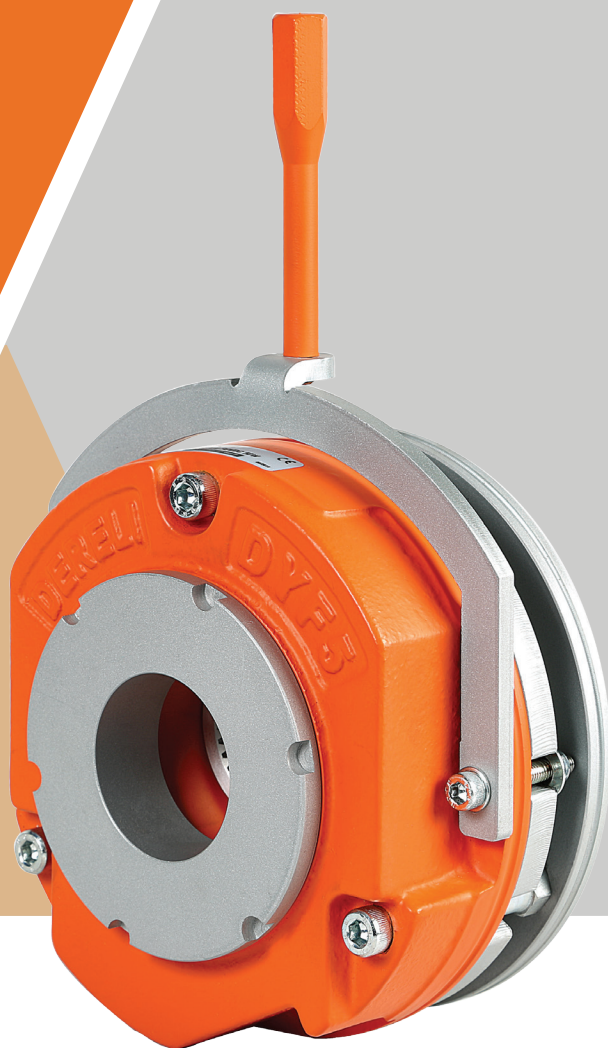




DYF SERIES

SPRING APPLIED BRAKES



For Brake Solutions



DYF

SERIES

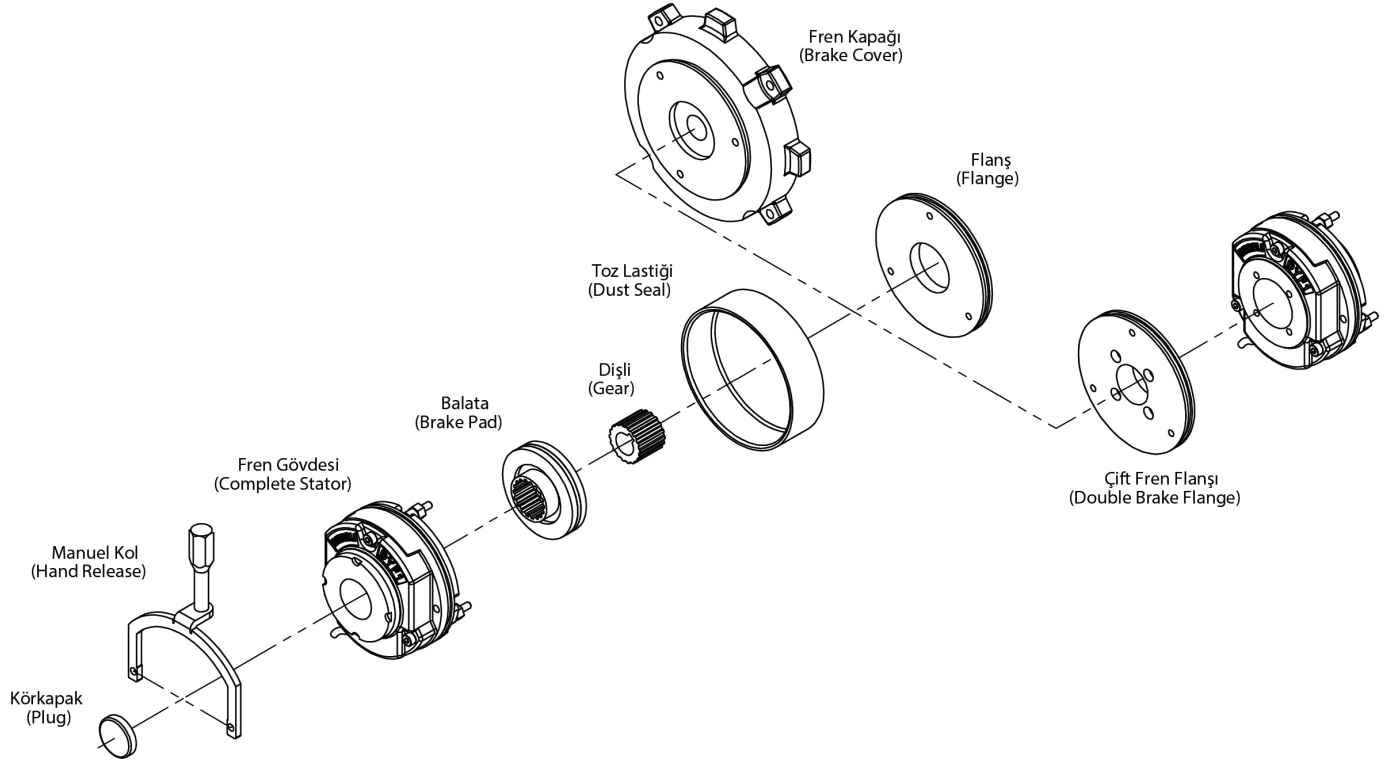
SPRING APPLIED BRAKES

Areas of Application

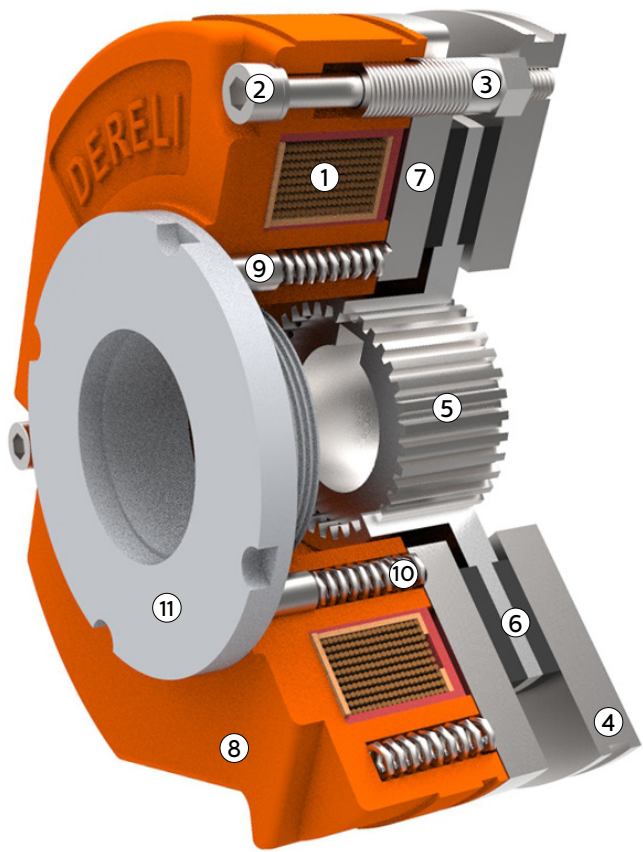
- Crane Systems
- Entertainment Systems
- Band Conveyors
- Escalator
- Wind Turbine







- Designed a strong structure for brake assembly and design.
- Noise level is <70 Db for brakes.
- For motors of different sizes high braking, torque had been provided.
- Vantilated brakes type; helps to eject to the heat that is formed during braking, in this way the wear of the brake pads is reduced to a minimum
- Electromagnetic coils are enfolded to coil molds which are made of heatproof material and protected with epoxy.(coil insulation range is H-180°)
- All mechanical parts are electrolysed and protected against corrosion.
- Brake discs are manufactured (rom aluminium in ec-tion for low moments and (rom antimagnetic stainless steel for high moments.
- In brakes Long-life, high coefficient of friction and asbestos free brake pads are used
- Brake coil bodies are manufactured (rom GGG42 spherocasting which reduces hysteresis losses to minimum.
- Brakes are designed to be used in all types of motors by changing intermediate connection flanges.
- Brakes can operate in every position.
- All mechanical parts are processed in CNC workbenches.
- All brakes are designed consistent to microswitch, proxyswitch and encoder assembly.
- Brakes are manufactured as 24 Vdc and 98 Vdc 198 Vdc standard except special requests.
- Brakes are manufactured as; in DYF models between 5Nm to 1600 Nm torque levels



