

# DOGA



**MOTORES C.C.  
D.C. MOTORS  
MOTEURS C.C.  
GLEICHSTROMMOTOREN**



**MOTORREDUCTORES C.C.  
D.C. MOTORS WITH GEAR  
MOTOREDUCTEURS C.C.  
GLEICHSTROMGETRIEBEMOTOREN**



04/2006

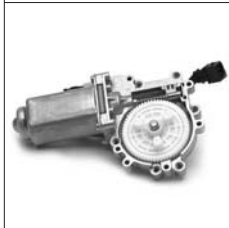
Un motor para cada aplicación.  
One application, one motor.  
Un moteur pour chaque application.  
Ein Motor für jede Anwendung.

## "CUSTOMISED"



► Los motores y motorreductores de corriente continua DOGA de este catálogo han sido desarrollados por nuestros ingenieros para lograr una adaptación óptima a las necesidades del cliente en todo tipo de aplicaciones, en el sector automóvil o en el sector industrial.

En DOGA somos especialistas en adaptar nuestros productos "estándar" a las necesidades del cliente: desde un conector especial, un eje a medida, un bobinado que ajuste las prestaciones del motor, hasta un diseño de motor completamente de nuevo.



Nuestra misión es la de desarrollar motores y motorreductores de corriente continua a medida, y hasta 72 V, para satisfacer las necesidades particulares de nuestros clientes.

► The Doga DC motors and gearmotors of this catalogue have been developed by our engineers to obtain an optimal adaptation to the necessities of the client for all type of applications, as much in the sector of the automobile, as in the rest of the industry.



In Doga we are specialist in adapting our "standard" products to the necessities of the client. From a special connector, to an axis, to size a winding that fits the specification of the motor to even a brand new design of motor.



Our mission is to develop customized DC motor and gearmotors, up to 72 V, to satisfy the necessities of our clients.

► Les moteurs et motoréducteurs à courant continu Doga de ce catalogue ont été conçus par nos ingénieurs pour une adaptation optimale aux besoins du client et pour tout type d'application, tant pour le secteur automobile que pour l'industrie en général.

Chez Doga nous sommes spécialistes dans l'adaptation de produits "standard" aux nécessités du client. Du connecteur spécial, à l'axe à dimension spéciale, l'induit pour ajuster les capacités du moteur jusqu'à la conception totale d'un nouveau moteur.

Notre mission est de développer des moteurs et motoréducteurs à courant continu sur mesure, et jusqu'à 72V, pour satisfaire les besoins de nos clients.

► Die Gleichstrommotoren mit und ohne Getriebe in diesem Katalog sind von unseren Technikern entwickelt worden, um die beste Anpassung an die Kundenanforderungen zu erzielen, für jede Art von Anwendung, sei es im Automotivbereich, sei es in der übrigen Industrie.

Wir bei Doga sind Spezialisten darin, unsere "Standardmodelle" an die Anforderungen des Kunden anzupassen. Seien es eine besondere Steckverbindung oder ein besonderes Wellenende, eine Wicklung, die den Wirkungsgrad des Motors verfeinert bis hin zu einem vollständigen neuen Design.

Wir sehen es als unsere Aufgabe an, Gleichstrommotoren mit und ohne Getriebe kundenspezifisch zu entwerfen, bis zu 72 V Spannung, um die Bedürfnisse unserer Kunden zu erfüllen.

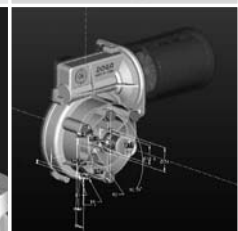
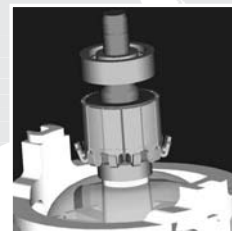
## "SPECIAL"

► DOGA ofrece a sus clientes su tecnología y experiencia en la fabricación de motores y motorreductores de c.c., para desarrollar soluciones específicas que requieran una motorización en corriente continua y en baja tensión, hasta 75 V, en tecnología de imanes permanentes, con carbones o tecnología brushless.

► DOGA offers to their clients their technology and experience in the manufacture of DC motors and gearmotors, to develop specific solutions that require a motorization in DC and low voltages, up to 75 V, as much as in permanent magnet technology as with coals as without them (brushless).

► DOGA offre à ses clients sa technologie et expérience dans la fabrication de moteurs et motoréducteurs c.c., afin de développer des solutions spécifiques demandant une motorisation à courant continu et de basse tension, jusqu'à 75V, tant avec une technologie à aimants permanents qu'avec ou sans charbons (brushless).

► DOGA bietet seinen Kunden Technologie und Erfahrung bei der Herstellung von Gleichstrommotoren mit und ohne Getriebe an, um spezifische Lösungen zu finden, die eines Gleichstromantriebs im Niederspannungsbereich bis zu 75 V bedürfen, in Permanentmagnettechnik ebenso wie in bürstenlosen Technik.



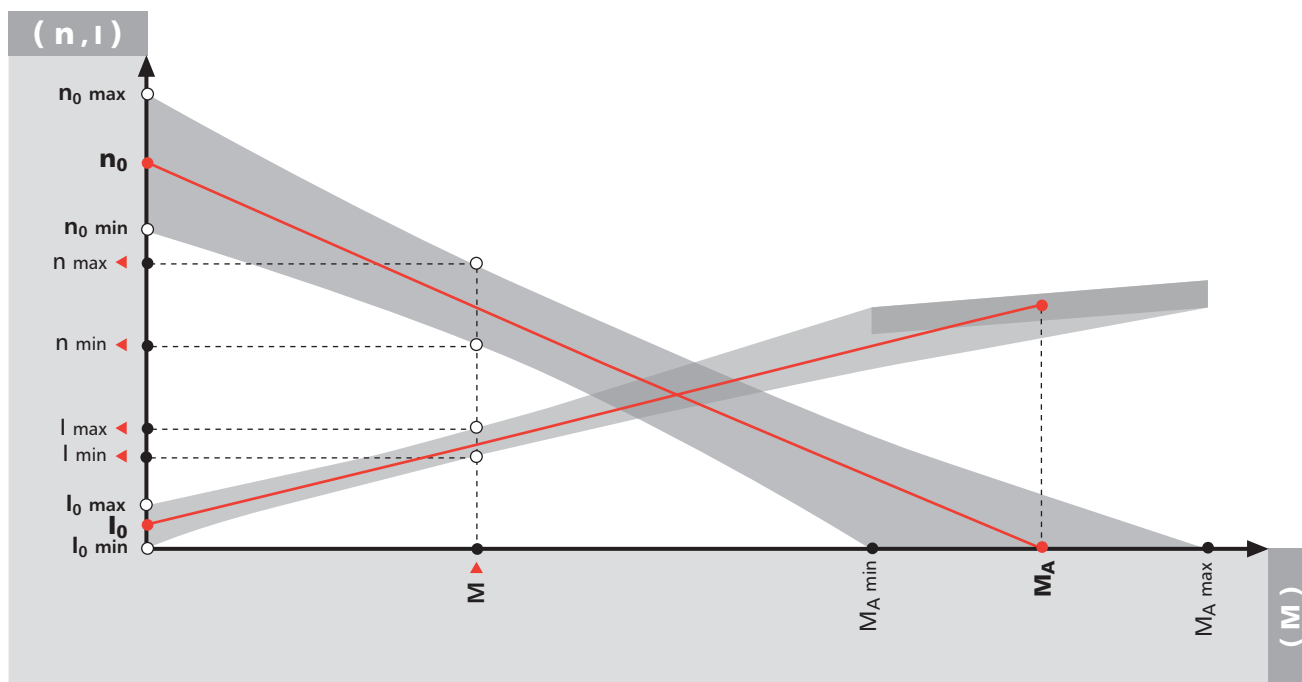
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### SÍMBOLOS - SYMBOLS - SYMBOLES - ZEICHENERKLÄRUNG

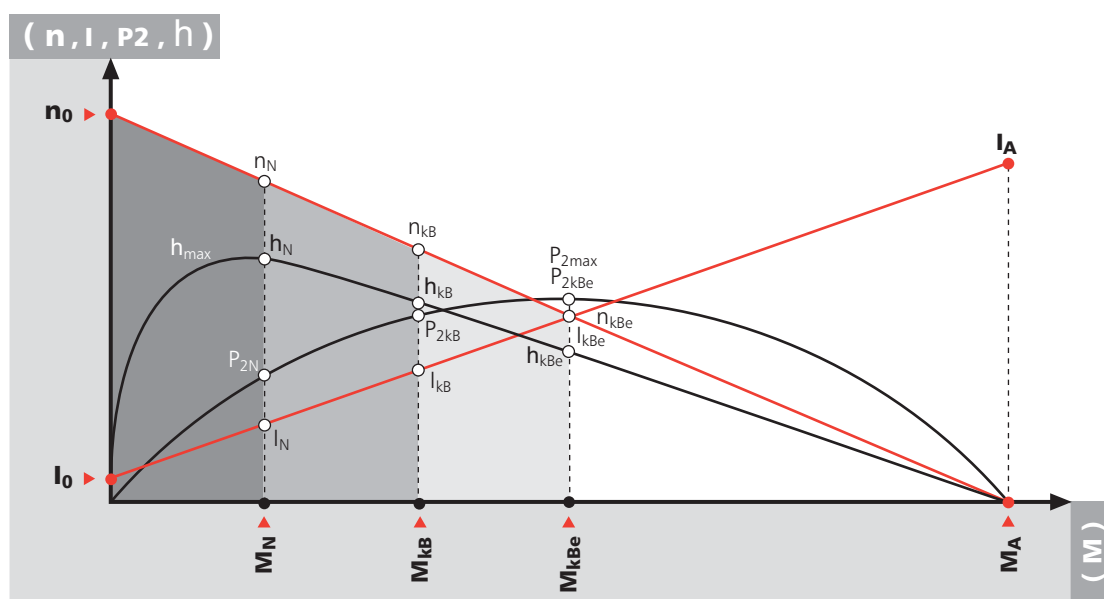
	ESPAÑOL	ENGLISH	FRANÇAIS	DEUTSCH
<b>BRO</b>	▶ Bronce	Bronze	Bronze	Bronze
<b>CEL</b>	▶ Resina fenólica estratificada	Resin bonded fabric	Résine phénolique stratifiée	Hartgewebe
<b>η (%)</b>	▶ Rendimiento nominal	Efficiency	Courant nominal	Wirkungsgrad nominal
<b>η max (%)</b>	▶ Rendimiento máximo	Maximum efficiency	Rendement maximum	Maximale Wirkungsgrad
<b>i</b>	▶ Relación de reducción	Transmission ratio	Rapport de réducteur	Übersetzung
<b>I (A)</b>	▶ Corriente	Current	Courant	Stromaufnahme
<b>I<sub>0</sub> (A)</b>	▶ Corriente en vacío	No load current	Courant à vide	Stromaufnahme im Leerlauf
<b>I<sub>2kBe</sub> (A)</b>	▶ Corriente en servicio de muy corta duración	Current in very short term operation	Courant de service très courte durée	Strom bei extremem Kurzzeitbetrieb
<b>I<sub>a</sub> (A)</b>	▶ Corriente de arranque	Starting current	Courant de démarrage	Anlaufstrom
<b>I<sub>kB</sub> (A)</b>	▶ Corriente en servicio de corta duración	Current in short term operation	Courant de service courte durée	Strom bei Kurzzeitbetrieb
<b>I<sub>n</sub> (A)</b>	▶ Corriente nominal	Nominal current	Courant nominal	Nominalstrom
<b>IP</b>	▶ Grado de estanqueidad	Watertightness	Etanchéité	Feuchtigkeitsschutzklasse
<b>kB</b>	▶ Servicio intermitente	Short operating	Service intermittent	Kurzzeitbetrieb
<b>kB (A)</b>	▶ Rendimiento en servicio de corta duración	Efficiency in short term operation	Rendement de service courte durée	Wirkungsgrad bei Kurzbetrieb
<b>kBe</b>	▶ Servicio de muy corta duración	Very short operation	Service de très courte durée	Extremer Kurzzeitbetrieb
<b>kBe (A)</b>	▶ Rendimiento en servicio de muy corta duración	Efficiency in very short term operation	Rendement de service de très courte durée	Wirkungsgrad bei Extremkurzbetrieb
<b>M (N.m)</b>	▶ Par	Torque	Couple	Drehmoment
<b>Ma (N.m)</b>	▶ Par de arranque	Starting torque	Couple de démarrage	Anzugsdrehmoment
<b>Mk (N.m)</b>	▶ Par de autobloqueo	Self-locking torque	Couple d'autoblocage	Selbsthemmungsmoment
<b>M<sub>kB</sub> (N.m)</b>	▶ Par en servicio de corta duración	Torque at the output shaft in short term operation	Couple de service courte durée	Drehmoment bei Kurzbetrieb
<b>M<sub>kBe</sub> (N.m)</b>	▶ Par en servicio de muy corta duración	Torque at the output shaft in very short operation	Couple de service très courte durée	Drehmoment bei Extremkurzbetrieb
<b>Mn (N.m)</b>	▶ Par nominal	Nominal torque	Couple nominal	Drehmoment nominal
<b>N</b>	▶ Servicio continuo	Continuous running	Service continu	Dauerbetrieb
<b>n (r.p.m.)</b>	▶ Velocidad	Speed	Vitesse	Geschwindigkeit
<b>n<sub>0</sub> (r.p.m.)</b>	▶ Velocidad en vacío	No load speed	Vitesse à vide	Geschwindigkeit im Leerlauf
<b>n<sub>kB</sub> (r.p.m.)</b>	▶ Velocidad en servicio de corta duración	Speed in short operation	Vitesse de service courte durée	Geschwindigkeit bei Kurzbetrieb
<b>n<sub>kBe</sub> (r.p.m.)</b>	▶ Velocidad en servicio de muy corta duración	Speed in very short operation	Vitesse de service très courte durée	Geschwindigkeit bei Extremkurzbetrieb
<b>n<sub>n</sub> (r.p.m.)</b>	▶ Velocidad nominal	Nominal speed	Vitesse nominale	Geschwindigkeit nominal
<b>P (kg)</b>	▶ Peso aproximado	Approximate weight	Poids approximatif	Gewicht (ca.)
<b>P (W)</b>	▶ Potencia	Power	Puissance	Leistung
<b>P<sub>1</sub> (W)</b>	▶ Potencia absorbida (U.I)	Absorbed power (U.I)	Puissance absorbée (U.I)	Aufgenommene Leistung (U.I.)
<b>P<sub>2 max</sub></b>	▶ Potencia útil máxima	Maximum power at the output shaft	Puissance utile maximum	Maximale abgegebene Leistung
<b>P<sub>2</sub> (W)</b>	▶ Potencia nominal, útil	Nominal power, useful	Puissance nominale, utile	Abgegebene Leistung
<b>P<sub>2kB</sub> (W)</b>	▶ Potencia útil en servicio de corta duración	Power at the output shaft in short operation	Puissance utile de service courte durée	Abgegebene Leistung bei Kurzbetrieb
<b>P<sub>2kBe</sub> (W)</b>	▶ Potencia útil en servicio de muy corta duración	Power at the output shaft in very short operation	Puissance utile de service très courte durée	Abgegebene Leistung bei Extremkurzbetrieb
<b>PLA</b>	▶ Plástico	Plastic	Plastique	Kunststoff
<b>U (V)</b>	▶ Tensión	Voltage	Tension	Spannung
<b>Un (V)</b>	▶ Tensión nominal	Nominal voltage	Tension nominale	Nennspannung

MÁRGENES DE TOLERANCIA - TOLERANCE ZONES - MARGES DE TOLERANCE - TOLERANZBEREICHE  
 lectura de las curvas - Reading curves - lecture des courbes



CARACTERÍSTICAS DE LAS CURVAS - CHARACTERISTIC CURVES - CARACTÉRISTIQUES DES COURBES - LEISTUNGSKURVEN

- N** Servicio continuo  
Continuous running  
Service continu  
Dauerbetrieb
- kB** Servicio intermitente  
Short operation  
Service intermittent  
Kurzzeitbetrieb
- kBe** Servicio de muy corta duración  
Very short operation  
Service de très courte durée  
Extremer Kurzzeitbetrieb



**259**

motorreductor  
motor with gear  
Moteur réducteur  
Gleichstromgetriebemotoren

a

b

Referencia Serie Reference Série Reihe	Un (W)	Mn (N.m.)	Fn (g.p.m.)	In (A)	Ma (N.m.)	Is (A)	E37	C34	EE2	50:1	5.90	IP53	PLA	a	20
259.3710.20.00	12	20	22	12	130	60	E37	C34	EE2	50:1	5.90	IP53	PLA	a	20
259.3710.30.00	24	20	22	6	130	30	E37	C34	EE2	50:1	5.90	IP53	PLA	a	20
259.3716.20.00	12	15	40	1.8	120	98	E37	C34	EE7	50:1	5.90	IP53	PLA	a	21
259.3716.30.00	24	15	40	9	120	49	E37	C34	EE7	50:1	5.90	IP53	PLA	a	21
259.9001.20.00	12	15	30	1.8	120	98	E37	C34	F2	50:1	5.90	IP53	PLA	a	21
259.9001.30.00	24	15	30	9	120	49	E37	C34	F2	50:1	5.90	IP53	PLA	a	21
259.9008.30.00	24	25	25	7	135	30	E37/E51	C34	EE2	50:1	5.90	IP53	PLA	b	22
259.9016.30.00	24	20	22	6	130	30	E37	C34	EE2	50:1	5.90	IP53	CEL	a	20

MOTORES C.C. - D.C. MOTORES - MOTEURS C.C. - GLEICHSTROMMOTOREN DOGA

EJE - SHAFT - ARBRE - WELLE

CONEXIÓN - CONNECTION - CONNEXION - ANSCHLUSSART

ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIELD

CURVAS - CURVES - COURBES - KURVEN

MOTORES C.C. - D.C. MOTORES - MOTEURS C.C. - GLEICHSTROMMOTOREN

REFERENCIA - PART NUMBER - REFERENCE - ARTIKELNUMMER

AAA.BBBB.CD.EE.F

<b>AAA</b> Serie Série Série Baureihe	<b>BBBB</b> Código producto Product code Codage produit Produktnummer	<b>C</b> Tensión nominal Nominal voltage Tension nominale Nennspannung	<b>"2"</b> = 12V <b>"3"</b> = 24V <b>"5"</b> = 48V <b>"7"</b> = 72V	<b>D</b> Embalaje Packaging Emballage Verpackung	<b>EE</b> Acabado Finish Finition Finish	<b>F</b> "E" = con filtro EMC with EMC filter avec filtre EMC mit Filter EMC
--	--	---	--	---	---	---

ejemplo - example - exemple - zum Beispiel : 111.3711.20.00

<b>111</b> Serie 111 Série 111 Série 111 Reihe 111	<b>3711</b> Código producto Product code Codage produit Produktnummer	<b>2</b> 12V	<b>0</b> Variará según embalaje final Packaging Variable suivant emballage final Verpackung	<b>00</b> Acabado Finish Finition Finish	- Con o sin filtro EMC. Según plano. With or without EMC filter. Avec ou sans filtre EMC suivant plan. Mit Filter EMC
---	--	--------------	--	---	--







NOTAS - NOTES - ANMERKUNGEN

- ▶ Los valores de bloqueo (Ma, Ia) corresponden al par y la corriente del motor en frío con el eje de salida bloqueado. Los valores nominales (Un, In, N, Mn, n) están determinados para funcionamiento continuo (S1 según VDE) a condiciones ambiente normales. Tolerancia ±10%. Las curvas son con el motor en frío.
- ▶ The stall values (Ma, Ia) correspond to the torque and the current of the motor in cold temperatures with the output shaft blocked. The nominal values, (Un, In, N, Mn, n) are for continuous operation (S1 according to VDE) to normal ambient conditions. Tolerance ±10%. The curves are with the motor in cold temperature.
- ▶ Les valeurs de blocage (Ma, Ia) correspondent au couple du moteur à froid avec axe de sortie bloqué. Les valeurs nominales (Un, In, N, Mn, n) sont déterminées pour un fonctionnement continu (S1 suivant VDE) en conditions ambiantes normales. Tolérance ±10%. Les courbes sont avec moteur froid.
- ▶ Die Werte für die Anlaufstrom und der Anzugsdrehmoment (Ma, Ia) entsprechen dem Drehmoment und der Strom des Motors in kaltem Zustand mit blockierter Abgangswelle. Die Nominalwerte werden ermittelt bei Dauerbetrieb (S1 nach VDE) unter normalen Umgebungsbedingungen. Toleranz ±10%. Die Kurven beziehen sich auf den Motor in kaltem Zustand.

