



DOGA



DC MOTORS & GEAR MOTORS

CUSTOM ASSEMBLIES PROVIDED

- Optional Hall Effects as Encoder
- **NEW!** Integrated DC Drive Option

Contact Us! 800-433-3434 USA

Email info@grp6.com

DOGA can develop for you !!



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.



- 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.



SPECIAL

- DOGA ofrece a sus clientes su tecnología y experiencia en la fabricación de motores y motorreductores de corriente continua, para desarrollar soluciones específicas que requieran una motorización en corriente continua y en baja tensión, hasta 72 V, en tecnología de imanes permanentes, con carbones o tecnología brushless.

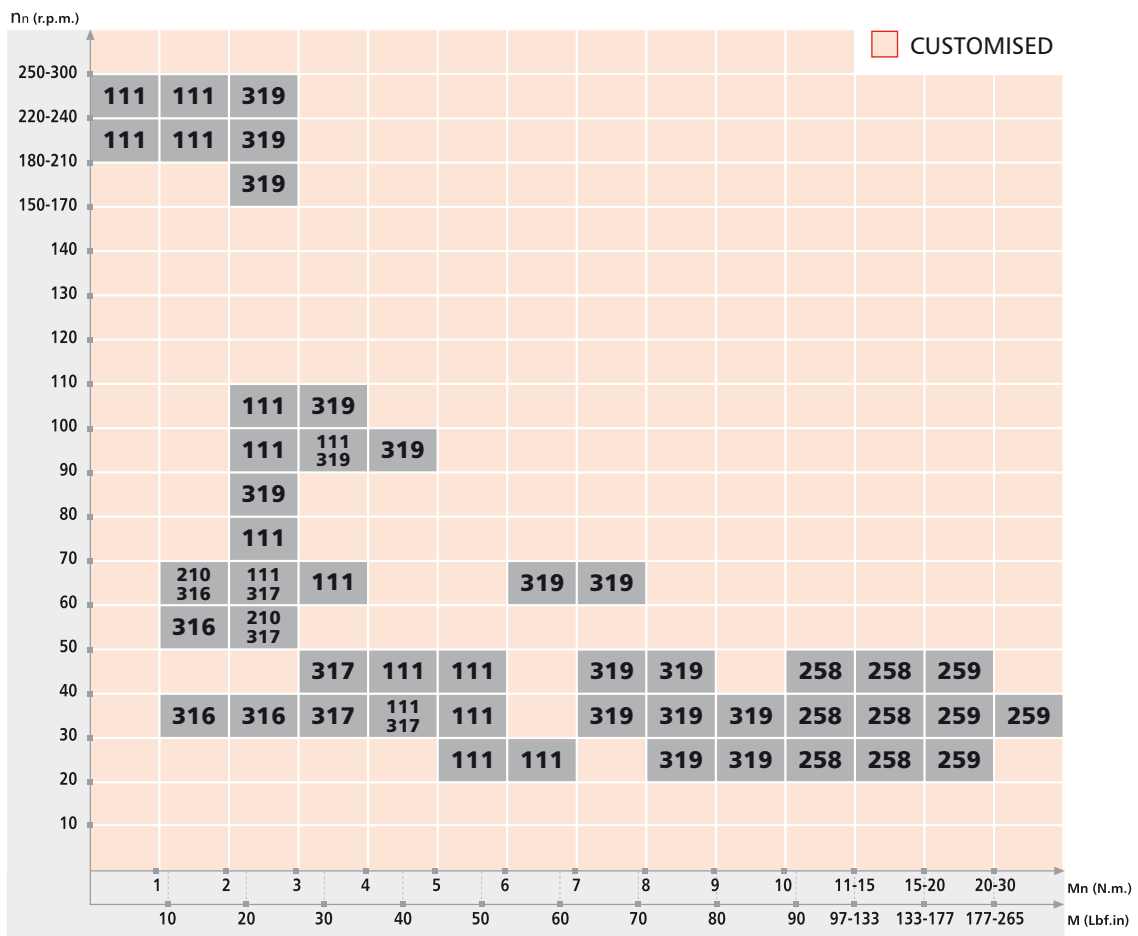
- DOGA offers to their clients their technology and experience in the manufacture of DC motors and gearmotors, to develop specific solutions that require a motorization in DC and low voltages, up to 72 V, as much as in permanent magnet technology as with coals as without them (brushless).

- 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 72V, tant avec une technologie a imants permanents qu'avec ou sans charbons (brushless).

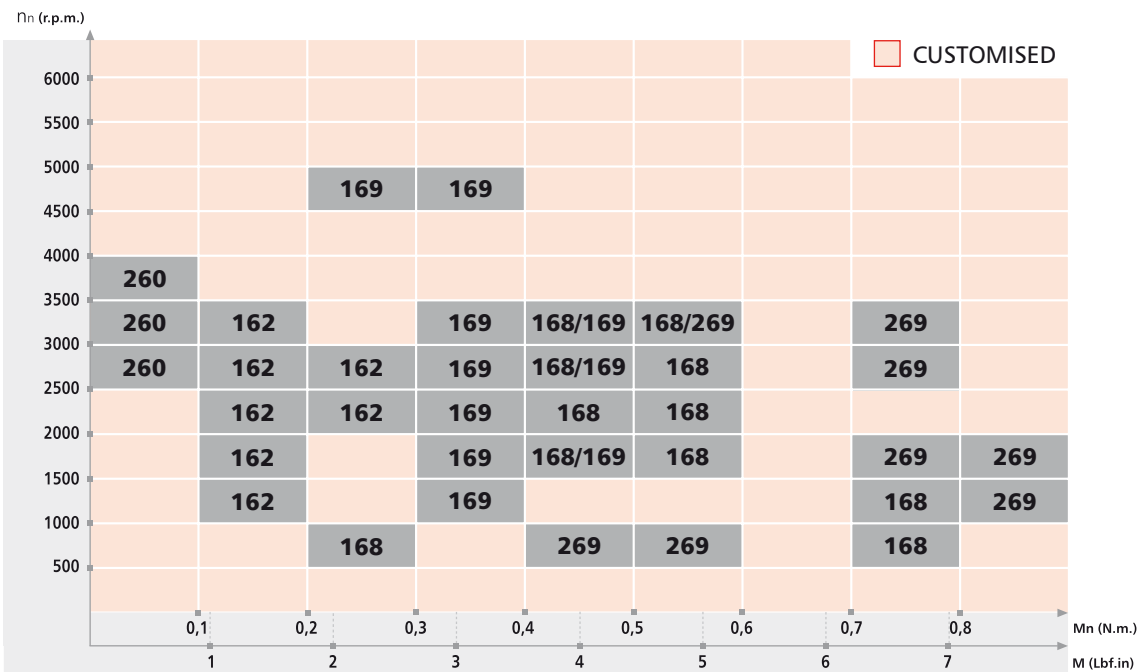
- DOGA bietet seinen Kunden Technologie und Erfahrung bei der Herstellung von Gleichstrommotoren mit und ohne Getriebe an, um spezifische Lösungen zu finden, die eines Gleichstromantriebs im Niederspannungsbereich bis zu 72 V bedürfen, in Permanentmagnettechnik ebenso wie in bürstenlosen Technik.



MOTORREDUCTORES - MOTORS WITH GEAR - MOTORÉDUCTEURS - GLEICHSTROMGETRIEBEMOTOREN



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ESPAÑOL

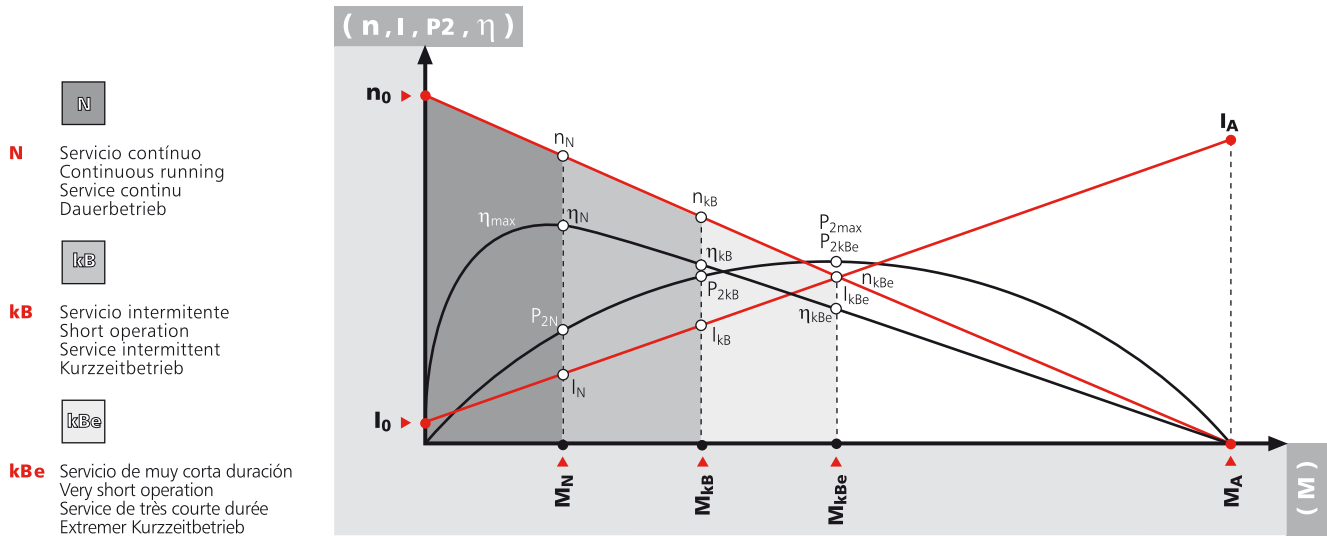
ENGLISH

FRANÇAIS

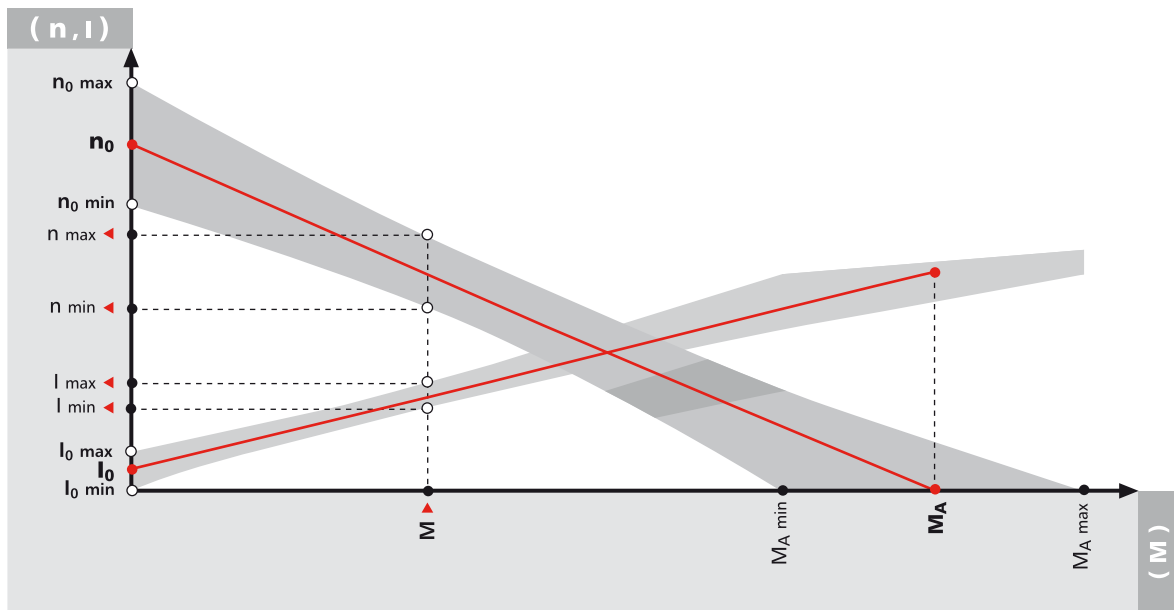
DEUTCH

	ESPAÑOL	ENGLISH	FRANÇAIS	DEUTCH
BRO	Bronce	Bronze	Bronze	Bronze
CEL	Resina fenólica estratificada	Resin bonded fabric	Résine phénolique stratifiée	Hartgewebe
i	Relación de reducción	Transmission ratio	Rapport de réducteur	Übersetzung
I	Corriente	Current	Courant	Stromaufnahme
I₀	Corriente en vacío	No load current	Courant à vide	Stromaufnahme im Leerlauf
I_a	Corriente de arranque	Starting current	Courant de démarrage	Anlaufstrom
I_n	Corriente nominal	Nominal current	Courant nominal	Nennstrom
IP	Grado de estanqueidad	Protection degree	Étanchéité	Feuchtigkeitsschutzklasse
M	Par	Torque	Couple	Drehmoment
Ma	Par de arranque	Starting torque	Couple de démarrage	Anzugsdrehmoment
Mk	Par de autobloqueo	Self-locking torque	Couple d'autoblocage	Selbsthemmungsmoment
Mn	Par nominal	Nominal torque	Couple nominal	Nenn Drehmoment
η (%)	Rendimiento	Efficiency	Rendement	Wirkungsgrad
n	Velocidad	Speed	Vitesse	Geschwindigkeit
n₀	Velocidad en vacío	No load speed	Vitesse à vide	Geschwindigkeit im Leerlauf
n_n	Velocidad nominal	Nominal speed	Vitesse nominale	Nenngeschwindigkeit
P	Peso aproximado	Approximate weight	Poids approximatif	Gewicht (ca.)
P	Potencia	Power	Puissance	Leistung
P₁	Potencia absorbida (U.I.)	Absorbed power (U.I.)	Puissance absorbée (U.I.)	Aufgenommene Leistung (U.I.)
P₂	Potencia nominal, útil	Nominal power, useful	Puissance nominale, utile	Abgegebene Leistung
PLA	Plástico	Plastic	Plastique	Kunststoff
U	Tensión	Voltage	Tension	Spannung
Un	Tensión nominal	Nominal voltage	Tension nominale	Nennspannung

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



MÁRGENES DE TOLERANCIA - TOLERANCE ZONES - MARGES DE TOLERANCE - TOLERANZBEREICHE



- Los valores de bloqueo (M_a , I_a) corresponden al par y la corriente del motor en frío con el eje de salida bloqueado.

Los valores nominales (I_n , N , M_n , n) están determinados para funcionamiento continuo (S1-VDE0530) a condiciones ambiente normales. Tolerancia $\pm 10\%$.

Las curvas son con el motor en frío.

- The stall values (M_a , I_a) correspond to the torque and the current of the motor in cold temperatures with the output shaft blocked.

The nominal values, (I_n , N , M_n , n) are for continuous operation (S1-VDE0530) to normal ambient conditions. Tolerance $\pm 10\%$.

The curves are with the motor in cold temperature.

- Les valeurs de blocage (M_a , I_a) correspondent au couple du moteur à froid avec axe de sortie bloqué.

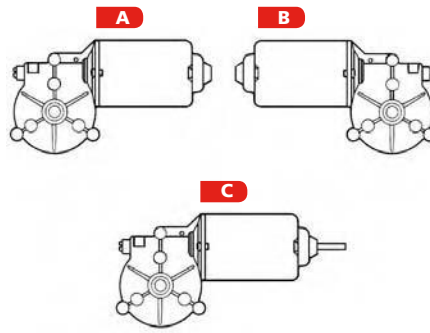
Les valeurs nominales (I_n , N , M_n , n) sont déterminées pour un fonctionnement continu (S1-VDE0530) en conditions ambiantes normales. Tolérance $\pm 10\%$.

Les courbes sont avec moteur froid.

- Die Werte für die Anlaufstrom und der Anzugsdrehmoment (M_a , I_a) entsprechen dem Drehmoment und der Strom des Motors in kaltem Zustand mit blockierter Abgangswelle.

Die Nominalwerte werden ermittelt bei Dauerbetrieb (S1-VDE0530) unter normalen Umgebungsbedingungen. Toleranz $\pm 10\%$.

