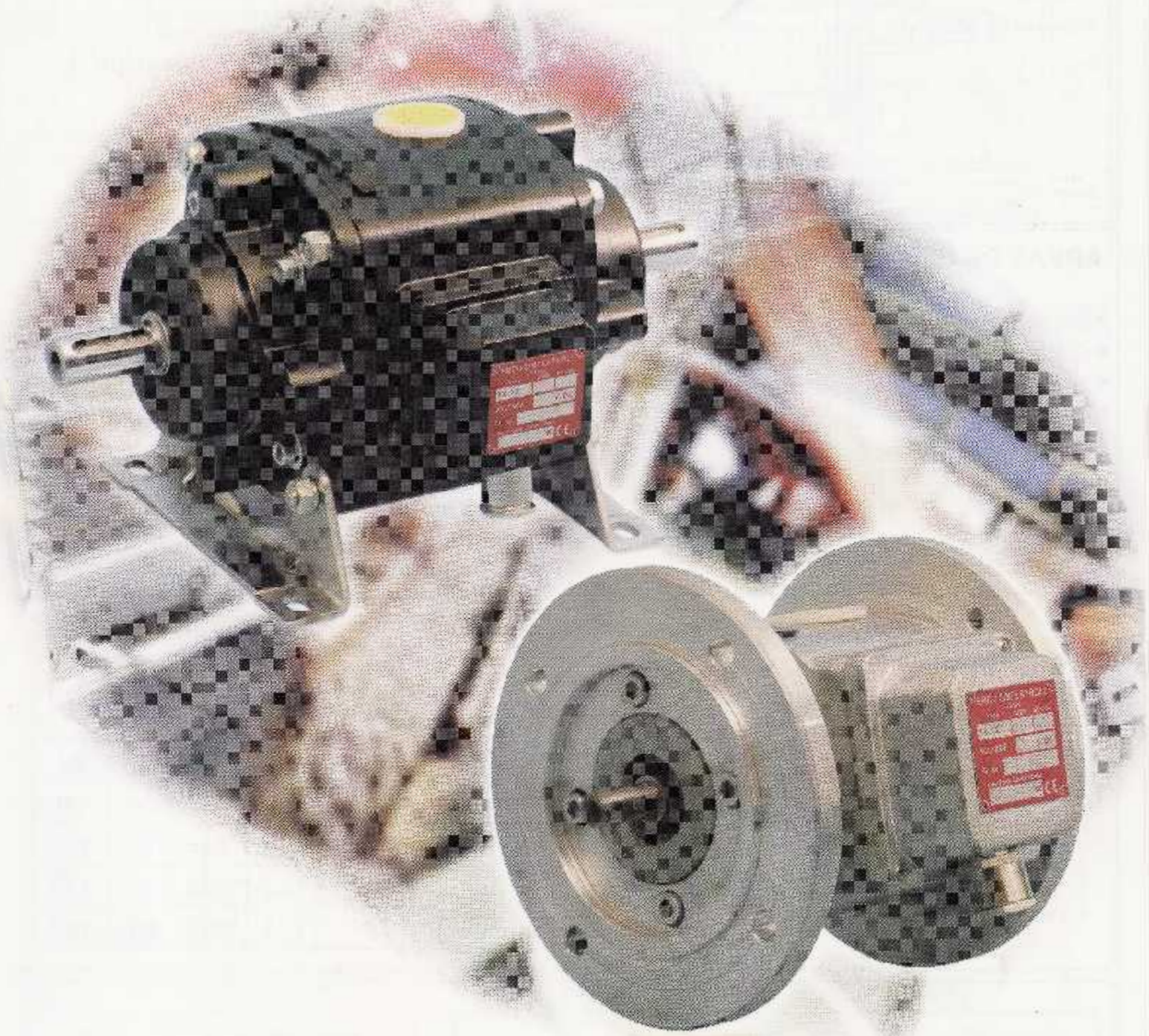
EMCO-Simplatroll™

INDUSTRIAL ELECTROMAGNETIC BRAKES & CLUTCHES

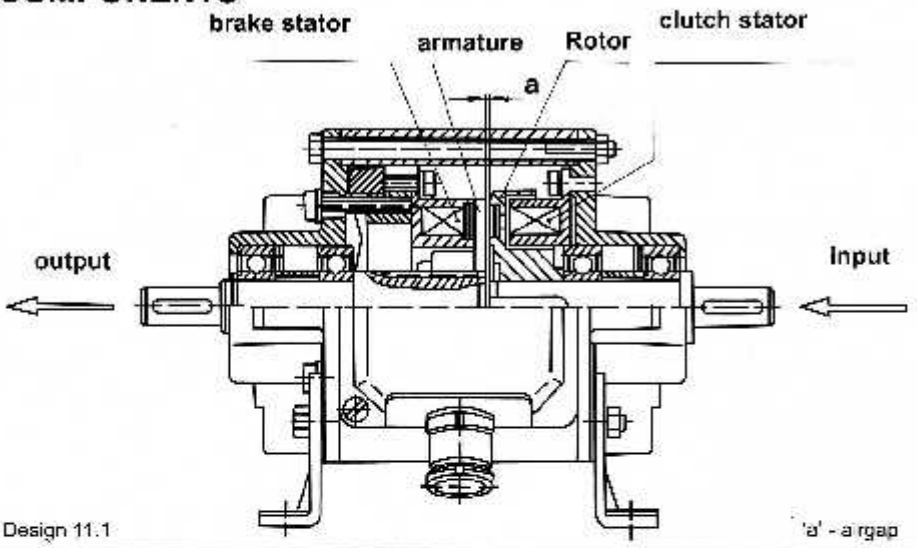


ELECTROMAGNETIC CLUTCH BRAKE UNITS
(Normally Off & Encased)
TYPE 14.800

www.emco-dynatorq.in

CAT NO.800.0/REV.0

COMPONENTS



WORKING

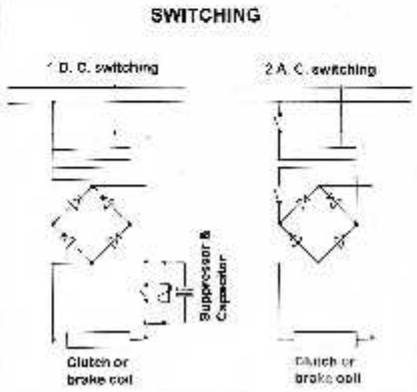
When D.C. Power is supplied to Clutch Coil, Rotor attracts Armature Assembly, thus transmitting torque from drive connected to input shaft via Clutch to Load connected through output shaft. On withdrawal of current from clutch, relay contactor or some Suitable circuit when used automatically diverts the current to brake coil, thus instantaneously disengaging drive and simultaneously stopping output shaft connected to Load via Brake.