## MOTORREDUCTORES - MOTORS WITH GEAR - MOTORÉDUCTEURS - GLEICHSTROMGETRIEBEMOTOREN

SERIE SERIES SÉRIE BAUREIHE	IMAGEN IMAGE IMAGE ABBILDUNG	Mn (N.m)	n (r.p.m.)	PÁGINA PAGE PAGE SEITE
<b>111</b>		1.5 - 6	25 - 240	8
<b>112</b>		0.8	30	10
<b>113</b>		1.4	35	12
<b>119</b>		3.5 - 10	18 - 195	14
<b>210</b>		3	55 - 75	16
<b>258</b>		12 - 15	25 - 40	18
<b>259</b>		15 - 25	22 - 40	20
<b>316</b>	 <b>New</b>	1.5 - 2	40 - 65	22
<b>319</b>	 <b>New</b>	9	30	24

## MOTORES - MOTORS - MOTEURS - MOTOREN

SERIE SERIES SÉRIE BAUREIHE	IMAGEN IMAGE IMAGE ABBILDUNG	Mn (N.m)	n (r.p.m.)	PÁGINA PAGE PAGE SEITE
<b>161</b>		0.05	3500	26
<b>162</b>		0.12 - 0.20	1500 - 3000	28
<b>168</b>		0.3 - 0.75	750 - 3000	30
<b>169</b>		0.40 0.30 - 0.35	1500 - 2900 3200 - 4600	32
<b>260</b>		0.08	3000 - 4000	34
<b>269</b>		0.50 - 0.80	675 - 3000	36

▶ 111

▶ 112

▶ 113

▶ 119

▶ 210

▶ 258

▶ 259

▶ 316

▶ 319

▶ 161

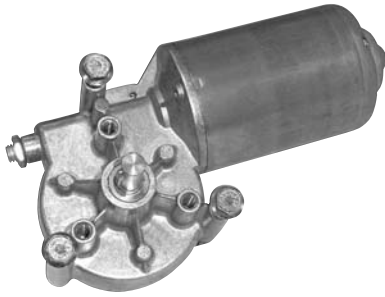
▶ 162

▶ 168

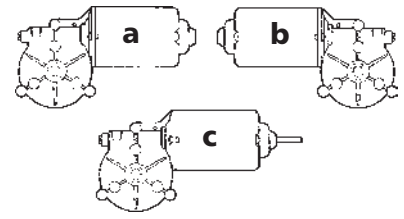
▶ 169

▶ 260

▶ 269



motorreductor  
motor with gear  
motoréducteur  
Gleichstromgetriebemotoren

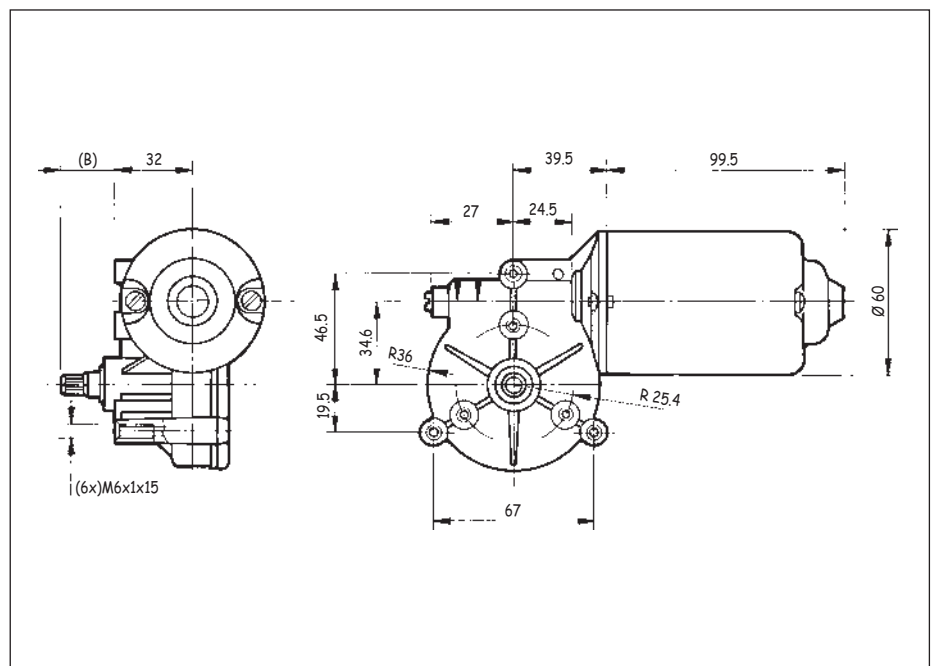


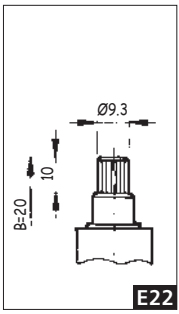
Referencia Reference number Référence nummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Axe Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitsschutzklasse	Material rueda Wheel material Matériau roue Mat. des Schneckenrads	Diseño: a,b,c Design: a,b,c Dessin: a,b,c Abbildung: a,b,c	Curva Curve Courbe Kurve
	Un (V)	Mn (N.m.)	Pn (r.p.m.)	In (A)	Ma (N.m.)	Ia (A)				i	P (kg)	IP			
111.3711.20.00	12	5	40	5	25	25	E22	C25	EE2	62:1	1.25	IP53	PLA	a	1
111.3711.30.00	24	5	40	2.5	25	13	E22	C25	EE2	62:1	1.25	IP53	PLA	a	1
111.3761.20.00	12	5	40	5	25	25	E23	C25	EE2	62:1	1.25	IP53	PLA	a	1
111.3761.30.00	24	5	40	2.5	25	13	E23	C25	EE2	62:1	1.25	IP53	PLA	a	1
111.3761.20.00E	24	5	40	2.5	25	13	E23	C25	F2	62:1	1.25	IP53	PLA	a	1
111.3761.30.00E	24	5	40	2.5	25	13	E23	C25	F2	62:1	1.25	IP53	PLA	a	1
111.3763.20.00	12	6	25	4	25	15	E23	C25	EE2	62:1	1.25	IP53	PLA	a	3
111.3763.30.00	24	6	25	2	25	8	E23	C25	EE2	62:1	1.25	IP53	PLA	a	3
111.4761.30.00	24	5	40	2.5	25	13	E23	C25	EE2	62:1	1.25	IP53	PLA	b	1
111.9031.20.00	12	3	70	6	25	34	E23	C25	EE2	62:1	1.25	IP53	PLA	a	2
111.9031.30.00	24	3	70	3	25	17	E23	C25	EE2	62:1	1.25	IP53	PLA	a	2
111.9039.30.00	24	1.5	240	4	14	23	E23	C26	EE1	49:4	1.25	IP53	PLA	a	4
111.9041.30.00	24	5	40	2.5	25	13	E24	C25	EE2	62:1	1,30	IP53	BRO	a	1
111.9094.20.00	12	5	40	5	25	25	E52	C2	EE2	62:1	1.25	IP53	PLA	a	1
111.9107.30.00	24	1.5	240	4	14	23	E24/E53	C26	EE1	49:4	1.25	IP53	CEL	c	4
111.9114.30.00	24	3	70	3	25	17	E24/E54	C37	EE2	62:1	1.25	IP53	PLA	c	2

DOGA can develop for you!

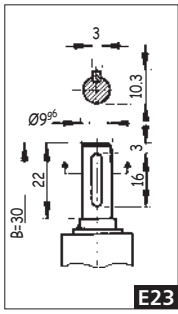
auto-bloqueo / SELF-LOCKING

Tensión nominal Nominal voltage Tension nominale Nennspannung	Par de autobloqueo Self-locking torque Couple d'autobloqueo Drehmoment	Velocidad en vacío Unload speed Vitesse à vide Geschwindigkeit im Leerlauf	Reducción Transmission ratio Rapport de réduction Übersetzung	Material rueda reductora Worm wheel material Mat. roue de réduction Mat. des Schneckenrads
U (V)	Mk (N.m.)	n (R.P.M.)	i	
12	30	30-50	58:1	CEL
24	30	30-50	58:1	CEL

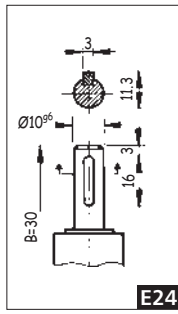




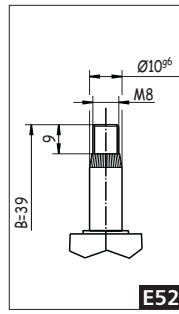
E22



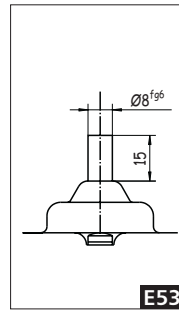
E23



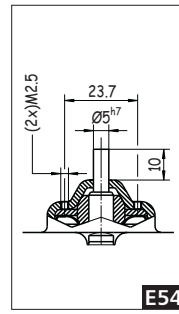
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E52

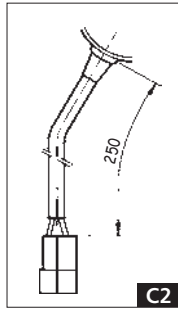


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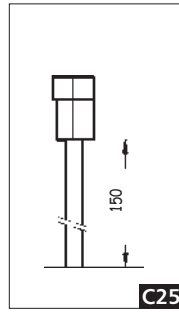


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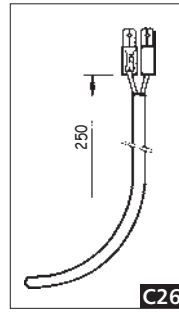
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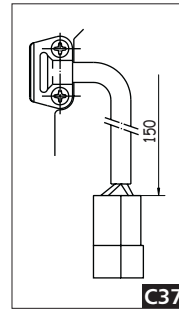
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C25



C26



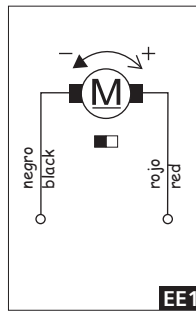
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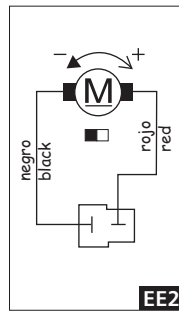
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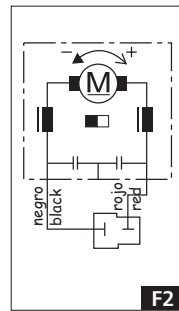
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EE1



EE2



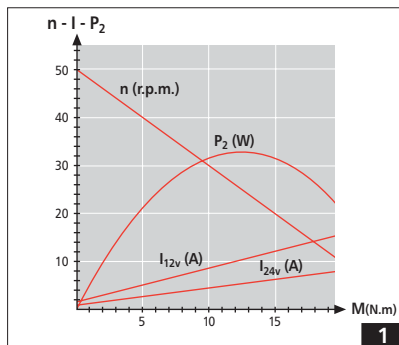
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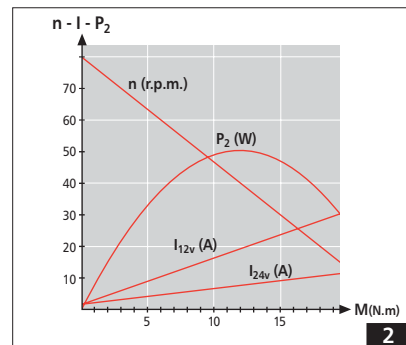
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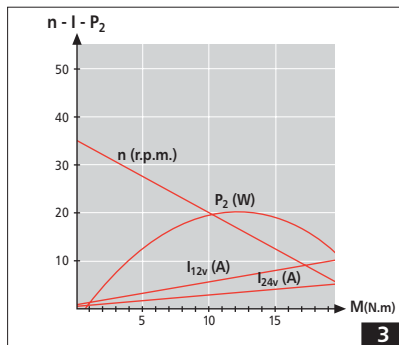
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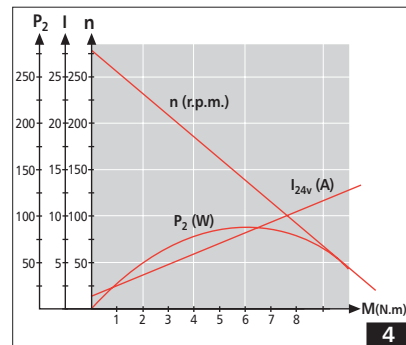
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2



3



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161

162

168

169

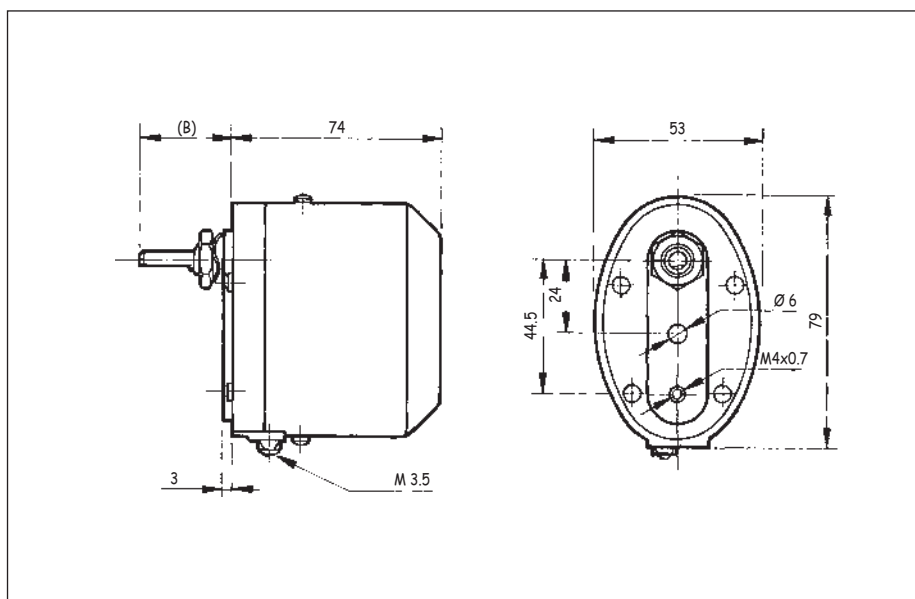
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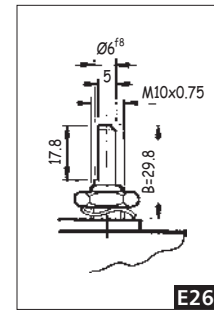
269



motorreductor  
motor with gear  
moteur réducteur  
Gleichstromgetriebemotoren

Referencia Reference number Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>	
112.9703.20.00	12	0.8	30	2	4.5	7	E26	C27	EE11	90:1	0.6	IP30	4
112.9703.30.00	24	0.8	30	1	4.5	3.5	E26	C27	EE11	90:1	0.6	IP30	4

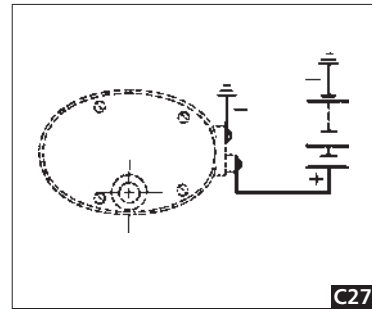




E26

111

112



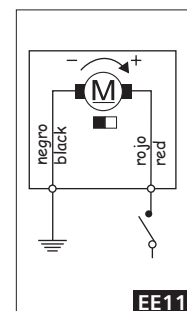
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113

