * Microswitch
- * Dual coil heater
- * Locking hand release
- * Higher torque for non dynamic applications
- * Others available upon request

Small Housing

56C & 145C Frame

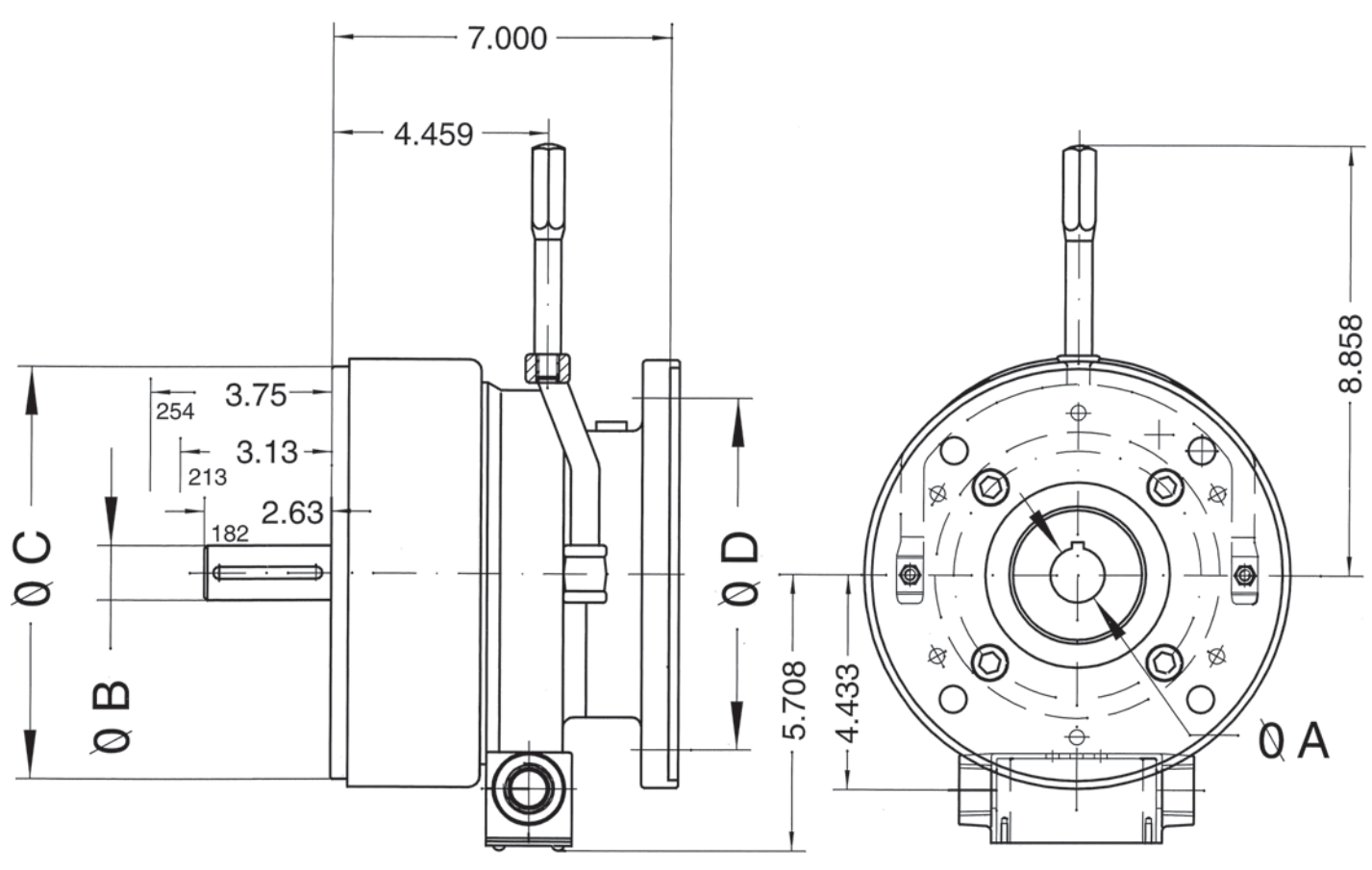


Size	Torque	Frame Size	A Input	B Output	C Pilot	D Bolt Circle	Overall Length
2	3 ft lbs	56C	0.625	0.625	4.500	5.875	3.500
		145C	0.875	0.875			
3	6 ft lbs	56C	0.625	0.625	4.500	5.875	3.500
		145C	0.875	0.875			
4	12 ft lbs	56C	0.625	0.625	4.500	5.875	3.500
		145C	0.875	0.875			
5	18 ft lbs	56C	0.625	0.625	4.500	5.875	3.500
		145C	0.875	0.875			

Approx. weight is 18 lbs.

*Note all dimensions are in inches

182C, 213C & 254C Frame



Size	Torque	Frame Size	A Input	B Output	C Pilot	D Bolt Circle	Overall Length
6	25 ft lbs	182C	1.125	1.125	8.500	7.250	7.000
		213C	1.375	1.375			
		254C	1.625	1.625			
7	45 ft lbs	182C	1.125	1.125	8.500	7.250	7.000
		213C	1.375	1.375			
		254C	1.625	1.625			
8	75 ft lbs	182C	1.125	1.125	8.500	7.250	7.000
		213C	1.375	1.375			
		254C	1.625	1.625			

Approx. weight is 55 lbs.

*Note all dimensions are in inches

Selection Chart

Hp	NEMA Frame Size		Motor Dimensions (in.)			Brake*		
	T Frame	C Frame	Shaft Diameter	Pilot	Bolt Circle	Torque	Voltage Input	Part Number
1/3-1/2	56C	56C	0.625	4.500	5.875	3 ft lbs	120 VAC 230 VAC 460 VAC	02.17.670-710U 02.17.670-810U 02.17.670-910U
3/4	56C	56C	0.625	4.500	5.875	6 ft lbs	120 VAC 230 VAC 460 VAC	03.17.670-710U 03.17.670-810U 03.17.670-910U
1	56C	56C	0.625	4.500	5.875	6 ft lbs	120 VAC 230 VAC 460 VAC	03.17.670-710U 03.17.670-810U 03.17.670-910U
