DOUBLE C-FACE BRAKES

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

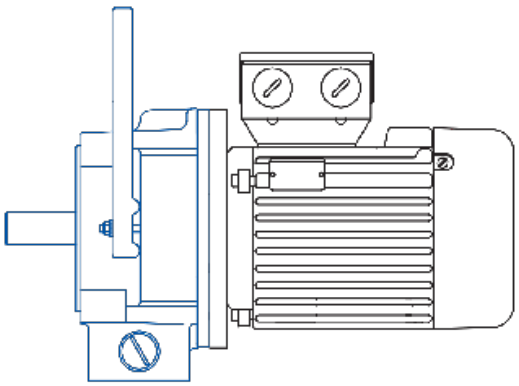
Do you have a NEMA frame motor but you just can't find the brake you need? The **KEB Type 17 Spring-Set Brake** is the answer to all your motor braking problems. We have a simple solution to your braking headaches. This catalog will quickly and easily point you to the exact brake you're looking for.

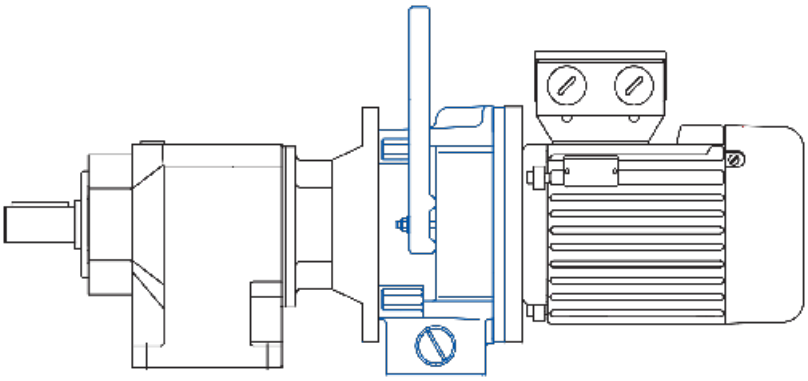
Why the Type 17 Spring-Set Brake?

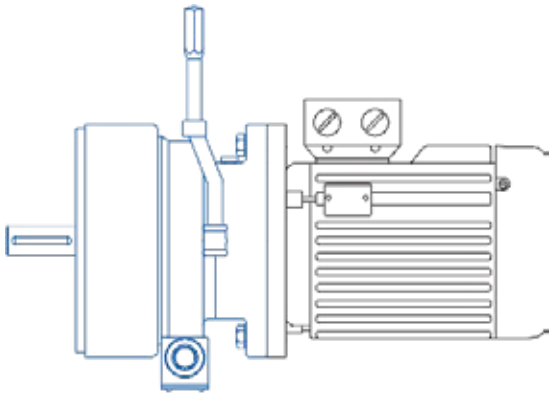
- Eliminates the need for expensive double shaft motors
- NEMA mounting available from 56C to 254TC
- Reliable replacement for existing AC brake modules
- Standard washdown housing and hand release
- Rigid construction and long life
- Available torque from 3 to 110 ft lbs
- Conduit box for convenient wiring
- Mount in vertical or horizontal orientations

GUARANTEED ENGINEERING PERFORMANCE

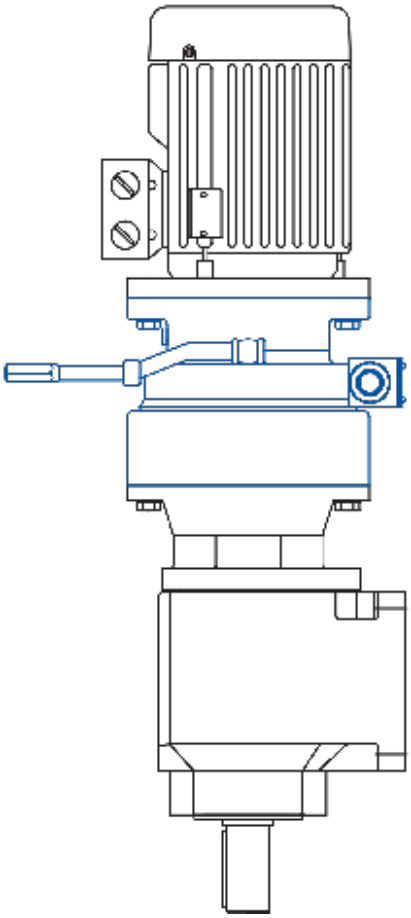
KEB Type 17 Spring-Set Brakes do not need a special kit to be mounted with a gearbox horizontally or vertically. Motors can be partnered with small or large brakes.