Brake Coil-1

Brake Connecting Screw-2

Operating Clearance Adjustment Bush-3

Brake Connecting Flange-4

Brake Gear-5

Brake Pad-6

Pad Pressure Scale-7

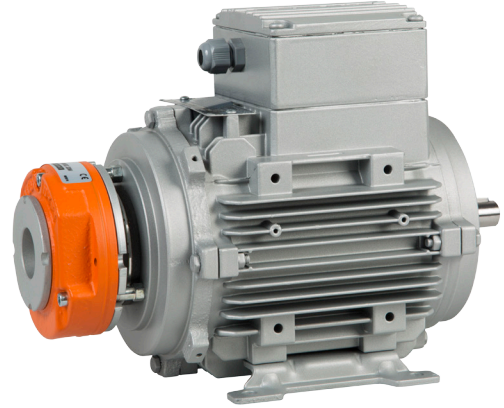
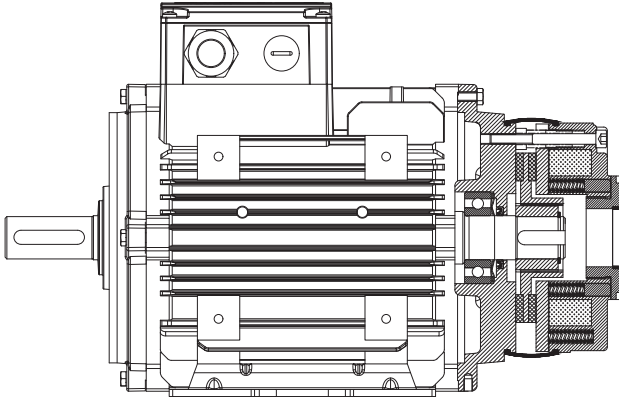
Brake Body-8

Pressure Adjustment Pin-9

Pressure Spring-10

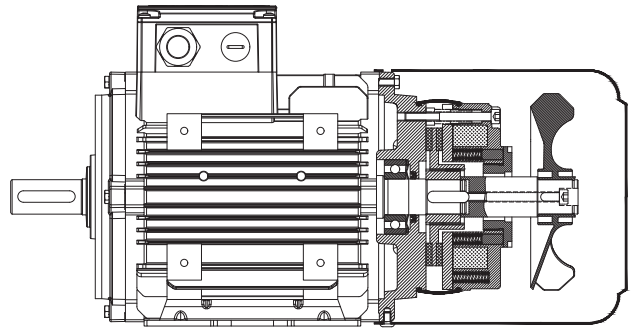
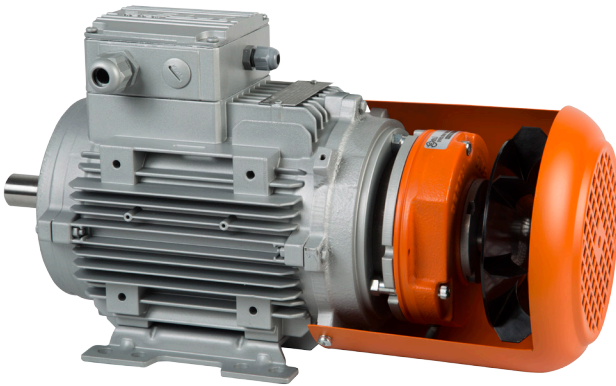
Pressure Adjustment Turn screw-11

Brakes has two friction surfaces. Braking torque is formed with springs force when there is no voltage. Brake releases free with electromagnetic space. Pad pressure scale (no:7) which is magnetized with coil feeding draws away to electromag-net (no:1). This movement takes the springs (no: 10) under pressure and the pad (no:6) which is mounted on motor shaft and can move on multiple wedge in axial direction releases. When the current is cut off with the springs pressure, pad pressure scale is drawn towards brake pad and this movement brakes the motor.



Non-Ventilated Type Assembled to the Motor

Dyf Series is the standart mounting type for brakes. It is preferred in systems that do not require frequent switching on and off.



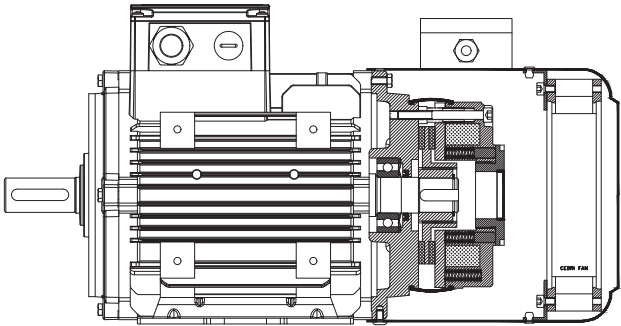
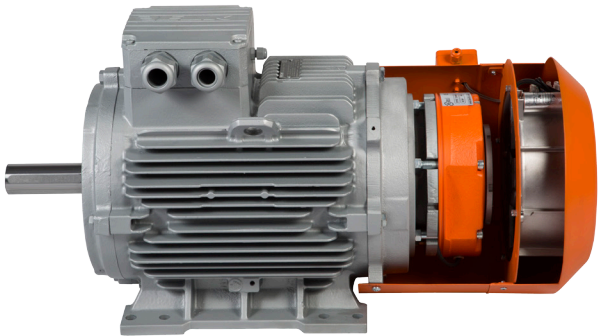
Ventilated Type Assembled to the Motor



Dyf series in brakes ,it is the preferred type of application for systems that require frequent opening and closing of brakes. This feature must be specified with the order

DYF

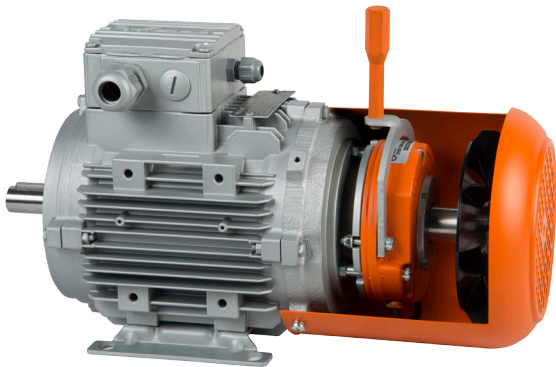
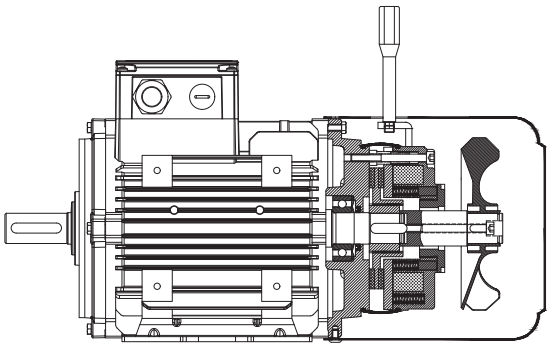
SERIES



Axial Force Fans Application

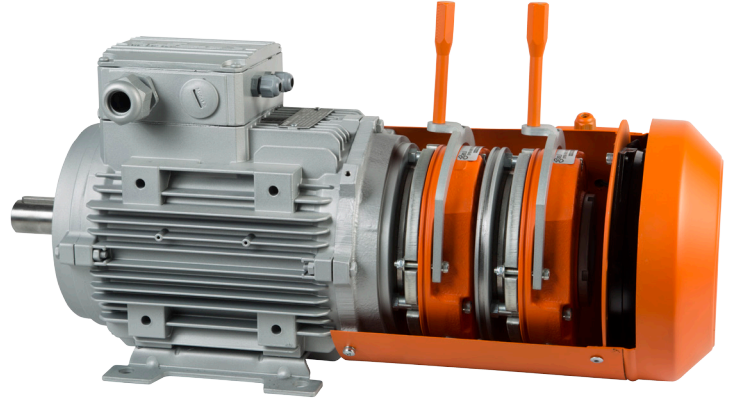
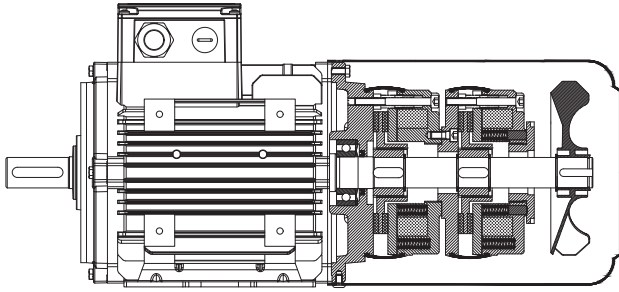


Dyf Series in brakes , it is the preferred type of application for systems that have a long operating time and frequent opening and shutting and high ambient temperature. This feature must be specified with the order.



