

EMCO-Simplatroll™

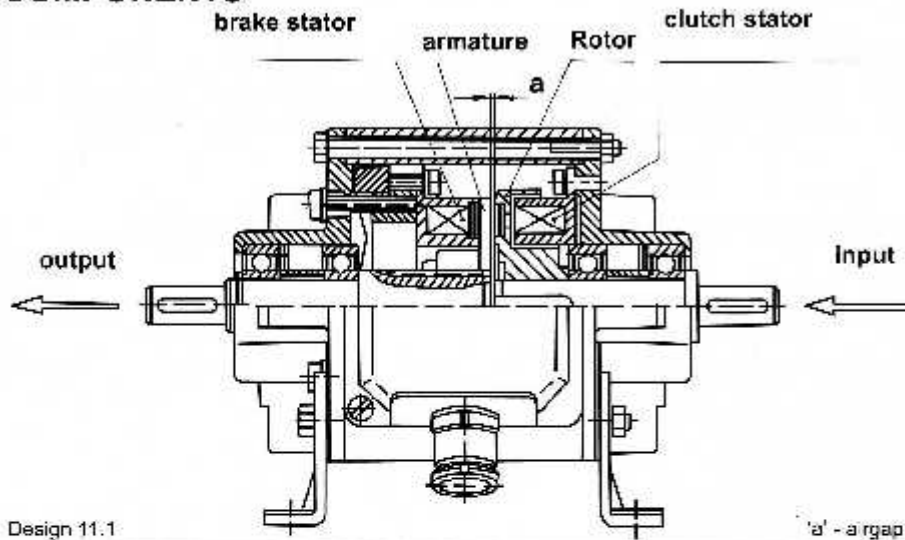
INDUSTRIAL ELECTROMAGNETIC BRAKES & CLUTCHES



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

www.emco-dynatorq.in

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.

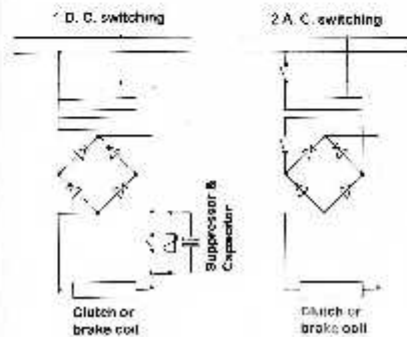
ORDERING INFORMATION

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

AREAS OF OPERATIONS

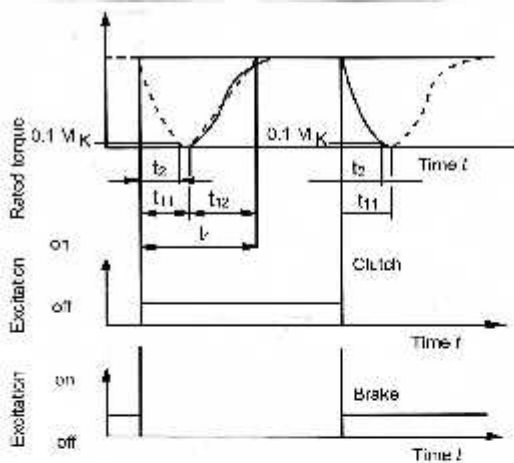
- Packaging Machines.
- Conveyors.
- Machine Tools.
- Special Purpose Machines.
- Welding Machines.

SWITCHING



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.



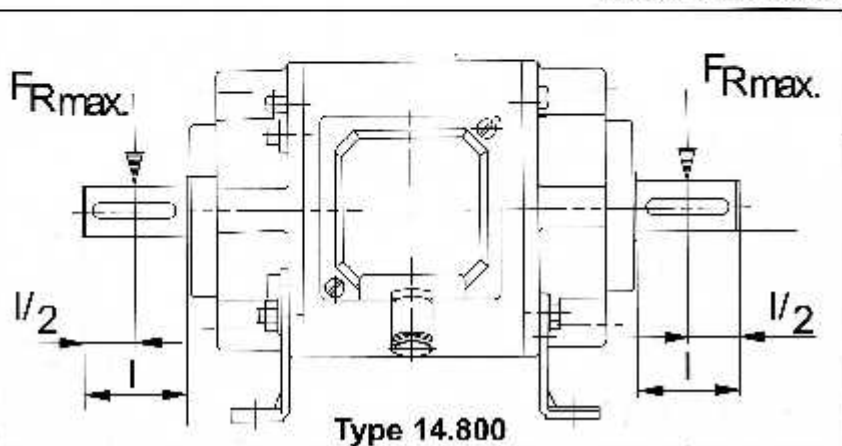
Description of times when engaging and disengaging