119

210

258

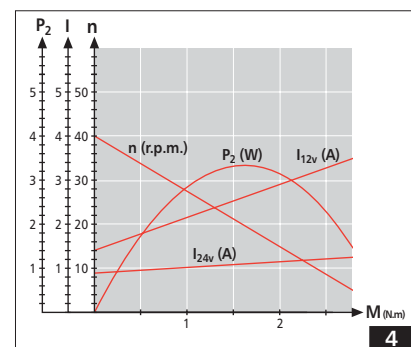


EE11

259

316

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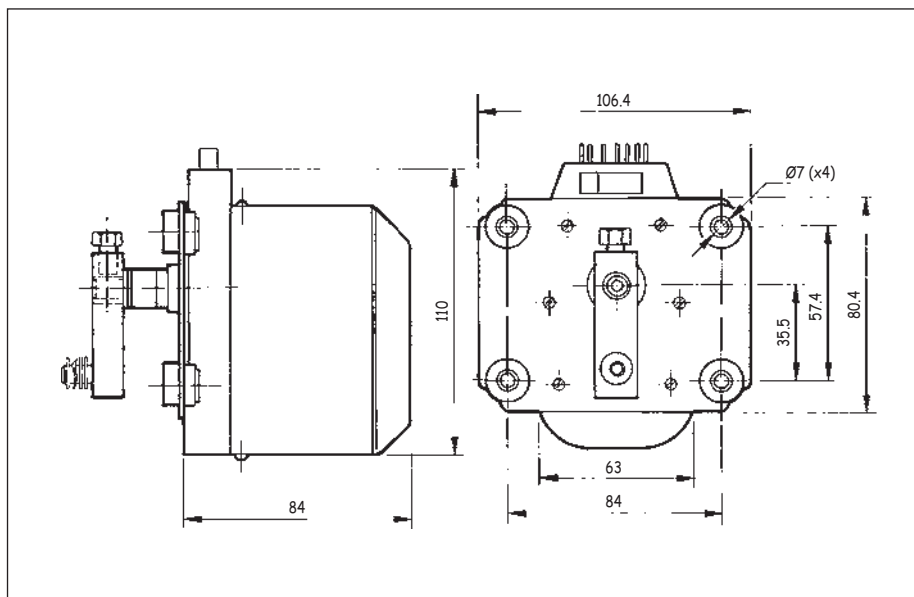
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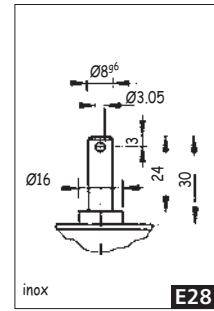
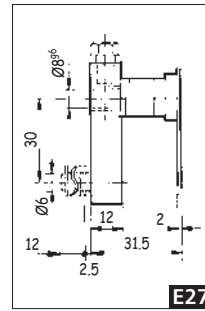
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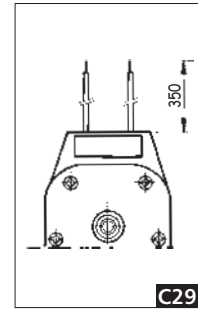
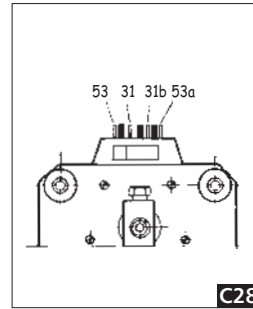
motorreductor  
motor with gear  
moteur-réducteur  
Gleichstromgetriebemotoren

Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Axe Welle	Conexiones Connections Connexions Anschlußbart	Esq. elect. Wiring diag. Sch. elect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b><math>\Omega</math>n (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>	
113.9703.20.00	12	1.4	35	2	7.5	8	E27	C28	EE12	54:1	1.5	IP30	5
113.9703.30.00	24	1.4	35	1	7.5	4	E27	C28	EE12	54:1	1.5	IP30	5
113.9722.30.00	24	1.4	35	1	7.5	4	E28	C29	EE1	54:1	1.5	IP30	5





111

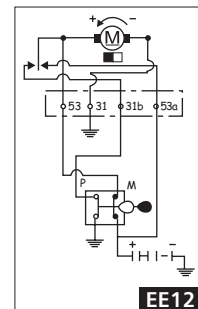
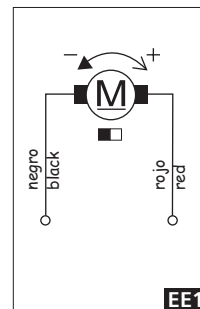


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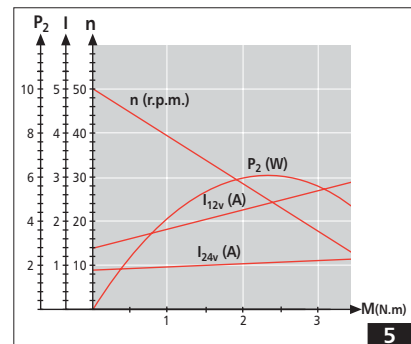


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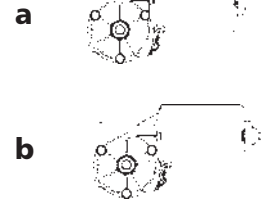
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260

269



motorreductor  
motor with gear  
motoréducteur  
Gleichstromgetriebemotoren

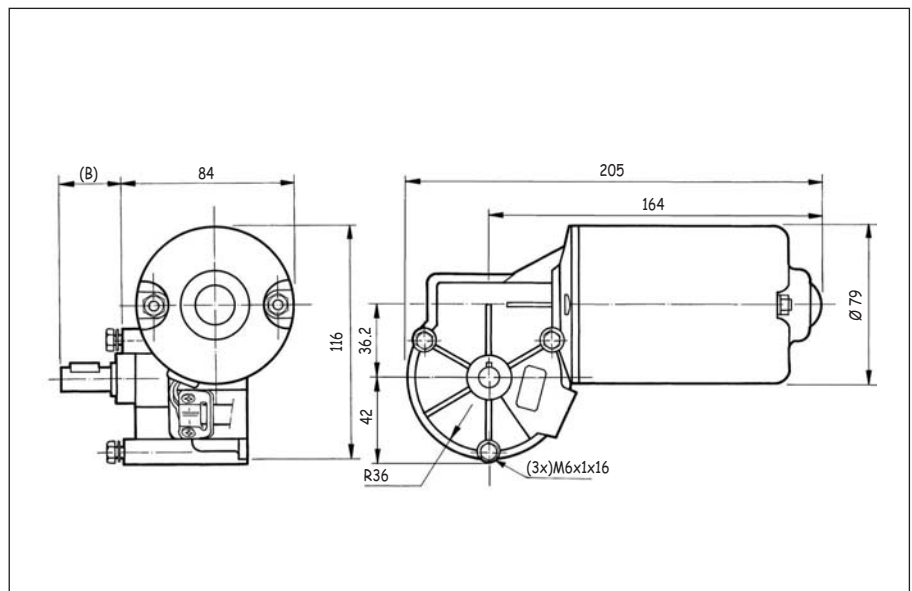


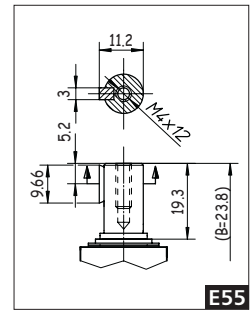
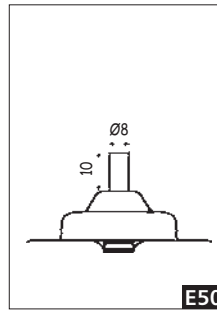
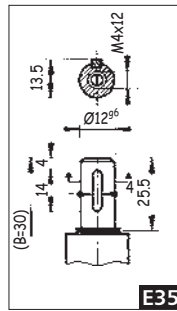
Referencia Reference number Referenznummern	Tensión nominal Nominal voltage tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Par de autobloqueo Self-locking torque Couple d'autobloccage Drehmoment	Eje Shaft Axe Welle	Conexiones Connections Connexions Anschlußart	Esp. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (Ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Material rueda Wheel material Matériau roue Mat. des Schneckenrades	Diseño: a,b,c Design: a,b,c Dessin: a,b,c Abbildung: a,b,c	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>la (A)</b>	<b>Mk (N.m.)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>			
119.3780.20.00	12	10	25	6	40	30	-	E35	C33	EE4	50:1	2.30	IP53	PLA	a	9
119.3780.30.00	24	10	25	3	40	15	-	E35	C33	EE4	50:1	2.30	IP53	PLA	a	9
119.3786.20.00	12	9	40	9	50	40	-	E35	C33	EE4	50:1	2.30	IP53	PLA	a	10
119.3786.30.00	24	9	40	4.5	50	20	-	E35	C33	EE4	50:1	2.30	IP53	PLA	a	10
119.3786.20.00E	12	9	40	9	50	40	-	E35	C33	F4	50:1	2.30	IP53	PLA	a	10
119.3786.30.00E	24	9	40	4.5	50	20	-	E35	C33	F4	50:1	2.30	IP53	PLA	a	10
119.3788.20.00	12	6	80	10	30	48	-	E35	C33	EE4	48:2	2.30	IP53	PLA	a	11
119.3788.30.00	24	6	80	5	30	24	-	E35	C33	EE4	48:2	2.30	IP53	PLA	a	11
119.9009.20.00	12	10	25	6	40	30	-	E35	C33	EE4	50:1	2.50	IP53	BRO	a	9
119.9009.30.00	24	10	25	3	40	15	-	E35	C33	EE4	50:1	2.50	IP53	BRO	a	9
119.9011.20.00	12	6	18	4	48	11	-	E35	C33	EE4	48:2	2.30	IP53	PLA	a	12
119.9032.20.00	12	9	40	9	50	40	-	E35	C33	EE4	50:1	2.50	IP53	BRO	a	10
119.9032.30.00	24	9	40	4.5	50	20	-	E35	C33	EE4	50:1	2.50	IP53	BRO	a	10
119.9035.20.00	12	4	140	10	25	60	-	E35	C38	EE4	48:2	2.30	IP53	PLA	a	13
119.9037.30.00	24	6	80	5	30	24	-	E35/E50	C33	EE4	48:2	2.30	IP53	PLA	b	11
119.9059.30.00	24	3.5	195	6	30	65	-	E35	C33	EE4	48:2	2.30	IP53	PLA	a	14
119.9062.20.00	12	8	40	8	30	40	40	E55	C39	EE5	50:1	2.50	IP53	CEL	a	15
119.9063.20.00	12	9	27	8	35	30	40	E35	C33	EE4	50:1	2.50	IP53	CEL	a	16

DOGA can develop for you!

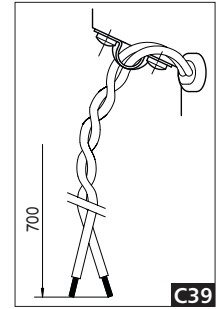
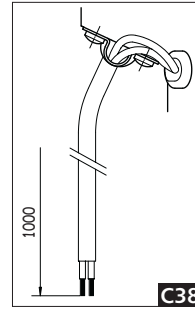
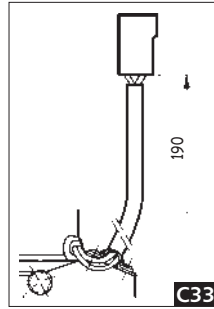
auto-bloqueo / SELF-LOCKING

Tensión nominal Nominal voltage Tension nominale Nennspannung	Par de autobloqueo Self-locking torque Couple d'autobloccage Drehmoment	Velocidad en vacío Unload speed Vitesse à vide Geschwindigkeit im Leerlauf	Reducción Transmission ratio Rapport Übersetzung	Material rueda reductora Worm wheel material Mat. roue de reduction Mat. des Schneckenrades
<b>U (V)</b>	<b>Mk (N.m.)</b>	<b>n (R.P.M.)</b>	<b>i</b>	
12	40	30-50	50:1	CEL
24	40	30-50	50:1	CEL





111

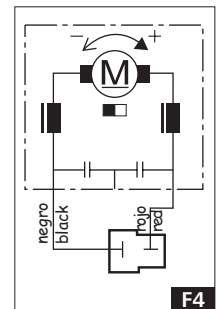
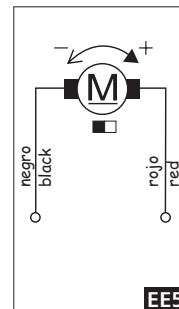
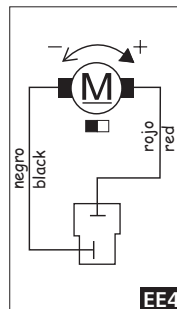


112

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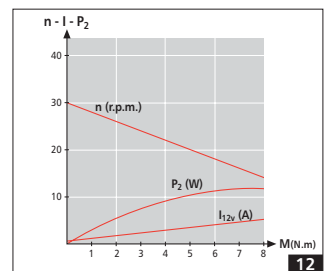
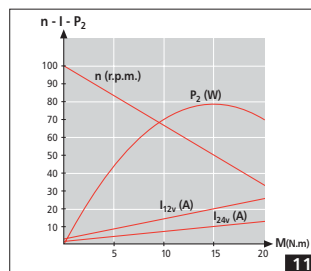
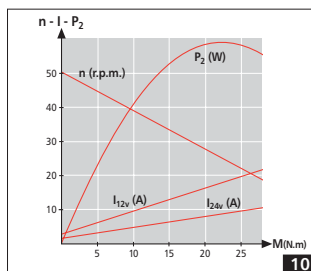
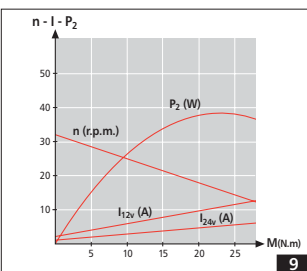


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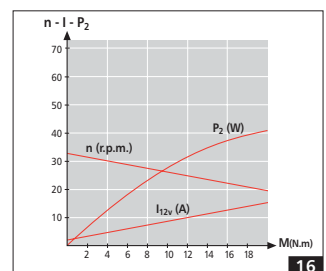
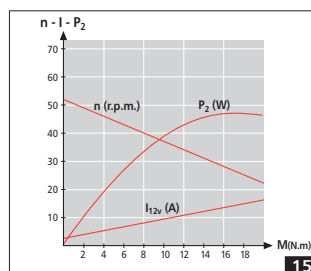
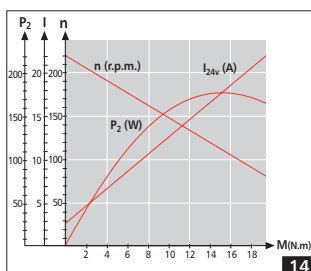
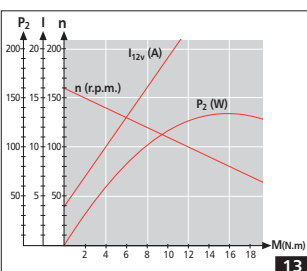
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161

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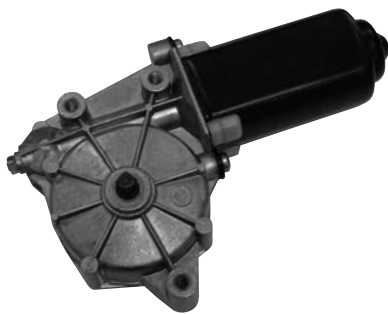
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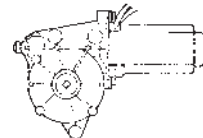
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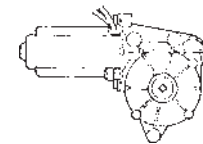


motorreductor  
motor with gear  
motorréducteur  
Gleichstromgetriebemotoren

a

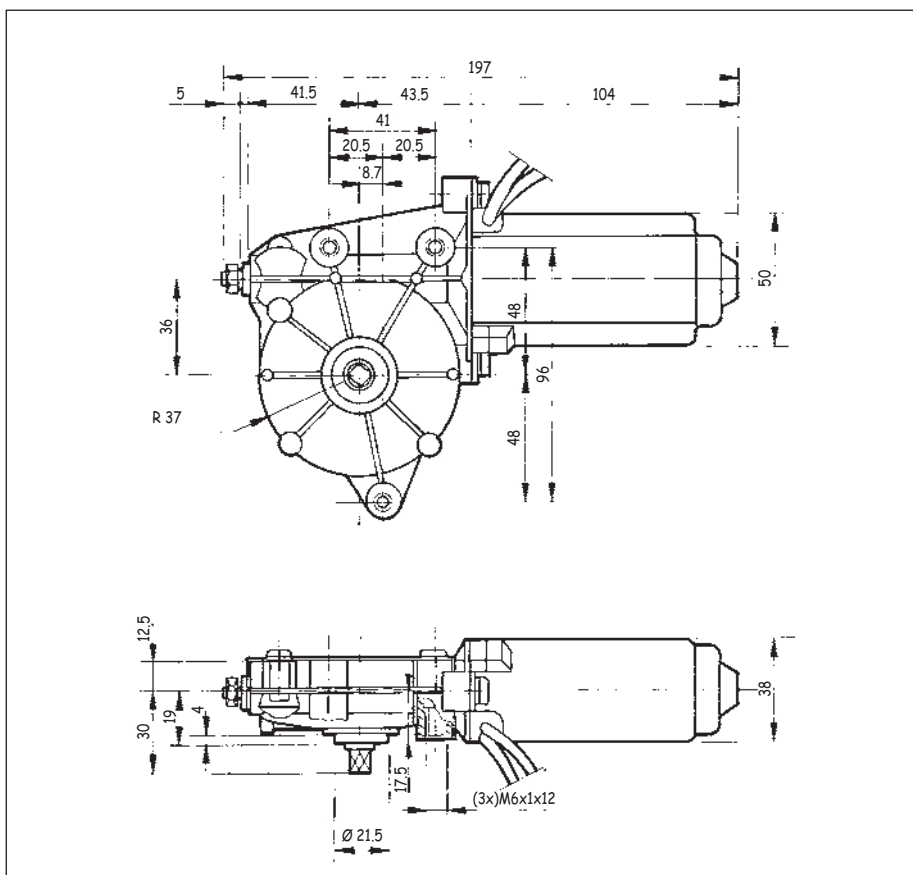


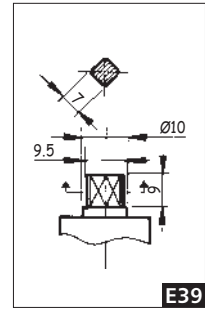
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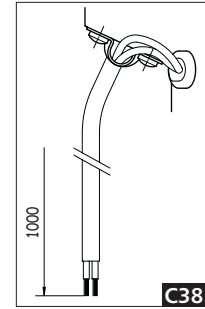
Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitsschutzklasse	Material rueda Wheel material Matériau roue Mat. des Schneckenrads	Diseño: a, b Design: a, b Dessin: a, b Abbildung: a, b	Curva Curve Courbe Kurve
	Un (V)	Mn (N.m.)	nn (r.p.m.)	In (A)	Ma (N.m.)	Ia (A)				i	P (kg)	IP			
210.0102.20.D0	12	3	55-75	7.5	10	28	E39	C38	EE16	60:1	0.95	IP40	PLA	a	17
210.0102.20.I0	12	3	55-75	7.5	10	28	E39	C38	EE16	60:1	0.95	IP40	PLA	b	17
210.0102.30.D0	24	3	55-75	4	10	14	E39	C38	EE16	60:1	0.95	IP40	PLA	a	17
210.0102.30.I0	24	3	55-75	4	10	14	E39	C38	EE16	60:1	0.95	IP40	PLA	b	17

(VDE 0530) S3 - 10% (10 min.)