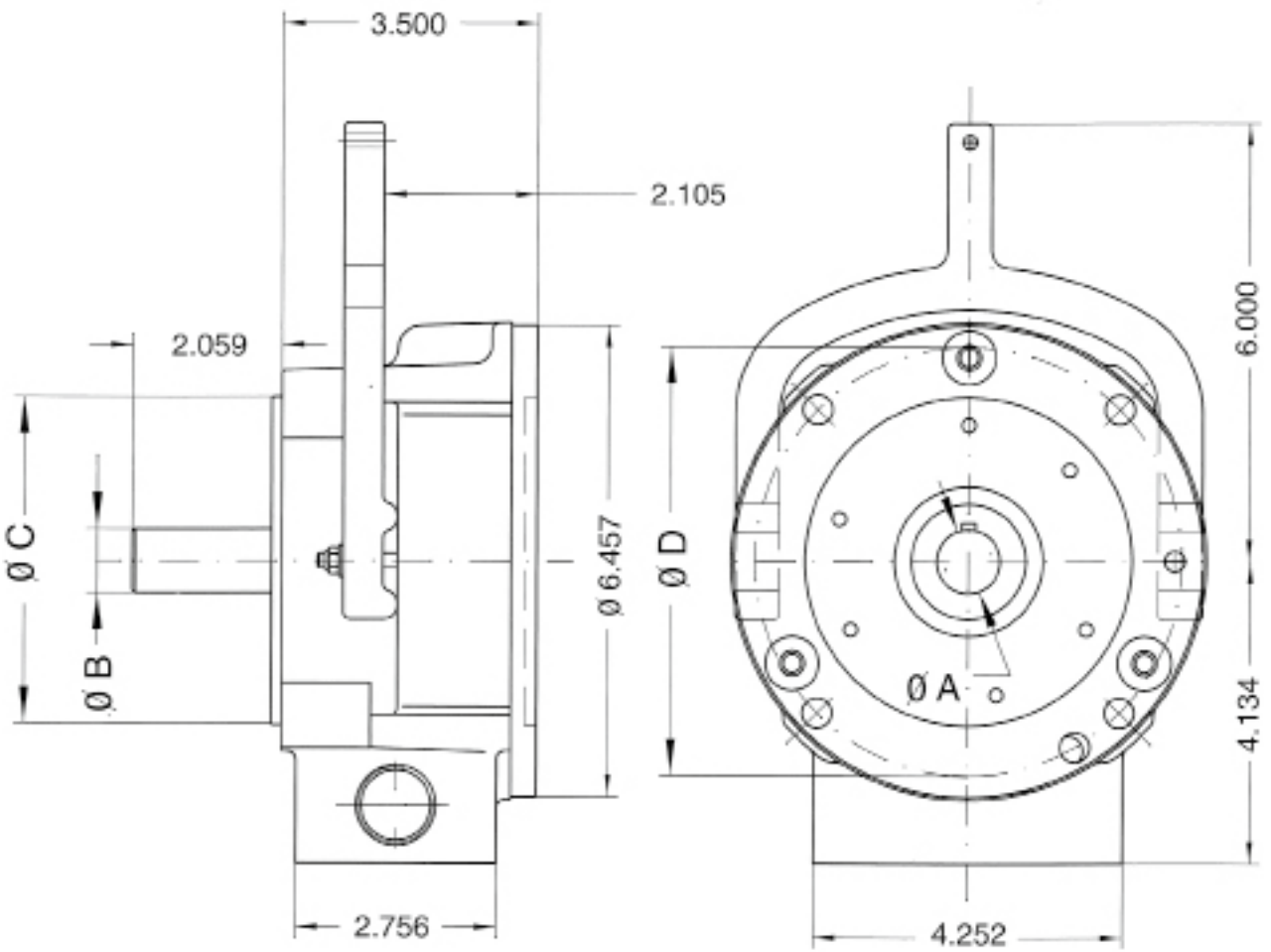
Clockwise from lower left: *motor and large brake; motor and small brake; horizontally mounted with gearbox; vertically mounted with gearbox*