t11 = Delay time when engaging
 t12 = Torque rise time
 t2 = Engagement time
 t = Total operation time
 t1 (brake) = t1, clutch
 t2 (clutch) = t2, brake

Operating times in ms

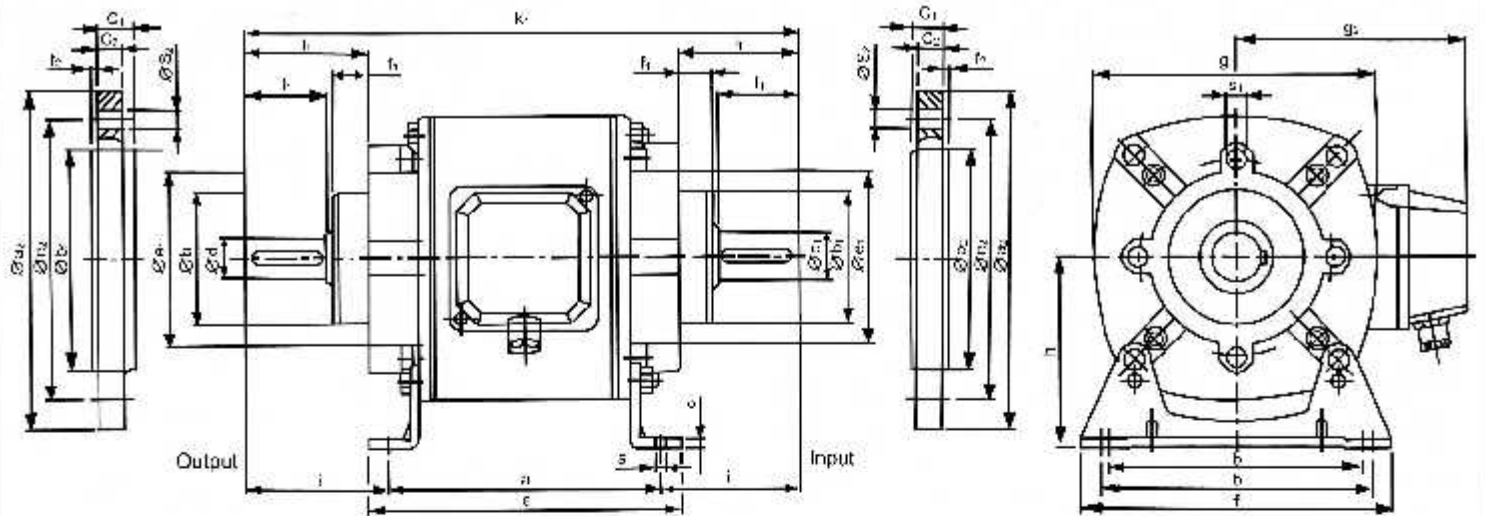
Size	Type 14.800				
	$t_{11} \approx t_2$	Clutch	Brake	t_{12}	t_1
06	24	42	66	30	54
08	30	84	114	36	66
10	42	102	144	60	102
12	60	144	204	90	150
16	78	174	252	102	180