Die Kurven beziehen sich auf den Motor in kaltem Zustand.

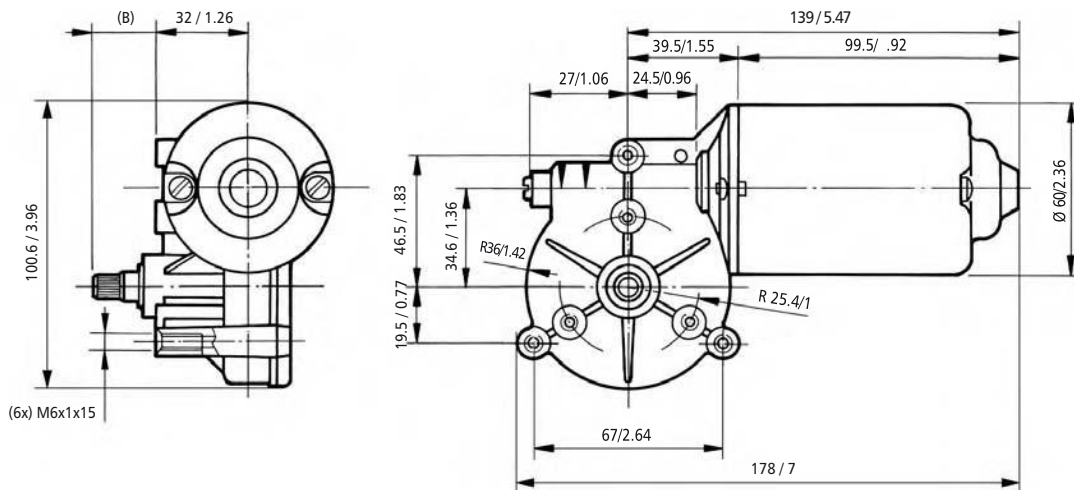


CUSTOMISED

AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLENSOR	✓

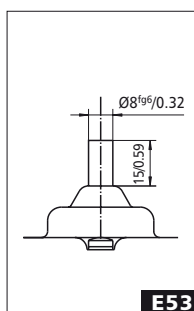
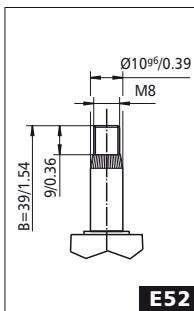
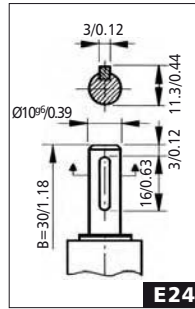
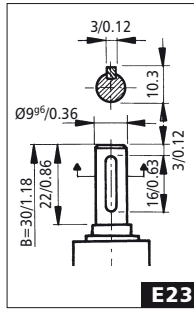
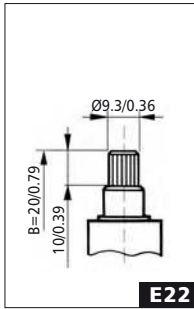
**Y MUCHO MÁS
AND MANY MORE
ET BEAUCOUP D'AUTRES
UND VIELEN ANDEREN**

REFERENCIA NUMBER REFERENCE 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	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBIUD	RELACION DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAL ROUE MAT. DES SCHNECKENRADES	DESIGN: A,B,C DESSIN: A,B,C ABBILDUNG: A,B,C	CURVA CURVE COURBE
	U _N (V)	M _n (N.m./lbf.in)	n _n (r.p.m.)	I _n (A)	M _a (N.m./lbf.in)	I _a (A)				i	P (kg/lb.t)	IP			
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111.3761.20.00	12	5 / 44.2	40	5	25 / 221.2	25	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	1
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111.3761.20.00E	12	5 / 44.2	40	5	25 / 221.2	25	E23	C25	F2	62:1	1.25 / 3.34	IP53	PLA	a	1
111.3761.30.00E	24	5 / 44.2	40	2.5	25 / 221.2	13	E23	C25	F2	62:1	1.25 / 3.34	IP53	PLA	a	1
111.3763.20.00	12	6 / 53.1	25	4	25 / 221.2	15	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	3
111.3763.30.00	24	6 / 53.1	25	2	25 / 221.2	8	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	3
111.4761.30.00	24	5 / 44.2	40	2.5	25 / 221.2	13	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	b	1
111.9031.20.00	12	3 / 26.5	70	6	25 / 221.2	34	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	2
111.9031.30.00	24	3 / 26.5	70	3	25 / 221.2	17	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	2
111.9039.20.00	12	1.5 / 13.2	240	8	14 / 123.9	46	E23	C26	EE1	49:4	1.25 / 3.34	IP53	PLA	a	4
111.9039.30.00	24	1.5 / 13.2	240	4	14 / 123.9	23	E23	C26	EE1	49:4	1.25 / 3.34	IP53	PLA	a	4
111.9041.30.00	24	5 / 44.2	40	2.5	25 / 221.2	13	E24	C25	EE2	62:1	1.30 / 3.48	IP53	BRO	a	1
111.9094.20.00	12	5 / 44.2	40	5	25 / 221.2	25	E52	C2	EE2	62:1	1.25 / 3.34	IP53	PLA	a	1
111.9107.30.00	24	1.5 / 13.2	240	4	14 / 123.9	23	E24/E53	C26	EE1	49:4	1.25 / 3.34	IP40	CEL	c	4
111.9199.20.00	12	3 / 26.5	100	6	20 / 177.01	48	E24	C26	F3	59:2	1.25 / 3.34	IP53	PLA	a	59
111.9199.30.00	24	3 / 26.5	100	3	20 / 177.01	24	E24	C26	F3	59:2	1.25 / 3.34	IP53	PLA	a	59

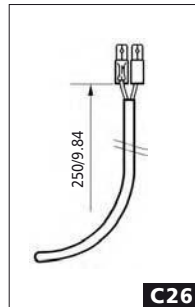
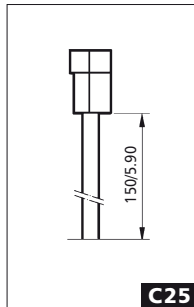
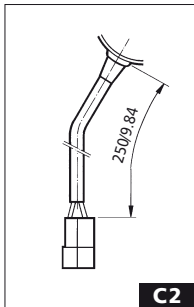


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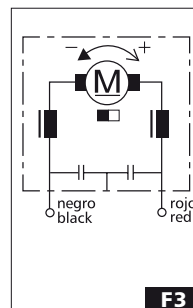
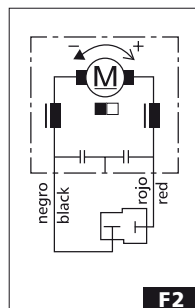
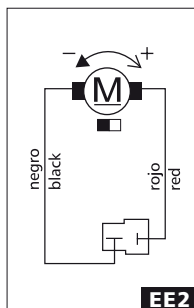
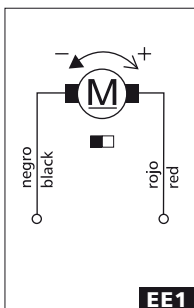
EJE - SHAFT - ARBRE - WELLE



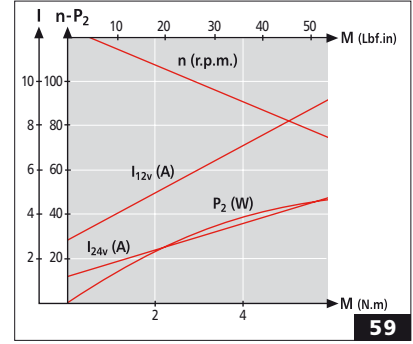
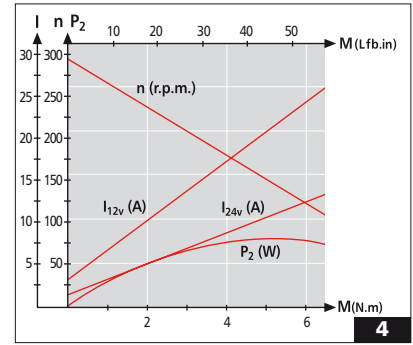
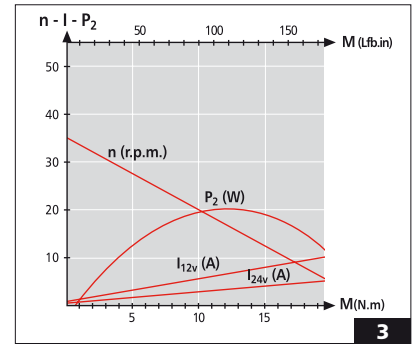
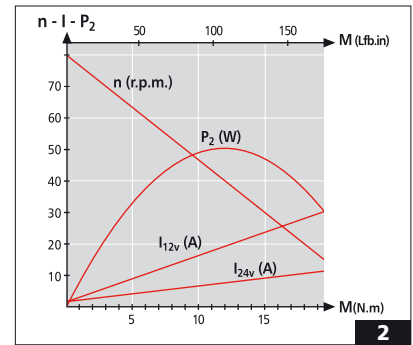
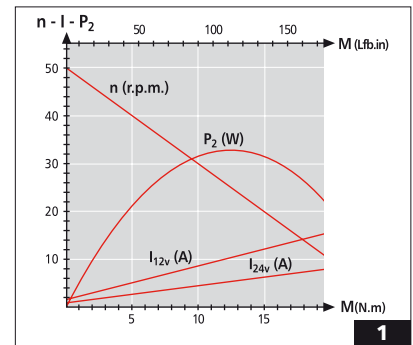
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART

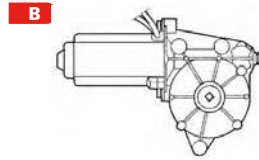
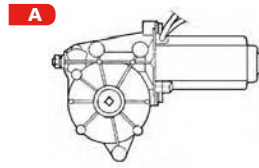


ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHÉME ÉLECTRIQUE - SCHALTBIKD



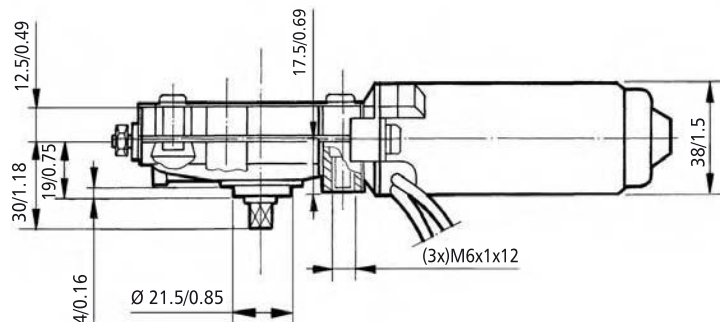
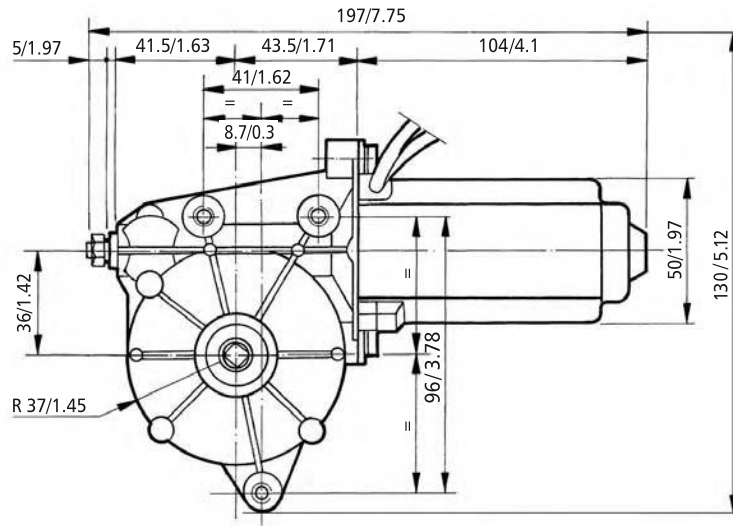
CURVAS - CURVES - COURBES - KURVEN





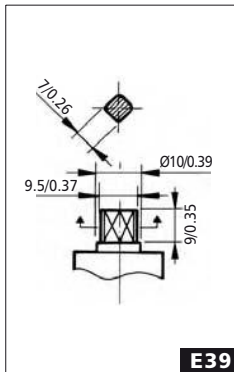
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	Un (V)	Mn * (N.m./lb.ft)	n _n (r.p.m.)	In (A)	Ma (N.m./lb.ft)	Ia (A)				i	P (kg/lb.t)	IP			
210.0111.20.D0	12	3 / 26.5	55-75	7.5	10 / 88.5	28	E39	C20	EE16	60:1	0.95 / 2.54	IP40	PLA	a	17
210.0111.20.I0	12	3 / 26.5	55-75	7.5	10 / 88.5	28	E39	C20	EE16	60:1	0.95 / 2.54	IP40	PLA	b	17
210.0111.30.D0	24	3 / 26.5	55-75	4	10 / 88.5	14	E39	C20	EE16	60:1	0.95 / 2.54	IP40	PLA	a	17
210.0111.30.I0	24	3 / 26.5	55-75	4	10 / 88.5	14	E39	C20	EE16	60:1	0.95 / 2.54	IP40	PLA	b	17

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



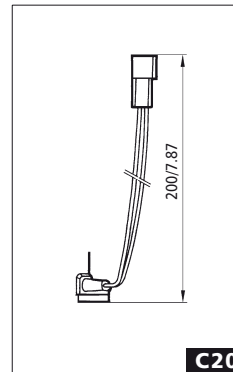
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EJE - SHAFT - ARBRE - WELLE



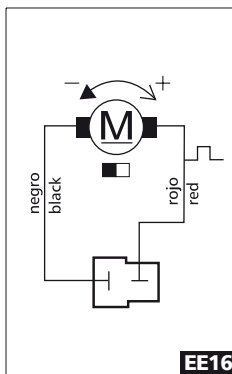
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CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



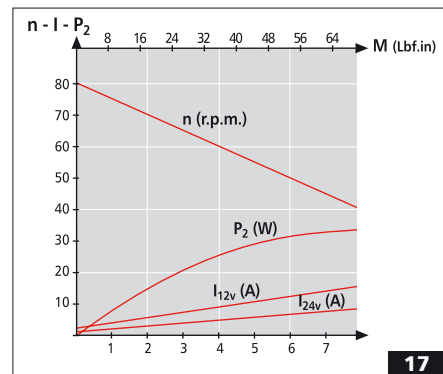
C20

ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHÉME ÉLECTRIQUE - SCHALTBILD



EE16

CURVAS - CURVES - COURBES - KURVEN



17

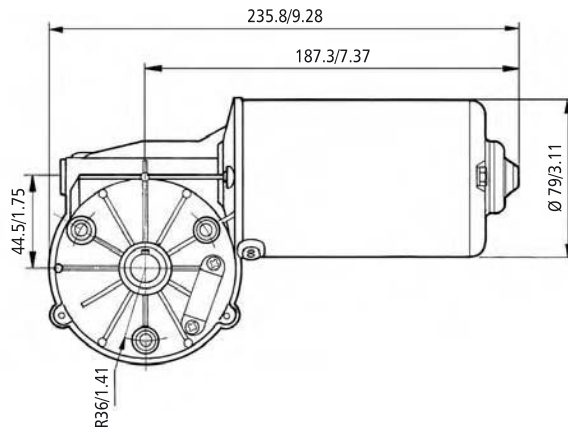
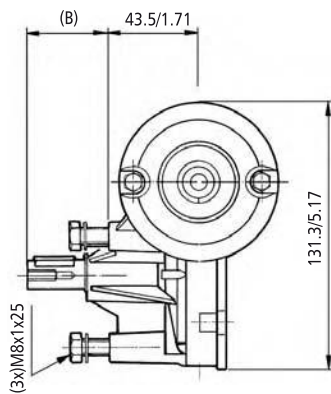