Additional Options

- Microswitch
- Dual coil heater
- Locking hand release
- Higher torque for non-dynamic applications
- Corosive resistant paint
- Special shaft materials, i.e. nickel-plated or stainless steel
- Others available on request

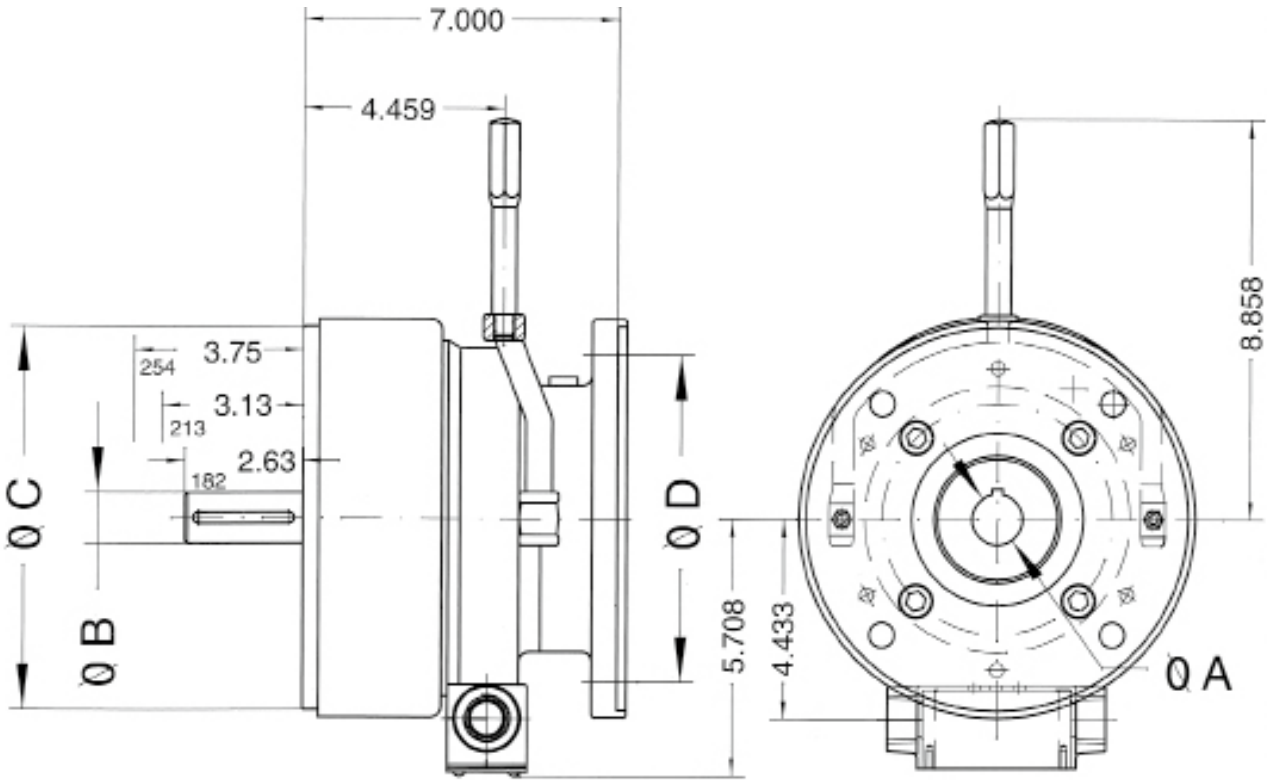
56C & 145TC FRAME



size	torque	frame size	input A	output B	pilot C	bolt circle D	overall length
2	3 ft lbs/ 4.0 Nm	56C	0.625	0.625	4.500	5.875	3.500
		145TC	0.875	0.875			
3	6 ft lbs/ 8.0 Nm	56C	0.625	0.625	4.500	5.875	3.500
		145TC	0.875	0.875			
4	12 ft lbs/ 16.5 Nm	56C	0.625	0.625	4.500	5.875	3.500
		145TC	0.875	0.875			
5	18 ft lbs/ 24.5 Nm	56C	0.625	0.625	4.500	5.875	3.500
		145TC	0.875	0.875			

Approximate weight is 18 lbs. All dimensions are in inches.

182TC, 213TC & 254TC FRAME



size	torque	frame size	input A	output B	pilot C	bolt circle D	overall length
6	25 ft lbs/ 34.0 Nm	182TC	1.125	1.125	8.500	7.250	7.000
		213TC	1.375	1.375			
		254TC	1.625	1.625			
7	45 ft lbs/ 61.0 Nm	182TC	1.125	1.125	8.500	7.250	7.000
		213TC	1.375	1.375			
		254TC	1.625	1.625			
8	75 ft lbs/ 102.0 Nm	182TC	1.125	1.125	8.500	7.250	7.000
		213TC	1.375	1.375			
		254TC	1.625	1.625			
9	110 ft lbs/ 150.0 Nm	182TC	1.125	1.125	8.500	7.250	7.000
		213TC	1.375	1.375			
		254TC	1.625	1.625			

Approximate weight is 55 lbs. All dimensions are in inches.

KEB COMBISTOP TYPE 17 - **SELECTION CHART**

hp	NEMA frame size	motor dimensions (in.)			brake*		