ORDERING INFORMATION

1.Type
2.Size
3.Coil Operating Voltage
4.Design
5.Shaft diameter
6.Flange diameter
7.Height of feet

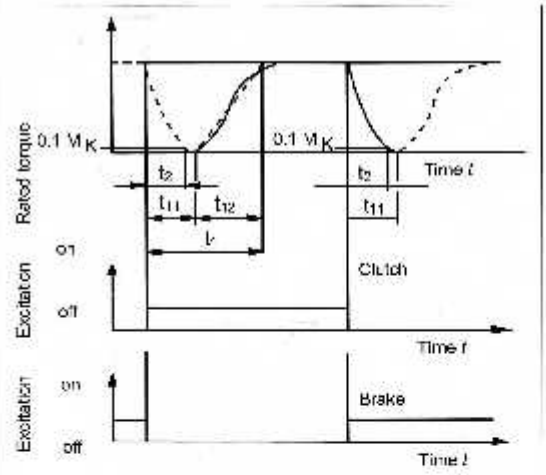
AREAS OF OPERATIONS

- Packaging Machines.
- Conveyors.
- Machine Tools.
- Special Purpose Machines.
- Welding Machines.



SWITCHING

Our Clutch-Brake Combination Unit require D.C. supply voltage which is obtained through A.C./D.C. rectification. Normally switching is carried out on the A.C. side. However, for much faster engagement / disengagement time, switching is carried out on the D.C. side for which a suitable arc suppressor and a capacitor is a must to protect the coil and switches from high induction voltages. Engagement/disengagement time is a function of nominal release distance.

