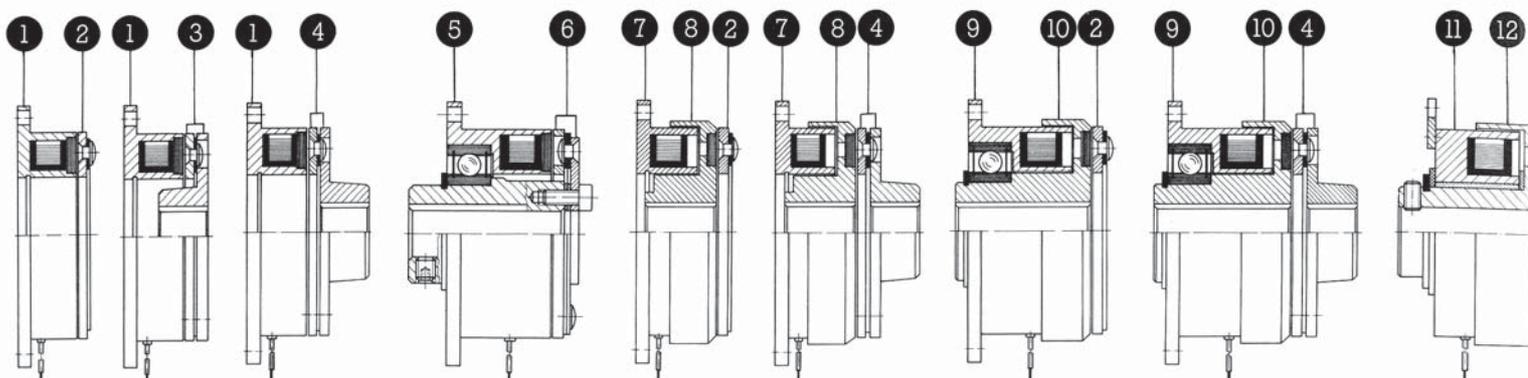


COMBINORM

*ELECTROMAGNETIC
CLUTCHES
AND BRAKES*



INSTRUCTION MANUAL



Principle of operation

KEB COMBINORM are single disc clutches and brakes without slip rings for dry operation. Their use presents no problems provided the size is carefully chosen. **Grease and oil must not be allowed to contaminate the friction surfaces.** Reasonable amounts of dust however are harmless.

When the current is switched-on the coil produces a strong magnetic force which attracts the armature disc hard against the friction lining on the clutch rotor or brake housing. The driving or braking torque is transmitted through a flat steel spring and transmission is free from wear or backlash. When the current is switched-off the steel spring separates the armature from the friction lining ready for the next operation. Regardless of the mounting position, horizontal or vertical, no residual torque remains. Even at high no load speeds no friction losses occur.

Description and application of components

Centre the magnets and rotors accurately. Design and rotational inaccuracies may cause premature failure. Only use sealed bearings. Friction surfaces must be free of oil and grease.