111

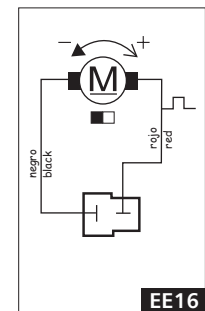


112

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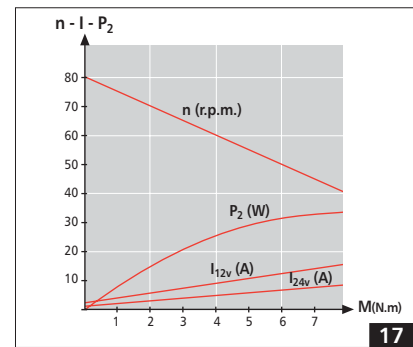


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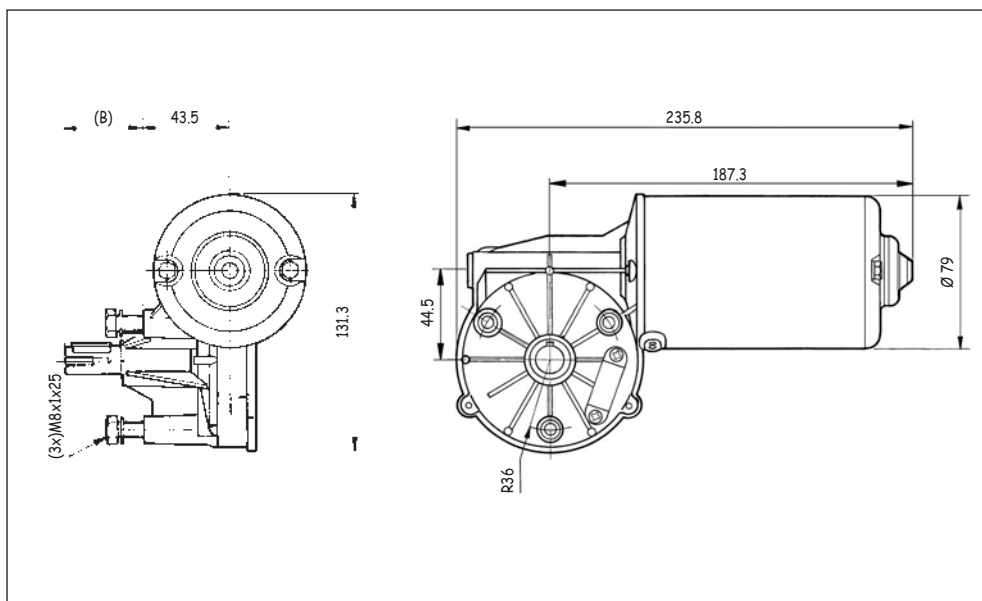
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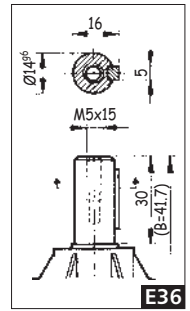
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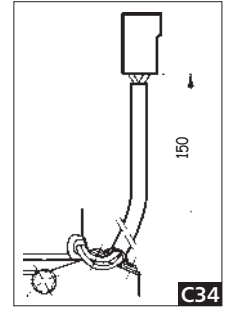
motorreductor  
motor with gear  
moteur réducteur  
Gleichstromgetriebemotoren

Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de Arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conejones Connections Connexions Anschlußart	Esg. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Water-tightness Étanchéité Feuchtigkeitsschutzklasse	Materiai rueda Wheel material Matériau roue Mat. des Schneckenrads	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>n<sub>n</sub> (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>		
258.1710.20.00	12	15	25	10	80	42	E36	C34	F2	52:1	3.00	IP53	PLA	18
258.1710.30.00	24	15	25	5	80	21	E36	C34	F2	52:1	3.00	IP53	PLA	18
258.3710.20.00	12	15	25	10	80	42	E36	C34	EE2	52:1	3.00	IP53	PLA	18
258.3710.30.00	24	15	25	5	80	21	E36	C34	EE2	52:1	3.00	IP53	PLA	18
258.3712.20.00	12	12	40	12	80	55	E36	C34	EE2	52:1	3.00	IP53	PLA	19
258.3712.30.00	24	12	40	6	80	32	E36	C34	EE2	52:1	3.00	IP53	PLA	19





111

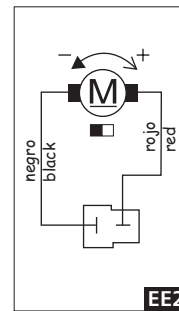


112

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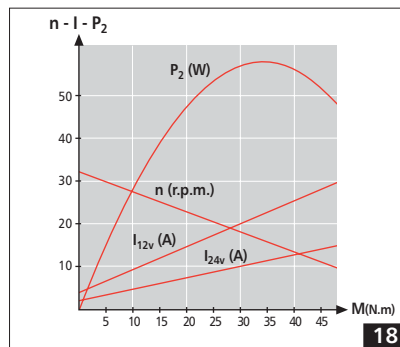
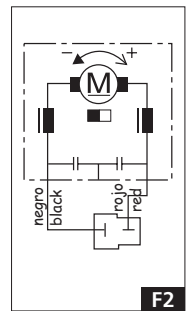


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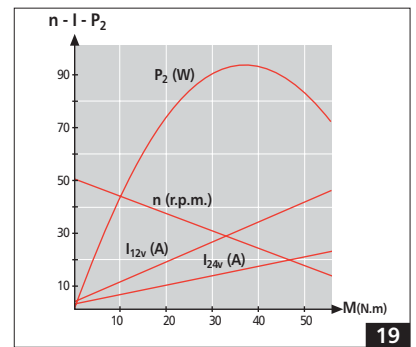


161

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168

169



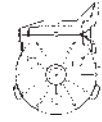
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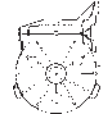


motorreductor  
motor with gear  
motoréducteur  
Gleichstromgetriebemotoren

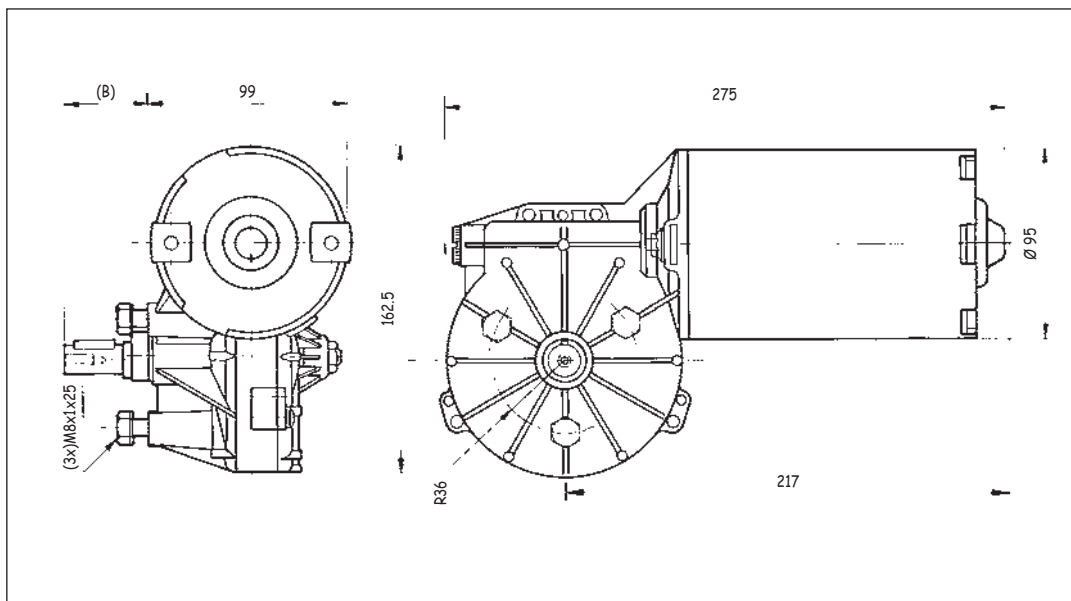
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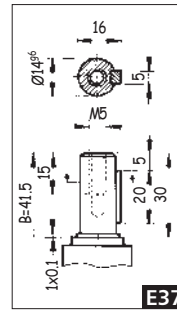


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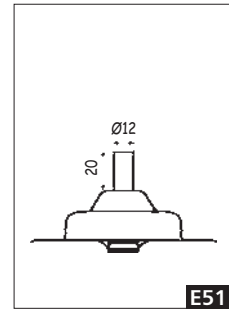


Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esg. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Waterproofness Étanchéité Feuchtigkeitschutzklasse	Material rueda Wheel material Matériau roue Mat. des Schneckenrades	Diseño: a, b Design: a, b Dessin: a, b Abbildung: a, b	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>			
259.3710.20.00	12	20	22	12	130	60	E37	C34	EE2	50:1	5.90	IP53	PLA	a	20
259.3710.30.00	24	20	22	6	130	30	E37	C34	EE2	50:1	5.90	IP53	PLA	a	20
259.3716.20.00	12	15	40	18	120	98	E37	C34	EE7	50:1	5.90	IP53	PLA	a	21
259.3716.30.00	24	15	40	9	120	49	E37	C34	EE7	50:1	5.90	IP53	PLA	a	21
259.9001.20.00	12	15	40	18	120	98	E37	C34	F2	50:1	5.90	IP53	PLA	a	21
259.9001.30.00	24	15	40	9	120	49	E37	C34	F2	50:1	5.90	IP53	PLA	a	21
259.9008.30.00	24	25	25	7	135	30	E37/E51	C34	EE2	50:1	5.90	IP53	PLA	b	22
259.9016.30.00	24	20	22	6	130	30	E37	C34	EE2	50:1	5.90	IP53	CEL	a	20





E37



E51

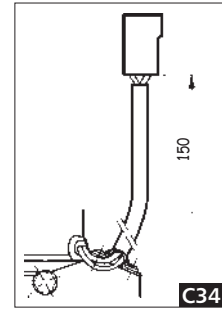
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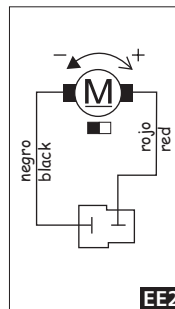
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258

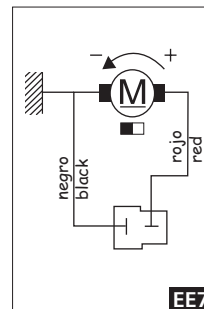
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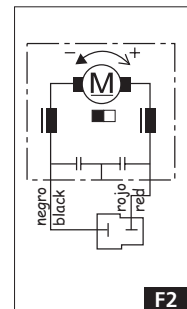
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EE2



EE7



F2

161

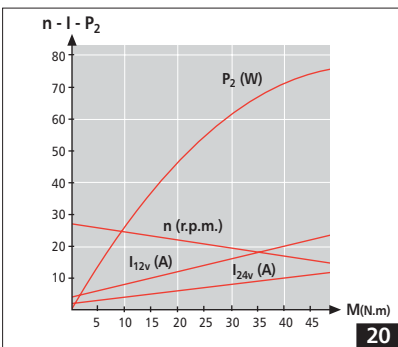
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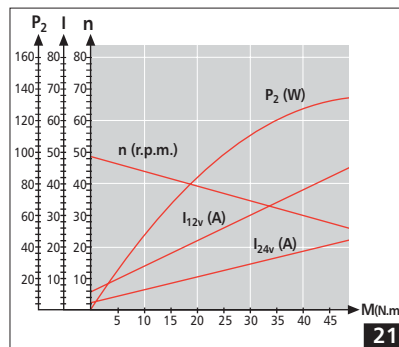
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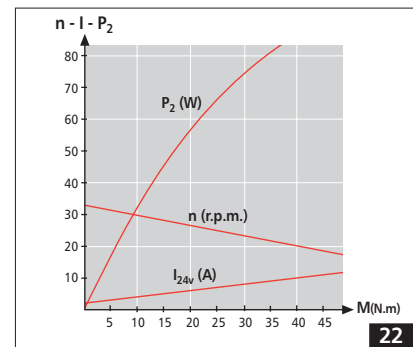
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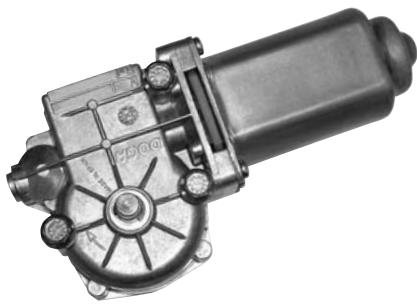
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21



22

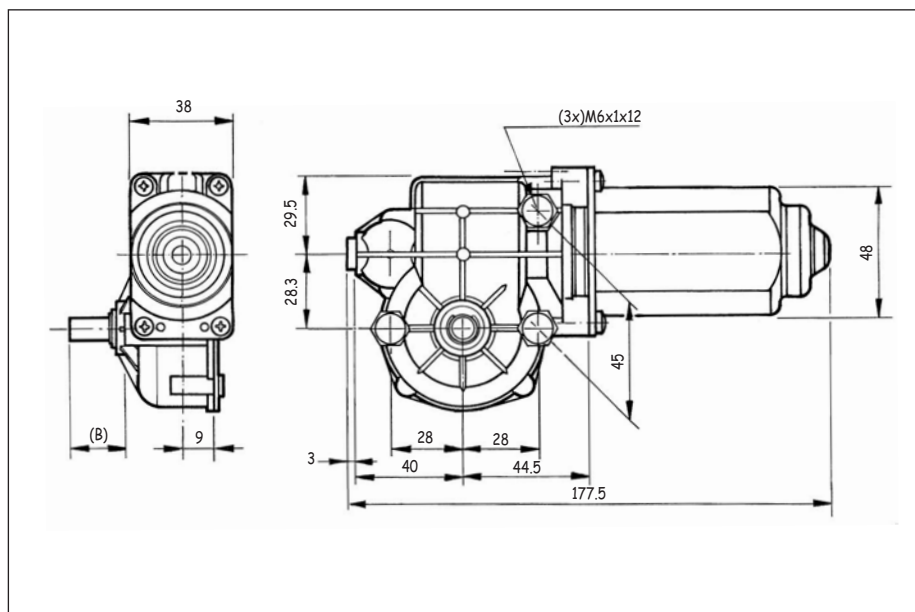


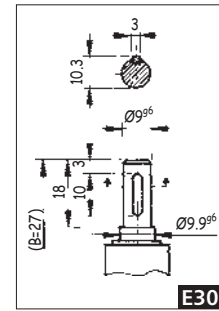
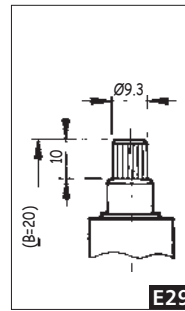
motorreductor  
motor with gear  
motoréducteur  
Gleichstromgetriebemotoren



Referencia Reference number Référence nummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Aixe Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Material rueda Wheel material Matériau roue Mat. des Schneckenrades	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>		
316.2711.20.00	12	2	38	3.4	10	12	E29	C30	EE4	62:1	0.90	IP40	PLA	56
316.2711.30.00	24	2	38	1.7	10	6	E29	C30	EE4	62:1	0.90	IP40	PLA	56
316.2761.20.00	12	2	38	3.4	10	12	E30	C30	EE4	62:1	0.90	IP40	PLA	56
316.2761.30.00	24	2	38	1.7	10	6	E30	C30	EE4	62:1	0.90	IP40	PLA	56
316.2761.20.00E	12	2	38	3.4	10	12	E30	C30	F4	62:1	0.90	IP40	PLA	56
316.2761.30.00E	24	2	38	1.7	10	6	E30	C30	F4	62:1	0.90	IP40	PLA	56
316.9728.30.00	24	2	38	1.7	10	6	E30	C30	EE4	62:1	0.90	IP40	BRO	56
316.9731.30.00 *	24	1.5	65	3.0	10	11	E30	C30	EE4	62:1	0.90	IP40	PLA	57

\* (VDE 0530) S3 - 10% (10 min.)





