

PRODUCT CATALOGUE

RELEASE 4.6



High **performance**

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TEKNOMOTOR

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BY CAR – IN MACCHINA – MIT DEM AUTO

From motorway – Dalla autostrada –
Aus dem Autobahn:
A27 (Venezia-Belluno)
Exit – Uscita – Ausgang
Treviso Nord

BY TRAIN – IN TRENO – MIT DEM ZUG

Nearest station – Stazione più vicina
– Bahnhof
Feltre

BY PLANE – IN AEREO – MIT FLUGZEUG

Venezia (Marco Polo)

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L'AZIENDA

Fondata nel 1983 la società Teknomotor S.r.l. progetta e produce da oltre 30 anni motori elettrici ed elettromandri per applicazioni meccaniche. Azienda in costante espansione, Teknomotor S.n.c. è attualmente impegnata sul mercato mondiale come fornitore di importanti aziende costruttrici i macchine per la lavorazione del legno, PVC e alluminio.

All'unità produttiva principale di Quero (BL) è stata recentemente affiancata un'ulteriore sede dedicata esclusivamente all'assemblaggio e collaudo finale dei motori. Tutte le fasi della produzione si avvalgono delle più avanzate tecnologie in materia di sistemi di disegno CAD, macchine utensili a controllo numerico e banchi prova computerizzati.

Le lavorazioni meccaniche sono effettuate all'interno, in modo da garantire un costante controllo del processo produttivo unito ad un elevato grado di flessibilità che ci permette di soddisfare commesse di grande e piccola serie.

A ciò si aggiunge un'attenta scelta dei fornitori esterni, nostri partner commerciali, al fine di garantire un prodotto esente da difetti e di qualità superiore.

Fin dalla nascita Teknomotor S.r.l. si è distinta per la cortesia nei confronti della propria clientela e per la disponibilità nello sviluppare nuove soluzioni in stretta collaborazione con il committente.

COMPANY

Founded in 1983 Teknomotor S.r.l. has for over 30 years designed and developed electric motors and electrospindles for mechanical applications. As a constant growing Company, Teknomotor S.r.l. is currently engaged on worldwide market as supplier of important Companies specialized in the construction of machinery for the working of wood, PVC and aluminum. The established headquarters in Quero (BL) Italy, was recently enlarged with a new building dedicated exclusively to the assembly and final test of the motors. All the production phases use, at every stage, advanced technologies to ensure maximum quality, such as the CAD design software, machine tool with numeric control and computerized trials. The mechanical operations are carried out internally, in order to guarantee a constant control of the productive process and a high level of flexibility, which allows both large and small commissions to be fulfilled.

A careful selection of external suppliers, commercial partners, is made in order to guarantee an high quality product without defects.

From its birth Teknomotor S.r.l. has distinguished it self for the courtesy it shows its clients and for the commitment it has to develop new solutions in close collaboration with the buyer.

FIRMA

Die Firma Teknomotor S.r.l. wurde im Jahr 1983 gegründet. Seit mehr als 30 Jahren plant und produziert sie elektrische Motoren und Spindeln für mechanische Anwendungen. Teknomotor S.r.l. hat eine ständige Expansion bekannt und sie ist im Moment mit dem Weltmarkt beschäftigt. Sie versorgt mit ihren Motoren, wichtige und bekannte Firmen, die Holz-, PVC- und Aluminiummaschinen bauen. Der Hauptsitz in Quero (BL) war vor kurzem erweitert. In dem neuen Gebäude wird die Montage und die Prüfung gemacht. Vorgeschrittene Technologie wird benutzt, um die Qualität immer zu verbessern, wie z.B. CAD Plansysteme, numerische Kontrolle- Maschinen und computerisierte Prüfstände. Vorgeschrittene Technologie wird benutzt, um die Qualität immer zu verbessern, wie z.B. CAD Plansysteme, numerische Kontrolle- Maschinen und computerisierte Prüfstände. Die ganzen mechanischen Bearbeitungen sind in der Firma realisiert, so eine ständige Kontrolle der Produktion und hohe Flexibilität sind garantiert. Sowohl die kleinen Bestellungen als auch die größere können ohne Probleme erfüllt werden.

Es wird außerdem eine aufmerksame Wahl der Lieferanten, um ein Produkt ohne Defekte und von höherer Qualität zu garantieren. Von Geburt hat Teknomotor S.r.l. für ihre Höflichkeit und ihre Verfügung sich unterschieden, so sie, sehr schnell, immer neue Lösungen in Zusammenarbeit mit den Kunden vorschlagen und entwickeln kann.

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[CLICK ON THE MAP TO VIEW OUR POSITION ON GOOGLE MAPS →](#)

NOTE: In case your satnav is unable to find «via Argenega», look for «via Andrea Redusio» which is the street right in front of «via Argenega». From there, you can just follow the street banners guiding you to Teknomotor.



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SECTION 1: POWER vs SPEED TABLES

1.1 – HIGH FREQUENCY MOTORS - POWER vs SPEED TABLE

FREQUENCY [Hz] Speed [rpm]	50 3000	100 6000	200 12000	300 18000
type	Power [kW]	Power [kW]	Power [kW]	Power [kW]
C24/31-A-SB	-	-	0,22	0,22
C24/31-B-SB	-	-	0,27	0,27
C35-A-SB	-	-	0,22	0,33
C35-B-SB	-	-	0,37	0,50
C35-C-SB	-	-	0,50	0,73
NC35-A-SB	-	-	0,22	0,33
NC35-B-SB	-	-	0,37	0,55
NC35-C-SB	-	-	0,55	0,73
NC35-D-SB	-	-	0,73	-
C31/40-A-SB	-	-	0,22	0,33
C31/40-B-SB	-	-	0,37	0,55
C31/40-C-SB	-	-	0,55	0,73
C31/40-D-SB	-	-	0,73	-
C55-A-SB	-	-	0,22	0,33
C55-B-SB	-	-	0,37	0,55
C55-C-SB	-	-	0,55	0,73
C55-D-SB	-	-	0,73	-
C55K-A-SB	-	0,30	0,70	0,90
C55K-B-SB	-	0,45	1,00	1,30
C55K-C-SB	-	0,60	1,40	1,90
C55K-D-SB	-	0,75	1,60	2,20
C55K-E-SB	-	0,90	2,00	-
C41/47-A-SB	-	-	0,75	1,10
C41/47-B-SB	-	0,55	1,10	1,60
C41/47-C-SB	-	0,75	1,50	2,20
C41/47-D-SB	0,45	0,90	1,80	2,70
C55M-A-SB	-	-	0,75	1,10
C55M-B-SB	-	0,55	1,10	1,60
C55M-C-SB	-	0,75	1,50	2,20
C55M-D-SB	0,45	0,90	1,80	2,70
C64-A-SB	-	-	0,75	1,10
C64-B-SB	-	0,55	1,10	1,60
C64-C-SB	-	0,75	1,50	2,20
C64-D-SB	0,45	0,90	1,80	2,70
C51/60-A-SB	-	-	2,20	3,30
C51/60-B-SB	-	-	2,60	4,50 (S6)
C51/60-C-SB	-	-	3,00	-
C51/60-D-SB	1,10	2,20	3,70	5,60
C55P-A-SB	-	-	2,20	-
C55P-B-SB	-	-	2,60	-
C55P-C-SB	-	-	3,00	-
C55P-D-SB	1,10	2,20	3,70	-
C60/67-A-SB	-	1,90	3,00	4,50
C60/67-D-SB	-	3,30	4,50	7,00

SECTION 1: POWER vs SPEED TABLES

1.2 – ELECTROSPINDLES POWER vs SPEED TABLE

FREQUENCY [Hz] Speed [rpm]	50 3000	100 6000	200 12000	300 18000	400 24000
type	Power [kW]	Power [kW]	Power [kW]	Power [kW]	Power [kW]
NC35–A–DB	-	-	0,22	0,33	0,33
NC35–B–DB	-	-	0,37	0,55	0,55
NC35–C–DB	-	-	0,55	0,73	0,73
NC35–D–DB	-	-	0,73	-	-
C31/40–A–DB	-	-	0,22	0,33	0,33
C31/40–B–DB	-	-	0,37	0,55	0,55
C31/40–C–DB	-	-	0,50	0,73	0,73
C31/40–D–DB	-	-	0,73	-	-
C41/47–A–DB	-	-	0,75	1,10	1,10
C41/47–B–DB	-	-	1,10	1,60	1,60
C41/47–C–DB	-	-	1,50	2,20	2,20
C41/47–D–DB	-	-	1,80	2,70	2,70
C51/60–A–DB	-	-	2,20	3,30	3,30
C51/60–B–DB	-	-	2,60	-	-
C51/60–C–DB	-	-	3,00	-	-
C51/60–D–DB	1,10	2,20	3,70	5,60	5,60
C60/67–A–DB	1,10	1,90	3,00	4,50	4,50
C60/67–D–DB	1,70	3,30	4,50	7,00	7,00

1.3 – RECTANGULAR MOTORS vs SPEED TABLE

FREQUENCY [Hz] Speed [rpm]	50 3000	100 6000
type	Power [kW]	Power [kW]
C71/80-A-SB (2p)	2,20	2,20
C71/80-A-SB (4p)	1,50	3,00
C71/80-A-SB (6p)	1,50	-
C71/80-B-SB (2p)	3,00	4,00
C71/80-B-SB (4p)	2,20	5,50
C71/80-B-SB (6p)	1,80	-
C71/80-C-SB (2p)	4,00	-
C71/80-C-SB (4p)	3,00	-
C71/80-B-DB	3,00	4,40
C71/80-C-DB	4,00	5,50
C85/90-A-SB	5,50	7,50
C85/90-B-SB	7,50	11,00

1.4 – AUTOMATIC TOOL CHANGER (ATC71) POWER vs SPEED TABLE

FREQUENCY [Hz] Speed [rpm]	200 12000		300 18000		400 24000	
type	Power [kW]		Power [kW]		Power [kW]	
	S1	S6	S1	S6	S1	S6
ATC71–A–ISO30 (SN/LN)	3.8	4.6	3.8	4.6	3.8	4.6
ATC71–B–ISO30 (SN/LN) / HSK F63 (LN)	5.5	6.6	5.5	6.6	5.5	6.6
ATC71–C–ISO30 (SN/LN) / HSK F63 (LN)	7.5	9.0	7.5	9.0	7.5	9.0

HIGH FREQUENCY MOTORS WITH CYLINDRICAL SHAFT

GENERAL INFORMATION

The HF motors (High Frequency motors) have been designed to develop high speeds and powers with limited overall dimensions.

The standard models work at 12000 rpm; on customer's request, we can supply motors that reach 18000 rpm. The available powers goes from 0.22 to 7.0 kW (view [power vs speed table](#)).

These features make them ideal for use on machines for machining wood, aluminum alloys and plastics. Typically they are mounted on woodworking machines like edge banding machines and others.

Because of their structural features, the HF motors can withstand primarily radial loads.

For every kind of machining subjecting the motor to not negligible axial loads (eg. milling, drilling, etc.) we suggest to refer to the electrospindles (see sec. [5](#), [6](#), [7](#), [8](#)), which are manufactured expressly for the mentioned processes.

INFORMAZIONI GENERALI

I motori HF (High Frequency motors) con albero liscio sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano a 12000 rpm; su richiesta del cliente è possibile fornire motori che raggiungano i 18000 rpm. Le potenze disponibili variano tra 0.22 kW e 7.0 kW (si veda [power vs speed table](#)).

Queste caratteristiche li rendono ideali per l'impiego su macchine per la lavorazione del legno, delle leghe di alluminio e delle materie plastiche.

Nello specifico, i motori HF vengono impiegati prevalentemente nell'ambito delle macchine bordatrici per la lavorazione del legno.

Per le loro caratteristiche costruttive, i motori HF sopportano carichi di tipo prevalentemente radiale.

Per lavorazioni che sottopongano il motore a carichi assiali non trascurabili (e.g. fresatura, foratura, etc.) si consiglia di fare riferimento alla sezione elettromandri (vedi sez. [5](#), [6](#), [7](#), [8](#)), concepiti appositamente per le lavorazioni succitate.

ALLGEMEINE INFORMATIONEN

Die HF-Motoren (High Frequency Motors) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen.

Die Standardmodelle sind mit 12000 U/min tätig. Auf Kundenanfrage ist es auch möglich, Motoren mit 18000 U/min zu liefern. Die verfügbaren Leistungen variieren zwischen 0.22kW und 7.0kW (siehe [power vs speed table](#)).

Dafür sind sie für den Einsatz an Maschinen für die Holz- bzw. Aluminiumlegierungs- und Kunststoffbearbeitung geeignet.

Insbesondere werden die HF-Motoren vorwiegend im Zusammenhang mit den Kantenanleimmaschinen bei der Holzverarbeitung eingesetzt.

Dank ihrer Bauweise können sie vorwiegend Radialbelastungen standhalten.

Für jene Bearbeitungen, die den Motor beträchtlichen Axialbelastungen unterziehen (z. B. Fräsen, Bohren usw.) wird auf das Kapitel "Elektrospindel" (siehe Abschnitt [5](#), [6](#), [7](#), [8](#)) verwiesen, die speziell für o.a. Bearbeitungen konzipiert wurden.

TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTECTION GRADE	SHAFT BALANCING
	TYPE	INSULATION	TYPE	BALANCING GRADE				
HF motors with cylindrical shaft	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Shaft driven fan cooling.	IP 50 (IP 60 on request)	Half key (full key on request)

The motors conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the motor cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

I motori sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che il motore non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Motoren entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 2: HF MOTORS WITH CYLINDRICAL SHAFT

[C24/31](#)

(0.22 – 0.27 kW)



[C35](#)

(0.22 – 0.50 kW)



[NC35](#)

(0.22 – 0.73 kW)



[C31/40](#)

(0.22 – 0.75 kW)



[C55](#)

(0.22 – 0.75 kW)



[C55K](#)

(0.30 – 2.2 kW)



[C41/47](#)

(0.75 – 1.8 kW)



[C55M](#)

(0.75 – 1.8 kW)



[C64](#)

(0.75 – 1.8 kW)



[C51/60](#)

(1.1 – 5.6 kW)



[C55P](#)

(1.1 – 3.7 kW)



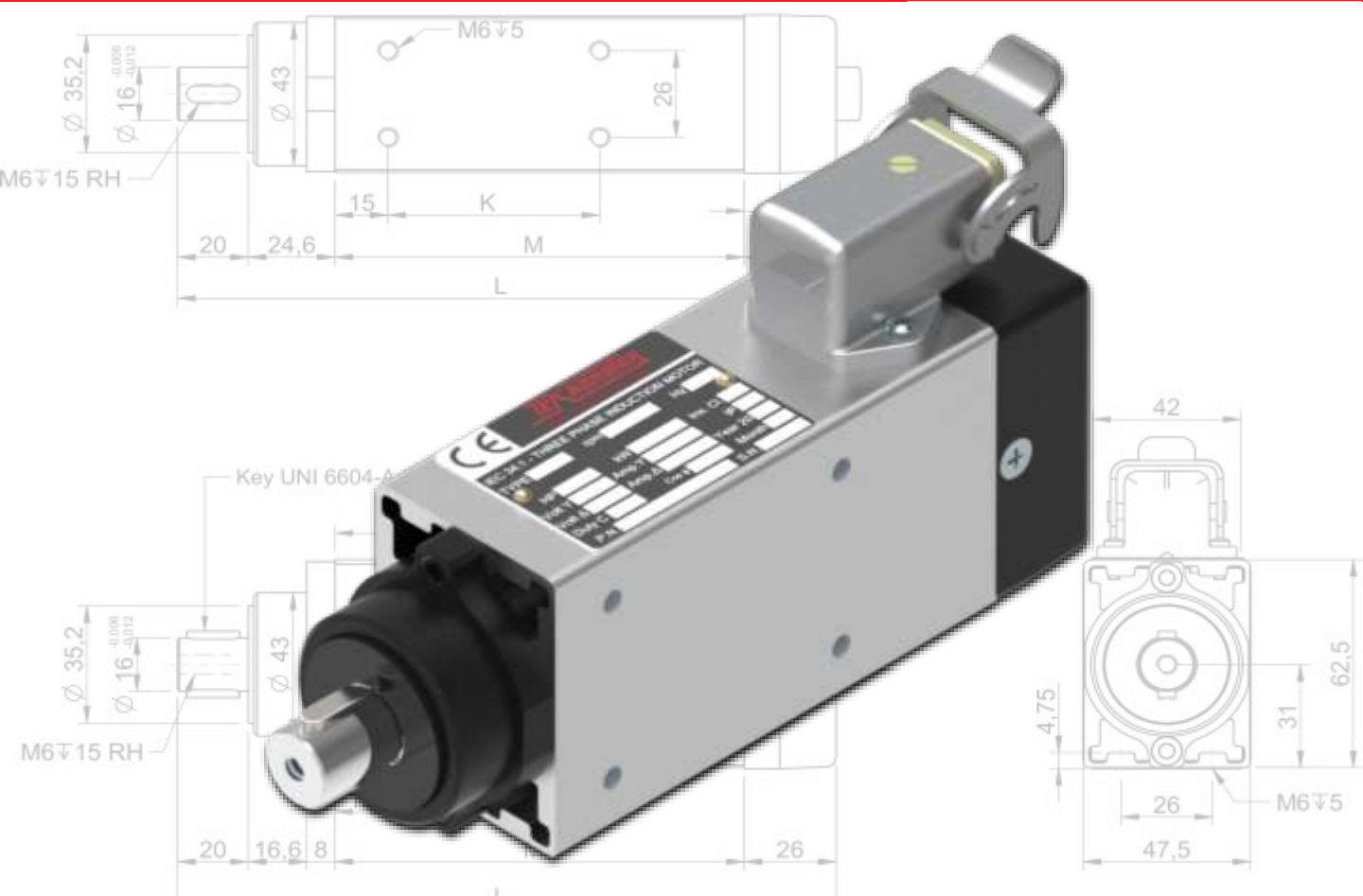
[C60/67](#)

(1.25 – 4.5 kW)



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HF motor C24/31



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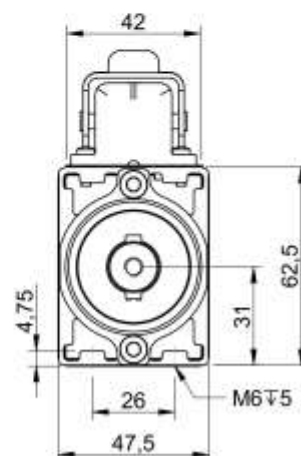
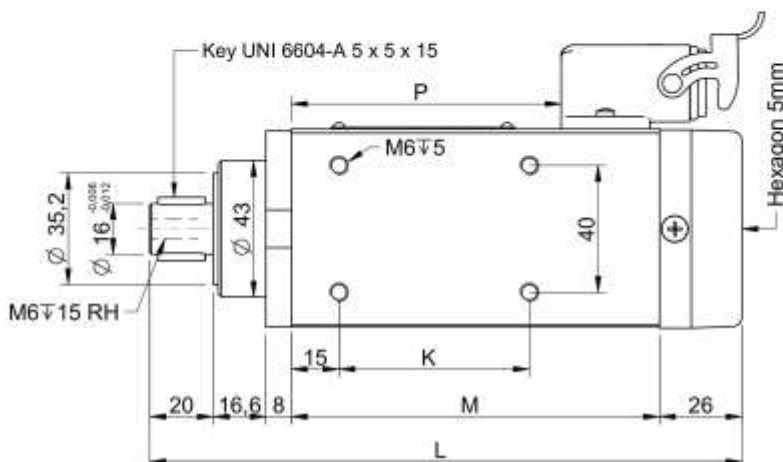
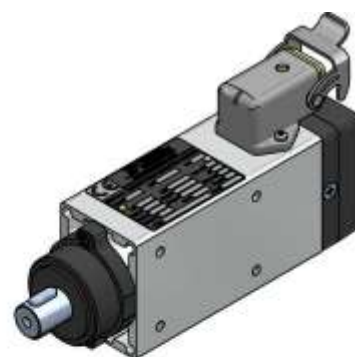
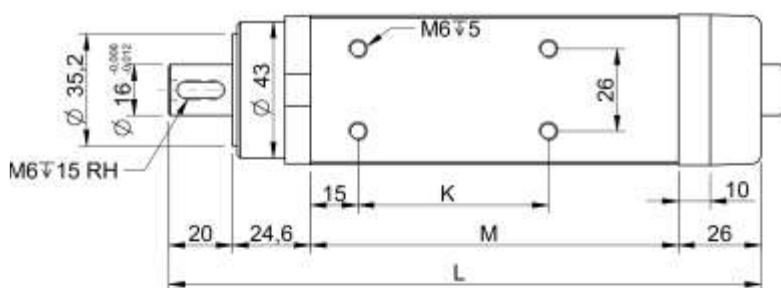
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C24/31-A-SB	0.22	220	200	12000	1.3	1.7
C24/31-A-SB	0.22	380	200	12000	0.7	1.7
C24/31-B-SB	0.27	220	200	12000	1.4	1.9
C24/31-B-SB	0.27	380	200	12000	0.8	1.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

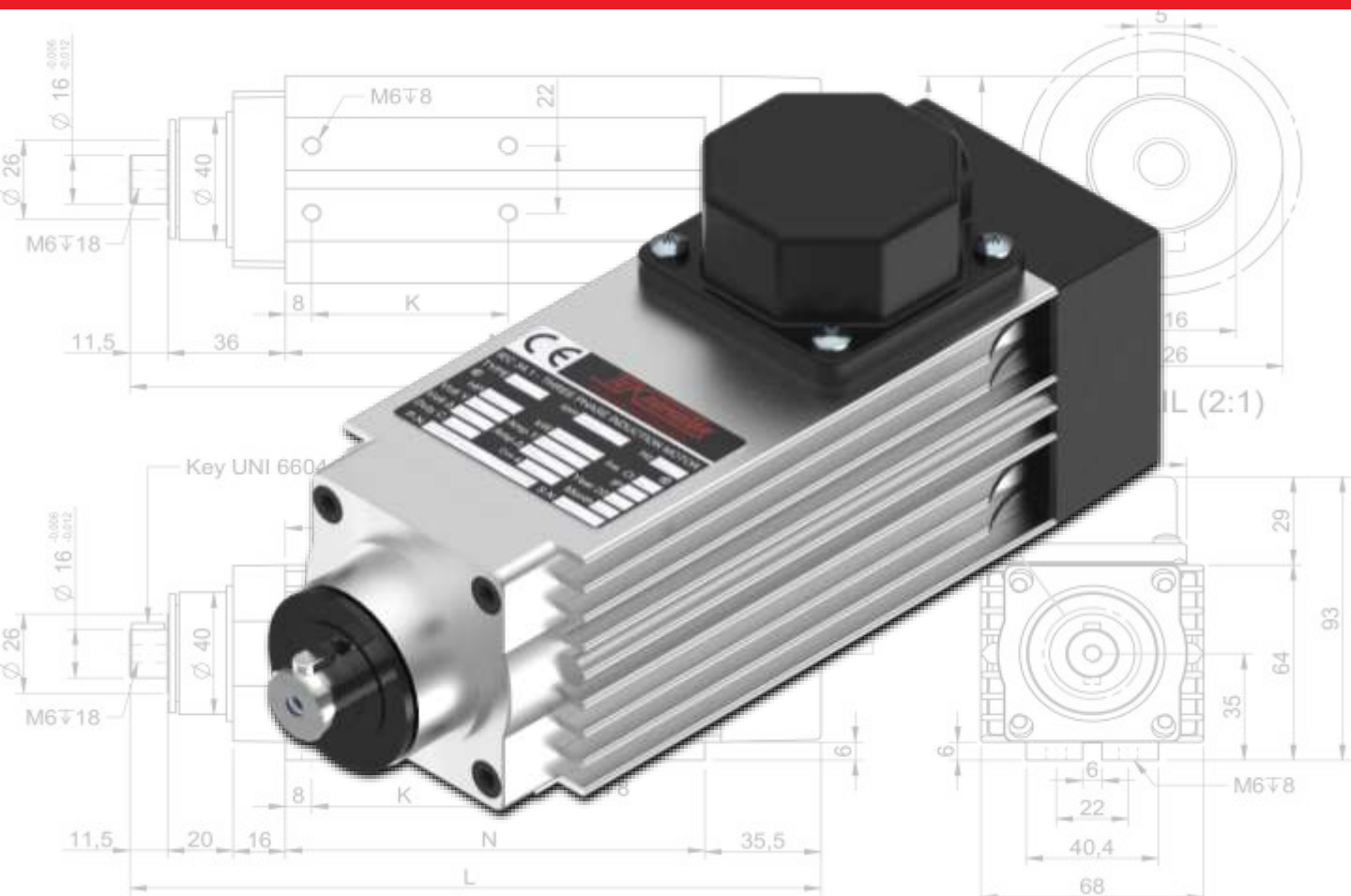
C24/31 – SB – L20



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C24/31-A-SB-L20	186.6	84	60	116
C24/31-B-SB-L20	201.6	99	60	131

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HF motor C35

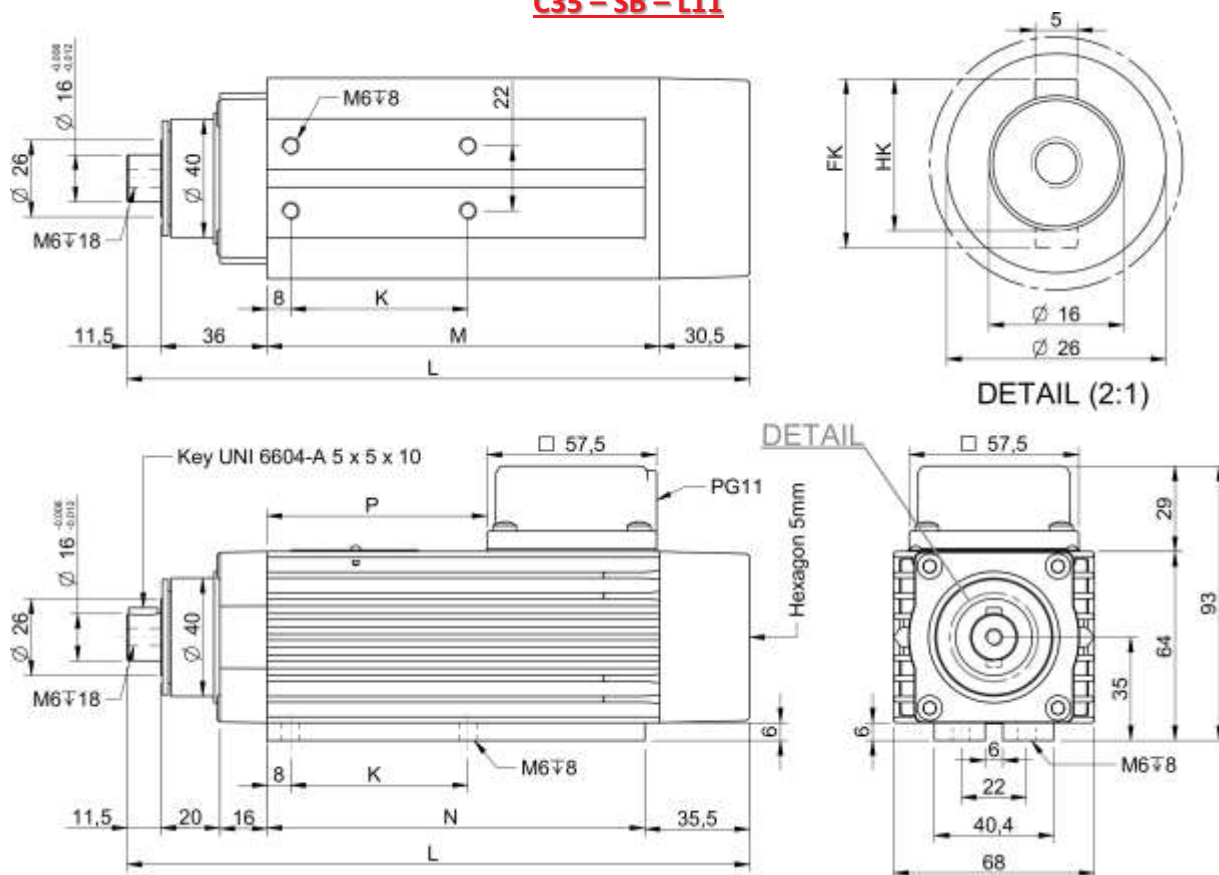


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ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C35 – A – SB	0.22	220 / 380	200	12000	1.6 / 0.9	2.0
C35 – B – SB	0.37	220 / 380	200	12000	2.1 / 1.2	2.5
C35 – C – SB	0.50	220 / 380	200	12000	2.7 / 1.5	2.8

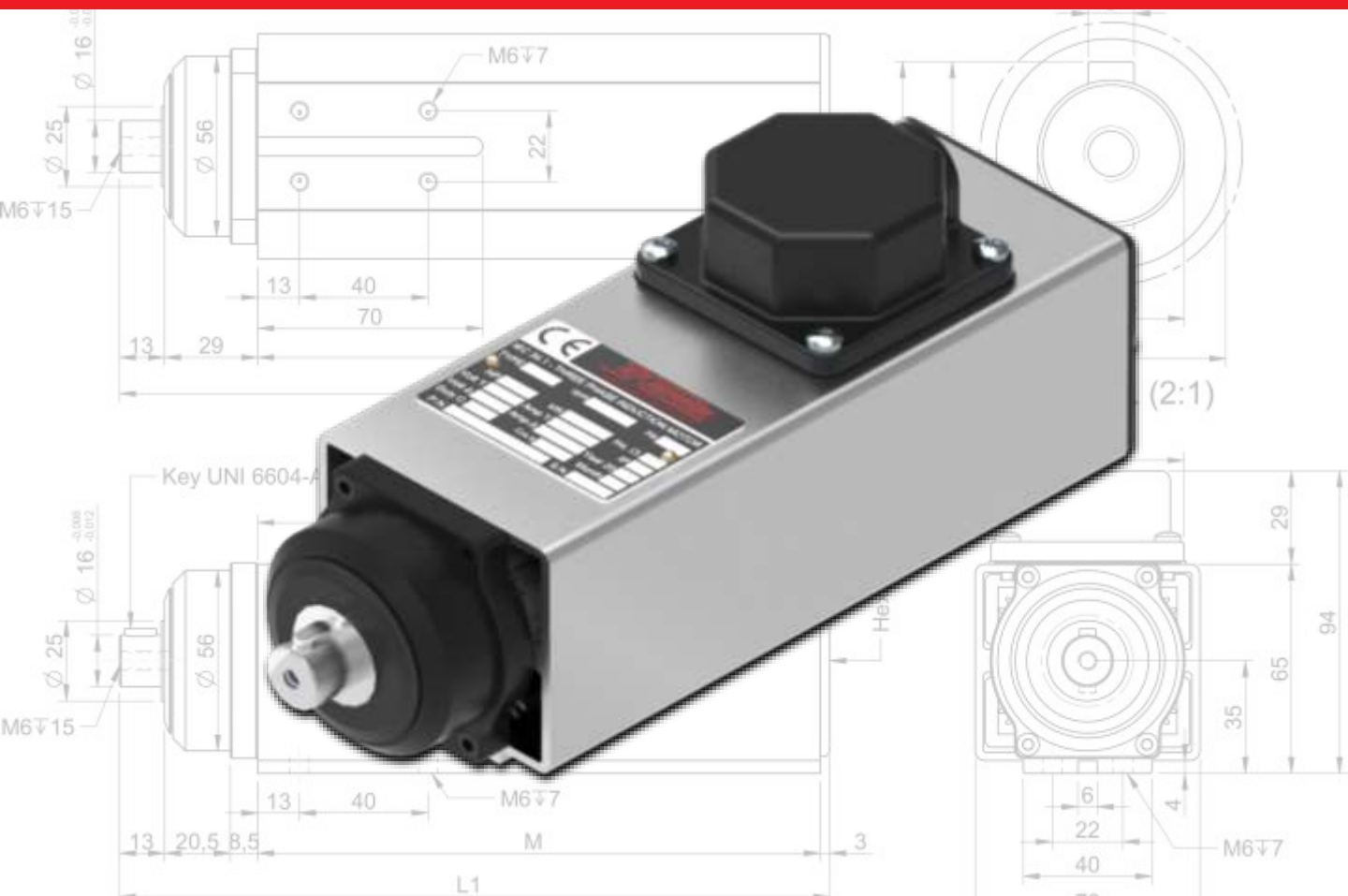
For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN**C35 – SB – L11**

TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]	N [mm]	HK [mm]	FK [mm]
C35-A-SB-L11	186	49.5	40	108	103	18	19
C35-B-SB-L11	211	74.5	60	133	128		
C35-C-SB-L11	226	89.5	60	148	143		

TEKNOMOTOR

HF motor NC35

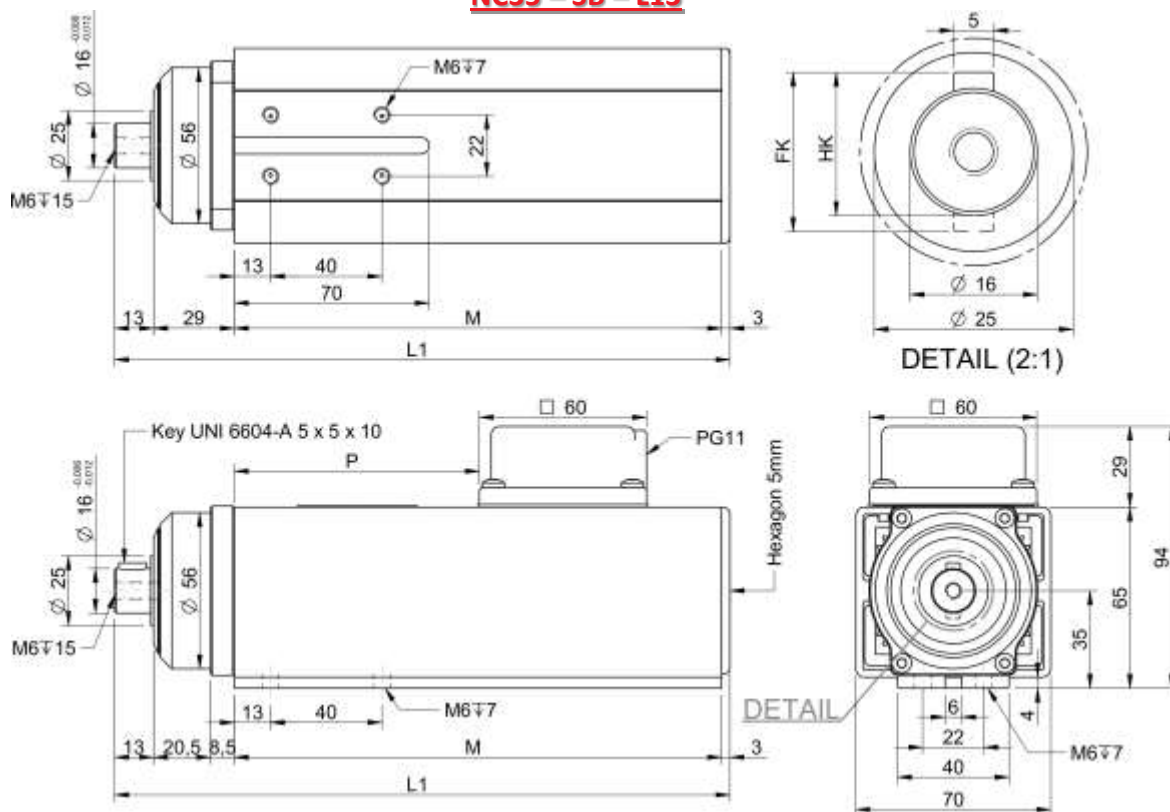


TEKNOMOTOR

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

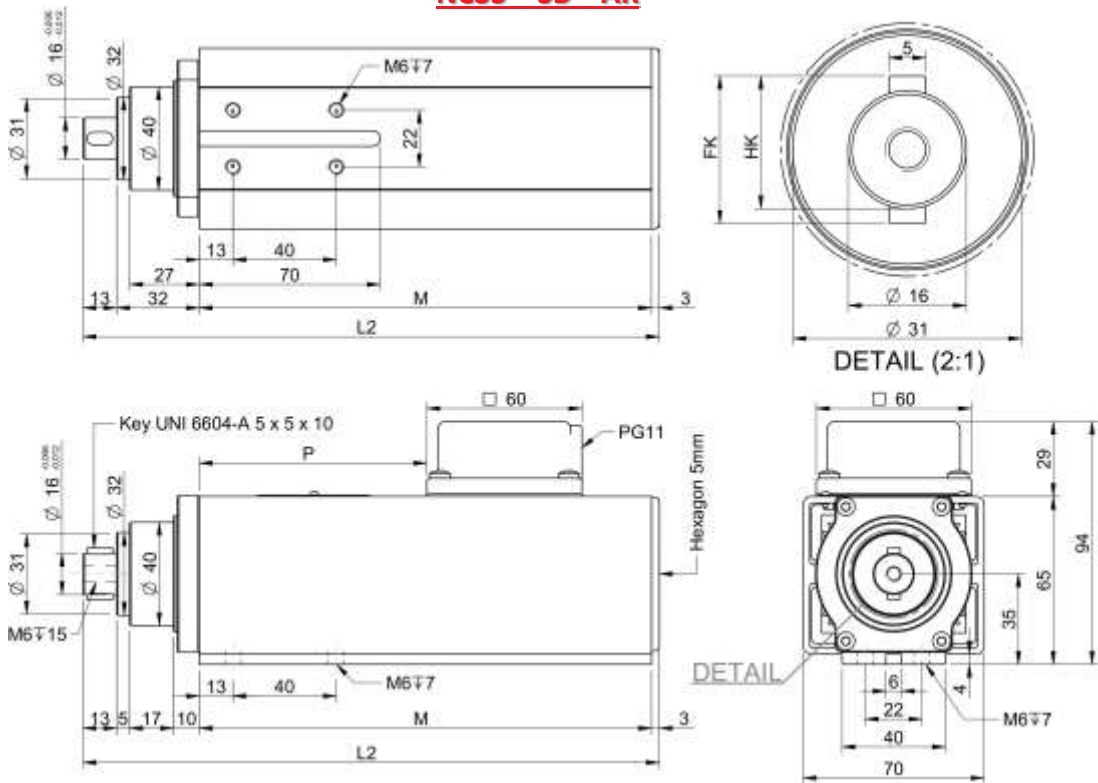
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
NC35 – A – SB	0.22	220 / 380	200	12000	1.6 / 0.9	2.5
NC35 – AA – SB	0.35	220 / 380	200	12000	2.1 / 1.2	2.6
NC35 – B – SB	0.37	220 / 380	200	12000	2.1 / 1.2	2.9
NC35 – C – SB	0.55	220 / 380	200	12000	2.7 / 1.5	3.1
NC35 – D – SB	0.73	220 / 380	200	12000	3.1 / 1.8	3.7

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN**NC35 – SB – L13**

TYPE – TIPO – TYP	L1 [mm]	P [mm]	M [mm]	HK [mm]	FK [mm]
NC35-A-SB-L13	180	48	135	18	19
NC35-AA-SB-L13	180	48	135		
NC35-B-SB-L13	205	73	160		
NC35-C-SB-L13	220	88	175		
NC35-D-SB-L13	240	108	195		

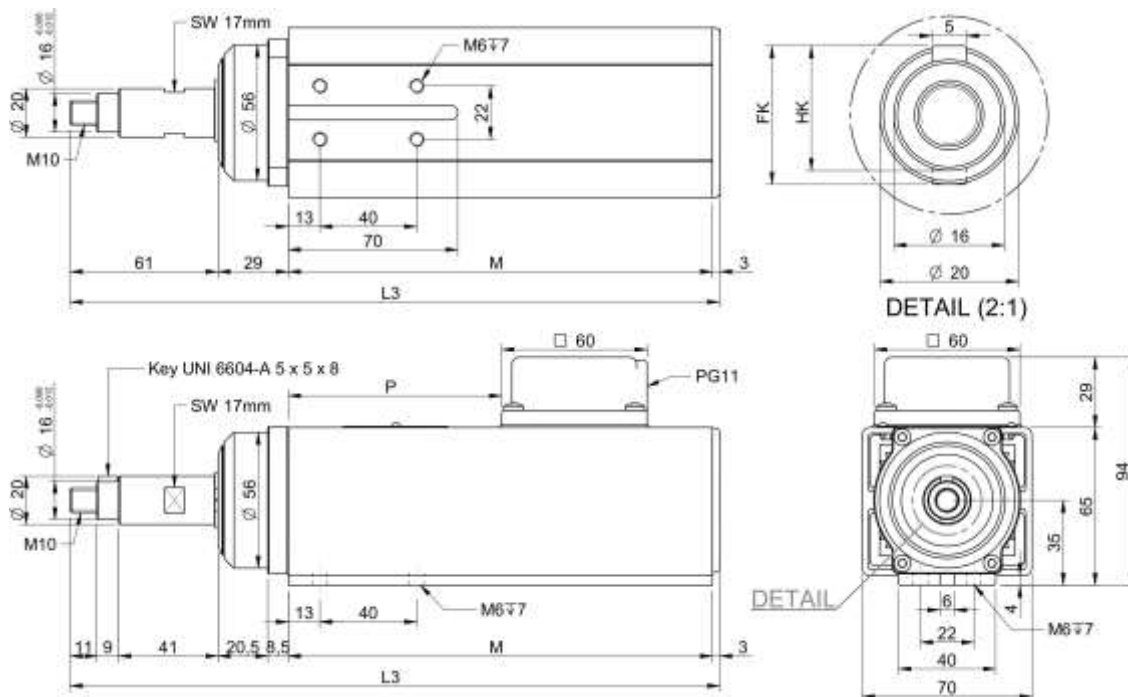
NC35 – SB – AR



TYPE – TIPO – TYP	L2 [mm]	P [mm]	M [mm]	HK [mm]	FK [mm]
NC35-A-SB-AR	183	48	135	18	19
NC35-AA-SB-AR	183	48	135		
NC35-B-SB-AR	208	73	160		
NC35-C-SB-AR	223	88	175		
NC35-D-SB-AR	243	108	195		



NC35 – SB – L61



TYPE – TIPO – TYP	L3 [mm]	P [mm]	M [mm]	HK [mm]	FK [mm]
NC35-A-SB-L61	228	48	135	18	19
NC35-AA-SB-L61	228	48	135		
NC35-B-SB-L61	253	73	160		
NC35-C-SB-L61	268	88	175		
NC35-D-SB-L61	288	108	195		



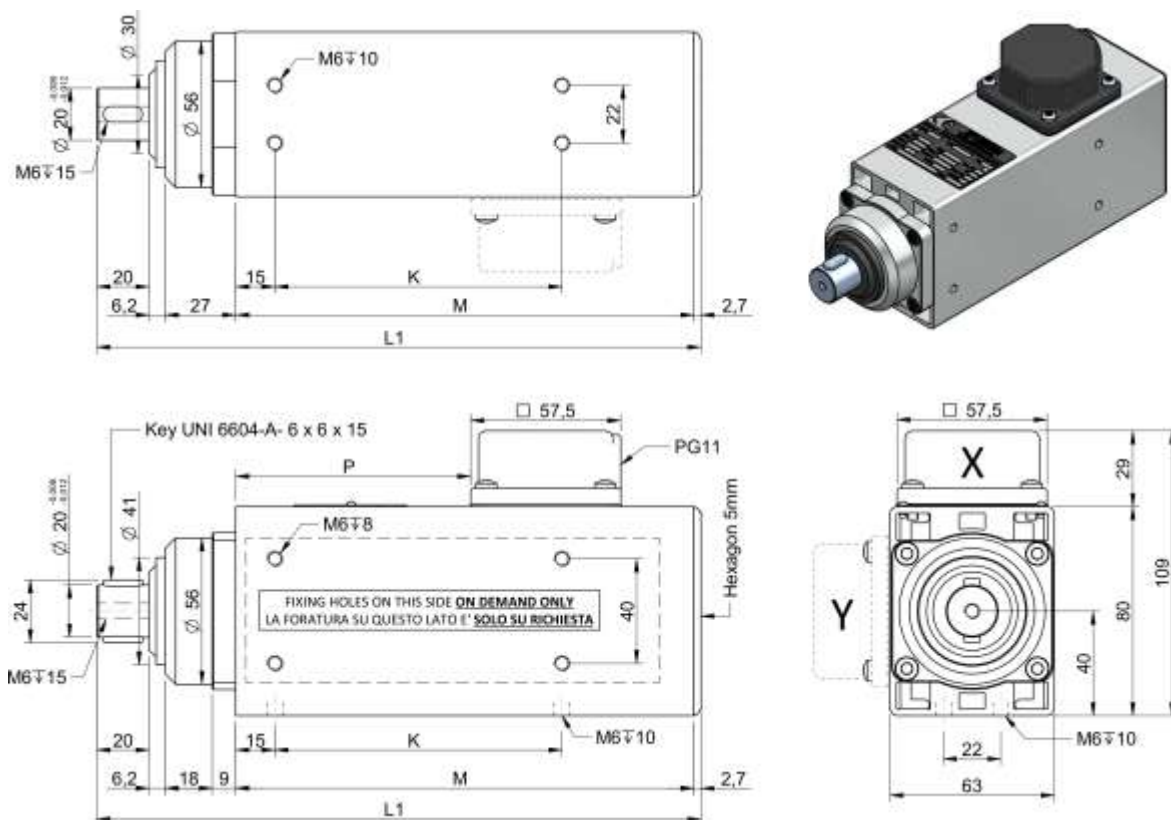
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C31/40 – A – SB	0.22	220 / 380	200	12000	1.6 / 0.9	2.8
C31/40 – B – SB	0.37	220 / 380	200	12000	2.1 / 1.2	3.2
C31/40 – C – SB	0.55	220 / 380	200	12000	2.7 / 1.5	3.5
C31/40 – D – SB	0.75	220 / 380	200	12000	3.1 / 1.8	3.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

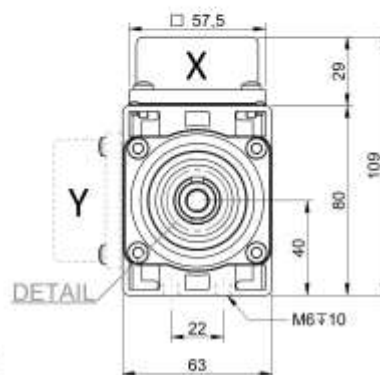
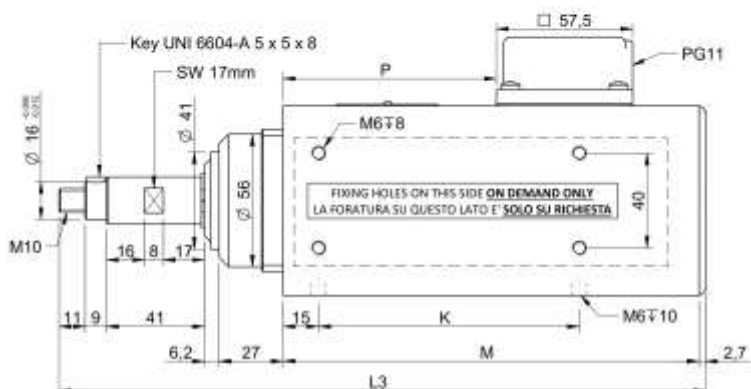
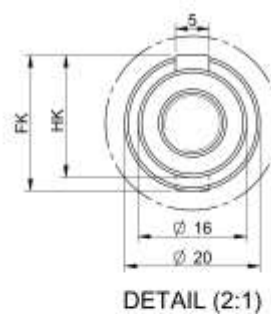
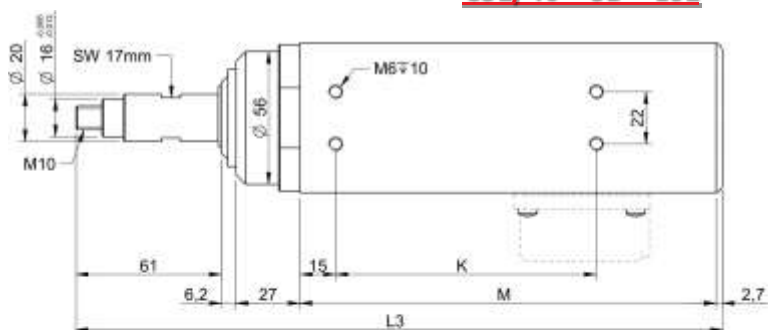
OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C31/40 – SB – L20



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C31/40–A–SB–L20	206.4	65	85	150.5
C31/40–B–SB–L20	231.4	90	110	175.5
C31/40–C–SB–L20	251.4	110	110	195.5
C31/40–D–SB–L20	261.4	120	110	205.5

C31/40 – SB – L61



TYPE – TIPO – TYP	L3 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C31/40-A-SB-L61	247.4	65	85	150.5	18	19
C31/40-B-SB-L61	272.4	90	110	175.5		
C31/40-C-SB-L61	292.4	110	110	195.5		
C31/40-D-SB-L61	302.4	120	110	205.5		



TEKNOMOTOR

HF motor C55



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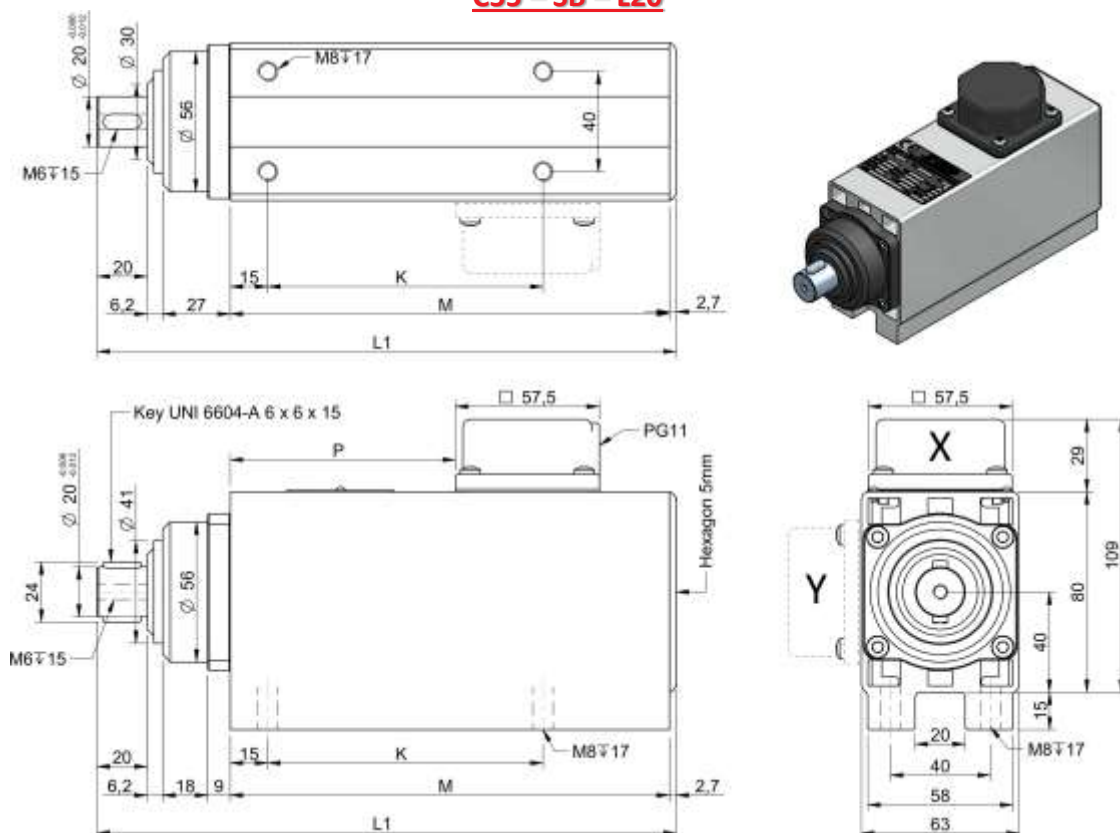
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55 – A – SB	0.22	220 / 380	200	12000	1.6 / 0.9	2.9
C55 – B – SB	0.37	220 / 380	200	12000	2.1 / 1.2	3.3
C55 – C – SB	0.55	220 / 380	200	12000	2.7 / 1.5	3.6
C55 – D – SB	0.75	220 / 380	200	12000	3.1 / 1.8	4.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

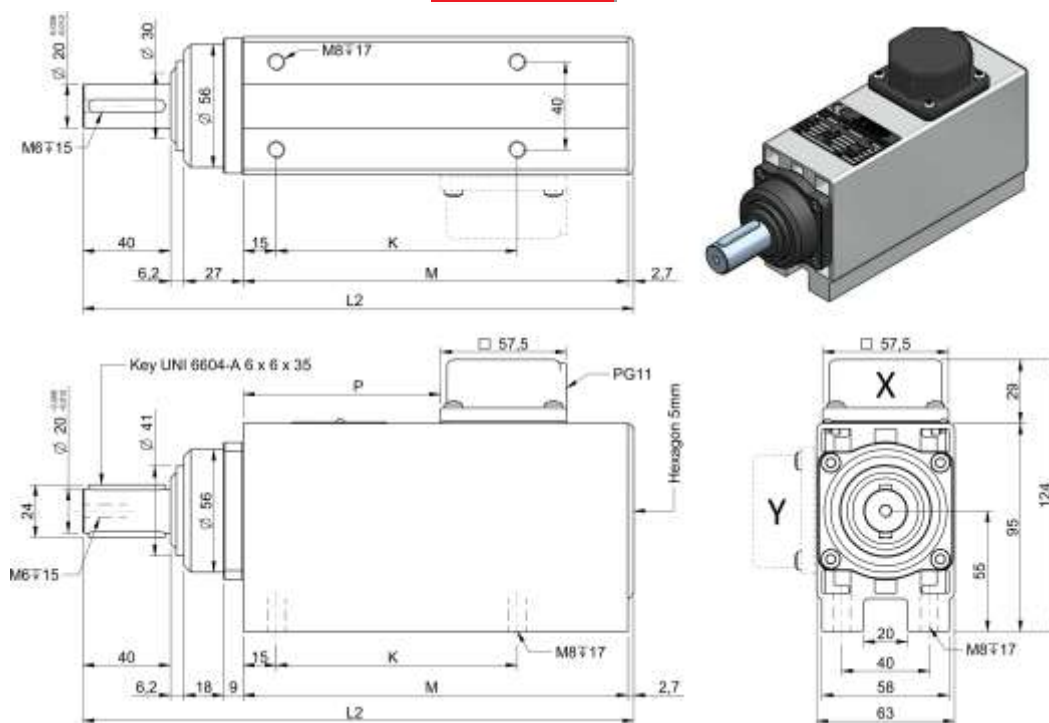
OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55 – SB – L20



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C55-A-SB-L20	206.4	65	90	150.5
C55-B-SB-L20	231.4	90	110	175.5
C55-C-SB-L20	251.4	110	130	195.5
C55-D-SB-L20	261.4	120	150	205.5

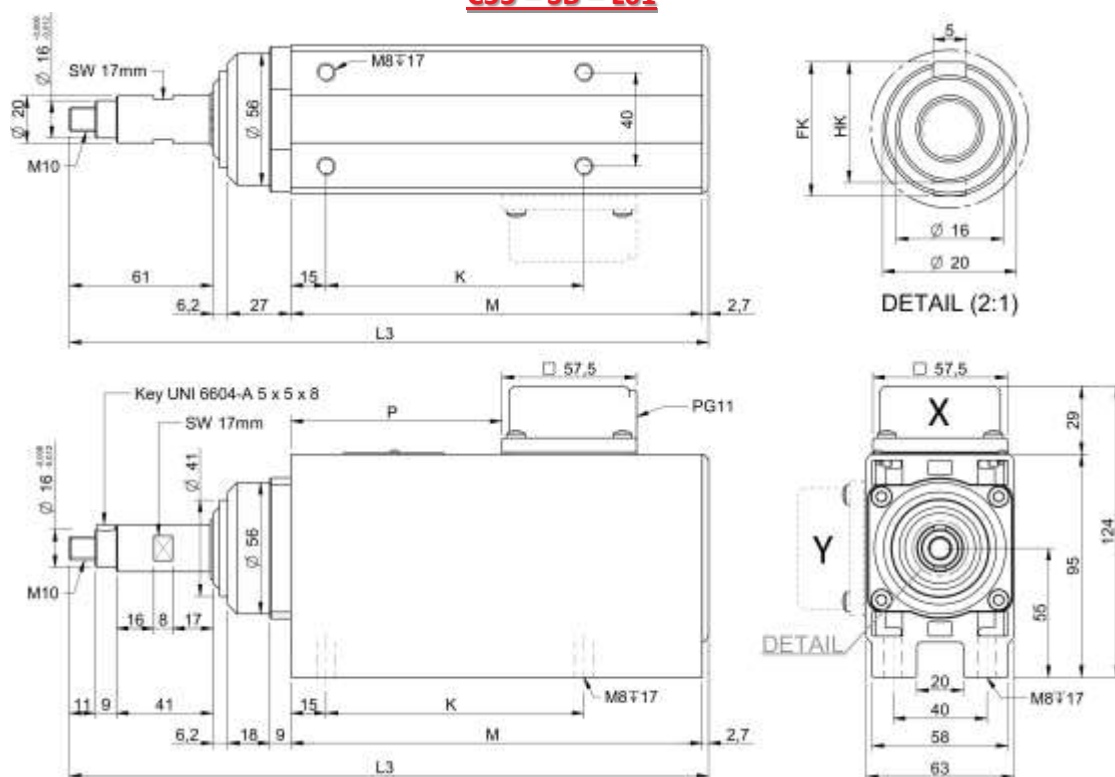
C55-SB-L40



TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]
C55-A-SB-L40	226.4	65	90	150.5
C55-B-SB-L40	251.4	90	110	175.5
C55-C-SB-L40	271.4	110	130	195.5
C55-D-SB-L40	291.4	120	150	205.5