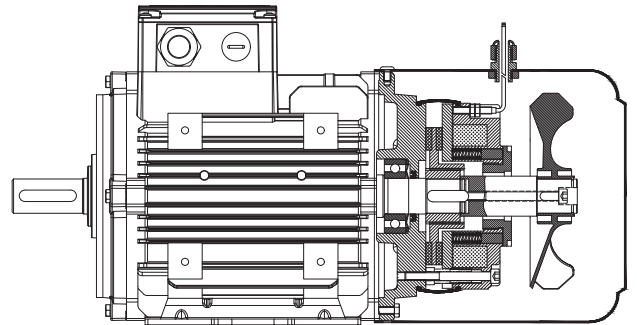
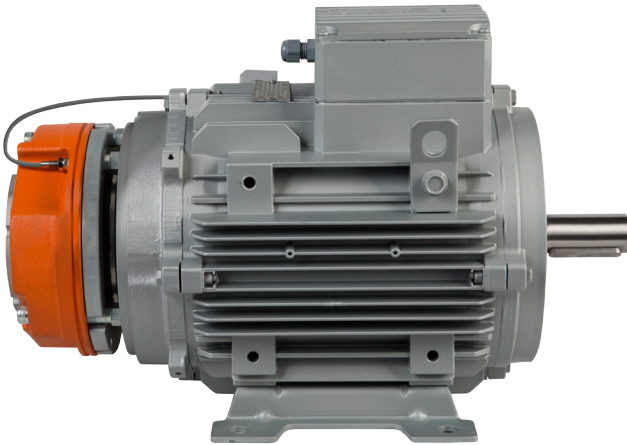
Hand Release System Application

This is the preferred method of application of Dyf Series Brakes in which the system is mechanically released with the help of a lever on the brake whenever required. (Usually preferred in outdoor elevators, stage systems, and conveyor systems.) This feature must be specified with the order.



Double Brake Application

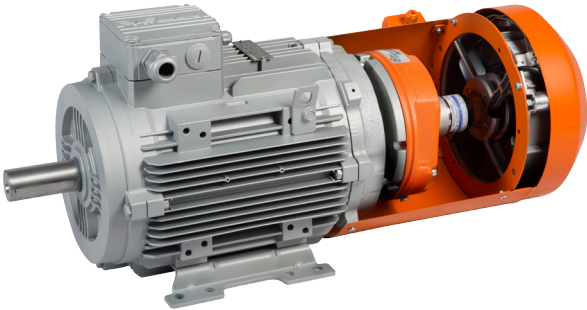
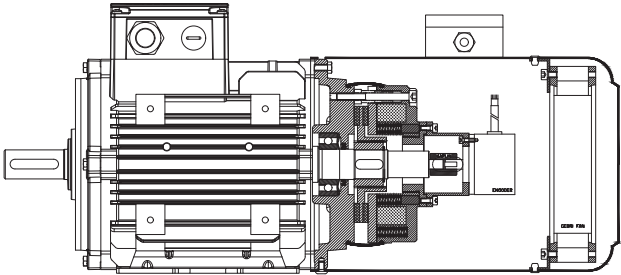
Dyf Series Brakes are the preferred systems for safety in systems where the human factor due to standards is intensive (Outdoor elevators, Stage Systems) The feature must be specified with the order.



Proxy Switch Application



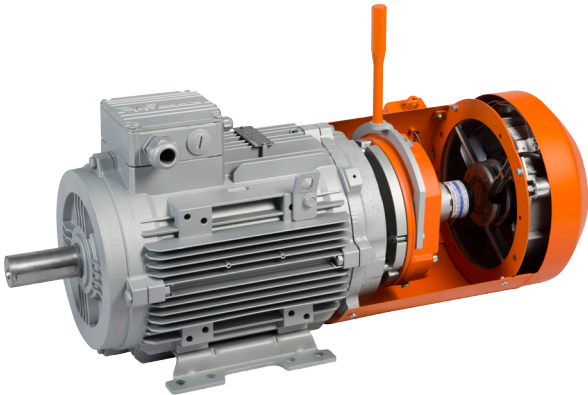
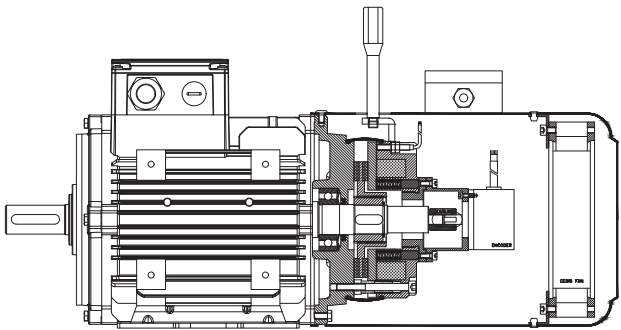
Dyf Series in brakes, It is the type of application that enables the monitoring of the magnetic saturation time and the wear of the pad in brakes, especially in brake motors with high braking torque. This feature must be specified with the order.



Encoder and Axial Force Fan Application

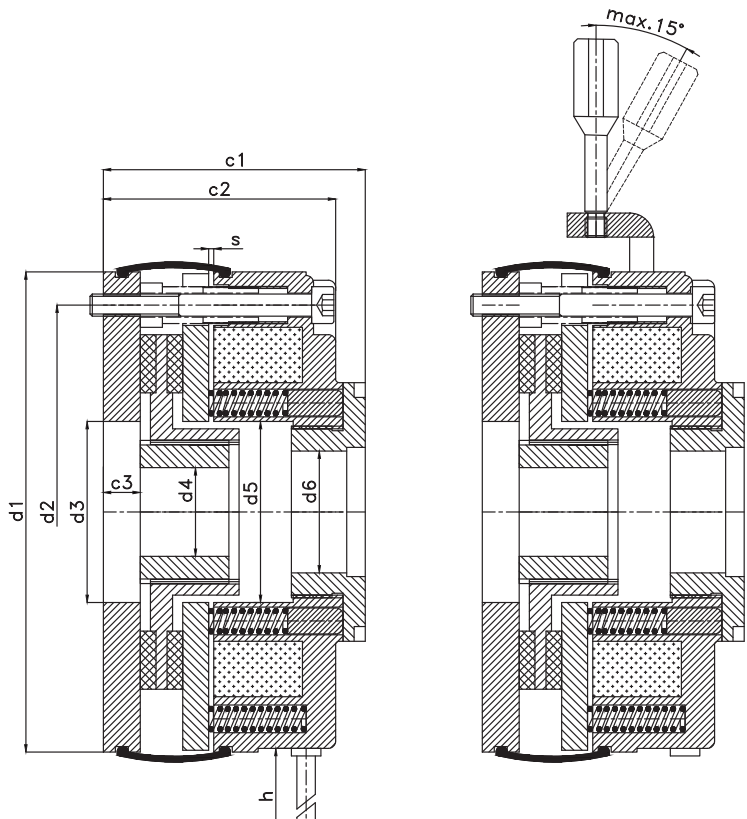
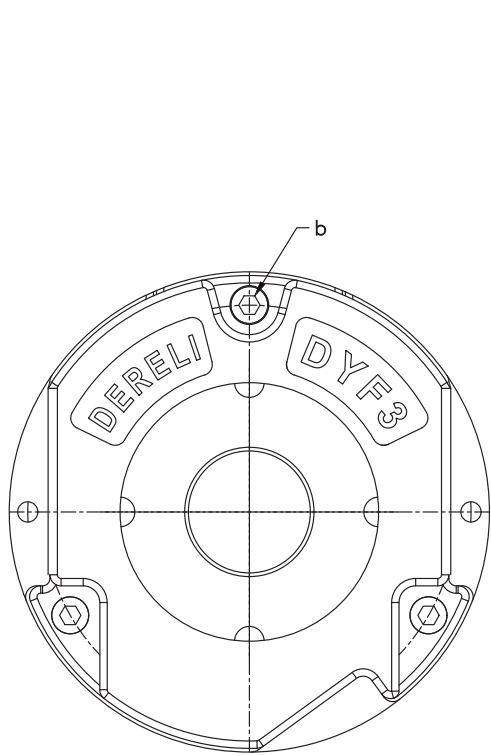


Dyf Series in brakes it is the preferred method of application, especially in automation systems and in intensive working environments. This feature must be specified with the order.



