

DRIVE SYSTEMS

DOGA

MOTORREDUCTORES C.C. SIN FIN
MOTORS WITH WORM GEAR
MOTOREDUCTEURS À C.C. À VIS SANS FIN
GLEICHSTROMSCHNECKENGETRIEBEMOTOREN

MOTORES C.C.
D.C. MOTORS
MOTEURS À C.C.
GLEICHSTROMMOTOREN

MOTORES C.C. CON REDUCTOR PLANETARIO
PLANETARY GEAR D.C. MOTORS
MOTEURS À C.C. AVEC RÉDUCTEUR PLANETAIRE
GLEICHSTROMPLANETENGETRIEBEMOTOREN

STANDARD

SPECIAL

CUSTOMIZED

A MOTOR FOR EACH APPLICATION



01-2014

DOGA can develop for you!!

CUSTOMIZED

SPECIAL

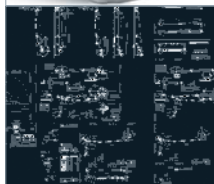


MOTORES A MEDIDA

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.

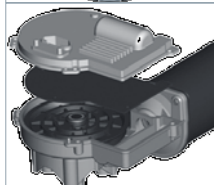
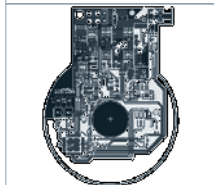
En DOGA somos especialistas en adaptar nuestros productos "estándar" a las necesidades del cliente: desde un conector especial, un eje a medida, un bobinado que ajuste las prestaciones del motor, hasta un diseño de motor completamente de nuevo.

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.



MOTORES ESPECIALES

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.



MOTEURS SUR MESURE

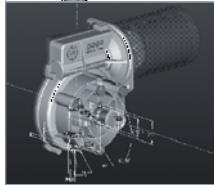
Les moteurs et motoréducteurs à courant continu Doga de ce catalogue ont été conçus par nos ingénieurs pour une adaptation optimale aux besoins du client et pour tout type d'application, tant pour le secteur automobile que pour l'industrie en général.

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.

MOTEURS SPÉCIALEMENT CONÇUS

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 à aimants permanents qu'avec ou sans charbons (brushless).



CUSTOMIZED MOTORS

The DOGA DC motors and gearmotors in this catalog have been developed by our engineers to obtain an optimal adaptation to the needs of the client for all type of applications which come from a variety of industries.

At DOGA, we are a specialist in adapting our "standard" products to meet the desires of our customers. From a special connector, to a shaft, to a selected winding that fits the specification of the motor to even a brand new design of motor, DOGA does them all.

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

SPECIAL MOTORS

DOGA offers their technology and experience in the manufacture of DC motors and gearmotors, to develop specific solutions that operate on DC voltages to 72 Volts, using permanent magnet technology, both Brush type (PMDC) and Brushless (BLDC).

KUNDENSPEZIFISCH

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.

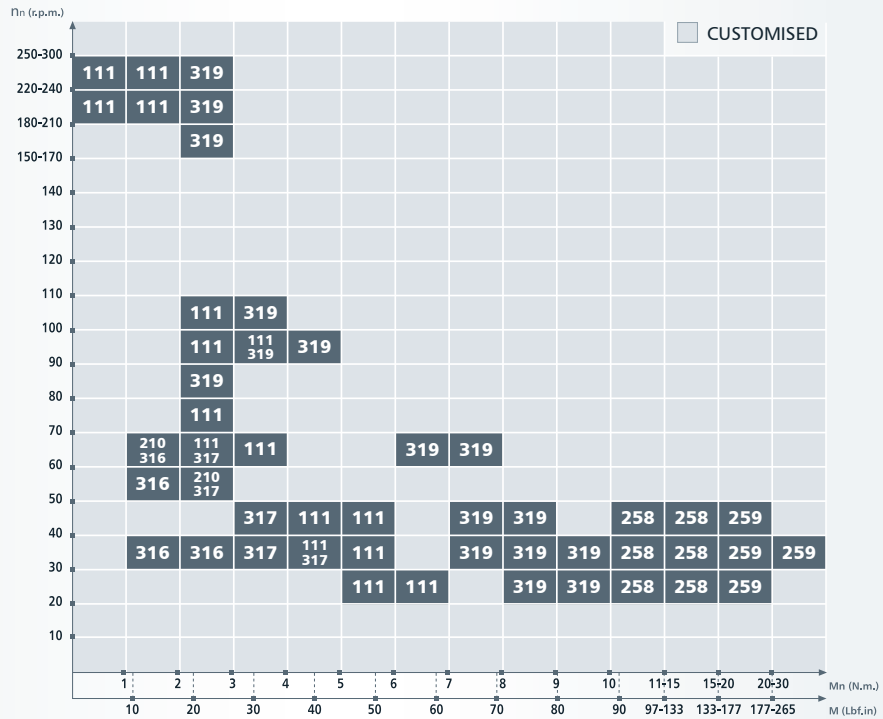
Wir bei Doga sind Spezialisten darin, unsere "Standardmodelle" an die Anforderungen des Kunden anzupassen. Seien es eine besondere Steckverbindung oder ein besonderes Wellenende, eine Wicklung, die den Wirkungsgrad des Motors verfeinert bis hin zu einem vollständigen neuen Design.

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

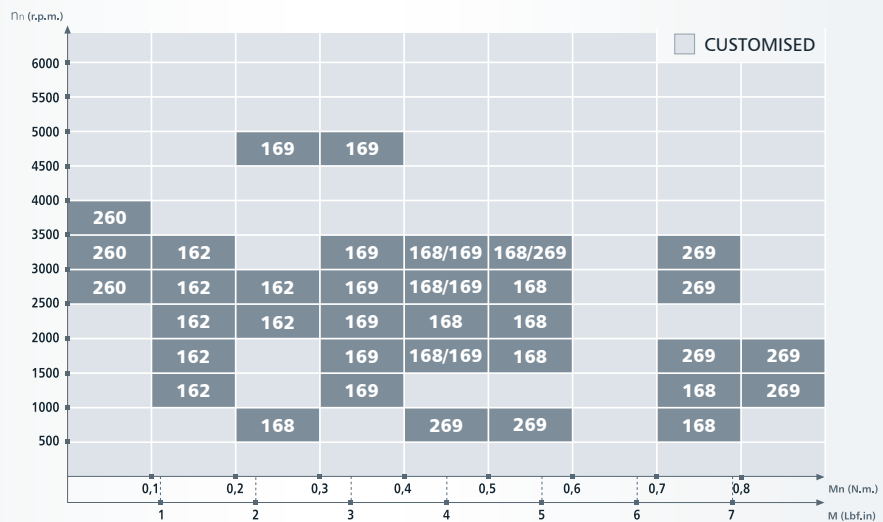
SPEZIALMOTOREN

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 C.C. SIN FIN
MOTORS WITH WORM GEAR
MOTOREDUCTEURS À C.C. À VIS SANS FIN
GLEICHSTROMSCHNECKENGETRIEBEMOTOREN**



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



**MOTORES C.C. CON REDUCTOR PLANETARIO
PLANETARY GEAR D.C. MOTORS
MOTEURS À C.C. AVEC RÉDUCTEUR PLANÉTAIRE
GLEICHSTROMPLANETENGETRIEBEMOTOREN**