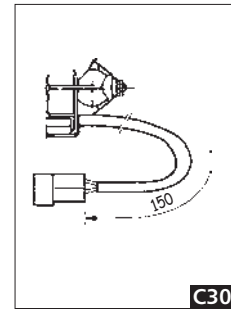
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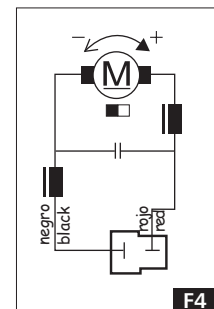
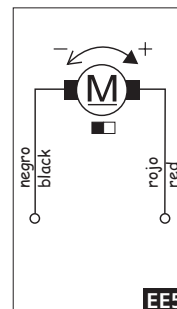
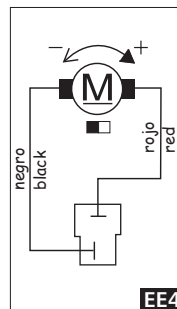


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161

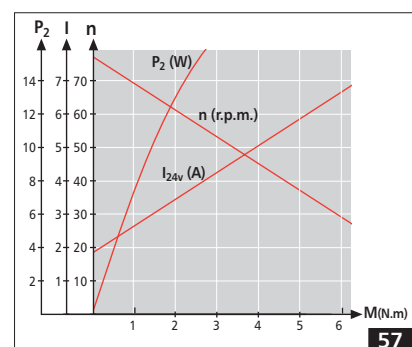
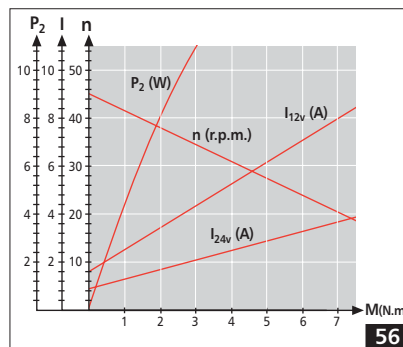
162

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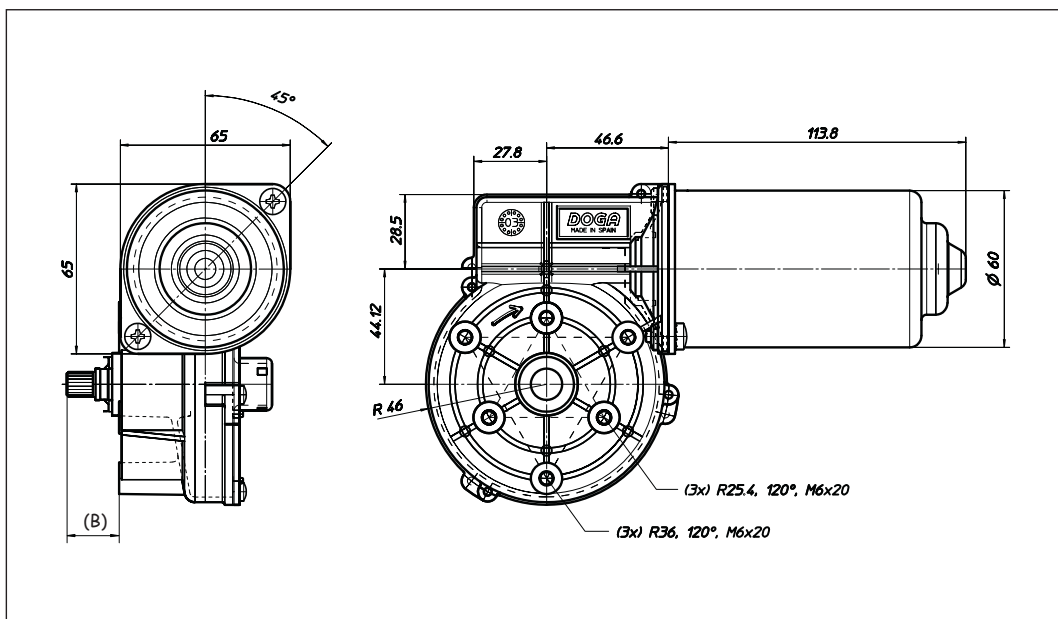


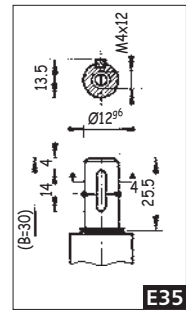


motorreductor  
motor with gear  
motoréducteur  
Gleichstromgetriebemotoren

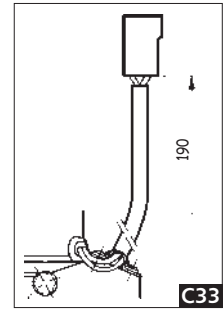


Referencia Reference number Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Relación de reducción Transmission ratio Rapport de réducteur Übersetzung	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Material rueda Wheel material Matériau roue Mat. des Schneckenrads	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>Nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>i</b>	<b>P (kg)</b>	<b>IP</b>		
319.1760.20.00	12	9	30	7	50	28	E35	C33	F4	81:1	1.7	IP55	PLA	58
319.1760.30.00	24	9	30	3	50	15	E35	C33	F4	81:1	1.7	IP55	PLA	58
319.3760.20.00	12	9	30	7	50	28	E35	C33	EE4	81:1	1.7	IP55	PLA	58
319.3760.30.00	24	9	30	3	50	15	E35	C33	EE4	81:1	1.7	IP55	PLA	58





111

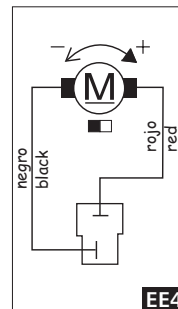


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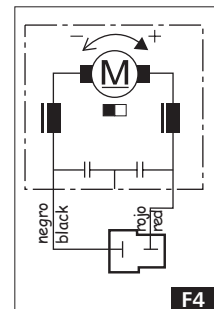
113

119

210



EE4



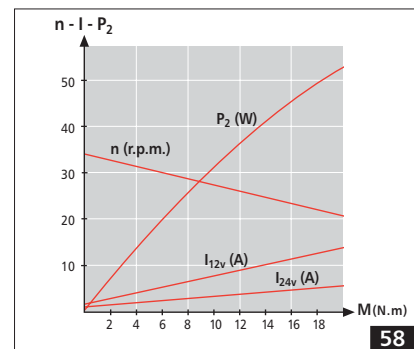
F4

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316

319



58

161

162

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169

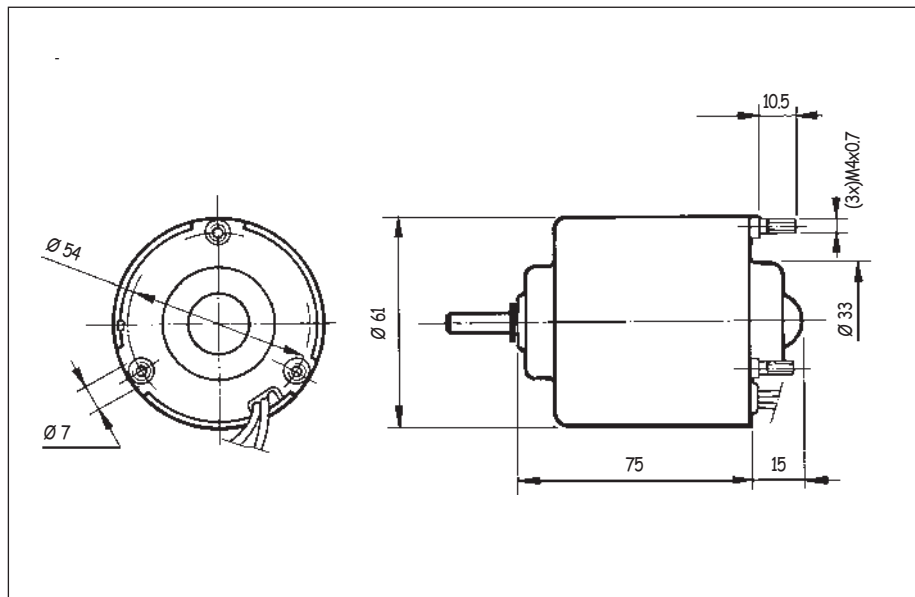
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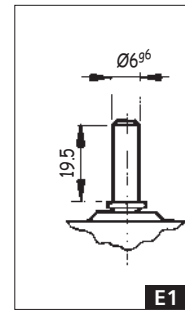
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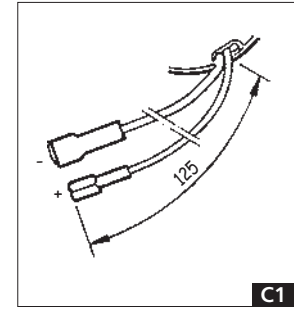
motor  
moteur  
Gleichstrommotor

Referencia Reference number Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esq. elect. Wiring diag. Sch. élect. Schaltbild	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>P (kg)</b>	<b>IP</b>	
161.3101.20.09	12	0.05	3500	3	0.25	12	E1	C1	EE1	0.5	IP53	31
161.3101.30.09	24	0.05	3500	1.5	0.25	6	E1	C1	EE1	0.5	IP53	31





111

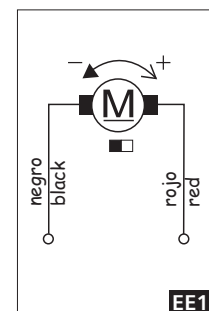


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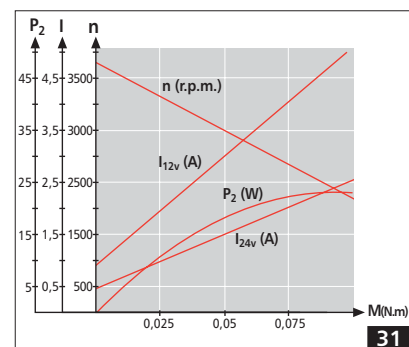


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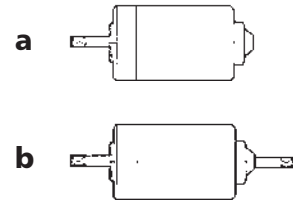
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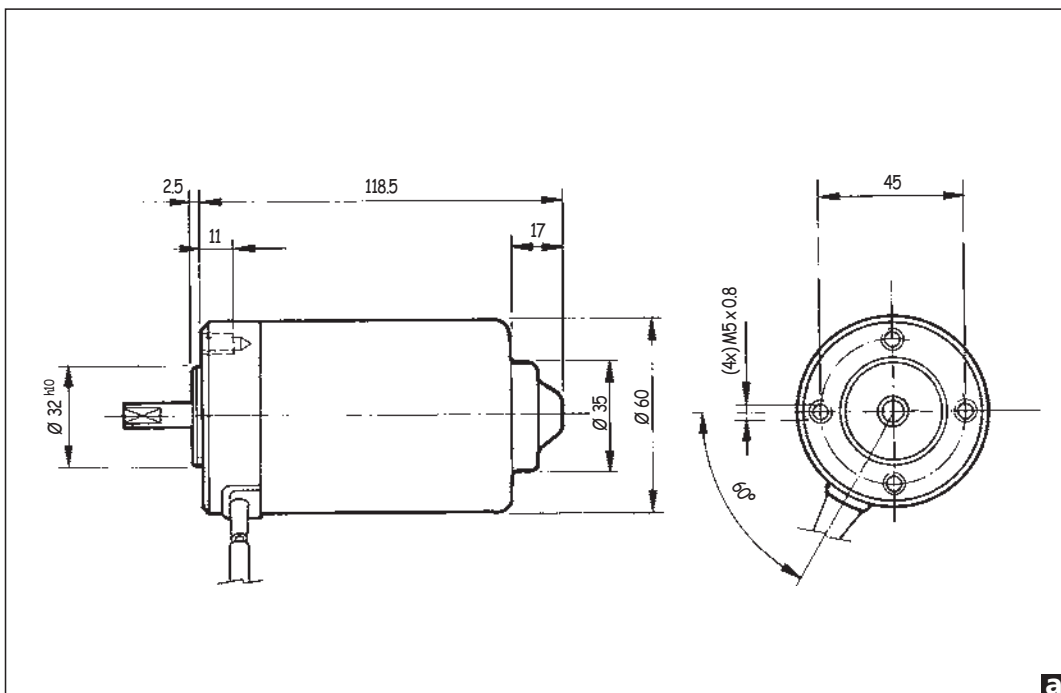
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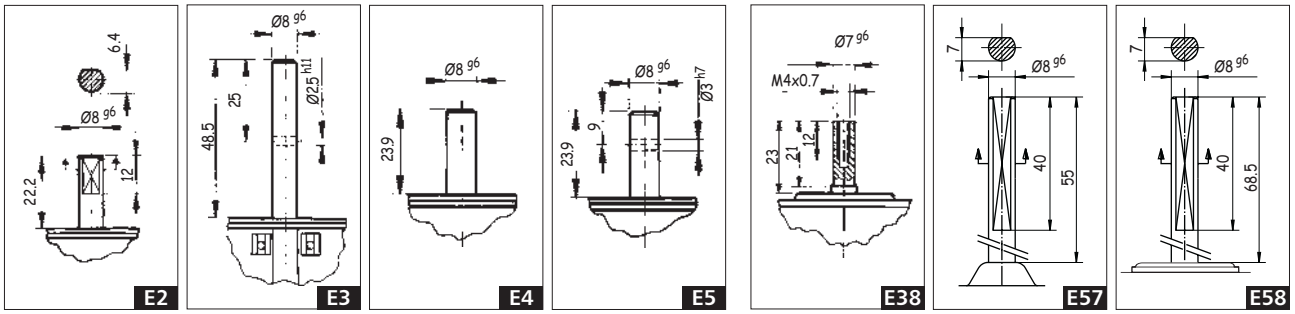


motor  
moteur  
Gleichstrommotor

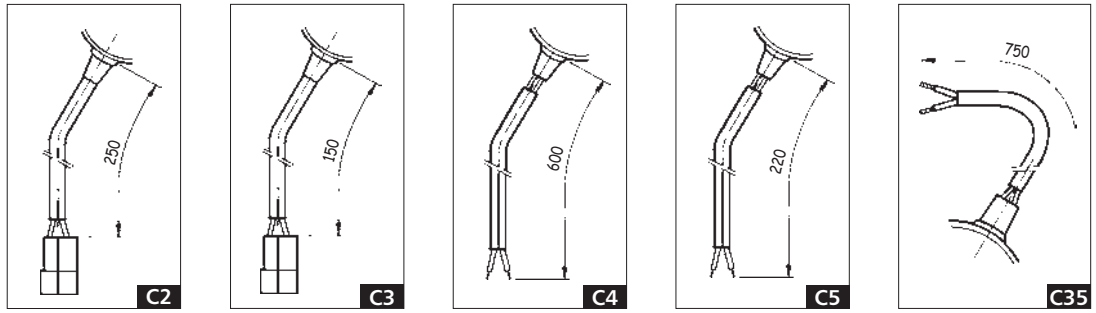


Referencia Reference number Référéznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de Arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Aibre Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitsschutzklasse	Diseño: a,b Design: a,b Dessin: a,b Abbildung: a,b	Curva Curve Courbe Kurve
	Un (V)	Mn (N.m.)	nn (r.p.m.)	In (A)	Ma (N.m.)	Ia (A)				P (kg)	IP		
162.4101.20.00	12	0.18	2800	7.5	1.0	33	E2	C2	EE2	1.1	IP53	a	32
162.4101.30.00	24	0.20	3000	4	1.0	18	E2	C2	EE2	1.1	IP53	a	33
162.4102.20.00	12	0.20	2000	6	1.0	24	E2	C3	EE2	1.1	IP53	a	34
162.4102.30.00	24	0.20	2000	3	1.0	12	E2	C3	EE2	1.1	IP53	a	34
162.4106.20.00	12	0.18	2800	7.5	1.0	33	E4	C2	EE2	1.1	IP53	a	32
162.4106.30.00	24	0.20	3000	4	1.0	18	E4	C2	EE2	1.1	IP53	a	33
162.4107.30.00E	24	0.20	2000	3	1.0	12	E5	C5	F3	1.1	IP53	a	34
162.4108.30.00	24	0.18	1500	2.5	0.8	8.5	E2	C3	EE2	1.1	IP53	a	35
162.4109.30.00	24	0.18	1500	2.5	0.8	8.5	E38	C35	EE3	1.1	IP53	a	35
162.4109.50.00	48	0.18	1500	1,3	0.8	4,5	E38	C35	EE3	1.1	IP53	a	35
162.4113.30.00	24	0.12	3000	2.5	1.0	15	E3	C4	F3	1.1	IP53	b	36
162.4116.30.00	24	0.20	3000	4	1.0	18	E58/E57	C2	EE2	1.1	IP53	b	33





111

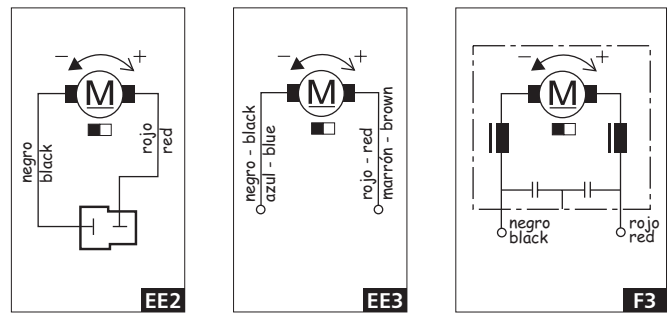


112

113

119

210

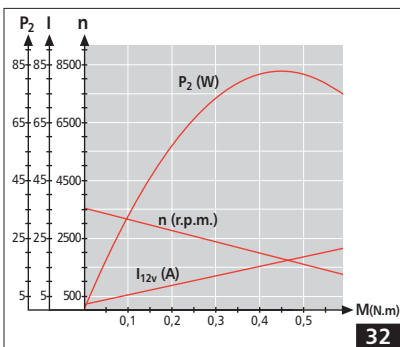


258

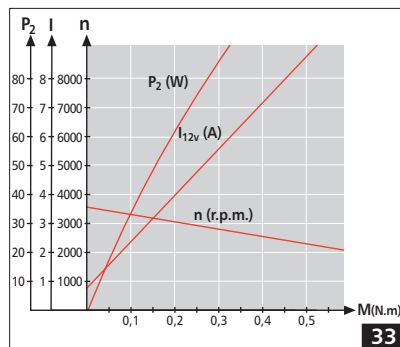
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316