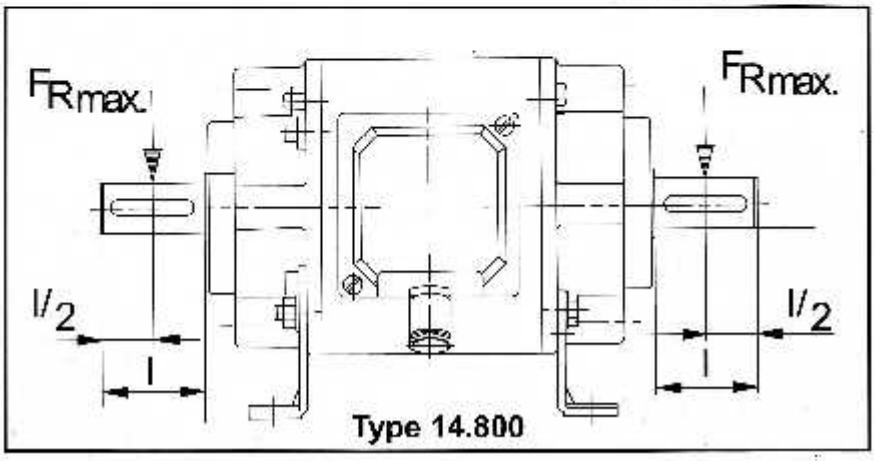


Description of times when engaging and disengaging

Operating times in ms

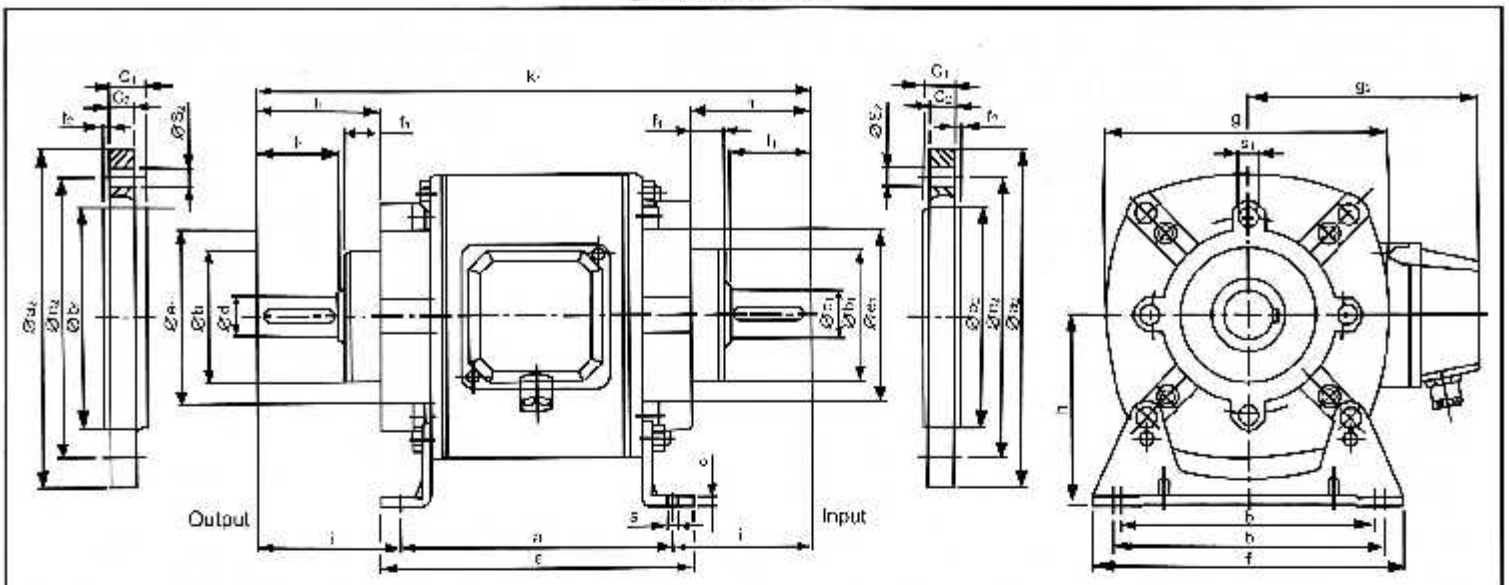
Size	Type 14.800				
		Clutch		Brake	
	$t_{11} \approx t_2$	t_{12}	t_1	t_{12}	t_1
06	24	42	66	30	54
08	30	84	114	36	66
10	42	102	144	60	102
12	60	144	204	90	150
16	78	174	252	102	180

SHAFT LOADS



Size	Force $F_{R\,max.}$ [N]	Force F_N [N]
06	600	325
08	900	425
10	1300	590
12	1900	870
16	2300	1350

DIMENSIONS



Keyways to IS : 2048

All dimensions are in 'mm' only.

