COMPACT SAW MOTORS

Asynchronous three-phase and single-phase

INDEX

1. MOTOR DESIGNATION:

MOTOR FRAME

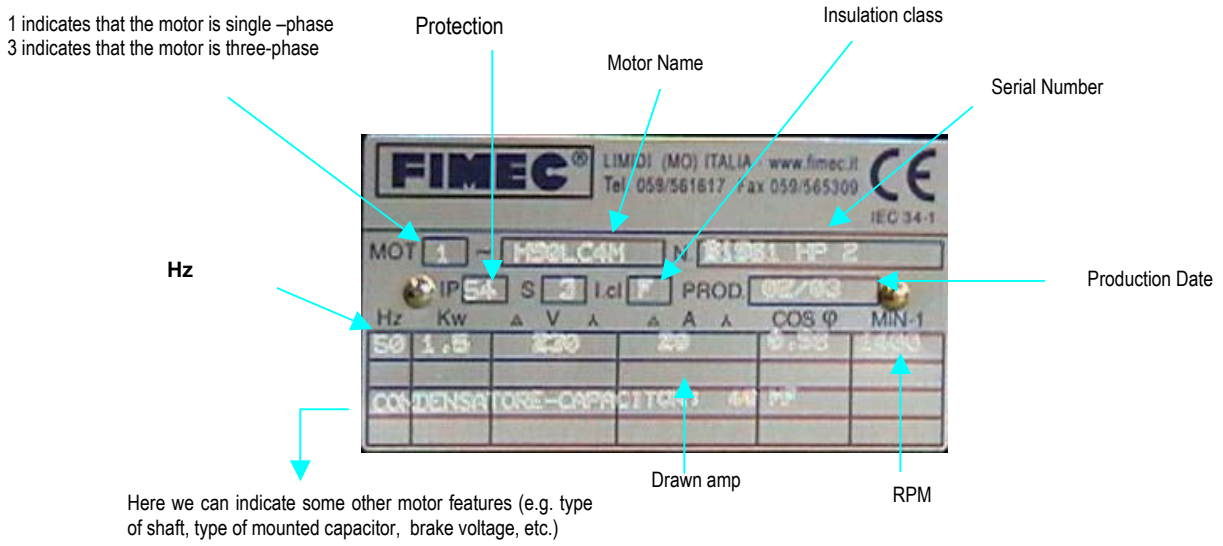
NUMBER OF POLES
2 poles = 3000 rpm at 50hz./3400rpm at 60hz.
4 poles = 1500 rpm at 50hz./1700rpm at 60hz.

MOTOR TYPE
SE = asynchronous three-phase
SEF=asynchronous three-phase with dc brake
SEP=asynchronous three-phase with pneumatic brake
SEM= asynchronous single phase
SEMF=asynchronous single phase with dc brake
SEMP=asynchronous single phase with pneumatic brake

MOTOR SUPPLY VOLTAGE
(The mentioned tensions are the standard European ones. We have any problems in supplying saw motors with other tensions for working in countries all over the world).

H71a	2	SE	230/400V.50hz.
H80M	4	SEF	240/415V.50hz.
H90S	2	SEM	400/695V.50hz.
H100L	4	SEP	380/660V.50hz.

1.1 Motor Name Plate



1.2 Measures and Temperatures in the catalogue

- In this catalogue temperatures are all expressed in Celsius degrees (C= Celsius). For converting Celsius temperatures into Fahrenheit temperatures, this is what you have to do:
  - multiply your Celsius temperature by 9
  - divide the result by 5
  - add 32
- In this catalogue, measures are all expressed in millimetres. 1" corresponds to 25,4 millimetres.

2. COMPACT SAW MOTORS- GENERAL FEATURES

Asynchronous three-phase and single-phase motors with compact dimensions have been studied for all those applications in which an high output but limited dimensions are requested. They are suitable for applications on cutting machines (e.g. circular saws) because the lowered shape allows the maximum exploitation of cutting height. They are particularly suitable for all those machines and applications where the required motor space has to be reduced as that of standard round motors.

Saw motors are usually supplied with a left or right hand threaded shaft, two flanges and one nut for the fastening of cutting tool. Shaft can be easily modified according to our customers' needs.

Compact saw motors can be employed with an inverter (more information on chapter 3.5).

Three-Phase and single-phase saw motors can be supplied with d.c. safety brake or with Fimec patented pneumatic brake. These two types of brake are particularly suitable for cutting machines safety stops, as parking brake, etc. featuring: motor overall dimensions keeps unchanged compared to the design without brake, high braking capacity.

Features of Fimec compact saw motors are:

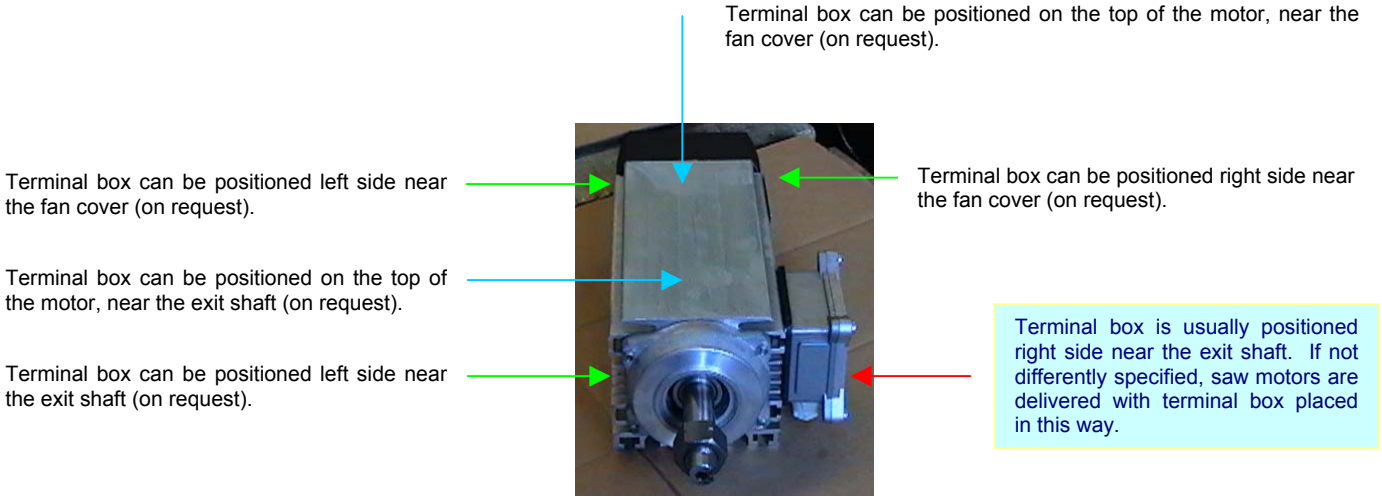
STANDARD SUPPLY: Saw motors are usually supplied with standard European tension 230/400V**. ±10% or** 400/695V**. ±10% at** 50hz **and standard American tensions 230/460V. 60hz. . Dc brake can be wound at 230Volt (±10%)or 400Volt (±10%) Motors and brake** can be easily supplied with other tensions **on request** for working in countries all over the world**. It is also possible to supply motors wound at 100hz. Max. brake and rectifier tension is 440V. ±10% . If you think your brake tension may exceed 440V +10% (this might happen in some American or English countries), we can supply, on request, a special rectifier connected at the brake.**