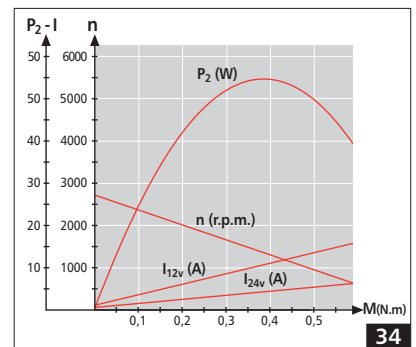
319



161

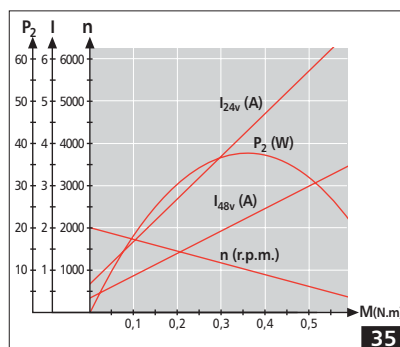


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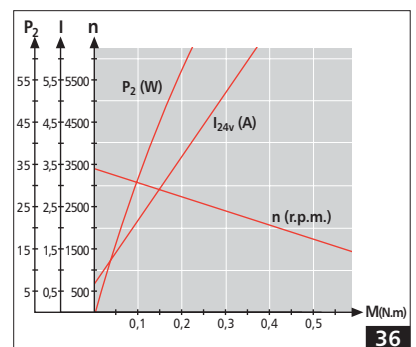


168

169



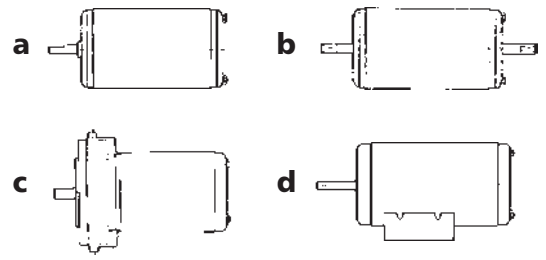
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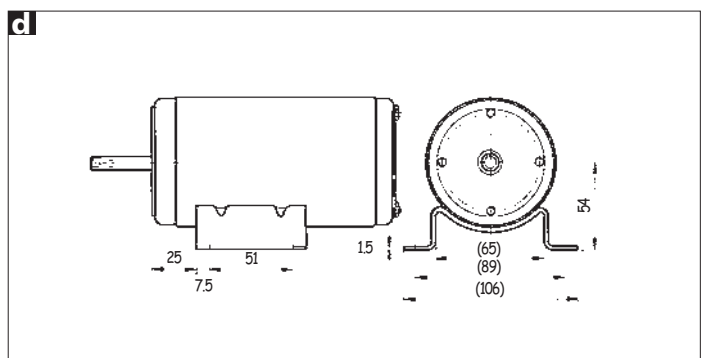
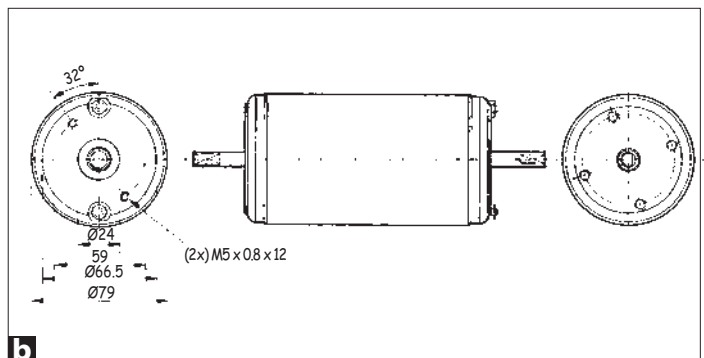
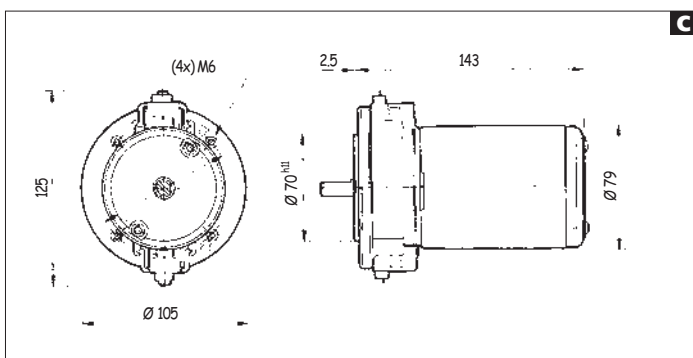
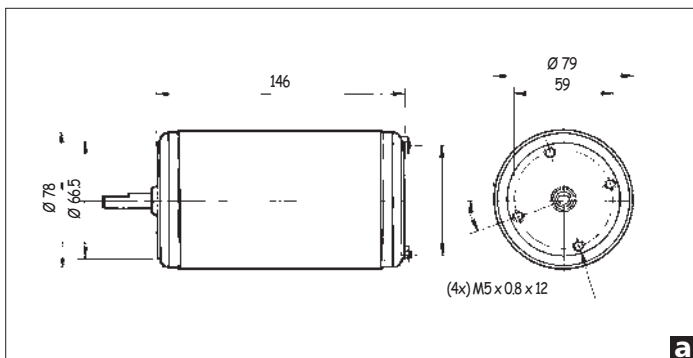
269

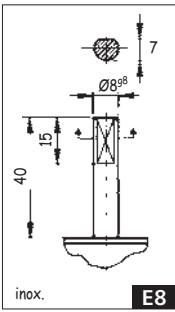


motor  
moteur  
Gleichstrommotor

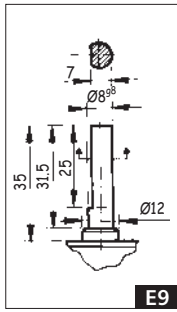


Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nennstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Axe Welle	Conexiones Connections Connexions Anschlußart	Esq. elect. Wiring diag. Sch. elect. Schaltbild	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Diseño: a, b, c, d Design: a, b, c, d Desain: a, b, c, d Abbildung: a, b, c, d	Curva Curve Courbe Kurve
	Un (V)	Mn (N.m.)	nn (r.p.m.)	In (A)	Ma (N.m.)	Ia (A)				P (kg)	IP		
168.4105.20.04	12	0.50	1900	14	3.0	64	E8	C8	EE1	2.6	IP53	a	37
168.4105.30.04	24	0.50	1900	7	3.0	32	E8	C8	EE1	2.6	IP53	a	37
168.4107.20.04	12	0.50	2000	13	3.2	76	E46	-	EE1	2.6	IP53	c	38
168.4107.30.04	24	0.50	2000	6.5	3.2	38	E46	-	EE1	2.6	IP53	c	38
168.4108.20.04	12	0.45	2800	19	3.0	100	E9	C9	EE4	2.6	IP53	a	39
168.4108.30.04	24	0.45	2800	10	3.0	52	E9	C9	EE4	2.6	IP53	a	39
168.4111.20.04	12	0.75	1000	11	2.8	36	E11	C9	EE2	2.6	IP53	a	40
168.4111.30.04	24	0.75	1000	5.5	2.8	18	E11	C9	EE2	2.6	IP53	a	40
168.4112.20.04	12	0.70	1500	14	3.0	56	E12	C11	EE2	2.6	IP53	a	42
168.4112.30.04	24	0.70	1500	7	3.0	28	E12	C11	EE2	2.6	IP53	a	42
168.4115.30.04	24	0.50	3000	11	3.0	70	E13/E41	C13	EE2	2.6	IP53	a	41
168.4116.20.04	12	0.50	1900	14	3.0	64	E8	C8	EE1	2.6	IP53	d	37
168.4116.30.04	24	0.50	1900	7	3.0	32	E8	C8	EE1	2.6	IP53	d	37
168.4121.30.04E	24	0.50	3000	11	3.0	70	E11/E11	C13	F2	2.6	IP53	b	41
168.4122.30.04	24	0.75	1000	5.5	2.8	18	E13/E41	C13	EE2	2.6	IP53	a	40
168.4123.20.04	12	0.50	2100	16	3.0	76	E13/E41	C13	EE2	2.6	IP53	a	43
168.4123.30.04	24	0.50	2100	8	3.0	38	E13/E41	C13	EE2	2.6	IP53	a	43
168.4134.30.04	24	0.30	750	1.5	1.5	7	E59	C9	EE2	2.6	IP53	a	44

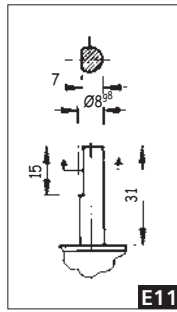




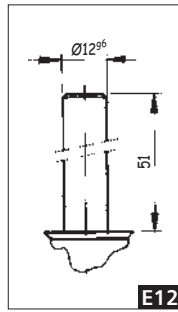
E8



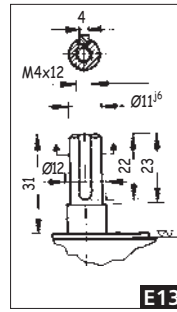
E9



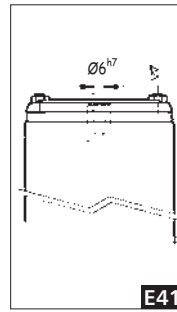
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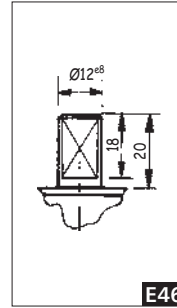
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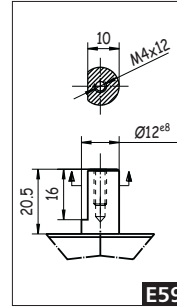
E13



E41

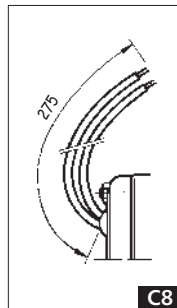


E46

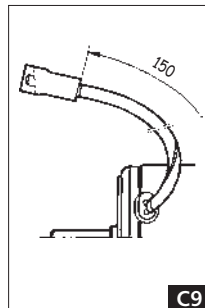


E59

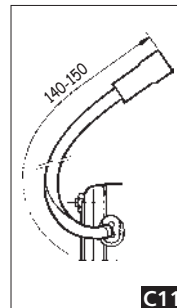
- 111
- 112
- 113
- 119



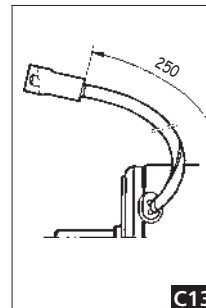
C8



C9

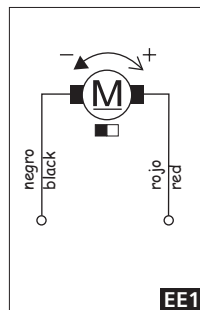


C11

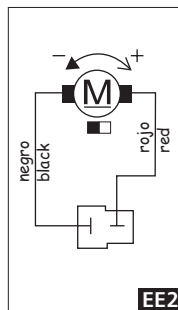


C13

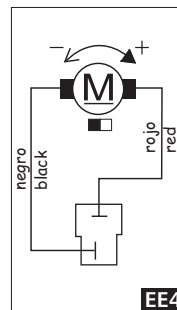
- 210
- 258
- 259



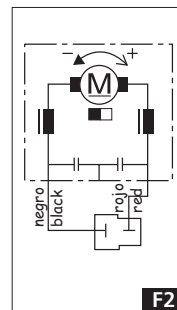
EE1



EE2

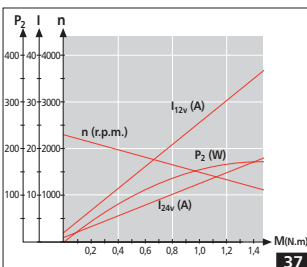


EE4

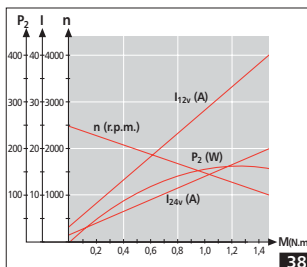


F2

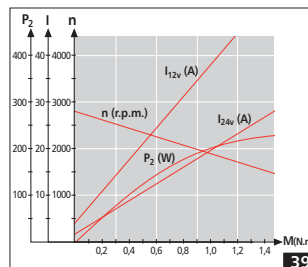
- 316
- 319
- 161



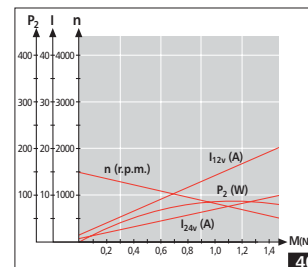
37



38

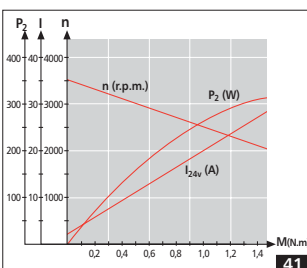


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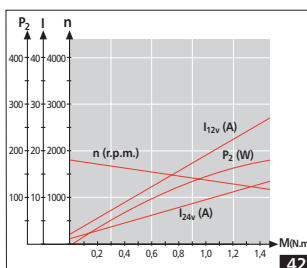


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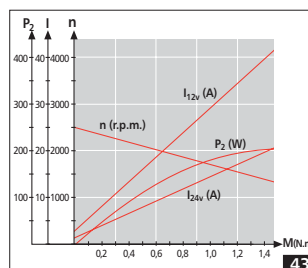
- 162
- 168
- 169



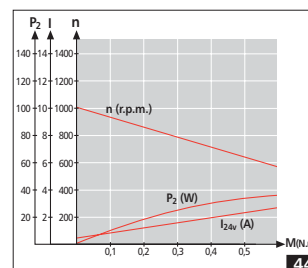
41



42

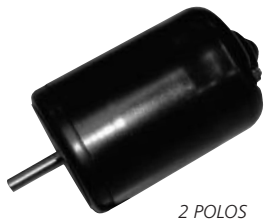


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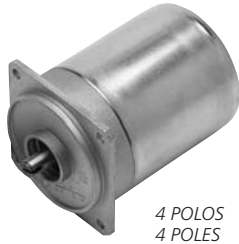


44

- 260
- 269

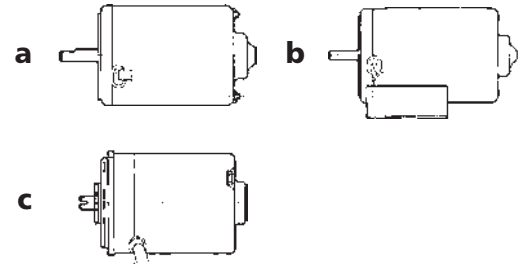


2 POLOS  
2 POLES  
2 PÔLES  
2 PHASEN

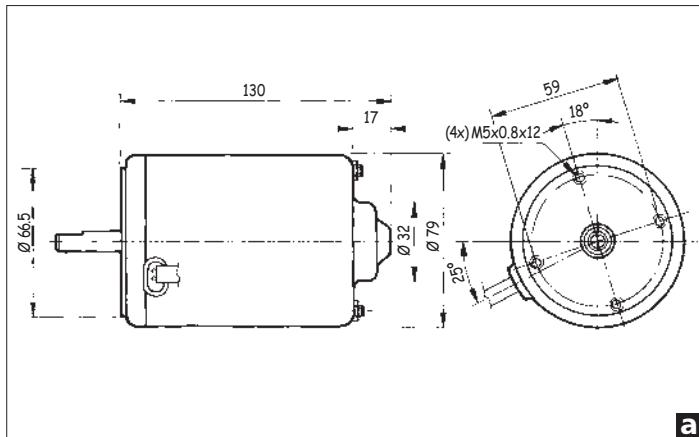


4 POLOS  
4 POLES  
4 PÔLES  
4 PHASEN

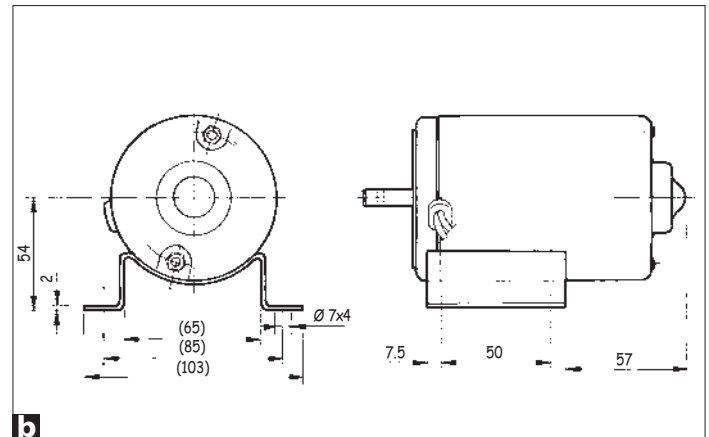
motor  
moteur  
Gleichstrommotor



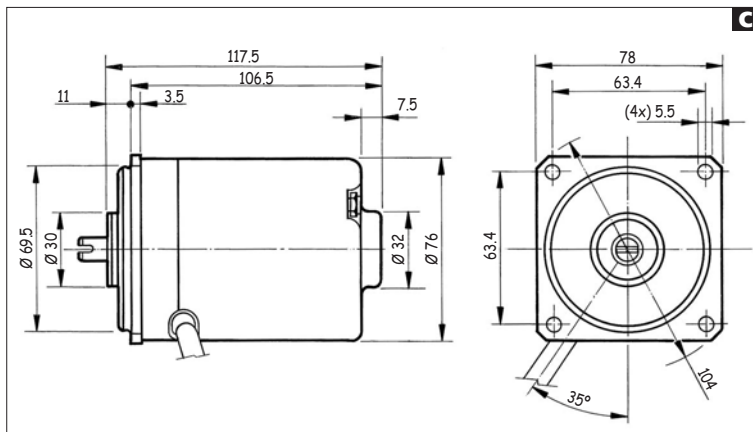
Referencia Reference number Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de Arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esq. elect. Wiring diag. Sch. elect. Schaltbild	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitschutzklasse	Diseño: a, b, c Design: a, b, c Desin: a, b, c Abbildung: a, b, c	Curva Curve Courbe Kurve
	Un (V)	Mn (N.m.)	Nn (r.p.m.)	In (A)	Ma (N.m.)	Ia (A)				P (kg)	IP		
169.4106.20.04	12	0.40	1900	11	2.0	46	E14	C14	EE2	2.0	IP53	a	45
169.4106.30.04	24	0.40	1900	5.5	2.0	23	E14	C14	EE2	2.0	IP53	a	45
169.4107.20.04	12	0.40	2900	16	2.2	100	E15	C15	EE2	2.0	IP53	a	46
169.4107.30.04	24	0.40	2900	8	2.2	50	E15	C15	EE2	2.0	IP53	a	46
169.4110.20.04	12	0.40	1500	9	2.0	38	E16	C16	EE6	2.0	IP53	a	47
169.4110.30.04	24	0.40	1500	4.5	2.0	19	E16	C16	EE6	2.0	IP53	a	47
169.4113.20.09	12	0.40	3200	16	2.2	85	E18	C18	EE8	1.37	IP53	c	48
169.4113.30.09	24	0.40	3200	8	2.2	43	E18	C18	EE8	1.37	IP53	c	48
169.4117.20.04	12	0.40	1500	9	2.0	38	E47	C36	EE1	2.0	IP53	b	47
169.4122.20.09	12	0.30	4600	16	1.8	100	E18	C18	EE8	1.37	IP53	c	49
169.4124.20.04	12	0.40	1900	11	2.0	46	E60	C14	EE2	2.0	IP53	b	45
169.4124.30.04	24	0.40	1900	5.5	2.0	23	E60	C14	EE2	2.0	IP53	b	45



