



Motori e Elettromandrini per alte velocità
Motors and Electric Spindles for High Speeds

EDIZIONE IV - Maggio 2004

Elte srl si riserva il diritto di apportare modifiche o miglioramenti senza preavviso.
Elte srl reserves the right to change specifications or bring improvements without notice.



Un merito particolare va all'impegno di tutto il nostro staff che ha reso possibile il successo dell'azienda.
We specially have to thank our staff for the achievement of our company success.

PRESENTAZIONE PRESENTATION

Siamo un'azienda conosciuta ormai a livello mondiale che vanta un'esperienza più che ventennale nel campo dei motori elettrici per la lavorazione del legno e delle leghe leggere. Competenze tecniche ed innovazione tecnologica sono alla base della nostra filosofia di lavoro. La vasta gamma di motori e la notevole esperienza nelle problematiche legate al settore dell'alta velocità permettono di avvicinarci con competenza ed affidabilità ad ogni tipo di applicazione: gruppi a forare, a incidere, a intestare, a squadrare.

Il nostro impegno è principalmente realizzare motori "su misura" per le specifiche esigenze del cliente, nell'intento di essere il partner ideale per i costruttori di macchine che utilizzano l'alta frequenza.

Le velocità variano da un minimo di 1.500 giri/min. per arrivare ad oltre 40.000 giri/min. con un range di potenze che vanno da 0.05 Kw fino a 15 Kw.

I nostri motori asincroni trifase per l'impiego ad alte velocità vanno alimentati con tensioni ad alta frequenza in un range tipico che va da 50 Hz fino a 670 Hz.

L'alta frequenza richiede particolare attenzione nella scelta dei materiali di costruzione ed in tutte le successive fasi di lavorazione ed assemblaggio in quanto i più piccoli difetti verrebbero inevitabilmente amplificati dall'alta velocità: così ad esempio i lamierini magnetici sono tutti a bassa perdita in modo da poter garantire temperature accettabili di servizio; i cuscinetti sono dimensionati in base alla velocità e al tipo di sforzo cui saranno destinati.

We are a company that is known almost worldwide, with twenty years experience in the field of electric motors for the processing of wood and light alloys.

Technical expertise and technological innovation are the working philosophy of our company.

The vast range of motors and the considerable experience in solving high-speed problems let us approach every type of application with expertise and reliability.

Elte motors are built and designed for different applications like drilling, engraving, facing, squaring. We are committed to meeting all customer requirements with the intention of becoming the right partner for the manufacturers of high frequency machines.

Typical range is from 1.500 RPM to 40.000 RPM referred to shaft

speed and from 0,05 Kw to 15 Kw. referred to power.

To be used at high speeds our asynchronous three-phase motors are fed by high frequency voltage from 50 to 670 Hz.

Particular attention is paid to materials and to all further working and assembling stages, this to avoid the smallest defect becoming more important due to the high speed.

For this reason low loss electrical sheets are used to assure acceptable operative temperatures; ball bearings sizes are calculated according to requested speed and to the type of working stress the motor is subjected to.



Da sinistra: / From left:

D'Amico Ing. Sebastiano

Consulente Tecnico - Consulting Engineer

Mr. Trebbi Gianni

Amministratore - Administrator

Mr. Padoan Beniamino

*Resp. Tecnico Comm. e Progettazione
Technical and Commercial Manager*

Tecnologie all'avanguardia concorrono alla ottimizzazione di tutti i componenti durante la fase del processo produttivo: centri di lavoro CNC, rettificazione e torni a controllo numerico influiscono in modo decisivo sulla qualità del prodotto finale.



Advanced technologies permit to obtain the best results from all the components during the production: DNC machines, grinding machines and DNC lathes are of primary importance for the end quality of the product.

Controlli durante tutte le fasi del processo per garantire i requisiti fondamentali per l'alta velocità: controlli dimensionali durante la realizzazione dei particolari, controlli funzionali a motore ultimato tra i quali la verifica delle vibrazioni con relativa equilibratura.



Checks of the sizes, vibrations control and accurate final inspection guarantee all high-speed requirements.

Rodaggio per garantire una uniforme distribuzione del grasso nei cuscinetti.

Running in to ensure a proper lubrication of the bearings.



Verifica delle caratteristiche elettromeccaniche all'interno di una moderna sala prove.

Electrical and mechanical characteristics are verified in a modern test room.

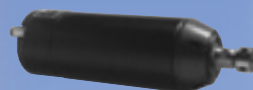
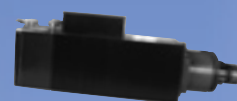
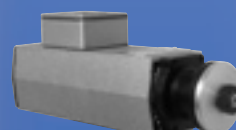
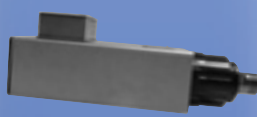
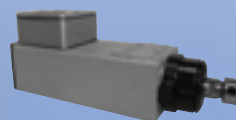
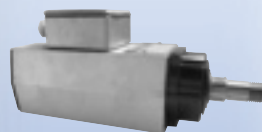
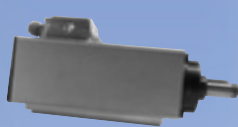
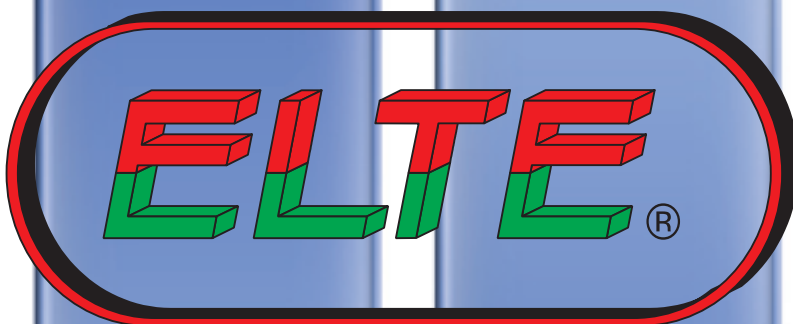
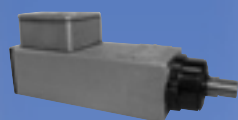
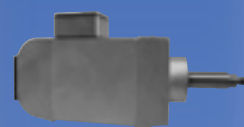
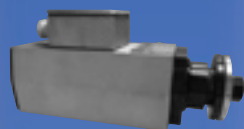
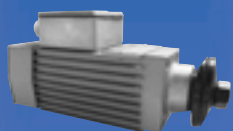
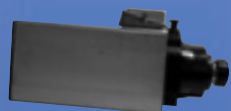
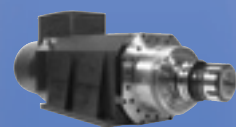
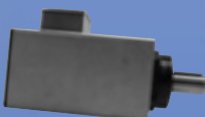
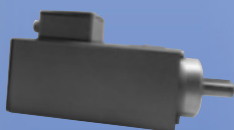
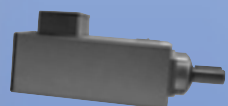
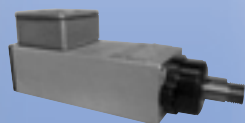
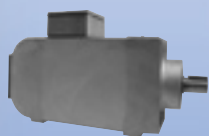
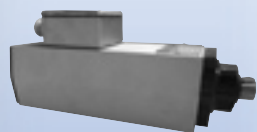
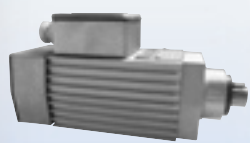




ELTE S.R.L. ha conseguito la *Certificazione del Sistema di Qualità* secondo la normativa **UNI EN ISO 9001:2000** nell'ottica di un processo aziendale volto al raggiungimento di traguardi qualitativi stabiliti e per rispondere in modo adeguato alle aspettative del mercato.

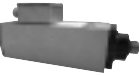


ELTE S.R.L. obtained the quality management system certification as meeting the requirements of **UNI EN ISO 9001:2000** in order to achieve fixed quality purposes and to meet market's expectations.



MOTORI ED ELETTROMANDRINI AD ALTA VELOCITÀ

MOTORS AND ELECTRIC SPINDLES FOR HIGH FREQUENCY

Page	Type	INDICE <i>Index</i>	Range di potenza (Kw)	Range di velocità (rpm)
3		Serie KNS21	0.10 ÷ 0.55	6000 ÷ 18000
5		Serie STK21	0.13 ÷ 0.75	6000 ÷ 18000
7		Serie EVS31/40	0.13 ÷ 2.20	3000 ÷ 18000
10		Serie PE0 TMPE0	0.10 ÷ 0.40	6000 ÷ 24000
12		Serie PE1-2 TM PE1-2	0.10 ÷ 0.75	3000 ÷ 24000
16		Serie PE3 TM PE3	0.15 ÷ 2.20	3000 ÷ 30000
20		Serie PE4 TM PE4	0.65 ÷ 5.60	3000 ÷ 24000
24		Serie PE5 TM PE5	1.25 ÷ 7.00	3000 ÷ 24000
27		Serie TM PE6	3.40 ÷ 9.50	3000 ÷ 18000
29		BIALBERO <i>Double ended shaft</i>	0.15 ÷ 7.00	3000 ÷ 18000
34		Serie SQUADRATICI <i>Panel Sizing</i>	0.65 ÷ 16.00	3000 ÷ 6000
40		Motori SERIE S <i>Seghe Circolari</i> <i>Circular Saws</i>	2.90 ÷ 19.00	1500 ÷ 6000
45		Serie Elettromandrini TMA <i>Cambio utensile automatico</i> <i>Automatic tool change</i> <i>electric spindles</i>	2.00 ÷ 12.00	12000 ÷ 30000
50		Serie AF <i>Elettr. raffreddati a liquido</i> <i>Liquid cooled electric spindles</i>	0.25 ÷ 8.50	18000 ÷ 40000
62		Serie Convertitori Statici <i>Inverter</i>	0.55 ÷ 60.00	
73		RICAMBI <i>Spare Parts</i>		

■ Bilanciatura *Balance*

- **Bilanciatura Standard con 1/2 chiavetta per utensile ad una cava**

Standard balance with half key for one slot tool.

- **A richiesta bilanciatura con chiavetta intera per utensile a due cave**

On request balance with full key for two slot tool.

- **Si raccomanda l'uso di utensili bilanciati**

We strictly recommend the use of balanced tools.

- **Tutti i motori vengono forniti privi di pressacavo**

All motors are supplied without the plastic gland.

- **È importante in sede d'ordine specificare il tipo di motore completo di Tensione, Frequenza, Potenza.**

When ordering please specify the Voltage, Frequency and Power of the motor.

- **In tutti i motori sono montati cuscinetti per alte velocità ingrassati a vita.**

All motors have bearings for high speeds and do not require any additional lubrication.

- **Tutti i motori sono a normativa europea (marchio CE).**

All motors conform to the European CE standard.

- **Direttiva macchine (89/392/CEE).**

All motors conform to the "machines" directive (89/392/CEE).

- **Direttiva compatibilità elettromagnetica EMC (89/336/CEE).**

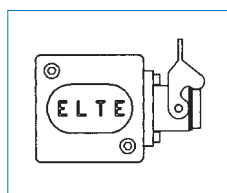
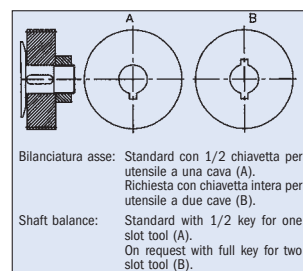
All motors conform to the electromagnetic compatibility directive EMC (89/336/CEE).

- **Direttiva bassa tensione (73/23/CEE).**

All motors conform to the "low voltage directive" 73/23/CEE.

- **Tutti i motori (a specifica richiesta) possono essere documentati con bollettini di collaudo funzionale, in fase di certificazione finale.**

(On request) all motors can be supplied with a functional test certificate, during the final phase of certification.



A richiesta coprimorsettiera in alluminio 57x57 con connettore esterno come da disegno.

On request aluminium cable box 57x57 with external connector.



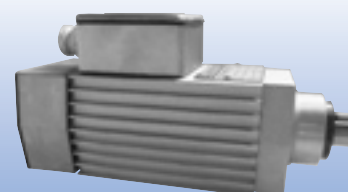
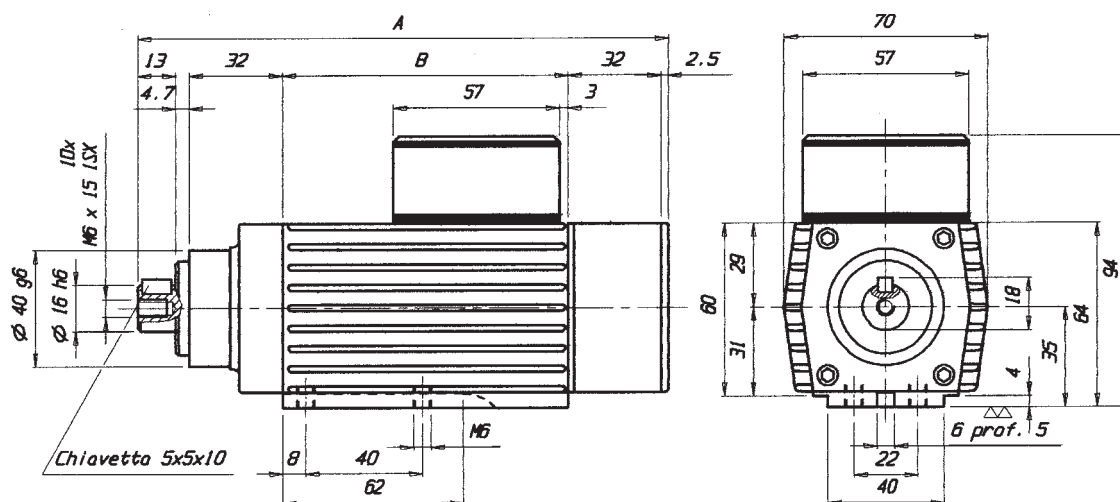


Serie KNS

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
KNS21 6/2	380	220	220/380	100	6000	0.09	0.40	0.7	0.7/0.40	0.65	1.8
KNS21 6/2	220	380	220/380	200	12000	0.16	1.10	0.64	1.10/0.64	0.70	1.8
KNS21 6/2	380	220	220/380	300	18000	0.22	1.00	1.73	1.73/1.00	0.70	1.8
KNS21 7/2	380	220	220/380	100	6000	0.11	0.49	0.85	0.85/0.49	0.65	2
KNS21 7/2	220	380	220/380	200	12000	0.22	1.50	0.85	1.50/0.85	0.70	2
KNS21 7/2	380	220	220/380	300	18000	0.33	1.20	2.10	2.10/1.20	0.70	2
KNS21 8.5/2	380	220	220/380	100	6000	0.22	0.86	1.50	1.50/0.86	0.65	2.5
KNS21 8.5/2	220	380	220/380	200	12000	0.37	2.30	1.30	2.30/1.30	0.70	2.5
KNS21 8.5/2	380	220	220/380	300	18000	0.55	1.85	3.20	3.20/1.85	0.70	2.5

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori KNS21

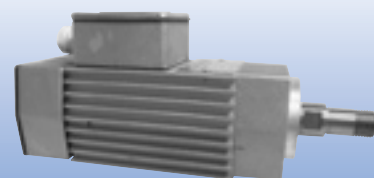
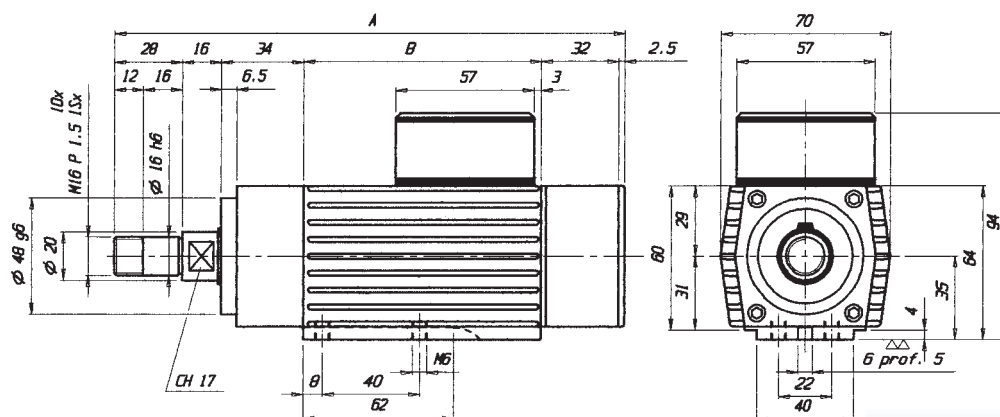


TIPO Type	A	B
KNS21 6/2	182	98
KNS21 7/2	182	98
KNS21 8.5/2	217	133

Sporgenza SC
Nose type SC

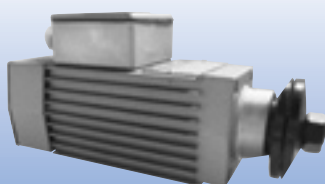
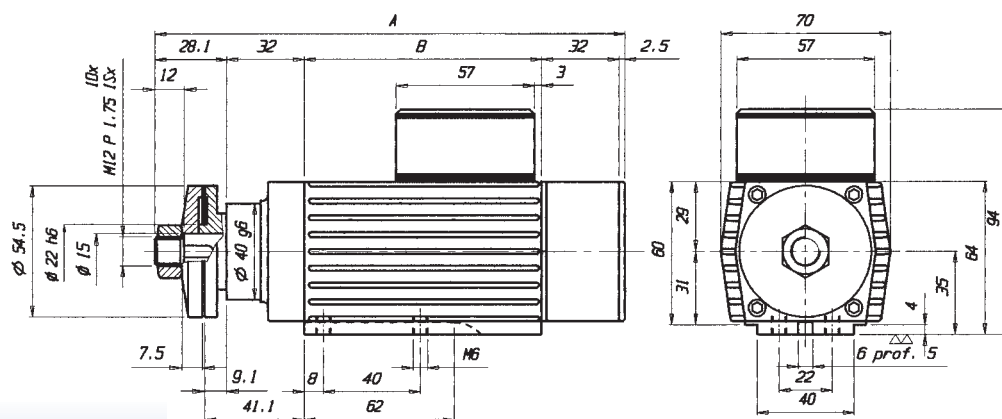


Motori KNS21



TIPO Type	A	B
KNS21 6/2	210.5	98
KNS21 7/2	210.5	98
KNS21 8.5/2	245.5	133

Sporgenza SF
Nose type SF



TIPO Type	A	B
KNS21 6/2	192.5	98
KNS21 7/2	192.5	98
KNS21 8.5/2	227.5	133

Sporgenza SCF
Nose type SCF

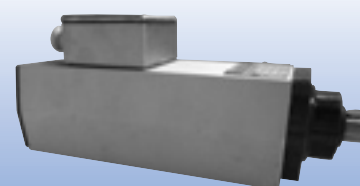
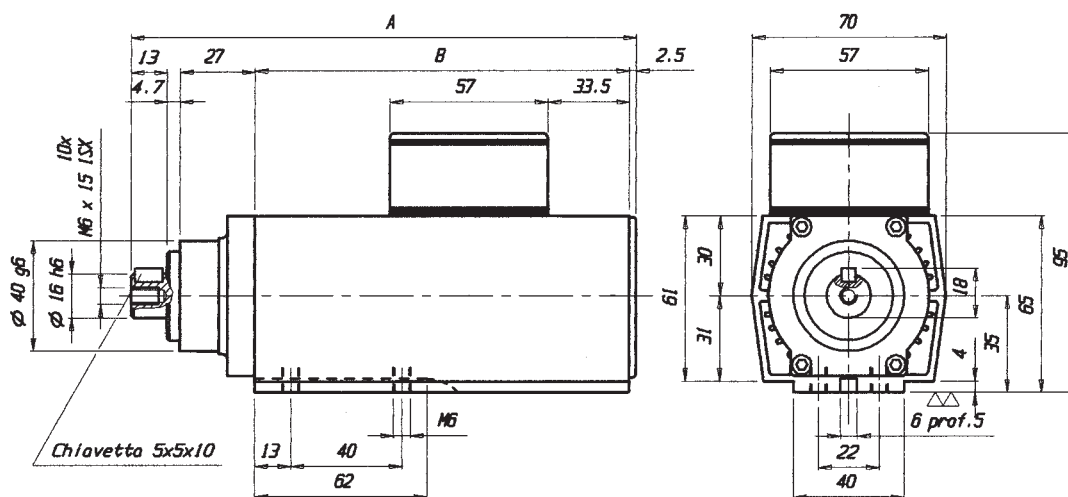


• Serie STK

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
STK21 6.5/2	380	220	220/380	100	6000	0.13	0.58	1.00	1.00/0.58	0.63	1.8
STK21 6.5/2	220	380	220/380	200	12000	0.35	2.00	1.16	2.00/1.16	0.69	1.8
STK21 6.5/2	380	220	220/380	300	18000	0.41	1.27	2.20	2.20/1.27	0.70	1.8
STK21 9/2	380	220	220/380	100	6000	0.22	0.85	1.47	1.47/0.85	0.65	2
STK21 9/2	220	380	220/380	200	12000	0.55	2.55	1.50	2.55/1.50	0.70	2
STK21 9/2	380	220	220/380	300	18000	0.75	2.14	3.70	3.70/2.14	0.71	2

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

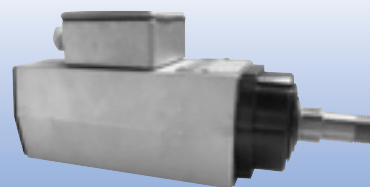
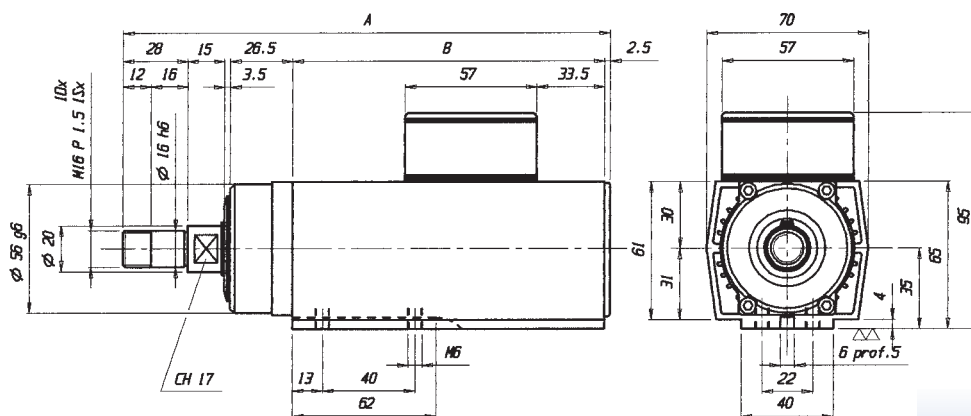
• Motori STK21



TIPO Type	A	B
STK21 6.5/2	182	135
STK21 9/2	217	170
Sporgenza SC Nose type SC		



Motori STK21



TIPO
Type

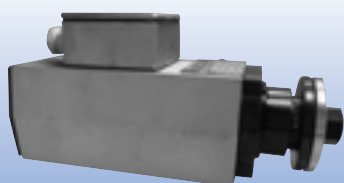
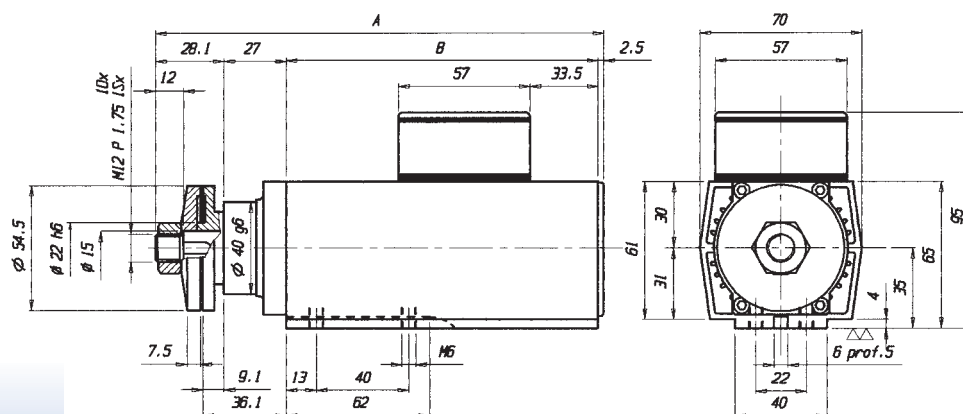
A

B

STK21 6.5/2 210.5 135

STK21 9/2 245.5 170

Sporgenza SF
Nose type SF



TIPO
Type

A

B

STK21 6.5/2 192.5 135

STK21 9/2 227.5 170

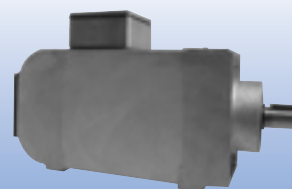
Sporgenza SCF
Nose type SCF



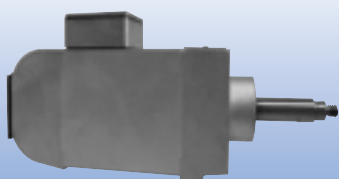
Serie EVS31/40

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
EVS31 6.5/2	380	220	220/380	100	6000	0.13	0.58	1.00	1.00/0.58	0.63	2.8
EVS31 6.5/2	220	380	220/380	200	12000	0.35	2.00	1.16	2.00/1.16	0.69	2.8
EVS31 6.5/2	380	220	220/380	300	18000	0.41	1.27	2.20	2.20/1.27	0.70	2.8
EVS31 9/2	380	220	220/380	100	6000	0.22	0.85	1.47	1.47/0.85	0.65	3.4
EVS31 9/2	220	380	220/380	200	12000	0.55	2.55	1.50	2.55/1.50	0.70	3.4
EVS31 9/2	380	220	220/380	300	18000	0.75	2.14	3.70	3.70/2.14	0.71	3.4
EVS40 9/2	220/380	220	380	50	3000	0.20	1.50/0.90	1.50	0.90	0.70	5.8
EVS40 9/2	380	220	220/380	100	6000	0.45	1.40	2.40	2.40/1.40	0.75	5.8
EVS40 9/2	220	380	220/380	200	12000	0.75	4.00	2.30	4.00/2.30	0.75	5.8
EVS40 9/2	380	220	220/380	300	18000	1.00	3.20	5.50	5.50/3.20	0.75	5.8
EVS40 12/2	220/380	220	380	50	3000	0.30	1.70/1.00	1.70	1.00	0.70	7
EVS40 12/2	380	220	220/380	100	6000	0.75	1.90	3.30	3.30/1.90	0.75	7
EVS40 12/2	220	380	220/380	200	12000	1.50	6.30	3.60	6.30/3.60	0.79	7
EVS40 12/2	380	220	220/380	300	18000	2.00	5.20	9.00	9.00/5.20	0.80	7
EVS40 14/2	220/380	220	380	50	3000	0.45	2.78/1.60	2.78	1.60	0.68	8.2
EVS40 14/2	380	220	220/380	100	6000	0.95	2.52	4.36	4.36/2.52	0.73	8.2
EVS40 14/2	220	380	220/380	200	12000	1.80	8.20	4.70	8.20/4.70	0.70	8.2
EVS40 14/2	380	220	220/380	300	18000	2.20	5.80	10.00	10.00/5.80	0.73	8.2

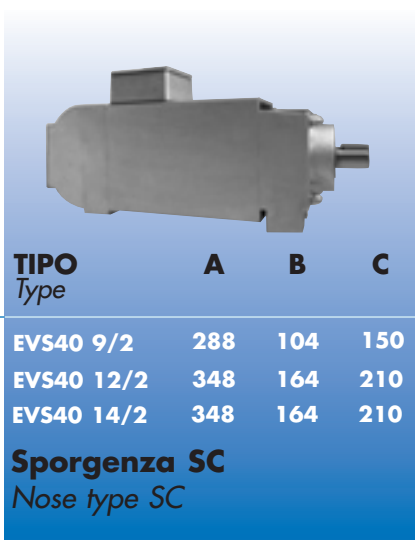
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.