HOUSING: made of extruded light alloy. Flat casing, finned on three sides and feet obtained from equal longitudinal tee slots on overall length.

FLANGE: saw motors are supplied with a drive-end shield and non-drive end shield. On request, without addition in price, drive end shield can be supplied with holes as It were a B14 flange.

TERMINAL BLOCKS: with 6 terminals (on request 9 or 12) for motor supply. Dc brake can be fed directly from motor terminal block or separately. Earth terminal located inside the terminal box.

TERMINAL BOX: metallic or thermoplastic terminal box usually positioned on the right side of the motor (near the exit shaft, as shown in the picture). On request, It can be positioned on the right side near the fan cover or on the left side (near the exit shaft or the fan cover) and also on the top of the motor or on the bottom of the motor. The terminal box can also be rotated in steps of 90° in order to provide cable entry from different directions. Every motors are provided with a terminal for grounding.



CABLE GLANDS: are pull-out resistant V-TEC cable glands. Made of a specific plastic and certified according to UL directives and other European standards.

FAN: saw motors are fitted with bi-directional radial fans keyed externally onto the non-drive-end shaft. Made of thermoplastic material strengthened with fiberglass or made of aluminum when motors mount the brake.

ADDITIONAL VENTILATION : In case saw motors are employed with Inverter at very low speeds, we suggest to request the application of an additional ventilation, fed separately, i.e. obtained by means of an axial flow servo-fan whose air flow rate is independent from motor speed. Use of the servo-fan is recommended for motor speeds lower than the nominal speed (usually under 40hz), when the air flow rate of the standard fan would be insufficient for correct cooling.

FANCOVER: made of thermoplastic material up to frame 90 and of aluminum for size 100.

ROTOR: die cast cage aluminum rotor . Rotors are balanced with half key inserted into shaft extension.

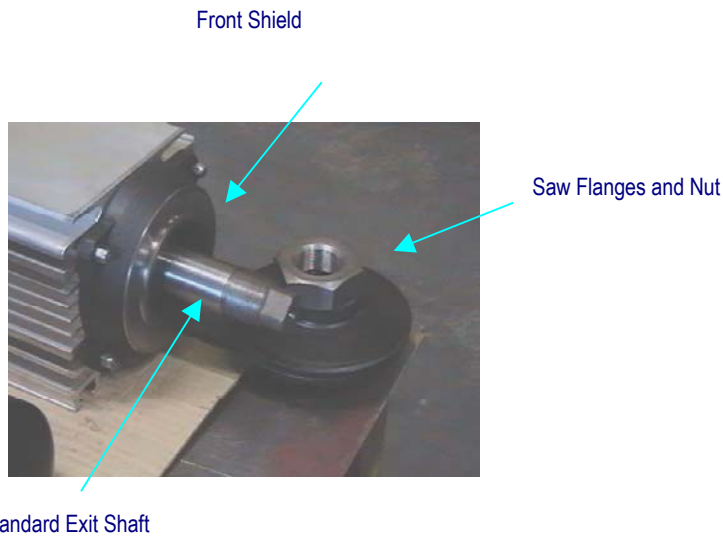
PROTECTION: standard protection is IP54 . On request we can supply saw motors with higher protection by using specific seals (IP55) or by creating a special labyrinth in the front shield for protecting motors employed in aggressive situations (for example, when water sprays reach the motor) . It is also possible to employ a specific red paste which seals the motors almost hermetically and protects it from possible water jets.

MOTOR WINDING: manufactured with class H copper conductor insulation, double coat insulated, type of impregnation with class H resin; other materials are usually class F and H protected. Components are all UL certified. On request, It is possible to insert in windings three termistors wired in series for connection to a suitable contact breaker device .

SHAFT: in standard execution, saw motors are supplied with a left or right hand thread. Usually made of C43 steel. On request, wide range of non-standard designs are available for every needs.

BEARINGS: high quality radial bearings are employed.

SINGLE–PHASE MOTORS: Single-phase saw motors are equipped with a run capacitor permanently turned on and connected to the auxiliary winding for starting. Single phase saw motors type SEM are suitable for being used in those machines that start without charge. Single-phase motors can be also equipped with d.c. security brake or pneumatic brake.
CONNECTION TO AN INVERTER: Saw motors can be employed with inverter (reference chapter 4.5)



3. MECHANICAL FEATURES

tab. 1

Motor Frame	Bearing (Drive End)[1]	Bearing (Non Drive End)	Key Dimensions[2]	Standard Thread[3]	Front flat wrench[4]
H71	6206 2RS	6204 2RS	8 x 7 x 20	30 x 1.5	∅ 20 mm
H80	6207 2RS	6205 2RS	8 x 7 x 20	30 x 1.5	∅ 20 mm
H90	6208 2RS	6205 2RS	8 x 7 x 20	35 x 1.5	∅ 25 mm
H100	6210 2RS	6206 2RS	8 x10x 30	50 x 1.5	∅ 30 mm

Please contact our American dealer for checking with him the different standard exit shafts available for the US market.

4. ELECTRO-MECHANICAL SPECIFICATIONS

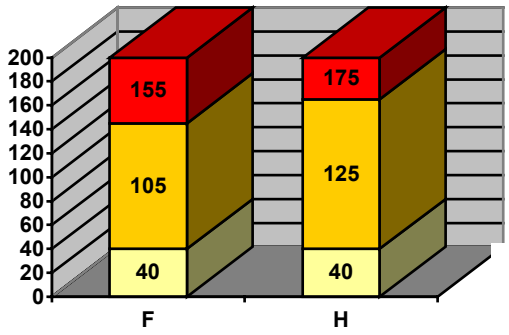
4.1 Duty cycles

Motor powers in the catalogue are given for continuous duty S1 and for intermittent periodic duty S3 and continuous – operation periodic duty S6. Usually we suggest to employ saw motors for S3 and S6 duty . On request, we can supply them for working in S1 continuous duty:

Continuous duty (S1):
Motor runs under constant load for enough time to reach thermal stabilization.
Continuous periodic duty with intermittent load (S6)
Succession of identical work cycles consisting of a periodic running at constant load and a rest period (for rest period we intend that motor can go on running but without load. This helps the motor to be cooled).
Intermittent periodic duty (S3)
Succession of identical work cycles consisting of a period of running at constant load and a rest period.

