ELK MOTOR

TECHNİCAL INFORMATİON

Winding Insulation / Temperature Rise Classes

Protection Classes

Electrical Construction / Electrical Connections

Mechanical Construction

Spare Parts

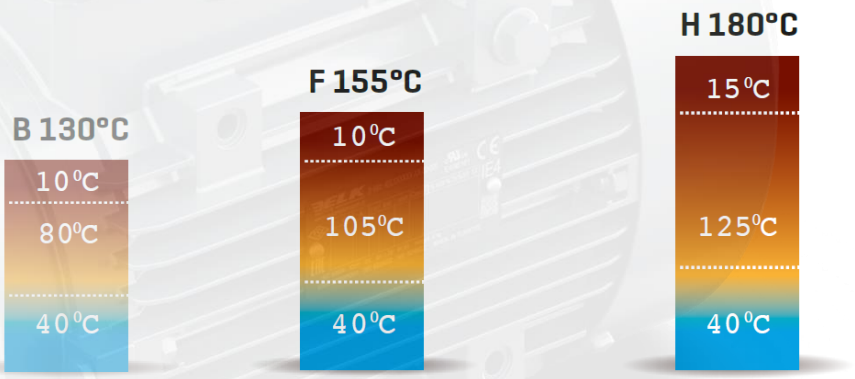
Construction Types

Winding Insulation / Temperature Rise Classes

All standard motors in the ELK Motor range have F (155 ° C) class electrical insulation system. However, by means of its superior design features, the temperature rise of all standard motors remain within the Class B temperature rise limits when operating under rated conditions. Depending on the safety margin of the temperature rise class provided, our motors can provide 15% higher rated output power with a service factor of 1.15 (SF).

INSULATION CLASS

	B	F	H
Maximum Winding Temperature	130°C	155°C	180°C
Tolerance	10°C	10°C	15°C
Limits of Winding Temperature	80°C	105°C	125°C
Ambient Temperature	40°C	40°C	40°C



B

Class B insulation system is shown for referance purposes only. Class B insulation system is not used in ELK motors.

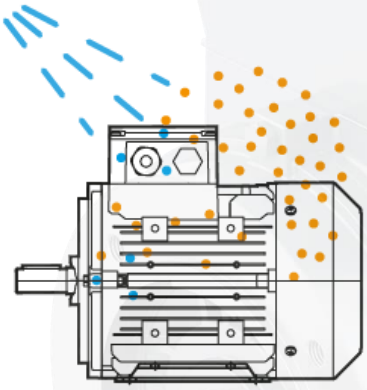
F (Standard)

Our standard motors have class F electrical insulation system. The maximum permissible winding temperature at 40°C ambient temperature is 155°C.

H (Optional)

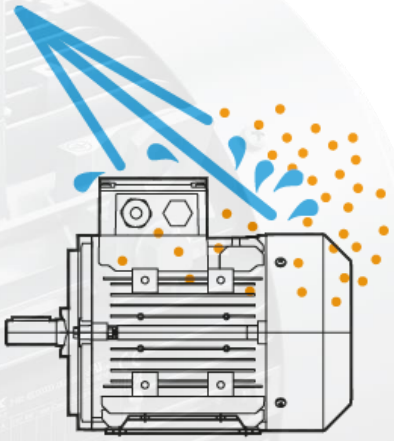
H class insulation is provided on special request. At 40°C ambient temperature, the maximum permissible winding temperature is 180°C

Protection Classes



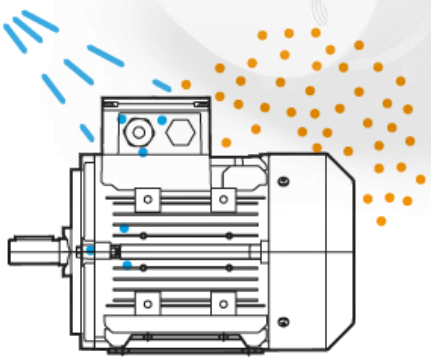
IP55 (Standard)

Limited protection against dust ingress and protected against low pressure water jets from any direction.