C55 – SB – L61



TYPE – TIPO – TYP	L3 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C55-A-SB-L61	247.7	65	90	150.5	18	19
C55-B-SB-L61	272.7	90	110	175.5		
C55-C-SB-L61	292.7	110	130	195.5		
C55-D-SB-L61	312.7	120	150	205.5		



TEKNOMOTOR

HF motor C55K



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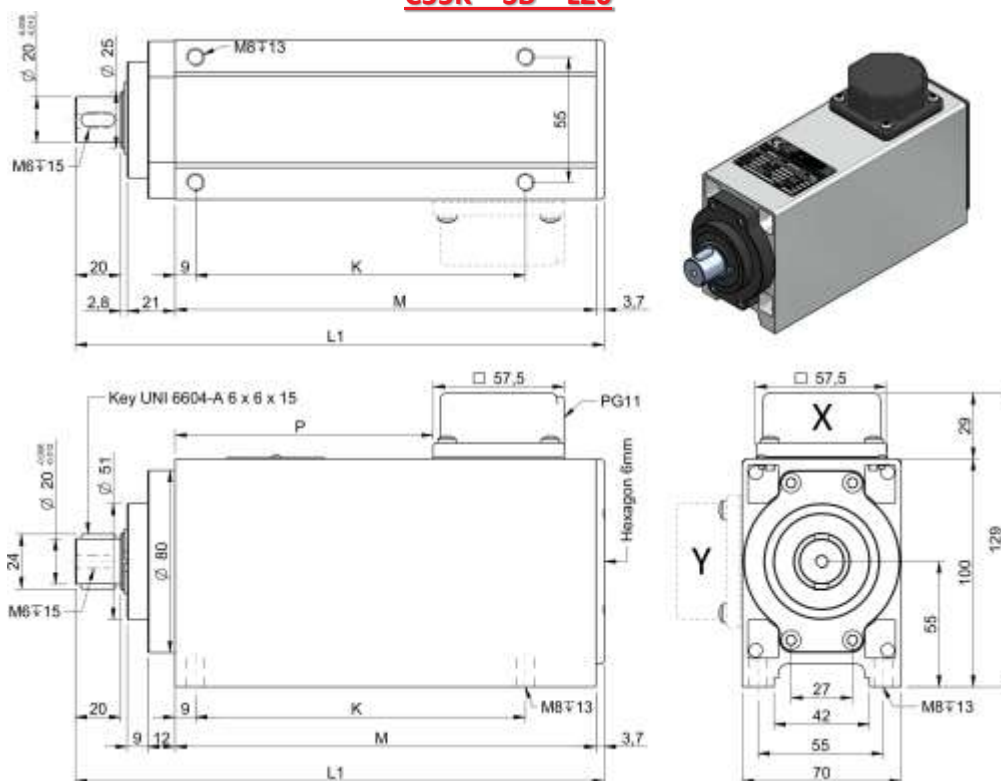
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55K – A – SB	0.30	220 / 380	100	6000	2.1 / 1.2	6.8
C55K – B – SB	0.45	220 / 380	100	6000	3.0 / 1.7	7.4
C55K – C – SB	0.60	220 / 380	100	6000	3.9 / 2.3	8.1
C55K – D – SB	0.75	220 / 380	100	6000	4.8 / 2.8	8.4
C55K – E – SB	0.90	220 / 380	100	6000	5.7 / 3.3	9.0
C55K – A – SB	0.70	220 / 380	200	12000	3.6 / 2.1	6.8
C55K – B – SB	1.00	220 / 380	200	12000	5.4 / 3.1	7.4
C55K – C – SB	1.40	220 / 380	200	12000	7.2 / 4.2	8.1
C55K – D – SB	1.60	220 / 380	200	12000	8.5 / 4.9	8.4
C55K – E – SB	2.00	220 / 380	200	12000	10.3 / 5.9	9.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

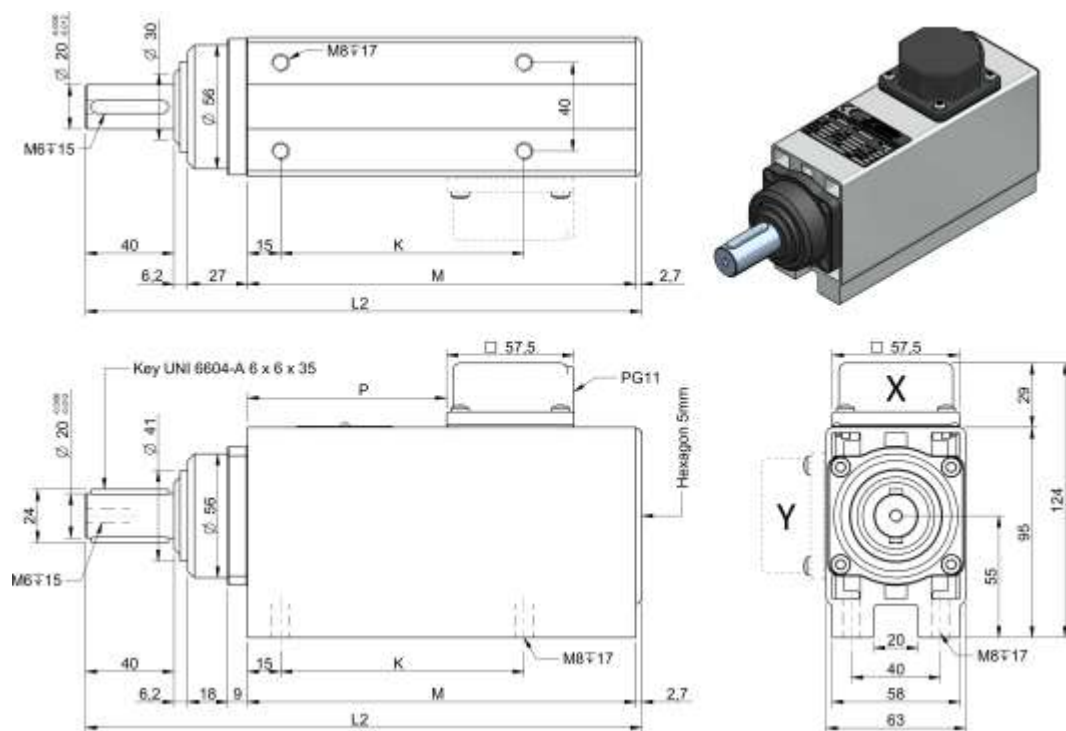
OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55K – SB – L20



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C55K-A-SB-L20	232.5	113.5	145	185
C55K-B-SB-L20	262.5	143.5	175	215
C55K-C-SB-L20	302.5	183.5	215	255
C55K-D-SB-L20	322.5	203.5	235	275
C55K-E-SB-L20	362.5	243.5	275	315

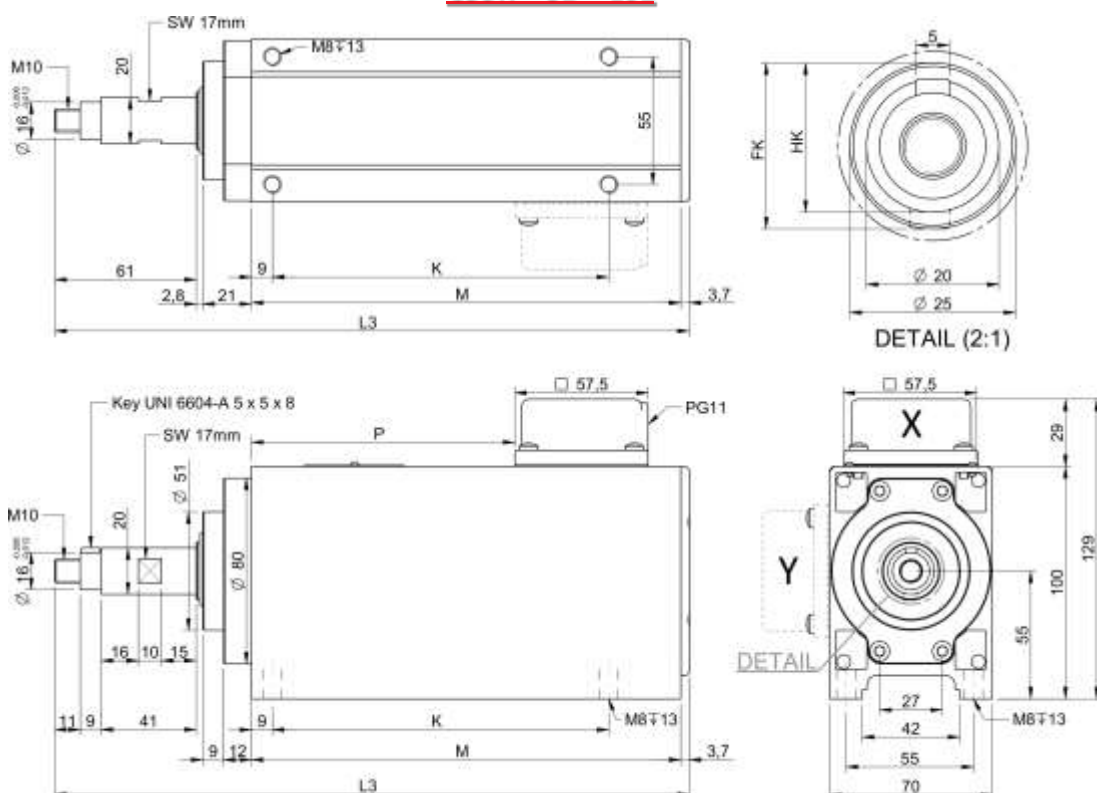
C55K – SB – L40



TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]
C55K-A-SB-L40	252.5	113.5	145	185
C55K-B-SB-L40	282.5	143.5	175	215
C55K-C-SB-L40	322.5	183.5	215	255
C55K-D-SB-L40	342.5	203.5	235	275
C55K-E-SB-L40	382.5	243.5	275	315



C55K – SB – L61

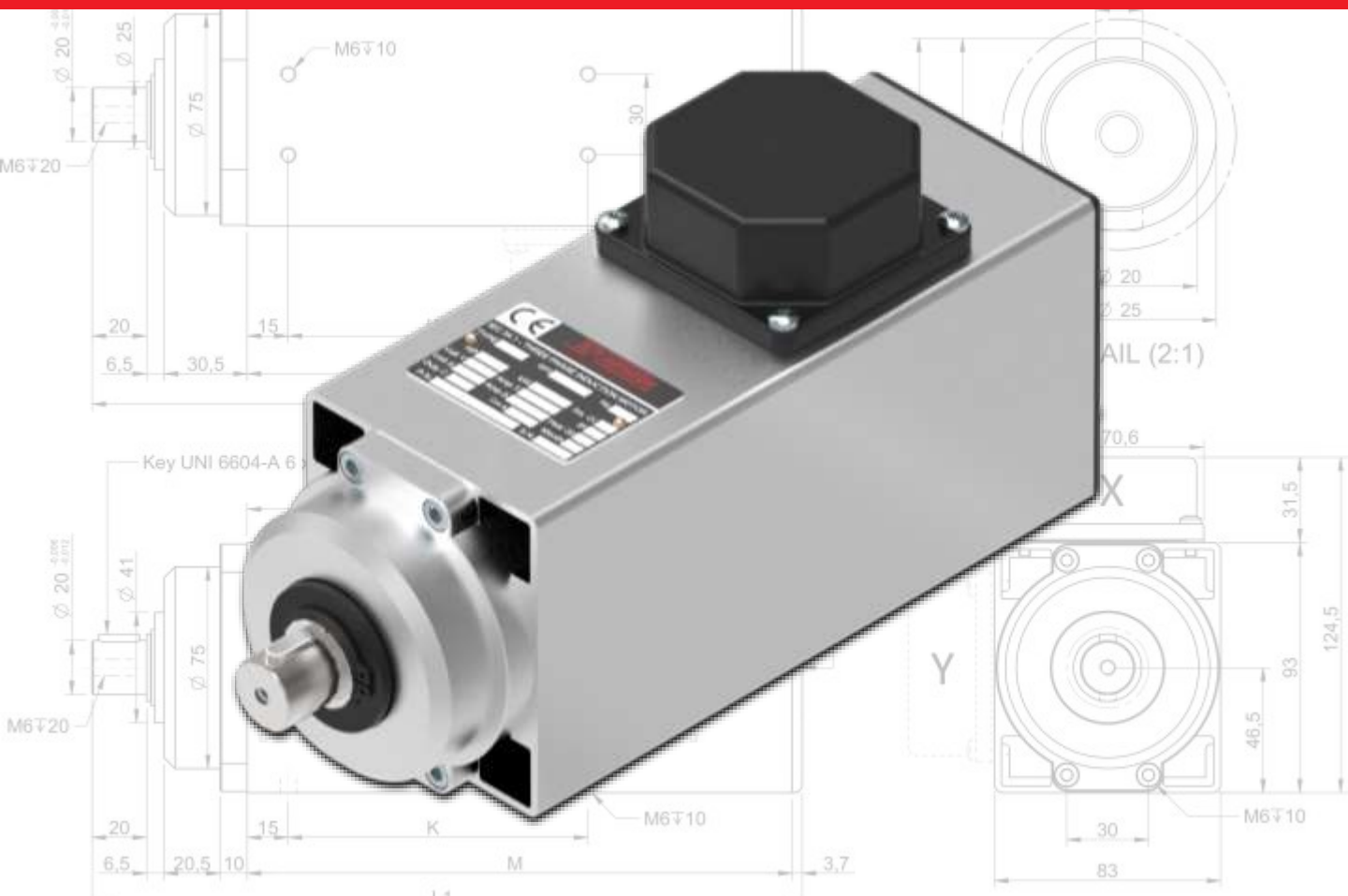


TYPE – TIPO – TYP	L3 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C55K-A-SB-L61	273.5	113.5	145	185	18	19
C55K-B-SB-L61	303.5	143.5	175	215		
C55K-C-SB-L61	343.5	183.5	215	255		
C55K-D-SB-L61	363.5	203.5	235	275		
C55K-E-SB-L61	403.5	243.5	275	315		



TEKNOMOTOR

HF motor C41/47



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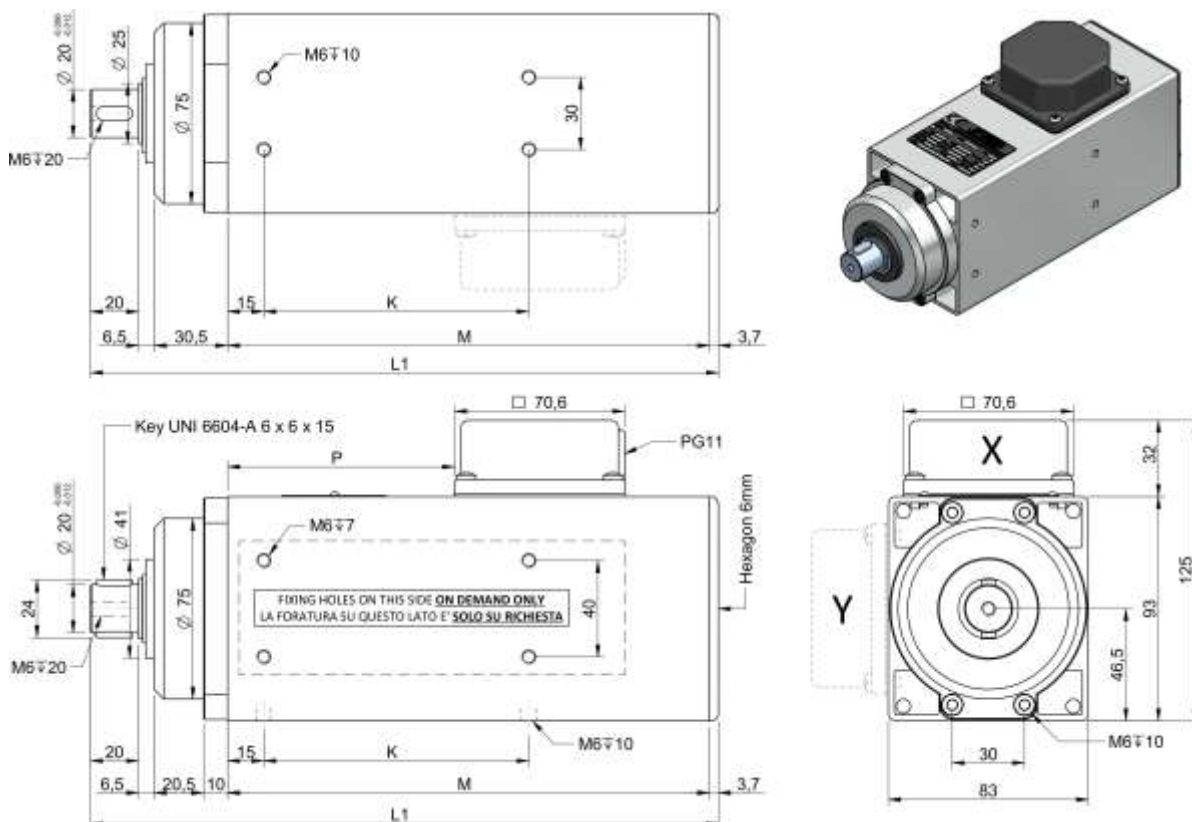
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C41/47 – A – SB	0.75	220 / 380	200	12000	4.2 / 2.4	4.7
C41/47 – B – SB	1.10	220 / 380	200	12000	5.4 / 3.1	5.3
C41/47 – C – SB	1.50	220 / 380	200	12000	6.7 / 3.9	6.6
C41/47 – D – SB	1.80	220 / 380	200	12000	8.0 / 4.6	7.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

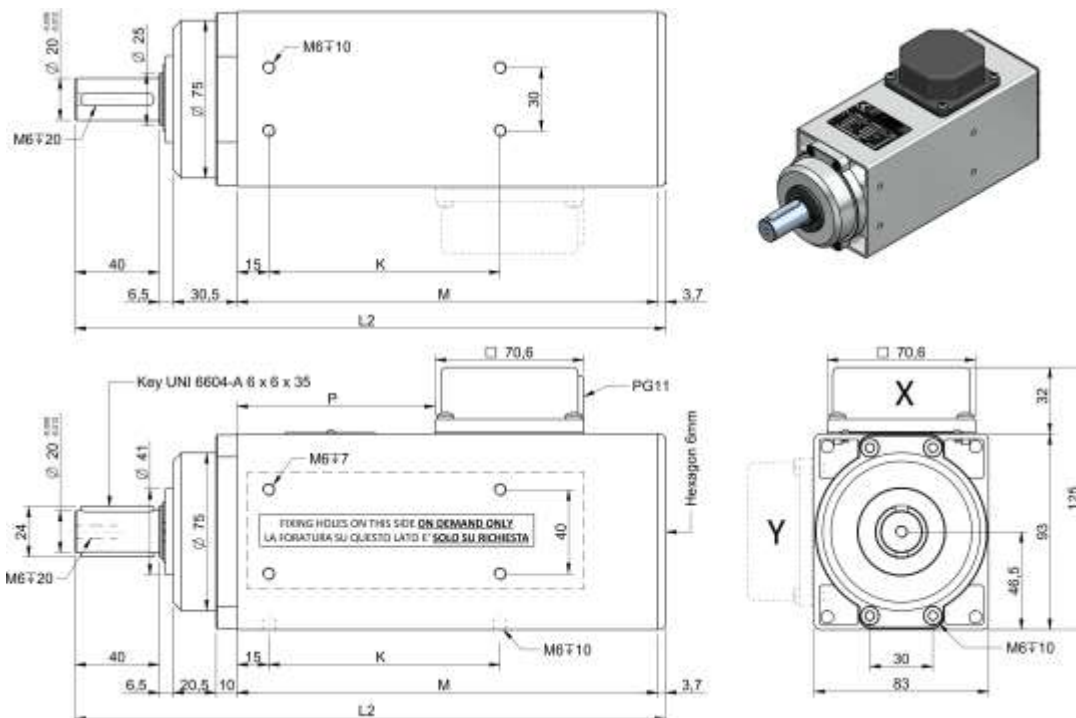
OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – SB – L20



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-SB-L20	245.7	79.2	110	185
C41/47-B-SB-L20	260.7	94.2	110	200
C41/47-C-SB-L20	280.7	114.2	110	220
C41/47-D-SB-L20	300.7	134.2	110	240

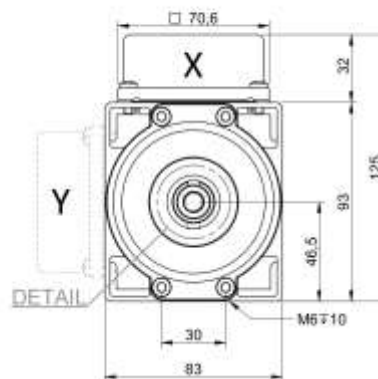
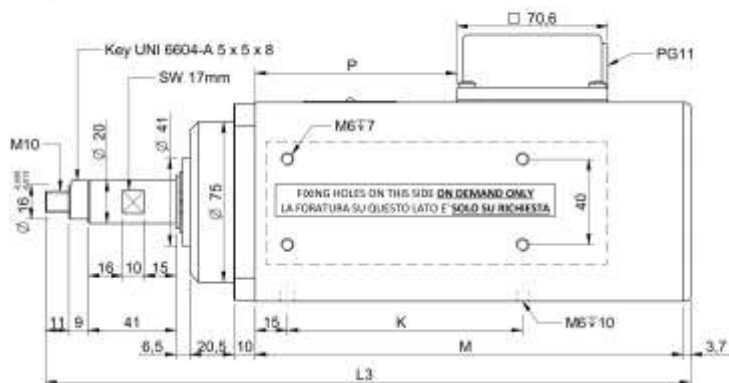
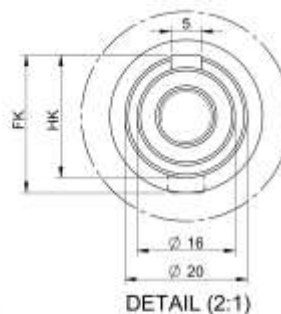
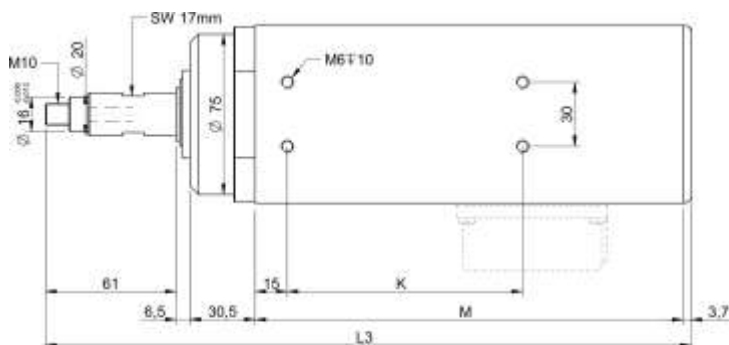
C41/47 – SB – L40



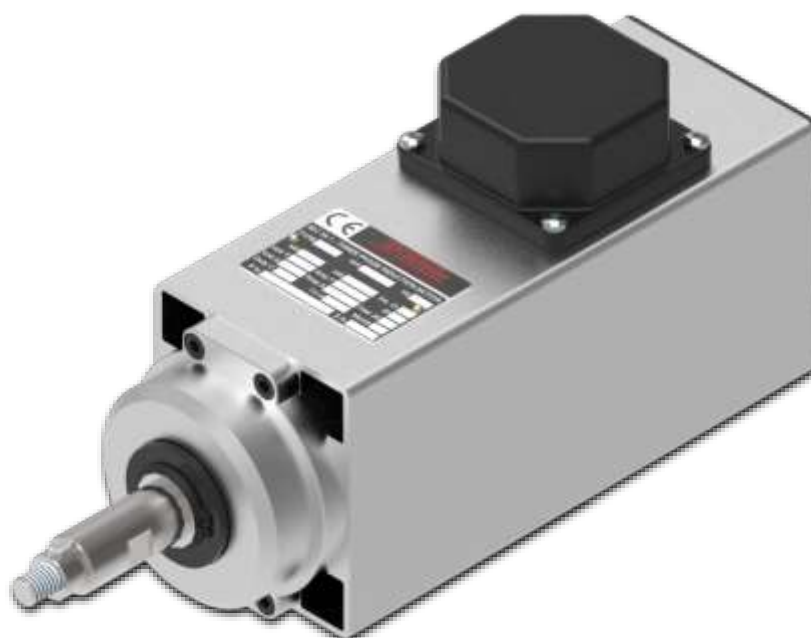
TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-SB-L40	265.7	79.2	110	185
C41/47-B-SB-L40	280.7	94.2	110	200
C41/47-C-SB-L40	300.7	114.2	110	220
C41/47-D-SB-L40	320.7	134.2	110	240



C41/47 – SB – L61

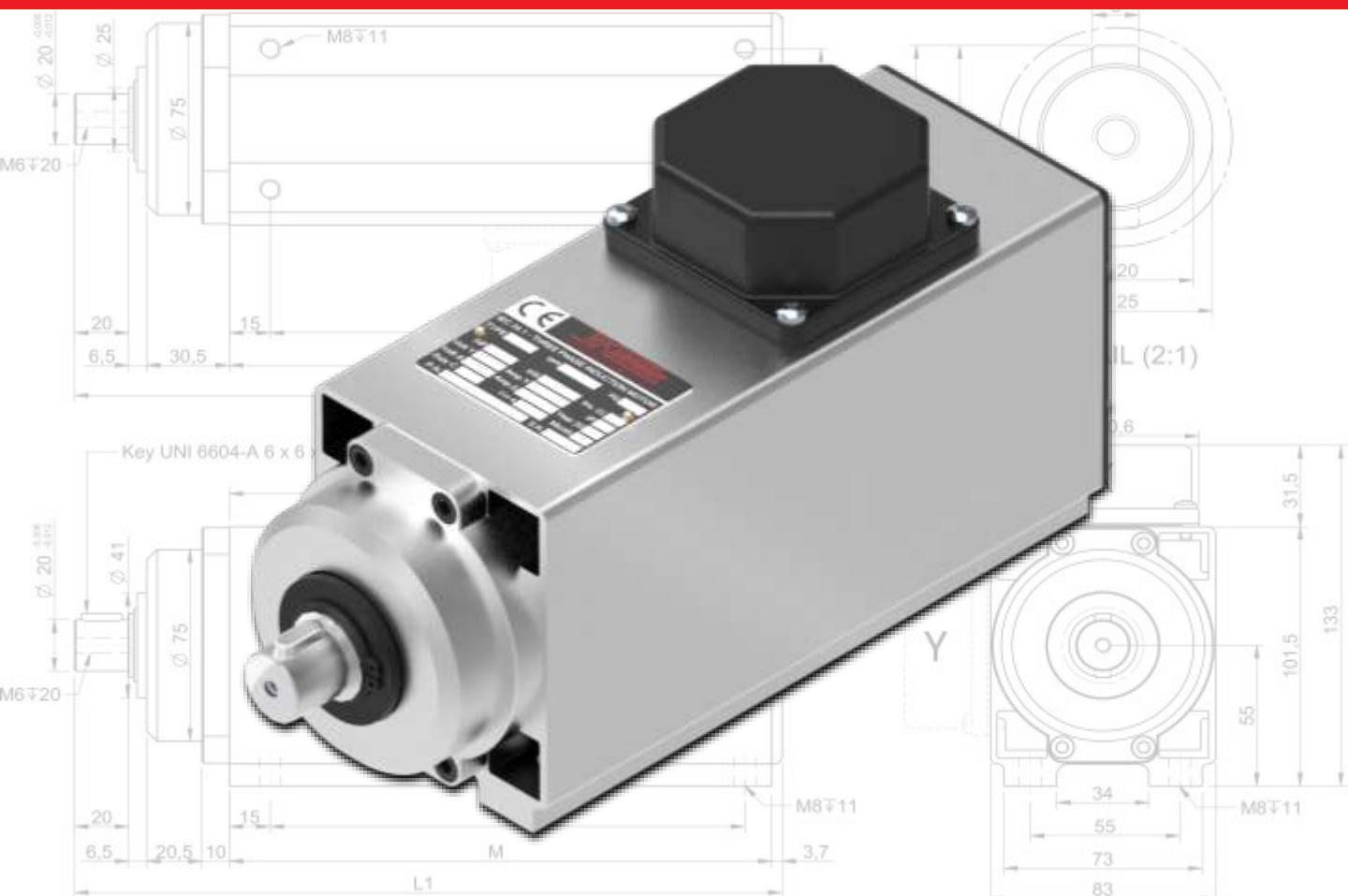


TYPE – TIPO – TYP	L3 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C41/47-A-SB-L61	286.7	79.2	110	185	18	19
C41/47-B-SB-L61	301.7	94.2	110	200		
C41/47-C-SB-L61	321.7	114.2	110	220		
C41/47-D-SB-L61	341.7	134.2	110	240		



TEKNOMOTOR

HF motor C55M



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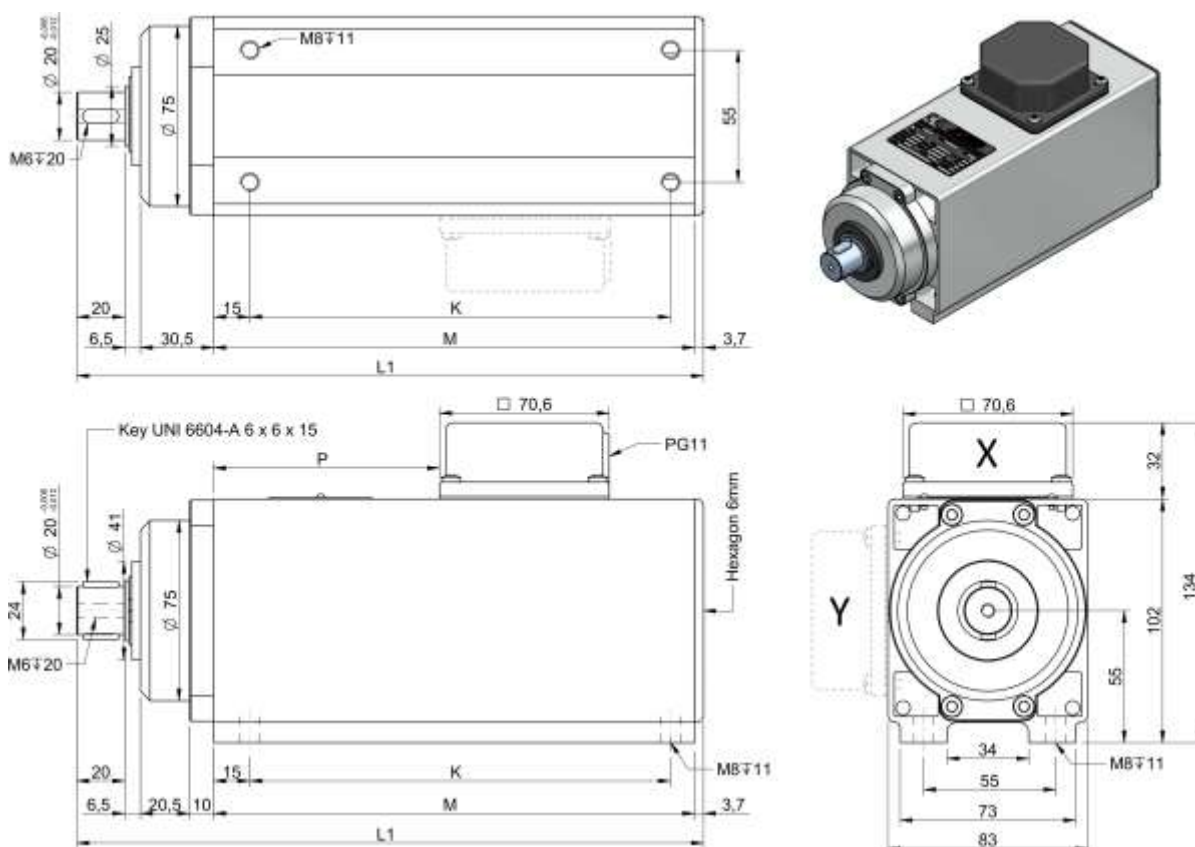
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55M – A – SB	0.75	220 / 380	200	12000	4.2 / 2.4	4.8
C55M – B – SB	1.10	220 / 380	200	12000	5.4 / 3.1	5.4
C55M – C – SB	1.50	220 / 380	200	12000	6.7 / 3.9	6.7
C55M – D – SB	1.80	220 / 380	200	12000	8.0 / 4.6	7.1

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

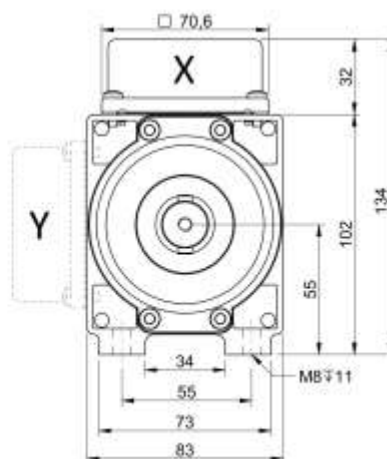
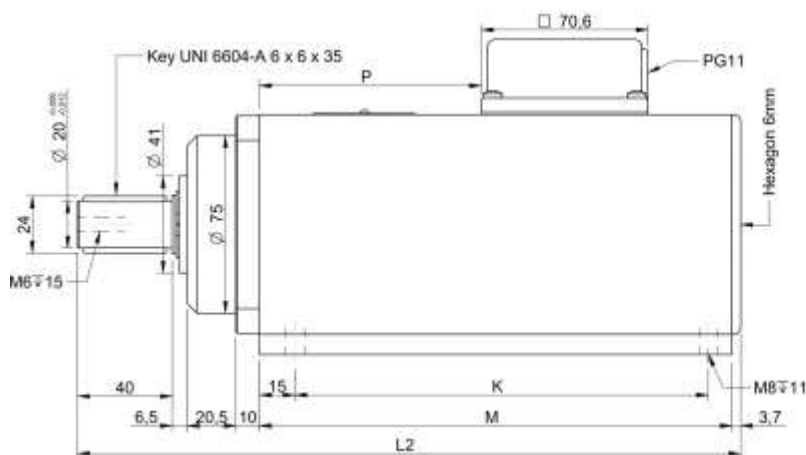
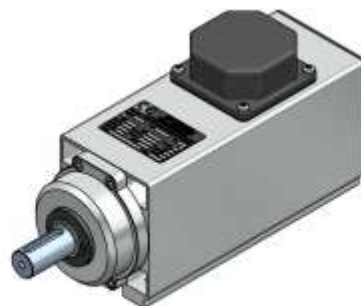
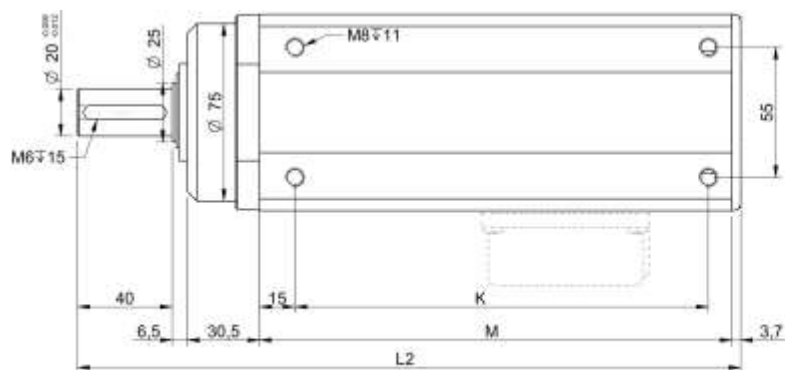
OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55M – SB – L20

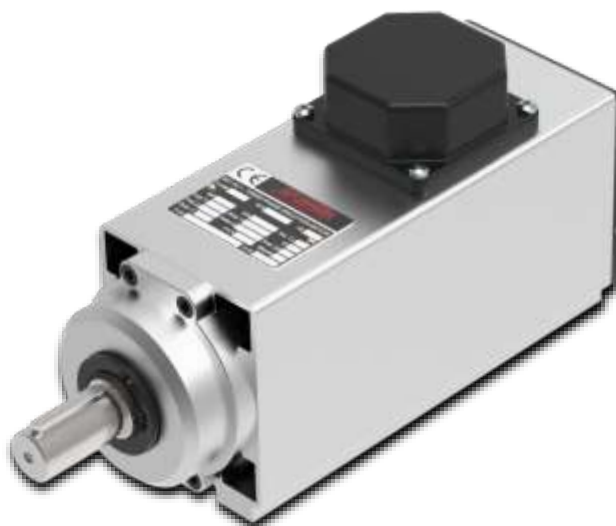


TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C55M-A-SB-L20	245.7	79.2	130	185
C55M-B-SB-L20	260.7	94.2	130	200
C55M-C-SB-L20	280.7	114.2	170	220
C55M-D-SB-L20	300.7	134.2	170	240

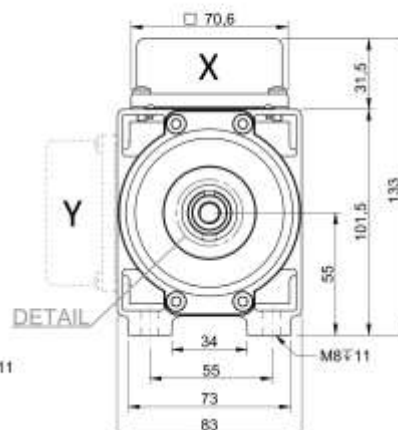
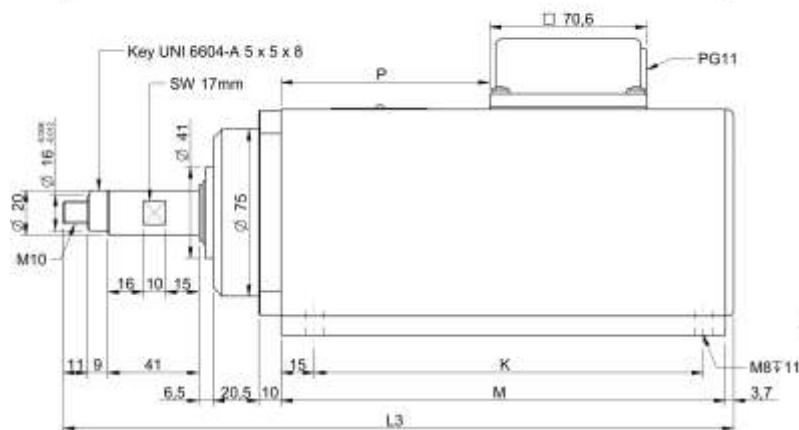
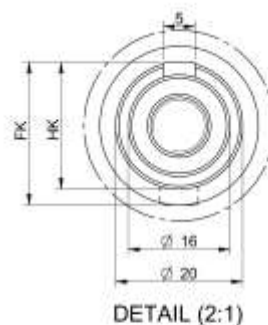
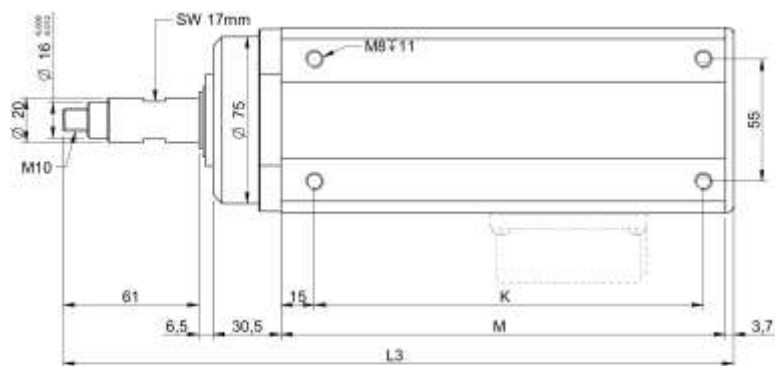
C55M – SB – L40



TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]
C55M-A-SB-L40	265.7	79.2	130	185
C55M-B-SB-L40	280.7	94.2	130	200
C55M-C-SB-L40	300.7	114.2	170	220
C55M-D-SB-L40	320.7	134.2	170	240



C55M – SB – L61



TYPE – TIPO – TYP	L3 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C55M-A-SB-L61	286.7	79.2	130	185	18	19
C55M-B-SB-L61	301.7	94.2	130	200		
C55M-C-SB-L61	321.7	114.2	170	220		
C55M-D-SB-L61	341.7	134.2	170	240		



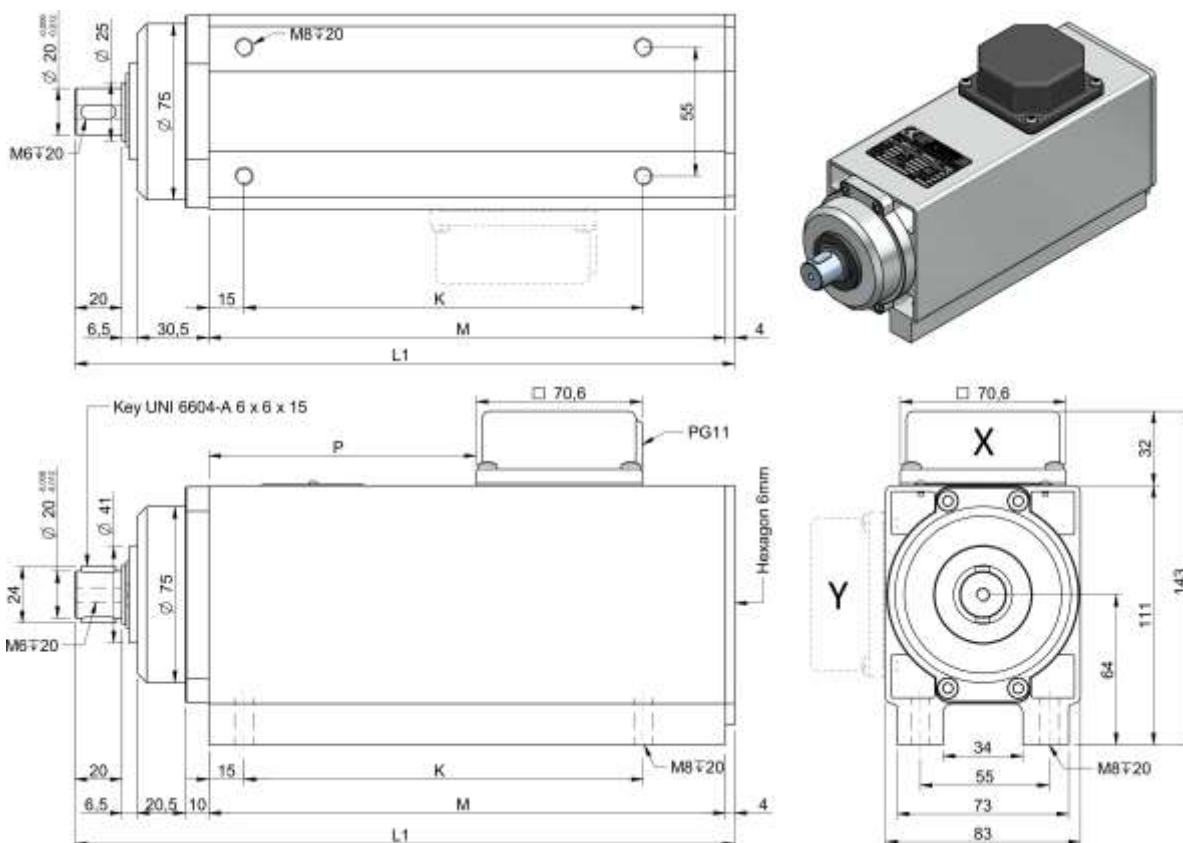
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C64 – A – SB	0.75	220 / 380	200	12000	4.2 / 2.4	4.8
C64 – B – SB	1.10	220 / 380	200	12000	5.4 / 3.1	5.4
C64 – C – SB	1.50	220 / 380	200	12000	6.7 / 3.9	6.7
C64 – D – SB	1.80	220 / 380	200	12000	8.0 / 4.6	7.1

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

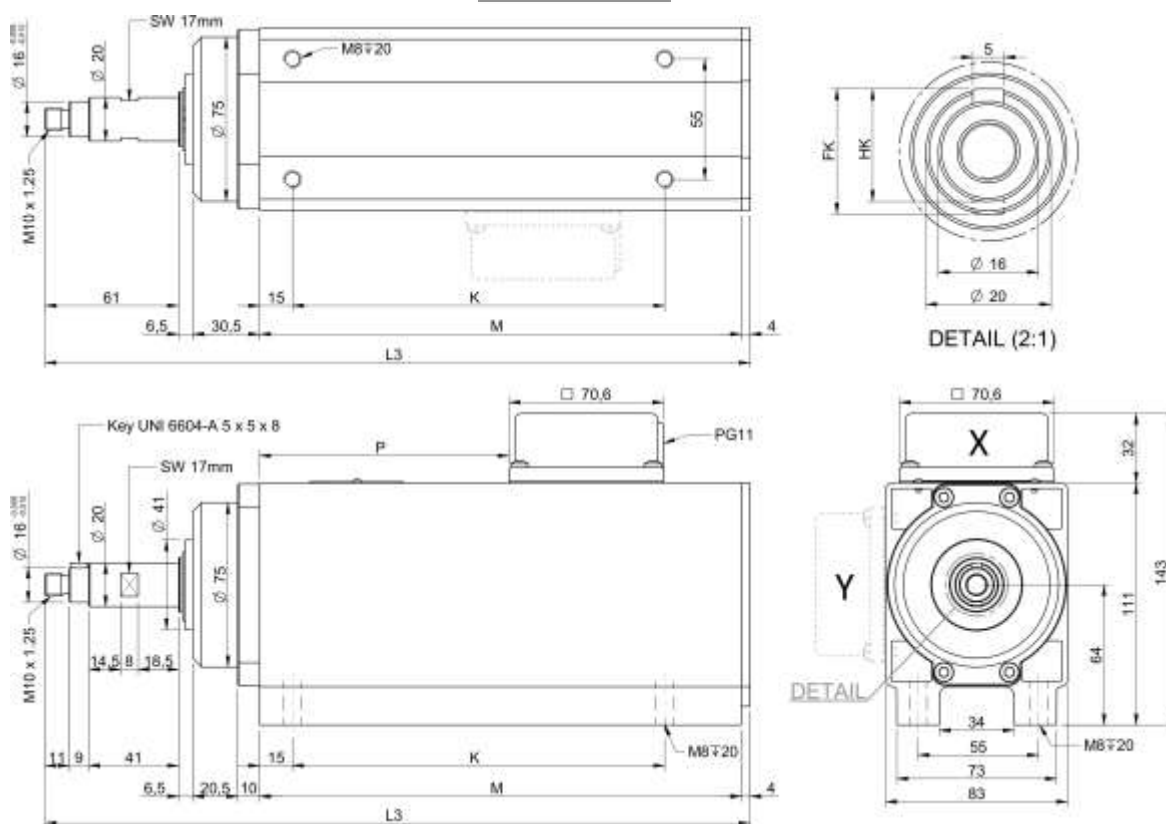
OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C64 – SB – L20

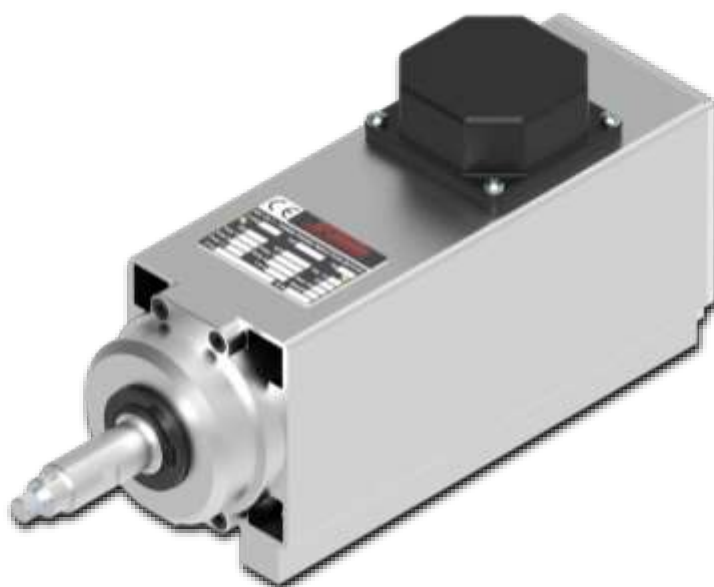


TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C64-A-SB-L20	245.7	79.2	130	185
C64-B-SB-L20	260.7	94.2	130	200
C64-C-SB-L20	280.7	114.2	170	220
C64-D-SB-L20	300.7	134.2	170	240

C64 – SB – L61



TYPE – TIPO – TYP	L3 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C64-A-SB-L61	286.7	79.2	130	185	18	19
C64-B-SB-L61	301.7	94.2	130	200		
C64-C-SB-L61	321.7	114.2	170	220		
C64-D-SB-L61	341.7	134.2	170	240		



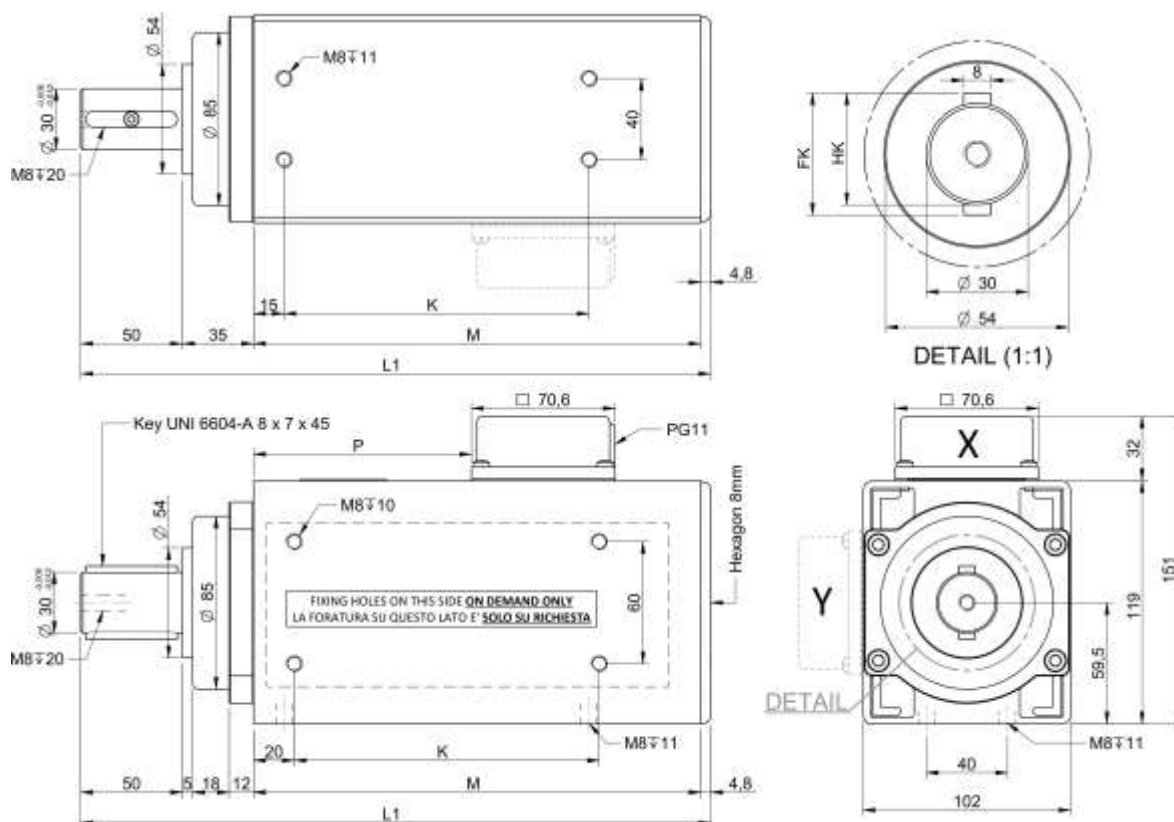
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60 – D – SB	1.1	220 / 380	50	3000	5.5 / 3.15	12.5
C51/60 – D – SB	2.2	220 / 380	100	6000	9.9 / 5.7	12.5
C51/60 – A – SB	2.2	220 / 380	200	12000	9.7 / 5.6	11.0
C51/60 – B – SB	2.6	220 / 380	200	12000	10.4 / 6.0	11.3
C51/60 – C – SB	3.0	220 / 380	200	12000	12.5 / 7.2	12.0
C51/60 – D – SB	3.7	220 / 380	200	12000	15.0 / 8.7	12.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – SB – L50



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C51/60-A-SB-L50	309.8	107.2	150	220	33	35
C51/60-B-SB-L50	319.8	117.2	150	230		
C51/60-C-SB-L50	339.8	137.2	200	250		
C51/60-D-SB-L50	349.8	147.2	200	260		

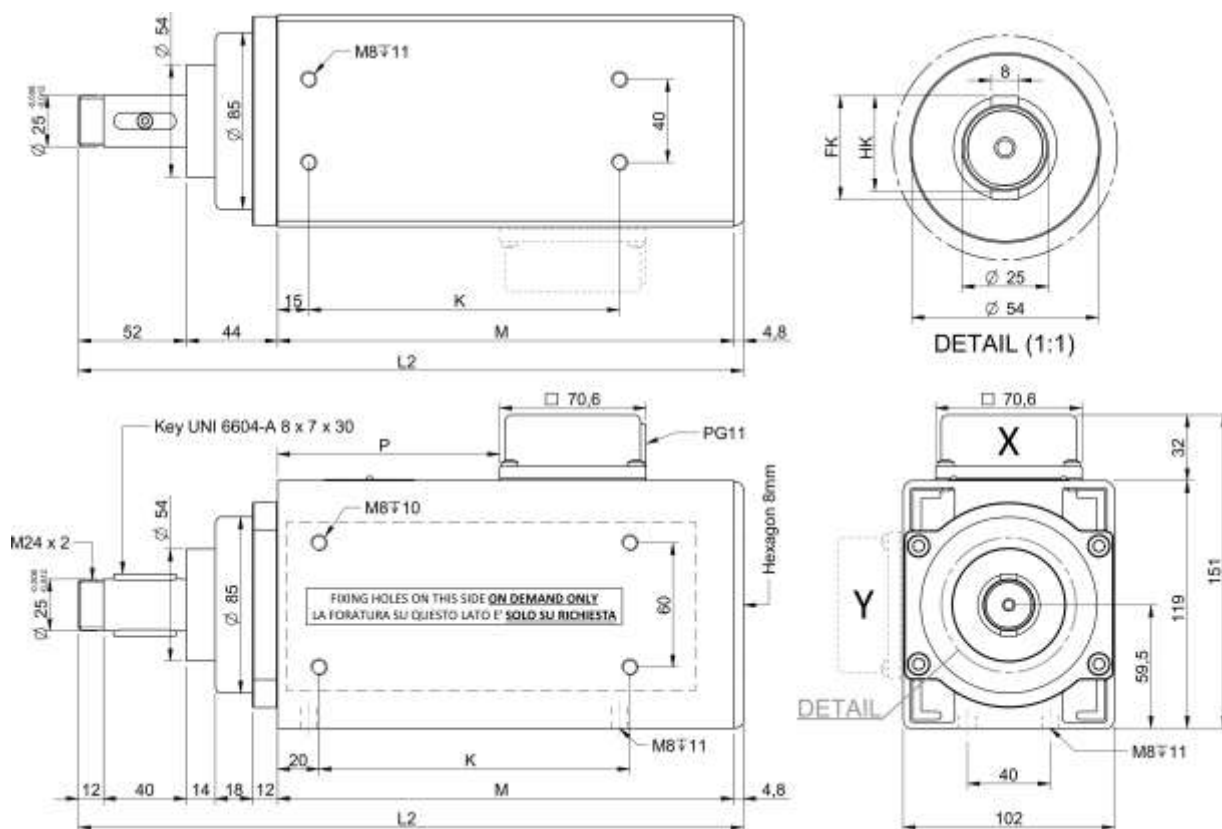
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60 – D – SB	1.1	220 / 380	50	3000	5.5 / 3.15	12.5
C51/60 – D – SB	2.2	220 / 380	100	6000	9.9 / 5.7	12.5
C51/60 – A – SB	2.2	220 / 380	200	12000	9.7 / 5.6	11.0
C51/60 – B – SB	2.6	220 / 380	200	12000	10.4 / 6.0	11.3
C51/60 – C – SB	3.0	220 / 380	200	12000	12.5 / 7.2	12.0
C51/60 – D – SB	3.7	220 / 380	200	12000	15.0 / 8.7	12.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – SB – L52



TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C51/60-A-SB-L52	320.8	107.2	150	220	28	30
C51/60-B-SB-L52	330.8	117.2	150	230		
C51/60-C-SB-L52	350.8	137.2	200	250		
C51/60-D-SB-L52	360.8	147.2	200	260		



TEKNOMOTOR

HF motor C55P



TEKNOMOTOR

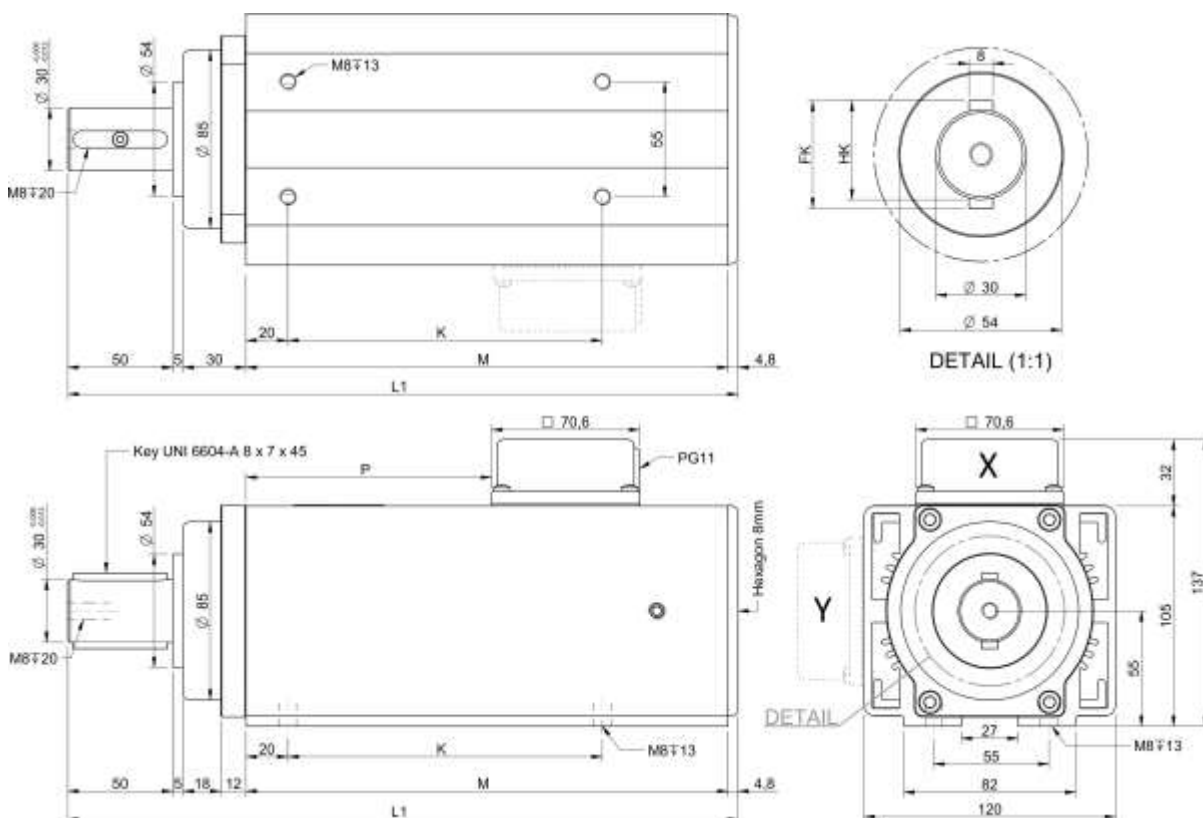
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55P – D – SB	1.1	220 / 380	50	3000	5.5 / 3.15	12.5
C55P – D – SB	2.2	220 / 380	100	6000	9.9 / 5.7	12.5
C55P – A – SB	2.2	220 / 380	200	12000	9.7 / 5.6	11.0
C55P – B – SB	2.6	220 / 380	200	12000	10.4 / 6.0	11.3
C55P – C – SB	3.0	220 / 380	200	12000	12.5 / 7.2	12.0
C55P – D – SB	3.7	220 / 380	200	12000	15.0 / 8.7	12.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55P – SB – L50



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C55P-A-SB-L50	309.8	107.2	150	220	33	35
C55P-B-SB-L50	319.8	117.2	150	230		
C55P-C-SB-L50	339.8	137.2	200	250		
C55P-D-SB-L50	349.8	147.2	200	260		

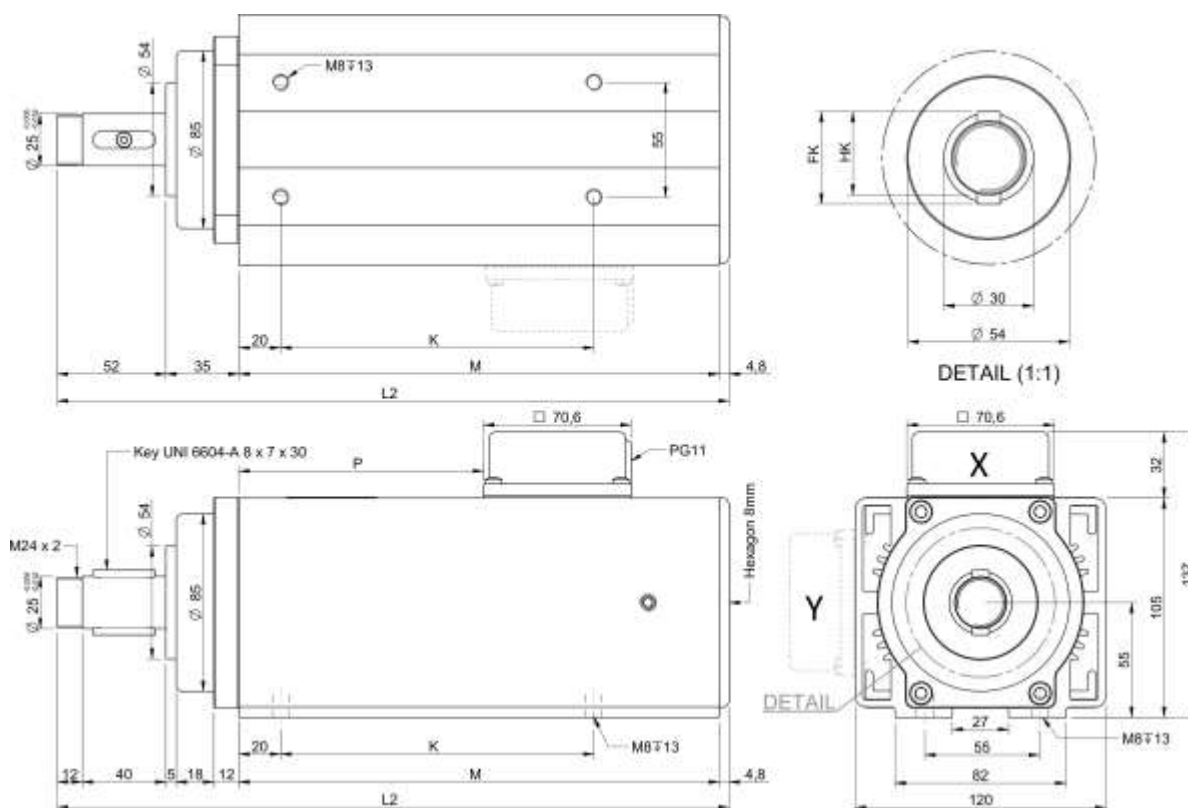
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55P – D – SB	1.1	220 / 380	50	3000	5.5 / 3.15	12.5
C55P – D – SB	2.2	220 / 380	100	6000	9.9 / 5.7	12.5
C55P – A – SB	2.2	220 / 380	200	12000	9.7 / 5.6	11.0
C55P – B – SB	2.6	220 / 380	200	12000	10.4 / 6.0	11.3
C55P – C – SB	3.0	220 / 380	200	12000	12.5 / 7.2	12.0
C55P – D – SB	3.7	220 / 380	200	12000	15.0 / 8.7	12.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55P – SB – L52



TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C55P-A-SB-L52	320.8	107.2	150	220	28	30
C55P-B-SB-L52	330.8	117.2	150	230		
C55P-C-SB-L52	350.8	137.2	200	250		
C55P-D-SB-L52	360.8	147.2	200	260		



TEKNOMOTOR

HF motor C60/67



TEKNOMOTOR

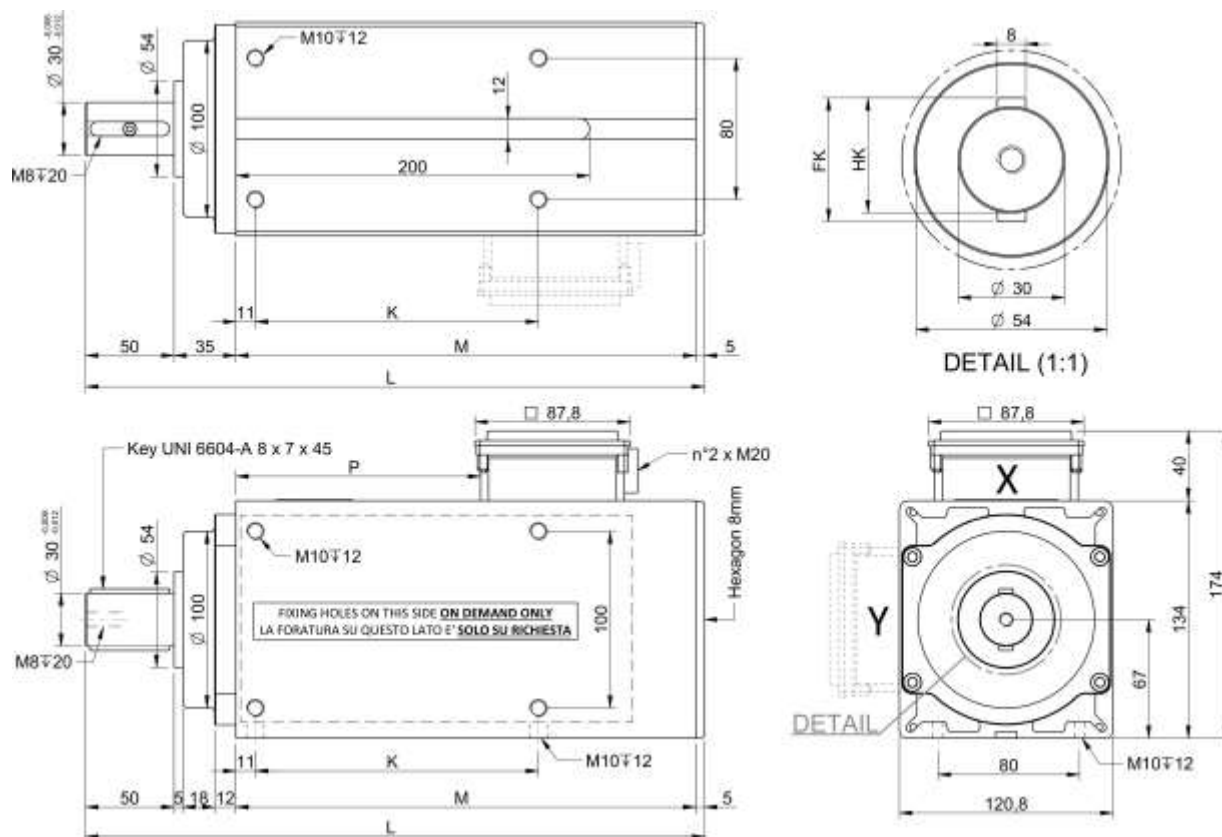
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C60/67 – A – SB	1.25	220 / 380	50	3000	5.6 / 3.2	10.3
C60/67 – D – SB	1.6	220 / 380	50	3000	7.0 / 4.2	16.1
C60/67 – A – SB	1.9	220 / 380	100	6000	7.6 / 4.4	10.3
C60/67 – D – SB	3.3	220 / 380	100	6000	12.8 / 7.4	16.1
C60/67 – A – SB	3.0	220 / 380	200	12000	12.3 / 7.1	10.3
C60/67 – D – SB	4.5	220 / 380	200	12000	18.2 / 10.6	16.1

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C60/67 – SB – L50



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]	HK [mm]	FK [mm]
C60/67-A-SB-L50	310	88.4	160	220	33	35
C60/67-D-SB-L50	350	138.4	160	260		

HIGH FREQUENCY MOTORS WITH CIRCULAR SAW

GENERAL INFORMATION

The HF motors (High Frequency motors) with circular saw have been designed to develop high speeds and powers with limited overall dimensions.

The standard models work between 800 and 18000 rpm. The available powers go from 0.22 to 11.0 kW (view [power vs speed table](#)).

These features make them ideal for use on machines for machining wood, aluminum alloys and plastics.

Because of their structural features, the HF motors can withstand primarily radial loads.

A key aspect in the choice of a BT motor is the direction of the shaft thread.

In order to avoid extremely dangerous situations, either for the safety of operators or for the integrity of the machines, for example due to loosening of the nut; we report the following simple criterion to identify the correct direction of the thread.

By looking at the motor from the front:

- If the motor rotates **CLOCKWISE**, the thread must be **counterclockwise (LEFT)**.
- If the motor rotates **COUNTER-CLOCKWISE**, the thread must be **clockwise (RIGHT)**.

INFORMAZIONI GENERALI

I motori HF (High Frequency motors) per sega circolare sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano tra 800 e 18000 rpm. Le potenze variano tra 0.22 e 11.0 kW (vedi [power vs speed table](#)).

Queste caratteristiche li rendono ideali per l'applicazione su macchine per la lavorazione del legno, delle leghe di alluminio e delle materie plastiche.

Per le loro caratteristiche costruttive, i motori HF sopportano carichi di tipo prevalentemente radiale.

Un aspetto fondamentale nella scelta di un motore BT è il verso di filettatura dell'albero.

Onde evitare inconvenienti estremamente pericolosi sia per la sicurezza degli operatori che per l'integrità delle macchine, dovuti ad esempio all'allentamento del dado; si riporta nel seguito un criterio semplice e immediato per identificare in pochi secondi il verso corretto della filettatura.

Guardando il motore dal lato anteriore:

- Se il motore gira in senso **ORARIO**, il filetto dovrà essere in senso **antiorario (SINISTRO)**.
- Se il motore gira in senso **ANTIORARIO**, il filetto dovrà essere in senso **orario (DESTRO)**.

ALLGEMEINE INFORMATIONEN

Die HF-Motoren (High Frequency Motors) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen.

Die Standardmodelle sind zwischen 800 und 18000 U/min tätig. Die Leistungen variieren zwischen 0.22 und 11.0 kW (siehe [power vs speed table](#)).

Dafür sind sie für den Einsatz an Maschinen für die Holz- bzw. Aluminiumlegierungs- und Kunststoffbearbeitung geeignet.

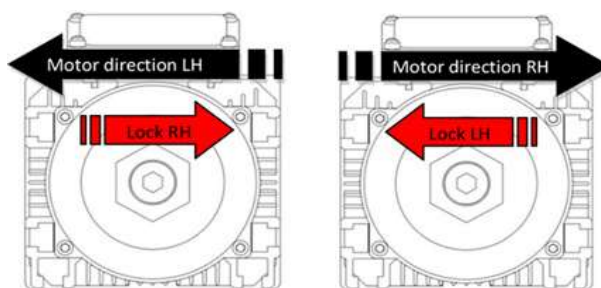
Dank ihrer Bauweise können sie vorwiegend Radialbelastungen standhalten.

Entscheidend für die Wahl eines Motors BT ist die Gewindeschneiderichtung der Welle.

Um sowohl für die Sicherheit der Bediener als auch für die Integrität der Maschinen äußerst gefährliche Schäden zu vermeiden, die z. B. durch das Lockern einer Mutter bedingt sind, wird nun hier auf eine prompte und einfache Weise darauf hingewiesen, wie man in wenigen Sekunden die richtige Gewindeschneiderichtung bestimmt.

Vorderansicht:

- Wenn der Motor sich **im HRZEIGERSINN** dreht, muss das Gewinde gegen den **Uhrzeigersinn (LINKS HERUM)** sein.
- Wenn der Motor sich **gegen den HRZEIGERSINN** dreht, muss das Gewinde gegen den **Uhrzeigersinn (RECHTS HERUM)** sein.



TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTECTION GRADE
	TYPE	INSULATION	TYPE	BALANCING GRADE			
HF motors with circular saw	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Shaft driven fan cooling.	IP 50 (IP 60 on request)

The motors conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the motor cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

I motori sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che il motore non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Motoren entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 3: HF MOTORS WITH CIRCULAR SAW

[C24/31](#)

(0.22 – 0.27 kW)



[C35](#)

(0.22 – 0.50 kW)



[NC35](#)

(0.22 – 0.73 kW)



[C31/40](#)

(0.22 – 0.75 kW)



[C55](#)

(0.22 – 0.75 kW)



[C55K](#)

(0.3 – 2.2 kW)



[C41/47](#)

(0.75 – 1.8 kW)



[C55M](#)

(0.75 – 1.8 kW)



[C64](#)

(0.75 – 1.8 kW)



[C51/60](#)

(1.1 – 3.7 kW)



[C55P](#)

(1.1 – 3.7 kW)



[C60/67](#)

(1.25 – 4.5 kW)



[C71/80](#)

(1.5 – 5.5 kW)



[C85/90](#)

(5.5 – 11.0 kW)



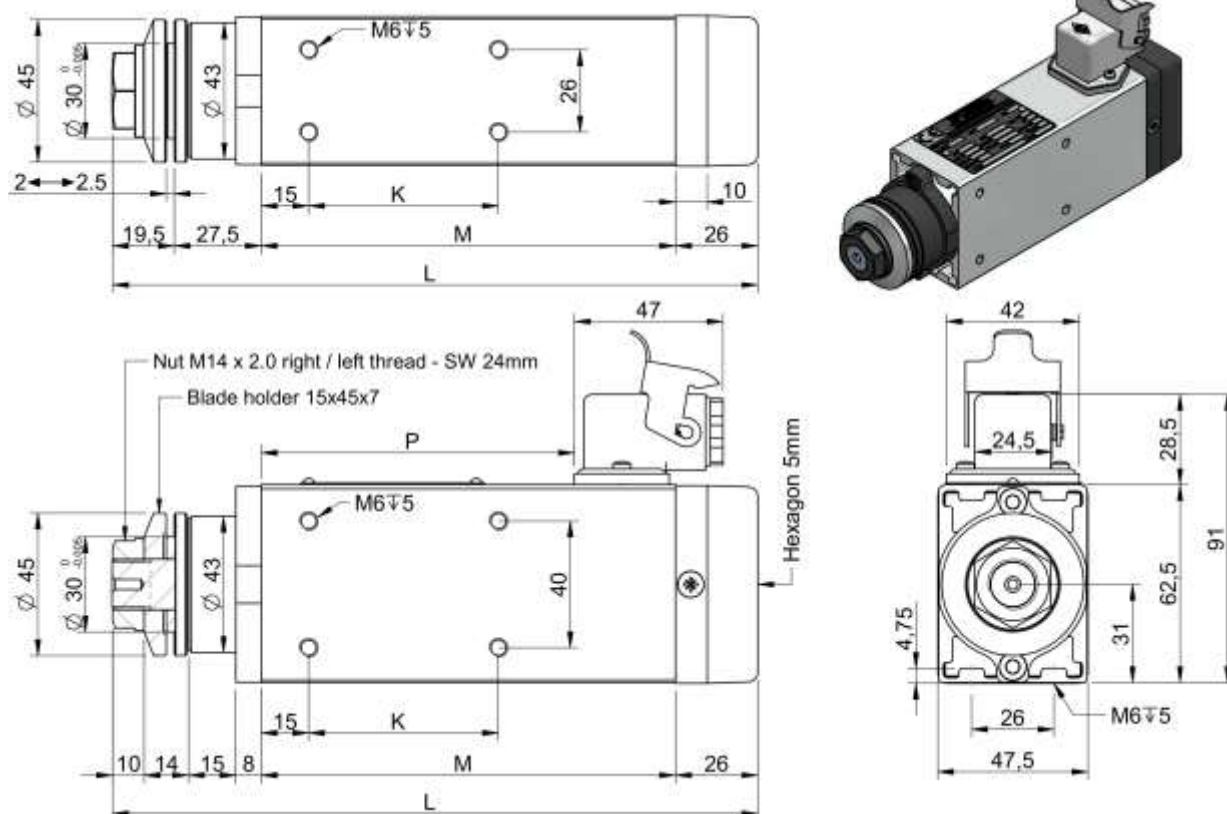
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C24/31–A–SB–BT	0.22	220	200	12000	1.3	1.8
C24/31–A–SB–BT	0.22	380	200	12000	0.7	1.8
C24/31–B–SB–BT	0.27	220	200	12000	1.4	2.0
C24/31–B–SB–BT	0.27	380	200	12000	0.8	2.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C24/31 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C24/31–A–SB–BT	189	84	60	116
C24/31–B–SB–BT	204	99	60	131

TEKNOMOTOR

HF motor C35



TEKNOMOTOR

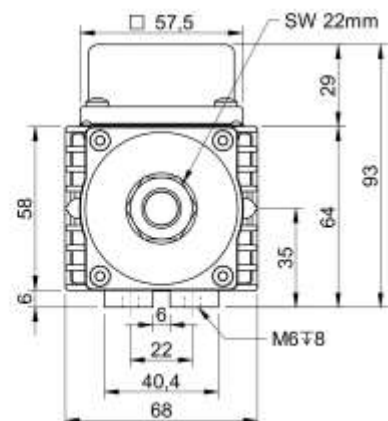
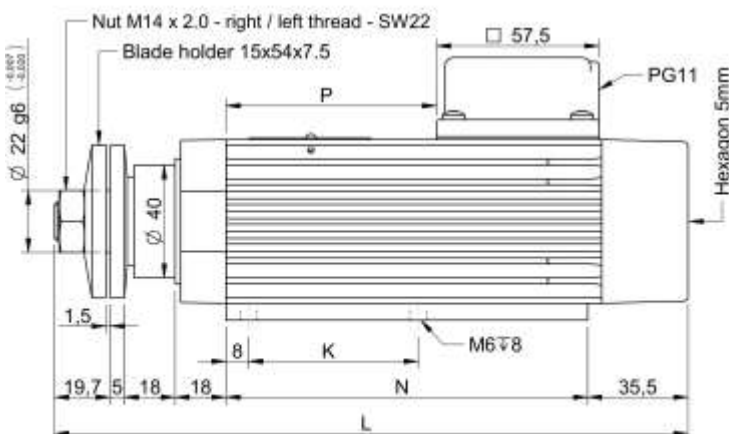
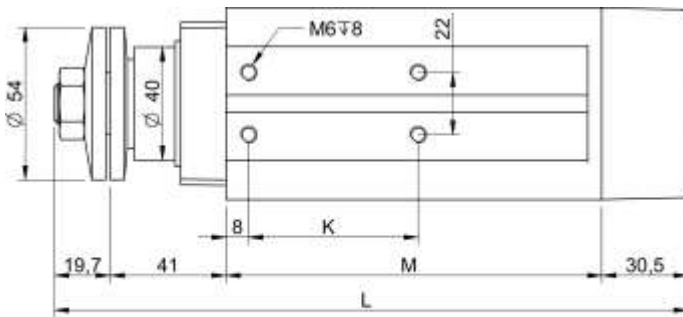
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C35-A-SB-BT	0.22	220 / 380	200	12000	1.6 / 0.9	2.2
C35-B-SB-BT	0.37	220 / 380	200	12000	2.1 / 1.2	2.7
C35-C-SB-BT	0.50	220 / 380	200	12000	2.7 / 1.5	3.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C35 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]	N [mm]
C35-A-SB-BT	199.2	49.5	40	108	103
C35-B-SB-BT	224.2	74.5	60	133	128
C35-C-SB-BT	239.2	89.5	60	148	143

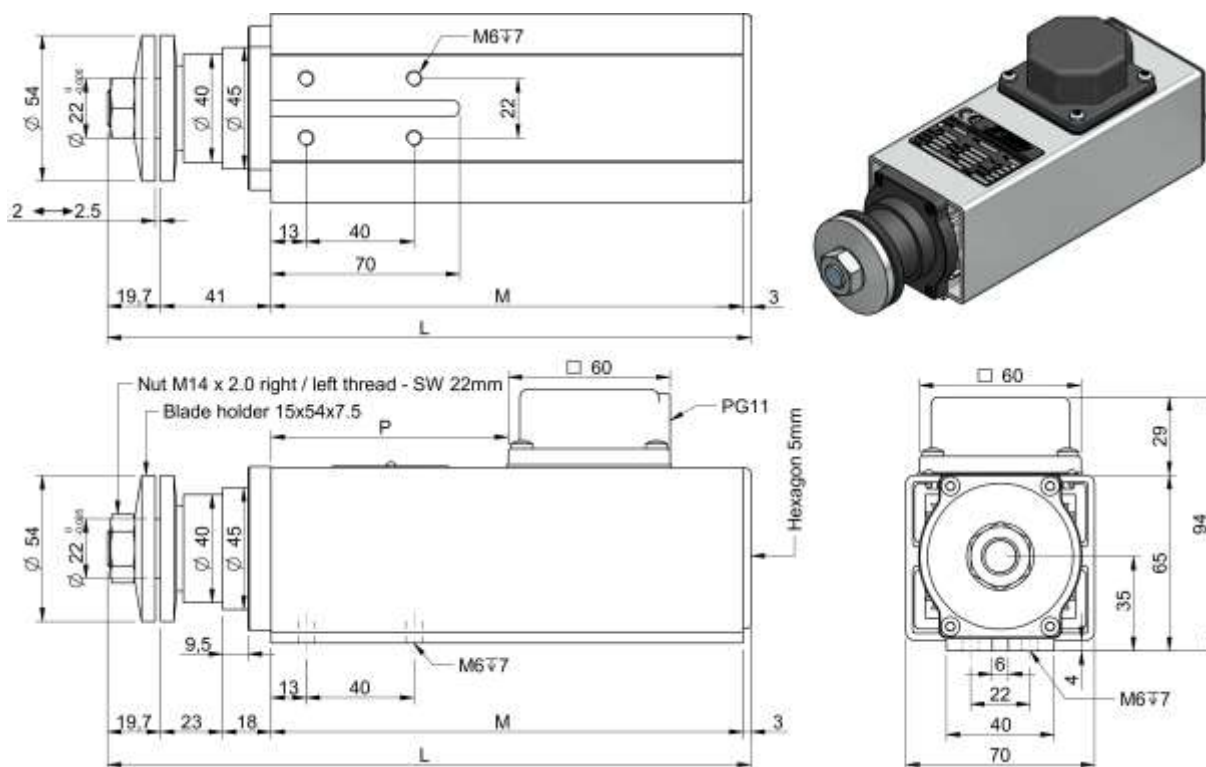
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
NC35-A-SB-BT	0.22	220 / 380	200	12000	1.6 / 0.9	2.9
NC35-AA-SB-BT	0.35	220 / 380	200	12000	2.1 / 1.2	3.0
NC35-B-SB-BT	0.37	220 / 380	200	12000	2.1 / 1.2	3.3
NC35-C-SB-BT	0.55	220 / 380	200	12000	2.7 / 1.5	3.5
NC35-D-SB-BT	0.73	220 / 380	200	12000	3.1 / 1.8	4.1

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

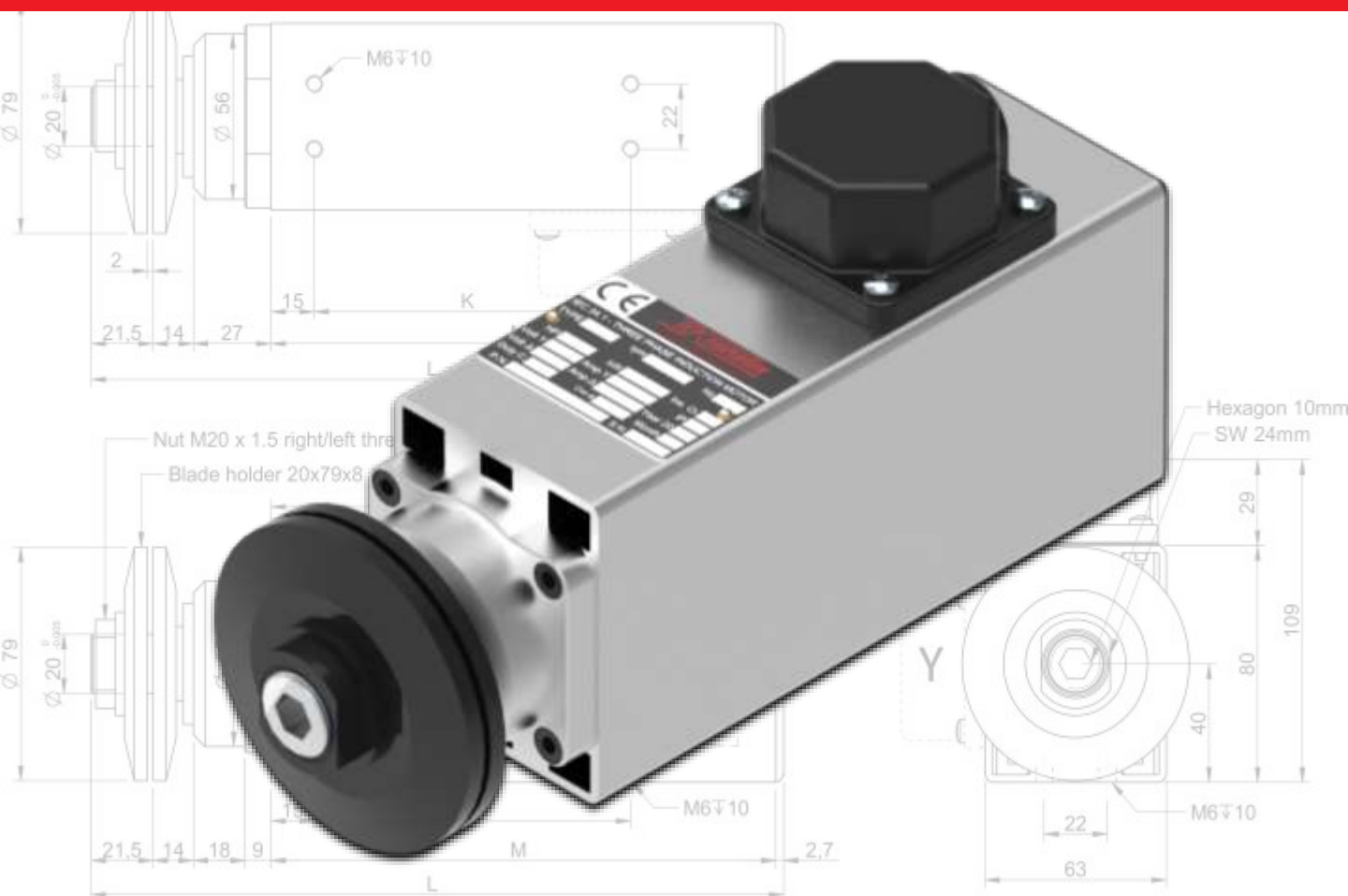
NC35 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
NC35-A-SB-BT	198.7	48	135
NC35-AA-SB-BT	198.7	48	135
NC35-B-SB-BT	223.7	73	160
NC35-C-SB-BT	238.7	88	175
NC35-D-SB-BT	258.7	108	195

TEKNOMOTOR

HF motor C31/40



TEKNOMOTOR

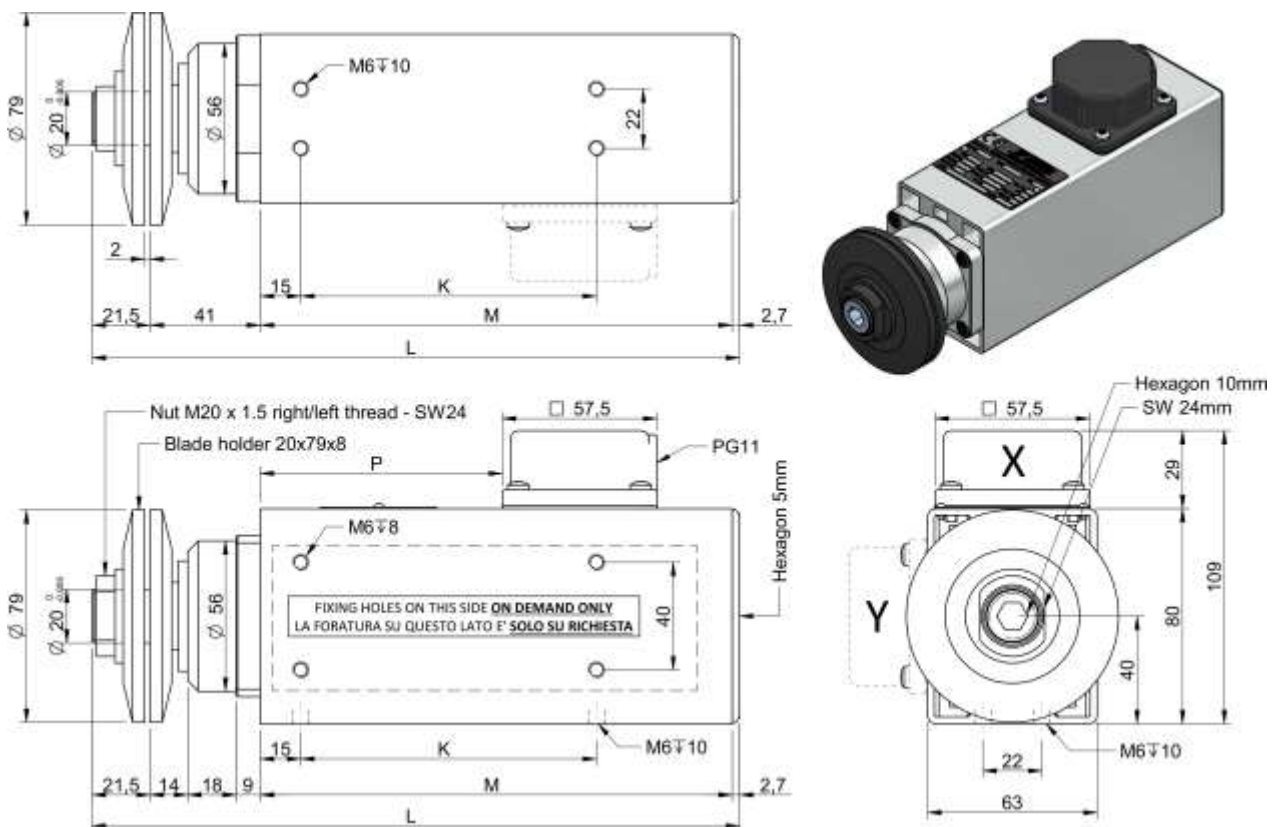
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C31/40-A-SB-BT	0.22	220 / 380	200	12000	1.6 / 0.9	3.2
C31/40-B-SB-BT	0.37	220 / 380	200	12000	2.1 / 1.2	3.6
C31/40-C-SB-BT	0.55	220 / 380	200	12000	2.7 / 1.5	3.9
C31/40-D-SB-BT	0.75	220 / 380	200	12000	3.1 / 1.8	4.3

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

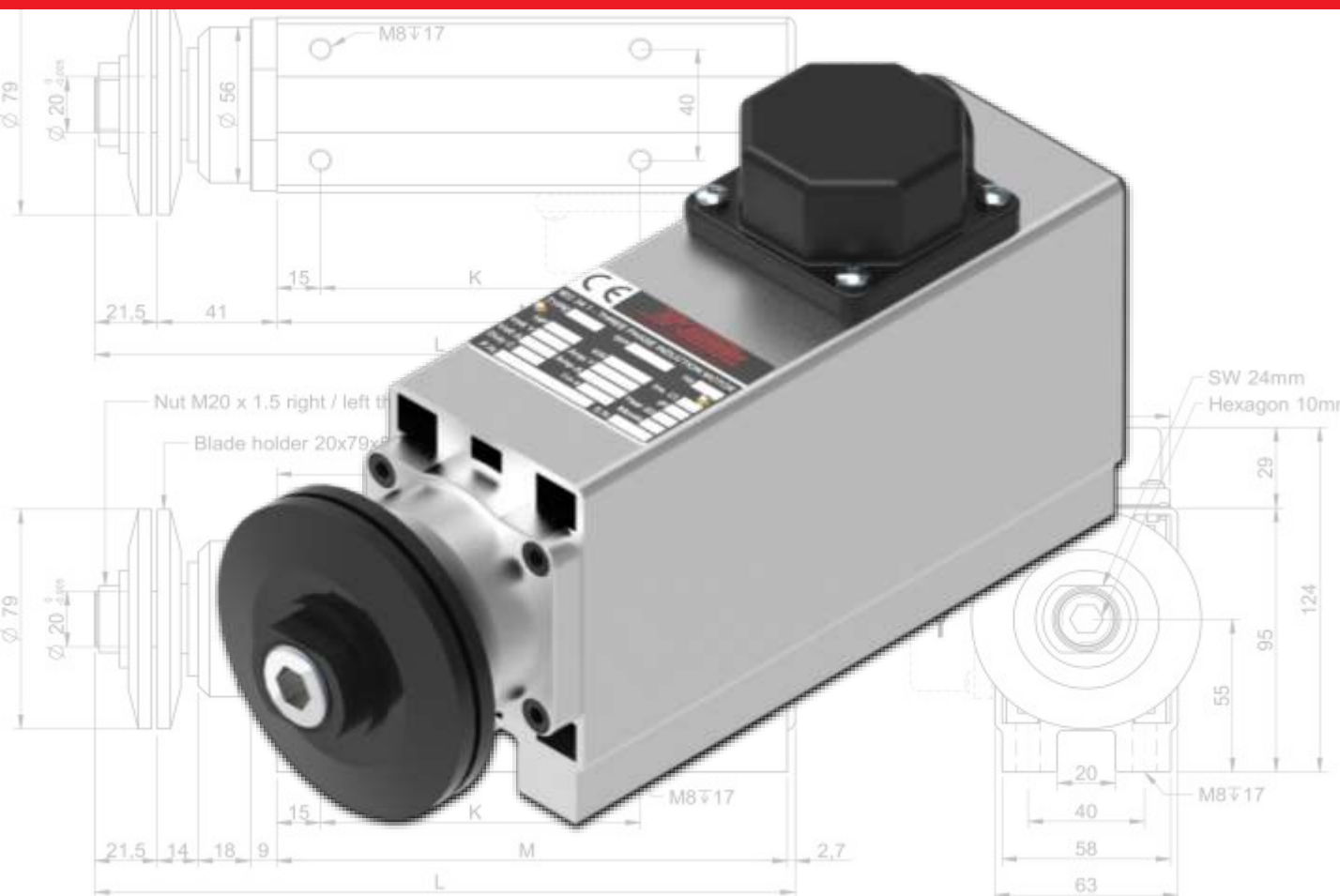
C31/40 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C31/40-A-SB-BT	215.7	65	85	150.5
C31/40-B-SB-BT	240.7	90	110	175.5
C31/40-C-SB-BT	260.7	110	110	195.5
C31/40-D-SB-BT	270.7	120	110	205.5

TEKNOMOTOR

HF motor C55



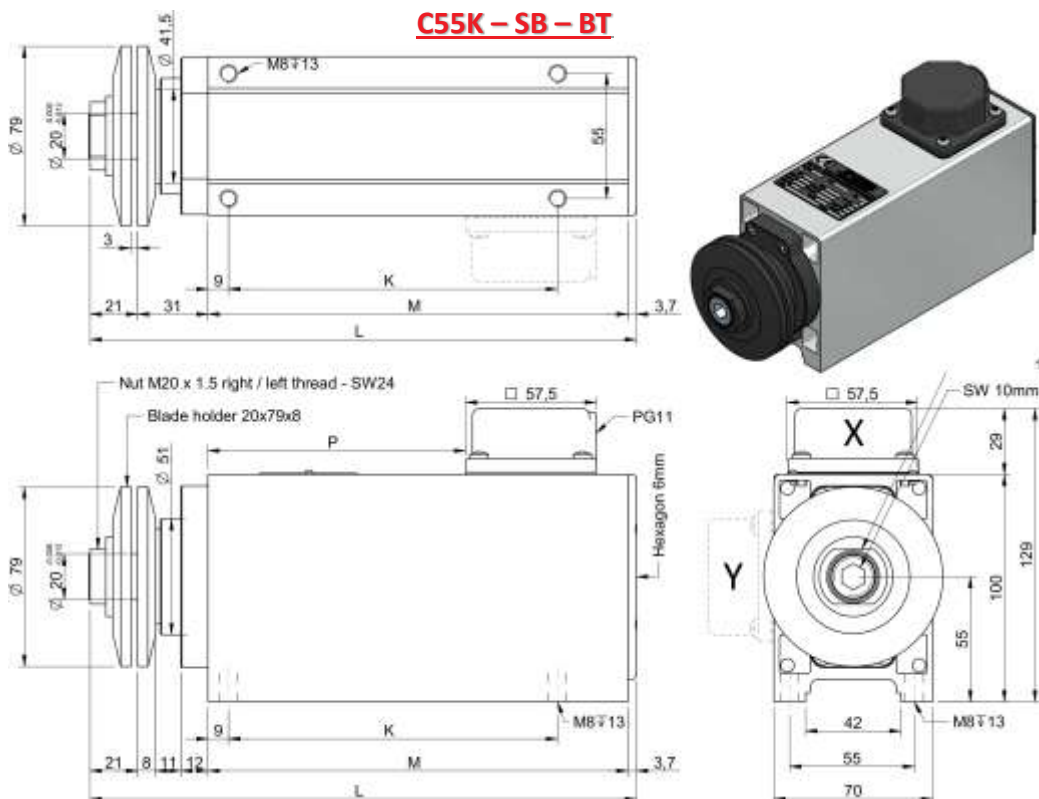
TEKNOMOTOR

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55K-A-SB-BT	0,30	220 / 380	100	6000	2.1 / 1.2	7.2
C55K-B-SB-BT	0,45	220 / 380	100	6000	3.0 / 1.7	7.8
C55K-C-SB-BT	0,60	220 / 380	100	6000	3.9 / 2.3	8.5
C55K-D-SB-BT	0,75	220 / 380	100	6000	4.8 / 2.8	8.8
C55K-E-SB-BT	0,90	220 / 380	100	6000	5.7 / 3.3	9.4
C55K-A-SB-BT	0,70	220 / 380	200	12000	3.6 / 2.1	7.2
C55K-B-SB-BT	1,00	220 / 380	200	12000	5.4 / 3.1	7.8
C55K-C-SB-BT	1,40	220 / 380	200	12000	7.2 / 4.2	8.5
C55K-D-SB-BT	1,60	220 / 380	200	12000	8.5 / 4.9	8.8
C55K-E-SB-BT	2,00	220 / 380	200	12000	10.3 / 5.9	9.4

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C55K-A-SB-BT	240.7	113.5	145	185
C55K-B-SB-BT	270.7	143.5	175	215
C55K-C-SB-BT	310.7	183.5	215	255
C55K-D-SB-BT	330.7	203.5	235	275
C55K-E-SB-BT	370.7	243.5	275	315

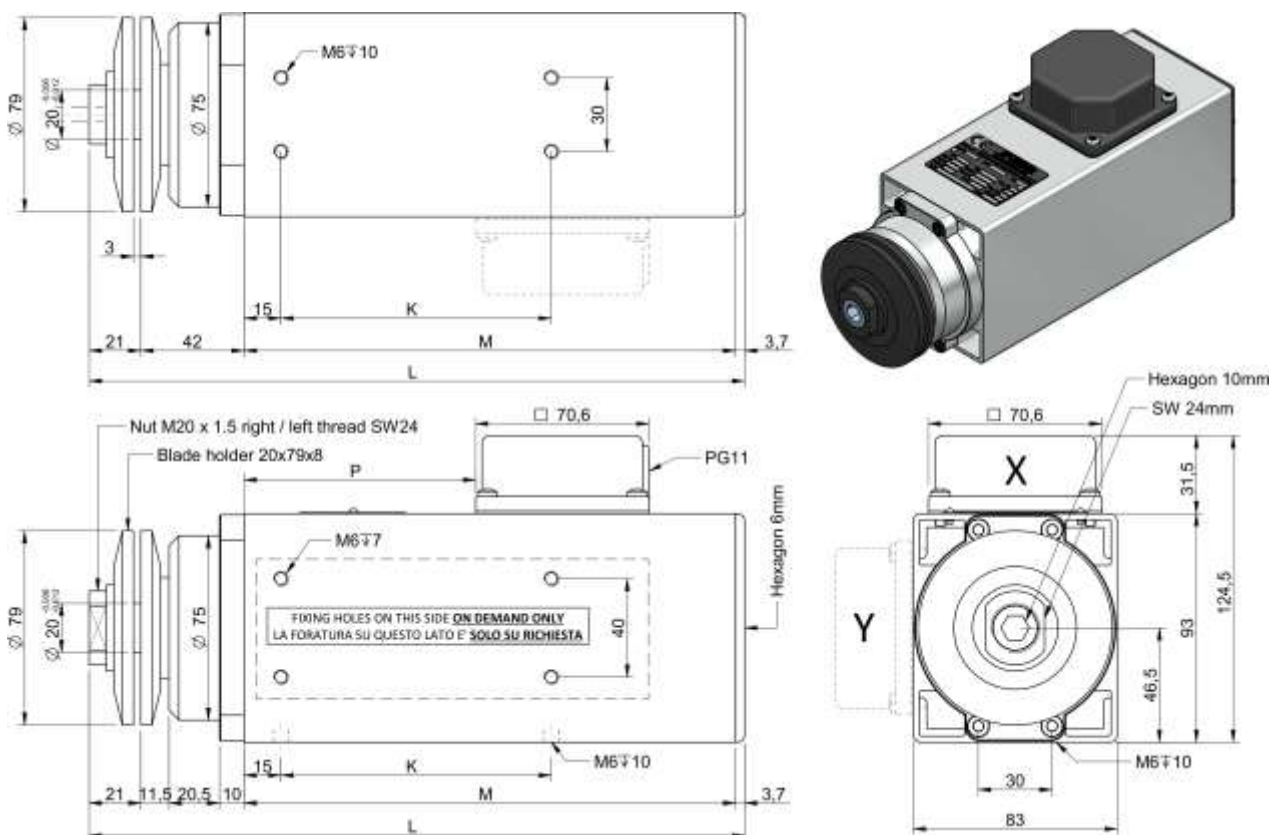
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C41/47-A-SB-BT	0.75	220 / 380	200	12000	4.2 / 2.4	5.1
C41/47-B-SB-BT	1.10	220 / 380	200	12000	5.4 / 3.1	5.7
C41/47-C-SB-BT	1.50	220 / 380	200	12000	6.7 / 3.9	7.0
C41/47-D-SB-BT	1.80	220 / 380	200	12000	8.0 / 4.6	7.4

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-SB-BT	251.7	79.2	110	185
C41/47-B-SB-BT	266.7	94.2	110	200
C41/47-C-SB-BT	286.7	114.2	110	220
C41/47-D-SB-BT	306.7	134.2	110	240

TEKNOMOTOR

HF motor C55M



TEKNOMOTOR

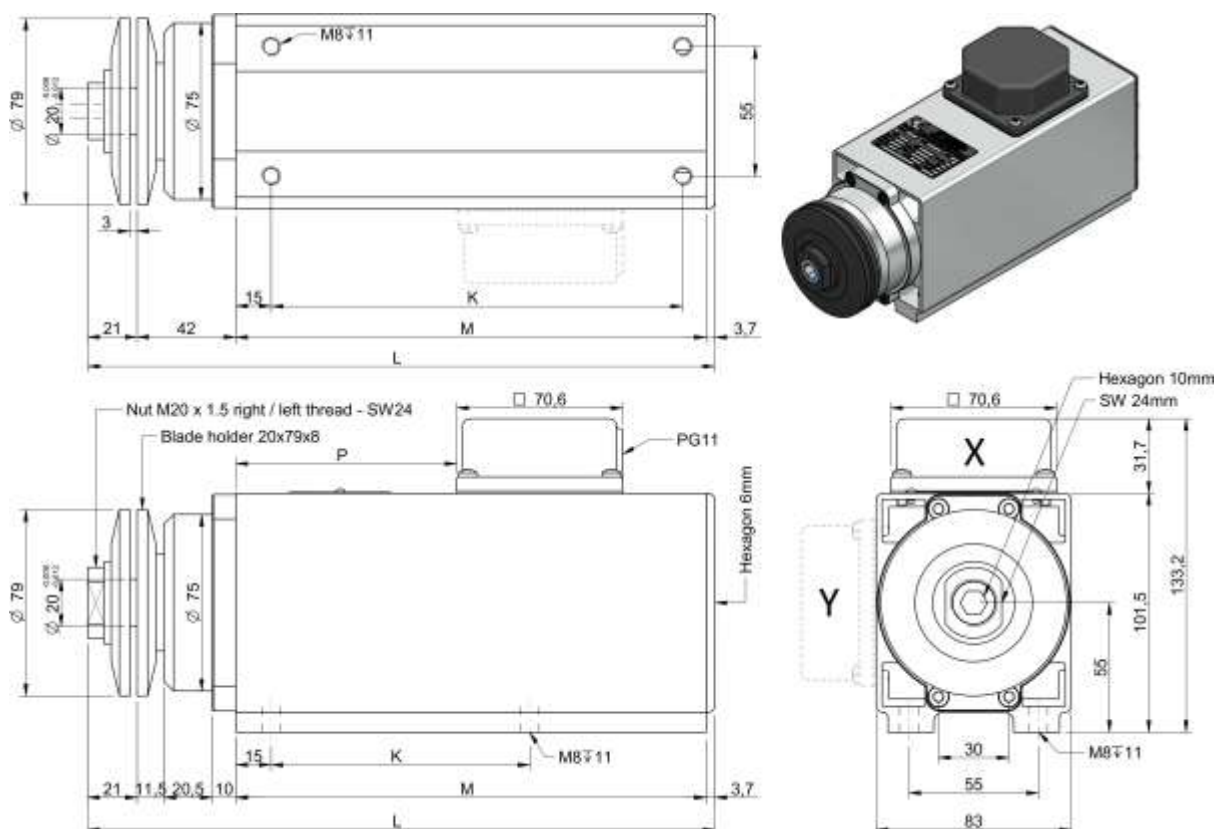
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55M-A-SB-BT	0.75	220 / 380	200	12000	4.2 / 2.4	5.2
C55M-B-SB-BT	1.10	220 / 380	200	12000	5.4 / 3.1	5.8
C55M-C-SB-BT	1.50	220 / 380	200	12000	6.7 / 3.9	7.1
C55M-D-SB-BT	1.80	220 / 380	200	12000	8.0 / 4.6	7.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55M – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C55M-A-SB-BT	251.7	79.2	130	185
C55M-B-SB-BT	266.7	94.2	130	200
C55M-C-SB-BT	286.7	114.2	170	220
C55M-D-SB-BT	306.7	134.2	170	240

TEKNOMOTOR

HF motor C64



TEKNOMOTOR

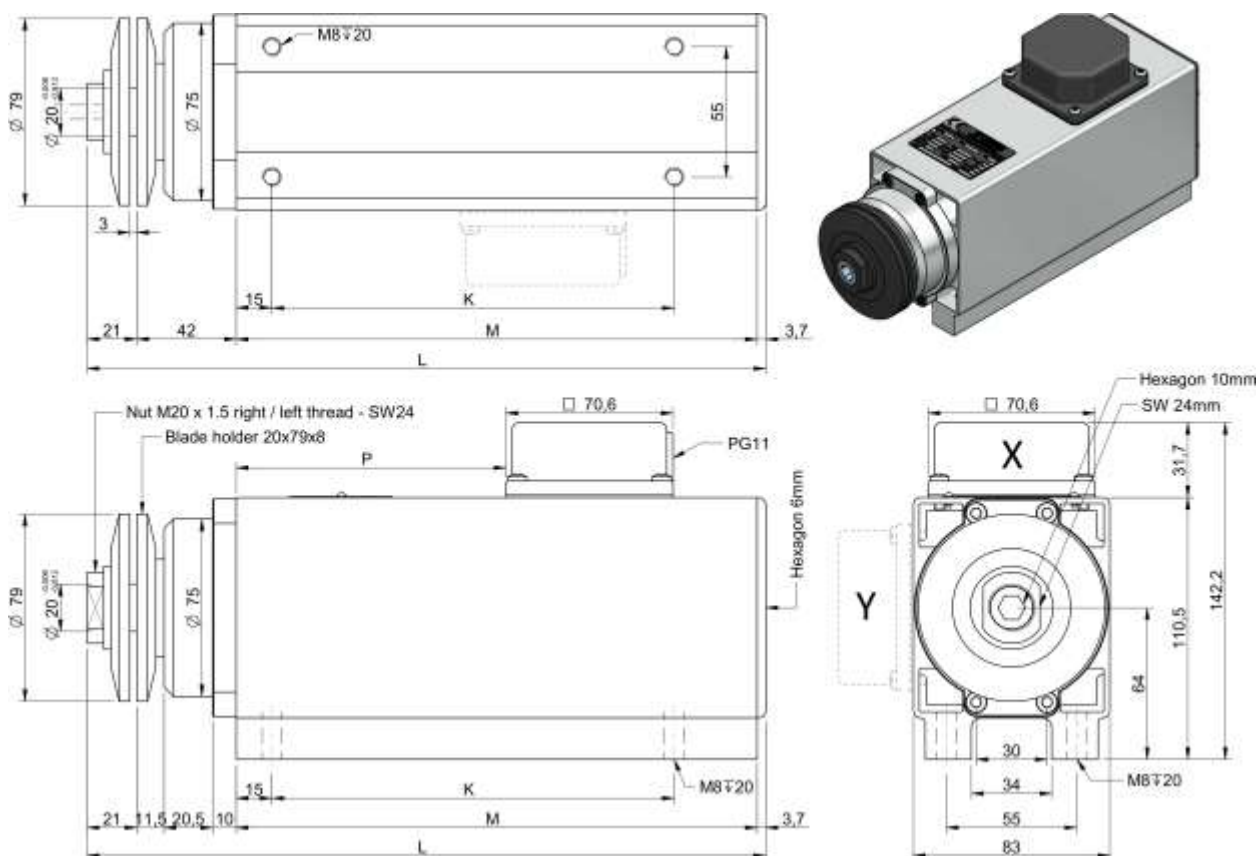
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C64-A-SB-BT	0.75	220 / 380	200	12000	4.2 / 2.4	5.2
C64-B-SB-BT	1.10	220 / 380	200	12000	5.4 / 3.1	5.8
C64-C-SB-BT	1.50	220 / 380	200	12000	6.7 / 3.9	7.1
C64-D-SB-BT	1.80	220 / 380	200	12000	8.0 / 4.6	7.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C64 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C64-A-SB-BT	251.7	79.2	130	185
C64-B-SB-BT	266.7	94.2	130	200
C64-C-SB-BT	286.7	114.2	170	220
C64-D-SB-BT	306.7	134.2	170	240

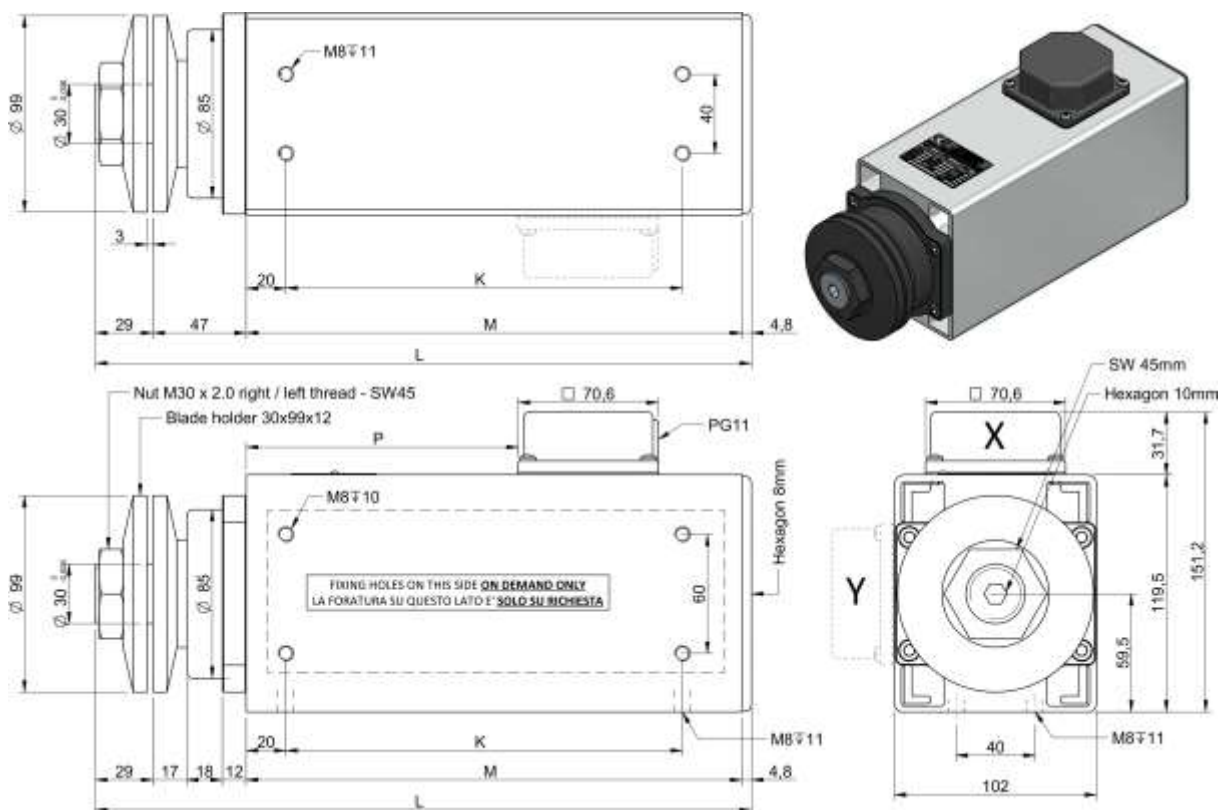
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60-D-SB-BT	1.1	220 / 380	50	3000	5.5 / 3.15	12.9
C51/60-D-SB-BT	2.2	220 / 380	100	6000	9.9 / 5.7	12.9
C51/60-A-SB-BT	2.2	220 / 380	200	12000	9.7 / 5.6	11.4
C51/60-B-SB-BT	2.6	220 / 380	200	12000	10.4 / 6.0	11.7
C51/60-C-SB-BT	3.0	220 / 380	200	12000	12.5 / 7.2	12.4
C51/60-D-SB-BT	3.7	220 / 380	200	12000	15.0 / 8.7	12.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-SB-BT	300.8	107.2	150	220
C51/60-B-SB-BT	310.8	117.2	150	230
C51/60-C-SB-BT	330.8	137.2	200	250
C51/60-D-SB-BT	340.8	147.2	200	260