CUSTOMISED

AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

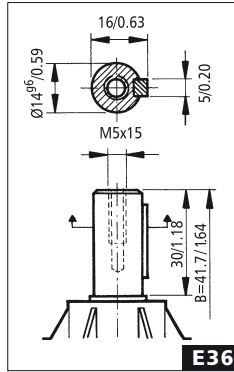
**Y MUCHO MÁS
AND MANY MORE
ET BEAUCOUP D'AUTRES
UND VIELEN ANDEREN**

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 NOMINAL STROM	PAR DE ARRANQUE STARTING TORQUE COUPLE DE DEARRAGE ANZUGSDREHMOMENT	CORRIENTE DE ARRANQUE STARTING CURRENT COURANT DE DEARRAGE ANLAUFSTROM	EJE SHAFT ARBRE WELLE	CONEXIONES CONNECTIONS CONNEXIONS ANSCHLUSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBIKD	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (gr.)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	CURVA CURVE COURBE KURVE
	Un (V)	Mn (N.m./lb.ft)	nn (r.p.m.)	In (A)	Ma (N.m./lb.ft)	Ia (A)				i	P (kg/lb.t)	IP		
258.1710.20.00	12	15 / 133	25	10	80 / 708	42	E36	C34	F2	52:1	3.00 / 8	IP53	PLA	18
258.1710.30.00	24	15 / 133	25	5	80 / 708	21	E36	C34	F2	52:1	3.00 / 8	IP53	PLA	18
258.3710.20.00	12	15 / 133	25	10	80 / 708	42	E36	C34	EE2	52:1	3.00 / 8	IP53	PLA	18
258.3710.30.00	24	15 / 133	25	5	80 / 708	21	E36	C34	EE2	52:1	3.00 / 8	IP53	PLA	18
258.3712.20.00	12	12 / 106	40	12	80 / 708	55	E36	C34	EE2	52:1	3.00 / 8	IP53	PLA	19
258.3712.30.00	24	12 / 106	40	6	80 / 708	32	E36	C34	EE2	52:1	3.00 / 8	IP53	PLA	19
258.9026.20.00	12	12 / 106	40	12	80 / 708	55	E36	C34	EE2	52:1	3.00 / 8	IP53	CEL	19
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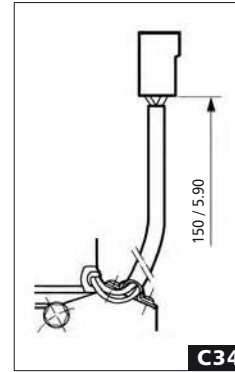


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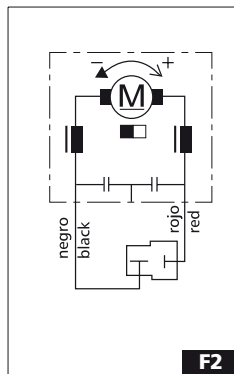
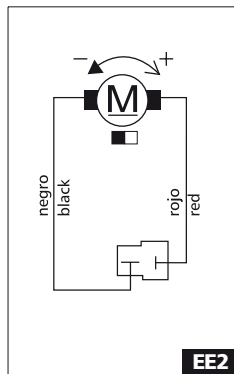
EJE - SHAFT - ARBRE - WELLE



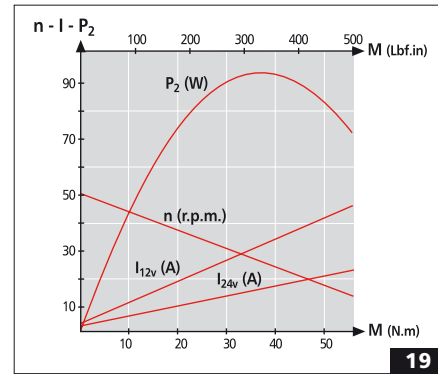
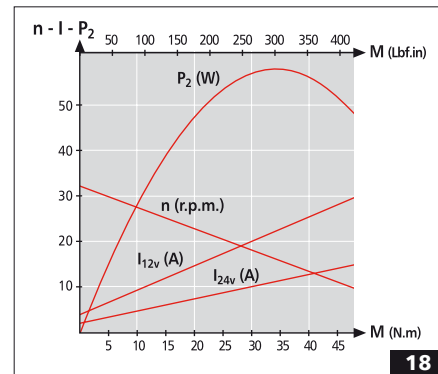
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART

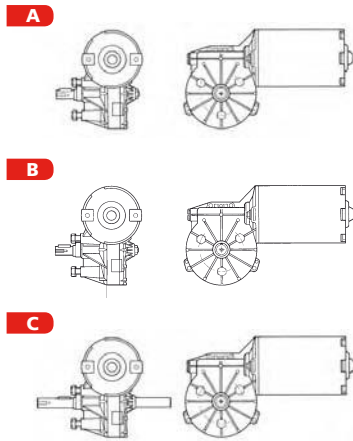


ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHÉME ÉLECTRIQUE - SCHALTBILD



CURVAS - CURVES - COURBES - KURVEN



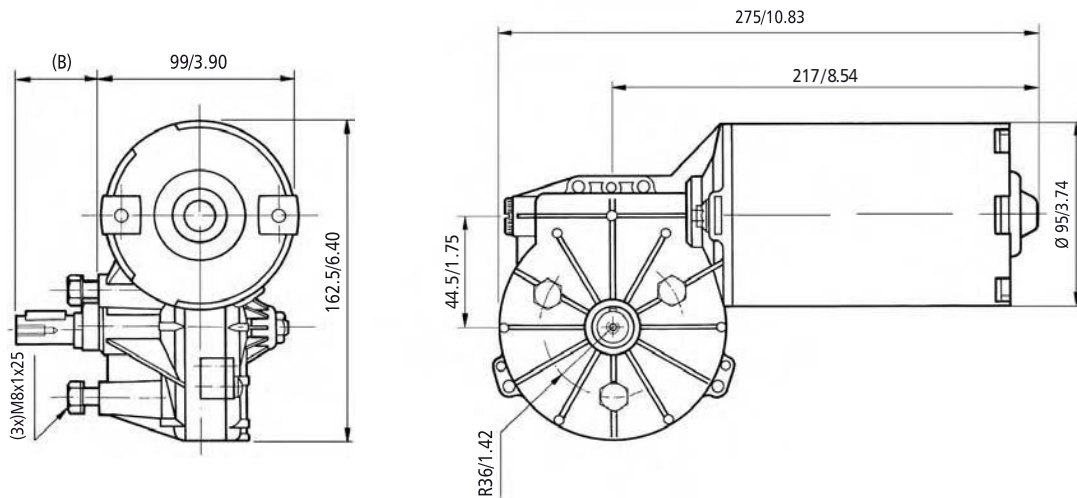


CUSTOMISED

AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

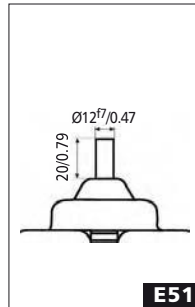
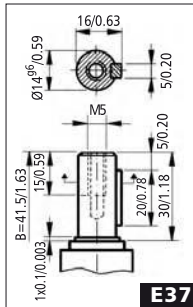
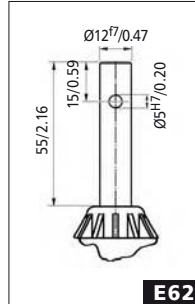
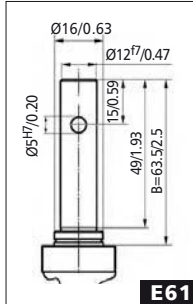
**Y MUCHO MÁS
AND MANY MORE
ET BEAUCOUP D'AUTRES
UND VIELEN ANDEREN**

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 DEMARRAGE ANZUGSDREHMOMENT	CORRIENTE DE ARRANQUE STARTING CURRENT COURANT DE DEMARRAGE ANLAUFSTROM	EJE SHAFT ARBRE WELLE	CONEXIONES CONNECTIONS CONNEXIONS ANSCHLUSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ÉLECTRIQUE SCHALTBIKD	RELACION DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (Gg)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ÉTANCHÉTE FUGHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	DESIGN: A,B,C DESSIN: A,B,C ABBILDUNG: A,B,C	CURVA CURVE KURVE
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	la (A)				i	P (kg/lb.t)	IP			
259.3710.20.00	12	20 / 177	22	12	130 / 1150	60	E37	C34	EE2	50:1	5.90 / 15.80	IP53	PLA	a	20
259.3710.30.00	24	20 / 177	22	6	130 / 1150	30	E37	C34	EE2	50:1	5.90 / 15.80	IP53	PLA	a	20
259.9001.20.00	12	15 / 132.7	40	18	120 / 1062	98	E37	C34	F2	50:1	5.90 / 15.80	IP53	PLA	a	21
259.9001.30.00	24	15 / 132.7	40	9	120 / 1062	49	E37	C34	F2	50:1	5.90 / 15.80	IP53	PLA	a	21
259.9008.30.00	24	25 / 221	25	7	135 / 1195	30	E37/E51	C34	EE2	50:1	5.90 / 15.80	IP40	PLA	b	22
259.9016.30.00	24	20 / 177	22	6	130 / 1150	30	E37	C34	EE2	50:1	5.90 / 15.80	IP53	CEL	a	20
259.9027.20.00	12	20 / 177	22	12	130 / 1150	60	E61/E62	C40	EE1	50:1	6.0 / 16.07	IP53	CEL	c	20

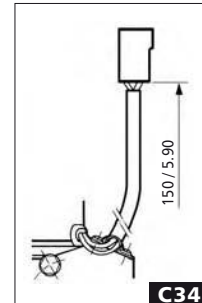
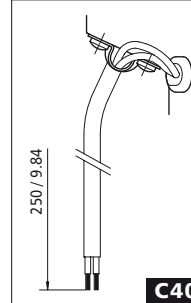


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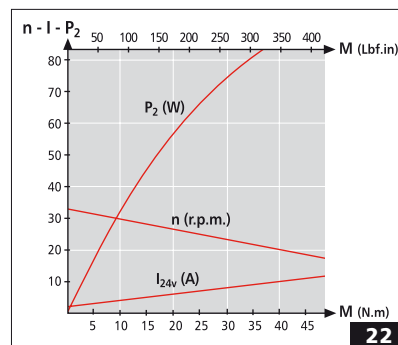
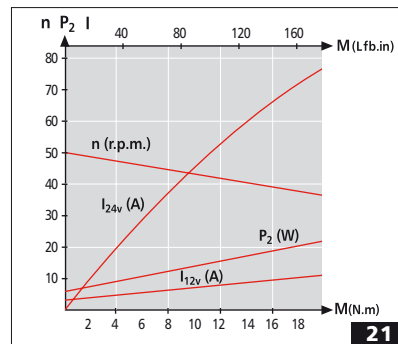
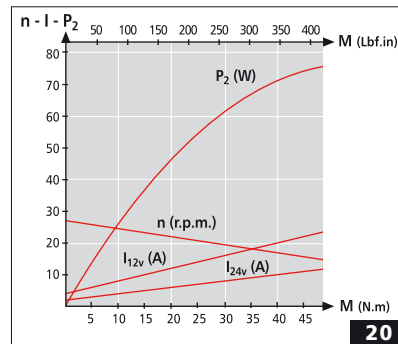
EJE - SHAFT - ARBRE - WELLE



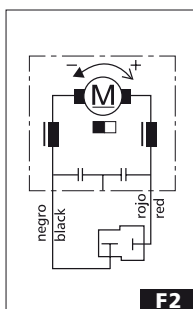
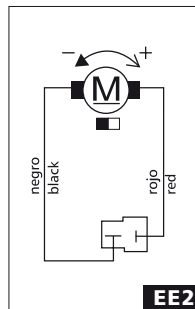
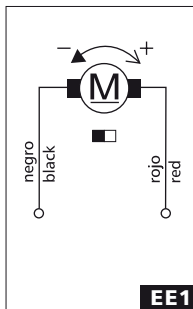
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



CURVAS - CURVES - COURBES - KURVEN



ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHEMA ÉLECTRIQUE - SCHALTBILD





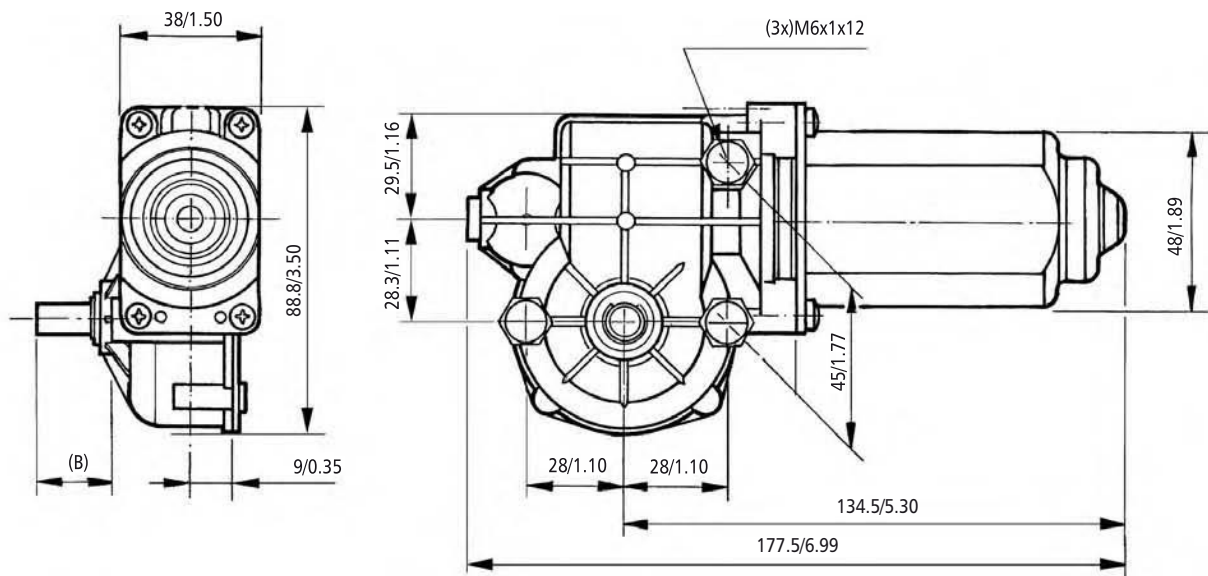
CUSTOMISED

AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

Y MUCHO MÁS
AND MANY MORE
ET BEAUCOUP D'AUTRES
UND VIELEN ANDEREN

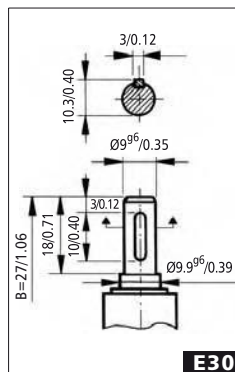
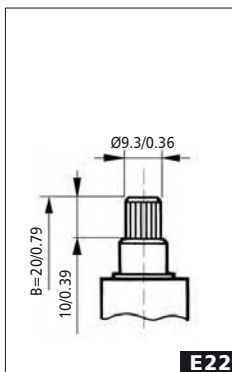
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINAL STROM	PAR DE ARRANQUE STARTING TORQUE COUPLE DE DEVIARRAGE ANZUGSDREHMOMENT	CORRIENTE DE ARRANQUE STARTING CURRENT COURANT DE DEVIARRAGE ANLAUFSTROM	EJE SHAFT ARBRE WELLE	CONEXIONES CONNECTIONS CONNEXIONS ANSCHLUSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBIKD	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (Gg.)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	CURVA CURVE COURBE KURVE
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				i	P (kg/lb.t)	IP		
316.2711.20.00	12	2 / 17.70	38	3.4	10 / 88.5	12	E22	C30	EE4	62:1	0.90/2.41	IP40	PLA	56
316.2711.30.00	24	2 / 17.70	38	1.7	10 / 88.5	6	E22	C30	EE4	62:1	0.90/2.41	IP40	PLA	56
316.2761.20.00	12	2 / 17.70	38	3.4	10 / 88.5	12	E30	C30	EE4	62:1	0.90/2.41	IP40	PLA	56
316.2761.30.00	24	2 / 17.70	38	1.7	10 / 88.5	6	E30	C30	EE4	62:1	0.90/2.41	IP40	PLA	56
316.2761.20.00E	12	2 / 17.70	38	3.4	10 / 88.5	12	E30	C30	F4	62:1	0.90/2.41	IP40	PLA	56
316.2761.30.00E	24	2 / 17.70	38	1.7	10 / 88.5	6	E30	C30	F4	62:1	0.90/2.41	IP40	PLA	56
316.9728.30.00	24	2 / 17.70	38	1.7	10 / 88.5	6	E30	C30	EE4	62:1	0.90/2.41	IP40	BRO	56
316.9731.20.00	12	*1.5/13.27	65	6.0	10 / 88.5	22	E30	C30	EE4	62:1	0.90/2.41	IP40	PLA	57
316.9731.30.00	24	*1.5/13.27	65	3.0	10 / 88.5	11	E30	C30	EE4	62:1	0.90/2.41	IP40	PLA	57

