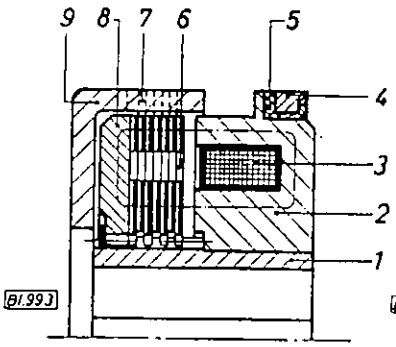
Ortlinghaus-Werke
GmbH
D-5632 Wermelskirchen

Installation and Maintenance

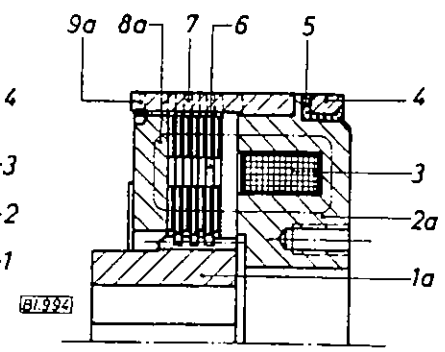
of Original-Ortlinghaus
Electromagnetic SINUS multi-plate clutches and brakes
(with flux-type plate stack)

Instructions
No. 541

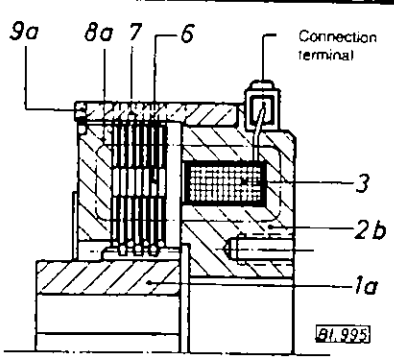
Series
0-011



Clutch 0-011-...-



Clutch 0-011-100-



Brake 0-011-300-

Where coil body has no keyway in bore (2a, 2b), use dowels to prevent rotation.

1. Description

The slotted housing (9) or (9a) engages with external lugs on the hardened and flat ground outer plates (7), allowing them free axial movement.

The internally splined SINUS inner plates (6) slide along the splined hub (1) or (1a). The coil body (2) is secured to the hub and coil body (2a and 2b) to the housing, preventing relative rotation or axial dislocation. The coil is permanently embedded in resin. With the clutch version 0-011 and 0-011-100 one coil end is connected to earth (magnet body) and the other end is connected to the insulated slipring (4). In the brake version 0-011-300, the coil is connected either to earth and to one terminal block, or to two isolated terminals.

The negative output terminal of the rectifier should be earthed-except when using the version of the brake 0-011-300 having two isolated terminals.

When the coil is energised a magnetic field is set-up, attracting the armature plate (8,8a) and hence compressing the plate-pack. The resulting friction between the plates (6 and 7) transmits a torque between driving and driven halves of the clutch.

Whe the coil is de-energised, the magnetic field collapses and the plates are separated by the spring action of the wave-form imparted to the plane surface of the SINUS plates. This substantially reduces the idling (drag) torque.

The clutches and brakes are supplied complete and ready for installation. They have no working air gap and cannot be adjusted since wear is automatically compensated.

2. Lubrication

These clutches (brakes) are not to be run dry. We recommend the use of a low viscosity mineral oil appr. 32 mm ^{2}/s (CSt) at 40°C eg Shell Tellus Oil C32. The oil should be ageing resistant and non agressive to steel and copper even at high temperatures. The use of oils with high additive contents should be avoided. For most applications splash or mist lubrication is sufficient. To avoid intermittent contact and excessive brush wear, ensure that the sliprings are well lubricated.

If the clutch is partly submerged, the oil level should be no higher than 1/10th clutch diameter.

3. Fault check

3.1 Clutch slips and does not fully angage.
Check that full voltage of 24 V (+10%) is available.
Viscosity of oil is too high or oil supply is excessive (see para. 2).
Check brushes for wear and renew if necessary.