TEKNOMOTOR

HF motor C55P



TEKNOMOTOR

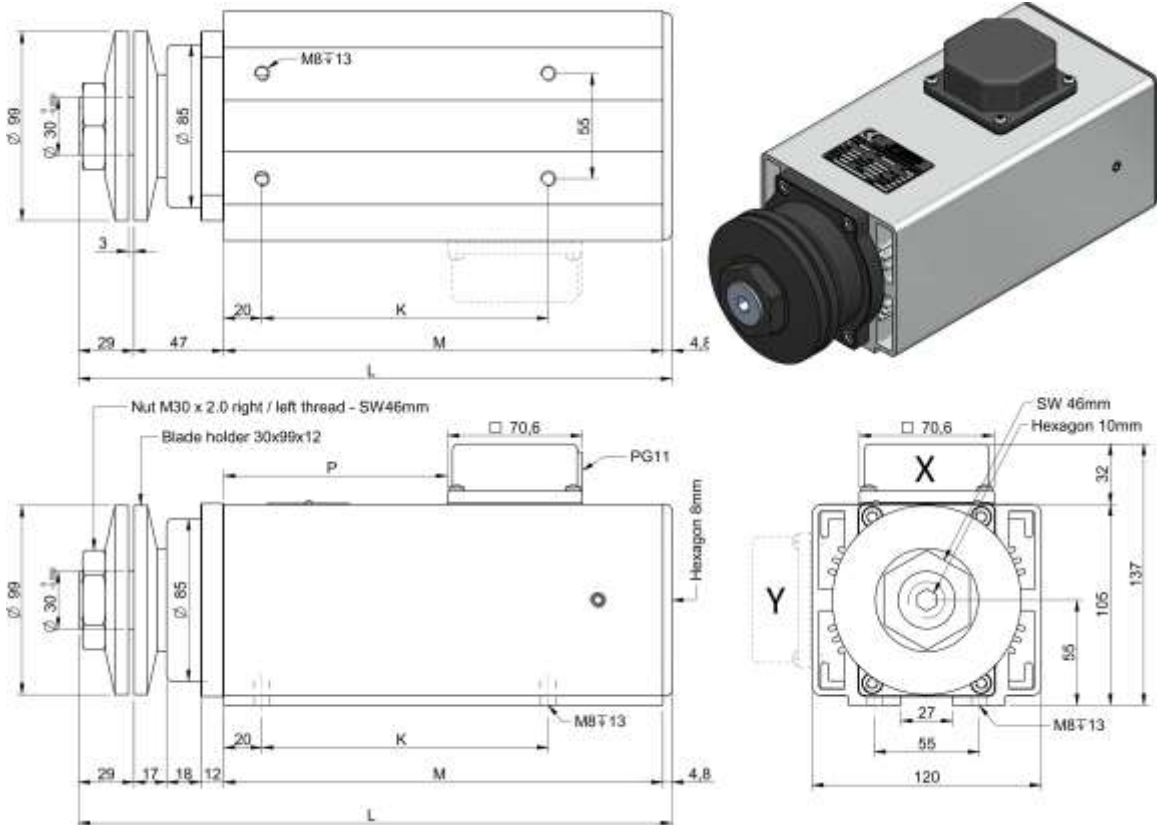
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C55P-D-SB-BT	1.1	220 / 380	50	3000	5.5 / 3.15	12.9
C55P-D-SB-BT	2.2	220 / 380	100	6000	9.9 / 5.7	12.9
C55P-A-SB-BT	2.2	220 / 380	200	12000	9.7 / 5.6	11.4
C55P-B-SB-BT	2.6	220 / 380	200	12000	10.4 / 6.0	11.7
C55P-C-SB-BT	3.0	220 / 380	200	12000	12.5 / 7.2	12.4
C55P-D-SB-BT	3.7	220 / 380	200	12000	15.0 / 8.7	12.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C55P – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C55P-A-SB-BT	300.8	107.2	150	220
C55P-B-SB-BT	310.8	117.2	150	230
C55P-C-SB-BT	330.8	137.2	200	250
C55P-D-SB-BT	340.8	147.2	200	260

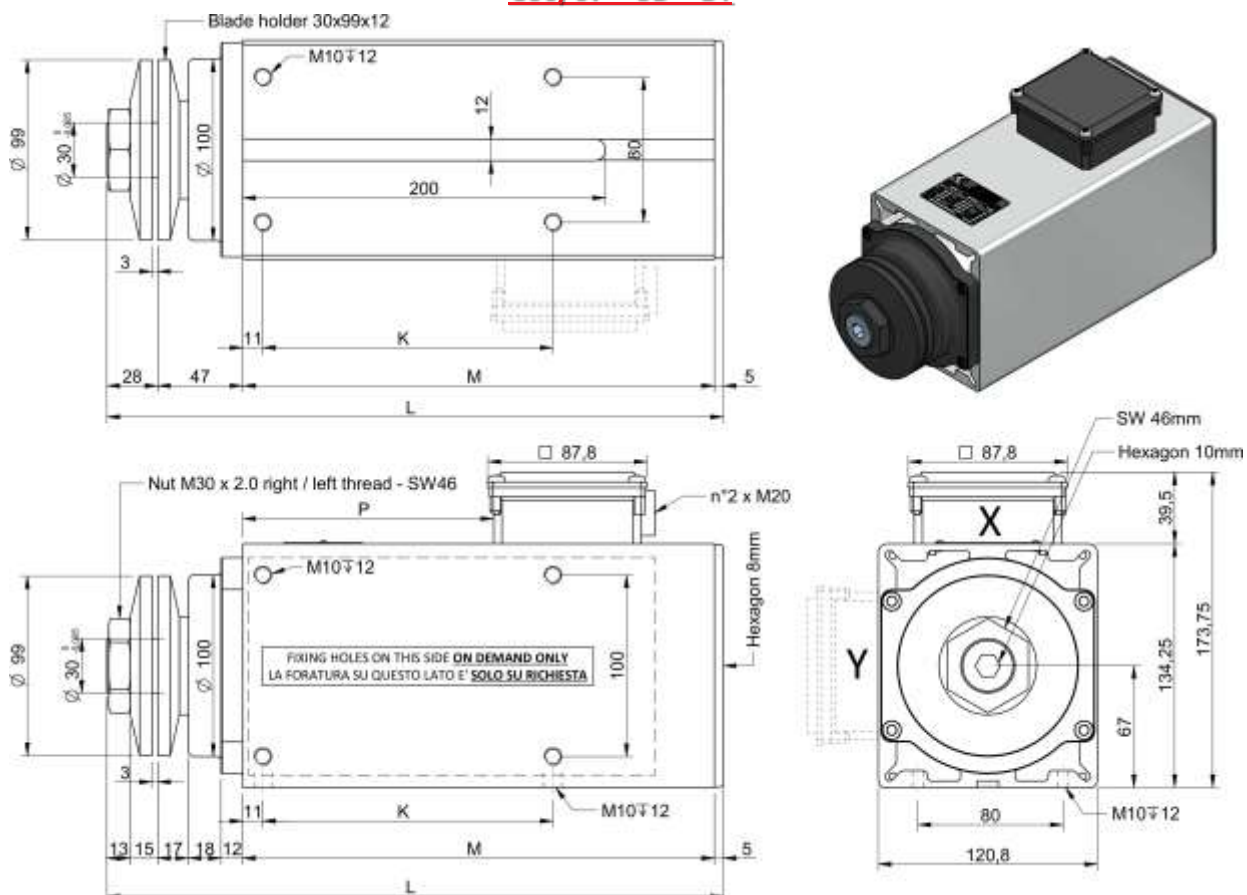
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C60/67-A-SB-BT	1.25	220 / 380	50	3000	5.6 / 3.2	10.7
C60/67-D-SB-BT	1.6	220 / 380	50	3000	7.0 / 4.2	16.5
C60/67-A-SB-BT	1.9	220 / 380	100	6000	7.6 / 4.4	10.7
C60/67-D-SB-BT	3.3	220 / 380	100	6000	12.8 / 7.4	16.5
C60/67-A-SB-BT	3.0	220 / 380	200	12000	12.3 / 7.1	10.7
C60/67-D-SB-BT	4.5	220 / 380	200	12000	18.2 / 10.6	16.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C60/67 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C60/67-A-SB-BT	309	88.4	160	220
C60/67-D-SB-BT	349	138.4	160	260

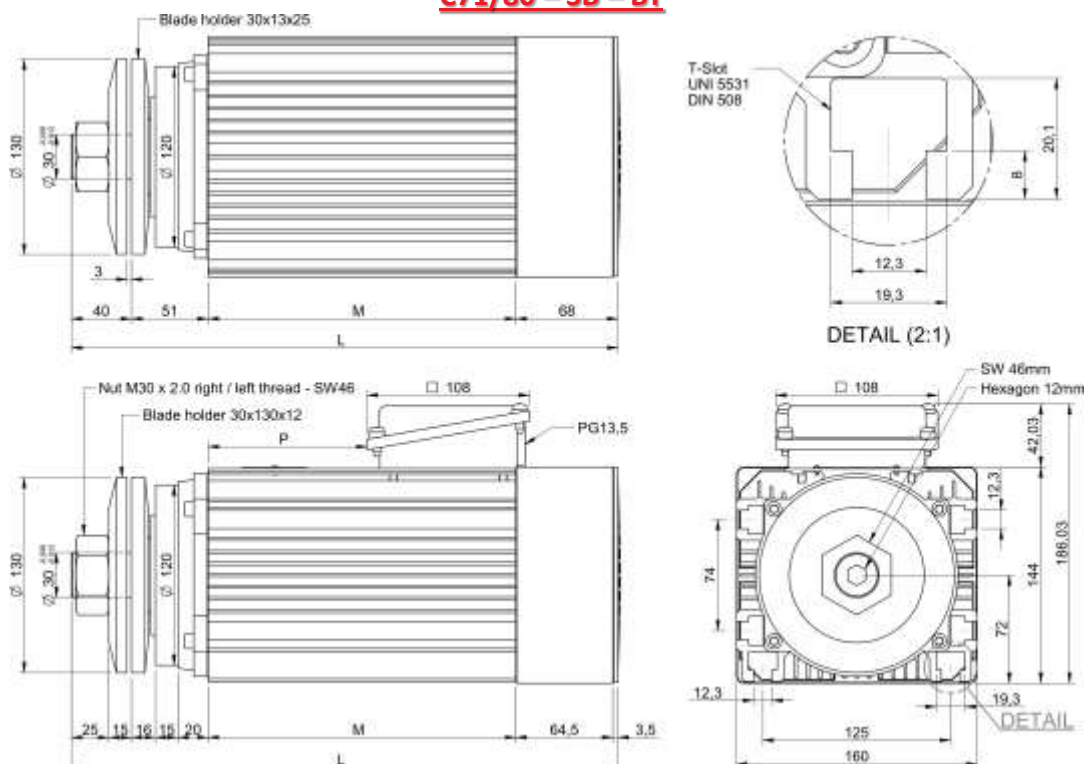
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	POLES POLI POLE	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	-	V	Hz	RPM	A	Kg
C71/80-A-SB-BT	2.2	2	220 / 380	50	3000	8.8 / 5.1	18.5
C71/80-B-SB-BT	3.0	2	220 / 380	50	3000	11.1 / 6.4	21.5
C71/80-C-SB-BT	4.0	2	220 / 380	50	3000	15.2 / 8.8	23.5
C71/80-A-SB-BT	1.5	4	220 / 380	50	1500	6.6 / 3.8	19.0
C71/80-B-SB-BT	2.2	4	220 / 380	50	1500	9.7 / 5.6	22.0
C71/80-C-SB-BT	3.0	4	220 / 380	50	1500	12.2 / 7.1	24.0
C71/80-A-SB-BT	1.5	6	220 / 380	50	1000	7.4 / 4.3	19.0
C71/80-B-SB-BT	1.8	6	220 / 380	50	1000	9.0 / 5.2	24.0
C71/80-A-SB-BT	2.2	2	220 / 380	100	6000	8.8 / 5.1	18.5
C71/80-A-SB-BT	3.0	2	220 / 380	100	6000	11.7 / 6.7	18.5
C71/80-A-SB-BT	4.0	2	220 / 380	100	6000	14.8 / 8.6	18.5
C71/80-B-SB-BT	5.5	2	220 / 380	100	6000	19.7 / 11.4	21.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C71/80 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C71/80-A-SB-BT	334	74	175
C71/80-B-SB-BT	364	104	205
C71/80-C-SB-BT	404	144	245

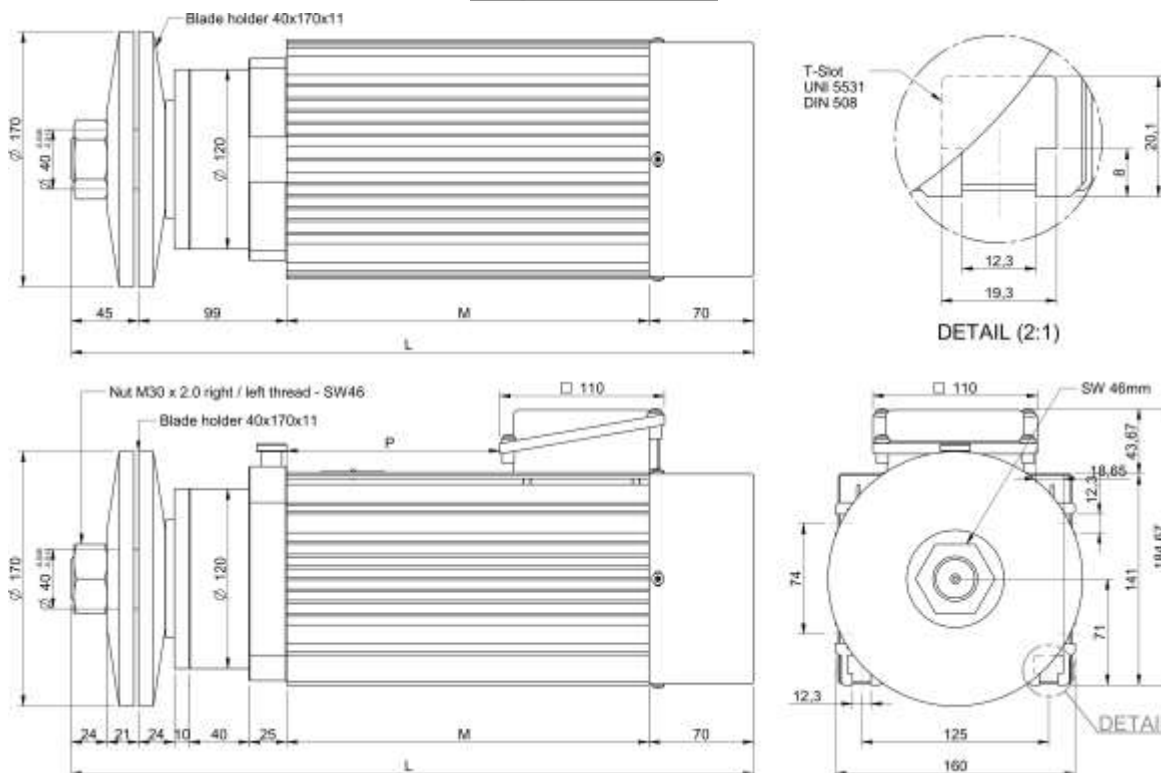
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	POLES POLI POLE	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	-	V	Hz	RPM	A	Kg
C71/80-A-2DB-BT	2.2	2	220 / 380	50	3000	8.8 / 5.1	28.2
C71/80-B-2DB-BT	3.0	2	220 / 380	50	3000	11.1 / 6.4	31.2
C71/80-C-2DB-BT	4.0	2	220 / 380	50	3000	15.2 / 8.8	35.2
C71/80-A-2DB-BT	1.5	4	220 / 380	50	1500	6.6 / 3.8	28.2
C71/80-B-2DB-BT	2.2	4	220 / 380	50	1500	9.7 / 5.6	31.2
C71/80-C-2DB-BT	3.0	4	220 / 380	50	1500	12.2 / 7.1	35.2
C71/80-A-2DB-BT	1.5	6	220 / 380	50	1000	7.4 / 4.3	28.2
C71/80-B-2DB-BT	1.8	6	220 / 380	50	1000	9.0 / 5.2	31.2
C71/80-A-2DB-BT	2.2	2	220 / 380	100	6000	9.9 / 5.7	28.2
C71/80-A-2DB-BT	3.0	2	220 / 380	100	6000	11.7 / 6.7	28.2
C71/80-A-2DB-BT	4.0	2	220 / 380	100	6000	14.8 / 8.6	28.2
C71/80-B-2DB-BT	5.5	2	220 / 380	100	6000	19.7 / 11.4	31.2

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C71/80 – 2DB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C71/80-B-2DB-BT	442	142	242
C71/80-C-2DB-BT	472	172	272



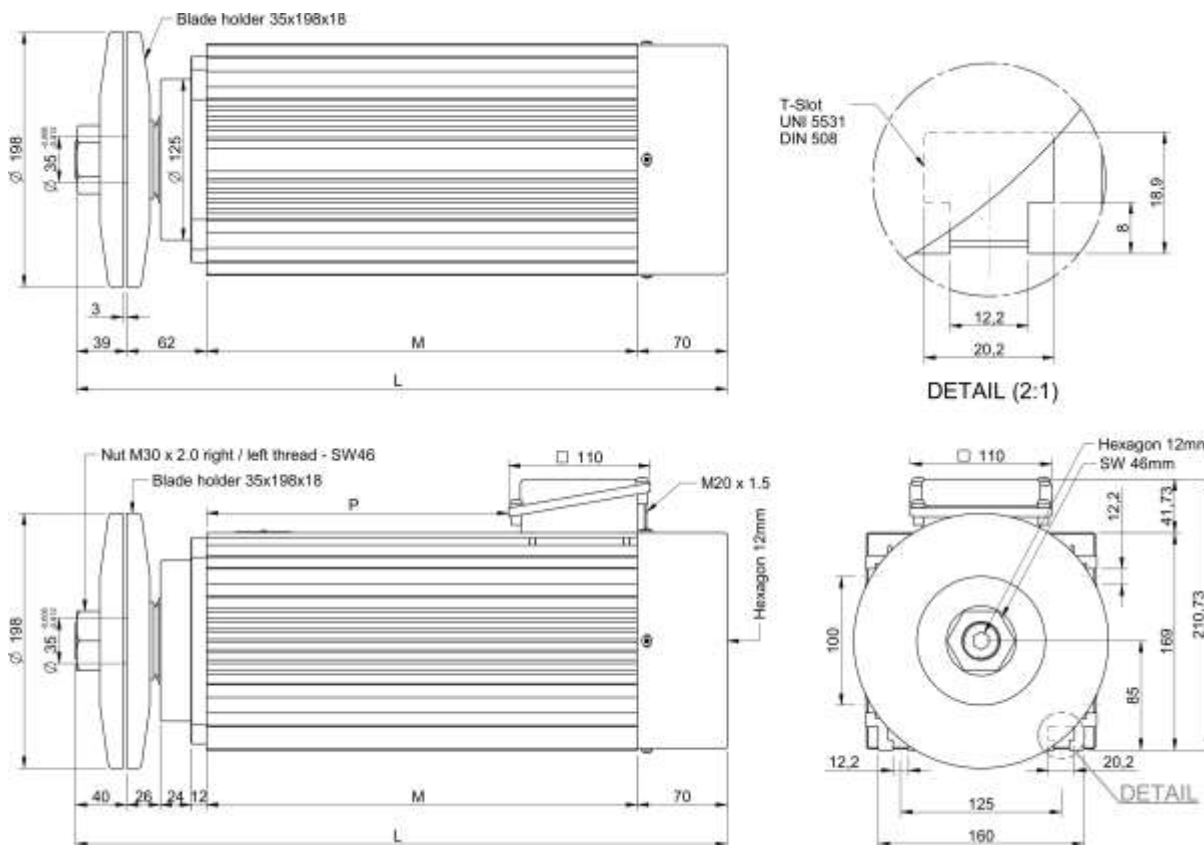
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V (D / Y)	Hz	RPM	A	kg
C85/90–A–SB–BT	5.5	220 / 380	50	3000	21.6 / 12.5	39.2
C85/90–A–SB–BT	7.5	380 D	100	6000	15.0	39.2
C85/90–B–SB–BT	7.5	220 / 380	50	3000	28.7 / 16.6	45.5
C85/90–B–SB–BT	11.0	380 D	100	6000	23.0	45.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C85/90 – SB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C85/90–A–SB–BT	462	195	295
C85/90–B–SB–BT	502	235	335

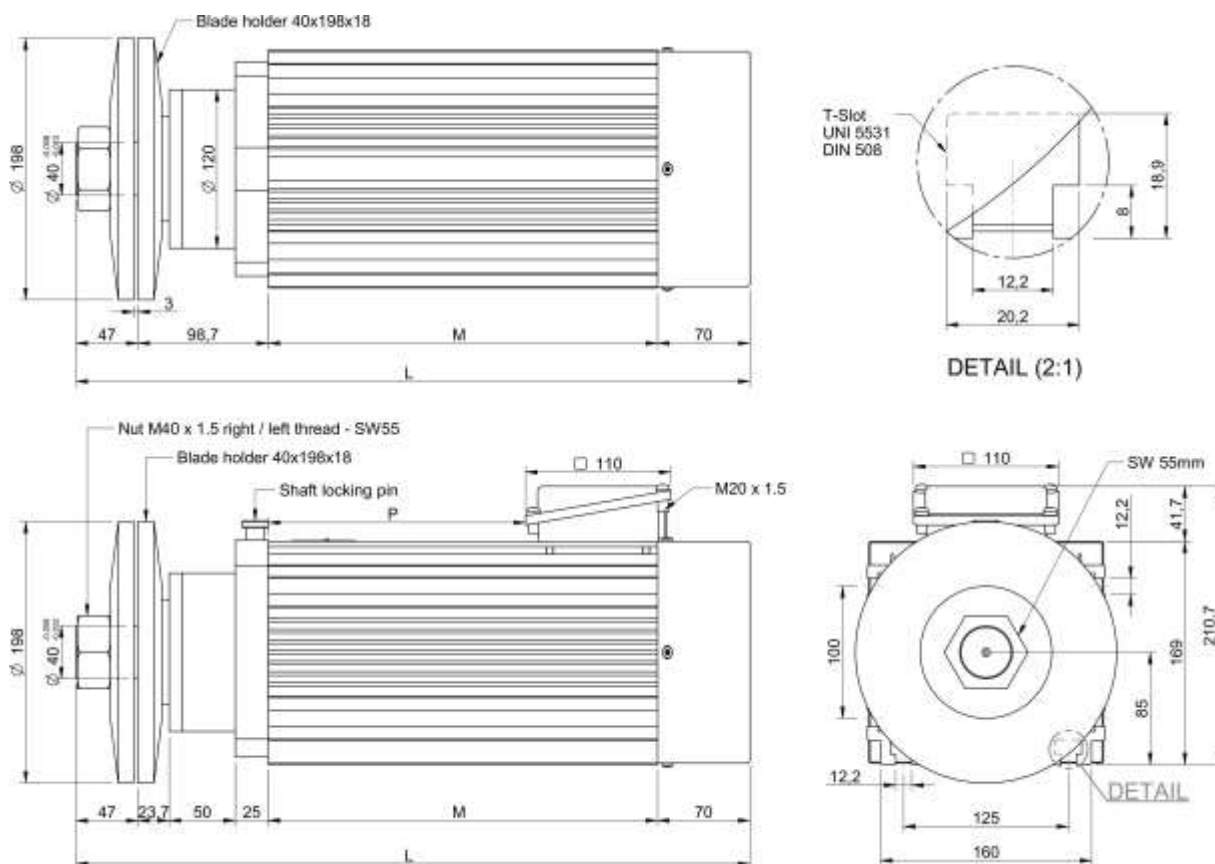
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C85/90-A-2DB-BT	5.5	220 / 380	50	3000	21.6 / 12.5	50.1
C85/90-A-2DB-BT	7.5	380 D	100	6000	15.0	50.1
C85/90-B-2DB-BT	7.5	220 / 380	50	3000	28.7 / 16.6	54.4
C85/90-B-2DB-BT	11.0	380 D	100	6000	23.0	54.4

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C85/90 – 2DB – BT



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C85/90-A-2DB-BT	503	196	295
C85/90-B-2DB-BT	543	236	335



HIGH FREQUENCY MOTORS WITH ER COLLET CHUCK (ISO 15488)

GENERAL INFORMATION

The HF motors with ER collet chuck have been designed to develop high speeds and powers with limited overall dimensions.

The standard models operate at 12000 rpm; on customer's request we can supply motors that reach 18000 rpm. The available powers go from 0.22 to 2.2 kW (view [power vs speed table](#)).

These features make them ideal for use on machines for machining plastics, PVC and in the hobby applications of CNC routing, where the axial load is low enough.

Because of their structural features, the HF motors can withstand primarily radial loads and a small axial load.

INFORMAZIONI GENERALI

I motori HF (High Frequency motors) con pinza ER sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano a 12000 rpm; su richiesta del cliente è possibile fornire motori che raggiungano i 18000 rpm. Le potenze disponibili variano tra 0.22 kW e 2.2 kW (si veda [power vs speed table](#)).

Queste caratteristiche li rendono ideali per l'impiego su macchine per la lavorazione delle materie plastiche, del PVC, e nelle applicazioni di CNC routing di tipo hobbistico, laddove il carico assiale sia limitato.

Per le loro caratteristiche costruttive, i motori HF con pinza ER sopportano carichi di tipo prevalentemente radiale ed un modesto carico di tipo assiale.

ALLGEMEINE INFORMATIONEN

Die HF-Motoren (High Frequency Motors) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen.

Die Standardmodelle sind mit 12000 U/min tätig. Auf Kundenanfrage ist es auch möglich, Motoren mit 18000 U/min zu liefern. Die verfügbaren Leistungen variieren zwischen 0.22kW und 2.2kW (siehe zum Beispiel [power vs speed table](#)).

Dafür sind sie für den Einsatz von Maschinen zur Bearbeitung von Kunststoff und PVC und zugunsten von CNC Routing Anwendungen für Hobby-Zwecke ideal, wenn die Axialbelastung gering ist.

Dank ihrer Bauweise können die HF-Motoren mit ER-Spannzange vorwiegend Radialbelastungen und eine mäßige Axialbelastung standhalten.



TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTECTION GRADE
	TYPE	INSULATION	TYPE	BALANCING GRADE			
HF motors with ER collet chuck	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Shaft driven fan cooling.	IP 50 (IP 60 on request)

The motors conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the motor cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

I motori sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che il motore non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Motoren entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 4: HF MOTORS WITH ER COLLET CHUCK

C24/31

(0.22 – 0.27 kW)



C35

(0.22 – 0.75 kW)



NC35

(0.22 – 0.73 kW)



C31/40

(0.22 – 0.73 kW)



C41/47

(0.75 – 2.0 kW)



C51/60 DA

(2.2 – 3.3 kW)



ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

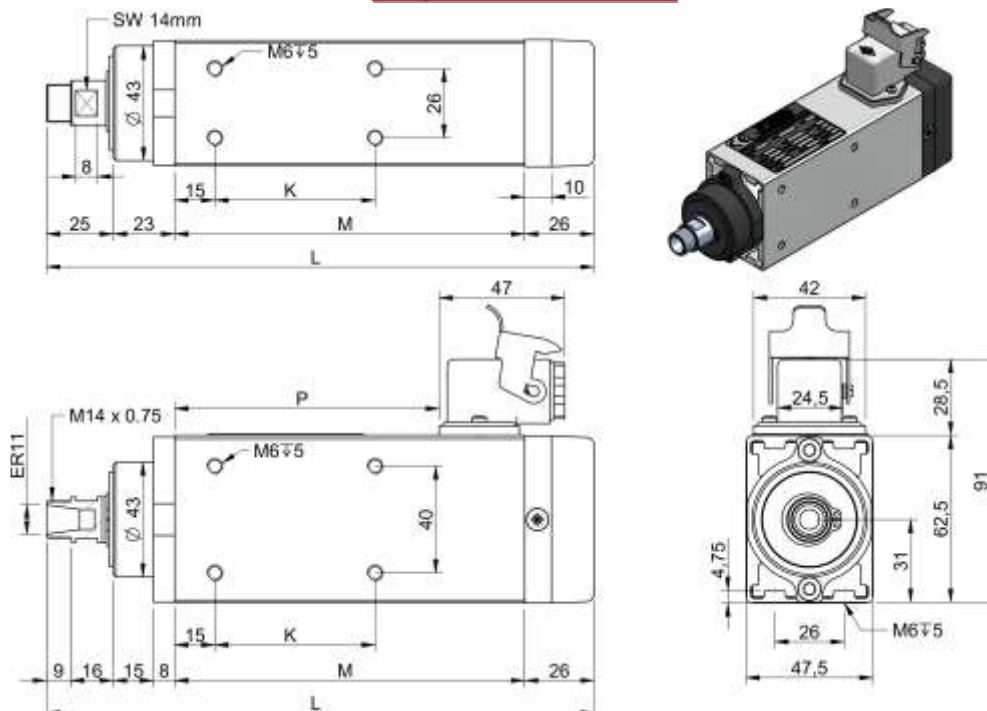
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQUENCY* [Hz]			Base SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	min	Base	Max	RPM	A	kg
C24/31-A-SB-P-ER11	0.22	220	150	200	300	12000	1.3	1.7
C24/31-A-SB-P-ER11	0.22	380	150	200	300	12000	0.7	1.7
C24/31-B-SB-P-ER11	0.27	220	150	200	300	12000	1.4	1.9
C24/31-B-SB-P-ER11	0.27	380	150	200	300	12000	0.8	1.9
C24/31-A-SB-P-ER11	0.22	220	150	300	360	18000	1.3	1.7
C24/31-A-SB-P-ER11	0.22	380	150	300	360	18000	0.7	1.7
C24/31-B-SB-P-ER11	0.27	220	150	300	360	18000	1.3	1.9
C24/31-B-SB-P-ER11	0.27	380	150	300	360	18000	0.7	1.9
C24/31-A-SB-P-ER11	0.22	220	150	400	400	24000	1.3	1.7
C24/31-A-SB-P-ER11	0.22	380	150	400	400	24000	0.7	1.7
C24/31-B-SB-P-ER11	0.27	220	150	400	400	24000	1.3	1.9
C24/31-B-SB-P-ER11	0.27	380	150	400	400	24000	0.7	1.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

* For more informations about frequency data, view the [FAQ](#) n°12 on our website – Per maggiori informazioni sul significato delle frequenze, vedere la [FAQ](#) n°12 sul nostro sito

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C24/31 – SB – P – ER11



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C24/31-A-SB-P-ER11	190	84	60	116
C24/31-B-SB-P-ER11	205	99	60	131

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

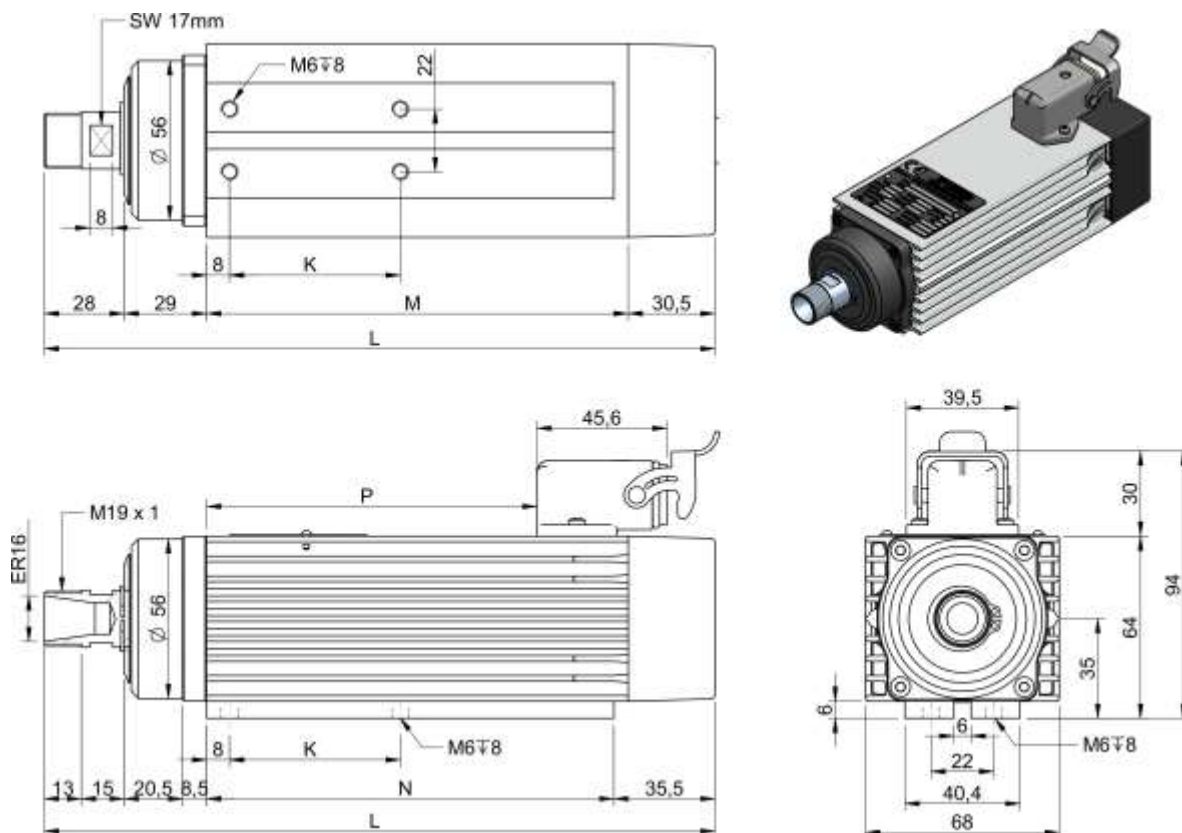
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQUENCY* [Hz]			Base SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	min	Base	Max	RPM	A	kg
C35-C-SB-P-ER16	0.66	220	100	300	360	18000	3.8	2.8
C35-C-SB-P-ER16	0.66	380	100	300	360	18000	2.2	2.8

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

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OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C35 – SB – P – ER16



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]	N [mm]
C35-A-SB-P-ER16	195.5	54.5	40	108	103
C35-B-SB-P-ER16	220.5	74.5	60	133	128
C35-C-SB-P-ER16	235.5	89.5	60	148	143

TEKNOMOTOR

HF motor NC35



TEKNOMOTOR

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

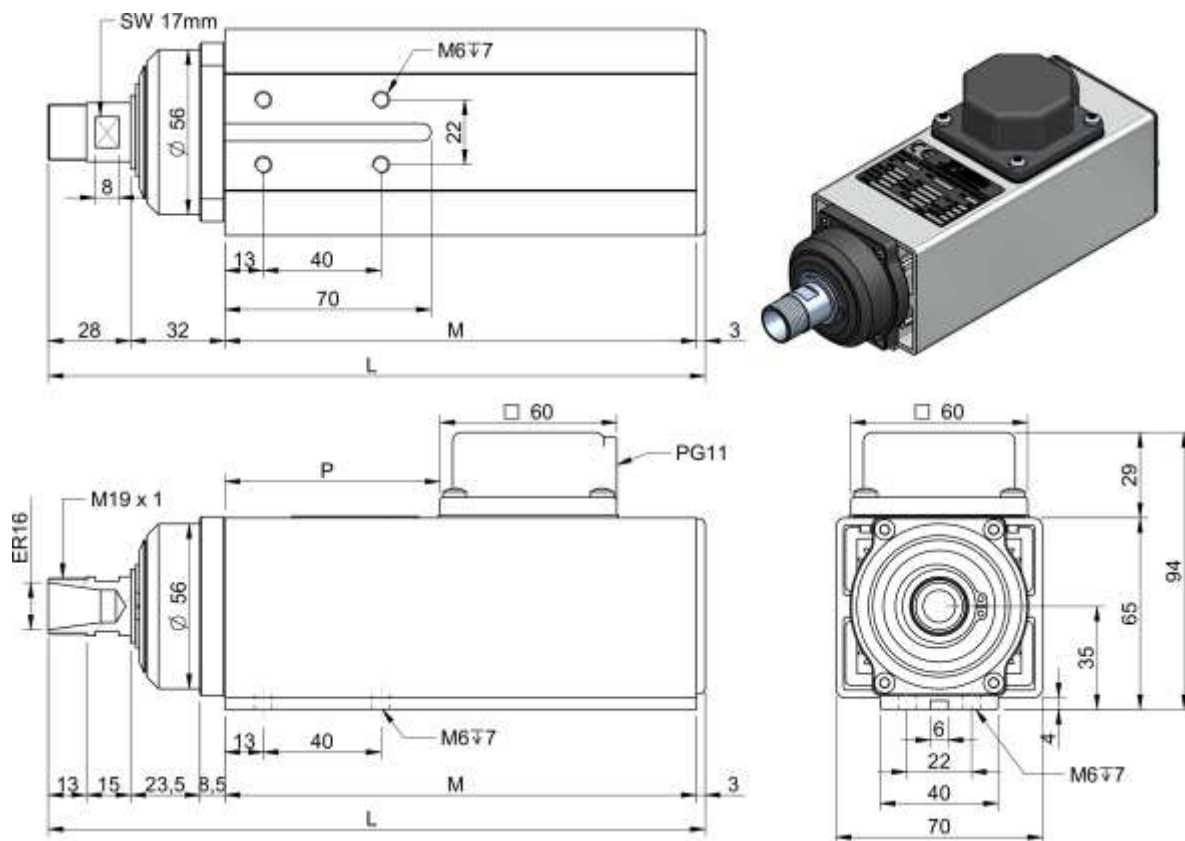
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQUENCY* [Hz]			Base SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	min	Base	Max	RPM	A	kg
NC35-A-SB-P-ER16	0.22	220 / 380	150	200	300	12000	1.6 / 0.9	2.5
NC35-B-SB-P-ER16	0.37	220 / 380	150	200	300	12000	2.1 / 1.2	2.9
NC35-C-SB-P-ER16	0.55	220 / 380	150	200	300	12000	2.7 / 1.5	3.1
NC35-A-SB-P-ER16	0.33	220 / 380	150	300	360	18000	2.1 / 1.2	2.5
NC35-B-SB-P-ER16	0.55	220 / 380	150	300	360	18000	3.0 / 1.7	2.9
NC35-C-SB-P-ER16	0.73	220 / 380	150	300	360	18000	3.6 / 2.1	3.1

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

* For more informations about frequency data, view the [FAQ](#) n°12 on our website – Per maggiori informazioni sul significato delle frequenze, vedere la [FAQ](#) n°12 sul nostro sito

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

NC35 – SB – P – ER16



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
NC35-A-SB-P-ER16	198	48	135
NC35-B-SB-P-ER16	223	73	160
NC35-C-SB-P-ER16	238	88	175

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

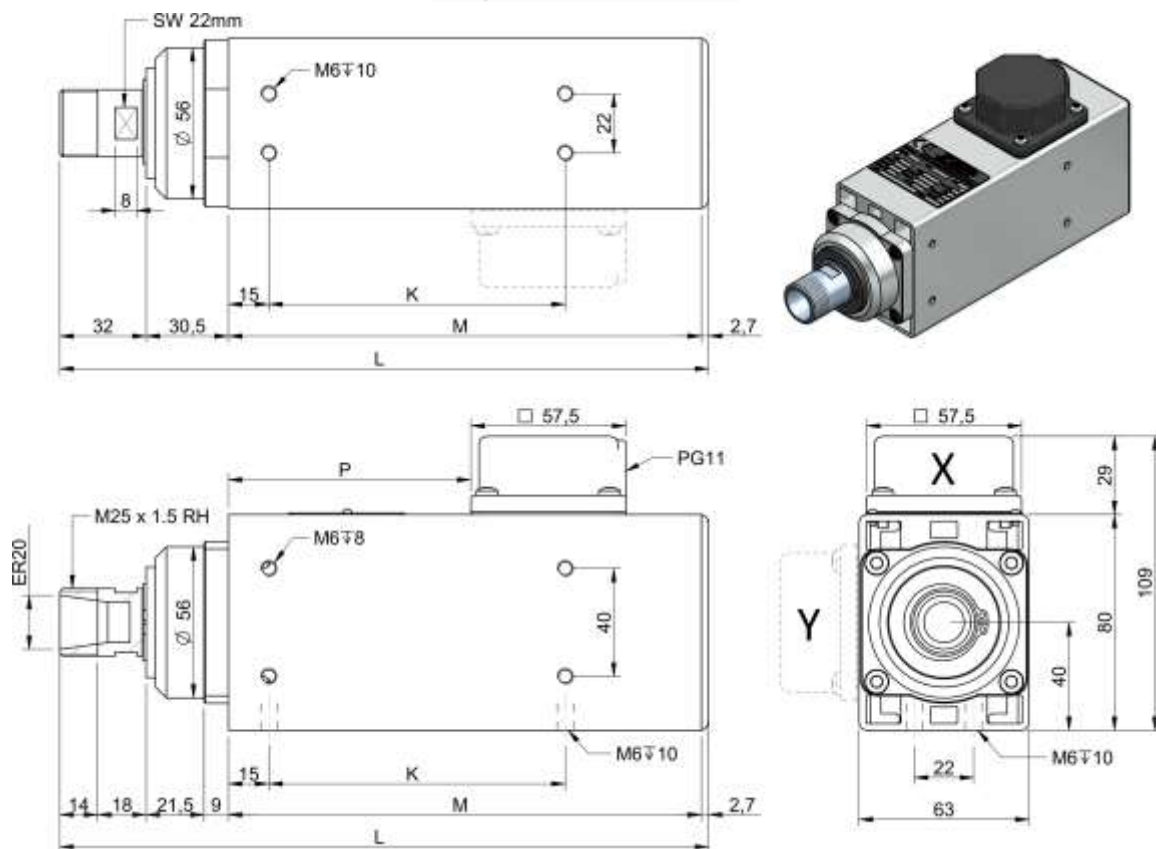
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQUENCY* [Hz]			Base SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Min	Base	Max	RPM	A	kg
C31/40-A-SB-P-ER20	0.22	220 / 380	100	200	300	12000	1.6 / 0.9	2.8
C31/40-B-SB-P-ER20	0.37	220 / 380	100	200	300	12000	2.1 / 1.2	3.2
C31/40-C-SB-P-ER20	0.55	220 / 380	100	200	300	12000	2.7 / 1.5	3.5
C31/40-D-SB-P-ER20	0.75	220 / 380	100	200	300	12000	3.1 / 1.8	3.9
C31/40-A-SB-P-ER20	0.33	220 / 380	100	300	360	18000	2.1 / 1.2	2.8
C31/40-B-SB-P-ER20	0.55	220 / 380	100	300	360	18000	3.0 / 1.7	3.2
C31/40-C-SB-P-ER20	0.73	220 / 380	100	300	360	18000	3.6 / 2.1	3.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

* For more informations about frequency data, view the [FAQ](#) n°12 on our website – Per maggiori informazioni sul significato delle frequenze, vedere la [FAQ](#) n°12 sul nostro sito

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C31/40 – SB – P – ER20



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C31/40-A-SB-P-ER20	215.7	65	85	150.5
C31/40-B-SB-P-ER20	240.5	90	110	175.5
C31/40-C-SB-P-ER20	260.5	110	110	195.5
C31/40-D-SB-P-ER20	280.5	120	110	205.5

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

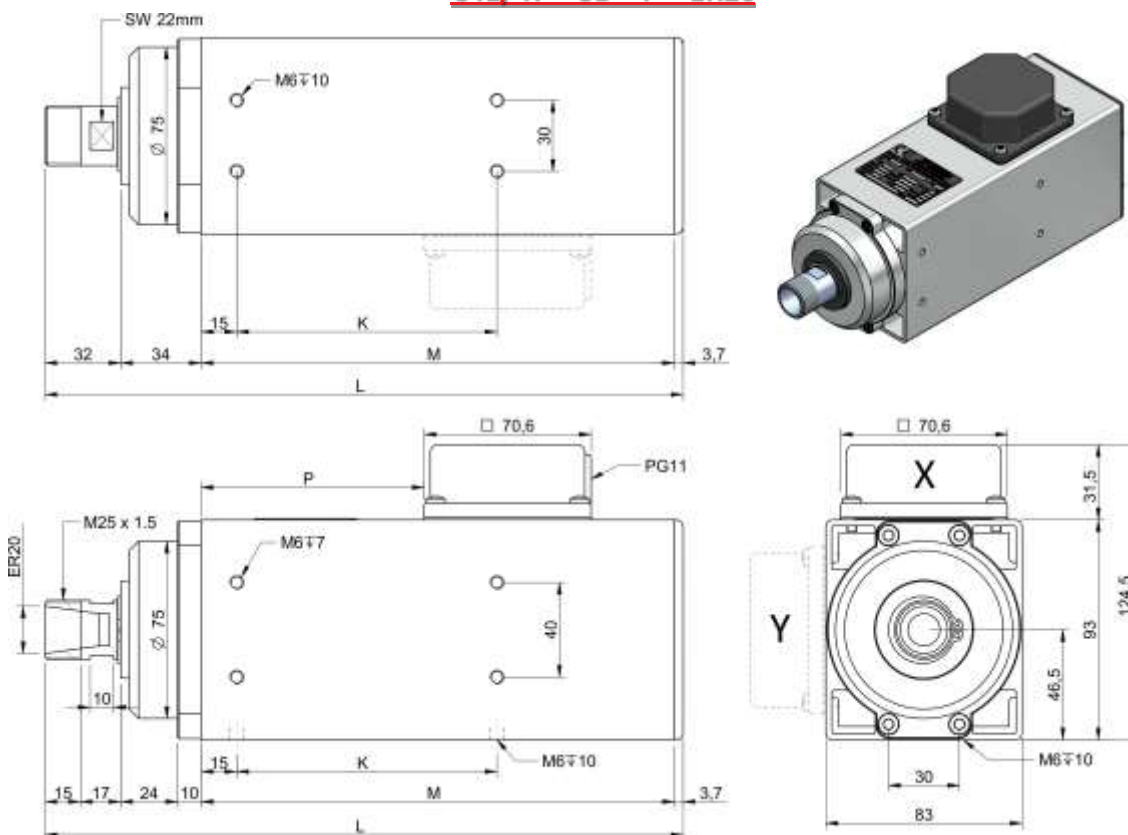
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQUENCY* [Hz]			Base SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	min	Base	Max	RPM	A	kg
C41/47-A-SB-P-ER20	0.75	220 / 380	100	200	300	12000	4.2 / 2.4	4.7
C41/47-B-SB-P-ER20	1.1	220 / 380	100	200	300	12000	5.4 / 3.1	5.3
C41/47-C-SB-P-ER20	1.5	220 / 380	100	200	300	12000	6.7 / 3.9	6.6
C41/47-D-SB-P-ER20	1.8	220 / 380	100	200	300	12000	8.0 / 4.6	7.0
C41/47-A-SB-P-ER20	1.1	220 / 380	100	300	360	18000	6.2 / 3.6	4.7
C41/47-B-SB-P-ER20	1.6	220 / 380	100	300	360	18000	8.1 / 4.7	5.3
C41/47-C-SB-P-ER20	2.0	220 / 380	100	300	360	18000	9.0 / 5.2	6.6

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

* For more informations about frequency data, view the [FAQ](#) n°12 on our website – Per maggiori informazioni sul significato delle frequenze, vedere la [FAQ](#) n°12 sul nostro sito

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – SB – P – ER20



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-SB-P-ER20	254.7	79.2	110	185
C41/47-B-SB-P-ER20	269.7	94.2	110	200
C41/47-C-SB-P-ER20	289.7	114.2	110	220
C41/47-D-SB-P-ER20	309.7	134.2	110	240

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQUENCY* [Hz]			Base SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW (S2-30min**)	V	min	Base	Max	RPM	A	kg
C51/60-A-SB-P-ER25-DA	2.2	220 / 380	50	300	300	18000	13.7 / 7.9	10.3

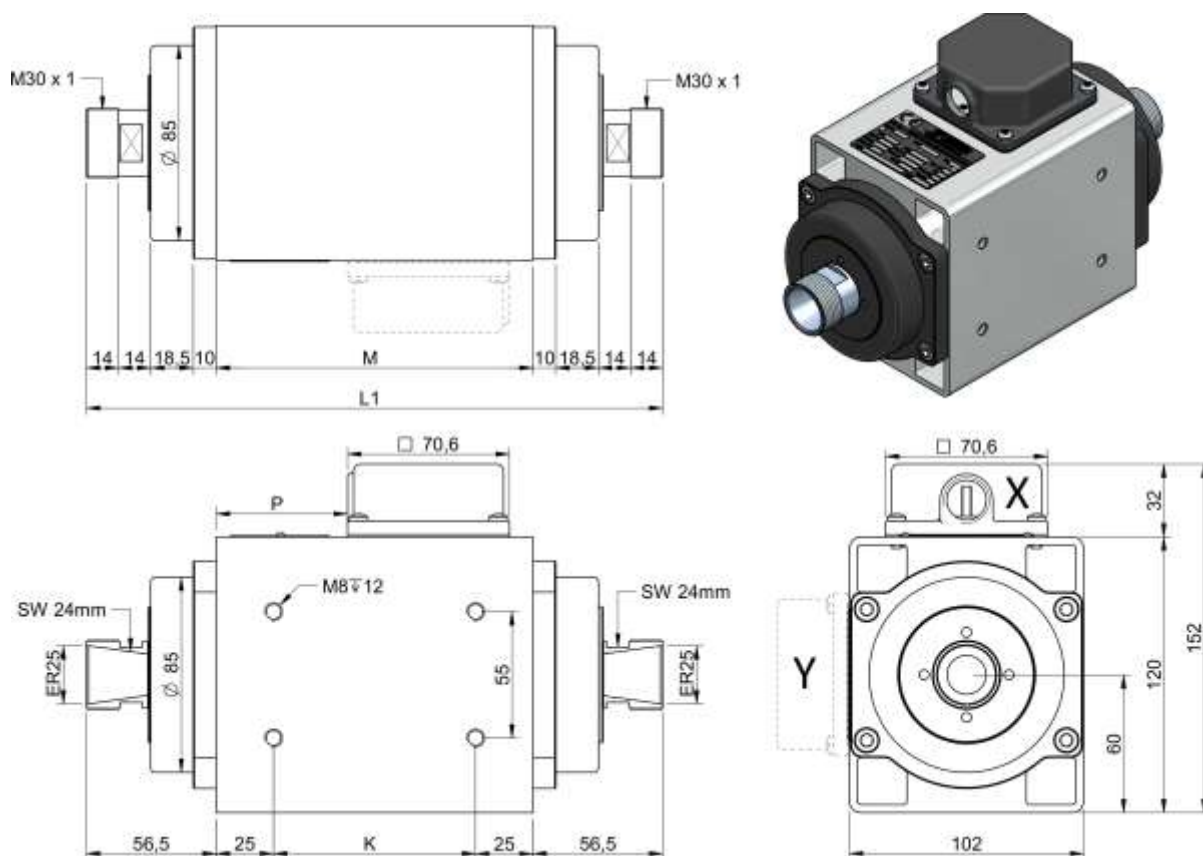
For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

* For more informations about frequency data, view the [FAQ](#) n°12 on our website – Per maggiori informazioni sul significato delle frequenze, vedere la [FAQ](#) n°12 sul nostro sito

** For more informations about Duty Cycles, view the [FAQ](#) n°11 on our website – Per maggiori informazioni sui tipi di servizio, vedere la [FAQ](#) n°11 sul nostro sito

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – SB – P – ER25 DA



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-SB-P-ER25 DA	251	57	88	138

ELECTROSPINDLES WITH ER COLLET CHUCK (ISO 15488)

GENERAL INFORMATION

The electrospindles have been designed to develop high speeds and powers with limited overall dimensions.

The standard models operate between 12000 rpm and 24000 rpm. The powers go from 0.22 to 11.0 kW (view [power vs speed table](#)).

These features make them ideal for use on machines for machining wood, aluminum alloys and plastics.

The electrospindles are used mainly on CNC routers, on drilling machines, on deburring machines, on the automatic systems for the construction of PVC or aluminum windows and doors, and for the automation in general (Electrospindle mounted directly on anthropomorphic robot).

Because of their structural features, the electrospindles can withstand radial or axial or mixed loads.

The electrospindles are protected against the ingress of contaminants such as wooden chips, dry sawdust, aluminum shavings, and chips of PVC. In case the process generates ultra-fine dusts (epoxy materials, carbon and the like) or where are present liquid lubricants in the form of jets and sprays, it is strictly necessary to use the pneumatically sealed electrospindles (view sec. [7](#)).

INFORMAZIONI GENERALI

Gli elettromandri (Electrospindles) sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano tra 1400 rpm e 24000 rpm. Le potenze disponibili variano tra 0.22 kW e 11 kW (si veda [power vs speed table](#)).

Queste caratteristiche li rendono ideali per l'impiego su macchine per la lavorazione del legno, delle leghe di alluminio e delle materie plastiche.

Gli elettromandri vengono impiegati prevalentemente nel settore delle macchine CNC routers, delle foratrici, delle sbavatrici, degli impianti automatici per la costruzione dei serramenti in PVC o alluminio, dell'automazione in generale (Elettromandrino montato direttamente su robot antropomorfo).

Per le loro caratteristiche costruttive gli elettromandri sopportano un carico di tipo assiale, radiale o misto.

Gli elettromandri sono protetti contro l'ingresso di contaminanti secchi quali segatura, trucioli di alluminio, trucioli di PVC.

Se la lavorazione genera polveri ultrasottili (materiali epossidici, carbonio e simili) o laddove siano presenti lubrificanti liquidi sotto forma di getti o nebbie, è strettamente necessario utilizzare gli elettromandri pressurizzati (vedi sez. [7](#)).

ALLGEMEINE INFORMATIONEN

Diese Elektrospendeln (Electrospindles) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen.

Die Standardmodelle sind zwischen 1400 und 24000 U/min tätig. Die verfügbaren Leistungen variieren zwischen 0.22 kW und 11 kW (siehe zum Beispiel [power vs speed table](#)).

Dafür sind sie für den Einsatz an Maschinen für die Holz- bzw. Aluminiumlegierungs- und Kunststoffbearbeitung geeignet.

Die Elektrospendeln kommen hauptsächlich im Bereich CNC Router, Bohr- und Entgrätmaschinen, automatischen Anlagen zur Herstellung von Türen und Fenstern aus PVC oder Aluminium sowie Automatisierung im Allgemeinen zum Einsatz (Elektrospendel wird direkt auf dem anthropomorphen Roboter installiert).

Dank ihrer Bauweise können die Elektrospendeln einer radialen, axialen und miteinander kombinierten Belastung standhalten.

Die Elektrospendeln sind gegen den Eintritt von kontaminierenden Fremdkörpern, wie Sägemehl, Alu- und PVC-Späne geschützt.

Wenn die Bearbeitung von extra-feinem Staub (Epoxid-Stoffe, Karbon u.ä.) erzeugt und wenn flüssige Schmiermittel in Form von Strahlen und Nebel vorhanden sind, ist es unbedingt erforderlich, eine mit Druck-Elektrospendel (siehe Abschn. [7](#)) zu verwenden.

TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTECTION GRADE
	TYPE	INSULATION	TYPE	BALANCING GRADE			
Electrospindles with ER collet chuck	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded Aluminum profile	Shaft driven fan cooling.	IP 50 (IP 60 on request)

The electrospindles conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the electrospindle cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

Gli elettromandri sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che l'elettromandrino non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Elektrospendeln entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 5: ELECTROSPINDLES WITH ER COLLET CHUCK

[NC35](#)

(0.22 – 0.73 kW)



[C31/40](#)

(0.22 – 0.73 kW)



[C41/47](#)

(0.75 – 2.0 kW)



[C51/60](#)

(1.1 – 5.6 kW)



[C60/67](#)

(1.1 – 7.0 kW)



[C71/80](#)

(3.0 – 5.5 kW)



[C85/90](#)

(3.0 – 5.5 kW)



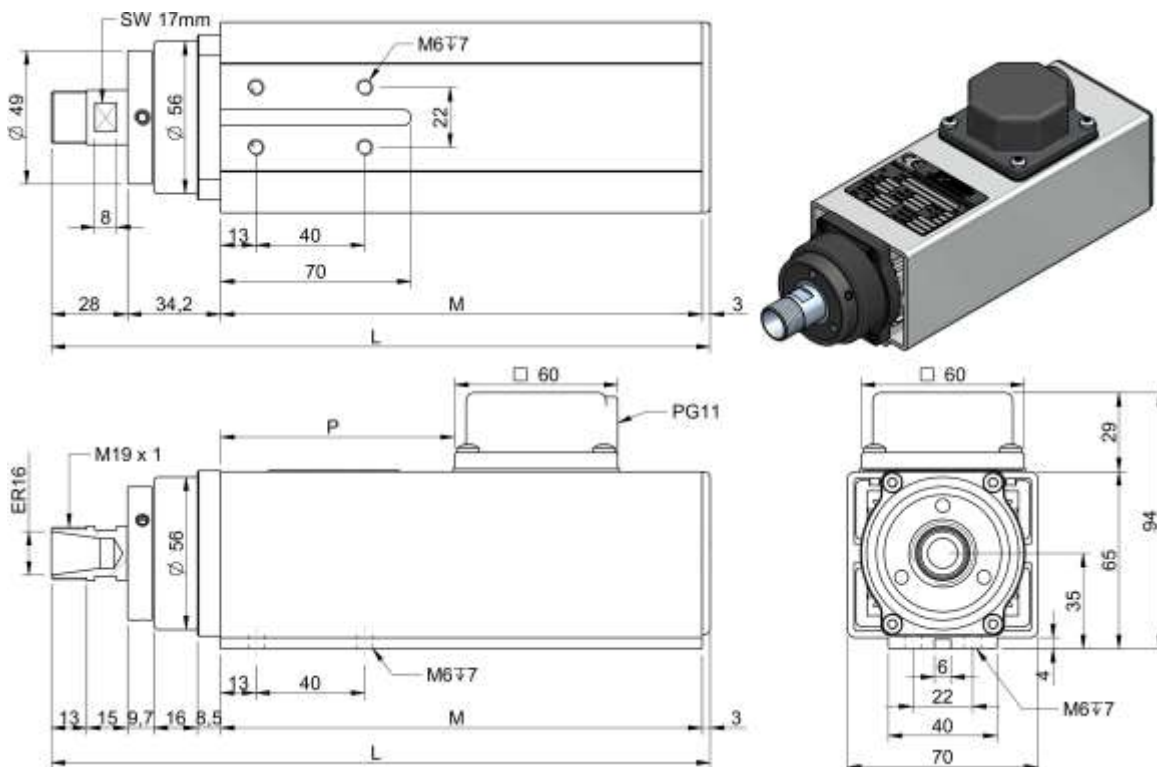
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
NC35-A-DB-P-ER16	0.22	220 / 380	200	12000	1.6 / 0.9	2.5
NC35-B-DB-P-ER16	0.37	220 / 380	200	12000	2.1 / 1.2	2.9
NC35-C-DB-P-ER16	0.55	220 / 380	200	12000	2.7 / 1.5	3.1
NC35-D-DB-P-ER16	0.73	220 / 380	200	12000	3.1 / 1.8	3.7
NC35-A-DB-P-ER16	0.33	220 / 380	300	18000	2.1 / 1.2	2.5
NC35-B-DB-P-ER16	0.55	220 / 380	300	18000	3.0 / 1.7	2.9
NC35-C-DB-P-ER16	0.73	220 / 380	300	18000	3.6 / 2.1	3.1
NC35-A-DB-P-ER16	0.33	220 / 380	400	24000	2.1 / 1.2	2.5
NC35-B-DB-P-ER16	0.55	220 / 380	400	24000	3.0 / 1.7	2.9
NC35-C-DB-P-ER16	0.73	220 / 380	400	24000	3.6 / 2.1	3.1

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

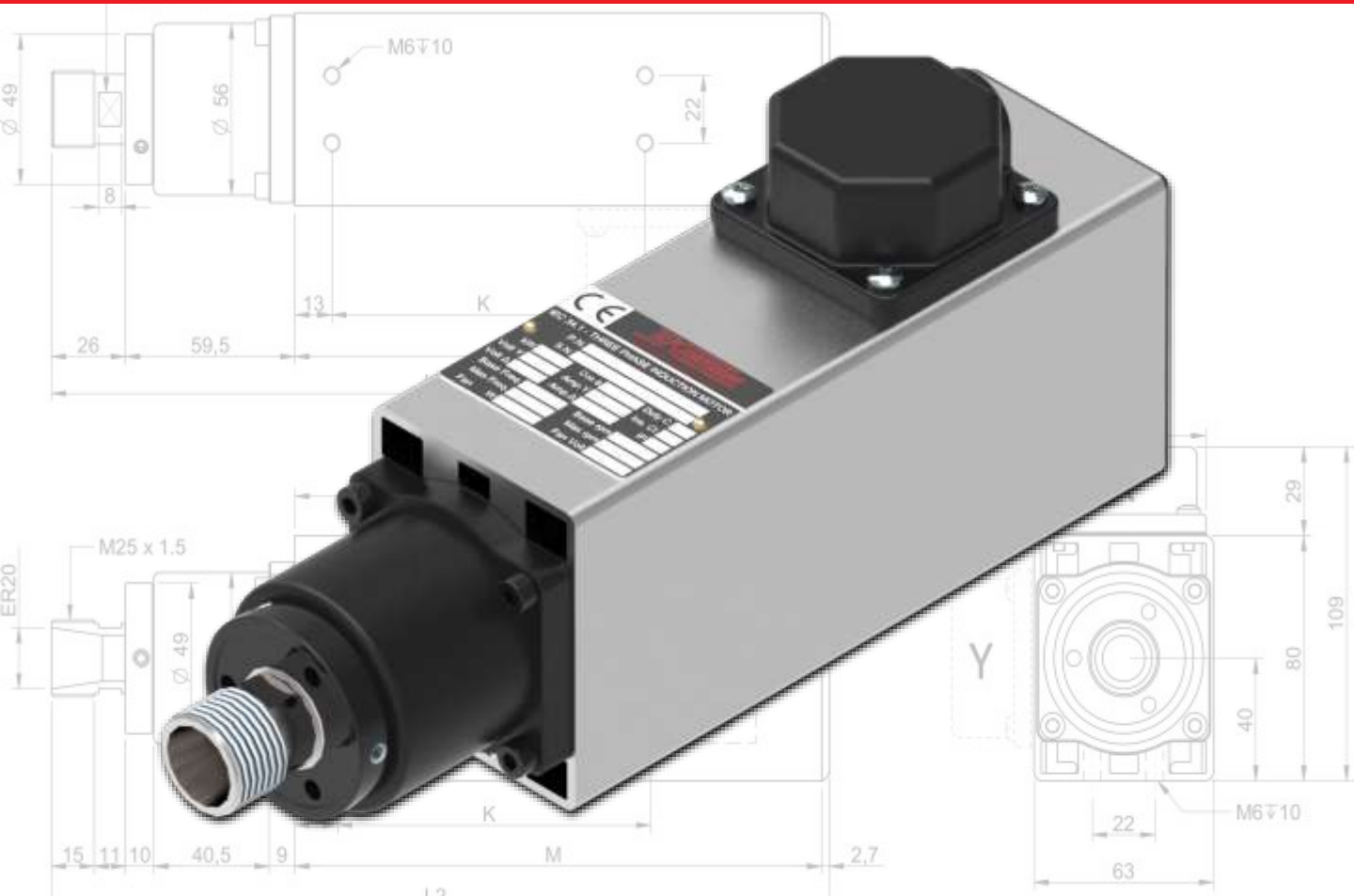
NC35 – DB – P – ER16



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
NC35-A-DB-P-ER16	217.2	60.5	152
NC35-B-DB-P-ER16	242.2	86.0	177
NC35-C-DB-P-ER16	257.2	100.5	192
NC35-D-DB-P-ER16	277.2	120.5	212

TEKNOMOTOR

Electrospindle C31/40



TEKNOMOTOR

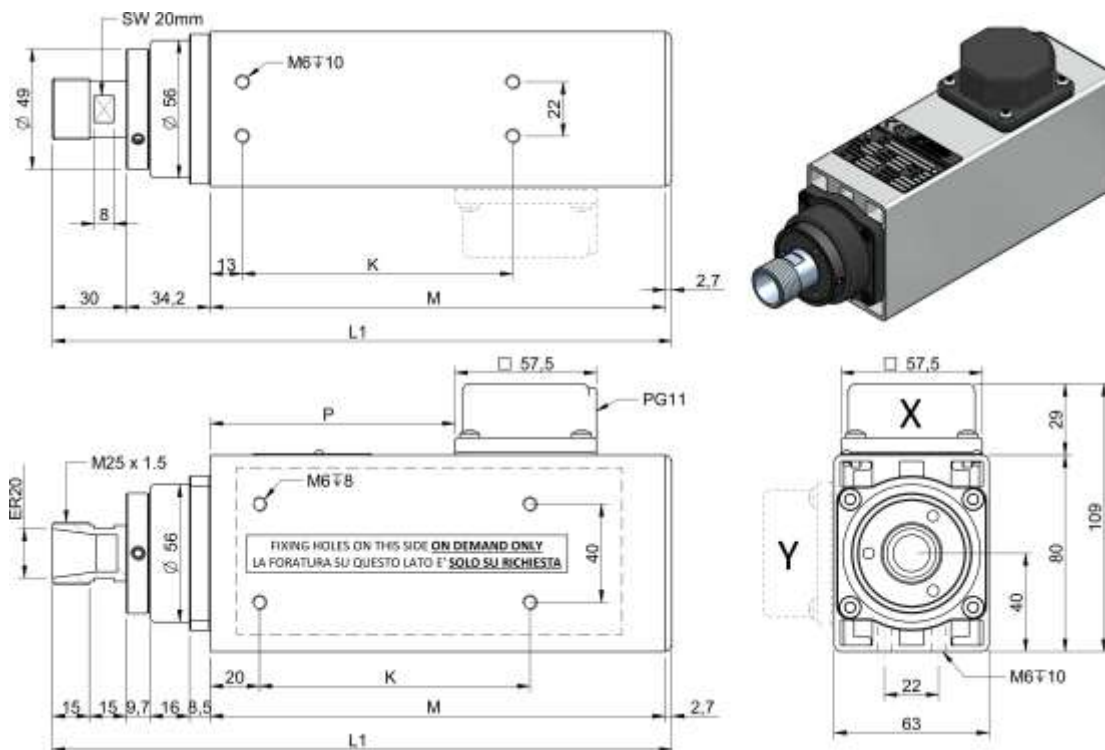
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C31/40-A-DBS-P-ER20	0.22	220 / 380	200	12000	1.6 / 0.9	3.3
C31/40-B-DBS-P-ER20	0.37	220 / 380	200	12000	2.1 / 1.2	3.7
C31/40-C-DBS-P-ER20	0.55	220 / 380	200	12000	2.7 / 1.5	4.0
C31/40-D-DBS-P-ER20	0.73	220 / 380	200	12000	3.1 / 1.8	4.3
C31/40-A-DBS-P-ER20	0.33	220 / 380	300	18000	2.1 / 1.2	3.3
C31/40-B-DBS-P-ER20	0.55	220 / 380	300	18000	3.0 / 1.7	3.7
C31/40-C-DBS-P-ER20	0.73	220 / 380	300	18000	3.6 / 2.1	4.0
C31/40-A-DBS-P-ER20	0.33	220 / 380	400	24000	2.1 / 1.2	3.3
C31/40-B-DBS-P-ER20	0.55	220 / 380	400	24000	3.0 / 1.7	3.7
C31/40-C-DBS-P-ER20	0.73	220 / 380	400	24000	3.6 / 2.1	4.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C31/40 – DBS – P – ER20

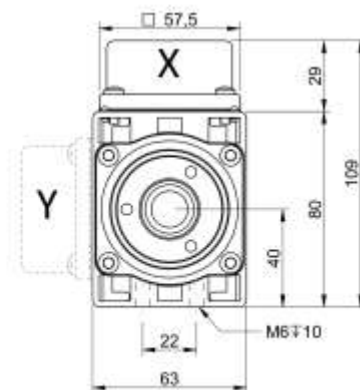
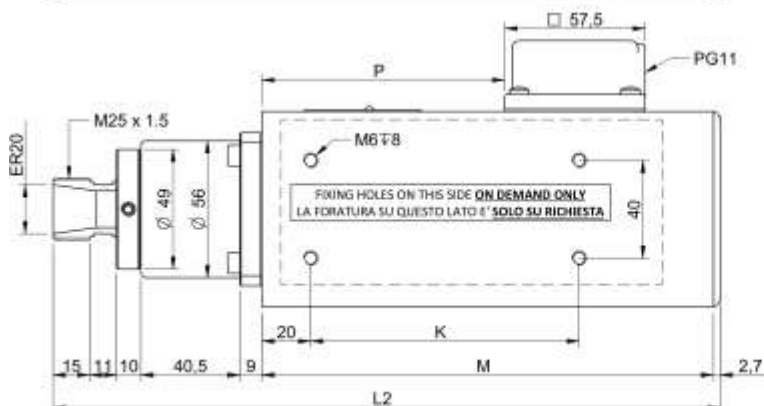
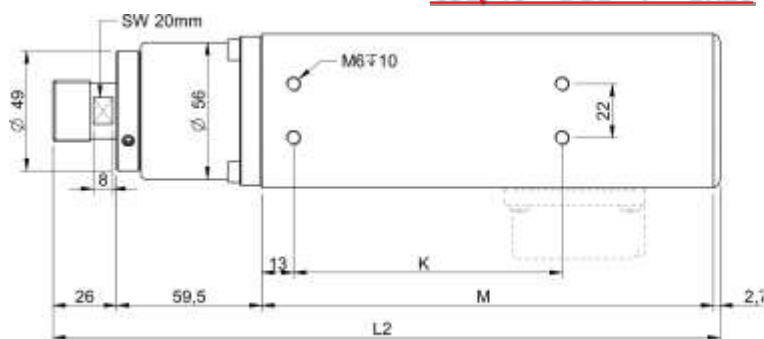


TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C31/40-A-DBS-P-ER20	227	77.5	110	160
C31/40-B-DBS-P-ER20	252	99.5	110	185
C31/40-C-DBS-P-ER20	267	114.5	110	200
C31/40-D-DBS-P-ER20	287	134.5	110	220

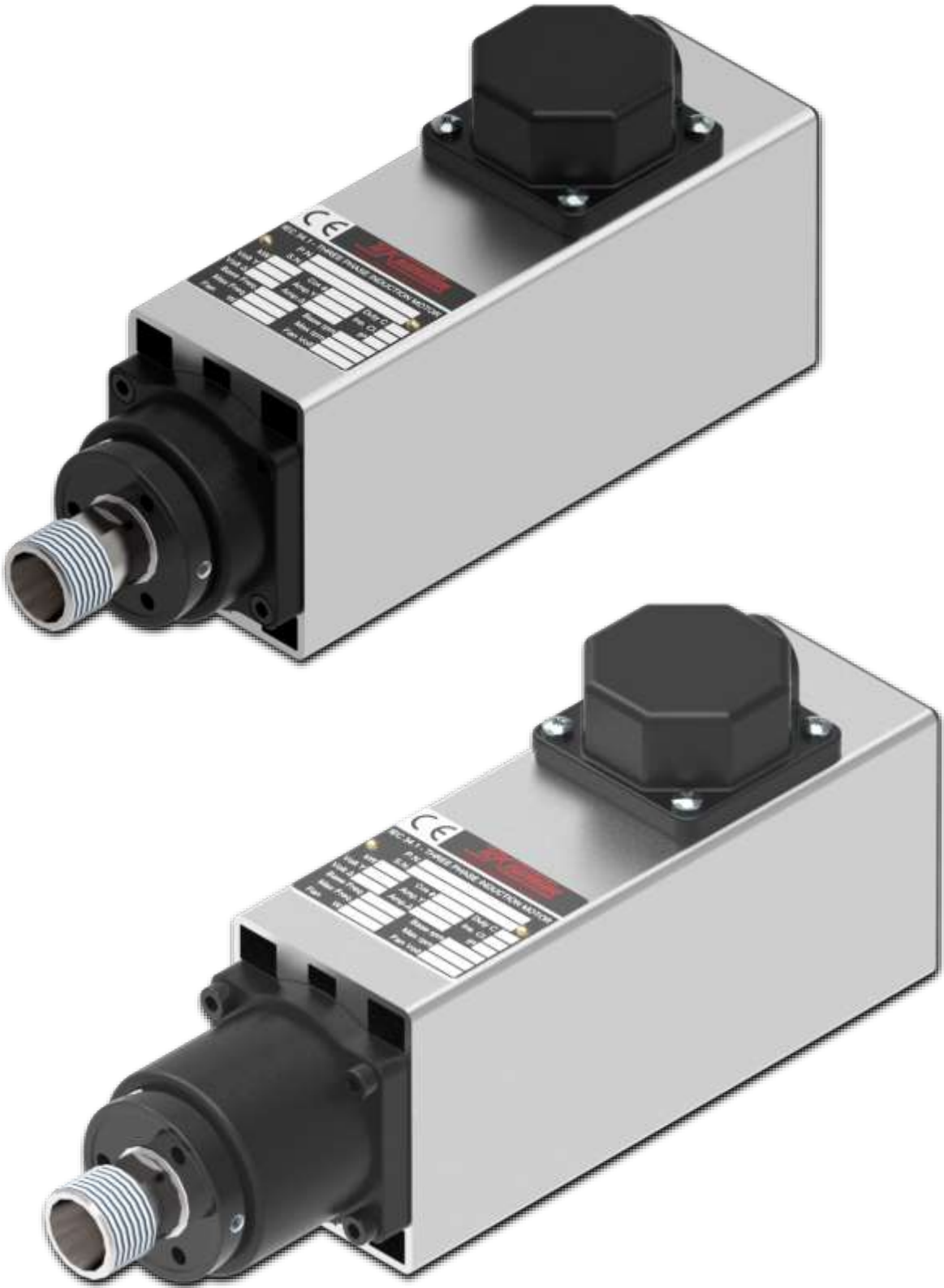
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C31/40-A-DBL-P-ER20	0.22	220 / 380	200	12000	1.6 / 0.9	3.3
C31/40-B-DBL-P-ER20	0.37	220 / 380	200	12000	2.1 / 1.2	3.7
C31/40-C-DBL-P-ER20	0.55	220 / 380	200	12000	2.7 / 1.5	4.0
C31/40-D-DBL-P-ER20	0.73	220 / 380	200	12000	3.1 / 1.8	4.3
C31/40-A-DBL-P-ER20	0.33	220 / 380	300	18000	2.1 / 1.2	3.3
C31/40-B-DBL-P-ER20	0.55	220 / 380	300	18000	3.0 / 1.7	3.7
C31/40-C-DBL-P-ER20	0.73	220 / 380	300	18000	3.6 / 2.1	4.0
C31/40-A-DBL-P-ER20	0.33	220 / 380	400	24000	2.1 / 1.2	3.3
C31/40-B-DBL-P-ER20	0.55	220 / 380	400	24000	3.0 / 1.7	3.7
C31/40-C-DBL-P-ER20	0.73	220 / 380	400	24000	3.6 / 2.1	4.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN**C31/40 – DBL – P – ER20**

TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]
C31/40-A-DBL-P-ER20	248.2	77.5	110	160
C31/40-B-DBL-P-ER20	273.2	99.5	110	185
C31/40-C-DBL-P-ER20	288.2	114.5	110	200
C31/40-D-DBL-P-ER20	308.2	134.5	110	220



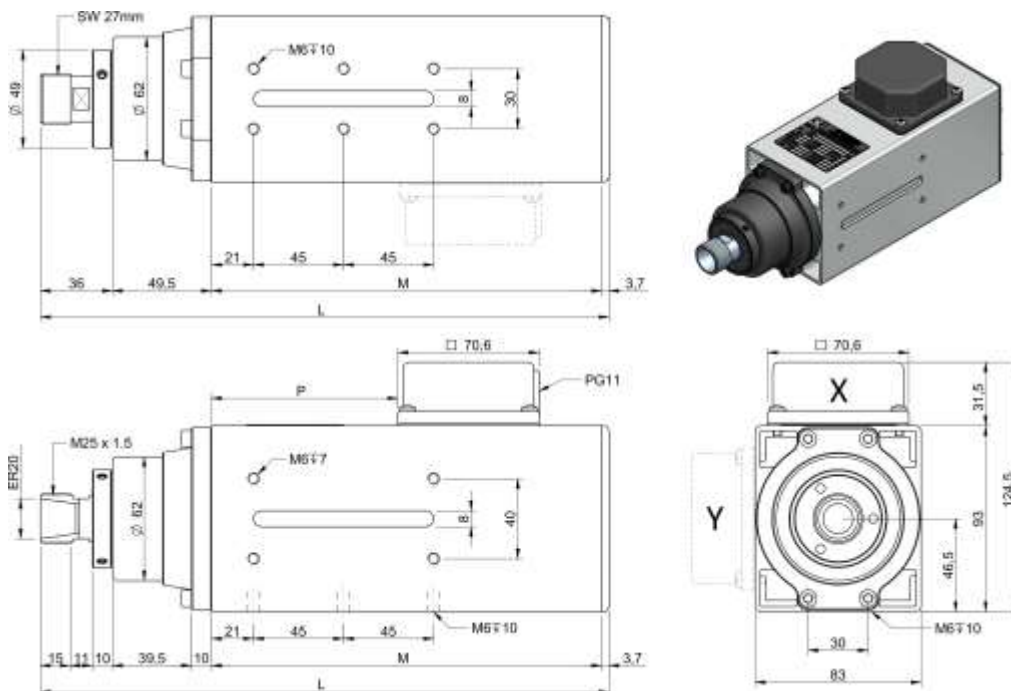
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C41/47-A-DB-P-ER20	0.75	220 / 380	200	12000	4.2 / 2.4	6.5
C41/47-B-DB-P-ER20	1.1	220 / 380	200	12000	5.4 / 3.1	7.0
C41/47-C-DB-P-ER20	1.5	220 / 380	200	12000	6.7 / 3.9	8.5
C41/47-D-DB-P-ER20	1.8	220 / 380	200	12000	8.0 / 4.6	9.0
C41/47-A-DB-P-ER20	1.1	220 / 380	300	18000	6.2 / 3.6	6.5
C41/47-B-DB-P-ER20	1.6	220 / 380	300	18000	8.1 / 4.7	7.0
C41/47-C-DB-P-ER20	2.2	220 / 380	300	18000	9.0 / 5.2	8.5
C41/47-D-DB-P-ER20	2.7	220 / 380	300	18000	12.0 / 7.0	9.0
C41/47-A-DB-P-ER20	1.1	220 / 380	400	24000	6.2 / 3.6	6.5
C41/47-B-DB-P-ER20	1.6	220 / 380	400	24000	8.1 / 4.7	7.0
C41/47-C-DB-P-ER20	2.2	220 / 380	400	24000	9.0 / 5.2	8.5
C41/47-D-DB-P-ER20	2.7	220 / 380	400	24000	12.0 / 7.0	9.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – DB – P – ER20



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C41/47-A-DB-P-ER20	280.7	73	175
C41/47-B-DB-P-ER20	303.7	93	195
C41/47-C-DB-P-ER20	333.7	123	225
C41/47-D-DB-P-ER20	353.7	143	245

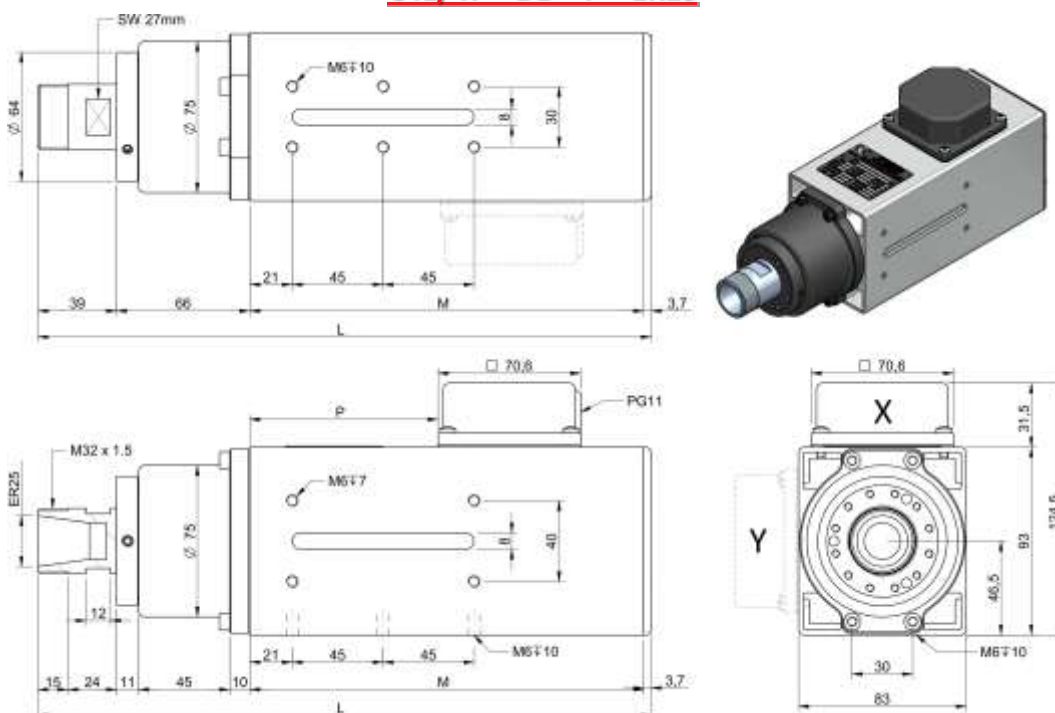
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C41/47-A-DB-P-ER25	0.75	220 / 380	200	12000	4.2 / 2.4	6.5
C41/47-B-DB-P-ER25	1.1	220 / 380	200	12000	5.4 / 3.1	7.0
C41/47-C-DB-P-ER25	1.5	220 / 380	200	12000	6.7 / 3.9	8.5
C41/47-D-DB-P-ER25	1.8	220 / 380	200	12000	8.0 / 4.6	8.9
C41/47-A-DB-P-ER25	1.1	220 / 380	300	18000	6.2 / 3.6	6.5
C41/47-B-DB-P-ER25	1.6	220 / 380	300	18000	8.1 / 4.7	7.0
C41/47-C-DB-P-ER25	2.0	220 / 380	300	18000	9.0 / 5.2	8.5
C41/47-D-DB-P-ER25	2.7	220 / 380	300	18000	12.0 / 7.0	8.9
C41/47-A-DB-P-ER25	1.1	220 / 380	400	24000	6.2 / 3.6	6.5
C41/47-B-DB-P-ER25	1.6	220 / 380	400	24000	8.1 / 4.7	7.0
C41/47-C-DB-P-ER25	2.0	220 / 380	400	24000	9.0 / 5.2	8.5
C41/47-D-DB-P-ER25	2.7	220 / 380	400	24000	12.0 / 7.0	8.9

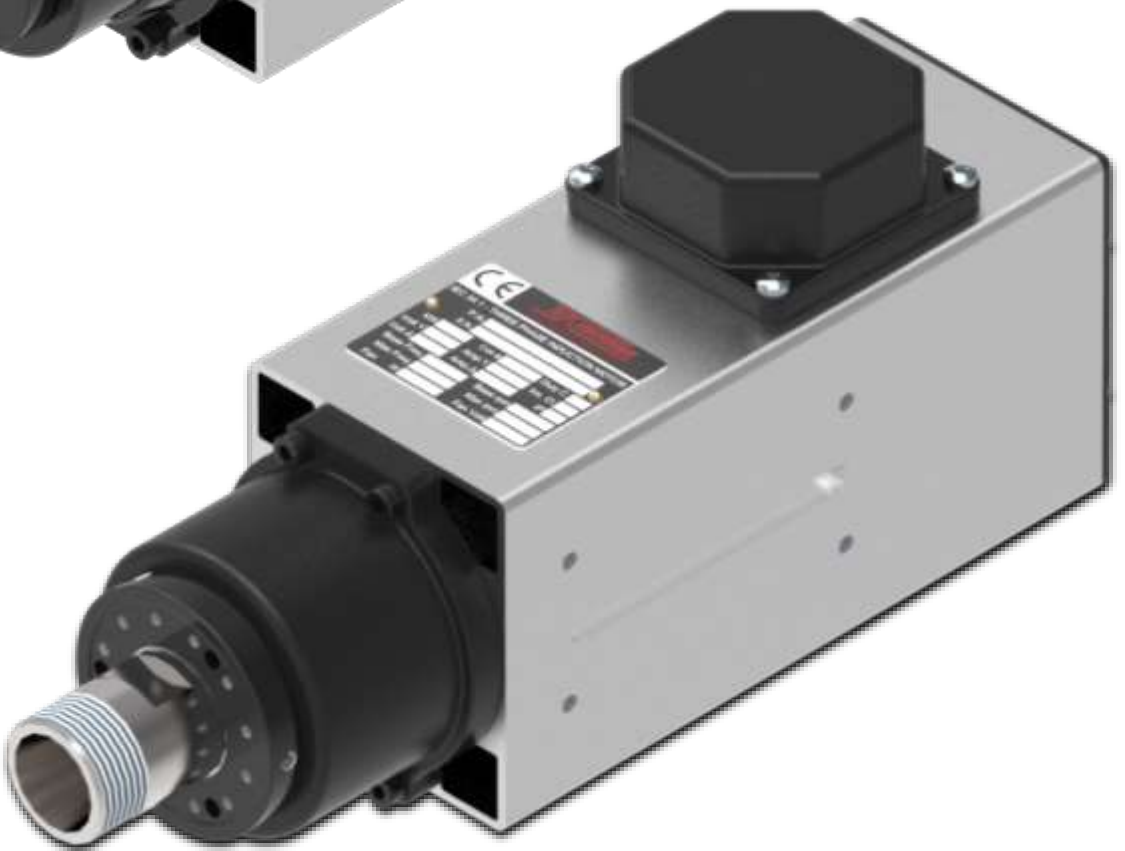
For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – DB – P – ER25



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C41/47-A-DB-P-ER25	280.7	73	175
C41/47-B-DB-P-ER25	303.7	93	195
C41/47-C-DB-P-ER25	333.7	123	225
C41/47-D-DB-P-ER25	353.7	143	245



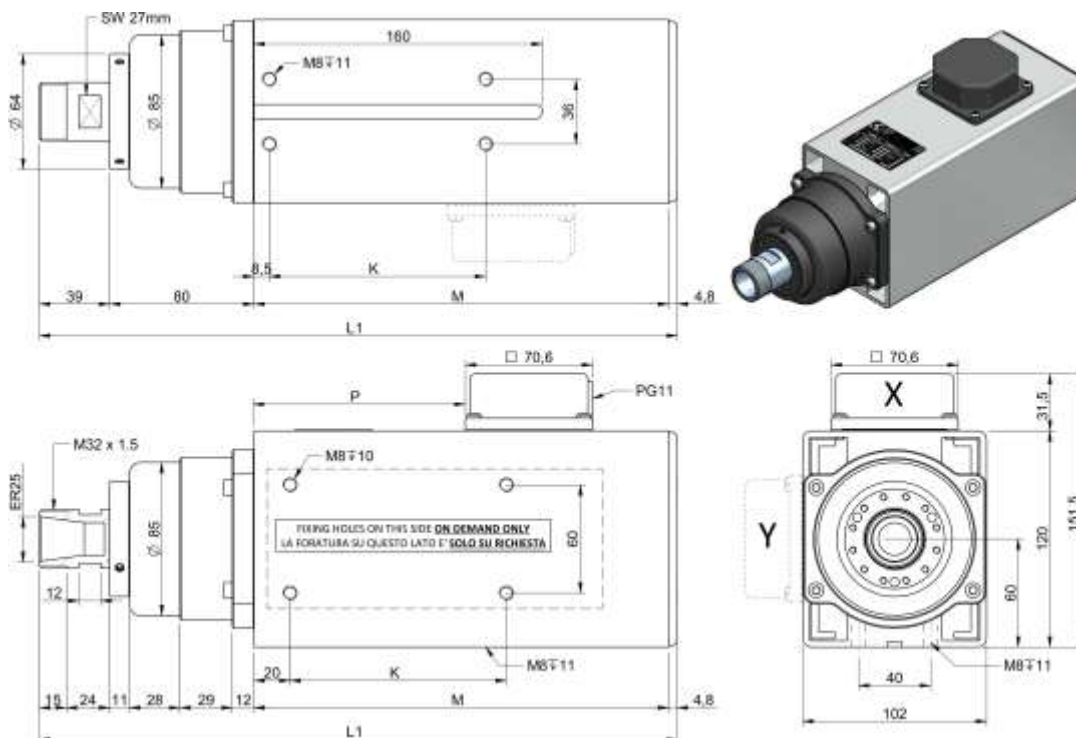
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60-D-DB-P-ER25	1.1	220 / 380	50	3000	5.5 / 3.15	13.9
C51/60-D-DB-P-ER25	2.2	220 / 380	100	6000	9.9 / 5.7	13.9
C51/60-A-DB-P-ER25	2.2	220 / 380	200	12000	9.7 / 5.6	12.0
C51/60-D-DB-P-ER25	3.7	220 / 380	200	12000	15.0 / 8.7	13.9
C51/60-A-DB-P-ER25	3.3	220 / 380	300	18000	13.7 / 7.9	12.0
C51/60-D-DB-P-ER25	5.6	220 / 380	300	18000	20.0 / 11.5	13.9
C51/60-A-DB-P-ER25	3.3	220 / 380	400	24000	13.7 / 7.9	12.0
C51/60-D-DB-P-ER25	5.6	220 / 380	400	24000	20.0 / 11.5	13.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – A or D – DB – P – ER25



TYPE – TIPO – TYP	L1 [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-DB-P-ER25	343.8	107.2	120	220
C51/60-D-DB-P-ER25	383.8	147.2	120	260

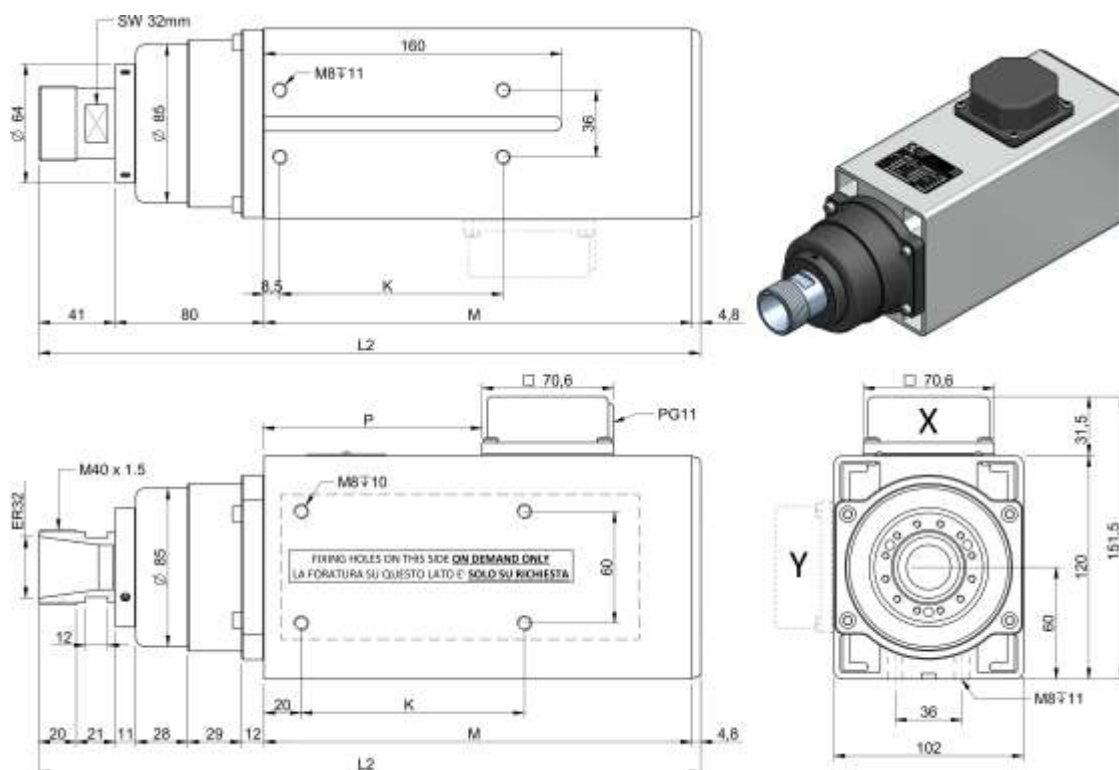
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60-D-DB-P-ER32	1.1	220 / 380	50	3000	4.5 / 2.6	13.9
C51/60-D-DB-P-ER32	2.2	220 / 380	100	6000	9.9 / 5.7	13.9
C51/60-A-DB-P-ER32	2.2	220 / 380	200	12000	9.7 / 5.6	12.0
C51/60-D-DB-P-ER32	3.7	220 / 380	200	12000	15.0 / 8.7	13.9
C51/60-A-DB-P-ER32	3.3	220 / 380	300	18000	13.7 / 7.9	12.0
C51/60-D-DB-P-ER32	5.6	220 / 380	300	18000	20.0 / 11.5	13.9
C51/60-A-DB-P-ER32	3.3	220 / 380	400	24000	13.7 / 7.9	12.0
C51/60-D-DB-P-ER32	5.6	220 / 380	400	24000	20.0 / 11.5	13.9

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – A or D – DB – P – ER32



TYPE – TIPO – TYP	L2 [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-DB-P-ER32	345.8	107.2	120	220
C51/60-D-DB-P-ER32	385.8	147.2	120	260



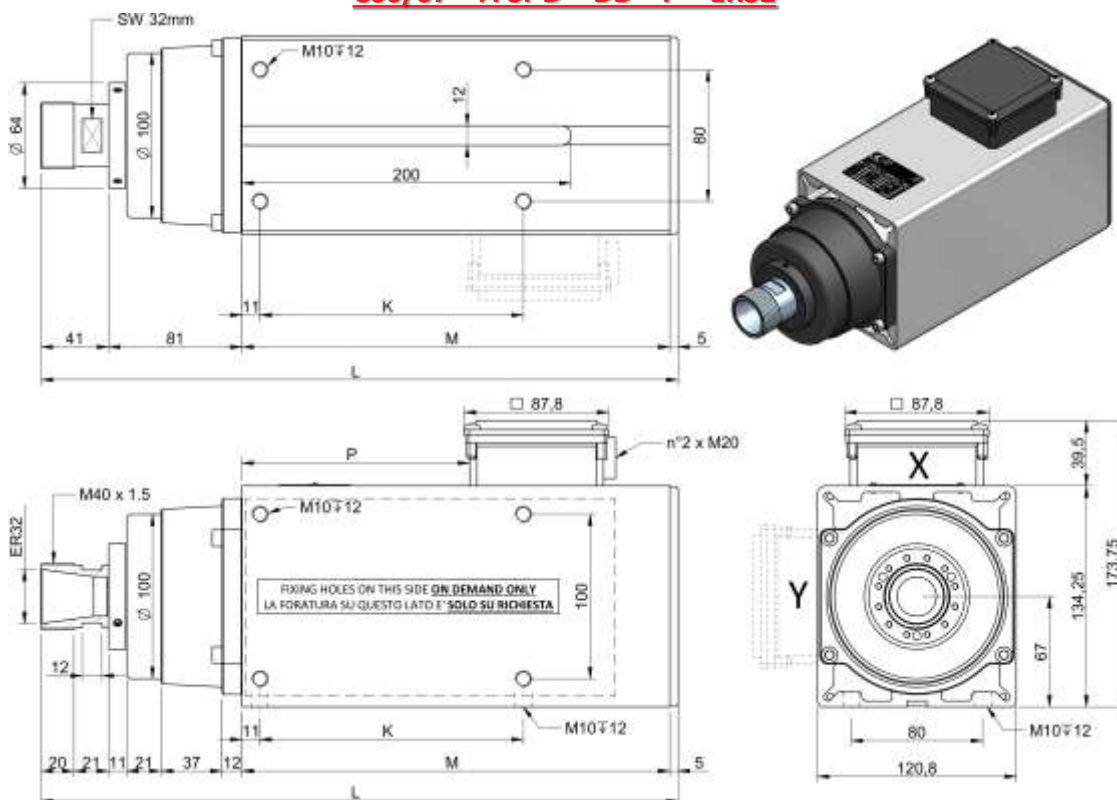
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C60/67-A-DB-P-ER32	1.1	220 / 380	50	3000	4.5 / 2.6	13.3
C60/67-D-DB-P-ER32	1.7	220 / 380	50	3000	6.9 / 4.0	20.8
C60/67-A-DB-P-ER32	1.9	220 / 380	100	6000	7.6 / 4.4	13.3
C60/67-D-DB-P-ER32	3.3	220 / 380	100	6000	12.8 / 7.4	20.8
C60/67-A-DB-P-ER32	3.0	220 / 380	200	12000	12.3 / 7.1	13.3
C60/67-D-DB-P-ER32	4.5	220 / 380	200	12000	18.2 / 10.6	20.8
C60/67-A-DB-P-ER32	4.5	220 / 380	300	18000	18.0 / 10.0	13.3
C60/67-D-DB-P-ER32	7.0	220 / 380	300	18000	25.0 / 14.5	20.8
C60/67-A-DB-P-ER32	4.5	220 / 380	400	24000	18.0 / 10.0	13.3
C60/67-D-DB-P-ER32	7.0	220 / 380	400	24000	25.0 / 14.5	20.8

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C60/67 – A or D – DB – P – ER32



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C60/67-A-DB-P-ER32	347	98.4	160	220
C60/67-D-DB-P-ER32	387	138.4	160	260

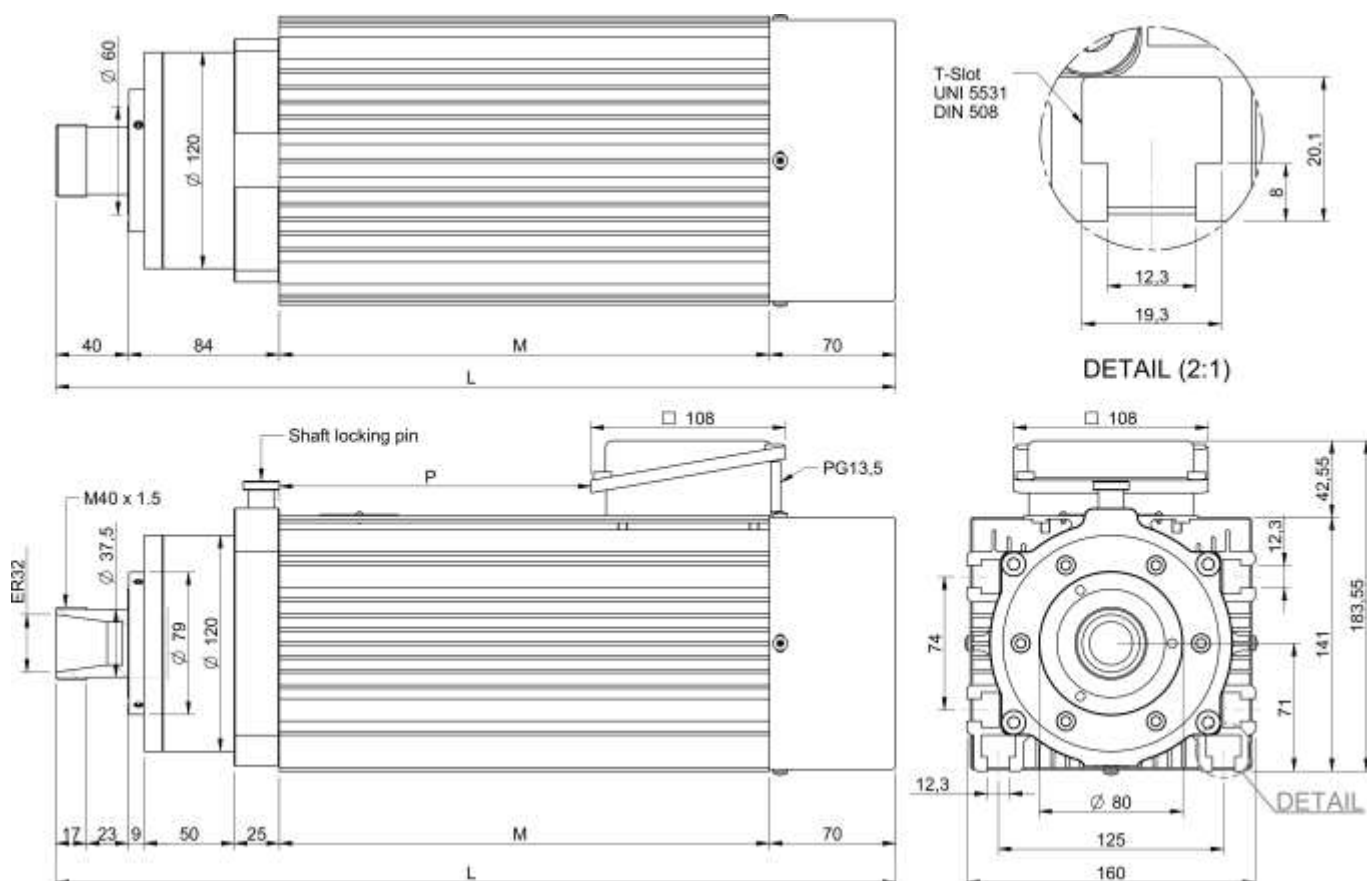
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C71/80-B-2DB-P-ER32	3.0	220 / 380	50	3000	11.1 / 6.4	29.0
C71/80-B-2DB-P-ER32	4.4	380 D	100	6000	10.0	29.0
C71/80-C-2DB-P-ER32	4.0	220 / 380	50	3000	15.2 / 8.8	32.0
C71/80-C-2DB-P-ER32	5.5	380 D	100	6000	11.5	32.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C71/80 – 2DB – P – ER 32



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C71/80-B-2DB-P-ER32	436	142	242
C71/80-C-2DB-P-ER32	466	172	272

TEKNOMOTOR

H.L. Rectangular Motor C85/90



TEKNOMOTOR

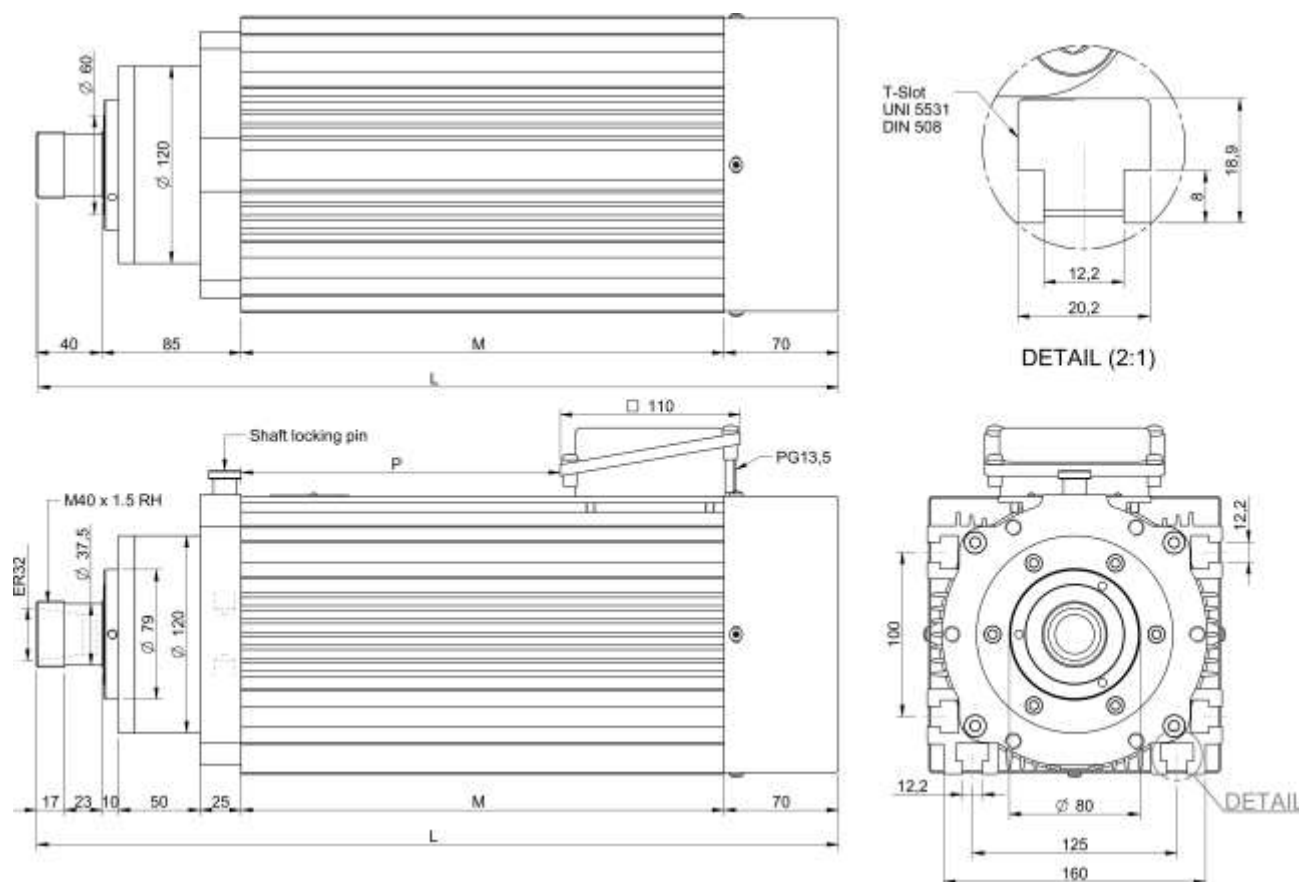
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C85/90 – A – 2DB – P – ER32	5.5	220 / 380	50	3000	21.6 / 12.5	45.7
C85/90 – A – 2DB – P – ER32	7.5	380 Δ	100	6000	15.0	45.7
C85/90 – B – 2DB – P – ER32	7.5	220 / 380	50	3000	28.7 / 16.6	51.0
C85/90 – B – 2DB – P – ER32	11.0	380 Δ	100	6000	23.0	51.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C85/80 – 2DB – P – ER 32



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]
C85/90-A-2DB-P-ER32	490	195	295
C85/90-B-2DB-P-ER32	530	235	315

ELECTRIC FAN COOLED ELECTROSPINDLES

GENERAL INFORMATION

The electric fan cooled electrospindles have been designed to develop high speeds and powers with limited overall dimensions.

The standard models operate between 6000 rpm and 24000 rpm. Power goes from 0.22 to 7.0 kW (view [power vs speed table](#)). These features make them ideal for use on machines for machining wood, aluminum alloys and plastics.

The electric fan cooled electrospindles are used mainly on CNC routers machines where there is the need to limit the operating noise of the spindle or to extend down the speed range.

Because of their structural features, the electrospindles can withstand radial or axial or mixed loads.

Specifically, the electric fan cooled electrospindles are different from the regular electrospindles with ER clamp for the presence of an electric fan, placed on the back of the casing of the electrospindle, which replaces the normal fan moved by the shaft. The need to resort to this type of ventilation occurs essentially in two cases:

- when it is necessary to minimize the noise at high rotational speeds
- when it is necessary that the flow of cooling air is high enough even at low speeds, in order to avoid overheating.

The electric fans are supplied with a voltage of 24 V DC.

The electric fan cooled electrospindles are protected against the ingress of contaminants such as dry sawdust, aluminum shavings, chips PVC.

If the treatment generates ultra-fine (epoxy, carbon and the like) are present or where liquid lubricants in the form of jets and sprays, it is strictly necessary to use pneumatically sealed electrospindles (see sec. 7)

INFORMAZIONI GENERALI

Gli elettromandri servoventilati (Electric fan cooled Electrospindles) sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano tra 6000 rpm e 24000 rpm. Le potenze disponibili variano tra 0.22 kW e 7.0 kW (si veda [power vs speed table](#)).

Queste caratteristiche li rendono ideali per l'impiego su macchine per la lavorazione del legno, delle leghe di alluminio e delle materie plastiche.

Gli elettromandri servoventilati vengono impiegati prevalentemente nel settore delle macchine CNC routers laddove si voglia limitare il rumore di funzionamento del mandrino oppure estenderne verso il basso il numero di giri.

Per le loro caratteristiche costruttive gli elettromandri sopportano un carico di tipo assiale, radiale o misto.

Gli elettromandri servoventilati si differenziano dai normali elettromandri con pinza ER per la presenza di una elettroventola, posta nella zona posteriore dell'elettromandrino, in sostituzione alla ventola calettata sull'albero. L'esigenza di ricorrere a questo tipo di ventilazione si presenta essenzialmente in due casi:

- quando è necessario ridurre il più possibile il rumore ad alti regimi di rotazione
- quando è necessario che la portata d'aria di raffreddamento sia sufficientemente elevata anche ai bassi regimi, onde evitare il surriscaldamento.

Le elettroventole sono alimentate con una tensione di 24 V - CC.

Gli elettromandri servoventilati sono protetti contro l'ingresso di contaminanti secchi quali segatura, trucioli di alluminio, trucioli di PVC.

Se la lavorazione genera polveri ultrasottili (materiali epossidici, carbonio e simili) o laddove siano presenti lubrificanti liquidi sotto forma di getti o nebbie, è strettamente necessario utilizzare gli elettromandri pressurizzati (vedi sez. 7)

ALLGEMEINE INFORMATIONEN

Die Elektrospindel mit Servolüftung (Electric Fan Cooled Electrospindles) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen. Die Standardmodelle sind zwischen 6000 und 24000 U/min tätig. Die verfügbaren Leistungen variieren zwischen 0.22 kW und 7.0 kW (siehe zum Beispiel [power vs speed table](#)).

Dafür sind sie für den Einsatz an Maschinen für die Holz- bzw. Aluminiumlegierungs- und Kunststoffbearbeitung geeignet.

Die Elektrospindeln mit Servolüftung kommen vor allem im Bereich der CNC Router im Einsatz, dort wo die von der laufenden Spindel verursachten Geräusche einzuschränken oder deren Drehzahl zu reduzieren sind.

Dank ihrer Bauweise können die Elektrospindel einer radialen, axialen und miteinander kombinierten Belastung standhalten.

Die Elektrospindeln mit Servolüftung unterscheiden sich von den normalen Elektrospindeln mit ER-Spannzange durch die Präsenz eines Elektroventils, das hinten an der Spindel als Ersatz des Ventils, das auf der Welle sitzt, angebaut ist. Sich für diesen Lüftungstyp zu entscheiden, kommt wesentlich in diesen beiden Fällen vor:

- wenn es erforderlich ist, die von der hohen Drehzahl Lärmemission so weit wie möglich zu reduzieren
- wenn es erforderlich ist, dass der Kühlluftdurchfluss auch bei einer niedrigen Drehzahl genügend hoch ist, um die Überhitzung zu vermeiden.

Die Elektroventile werden mit 24V DC versorgt. Die Elektroventile mit Servolüftung sind gegen den Eintritt von kontaminierenden trockenen Fremdkörpern wie Sägemehl, Alu- und PVC-Späne geschützt.

Wenn die Bearbeitung Extra-Feinstaub (Epoxid-Stoffe, Karbon und ähnliches) erzeugt und wenn flüssige Schmiermittel in Form von Strahlen und Nebel vorhanden sind, ist es unbedingt erforderlich, die mit Druck beaufschlagten Elektrospindel zu verwenden (siehe Abschn. 7)

TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTECTION GRADE
	TYPE	INSULATION	TYPE	BALANCING GRADE			
Electric fan cooled electrospindles	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Electric fan cooling	IP 50 (IP 60 on request)

The electrospindles conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the electrospindle cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

Gli elettromandri sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che l'elettromandrino non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Elektrospindel entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die vorgesehenen Richtlinien erfüllt.