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

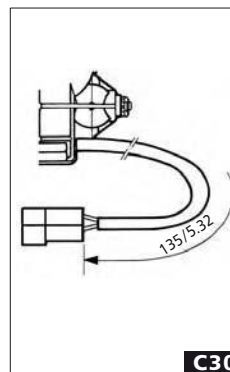


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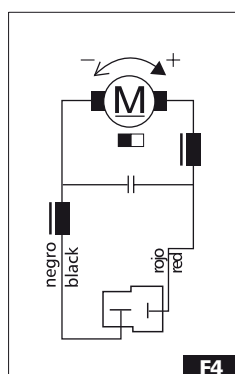
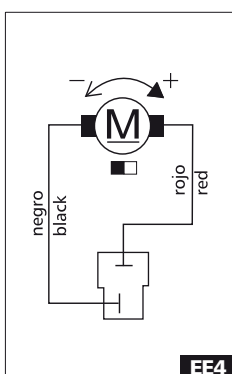
EJE - SHAFT - ARBRE - WELLE



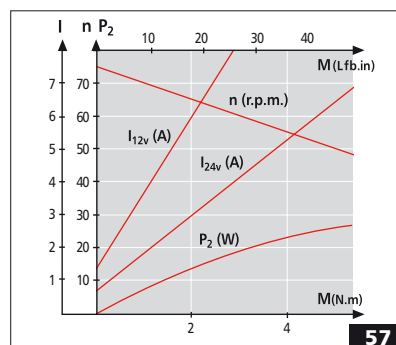
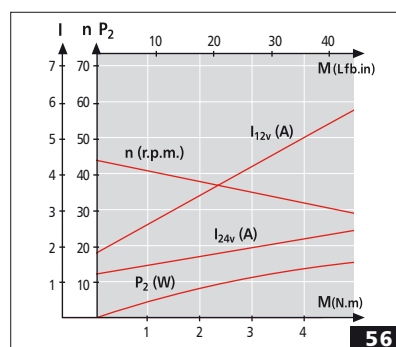
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHEMA ÉLECTRIQUE - SCHALTBILD



CURVAS - CURVES - COURBES - KURVEN



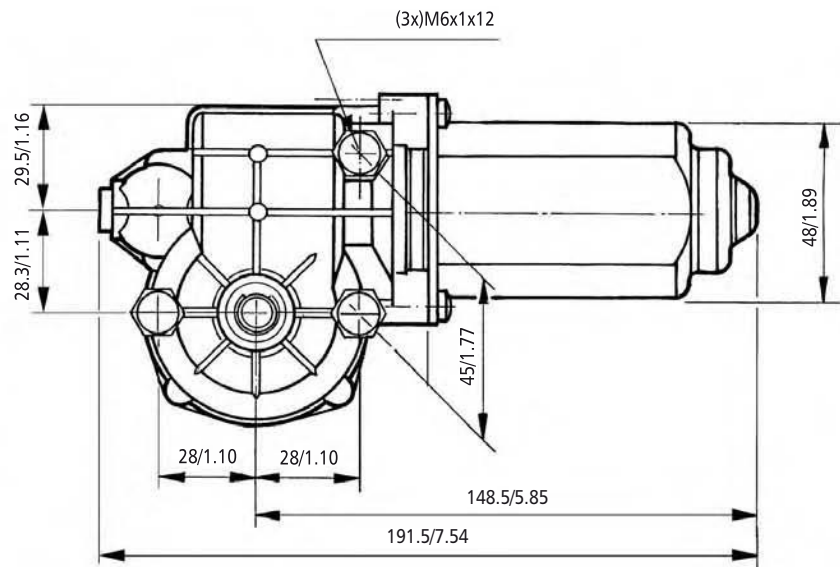
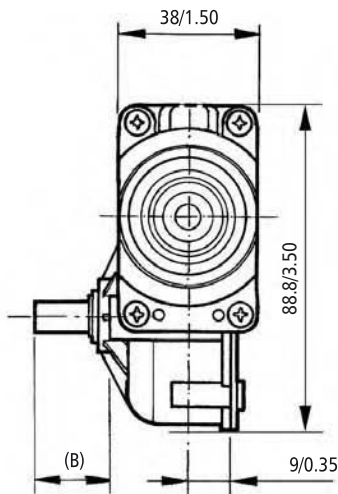


CUSTOMISED

AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONZE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

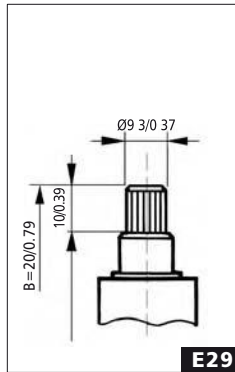
Y MUCHO MÁS
AND MANY MORE
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REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINAL STROM	PAR DE ARRANQUE STARTING TORQUE COUPLE DE DEARRAGE ANZUGSDREHMOMENT	CORRIENTE DE ARRANQUE STARTING CURRENT COURANT DE DEARRAGE ANLAUFSTROM	EJE SHAFT ARBRE WELLE	CONEXIONES CONNECTIONS CONNEXIONS ANSCHLUSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBIKD	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (Gg.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ÉTANCHÉTE FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	CURVA CURVE KURBE KURVE
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				i	P (kg/lb.t)	IP		
317.2711.20.00	12	4 / 35	25	2.5	12 / 106	8	E29	C30	EE4	62:1	1.15/3.08	IP40	PLA	64
317.2711.30.00	24	4 / 35	25	1.1	12 / 106	4	E29	C30	EE4	62:1	1.15/3.08	IP40	PLA	64
317.2761.20.00	12	4 / 35	25	2.5	12 / 106	8	E30	C30	EE4	62:1	1.15/3.08	IP40	PLA	64
317.2761.30.00	24	4 / 35	25	1.1	12 / 106	4	E30	C30	EE4	62:1	1.15/3.08	IP40	PLA	64
317.2761.20.00E	12	4 / 35	25	2.5	12 / 106	8	E30	C30	F4	62:1	1.15/3.08	IP40	PLA	64
316.2761.30.00E	24	4 / 35	25	1.1	12 / 106	4	E30	C30	F4	62:1	1.15/3.08	IP40	PLA	64
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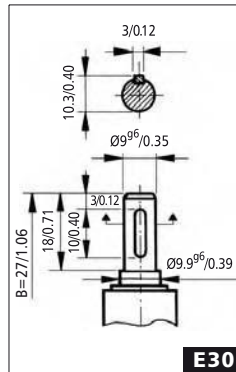


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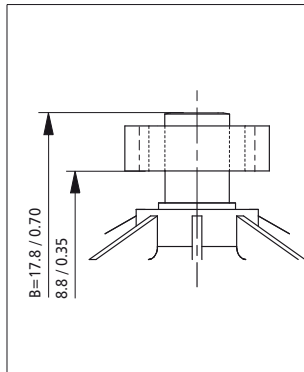
EJE - SHAFT - ARBRE - WELLE



E29



E30

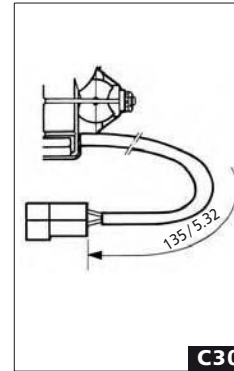


PIÑÓN DIENTES EXTERNOS
EXTERNAL TEETH PINION

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m	1.75
α	20
de	22.32
dp	18.8
df	14.41
s	3.30
h	3.94

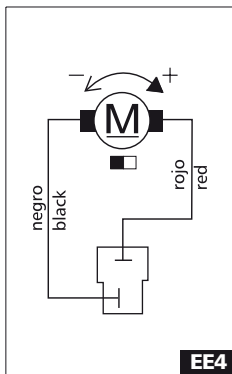
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CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART

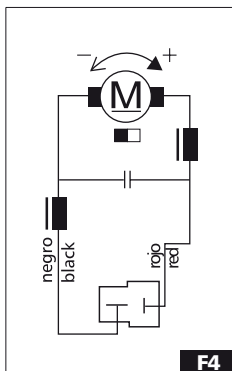


C30

ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHEMA ÉLECTRIQUE - SCHALTBILD

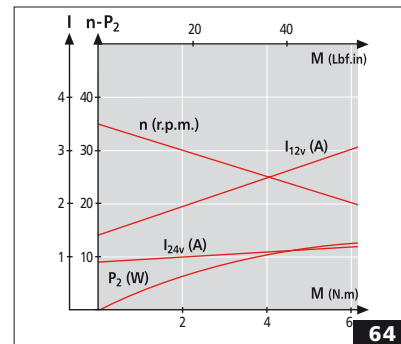


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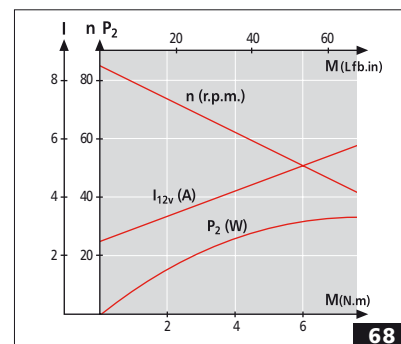


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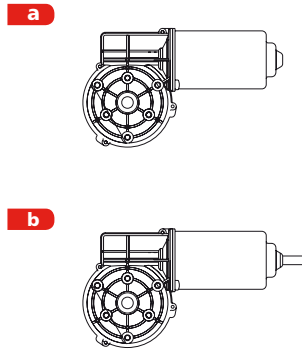
CURVAS - CURVES - COURBES - KURVEN



64



68

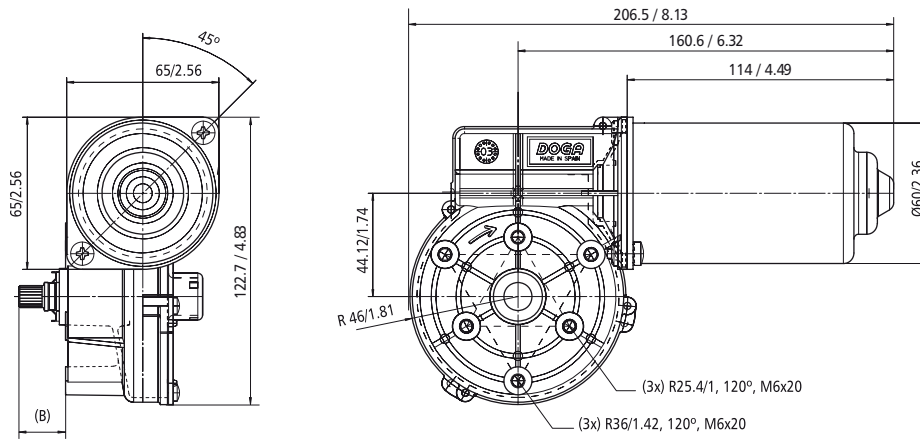


CUSTOMISED

AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

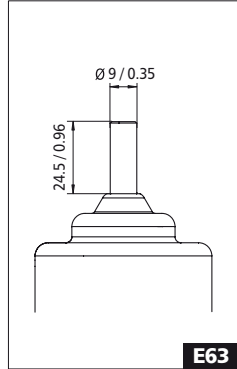
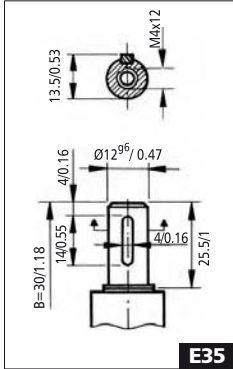
Y MUCHO MÁS
AND MANY MORE
ET BEAUCOUP D'AUTRES
UND VIELEN ANDEREN

REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSION 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 DEMARRAGE ANZUGSDREHMOMENT	CORRIENTE DE ARRANQUE STARTING CURRENT COURANT DE DEMARRAGE ANLAUFSTROM	EJE SHAFT ARBRE WELLE	CONEXIONES CONNECTIONS CONNEXIONS ANSCHLUSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBILD	RELACION DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MÉRIAU ROUE MAT. DES SCHNECKENRADES	DESIGN: A,B,C DESIGN: A,B,C DESSIN: A,B,C ABBILDUNG: A,B,C	CURVA CURVE COURBE KURVE
	U _n (V)	M _n (N.m./lb.ft.in)	n _n (r.p.m.)	I _n (A)	M _a (N.m./lb.ft.in)	I _a (A)				i	P (kg/lb.t)	IP			
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319.1846.30.00	24	4 / 35	85	3.5	40 / 354	30	E35	C37	F5	78:2	1.7 / 4.55	IP55	PLA	a	62
319.1860.20.00	12	9 / 79.6	30	7	50 / 442	28	E35	C37	F5	81:1	1.7 / 4.55	IP55	PLA	a	58
319.1860.30.00	24	9 / 79.6	30	3	50 / 442	15	E35	C37	F5	81:1	1.7 / 4.55	IP55	PLA	a	58
319.1862.20.00	12	8 / 70.8	45	6	50 / 442	50	E35	C37	F5	81:1	1.7 / 4.55	IP55	PLA	a	60
319.1862.30.00	24	9 / 79.6	45	3	60 / 531	25	E35	C37	F5	81:1	1.7 / 4.55	IP55	PLA	a	61
319.3820.20.00	12	9 / 79.6	30	7	50 / 442	28	E35	C37	EE4	81:1	1.7 / 4.55	IP55	BRO	a	58
319.3820.30.00	24	9 / 79.6	30	3	50 / 442	15	E35	C37	EE4	81:1	1.7 / 4.55	IP55	BRO	a	58
319.3822.20.00	12	8 / 70.8	45	6	50 / 442	50	E35	C37	EE4	81:1	1.7 / 4.55	IP55	BRO	a	60
319.3822.30.00	24	9 / 79.6	45	3	60 / 531	25	E35	C37	EE4	81:1	1.7 / 4.55	IP55	BRO	a	61
319.3845.20.00	12	6 / 53.1	65	8	35 / 309	40	E35	C37	EE4	78:2	1.7 / 4.55	IP55	PLA	a	67
319.3845.30.00	24	6 / 53.1	65	4	40 / 354	25	E35	C37	EE4	78:2	1.7 / 4.55	IP55	PLA	a	67
319.3846.20.00	12	4 / 35	85	7	40 / 354	60	E35	C37	EE4	78:2	1.7 / 4.55	IP55	PLA	a	62
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319.3860.20.00	12	9 / 79.6	30	7	50 / 442	28	E35	C37	EE4	81:1	1.7 / 4.55	IP55	PLA	a	58
319.3860.30.00	24	9 / 79.6	30	3	50 / 442	15	E35	C37	EE4	81:1	1.7 / 4.55	IP55	PLA	a	58
319.3862.20.00	12	8 / 70.8	45	6	50 / 442	50	E35	C37	EE4	81:1	1.7 / 4.55	IP55	PLA	a	60
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319.9059.30.00	24	2.2 / 19.47	230	4	20 / 177	36	E35	C37	EE4	67:4	1.7 / 4.55	IP55	PLA	a	65
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319.9137.20.00	12	2 / 17.7	155	8	20 / 177	60	E35	C38	EE4	67:4	1.7 / 4.55	IP55	PLA	a	66
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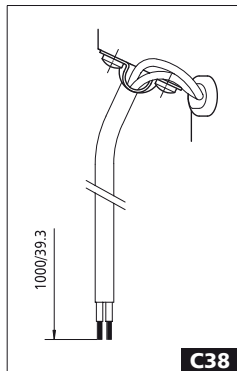
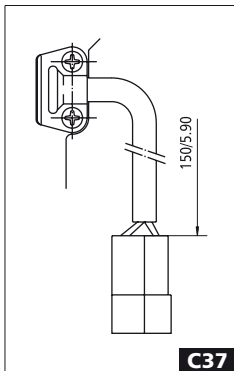