		shaft diameter	pilot	bolt circle	torque	voltage input*	part number
1/3-1/2	56C	0.625	4.500	5.875	3 ft lbs/ 4.0 Nm	120 VAC 230 VAC 460 VAC	02.17.670-710U 02.17.670-810U 02.17.670-910U
3/4	56C	0.625	4.500	5.875	6 ft lbs/ 8.0 Nm	120 VAC 230 VAC 460 VAC	03.17.670-710U 03.17.670-810U 03.17.670-910U
1	56C	0.625	4.500	5.875	6 ft lbs/ 8.0 Nm	120 VAC 230 VAC 460 VAC	03.17.670-710U 03.17.670-810U 03.17.670-910U
	143TC/145TC	0.875	4.500	5.875	6 ft lbs/ 8.0 Nm	120 VAC 230 VAC 460 VAC	03.17.670-720U 03.17.670-820U 03.17.670-920U
1.5	56C	0.625	4.500	5.875	12 ft lbs/ 16.5 Nm	120 VAC 230 VAC 460 VAC	04.17.670-710U 04.17.670-810U 04.17.670-910U
	143TC/145TC	0.875	4.500	5.875	12 ft lbs/ 16.5 Nm	120 VAC 230 VAC 460 VAC	04.17.670-720U 04.17.670-820U 04.17.670-920U
2	56C	0.625	4.500	5.875	12 ft lbs/ 16.5 Nm	120 VAC 230 VAC 460 VAC	04.17.670-710U 04.17.670-810U 04.17.670-910U
	143TC/145TC	0.875	4.500	5.875	12 ft lbs/ 16.5 Nm	120 VAC 230 VAC 460 VAC	04.17.670-720U 04.17.670-820U 04.17.670-920U
3	143TC/145TC	0.875	4.500	5.875	18 ft lbs/ 24.5 Nm	120 VAC 230 VAC 460 VAC	05.17.670.720U 05.17.670-820U 05.17.670-920U
	182TC/184TC	1.125	8.500	7.250	25 ft lbs/ 34.0 Nm	120 VAC 230 VAC 460 VAC	06.17.670-730U 06.17.670-830U 06.17.670-930U
5	182TC/184TC	1.125	8.500	7.250	45 ft lbs/ 61.0 Nm	120 VAC 230 VAC 460 VAC	07.17.670-730U 07.17.670-830U 07.17.670-930U
	213TC/215TC	1.375	8.500	7.250	45 ft lbs/ 61.0 Nm	120 VAC 230 VAC 460 VAC	07.17.670-740U 07.17.670-840U 07.17.670-940U