SECTION 6: ELECTRIC FAN COOLED ELECTROSPINDLES

C31/40

(0.22 – 0.73 kW)



C41/47

(0.75 – 2.0 kW)



C51/60

(1.1 – 5.6 kW)



C60/67

(1.25 – 7.0 kW)



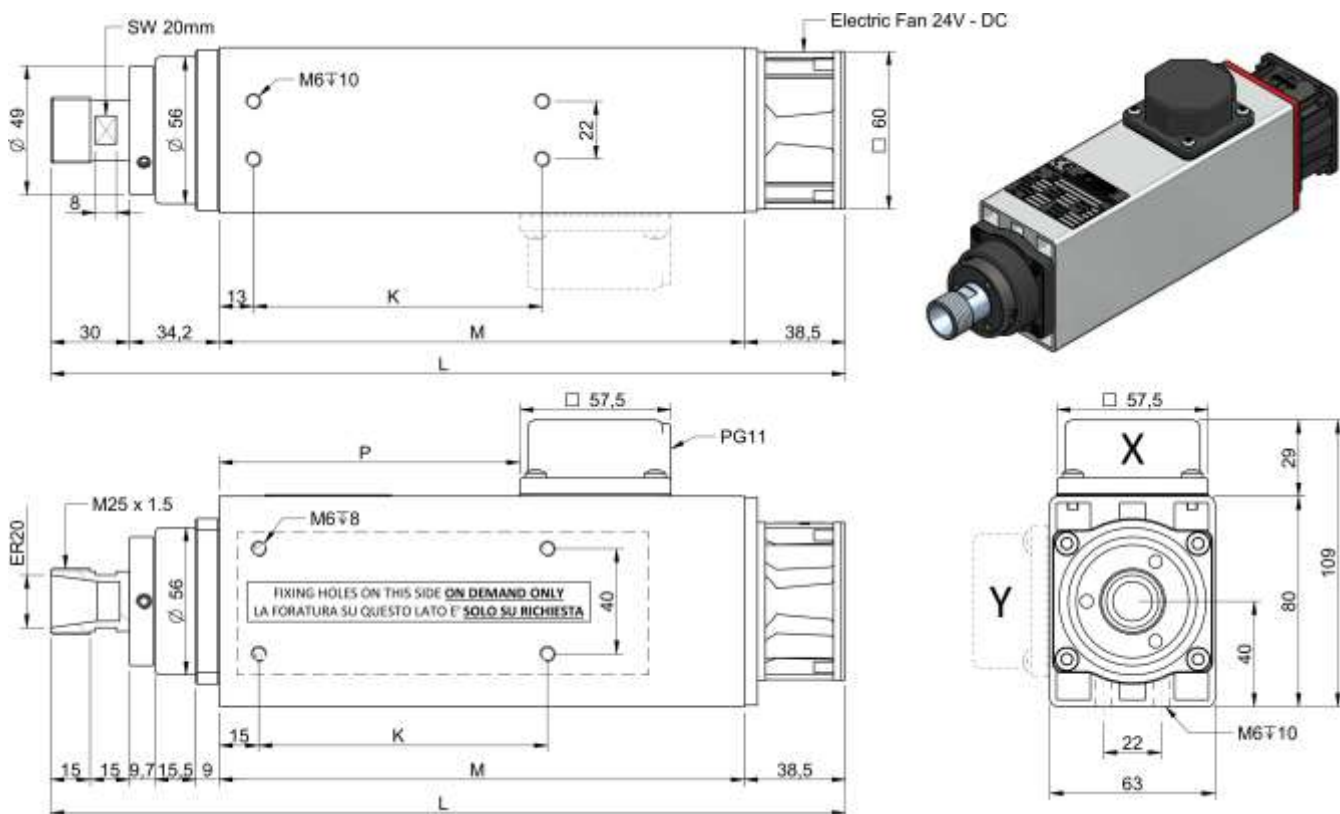
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.	ELECTRIC FAN VOLTAGE TENSIONE ELETTROVENTOLA ELEKTROLÜFTERSPANNUNG
	kW	V	Hz	RPM	A	kg	V
C31/40-A-DB-P-ER20-SV	0.22	220 / 380	200	12000	1.6 / 0.9	3.5	24 – DC
C31/40-B-DB-P-ER20-SV	0.37	220 / 380	200	12000	2.1 / 1.2	3.9	24 – DC
C31/40-C-DB-P-ER20-SV	0.55	220 / 380	200	12000	2.7 / 1.5	4.2	24 – DC
C31/40-D-DB-P-ER20-SV	0.75	220 / 380	200	12000	3.1 / 1.8	4.5	24 – DC
C31/40-A-DB-P-ER20-SV	0.33	220 / 380	300	18000	2.1 / 1.2	3.5	24 – DC
C31/40-B-DB-P-ER20-SV	0.55	220 / 380	300	18000	3.0 / 1.7	3.9	24 – DC
C31/40-C-DB-P-ER20-SV	0.73	220 / 380	300	18000	3.6 / 2.1	4.2	24 – DC

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

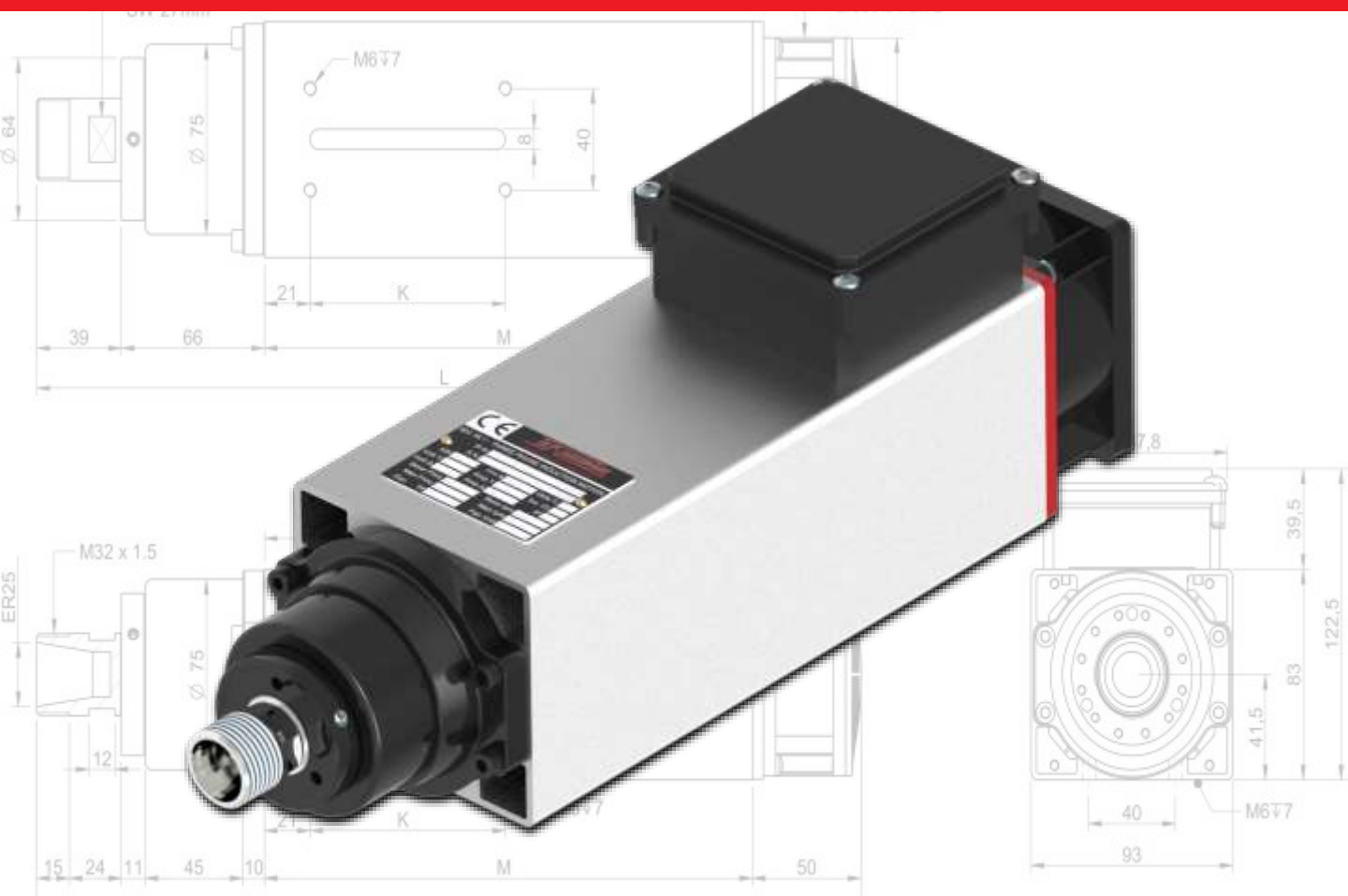
C31/40 – DB – P – ER20 – SV



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C31/40-A-DB-P-ER20-SV	262.7	77.5	110	160
C31/40-B-DB-P-ER20-SV	287.7	99.5	110	185
C31/40-C-DB-P-ER20-SV	302.7	114.5	110	200
C31/40-D-DB-P-ER20-SV	322.7	134.5	110	220

TEKNOMOTOR

Electrospindle C41/47



TEKNOMOTOR

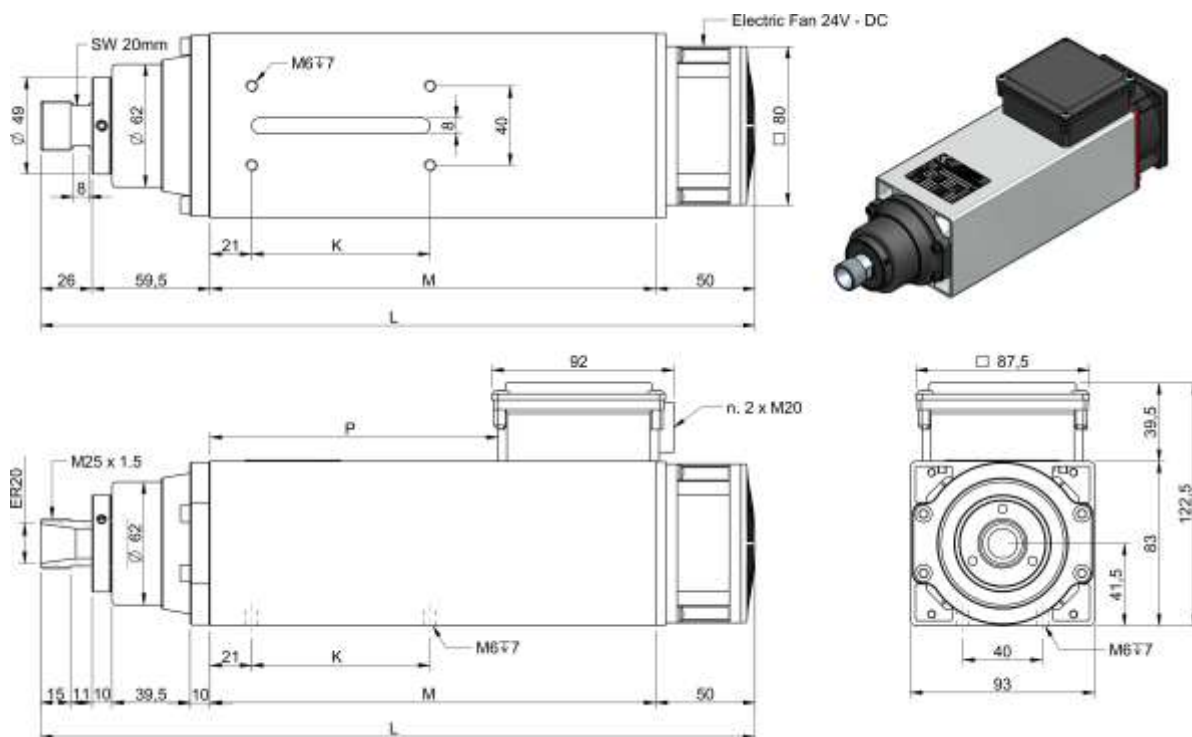
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.	ELECTRIC FAN VOLTAGE TENSIONE ELETTROVENTOLA ELEKTROLÜFTERSPANNUNG
	kW	V	Hz	RPM	A	Kg	V
C41/47-A-DB-P-ER20-SV	0.75	220 / 380	200	12000	4.2 / 2.4	6.7	24 – DC
C41/47-B-DB-P-ER20-SV	1.1	220 / 380	200	12000	5.4 / 3.1	7.2	24 – DC
C41/47-C-DB-P-ER20-SV	1.5	220 / 380	200	12000	6.7 / 3.9	8.7	24 – DC
C41/47-D-DB-P-ER20-SV	1.8	220 / 380	200	12000	8.0 / 4.6	9.1	24 – DC
C41/47-A-DB-P-ER20-SV	1.1	220 / 380	300	18000	6.2 / 3.6	6.7	24 – DC
C41/47-B-DB-P-ER20-SV	1.6	220 / 380	300	18000	8.1 / 4.7	7.2	24 – DC
C41/47-C-DB-P-ER20-SV	2.0	220 / 380	300	18000	9.0 / 5.2	8.7	24 – DC
C41/47-A-DB-P-ER20-SV	1.1	220 / 380	400	24000	6.2 / 3.6	6.7	24 – DC
C41/47-B-DB-P-ER20-SV	1.6	220 / 380	400	24000	8.1 / 4.7	7.2	24 – DC
C41/47-C-DB-P-ER20-SV	2.0	220 / 380	400	24000	9.0 / 5.2	8.7	24 – DC

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – DB – P – ER20 – SV



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-DB-P-ER20-SV	310.5	95.4	90.0	175
C41/47-B-DB-P-ER20-SV	330.5	115.4	90.0	195
C41/47-C-DB-P-ER20-SV	360.5	145.4	90.0	225
C41/47-D-DB-P-ER20-SV	380.5	165.4	90.0	245

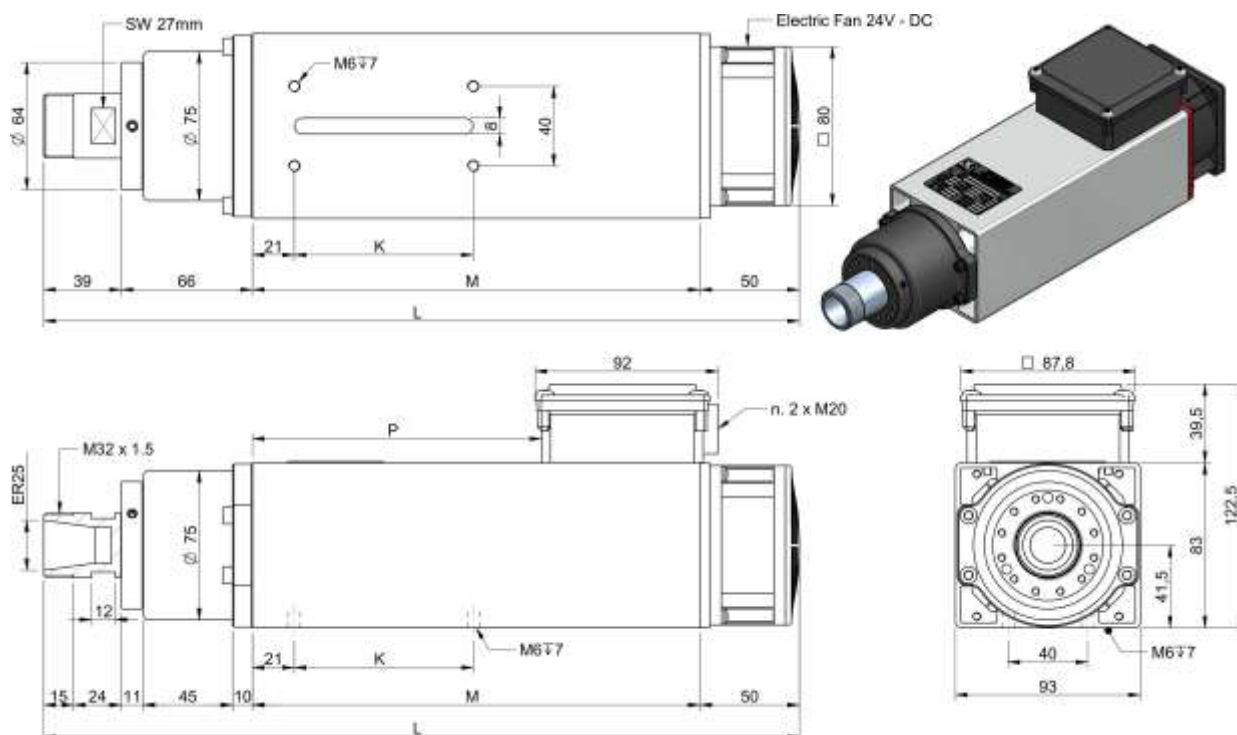
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.	ELECTRIC FAN VOLTAGE TENSIONE ELETTROVENTOLA ELEKTROLÜFTERSPANNUNG
	kW	V	Hz	RPM	A	Kg	V
C41/47-A-DB-P-ER25-SV	0.75	220 / 380	200	12000	4.2 / 2.4	6.7	24 – DC
C41/47-B-DB-P-ER25-SV	1.1	220 / 380	200	12000	5.4 / 3.1	7.2	24 – DC
C41/47-C-DB-P-ER25-SV	1.5	220 / 380	200	12000	6.7 / 3.9	8.7	24 – DC
C41/47-D-DB-P-ER25-SV	1.8	220 / 380	200	12000	8.0 / 4.6	9.1	24 – DC
C41/47-A-DB-P-ER25-SV	1.1	220 / 380	300	18000	6.2 / 3.6	6.7	24 – DC
C41/47-B-DB-P-ER25-SV	1.6	220 / 380	300	18000	8.1 / 4.7	7.2	24 – DC
C41/47-C-DB-P-ER25-SV	2.0	220 / 380	300	18000	9.0 / 5.2	8.7	24 – DC
C41/47-A-DB-P-ER25-SV	1.1	220 / 380	400	24000	6.2 / 3.6	6.7	24 – DC
C41/47-B-DB-P-ER25-SV	1.6	220 / 380	400	24000	8.1 / 4.7	7.2	24 – DC
C41/47-C-DB-P-ER25-SV	2.0	220 / 380	400	24000	9.0 / 5.2	8.7	24 – DC

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – DB – P – ER25 – SV



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-DB-P-ER25-SV	330.0	95.4	90.0	175
C41/47-B-DB-P-ER25-SV	350.0	115.4	90.0	195
C41/47-C-DB-P-ER25-SV	380.0	145.4	90.0	225
C41/47-D-DB-P-ER25-SV	400.0	165.4	90.0	245



TEKNOMOTOR

Electrospindle C51/60



TEKNOMOTOR

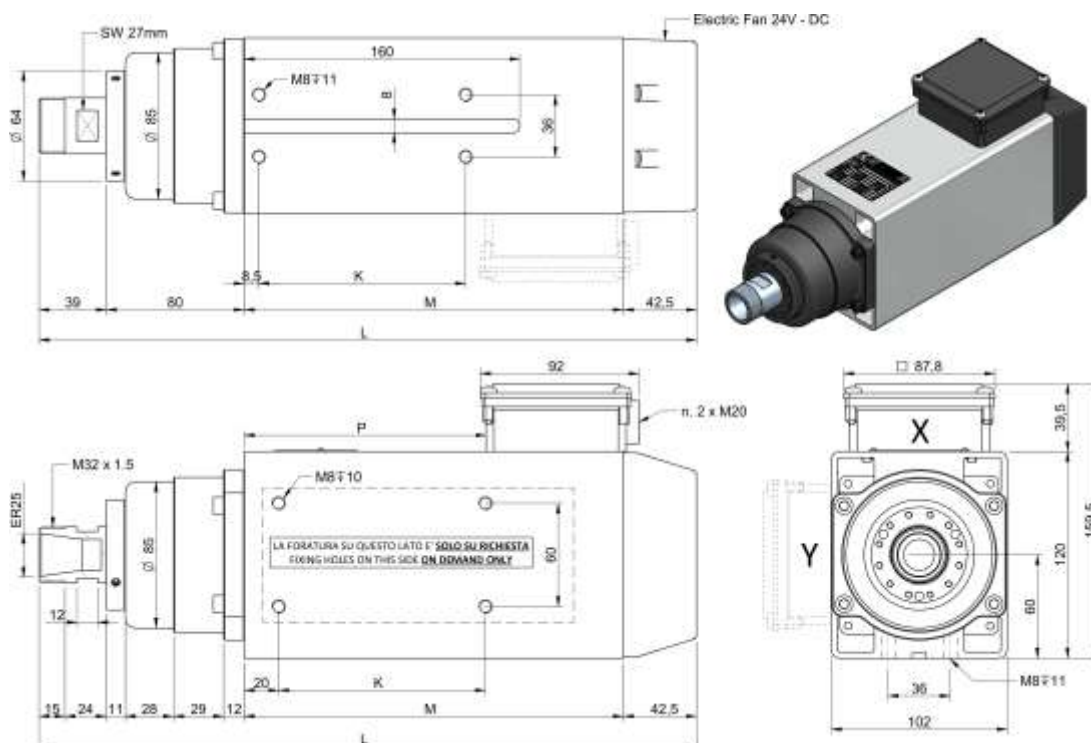
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.	ELECTRIC FAN VOLTAGE TENSIONE ELETTROVENTOLA ELEKTROLÜFTERSPANNUNG
	kW	V	Hz	RPM	A	kg	V
C51/60-D-DB-P-ER25-SV	1.1	220 / 380	50	3000	5.5 / 3.15	14.1	24 – DC
C51/60-D-DB-P-ER25-SV	2.2	220 / 380	100	6000	9.9 / 5.7	14.1	24 – DC
C51/60-A-DB-P-ER25-SV	2.2	220 / 380	200	12000	9.7 / 5.6	12.2	24 – DC
C51/60-D-DB-P-ER25-SV	3.7	220 / 380	200	12000	15.0 / 8.7	14.1	24 – DC
C51/60-A-DB-P-ER25-SV	3.3	220 / 380	300	18000	13.7 / 7.9	12.2	24 – DC
C51/60-D-DB-P-ER25-SV	5.6	220 / 380	300	18000	20.0 / 11.5	14.1	24 – DC
C51/60-A-DB-P-ER25-SV	3.3	220 / 380	400	24000	13.7 / 7.9	12.2	24 – DC
C51/60-D-DB-P-ER25-SV	5.6	220 / 380	400	24000	20.0 / 11.5	14.1	24 – DC

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – DB – P – ER25 – SV



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-DB-P-ER25-SV	381.5	107.2	120	220
C51/60-D-DB-P-ER25-SV	421.5	147.2	120	260

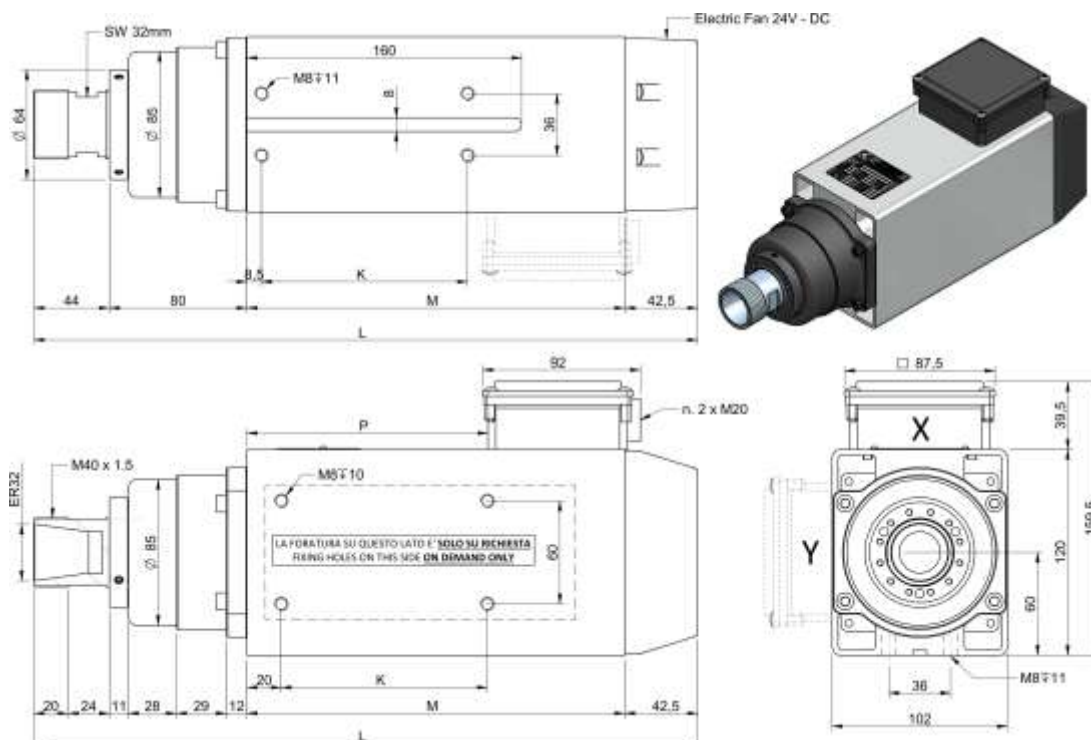
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.	ELECTRIC FAN VOLTAGE TENSIONE ELETTROVENTOLA ELEKTROLÜFTERSPANNUNG
	kW	V	Hz	RPM	A	kg	V
C51/60-D-DB-P-ER32-SV	1.1	220 / 380	50	3000	5.5 / 3.15	14.1	24 – DC
C51/60-D-DB-P-ER32-SV	2.2	220 / 380	100	6000	9.9 / 5.7	14.1	24 – DC
C51/60-A-DB-P-ER32-SV	2.2	220 / 380	200	12000	9.7 / 5.6	12.2	24 – DC
C51/60-D-DB-P-ER32-SV	3.7	220 / 380	200	12000	15.0 / 8.7	14.1	24 – DC
C51/60-A-DB-P-ER32-SV	3.3	220 / 380	300	18000	13.7 / 7.9	12.2	24 – DC
C51/60-D-DB-P-ER32-SV	5.6	220 / 380	300	18000	20.0 / 11.5	14.1	24 – DC
C51/60-A-DB-P-ER32-SV	3.3	220 / 380	400	24000	13.7 / 7.9	12.2	24 – DC
C51/60-D-DB-P-ER32-SV	5.6	220 / 380	400	24000	20.0 / 11.5	14.1	24 – DC

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – DB – P – ER32 - SV

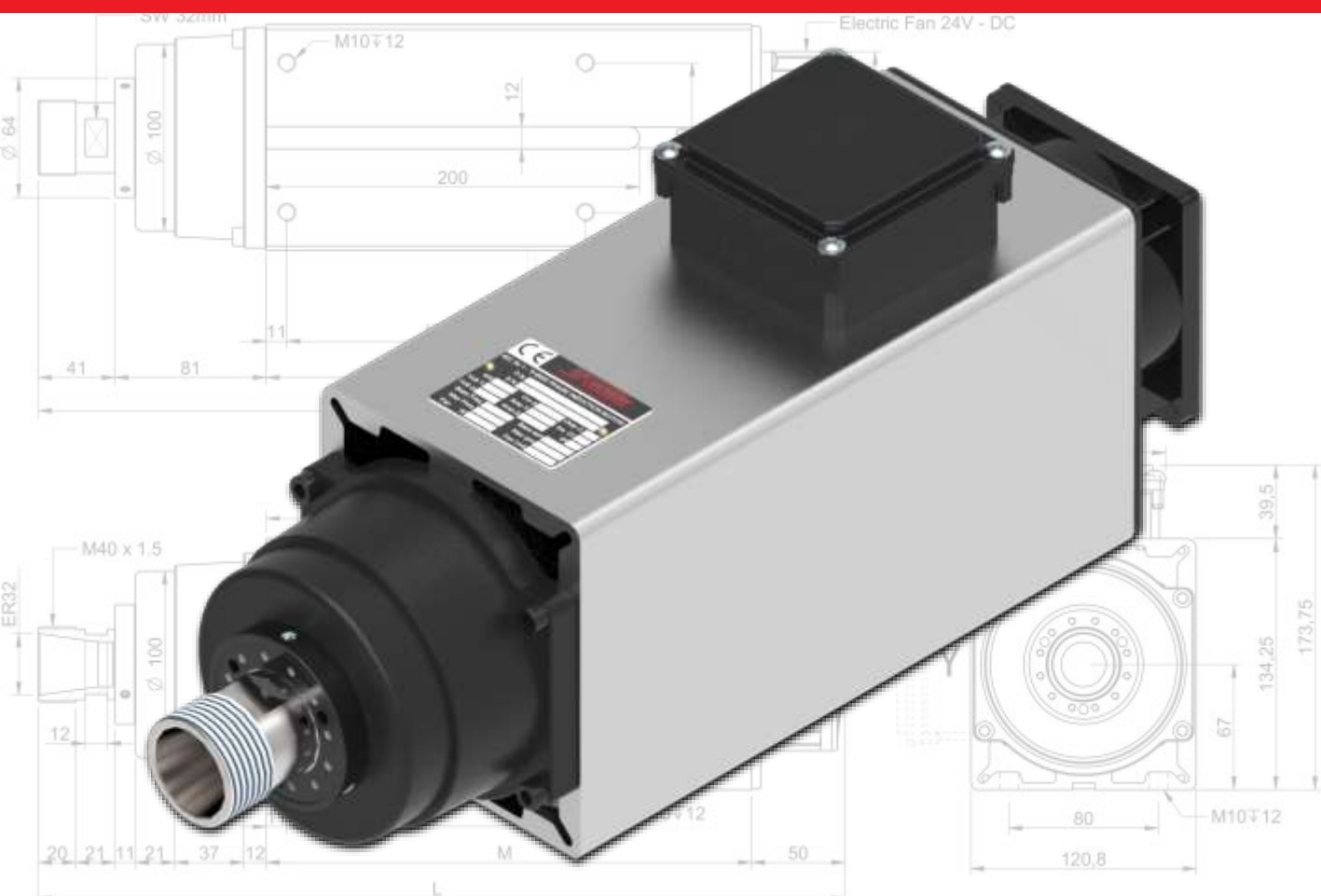


TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-DB-P-ER32-SV	381.5	107.2	120	220
C51/60-D-DB-P-ER32-SV	421.5	147.2	120	260



TEKNOMOTOR

Electrospindle C60/67



TEKNOMOTOR

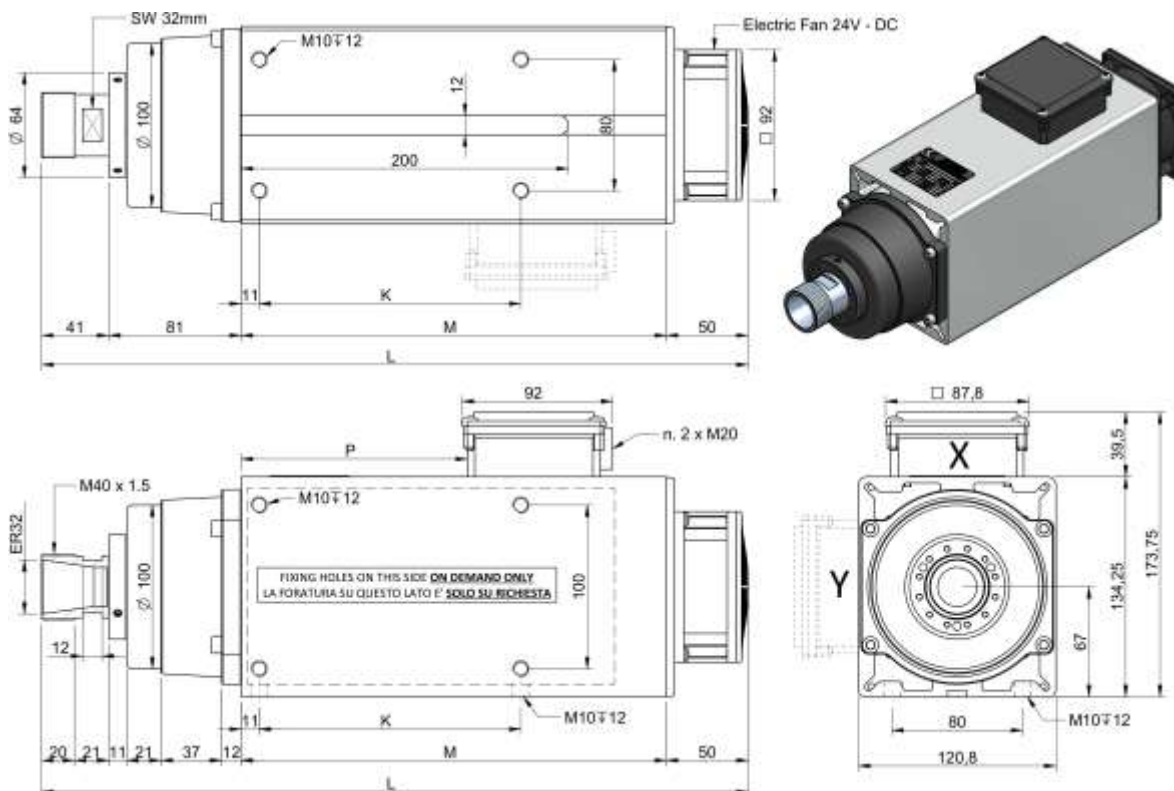
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.	ELECTRIC FAN VOLTAGE TENSIONE ELETTROVENTOLA ELEKTROLÜFTERSPANNUNG
	kW	V	Hz	RPM	A	kg	V
C60/67-A-DB-P-ER32-SV	1.25	220 / 380	50	3000	5.6 / 3.2	13.5	24 – DC
C60/67-D-DB-P-ER32-SV	1.6	220 / 380	50	3000	6.9 / 4.0	21.0	24 – DC
C60/67-A-DB-P-ER32-SV	1.9	220 / 380	100	6000	7.6 / 4.4	13.5	24 – DC
C60/67-D-DB-P-ER32-SV	3.3	220 / 380	100	6000	12.8 / 7.4	21.0	24 – DC
C60/67-A-DB-P-ER32-SV	3.0	220 / 380	200	12000	12.3 / 7.1	13.5	24 – DC
C60/67-D-DB-P-ER32-SV	4.5	220 / 380	200	12000	18.2 / 10.6	21.0	24 – DC
C60/67-A-DB-P-ER32-SV	4.5	220 / 380	300	18000	18.0 / 10.0	13.5	24 – DC
C60/67-D-DB-P-ER32-SV	7.0	220 / 380	300	18000	25.0 / 14.5	21.0	24 – DC
C60/67-A-DB-P-ER32-SV	4.5	220 / 380	400	24000	18.0 / 10.0	13.5	24 – DC
C60/67-D-DB-P-ER32-SV	7.0	220 / 380	400	24000	25.0 / 14.5	21.0	24 – DC

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C60/67 – DB – P – ER32 – SV



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C60/67-A-DB-P-ER32-SV	392	98.4	160	220
C60/67-D-DB-P-ER32-SV	432	138.4	160	260

PNEUMATICALLY SEALED ELECTROSPINDLES

GENERAL INFORMATION

The pneumatically sealed electrospindles have been designed to develop high speeds and powers with limited overall dimensions.

The standard models operate between 1400 and 24000 rpm. The powers go from 0.22 to 5.6 kW (view [power vs speed table](#)).

Because of their structural features, the electrospindles can withstand radial or axial or mixed loads.

The pneumatically sealed electrospindles are highly protected from all external inclusions, both of liquids which fine particles (IP 64).

The pressurization takes place through the injection of compressed air, which protruding from the cavities in correspondence of the front or/and back cover, prevents the entry of any impurity from the outside.

These characteristics make them ideal for use on machines for the processing of aluminum with liquid coolants, composite materials, glass and marble. In case the coolant liquid is water, you can require the shaft made by stainless steel.

INFORMAZIONI GENERALI

Gli elettromandri pressurizzati (Pneumatically sealed Electrospindles) sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano tra 1400 rpm e 24000 rpm. Le potenze disponibili variano tra 0.22 kW e 5.6 kW (si veda [power vs speed table](#)).

Per le loro caratteristiche costruttive gli elettromandri sopportano un carico di tipo assiale, radiale o misto.

Gli elettromandri pressurizzati sono altamente protetti da tutte le inclusioni esterne, sia di liquidi che di polveri sottili (IP 64). La pressurizzazione avviene mediante aria compressa, la quale fuoriuscendo dalle intercapedini in corrispondenza degli scudi anteriore e/o posteriore, impedisce l'ingresso di qualsiasi impurezza proveniente dall'esterno.

Queste caratteristiche li rendono ideali per l'impiego su macchine per la lavorazione dell'alluminio con liquidi refrigeranti, dei materiali compositi, del vetro e del marmo.

Nel caso in cui il refrigerante liquido sia acqua, si richieda la realizzazione dell'albero in acciaio inossidabile.

ALLGEMEINE INFORMATIONEN

Die Druckluft-Elektrospindel (Pneumatically Sealed Electrospindles) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen.

Die Standardmodelle sind zwischen 1400 und 24000 U/min tätig. Die verfügbaren Leistungen variieren zwischen 0.22 kW und 5.6 kW (siehe zum Beispiel [power vs speed table](#)).

Dank ihrer Bauweise können die Elektrospindel einer radialen, axialen und miteinander kombinierten Belastung standhalten.

Die Druckluft-Elektrospindeln sind gegen das Eindringen von Fremdkörpern, wie Flüssigkeiten oder Feinstaub (IP64) geschützt. Die Beaufschlagung erfolgt mit Druckluft, die durch die Spalten bei den Schutzschilden ausfließt und den Eintritt von Unreinheiten vermeidet, die von außen kommen.

Dafür sind sie ideal zum Einsatz an Maschinen zur Bearbeitung von Aluminium mit Kühlmitteln, von Verbundstoffen, von Glas bzw. Marmor geeignet.

Wenn das Wasser als Kühlmittel verwendet wird, muss die Welle aus Edelstahl hergestellt werden.

TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTEZIONE
	TYPE	INSULATION	TYPE	INSULATION			
Pneumatically sealed electrospindles	Asynchronous, 3 phases	F class	Gabbia di scoiattolo	2.5 (ISO 1940)	Closed, from extruded Aluminum profile	Shaft driven fan cooling.	IP 64

The electrospindles conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the electrospindle cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

Gli elettromandri sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che l'elettromandrino non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Elektrospindel entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 7: PNEUMATICALLY SEALED ELECTROSPINDLES

[C31/40](#)

(0.22 – 0.73 kW)



[C41/47](#)

(0.75 – 2.0 kW)



[C51/60](#)

(1.1 – 5.6 kW)



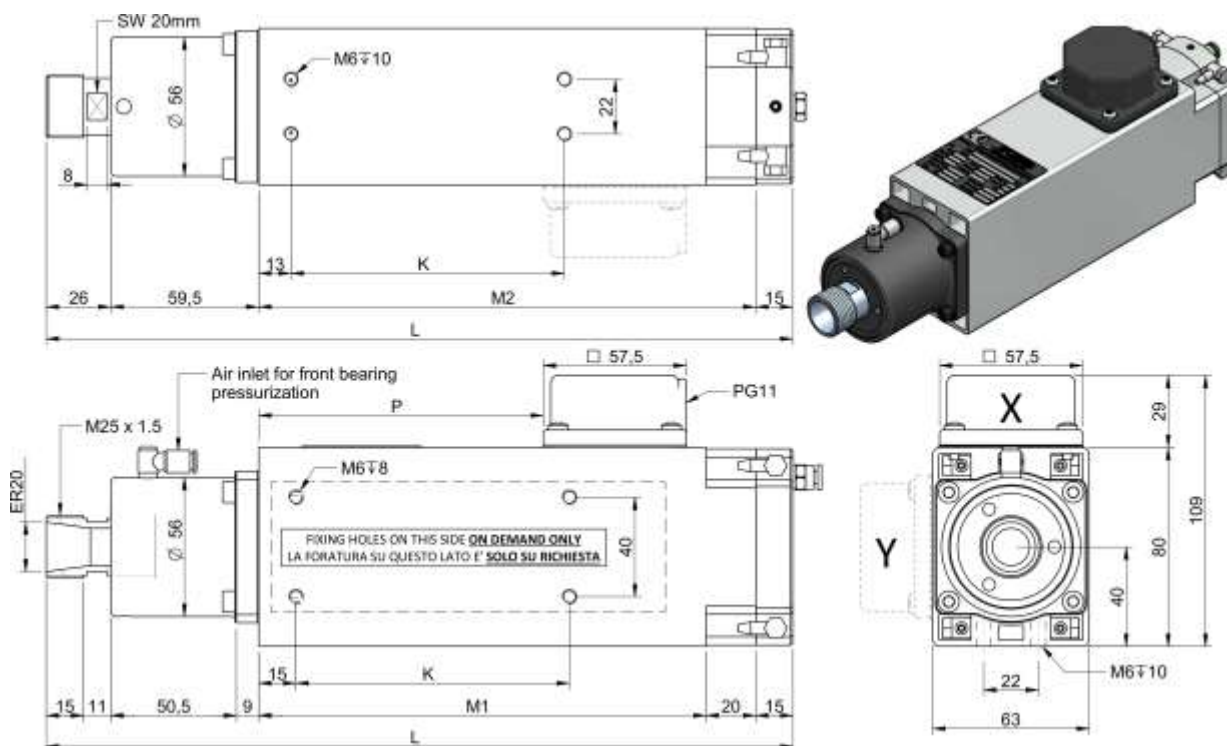
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C31/40-A-DBL-P-ER20-PR	0.22	220 / 380	200	12000	1.6 / 0.9	3.5
C31/40-B-DBL-P-ER20-PR	0.37	220 / 380	200	12000	2.1 / 1.2	3.9
C31/40-C-DBL-P-ER20-PR	0.55	220 / 380	200	12000	2.7 / 1.5	4.2
C31/40-D-DBL-P-ER20-PR	0.75	220 / 380	200	12000	3.1 / 1.8	4.5
C31/40-A-DBL-P-ER20-PR	0.33	220 / 380	300	18000	2.1 / 1.2	3.5
C31/40-B-DBL-P-ER20-PR	0.55	220 / 380	300	18000	3.0 / 1.7	3.9
C31/40-C-DBL-P-ER20-PR	0.73	220 / 380	300	18000	3.6 / 2.1	4.2

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

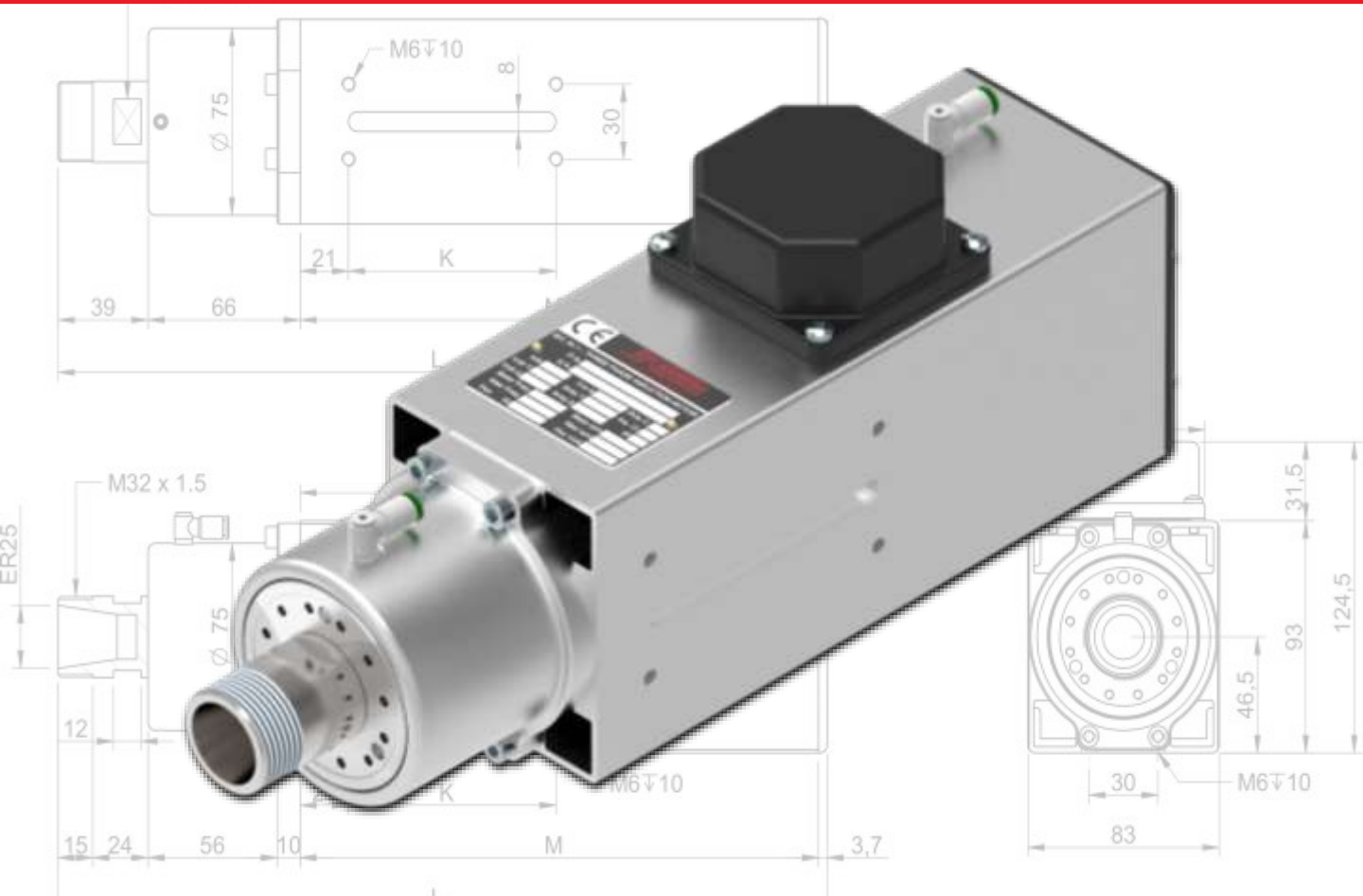
C31/40 – DBL – P – ER20 – PR



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M1 [mm]	M2 [mm]
C31/40-A-DBL-P-ER20-PR	260.5	77.5	110	160	140
C31/40-B-DBL-P-ER20-PR	285.5	99.5	110	185	165
C31/40-C-DBL-P-ER20-PR	300.5	114.5	110	200	180
C31/40-D-DBL-P-ER20-PR	320.5	134.5	110	220	200

TEKNOMOTOR

Electrospindle C41/47



TEKNOMOTOR

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

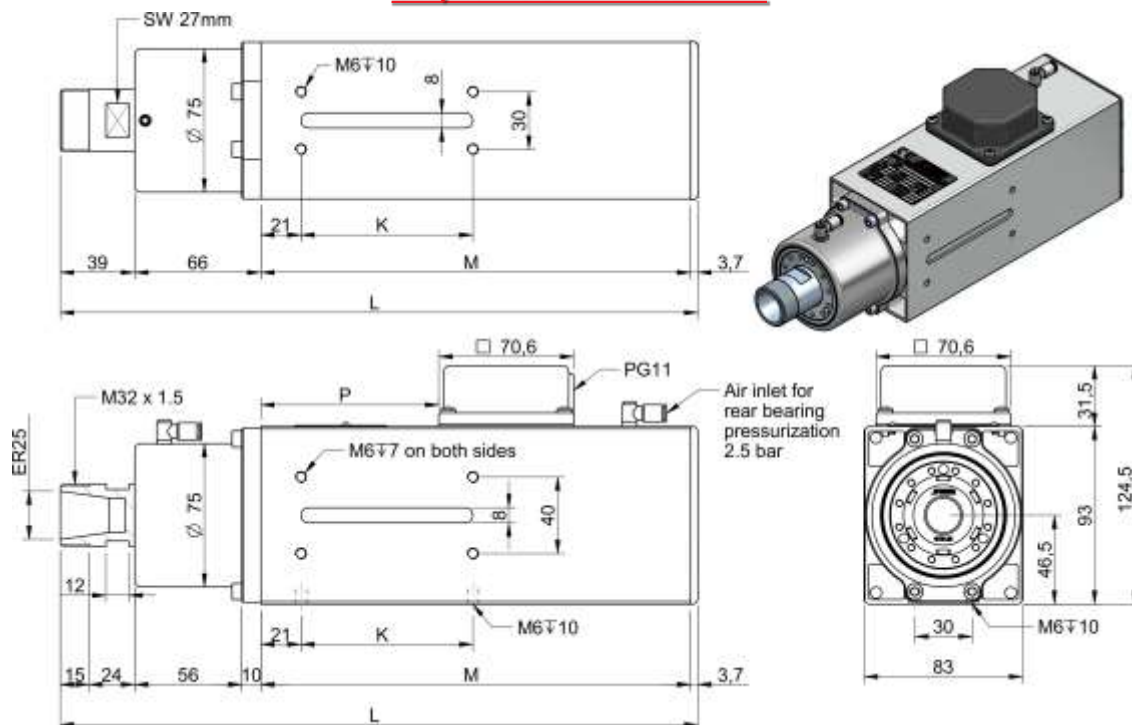
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	Kg
C41/47-A-DB-P-ER25-PR	0.75	220 / 380	200	12000	4.2 / 2.4	6.6
C41/47-B-DB-P-ER25-PR	1.1	220 / 380	200	12000	5.4 / 3.1	7.1
C41/47-C-DB-P-ER25-PR	1.5	220 / 380	200	12000	6.7 / 3.9	8.6
C41/47-D-DB-P-ER25-PR	1.8	220 / 380	200	12000	8.0 / 4.6	9.0
C41/47-A-DB-P-ER25-PR	1.1	220 / 380	300	18000	6.2 / 3.6	6.6
C41/47-B-DB-P-ER25-PR	1.6	220 / 380	300	18000	8.1 / 4.7	7.1
C41/47-C-DB-P-ER25-PR	2.0	220 / 380	300	18000	9.0 / 5.2	8.6
C41/47-A-DB-P-ER25-HY-PR ¹	1.1	220 / 380	400	24000	6.2 / 3.6	6.6
C41/47-B-DB-P-ER25-HY-PR ¹	1.6	220 / 380	400	24000	8.1 / 4.7	7.1
C41/47-C-DB-P-ER25-HY-PR ¹	2.0	220 / 380	400	24000	9.0 / 5.2	8.6

1. 'HY' means Ceramic Bearings, available on request - 'HY' significa Cuscinetti Ceramici, disponibili su richiesta

For different voltage and frequency, contact our technical office. - Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C41/47 – DB – P – ER25 – PR



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C41/47-A-DB-P-ER25-PR	389.4	73	175	175
C41/47-B-DB-P-ER25-PR	412.4	93	195	195
C41/47-C-DB-P-ER25-PR	442.4	123	225	225
C41/47-D-DB-P-ER25-PR	462.4	143	245	245

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

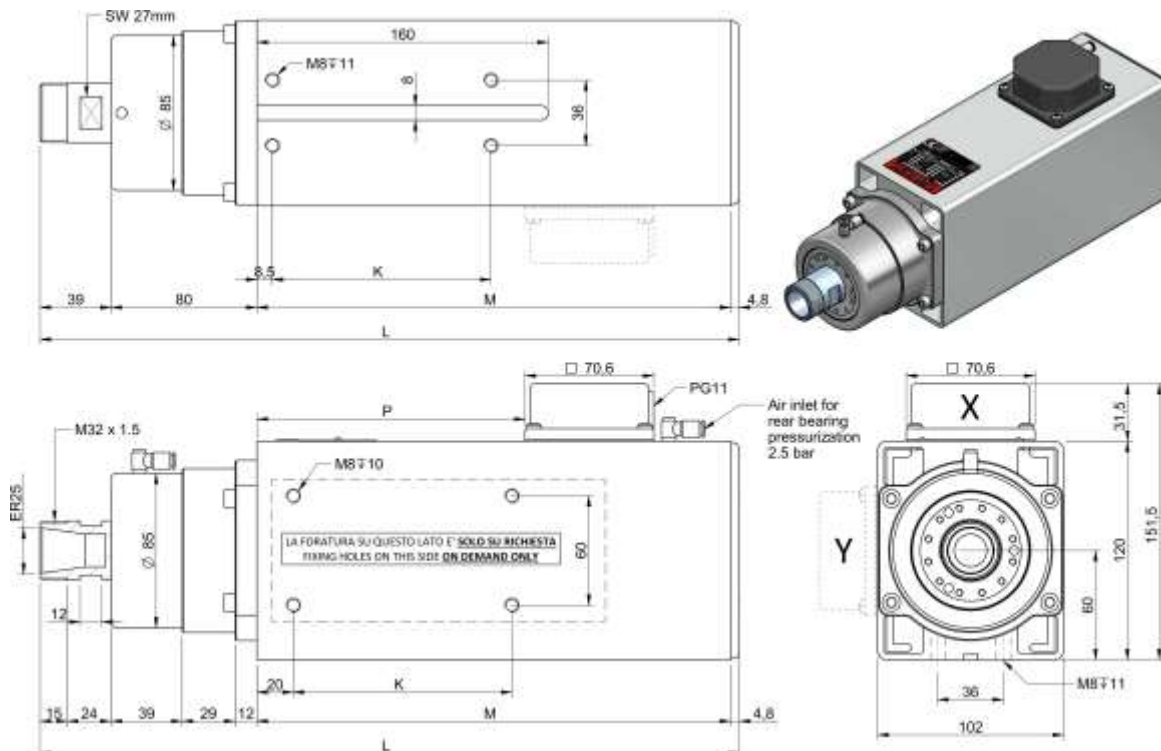
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60-D-DB-P-ER25-PR	1.1	220 / 380	50	3000	5.5 / 3.15	14.0
C51/60-D-DB-P-ER25-PR	2.2	220 / 380	100	6000	9.9 / 5.7	14.0
C51/60-A-DB-P-ER25-PR	2.2	220 / 380	200	12000	9.7 / 5.6	12.1
C51/60-D-DB-P-ER25-PR	3.7	220 / 380	200	12000	15.0 / 8.7	14.0
C51/60-A-DB-P-ER25-PR	3.3	220 / 380	300	18000	13.7 / 7.9	12.1
C51/60-D-DB-P-ER25-PR	5.6	220 / 380	300	18000	20.0 / 11.5	14.0
C51/60-A-DB-P-ER25-HY-PR ¹	3.3	220 / 380	400	24000	13.7 / 7.9	12.1
C51/60-D-DB-P-ER25-HY-PR ¹	5.6	220 / 380	400	24000	20.0 / 11.5	14.0

1. 'HY' means Ceramic Bearings, available on request – 'HY' significa Cuscinetti Ceramici, disponibili su richiesta

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – DB – P – ER25 – PR



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-DB-P-ER25-PR	343.8	107.2	120	220
C51/60-D-DB-P-ER25-PR	383.8	147.2	120	260

ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

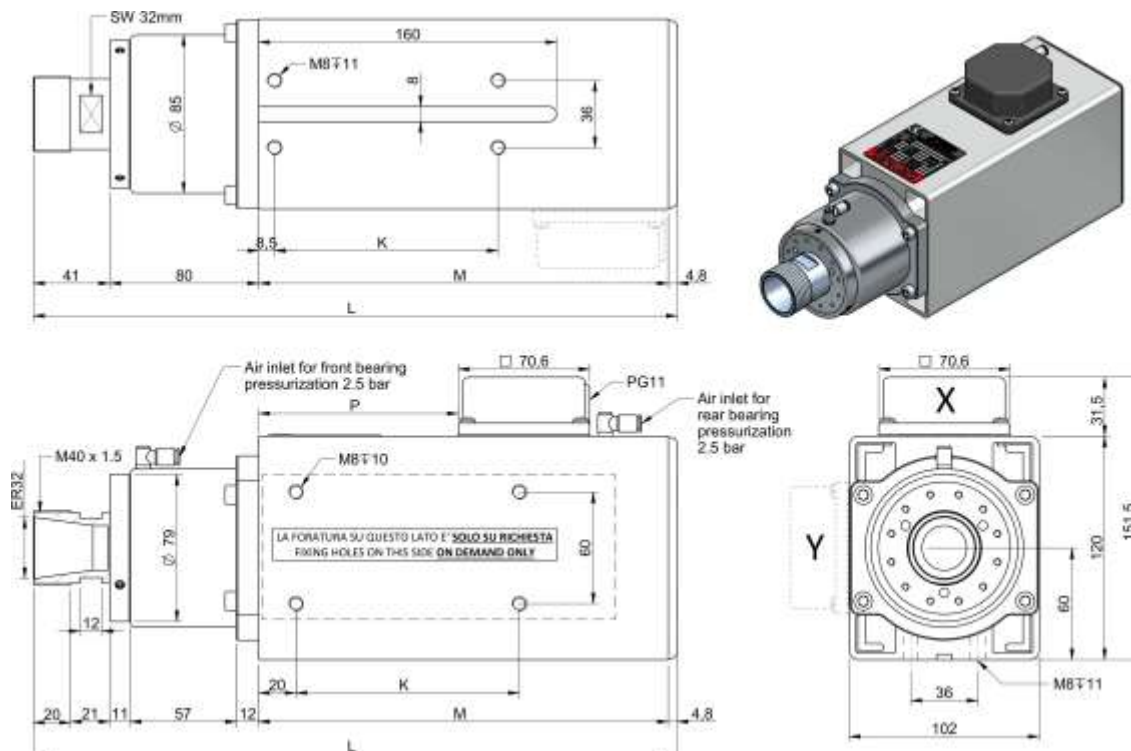
TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C51/60-D-DB-P-ER32-PR	1.1	220 / 380	50	3000	5.5 / 3.15	14.0
C51/60-D-DB-P-ER32-PR	2.2	220 / 380	100	6000	9.9 / 5.7	14.0
C51/60-A-DB-P-ER32-PR	2.2	220 / 380	200	12000	9.7 / 5.6	12.1
C51/60-D-DB-P-ER32-PR	3.7	220 / 380	200	12000	15.0 / 8.7	14.0
C51/60-A-DB-P-ER32-PR	3.3	220 / 380	300	18000	13.7 / 7.9	12.1
C51/60-D-DB-P-ER32-PR	5.6	220 / 380	300	18000	20.0 / 11.5	14.0
C51/60-A-DB-P-ER32-HY-PR ¹	3.3	220 / 380	400	24000	13.7 / 7.9	12.1
C51/60-D-DB-P-ER32-HY-PR ¹	5.6	220 / 380	400	24000	20.0 / 11.5	14.0

1. 'HY' means Ceramic Bearings, available on request – 'HY' significa Cuscinetti Ceramici, disponibili su richiesta

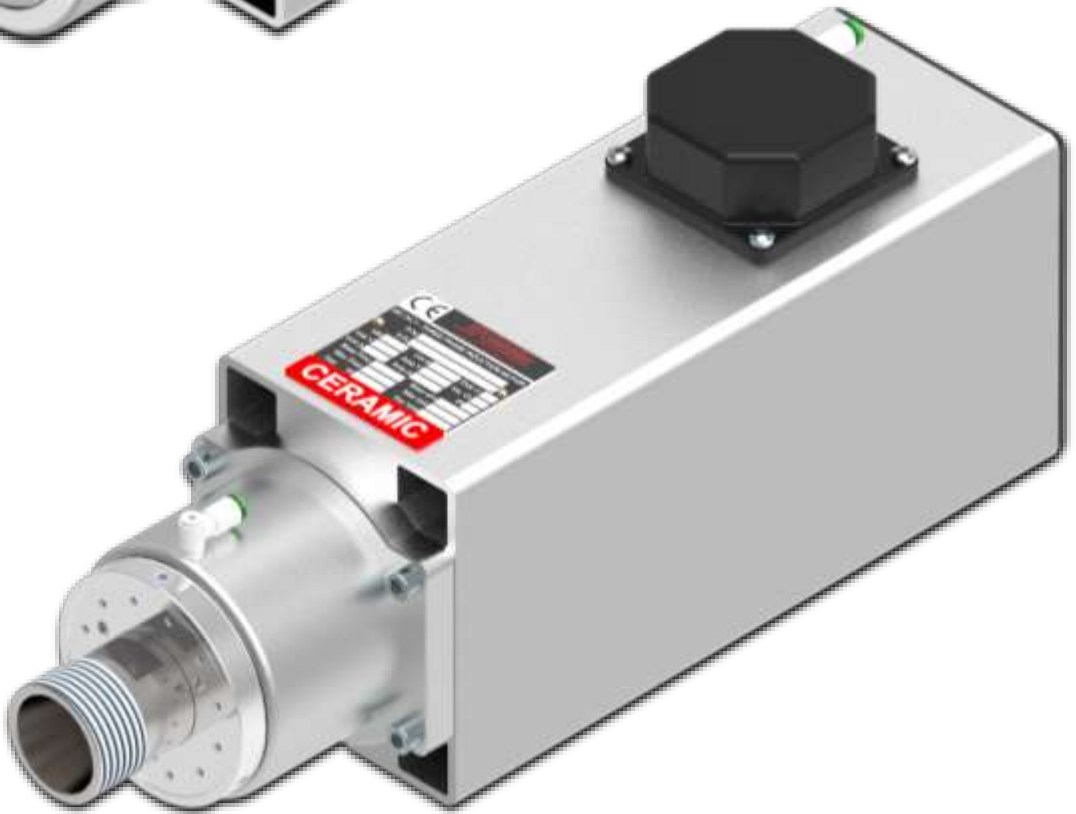
For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C51/60 – DB – P – ER32 – PR



TYPE – TIPO – TYP	L [mm]	P [mm]	K [mm]	M [mm]
C51/60-A-DB-P-ER32-PR	345.8	107.2	120	220
C51/60-D-DB-P-ER32-PR	385.8	147.2	120	260



AUTOMATIC TOOL CHANGER (ATC71)

GENERAL INFORMATIONS

The Automatic Tool Changer electrospindle (ATC) have been designed to develop high speeds and powers with limited overall dimensions.