4.2 Insulation class

Considering that a motor works in a max. ambient temperature of 40°C (i.e. 104° Fahrenheit), insulation class is determined according to the increase in motor temperature (Δt). Fimec saw motors are manufactured in insulation class F (max. over temperature of 105° C) and H (max. over temperature 125° C) for saw motors frame H90 and H100. Insulation material are all UL-CSA certified.



Temperatures are expressed in Celsius degrees. For converting Celsius to Fahrenheit, pls look at note number 3 at the bottom of this page.

[1] When special exit shaft are requested, we usually change the type of bearing for drive end according to exit shaft diameter;
[2] Measures are expressed in millimetres. On request, we can machine special keys with different measures (also expressed in inches and fractions of inch).
[3] Measures are expressed in millimetres. Shafts with standard threads (as mentioned in the table) are supplied with nut. On request, we can manufacture shafts with different types of thread (in this case, nuts are usually not supplied with motors).
[4] Our standard shafts are manufactured with a front flat wrench. On request we can manufacture an hexagonal key inside the exit shaft instead of the wrench.

Back to Index

4.3 Higher ambient temperatures

If motors work in an ambient temperature higher than 40°C, motor power is reduced according to the following percentages :

tab. 2

Ambient Temperature (°C)	40°	45°	50°	55°	60°	70°
Permissible output as percentage of the rated value	100%	96,5%	93%	90%	86.5%	79%

4.4 Higher altitude

If motors work in an altitude higher than 1000 Mt above sea level, motor power is reduced according to the following percentages :

tab. 3

Altitude above sea level [5]	1000	1500	2000	2500	3000	3500	4000
Permissible output as percentage of the rated value	100%	97%	94.5%	92%	89%	86.5%	83.5%

4.5 Motor tensions

All technical data shown in the present catalogue are calculated for motors that work at 50hz. Motors designed for 50 Hz can be connected at 60 Hz. In this case, information shown in the tables must be multiplied by the factors given in the table below, in order to obtain the real operating data:

tab. 4

Motor wounded for working at 230/400V. 50hz.						
Tension at 60hz.	Pn[6]	Mn[7]	RPM[8]	Is/In[9]	Ms/Mn[10]	Mm/Mn[11]
220/380 Volt	1	0.83	1.2	0.83	0.83	0.83
230/400 Volt	1	0.83	1.2	0.83	0.83	0.3.
240/415 Volt	1.05	0.87	1.2	0.87	0.87	0.87
255/440 Volt	1.15	0.93	1.2	0.93	0.93	0.93
265/460 Volt	1.15	0.96	1.2	0.96	0.96	0.96
280/480 Volt	1.2	1	1.2	1	1	1

[5] Expressed in meters. 1 meter = 39,37 inches.
[6] Rated power
[7] Rated Torque
[8] Example: a motor that at 50 Hz runs at 1400 rpm, at 60hz. It will run at 1680 rpm (1400 x 1.2)
[9] Starting current / Rated current
[10] Starting torque / Rated torque
[11] Max torque / Rated Torque

Example: *tab. 5*

	Data at 50 Hz	Conversion factor	Data at 60 Hz
Tension	380 V	-	440 V
Power	11 kW	1.2	12.6 kW
	15 hp	1.2	17.3 hp
Current	23 A	1.0	23 A
RPM	1450	1.2	1740

Motors delivered to the USA are usually supplied wounded for working only at 60 Hz. Most requested tensions are 230/460 Volt 60 Hz (or 220/440V.60hz), as indicated as follows:

Motors size H71 230/460V. 60hz.
Motors size H80, H90 and H100 230/460V. 60hz. or 460/800V. 60hz.

(For both sizes, other tensions are available)

Usually these motors are supplied with a 6 terminals in the box. On request, they can be supplied with 9 or 12 terminals.

4.6 Motor employed with Inverter

Fimec compact saw motors can be employed with a PWM inverter. In this case the maximum allowed rotation speed is 6000 rpm for 2 pole motors and 3000 rpm for 4 pole motors (max.100 Hz). If employed at speeds that are lower than 40hz, we suggest to contact our technical department because, in this case, motors can suffer for not having enough cooling ventilation and an additional power cooling should be required. **When motor is connected to an inverter, both the dc brake and eventually the servo-cooling require direct connection to mains power supply (do not feed them from motor terminal box).**

The inverter supplies the motor at variable voltage *U* and frequency *f* keeping constant the *U/f* ratio. For *U* ≤ *U* mains, with constant *U/f*, motor changes Its speed in proportion to frequency *f* . When *f* increases, since the inverter cannot produce an output voltage higher than the input tension, when *U* reaches the mains value, the *U/f* ratio decreases (motor runs under-voltage supplied) and at the same time , with the same absorbed current, *M* decreases proportionally.

Motor wound for Δ 230 Y400 V 50 Hz and three—phase supply **inverter 400 V 50 Hz , It is possible to have two running types:**

A. Running with constant *U/f* up to 50 Hz (Y connected motor)

For supply frequency:

5 – 35,5 Hz Since motor is slightly cooled, *M* decreases by decreasing speed (*M* remains constant for intermittent duty. In case of motors supplied using vector inverter, for continuous duty torque *M* keeps constant down to about 2,5 Hz). Please remind that if the motor operates below 50 Hz power cooling is required so that the winding temperature does not reach hazardous levels to their integrity.

35,5 – 50 Hz Motor runs at constant *M.*

> 50 Hz Motor runs at constant nominal power *P* with progressively decreased *U/f* ratio (frequency increase while voltage keeps unchanged) and also *M* proportionally decreases but keeping the same absorbed current.

B. **Running with U/f constant up to 87 Hz (Δ – connected motor)**
It allows motor power to be increased, to run at higher frequency with the same frequency variation ratio at the same derating coefficient C.