*** Custom input Voltages (eg. 208VAC, 575VAC) are possible - Contact KEB America**

hp	NEMA frame size	motor dimensions (in.)			brake*		
		shaft diameter	pilot	bolt circle	torque	voltage input*	part number
7.5	213TC/215TC	1.375	8.500	7.250	45 ft lbs/ 61.0 Nm	120 VAC 230 VAC 460 VAC	07.17.670-740U 07.17.670-840U 07.17.670-940U
	254TC/256TC	1.625	8.500	7.250	45 ft lbs/ 61.0 Nm	120 VAC 230 VAC 460 VAC	07.17.670-750U 07.17.670-850U 07.17.670-950U
10	213TC/215TC	1.375	8.500	7.250	75 ft lbs/ 102.0 Nm	120 VAC 230 VAC 460 VAC	08.17.670-740U 08.17.670-840U 08.17.670-940U
	254TC/256TC	1.625	8.500	7.250	75 ft lbs/ 102.0 Nm	120 VAC 230 VAC 460 VAC	08.17.670-750U 08.17.670-850U 08.17.670-950U
15	213TC/215TC	1.375	8.500	7.250	75 ft lbs/ 102.0 Nm	120 VAC 230 VAC 460 VAC	08.17.670-740U 08.17.670-840U 08.17.670-940U
	254TC/256TC	1.625	8.500	7.250	75 ft lbs/ 102.0 Nm	120 VAC 230 VAC 460 VAC	08.17.670-750U 08.17.670-850U 08.17.670-950U
20	213TC/215TC	1.375	8.500	7.250	110 ft lbs/ 150.0 Nm	120 VAC 230 VAC 460 VAC	09.17.670-740U 09.17.670-840U 09.17.670-940U
	254TC/256TC	1.625	8.500	7.250	110 ft lbs/ 150.0 Nm	120 VAC 230 VAC 460 VAC	09.17.670-750U 09.17.670-850U 09.17.670-950U

*** Custom input Voltages (eg. 208VAC, 575VAC) are possible - Contact KEB America**

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 coil 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.*

Nominal Torque

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

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

$$KW = HP \times 0.746$$

or

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

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

$$T_a = J \times a$$

Deceleration Time

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

Heat Load

$$W_R = \frac{J \times n^2}{182.5} \times \frac{T_{brake}}{T_{brake} \pm T_{load}} \qquad W_R \leq W_{Rmax}$$

Friction Work Per Second

$$P_R = W_R \times S \qquad P_R \leq P_{Rmax}$$

Overhung Load Ratings

Maximum force allowed at the center of the output shaft

Size 02-05 : 83lbs Size 06-09 : 330lbs

size	T_{brake}	J_{brake}	W_{rmax}	P_{Rmax}	t_1	AC side t_2	DC side t_2
02	4.0	1.3×10^{-4}	3.5×10^{3}	100	15	210	40
03	8.0	1.3×10^{-4}	3.5×10^{3}	100	40	175	35
04	16.5	1.3×10^{-4}	3.5×10^{3}	100	65	145	35
05	24.5	1.3×10^{-4}	3.5×10^{3}	100	90	110	30
06	34.0	3.9×10^{-3}	11×10^{3}	300	100	900	40
07	61.0	3.9×10^{-3}	11×10^{3}	300	140	725	38
08	102.0	3.9×10^{-3}	11×10^{3}	300	180	550	35
09	150	3.9×10^{-3}	11×10^{3}	300	200	475	32

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 release time [3)]	[ms]
t_2	= brake engagement 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.

KEB AMERICA, INC.

5100 Valley Industrial Blvd. South, Shakopee, MN 55379
tel: (952) 224-1400
sales@kebamerica.com
www.kebamerica.com