PARAMETERS

Size	M_k Nm	Clutch P_D W	Brake P_D W	b_1 js	e_1	d k6	f	g_1	g_2	h	k	k_1	l	s_1
06	7.5	15	11.5	52	67	11 / 14	10	90	89	63 / 71	35 / 42	183 / 197	23 / 30	M6
08	15	20	16	65	80	14 / 19	10	114	95	71 / 80	42 / 52	230 / 250	30 / 40	M8
10	30	25	21	78	115	19 / 24	19	140	110	80 / 90	52 / 72	250 / 300	40 / 50	M10
12	60	35	28	78	115	24 / 28	20	167	136	100 / 112	72 / 82	324 / 347	50 / 60	M10
16	120	50	38	98	145	28 / 38	20	210	158	112 / 132	82 / 102	360 / 420	60 / 80	M12

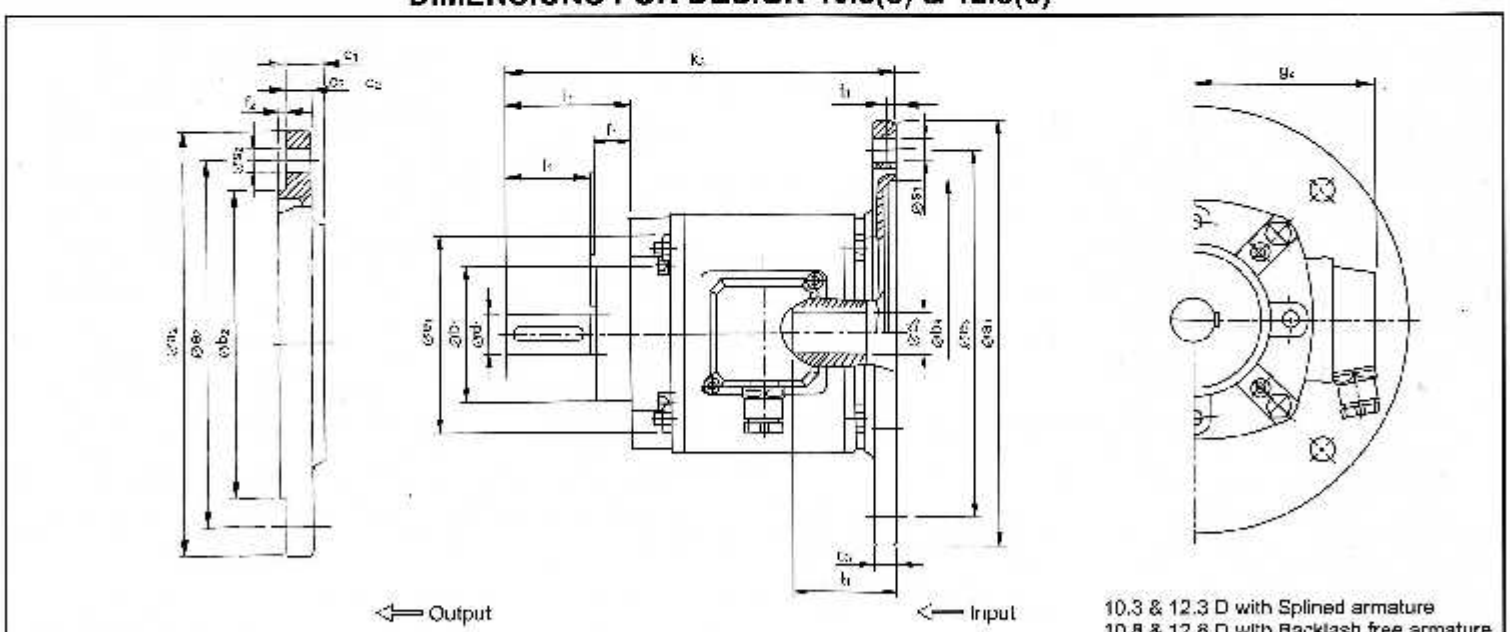
Feet

Size	a	b	b_1	c	e	f	l	s
06	100	80	35	3	115	100	41.5 / 48.5	7
08	120	100	110	3	140	130	55 / 65	9
10	140	150	140	4	165	160	70 / 80	9
12	160	150	160	5	184	180	82 / 92	11
16	145	180	195	6	215	223	97.5 / 117.5	13