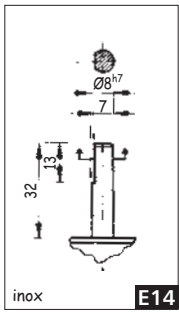
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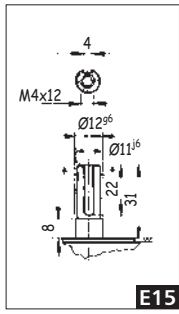
b



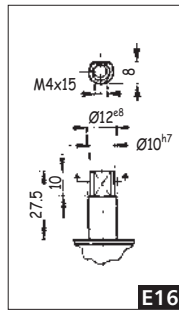
c



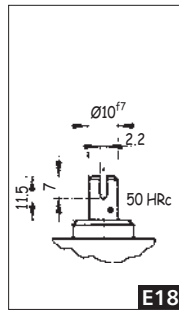
E14



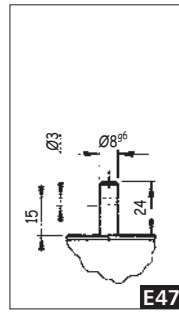
E15



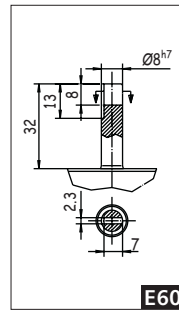
E16



E18

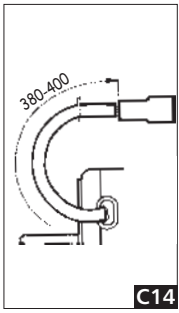


E47

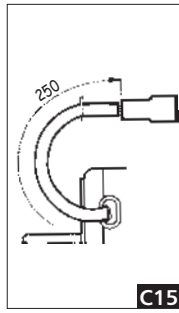


E60

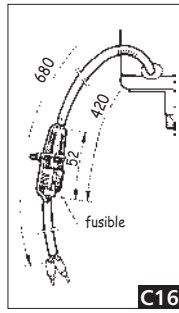
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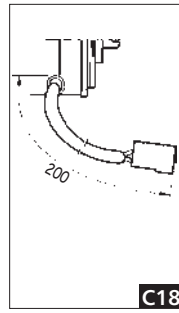
C14



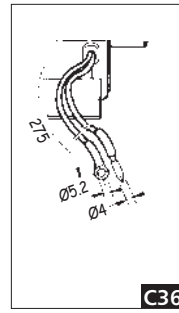
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C16



C18



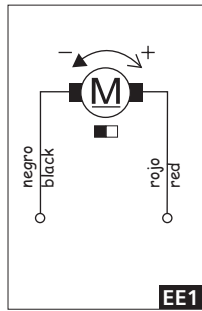
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112

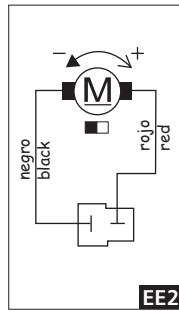
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119

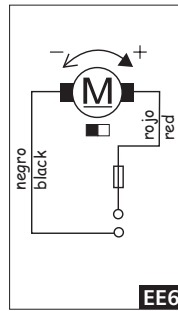
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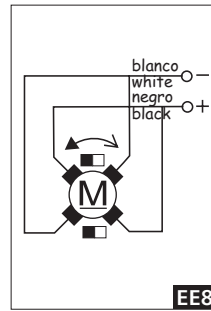
EE1



EE2



EE6



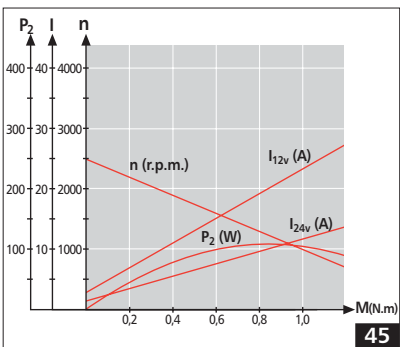
EE8

258

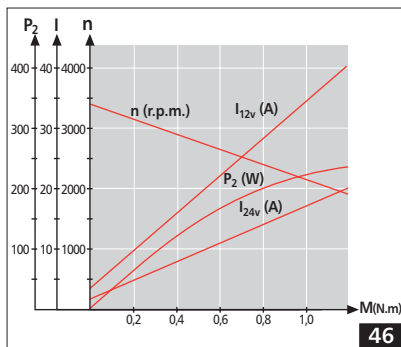
259

316

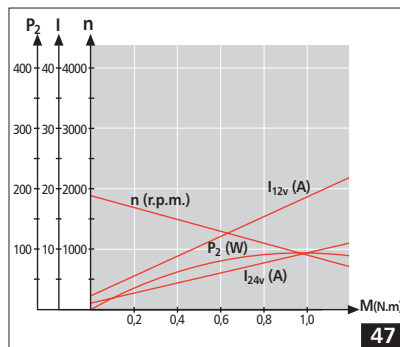
319



45



46

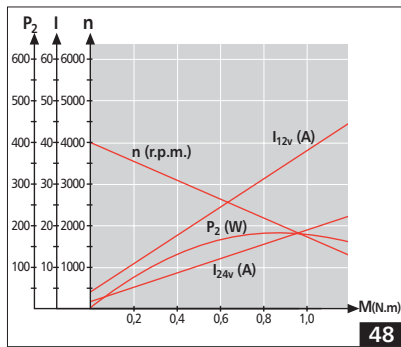


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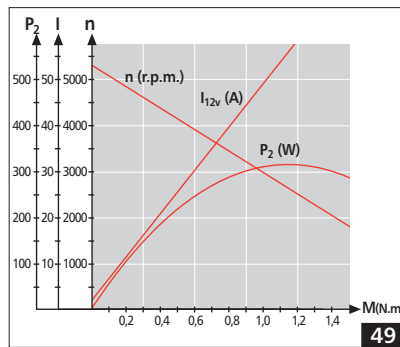
161

162

168



48



49

169

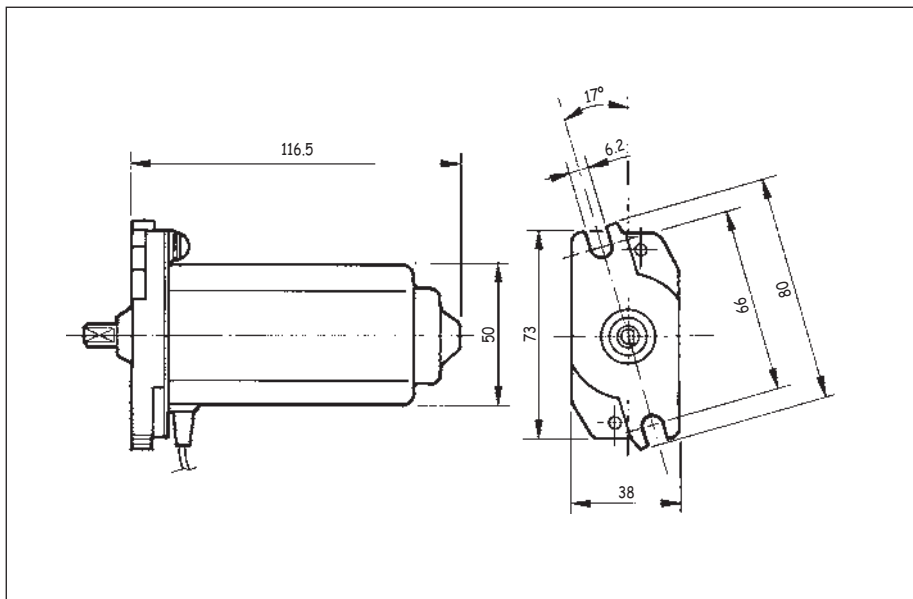
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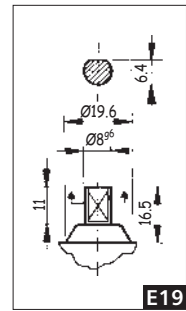
269



motor  
moteur  
Gleichstrommotor

Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Arbre Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Watertightness Étanchéité Feuchtigkeitsschutzklasse	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>Fn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>P (kg)</b>	<b>IP</b>	
260.0107.30.00	24	0.08	4000	3	0.4	12	E19	C19	EE9	0.7	IP40	51
260.0108.20.00	12	0.08	4000	6	0.4	24	E19	C20	EE9	0.7	IP40	51
260.0111.20.04	12	0.08	3000	5	0.4	22	E19	C21	EE2	0.7	IP40	50
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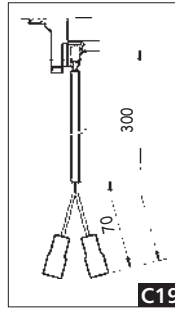




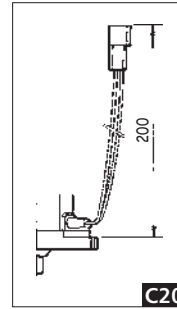
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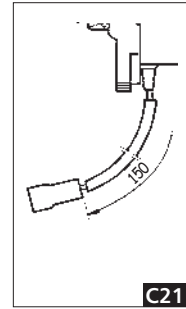
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C19



C20



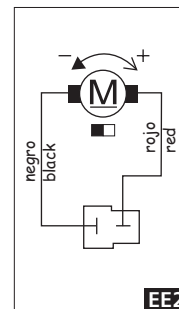
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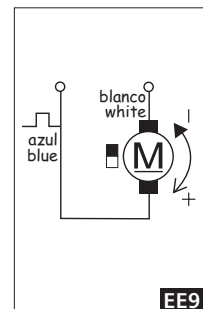
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EE2

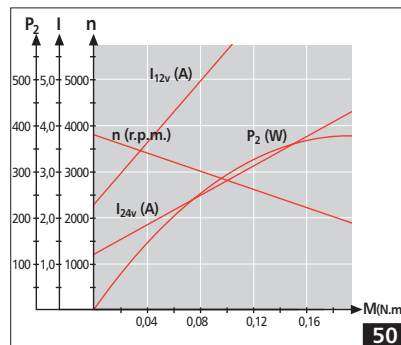


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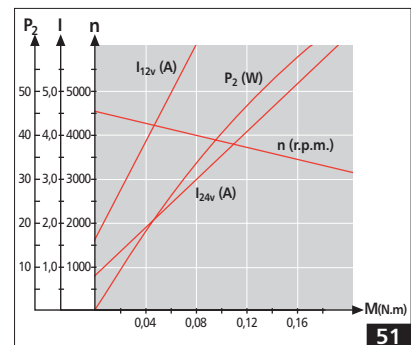
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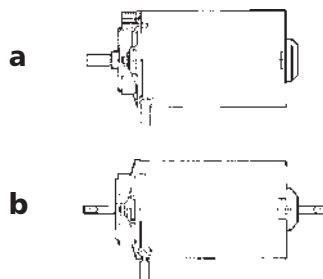
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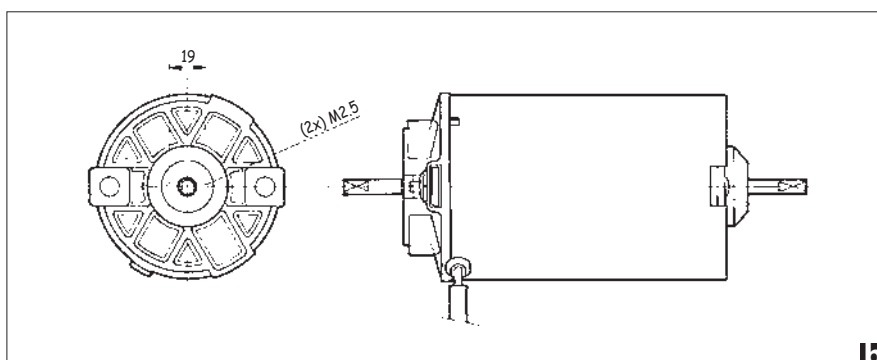
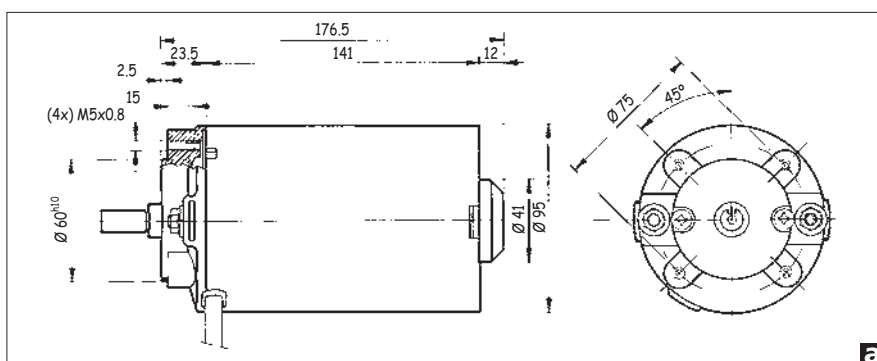
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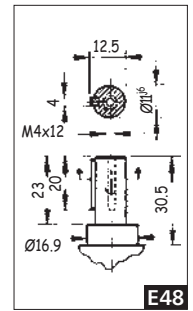
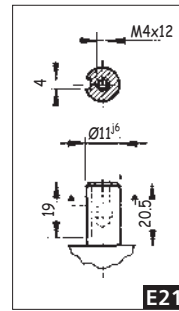
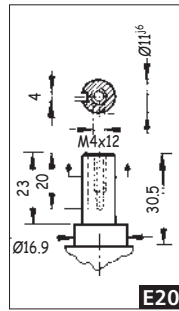
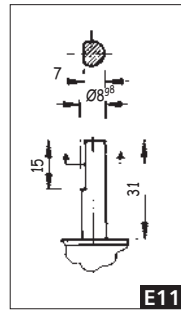


motor  
moteur  
Gleichstrommotor

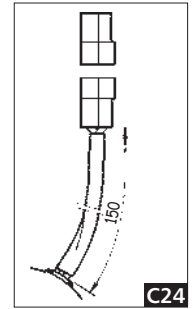
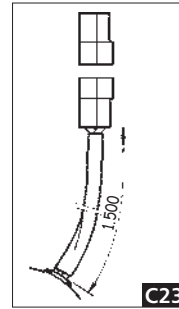
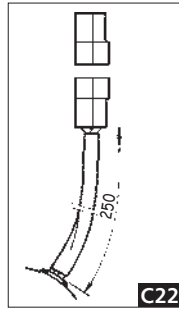


Referencia Reference number Référence Referenznummern	Tensión nominal Nominal voltage Tension nominale Nennspannung	Par nominal Nominal torque Couple nominal Drehmoment nominal	Velocidad nominal Nominal speed Vitesse nominale Geschwindigkeit nominal	Corriente nominal Nominal current Courant nominal Nominalstrom	Par de arranque Starting torque Couple de démarrage Anzugsdrehmoment	Corriente de arranque Starting current Courant de démarrage Anlaufstrom	Eje Shaft Axe Welle	Conexiones Connections Connexions Anschlußart	Esq. eléct. Wiring diag. Sch. élect. Schaltbild	Peso aproximado Approximate weight Poids approximatif Gewicht (ca.)	Grado de estanqueidad Water-tightness Étanchéité Feuchtigkeitschutzklasse	Diseño: a,b Design: a,b Dessin: a,b Abbildung: a,b	Curva Curve Courbe Kurve
	<b>Un (V)</b>	<b>Mn (N.m.)</b>	<b>nn (r.p.m.)</b>	<b>In (A)</b>	<b>Ma (N.m.)</b>	<b>Ia (A)</b>				<b>P (kg)</b>	<b>IP</b>		
269.4102.20.04	12	0.50	3000	20	4	140	E20	C22	EE2	3.8	IP53	a	52
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269.4103.20.04	12	0.50	3000	20	4	140	E21	C23	EE2	3.8	IP53	a	52
269.4103.30.04	24	0.75	3000	15	4	120	E21	C23	EE2	3.8	IP53	a	53
269.4104.20.04	12	0.80	1800	20	4	100	E48	C24	EE2	3.8	IP53	a	54
269.4104.30.04	24	0.80	1800	10	4	50	E48	C24	EE2	3.8	IP53	a	54
269.4106.20.04	12	0.80	1800	20	4	100	E21	C23	EE2	3.8	IP53	a	54
269.4106.30.04	24	0.80	1800	10	4	50	E21	C23	EE2	3.8	IP53	a	54
269.4107.30.04E	24	0.75	3000	15	4	120	E48/E11	C22	F2	3.8	IP53	b	53
269.4108.20.04E	12	0.80	1800	20	4	100	E48/E11	C24	F2	3.8	IP53	b	54
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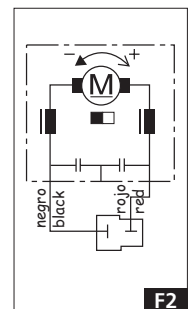
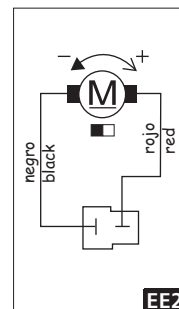