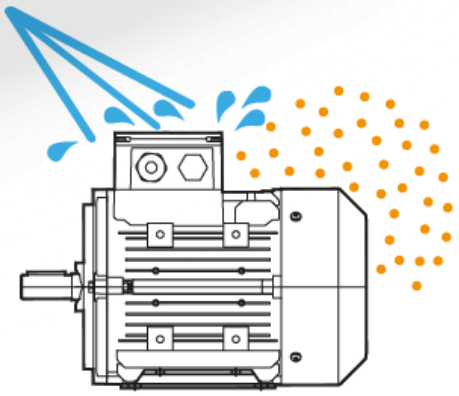
IP56

Limited protection against dust ingress and protected against high pressure water jets from any direction.



IP65

Totally protected against dust ingress and protected against low pressure water jets from any direction.



IP66

Totally protected against dust ingress and protected against high pressure water jets from any direction.

Electrical Construction / Electrical Connections

Electrical Construction

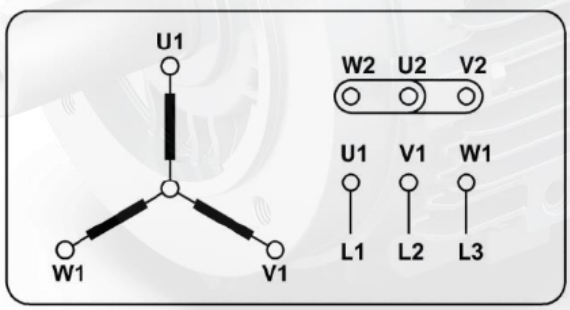
Standard ELK Motors have insulation Class F while the temperature rise is Class B. This means the motors will have a longer service life and work under hard conditions. Upon the customer's request, Class H insulation motors are manufactured.

Electrical Connection

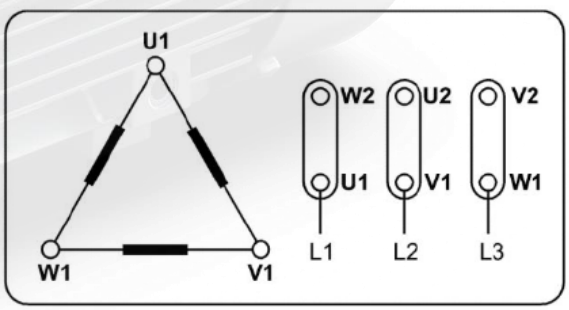
Cable Gland and Blind Cap														
Frame Size	063	071	080	090	100	112	132	160	180	200	225	250	280	315
Cable Glands	M20x1,5				M25x1,5			2xM32x1,5		2xM40x1,5	2xM50x1,5		2xM63x1,5	
Blind Cap	M16x1,5				M25x1,5			-		-	-		-	

Three Phase Motors

The motors shall be connected in star or delta according to rated voltage given in their nameplate and the network voltage that they will be connected. For phase to phase 400V supply the motors with 230/400V nameplate values shall be connected in star and the motors with 400/690V nameplates values shall be connected in delta.