Sporgenza SC
Nose type SC

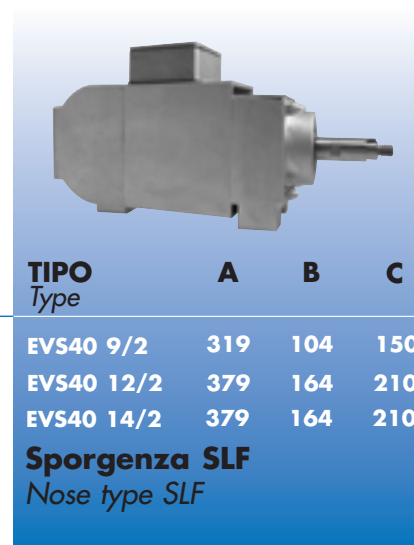


Sporgenza SLF
Nose type SLF



TIPO <i>Type</i>	A	B	C
EVS40 9/2	288	104	150
EVS40 12/2	348	164	210
EVS40 14/2	348	164	210

Sporgenza SC
Nose type SC



TIPO <i>Type</i>	A	B	C
EVS40 9/2	319	104	150
EVS40 12/2	379	164	210
EVS40 14/2	379	164	210

Sporgenza SLF
Nose type SLF

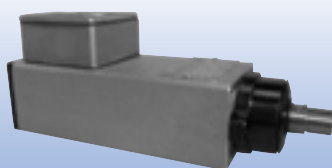
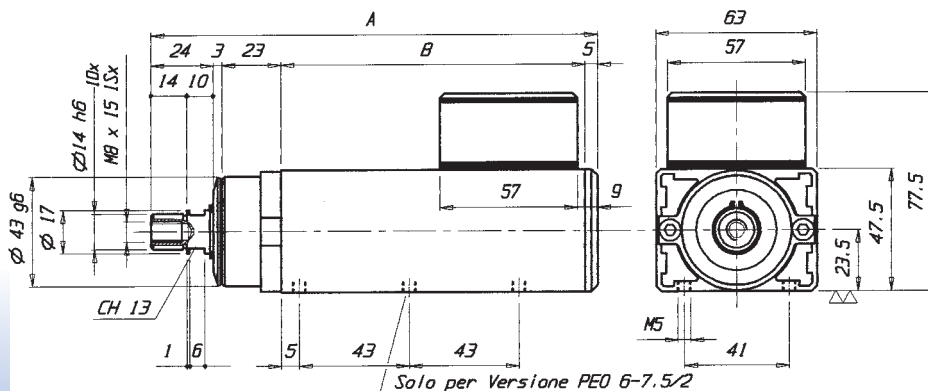


Serie PE0 TMPEO

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
PEO 3.5/2	220	380	220/380	200	12000	0.08	0.60	0.34	0.60/0.34	0.65	1.2
PEO 3.5/2	380	220	220/380	300	18000	0.12	0.45	0.78	0.78/0.45	0.69	1.2
PEO 6/2	380	220	220/380	100	6000	0.05	0.26	0.45	0.45/0.26	0.61	1.5
PEO 6/2	220	380	220/380	200	12000	0.15	0.80	0.45	0.80/0.45	0.68	1.5
PEO 6/2	380	220	220/380	300	18000	0.30	1.00	1.70	1.70/1.00	0.70	1.5
PEO 7.5/2	380	220	220/380	100	6000	0.07	0.32	0.55	0.55/0.32	0.61	1.8
PEO 7.5/2	220	380	220/380	200	12000	0.18	1.20	0.69	1.20/0.69	0.64	1.8
PEO 7.5/2	380	220	220/380	300	18000	0.35	1.00	1.70	1.70/1.00	0.70	1.8
Per frequenze superiori contattare ns. ufficio tecnico. For higher frequencies please contact our technical dept.											
TMPEO 3.5/2	220	380	220/380	200	12000	0.08	0.60	0.34	0.60/0.34	0.65	1.4
TMPEO 3.5/2	380	220	220/380	300	18000	0.12	0.45	0.78	0.78/0.45	0.69	1.4
TMPEO 3.5/2	380	220	220/380	400	24000	0.15	0.52	0.90	0.90/0.52	0.70	1.4
TMPEO 6/2	380	220	220/380	100	6000	0.05	0.26	0.45	0.45/0.26	0.61	1.7
TMPEO 6/2	220	380	220/380	200	12000	0.15	0.80	0.45	0.80/0.45	0.68	1.7
TMPEO 6/2	380	220	220/380	300	18000	0.30	1.00	1.70	1.70/1.00	0.70	1.7
TMPEO 6/2	380	220	220/380	400	24 000	0.35	1.10	1.90	1.90/1.10	0.70	1.7
TMPEO 7.5/2	380	220	220/380	100	6000	0.07	0.32	0.55	0.55/0.32	0.61	2
TMPEO 7.5/2	220	380	220/380	200	12000	0.18	1.20	0.69	1.20/0.69	0.64	2
TMPEO 7.5/2	380	220	220/380	300	18000	0.35	1.00	1.70	1.70/1.00	0.70	2
TMPEO 7.5/2	380	220	220/380	400	24000	0.40	1.20	2.10	2.10/1.20	0.70	2

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori PE0

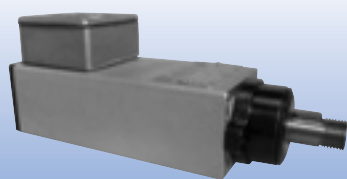
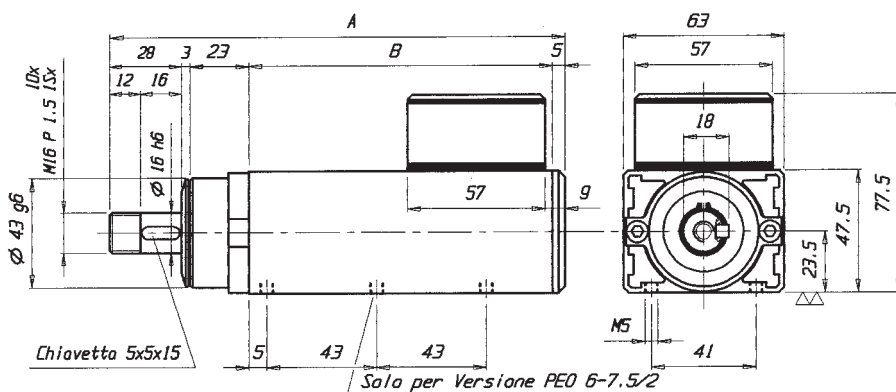


TIPO Type	A	B
PEO 3.5/2	174	119
PEO 6/2	199	144
PEO 7.5/2	214	159

Sporgenza SL
Nose type SL



Motori PEO



TIPO
Type

A

B

PEO 3.5/2 178 119

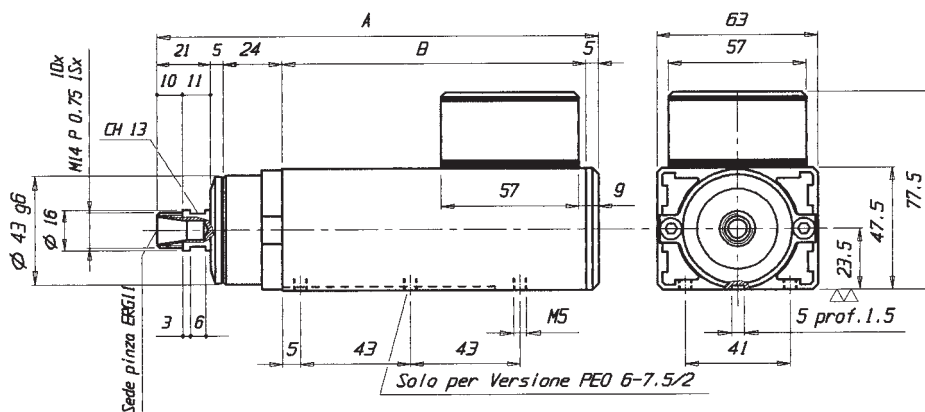
PEO 6/2 203 144

PEO 7.5/2 218 159

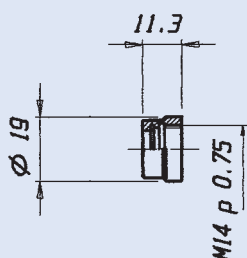
Sporgenza SF

Nose type SF

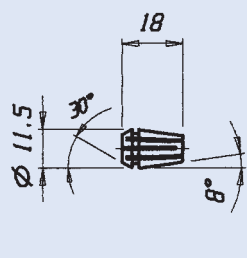
Motori TM PEO



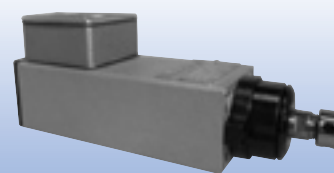
Ghiera ER 11
Ring nut ER 11



Pinza ER 11
Collet ER 11



Diametro Min. 1 Max. 7 mm.
Diameter Min. 1 Max. 7 mm.



TIPO
Type

A

B

TMPEO 3.5/2 174 119

TMPEO 6/2 199 144

TMPEO 7.5/2 214 159

Sporgenza per pinza ER 11
Nose type for collet ER 11

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



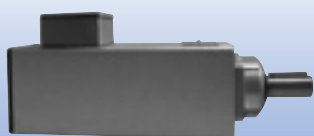
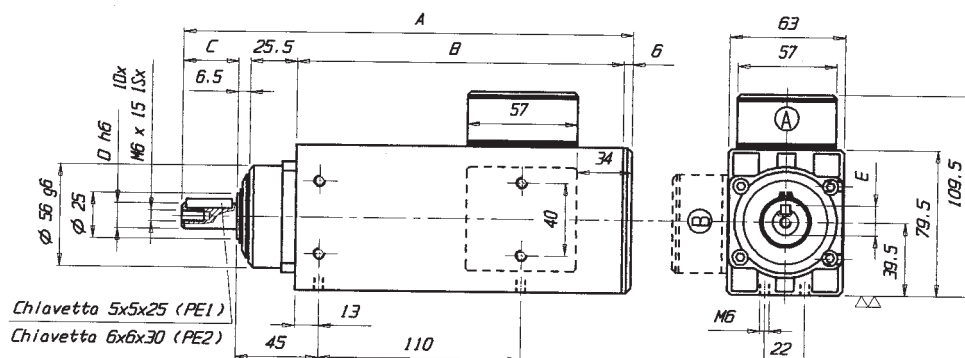
Serie PE1-2 TM PE1-2.

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS φ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
PE1 6/2	380	220	220/380	100	6000	0.07	0.25	0.43	0.43/0.25	0.70	2.5
PE1 6/2	220	380	220/380	200	12000	0.16	1.35	0.78	1.35/0.78	0.70	2.5
PE1 6/2	380	220	220/380	300	18000	0.22	1.25	2.20	2.20/1.25	0.70	2.5
PE1 7/2	380	220	220/380	100	6000	0.10	0.40	0.70	0.70/0.40	0.70	2.8
PE1 7/2	220	380	220/380	200	12000	0.22	1.65	0.95	1.65/0.95	0.70	2.8
PE1 7/2	380	220	220/380	300	18000	0.33	1.40	2.40	2.40/1.40	0.70	2.8
PE1 8.5/2	380	220	220/380	100	6000	0.22	0.78	1.35	1.35/0.78	0.68	3.1
PE1 8.5/2	220	380	220/380	200	12000	0.37	2.00	1.15	2.00/1.15	0.69	3.1
PE1 8.5/2	380	220	220/380	300	18000	0.55	1.73	3.00	3.00/1.73	0.70	3.1
PE2 9/2	220/380	220	380	50	3000	0.10	0.85/0.50	0.85	0.50	0.60	3.5
PE2 9/2	380	220	220/380	100	6000	0.22	0.85	1.47	1.47/0.85	0.65	3.5
PE2 9/2	220	380	220/380	200	12000	0.55	2.60	1.50	2.60/1.50	0.73	3.5
PE2 9/2	380	220	220/380	300	18000	0.75	2.15	3.70	3.70/2.15	0.71	3.5
Per frequenze superiori contattare ns. ufficio tecnico. For higher frequencies please contact our technical dept.											
TMPE1 6.5/2	380	220	220/380	100	6000	0.10	0.40	0.70	0.70/0.40	0.70	3.3
TMPE1 6.5/2	220	380	220/380	200	12000	0.22	1.65	0.95	1.65/0.95	0.70	3.3
TMPE1 6.5/2	380	220	220/380	300	18000	0.33	1.40	2.40	2.40/1.40	0.70	3.3
TMPE1 6.5/2	380	220	220/380	400	24000	0.40	1.4	2.40	2.40/1.40	0.72	3.3
TMPE2 9/2	220/380	220	380	50	3000	0.10	0.85/0.50	0.85	0.50	0.60	3.7
TMPE2 9/2	380	220	220/380	100	6000	0.20	0.85	1.47	1.47/0.85	0.65	3.7
TMPE2 9/2	220	380	220/380	200	12000	0.55	2.60	1.50	2.60/1.50	0.73	3.7
TMPE2 9/2	380	220	220/380	300	18000	0.75	2.15	3.70	3.70/2.15	0.71	3.7
TMPE2 9/2	380	220	220/380	400	24000	0.75	2.40	4.1	4.1/2.40	0.71	3.7

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.



Motori PE1-2



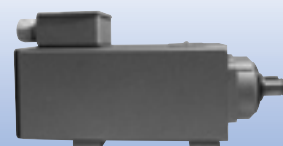
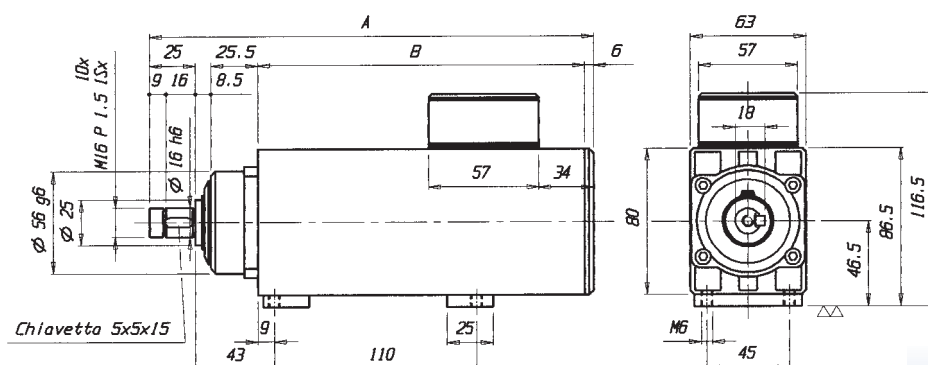
TIPO
Type

	A	B	C	D	E
PE1 6/2	246	178	30	14	16
PE1 7/2	246	178	30	14	16
PE1 8.5/2	246	178	30	14	16
PE2 9/2	275	197	40	20	22.5

Sporgenza SC
Nose type SC

NB: Posizione morsettiera standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.

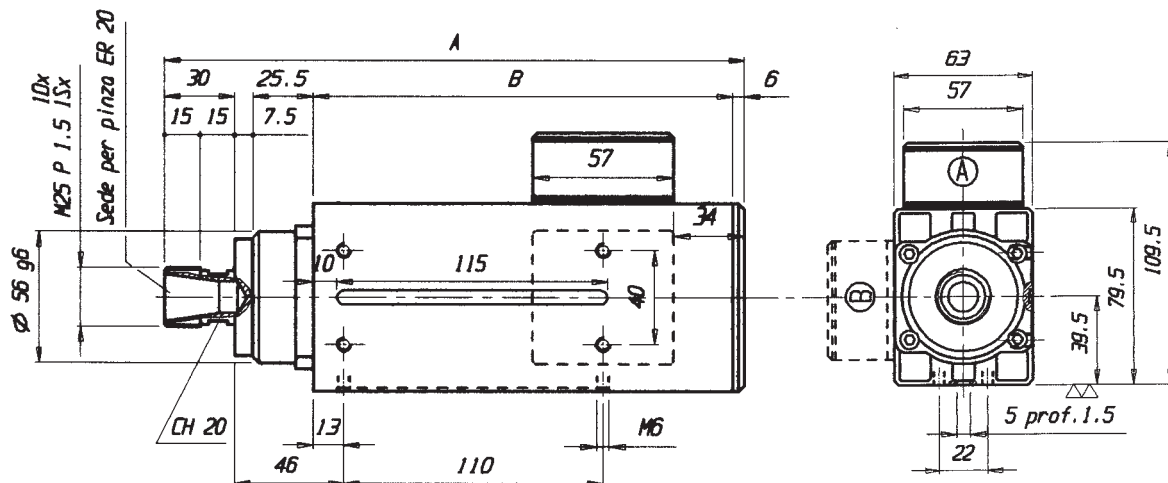


TIPO Type	A	B
PE1 6/2	243	178
PE1 7/2	243	178
PE1 8.5/2	243	178
PE2 9/2	262	197

Sporgenza SF
Nose type SF



Motori TM PE1-2

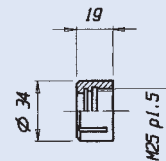


NB: Posizione morsetteria standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.

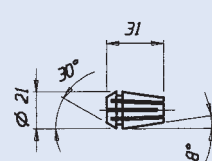
Ghiera ER 20

Ring nut ER 20



Pinza ER 20

Collet ER 20

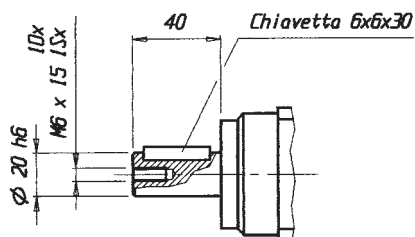


Diametro Min. 1 Max. 13 mm.

Diameter Min. 1 Max. 13 mm.

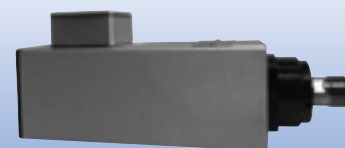
NB: Pinza e ghiera vengono fornite a richiesta.

NB: Collet and ring nut only on your request.



Versione TM PE1-2 con sporgenza d'albero SC

TM PE1-2 version with nose type SC



TIPO
Type

A

B

TMPE1 6.5/2

254

185

TMPE2 9/2

274

205

Sporgenza per pinza ER20

Nose type for collet ER 20

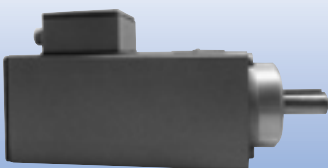


Serie PE3 TM PE3

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)		COS ϕ	PESO WEIGHT (Kg)	
	Standard	a richiesta on request					Standard	a richiesta on request			
PE3 7/2	220/380	220	380	50	3000	0.15	1.35/0.78	0.35	0.78	0.68	3.7
PE3 7/2	380	220	220/380	100	6000	0.30	1.00	1.73	1.73/1.00	0.68	3.7
PE3 7/2	220	380	220/380	200	12000	0.60	3.41	1.97	3.41/1.97	0.68	3.7
PE3 7/2	380	220	220/380	300	18000	0.85	2.70	4.60	4.60/2.70	0.70	3.7
PE3 9/2	220/380	220	380	50	3000	0.20	1.50/0.90	1.50	0.90	0.70	4.8
PE3 9/2	380	220	220/380	100	6000	0.45	1.40	2.40	2.40/1.40	0.75	4.8
PE3 9/2	220	380	220/380	200	12000	0.75	4.00	2.30	4.00/2.30	0.75	4.8
PE3 9/2	380	220	220/380	300	18000	1.00	3.20	5.50	5.50/3.20	0.75	4.8
PE3 12/2	220/380	220	380	50	3000	0.30	1.70/1.00	1.70	1.00	0.70	6.5
PE3 12/2	380	220	220/380	100	6000	0.75	1.90	3.30	3.30/1.90	0.75	6.5
PE3 12/2	220	380	220/380	200	12000	1.50	6.30	3.60	6.30/3.60	0.79	6.5
PE3 12/2	380	220	220/380	300	18000	2.00	5.20	9.00	9.00/5.20	0.80	6.5
PE3 14/2	220/380	220	380	50	3000	0.45	2.78/1.60	2.78	1.60	0.68	7.5
PE3 14/2	380	220	220/380	100	6000	0.95	2.52	4.36	4.36/2.52	0.73	7.5
PE3 14/2	220	380	220/380	200	12000	1.80	8.20	4.70	8.20/4.70	0.70	7.5
PE3 14/2	380	220	220/380	300	18000	2.20	5.80	10.00	10.00/5.80	0.73	7.5
Per frequenze superiori contattare ns. ufficio tecnico. For higher frequencies please contact our technical dept.											
TMPE3 9/2	220/380	220	380	50	3000	0.20	1.50/0.90	1.50	0.90	0.70	5.5
TMPE3 9/2	380	220	220/380	100	6000	0.45	1.40	2.40	2.40/1.40	0.75	5.5
TMPE3 9/2	220	380	220/380	200	12000	0.75	4.00	2.30	4.00/2.30	0.75	5.5
TMPE3 9/2	380	220	220/380	300	18000	1.00	3.20	5.50	5.50/3.20	0.75	5.5
TMPE3 9/2	380	220	220/380	400	24000	1	3.20	5.50	5.50/3.20	0.75	5.5
TMPE3 12/2	220/380	220	380	50	3000	0.30	1.70/1.00	1.70	1.00	0.70	8
TMPE3 12/2	380	220	220/380	100	6000	0.75	1.90	3.30	3.30/1.90	0.75	8
TMPE3 12/2	220	380	220/380	200	12000	1.50	6.30	3.60	6.30/3.60	0.79	8
TMPE3 12/2	380	220	220/380	300	18000	2.00	5.20	9.00	9.00/5.20	0.80	8
TMPE3 12/2	380	220	220/380	400	24000	2.2	5.50	9.50	9.50/5.50	0.80	8

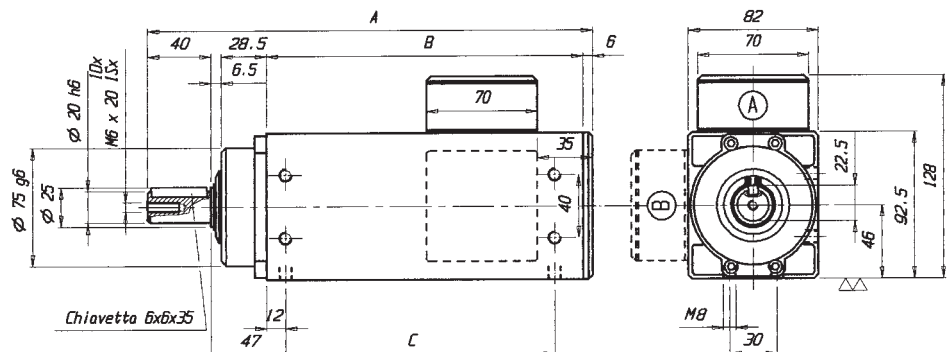
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori PE3



TIPO Type	A	B	C
PE3 7/2	261	180	150
PE3 9/2	281	200	170
PE3 12/2	321	240	170
PE3 14/2	321	240	170

Sporgenza SC
Nose type SC

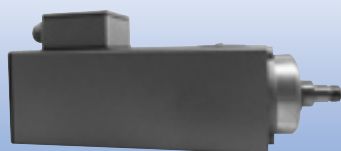
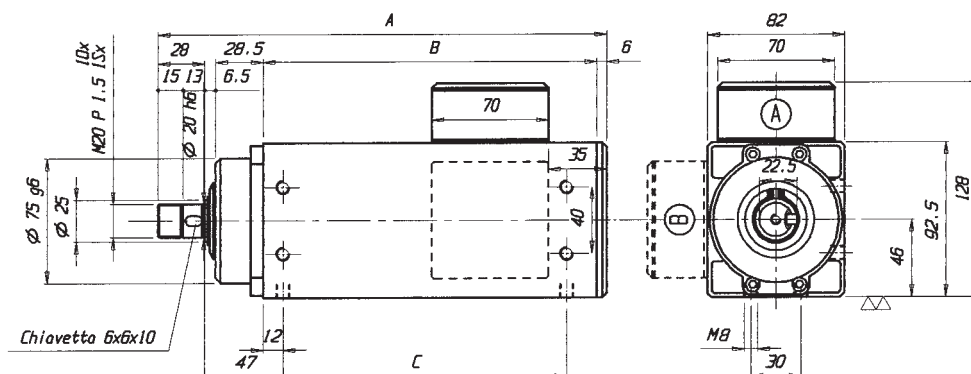


NB: Posizione morsetteria standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.



Motori Serie PE3



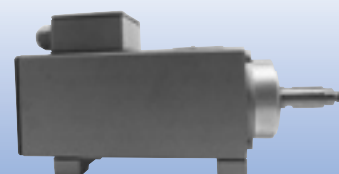
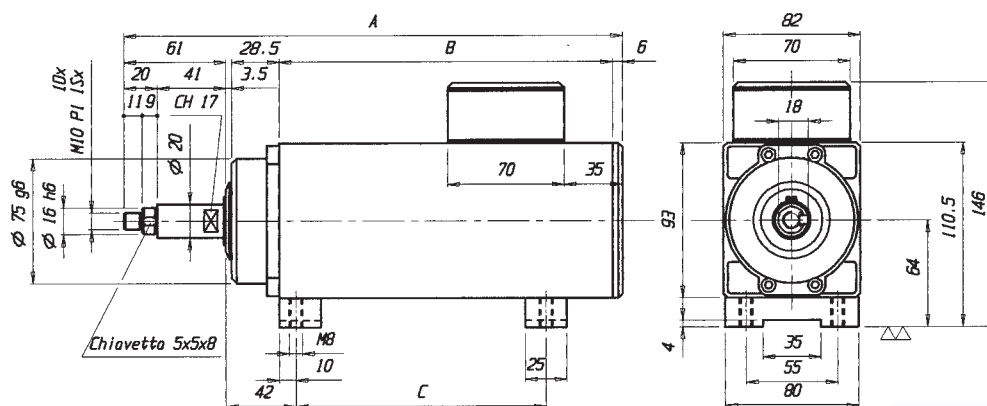
TIPO
Type

	A	B	C
PE3 7/2	249	180	150
PE3 9/2	269	200	170
PE3 12/2	309	240	170
PE3 14/2	309	240	170

Sporgenza SF
Nose type SF

NB: Posizione morsetteria standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

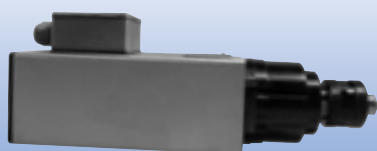
NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.