Motor Encoder and Axial Force Fan and Hand Release Application

This is the preferred method of application of Dyf Series Brakes especially in automation systems, intense working environments, high ambient temperature and systems with mechanical control requirements. This feature must be specified with the order.

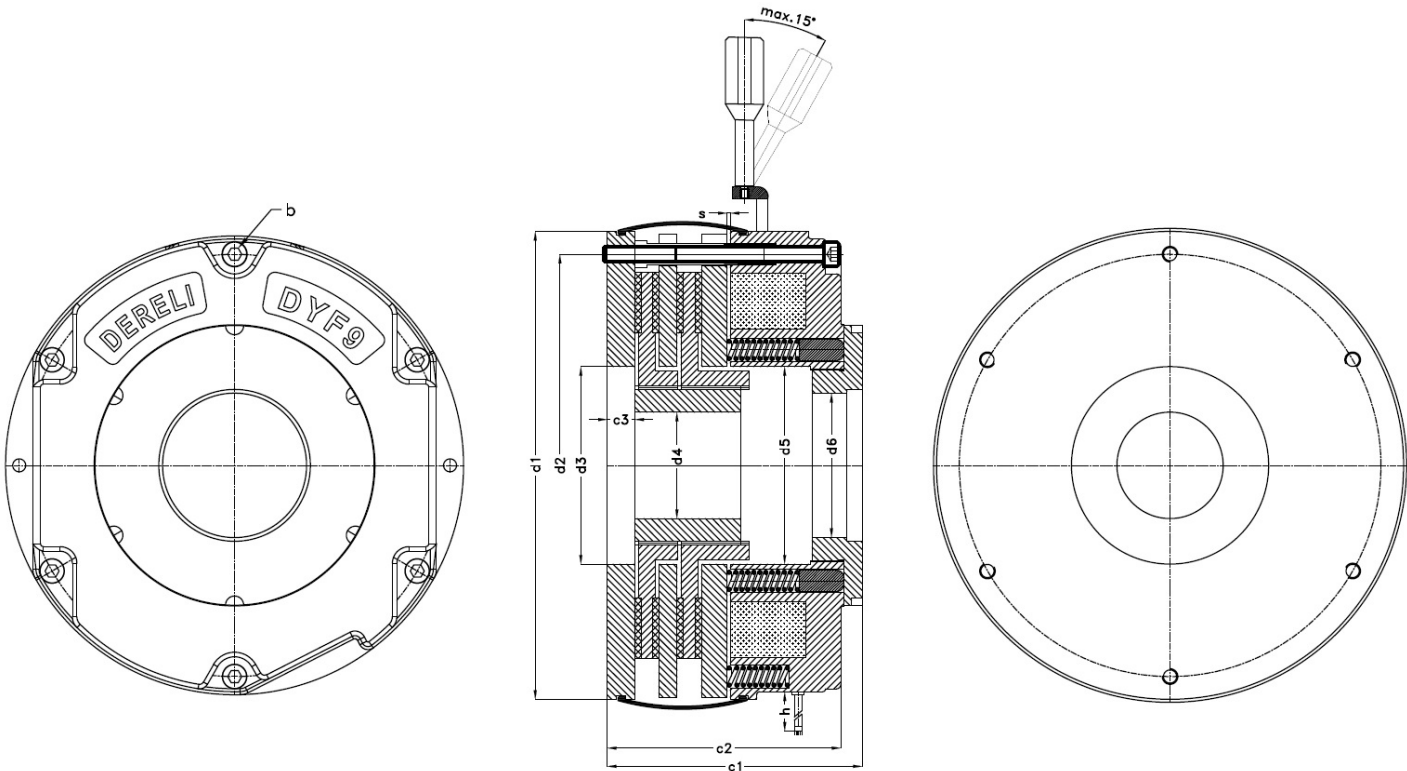


Technical Specifications

Tip/Type	Moment(Nm)	b	c1	c2	c3	d1	d2	d3	d4(max)	d5	d6	h	s	ağırlık*(kg)	ağırlık**(kg)
DYF01	5	M4x3	55	49	7	86	72	31	11/14	31	25	300	0,3	1,5	1
DYF02	10	M5x3	61	54	8	106	90	42	14/16/19	42	27	350	0,3	2	1,5
DYF03	25	M6x3	70	62	10	130	112	49	19/20/24	49	33	400	0,3	3,5	3
DYF04	40	M6x3	77	68	10	151	132	57	19/24/28	57	40	450	0,4	5,5	4,5
DYF05	60	M8x3	92	83	12	166	145	62	19/24/28	62	51	450	0,4	8,5	7
DYF06	100	M8x3	103	93	12	193	170	73,5	28/30/38	73,5	55	600	0,4	13,5	11
DYF07	200	M8x6	114	102	14	220	195	84	38/42/48	84	62	650	0,4	18,5	15
DYF08	300	M10x6	128	117	16	256	230	96	42/48/57	96	73	750	0,5	25,5	21
DYF09	500	M10x6	139	125	18	308	278	130	42/48/57	130	100	800	0,5	38,5	28,7
DYF10	1200	M14x6	175	156	27	410	371	174	57/70/85	174	115	1000	0,6	139	104

ağırlık* : Montaj Flanşlı ağırlık / Mounting Flange Weight
ağırlık** : Montaj Flanşsız ağırlık / Mounting flangeless Weight