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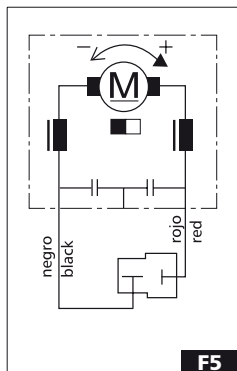
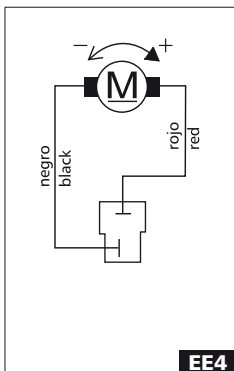
EJE - SHAFT - ARBRE - WELLE



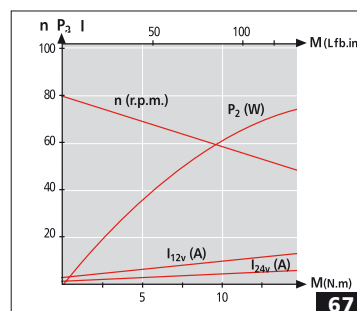
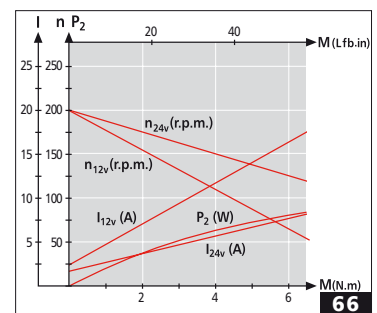
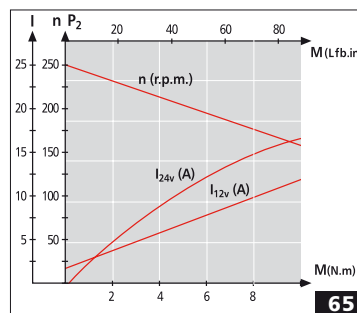
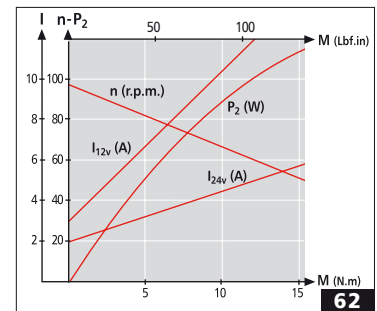
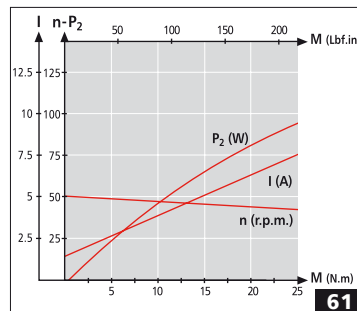
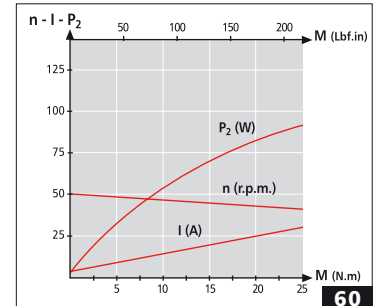
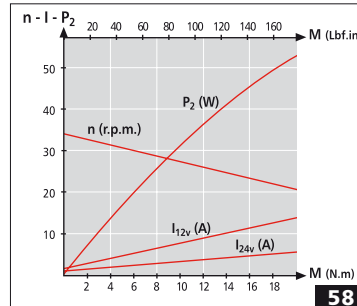
CONEXIONES - CONNECTIONS CONNEXIONS - ANSCHLUSSART

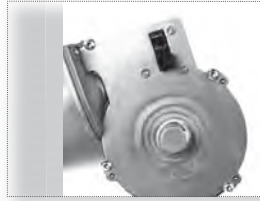


ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHÉME ÉLECTRIQUE - SCHALTBILD



CURVAS - CURVES - COURBES - KURVEN





CUSTOMISED

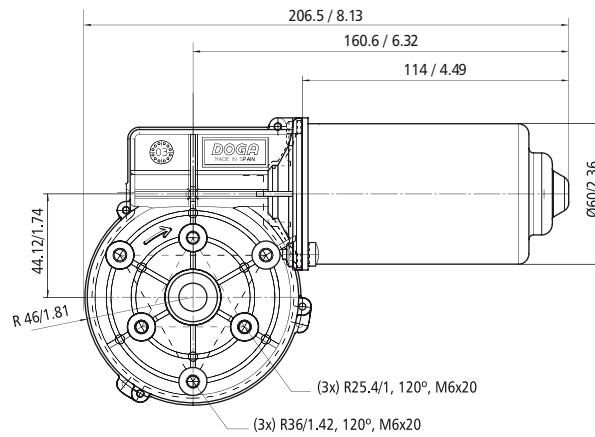
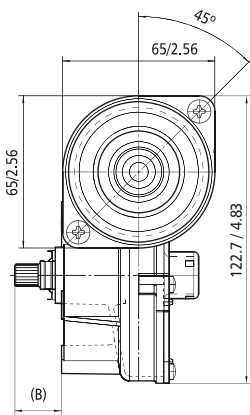
AUTO-BLOQUEO
SELF-LOCKING
COUPLE D'AUTOBLOCAGE
SELBSTHEMMUNG

RUEDA DE BRONCE
BRONZE WHEEL
ROUE EN BRONZE
GETRIEBERAD AUS BRONZE

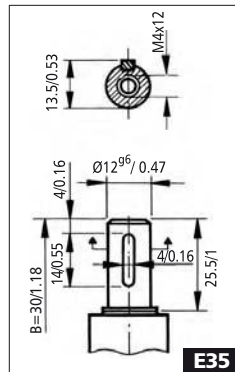
EJE DELANTERO Y POSTERIOR
FRONT AND REAR SHAFT
ARBRE ARRIERE
VORDERWELLE UND HINTERWELLE

Y MUCHO MÁS
AND MANY MORE
ET BEAUCOUP D'AUTRES
UND VIELEN ANDEREN

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 DEMARRAGE ANZUGSDREHMOMENT	CORRIENTE DE ARRANQUE STARTING CURRENT COURANT DE DEMARRAGE ANLAUFSTROM	EJE SHAFT ARBRE WELLE	CONEXIONES CONNECTIONS CONNEXIONS ANSCHLUSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ÉLECTRIQUE SCHALTBILD	RELACION DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR ÜBERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	CURVA CURVE COURBE KURVE	Nº PULSOS PULSES NUM. NUMI. POISES IMPULSANZAHL
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				i	P (kg/lb.t)	IP			
319.4846.20.00	12	4 / 35	100	6	40 / 354	60	E35	C41	EE18	78:2	1.7 / 4.55	IP55	PLA	62	468
319.4846.30.00	24	4 / 35	100	3	40 / 354	30	E35	C41	EE18	78:2	1.7 / 4.55	IP55	PLA	62	468
319.4860.20.00	12	9 / 79.6	30	7	50 / 442	28	E35	C41	EE18	81:1	1.7 / 4.55	IP40	PLA	58	972
319.4860.30.00	24	9 / 79.6	30	3	50 / 442	15	E35	C41	EE18	81:1	1.7 / 4.55	IP40	PLA	58	972
319.4862.20.00	12	8 / 70.8	45	6	50 / 442	50	E35	C41	EE18	81:1	1.7 / 4.55	IP40	PLA	60	972
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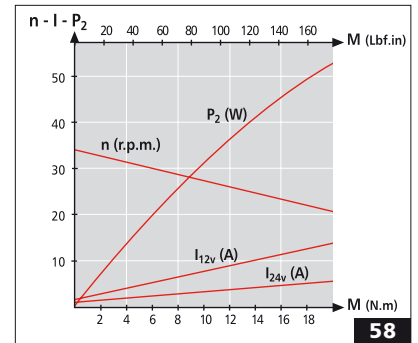


EJE - SHAFT - ARBRE - WELLE



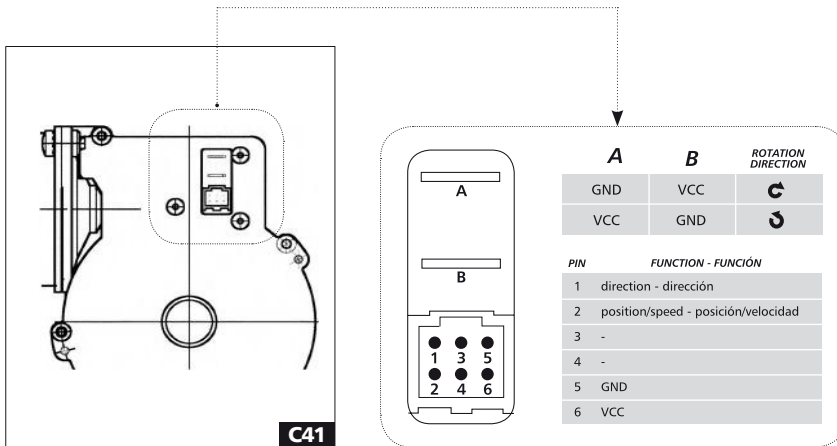
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CURVAS - CURVES - COURBES - KURVEN

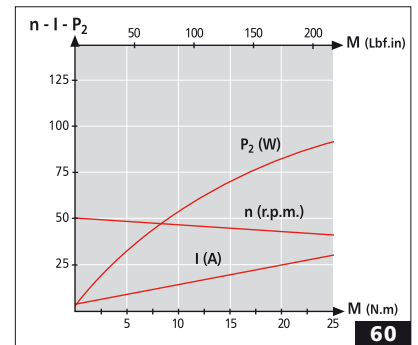


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CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART

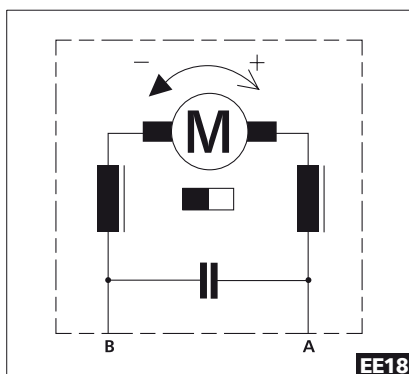


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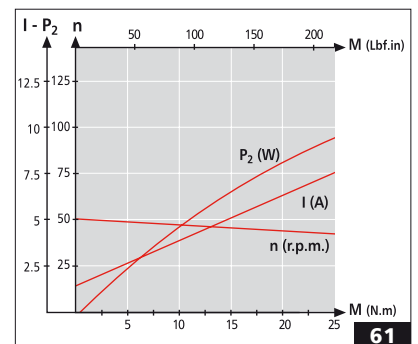


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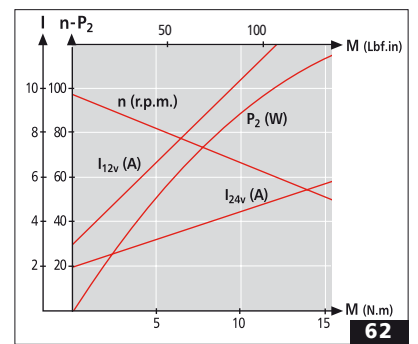
ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHÉME ÉLECTRIQUE - SCHALTBILD



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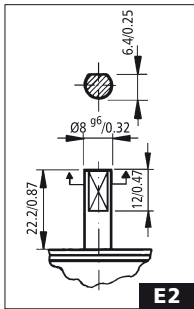


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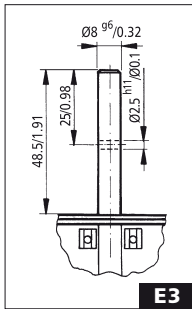


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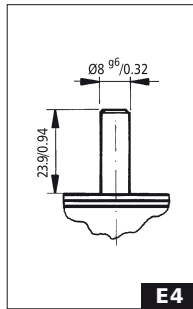
EJE - SHAFT - ARBRE - WELLE



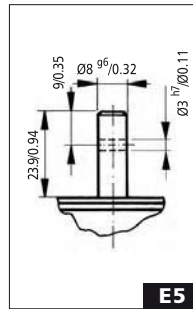
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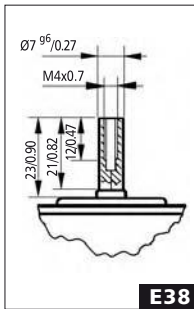
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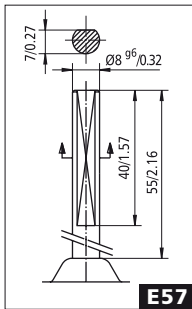
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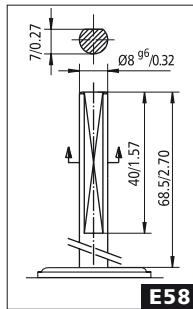
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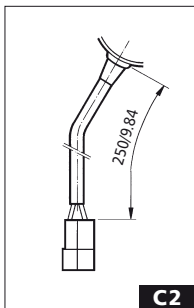


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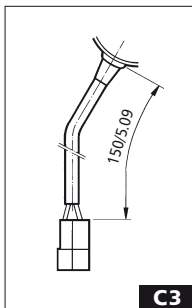


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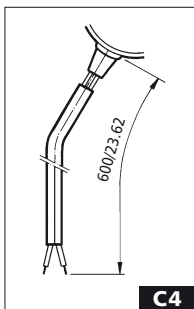
CONEXIONES - CONNECTIONS CONNEXIONS - ANSCHLUSSART



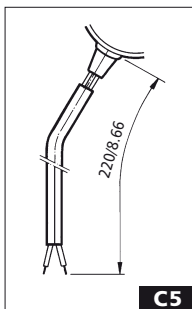
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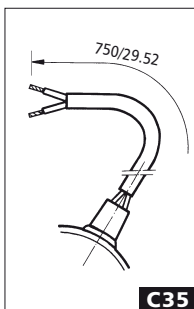
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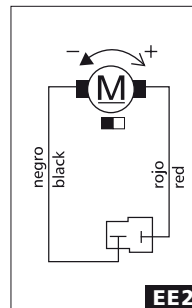


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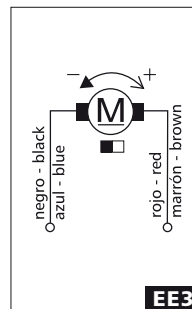


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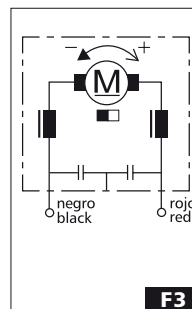
ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHEMA ÉLECTRIQUE - SCHALTBILD



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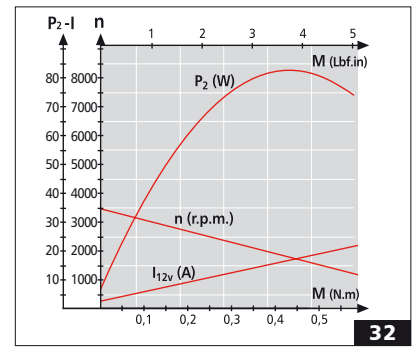


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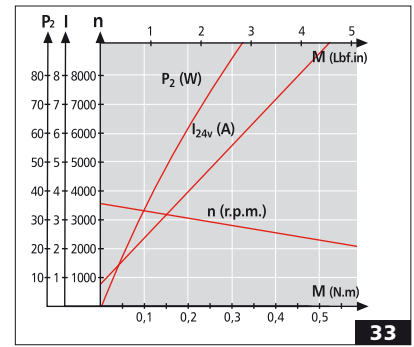