TIPO
Type

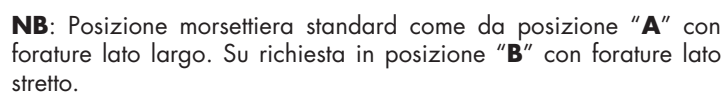
	A	B	C
PE3 7/2	249	180	90
PE3 9/2	299	200	150
PE3 12/2	339	240	150
PE3 14/2	339	240	150

Sporgenza SLF
Nose type SLF



Sporgenza per Cono Morse 2-3

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



NB: Standard terminal box on **"A"** position with fixing holes on wide part. On request terminal box in **"B"** position with fixing holes on narrow part.

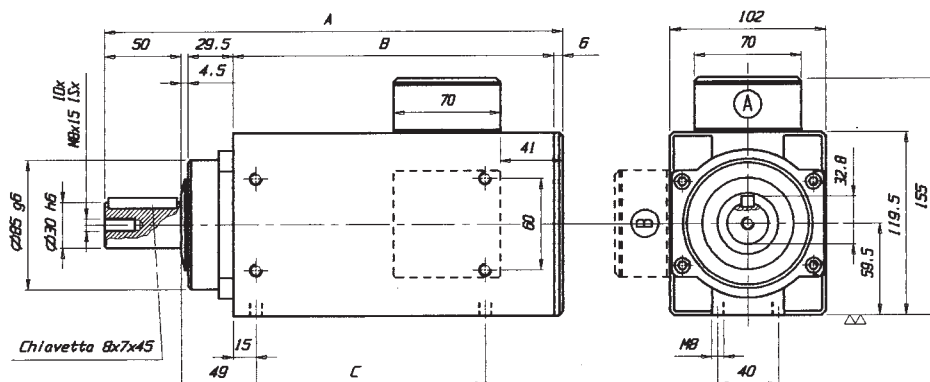
Versione TM PE3 con sporgenza d'albero SC
TM PE3 version with nose type SC

Serie PE4 TM PE4

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS φ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
PE4 10/2	220/380	220	380	50	3000	0.65	3.30/1.90	3.30	1.90	0.72	9
PE4 10/2	380	220	220/380	100	6000	1.10	2.80	4.90	4.90/2.80	0.77	9
PE4 10/2	220	380	220/380	200	12000	2.20	9.70	5.60	9.70/5.60	0.77	9
PE4 10/2	380	220	220/380	300	18000	3.30	7.90	13.70	13.70/7.90	0.80	9
PE4 11/2	220/380	220	380	50	3000	0.75	3.50/2.00	3.50	2.00	0.74	9.8
PE4 11/2	380	220	220/380	100	6000	1.50	3.80	6.60	6.60/3.80	0.75	9.8
PE4 11/2	220	380	220/380	200	12000	2.60	10.40	6.00	10.40/6.00	0.83	9.8
PE4 11/2	380	220	220/380	300	18000	3.30	7.80	13.40	13.40/7.80	0.82	9.8
PE4 13/2	220/380	220	380	50	3000	1.00	4.90/2.85	4.90	2.85	0.77	11.2
PE4 13/2	380	220	220/380	100	6000	2.00	4.45	7.70	7.70/4.45	0.82	11.2
PE4 13/2	220	380	220/380	200	12000	3.00	12.50	7.20	12.50/7.20	0.80	11.2
PE4 13/2	380	220	220/380	300	18000	4.00	9.50	16.40	16.40/9.50	0.80	11.2
PE414/2	220/380	220	380	50	3000	1.10	5.50/3.15	5.50	3.15	0.72	12
PE4 14/2	380	220	220/380	100	6000	2.20	5.50	9.50	9.50/5.50	0.77	12
PE4 14/2	220	380	220/380	200	12000	3.70	15.00	8.70	15.00/8.70	0.78	12
PE4 14/2	380	220	220/380	300	18000	5.60	11.50	20.00	20.00/11.5	0.85	12
Per frequenze superiori contattare ns. ufficio tecnico. For higher frequencies please contact our technical dept.											
TMPE4 10/2	220/380	220	380	50	3000	0.65	3.30/1.90	3.30	1.90	0.72	11.5
TMPE4 10/2	380	220	220/380	100	6000	1.10	2.80	4.90	4.90/2.80	0.77	11.5
TMPE4 10/2	220	380	220/380	200	12000	2.20	9.70	5.60	9.70/5.60	0.77	11.5
TMPE4 10/2	380	220	220/380	300	18000	3.30	7.90	13.70	13.70/7.90	0.80	11.5
TMPE4 10/2	380	220	220/380	400	24000	3.30	7.90	13.70	13.70/7.90	0.80	11.5
TMPE4 14/2	220/380	220	380	50	3000	1.10	5.50/3.15	5.50	3.15	0.72	13.5
TMPE4 14/2	380	220	220/380	100	6000	2.20	5.50	9.50	9.50/5.50	0.77	13.5
TMPE4 14/2	220	380	220/380	200	12000	3.70	15.00	8.70	15.00/8.70	0.78	13.5
TMPE4 14/2	380	220	220/380	300	18 000	5.60	11.50	20.00	20.00/11.5	0.85	13.5
TMPE4 14/2	380	220	220/380	400	24000	5.60	11.50	20.00	20.00/11.5	0.85	13.5

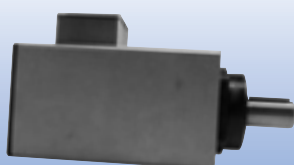
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori PE4



NB: Posizione morsetti standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.

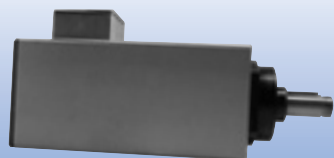
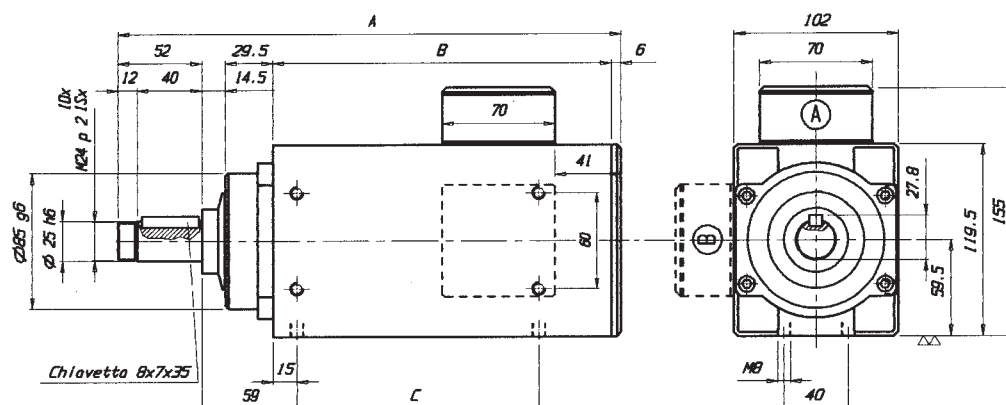


TIPO Type	A	B	C
PE4 10/2	300	210	150
PE4 11/2	340	250	200
PE4 13/2	340	250	200
PE4 14/2	340	250	200

Sporgenza SC
Nose type SC



Motori PE4

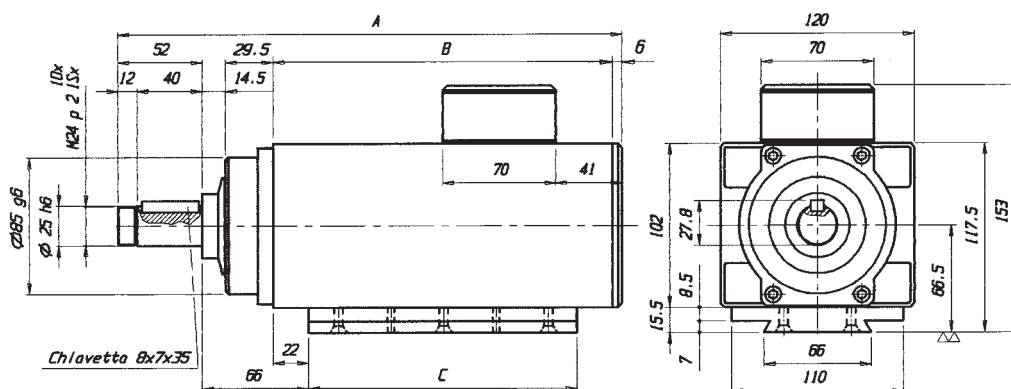


TIPO Type	A	B	C
PE4 10/2	312	210	150
PE4 11/2	352	250	200
PE4 13/2	352	250	200
PE4 14/2	352	250	200

Sporgenza SF
Nose type SF

NB: Posizione morsettiera standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.



TIPO Type	A	B	C
PE4 10/2	312	210	165
PE4 11/2	352	250	205
PE4 13/2	352	250	205
PE4 14/2	352	250	205

Sporgenza SFC
Nose type SFC





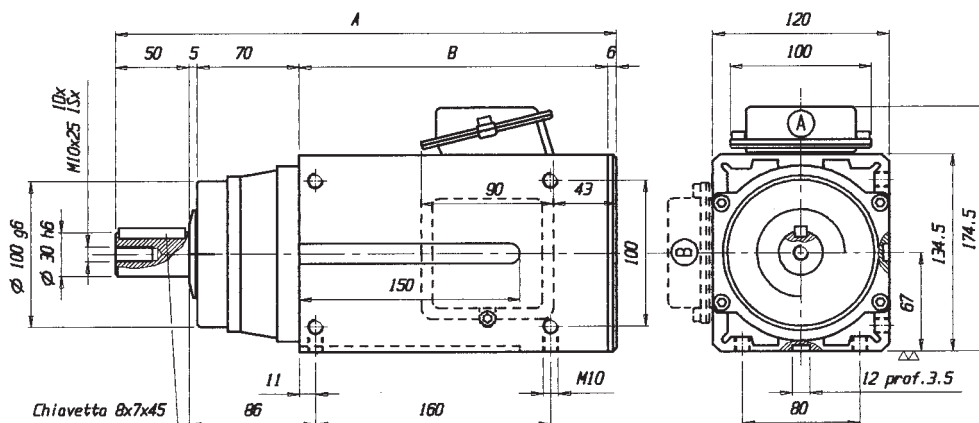


• Serie PE5 TM PE5

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard		a richiesta on request				Standard		a richiesta on request		
PE5 10/2	220/380	220	380	50	3000	1.25	5.60/3.20	5.60	3.20	0.78	12
PE5 10/2	380	220	220/380	100	6000	1.90	4.35	7.55	7.55/4.35	0.83	12
PE5 10/2	220	380	220/380	200	12000	3.00	12.3	7.10	12.3/7.10	0.80	12
PE5 10/2	380	220	220/380	300	18000	4.50	10	18	18/10	0.81	12
PE5 14/2	220/380	220	380	50	3000	3.00	11.5/6.60	11.50	6.60	0.82	19.5
PE5 14/2	380	220	220/380	100	6000	3.30	7.40	12.80	12.80/7.40	0.82	19.5
PE5 14/2	220	380	220/380	200	12000	4.50	18.2	10.60	18.2/10.60	0.85	19.5
PE5 14/2	380	220	220/380	300	18000	7.00	14.50	25.00	25.0/14.50	0.86	19.5
Per frequenze superiori contattare ns. ufficio tecnico. For higher frequencies please contact our technical dept.											
TMPE5 10/2	220/380	220	380	50	3000	1.25	5.60/3.20	5.60	3.20	0.78	12
TMPE5 10/2	380	220	220/380	100	6000	1.90	4.35	7.55	7.55/4.35	0.83	12
TMPE5 10/2	220	380	220/380	200	12000	3.00	12.3	7.10	12.3/7.10	0.80	12
TMPE5 10/2	380	220	220/380	300	18000	4.50	10	18	18/10	0.81	12
TMPE5 10/2	380	220	220/380	400	24000	4.50	10	18	18/10	0.91	12
TMPE5 14/2	220/380	220	380	50	3000	3.00	11.5/6.60	11.50	6.60	0.82	19.5
TMPE5 14/2	380	220	220/380	100	6000	3.30	7.40	12.80	12.80/7.40	0.82	19.5
TMPE5 14/2	220	380	220/380	200	12000	4.50	18.2	10.60	18.2/10.60	0.85	19.5
TMPE5 14/2	380	220	220/380	300	18 000	7.00	14.50	25.00	25.0/14.50	0.86	19.5
TMPE5 14/2	380	220	220/380	400	24000	7.00	14.50	25	25.0/14.50	0.86	19.5

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

• Motori PE5



TIPO Type	A	B
PE5 10/2	341	210
PE5 14/2	381	250

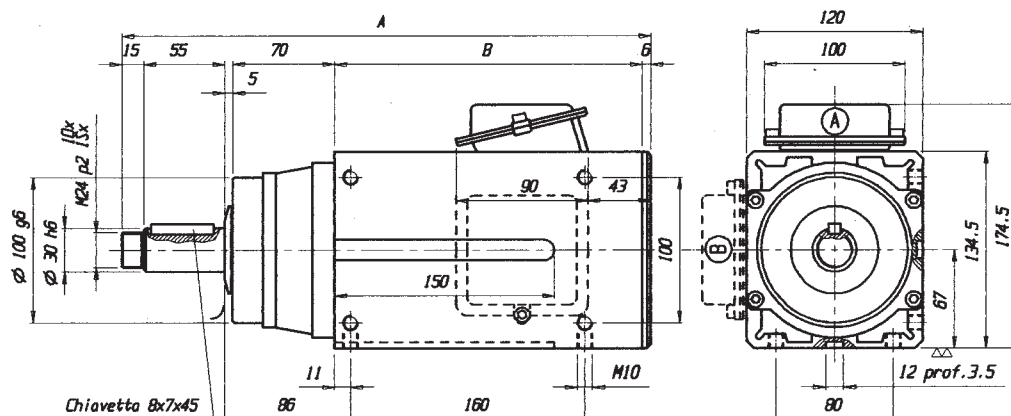
Sporgenza SC
Nose type SC

NB: Posizione morsettiera standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.



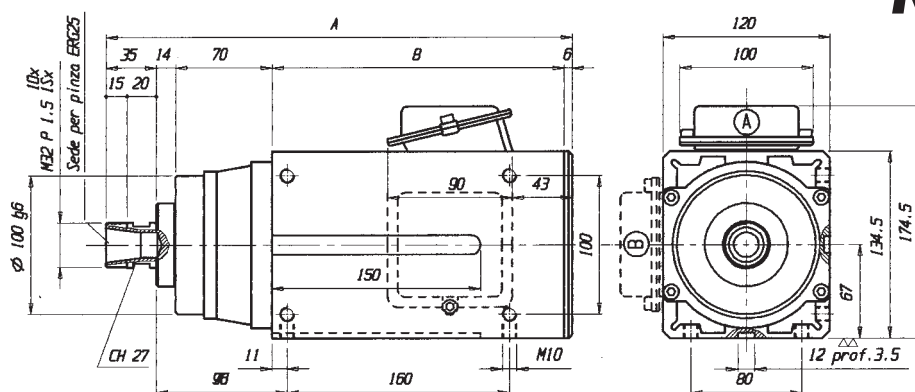
Motori PE5



TIPO Type	A	B
PE5 10/2	361	210
PE5 14/2	401	250

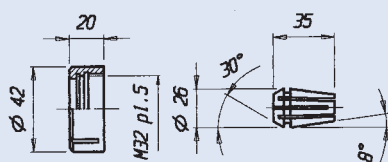
Sporgenza SF
Nose type SF

Motori TM PE5



Ghiera ER 25
Ring nut ER 25

Pinza ER 25
Collet ER 25



Diametro Min. 1 Max. 16 mm.
Diameter Min. 1 Max. 16 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.

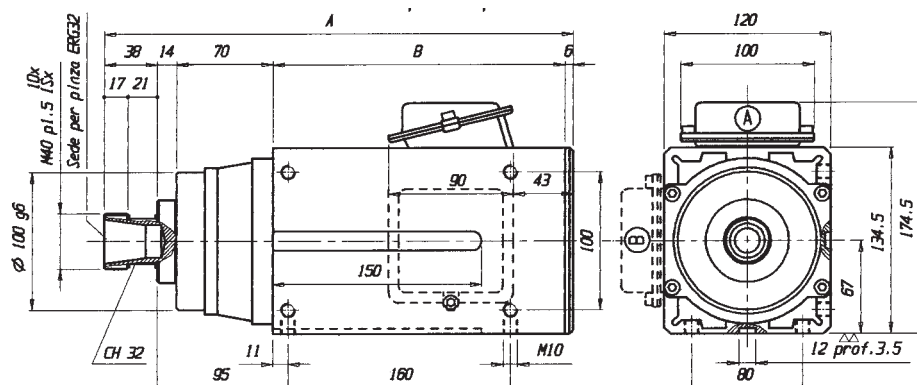


TIPO Type	A	B
TMPE5 10/2	335	210
TMPE5 14/2	375	250

Sporgenza per pinza ER 25
Nose type for collet ER 25



Motori TM PE5

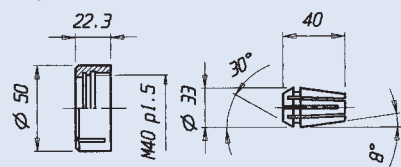


Ghiera ER 32

Ring nut ER 32

Pinza ER 32

Collet ER 32



Diametro Min. 1 Max. 20 mm.

Diameter Min. 1 Max. 20 mm.

NB: Posizione morsettiera standard come da posizione "A" con forature lato stretto. Su richiesta in posizione "B" con forature lato largo.

NB: Standard terminal box in "A" position with fixing holes on narrow part. On request terminal box in "B" position with fixing holes on wide part.



TIPO

Type

A

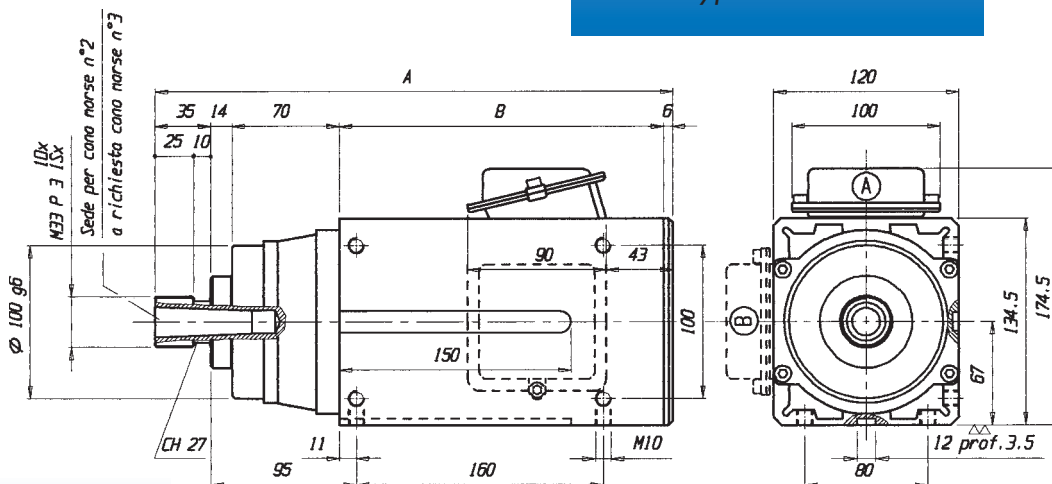
B

TMPE5 10/2 338 210

TMPE5 14/2 378 250

Sporgenza per pinza ER 32

Nose type for collet ER 32



TIPO

Type

A

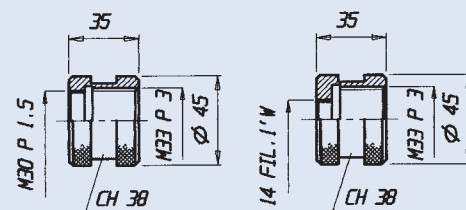
B

TMPE5 10/2 335 210

TMPE5 14/2 375 250

Sporgenza per cono morse 2-3

Nose type for MK 2-3



Ghiera per Cono Morse n° 2-3

Collet for MK n° 2-3

NB: Pinza e ghiera vengono fornite a richiesta.

NB: Collet and ring nut only on your request.

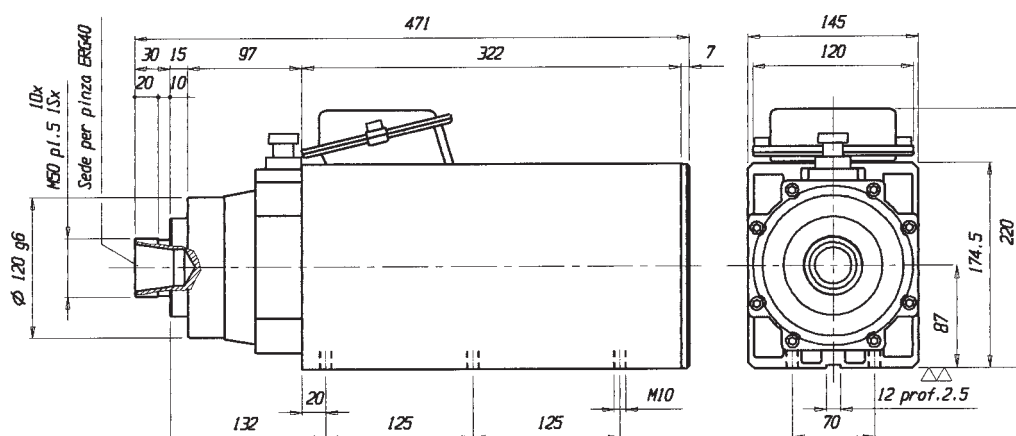


Serie TM PE6

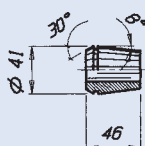
TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
TMPE6 15/2	220/380	220	380	50	3000	3.40	13.6/7.8	13.6	7.8	0.83	28
TMPE6 15/2	380	220	220/380	100	6000	5.60	11.5	19.9	19.9/11.5	0.84	28
TMPE6 15/2	220	380	220/380	200	12000	8.50	32.7	18.9	32.7/18.9	0.84	28
TMPE6 15/2	380	220	220/380	300	18000	9.50	21.00	36.40	36.40/21.0	0.84	28

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

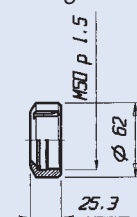
Motori TM PE6



Pinza ER 40
Collet ER 40



Ghiera ER 40
Ring nut ER 40

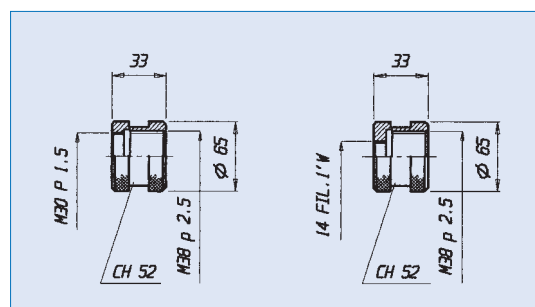


Diametro Min. 3 Max. 30 mm.
Diameter Min. 3 Max. 30 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



Sporgenza per pinza ER 40
Nose type for collet ER 40





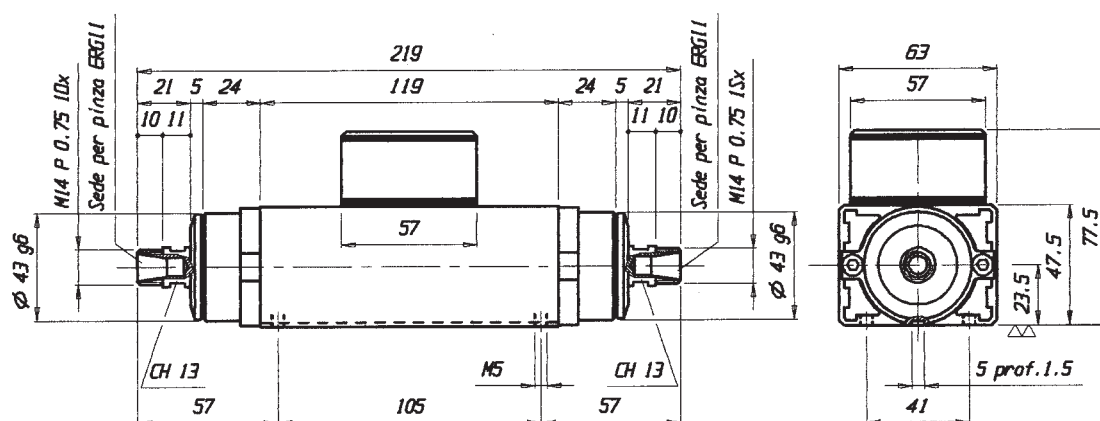
BIALBERO

Double shaft exit

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS φ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
TMPEO 6/2	220	380	220/380	200	12000	0.15	0.80	0.45	0.80/0.45	0.70	2
TMPEO 6/2	380	220	220/380	300	18000	0.16	0.70	1.20	1.20/0.70	0.70	2

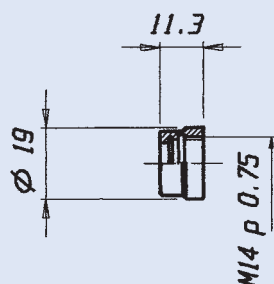
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori TM PEO 6/2



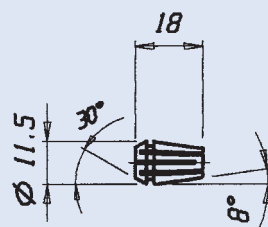
Ghiera ER 11

Ring nut ER 11



Pinza ER 11

Collet ER 11



Diametro Min. 1 Max. 7 mm.

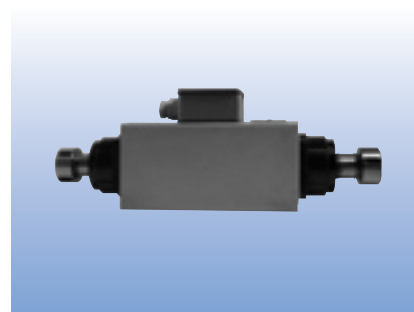
Diameter Min. 1 Max. 7 mm.

NB: Motore senza ventilazione

NB: Engine without ventilation

NB: Pinza e ghiera vengono fornite a richiesta.

NB: Collet and ring nut only on your request.