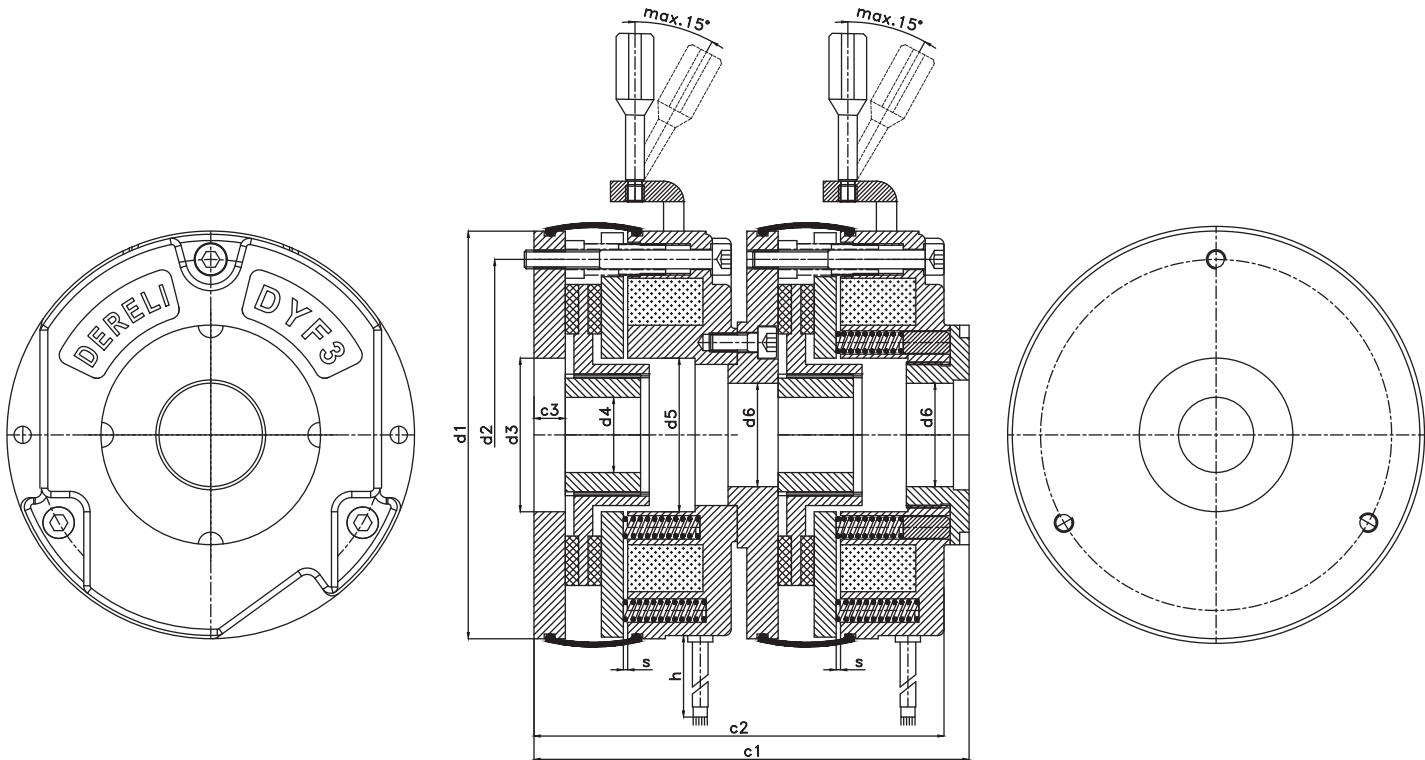


Technical Specifications

Tip/Type	Moment(Nm)	b	c1	c2	c3	d1	d2	d3	d4(max)	d5	d6	h	s	ağırlık*(kg)	ağırlık**(kg)
DYF09-D	800	M10x6	165	154	18	308	278	130	57/65/75	130	100	400	0,5	39.1	29,6
DYF10-D	1600	M14X6	210	191	27	410	371	174	75/70/85	174	115	1000	0,7	158	123

ağırlık* : Montaj Flanşlı ağırlık / Mounting Flange Weight
ağırlık** : Montaj Flanşsız ağırlık / Mounting flangeless Weight

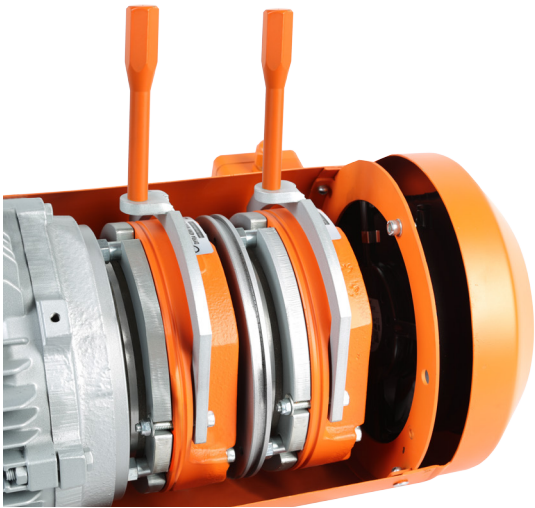


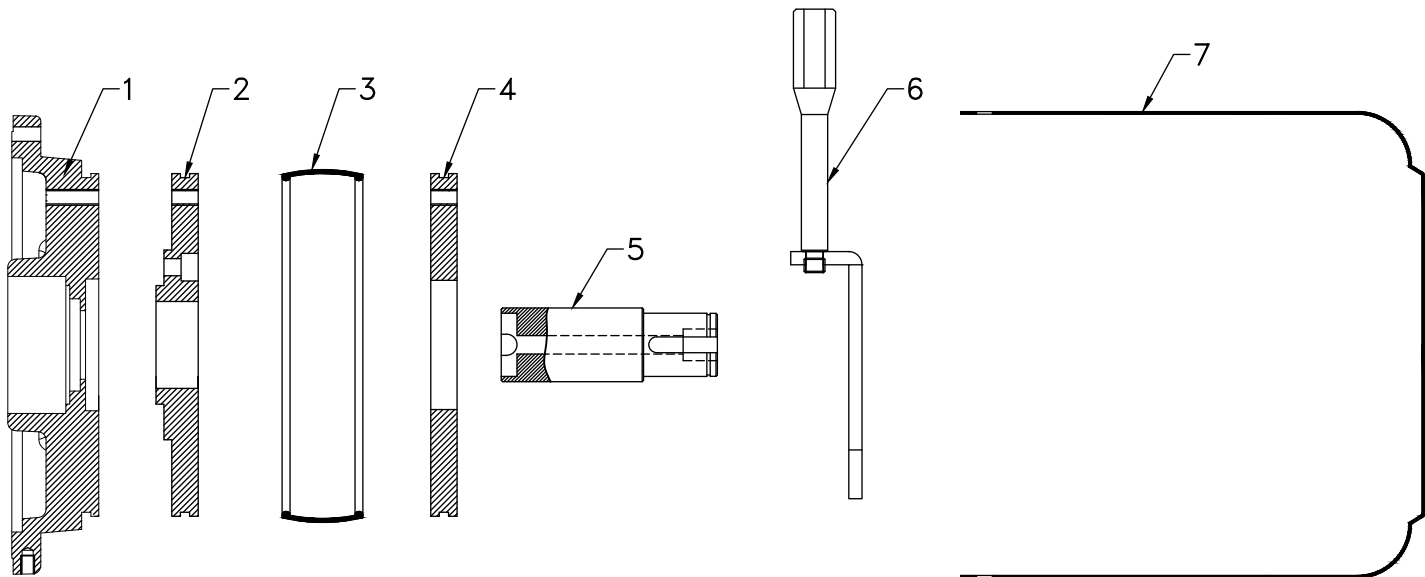


Technical Specifications

Tip/Type	Moment(Nm)	b	c1	c2	c3	d1	d2	d3	d4(max)	d5	d6	h	s	ağırlık*(kg)	ağırlık**(kg)
DYF01-DB	2x5	M4x3	109	103	7	89	72	31	11/14	31	25	400	0.3	1,5	1
DYF02-DB	2x10	M5x3	119	112	8	106	90	42	14/16/19	42	27	400	0,3	2	1,5
DYF03-DB	2x25	M6x3	137	129	10	130	112	49	19/20/24	49	33	400	0,3	3,5	3
DYF04-DB	2x40	M6x3	151	142	10	151	132	57	19/24/28	57	40	400	0,4	5,5	4,5
DYF05-DB	2x60	M8x3	181	172	12	166	145	62	19/24/28	62	51	400	0,4	8,5	7
DYF06-DB	2x100	M8x3	203	192	12	193	170	73,5	28/30/38	73,5	55	400	0,4	13,5	11
DYF07-DB	2x200	M8x6	224	211	14	220	195	84	38/42/48	84	62	400	0,4	18,5	15
DYF08-DB	2x300	M10x6	253	240	16	256	230	96	42/48/57	96	73	400	0,5	25,5	21
DYF09-DB	2x500	M10x6	270	256	18	308	278	130	42/48/57	130	100	400	0,5	85	77
DYF10-DB	2x1200	M14x6	342	323	27	410	371	174	70/85	174	140	1000	0,6	209	140

ağırlık* : Montaj Flanşlı ağırlık / Mounting Flange Weight
ağırlık** : Montaj Flanşsız ağırlık / Mounting flangeless Weight





1- Motor & Brake Connection Cover

This cover is custom manufactured for the cases, where the motor connection cover is not suitable, between the Type 63 and Type 200 motor body sizes. (For Gamak, Volt, Abana, Watt and Emtaş brands)

2- Double Brake Connecting Flange

This flange makes it possible to connect two brakes back to back, when high braking moment is required on the grounds of security.

3- Rubber Dust Seal

This seal protects the brake pad and thrust washers from the external factors such as dust, oil and metal particles.

4- Brake Connecting Flange

This flange is used when there is no suitable surface on motor covers or brake assembly area.