Flange

Size	a_2	b_2 j7	C_1	C_2	e_2	f	s_2
06	140 / 160	95 / 110	12	10	115 / 130	3 / 3.5	9
08	160 / 200	110 / 130	12	9	130 / 165	3.5	9 / 11.5
10	200 / 250	130 / 180	22	15	165 / 215	3.5 / 4	11 / 13.5
12	200 / 250	130 / 180	22	15	165 / 215	3.5 / 4	11 / 13.5
16	250 / 300	180 / 230	22	15	215 / 265	4	13.5

DIMENSIONS FOR DESIGN 10.3(8) & 12.3(8)



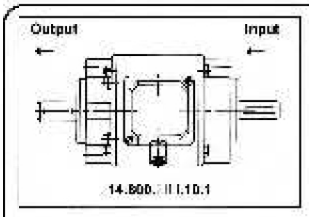
10.3 & 12.3 D with Splined armature
10.8 & 12.8 D with Backlash free armature

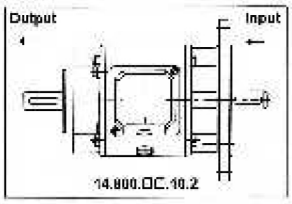
PARAMETERS

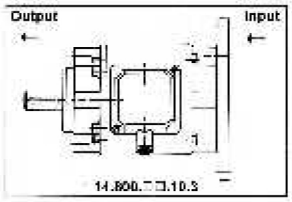
Size	M_k Nm	Clutch P_D W	Brake P_D W	a_1	b_1 js	b_2 H8	c	d k6	d_1 G7	e_1	e_2	f	f_1	g_1	g_2	h	k	l	l_1	s_1	s_2	s_3
06	7.5	15	11.5	140 / 160	52	95.2 / 110.2	12	11 / 14	14 / 14	67	115 / 130	10	4	90	89	35 / 42	148 / 153	23 / 30	40	M6	M6 / 10	8
08	15	20	16	160 / 200	65	110.2 / 130.2	14	14 / 19	14 / 19	80	130 / 165	10	4	112	95	42 / 52	184 / 197	30 / 40	60	M8	M8 / 11.5	8
10	30	25	21	200 / 250	78	130.2 / 180.2	19	19 / 24	19 / 24	115	165 / 215	19	4 / 5	140	110	62 / 72	217 / 227	40 / 50	60	M10	M10 / 13.5	8
12	60	35	28	200 / 250	78	130.2 / 180.2	19	24 / 28	24 / 28	115	165 / 215	20	4 / 5	167	136	72 / 82	251 / 261	50 / 60	70	M10	M10 / M12	11
16	120	50	38	250 / 300	98	180.2 / 230.2	20	28 / 38	28 / 38	145	215 / 265	20	5	210	158	82 / 102	284 / 314	60 / 80	80	M12	M12	11

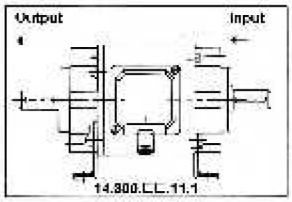
Output Flange

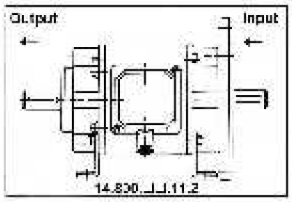
Size	a_2	b_2 j7	C_1	C_2	e_2	f	s_2
06	140 / 160	95 / 110	12	10	115 / 130	3 / 3.5	9
08	160 / 200	110 / 130	12	9	130 / 165	3.5	9 / 11.5
10	200 / 250	130 / 180	22	15	165 / 215	3.5 / 4	11 / 13.5
12	200 / 250	130 / 180	22	15	165 / 215	3.5 / 4	11 / 13.5
16	250 / 300	180 / 230	22	15	215 / 265	4	13.5