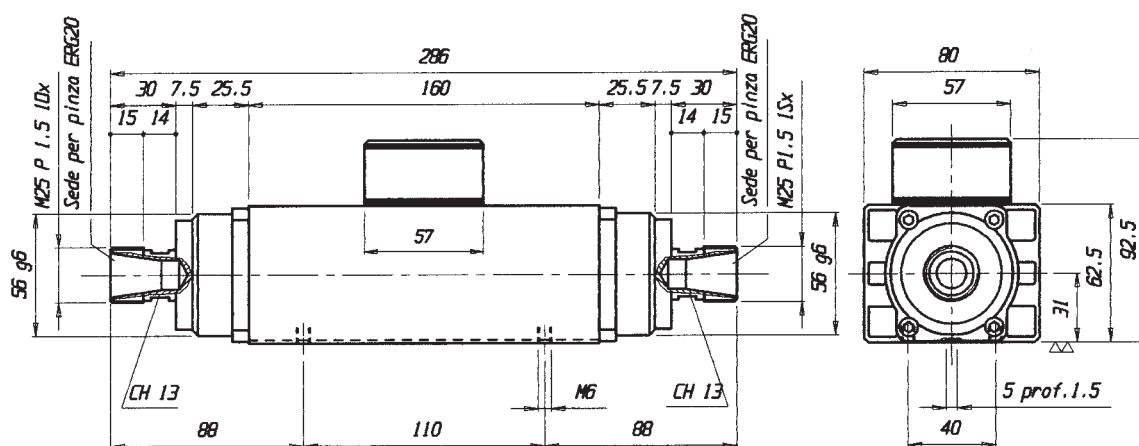
BIALBERO

Double shaft exit

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS φ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
TMPE2 9/2	220	380	220/380	200	12000	0.22	1.30	0.75	1.30/0.75	0.70	4.5
TMPE2 9/2	380	220	220/380	300	18000	0.30	1.05	1.80	1.80/1.05	0.73	4.5

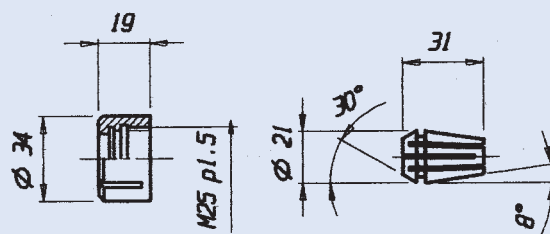
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori TM PE2 9/2



Ghiera ER 20
Ring nut ER 20

Pinza ER 20
Collet ER 20



Diametro Min. 1 Max. 13 mm.
Diameter Min. 1 Max. 13 mm.

NB: Motore senza ventilazione
NB: Engine without ventilation

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



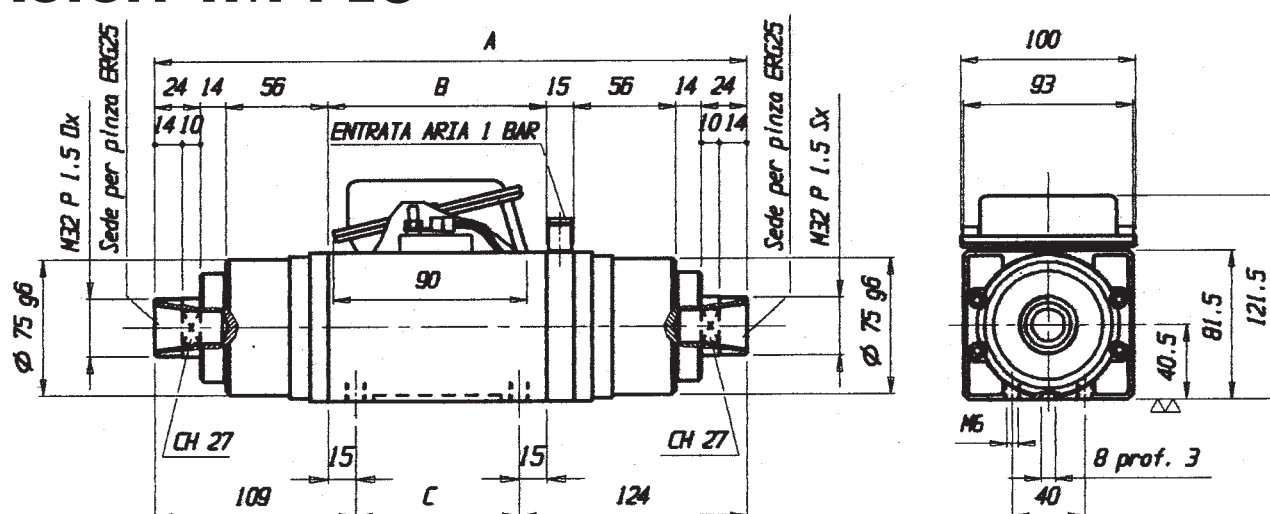
BIALBERO

Double shaft exit

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
TMPE3 9/2	220/380	220	380	50	3000	0.20	1.50/0.90	1.50	0.90	0.70	7.5
TMPE3 9/2	380	220	220/380	100	6000	0.45	1.40	2.40	2.40/1.40	0.75	7.5
TMPE3 9/2	220	380	220/380	200	12000	0.75	4.00	2.30	4.00/2.30	0.75	7.5
TMPE3 9/2	380	220	220/380	300	18000	1.00	3.20	5.50	5.50/3.20	0.75	7.5
TMPE3 12/2	220/380	220	380	50	3000	0.30	1.70/1.00	1.70	1.00	0.70	9
TMPE3 12/2	380	220	220/380	100	6000	0.75	1.90	3.30	3.30/1.90	0.75	9
TMPE3 12/2	220	380	220/380	200	12000	1.50	6.30	3.60	6.30/3.60	0.80	9
TMPE3 12/2	380	220	220/380	300	18000	2.00	5.20	9.00	9.00/5.20	0.80	9

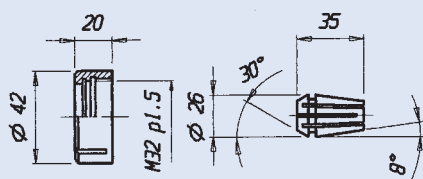
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori TM PE3



Ghiera ER 25
Ring nut ER 25

Pinza ER 25
Collet ER 25



Diametro Min. 1 Max. 16 mm.
Diameter Min. 1 Max. 16 mm.

NB: Raffreddamento ad aria compressa
NB: Compressed air cooling

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



TIPO Type	A	B	C
TMPE3 9/2	323	120	90
TMPE3 12/2	353	150	120



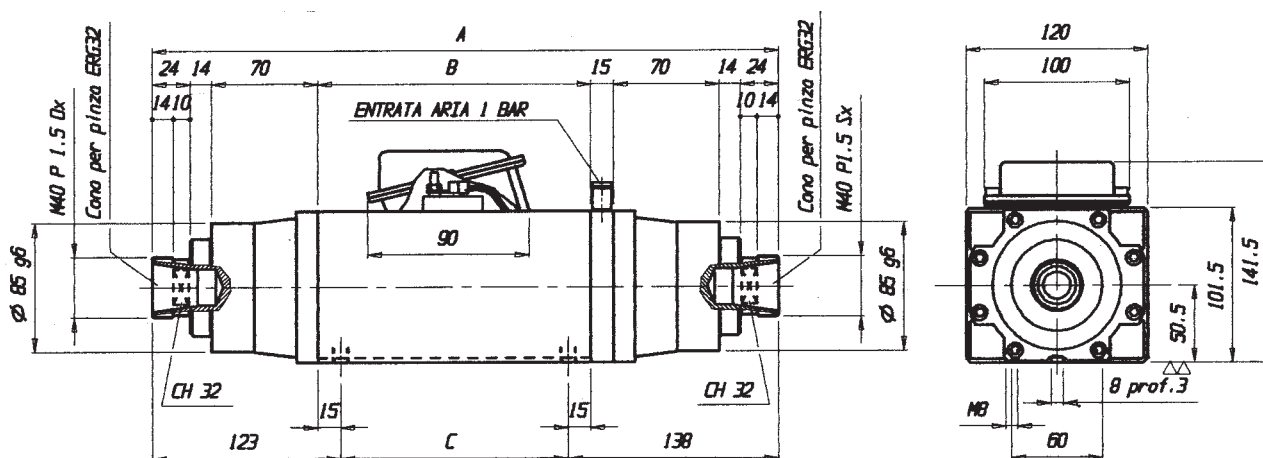
BIALBERO

Double shaft exit

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
TMPE4 10/2	220/380	220	380	50	3000	0.65	3.30/1.90	3.30	1.90	0.72	14.5
TMPE4 10/2	380	220	220/380	100	6000	1.10	2.80	4.90	4.90/2.80	0.77	14.5
TMPE4 10/2	220	380	220/380	200	12000	2.20	9.70	5.60	9.70/5.60	0.77	14.5
TMPE4 10/2	380	220	220/380	300	18000	3.30	7.90	13.70	13.70/7.90	0.80	14.5
TMPE4 14/2	220/380	220	380	50	3000	1.10	5.50/3.15	5.50	3.15	0.72	16
TMPE4 14/2	380	220	220/380	100	6000	2.20	5.50	9.50	9.50/5.50	0.77	16
TMPE4 14/2	220	380	220/380	200	12000	3.70	15.00	8.70	15.00/8.70	0.78	16
TMPE4 14/2	380	220	220/380	300	18000	5.60	11.5	20.00	20.00/11.5	0.85	16

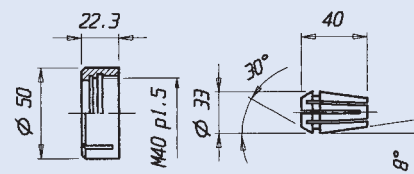
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori TM PE4



Ghiera ER 32
Ring nut ER 32

Pinza ER 32
Collet ER 32



Diametro Min. 1 Max. 20 mm.
Diameter Min. 1 Max. 20 mm.

NB: Raffreddamento ad aria compressa
NB: Compressed air cooling

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



TIPO Type	A	B	C
TMPE4 10/2	371	140	110
TMPE4 14/2	411	180	150



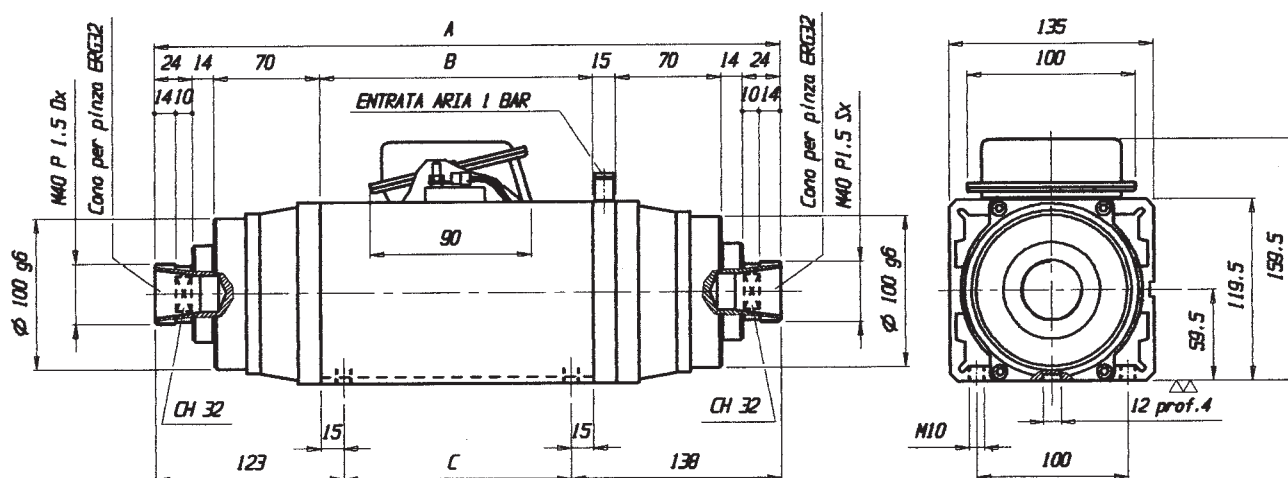
BIALBERO

Double shaft exit

TIPO TYPE	TENSIONE VOLTAGE (VOLT)			FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)			COS ϕ	PESO WEIGHT (Kg)
	Standard	a richiesta on request					Standard	a richiesta on request			
TMPE5 10/2	220/380	220	380	50	3000	1.25	5.60/3.20	5.60	3.20	0.78	17.5
TMPE5 10/2	380	220	220/380	100	6000	1.90	4.40	7.55	7.55/4.40	0.83	17.5
TMPE5 10/2	220	380	220/380	200	12000	3.00	12.30	7.10	12.3/7.10	0.80	17.5
TMPE5 10/2	380	220	220/380	300	18000	4.50	10.5	18.00	18.0/10.5	0.81	17.5
TMPE5 14/2	220/380	220	380	50	3000	3.00	11.5/6.60	11.5	6.60	0.82	20.5
TMPE5 14/2	380	220	220/380	100	6000	3.30	7.40	12.80	12.8/7.40	0.82	20.5
TMPE5 14/2	220	380	220/380	200	12000	4.50	18.20	10.6	18.2/10.6	0.85	20.5
TMPE5 14/2	380	220	220/380	300	18000	7.00	14.50	25.00	25/14.50	0.86	20.5

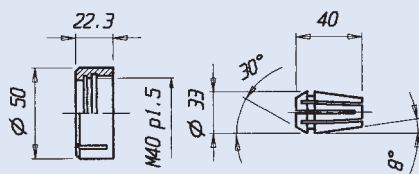
- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori TM PE5



Ghiera ER 32
Ring nut ER 32

Pinza ER 32
Collet ER 32



Diametro Min. 1 Max. 20 mm.
Diameter Min. 1 Max. 20 mm.

NB: Raffreddamento ad aria compressa
NB: Compressed air cooling

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



TIPO Type	A	B	C
TMPE5 10/2	371	140	110
TMPE5 14/2	411	180	150



• **Serie SQUADRATRICE** **Squaring machines**

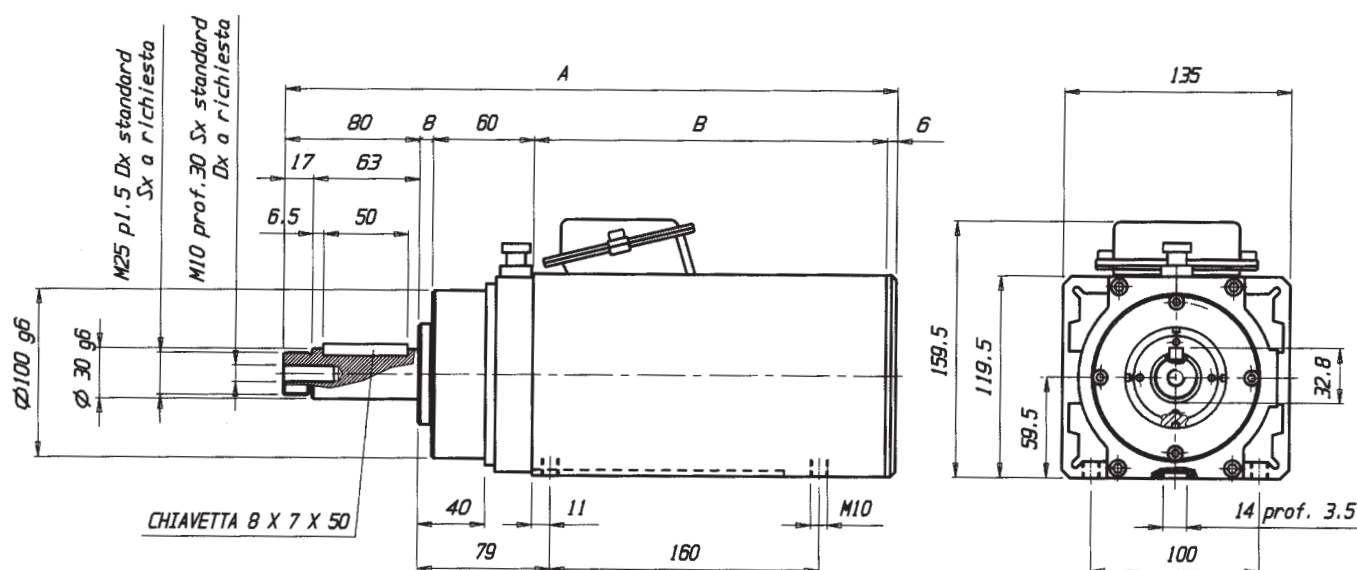
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
PE5 10/2	220/380 (380Δ)	50/100	3000/6000	1.25/1.90	5.60/3.20 (4.35Δ)	0.78	10
PE5 14/2	220/380 (380Δ)	50/100	3000/6000	3.00/3.30	11.5/6.6 (7.40Δ)	0.82	17

Solo a richiesta tensioni 230/400

Only on request voltages 230/400

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

• **Motori PE5**



TIPO Type	A	B
PE5 10/2	364	210
PE5 14/2	404	250

Solo su richiesta/Only on request

Albero/Shaft $\varnothing$ 40



• **Serie SQUADRATRICE** **Squaring machines**

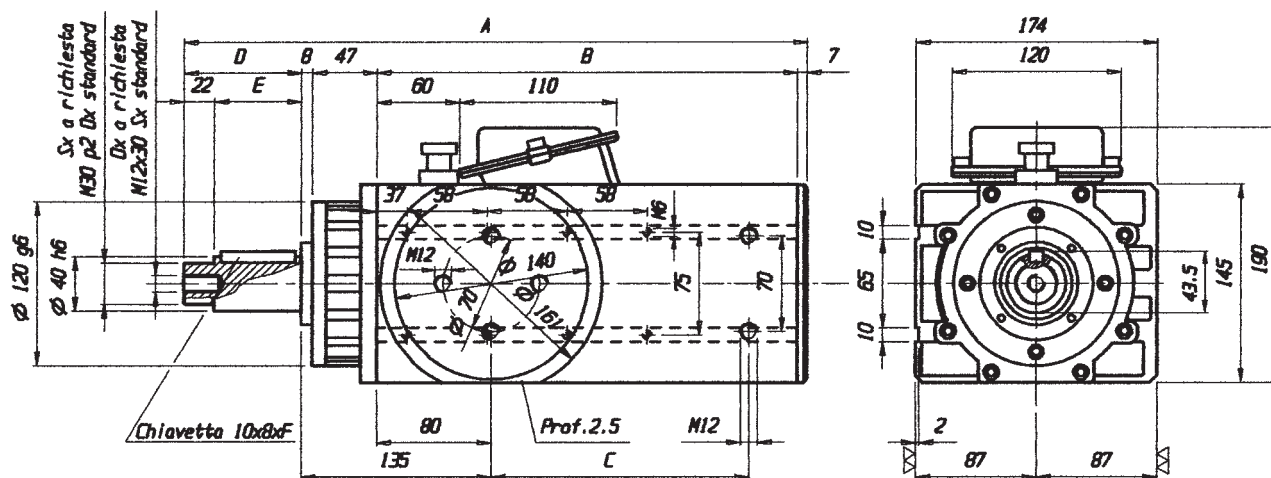
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS φ	PESO WEIGHT (Kg)
PE6 11/2	220/380 (380Δ)	50/100	3000/6000	2.3/4.0	9.5/5.5 (9.1Δ)	0.82	22
PE6 15/2	220/380 (380Δ)	50/100	3000/6000	3.4/5.6	3.50/2 (11.5Δ)	0.83	30

Solo a richiesta tensioni 230/400

Only on request voltages 230/400

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

• **Motori PE6**



TIPO Type	A	B	C	D	E	F
PE6 11/2	452	305	170	85	63	50
PE6 11/2	482	305	170	115	93	80
PE6 11/2	507	305	170	140	118	100
PE6 15/2	495	348	230	85	63	50
PE6 15/2	525	348	230	115	93	80
PE6 15/2	550	348	230	140	118	100



Serie SQUADRATRICE

Squaring machines

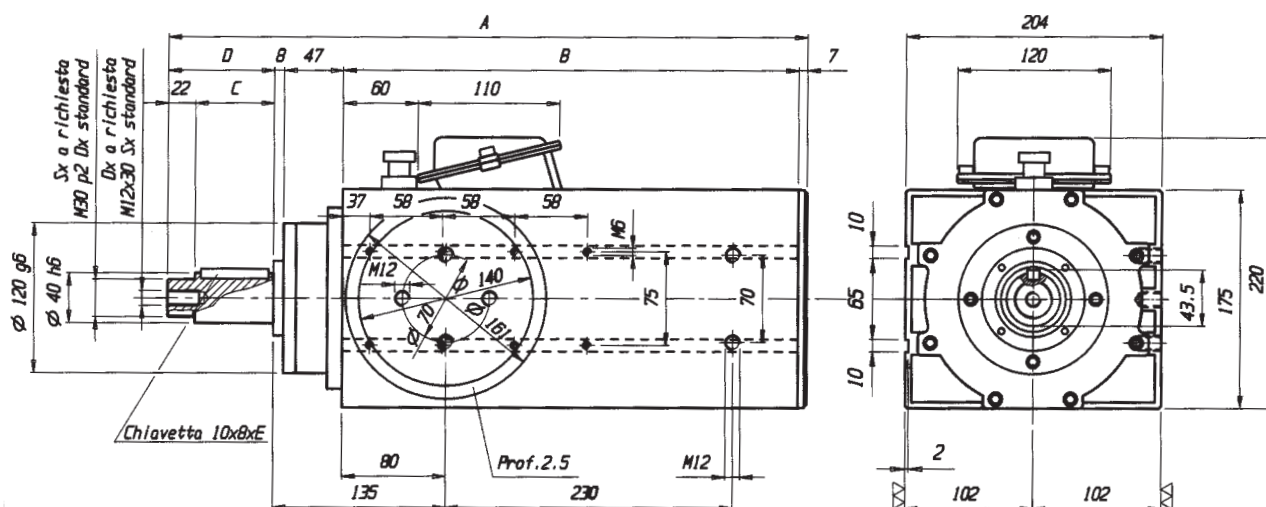
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
PE7 11/2	220/380 (380Δ)	50/100	3000/6000	4.0/5.8	15.7/9.1 (12.9Δ)	0.82	38
PE7 15/2	220/380 (380Δ)	50/100	3000/6000	5.6/8.2	20.2/11.7 (17.7Δ)	0.80	45
PE7 17/2	220/380 (380Δ)	50/100	3000/6000	6.2/8.8	24.0/13.8 (19.6Δ)	0.80	50

Solo a richiesta tensioni 230/400

Only on request voltages 230/400

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

Motori PE7



TIPO Type	A	B	C	D	E
PE7 11/2	512	365	63	85	50
PE7 11/2	542	365	93	115	80
PE7 11/2	567	365	118	140	100
PE7 15/2	512	365	63	85	50
PE7 15/2	542	365	93	115	80
PE7 15/2	567	365	118	140	100
PE7 17/2	562	415	63	85	50
PE7 17/2	592	415	93	115	80
PE7 17/2	617	415	118	140	100



- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.



• Serie SQUADRATICI *Squaring machines*

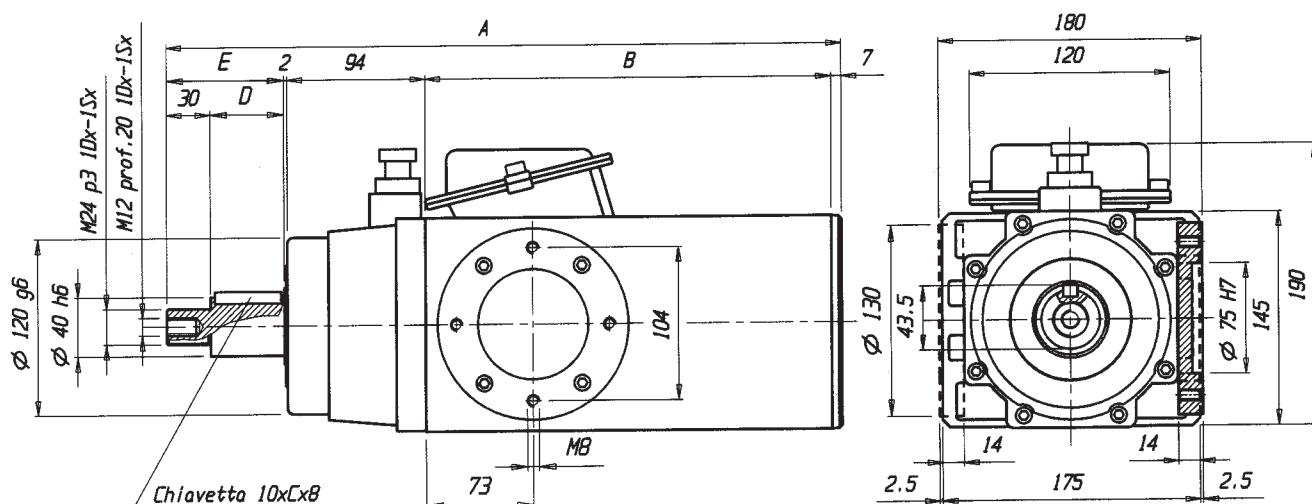
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
TMPE6 13/2	220/380 (380Δ)	50/100	3000/6000	2.90/4.8	11.45/6.60 (10.90Δ)	0.82	28
TMPE6 15/2	220/380 (380Δ)	50/100	3000/6000	3.40/5.60	13.6/7.8 (11.5Δ)	0.83	32
TMPE6 17/2	220/380 (380Δ)	50/100	3000/6000	3.80/6.65	14.90/8.60 (14.90Δ)	0.83	36

Solo a richiesta tensioni 230/400

Only on request voltages 230/400

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.