5- Fan Carrying Shaft

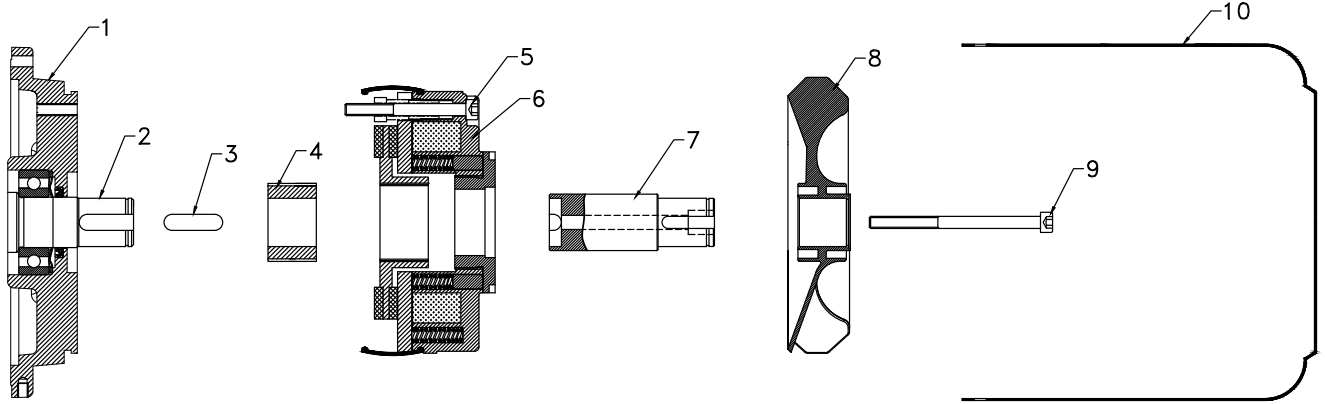
This shaft is fastened to rotor shaft and used in ventilated brakes, for carrying the motor ventilating fan behind the brake.

6- Manual Release Lever

In ventilated and non-ventilated type brakes, the metal lever that allows mechanical releasing of the system.

7- Brake Cover Plate

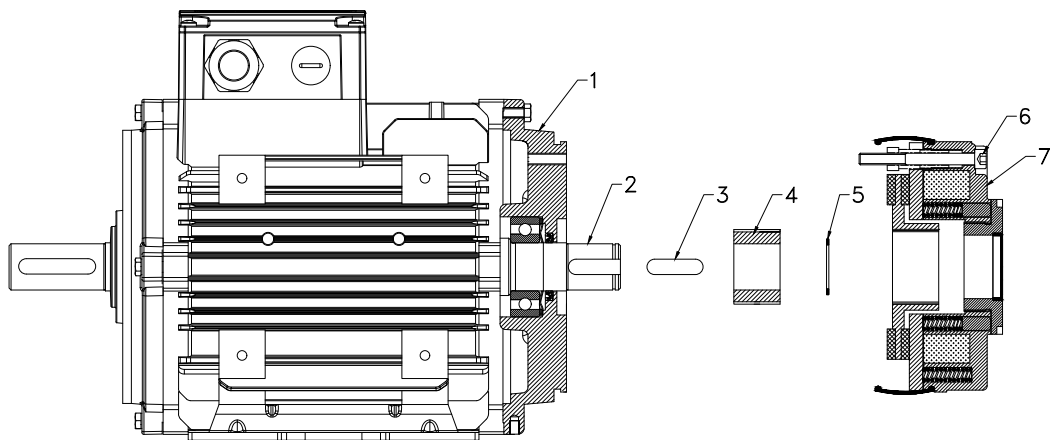
This plate protects the brake from the external factors, provides air circulation and used in both ventilated and non-ventilated brakes.



■ DYF Series brakes are designed to be mounted on all electric motors and movement systems easily.

The motor connecting cover which comes with the brake can be replaced with the rear motor-connecting cover when requested. (The custom motor-connecting cover (no:1) which is supplied with the brake are designed for ELK, Gamak, Volt, Abana, Watt and Erntaş branded motors. Please ask for the suitable cover by specifying your motor brand. We are producing covers for different motor brands.) If there is no suitable connecting cover, or when deemed necessary, the optional connecting flange is machined appropriately to form a centering protrude and mounted on the motor cover using allen screws. Cover should be mounted on the motor. A hole should be cut through on the center of the rotor shaft (no:2), and it should be threaded appropriately with the shaft fixing screw. The central gear (no:4) supplied with the brake should be mounted on the rotor shaft (no:2) (by milling the rotor shaft in proportion to the size of the hole on the gear, and by equalizing it with the size of the gear wedge when necessary). Central gear should be mounted by adjusting so the pad gear will be in line centrally when the brake is mounted. The protruded part of the fan carrying shaft which is a part of the ventilation system should be mounted on the central gear, and shaft connecting screw (no:9) should be fastened to the rotor shaft so the gear and the carrying shaft are fixed. Brake pad should be mounted on central gear. Brake housing (no:6) should be mounted on the connecting flange using brake connecting screws (no: 5). This procedure closes the brake operation clearance (a) and it should be adjusted according to the "a" values in the table, by turning the clearance adjustment bush to the left and right using a filler knife. The operation clearance should be fixed by fastening the adjustment bush after this procedure. Brake connecting screws should be checked again. The optional cover plate (no:10) should be screwed on the motor cover. The proper connection type (delayed shutdown connection for propulsion systems, and immediate shutdown connection for lifting systems) should be selected according to the connection diagram in the electromagnetic brake terminal box, and connections should be made via the electric motor or wall box.

The electromagnetic brake is now ready to operate. When there is no voltage applied, it brakes and the motor does not rotate. Electromagnetic brakes are released with voltage, and apply braking with the pressure of the spring. Motor rotates freely as long as a DC voltage proper with the coil voltage is applied to the brake.



■ DYF Series brakes are designed to be mounted on all electric motors and movement systems easily.

The motor connecting cover which comes with the brake can be replaced with the rear motor-connecting cover (no. 1) when requested. (The custom motor-connecting cover which is supplied with the brake are designed for ELK, Gamak, Volt, Abana, Watt and Emtaş branded motor. Please ask for the suitable cover by specifying your motor brand. We are producing covers for different motor brands.) If there is no suitable connecting cover, or when deemed necessary, the optional connecting flange is machined appropriately to form a centering protrude and mounted on the motor cover using allen screws. Cover should be mounted on the motor.

The central gear (no. 4) supplied with the brake should be mounted on the rotor shaft (no. 2) (by milling the rotor shaft in proportion to the size of the hole on the gear, and by equalizing it with the size of the gear wedge when necessary).

Central gear should be mounted by adjusting so the pad gear will be in line centrally when the brake is mounted, and fixed with a suitable shaft ring (no. 5).

Brake pad should be mounted on central gear. Brake housing (no. 7) should be mounted on the connecting flange using brake connecting screws. This procedure closes the brake operation clearance (a) and it should be adjusted according to the "a" values in the table, by turning the clearance adjustment bush (no. 6) to the left and right using a filler knife. The operation clearance should be fixed by fastening the adjustment bush after this procedure.

Brake connecting screws should be checked again. The proper connection type (delayed shutdown connection for propulsion systems, and immediate shutdown connection for lifting systems) should be selected according to the connection diagram in the electromagnetic brake terminal box, and connections should be made via the electric motor or wall box.

The electromagnetic brake is now ready to operate. When there is no voltage applied, it brakes and the motor does not rotate. Electromagnetic brakes are released with voltage, and apply braking with the pressure of the spring. Motor rotates freely as long as a DC voltage proper with the coil voltage is applied to the brake.