5. SAW MOTORS WITH D.C. SECURITY BRAKE

Electromagnetic spring loaded brake (braking occurs automatically when brake is not supplied) with d.c. coil . Projected to keep reduced motor axial dimensions (same as those of non-braking motors), It is featured by a soft braking and by an high braking capacity. Particularly suitable for cutting machines, safety stops, as parking brake, etc.

When electromagnet is not supplied the brake anchor, pushed by springs, presses the cooling fan generating a braking torque on motor shaft. By supplying the brake, the electromagnet draws the brake anchor, releases fan and driving shaft.

Brake motor is always equipped with rectifier fixed at terminal box. Supply voltage of rectifier is alternate single-phase 230V. ± 10% 50 or 60 Hz or 400V ± 10% 50 or 60 Hz. Rectifier supply can be directed from motor terminal block or from separate line. **If motor is employed with inverter, brake and rectifier must be supplied separately.**

If brakes are employed in ambient with very cold temperatures , It is possible to supply them manufactured with a special material that prevents them from freezing.

If you think your brake tension may exceed 440V +10% (this might happen in some American or English countries), we can supply, on request, a special rectifier connected at the brake.

MOTOR SIZE	BRAKE POWER N m	Brake Absorption connected at 230V. A	Brake Absorption connected at 400V. A
H71…SEF	7	0.115	0.080
H80…SEF	10	0.150	0.110
H90…SEF	12	0.170	0.110
H100..SEF	22	0.200	0.115

5.1 D.c electric brake – Spare Parts and Installing Information

The following instructions will help you in case you have to replace the brake disc or some of Its parts.

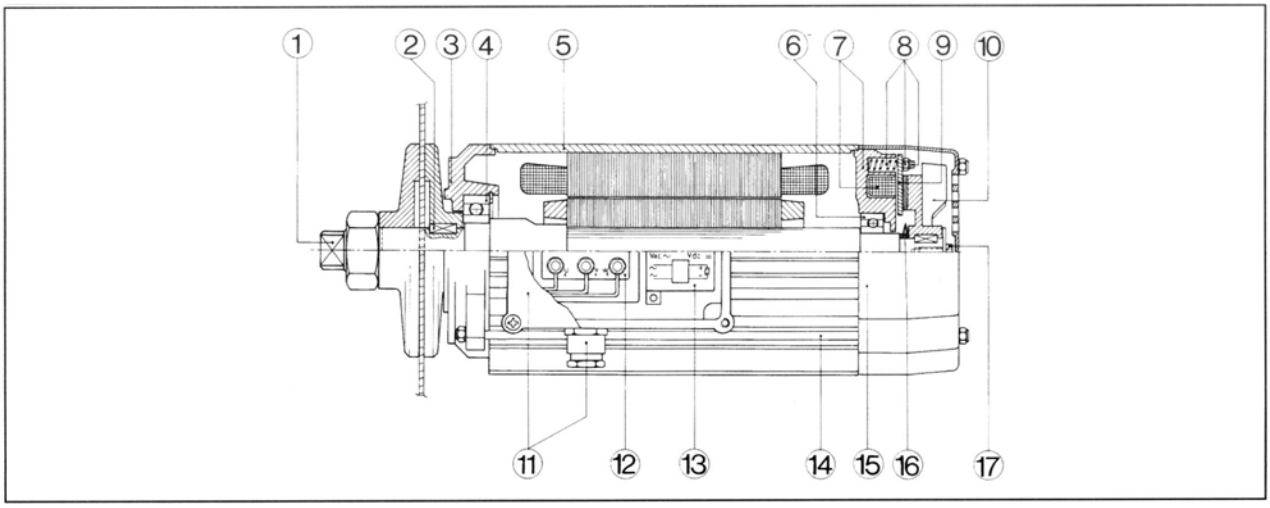
Important Information: when the brake coil is burnt, usually the rectifier is also burnt. In this case they must be both replaced. But usually when only the rectifier is burnt, the brake coil may still work. Please check it before ordering any spare parts.

- Brake disc replacement. Remove the fan cover (15) and unscrew the nut (17). Take the disk with fan (10) off. With care and clean hands, set the new brake disk and screw the nut for the brake regulation.
- Electromagnet replacement. Remove the fan cover (15) and unscrew the nut (17). Take off the brake disk (10) and the washers (16). Unscrew the spring regulation nuts (8) and take off the armature plate (9). Unscrew the nuts and washers from ties rod (14) and take out the electromagnet.
- Rectifier replacement. It is necessary to replace the rectifier (13) when the armature plate is not attracted to the electromagnet with a sharp stroke. Before replacing the rectifier, It is necessary to check whether the magnetic gap (i.e. the distance between the electromagnet and the armature plate) is between 0.4/0.5 millimetres. Take care that the new rectifier connection follows the previous one.
- Brake clearance. The magnetic gap (i.e. the distance between the electromagnet and the armature plate) should be 0.4 or 0.5 millimetres. It is better not to exceed this value in order to avoid any

vibrations in the armature plate and even possible burnt of the brake coil. The magnetic gap has to be checked periodically, as the worn of the brake disk provokes Its widening. In order to regulate the magnetic gap , It is necessary to draw the brake disc to the armature plate (9) and then regulate the brake nut (17) until the correct measure is set. If the brake disk is seriously worn out, It is also necessary to remove the thickness between the two washers and the brake disk.

- Rectifiers for the d.c. brakes. The employed rectifiers are of high quality and technology. An electronic device gives to the users a peak of tension equivalent to the voltage value of rectified feeding and then sets it to Its half value . These rectifiers are protected by a varistor in input and output.

Type	Input	
	V min	V max
P2 (220 V.)	110 -	220
P4 (380 V.)	200 -	460



1. shaft
2. key (usually machined only on saw motors with brake)
3. end shield (B14 holes available on request)
4. drive end bearing
5. housing
6. non-drive end bearing
7. electromagnet
8. bake adjustment nuts
9. armature plate
10. brake disc with fan
11. terminal box
12. connections
13. rectifier
14. tie-bolt with nuts and washers
15. fan cover
16. washers
17. screws for brake adjustment

6. SAW MOTORS WITH PNEUMATIC BRAKE (FIMEC PATENT)

Motors manufactured with pneumatic brake are equipped, at the rear shield, with a pneumatically operated annular piston propping against a spring-loaded metal plate with a glued-on friction disc and a massive fan wheel.

In the neutral position of the brake, the motor shaft runs freely. At loading the annular piston with air, the metal plate with friction disc is brought into contact with the fan wheel, thus braking the motor (a little electric valve connected, for example, to a compressor is necessary to feed the brake with air).