	143C/145C	143C/145C	0.875	4.500	5.875	6 ft lbs	120 VAC 230 VAC 460 VAC	03.17.670-720U 03.17.670-820U 03.17.670-920U
1.5	56C	56C	0.625	4.500	5.875	12 ft lbs	120 VAC 230 VAC 460 VAC	04.17.670-710U 04.17.670-810U 04.17.670-910U
	143C/145C	143C/145C	0.875	4.500	5.875	12 ft lbs	120 VAC 230 VAC 460 VAC	04.17.670-720U 04.17.670-820U 04.17.670-920U
2	56C	56C	0.625	4.500	5.875	12 ft lbs	120 VAC 230 VAC 460 VAC	04.17.670-710U 04.17.670-810U 04.17.670-910U
	143C/145C	143C/145C	0.875	4.500	5.875	12 ft lbs	120 VAC 230 VAC 460 VAC	04.17.670-720U 04.17.670-820U 04.17.670-920U
3	143C/145C	143C/145C	0.875	4.500	5.875	18 ft lbs	120 VAC 230 VAC 460 VAC	05.17.670-720U 05.17.670-820U 05.17.670-920U
	182C/184C	182C/184C	1.125	8.500	7.250	25 ft lbs	120 VAC 230 VAC 460 VAC	06.17.670-730U 06.17.670-830U 06.17.670-930U
5	182C/184C	182C/184C	1.125	8.500	7.250	45 ft lbs	120 VAC 230 VAC 460 VAC	07.17.670-730U 07.17.670-830U 07.17.670-930U
	213C/215C	213C/215C	1.375	8.500	7.250	45 ft lbs	120 VAC 230 VAC 460 VAC	07.17.670-740U 07.17.670-840U 07.17.670-940U
7.5	213C/215C	213C/215C	1.375	8.500	7.250	45 ft lbs	120 VAC 230 VAC 460 VAC	07.17.670-740U 07.17.670-840U 07.17.670-940U
	254C/256C	254C/256C	1.625	8.500	7.250	45 ft lbs	120 VAC 230 VAC 460 VAC	07.17.670-750U 07.17.670-850U 07.17.670-950U
10	213C/215C	213C/215C	1.375	8.500	7.250	75 ft lbs	120 VAC 230 VAC 460 VAC	08.17.670-740U 08.17.670-840U 08.17.670-940U
	254C/256C	254C/256C	1.625	8.500	7.250	75 ft lbs	120 VAC 230 VAC 460 VAC	08.17.670-750U 08.17.670-850U 08.17.670-950U
15	254C/256C	254C/256C	1.625	8.500	7.250	75 ft lbs	120 VAC 230 VAC 460 VAC	08.17.670-750U 08.17.670-850U 08.17.670-950U