Technical Specifications

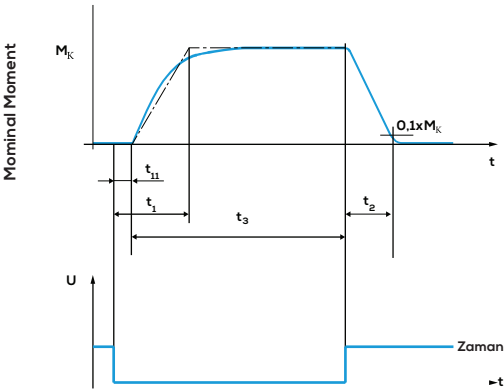
Tip/Type	Fren Momenti Braking Moment	Fren Açma Zamanı Braking Time	Frenleme Gecikme Zamanı Connection Delay	Frenleme Zamanı Brake Switching Time	Frenleme Gecikme Zamanı Waiting Time	Frenleme Zamanı Brake Switching Time
Dc Anahtarlama(Hızlı) / Dc Switching (Fast)				Ac Anahtarlama(Yavaş) / Ac Switching (Low)		
	$M_k = \text{Nm}$	$t_1 = \text{ms}$	$t_{11} \text{ DC} = \text{ms}$	$t_2 \text{ DC} = \text{ms}$	$t_{11} \text{ AC} = \text{ms}$	$t_2 \text{ AC} = \text{ms}$
DYF01	5	37	19	38	55	80
DYF02	10	58	22	50	958	130
DYF03	25	80	24	65	205	285
DYF04	40	104	23	70	140	240
DYF05	60	170	25	82	205	280
DYF06	100	185	38	115	280	440
DYF07	200	285	43	145	335	550
DYF08	300	320	55	178	420	640
DYF09	500	385	70	195	580	890
DYF09-D	800	410	140	320	2600	3300
DYF10	1200	450	160	340	2800	3450
DYF10-D	1600	480	175	360	2900	3600

Electrical Connection:

DC circuit is required for brake operation. Coil voltage is shown on the nameplate as well as on the brake caliper. (Max. % ± 5 tolerance) It is possible to operate the brakes with rectifiers or other suitable DC power source. Depen-ding on the brake equipment connections may vary. Please apply the connections exactly according to the Brake Con-nection Diagram. (For fast switching applications use DC switching, for slow switching applications use AC switching.)

Switching Characteristics of Brakes:

A brakes operating characteristics highly depends on the switching mode used. Additionally, switching durations are affected by the temperature and the air gap between the pad flange and the brake coil body. (Especially, this depends on pad wearing condition so pad thicknesses must be checked periodically.)



- M_k :Frenleme Momenti / Braking Moment
- t_1 :Frenleme Zamanı /Braking Time
- t_{11} :Bağlantı Gecikme Süresi /Connection Delay
- t_2 :Fren Açma Kapama Zamanı /Brake Switching Time
- t_3 :Bekleme Zamanı / Waiting Time

Fren Tipi Break Type	Teorik Moment Theorical Moment (Nm)	Pratik Moment Practical Moment		Çalışma Gelirimi Oprating Voltage			Bobin Gerçek Coil Real (Vdc)	Bobin Akım Coil Current (A)	Elektriksel Güç (Ortalama) Power (Average) (W)
				Teorik Voltaj Theoretical Voltage (Vac)	Çalışma Gelirimi Oprating Voltage				
		Min. Nm	Max. Nm			Min.			
DYF01	5	4	7	24	22	27	24	0.90	23
DYF01	5	4	7	220	210	240	98	0.26	
DYF01	5	4	7	380	360	400	198	0.12	
DYF02	10	7	13	24	22	27	24	1.2	29
DYF02	10	7	13	220	210	240	98	0.33	
DYF02	10	7	13	380	360	400	198	0.14	
DYF03	25	18	31	24	22	27	24	1.45	34
DYF03	25	18	31	220	210	240	98	0.4	
DYF03	25	18	31	380	360	400	198	0.17	
DYF04	40	29	51	24	22	27	24	1.71	47
DYF04	40	29	51	220	210	240	98	0.49	
DYF04	40	29	51	380	360	400	198	0.25	
DYF05	60	48	72	24	22	27	24	2.2	56
DYF05	60	48	72	220	210	240	98	0.61	
DYF05	60	48	72	380	360	400	198	0.3	
DYF06	100	90	118	24	22	27	24	3.34	87
DYF06	100	90	118	220	210	240	98	0.91	
DYF06	100	90	118	380	360	400	198	0.42	
DYF07	200	180	230	24	22	27	24	3.25	79
DYF07	200	180	230	220	210	240	98	0.9	
DYF07	200	180	230	380	360	400	198	0.37	
DYF08	300	265	340	24	22	27	24	4.21	108
DYF08	300	265	340	220	210	240	98	1.16	
DYF08	300	265	340	380	360	400	198	0.61	
DYF09	500	390	560	24	22	27	24	5.95	141
DYF09	500	390	560	220	210	240	98	1.40	
DYF09	500	390	560	380	360	400	198	0.71	
DYF09-D	800	600	900	24	22	27	24	7.6	141
DYF09-D	800	600	900	220	210	240	98	1.68	
DYF09-D	800	600	900	380	360	400	198	0.79	
DYF10	1200	1000	1350	24	22	27	24	7,5	155
DYF10	1200	1000	1350	220	210	240	98	1,79	
DYF10	1200	1000	1350	380	360	400	198	0,95	
DYF10-D	1600	1400	1800	24	22	27	24	7,5	155
DYF10-D	1600	1400	1800	220	210	240	98	1,79	
DYF10-D	1600	1400	1800	380	360	400	198	0,95	

8 Pole 750d/d Motors	Motor / Motor					Fren / Brake					
	Power		Type	Nominal Moment		Light Braking(Propulsion)			Strong Braking(Lifting)		
	Kw	Bg		Nm	Kgm	Nm	Ek	Tip / Type	Nm	Ek	Tip / Type
	0,18	0,25	80/8a	2,5	0,3	5	2,0	DYF01	10	4,0	DYF02
	0,25	0,33	80/8b	3,5	0,4	5	1,4	DYF01	10	2,9	DYF02
	0,37	0,55	90S/8	5,1	0,5	10	2,0	DYF02	25	4,9	DYF03
	0,55	0,75	90L/8	7,8	0,8	10	1,3	DYF02	25	3,2	DYF03
	0,75	1	100L/8a	10,2	1,0	25	2,5	DYF03	40	3,9	DYF04
	1,1	1,5	100L/8b	15,5	1,6	25	1,6	DYF03	40	2,6	DYF04
	1,5	2	112M/8	20,5	2,1	40	2,0	DYF04	50	2,4	DYF05
	2,2	3	132S/8	30	3,0	60	2,0	DYF05	100	3,3	DYF06
	3	4	132M/8	41,2	4,1	60	1,5	DYF05	100	2,4	DYF06
	4	5,5	160M/8a	54	5,4	100	1,9	DYF06	200	3,7	DYF07
	5,5	7,5	160M/8b	73	7,3	100	1,4	DYF06	200	2,7	DYF07
	7,5	10	160L/8	100	10,0	200	2,0	DYF07	300	3,0	DYF08
	11	15	180L/8	146	14,6	200	1,4	DYF07	300	2,1	DYF08
	15	20	200L/8	198	19,8	300	1,5	DYF08	500	2,5	DYF09
	18,5	25	225S/8	244	24,4	300	1,2	DYF08	500	2,0	DYF09
	22	30	225M/8	290	29,0	500	1,7	DYF09	800	2,8	DYF09D
	30	40	250M/8	390	39,0	800	2,1	DYF09D	800	2,1	DYF09D
	37	50	280S/8	484	48,4	800	1,7	DYF09D	1200	2,5	DYF10
	45	60	280M/8	589	58,9	800	1,4	DYF09D	1200	2,0	DYF10
	55	75	315S/8	710	71,0	1200	1,7	DYF10	1600	2,3	DYF10D
	75	100	315M/8a	968	96,8	1200	1,2	DYF10	1600	1,7	DYF10D