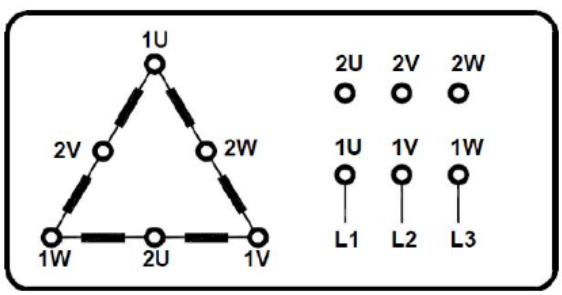
Star Connection



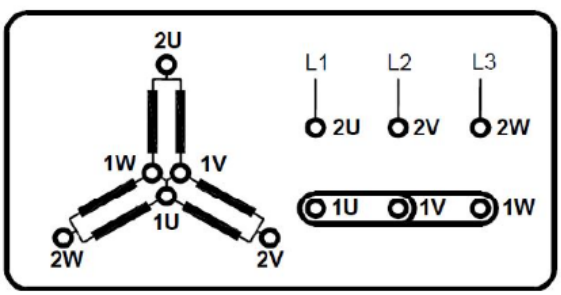
Delta Connection

Double Speed Motors

Canstant Power Dahlander Motors

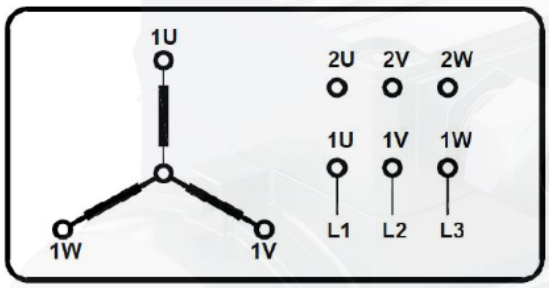


Low Speed

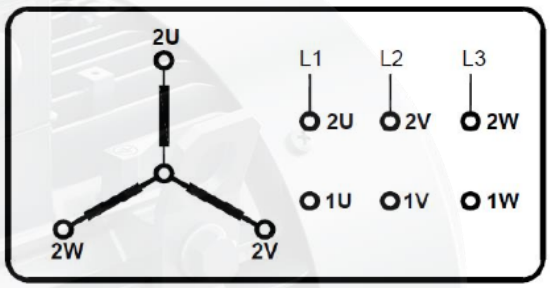


High Speed

Seperate Windings Motors

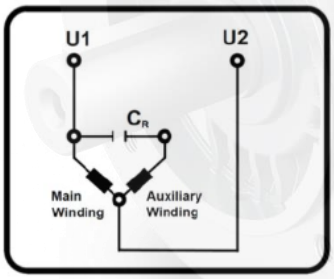


Low Speed

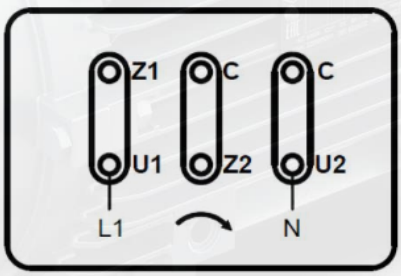


High Speed

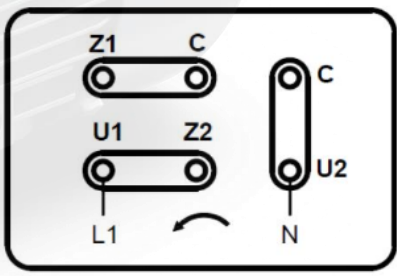
Single Phase Motors



Circuit Connection



Clockwise Direction

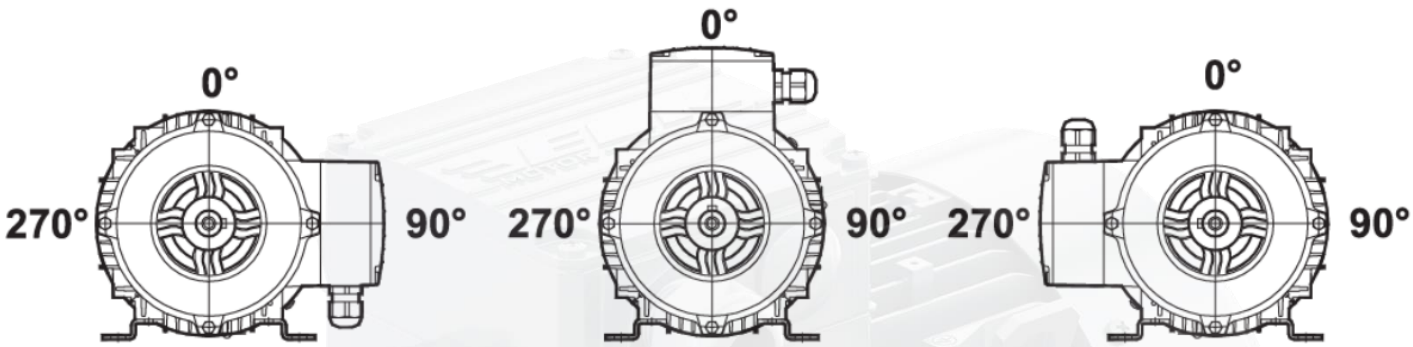


Counter-Clockwise Direction

Mechanical Construction

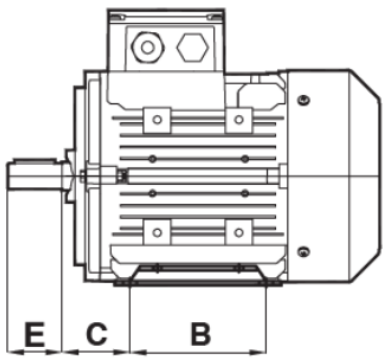
63-180 frame size ELK Motors provides flexibility for different mounting types through their detachable feet which can be mounted on three sides. This feature allows terminal box assembly on the desired side. Terminal box is on the top for standard motors. 