SHAFT LOADS



Size	Force F_{Rmax} [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 N ₍₁₎	Output		Brake		b ₁ 18	e ₁ 67	d ₁ 11	f ₁ 10	g ₁ 90	h ₁ 89	i ₁ 53	j ₁ 35	k ₁ 183	l ₁ 23	m ₁ 30
		W ₂₀	W	W ₂₀	W											
06	7.5	15	11.5	52	67							71	42	197	30	M8
08	15	20	16	65	80	14	18	10	114	85	80	71	42	230	30	M8
												80	52	250	40	
10	30	28	21	78	113	18	24	18	140	110	80	52	280	40	M10	
						30	72	300	50							
12	60	35	28	78	115	21	28	20	167	136	100	72	324	50	M10	
						112	82	317	60							
16	120	50	38	88	145	28	38	20	210	168	112	82	360	60	M12	
						132	102	420	80							

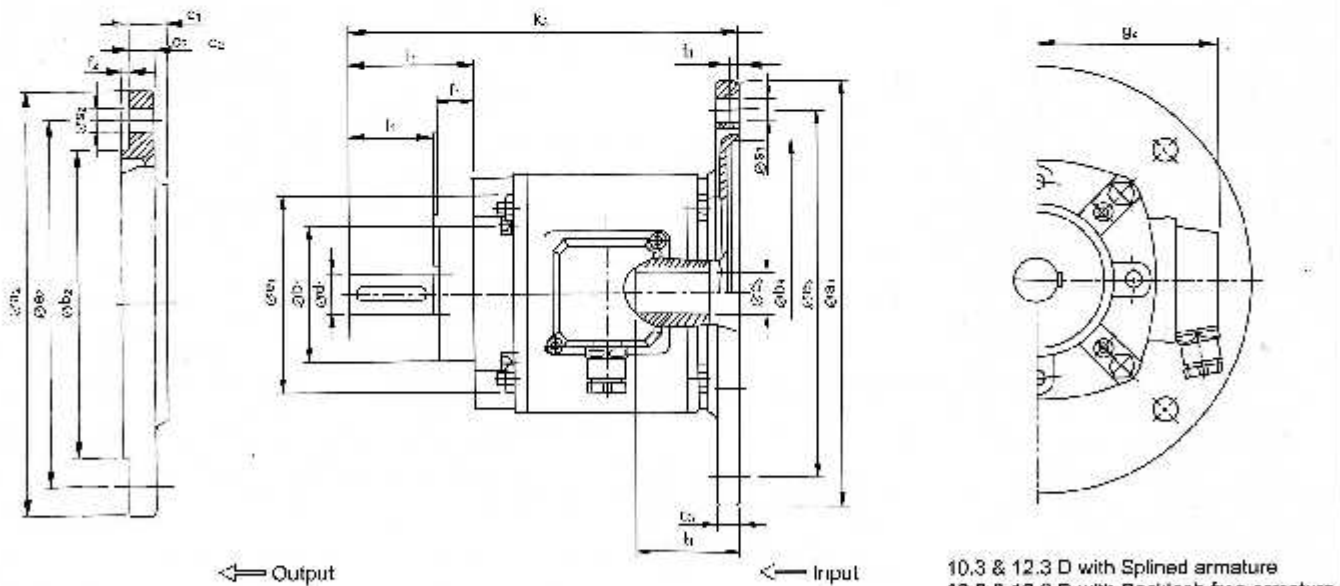
Feet

Size	a	b	c	d	e	f	g	h	i	j	k	l	m
06	100	30	35	3	115	100	41.5	7					
08	120	106	110	3	140	130	55	85	9				
10	140	150	140	4	165	160	70	80	9				
12	180	150	180	5	184	180	82	82	11				
16	145	185	190	6	215	229	97.5	117.5	13				

Flange

Size	a ₂	b ₂ j ₇	C ₁	C ₂	e ₂	f	g
06	140	95	12	10	115	3	p
	160	110			130	3.5	
08	160	110	12	9	130	3.5	9
	200	130			165	4	11.5
10	200	130	22	15	165	3.5	11
	250	180			216	4	13.5
12	200	130	22	15	165	3.5	11
	250	180			216	4	13.5
16	250	190	22	15	215	4	13.5
	300	230			285		