The pneumatic brake is characterised by simplicity of use, reliability and long lifetime. First of all simplicity of use. By simple variation of air pressure, It is possible to adjust the braking torque. Secondly the reliability. The braking force remains constant over the whole lifetime of the friction disc. Finally the long lifetime. Having no electric winding in it and not being connected to any electric rectifier, the pneumatic brake never burns. This warrants Its long lifetime.

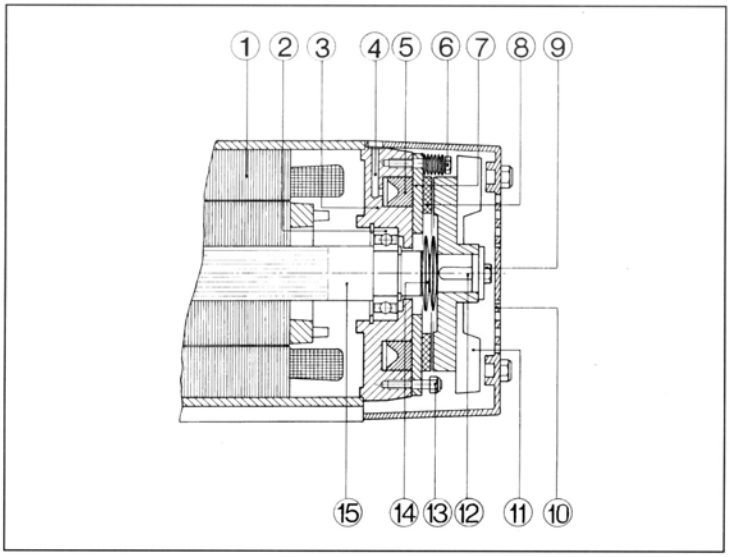
Moreover, considering the compact design of the motors, which keep within the dimensions of motors without brake, thus being interchangeable with them, the possible brake torque is stronger than that of the electric brakes.

The pneumatic brake is available within the asynchronous three—phase motors (called, in this case, type SEP) and within the asynchronous single-phase motors (called, in this case, type SEMP).

SAW MOTORS WITH PNEUMATIC BRAKE FRAMES H71 – H80 – H90 Brake Features		
Air delivered pressure (Bar)	**With new ferodo**	**With worn ferodo**
1	3	-
2	9.5	6
3	15.5	12
4	22	18.5
5	28	25
6	34	31

SAW MOTORS WITH PNEUMATIC BRAKE FRAMES H100 Brake Features		
Air delivered pressure (Bar)	**With new ferodo**	**With worn ferodo**
1	6	-
2	18	-
3	30	11
4	42	23
5	54	35
6	65	47

6.1 Pneumatic brake – Spare Parts



1. Housing with stator
2. back bearing
3. Back Shield
4. Hole
5. Annular Piston
6. Brake adjustment nuts and stud bolts
7. Armature
8. Friction ring
9. Screw for air gap adjustment
10. Fan cover
11. fan
12. Key
13. Stud bolts for armature
14. Washers
15. Shaft with rotor

7. MANUFACTURING PROGRAMME – THREE PHASE SAW MOTORS

ASYNCHRONOUS THREE-PHASE COMPACT SAW MOTORS type SE
2 poles – 2800 rpm at 50hz. – 3400 rpm at 60hz.

Type	KW at 50hz.	Hp at 50hz.	RPM 50 Hz	RPM 60 Hz	η %	Cos.φ	In 230V 50hz	In 400V 50hz	Ca/Cn	Ia/In	J Rotor kgm	Weight kilos[12]
H71a2se	1.5	2	2860	3430	80	0.82	6.2	3.6	2.8	6	0.00178	16.5
H71b2se	1.85	2.5	2875	3450	80	0.84	7.2	4.2	3	6.2	0.00216	18.5
H71c2se	2.2	3	2875	3450	80	0.84	9.6	5.5	-	-	-	20
H80Sa2se	2.2	3	2885	3460	83	0.85	9.3	5.4	3.3	6.4	0.00400	21.5
H80Sb2se	3	4	2890	3470	85	0.84	12.5	7.2	3	7.2	0.00432	24
H80M2se	4.4	5.5	2890	3470	85	0.84	16	9.3	3.1	7.2	0.00485	28
H80L2se	5.5	7.5	2890	3470	85	0.84	21.10	12.2	-	-	-	35
H90S2se	5.5	7.5	2880	3450	86	0.85	19.1	11	2.4	6.5	0.00655	40
H90L2se[13]	7.5	10	2885	3460	86	0.86	26.5	15.3	2.6	6.6	0.00750	46
H100S2se	9.2	12.5	2840	3470	86	0.80	34.6	21	2.6	6.6	-	60
H100L2se	11	15	2840	3470	86	0.80	41.5	24	2.7	6.8	-	68

ASYNCHRONOUS THREE-PHASE COMPACT SAW MOTORS type SE
4 poles – 1400 rpm at 50hz. – 1700 rpm at 60hz.

Type	KW at 50hz.	Hp at 50hz.	RPM 50 Hz	RPM 60 Hz	η %	Cos.φ	In 230V 50hz	In 400V 50hz	Ca/Cn	Ia/In	J Rotor kgm	Weight kilos[14]
H71a4se	1.1	1.5	1405	1685	79	0.80	5.2	3	2.7	5.4	0.00274	19
H71b4se	1.5	2	1410	1690	79	0.83	6.3	3.6	3	5.8	0.00284	21
H80Sa4se	1.85	2.5	1420	1700	81	0.83	9.2	5.3	3	5.7	0.00572	23
H80Sb4se	2.2	3	1420	1700	82	0.82	10.5	6.1	2.5	6.1	0.00690	24.5
H80L4se	3	4	1420	1700	82	0.82	16	9.1	2.6	6.9	0.00857	26.3
H90S4se	4	5.5	1430	1715	84	0.84	17.7	10.3	2.6	7.1	0.0115	37.5
H90L4se	5.5	7.5	1435	1720	86	0.87	22	12.7	2.4	6	0.0131	45
H100S4se	7.5	10	1440	1720	87	0.80	34.6	20	2.5	6.1	-	60

Symbols

- RPM =
- η = Efficiency (%)
- In = Rated current
- Ia = Starting current
- Ca = Starting torque
- Cn = Rated torque
- Cos φ = Power factor
- J = Moment of inertia

For converting motor drawn ampere from 50 to 60hz. pls read here.

[12] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.
[13] If you need to employ a 7.5kw motor for S1 service, we suggest to request the frame H100Sa2SE
[14] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.