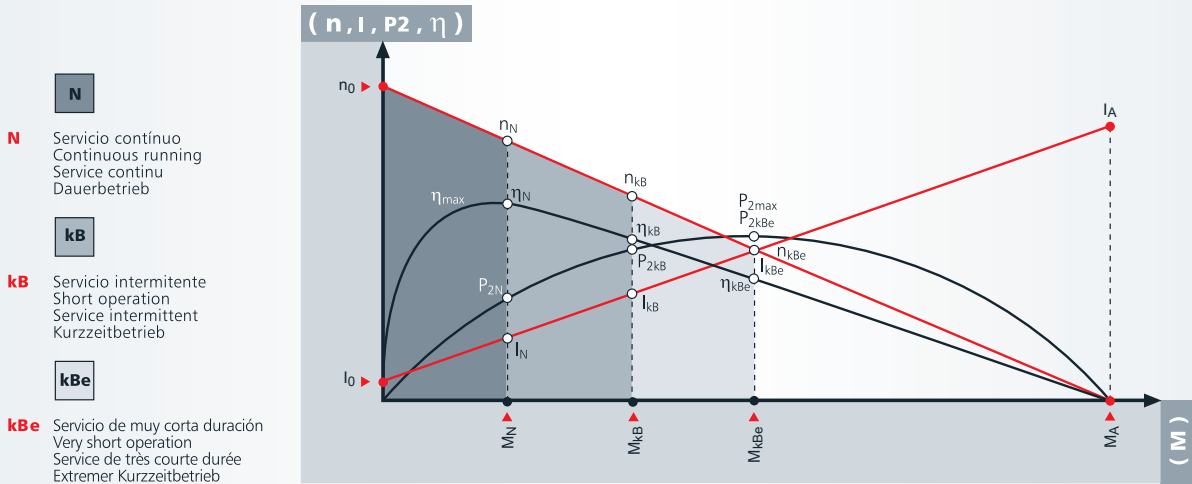
VER SECCIÓN ESPECIAL EN CATÁLOGO. (p.38)
SEE SPECIAL SECTION IN CATALOGUE. (p.38)
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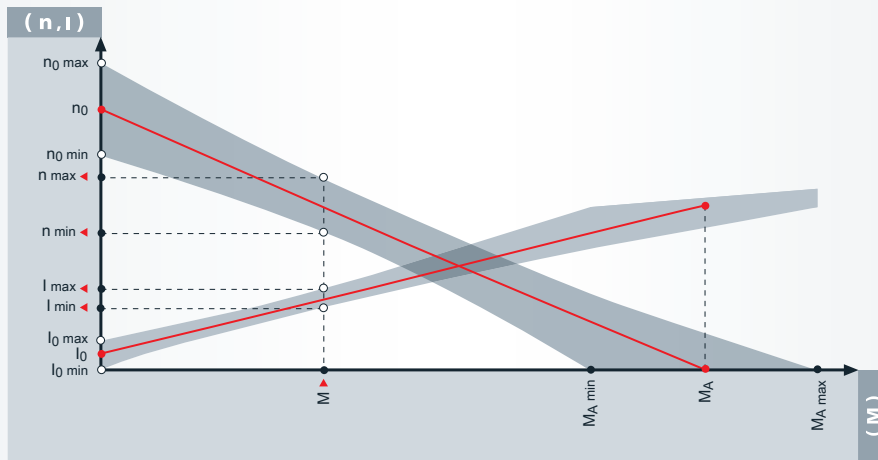
	ESPAÑOL	ENGLISH	FRANÇAIS	DEUTSCH
BRO	Bronce	Bronze	Bronze	Bronze
CEL	Resina fenólica estratificada	Resin bonded fabric	Résine phénolique stratifiée	Hartgewebe
i	Relación de reducción	Transmission ratio	Rapport de réducteur	Untersetzung
I	Corriente	Current	Courant	Stromaufnahme
I₀	Corriente en vacío	No 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	Nenndrehmoment
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 - CARACTERISTIQUES DES COURBES - LEISTUNGSKURVEN



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

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 (U_n , I_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.

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

Les valeurs nominales (U_n , I_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.

The stall values of starting torque (M_a) and starting current (I_a) in this catalog correspond to the torque and the current of the motor at room temperature with the output shaft locked.

The nominal values for voltage (U_n), current (I_n), torque (M_n) and speed (n) are for continuous operation (S1-VDE0530) in normal ambient conditions. The tolerance is 10% for all values shown unless otherwise noted. Performance curves are with the motor at 20 degrees C temperature.

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.

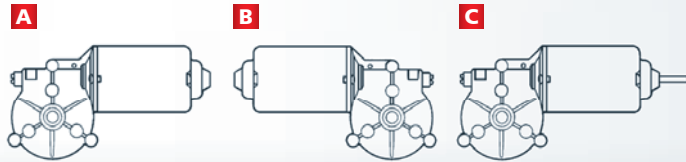
Die Nominalwerte (U_n , I_n , M_n , n) werden ermittelt bei Dauerbetrieb (S1-VDE0530) unter normalen Umgebungsbedingungen. Toleranz $\pm 10\%$.

Die Kurven beziehen sich auf den Motor in kaltem Zustand.

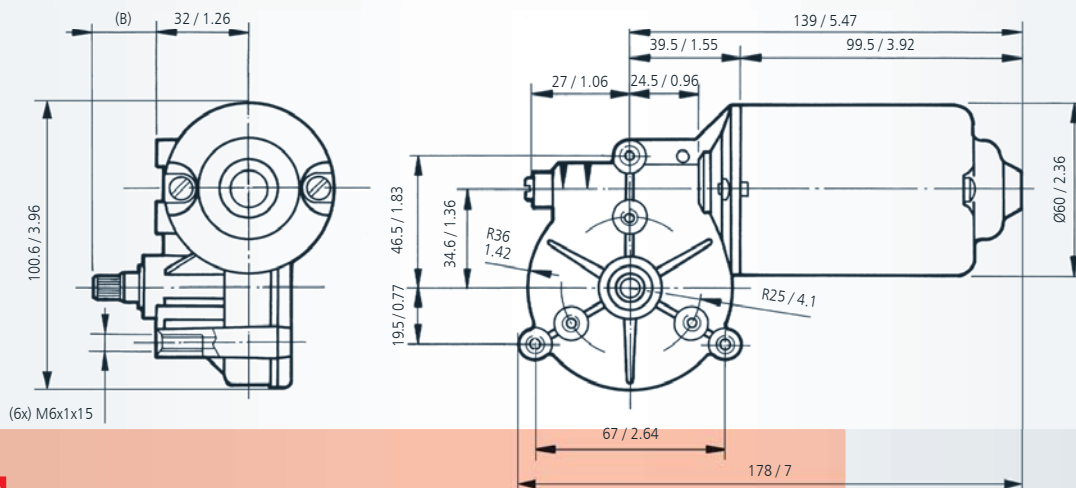
CUSTOMIZED

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



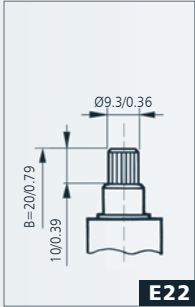
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSION NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 ELECTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBILD	RELACION DE REDUCCION TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ETANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	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./lbf.in)	nn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				i	P (kg/lb.t)	IP			
111.3711.20.00	12	5 / 44.2	40	5	25 / 221.2	25	E22	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	1
111.3711.30.00	24	5 / 44.2	40	2.5	25 / 221.2	13	E22	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	1
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
111.3761.30.00	24	5 / 44.2	40	2.5	25 / 221.2	13	E23	C25	EE2	62:1	1.25 / 3.34	IP53	PLA	a	1
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	E67	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	E67	C26	F3	59:2	1.25 / 3.34	IP53	PLA	a	59