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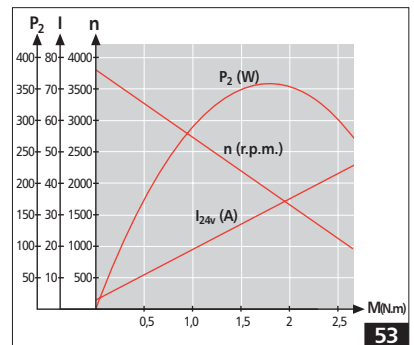
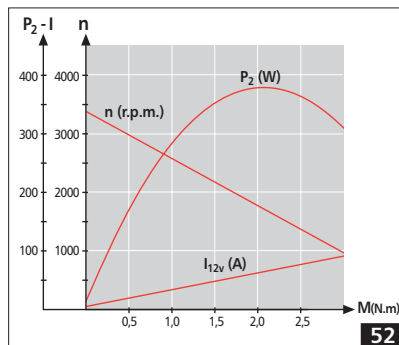


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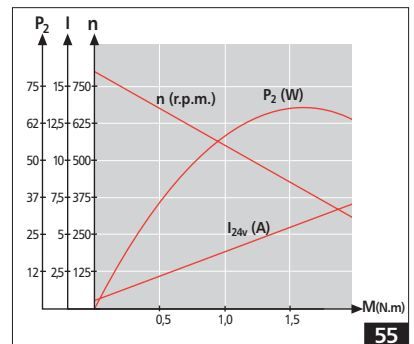
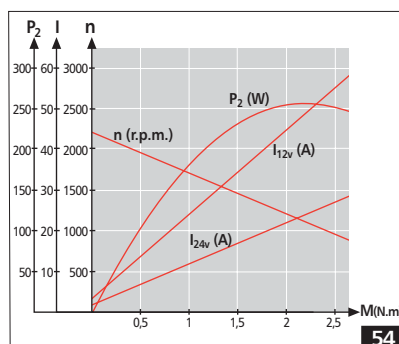


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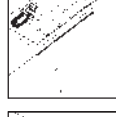
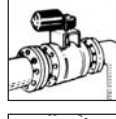
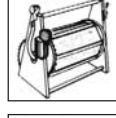
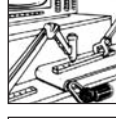
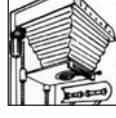
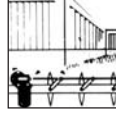
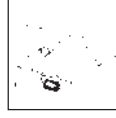
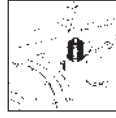
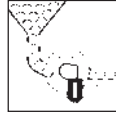
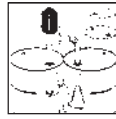
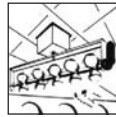
## APLICACIONES APPLICATIONS ANWENDUNGEN

Un motor para cada aplicación.

One application, one motor.

Un moteur pour chaque application.

Ein Motor für jede Anwendung.



### APLICACIONES

Climatización vehículos y maquinaria  
Motobombas  
Maquinaria en general, fresadoras, etc.  
Maquinaria soldadura alimentación hilo continuo  
Maquinaria agrícola (dosificadoras, alimentadoras)  
Maquinaria gráficas  
Maquinaria textil  
Máquinas embalaje, envase, etiquetadoras  
Maquinaria hidráulica  
Automatización industrial (robots)  
Edificación (accionamiento puertas, toldos, barreras, etc.)  
Manutención (cintas transportadoras, etc.)  
Expendedoras (bebidas, moneda, gasolina, etc.)  
Máquinas recreativas  
Electromedicina y laboratorio (dosificadores, agitadores, tamizadores, etc.)  
Fotografía (ensamblaje películas, reproducción, proyectores)  
Maquinaria oficina (fotocopiadoras, offset)  
Informática (impresoras, ordenadores)  
Galvanotecnica  
Juguetes eléctrico y electrónicos  
Nuevas energías (eólica, fotovoltaica)  
Caravanas y embarcaciones deportivas  
Bricolage y pequeños electrodomésticos

Y muchas otras ...

### APPLICATIONS

Air conditioning in vehicles and machines  
Pumps  
Machine construction (grinders, automatic lathes, etc.)  
Welding machines  
Agricultural technology (fertilizer and feeding machines)  
Printing machines  
Textile machines  
Packing and labeling machines  
Hydraulic systems  
Industrial automation (robots, etc.)  
Constructional engineering (regulation of windows and drive mechanisms)  
Material handling technology (conveyor belts)  
Vending machines (drinks, change and cigarette machines, etc.)  
Leisure time machines  
Electromedicine and laboratory appliances (metering, stirrers and filters)  
Photo (copying and film editing machines projectors)  
Business machines (copiers, offset)  
Data process (computers, printers)  
Electroplating  
Electric toys  
New energies (wind energy, solar cells)  
Caravanning and sailing  
Do-it-yourself equipment and small household appliances

And many others ...

### APPLICATIONS

Climatisation de véhicules et de machines  
Pompes  
Construction mécanique (machines à rectifier, tours, etc.)  
Machines à souder  
Appareils agricoles (machines à doser les engrais et de distribution de nourriture aux animaux)  
Machines à imprimer  
Construction textile  
Machines à emballer et à étiqueter  
Machines hydrauliques  
Automatisation industrielle (robots, etc.)  
Bâtiment (déplacement de fenêtres, commandes de portes et barrières)  
Manutention (bandes transporteuses)  
Distributeurs automatiques (boissons, monnaie, cigarettes, etc.)  
Appareils de loisir  
Electromédecine et appareils de laboratoire (doseurs, agitateurs, cribleurs, etc.)  
Photographie (montage de films, reproduction et projecteurs)  
Machines de bureau (appareils à copier, offset)  
Informatique (ordinateur, imprimante)  
Galvanoplastie  
Jouets électriques  
Nouvelles énergies (éolienne, photovoltaïque)  
Caravane et sports de voile  
Appareils de bricolage, machines portatives et petits appareils électrodomestiques

Et beaucoup d'autres ...

### ANWENDUNGEN

Klimatisierung in Fahrzeugen und Maschinen  
Pumpen  
Maschinenbau (Schleifmaschinen, Dreh-automaten, usw.)  
Schweißmaschinen  
Landwirtschaftstechnik (Dünger und Fütterungsautomaten)  
Druckereimaschinen  
Webmaschinen  
Verpackungs- und Etikettiermaschinen  
Hydraulik Maschinenbau  
Industrielle Automatisierung (Roboter, usw.)  
Bautechnik (Verstellung von Fenstern und generelle Antriebe)  
Förder (Förderbänder)  
Getränke-, Zigarretten-, und Münzwechsler-terautomaten, usw.  
Freizeitgeräte  
Elektromedizin und Laborgeräte (Dosier-, Rühr-, und Siebmaschinen, usw.)  
Foto (Repro- u. Filmschneidgeräte, Projektoren)  
Büromaschinen (Kopiergeräte, offset)  
Datenverarbeitung (Komputer, Drucker)  
Galvanik  
Elektrische Spielwaren  
Neue Energie (Windenergie, Sonnenenergie)  
Wohnwagen und Segeln  
Heimwerkergeräte und kleine  
Haushaltsgeräte

Und vielen anderen ...

Si Vd. no encuentra en este catálogo el motor adecuado a su aplicación, envíenos una copia de esta hoja cumplimentada y procuraremos complacerles a la mayor brevedad.

If you can not find any motor suitable for your application in our catalogue, please fill in this sheet and send it back to us. We will do our best to help you as soon as possible.

Si vous ne trouvez pas dans notre catalogue le moteur correspondant à vos besoins, remplissez ce formulaire et renvoyez-nous le par fax. Nous ferons tout notre possible pour résoudre votre problème dans les meilleurs délais.

Wenn Sie in unserem Katalog nicht den geeigneten Motor finden, so senden Sie uns bitte dieses Datenblatt ausgefüllt mit möglichst vielen Angaben zurück. Sie erhalten so bald wie möglich Nachricht von uns.

## "INFO"

### CARACTERISTICAS BASICAS - BASIC CHARACTERISTICS - CARACTERISTIQUES DE BASE - GRUNDDATEN

Tensión nominal - Nominal voltage - Tension nominale - Nominalspannung (V) ▶

Velocidad nominal - Nominal speed - Vitesse nominale - Nenndrehzahl (R.P.M.) ▶

Potencia nominal, útil - Nominal power, useful - Puissance nominale, utile - Abgegebene Leistung P2 (W)  
(o/or/ou/oder) Par nominal - Nominal torque - Couple nominal - Nenndrehmoment (N.m) ▶

Corriente nominal - Nominal current - Courant nominal - Nennstrom (A) ▶

Par de arranque - Starting torque - Couple de démarrage - Anzugsdrehmoment (N.m) ▶

Corriente de arranque máxima admisible - Maximum permitted starting current - Courant de démarrage maximum admissible - Höchstzulässiger Anzugsstrom (A) ▶

Consumo anual en unidades - Quantities per year - Consommation annuelle, en nombre de moteurs - Jahresbedarf

1er. año - 1st year - 1ère année - 1. Jahr ▶

2o. año - 2nd year - 2ème année - 2. Jahr ▶

Aplicación - Application - Application - Anwendung ▶

### VIDA, TIPO DE SERVICIO, COMPLEMENTOS OPCIONALES - LIFE, SERVICE, OPTIONAL EXTRAS - DUREE DE VIE, TYPE DE SERVICE, OPTIONS - LEBENSDAUER, NUTZUNGSART UND SONDERAUSFÜHRUNGEN

Tipo de servicio - Service - Type de service - Dauer- oder unterbrochener Betrieb ▶

Temperatura ambiente - Ambient temperature - Température ambiante - Umgebungstemperatur (min., max.) ▶

Humedad relativa - Relative humidity - Humidité relative - relative Luftfeuchtigkeit (%) ▶

Tipo de ambiente (descripción) - Ambient conditions (dusty, etc) - Type d'environnement (description) - Raumbedingungen (Staub, usw) ▶

Necesidad de vida útil (horas) - Life (hours) - Durée de vie nécessaire (heures) - Lebensdauer in Stunden ▶

Tipo de masa - Type of ground - Type de masse - Anschluss/Masse ▶

Antiparasitaje, clase - Electrical filter, specify - Antiparasitage, type - Art und Klasse der Entstörung ▶

Tipo de protección (estanqueidad) - Degree of protection - Type de protection (étanchéité) - Abdichtung gegen Nässe und Feuchtigkeit ▶

Dimensiones máximas motor/motorreductor, adjuntar plano o croquis - Maximum permitted dimensions motor/gearmotor, please enclose a drawing - Dimensions maximums admissibles moteur/motoréducteur, joindre plan ou croquis - Maximal zulässige Abmessungen (bitte Skizze beifügen) ●

Sistema de acoplamiento (eje, brida), adjuntar plano o croquis - Coupling (shaft, flange), enclose a drawing - Système d'accouplement (arbre, bride), joindre plan ou croquis - Verbindungsart (Welle, Flansch) (bitte Skizze beifügen) ●

Sentido de giro (eje) - Rotation (shaft) - Sens de rotation (arbre) - Drehrichtung der Welle ▶

derecha - right - droite - rechts

izquierda - left - gauche - links

ambos - both - les deux - beide

Autobloqueo - Self-locking - Autoblocage - Selbsthemmung ▶

Otras especificaciones - Other specifications - Autres spécifications - Andere Spezifikationen ▶

### DATOS DE LA EMPRESA - COMPANY DATA - DONNEES DE L'ENTREPRISE - IHRE DATEN

Nombre de la empresa - Company's name - Nom de l'entreprise - Firmenname ▶

Dirección - Address - Adresse - Anschrift ▶

Código postal y población - Town - Code postal et département - Postleitzahl und Ort ▶

Pais - Country - Pays - Land ▶

Teléfono/Fax/e-mail - Phone/fax/e-mail - Téléphone/fax/e-mail - Telefon/Telefax/E-mail ▶

Persona de contacto - Person to be contacted - Personne à contacter - Ansprechpartner ▶

Fecha - Date - Date - Datum ▶

**ENVIAR A - SEND TO - ENVOYER A - SENDEN AN ...**

▶ **FAX +34 93 770 23 52**

▶ **e-mail: [doga@doga.es](mailto:doga@doga.es)**

▶ **TEL. +34 93 770 46 47**

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"IN THE WORLD"

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■ ● **ELRA Antriebstechnik-Elektronik  
Vertriebs GmbH**

*Herr Peter Rogetzer*

Schönngasse 15-17  
A-1020 WIEN  
Tel. +43 1 2141785 0  
Fax +43 1 2163834  
e-mail: p.rogetzer@elra.at  
www.elra.at

## BELGIUM

■ ● **Act in Time**

*Mr. Luc Van Hoylandt*

47 rue du Valcq  
B-1420 BRAINE L'ALLEUD  
Tel. +32 23660606  
Fax +32 23663680  
e-mail: act.in.time@skynet.be  
www.actintime.be

## DENMARK

■ ● **OEM Automatic AB**

Dalagatan 4  
S-573 28 TRANAS  
Tel. +46 (0140) 360 000  
Fax +46 (0140) 360 199  
e-mail: fredrik.wibring@aut.oem.se  
www.oem-motor.se

## ESPAÑA

■ ● **Elmeq, S.L.**

*Sr. Victor Naranjo*

C/ Vilamarí, 50, A-B  
E-08015 BARCELONA  
Tel. +34 93 422 70 33  
Fax +34 93 432 36 60  
e-mail: victor.naranjo@elmeq.es  
www.elmeq.es

## FINLAND

■ ● **OEM Automatic OY**

*Mr. Marko Varjokivi*

PL 9  
FI-20101 TURKU  
Tel. +358 2 4120400  
Fax +358 2 4120490  
e-mail: info@fi.oem.se  
www.oem.fi

## FRANCE

■ ● **MDP**

21 Porte du Grand Lyon-Neyron  
F-01707 MIRIBEL CEDEX  
Tel. +33 (04) 72018300  
Fax +33 (04) 72018309  
e-mail: mdpcontact@mdpmotor.com  
www.mdpmotor.com

## GERMANY

● **B.K.I. Industrievertretungen GmbH**

*Herr Dieter Breitbach*

Agrippinaufer 6  
D-50678 KÖLN  
Tel. +49 (0221) 3319568  
Fax +49 (0221) 3319461  
e-mail: dieter.breitbach@bki-koeln.de

■ ● **EPH Elektronik Produktions- und  
Handelsgesellschaft mbH**

Rudolf-Diesel-Strasse, 18  
D-74354 BESIGHEIM-OTTMARSHEIM  
Tel. +49 7143 8152-0  
Fax +49 7143 8152-50  
e-mail: info@eph-elektronik.de  
www.eph-elektronik.de

## GREAT BRITAIN

■ ● **OEM Automatic Ltd**

*Mr. Nik Page*

Whiteacres, Cambridge RD, WHETSTONE  
Leicestershire LE8 6ZG  
Tel. +44 (0116) 2849900  
Fax +44 (0116) 2841721  
e-mail: nik.page@uk.oem.se  
www.oem.co.uk

## ITALY

■ ● **Megadyne Service & Distribution s.r.l.**

C.so Kennedy, 8  
I-10070 ROBASSOMERO - TORINO  
Tel. +39 011 92 41 740  
Fax +39 011 92 37 907  
e-mail: tech@megadynesd.com  
www.megadynesd.com

## NEDERLAND

■ ● **Elmeq Nederland BV**

*Mr. Arno Meijer*

Broeikweg 25  
NL-2871 RM SCHOONHOVEN  
Tel. +31 (0182) 385711  
Fax +31 (0182) 386920  
e-mail: info@elmeq.nl  
www.elmeq.nl

## SWEDEN

■ ● **OEM Automatic AB**

*Mr. Fredrik Wibring*

Dalagatan 4  
S-573 28 TRANAS  
Tel. +46 (0140) 360 000  
Fax +46 (0140) 360 199  
e-mail: fredrik.wibring@aut.oem.se  
www.oem.se



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[www.doga.es](http://www.doga.es)

# DOGA

## **DOGA, S.A.**

Autovía A-2, Km. 583  
08630 ABRERA - BARCELONA - (SPAIN)  
Tel. +34 93 770 46 47 - Fax +34 93 770 23 52  
e-mail: [doga@doga.es](mailto:doga@doga.es)

## **DOGA do Brasil, Ltda.**

Rua Ibaiti, 111 - Vila Pernetá - Cond. Portal da Serra  
83325-060 PINHAIS - PARANÁ - (BRAZIL)  
Tel. +55 41 3668 6598 - Fax +55 41 3668 1988  
e-mail: [dogabrasil@doga.com.br](mailto:dogabrasil@doga.com.br)

## **DOGA France, S.A.R.L.**

12 Rue de la Fosse Rouge  
77220 PRESLES-EN-BRIE - (FRANCE)  
Tel. +33 164078213 - Fax +33 164071701  
e-mail: [dogafrance@dogafrance.fr](mailto:dogafrance@dogafrance.fr)

## **DOGA Italia, S.R.L.**

Reg. Cocito, 24  
14040 CASTELNUOVO CALCEA (AT) - (ITALY)  
Tel. +39 0141 963000 - Fax +39 0141 963001  
e-mail: [dogaitalia@dogaitalia.com](mailto:dogaitalia@dogaitalia.com)

## **DOGA USA, Corp.**

11259 Kiley Drive  
Huntley - IL - 60142 - (USA)  
Tel. +1 847 669 8529 - Fax +1 847 669 8694  
e-mail: [dogausa@dogausa.com](mailto:dogausa@dogausa.com)