6 Pole 1000 d/d Motors	Motor / Motor					Fren / Brake					
	Power		Type	Mominal Moment		Light Braking(Propulsion)			Strong Braking(Lifting)		
	Kw	Bg		Nm	Kgm	Nm	Ek	Tip / Type	Nm	Ek	Tip / Type
	0,18	0,25	71/6a	1,9	0,2	5	2,6	DYF01	5	2,6	DYF01
	0,25	0,33	80/6b	2,6	0,3	10	3,8	DYF02	10	3,8	DYF02
	0,37	0,55	80/6a	3,8	0,4	10	2,6	DYF02	10	2,6	DYF02
	0,55	0,75	80/6b	5,9	0,6	10	1,7	DYF02	10	1,7	DYF02
	0,75	1	90S/6	7,7	0,8	10	1,3	DYF02	25	3,2	DYF03
	1,1	1,5	90L/6	11,3	1,1	10	0,9	DYF02	25	2,2	DYF03
	1,5	2	100L/6	15,2	1,5	25	1,6	DYF03	40	2,6	DYF04
	2,2	3	112M/6	22	2,2	40	1,8	DYF04	60	2,7	DYF05
	3	4	132S/6	30	3,0	60	2,0	DYF05	100	3,3	DYF06
	4	5,5	132M/6a	39,8	4,0	60	1,5	DYF05	100	2,5	DYF06
	5,5	7,5	132M/6b	54,7	5,5	60	1,1	DYF05	100	1,8	DYF06
	7,5	10	160M/6	74,6	7,5	100	1,3	DYF06	200	2,7	DYF07
	11	15	160L/6	109	10,9	100	0,9	DYF06	200	1,8	DYF07
	15	20	180L/6	148	14,8	200	1,4	DYF07	300	2,0	DYF08
	18,5	25	200L/6a	182	18,2	300	1,6	DYF08	500	2,7	DYF09
	22	30	200L/6b	216,5	21,7	300	1,4	DYF08	500	2,3	DYF09
	30	40	225M/6	292	29,2	500	1,7	DYF09	800	2,7	DYF09D
	37	50	250M/6	359	35,9	500	1,4	DYF09	800	2,2	DYF09D
	45	60	280S/6	436	43,6	800	1,8	DYF09D	1200	2,8	DYF10
	55	75	280M/6	533	53,3	800	1,5	DYF09D	1200	2,3	DYF10
	75	100	315S/6	723	72,3	800	1,1	DYF09D	1600	2,2	DYF10D
	90	120	315M/6a	868	86,8	1200	1,4	DYF10	1600	1,8	DYF10D
	110	145	315M/6b	1061	106,1	1200	1,1	DYF10	1600	1,5	DYF10D

EK: Emniyet Kat Sayısı, Security Nm: Frenleme Momenti, Braking Moment

Brake Selection Table

DYF

SERIES

Motor / Motor					Fren / Brake					
Power		Type	Mominal Moment		Light Braking(Propulsion)			Strong Braking(Lifting)		
Kw	Bg		Nm	Kgm	Nm	Ek	Tip / Type	Nm	Ek	Tip / Type
0,12	0,2	63/4a	0,8	0,1	5	6,0	DYF01	5	6,0	DYF01
0,18	0,3	63/4b	1,3	0,1	5	3,9	DYF01	5	3,9	DYF01
0,25	0,3	63/4	1,8	0,2	5	2,8	DYF01	5	2,8	DYF01
0,25	0,3	71/4a	1,7	0,2	5	2,9	DYF01	5	2,9	DYF01
0,37	0,5	71/4b	2,5	0,3	5	2,0	DYF01	5	2,0	DYF01
0,55	0,8	80/4a	3,9	0,4	10	2,6	DYF02	10	2,6	DYF02
0,75	1	80/4b	5,0	0,5	10	2,0	DYF02	10	2,0	DYF02
1,1	1,5	90S/4	7,4	0,7	10	1,4	DYF02	25	3,4	DYF03
1,5	2	90L/4	10,0	1,0	10	1,0	DYF02	25	2,5	DYF03
2,2	3	100L/4a	14,6	1,5	25	1,7	DYF03	40	2,7	DYF04
3	4	100L/4b	20,0	2,0	25	1,3	DYF03	40	2,0	DYF04
4	5,5	112M/4	26,5	2,7	40	1,5	DYF04	60	2,3	DYF05
5,5	7,5	132S/4	35,9	3,6	60	1,7	DYF05	100	2,8	DYF06
7,5	10	132M/4	49,0	4,9	60	1,2	DYF05	100	2,0	DYF06
11	15	160M/4	71,7	7,2	100	1,4	DYF06	200	2,8	DYF07
15	20	160L/4	97,8	9,8	100	1,0	DYF06	200	2,0	DYF07
18,5	25	180M/4	120,0	12,0	200	1,7	DYF07	300	2,5	DYF08
22	30	180L/4	143,0	14,3	200	1,4	DYF07	300	2,1	DYF08
30	40	200L/4	195,0	19,5	300	1,5	DYF08	500	2,6	DYF09
37	50	225S/4	240,0	24,0	500	2,1	DYF09	500	2,1	DYF09
45	60	225M/4	292,0	29,2	500	1,7	DYF09	500	1,7	DYF09
55	70	250M/4	356,0	35,6	500	1,4	DYF09	800	2,2	DYF09D
75	100	280S/4	484,0	48,4	800	1,7	DYF09D	1200	2,5	DYF10
90	120	280M/4	581,0	58,1	800	1,4	DYF09D	1600	2,8	DYF10D
110	150	315S/4	707,0	70,7	1200	1,7	DYF10	1600	2,3	DYF10D

4 Pole 1500 d/d Motors

Motor / Motor					Fren / Brake					
Power		Type	Mominal Moment		Light Braking(Propulsion)			Strong Braking (Lifting)		
Kw	Bg		Nm	Kgm	Nm	Ek	Tip / Type	Nm	Ek	Tip / Type
0,18	0,3	63/2a	0,6	0,1	5	8,3	DYF01	5	8,3	DYF01
0,25	0,4	63/2b	0,8	0,1	5	6,0	DYF01	5	6,0	DYF01
0,37	0,5	71/2a	1,3	0,1	5	4,0	DYF01	5	4,0	DYF01
0,55	0,8	71/2b	1,9	0,2	5	2,6	DYF01	5	2,6	DYF01
0,75	1	80/2a	2,5	0,3	10	4,0	DYF02	10	4,0	DYF02
1,1	1,5	80/2b	3,7	0,4	10	2,7	DYF02	10	2,7	DYF02
1,5	2	90S/2	5,0	0,5	10	2,0	DYF02	25	5,0	DYF03
2,2	3	90L/2	7,3	0,7	10	1,4	DYF02	25	3,4	DYF03
3	4	100L/2	10,0	1,0	25	2,5	DYF03	40	4,0	DYF04
4	5,5	112M/2	13,1	1,3	40	3,1	DYF04	60	4,6	DYF05
5,5	7,5	132S/2a	18,1	1,8	60	3,3	DYF05	100	5,5	DYF06
7,5	10	132S/2b	24,6	2,5	60	2,4	DYF05	100	4,1	DYF06
11	15	160M/2a	35,7	3,6	100	2,8	DYF06	200	5,6	DYF07
15	20	160M/2b	48,6	4,9	100	2,1	DYF06	200	4,1	DYF07
18,5	25	160L/2	60,0	6,0	100	1,7	DYF06	200	3,3	DYF07
22	30	180M/2	71,2	7,1	200	2,8	DYF07	300	4,2	DYF08
30	40	200L/2a	96,0	9,6	200	2,1	DYF07	300	3,1	DYF08
37	50	200L/2b	119,0	11,9	300	2,5	DYF08	500	4,2	DYF09
45	60	225M/2	144,0	14,4	300	2,1	DYF08	500	3,5	DYF09
55	75	250M/2	176,0	17,6	300	1,7	DYF08	500	2,8	DYF09
75	100	280S/2	240,0	24,0	500	2,1	DYF09	800	3,3	DYF09D
90	120	280M/2	288,0	28,8	500	1,7	DYF09	800	2,8	DYF09D
110	150	315S/2	353	35,3	800	2,3	DYF09D	1200	3,4	DYF10
132	175	315M/2a	423	42,3	800	1,9	DYF09D	1200	2,8	DYF10
160	210	315M/2b	513,0	51,3	800	1,6	DYF09D	1200	2,3	DYF10
185	250	315L/2a	593	59,3	1200	2,0	DYF10	1600	2,7	DYF10D
200	265	315L/2a	641	64,1	1200	1,9	DYF10	1600	2,5	DYF10D
250	330	355M/2a	801	80,1	1200	1,5	DYF10	1600	2,0	DYF10D

2 Pole 3000 d/d Motors

Ek: Emniyet Kat Sayısı, Security Nm: Frenleme Momenti, Braking Moment