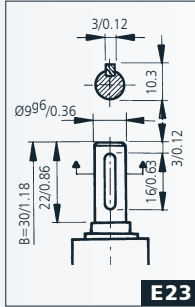
mm / inch

DOGA

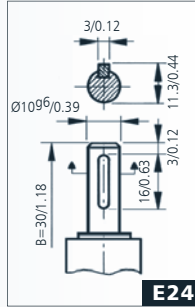
EJE - SHAFT - ARBRE - WELLE



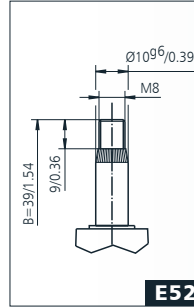
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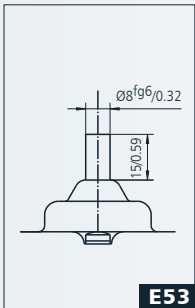
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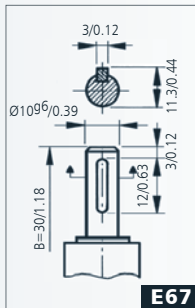
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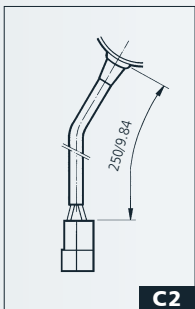


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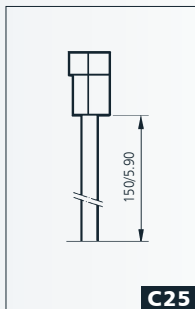


E67

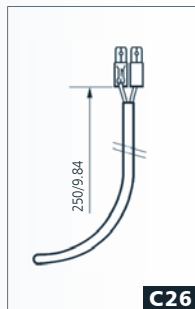
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



C2

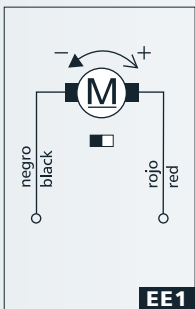


C25

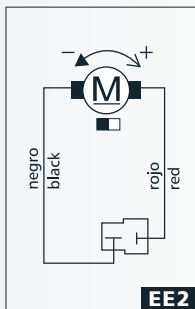


C26

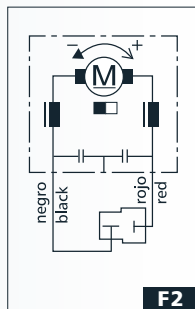
ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD



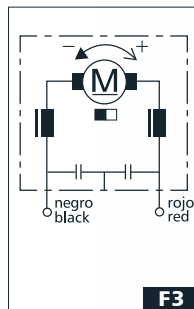
EE1



EE2

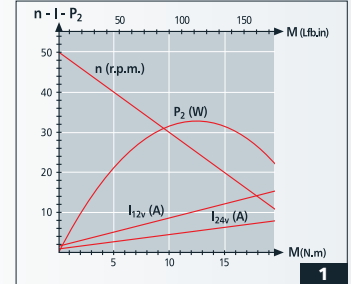


F2

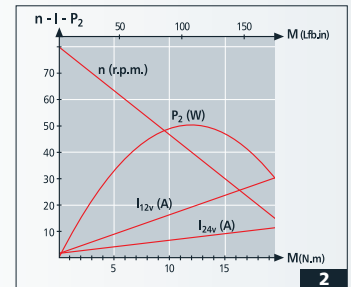


F3

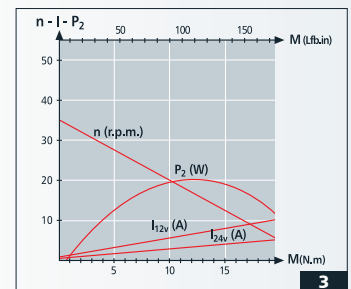
CURVAS - CURVES - COURBES - KURVEN



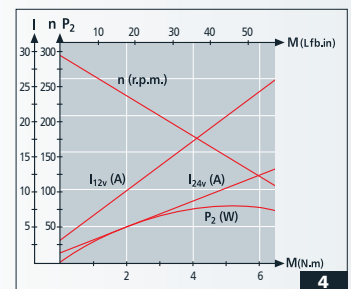
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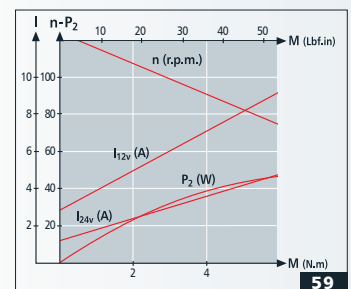
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3

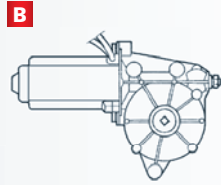
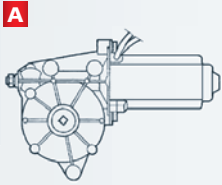


4



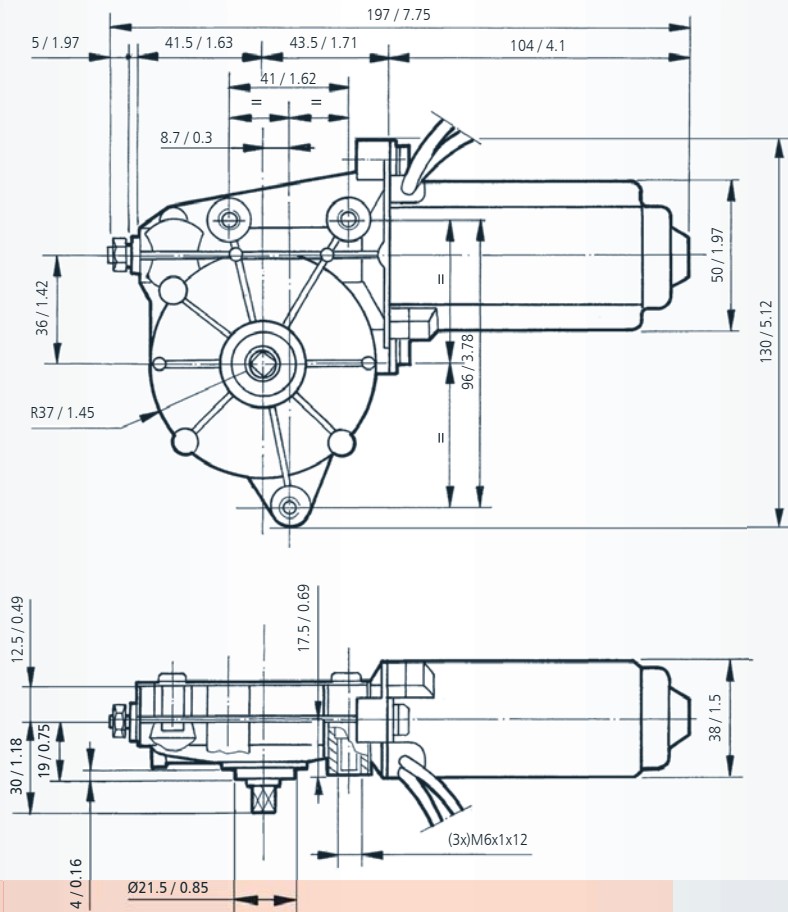
59

210



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 ELECTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBIID	RELACION DE REDUCCION TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ETANCHÉITE FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT DES SCHNECKENRADES	DISENO: AB DESIGN: AB DESSIN: AB ABBILDUNG: A.B	CURVA CURVE KURVE
	Un (V)	Mn * (N.m./lb.in)	nn (r.p.m.)	In (A)	Ma (N.m./lb.in)	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