• Motori TMPE6



TIPO Type	A	B	C	D	E
TMPE6 13/2	459	276	45	50	80
TMPE6 13/2	499	276	80	90	120
TMPE6 15/2	505	322	45	50	80
TMPE6 15/2	545	322	80	90	120
TMPE6 17/2	555	372	45	50	80
TMPE6 17/2	595	372	80	90	120



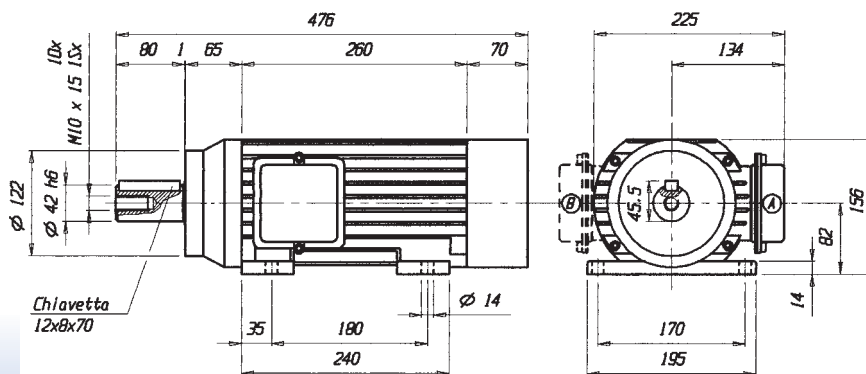
Motori Serie S

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
S1 12/2	220/380	50	3000	2.90	11.5/6.6	0.83	25
	380Δ	100	6000	4.80	10.90	0.83	
S1 14/2	220/380	50	3000	4.00	15.5/8.90	0.83	27
	380Δ	100	6000	6.65	14.9	0.84	
S1 13/4	220/380	50	1500	2.20	9.3/5.3	0.80	25
	380Δ	100	3000	3.60	8.2	0.82	
S1 17/4	220/380	50	1500	3.00	11.8/6.80	0.80	27
	380Δ	100	3000	4.50	10.2	0.82	
S2 12/2	220/380	50	3000	5.20	20.0/11.4	0.82	45
	380Δ	100	6000	7.30	16.2	0.83	
S2 15/2	220/380	50	3000	7.00	27.0/15.6	0.82	60
	380Δ	100	6000	9.20	20.0	0.83	
S2 12/4	220/380	50	1500	3.70	14.9/8.6	0.80	45
	380Δ	100	3000	5.40	12.0	0.82	
S2 14/4	220/380	50	1500	4.50	17.7/10.2	0.80	60
	380Δ	100	3000	6.35	14.0	0.82	
S3 9/2	220/380	50	3000	5.50	20.1/11.6	0.86	55
	380Δ	100	6000	8.50	17.8	0.86	
S3 12/2	220/380	50	3000	7.10	26.0/15.0	0.87	57
	380Δ	100	6000	11.3	23.5	0.87	
S3 14/2	220/380	50	3000	8.80	32.5/18.8	0.87	60
	380Δ	100	6000	12.6	26.5	0.87	
S3 16/2	220/380	50	3000	10.5	39.0/22.5	0.87	62
	380Δ	100	6000	14.3	30	0.87	
S3 20/2	220/380	50	3000	14.2	53.7/31.0	0.87	65
	380Δ	100	6000	19.0	40	0.87	
S3 12/4	220/380	50	1500	5.20	20.8/12.0	0.83	57
	380Δ	100	3000	6.30	14	0.83	
S3 16/4	220/380	50	1500	7.10	27.7/16.0	0.83	60
	380Δ	100	3000	8.40	18.5	0.84	
S3 18/4	220/380	50	1500	8.50	34.6/20	0.83	62
	380Δ	100	3000	10.2	23	0.84	
S3 20/4	220/380	50	1500	10.5	41.6/24.0	0.83	65
	380Δ	100	3000	12.2	26.9	0.84	

- Per Tensioni 230/400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230/400 the amps ABS. has to be multiplied by 0.95.



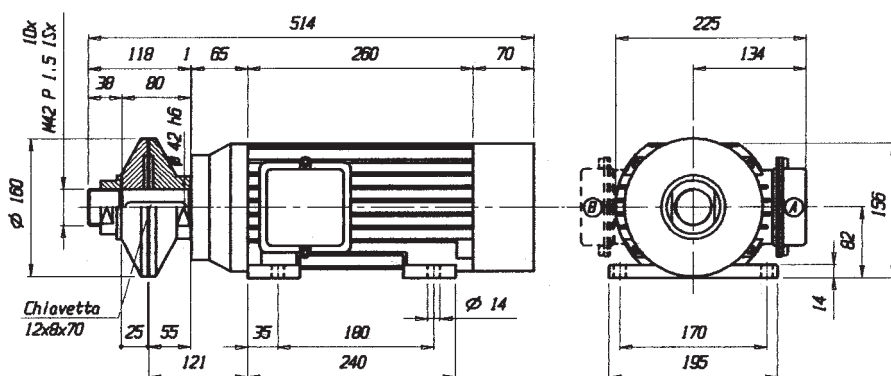
Motori S1



Sporgenza SC
Nose type SC

NB: Posizione morsettiera standard come da posizione "A" con forature lato destro. Su richiesta in posizione "B" con forature lato sinistro.

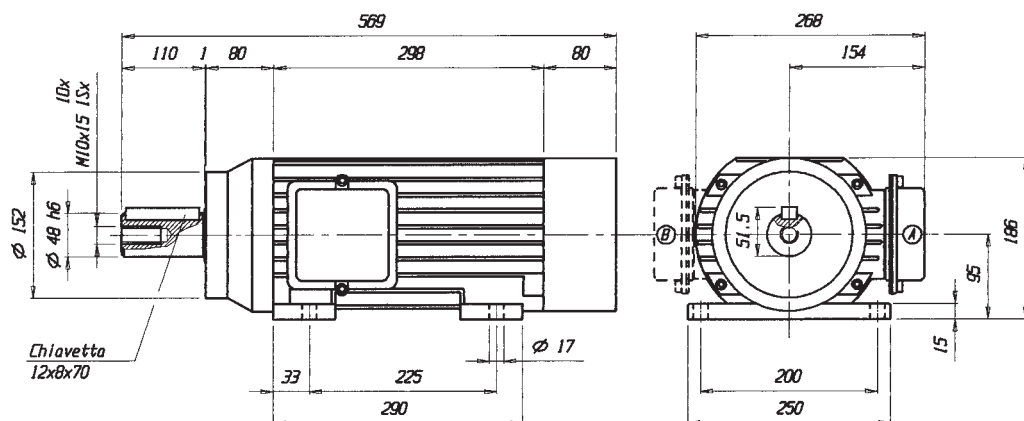
NB: Standard terminal box in "A" position with fixing holes on right side. On request terminal box in "B" position with fixing holes on left side.



**Sporgenza SCF
e Flange**
Nose type SCF with flanges



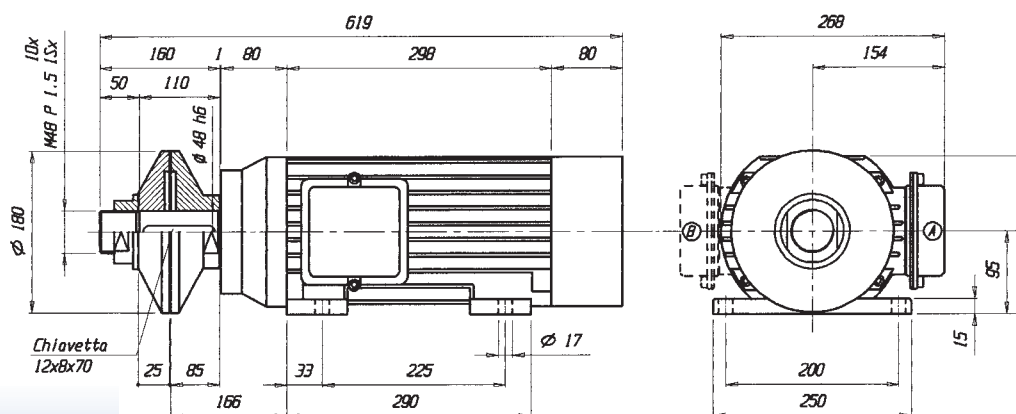
Motori S2



Sporgenza SC
Nose type SC

NB: Posizione morsetteria standard come da posizione "A" con forature lato destro. Su richiesta in posizione "B" con forature lato sinistro.

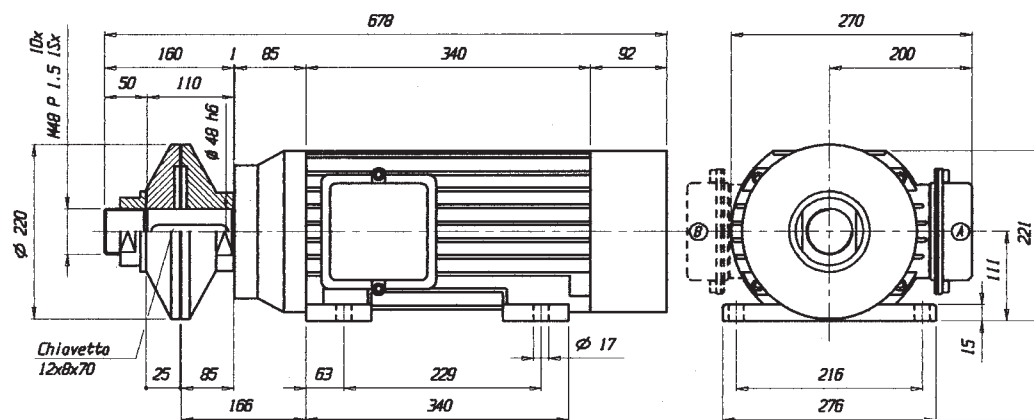
NB: Standard terminal box in "A" position with fixing holes on right side. On request terminal box in "B" position with fixing holes on left side.



**Sporgenza SCF
e Flange**
Nose type SCF with flanges



NB: Standard terminal box in "A" position with fixing holes on right side. On request terminal box in "B" position with fixing holes on left side.



Sporgenza SCF e Flange

■ Bilanciatura *Balance*

- **Bilanciatura Standard con 1/2 chiavetta per utensile ad una cava**

Standard balance with half key for one slot tool.

- **A richiesta bilanciatura con chiavetta intera per utensile a due cave**

On request balance with full key for two slot tool.

- **Si raccomanda l'uso di utensili bilanciati**

We strictly recommend the use of balanced tools.

- **Tutti i motori vengono forniti privi di pressacavo**

All motors are supplied without the plastic gland.

- **È importante in sede d'ordine specificare il tipo di motore completo di Tensione, Frequenza, Potenza.**

When ordering please specify the Voltage, Frequency and Power of the motor.

- **In tutti i motori sono montati cuscinetti per alte velocità ingrassati a vita.**

All motors have bearings for high speeds and do not require any additional lubrication.

- **Tutti i motori sono a normativa europea (marchio CE).**

All motors conform to the European CE standard.

- **Direttiva macchine (89/392/CEE).**

All motors conform to the "machines" directive (89/392/CEE).

- **Direttiva compatibilità elettromagnetica EMC (89/336/CEE).**

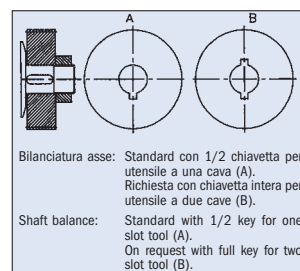
All motors conform to the electromagnetic compatibility directive EMC (89/336/CEE).

- **Direttiva bassa tensione (73/23/CEE).**

All motors conform to the "low voltage directive" 73/23/CEE.

- **Tutti i motori (a specifica richiesta) possono essere documentati con bollettini di collaudo funzionale, in fase di certificazione finale.**

(On request) all motors can be supplied with a functional test certificate, during the final phase of certification.





- Per Tensioni 230 o 400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230 or 400 the amps ABS. has to be multiplied by 0.95.



Serie Elettromandrini TMA

cambio utensile automatico

automatic tool change

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS φ	PESO WEIGHT (Kg)
TMA 4 10/2	350	200/300	12000/18000	3.6	8.6	0.82	16
TMA 4 10/2	350	200/400	12000/24000	3.6	8.6	0.82	16

Solo a richiesta tensioni 230 o 400

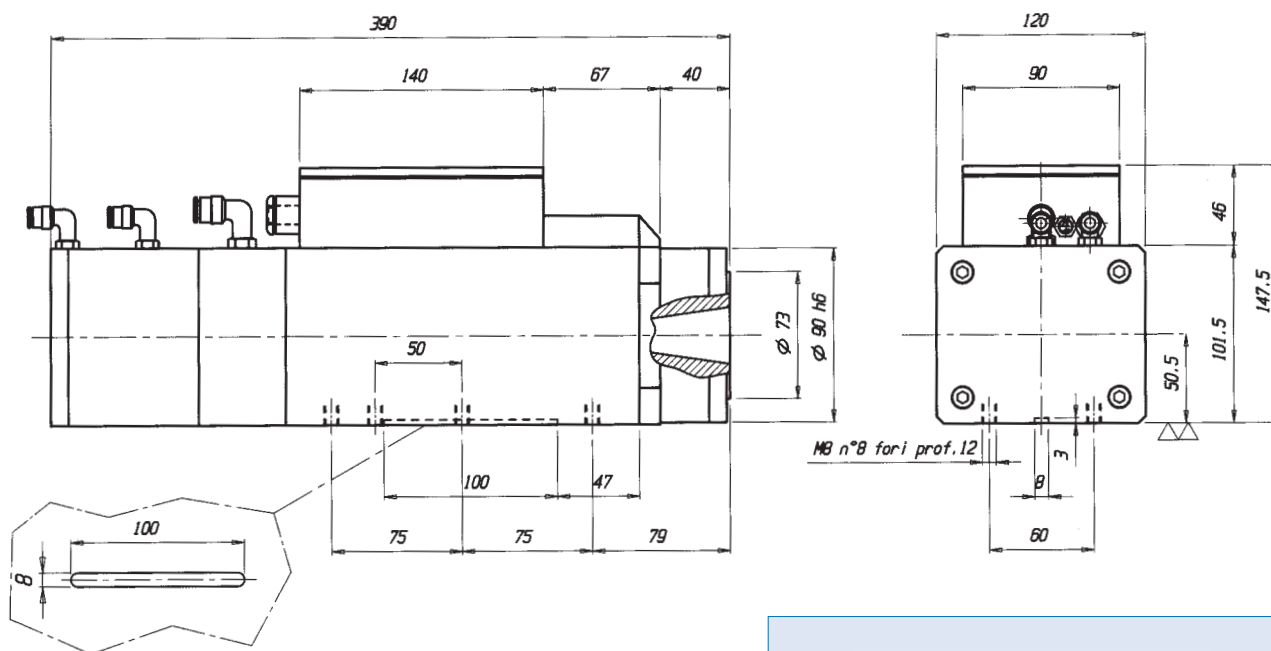
Only on request voltages 230 or 400

- Per Tensioni 230 o 400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230 or 400 the amps ABS. has to be multiplied by 0.95.

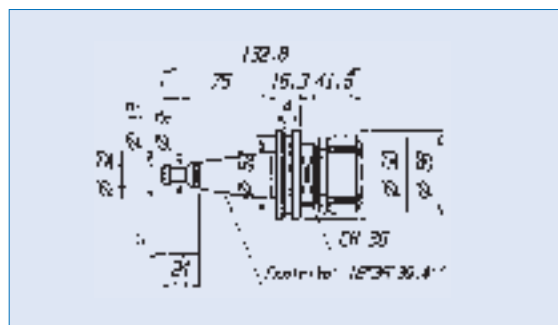
Elettromandrini TMA4 ISO 30

Raffreddato ad aria compressa

Compressed air cooling



Diametro Min. 1
Max 20 mm.
Diameter Min. 1
Max 20 mm.



Cono ISO 30 con attacco per pinza ER 32
ISO 30 taper for collet ER 32

NB: La versione a 24000 giri richiede l'utilizzo di cuscinetti ceramici.
Important: ceramic ball-bearings required for 24000 rpm.



Serie Elettromandrini TMA cambio utensile automatico automatic tool change

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS φ	PESO WEIGHT (Kg)
TMA 5 14/2	350	200/300	12000/18000	7	16	0.85	25
TMA 5 14/2	350	200/400	12000/24000	7	16	0.82	25

Solo a richiesta tensioni 230 o 400

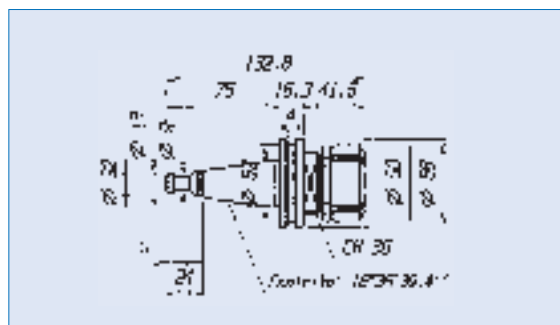
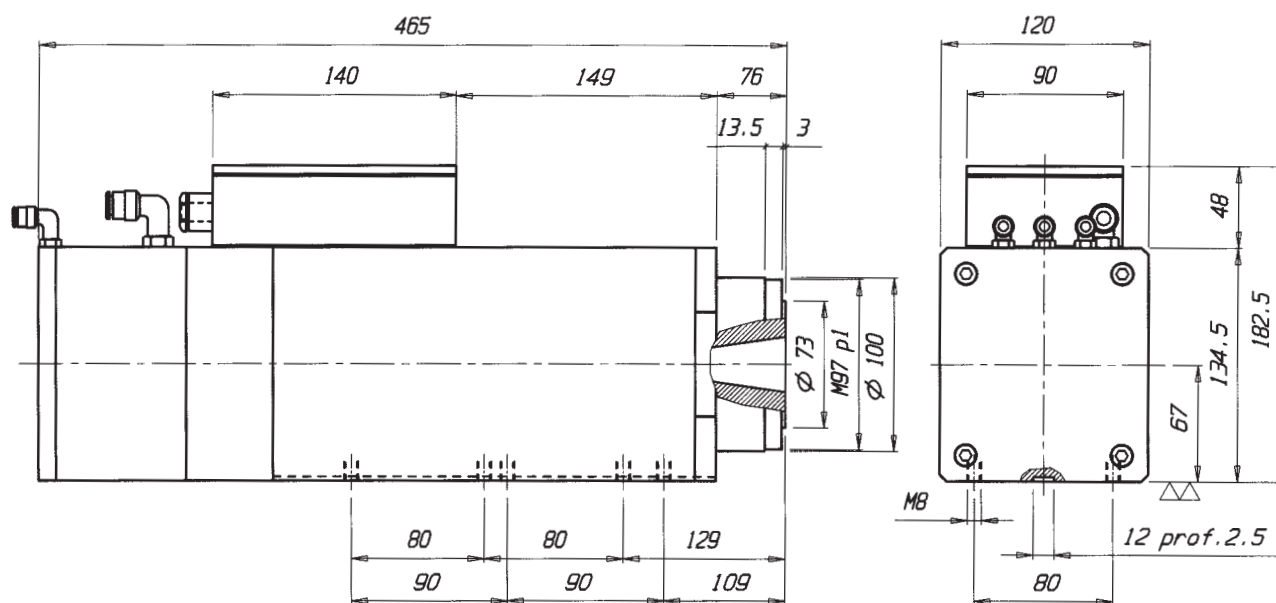
Only on request voltages 230 or 400

- Per Tensioni 230 o 400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230 or 400 the amps ABS. has to be multiplied by 0.95.

Elettromandrini TMA5 ISO 30

Raffreddato ad aria compressa

Compressed air cooling



Cono ISO 30 con attacco per pinza ER 32
ISO 30 taper for collet ER 32

**Diametro Min. 1
Max 20 mm.**
*Diameter Min. 1
Max 20 mm.*



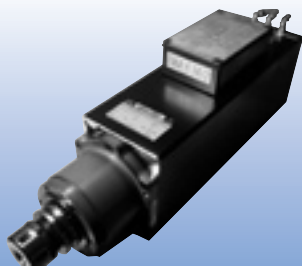
NB: La versione a 24000 giri richiede l'utilizzo di cuscinetti ceramici.
Important: ceramic ball-bearings required for 24000 rpm.



Solo a richiesta tensioni 230 o 400

- Per Tensioni 230 o 400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230 or 400 the amps ABS. has to be multiplied by 0.95.

Raffreddato ad aria compressa
Compressed air cooling

[illegible]

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Serie Elettromandrini TMA

cambio utensile automatico

automatic tool change

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
TMA 6 12/4	350	400/600	18000	8.8	21.6	0.80	38
TMA 6 17/4	350	400/600	18000	12	28.5	0.82	43

Solo a richiesta tensioni 230 o 400

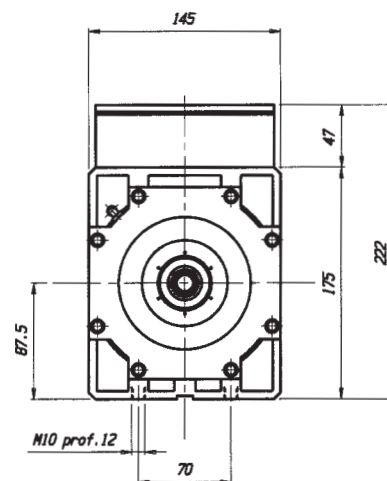
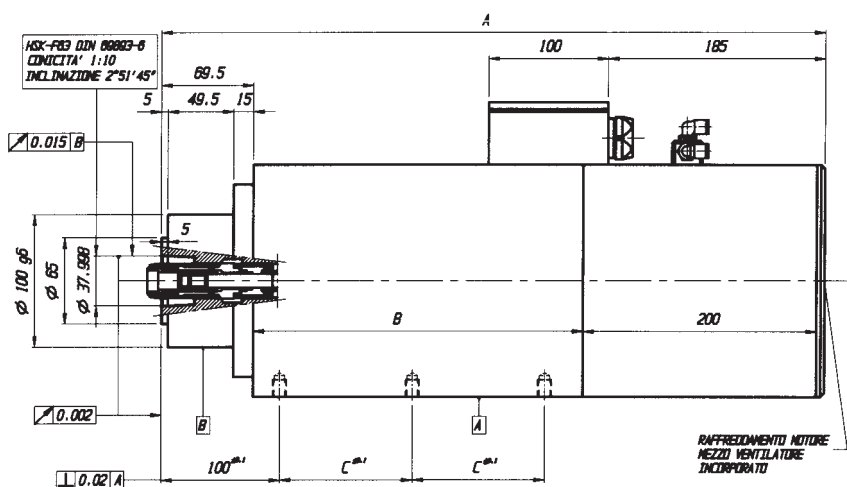
Only on request voltages 230 or 400

- Per Tensioni 230 o 400 VOLT l'assorbimento amperometrico va moltiplicato per 0.95.
- For Voltages 230 or 400 the amps ABS. has to be multiplied by 0.95.

Elettromandrini TMA6 HSK F63

Raffreddato mezzo elettroventola

Cooled by electric fan



PRESSACAVO PER
ALIMENTAZIONE MOTORE

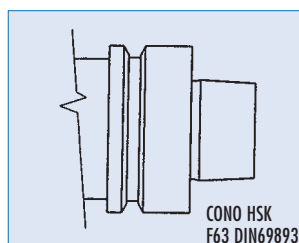
CONNETTORE A BASSA
TENSIONE V. 24 VCC
PER CONTROLLO SENSORI

ENTRATA ARIA PER
PRESSURIZZAZIONE
COPPIA ANTERIORE 3 Bar

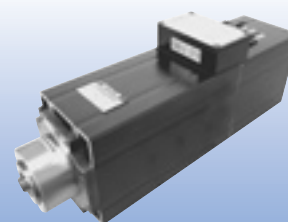
CORSA PISTONE
AVANTI

ENTRATA ARIA PER
PULIZIA CONO

CORSA PISTONE
INDIETRO



CONO HSK
F63 DIN69893



TIPO Type	A	B	C
12/4	523	248.5	100
17/4	573	298.5	125

Cono porta utensile HSK F63 Din. 69893

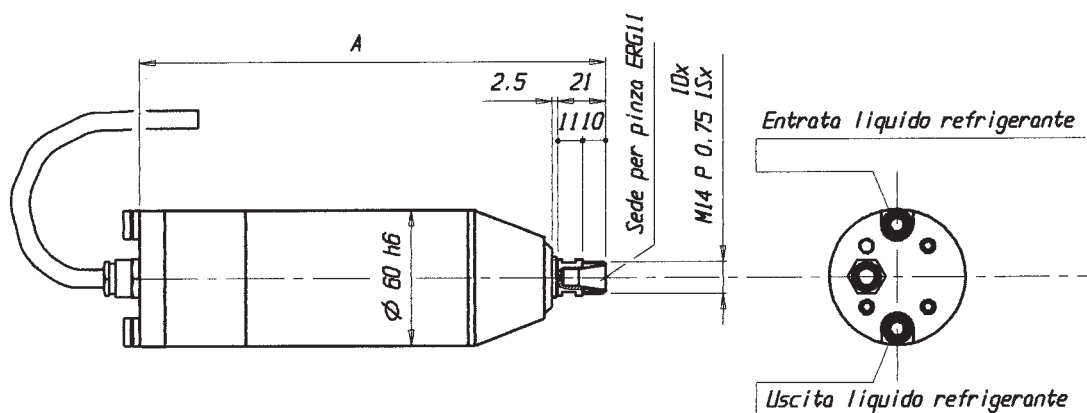
Tool holder taper HSK F636 Din. 69893



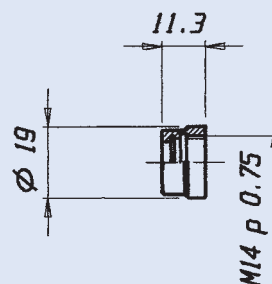
Serie AF Raffreddato a liquido Liquid Cooled

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF60 2.5/2	220	400	24000	0.25	1.8	0.70	2
AF60 2.5/2	380	400	24000	0.25	1.0	0.70	2
AF60 2.5/2	220	670	40000	0.25	1.8	0.70	2
AF60 2.5/2	380	670	40000	0.25	1	0.70	2
AF60 6/2	220	400	24000	0.55	2.6	0.75	2.5
AF60 6/2	380	400	24000	0.55	1.5	0.75	2.5
AF60 6/2	220	670	40000	0.55	2.6	0.75	2.5
AF60 6/2	380	670	40000	0.55	1.5	0.75	2.5

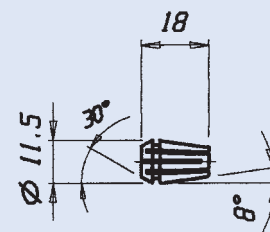
Elettromandrini AF60 2.5-6/2



Ghiera ER 11
Ring nut ER 11

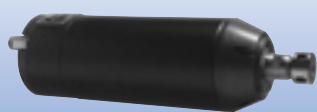


Pinza ER 11
Collet ER 11



Diametro Min. 1 Max. 7 mm.
Diameter Min. 1 Max. 7 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



TIPO
Type

A

AF60 2.5/2 167.5

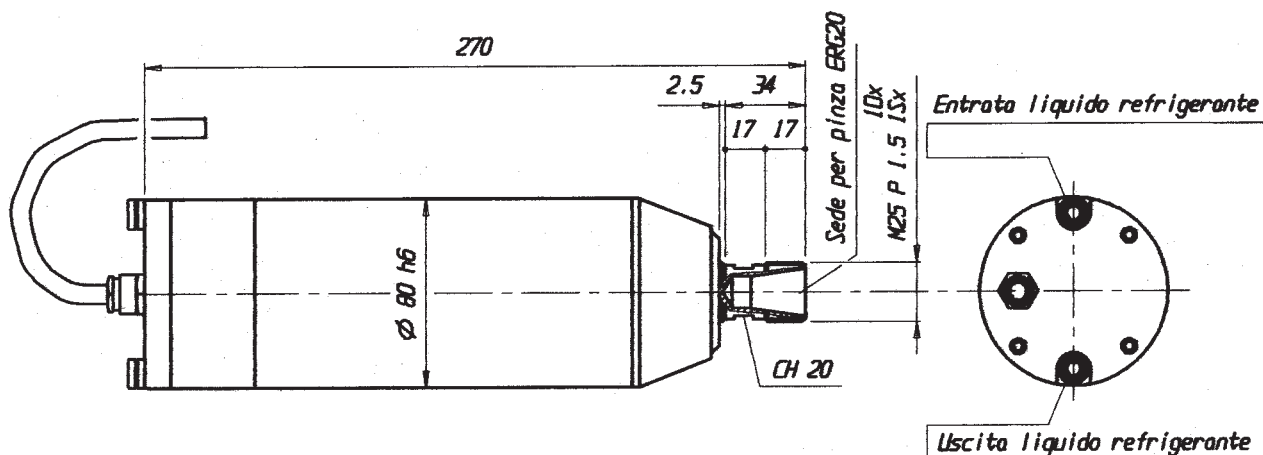
AF60 6/2 202.5



Serie AF Raffreddato a liquido Liquid Cooled

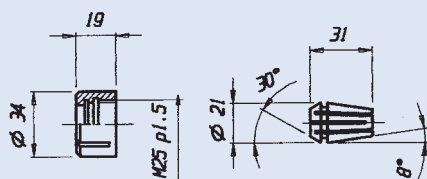
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF80 9/2	220	300	400	24000	1.1	5.2	0.75	6.5
AF80 9/2	380	300	400	24000	1.1	3.0	0.75	6.5
AF80 9/2	220	400	670	40000	1.4	5.8	0.75	6.5
AF80 9/2	380	400	670	40000	1.4	3.3	0.75	6.5