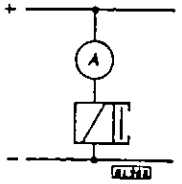
3.2 Clutch drags when idling.
Check switching circuit and insulation: there may be a residual voltage.
Viscosity of oil is too high, or oil supply is excessive (see para. 2).

3.3 Clutch temperature exceeds the normal 80°C
Check all bearings for insufficient or excessive lubrication.
Viscosity of oil is too high, or supply is excessive (see para. 2).

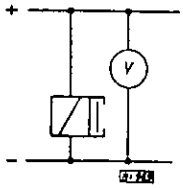
3.4 Clutch fails to engage.
Full voltage of 24 V (+10%) is not available at the slipring or terminal (s).
Check and renew worn brushes and clean the slipring.
The coil is short circuited. Check the current by wiring an ammeter in series.
Correct current values are as given below:

0-011-...-	Size	07	11	15	23	31	43	47	51	55	59
bei 20°C	A	0,3	0,63	1,03	1,66	1,74	3,2	3,63	3,75	4,8	6,1
bei 80°C	A	0,24	0,51	0,84	1,32	1,41	2,6	2,94	3	3,87	5

Current measurement



Voltage measurement



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4. Spare parts

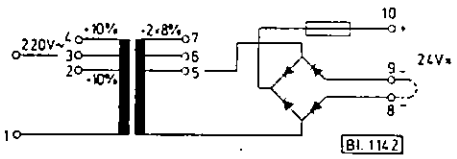
When ordering spare parts, please state the factory number, which is stamped on the clutch or brake. To avoid mistakes, please place all orders in writing or by telex.
Clutch or brake size can be established from following table.

Outer dia. of slip-ring (4) or housing (9 or 9a)	mm	82/80	95	114	134	165	195	210	240	290	310
corresponds with clutch 0-001-...-	size	07	11	15	23	31	43	47	51	55	59

5. Rectifier units

Rectifier units are normally supplied with primary windings for 220 V ± 10% 50–60 Hz. The secondary (output) winding is normally 24 V + 2 x 8%. Mains voltage variations can be accommodated using terminals 2 or 4, and higher output voltages can be obtained by using terminals 6 or 7.

When wired up correctly the rectifier unit should give 24 V DC + 10% on the output side. A fuse is provided in the DC circuit.



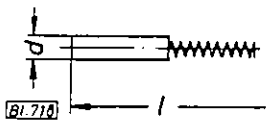
Rectifier unit faults

1. No output from rectifier
   a) No mains voltage at input.
   b) Primary or secondary winding open circuit.
   c) The DC fuse has blown.
2. Output voltage is too low mains voltage is reduced, (see above).

6. Current supply brushes

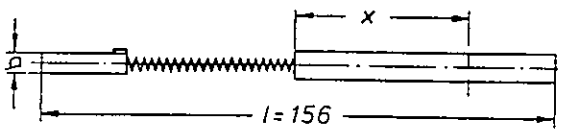
are subject to wear and should be checked regularly.

Standard version replacement brush



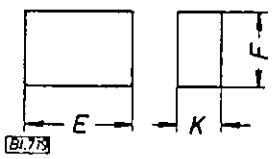
Size	Thread M of holder	Brush dia. d	l	Order number Woven bronze
00	M 18 x 1,5	6	73	0-085-231-00-001
01	M 16 x 1,5	6	78	0-085-231-01-000
03	M 14 x 1,5	4	56	0-085-231-03-000

Extented version replacement brush



Size	Thread M of holder	Brush dia. d	Order No. Woven bronze
00	M 18 x 1,5	6	0-085-231-00-010
01	M 16 x 1,5	6	0-085-231-00-010
02	M 16 x 1,5	5	0-085-231-02-010

7. Replacement brushes of caliper-type



Size	E	F	K	Order number Woven bronze
01	16	10	6,3	0-085-221-01-000
02	20	16	8	0-085-221-02-000

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