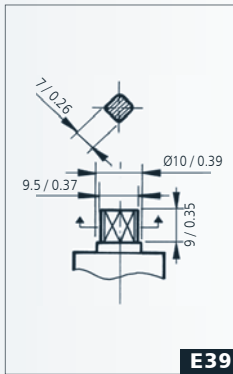
* - (VDE 0530) S3 - 10% (10 min.)



mm / inch

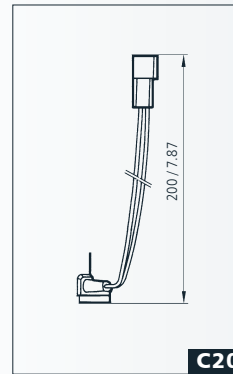
DOGA

EJE - SHAFT - ARBRE - WELLE



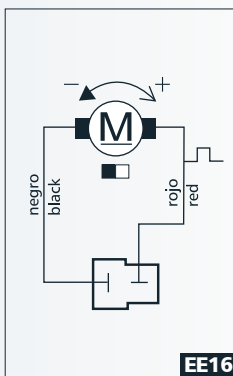
E39

CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



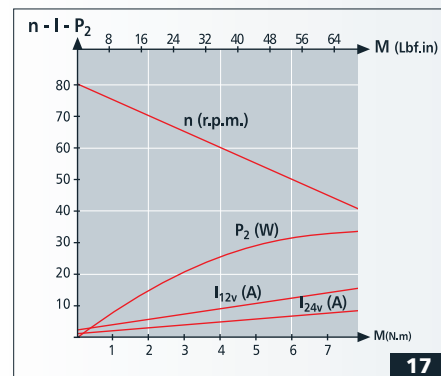
C20

ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBILD



EE16

CURVAS - CURVES - COURBES - KURVEN



17

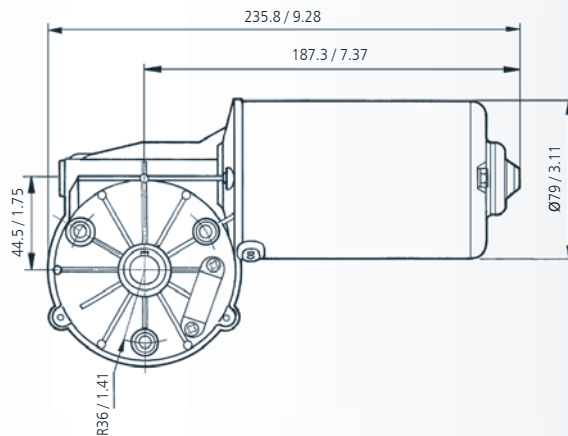
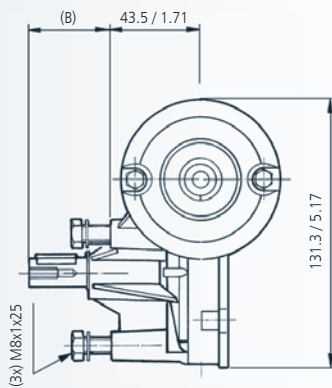
CUSTOMIZED

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	✓

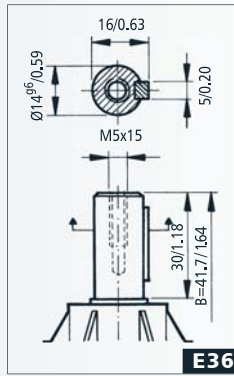
Y MUCHO MÁS - AND MANY MORE
ET BEAUCOUP D'AUTRES - UND VIELEN ANDEREN



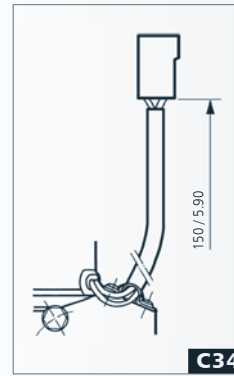
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 SCHALTBIID	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	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
	Un (V)	Mn (N.m./lb.ft.in)	nn (r.p.m.)	In (A)	Ma (N.m./lb.ft.in)	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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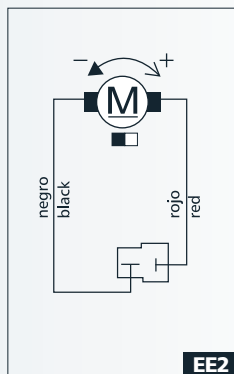
EJE - SHAFT - ARBRE - WELLE



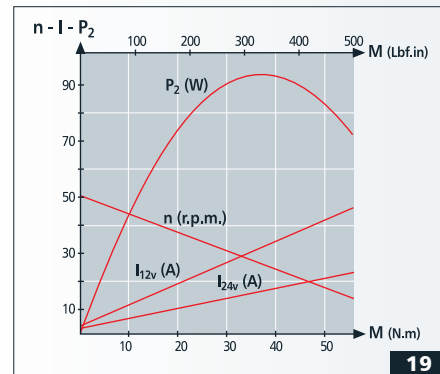
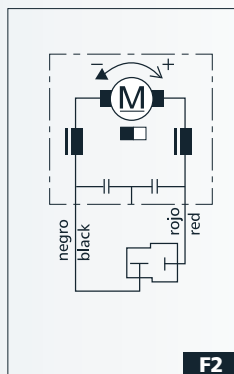
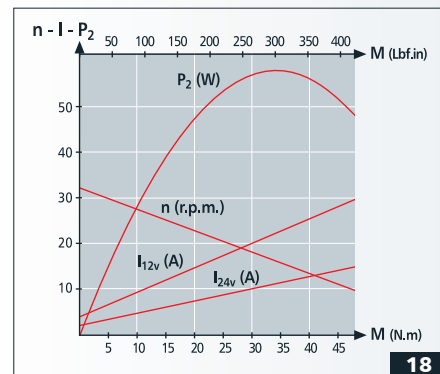
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBILD



CURVAS - CURVES - COURBES - KURVEN

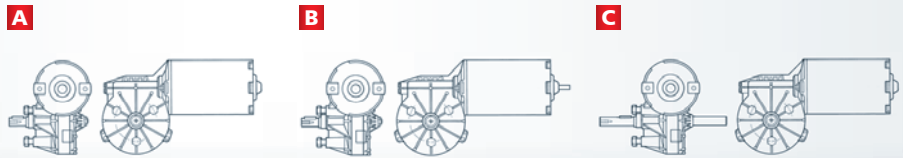


259

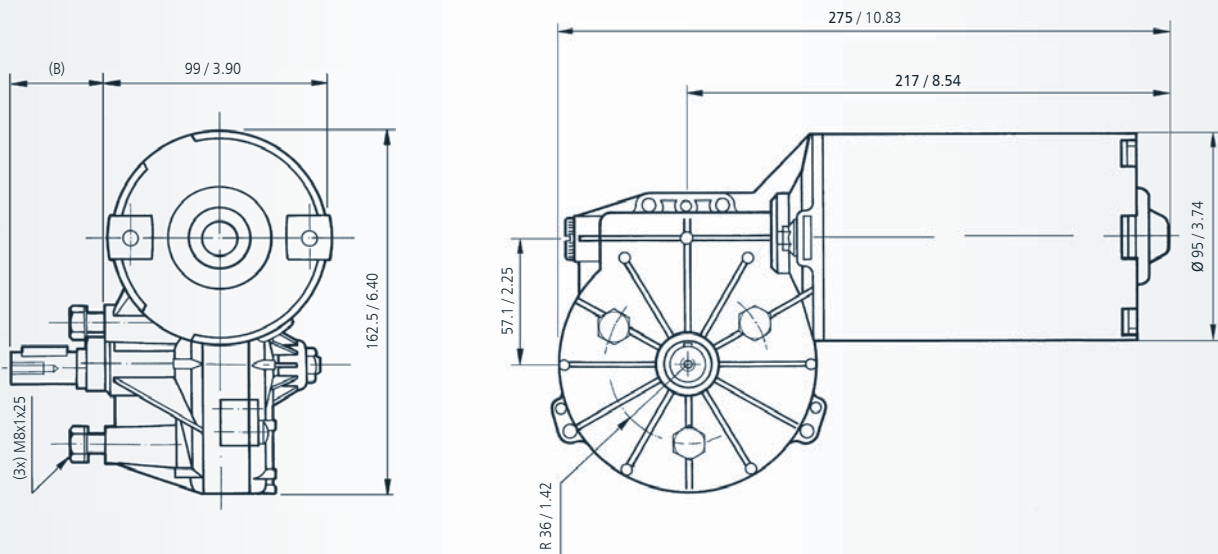
CUSTOMIZED

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



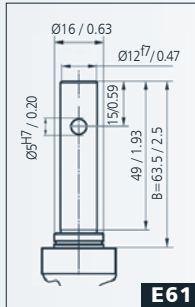
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSION NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 ELECTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE SCHALTBLD	RELACION DE REDUCCION TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSEITZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ETANCHEITE FEUCHTIGKEITSSCHUTZKLASSE	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)	n (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				i	P (kg/lb.t)	IP		a	
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



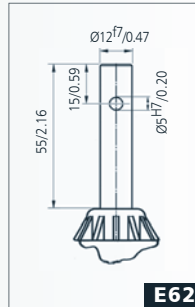
mm / inch

DOGA

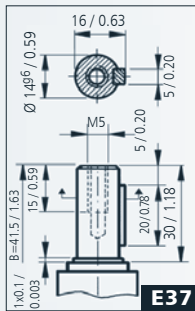
EJE - SHAFT - ARBRE - WELLE



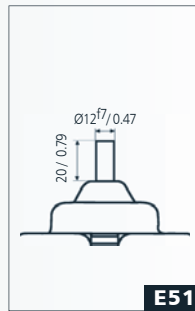
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E62

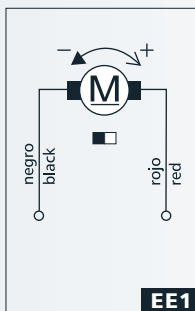


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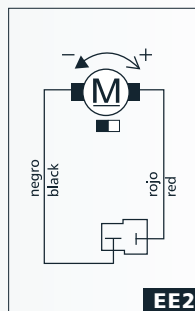


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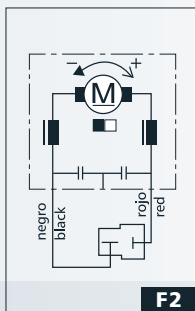
ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD



EE1

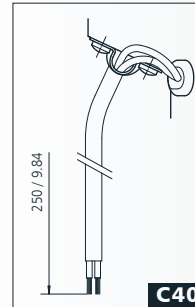


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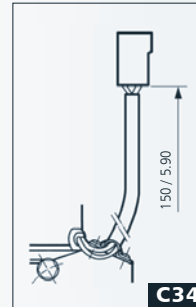


F2

CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART

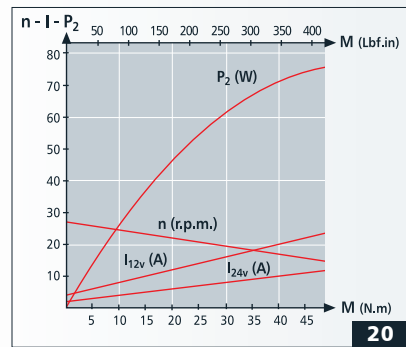


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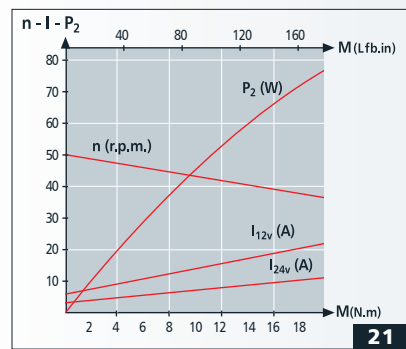


C34

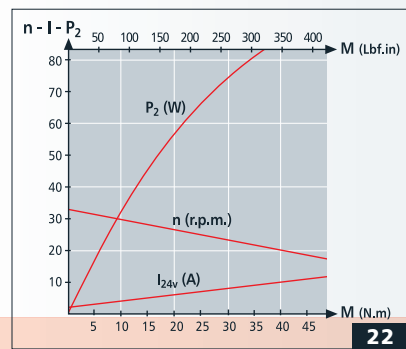
CURVAS - CURVES - COURBES - KURVEN



20



21



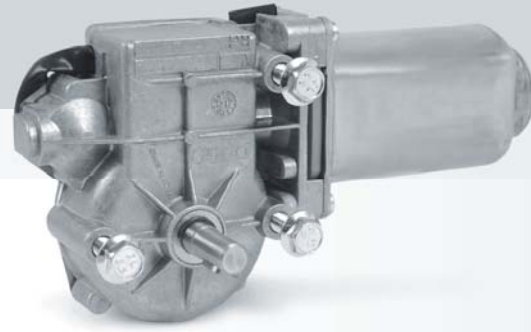
22

316

CUSTOMIZED

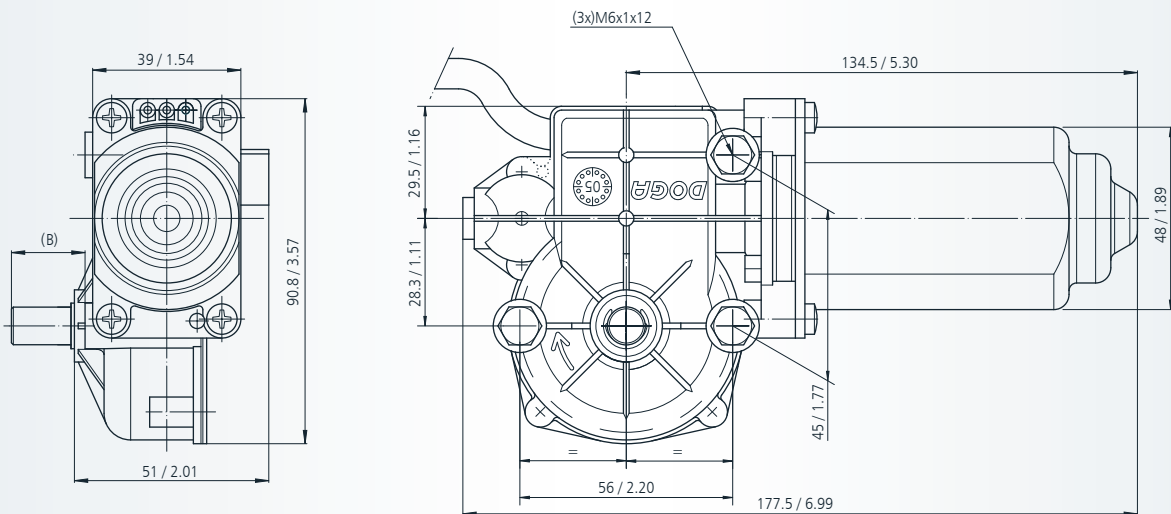
AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

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 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	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	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
	Un (V)	Mn (N.m./lbf.in)	n _n (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

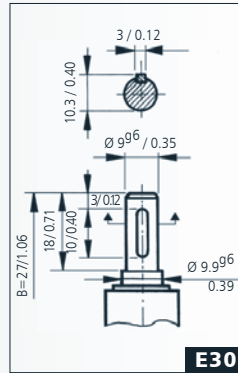
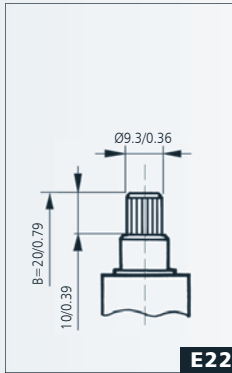
* (VDE 0530) S3 - 10% (10 min.)