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



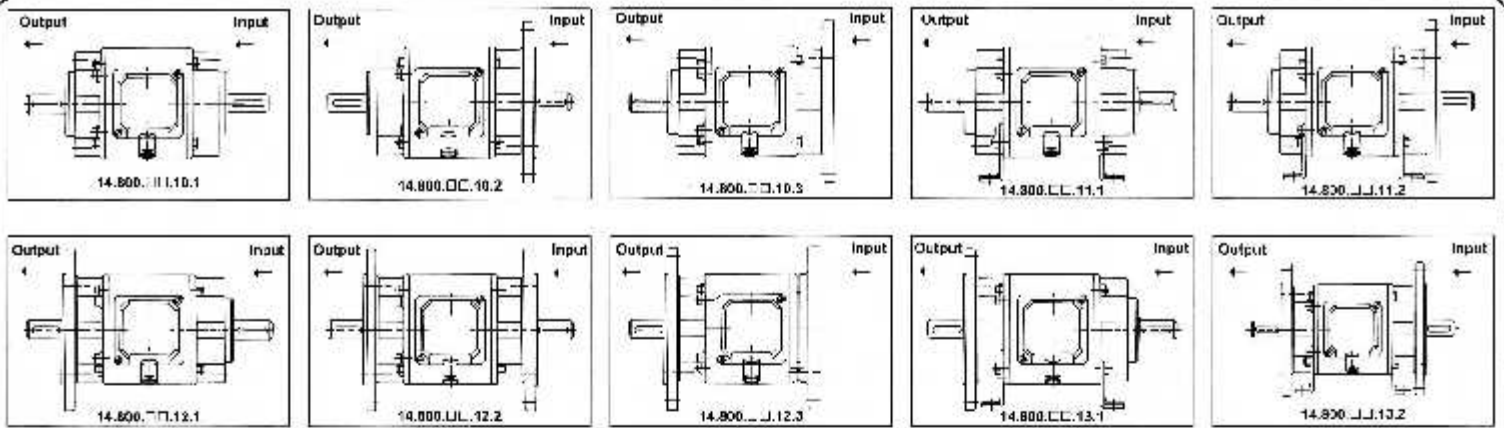
10.3 & 12.3 D with Splined armature
10.8 & 12.8 D with Backlash free armature

PARAMETERS

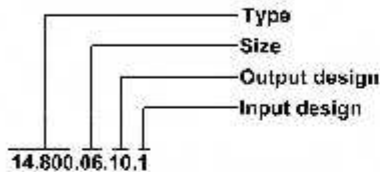
Size	M _k N ₍₁₎	Output		Brake		b ₁ 18	e ₁ 67	d ₁ 11	f ₁ 10	g ₁ 90	h ₁ 89	i ₁ 53	j ₁ 35	k ₁ 183	l ₁ 23	m ₁ 30
		W ₂₀	W	W ₂₀	W											
06	7.5	15	11.5	52	67	95.2	10	11	14	67	89	110	71	183	23	48
						101.7	14	14	130	40	M8	10	8			
08	15	20	16	65	80	110.2	14	14	14	90	120	80	71	197	30	M8
						133.2	19	19	165	60	M8	11.5	6			
10	30	28	21	78	113	133.7	18	18	18	110	183	110	80	280	40	M10
						183.2	24	24	215	60	M10	13.5	8			
12	60	35	28	78	115	133.2	18	24	24	115	165	110	90	317	50	M10
						183.2	28	28	215	70	M10	13.5	11			
16	120	50	38	88	145	153.2	20	28	28	145	215	140	110	360	60	M12
						233.2	38	38	265	80	M12	13	13			

Output Flange

Size	a ₂	b ₂ j ₇	C ₁	C ₂	e ₂	f	g
06	140	95	12	10	115	3	p
	160	110			130	3.5	
08	160	110	12	9	130	3.5	9
	200	130			165	4	11.5
10	200	130	22	15	165	3.5	11
	250	180			215	4	13.5
12	200	130	22	15	165	3.5	11
	250	180			215	4	13.5
16	250	190	22	15	215	4	13.5
	300	230			285		



Type 14.800.



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

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

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: $TORQUE = [9550 \times (K.W. / SPEED)] \times SAFETY \ FACTOR [K]$

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

- 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]
- Large masses, strong shock load & intermittent operation [4.0]

- 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.



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