200-315 frame size motors have fixed feet construction.

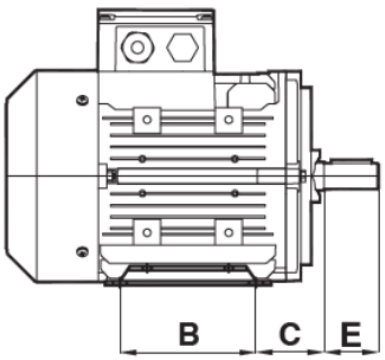
MOTOR SİZE 63 - 180



MOTOR SİZE 200 - 315

Additionally the housing and end shields are designed symmetrically for all the frame sizes, so that the drive and non-drive side end shields can be replaced and the direction of the rotor shaft group can be changed. By making this end shields and rotor shaft group modifications, the user can have a motor with terminal box is at the non-drive side keeping the distance C according to the standards.





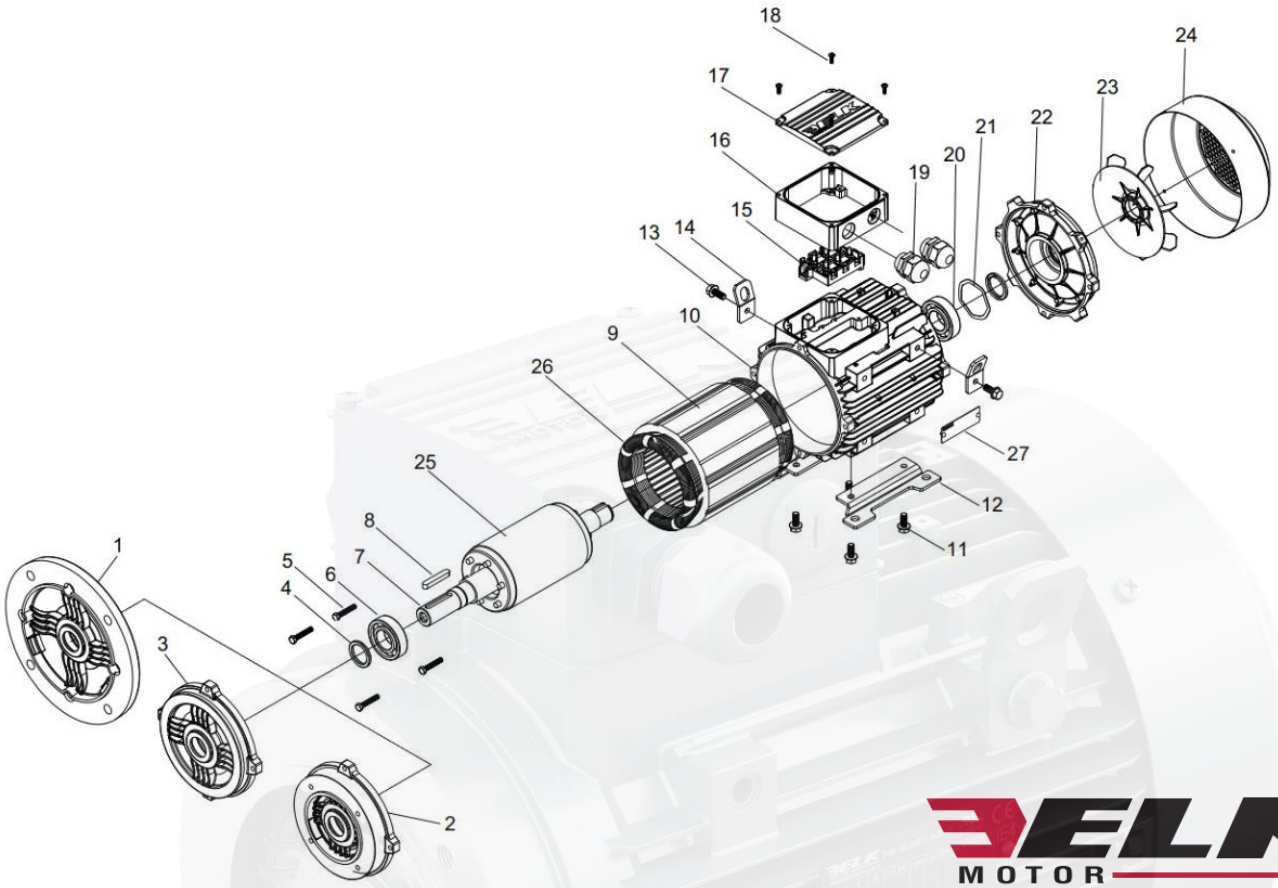
The raw materials that are used in our motors depending on the frame size are listed below.