The standard models operate between 3000 rpm and 24000 rpm. The powers go from 3.8 to 9.0 kW (view [power vs speed table](#)).

These features make them ideal for use on automatic machines for machining wood, aluminum alloys and plastics.

ATCs are used mainly on CNC routers, machines for drilling, and for automation in general (Electrospindle mounted directly on anthropomorphic robot).

ATCs are cooled by an industrial electric fan 230V AC. On customer's request they can be cooled by compressed air using a special kit. ATCs are pneumatically sealed and thus protected against the entry of any type of contaminants.

The stiffness of mechanical components, the speed of tool changing and the goodness of electrical components are key features of the ATC, which is produced by Teknomotor as a best in class product, for the most demanding costumers.



The electric fan ensures a constant cooling at every speed. All items are supplied with serial number and part number which refers to the mechanical and electrical test.

INFORMAZIONI GENERALI

Gli elettromandri con cambio utensile automatico (ATC - Automatic tool changers) sono stati progettati per sviluppare elevate velocità e potenze unite ad un ingombro limitato.

I modelli standard operano tra 3000 rpm e 24000 rpm. Le potenze disponibili variano tra 3.8 kW e 9.0 kW (si veda [power vs speed table](#)).

Queste caratteristiche li rendono ideali per l'impiego su macchine per la lavorazione del legno, delle leghe di alluminio e delle materie plastiche.

Gli ATC vengono impiegati prevalentemente nel settore delle macchine CNC routers, delle foratrici, dell'automazione in generale (Elettromandrino montato direttamente su robot antropomorfo).

Per le loro caratteristiche costruttive gli elettromandri sopportano un carico di tipo assiale, radiale o misto.

Gli ATC sono raffreddati per mezzo di un'elettroventola 230 V AC di tipo industriale. Su richiesta possono essere raffreddati da aria compressa tramite un apposito kit.

Gli ATC sono pressurizzati e quindi protetti contro l'ingresso di qualsiasi tipo di contaminanti.

La rigidità dei suoi componenti, la velocità di cambio utensile e la qualità dei componenti elettrici sono caratteristiche peculiari di questo elettromandrino, che Teknomotor realizza come prodotto di prima scelta, per i clienti più esigenti.

ALLGEMEINE INFORMATIONEN

Die Elektrospindeln mit automatischem Werkzeugwechsel (genannt ATC = Automatic Tool Changers) wurden ausgelegt, um bei einem beschränkten Raumbedarf hohe Geschwindigkeiten bzw. Leistungen zu erreichen.

Die Standardmodelle sind zwischen 3000 und 24000 U/min tätig. Die verfügbaren Leistungen variieren zwischen 3.8 kW und 9.0 kW (siehe zum Beispiel [power vs speed table](#)).

Dafür sind sie für den Einsatz an Maschinen für die Holz- bzw. Aluminiumlegierungs- und Kunststoffbearbeitung geeignet.

Die ATC kommen vorwiegend im Bereich CNC Router, Bohrmaschinen und in der Automation im Allgemeinen (Elektrospindel direkt auf dem anthropomorphen Roboter installiert) zum Einsatz.

Dank ihrer Bauweise können die Elektrospindel einer radialen, axialen und miteinander kombinierten Belastung standhalten.

Die ATC werden mittels eines Elektroventils von 230V AC (industrieller Typ) gekühlt. Auf Anforderung können von einem Spezialset abgekühlt werden.

Da die ATC mit Luftdruck beaufschlagt werden, werden sie gegen den Eintritt von kontaminierenden Substanzen geschützt.

Die Steifigkeit ihrer Bauelemente, die Geschwindigkeit des Werkzeugwechsels und die Qualität der elektrischen Komponenten gehören zu den typischen Eigenschaften dieser Elektrospindel, die Teknomotor als Produkt erster Wahl für anspruchsvolle Kunden realisiert.

MAIN CHARACTERISTICS

The compact design of the frame permits the ATC71 to be mounted in small spaces. All connectors are well ordered. The signal connector is separated from the power connector to prevent electromagnetic noise. All connectors are shielded and IP50 protected.



The frame is robust and compact; it is designed to be stiff and light. The nose is pneumatically sealed against dust. The ceramic bearings assure high speeds, up to 24000 rpm.

The smart design allows to replace the cartridge in a few steps.



TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	PROTECTION GRADE
	TYPE	INSULATION	TYPE	BALANCING GRADE			
Automatic tool changers (ATC71)	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Electric fan cooling	IP 64

The electrospindles conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the electrospindle cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

Gli elettromandri sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che l'elettromandrino non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Elektrospindel entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 8: **AUTOMATIC TOOL CHANGER (ATC71)**

[ISO30 - SN](#)

(3.8 – 9.0 kW)



[ISO30 - LN](#)

(3.8 – 9.0 kW)



[HSK 63F - LN](#)

(5.5 – 9.0 kW)



[ACCESSORIES FOR ATC](#)



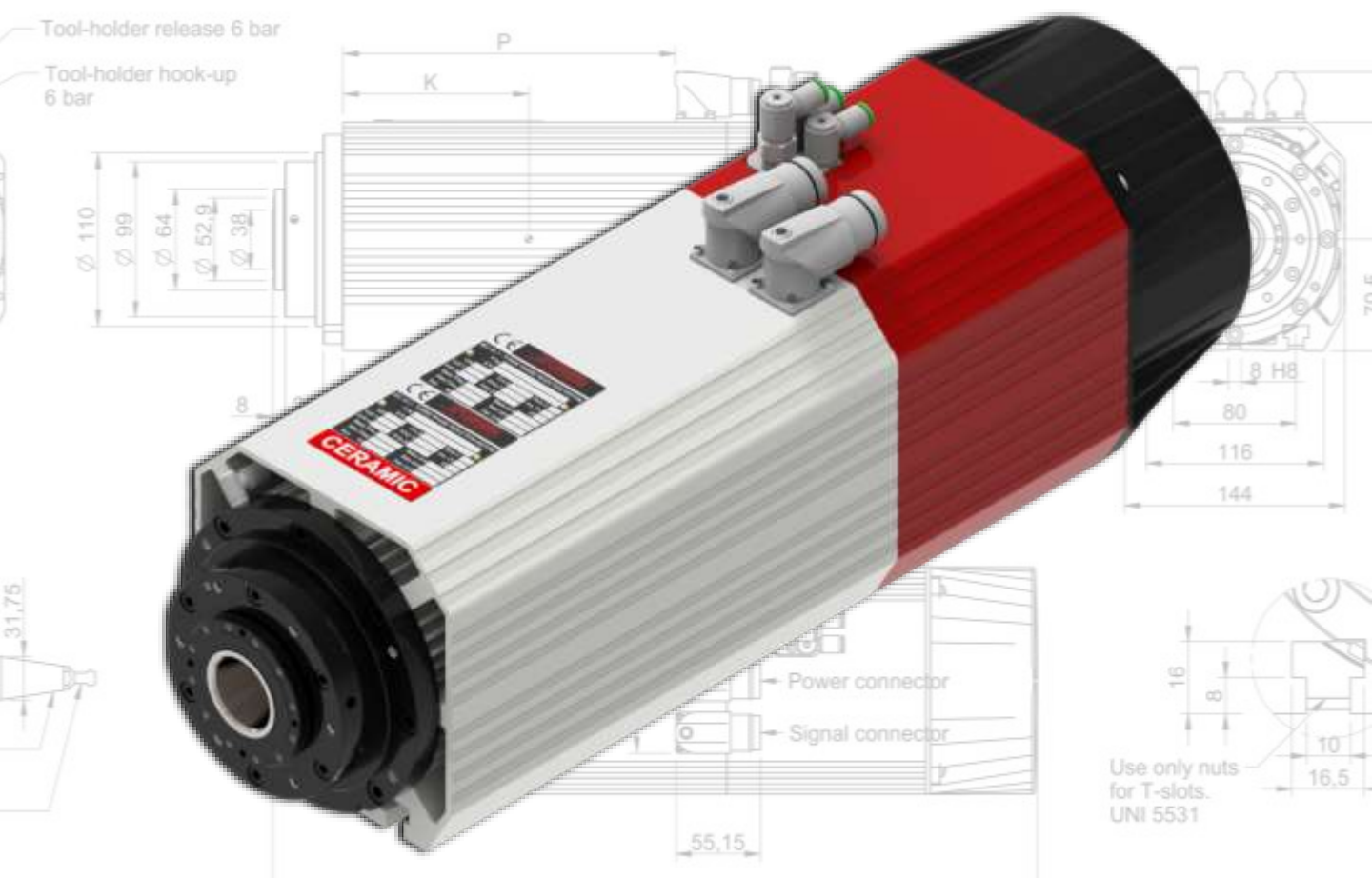
TEKNOMOTOR

Automatic Tool Changer ISO30-SN

(Automatic cone cleaning included)

Tool-holder release 6 bar

Tool-holder hook-up
6 bar



TEKNOMOTOR

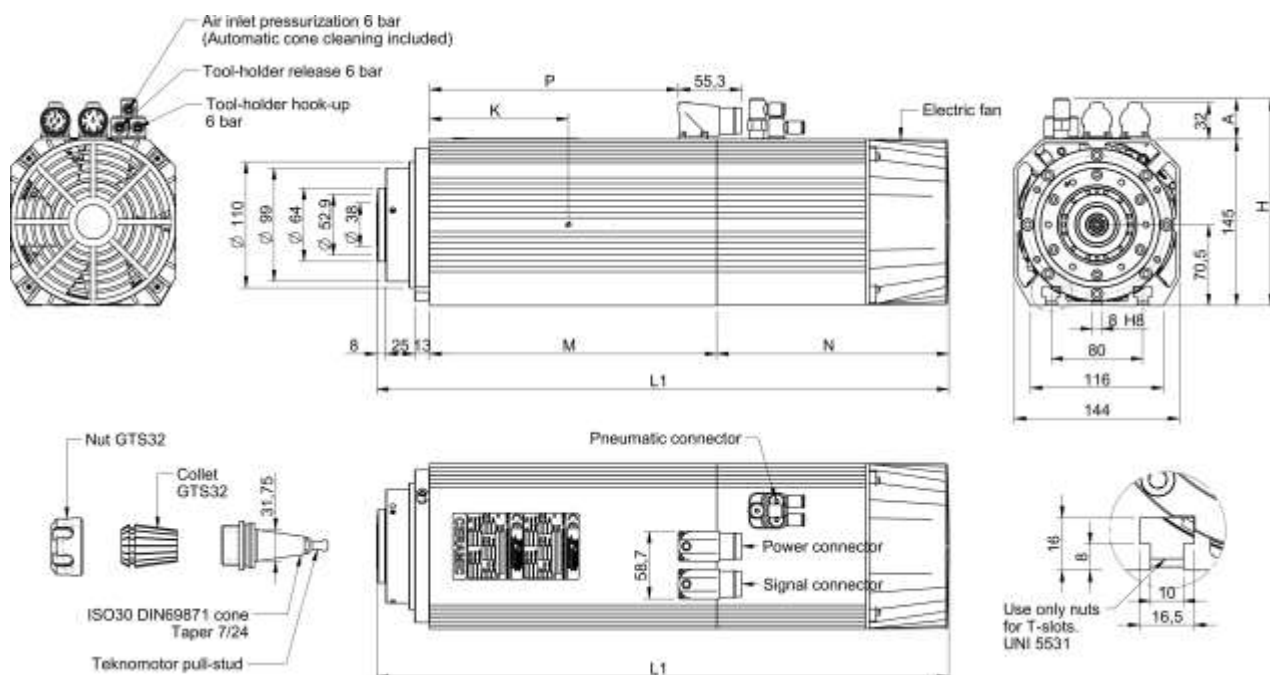
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG		VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	MAX SPEED VELOCITA' MAX *****	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	S1 [kW]	S6 [kW]	V	Hz	rpm	Rpm	A	Kg
ATC71 – A – ISO30 – SN	3.8	4.6	380	200	12000	24000	8.3 / 10.0	21.0
ATC71 – B – ISO30 – SN	5.5	6.6	380	200	12000	24000	11.4 / 13.4	24.0
ATC71 – C – ISO30 – SN	7.5	9.0	380	200	12000	24000	16.0 / 19.2	26.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

ATC71 – ISO30 – SN

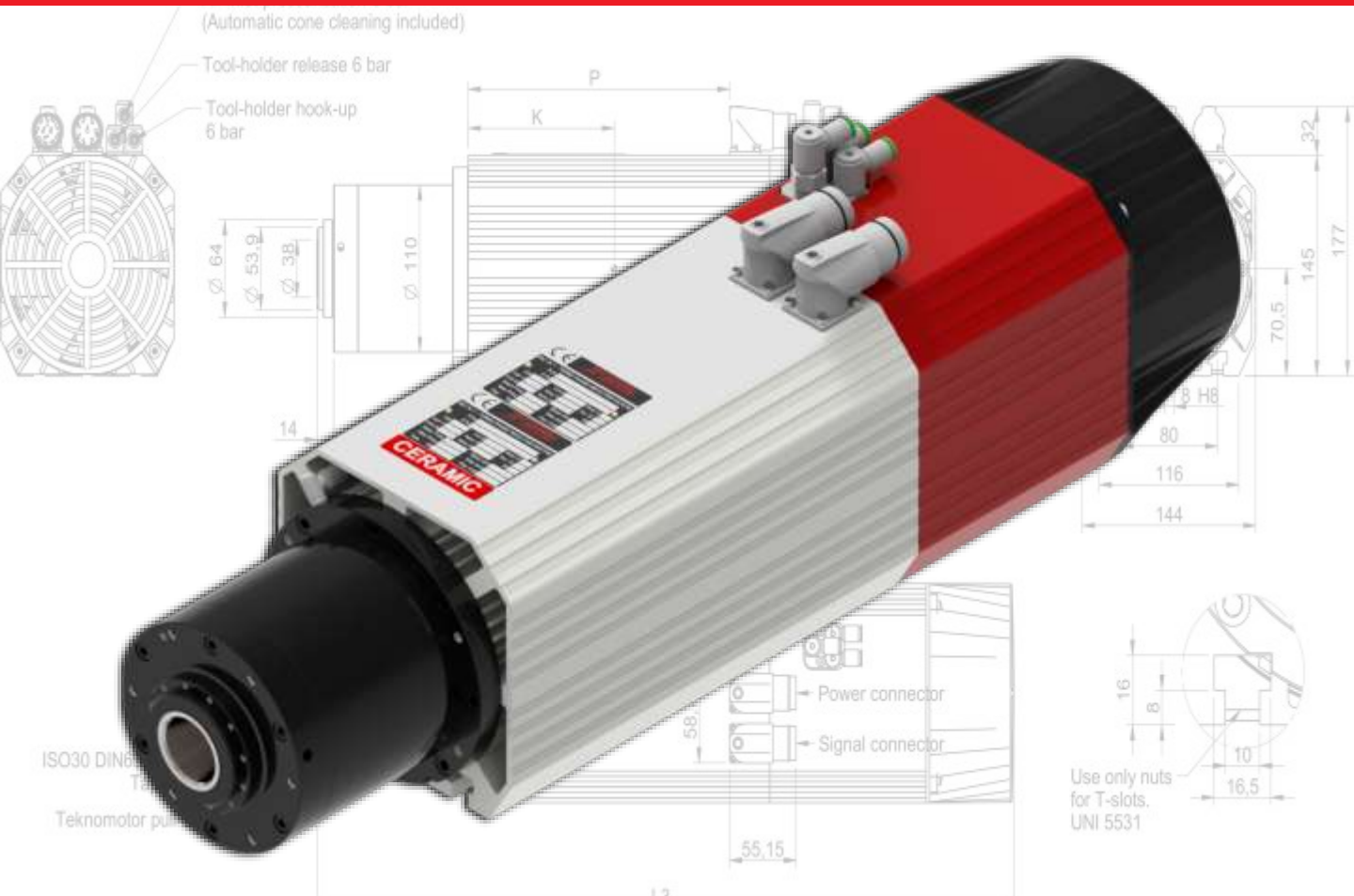


TYPE – TIPO – TYP	L1 [mm]	K [mm]	P [mm]	M [mm]	N [mm]
ATC71-A-ISO30-SN	429	175,4	193	180,5	202
ATC71-B-ISO30-SN	499	206,2	263	250,5	202
ATC71-C-ISO30-SN	499	208,3	263	250,5	202

TYPE – TIPO – TYP	A [mm]	H [mm]
With air flow control valve	45	190
Without air flow control	37	182

TEKNOMOTOR

Automatic Tool Changer ISO30-LN



TEKNOMOTOR

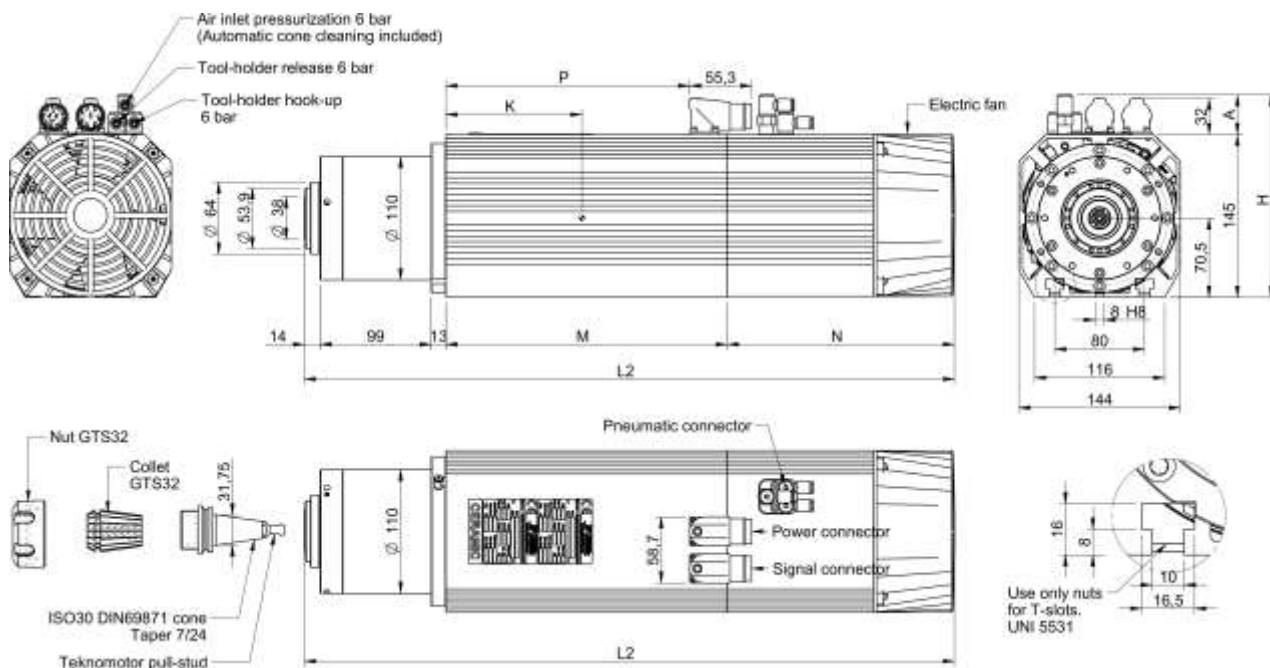
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG		VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	MAX SPEED VELOCITA' MAX *****	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	S1 [kW]	S6 [kW]	V	Hz	rpm	Rpm	A	Kg
ATC71 – A – ISO30 – LN	3.8	4.6	380	200	12000	24000	8.3 / 10.0	29.0
ATC71 – B – ISO30 – LN	5.5	6.6	380	200	12000	24000	11.4 / 13.4	30.0
ATC71 – C – ISO30 – LN	7.5	9.0	380	200	12000	24000	16.0 / 19.2	32.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

ATC71 – ISO30 – LN

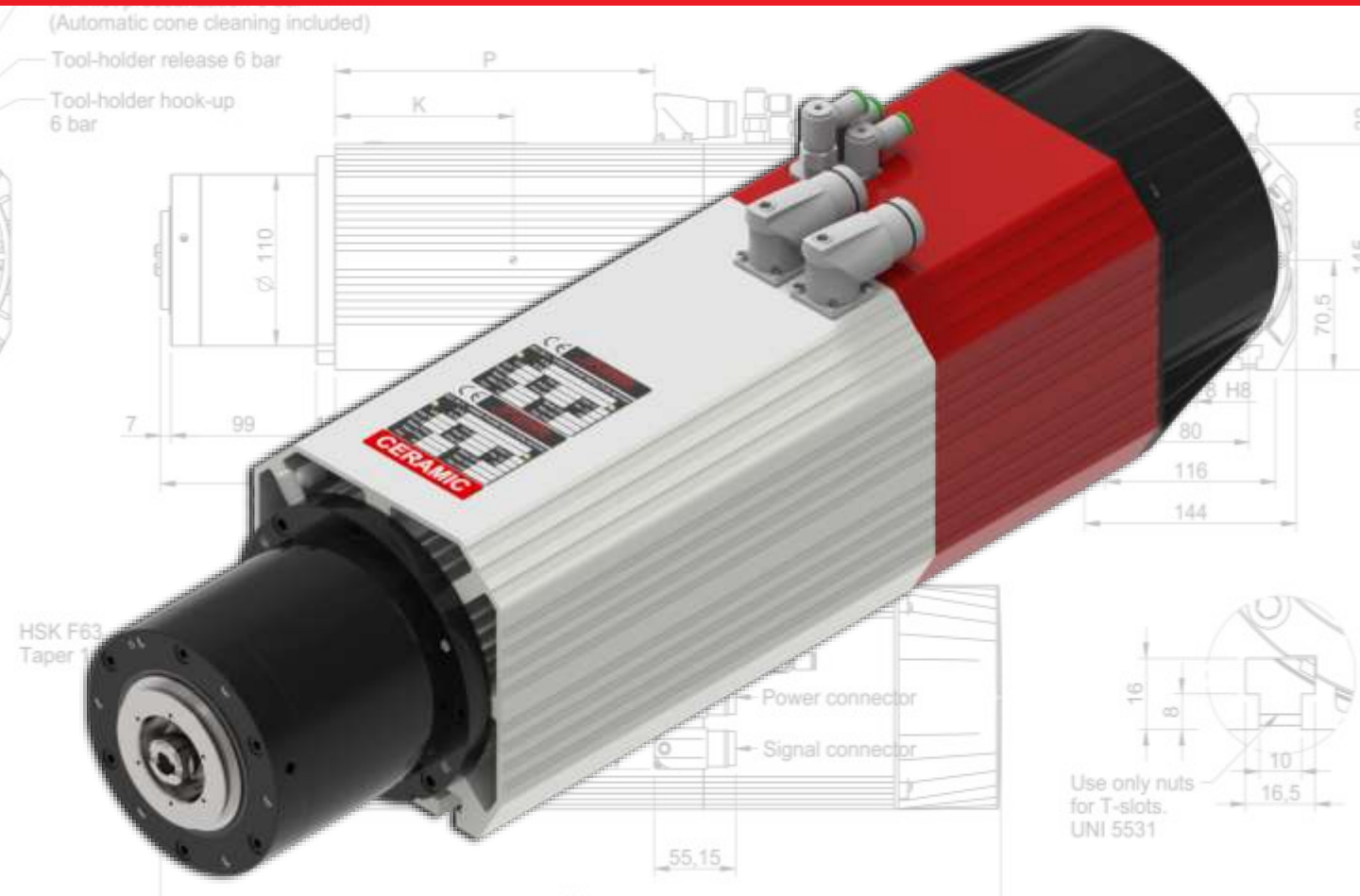


TYPE – TIPO – TYP	L2 [mm]	K [mm]	P [mm]	M [mm]	N [mm]
ATC71-A-ISO30-LN	509	96	147	180,5	202
ATC71-B-ISO30-LN	579	121	217	250,5	202
ATC71-C-ISO30-LN	579	121	217	250,5	202

TYPE – TIPO – TYP	A [mm]	H [mm]
With air flow control valve	45	190
Without air flow control	37	182

TEKNOMOTOR

Automatic Tool Changer HSK 63F-LN



TEKNOMOTOR

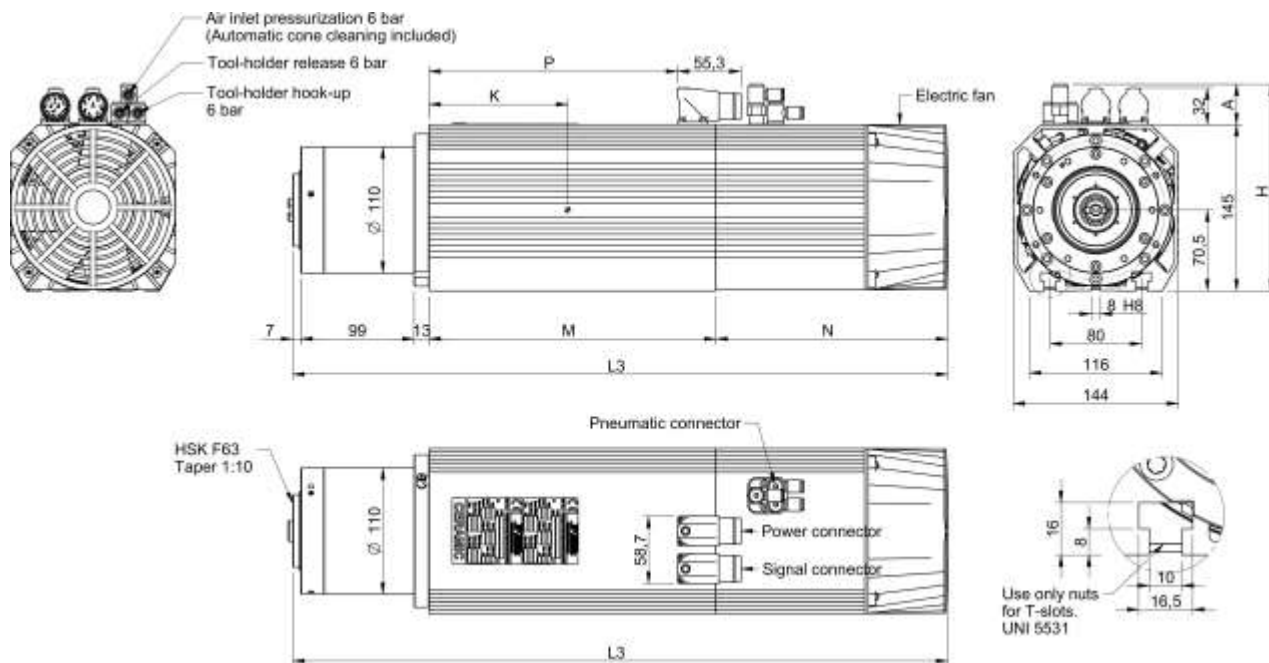
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG		VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	MAX SPEED VELOCITA' MAX *****	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	S1 [kW]	S6 [kW]	V	Hz	rpm	Rpm	A	Kg
ATC71 – B – HSK 63F – LN	5.5	6.6	380	200	12000	24000	11.4 / 13.4	30.0
ATC71 – C – HSK 63F – LN	7.5	9.0	380	200	12000	24000	16.4 / 19.0	32.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

ATC71 – HSK 63F – LN



TYPE – TIPO – TYP	L3 [mm]	K [mm]	P [mm]	M [mm]	N [mm]
ATC71–B–HSK–LN	572	121	217	250,5	202
ATC71–C–HSK–LN	572	121	217	250,5	202

TYPE – TIPO – TYP	A [mm]	H [mm]
With air flow control valve	45	190
Without air flow control	37	182

TEK NDMOTOR

Accessories for ATC71



TEK NDMOTOR

TOOL HOLDERS – PORTAUTENSILI – WERKZEUGTRÄGER

The tool holders are provided by Teknomotor only on demand.

The ISO 30 toolholders are supplied complete with pull stud and balanced nut.

The HSK 63F toolholders are supplied complete with balanced nut.

I portautensili vengono forniti da Teknomotor solo su richiesta.




I portautensili ISO 30 vengono forniti completi di codolo e ghiera equilibrata.

I portautensili HSK 63F vengono forniti completi di ghiera equilibrata.

Die Werkzeugträger werden nur auf Anfrage von Teknomotor geliefert.

Die Werkzeugträger ISO 30 werden mit Einspannzapfen und ausgewuchtetem Schraubstock angeliefert.

Die Werkzeugträger HSK 63F werden mit ausgewuchtetem Schraubstock angeliefert.


AVAILABLE TYPES	THREAD DIMENSION	TAPER	RENDER VIEW
ISO 30	M40 x 1.5	ER 32	
HSK 63F	M40 x 1.5	ER 32	
PULL STUD for ISO 30 tool holder	M12	-	

CONNECTORS – CONNETTORI – VEBINDUNGSKABEL


The connection cables provided by Teknomotor for its ATC are in **mobile lying, shielded** and **oil-proof** (PUR). All the wires are numbered and complete of insulated end ferrules. Moreover, the connectors are wired by professional companies, which ensure the compliance through testing. Teknomotor can even provide the connector with the PINs to wire, but do not recommend it.

I cavi di collegamento forniti da Teknomotor per i propri ATC sono in **posa mobile, schermati e resistenti all'olio** (PUR). Tutti i fili sono numerati e dotati di puntalini isolati. I connettori sono inoltre cablati da aziende specializzate, che ne garantiscono la conformità tramite collaudo. Teknomotor può anche fornire il connettore completo di PIN da cablare, ma lo sconsigliamo.

Die von Teknomotor mitgelieferten Verbindungskabel für die eigenen ATC werden **mobil verlegt, sind geschirmt und ölbeständig** (PUR). Alle Drähte sind durchnummeriert und mit isolierten Spitzen versehen. Die Verbinder wurden zudem von Fachbetrieben verkabelt, die durch Abnahme die Konformität zusichern. Teknomotor kann den Verbinder auch mit zu verkabelndem PIN anliefern, es ist jedoch nicht ratsam.

SIGNAL CONNECTOR WIRING TABLE			
SIGNAL CONNECTOR PIN	COLOR WIRE	CABLE TYPE	SIGNAL CONNECTOR CABLE
1	Green	3x(2x0.14) + 2x0.50 SHIELDED GREEN CABLE	
2	Yellow		
3	Grey		
4	Blue		
5	Pink		
6	White (0V)		
7	Brown (+24V DC)		
8	Red		
Frame connector	Cable shield		

CABLE LENGTHS AVAILABLE [m]
2
5
10
15
20

POWER CONNECTOR WIRING TABLE			
POWER CONNECTOR PIN	N° WIRE	CABLE TYPE	POWER CONNECTOR CABLE
↓ 2	Yellow / Green	4G2.5 + 2x(2x1) SHIELDED ORANGE CABLE	
1	U		
2	V		
3	W		
Frame connector	Cable shield		
A	5		
B	6		
C	7		
D	8		

CABLE LENGTHS AVAILABLE [m]
2
5
10
15
20

RECTANGULAR MOTORS

GENERAL INFORMATION

The rectangular motors **C71/80** join together limited radial overall dimensions with high levels of power.

These motors can be easily integrated in many different kinds of machines thanks to their efficient frame.

Used the most in the woodworking industry for sanding machines (ST type) or saws (BT type) they are the best solution where a high quality compact and powerful motor is required.

INFORMAZIONI GENERALI

I motori rettangolari della serie **C71/80** uniscono ad un ingombro radiale limitato elevati valori di potenza.

Facilmente integrabili all'interno di svariate tipologie di macchine grazie alle dimensioni ridotte e alla semplicità di ancoraggio che la forma costruttiva consente, vengono utilizzati con successo su macchine per la lavorazione del legno quali levigatrici (tipo ST), seghe (tipo BT) e laddove sia richiesto un motore compatto, potente e di elevata qualità.

ALLGEMEINE INFORMATIONEN

Die rechteckigen motoren **C71/80** haben geringe radiale Außmaßen mit hoher Kraft. Dank ihren kleinen Außmaßen und der einfachen Verankerung sind diese Motore Polimermaschinen (ST typ), Sägen (BT typ) geeignet und wenn einen kompakten Motor mit hoher Kraft und Qualität es gebraucht wird.

TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	ELECTRIC PROTECTION
	TYPE	INSULATION	TYPE	BALANCING GRADE			
Rectangular motors	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Shaft driven fan cooling.	IP 50 (IP 60 on request)

The motors conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the motor cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

I motori sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che il motore non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Motoren entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

C71/80

(1.5 – 5.5 kW)



TEKNOMOTOR

Rectangular Motor C71/80



TEKNOMOTOR

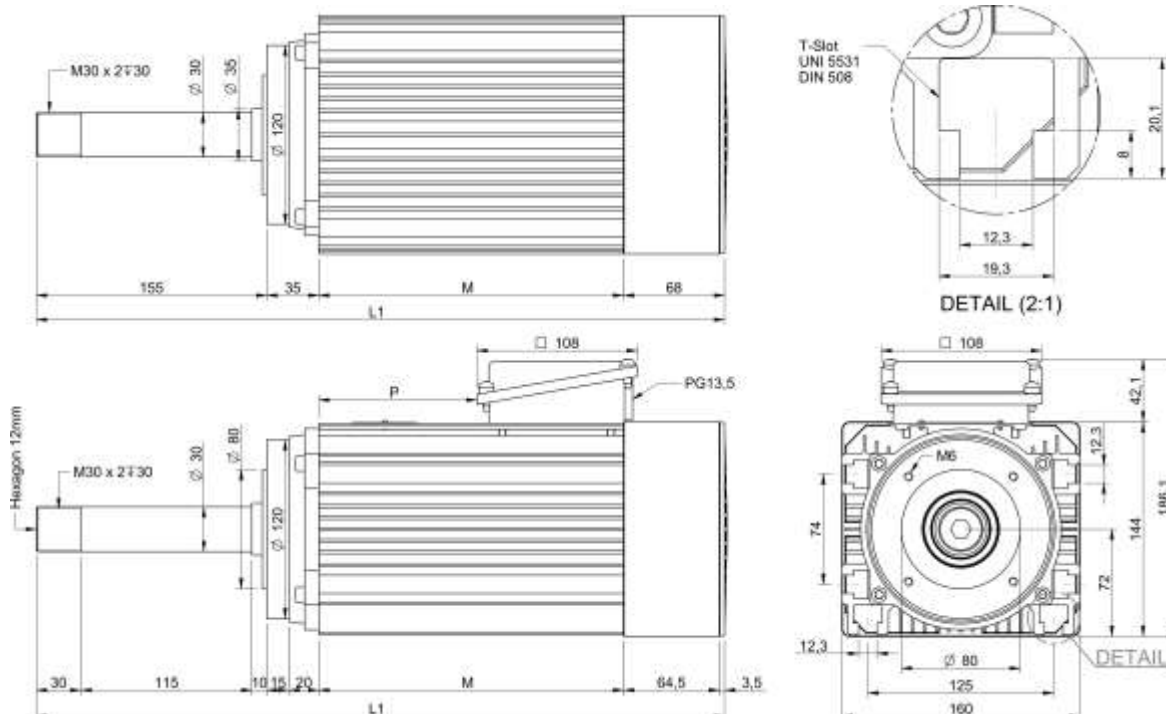
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	POLES POLI POLE	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	-	V	Hz	RPM	A	Kg
C71/80 – A – SB	2.2	2	220 / 380	50	3000	8.8 / 5.1	16.5
C71/80 – B – SB	3.0	2	220 / 380	50	3000	11.1 / 6.4	19.5
C71/80 – C – SB	4.0	2	220 / 380	50	3000	15.2 / 8.8	21.5
C71/80 – A – SB	1.5	4	220 / 380	50	1500	6.6 / 3.8	17.0
C71/80 – B – SB	2.2	4	220 / 380	50	1500	9.7 / 5.6	20.0
C71/80 – C – SB	3.0	4	220 / 380	50	1500	12.2 / 7.1	22.0
C71/80 – A – SB	1.5	6	220 / 380	50	1000	7.4 / 4.3	17.0
C71/80 – B – SB	1.8	6	220 / 380	50	1000	9.0 / 5.2	22.0
C71/80 – A – SB	2.2	2	220 / 380	100	6000	9.9 / 5.7	16.5
C71/80 – A – SB	3.0	2	220 / 380	100	6000	11.7 / 6.7	16.5
C71/80 – A – SB	4.0	2	220 / 380	100	6000	14.8 / 8.6	16.5
C71/80 – B – SB	5.5	2	220 / 380	100	6000	19.7 / 11.4	19.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C71/80 – SB – ST



TYPE – TIPO – TYP	L1 [mm]	P [mm]	M [mm]
C71/80-A-SB-ST	433	74	175
C71/80-B-SB-ST	463	104	205
C71/80-C-SB-ST	503	144	245

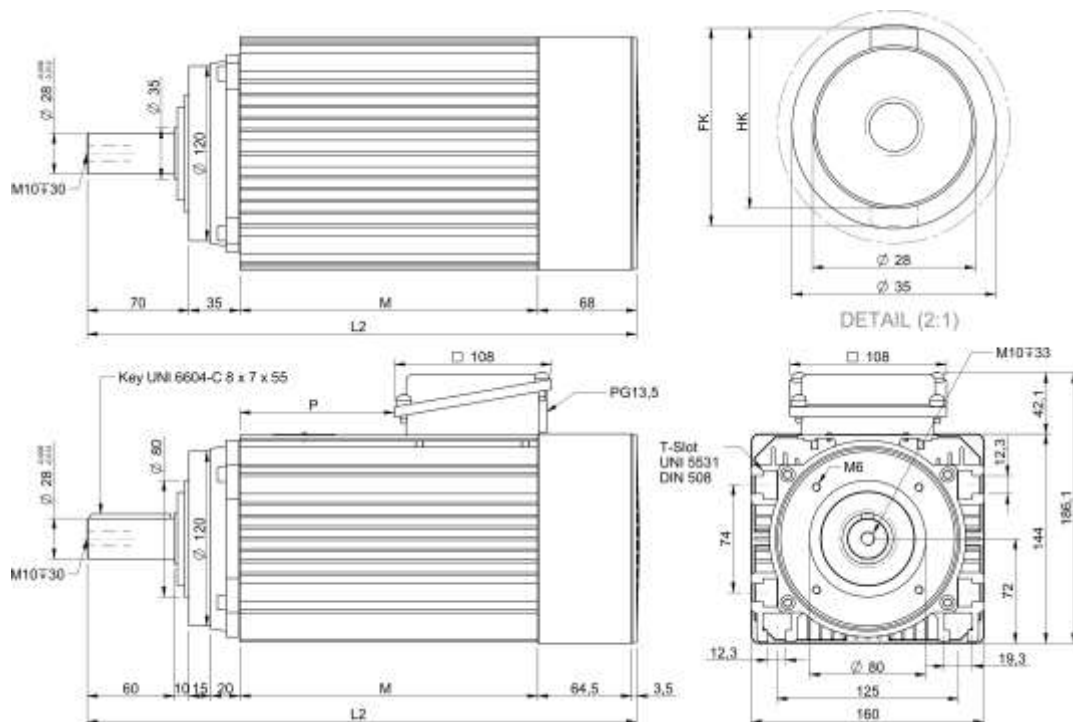
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	POLES POLI POLE	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	-	V	Hz	RPM	A	Kg
C71/80 – A – SB	2.2	2	220 / 380	50	3000	8.8 / 5.1	16.5
C71/80 – B – SB	3.0	2	220 / 380	50	3000	11.1 / 6.4	19.5
C71/80 – C – SB	4.0	2	220 / 380	50	3000	15.2 / 8.8	21.5
C71/80 – A – SB	1.5	4	220 / 380	50	1500	6.6 / 3.8	17.0
C71/80 – B – SB	2.2	4	220 / 380	50	1500	9.7 / 5.6	20.0
C71/80 – C – SB	3.0	4	220 / 380	50	1500	12.2 / 7.1	22.0
C71/80 – A – SB	1.5	6	220 / 380	50	1000	7.4 / 4.3	17.0
C71/80 – B – SB	1.8	6	220 / 380	50	1000	9.0 / 5.2	22.0
C71/80 – A – SB	2.2	2	220 / 380	100	6000	9.9 / 5.7	16.5
C71/80 – A – SB	3.0	2	220 / 380	100	6000	11.7 / 6.7	16.5
C71/80 – A – SB	4.0	2	220 / 380	100	6000	14.8 / 8.6	16.5
C71/80 – B – SB	5.5	2	220 / 380	100	6000	19.7 / 11.4	19.5

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C71/80 – SB – UN



TYPE – TIPO – TYP	L2 [mm]	P [mm]	M [mm]	HK [mm]	FK [mm]
C71/80-A-SB-UN	348	74	175	32	34
C71/80-B-SB-UN	378	104	205		
C71/80-C-SB-UN	418	144	245		



HEAVY LOAD RECTANGULAR MOTORS

GENERAL INFORMATION

The rectangular motors **C71/80-2DB** e **C85/90-2DB** are used mainly for sizing machines and tenoners, and where a high sturdiness and precision are requested.

Thanks to the double angular ball bearings, they are suitable for axial loads.

The rear double bearing assure also a very good radial load resistance.

INFORMAZIONI GENERALI

I motori rettangolari delle serie **C71/80-2DB** e **C85/90-2DB** heavy load sono principalmente utilizzati su macchine squadratrici e tenonatrici, ovvero dove sia richiesta un'elevata robustezza e precisione.

Grazie al doppio cuscinetto a contatto obliquo sul lato mandrino, sono adatti per un carico di tipo assiale. Il doppio cuscinetto posteriore garantisce inoltre un'ottima resistenza ai carichi radiali.

ALLGEMEINE INFORMATIONEN

Die rechteckigen motoren **C71/80-2DB** und **C85/90-2DB** heavy load sind besonders für Formatbearbeitungs und Rundzapfenfräsmaschinen benutzt, wo man hohe Kraft und Genauigkeit braucht.

Diese motoren sind, dank dem Doppelschräggugellager, für axiale Belastung geeignet. Außerdem garantier der rückseitige Doppelschräggugellager eine sehr gute Festigkeit zu den Radialkräften

TECHNICAL FEATURES TABLE	STATOR		ROTOR		SHAPE	COOLING	ELECTRIC PROTECTION
	TYPE	INSULATION	TYPE	BALANCING GRADE			
Heavy Load Rectangular motors	Asynchronous, 3 phases	F class	Squirrel cage	2.5 (ISO 1940)	Closed, from extruded aluminum profile	Shaft driven fan cooling.	IP 50 (IP 60 on request)

The motors conform to the EMC EEC 89/336 directive, and to the EEC 89/392 machines directive.

Moreover, the motor cannot be put into service before the machine into which it is incorporated is declared to be in line with the second mentioned directive.

I motori sono conformi alla direttiva EMC CEE 89/336 e alla direttiva macchine CEE 89/392 assumendo per quest'ultima che il motore non può essere messo in servizio prima che la macchina, in cui sarà incorporato, sia stata dichiarata conforme alle disposizioni.

Die Motoren entsprechen der EMV-Richtlinie EWG 89/336 und der Maschinenrichtlinie EWG 89/392. Diese letzte Norm setzt voraus, dass der Motor erst dann in Betrieb gesetzt werden darf, wenn die Maschine, in die er eingebaut wird, die dafür vorgesehenen Richtlinien erfüllt.

SECTION 10: HEAVY LOAD RECTANGULAR MOTORS

[C71/80](#)

(3.0 – 5.5 kW)



[C85/90](#)

(5.5 – 11.0 kW)



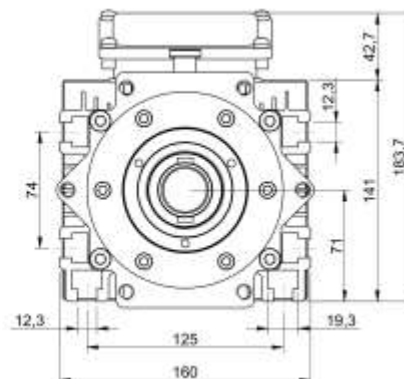
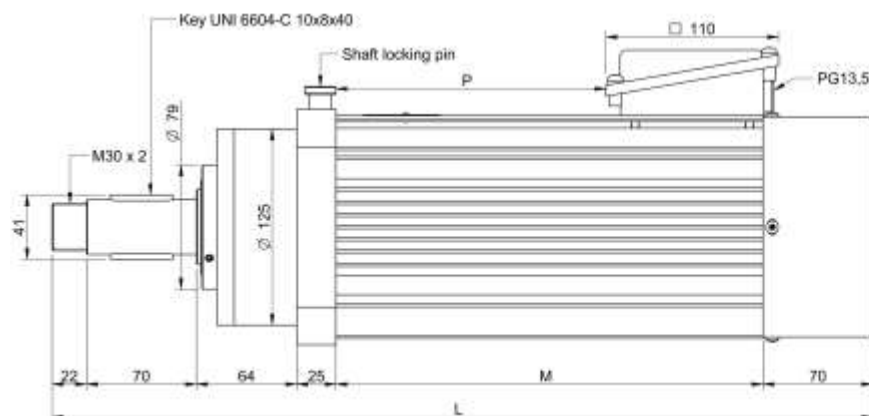
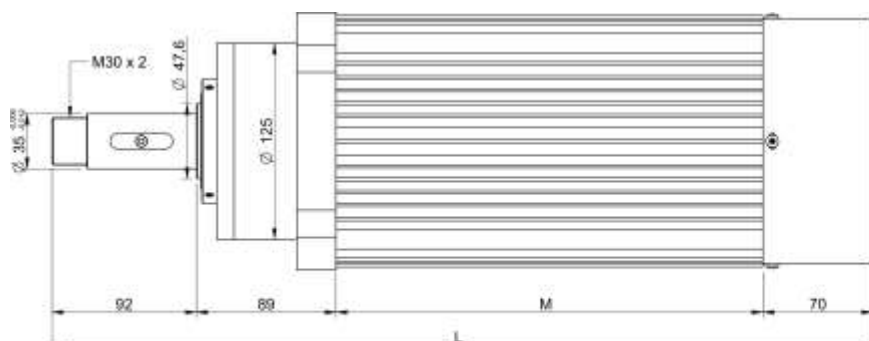
ELECTRIC FEATURES – CARATTERISTICHE ELETTRICHE – ELEKTRISCHE DATEN

TYPE TIPO TYP	POWER POTENZA LEISTUNG	VOLTAGE TENSIONE SPANNUNG	FREQ.	SPEED VELOCITA' DREHZAHL	ABSORB. ASSORB. AMP AUFN	WEIGHT PESO GEW.
	kW	V	Hz	RPM	A	kg
C71/80 – B – 2DB	3.0	220 / 380	50	3000	11.1 / 6.4	29.0
C71/80 – B – 2DB	4.4	380 D	100	6000	10.0	29.0
C71/80 – C – 2DB	4.0	220 / 380	50	3000	15.2 / 8.8	32.0
C71/80 – C – 2DB	5.5	380 D	100	6000	11.5	32.0

For different voltage and frequency, contact our technical office. – Per valori diversi di tensione e frequenza, contattare l'ufficio tecnico.

OVERALL DIMENSIONS – DIMENSIONI INGOMBRO – ABMESSUNGEN

C71/80 – 2DB – L92



TYPE – TIPO – TYP	L [mm]	P [mm]	M [mm]	HK [mm]	FK [mm]
C71/80-B-2DB-P-ER32	436	142	242	38,5	41
C71/80-C-2DB-P-ER32	466	172	272		

TEKNOMOTOR

H.L. Rectangular Motor C85/90



TEKNOMOTOR

INVERTER

GENERAL INFORMATION

Teknomotor sells inverters of leading manufacturers worldwide. This way the customers from all over the world can find an answer to any technical need or requirement by the local inverter dealer.

The service offered by Teknomotor is to provide an inverter already programmed in its basic parameters in order to avoid damage caused by incorrect programming.

INFORMAZIONI GENERALI

Teknomotor commercializza inverter di primari produttori a livello internazionale. In questo modo è possibile trovare risposte ad eventuali richieste tecniche in qualsiasi parte del mondo.

Il servizio offerto da Teknomotor è quello di fornire un inverter già programmato nei suoi parametri basilari in modo da evitare i danni causati da un'errata programmazione.

ALLGEMEINE INFORMATIONEN

Teknomotor handelt mit Invertern führender internationaler Hersteller. Auf diese Weise können Antworten auf etwaige technischen Anforderungen weltweit gefunden werden. Der von Teknomotor angebotene Dienst besteht in der Lieferung eines Inverters, dessen Grundparameter bereits vorprogrammiert wurden, um Schäden zu vermeiden, die auf fehlerhafte Programmierung zurückzuführen sind.

SECTION 11: INVERTERS

ONE PHASE INVERTERS



THREE PHASE INVERTERS



TEKNOMOTOR

ONE PHASE / THREE PHASES INVERTERS



TEKNOMOTOR

ONE PHASE INVERTERS – INVERTER MONOFASE – EINPHASEN INVERTER

The one phase inverters are suitable for small application up to 2.2 kW. They work with one phase line voltage of 220-230 V.

Gli inverter monofase sono adatti per piccole applicazioni, con potenza fino a 2.2 kW. Funzionano con tensione di rete 220-230 V monofase.

Die Einphasen-Inverter sind für kleine Anwendungen mit einer Leistung bis zu 2,2 kW geeignet. Sie werden mit einer einphasigen Netzspannung von 220-230V betrieben.



CODE CODICE CODE	DESCRIPTION DESCRIZIONE BESCHREIBUNG
VF-S15S 2004 PL-WP	for motor power up to 0.4kW - in 3.3A at 50°C
VF-S15S 2007 PL-WP	for motor power up to 0.75kW - in 4.8A at 50°C
VF-S15S 2015 PL-WP	for motor power up to 1.5kW - in 8A at 50°C
VF-S15S 2022 PL-WP	for motor power up to 2.2kW - in 11A at 50°C

THREE PHASES INVERTERS – INVERTER TRIFASE – DREIPHASEN INVERTER

The three phases inverters are suitable for every industrial application. They work with three phases line voltage of 380-400 V.

Gli inverter trifase sono adatti per ogni applicazione industriale. Funzionano con tensione di rete 380-400 V trifase.

Die Dreiphasen-Inverter sind für industrielle Einsätze geeignet. Sie werden mit einer dreiphasigen Netzspannung von 380-400V betrieben.



CODE CODICE CODE	DESCRIPTION DESCRIZIONE BESCHREIBUNG
VF-S15 4004 PL-WP	for motor power up to 0.4kW - in 1.5A at 50°C
VF-S15 4007 PL-WP	for motor power up to 0.75kW - in 2.3A at 50°C
VF-S15 4015 PL-WP	for motor power up to 1.5kW - in 4.1A at 50°C
VF-S15 4022 PL-WP	for motor power up to 2.2kW - in 5.5A at 50°C
VF-S15 4037 PLWP	for motor power up to 4.0kW - in 9.5A at 50°C
VF-S15 4055 PL-WP	for motor power up to 5.5kW - in 14.3A at 50°C
VF-S15 4075 PL-WP	for motor power up to 7.5kW - in 17A at 50°C
VF-S15 4110 PL-WP	for motor power up to 11kW - in 27.7A at 50°C
VF-S15 4150 PL-WP	for motor power up to 15kW - in 33A at 50°C

ACCESSORIES

GENERAL INFORMATION

Teknomotor sells the accessories for its electrospindles in order to ensure correct working conditions.

The **nuts** are produced by leading manufacturers and they are re-balanced by Teknomotor in order to comply with the degree of precision required by our quality standards.

The **collets** are extra precise type, in order to ensure the best performance by electrospindles and tools.

The **wrenches** are suitable to the nuts mounted on our motors.

INFORMAZIONI GENERALI

Teknomotor commercializza gli accessori per i propri elettromandrini al fine di garantirne il corretto funzionamento. Le ghiera sono prodotte da primari costruttori e sono da Teknomotor riequilibrata al fine di ottemperare al grado di precisione richiesto dai nostri standard qualitativi.

Le pinze sono del tipo extra preciso per garantire le migliori performance da parte degli elettromandrini e degli utensili.

Le chiavi sono adatte alle ghiera montate sui nostri motori.

ALLGEMEINE INFORMATIONEN

Teknomotor handelt mit Zubehörteilen für die eigenen Elektroschneidspindel, um einwandfreien Betrieb zu gewährleisten. Die Zwingen werden von führenden Herstellern produziert und werden von Teknomotor neu ausgewuchtet, um die von unseren Qualitätsstandards geforderte Präzision einzuhalten. Die Zangen sind super-präzise, um beste Leistung der Elektroschneidspindel und der Werkzeuge zu gewährleisten. Die Schlüssel sind für die Zwingen geeignet, die auf unseren Motoren montiert sind.

SECTION 12: ACCESSORIES

COLLETS



NUTS



WRENCHES



TEK **NOMOTOR**

COLLETS



TEK **NOMOTOR**

GENERAL FEATURES – CARATTERISTICHE GENERALI – ALLGEMEINE MERKMALE

The collet is not merely an accessory, but the link between the electrospindle and the tool.

There is no motivation, neither technique nor economic which justifies the use of a low quality clamp.

From the technical point of view:

1. Greater concentricity of the collet increases tool life
2. Increase the percentage of pieces within the expected tolerances, resulting in reduced waste
3. Using high quality collets allows to maintain high quality levels in the production process and then to save time and ensure customers shorter delivery times

From the economic point of view:

1. A smaller imbalance of tools lightens the spindles of machinery and maintenance costs are reduced
2. The toolholder collets are replaced less frequently; so they can be used for precision applications for a longer time

Teknomotor sells only high quality collets, produced in Germany, in two levels of accuracy:

- Run-out **2 mm (ULTRA PRECISE)**
- Run out **5 mm (EXTRA PRECISE)**

For applications in machining of wood; plastics; aluminum and the like, the extra precise collets, with run-out **5 mm** represent the best compromise between price and duration.