Elettromandrini AF80 9/2



Ghiera ER 20
Ring nut ER 20

Pinza ER 20
Collet ER 20



Diametro Min. 1 Max 13 mm.
Diameter Min. 1 Max 13 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



AF80

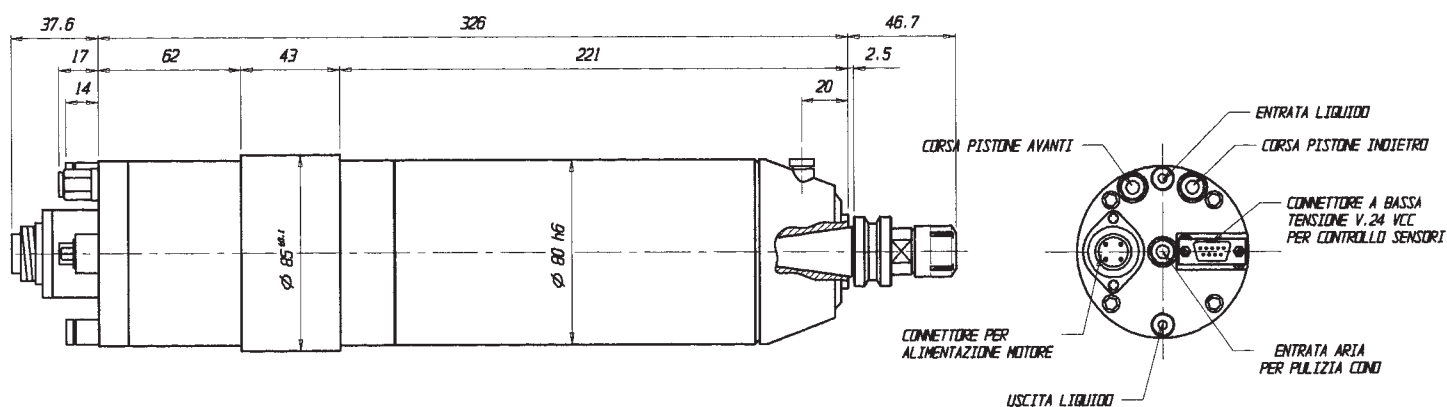


TIPO TYPE	SCELTA DI POTENZA							PESO WEIGHT (Kg)
	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS φ	
AF80 9/2 CU	220	300	400	24000	1.1	5.2	0.75	8.5
AF80 9/2 CU	380	300	400	24000	1.1	3.0	0.75	8.5
AF80 9/2 CU	220	400	670	40000	1.4	5.8	0.75	8.5
AF80 9/2 CU	380	400	670	40000	1.4	3.3	0.75	8.5

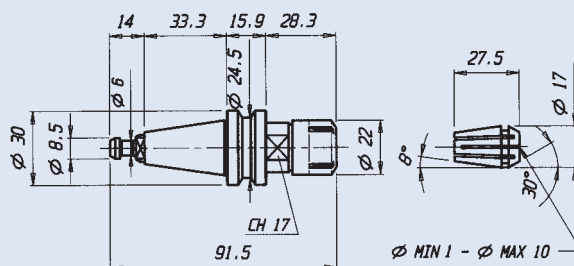
• Elettromandrini AF80 9/2 CU

Elettromandrino AF80 CU con cambio utensile automatico ISO 20

Electric spindle AF80 CU with automatic tool change ISO 20



AF80 CU



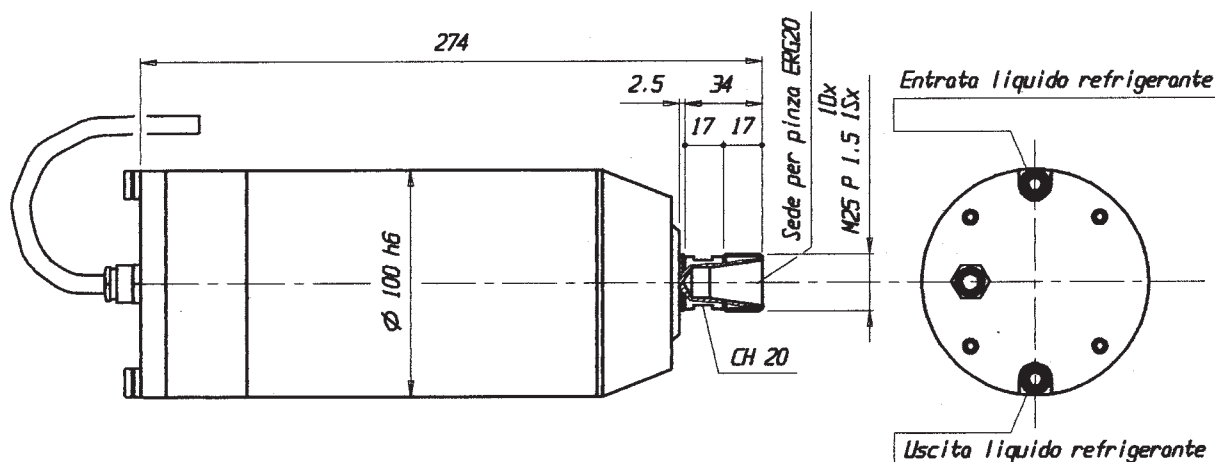
Cono ISO 20 con attacco per pinza ER 16 e ghiera ER 16 mini
Iso 20 taper for collet ER 16 and ring nut ER 16 mini



Serie AF Raffreddato a liquido Liquid Cooled

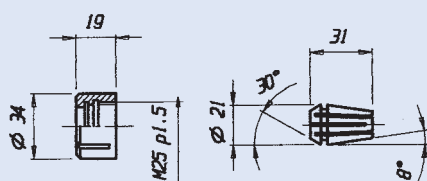
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF100 7/2	220	300	400	24000	1.8	7.8	0.80	8
AF100 7/2	380	300	400	24000	1.8	4.5	0.80	8
AF100 7/2	220	400	670	40000	2.2	8.5	0.80	8
AF100 7/2	380	400	670	40000	2.2	4.9	0.80	8

Elettromandrini AF100 7/2 Electric spindles AF100 7/2



Ghiera ER 20
Ring nut ER 20

Pinza ER 20
Collet ER 20



Diametro Min. 1 Max 13 mm.
Diameter Min. 1 Max 13 mm.



AF100

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.

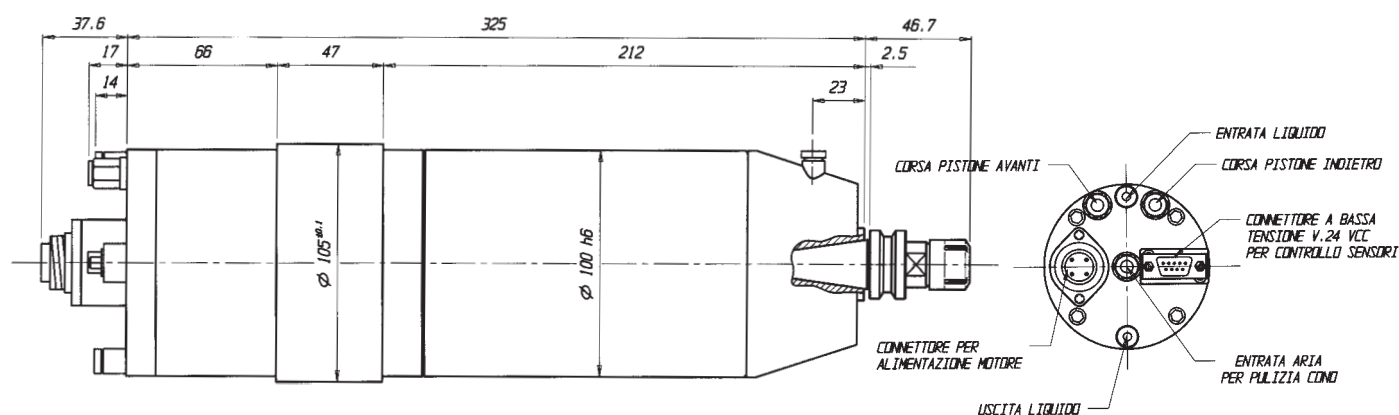


Serie AF Raffreddato a liquido Liquid Cooled

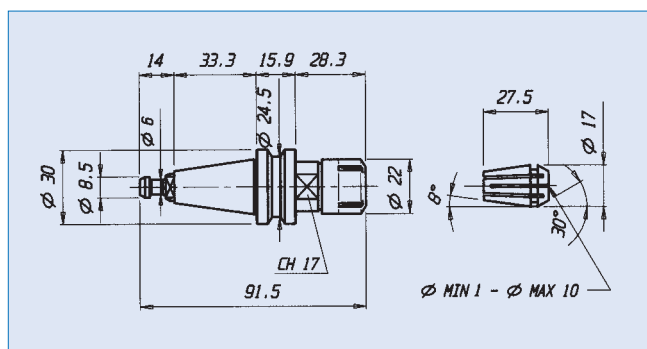
TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF100 7/2 CU	220	300	400		1.8	7.8	0.80	12
AF100 7/2 CU	380	300	400		1.8	4.5	0.80	12
AF100 7/2 CU	220	400	670		2.2	8.5	0.80	12
AF100 7/2 CU	380	400	670		2.2	4.9	0.80	12

Elettromandrini AF100 7/2 CU

Elettromandrino AF100 7/2 CU con cambio utensile automatico ISO 20
Electric spindle AF100 7/2 CU with automatic tool change ISO 20



AF100 CU



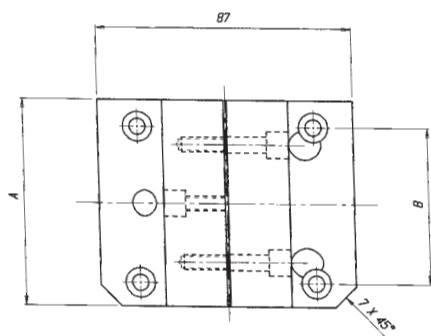
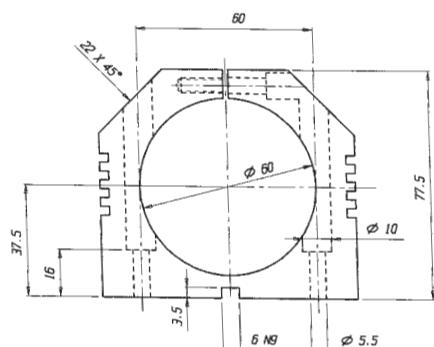
Cono ISO 20 con attacco per pinza ER 16 e ghiera ER 16 mini
ISO 20 taper for collet ER 16 and ring nut ER 16 mini



Serie AF

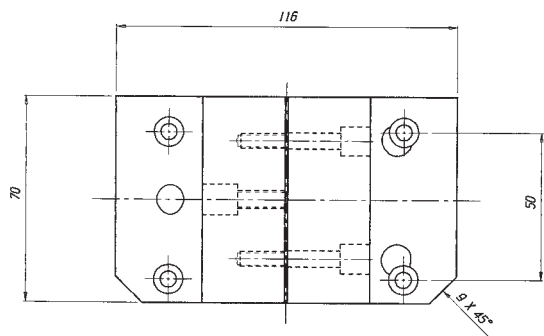
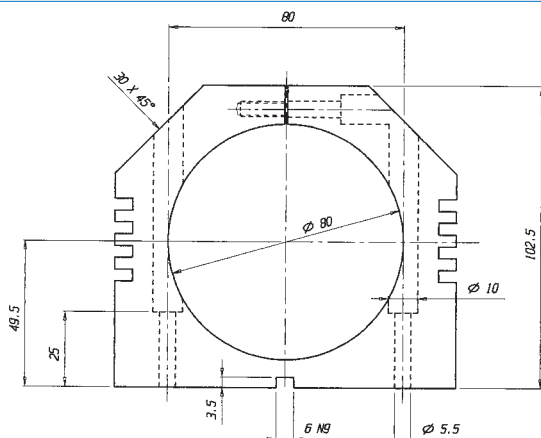
Dimensioni dei supporti per mandrini

Dimensions of the spindles holders

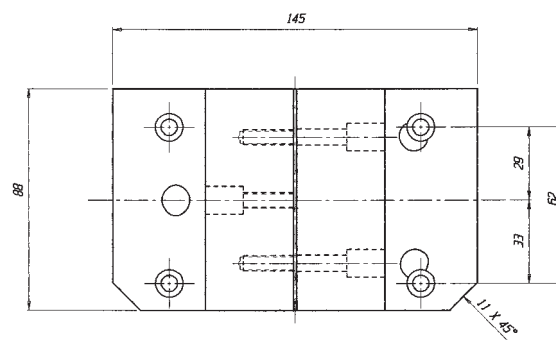
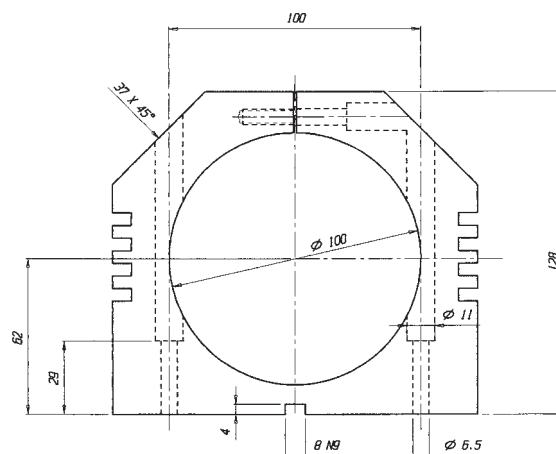


AF60

TIPO TYPE	A	B
AF60 2.5/2	50	33
AF60 6/2	70	53



AF 80 - AF 80CU



AF 100 - AF 100CU



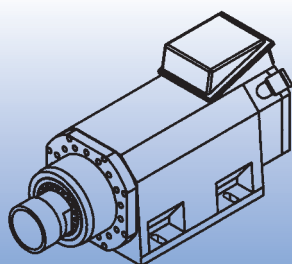
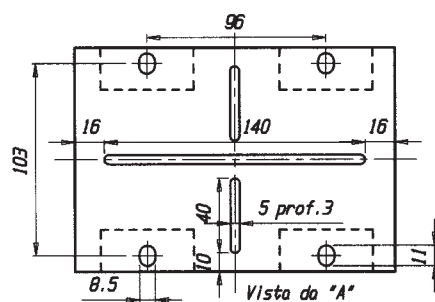
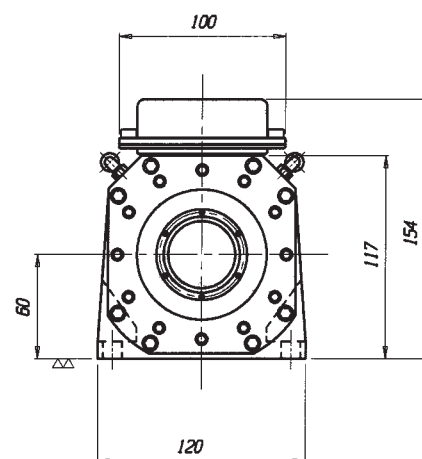
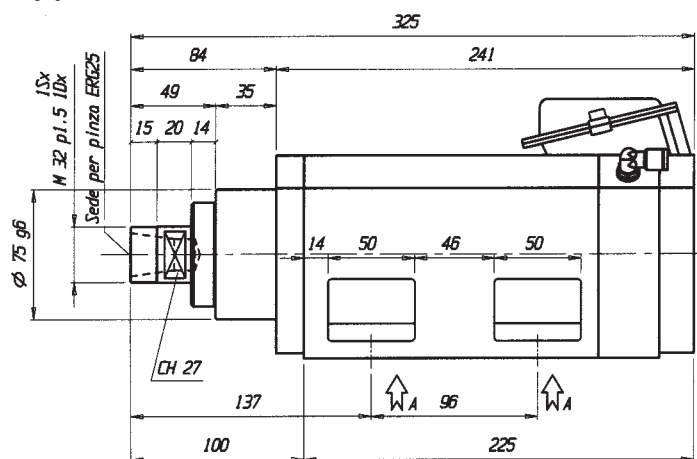
Serie AF Raffreddato a liquido Liquid Cooled

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF90 10/2	380	200	300	18000	4	8.7	0.81	14
	380	300	400	24000	4.6	11.4	0.82	14

Elettromandrini AF90 10/2 Electric spindles AF90 10/2

Sporgenza per pinza ER 25

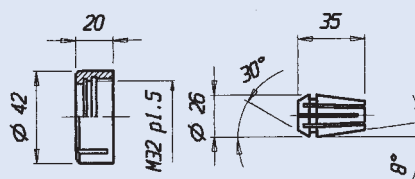
Nose type for collet ER 25



AF90

Ghiera ER 25
Ring nut ER 25

Pinza ER 25
Collet ER 25



Diametro Min. 1 Max. 16 mm.
Diameter Min. 1 Max. 16 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



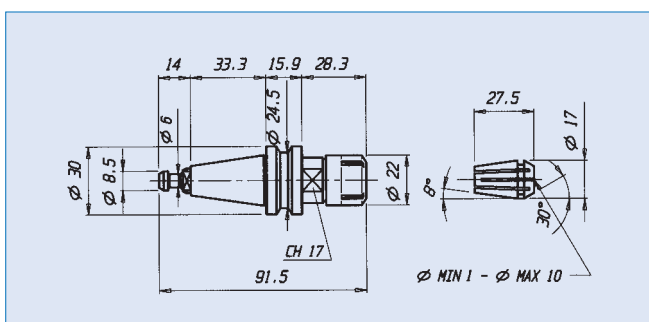
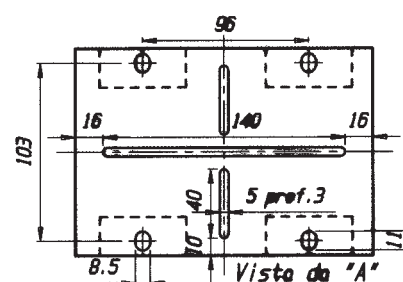
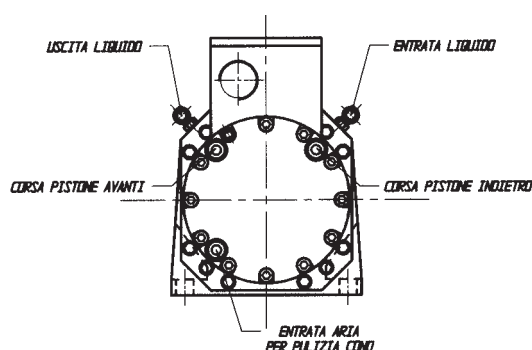
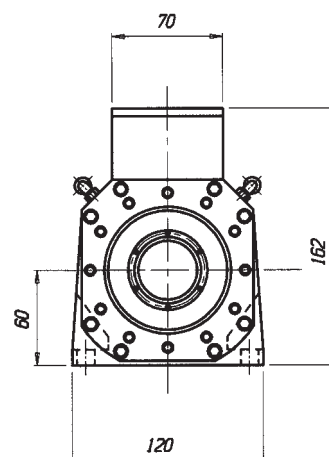
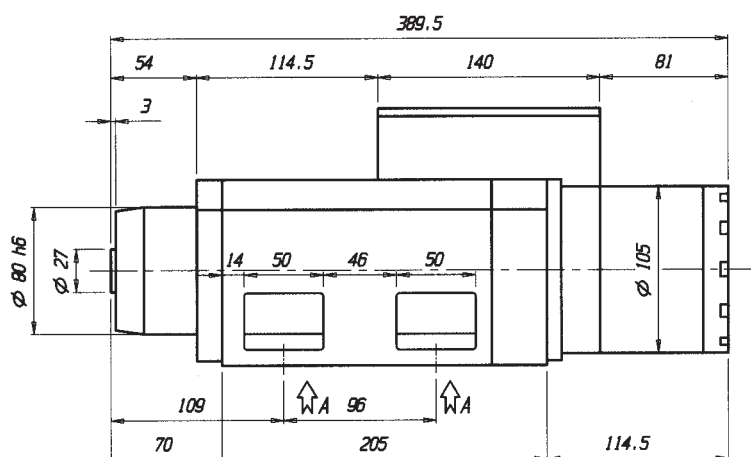
Serie AF Raffreddato a liquido Liquid Cooled

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF90 10/2 CU	350	400	500	30000	4	9.4	0.80	18
ISO 20								

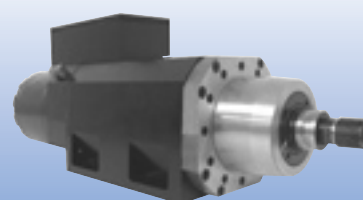
Elettromandrini AF90 10/2 CU Electric spindles AF90 10/2 CU

Versione con cono ISO 20

ISO 20 taper version



Cono ISO 20 con attacco per pinza ER 16 e ghiera ER 16 mini
ISO 20 taper for collet ER 16 and ring nut ER 16 mini



**AF90 CU
ISO 20**



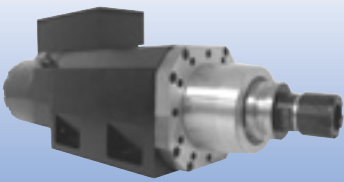
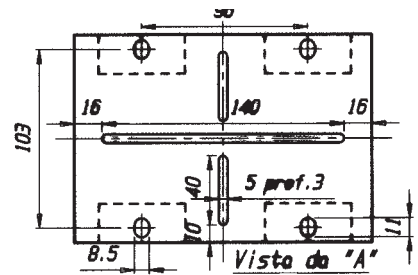
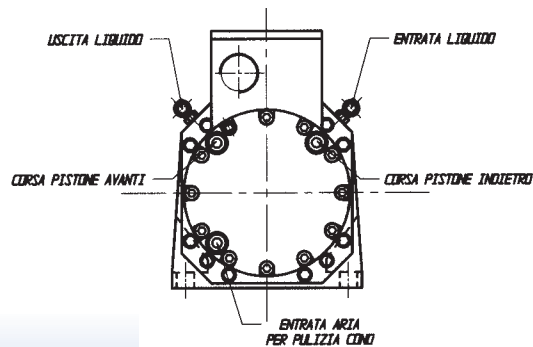
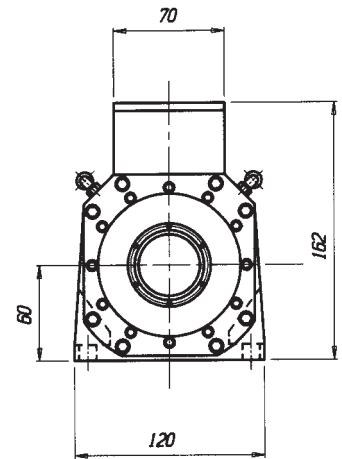
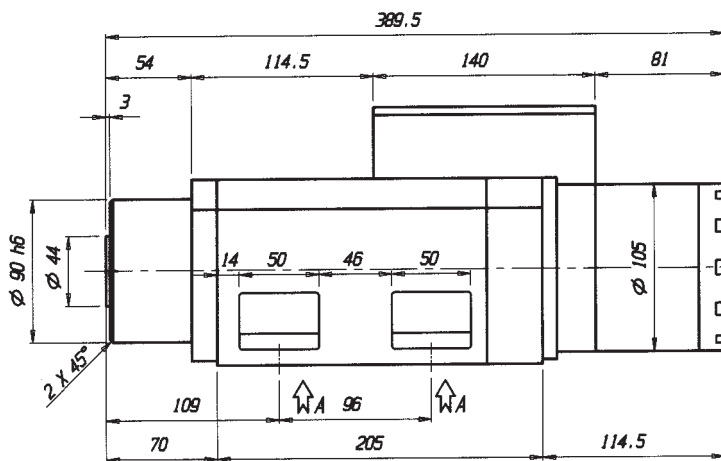
Serie AF Raffreddato a liquido *Liquid Cooled*

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS φ	PESO WEIGHT (Kg)
AF90 10/2 CU	350	300	400	24000	4	9.4	0.80	18
ISO 30								

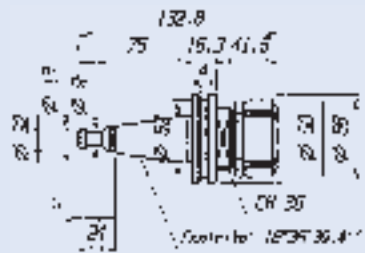
• **Elettromandrini AF90 10/2 CU** *Electric spindles AF90 10/2 CU*

Versione con cono ISO 30

ISO 30 taper version



**Diametro Min. 1
Max 20 mm.**
*Diameter Min. 1
Max 20 mm.*



Cono ISO 30 con attacco per pinza ER 32
Iso 30 taper for collet ER 32



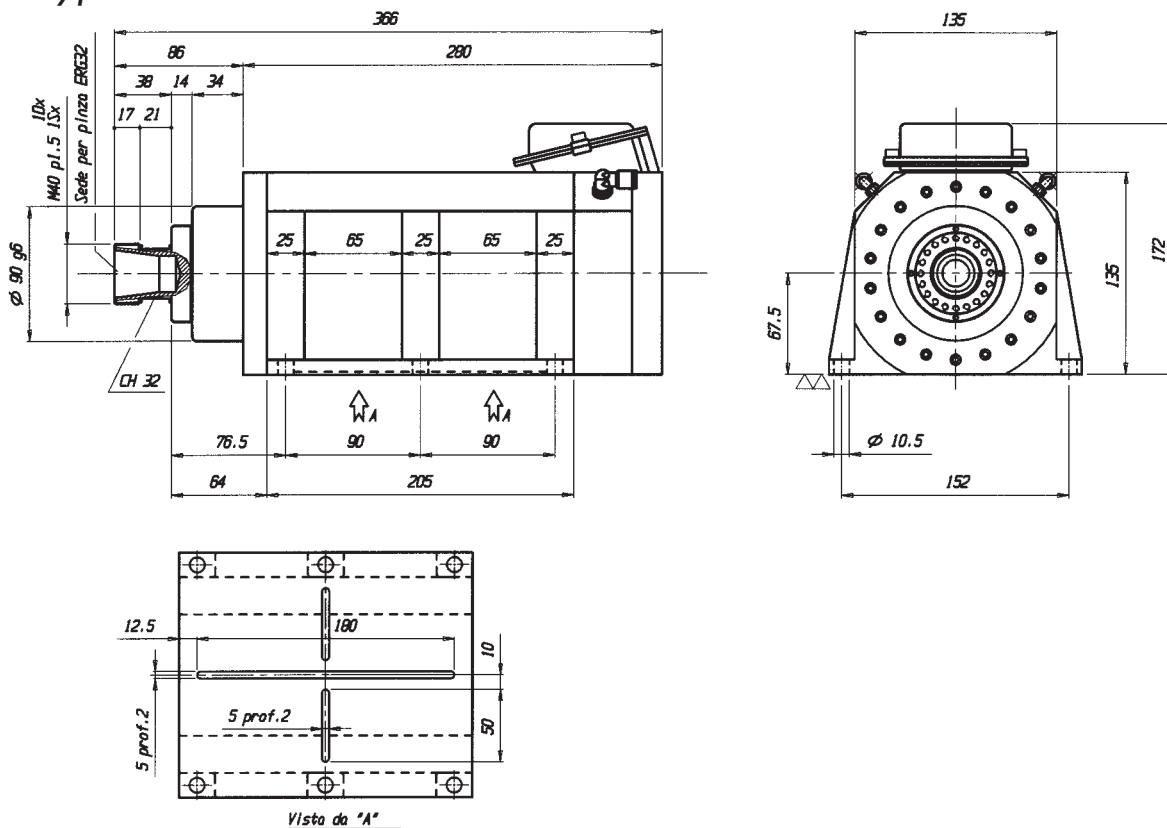
Serie AF Raffreddato a liquido *Liquid Cooled*