Back to Index

8. MANUFACTURING PROGRAMME –THREE PHASE SAW MOTORS WITH DC BRAKE

ASYNCHRONOUS THREE-PHASE COMPACT SAW MOTORS type SEF - with d.c. brake 2 poles – 2800 rpm at 50hz. – 3400 rpm at 60hz.

Type	KW at 50hz	Hp at 50hz	RPM 50 Hz	RPM 60 Hz	η %	Cos. φ	In 230V	In 400V	Ia/In	Brake 230V.[15] A	Brake 400V.[16]	J Rotor kgm	Weight kilos[17]
H71a2sef	1.5	2	2860	3430	80	0.82	6.2	3.6	6	0.115	0.080	0.00178	18
H71b2sef	1.85	2.5	2875	3450	80	0.84	7.2	4.2	6.2	0.115	0.080	0.00216	20
H71c2sef	2.2	3	2875	3450	80	0.84	9.6	5.5	-	0.115	0.080	-	22
H80Sa2sef	2.2	3	2885	3460	83	0.85	9.3	5.4	6.4	0.150	0.110	0.00400	23
H80Sb2sef	3	4	2890	3470	85	0.84	12.5	7.2	7.2	0.150	0.110	0.00432	25,5
H80M2sef	4.4	5.5	2890	3470	85	0.84	16	9.3	7.2	0.150	0.110	0.00485	30
H80L2sef	5.5	7.5	2890	3470	85	0.84	21.1	12.2	-	0.150	0.110	-	35
H90S2sef	5.5	7.5	2880	3450	86	0.85	19.1	11.1	6.5	0.170	0.110	0.00655	42
H90L2sef[18]	7.5	10	2885	3460	86	0.86	26.5	15.3	6.6	0.170	0.110	0.00750	48
H100S2sef	9.2	12.5	2890	3470	86	0.80	34.6	21	6.6	0.190	0.115	-	62
H100L2sef	11	15	2890	3470	86	0.80	41.5	24	6.8	0.190	0.115	-	70

ASYNCHRONOUS THREE-PHASE COMPACT SAW MOTORS type SEF – with d.c. brake 4 poles – 1400 rpm at 50hz. – 1700 rpm at 60hz.

Type	KW at 50hz.	Hp at 50hz.	RPM 50 Hz	RPM 60 Hz	η %	Cos. φ	In 230V	In 400V	Ia/In	Brake 230V. A	Brake 400V. A	J Rotor kgm	Weight kilos[19]
H71a4sef	1.1	1.5	1405	1685	79	0.81	5.2	3	5.4	0.115	0.080	0.00274	20.5
H71b4sef	1.5	2	1410	1690	79	0.83	6.3	3.6	5.8	0.115	0.080	0.00284	21.5
H80Sa4sef	1.85	2.5	1420	1700	81	0.83	9.2	5.3	5.7	0.150	0.110	0.00572	24.5
H80Sb4sef	2.2	3	1420	1700	82	0.82	10.5	6.1	6.1	0.150	0.110	0.00690	25.5
H80L4sef	3	4	1420	1700	82	0.82	16	9.1	6.9	0.150	0.110	0.00857	38.5
H90S4sef	4	5.5	1430	1715	84	0.84	17.7	10.3	7.1	0.170	0.110	0.0115	42.0
H90L4sef	5.5	7.5	1435	1720	86	0.87	22	12.7	6	0.170	0.110	0.0131	49.0
H100S4sef	7.5	10	1440	1720	87	0.80	34.6	20	6.1	0.190	0.115	-	62.0

Symbols

- RPM =
- η = Efficiency (%)
- In = Rated current
- Ia = Starting current
- Ca = Starting torque
- Cn = Rated torque
- Cos φ = Power factor
- J = Moment of inertia

For converting motor drawn ampere from 50 to 60hz. pls read here.

[15] Electromagnetic absorption of the brake connected at 230V.
[16] Electromagnetic absorption of the brake connected at 400 V.
[17] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.
[18] If you need to employ a 7.5kw motor for S1 service, we suggest to request the frame H100Sa2SEF
[19] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.

Back to Index

9. MANUFACTURING PROGRAMME – SINGLE PHASE MOTORS

ASYNCHRONOUS SINGLE-PHASE COMPACT SAW MOTORS type SEM
2 poles – 2800 rpm at 50hz. – 3400 rpm at 60hz.

Type	KW at 50hz.	Hp at 50hz	RPM 50 Hz	RPM 60 Hz	η %	Cos.φ	In 230V 50hz	Starting		Capacitors		Weight kilos[20]
								Ca / Cn	Ia / In	Number Df	Max V.	
H71a2sem	0.97	1.3	2840	3410	60	0.92	7.2	0.75	3.1	1 x 32	400	20
H71b2sem	1.27	1.7	2845	3415	62	0.92	10.2	0.80	3	1 x 40	400	22
H80S2sem	1.5	2	2855	3425	63	0.90	12	0.80	3.4	1 x 40	400	25
H80M2sem	1.87	2.5	2855	3425	63	0.88	16.3	0.82	3.5	1 x 50	400	28

ASYNCHRONOUS SINGLE-PHASE COMPACT SAW MOTORS type SEM
4 poles – 1400 rpm at 50hz. – 1700 rpm at 60hz.

Type	KW at 50hz.	Hp at 50hz	RPM 50 Hz	RPM 60 Hz	η %	Cos.φ	In 230V 50hz	Starting		Capacitors		Weight kilos[21]
								Ca / Cn	Ia / In	Number Df	Max V.	
H71a4sem	0.75	1	1400	1680	58	0.94	5.7	0.70	3.3	1 x 32	400	20
H71b4sem	0.97	1.3	1400	1685	60	0.96	7.2	0.70	3.3	1 x 40	400	22
H80S4sem	1.27	1.7	1420	1700	62	0.96	10	0.75	3.4	1 x 40	400	25
H80M4sem	1.5	2	1420	1700	64	0.96	11.5	0.75	3.8	1 x 50	400	27
H80L4sem	1.87	2.5	1430	1715	68	0.96	14.3	0.75	4	1 x 50	400	30

10. MANUFACTURING PROGRAMME – SINGLE PHASE MOTORS WITH DC BRAKE

ASYNCHRONOUS SINGLE-PHASE COMPACT SAW MOTORS type SEM
2 poles – 2800 rpm at 50hz. – 3400 rpm at 60hz.