La pinza non è semplicemente un accessorio, ma il collegamento tra l'elettromandrino e l'utensile.

Non c'è alcuna motivazione, ne' tecnica ne' economica che giustifichi l'uso di una pinza di scarsa qualità.

Dal punto di vista tecnico:

1. Una maggiore concentricità della pinza prolunga la vita utile degli utensili
2. Aumenta la percentuale di pezzi entro le tolleranze previste, con conseguente riduzione degli scarti
3. Permette di mantenere alti livelli qualitativi nel processo produttivo e quindi di risparmiare tempo e garantire ai clienti tempi di consegna più brevi

Dal punto di vista economico:

1. Un minore squilibrio degli utensili alleggerisce i mandrini del macchinario e i costi di manutenzione si riducono
2. Le pinze portautensile vengono sostituite con minore frequenza; possono cioè essere impiegate più a lungo per applicazioni di precisione

Teknomotor commercializza solo pinze di alta qualità, prodotte in Germania, in due livelli di precisione:

- concentricità **2 mm (ULTRA PRECISE)**
- concentricità **5 mm (EXTRA PRECISE)**

Per applicazioni su **legno; materie plastiche; alluminio** e affini, le pinze extra precise, con concentricità **5 mm** rappresentano il miglior compromesso tra prezzo e durata.

Die Spannzange ist nicht nur ein einfaches Zubehörteil, sondern die Verbindung zwischen der Elektrospindel und dem Werkzeug.

Es gibt keinen Grund (weder einen technischen noch einen finanziellen), der den Einsatz einer Spannzange geringer Qualität rechtfertigt.

Vom technischen Standpunkt aus:

1. Eine höhere Konzentricität der Spannzange verlängert die Nutzzeit der Werkzeuge.
2. Sie erhöht den Prozentsatz an Teilen innerhalb der vorgesehenen Toleranzen mit einer damit verbundenen Reduzierung der Ausschussteile.
3. Hiermit kann ein hohes Qualitätsniveau des Produktionsprozesses beibehalten und somit Zeit gespart und den Kunden kürzere Lieferzeiten zugesichert werden.

Vom finanziellen Standpunkt aus:

1. Eine mindere Unausgewogenheit der Werkzeuge macht es den Maschinenspindeln leistungsfähiger und die Wartungskosten werden reduziert.
2. Die Werkzeughalterzangen werden nicht so oft ausgetauscht; sie werden also länger für Präzisionseinsätze zum Einsatz verwendet.

Teknomotor handelt nur mit Hochleistungszangen, die in der BRD hergestellt werden und zwei Präzisionsniveaus aufweisen:

- Konzentricität **2 mm (ULTRA PRECISE)**
- Konzentricität **5 mm (EXTRA PRECISE)**

Zum Einsatz bei **Holz, Kunststoffen, Aluminium** u.ä. stellen die super-präzisen Spannzangen mit einer Konzentricität von **5 mm** den besten Preis-Dauer-Kompromiss dar.

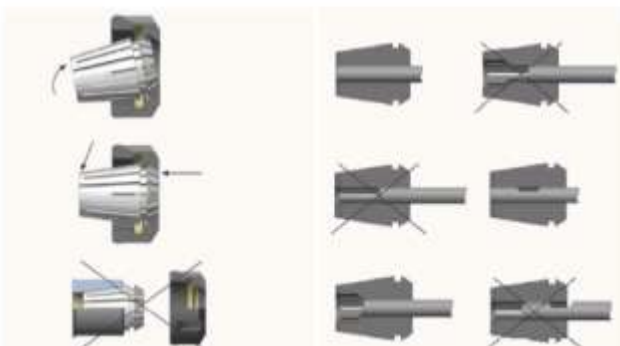
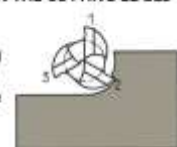
FROM TEKNOMOTOR HANDBOOK – DAL MANUALE TEKNOMOTOR – VON TEKNOMOTOR HANDBUCH

Before fixing the tool on the electrospindle:

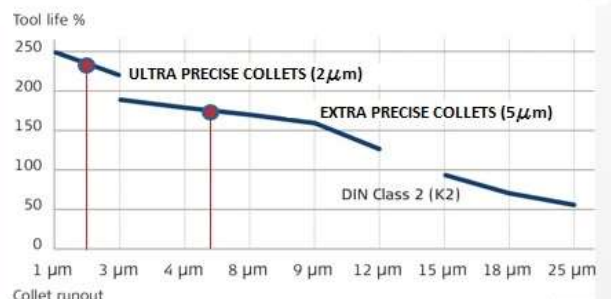
- Carefully blow with compressed air the inside taper, the nut, the collet and the tool.
- Clean them with mix thinner-of (92%+8%) to remove the processing residual if it is necessary use soft paper.
- Fix the collet on the nut and check that it could turn freely.
- Insert them into the inside taper of the electrospindle and screw the nut by hand.
- Insert the tool and check that it could axially move freely.
- Position the tool in order that the collet clamps the tool on the total length of contact.
- Screw the nut with the advised torque using the specific wrench.
- Check the run out of the tool or if it is not possible check the vibration level of the motor.

EFFECTS OF RUNOUT ON THE CUTTING EDGES

- irregular cutting load
- more tool wear and lower surface accuracy
- need to reduce the feed



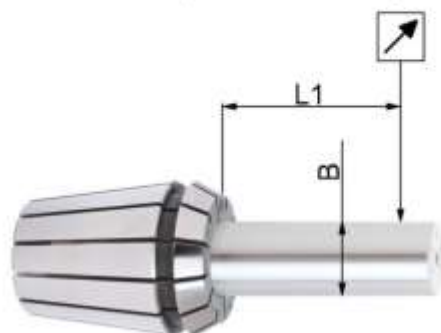
INFLUENCE OF COLLET ACCURACY ON THE LIFE OF CARBIDE CUTTING TOOLS



8.6. MAXIMUM RUN-OUT AND VIBRATION VALUES

Check that the tool is aligned with the shaft. Use a dial gauge with high resolution (0.001 mm) to measure the tool run-out. The maximum allowed run-out is 0.02mm @ 100mm far from the collet (L1). If it is not possible to measure the tool run-out because of the tool design, use a vibrometer to check the vibration level of the motor. The maximum vibration value should not exceed 2.0-2.5mm/s.

The concentricity values according to DIN 6388 are shown on the following table:



Concentricity collets values				
Ø B mm		L1 mm	DIN6388 mm	Extra precise mm
da	a			
1.0	1.6	6.0	0.015	0.005
1.6	3.0	10.0	0.015	0.005
3.0	6.0	16.0	0.015	0.005
6.0	10.0	25.0	0.015	0.005
10.0	18.0	40.0	0.020	0.005
18.0	26.0	50.0	0.020	0.005

The run-out values of 3 type of collets on the market are shown on the following table:

MEASURED RUN OUT OF GRINDED PIN Ø20mm WITH ER32 COLLET			
Distance between collet and measurement point L1	Collet low quality	Collet medium quality	Collet high quality (extra precise)
90mm	120µm	70µm	20µm

In the same way the vibration values of the motor with 3 different types of collet on the market are shown on the following table:

MEASURED VIBRATION VALUES OF THE MOTOR WITH ER32 COLLET AND GRINDED PIN Ø20mm 360g			
rpm	Collet low quality	Collet medium quality	Collet high quality (extra precise)
12000	3.0 mm/s (front)	2.0 mm/s (front)	0.7 mm/s (front)
	3.2 mm/s (rear)	1.1 mm/s (rear)	0.3 mm/s (rear)
18000	4.2 mm/s (front)	3.3 mm/s (front)	1.3 mm/s (front)
	4.6 mm/s (rear)	2.0 mm/s (rear)	0.5mm/s (rear)

The experimental results underline that a heavy tool as a milling tool (Ø 16 mm used on the door machine) needs an extra precise collet.

Excessive tool run-out causes a premature wear of the rear bearings as clearly shown on the above table.

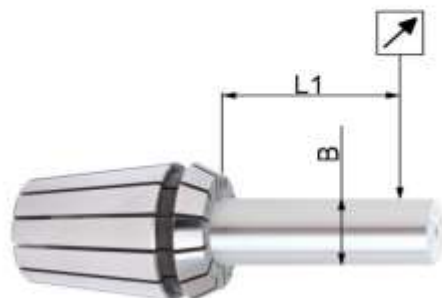
	<p>FOR ELECTROSPINDLE WITH CONICAL SEAT FOR ER DIN 6499</p> <p>IF THE TOOL PROTRUSION IS LONGER THAN 80mm USE ABSOLUTELY EXTRA PRECISION COLLETS.</p>
	<p>EXCESSIVE TOOL RUN-OUT CAUSES PREMATURE WEAR OF BEARINGS</p> <p>THE TOOL MOUNTING IS A CAREFUL OPERATION, BECAUSE IT DEFINES THE ELECTROSPINDLE LIFE.</p>

	<p><u>USE EXTRA PRECISE COLLETS</u> TO GUARANTEE A LONG LIFE TO YOUR ELECTROSPINDLE</p>
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8.6. VALORI LIMITE DI RUN-OUT E VIBRAZIONE

E' necessario eseguire dei semplici controlli per assicurarsi che l'utensile sia allineato con l'asse di rotazione dell'elettromandrino. Pertanto è necessario misurare con un comparatore millesimale (0.001mm) il valore di concentricità (run-out) dell'utensile. Il run-out limite concesso a 100mm dalla pinza è di 0.02mm. La ripetibilità di tale risultato è garantita solo dall'utilizzo di una pinza extra precisa. Se non fosse possibile misurarlo causa la geometria dell'utensile, utilizzare un vibrometro che misuri il grado di vibrazione al regime massimo di rotazione consentito dell'utensile. Tale valore non deve superare i 2.0-2.5 mm/s.

Di seguito sono stati comparati i valori di eccentricità secondo la norma DIN 6388 e delle pinze extra precise.



Ø B mm		L1 mm	Concentricità pinze	
da	a		DIN6388 mm	Extra precise mm
1.0	1.6	6.0	0.015	0.005
1.6	3.0	10.0	0.015	0.005
3.0	6.0	16.0	0.015	0.005
6.0	10.0	25.0	0.015	0.005
10.0	18.0	40.0	0.020	0.005
18.0	26.0	50.0	0.020	0.005

Inoltre sono stati misurati i valori di run-out per tre tipologie di pinze disponibili in commercio: pinza di bassa qualità, pinza di media qualità e pinza di alta qualità chiamata anche extra precisa. Ecco i risultati:

RUN OUT RILEVATI CON PINZA ER32 E SPINA RETTIFICATA Ø20mm			
distanza dalla pinza al punto di misura - L1	pinza bassa qualità	pinza media qualità	pinza alta qualità (extra precisa 5µm)
90mm	120µm	70µm	15µm

Allo stesso modo è stata condotta un'indagine anche sulle vibrazioni prodotte dallo squilibrio dovuto alle pinze:

VALORI DI VIBRAZIONE RILEVATI CON PINZA ER32 E SPINA RETTIFICATA Ø20mm 360g			
rpm	pinza bassa qualità	pinza media qualità	pinza alta qualità (extra precisa 5µm)
12000	3.0 mm/s (anteriore)	2.0 mm/s (anteriore)	0.7 mm/s (anteriore)
	3.2 mm/s (posteriore)	1.1 mm/s (posteriore)	0.3 mm/s (posteriore)
18000	4.2 mm/s (anteriore)	3.3 mm/s (anteriore)	1.3 mm/s (anteriore)
	4.6 mm/s (posteriore)	2.0 mm/s (posteriore)	0.5mm/s (posteriore)

I risultati sperimentali evidenziano come un utensile di massa importante come può essere la fresa diametro 16mm utilizzata molto frequentemente nell'ambito della produzione di serramenti necessita assolutamente di una pinza extra precisa per contenere il livello di vibrazione.

Si evidenzia inoltre che un eccesso di run-out dell'utensile causi un usura precoce dei cuscinetti dell'elettromandrino.

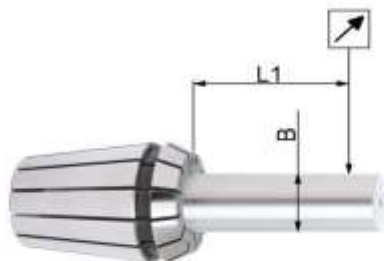
	<p>PER ELETTROMANDRINI CON CONO ER SECONDO DIN 6499</p> <p>SE L'UTENSILE SPORGE DALLA PINZA PER UNA LUNGHEZZA MAGGIORE DI 80mm, SI DEVONO UTILIZZARE PINZE EXTRA PRECISE.</p>
	<p>L'ECESSIVO RUN-OUT DELL'UTENSILE PROVOCA UNA REPENTINA USURA DEI CUSCINETTI.</p> <p>IL MONTAGGIO DELL'UTENSILE E' UN'OPERAZIONE DELICATA, PERCHE' DEFINISCE LA VITA DEL MOTORE.</p>
	<p>SI INVITANO GLI INSTALLATORI E GLI UTILIZZATORI FINALI AD <u>USARE PINZE EXTRA PRECISE</u> PER GARANTIRE ALL'ELETTROMANDRINO UNA VITA PIU' LUNGA</p>

8.6. RUN-OUT- UND VIBRATIONS Grenzwerte

Es müssen einfache Kontrollen durchgeführt werden, um sicher zu stellen, dass das Werkzeug auf die Rotationsachsen der Elektroschindel ausgerichtet ist. Daher muss der Konzentritätswert (run out) des Werkzeugs mit einem Tausendstel-Komparator (0.001 mm) gemessen werden. Der zulässige Run-Out-Grenzwert 100 mm von der Spannzange beträgt 0.02 mm. Die Wiederholbarkeit des Ergebnisses wird nur von einer Spannzange *Extra Precise* sicher gestellt. Sollte es aufgrund der Geometrie des Werkzeugs nicht möglich sein, diesen zu messen, dann benutzen Sie ein Vibrometer, das das Vibrationsniveau bei höchster Umdrehung misst, die vom Werkzeug erlaubt ist. Dieser Wert darf 2.0-2.5 mm/s nicht überschreiten.

Hier werden nun die Außermittigkeitswerte nach DIN 6388 und der Spannzangen *Extra Precise* verglichen.

Außerdem wurden die Run-Out-Werte für drei handelsübliche Spannzangen gemessen: Spannzange niedriger Qualität, Spannzange mittlerer Qualität und Spannzange hoher Qualität, die auch *Extra Precise* genannt wird. Es folgen die Ergebnisse:



Concentricità pinze				
Ø B mm		L1 mm	DIN6388 mm	Extra precise mm
da	a			
1.0	1.6	6.0	0.015	0.005
1.6	3.0	10.0	0.015	0.005
3.0	6.0	16.0	0.015	0.005
6.0	10.0	25.0	0.015	0.005
10.0	18.0	40.0	0.020	0.005
18.0	26.0	50.0	0.020	0.005

Wurden auch Werte der Auslauf gemessen für drei Arten von Spannzange auf dem Markt erhältlich: Spannzange Niedriger Qualität, Spannzange mittlerer Qualität und Spannzange hoher Qualität auch extra precise genannt.

Es folgen die Ergebnisse:

MIT SPANNZANGE ER32 UND GESCHLIFFENER SPITZE Ø20mm ERFASSTE RUN-OUT-WERTE			
Entfernung der Spannzange vom Messpunkt - L1	Spannzange niedriger Qualität	Spannzange mittlerer Qualität	Spannzange hoher Qualität (extra precise 5µm)
90mm	120µm	70µm	15µm

Auf dieselbe Weise wurde auch eine Untersuchung der Vibrationen durchgeführt, die von der Unausgeglichenheit der Spannzangen herrühren

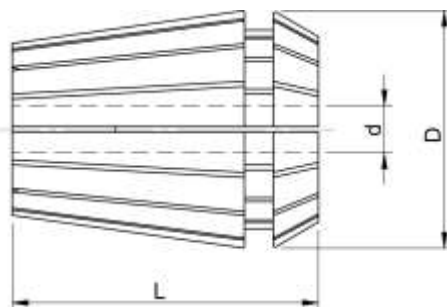
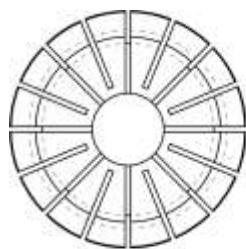
MIT SPANNZANGE ER32 UND GESCHLIFFENER SPITZE Ø20mm ERFASSTE VIBRATIONSWERTE 360g			
rpm	Spannzange niedriger Qualität	Spannzange mittlerer Qualität	Spannzange hoher Qualität (extra precise 5µm)
12000	3.0 mm/s (anteriore)	2.0 mm/s (anteriore)	0.7 mm/s (anteriore)
	3.2 mm/s (posteriore)	1.1 mm/s (posteriore)	0.3 mm/s (posteriore)
18000	4.2 mm/s (anteriore)	3.3 mm/s (anteriore)	1.3 mm/s (anteriore)
	4.6 mm/s (posteriore)	2.0 mm/s (posteriore)	0.5mm/s (posteriore)

Ergebnisse von Experimenten zeigen wie ein wichtiges Massen-Werkzeug wie die Fräse mit Durchmesser 16 mm, die sehr häufig bei der Produktion von Fenstern und Türen zum Einsatz kommt, unbedingt eine Spannzange *Extra Precise* benötigt, um das Vibrationsniveau zu halten.

Weiterhin wird darauf hingewiesen, dass ein zu hoher Run-Out des Werkzeugs eine vorzeitige Abnutzung der Lager der Elektroschindel zur Folge hat.

	<p>FÜR ELEKTROSPINDELN MIT ER-KEGEL NACH DIN 6499</p> <p>WENN DAS WERKZEUG ÜBER 80 mm ÜBER DIE SPANNZANGE HERAUSRAGT, MÜSSEN EXTRA PRECISE ZANGEN ZUM EINSATZ KOMMEN.</p>
	<p>EIN ZU HOHES RUN-OUT DES WERKZEUGS HAT EINE SCHLAGARTIGE ABNUTZUNG DER LAGE ZUR FOLGE.</p> <p>DIE WERKZEUGMONTAGE IST EIN SEHR EMPFINDLICHER VORGANG, WEIL DAMIT DIE LEBENSDAUER DES MOTORS BESTIMMT WIRD.</p>
	<p>DAHER WERDEN DIE INSTALLATEURE UND ENDNUTZER AUFGEFORDERT, EXTRA PRECISE SPANNZANGEN ZU BENUTZEN, UM DER ELEKTROSPINDEL EINE LÄNGERE LEBENSDAUER ZUZUSICHERN.</p>

TYPES OF COLLET AVAILABLE – TIPI DI PINZA DISPONIBILI – ARTEN SPANNZANGE VERFÜGBAR



SIZE DIMENSIONE DIMENSION	L [mm]	D [mm]
ER11	18.0	11.5
ER16	27.5	17.0
ER20	31.5	21.0
ER25	35.0	26.0
ER32	40.0	33.0

TOOL SIZE (d) [mm] DIAMETRO UTENSILE WERKZEUGDURCHMESSER	ER 11	ER 16 – M	ER 20	ER 25	ER 32	ER 40
1	On demand only	On demand only	On demand only			
2	On demand only	On demand only	On demand only			
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5	X	X	X	X	X	X
6	X	X	X	X	X	X
7	X	X	X	X	X	X
8		X	X	X	X	X
9		X	X	X	X	X
10		X	X	X	X	X
11			X	X	X	X
12			X	X	X	X
13			X	X	X	X
14				X	X	X
15				X	X	X
16				X	X	X
17					X	X
18					X	X
19					X	X
20					X	X
21						X
22						X
23						X
24						X
25						X
26						X

Note: The sizes with the «x» are available

TEKNOMOTOR

NUTS



TEKNOMOTOR

GENERAL FEATURES – CARATTERISTICHE GENERALI – ALLGEMEINE MERKMALE

The nuts provided by Teknomotor are balanced at a level higher than the standard and ensure the absence of vibrations during machining. They also have a protective surface treatment that keeps them free from rust in normal applications.

Le ghiera fornite da Teknomotor sono equilibrate ad un livello superiore allo standard e garantiscono l'assenza di vibrazioni durante la lavorazione. Presentano inoltre un trattamento superficiale protettivo che le mantiene esenti da ruggini nelle normali applicazioni.

Die von Teknomotor mitgelieferten Schraubstöcke sind auf eine Höhe ausgewuchtet, die über dem Standardwert liegt und sie sichern somit, dass es bei den Verarbeitungen keine Vibrationen gibt. Sie sind außerdem eine Oberflächen behandelt, wodurch sie bei normalen Einsätzen nicht rosten.

AVAILABLE TYPES	THREAD DIMENSION	ORDERING CODE	RENDER VIEW
GSX 11 for ER 11	M14 x 0.75 (right)	GHS0101RA	
	M14 x 0.75 (left)	GHS0101LA	
GTSM 16 for ER 16 – M	M19 x 1.0 (right)	GHS0302RA	
	M19 x 1.0 (left)	GHS0302LA	
GTS 20 for ER 20	M25 x 1.5 (right)	GHS0203RA	
	M25 x 1.5 (left)	GHS0203LA	
GTSM 25 for ER 25 – M	M30 x 1.0 (right)	GHS0304RA	
	M30 x 1.0 (left)	GHS0304LA	
GTS 25 for ER 25	M32 x 1.5 (right)	GHS0204RA	
	M32 x 1.5 (left)	GHS0204LA	
GTS 32 for ER 32	M40 x 1.5 (right)	GHS0205RA	
	M40 x 1.5 (left)	GHS0205LA	
GTS 40 for ER 40	M50 x 1.5 (right)	GHS0206RA	
	M50 x 1.5 (left)	GHS0206LA	

GENERAL FEATURES – CARATTERISTICHE GENERALI – ALLGEMEINE MERKMALE

The wrenches provided by Teknomotor are made only for the nut type reported in the following table. The tightening torque has not to exceed the value reported in table as well.

Le chiavi fornite da Teknomotor sono fatte per lo specifico tipo di ghiera indicato nella seguente tabella. La coppia di serraggio non deve superare il valore indicato in tabella.

Die von Teknomotor mitgelieferte Schlüssel werden für den spezifischen Schraubstock angefertigt, der aus der folgenden Tabelle hervorgeht. Der Anzugsmoment darf den in der Tabelle angegebenen Wert nicht überschreiten.

AVAILABLE TYPES (DIN)	ORDERING CODE	RENDER VIEW
WRENCH for GSX 11	CHG0101A	 STANDARD WRENCH 17 mm
WRENCH for GTSM 16	CHG0302A	
WRENCH for GTS 20	CHG0203A	
WRENCH for GTS 25	CHG0204A	
WRENCH for GTS 32	CHG0205A	
WRENCH for GTS 40	CHG0206A	

SECTION 13: **FAQ (Frequently Asked Questions)**

[1 – How to fix the tool on the electrospindle with collet type ER?](#)

[2 – What are the environments in which the motors can work?](#)

[3 – What are the type of shaft available in the catalogue?](#)

[4 – What are the motors dimensions?](#)

[5 – How to program the inverter?](#)

[6 – Plugs](#)

[7 – Half key and full key balancing](#)

[8 – Difference between HF motor and electrospindle](#)

[9 – Choice of the thread direction on the BT models with blade flanges](#)

[**IP protection grades \(tables\)**](#)

[**ENG – ITA – DEU**](#)

FAQ (Frequently Asked Questions)

13.1 – How to fix the tool on the electrospindle with collet type ER?

A correct mounting of the tool is necessary to guarantee a long lasting of the spindle bearings and to obtain a good surface finishing.

Before fixing the tool on the electrospindle carefully blow with compressed air the inside taper, the collet locking nut, the collet and the tool.

Clean them with mix thinner-oil (92%+8%) to remove the processing residual and if it is necessary use soft paper to clean.

Fix the collet on the nut and check that it could turn freely.

Insert them into the inside taper of the electrospindle and screw in the nut by hand.

Insert the tool and check that it could move axially freely.

Screw in the nut with the advised torque using the apposite wrench.

Check the run out of the tool. If you can not check the run-out of the tool because of the cutters you can use a straight grinded bar of the same diameter of the tool. Checking the run-out of the bar will give you an information about the status of the collet and of the cone of the spindle. At this point you must be sure that the tool is straight!! (From our experience this is not always true, the tool can be damaged)

We remind you that the life of the collet is not unlimited. You must check the collet status after many working hours.

Do not use inappropriate tools (i.e. tools with seeger, etc...)

If the tool length is larger than 80-100mm, use **ultra-precise collets**.

For more informations, please contact

Teknomotor technical office at:

tecnico@teknomotor.com

13.1 – Come montare l'utensile su un elettromandrino con pinza ER?

Un corretto montaggio dell'utensile è indispensabile per garantire una lunga durata dei cuscinetti del mandrino e per ottenere una finitura superficiale delle superfici adeguata.

Prima di fissare l'utensile all'elettromandrino soffiare accuratamente con aria compressa il cono, la pinza, la ghiera di serraggio della pinza e l'utensile.

Pulire tutti i vari componenti con miscela diluente-olio (92%+8%) affinché vengano asportati eventuali residui di lavorazione se necessario pulire e lucidare con carta morbida da officina.

Inserire la pinza nella ghiera e controllare che possa ruotare liberamente.

Inserire l'insieme ghiera-pinza nel cono dell'elettromandrino e avvitarlo leggermente la ghiera con le mani.

Inserire l'utensile e controllare che possa scorrere assialmente.

Serrare la ghiera con una coppia adeguata servendosi delle apposite chiavi in dotazione, non usare prolunghe per esercitare coppie maggiori.

Controllare l'eccentricità dell'utensile. Se a causa dei taglienti non è possibile controllare l'utensile si può utilizzare una barra rettificata dello stesso diametro del codolo utensile. Il controllo del run-out della barra ci darà un'informazione sullo stato della pinza e del cono mandrino. A questo punto si deve essere sicuri che anche l'utensile sia dritto. (Nella ns. casistica abbiamo trovato anche utensili piegati, magari da una collisione precedente)

Si ricorda che la vita di una pinza non è infinita e che dopo molte ore di lavoro va controllata.

Non usare utensili che rovinano la sede conica dell'albero (es. utensili con seeger, ecc...).

Usare **pinze extraprecise** qualora la sporgenza dell'utensile risulti elevata (superiore a 80-100mm). Contattare l'ufficio tecnico Teknomotor per maggiori informazioni:

tecnico@teknomotor.com

13.1 – Wie kann das Werkzeug auf eine Elektrospindel mit ER-Spannzange montiert werden?

Eine einwandfreie Montage des Werkzeugs ist unabdingbar, um eine lange Dauer der Spindel-Lager sicher zu stellen und eine Oberflächenbehandlung angemessener Oberflächen zu erhalten.

Vor der Befestigung des Werkzeugs an der Elektrospindel die Spitze, die Spannzange, den Schraubstock zum Verschluss der Spannzange sowie das Werkzeug sorgfältig mit Druckluft ausblasen.

Die verschiedenen Bestandteile mit Verdünnungsmittel-Öl (92%+8%) reinigen, damit Verarbeitungsreste herauskommen, und wenn notwendig, mit weichem Werkstattpapier reinigen und polieren.

Die Spannzange in den Schraubstock stecken und überprüfen, dass sie sich frei bewegen kann.

Den Zusammenbau Schraubstock-Spannzange in die Spitze der Elektrospindel stecken und den Schraubstock leicht mit den Händen anziehen.

Das Werkzeug einstecken und dabei überprüfen, dass es mittig gleiten kann.

Den Schraubstock mit dem mitgelieferten Schlüssel auf einen angemessenen Anzugsmoment anziehen, dabei keine Verlängerungen verwenden, um höhere Anzugsmomente zu erhalten.

Werkzeug auf Mittigkeit prüfen. Wenn das Werkzeug aufgrund von Klingen nicht überprüft werden kann, dann kann eine geschliffene Stange mit demselben Durchmesser des Werkzeug-Einspannzapfens verwendet werden. Die Kontrolle des Run-out der Stange gibt uns die Information zum Zustand der Spannzange und der Spindel Spitze. An dieser Stelle muss man sicher sein, dass auch das Werkzeug gerade ist (in unserem Fall haben wir auch verbogene Werkzeuge vorgefunden, die vielleicht von einer vorherigen Kollision herrühren).

Wir machen darauf aufmerksam, dass die Dauer einer Spannzange nicht unendlich lange dauert und dass sie nach vielen Arbeitsstunden überprüft werden muss.

Keine Werkzeuge benutzen, die die konische Wellenfassung ruinieren (z. B. Werkzeuge mit Seegerring, usw...).

Extrapräzise Spannzangen verwenden, wenn der Vorsprung des Werkzeugs groß ist (über 80-100 mm). Nähere Informationen erhalten Sie beim technischen Büro von Teknomotor:

tecnico@teknomotor.com

FAQ (Frequently Asked Questions)

13.2– What are the environments in which the motors can work?

If it is not specified differently the motors can work in an environment in which there aren't water or refrigerant jets used during machining. The motor can not work in a misty environment. Air sealed motors are available for environments where water or refrigerant jets are present. For more information, contact Teknomotor Technical Office.

13.3– What are the types of shaft available in catalogue?

This kind of shaft are available for manual tool change electrospindle and HF motor in accordance with DIN 6499/B collet:

P-ER16 = Designed for collet ER16; available diameter: from 1 to 10mm.

P-ER20 = Designed for collet ER20; available diameter: from 2 to 13mm.

P-ER25 = Designed for collet ER25; available diameter: from 2 to 16mm.

P-ER32 = Designed for collet ER32; available diameter: from 2 to 20mm.

P-ER40 = Designed for collet ER40; available diameter: from 3 to 30mm.

It is available also other kind of shaft for HF motor. (See the catalogue). For custom made shafts call Teknomotor Technical Office.

13.4– What are the motors dimensions?

Every Model is marked by a letter that denotes the frame dimension. The "A" letter marks the shortest motor and the "D" letter the longest motor, and the power increases in alphabetic order as well:

[View "power vs speed tables" →](#)

13.2 – Quali sono gli ambienti in cui i motori possono lavorare?

I motori se non diversamente specificato possono lavorare in ambienti esenti da spruzzi d'acqua o liquidi refrigeranti utilizzati durante le lavorazioni di asportazione del truciolo. Si deve anche evitare che il motore aspiri refrigerante nebulizzato o nebbie dalla ventola di raffreddamento. A tale scopo si raccomanda di usare un adeguato sistema di aspirazione. Per lavorazioni che richiedono la presenza di liquido refrigerante sono disponibili motori con labirinti pressurizzati, in questo caso si prega di contattare l'Ufficio Tecnico.

13.3 – Quali sono le tipologie di alberi a catalogo?

Per gli elettromandri e i motori HF con cambio manuale dell'utensile sono disponibili i seguenti tipi di albero secondo norma DIN6499/B:

P-ER16 = Attacco conico per pinza elastica ER16; misure disponibili delle pinze: da 1 a 10 mm.

P-ER20 = Attacco conico per pinza elastica ER20; misure disponibili delle pinze: da 2 a 13 mm.

P-ER25 = Attacco conico per pinza elastica ER25; misure disponibili delle pinze: da 2 a 16 mm.

P-ER32 = Attacco conico per pinza elastica ER32; misure disponibili delle pinze: da 2 a 20 mm.

P-ER40 = Attacco conico per pinza elastica ER40; misure disponibili delle pinze: da 3 a 30 mm.

Per i motori HF sono inoltre disponibili alcune tipologie di albero (vedi sezioni sui motori HF). Per alberi diversi da quelli a catalogo, contattare l'ufficio tecnico.

13.4 – Quali sono le dimensioni dei motori?

Ogni modello è contraddistinto da una lettera che indica l'ingombro del motore. Per ogni modello la lettera "A" corrisponde al motore più corto e la lettera "D" al motore più lungo. La potenza risulta crescente secondo l'ordine alfabetico

[Vedi "power vs speed tables" →](#)

13.2 - In welchen Umgebungen können die Motoren tätig sein?

Wenn es nicht anders angegeben ist, können die Motoren in Umgebungen tätig sein, wo keine Wasser- oder Kühlmittelspritzer vorhanden sind, die bei den Vorgängen zur Ableitung der Späne verwendet werden. Es muss auch vermieden werden, dass der Motor zerstäubtes Kühlmittel oder Nebel aus den Kühllüftern absaugt. Dazu ist es ratsam ein angemessenes Absaugsystem einzusetzen. Bei Verarbeitungen, wo der Einsatz von Kühlmittel gefordert wird, stehen Motoren mit druckfesten Schleusen zur Verfügung. Kontaktieren Sie dazu bitte das technische Büro.

13.3 – Welche sind die Wellen im Katalog?

Für die Elektrospindeln und die HF-Motoren mit manuellem Werkzeugaustausch stehen folgende Wellen nach DIN6499/B zur Verfügung:

P-ER16 = Konischer Anschluss für elastische Spannzange ER16; verfügbare Zangengrößen: von 1 bis 10 mm.

P-ER20 = Konischer Anschluss für elastische Spannzange ER20; verfügbare Zangengrößen: von 2 bis 13 mm.

P-ER25 = Konischer Anschluss für elastische Spannzange ER25; verfügbare Zangengrößen: von 2 bis 16 mm.

P-ER32 = Konischer Anschluss für elastische Spannzange ER32; verfügbare Zangengrößen: von 2 bis 20 mm.

P-ER40 = Konischer Anschluss für Spannzange ER40; verfügbare Zangengrößen: von 3 bis 30 mm.

Für HF-Motoren stehen weiterhin einige Wellen zur Verfügung (siehe Abschnitte an HF-Motoren). Für Wellen, die nicht im Katalog stehen, kontaktieren Sie bitte das technische Büro.

13.4 – Welche sind die Motorgrößen?

Jedes Modell zeichnet sich durch einen Buchstaben aus, der die Motorgröße angibt. Für jedes Modell stimmt der Buchstabe "A" mit dem kürzeren Motor und der Buchstabe "D" mit dem längeren Motor überein.

[siehe "power vs speed tables" →](#)

FAQ (Frequently Asked Questions)

13.5– How to program the inverter?

When the inverter is connected with the motor it must be remembered to modify some inverter parameters to allow the motor work properly and not to be damaged.

Warning:

feeding the motor with a wrong frequency curve can irreparably damage the motor in a few seconds.

the factory setting of every inverter must be modified to allow it to work with a HF motor/electrospindle.

Most important parameters:

Base Frequency (point A): it is the frequency to which it corresponds the maximum voltage acceptable by the motor (base voltage). The factory setting of this parameter is usually 50Hz this parameter must be set equal to the base frequency of the motor (usually 100Hz, 200Hz, 300Hz, 400Hz depends on the motor type). The value of the base frequency of your motor is written on the nameplate or in the instruction sheet.

Base Input Voltage: it is the maximum input voltage to which the motor can work. Generally this value is 220V or 380V, it depends on the motor wiring.

Max Frequency (point B): it is the maximum frequency to which the motor can work. It can correspond with the base frequency or it can be higher depending on the bearing type and on the balancing grade.

Auto tuning functions: to avoid any damaging of the motor we suggest not to use the auto tuning functions of your inverter but manually set up the inverter parameters with a linear [V;F] curve.

Warning: please refer to the inverter manufacturer manual to correctly install the inverter.

Warning: The electrospindles MUST be accelerated through a linear V/F ramp to preserve the integrity of the short-circuit rings of the rotor.

13.5 – Come programmare l'inverter?

Quando si collega un motore HF/elettromandrino ad un inverter ci si deve ricordare di modificare alcuni parametri dell'inverter al fine di non danneggiare il motore e di consentirne il corretto funzionamento.

Attenzione:

Alimentare il motore con un'errata curva di alimentazione può danneggiare gravemente il motore in pochi secondi.

I valori di fabbrica di qualsiasi inverter devono essere sempre modificati per consentirne il funzionamento con motore HF/elettromandrino.

I parametri principali:

Frequenza di base (Base Frequency - punto A): è la frequenza alla quale corrisponde la massima tensione accettabile dal motore (tensione di base - base input voltage). Il valore preimpostato sulla maggior parte degli inverter è di 50 Hz. Questo valore va impostato sul valore della frequenza di base del motore (di solito 100Hz, 200Hz, 300Hz, 400Hz a seconda del motore). Il valore della frequenza di base del motore si trova sulla targhetta oppure sulle istruzioni incluse.

Tensione di base (Base Input Voltage): è la massima tensione alla quale può essere sottoposto il motore. Normalmente questo valore è di 220V oppure di 380V a seconda del tipo di motore e del collegamento effettuato sulla morsettiera.

Frequenza massima (Max Frequency - punto B): è la massima frequenza alla quale può essere sottoposto il motore. Tale valore può coincidere con la frequenza di base oppure essere maggiore a seconda della tipologia dei cuscinetti utilizzati ed a seconda del grado di equilibratura.

Funzioni di auto tuning: al fine di evitare di danneggiare il motore sconsigliamo vivamente di abilitare la funzione di auto tuning e di programmare manualmente l'inverter con una curva [V;F] di tipo lineare.

Attenzione: per la corretta installazione dell'inverter fare riferimento al manuale di istruzioni dell'inverter stesso.

Attenzione: Gli elettromandri DEVONO essere accelerati tramite una rampa V/F lineare per preservare l'integrità degli anelli di cortocircuito del rotore.

13.5 – Wie den Umrichter zu programmieren?

Wenn ein HF-Motor/Elektrospindel an einen Inverter angeschlossen wird, muss man daran denken, dass einige Parameter des Inverters geändert werden müssen, um den Motor nicht zu beschädigen und einen einwandfreien Betrieb zu ermöglichen.

Achtung:

Durch Einspeisen des Motors mit einer falschen Einspeisungskurve kann der Motor in wenigen Sekunden beschädigt werden.

Die werkseitigen Werte aller Inverter müssen abgeändert werden, um den Betrieb mit HF-Motor/Elektrospindel zu ermöglichen.

Wichtigste Parameter:

Basisfrequenz (Base Frequency - Punkt A):

Das ist die Frequenz, die mit der maximalen Spannung übereinstimmt, die vom Motor akzeptiert werden kann (Basisspannung - Base Input Voltage). Der auf den meisten Invertern voreingestellte Wert beträgt 50 Hz. Dieser Wert muss auf den Basisfrequenzwert des Motors eingestellt werden (gewöhnlich 100Hz, 200Hz, 300Hz, 400Hz je nach Motor). Der Basisfrequenzwert des Motors befindet sich auf dem Schild oder in der mitgelieferten Anleitung.

Basisspannung (Base Input Voltage): Das ist die Spannung, der der Motor ausgesetzt werden kann. Normalerweise beträgt der Wert 220V oder 380V - je nach Motortyp und Verbindung, die vom Klemmbrett durchgeführt wurde.

Max. Frequenz (Max Frequency - Punkt B):

Das ist die maximale Frequenz, der der Motor ausgesetzt werden kann. Dieser Wert kann mit der Basisfrequenz übereinstimmen oder je nach verwendetem Lager-Typ und je nach Auswuchtung größer sein.

Funktionen eines Selbst-Tuning: Um Motorschäden zu vermeiden, raten wir vom Einschalten der Selbst-Tuning-Funktion sowie der manuellen Inverter-Programmierung mit einer linearen Kurve [V;F] ab.

Achtung: Zur einwandfreien Installation des Inverters nehmen Sie Bezug auf die Anweisungen des Inverters selbst.

Achtung: Die Elektrospindel MUSS durch eine Rampe V/F linear beschleunigt werden, um die Integrität der Kurzschlußringe des Rotors zu erhalten.

FAQ (Frequently Asked Questions)

13.6– Plugs

The HF motors and the electrospindle can be supplied with different types of plug. The connection of the power supply of the motor (220V or 380V) must be indicated by the customer in the order.

Two models are available:

Plugs with die cast aluminum cover

Plugs with screw terminal.

No particular instruments required.

Plugs with plastic cover

In this kind of plug the pins are clamped onto wires by a special instrument that the customer has to buy himself.

This kind of tightening is faster than screw terminal.

Contact our technical office for more informations.

13.6 – Connettori

I motori HF e gli elettromandri possono essere forniti con connettori rapidi di varie tipologie e forme. In genere quando viene montato un connettore rapido si deve scegliere in fase d'ordine la tensione di alimentazione del motore (220V oppure 380V). I connettori sono generalmente di due tipologie:

Connettori con custodia metallica

In questo tipo di connettore i fili sono connessi tramite morsetti a vite. Non sono necessari attrezzature particolari.

Connettori con custodia in plastica

In questo tipo di connettore i fili sono connessi ai pin metallici tramite uno speciale attrezzo detto pinza a crimpare; richiedono pertanto l'acquisto da parte del cliente delle attrezzature necessarie. Contattate il nostro ufficio tecnico per ulteriori informazioni.

13.6 – Verbinder

Die HF-Motoren und die Elektrospindeln können mit Schnellverbindern unterschiedlicher Art und Form geliefert werden. Wenn ein Schnellanschlussverbinder montiert wird, muss die Stromversorgungsspannung des Motors gewöhnlich bei der Bestellung gewählt werden (220V oder 380V). Die Verbinder sind im Allgemeinen folgende:

Verbinder mit Metallgehäuse

Bei diesem Verbindertyp sind die Drähte über Schraubklemmen angeschlossen. Hier sind keine besonderen Werkzeuge notwendig.

Verbinder mit Kunststoffgehäuse

Bei diesem Verbindertyp sind die Drähte über ein Spezialwerkzeug, die sogenannte Quetschzange, an Metall-Pins angeschlossen; daher muss der Auftraggeber die dafür notwendigen Werkzeuge beschaffen. Nähere Informationen erhalten Sie bei unserem technischen Büro.

13.7– Half key and full key balancing

When the order is placed it is fundamental to ask for the correct type of balancing to avoid any excessive vibration when the motor is coupled with the tool. An uncorrect match between tool and motor shaft causes vibrations which can compromise the finishing grade of the part as well as considerably reduce the motor life.

Half key balancing (HK):

this balancing method is usually associate with a one slot tool. In this case we have two asymmetrical and unbalanced rotors which will compensate each other when assembled together making a balanced system.

Full key balancing (FK):

this balancing method is usually associate with a two slots tool. In this case the tool is symmetrical and balanced and the motor shaft is balanced to compensate the keyway protrusion. The matching of the two rotors will make a balanced system.

13.7 – Equilibratura a mezza chiavetta e chiavetta intera

Il tipo di equilibratura richiesta in sede di ordine è un aspetto fondamentale per effettuare un corretto accoppiamento tra il motore HF / elettromandrino e l'utensile. Un accoppiamento errato comporterà un elevato valore di vibrazione quando il motore sarà in funzione che potrebbe compromettere il grado di finitura del pezzo oltreché accorciare considerevolmente la vita del mandrino.

Equilibratura con mezza chiavetta (HK):

Questo tipo di equilibratura dell'albero si associa solitamente ad un utensile ad una cava. In questo caso siamo in presenza di due rotanti asimmetrici e squilibrati che quando vengono accoppiati si compensano formando un sistema equilibrato.

Equilibratura con chiavetta intera (FK):

Questo tipo di equilibratura dell'albero si associa solitamente ad un utensile a 2 cave contrapposte. In questo caso l'utensile risulta simmetrico ed equilibrato mentre l'albero verrà equilibrato al fine di compensare la chiavetta sporgente. L'unione dei due rotanti darà luogo ad un sistema equilibrato.

13.7 – Halb Schlüssel und Vollkeilwuchtung

Die bei der Bestellung geforderte Auswuchtung ist ein fundamentaler Aspekt zur korrekten Ausführung der Kopplung des HF-Motors/der Elektrospindel mit dem Werkzeug. Eine falsche Kopplung zieht einen hohen Vibrationswert nach sich, wenn der Motor in Betrieb ist, was die Feinbearbeitung des Teils gefährden und die Lebensdauer der Spindel bemerkenswert verkürzen kann.

Auswuchtung mittels Keil (HK):

Diese Art Wellenauswuchtung wird gewöhnlich einem Werkzeug mit einer Nut zugeordnet. In diesem Fall gibt es zwei asymmetrischen und unausgewuchteten Drehausführungen, die sich miteinander kompensieren und ein ausgewuchtetes System bilden, wenn sie gekoppelt werden.

Auswuchtung mittels internen Keil (FK):

Diese Art Wellenauswuchtung wird gewöhnlich einem Werkzeug mit zwei gegenüberliegenden Nuten zugeordnet. In diesem Fall ist das Werkzeug symmetrisch und ausgewuchtet, während die Welle so ausgewuchtet wird, dass der herausragende Keil kompensiert wird. Aus der Vereinigung der beiden Drehteile ergibt sich ein ausgewuchtetes System.

FAQ (Frequently Asked Questions)

13.8 – Difference between HF motor and electrospindle

The main difference consists in the type of the load the motor can be subjected to, radial load for the HF motor, mixed load or pure axial load for the electrospindle. The electrospindle is moreover balanced with a lower grade (lower vibrations value) in comparison with HF motor because it is subjected to a process of dynamic balancing. At last the electrospindle allows faster rotational speed thanks to the better performance of the angular contact ball bearing compared with a deep groove bearing.

13.8 – Differenza tra motore HF ed elettromandrino

La principale differenza consiste nel tipo di carico al quale il motore può essere sottoposto, radiale per un motore HF o rettangolare, misto radiale ed assiale o puramente assiale per un elettromandrino o heavy load. L' elettromandrino inoltre risulta equilibrato con un grado inferiore (valore di vibrazione inferiore) rispetto agli altri tipi di motore in quanto subisce un ulteriore processo di bilanciatura dinamica. Infine l'elettromandrino consente velocità di rotazione più elevate grazie alle maggiori performance dei cuscinetti a contatto obliquo.

13.8 – Unterschied zwischen HF-Motor und Elektroschindel

Der Hauptunterschied besteht in der Belastung, der der Motor ausgesetzt werden kann, strahlenförmig bei einem HF-Motor und rechteckig, radial-axial gemischt und oder rein mittig bei einer Elektroschindel oder Schwerlast. Die Elektroschindel ist zudem niedriger ausgewuchtet (niedrigerer Vibrationswert) als die anderen Motortypen, da sie einem weiteren dynamischen Auswuchtungsprozess unterzogen wird. Schließlich ermöglicht die Elektroschindel dank einer höheren Leistung der Lager mit Schrägkontakt höhere Drehgeschwindigkeiten.

CHARACTERISTICS	HF MOTOR	ELECTROSPINDLE	RECTANGULAR MOTOR	HEAVY LOAD RECTANGULAR MOTOR
Radial load	Permitted	Permitted	Permitted	Permitted
Axial load	Minimum	Permitted	Minimum	Permitted
Front bearings	Radial	Angular contact	Radial	Angular contact
Rear Bearings	Radial	Radial / Angular contact	Radial	Radial / Angular contact
rpm Min/Max*	3000/18000	3000 / 30000	1000 / 6000	1000 / 9000

13.9 – Choice of the thread direction on BT models with blade flanges without key

Warning:

The choice of the correct correlation between the direction of rotation of the motor and the direction of the shaft thread is binding to guarantee the safety of the machining operations. A wrong correlation between the direction of rotation of the motor and the direction of the thread can cause the loosening of the locking nut; and this can cause serious or fatal consequences for the operator.

The correct correlation between the direction of rotation of the motor and the direction of the thread do not allow not to consider all the other security norms for the protection of the operators involved in the machine operations or maintenance.

**If the motor rotates clockwise, the thread must be counterclockwise (left).
If the motor rotates counterclockwise, the thread must be clockwise (right).**

13.9 – Scelta della filettatura nei modelli BT con flange portalama senza chiavetta

Attenzione:

La scelta della corretta correlazione tra il verso di rotazione del motore ed il verso del filetto sull'albero è indispensabile per garantire la sicurezza delle operazioni.

Una correlazione errata tra il verso di rotazione del motore ed il verso del filetto può portare all'allentamento del dado di serraggio con possibili gravi o fatali conseguenze per l'operatore.

Una corretta correlazione tra il verso di rotazione del motore ed il verso del filetto non esula dal rispettare tutte le altre ulteriori norme di sicurezza per la protezione del personale addetto alla macchina operatrice.

Se il motore gira in senso orario, il filetto dovrà essere in senso antiorario (sinistro).

Se il motore gira in senso antiorario, il filetto dovrà essere in senso orario (destro).

13.9 – Wahl der Faden BT-Modelle mit Flansch Halter ohne Schlüssel

Achtung!

Die Wahl der richtigen Zuordnung der Drehrichtung des Motors zu der Drehrichtung des Wellengewindes ist unerlässlich für die Sicherheit der Vorgänge.

Eine falsche Zuordnung der Drehrichtung des Motors zu der Drehrichtung des Wellengewindes kann zum Lösen der Anzugmutter mit möglichen schweren oder fatalen Folgen für den Bediener führen.

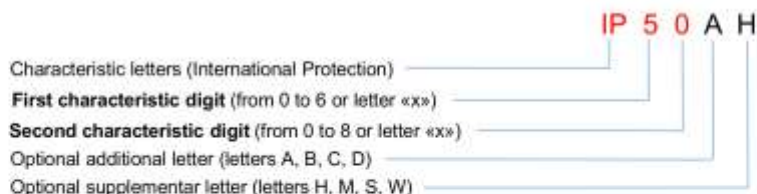
Eine richtige Zuordnung der Drehrichtung des Motors zu der Drehrichtung des Wellengewindes bedeutet nicht, dass man alle weiteren Sicherheitsvorschriften zum Schutz der Maschinenbediener nicht einzuhalten braucht.

Wenn der Motor sich im Uhrzeigersinn dreht, muss das Gewinde gegen den Uhrzeigersinn (links herum) sein.

Wenn der Motor sich gegen den Uhrzeigersinn dreht, muss das Gewinde im Uhrzeigersinn (rechts herum) sein.

IP protection grades

The technical norm CEI EN 60529/1997 (ex CEI 70-1) classify the protection grades of the enclosures for electrical equipment. The IP is indicated with two digits plus, if necessary, two additional letters.



The **first digit** indicates the grade of protection against ingress of **solid foreign objects**.

IP	Meaning
0	No protection
1	Protected against solid objects greater than 50 mm in diameter
2	Protected against solid objects greater than 12 mm in diameter
3	Protected against solid objects greater than 2.5 mm in diameter
4	Protected against solid objects greater than 1 mm in diameter
5	Protected against dust (no harmful deposit)
6	Totally protected against dust

The **second digit** indicates the grade of protection against ingress of **liquids**.

IP	Meaning
0	No protection
1	Protected against vertical falling water drops
2	Protected against falling water drops or rain up to 15° from the vertical
3	Protected against falling water drops or rain up to 60° from the vertical
4	Protected against splashing water from all directions
5	Protected against water jets
6	Protected against powerful water jets
7	Protected against the effects of temporary immersions
8	Protected against the effects of continuous immersions

The **additional letter** indicates the grade of protection against the access to dangerous parts.

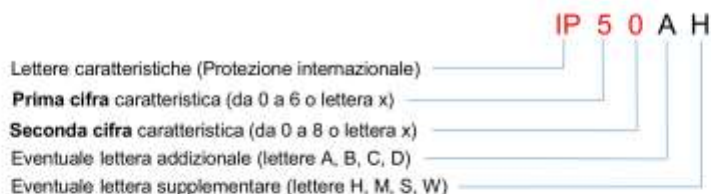
IP	Meaning
A	Protected against the access with hands
B	Protected against the access with fingers
C	Protected against the access with tools
D	Protected against the access with wires

The **supplementar letter** gives informations about the protection of the material.

IP	Meaning
H	Suitable for high voltage equipment
M	Tested for harmful effects due to entry of water when the movable parts of the equipment are in motion
S	Tested for harmful effects due to entry of water when the movable parts of the equipment are not in motion
W	Suitable for use in specified atmospheric conditions and featuring additional measures or procedures

Gradi di protezione IP

La norma CEI EN 60529/1997 (ex CEI 70-1) classifica i gradi di protezione degli involucri per apparecchiature elettriche. Il grado IP è indicato con due cifre caratteristiche più eventuali due lettere aggiuntive.



La **prima cifra** indica il grado di protezione contro la penetrazione di **corpi solidi** estranei.

IP	Significato
0	Nessuna protezione
1	Protetto contro i corpi solidi superiori a 50 mm di diametro
2	Protetto contro i corpi solidi superiori a 12 mm di diametro
3	Protetto contro i corpi solidi superiori a 2.5 mm di diametro
4	Protetto contro i corpi solidi superiori a 1 mm di diametro
5	Protetto contro le polveri (nessun deposito nocivo)
6	Totalmente protetto contro le polveri

La **seconda cifra** indica il grado di protezione contro la penetrazione di **liquidi**.

IP	Significato
0	Nessuna protezione
1	Protetto contro le cadute verticali di gocce d'acqua
2	Protetto contro le cadute di gocce d'acqua o pioggia fino a 15° dalla verticale
3	Protetto contro le cadute di gocce d'acqua o pioggia fino a 60° dalla verticale
4	Protetto contro gli spruzzi d'acqua da tutte le direzioni
5	Protetto contro i getti d'acqua
6	Protetto contro i getti d'acqua potenti
7	Protetto contro gli effetti delle immersioni temporanee
8	Protetto contro gli effetti delle immersioni continue

La **lettera aggiuntiva** indica il grado di protezione contro l'accesso a parti pericolose.

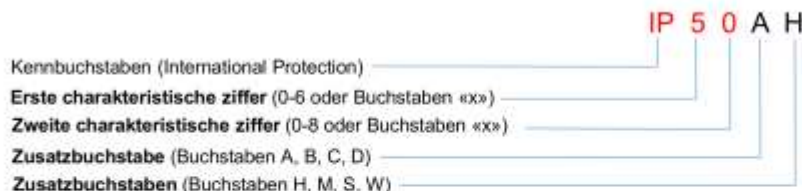
IP	Significato
A	Protetto contro l'accesso con la mano
B	Protetto contro l'accesso con il dito
C	Protetto contro l'accesso con attrezzo
D	Protetto contro l'accesso con filo

La **lettera supplementare** fornisce informazioni relative alla protezione del materiale.

IP	Significato
H	Adatto per apparecchiature ad alta tensione
M	Provato contro gli effetti dannosi dovuti all'ingresso d'acqua quando le parti mobili dell'apparecchiatura sono in moto
S	Provato contro gli effetti dannosi dovuti all'ingresso d'acqua quando le parti mobili dell'apparecchiatura non sono in moto
W	Adatto all'uso in condizioni atmosferiche specificate e dotato di misure o procedimenti aggiuntivi

IP schutzgrad

Die EWG-Norm EN 60529/1997 (vorher CEI 70-1) klassifiziert die Schutzarten für Elektrogeräte. Der IP-Schutzgrad erscheint mit zwei charakteristischen Ziffern plus ggf. zwei Zusatzbuchstaben.



Die **erste Ziffer** zeigt den Schutzgrad gegen das Durchbohren seitens von **Fremdkörpern**.

IP	Bedeutung
0	Kein Schutz
1	Schutz gegen Fremdkörper mit über 50 mm Durchmesser
2	Schutz gegen Fremdkörper mit über 12 mm Durchmesser
3	Schutz gegen Fremdkörper mit über 2.5 mm Durchmesser
4	Schutz gegen Fremdkörper mit über 1 mm Durchmesser
5	Schutz gegen Staub (keine giftige Ablagerung)
6	Totaler Schutz gegen Staub

Die **zweite Ziffer** zeigt den Schutzgrad gegen das Eintreten von **Flüssigkeiten**.

IP	Bedeutung
0	Kein Schutz
1	Schutz gegen das Fallen von Wassertropfen
2	Schutz gegen das Fallen von Wasser- oder Regentropfen bis 15° von der Vertikalen
3	Schutz gegen das Fallen von Wasser- oder Regentropfen bis 60° der Vertikalen
4	Schutz gegen Wasserspritzern aus allen Richtungen
5	Schutz gegen Wasserstrahle
6	Schutz gegen mächtige Wasserstrahle
7	Schutz gegen the effects of temporary immersions
8	Schutz gegen the effects of continuous immersions

Der **Zusatzbuchstabe** gibt den Schutzgrad gegen den Zugang seitens gefährlicher Teile an.

IP	Bedeutung
A	Schutz gegen den Zugriff mit der Hand
B	Schutz gegen den Zugriff mit dem Finger
C	Schutz gegen Zugriff mit dem Werkzeug
D	Schutz gegen Zugriff mit Faden

Mit dem **Zusatzbuchstaben** werden Informationen zum Schutz des Materials angegeben.

IP	Bedeutung
H	Für Hochspannungsgeräte geeignet
M	Gegen schädliche Folgen, die auf den Wassereintritt zurückzuführen ist, wenn die beweglichen Geräteteile sich bewegen
S	Gegen schädliche Folgen, die auf den Wassereintritt zurückzuführen ist, wenn die beweglichen Geräteteile sich nicht bewegen
W	Zum Einsatz spezieller Wetterbedingungen, die mit Zusatzmaßen und -vorgängen versehen ist, angemessen



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