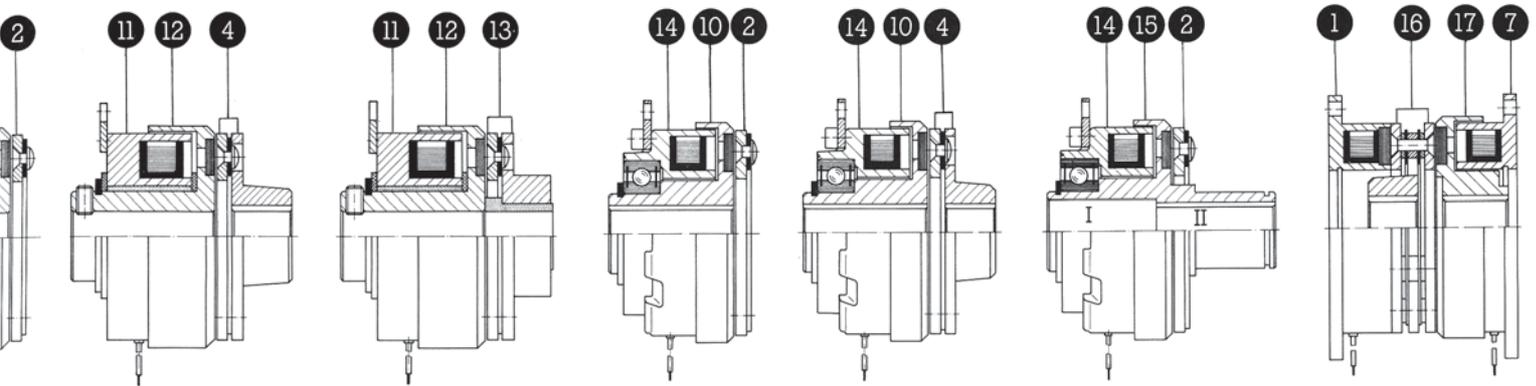
- 1 Brake magnet complete with brake lining** Item No. ...02.100^{a)}
Centre onto a machine part or use a ball bearing. Secure screws with lock washers.
- 2 Armature complete with spring** Item No. ...02.010^{b)}
Attach to chainwheel, belt pulley etc., and maintain the air gap X. Tapped holes must be equispaced on flat surface, screw heads must not project through lining, provide clearance for rivet heads. Do not use internal or external diameter for location.
- 3 Armature complete with hub** Item No. ...02.020^{c)}
Attach to shaft and maintain the air gap X. Secure axially.
- 4 Armature complete with hub** Item No. ...02.030^{c)}
Attach to shaft and maintain the air gap X. Secure axially.

- 5 Brake magnet complete with brake lining and ball bearing** Item No. ...02.200^{a)}
Bolt through the flange to prevent rotation but do not tighten down. Secure axially with hollow shaft.
- 6 Armature complete with support** Item No. ...02.050^{b)}
Attach by the hollow shaft maintaining air gap X. Secure screws with lock washers.
- 7 Clutch magnet** Item No. ...03.100^{a)}
Centre onto a machine part or use a ball bearing.
- 8 Rotor complete with lining** Item No. ...03.000^{c)}
Carefully maintain assembly dimension. Secure axially.
- 9 Clutch magnet complete with ball bearing** Item No. ...03.200^{a)}
Bolt through the flange to prevent rotation but do not tighten down. Secure rotor axially **10**.
- 10 Rotor complete with lining** Item No. ...03.400^{c)}
Fasten onto shaft. Secure axially.
- 11 Clutch magnet complete with bearing** Item No. ...03.300^{a)}
Use torque arm to prevent rotation. Do not fasten down. Secure axially on the rotor **12**.
- 12 Rotor complete with lining** Item No. ...03.600
Fasten onto shaft, secure axially.
- 13 Armature complete with sintered bearing** Item No. ...03.0430^{c)}
Fix on shaft maintaining air gap X. Secure axially.
- 14 Clutch magnet complete with bearing** Item No. ...03.300^{a)}
Use torque arm to prevent rotation. Do not fasten down. Secure axially on the rotor **10**.
- 15 Rotor complete with lining** Item No. ...03.800^{c)}
Fasten onto shaft, secure axially. When ordering spare parts indication of position of finished bore is essential: I or II.
- 16 Armature complete with hub** Item No. ...04.070^{c)}
Fasten onto shaft maintaining assembly dimension K_1 . Secure axially.
- 17 Rotor complete with lining** Item No. ...04.000^{c)}
Maintain assembly dimension N_1 . Secure axially.

^{a)} Please state size and voltage when ordering spare parts.

^{b)} Please state size when ordering spare parts.

^{c)} Please state finished bore size when ordering spare parts. Pilot bore available.