This chart assumes that the brake is being mounted to a standard 4-pole motor. If the unit you need doesn't appear on this page, please use the engineering information on the following page or consult KEB.

*All KEB units come with DC coils. Our standard voltages are 12, 24, 105 & 205 VDC. Special voltages are available upon request. The part numbers listed include an internal rectifier to get suitable DC output from the AC mains to the brake.

Size Selection

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Nominal Torque

$$T_{\text{brake}} \geq T_{\text{required}} \times K$$

$$T_{\text{required}} = \frac{9550 \times KW}{n}$$

$$KW = HP \times 0.746$$

OR

$$T_{\text{brake}} \geq T_{\text{required}} \times K$$

$$T_{\text{required}} = T_a \pm T_{\text{load}}$$

$$T_a = J \times a$$

Deceleration Time

$$t = 104.6 \frac{J \times n}{T_{\text{brake}} \pm T_{\text{load}}} + t_2$$

Heat Load

$$W_R = \frac{J \times n^2}{182.5} \times T_{\frac{T_{\text{brake}}}{\text{brake}} \pm T_{\text{load}}} \quad W_R \leq W_{R\text{max}}$$

Friction Work Per Second

$$P_R = W_R \times S \quad P_R \leq P_{R\text{max}}$$

Overhung Load Ratings

Maximum force allowed at the center of the output shaft
Size 02-05 : 83lbs Size 06-08 : 330lbs

a	= angular acceleration	[s ⁻²]
HP	= motor power	[HP]
J	= moment of inertia ¹⁾	[kg-m ²]
K	= safety factor (K>2)	
KW	= motor power	[KW]
n	= speed	[rpm]
P _R	= friction work per second	[J/s]
P _{Rmax}	= max friction work per second	[J/s]
S	= switching operations per second	
t	= deceleration time	[ms]
t ₁	= brake engagement time ³⁾	[ms]
t ₂	= brake release time ³⁾	[ms]
T _a	= acceleration torque	[N-m]
T _{brake}	= rated brake torque	[N-m]
T _{load}	= load torque ²⁾	[N-m]
T _{required}	= required torque	[N-m]
W _R	= friction per switching operation	[J]
W _{Rmax}	= max friction per switching operation	[J]

- ¹⁾ The total moment of inertia is equal to the moment of inertia of the accelerated components plus the moment of inertia of the brakes.
- ²⁾ For the selection of the sign, take notice of whether the load torque supports or counteracts the deceleration of the load.
- ³⁾ Use of the KEB Power Box can be used to reduce either the brake release time or the brake engagement time.