Frame Size	Housing	End Shield DE	End Shield NDE	Terminal Box & Cover	Feet	Fan Cover	Fan
63	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
71	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
80	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
90	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
100	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
112	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
132	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet Cast Iron	Steel Sheet	Plastic
160	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet	Plastic
180	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet	Plastic
200	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
225	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
250	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
280	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
315	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic

Spare Parts

Three Phase Motors

All the standard three phase motors are producedby ELK MOTOR consist of the following main parts ;

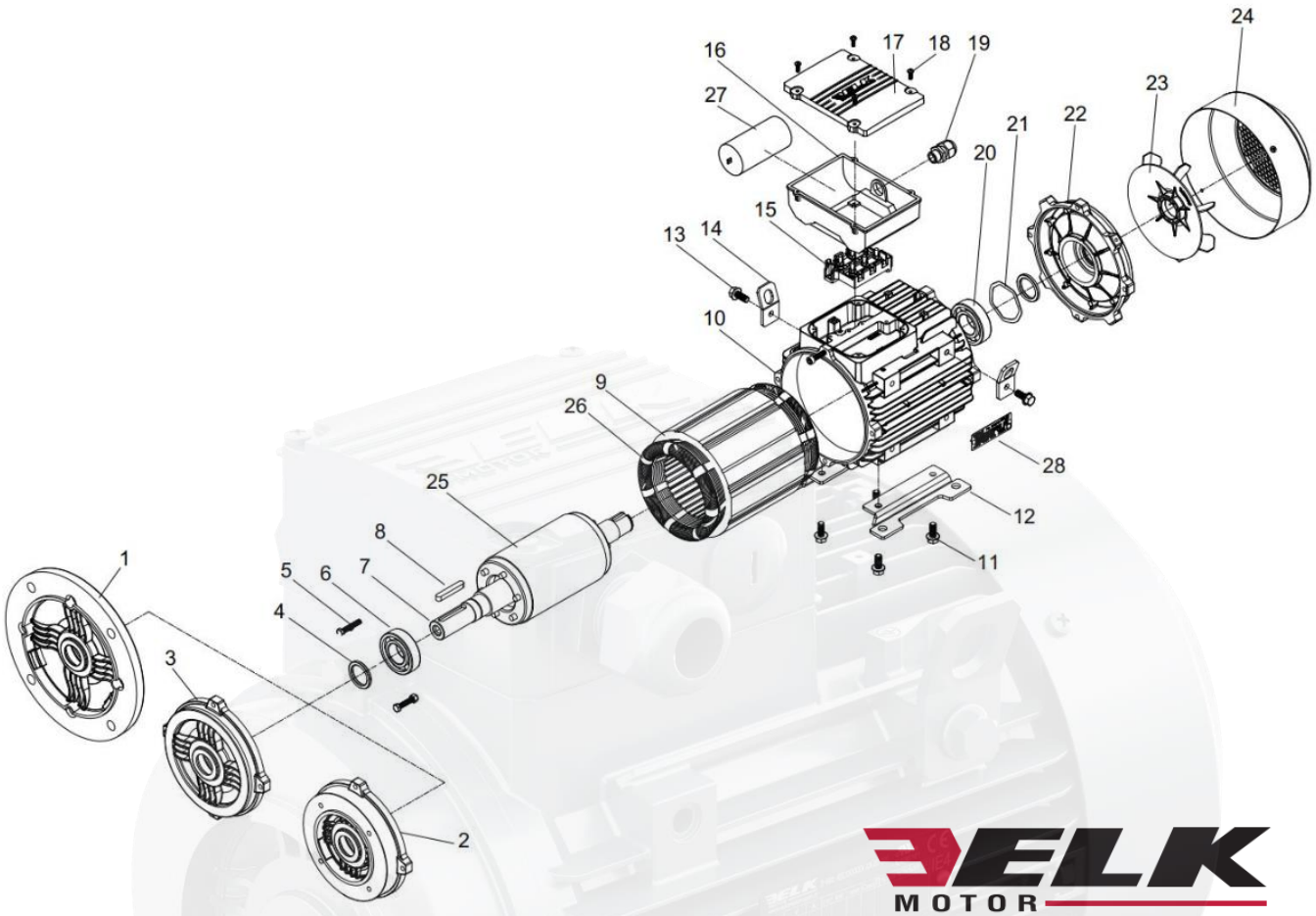


1. Flange B5	15. Terminal
2. Flange B14	16. Terminal box
3. End shield (DE)	17. Terminal box cover
4. Shaft sealing	18. Bolt
5. Screw	19. Cable gland
6. Bearing	20. Bearing
7. Shaft	21. Spring washer
8. Key	22. End shield (NDE)
9. Stator core	23. Fan
10. Housing	24. Fan cover
11. Screw	25. Squirrel cage rotor
12. Mounting foot	26. Winding
13. Screw	27. Motor nameplate
14. Lifting lug	

When ordering spare parts, the motor serial number, full type designation, and product code, as stated on the nameplate, must be specified. For field service, spare parts and additional information, please contact with us.