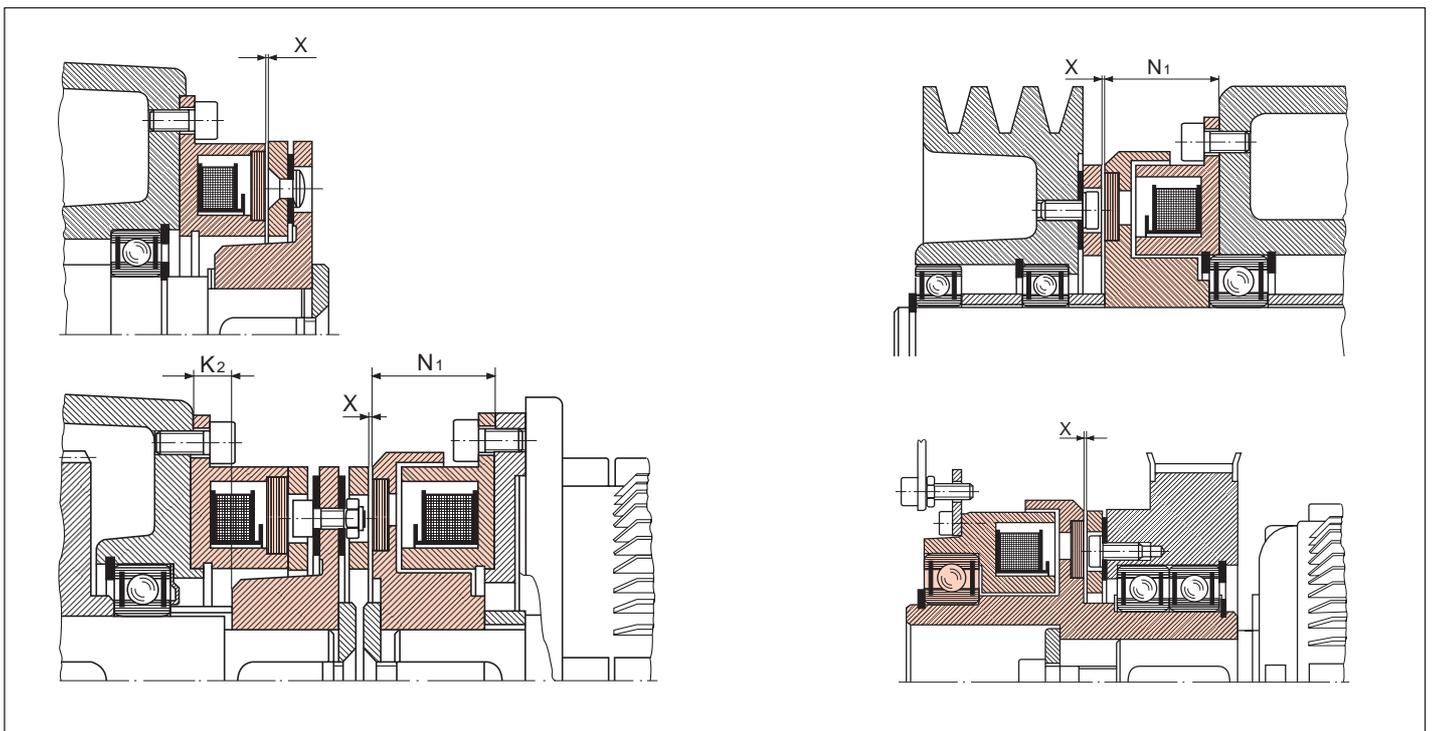


Power supply

Connection must be only made to DC voltage. Note the power consumption of the magnets. If DC voltage is not available, suitable transformer/rectifier units can be supplied.

In order to achieve higher switching accuracy a rapid switch is available.

When switching the DC side a voltage dependent resistor should be used in parallel with the coil to protect the coil and the switch contacts.



Size	01	02	03	04	05	06	07	08	09	10	11	12	
Nominal air gap	X	0,1	0,15	0,15	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,4	0,4
Installation dimension	N ₁	18	22,2	25,4	22,5	28,1	24	26,5	30	33,5	37,5	44	51
Installation dimension	K ₁	-	-	-	-	-	11,2	9,3	8,9	7,9	5	3,4	5,1



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