Type	KW at 50hz	Hp at 50hz	RPM 50 Hz	RPM 60 Hz	η %	Cos.φ	In 230V 50hz	Brake 230V.	Starting		Capacitors		Weight kilos[22]
									Ca / Cn	Ia / In	Number Df	Max V.	
H71a2semf	0.97	1.3	2840	3410	60	0.92	7.2	0.115	0.75	3.1	1 x 32	400	20
H71b2semf	1.27	1.7	2845	3415	62	0.92	10.2	0.115	0.80	3	1 x 40	400	22
H80S2semf	1.5	2	2855	3425	63	0.90	12	0.150	0.80	3.4	1 x 40	400	25
H80M2semf	1.87	2.5	2855	3425	63	0.88	16.3	0.150	0.82	3.5	1 x 50	400	28

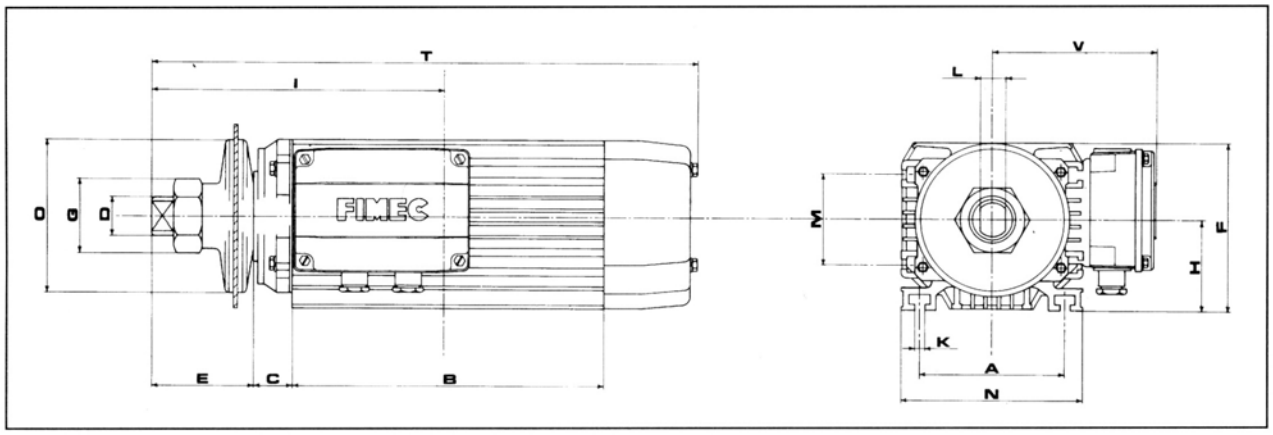
ASYNCHRONOUS SINGLE-PHASE COMPACT SAW MOTORS type SEM
4 poles – 1400 rpm at 50hz. – 1700 rpm at 60hz.

Type	KW at 50hz	Hp at 50hz	RPM 50 Hz	RPM 60 Hz	η %	Cos.φ	In 230V 50hz	Brake 230V	Starting		Capacitors		Weight kilos[23]
									Ca / Cn	Ia / In	Number Df	Max V.	
H71a4semf	0.75	1	1400	1680	58	0.94	5.7	0.115	0.70	3.3	1 x 32	400	20
H71b4semf	0.97	1.3	1400	1685	60	0.96	7.2	0.115	0.70	3.3	1 x 40	400	22
H80S4semf	1.27	1.7	1420	1700	62	0.96	10	0.150	0.75	3.4	1 x 40	400	25
H80M4semf	1.5	2	1420	1700	64	0.96	11.5	0.150	0.75	3.8	1 x 50	400	27
H80L4semf	1.87	2.5	1430	1715	68	0.96	14.3	0.150	0.75	4	1 x 50	400	30

[20] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.
[21] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.
[22] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.
[23] Weight is expressed in kilos. 1 kilo corresponds to 2,205 pounds.

Back to Index

11. SAW MOTORS – OVERALL DIMENSIONS[24]



	A	B	C	E	H	K	F	V	I	T	L	D	G	O	M	N
H71	112	240	30	78	71	9	130	126	224	418	20	30	50	118	70	140
H80S	125	240	30	78	80	10.3	149	136	228	422	20	30	50	139	74	160
H80M	125	280	30	78	80	10.3	149	136	248	462	20	30	50	139	74	160
H80L	125	320	30	78	80	10.3	149	145	268	502	20	30	50	139	74	160
H90S	140	330	30	78	90	10.3	165	145	274	535	25	35	60	139	84	177
H90L	140	380	30	78	90	10.3	165	145	314	585	25	35	60	139	84	177
H100Sa	160	280	42	113	100	14	189	160	320	535	30	50	70	205	84	200
H100S	160	320	42	113	100	14	189	160	320	575	30	50	70	205	84	200
H100L	160	320	42	113	100	14	189	160	345	575	30	50	70	205	84	200

IMPORTANT NOTES:

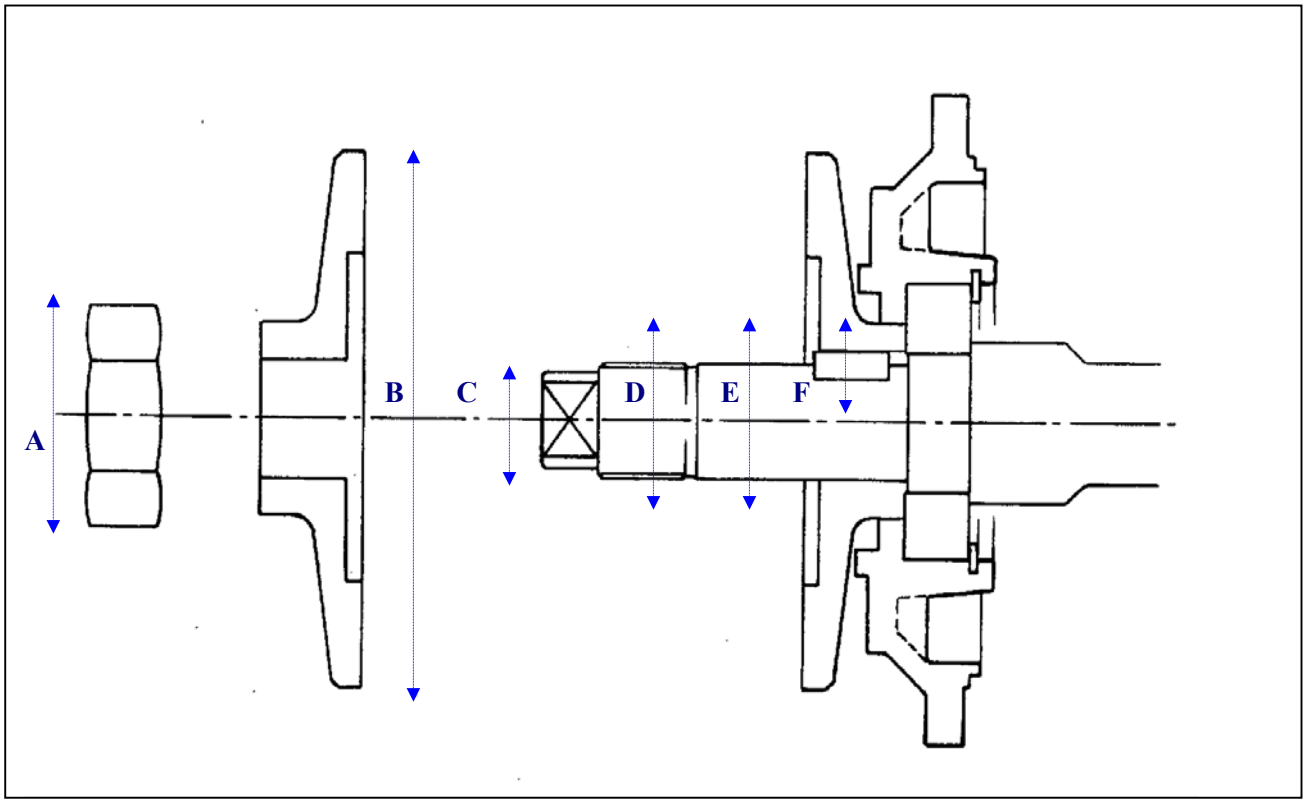
- If the motor length is a problem for your applications, we could evaluate the possibility of shortening the length of the housing (with addition in price). For three-phase motors frame H71SE and SEF, for example, we can suggest the following different solution if you decide that the standard housing length is too long (standard is 240 mm):

  H71-2SE 1.5hp housing length 180mm
  H71a2se 2 hp housing length 200mm
  H71b2se 2,5hp housing length 220mm

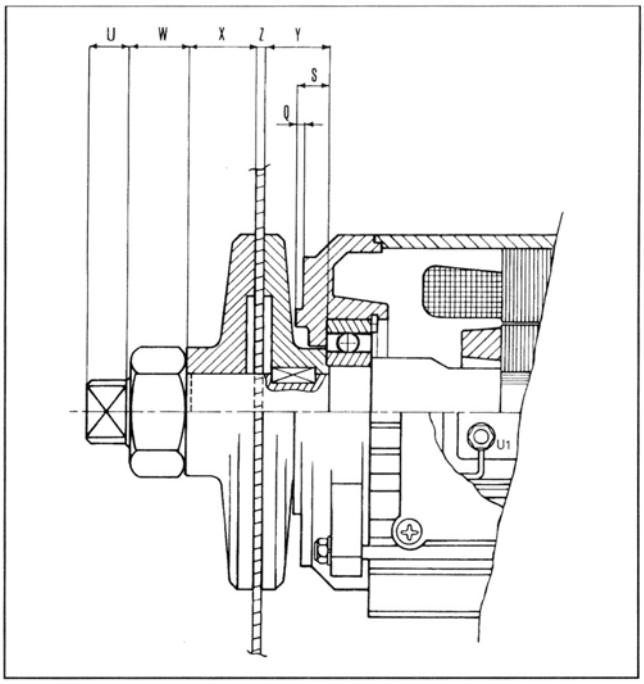
- If you need a 7.5kw for S1 service, we suggest you to employ a motor H100Sa2se.

[24] Measures expressed in millimeters. Motors with brake and without brake have the same dimensions.

12. EXIT SHAFT REPRESENTATION



In the above drawing It is clearly represented the standard exit shaft of Fimec saw motors. It is composed by a front wrench (letter C), a left or right hand thread (letter D), an a smooth exit shaft (letter E) with a key on it (letter F). Key on the smooth part of the shaft is present, in standard shafts, only for motors with brake. On request It can be machined on every shaft and modified according to your needs. Letter A shows the measures of the nut and letter B the measure of the saw flange.



	H71SE	H80SE	H90SE	H100SE
A	50	50	60	70
B	118	139	139	205
C	20	20	25	30
D	30 x 1.5*	30 x 1.5*	35 x 1.5*	50 x 1.5*
E	30	30	35	50
F	8 x 7 x 20	8 x 7 x 20	8 x 7 x 20	8 x 10 x 30
U	15	15	15	15
W	23	21	21	39
X	25	26	26	38
Z	3	3	3	3
Y	25	26	26	38
S	13	13	13	17
Q	3	3	3	3

* Left or right thread . Measure expressed in millimeters.
Saw motors with standard shafts are usually supplied with two saw flanges and a nut. When the exit shaft is special, It might happen that It is not possible to adapt our saw flanges to it (this frequently happens when special shafts smaller than ∅ 30 are requested). For special threads nut is not supplied (or supplied only on request).

Please contact our American dealer for checking with him the different standard exit shafts available for the US market.

13. SPECIAL EXECUTIONS

- Non standard motor and brake supply
- Non standard exit shaft and thread
- Thermal protections on winding
- IP55 Protection
- Additional winding protection
- Special labyrinth in the front shield for preventing water enter the motor
- Auxiliary capacitor with centrifugal switch for 1 phase motors staring at load

We are at your disposal for any request of special executions

14. HOW TO ORDER

▪ New Motor

As we want to serve you in the best possible way , please note that there are important characteristics that It is necessary to specify in case of order:

1. Motor name (for example, H80M2SEF);
2. Requested motor power (for example 5.5hp or 4kW);
3. Motor voltage (for example 220/440V.60hz or 440/860V.60hz.);
4. If the motor mounts a dc electric brake, It is necessary to specify the brake voltage (usually It is 240V. or 440V.);
5. Specify if you need a left or right threaded hand shaft ;
6. If you need a special exit shaft, you are kindly requested to send us a drawing which approximately represents what you need;
7. Terminal box position. Usually terminal box is placed right near the exit shaft . It can be placed in other positions if necessary.

▪ Replacement of old motors

For replacing a motor or buying a similar one to that you already have, It is absolutely necessary to **INDICATE ALL THE DATA YOU FIND WRITTEN ON THE NAME PLATE OF THE OLD MOTOR** (included motor production date). This is really very important because It helps to clearly identify your motor . In particular It helps in case your motor is manufactured with some special executions, as we can identify it and manufacture it as the previous one.