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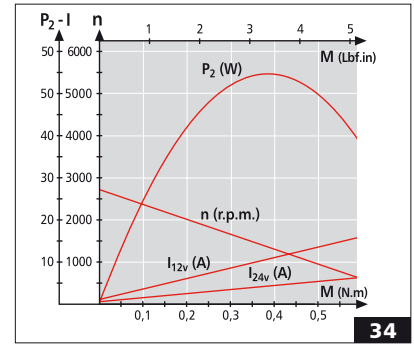
CURVAS - CURVES - COURBES - KURVEN



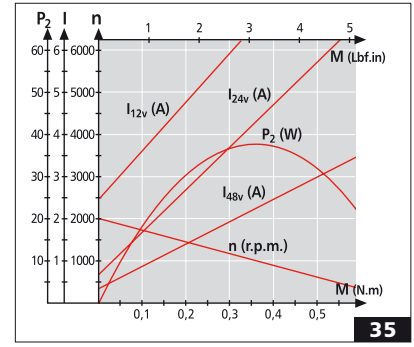
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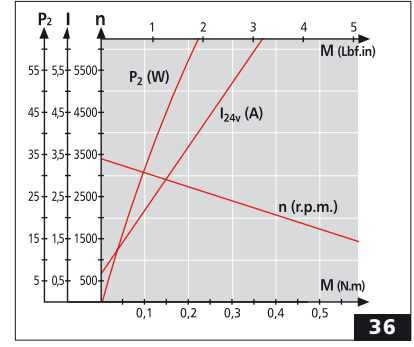
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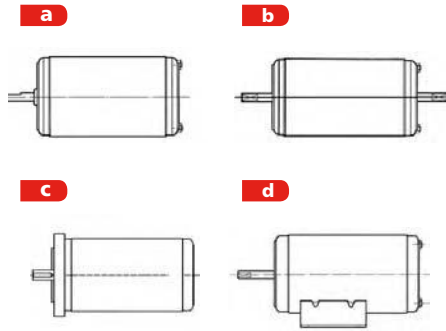
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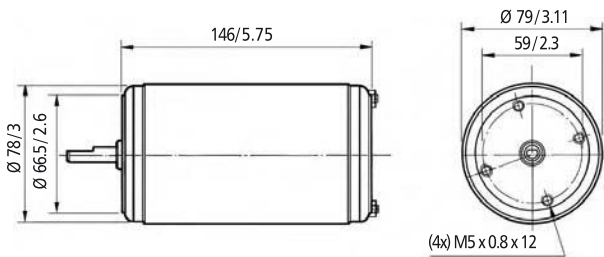
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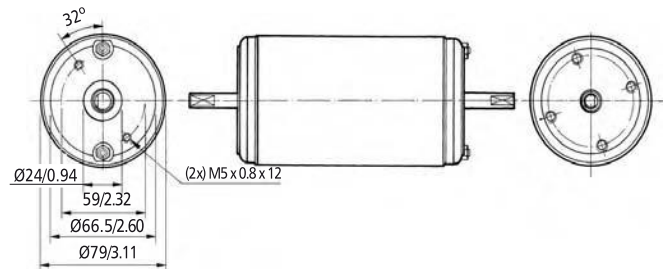
PLANETARY GEAR

- REDUCTORES PLANETARIOS: combinables con la serie 168. Ver sección especial en catálogo.
- PLANETARY GEARS: combinable with 168 series. See special section in catalogue.
- REDUCTEURS PLANETAIRES: combinables avec la série 168. Consultez section spécial du catalogue.
- PLANETENGETRIEBE: Mit der Reihe 168 kombinierbar. Sehen Sie Sonderabschnitt im Katalog.

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	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ÉLECTRIQUE SCHALTBIKD	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	DISEÑO: A-B DESIGN: A-B DESSIN: A-B ABBILDUNG: A-B	CURVA CURVE COURBE KURVE
	Un (V)	Mn (N.m/lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m/lbf.in)	Ia (A)				P (kg/lb.t)	IP		
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168.4105.30.04	24	0.50 / 4.42	1900	7	3.0 / 26.5	32	E8	C8	EE1	2.6 / 6.9	IP40	a	37
168.4108.20.04	12	0.45 / 3.98	2800	19	3.0 / 26.5	100	E9	C9	EE4	2.6 / 6.9	IP40	a	39
168.4108.30.04	24	0.45 / 3.98	2800	10	3.0 / 26.5	52	E9	C9	EE4	2.6 / 6.9	IP40	a	39
168.4111.20.04	12	0.75 / 6.64	1000	11	2.8 / 24.8	36	E11	C9	EE2	2.6 / 6.9	IP40	a	40
168.4111.30.04	24	0.75 / 6.64	1000	5.5	2.8 / 24.8	18	E11	C9	EE2	2.6 / 6.9	IP40	a	40
168.4112.20.04	12	0.70 / 6.19	1500	14	3.0 / 26.5	56	E12	C11	EE2	2.6 / 6.9	IP40	a	42
168.4112.30.04	24	0.70 / 6.19	1500	7	3.0 / 26.5	28	E12	C11	EE2	2.6 / 6.9	IP40	a	42
168.4115.30.04	24	0.50 / 4.42	3000	11	3.0 / 26.5	70	E13/E41	C13	EE2	2.6 / 6.9	IP40	a	41
168.4116.20.04	12	0.50 / 4.42	1900	14	3.0 / 26.5	64	E8	C8	EE1	2.6 / 6.9	IP40	d	37
168.4116.30.04	24	0.50 / 4.42	1900	7	3.0 / 26.5	32	E8	C8	EE1	2.6 / 6.9	IP40	d	37
168.4121.30.04E	24	0.50 / 4.42	3000	11	3.0 / 26.5	70	E11/E11	C13	F2	2.6 / 6.9	IP40	b	41
168.4122.30.04	24	0.75 / 6.64	1000	5.5	2.8 / 24.8	18	E13/E41	C13	EE2	2.6 / 6.9	IP40	a	40
168.4123.20.04	12	0.50 / 4.42	2100	16	3.0 / 26.5	76	E13/E41	C13	EE2	2.6 / 6.9	IP40	a	43
168.4123.30.04	24	0.50 / 4.42	2100	8	3.0 / 26.5	38	E13/E41	C13	EE2	2.6 / 6.9	IP40	a	43
168.4134.30.04	24	0.30 / 2.65	750	1.5	1.5 / 13.3	7	E59	C9	EE2	2.6 / 6.9	IP40	a	44
168.4136.30.00E	24	0.75 / 6.64	1000	5.5	2.8 / 24.8	18	E63	C42	F2	2.6 / 6.9	IP40	c	40

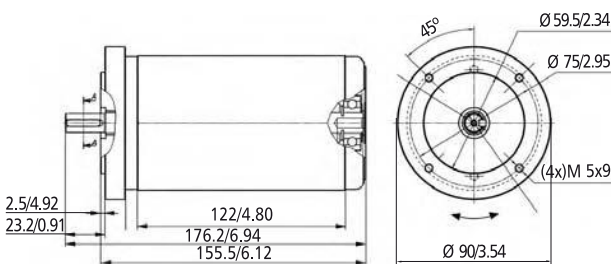


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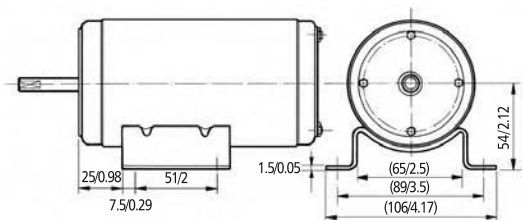


b

Flange according to IEC 63 B14 - Puntos de anclaje según IEC 63 B14



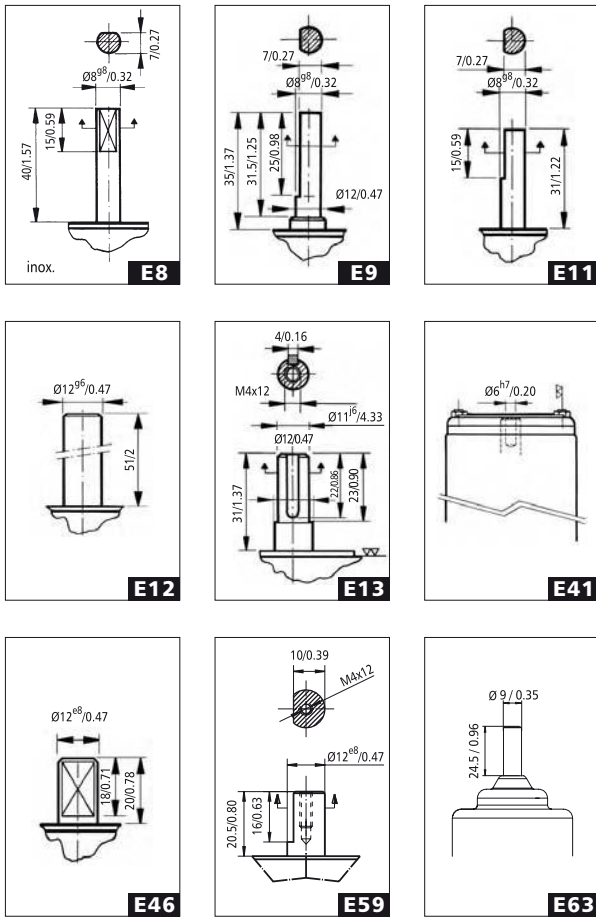
c



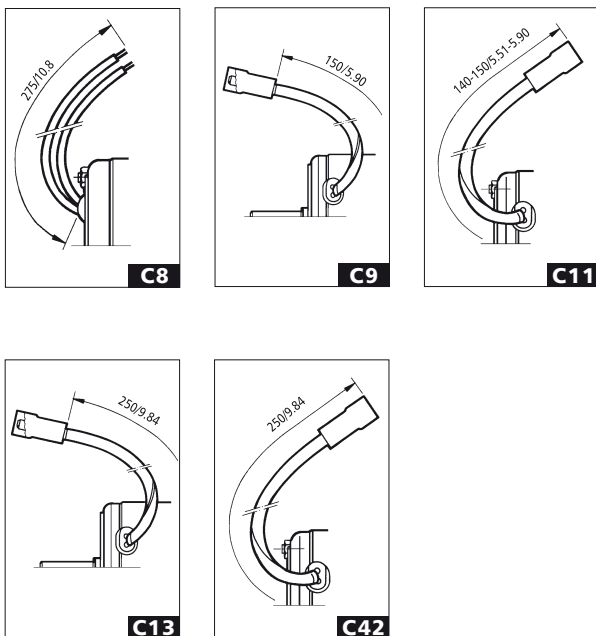
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mm / in

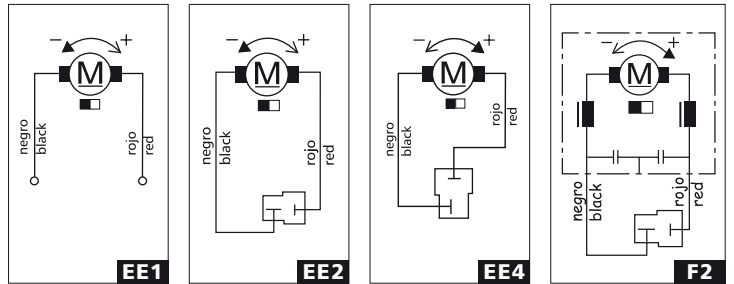
EJE - SHAFT - ARBRE - WELLE



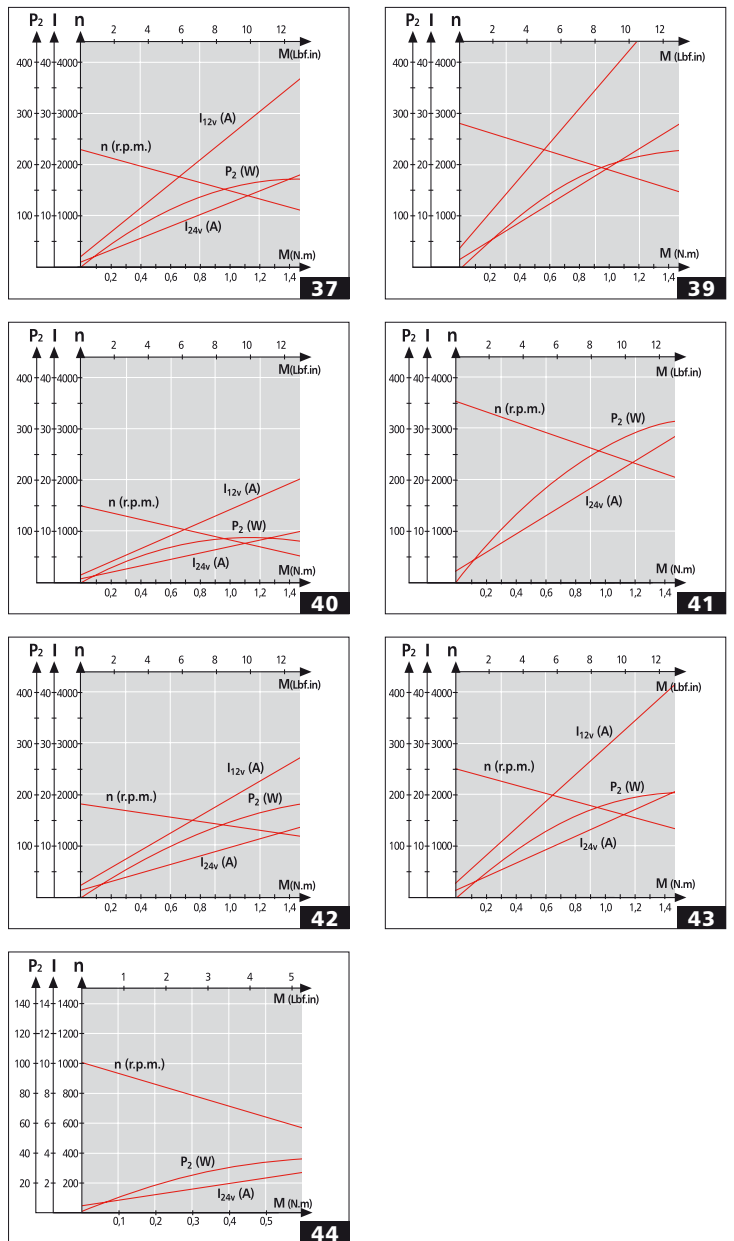
CONEXIONES - CONNECTIONS CONNEXIONS - ANSCHLUSSART



ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHÉME ÉLECTRIQUE - SCHALTBILD



CURVAS - CURVES - COURBES - KURVEN

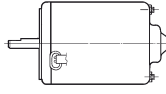




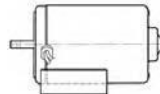
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2 POLES
2 PÔLES
2 PHASEN

4 POLOS
4 POLES
4 PÔLES
4 PHASEN

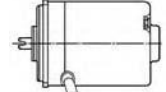
a



b



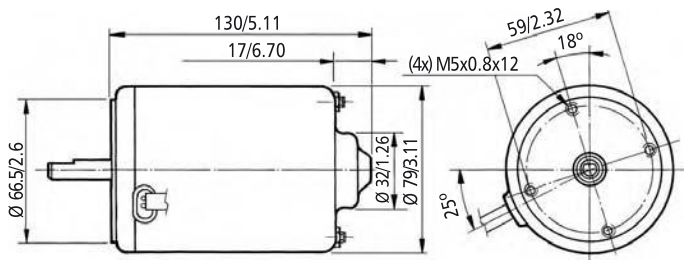
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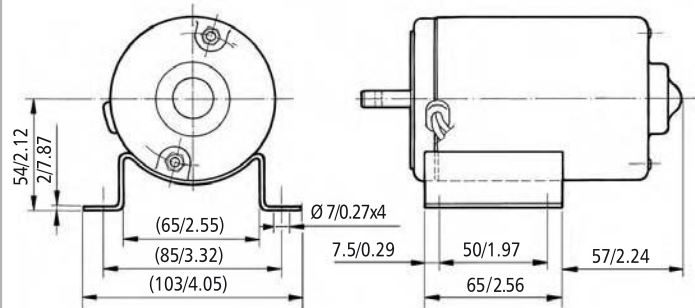
PLANETARY GEAR

- REDUCTORES PLANETARIOS: combinables con la serie 169. Ver sección especial en catálogo.
- PLANETARY GEARS: combinable with 169 series. See special section in catalogue.
- REDUCTEURS PLANÉTAIRES: combinables avec la série 169. Consultez section spécial du catalogue.
- PLANETENGETRIEBE: Mit der Reihe 169 kombinierbar. Sehen Sie Sonderabschnitt im Katalog.