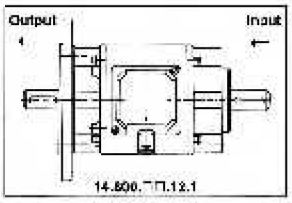


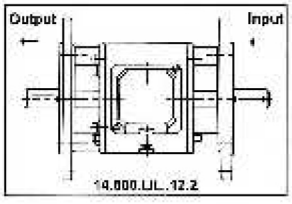


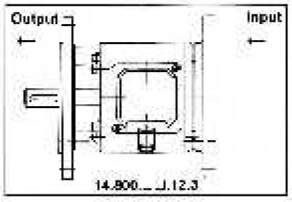


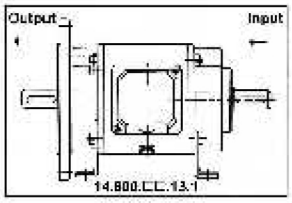


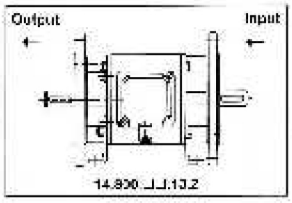












Type 14.800.

- Type
- Size
- Output design
- Input design

14.800.06.10.1

Type

14.800 - Electromagnetic clutch brake unit.

Size - 06, 08, 10, 10, 12, 16

Variants

(to be specify with Type Code)

- Coil operating voltage
- Shaft diameter / bore diameter
- Flange diameter
- Height of feet

Output design

10 - Free output shaft, no feet, no flange
11 - Free output shaft, with feet, no flange
12 - Free output shaft, with flange, no feet
13 - Free output shaft, with flange and feet

Input design

1 - Splined armature, free input shaft
2 - Splined armature, free input shaft and flange
3 - Splined armature, hollow shaft and B5 input flange

SIZE SELECTION

Approximate necessary Torque or Size of a unit for applications involving low operating frequency is determined as:TORQUE = [9550 x (K.W. / SPEED)] x SAFETY FACTOR [K]

SAFETY FACTOR [K]

To ensure necessary transmission safely also under extreme operating conditions adequate safety factor must be considered, the value of which depends on operating conditions namely, the type of load and prime mover.

TYPICALLY : For Electric Drive

	[K]
• Low masses, equal loading & non-intermittent operation	[2.0]
• Low masses, light shock load & intermittent operation	[2.5]
• Medium masses, light shock load & intermittent operation	[3.0]
• Larg masses, strong shock load & intermittent operation	[4.0]

	[K]
• Diesel Engine Drive	[4-5]
• Compressor Driven	[5-6]
• Non Overhauling loads	[2-3]
• Overhauling Loads	[3-4]

LIFE

The life of the friction liner depends on a number of factors namely, the inertia to be retarded or stopped, the relative speed, the operating frequency and the temperatures at the friction surfaces. These brakes must run dry. Oil, grease, Foreign materials and other lubricant can affect life and characteristics of friction materials. No general statement can be made about the life.

OUR OTHER PRODUCTS

- EM DC Fail Safe Brake Type 14.458 Torque upto 800 Nm.
- EM Brake (Normally off) Type 14.112 & Type 14.115 Torque upto 2500 Nm.
- EM Clutch (Normally off) Type 14.102 & Type 14.105 Torque upto 2500 Nm.
- EM Clutch-Brake/Clutch-Clutch Combination Type 14.121/Type 14.128 Torque upto 2500 Nm.
- EM AC Fail Safe Brake Type 1000 & Type 5000 Torque upto 140 Nm.
- PM DC Brake Type 14.118 Torque upto 120 Nm.
- Brake motors upto 15 HP with AC/DC Brake.

Salient Features

- Five Sizes from 7.5 to 120 Nm
- Asbestos Free Friction Linings
- Patented Air Gap Adjustment from outside without dismantling the unit.
- Two axis heights available for each size.
- Imported Rivetless Low Inertia Armature.
- Insulation Class F
- Dimensioning for 100% duty time.
- Enclosure IP 44.
- Rated Voltage 24 VDC, other voltages on request.
- Totally Enclosed design.
- Simple to fit.
- Ready in assembled form.
- Strong Bearing design.
- High operating reliability.
- Fast Switching times.
- Compact Flange Mounted Designs available.

GREAT-TECH CONTROL METIC Co., Ltd.
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