Single Phase Motors

All the standard single phase motors are producedby ELK MOTOR consist of the following main parts ;

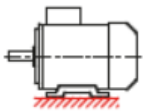
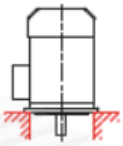
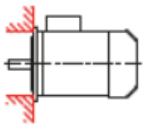
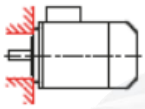
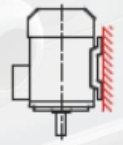
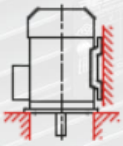
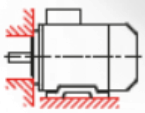
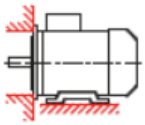


1. Flange B5	15. Terminal
2. Flange B14	16. Terminal box
3. End shield (DE)	17. Terminal box cover
4. Shaft sealing	18. Bolt
5. Screw	19. Cable gland
6. Bearing	20. Bearing
7. Shaft	21. Spring washer
8. Key	22. End shield (NDE)
9. Stator core	23. Fan
10. Housing	24. Fan cover
11. Screw	25. Squirrel cage rotor
12. Mounting foot	26. Winding
13. Screw	27. Capacitor
14. Lifting lug	28. Motor nameplate

When ordering spare parts, the motor serial number, full type designation, and product code, as stated on the nameplate, must be specified. For field service, spare parts and additional information, please contact with us.

Construction Types

ELK Motors are manufactured according to International Mounting Standard IEC 60034-7.

Mounting codes and diagrams according to IEC 60034-7					
Horizontal Mounting Codes			Vertical Mounting Codes		
	I	II		I	II
	IM B3	IM 1001		IM V1	IM 3011
	IM B5	IM 3001		IM V3	IM 3031
	IM B14	IM 3601		IM V5	IM 1011
	IM B7	IM 1061		IM V6	IM 1031
	IM B6	IM 1051		IM V15	IM 2011
	IM B8	IM 1071		IM V35	IM 2031
	IM B34	IM 2101			
	IM B35	IM 2001			