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS φ	PESO WEIGHT (Kg)
AF110 14/2	380	200	300	18000	7.5	16.8	0.85	28
	380	300	400	24000	8.5	19.4	0.82	28

• **Elettromandrini AF110 14/2** *Electric spindles AF110 14/2*

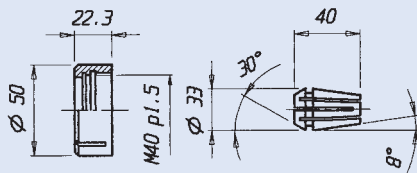
Sporgenza per pinza ER 32

Nose type for collet ER 32



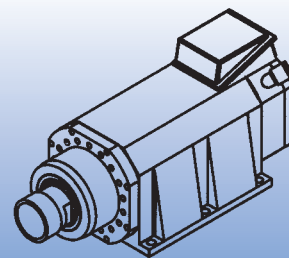
Ghiera ER 32
Ring nut ER 32

Pinza ER 32
Collet ER 32



Diametro Min. 1 Max. 20 mm.
Diameter Min. 1 Max. 20 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



AF110



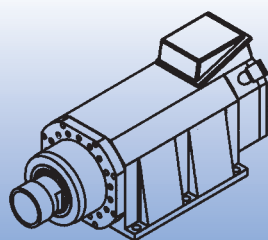
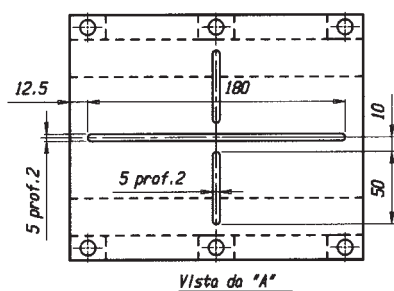
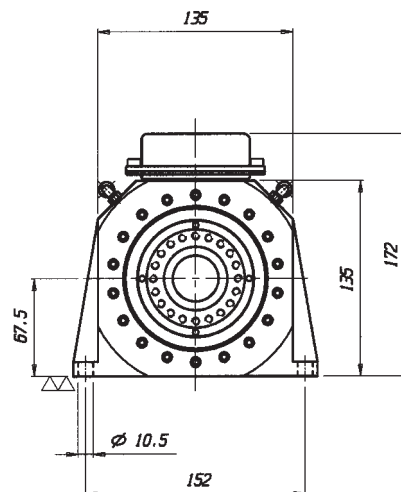
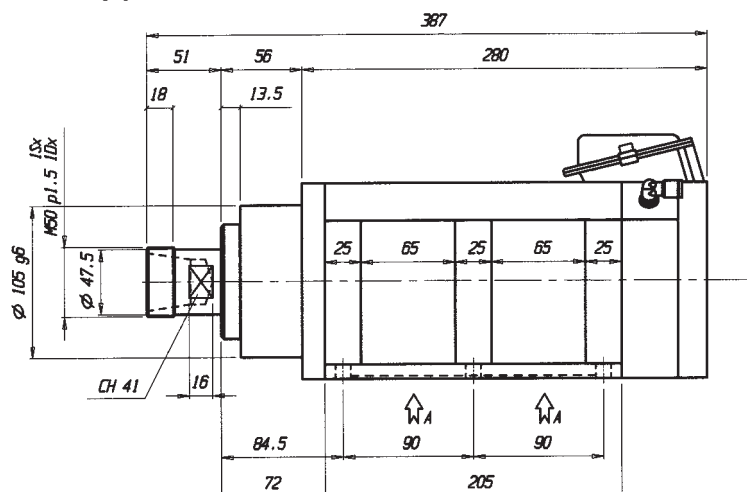
Serie AF Raffreddato a liquido Liquid Cooled

TIPO TYPE	TENSIONE VOLTAGE (VOLT)	FREQU. AL GINOCCHIO (HZ)	FREQU. (HZ)	GIRI (rpm)	POT. RESA OUT. POW. (KW)	ASSORB. ABSORB. (amp)	COS ϕ	PESO WEIGHT (Kg)
AF110 14/2	380	100	200	12000	5	10	0.82	28
	380	200	300	18000	7.5	16.8	0.85	28

Elettromandrini AF110 14/2 Electric spindles AF110 14/2

Sporgenza per pinza ER 40

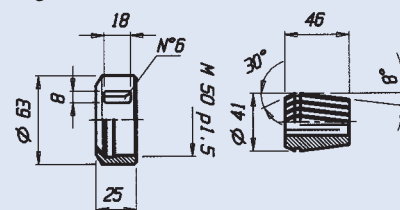
Nose type for collet ER 40



AF110

Ghiera ER 40
Ring nut ER 40

Pinza ER 40
Collet ER 40



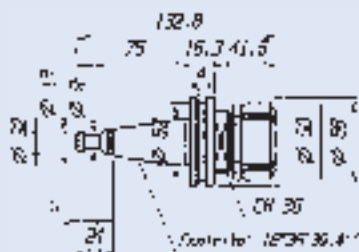
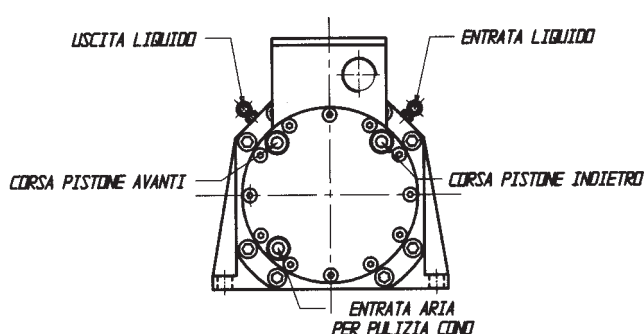
Diametro Min. 3 Max. 30 mm.
Diameter Min. 3 Max. 30 mm.

NB: Pinza e ghiera vengono fornite a richiesta.
NB: Collet and ring nut only on your request.



• **Elettromandrini AF110 14/2 CU** *Electric spindles AF110 14/2 CU*

ISO 30 taper version



**Diametro Min. 1
Max 20 mm.**
*Diameter Min. 1
Max 20 mm.*

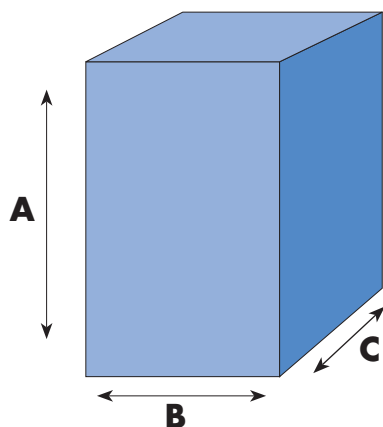




Serie AF

Scambiatore di calore aria-acqua

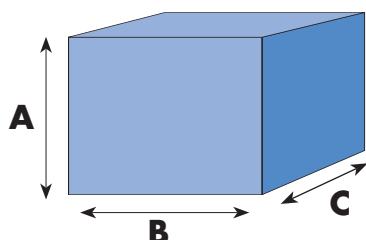
Air-water heat exchanger



RF.005.3R.VE



TIPO Type	A	B	C
AF60	40	48	23
AF80			



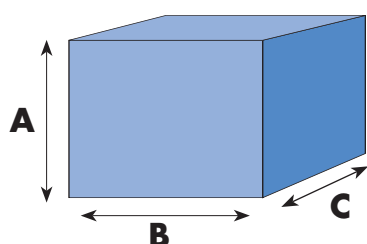
RF.01.4R.VE



TIPO Type	A	B	C
AF100	41	65	40
AF80 CU			

Refrigeratore d'acqua con vasca e pompa

Water chiller unit with tank and pump



KRA 10 AF
KRA 15 AF



TIPO Type	A	B	C
	33,5	70	42,5

SERIE ELETTROMANDRINI SEMIAUTOMATICI CON INVERTER INCORPORATO

Serie di elettromandrini con scheda inverter integrata per azionamenti a velocità variabile (mediante potenziometro), questa tipologia assicura semplicità di alimentazione ed economicità di applicazione. Vengono notevolmente ridotti anche i costi di cablaggio, acquisto inverter e cavi schermati.

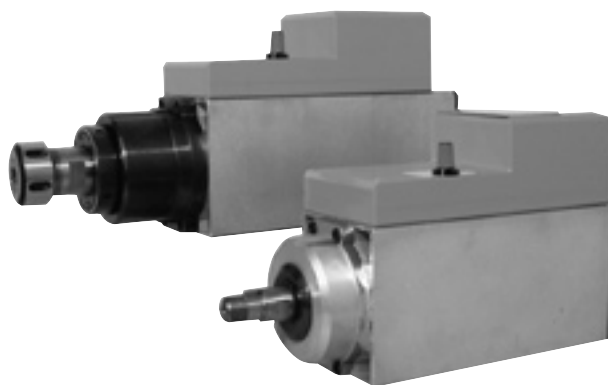
Specifiche tecniche:

- Alimentazione monofase 230V (+20%) frequenza 45-65Hz
- Regolazione della velocità mediante potenziometro
- Tensione frequenza e uscita già tarate
- Controllo della presenza di alimentazione dell'inverter
- Controllo delle fasi in uscita (mancanza fase, assorbimento elevato)
- Protezione per sovra temperatura
- Inversione del senso di rotazione mediante jumper
- Frequenza in uscita da 40 a 400 Hz
- Potenza massima disponibile 1Kw

È disponibile inoltre una scheda opzionale con le seguenti funzionalità:

- Comando di velocità con segnale analogico 0/+10V isolato
- Comando inversione marcia con segnale isolato
- Comando start/stop con segnale isolato
- Uscita optoisolata denominata drive-ok per segnale inverter in anomalia
- Uscita optoisolata per segnalazione frequenza raggiunta

Offriamo la nostra disponibilità per valutare ulteriori richieste ed eventuali modifiche su specifiche del cliente.



N.B. La realizzazione di questa nuova serie di elettromandrini con inverter integrato e' possibile su tutte le nostre serie con potenza max di 1KW e frequenza variabile da 50 a 400 HZ. Siamo in fase di progettazione anche per potenze superiori.

SET OF ELECTRIC SEMIAUTOMATIC SPINDLES WITH INCORPORATED INVERTER

Set of electric spindles with integrated inverter card for operations at variable speeds (by means of a potentiometer), this type of electric spindles guarantee simplicity of feeding and economic application. Consequently also the harness costs are dramatically reduced with no need to buy the inverter and the shielded cables.

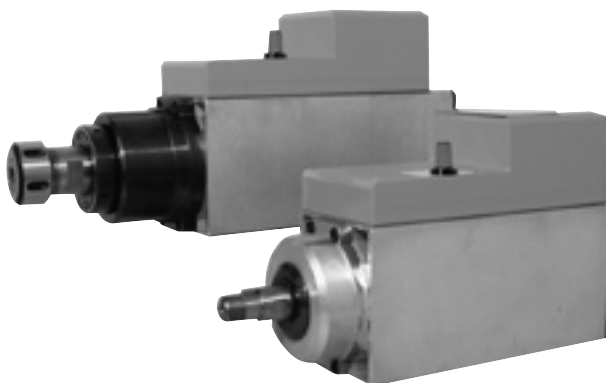
Technical features:

- Single phase input 230 V (+20%) frequency 45-65Hz
- Speed regulation by means of a potentiometer
- Voltage and output frequency are already set
- Checkout of the presence of the inverter feeding
- Checkout of the output phases (missing phase, high absorption)
- Over temperature protection
- Reversal of the direction of rotation by means of a jumper
- Output frequency from 40 to 400 Hz
- Max power available 1 Kw

Optional card with the following functionalities:

- Speed control with insulated analog signal 0/+10V
- Reverse control with insulated signal
- Start/stop control with insulated signal
- Optoinsulated exit called drive-ok to signal defect inverter
- Optoinsulated exit to signal reached frequency

We are at your disposal to value further requests and possible modifications based on customer's specifications.



Important: It is possible to carry out this new brand of electric spindles with incorporated inverter on all our series with max power 1 Kw and frequency variable from 50 to 400 Hz.

We are working on the same project also for higher power.



Serie Convertitori statici da 0.55 Kw a 60Kw Inverter

TESTATO E MARCATO **ELTE** CHE GARANTISCE IL FUNZIONAMENTO
ALLE MASSIME PRESTAZIONI CON I PROPRI MANDRINI

Tecnologia affidabile, compatto, robusto facile da usare.

Caratteristiche:

Inverter vettoriale con calcolo del vettore in automatico ogni millisecondo verso il motore, calcolando anche i relativi cavi di connessione, utilizzando i valori istantanei misurati.

Il processore Vacon si basa sul controllo vettoriale Sensorless con modello matematico di simulazione e sul circuito ASIC. Il controllo vettoriale avviene sfruttando il sistema di coordinate del flusso magnetico di statore. Il calcolo rimane così insensibile alle variazioni delle grandezze elettriche del motore.

- L'errore sulla velocità in situazione stazionaria è inferiore a 0.5 %.
- Il tempo di risposta della coppia è inferiore a 10 ms.
- Non c'è oscillazione di coppia.
- Non è sensibile a vibrazioni di risonanza.
- Coppia di spunto elevata: 200 %.
- Corrente di spunto elevata: 2.5 x ict.
- Adatto anche a sistemi multi- motore.
- Massima frequenza d'uscita 1.000 Hz.
- Filtro doppia gabbia per compatibilità "EMC" EN50081-2 (interno).
- Reattanza di linea trifase a pacco lamellare a.c (interna). Diminuisce le armoniche verso rete del 30%, protegge l'Inverter da extracorrenti e impurità di linea, diminuisce la corrente d'ingresso, etc.
- Filtro lato motore (interno).
- Chopper di frenatura (interno) dimensionato per frenare fino al 150 % in frequenza massima d'uscita fino a 1.000 Hz.

- Frequenza di commutazione verso il motore da 1 a 16 KHz tarabile linearmente da tastiera, rende silenzioso il motore fornendo un'onda sinusoidale senza creare problemi di disturbi.
- Disponibili due relè configurabili con contatti da 3° 220 / 240 Vca.
- Tastiera alfanumerica estraibile multi-lingua (Tedesco- Italiano - Francese - Inglese - Spagnolo, etc).
- Seriale RS 232 per programmazione/diagnostica da tastiera PC.
- Possibilità di tarare il motore con tensione e frequenze d'uscita a scelta (es. Inverter alimentato a 380Vca può alimentare uno o più mandrini a 220Vca 800 Hz, etc) reimpostandole all'interno dell' Inverter fino al massimo di 8 tipi diversi.
- Possibilità di mantenere costante nel tempo il valore di tensione in uscita, anche con variazioni di tensioni d'ingresso (alimentazione rete).
- Applicazione multi- tabella per gestire fino a 8 motori diversi con un unico Inverter.
- Software per gestione con controllo P.I. interno.
- L'Inverter permette di usare cavi motore con lunghezza massima fino a 200 mt senza usare nessuna reattanza esterna per l'abbassamento del fattore capacitivo dei cavi.
- Possibilità di avere l'Inverter sia in versione IP-20 che IP-54 con tensioni trifasi da 208 % - 15 % fino a 690 Vca +15.
- Tutti gli Inverter Vacon sono marchiat CE UL e c- UL standard produttivo ISO- 9001 (soddisfa in termini di sicurezza EN50178, EN60204-1, FI, GOST R).

Inverter VACON serie NXS

TIPO	MONOFASE		TRIFASE		PESO (Kg)	Induttanza di linea trifase filtro e toroide per EMS unità di frenata interna
	Potenza (Kw)	Corrente motore (A)	Potenza (Kw)	Corrente motore (A)		
NXS00072	0.75	4.8	1.1	6.6	5	INCLUSO
NXS00082	1.1	6.6	1.5	7.8	5	INCLUSO
NXS00112	1.5	7.8	2.2	11	5	INCLUSO
NXS00122	2.2	11	3	12.5	5	INCLUSO
NXS00172	3	12.5	4	17.5	8.1	INCLUSO
NXS00252	4	17.5	5.5	25	8.1	INCLUSO
NXS00312	5.5	25	7.5	31	8.1	INCLUSO

- **ALIMENTAZIONE 208-230 VOLT Hz 50/60 3~.**
- **USCITA INVERTER 220 VOLT Hz 1000.**

TIPO	TRIFASE		PESO (Kg)	Induttanza di linea trifase filtro e toroide per EMS unità di frenata interna	TAGLIA
	Potenza (Kw)	Corrente motore (A)			
NXS00035	1.1	3.6	5	INCLUSO	FR 4
NXS00045	1.5	4.7	5	INCLUSO	FR 4
NXS00055	2.2	6.2	5	INCLUSO	FR 4
NXS00075	3	8.4	5	INCLUSO	FR 4
NXS00095	4	9.9	5	INCLUSO	FR 4
NXS00125	5.5	13.2	5	INCLUSO	FR 4
NXS00165	7.5	17.6	8.1	INCLUSO	FR 5
NXS00225	11	25	8.1	INCLUSO	FR 5
NXS00315	15	34	8.1	INCLUSO	FR 5
NXS00385	18.5	42	18.5	INCLUSO	FR 6
NXS00455	22	51	18.5	INCLUSO	FR 6

- **ALIMENTAZIONE 380-400 VOLT Hz 50/60 3~.**
- **USCITA INVERTER 380-400 VOLT Hz 1000.**

La **ELTE** s.r.l. utilizza, oltre la serie sopra indicata, Inverters sperimentati sui propri mandrini e risultanti di ottima qualità della **EUROTHERM DRIVES** e **BERGES** i quali possono essere normalmente forniti su richiesta.

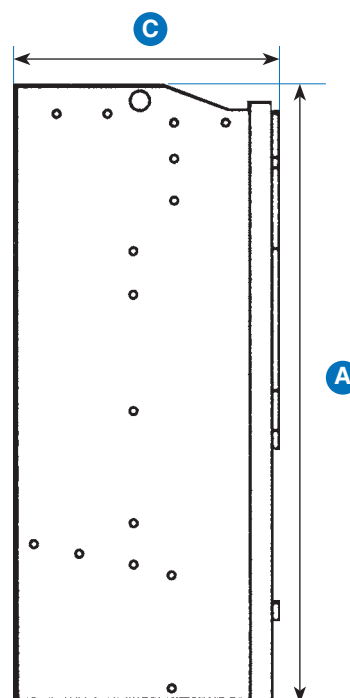
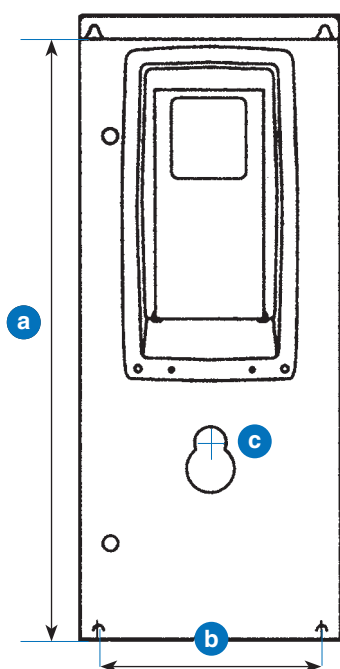
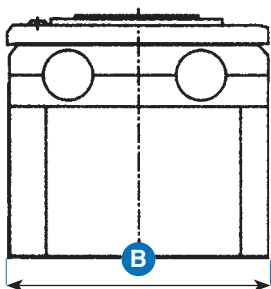
Installazione degli INVERTERS

Raffreddamento

Per assicurare una efficace circolazione dell'aria lo spazio libero attorno all'inverter deve avere determinate dimensioni (vedi Tab.1). Qualora si volessero montare unità multiple una sopra l'altra la distanza deve essere uguale a $b+c$.

Spazio di installazione e dimensioni di montaggio

DIMENSIONI	FR4	FR5	FR6	FR7	FR8	FR9	FR10
A - Altezza	327	419	558	630	755	1150	1130
B - Larghezza	128	144	195	237	285	476	471
C - Profondità	190	214	237	257	312	362	420
Quote di fissaggio							
A - Altezza	313	406	541	614	732	1120	833
B - Larghezza	100	100	148	190	255	400	380
C - Diametro	M6	M6	M8	M8	M8	M8	M10





Static frequency converters *(Inverters)* **0.55 Kw up to 60 Kw**

TESTED AND MARKED **ELTE** WHICH ENSURES THE OPERATION AT THE MAXIMUM PERFORMANCES WITH ITS OWN ELECTRIC SPINDLES

RELIABLE TECHNOLOGY, COMPACT, STRONG, EASY TO USE

Operating features:

Vectorial inverter with automatic calculation of the Vector each millisecond to the motor, calculating also the related connection cables, by using the instantaneous values measured.

The Vacon processor is based on the vectorial control Sensorless with mathematic model of emulation and on the ASIC circuit. The vectorial control is made by exploiting the coordinates system of the magnetic flow of the stator. In this way the calculation remains insensitive to the variation of the electric magnitude of the motor.

- The on speed error under fixed situation is lower than 0.5.
- The response time of the torque is lower than 10 ms.
- No torque oscillation.
- No sensitive to resonance vibrations.
- High starting torque: 200 %.
- High breakaway starting current: 2.5 x ict.
- Suitable also for multi-motor systems.
- Maximum output frequency 1.000 hz.
- Double cage filter for compatibility to "EMC" EN50081-2 (Internal).
- Three phase line reactance by a.c lamellar packet (internal). It reduces the harmonics to the mains by 30%, protects the inverter against extra-currents and line impurities, it reduces the input current etc.
- Filter on the motor side (internal).
- Braking chopper (internal) sized to brake up to 150%.

- Maximum frequency up to 1.000 Hz.
- Commutation frequency to the motor from 1 to 16 KHz which can be calibrated linearly from the keyboard; it makes the motor silenced, providing a sinusoidal wave with no interferences.
- Two configurable relays with contacts from 3a 220/240 Vca are available.
- Multilingual detachable alphanumeric keyboard (German-Italian-French-English-Spanish, etc.).
- Serial RS 232 for programming/diagnostics from keyboard to PC.
- Possibility to calibrate the motor with output voltages and frequencies by choice (ex. An inverter supplied at 380 Vac may supply one or more spindles at 220 Vac 800 Hz, etc.) presetting them inside the inverter up to maximum of 8 different types.
- Possibility to keep constant along the time the value of the output voltage, also with variations of the input voltages (mains power supply).
- Management software with an internal P.I control.
- The Inverter allows to use motor cables with maximum length up to 200 m without using any external reactance to reduce the capacitive factor of the cables.
- Possibility to receive the inverter either in Version IP-20 or IP-54 with three-phase voltages from 208 – 15% up to 690 Vca +15.
- All Vacon inverters are marked CE UL and c-UL., manufacturing standard ISO-9001 (it meets the safety terms EN50178, EN60204-1, FI, GOST R).

VACON inverter NXS series

TYPE	SINGLE PHASE		THREE PHASE		WEIGHT (Kg)	Three-Phase inductance filter and toroid for EMS internal braking
	Power (Kw)	Current motor (A)	Power (Kw)	Current motor (A)		
NXS00072	0.75	4.8	1.1	6.6	5	INCLUDED
NXS00082	1.1	6.6	1.5	7.8	5	INCLUDED
NXS00112	1.5	7.8	2.2	11	5	INCLUDED
NXS00122	2.2	11	3	12.5	5	INCLUDED
NXS00172	3	12.5	4	17.5	8.1	INCLUDED
NXS00252	4	17.5	5.5	25	8.1	INCLUDED
NXS00312	5.5	25	7.5	31	8.1	INCLUDED

- **INPUT 208-230 VOLT Hz 50/60 3~.**
- **OUTPUT INVERTER 220 VOLT Hz 1000.**

TYPE	THREE PHASE		WEIGHT (Kg)	Three-Phase inductance filter and toroid for EMS internal braking	FRAME SIZE
	Power (Kw)	Current motor (A)			
NXS00035	1.1	3.6	5	INCLUDED	FR 4
NXS00045	1.5	4.7	5	INCLUDED	FR 4
NXS00055	2.2	6.2	5	INCLUDED	FR 4
NXS00075	3	8.4	5	INCLUDED	FR 4
NXS00095	4	9.9	5	INCLUDED	FR 4
NXS00125	5.5	13.2	5	INCLUDED	FR 4
NXS00165	7.5	17.6	8.1	INCLUDED	FR 5
NXS00225	11	25	8.1	INCLUDED	FR 5
NXS00315	15	34	8.1	INCLUDED	FR 5
NXS00385	18.5	42	18.5	INCLUDED	FR 6
NXS00455	22	51	18.5	INCLUDED	FR 6

- **INPUT 380-400 VOLT Hz 50/60 3~.**
- **OUTPUT INVERTER 380-400 VOLT Hz 1000.**

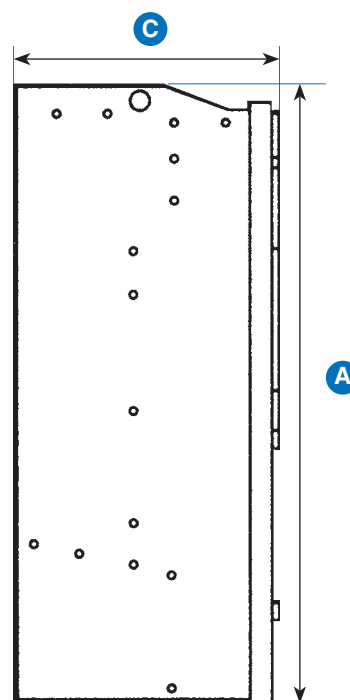
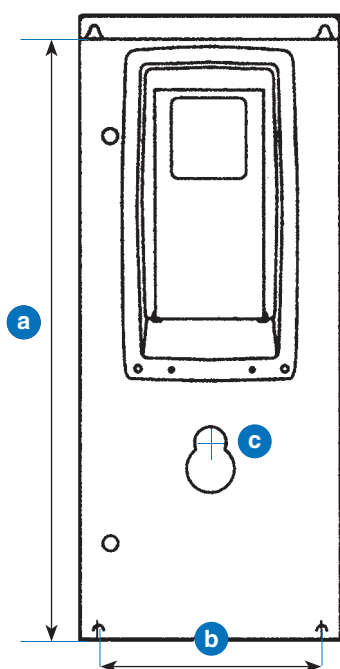
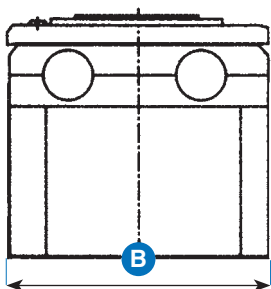
In addition to above mentioned inverters, **ELTE** srl can also offer high-quality inverters **EUROTHERM DRIVES** and **BERGES** which have been tested with our electric spindles.