Size	T _{brake}	J _{brake}	W _{rmax}	P _{Rmax}	t ₂	AC side t ₁	DC side t ₁	Power Box t ₂	Power Box AC side t ₁	Power Box DC side t ₁
02	4.0	1.3 x 10 ⁻⁴	3.5 x 10 ³	100	15	210	40	8	115	20
03	8.0	1.3 x 10 ⁻⁴	3.5 x 10 ³	100	40	175	35	20	110	20
04	16.5	1.3 x 10 ⁻⁴	3.5 x 10 ³	100	65	145	35	35	105	20
05	24.5	1.3 x 10 ⁻⁴	3.5 x 10 ³	100	90	110	30	45	100	20
06	34.0	3.9 x 10 ⁻³	11 x 10 ³	300	100	900	40	50	750	20
07	68.0	3.9 x 10 ⁻³	11 x 10 ³	300	140	725	38	70	620	20
08	102.0	3.9 x 10 ⁻³	11 x 10 ³	300	180	550	35	90	495	20

Headquarters

Karl E Brinkmann GmbH
Försterweg 36 - 38
D-32683 Barntrup
Internet: www.keb.de

Tel.: + 49 (0) 5263 401-0
Fax: + 49 (0) 5263 401-116
E-mail: info@keb.de

COMPANIES

USA (Mfg.)

KEB America, Inc
5100 Valley Industrial
Blvd. South
Shakopee, MN 55379 USA
Tel.: (952) 224-1400
Fax: (952) 224-1499
E-mail: info@kebamerica.com
Internet: www.kebamerica.com

JAPAN (Mfg.)

KEB - Japan Ltd.
15 - 16, 2 - Chome
Takanawa Minato-ku
J - Tokyo 108 - 0074
Tel.: +81 (0)33 445-8515
Fax: +81 (0)33 445-8215
E-mail: info@keb.jp
Internet: www.keb.jp

GREAT BRITAIN

KEB (UK) Ltd.
6 Chieftain Business Park,
Morris Close
Park Farm, Wellingborough
GB - Northants, NN8 6 XF
Tel.: +44 (0)1933 402220
Fax: +44 (0)1933 400724
E-mail: info@keb-uk.co.uk
Internet: www.keb-uk.co.uk

GERMANY (Mfg.)

KEB Antriebstechnik GmbH
Wildbacher Straße 5
D-08289 Schneeberg
Tel.: +49 (0)3772 67-0
Fax: +49 (0)3772 67-281
E-mail: info@keb-combidrive.de

AUSTRIA

KEB Antriebstechnik
Austria GmbH
Ritzstraße 8
A - 4614 Marchtrenk
Tel.: +43 (0)7243 53586-0
Fax: +43 (0)7243 53586-21
E-mail: info@keb.at
Internet: www.keb.at

RUSSIA

KEB-RUS Ltd.
Krasnokazarmeny proezd 1
RUS - 111050 Moscow
Tel.: +7 (0)495 7952317
Fax: +7 (0)495 6453913
E-mail: info@keb.ru
Internet: www.keb.ru

CHINA (Mfg.)

KEB Power Transmission
Technology (Shanghai) Co. Ltd.
No. 435 QianPu Road
Songjiang East Industrial Zone
CN-201611 Shanghai, PR. China
Tel.: +86 (0)21 37746688
Fax: +86 (0)21 37746600
E-mail: info@keb.cn
Internet: www.keb.cn

FRANCE

Société Française KEB
Z.I. de la Croix St. Nicolas
14, rue Gustave Eiffel
F - 94510 LA QUEUE EN BRIE
Tel.: +33 (0)149620101
Fax: +33 (0)145767495
E-mail: info@keb.fr
Internet: www.keb.fr

ITALY

KEB Italia S.r.l.
Via Newton, 2
I - 20019 Settimo Milanese (Milano)
Tel.: +39 02 33535311
Fax: +39 02 33500790
E-mail: info@keb.it
Internet: www.keb.it

Representative offices in Belgium • Korea • Spain • Sweden

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[...www.kebamerica.com](http://www.kebamerica.com)

KEB AMERICA, Inc.
5100 Valley Industrial Blvd. South
Shakopee, MN 55379
Ph.: 952-224-1400 FAX: 952- 224 -1499
Internet: www.kebamerica.com • E-mail: info@kebamerica.com



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