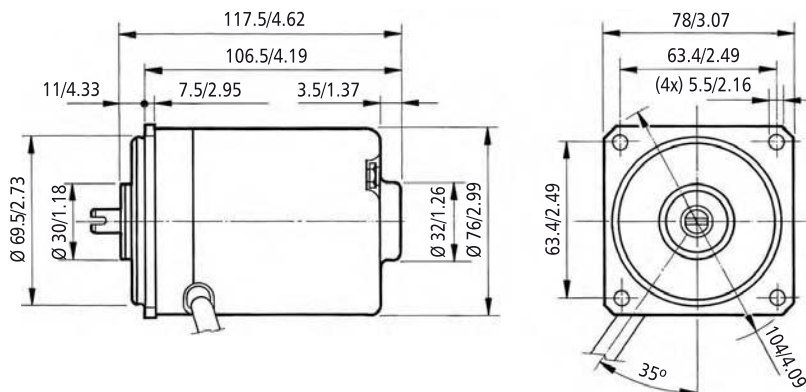
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ÉLECTRIQUE SCHALTBILD	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	DISEÑO: A/B DESIGN: A/B DESSIN: A/B ABBILDUNG: A/B	CURVA CURVE KURVE
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				P (kg/lb.t)	IP		
169.4106.20.04	12	0.40 / 3.54	1900	11	2.0 / 17.7	46	E14	C14	EE2	2.0 / 5.35	IP53	a	45
169.4106.30.04	24	0.40 / 3.54	1900	5.5	2.0 / 17.7	23	E14	C14	EE2	2.0 / 5.35	IP53	a	45
169.4107.20.04	12	0.40 / 3.54	2900	16	2.2 / 19.4	100	E15	C15	EE2	2.0 / 5.35	IP53	a	46
169.4107.30.04	24	0.40 / 3.54	2900	8	2.2 / 19.4	50	E15	C15	EE2	2.0 / 5.35	IP53	a	46
169.4110.20.04	12	0.40 / 3.54	1500	9	2.0 / 17.7	38	E16	C16	EE6	2.0 / 5.35	IP53	a	47
169.4110.30.04	24	0.40 / 3.54	1500	4.5	2.0 / 17.7	19	E16	C16	EE6	2.0 / 5.35	IP53	a	47
169.4113.20.09	12	0.40 / 3.54	3200	16	2.2 / 19.4	85	E18	C18	EE8	1.37 / 3.67	IP53	c	48
169.4113.30.09	24	0.40 / 3.54	3200	8	2.2 / 19.4	43	E18	C18	EE8	1.37 / 3.67	IP53	c	48
169.4122.20.09	12	0.30 / 2.65	4600	16	1.8 / 15.9	100	E18	C18	EE8	1.37 / 3.67	IP53	c	49
169.4124.20.04	12	0.40 / 3.54	1900	11	2.0 / 17.7	46	E60	C14	EE2	2.0 / 5.35	IP53	b	45
169.4124.30.04	24	0.40 / 3.54	1900	5.5	2.0 / 17.7	23	E60	C14	EE2	2.0 / 5.35	IP53	b	45
169.4128.20.04	12	0.40 / 3.54	1500	9	2.0 / 17.7	38	E64	C26	EE1	2.0 / 5.35	IP53	b	47



a



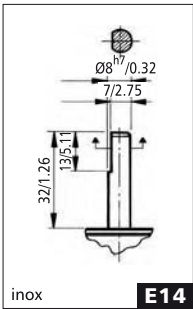
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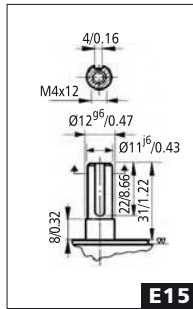
c

mm / in

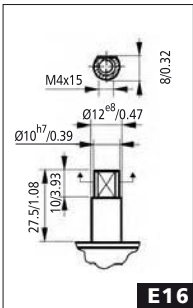
EJE - SHAFT - ARBRE - WELLE



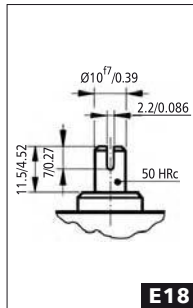
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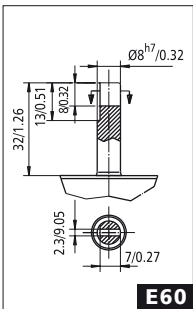
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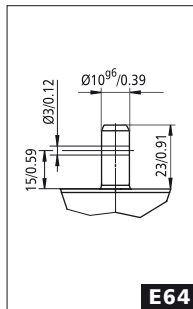
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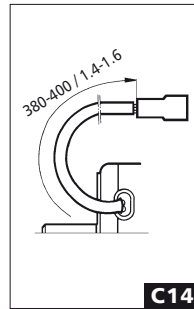


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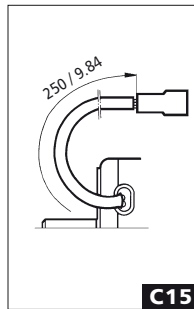


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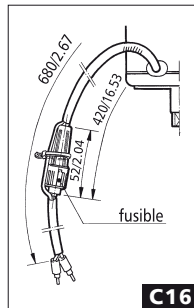
CONEXIONES - CONNECTIONS CONNEXIONS - ANSCHLUSSART



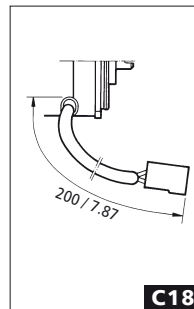
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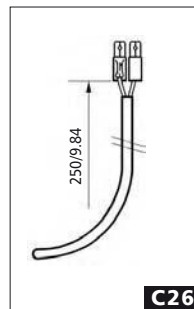
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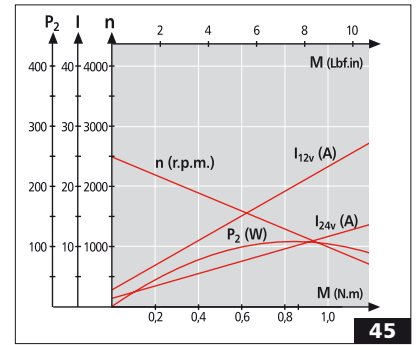


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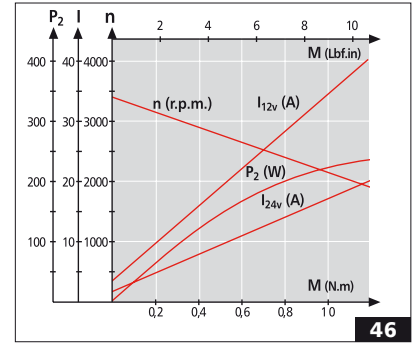


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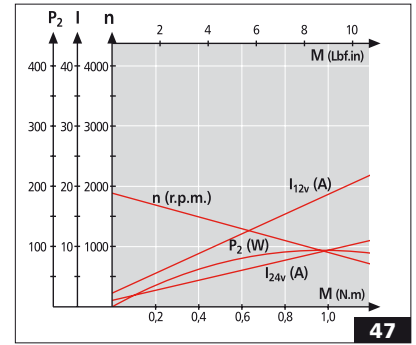
CURVAS - CURVES - COURBES - KURVEN



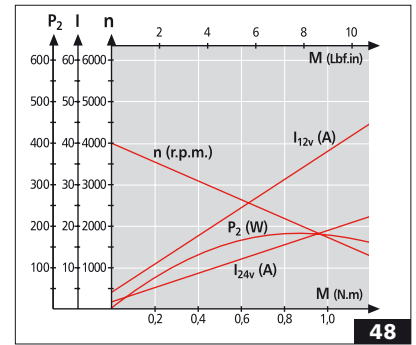
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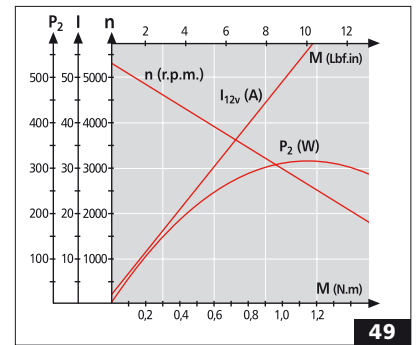
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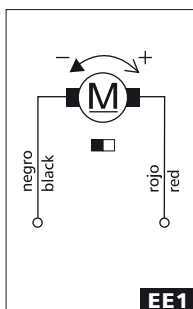


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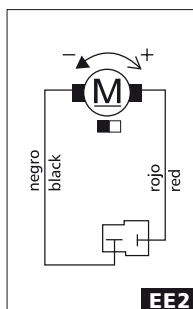


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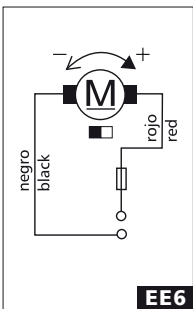
ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHEMA ÉLECTRIQUE - SCHALTBIOD



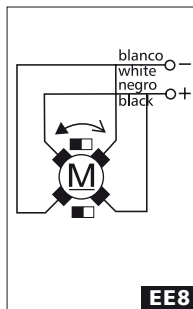
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EE2



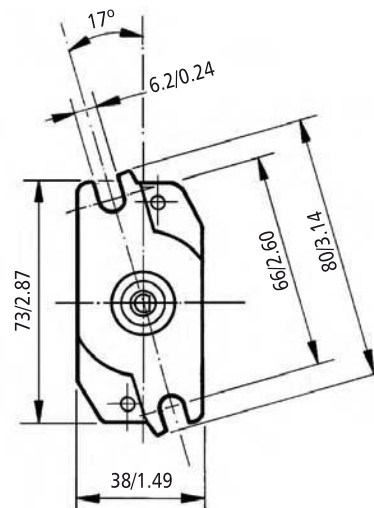
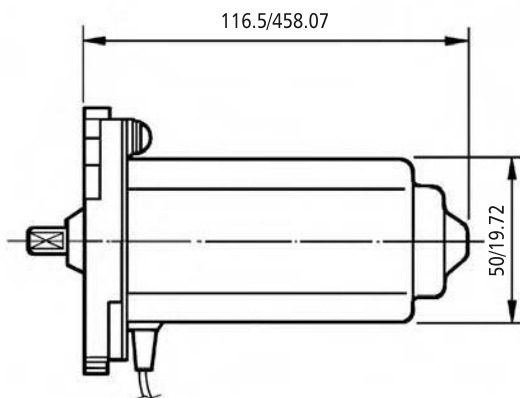
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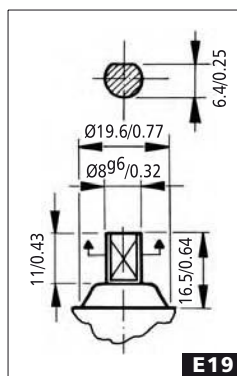
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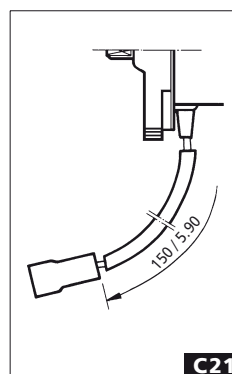
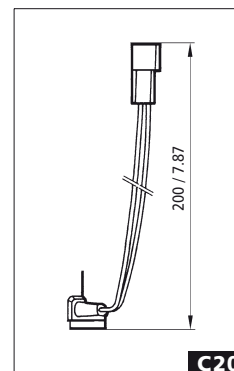
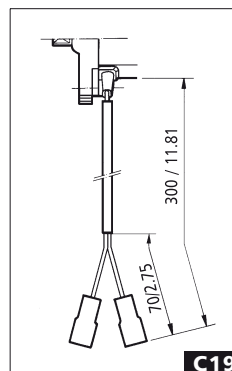
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBILD	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	CURVA CURVE COURBE KURVE
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				P (kg/lb.t)	IP	
260.0107.30.00	24	0.08 / 0.70	4000	3	0.4 / 3.54	12	E19	C19	EE9	0.7 / 1.87	IP40	51
260.0108.20.00	12	0.08 / 0.70	4000	6	0.4 / 3.54	24	E19	C20	EE9	0.7 / 1.87	IP40	51
260.0111.20.04	12	0.08 / 0.70	3000	5	0.4 / 3.54	22	E19	C21	EE2	0.7 / 1.87	IP40	50
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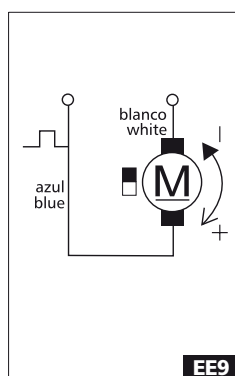
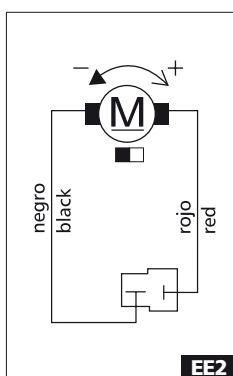
EJE - SHAFT - ARBRE - WELLE



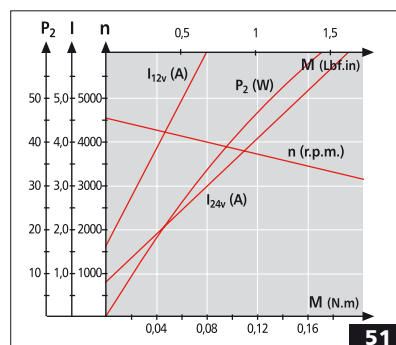
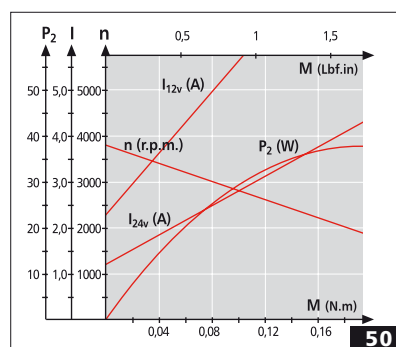
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART

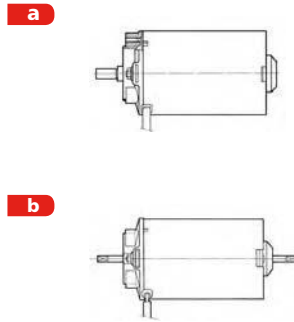


ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHÉME ÉLECTRIQUE - SCHALTBILD



CURVAS - CURVES - COURBES - KURVEN

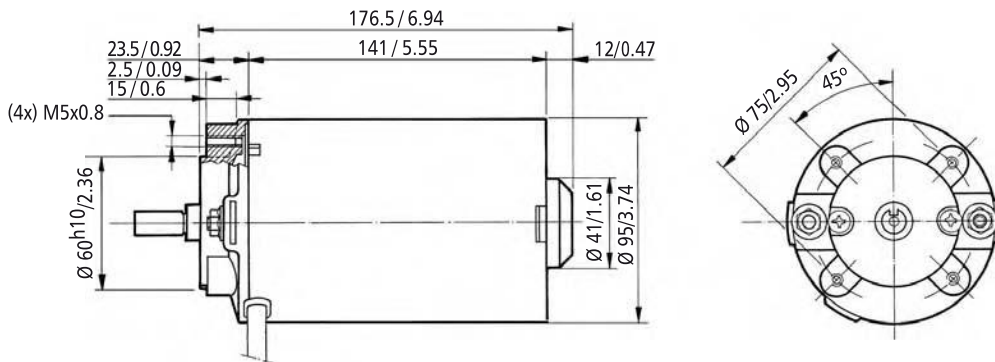




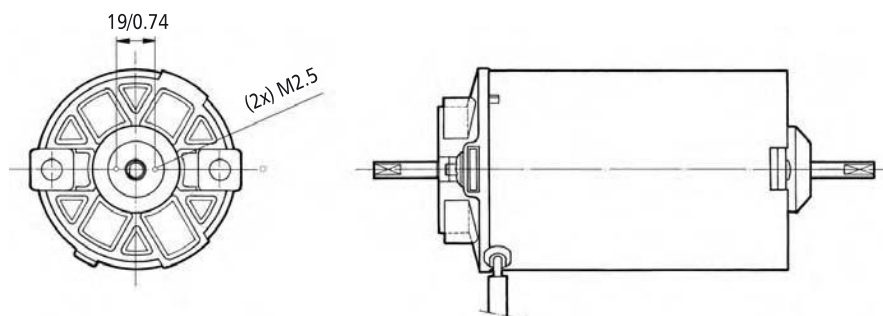
PLANETARY GEAR

- REDUCTORES PLANETARIOS: combinables con la serie 269. Ver sección especial en catálogo.
- PLANETARY GEARS: combinable with 269 series. See special section in catalogue.
- REDUCTEURS PLANÉTAIRES: combinables avec la série 269. Consultez section spécial du catalogue.
- PLANETENGETRIEBE: Mit der Reihe 269 kombinierbar. Sehen Sie Sonderabschnitt im Katalog.