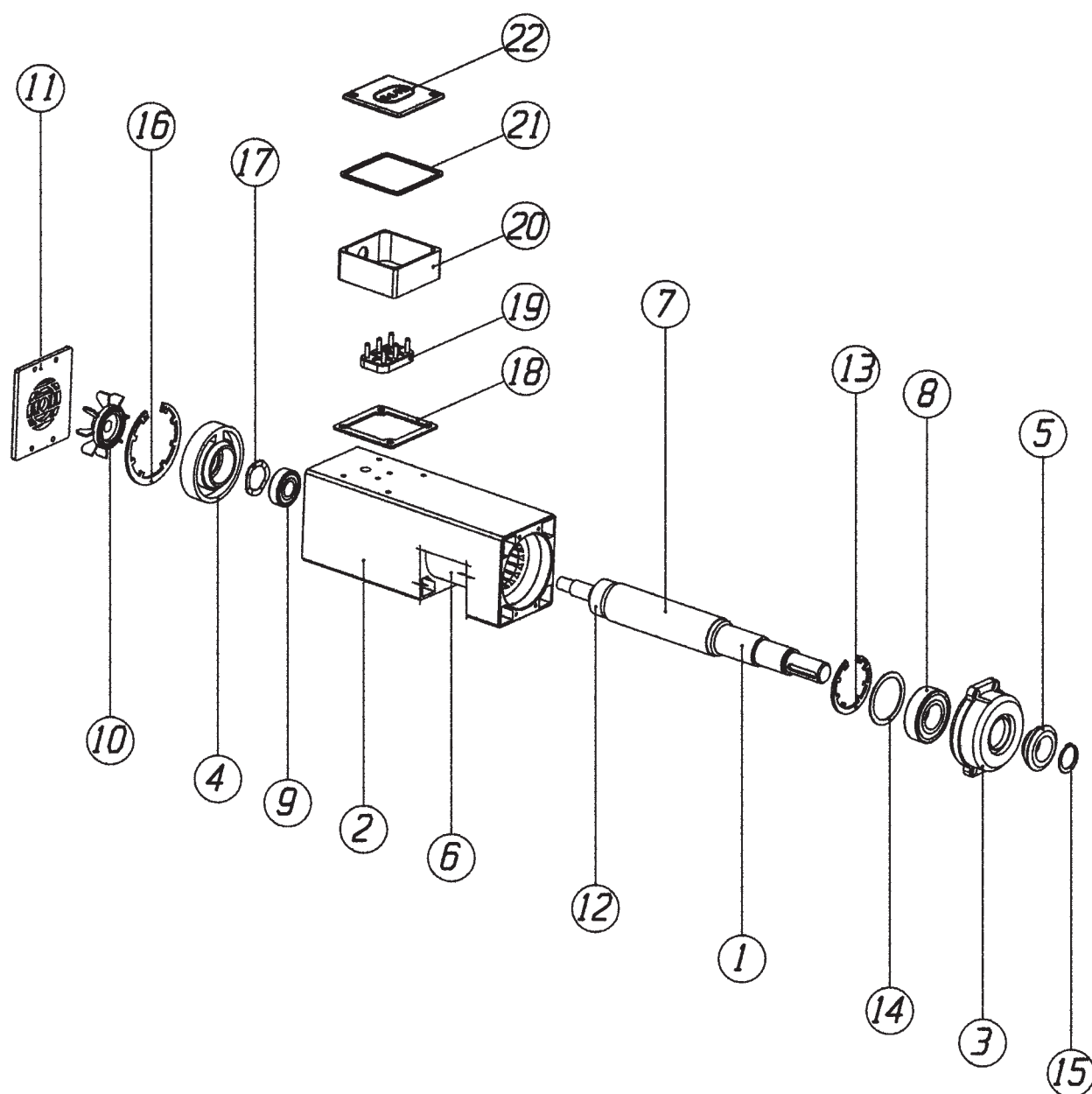
Installation of the INVERTERS

For assuring proper cooling air circulation the space around the Inverter should have determinate dimensions. See under mentioned table for dimensions. If multiple units are to be installed above each other, the dimensions must be B + C and air from outlet lower unit must be directed away from inlet of the upper unit.

Installation space dimensions e mounting dimensions

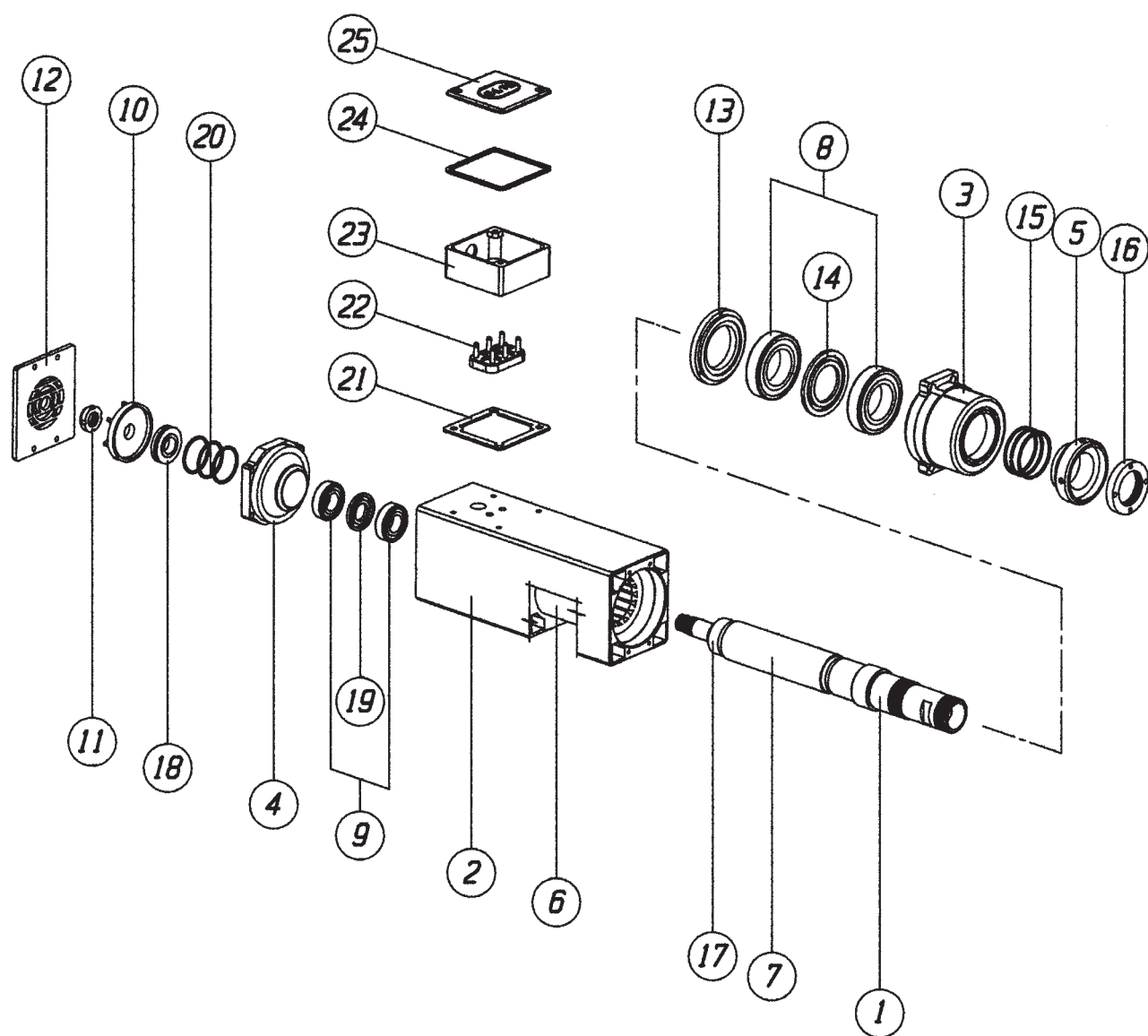
DIMENSIONS	FR4	FR5	FR6	FR7	FR8	FR9	FR10
A - Height	327	419	558	630	755	1150	1130
B - Width	128	144	195	237	285	476	471
C - Depth	190	214	237	257	312	362	420
FASTENING DIM.							
A - Height	313	406	541	614	732	1120	833
B - Width	100	100	148	190	255	400	380
C - Fastening bolt size	M6	M6	M8	M8	M8	M8	M10





POS.	DESCRIZIONE
1	ALBERO
2	CARCASSA
3	COPERCHIO ANTERIORE
4	COPERCHIO POSTERIORE
5	LABIRINTO
6	STATORE AVVOLTO
7	ROTORE
8	CUSCINETTO ANTERIORE
9	CUSCINETTO POSTERIORE
10	VENTOLA
11	PIASTRINA COPRIVENTOLA
12	BUSSOLA DI BILANCIATURA
13	SEEGER PER INTERNI
14	DISTANZIALE
15	SEEGER
16	SEEGER PER INTERNI
17	MOLLA DI COMPENSAZIONE
18	GUARNIZIONE BASE
19	MORSETTIERA
20	COPRIMORSETTIERA
21	GUARNIZIONE COPERCHIO
22	COPERCHIO COPRIMORSETTIERA

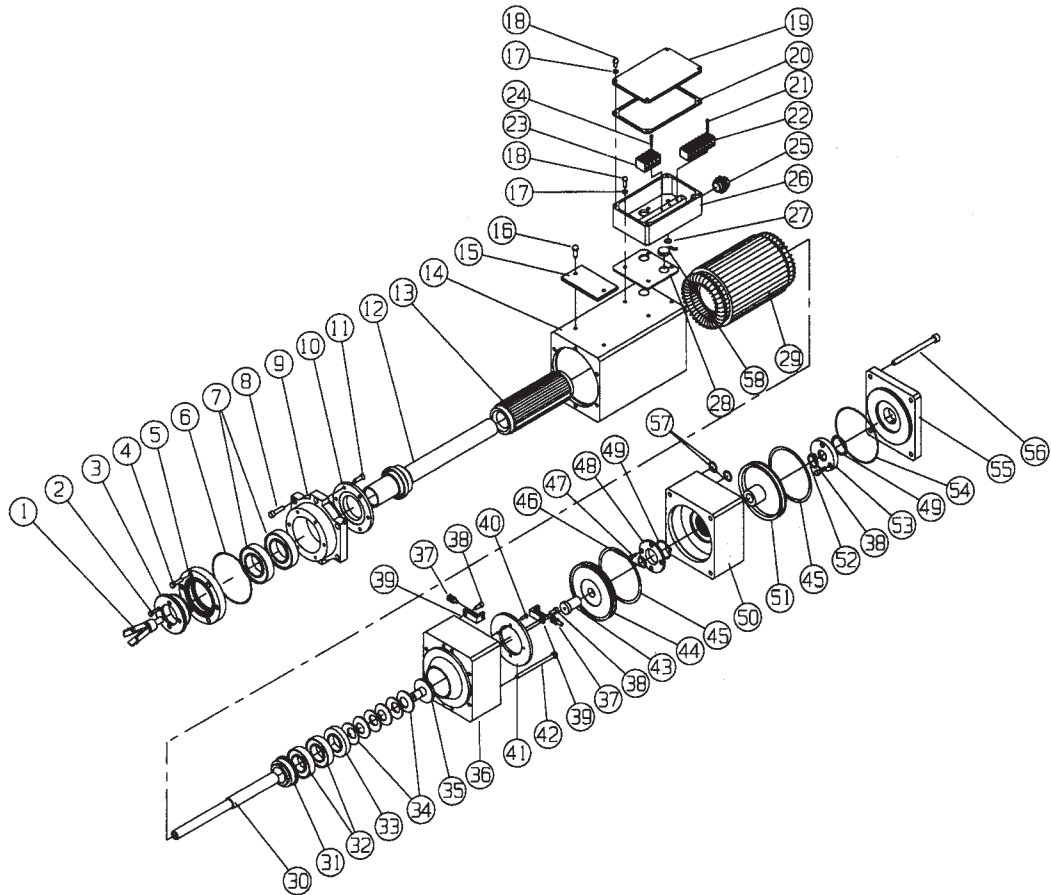
POS.	DESCRIPTION
1	SHAFT
2	FRAME
3	FRONT COVER
4	REAR COVER
5	LABIRYNTH SEAL
6	WOUND STATOR
7	ROTOR
8	FRONT BEARING
9	REAR BEARING
10	FAN
11	FAN COVER PLATE
12	BALANCING BUSH
13	"O" RING
14	DISTANCE RING
15	"O" RING
16	"O" RING
17	COMPENSATION SPRING
18	GASKET
19	TERMINAL BOARD
20	TERMINAL COVER
21	COVER GASKET
22	TERMINAL BOARD COVER



POS.	DESCRIZIONE
1	ALBERO
2	CARCASSA
3	COPERCHIO ANTERIORE
4	COPERCHIO POSTERIORE
5	LABIRINTO
6	STATORE AVVOLTO
7	ROTORE
8	COPPIA CUSCINETTO ANTERIORE
9	COPPIA CUSCINETTO POSTERIORE
10	VENTOLA
11	GHIERA AUTOBLOCCANTE
12	PIASTRINA COPRIVENTOLA
13	GHIERA BLOCCA COPPIA
14	DISTANZIALE
15	SEGMENTI LAMELLARI
16	CONTROGHIERA ANTERIORE
17	BUSSOLA DI BILANCIATURA
18	GHIERA BLOCCA COPPIA
19	DISTANZIALE
20	SEGMENTI LAMELLARI
21	GUARNIZIONE BASE
22	MORSETTIERA
23	COPRIMORSETTIERA
24	GUARNIZIONE COPERCHIO
25	COPERCHIO COPRIMORSETTIERA

POS.	DESCRIPTION
1	SHAFT
2	FRAME
3	FRONT COVER
4	REAR COVER
5	LABIRYNTH SEAL
6	WOUND STATOR
7	ROTOR
8	FRONT PAIR OF BEARINGS
9	REAR PAIR OF BEARINGS
10	FAN
11	SELFLOCKING NUT
12	FAN COVER PLATE
13	BEARINGS PAIR - LOCKING NUT
14	DISTANCE RING
15	LAMELLAR SEGMENTS
16	FRONT NUT
17	BALANCING BUSH
18	BEARINGS PAIR - LOCKING NUT
19	DISTANCE RING
20	LAMELLAR SEGMENTS
21	GASKET
22	TERMINAL BOARD
23	TERMINAL COVER
24	COVER GASKET
25	TERMINAL BOARD COVER

RICAMBI - SPARE PARTS TMA

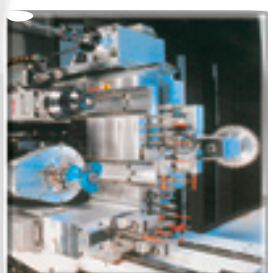


POS.	DESCRIZIONE	POS.	DESCRIZIONE	POS.	DESCRIZIONE
1	PINZA CAMBIO RAPIDO	21	VITE M3x16	41	FLANGIA CHIUSURA ARIA
2	VITE M4x14	22	MORSETTO MK3/8	42	VITE M6x80
3	GHIERA LABIRINTO	23	VITE M3x20	43	PERNO BLOCC. PISTONE
4	VITE M5x20	24	MORSETTO BK4	44	PISTONE INFERIORE
5	FLANGIA ANTERIORE	25	PRESSACAVO NYLON 3/4"	45	GUARNIZIONE OR 6375
6	GUARNIZIONE OR 2350	26	CORPO BASETTA MOTORE	46	GUARNIZIONE OR 2068
7	CUSCINETTI	27	GUARNIZIONE OR 109	47	VITE M4x12
8	VITE M6x20	28	GUARNIZIONE SCATOLA MORSETTIERA	48	FLANGIA TEFLON DM.30
9	CORPO CALOTTA INFERIORE	29	STATORE	49	GUARNIZIONE OR 3118
10	FLANGIA POSTERIORE	30	ALBERINO BLOCC., SBLOCC.	50	CALOTTA DOPPIA CILINDRO SBLOC.
11	VITE M5x16	31	DISTANZIALE ROTORE	51	PISTONE SUPERIORE
12	ALBERO MOTORE FRESA	32	CUSCINETTO	52	GUARNIZIONE OR 3081
13	ROTORE	33	GHIERA BLOCCAGGIO CUSCINETTO	53	GUARNIZIONE IN TEFLON
14	CARCASSA MOTORE	34	MOLLA A TAZZA	54	GUARNIZIONE OR 2400
15	TARGA IDENTIFICAZIONE MOTORE	35	PERNO MOLLE	55	CALOTTA CILINDRO SBLOCCAGGIO
16	RIVETTO	36	COPERCHIO POSTERIORE	56	VITE M10x100
17	RONDELLA DENTELLATA	37	INTER. DI PROSSIMITÀ MB5 26 PFAKL	57	GUARNIZIONE OR 2021
18	VITE M5x14	38	VITE M5x12	58	SONDA TERMICA
19	COPERCHIO MORSETTIERA	39	STAFFA INTERRUETTORE		
20	GUARNIZIONE COPERCHIO MORSETTIERA	40	VITE M4x10		

POS.	DESCRIPTION	POS.	DESCRIPTION	POS.	DESCRIPTION
1	SPRING COLLET	21	SCREW M3x16	41	AIR FLANGE CHOKING
2	SCREW M4x14	22	TERMINAL MK3/8	42	SCREW M6x80
3	LOCK NUT	23	SCREW M3x20	43	PISTON CLAMPING NUT
4	SCREW M5x20	24	TERMINAL BK4	44	LOWER PISTON
5	FRONT FLANGE	25	GLAND	45	"O" RING 6375
6	"O" RING 2350	26	TERMINAL BOARD CASING	46	"O" RING 2068
7	PAIR OF AC BEARINGS	27	"O" RING 109	47	SCREW M4x12
8	SCREW M6x20	28	TERMINAL BOARD GASKET	48	TEFLON FLANGE
9	FRONT BEARINGS SUPPORT	29	STATOR	49	"O" RING 3118
10	REAR FLANGE	30	CLAMPING COLLET INTR. SHAFT	50	TOP CYLINDER
11	SCREW M5x16	31	ROTOR SPACER	51	PISTON
12	SHAFT	32	BEARING	52	"O" RING 3081
13	ROTOR	33	BEARING CLAMPING NUT	53	GASKET
14	MOTOR CASING	34	WASHER	54	"O" RING 2400
15	NAMEPLATE	35	SPRINGS PIN	55	COVER
16	RIVET	36	REAR COVER	56	SCREW M10x100
17	WASHER	37	SENSOR	57	"O" RING 2021
18	SCREW M5x14	38	SCREW M5x12	58	PNP THERMAL PROTECTION
19	TERMINAL BOARD COVER	39	SWITCH BRACKET		
20	TERMINAL BOARD GASKET	40	SCREW M4x10		

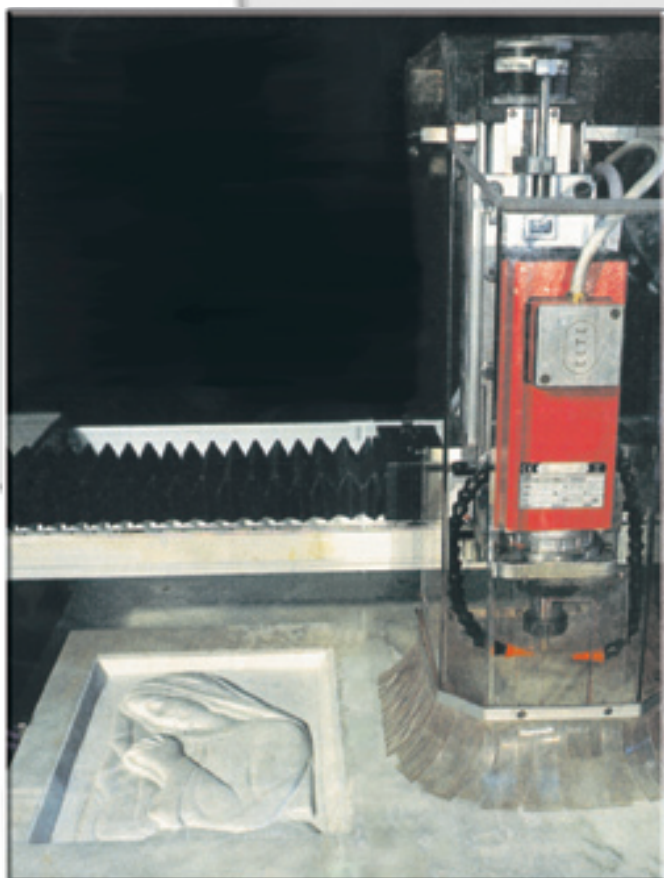
LAVORAZIONE DEL LEGNO

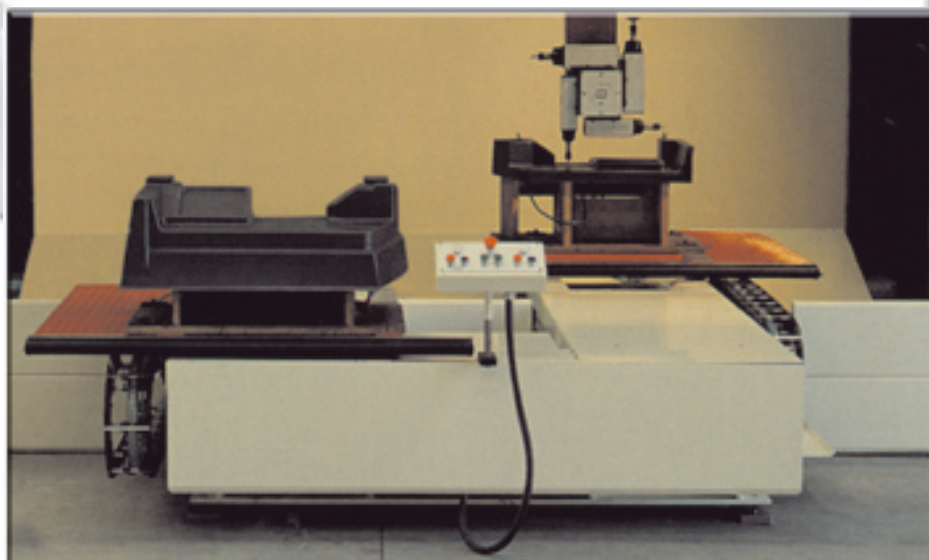
wood working



LAVORAZIONE DEL MARMO

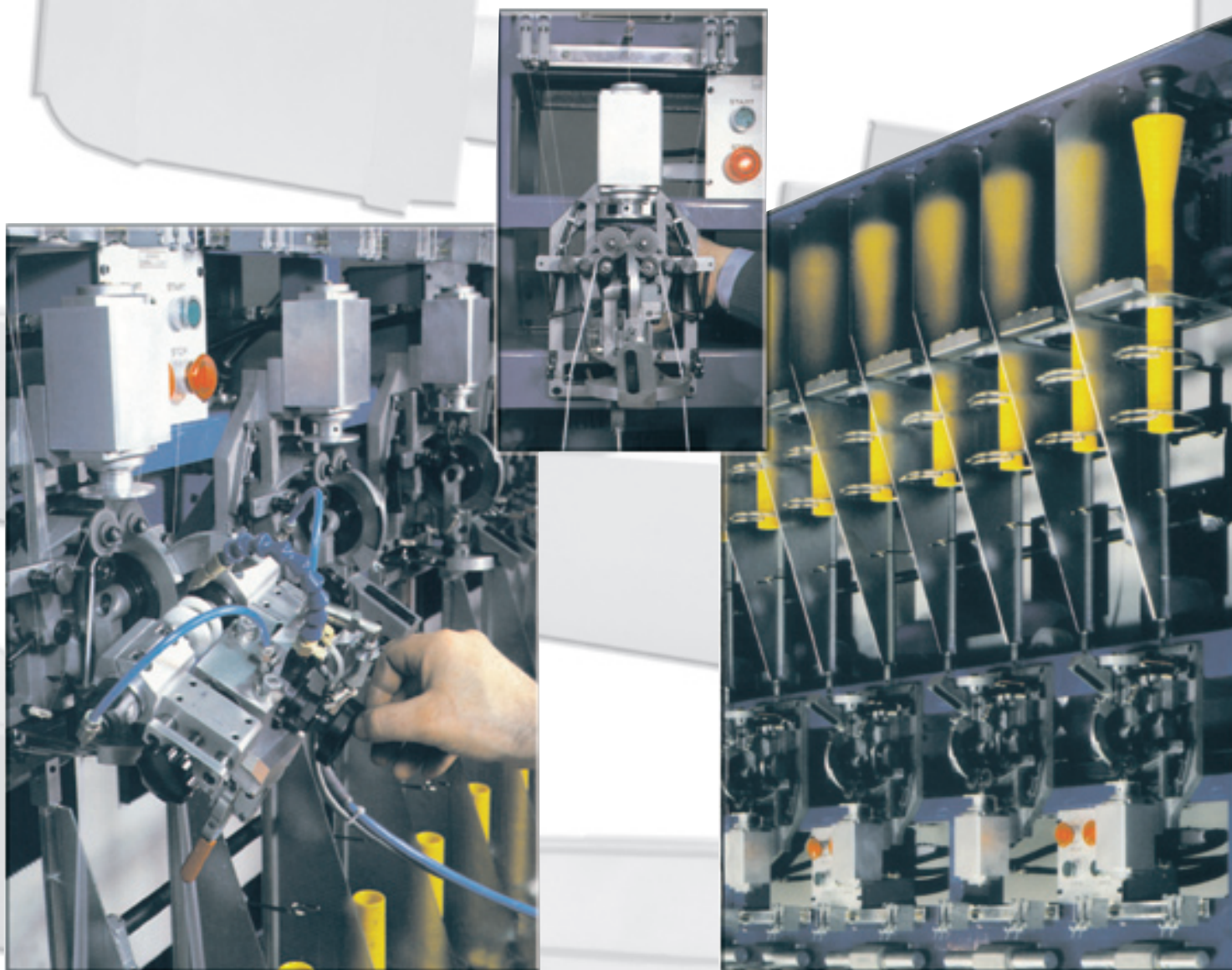
marble working





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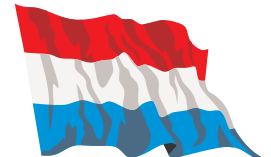
Per il mercato asiatico contattare i nostri uffici in Belgio
For Asian business please contact our office in Belgium

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