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	ESQUEMA ELÉCTRICO WIRNUNGSDIAGRAMM SCHEMA ÉLECTRIQUE SCHALTBILD	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITE FEUCHTIGKEITSSCHUTZKLASSE	DISEÑO: A-B DESIGN: A-B DESSIN: A-B ABBILDUNG: A-B	CURVA CURVE COURBE KURVE
	Un (V)	Mn (N.m./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				P (kg/lb.t)	IP		
269.4102.20.04	12	0.50 / 4.42	3000	20	4 / 35.4	140	E20	C22	EE2	3.8 / 10.18	IP53	a	52
269.4102.30.04	24	0.75 / 6.63	3000	15	4 / 35.4	120	E20	C22	EE2	3.8 / 10.18	IP53	a	53
269.4103.20.04	12	0.50 / 4.42	3000	20	4 / 35.4	140	E21	C23	EE2	3.8 / 10.18	IP53	a	52
269.4103.30.04	24	0.75 / 6.63	3000	15	4 / 35.4	120	E21	C23	EE2	3.8 / 10.18	IP53	a	53
269.4104.20.04	12	0.80 / 7.08	1800	20	4 / 35.4	100	E48	C24	EE2	3.8 / 10.18	IP53	a	54
269.4104.30.04	24	0.80 / 7.08	1800	10	4 / 35.4	50	E48	C24	EE2	3.8 / 10.18	IP53	a	54
269.4106.20.04	12	0.80 / 7.08	1800	20	4 / 35.4	100	E21	C23	EE2	3.8 / 10.18	IP53	a	54
269.4106.30.04	24	0.80 / 7.08	1800	10	4 / 35.4	50	E21	C23	EE2	3.8 / 10.18	IP53	a	54
269.4107.30.04E	24	0.75 / 6.63	3000	15	4 / 35.4	120	E48/E11	C22	F2	3.8 / 10.18	IP40	b	53
269.4108.20.04E	12	0.80 / 7.08	1800	20	4 / 35.4	100	E48/E11	C24	F2	3.8 / 10.18	IP40	b	54
269.4113.30.04	24	0.50 / 4.42	675	2.25	2.7 / 23.8	12	E48	C24	EE2	3.8 / 10.18	IP53	a	55



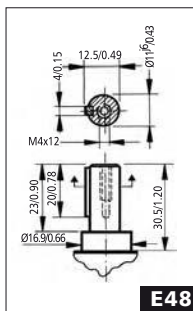
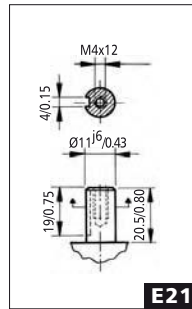
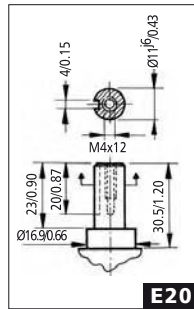
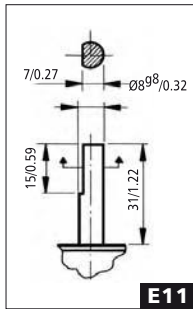
a



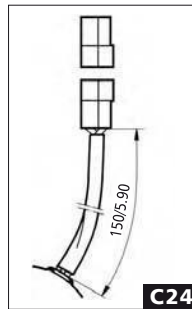
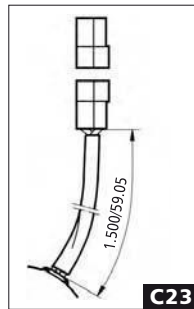
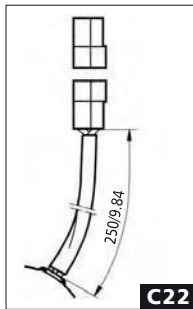
mm / in

b

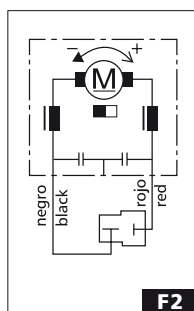
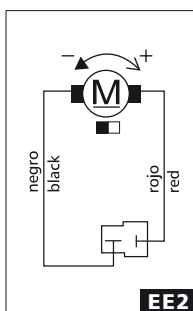
EJE - SHAFT - ARBRE - WELLE



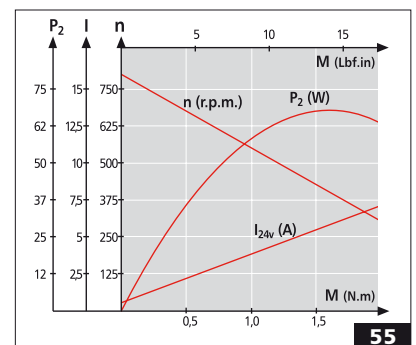
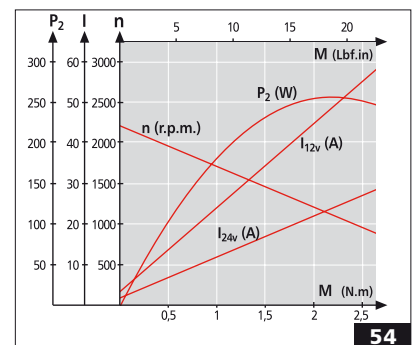
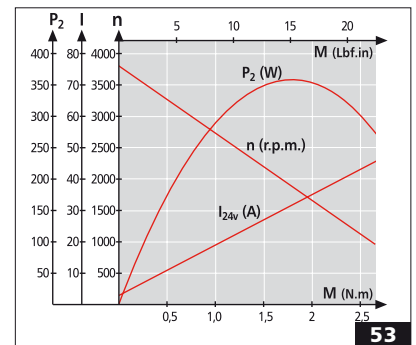
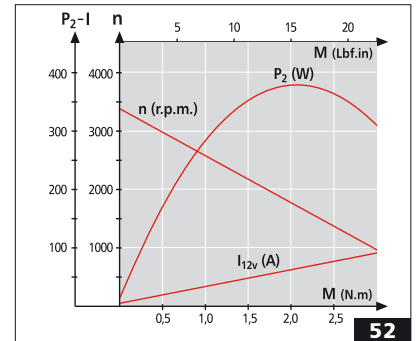
CONEXIONES - CONNECTIONS CONNEXIONS - ANSCHLUSSART



ESQUEMA ELÉCTRICO - WIRING DIAGRAM SCHÉME ÉLECTRIQUE - SCHALTBIID



CURVAS - CURVES - COURBES - KURVEN



OPCIONAL - OPTIONAL - OPTION - OPTION

PLANETARY GEARBOX

- **NUEVOS MOTORES DE C.C. CON REDUCTOR PLANETARIO**

DOGA puede proponer los motores de c.c. de imanes permanentes de las series 162, 168, 169 y 269 con reductores planetarios. Estos motores, que en su versión estándar son de 12 o 24V, pueden ser realizados hasta 72V c.c.

DOGA ofrece reductores planetarios de 1, 2 o 3 etapas. Los engranajes pueden ser metálicos o de plástico dependiendo de los requerimientos de cada aplicación. DOGA igualmente ofrece versiones de bajo ruido de los reductores planetarios.

Los valores siguientes son para funcionamiento continuo (S1). DOGA propondrá asesoramiento técnico para su aplicación.

- **NEW COMPACT D.C. MOTORS WITH PLANETARY GEARBOXES**

DOGA can now propose the permanent magnet d.c. motor series 162, 168, 169 and 269 with planetary gearboxes. These motors are standard in 12 & 24V and can be proposed up to 72V d.c.

DOGA offers 1 to 3 stages planetary gearboxes. The gears can be in metal or in plastic depending on the requirements of each application. DOGA also offers Low Noise versions of the planetary gearboxes.

Values below are for continuous duty (S1). DOGA will provide technical advice for your application.

- **NOUVEAUX MOTEURS A C.C. AVEC ENGRENAGES PLANÉTAIRES**

DOGA peut désormais proposer l'aimant permanent en courant continu sur les séries moteurs 162, 168, 169 et 269 avec engrenages planétaires. Les moteurs standards en 12 et 24V peuvent aussi être proposés jusqu'à 72 V c.c.

DOGA offre des réducteurs planétaires de 1, 2 et 3 étages. Les engrenages peuvent être en métal ou en plastique en fonction des besoins de chaque application. DOGA peut aussi proposer des versions à bas niveau de bruit.

Les valeurs ci-dessous sont définies pour un service continu (S1). DOGA peut vous donner des conseils techniques pour votre application.

- **NEUE KOMPAKTE GLIECHSTROMMOTOREN MIT PLANETENGETRIEBE**

DOGA bietet Ihnen ab sofort die Permanentmagneten-Gleichstrommotoren der Reihen 162,168,169 und 269 mit Planetengetrieben an. Diese Motoren sind als Standard in 12 und 24V erhältlich aber werden bis zu 72V angeboten.

DOGA bietet Ihnen 1- bis 3-stufige Planetengetriebe an. Die Getrieberäder sind entweder aus Metall oder Kunststoff, je nach Anwendung. DOGA bietet Ihnen auch Niedriggeräuschvarianten von der Planetengetriebe an.

Die folgende Werte sind für den Dauerbetrieb (S1). DOGA wird technische Beratung für Ihre Anwendung anbieten.



OPCIONAL - OPTIONAL - OPTION - OPTION

		motor ⁽¹⁾ 162	motor ⁽¹⁾ 168	motor ⁽¹⁾ 169	motor ⁽¹⁾ 269	
motor	TENSIÓN VOLTAGE TENSION SPANNUNG	12V standard 24V standard <72V customised	12V standard 24V standard <72V customised	12V standard 24V standard <72V customised	12V standard 24V standard <72V customised	
	POTENCIA EN SERVICIO CONTÍNUO CONTINUOUS POWER PUISSANCE EN SERVICE CONTINU DAUERLEISTUNG	<i>W</i>	63	158	122	236
		<i>H.P.</i>	0.08	0.21	0.16	0.32
	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL NENNDREHMOMENT	<i>N.m.</i>	0.2	0.5	0.4	0.75
		<i>lbf.in</i>	1.77	4.42	3.54	6.63
	PAR DE BLOQUEO STALL TORQUE COUPLE DE BLOCAGE ANLAUFDREHMOMENT	<i>N.m.</i>	1.0	3.0	2.2	4.0
		<i>lbf.in</i>	8.85	26.50	19.40	35.4
	DIÁMETRO DIAMETER DIAMETRE DURCHMESSER	<i>mm</i>	60	79	79	95
		<i>in</i>	2.36	3.11	3.11	3.74

		Ø 52 mm			Ø 62 mm			Ø 72 mm			Ø 81 mm			
		Ø 2.05 in			Ø 2.44 in			Ø 2.83 in			Ø 3.19 in			
planetary gearbox	TRANSMISIÓN TRANSMISSIONS TRANSMISSION GETRIEBE	i = (4, 5, 7, 14, 16, 18, 19, 22, 25, 27, 29, 35, 46, 51, 59, 68, 71, 79, 93, 95, 100, 107, 115, 124, 130, 139, 150, 169, 181, 195, 236, 308) : 1												
	(2) <i>max N.m.</i>	4	12	25	8	25	50	14	42	84	20	60	120	
	PAR EN SERVICIO CONTINUO CONTINUOUS TORQUE COUPLE EN SERVICE CONTINU NENNDREHMOMENT	<i>lbf.in</i>	35	106	221	71	221	442	124	372	743	177	531	1062
	STAGES ▶	1	2	3	1	2	3	1	2	3	1	2	3	
	(3) RENDIMIENTO % EFFICIENCY LEVEL % RENDIMENT % WIRKUNGSGRAD %	80%			75%			70%						
ETAPAS STAGES ÉTAGES DE RÉDUCTION STUFE	▼			▼			▼							
	1			2			3							

- (1) En cada serie de motores disponemos de distintas combinaciones de potencia. Ver hojas de características de los motores en el este catálogo.
- (2) La capacidad de par será precisado para cada combinación de motor y reductor y aplicación. Los valores están indicados para 1, 2 o 3 etapas respectivamente. En ciertas condiciones los pares indicados pueden ser excedidos.
- (3) Valores aproximados para cada n° de etapas de reducción.
- (1) In each motor series we have different power configurations. Here we show one of them. See motor catalogue for others
- (2) The Torque capacity will be precisele defined for each motor and gear combination and for each application. Values indicated per 1, 2 & 3 stages respectively. In certain conditions the mentioned torque can be exceeded.
- (3) Approximate values for each nr. of stages combination.

- (1) Dans chaque série de moteurs nous offrons différentes puissances. Voir page de caractéristiques des moteurs.
- (2) La capacité de couple sera définie pour chaque combinaison de moteur et réducteur ainsi que pour chaque application. Les valeurs sont indiquées pour 1, 2 et 3 étages respectivement. Dans certaines conditions de fonctionnement les valeurs de couple indiquées peuvent être excédées.
- (3) Valeurs approximatives pour chaque n° d'étages.
- (1) Für jede Motorreihe gibt es verschiedene Leistungsvarianten. Hier zeigen wir einige von diesen, für andere Sehen Sie die Motorsektion des Katalogs.
- (2) Das Drehmoment wird genau definiert für jede Motor- und Getriebekombination und für jede Anwendung. Werte für jeweils 1, 2 und 3 Stufen. Unter manche Bedingungen kann das erwähnte Drehmoment überschritten werden.
- (3) Näherungswerte für jede Stufenkombination.

ACCESO Y EDIFICIOS - ACCESS & BUILDING - ACCES ET EDIFICES - ZUGANG UND GEBÄUDE



AGRICULTURA Y GANADERÍA - AGRICULTURAL & FARM - AGRICULTURE ET BETAIL - LANDWIRTSCHAFT



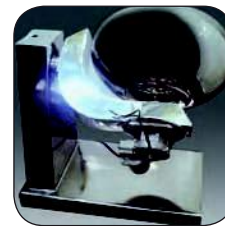
SISTEMAS DE AYUDA A PERSONAS - CARE AID SYSTEMS
SYSTEMES D'AIDE AUX PERSONNES - PERSONENBEHILFSEINRICHTUNGEN



ENERGÍA - ENERGY - ENERGIE



ALIMENTACIÓN - FOOD INDUSTRY - ALIMENTATION - ERNÄHRUNG



HOGAR - HOME - MAISON - HEIM



MARINA - MARINE - MARIN - WASSERSPORT



MEDICINA Y LABORATORIO - MEDICAL & LAB - MEDICAL ET LABORATOIRE - MEDIZIN UND LABOR



EQUIPOS DE OFICINA - OFFICE EQUIPMENT - EQUIPEMENT DE BUREAUX - BÜROEINRICHTUNGEN



Y MUCHOS MÁS - AND MANY MORE - ET PLUS ENCORE - UND VIELE MEHR