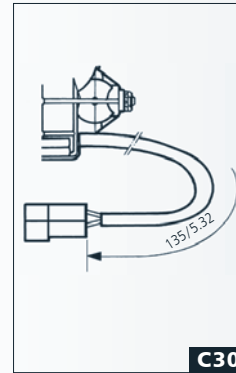
mm / inch

DOGA

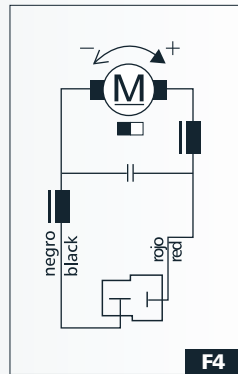
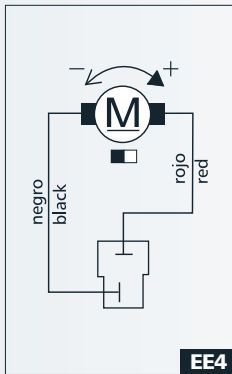
EJE - SHAFT - ARBRE - WELLE



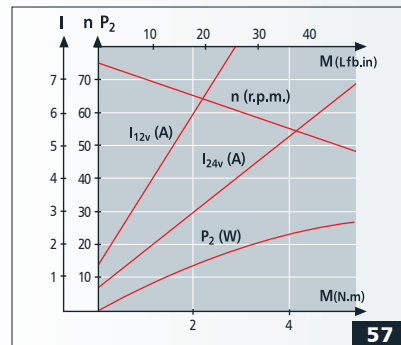
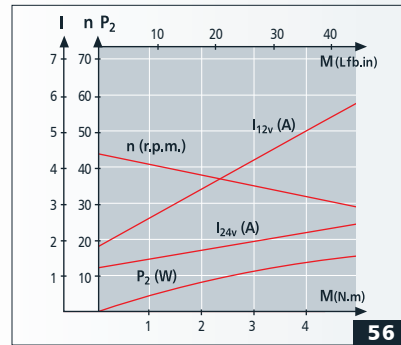
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD



CURVAS - CURVES - COURBES - KURVEN



316H

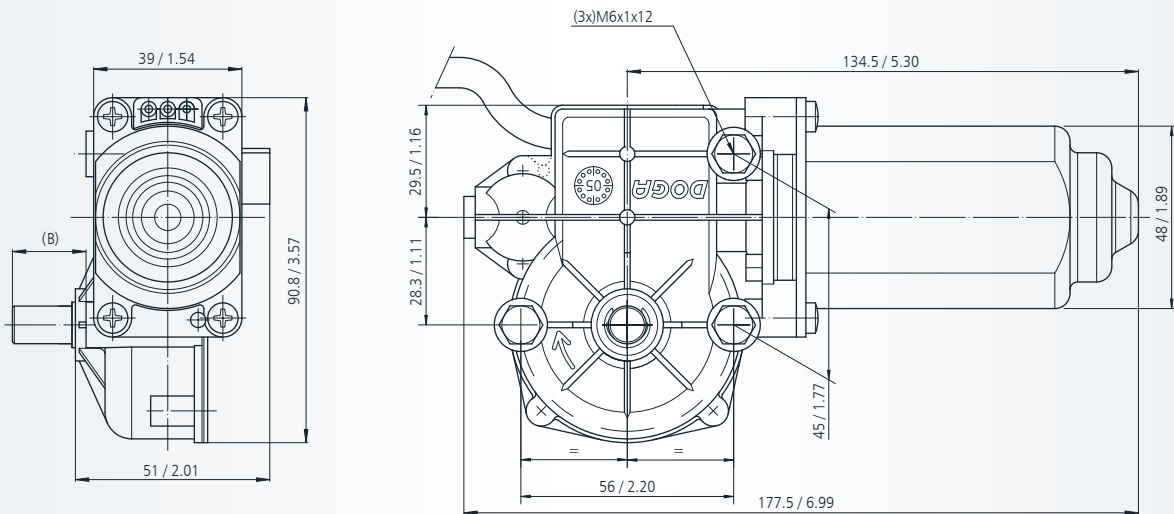
CUSTOMIZED

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



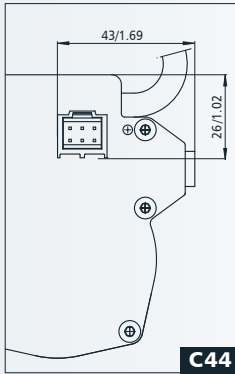
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 ANSCHLÜSSART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ÉLECTRIQUE SCHALTBILD	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (gr.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	CURVA CURVE COURBE KURVE	Nº PULSOS PULSES NUM. NºV. PULSES IMPULSZAHL
	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			
316.9747.20.00	12	1.5 / 13.27	65	6.0	10 / 88.5	22	E30	C44	F5	62:1	0.90/2.41	IP40	PLA	57	310
316.9747.30.00	24	1.5 / 13.27	65	3.0	10 / 88.5	11	E30	C44	F5	62:1	0.90/2.41	IP40	PLA	57	310
316.9751.20.00	12	2 / 17.70	38	3.4	10 / 88.5	12	E30	C44	F5	62:1	0.90/2.41	IP40	PLA	56	310
316.9751.30.00	24	2 / 17.70	38	1.7	10 / 88.5	6	E30	C44	F5	62:1	0.90/2.41	IP40	PLA	56	310



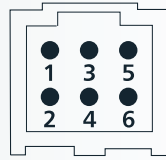
mm / inch

DOGA

CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



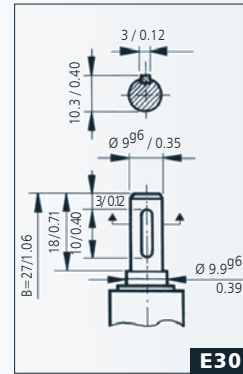
C44



PIN FUNCTION - FUNCIÓN

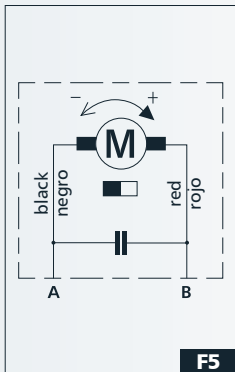
1	-
2	OUT A
3	OUT B
4	-
5	GND
6	VCC

EJE - SHAFT - ARBRE - WELLE



E30

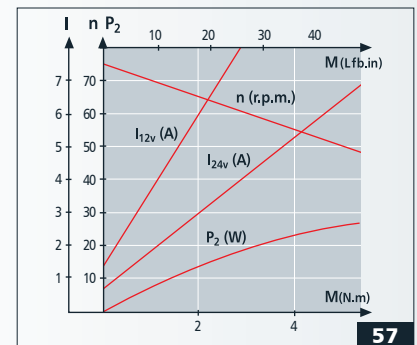
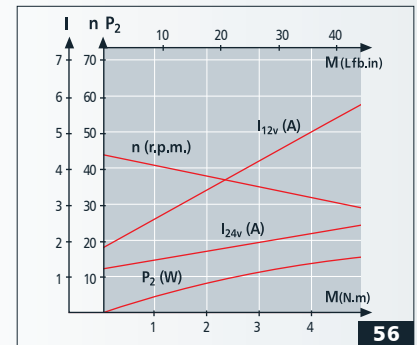
ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD



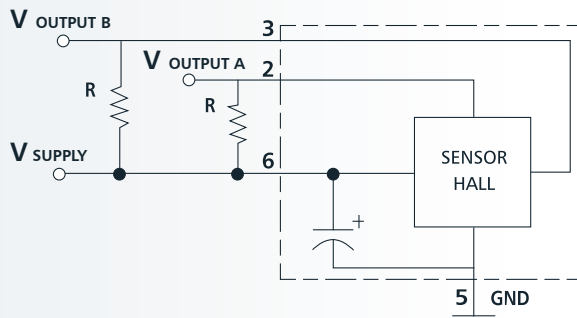
F5

TERMINAL A	TERMINAL B	ROTATION DIRECTION
GND	VCC	↻
VCC	GND	↻

CURVAS - CURVES - COURBES - KURVEN



ESQUEMA SENSOR HALL - SENSOR HALL DIAGRAM - SCHÉME SENSOR HALL - SCHALTBIKD HALLSENSOR



Vout = Vin **R (KΩ)**

5V	0.5
12V	1.2
24V	2.4

SEÑAL DE SALIDA - OUTPUT SIGNAL
SIGNALISATION DE SORTIE - AUSGANGSSIGNAL



317

CUSTOMIZED

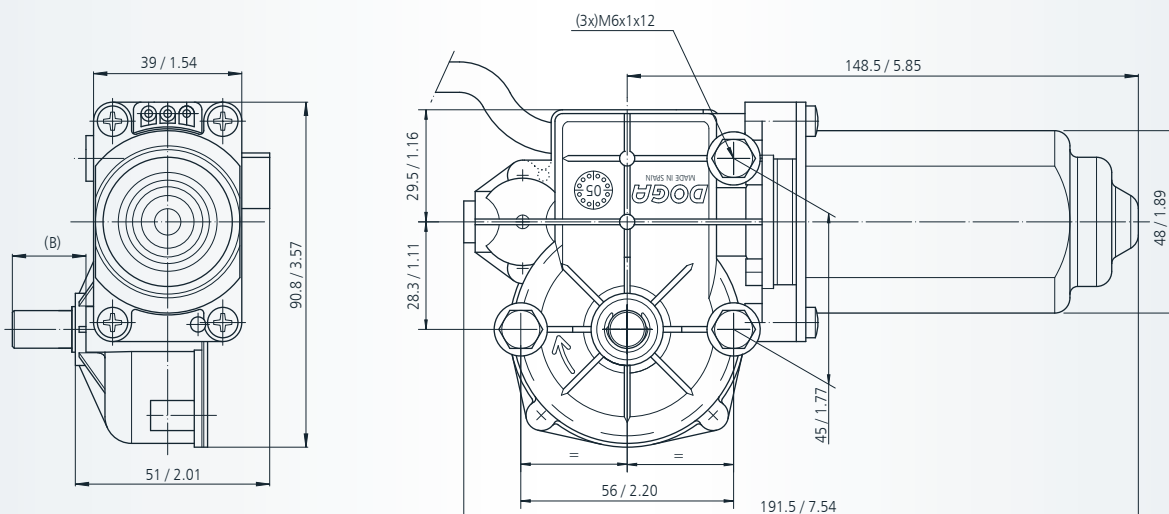
AUTO-BLOQUEO SELF-LOCKING COUPLE D'AUTOBLOCAGE SELBSTHEMMUNG	✓
RUEDA DE BRONCE BRONZE WHEEL ROUE EN BRONZE GETRIEBERAD AUS BRONZE	✓
EJE DELANTERO Y POSTERIOR FRONT AND REAR SHAFT ARBRE ARRIERE VORDERWELLE UND HINTERWELLE	✓
SENSOR HALL HALL SENSOR CAPTEUR HALL HALLSENSOR	✓

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 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	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	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
	Un (V)	Mn (N.m./lbf.in)	n (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	E22	C30	EE4	62:1	1.15/3.08	IP40	PLA	64
317.2711.30.00	24	4 / 35	25	1.1	12 / 106	4	E22	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
317.2761.30.00E	24	4 / 35	25	1.1	12 / 106	4	E30	C30	F4	62:1	1.15/3.08	IP40	PLA	64
317.9704.20.00	12	* 3.5 / 31	65	4	12 / 106	8	E65	C30	EE5	62:1	1.15/3.08	IP40	BRO	68

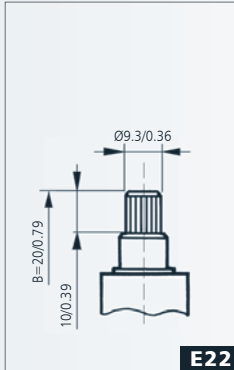
* (VDE 0530) S3 - 10% (10 min.)



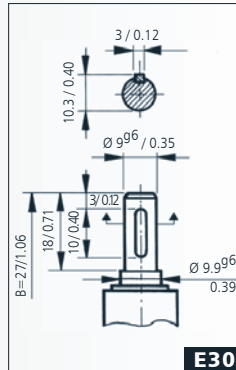
mm / inch

DOGA

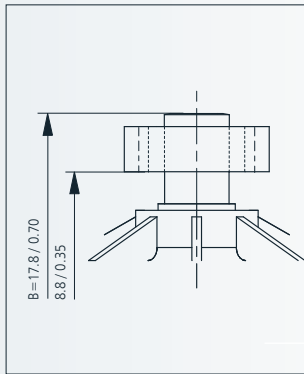
EJE - SHAFT - ARBRE - WELLE



E22



E30

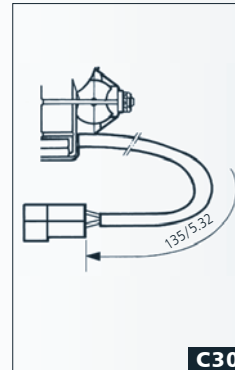


PIÑÓN DIENTES EXTERNOS
 EXTERNAL TEETH PINION

z	10
m	1.75
α	20
de	22.32
dp	18.8
df	14.41
s	3.30
h	3.94

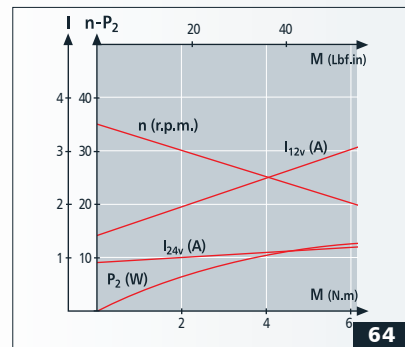
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CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



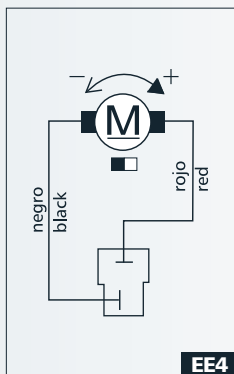
C30

CURVAS - CURVES - COURBES - KURVEN

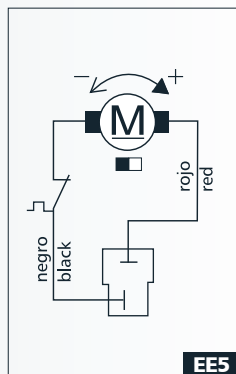


64

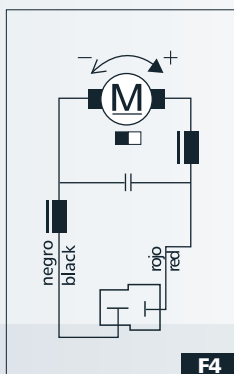
ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD



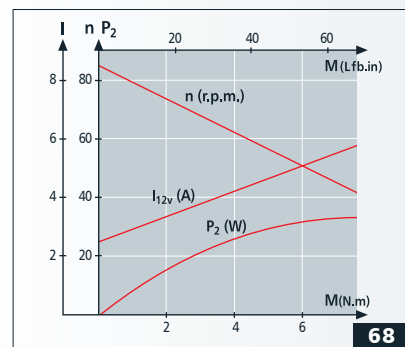
EE4



EE5



F4



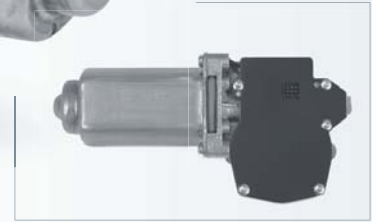
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317H

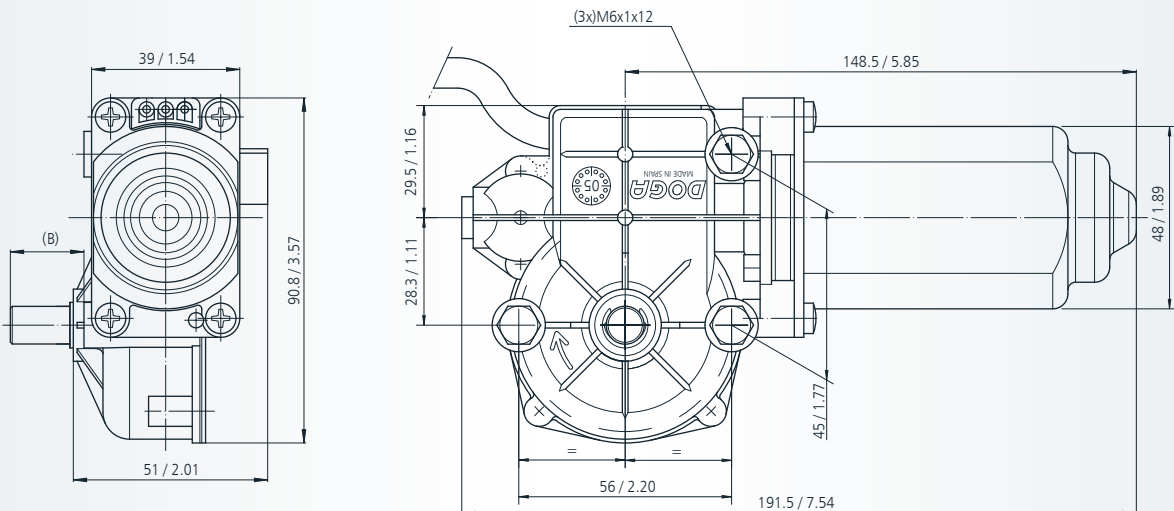
CUSTOMIZED

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



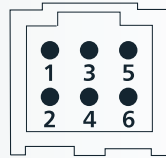
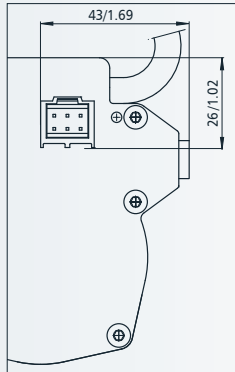
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 UNTERSEITZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHEITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATÉRIAU ROUE MAT. DES SCHNECKENRADES	CURVA CURVE COURBE KURVE	Nº PULSOS NUM. PULSES IMPULSZAHL
	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			
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317.9706.30.00	24	4 / 35	25	1.1	12 / 106	4	E30	C44	F5	62:1	1.15/3.08	IP40	PLA	64	310



mm / inch

DOGA

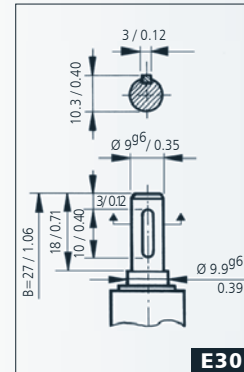
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



PIN FUNCTION - FUNCIÓN

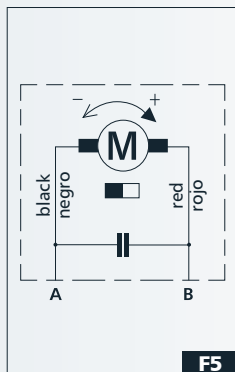
1	-
2	OUT A
3	OUT B
4	-
5	GND
6	VCC

EJE - SHAFT - ARBRE - WELLE



E30

ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD

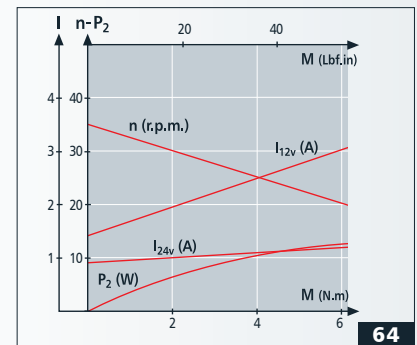


F5

TERMINAL A TERMINAL B ROTATION DIRECTION

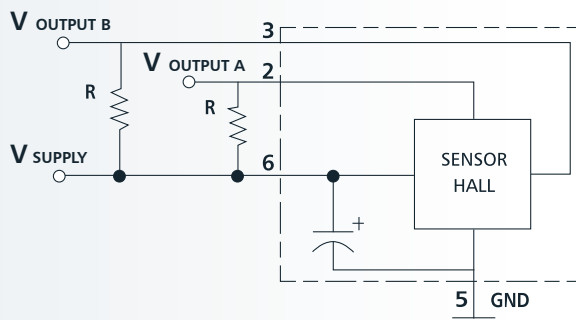
GND	VCC	↻
VCC	GND	↻

CURVAS - CURVES - COURBES - KURVEN



64

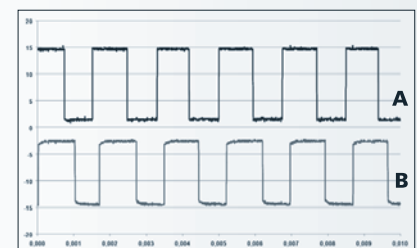
ESQUEMA SENSOR HALL - SENSOR HALL DIAGRAM - SCHÉME SENSOR HALL - SCHATBIKD HALLSENSOR



Vout = Vin R (KΩ)

5V	0.5
12V	1.2
24V	2.4

SEÑAL DE SALIDA - OUTPUT SIGNAL
 SIGNALISATION DE SORTIE - AUSGANGSSIGNAL

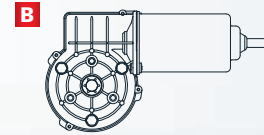
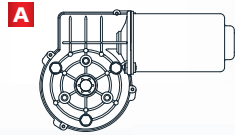


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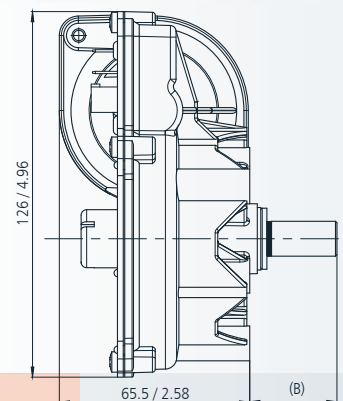
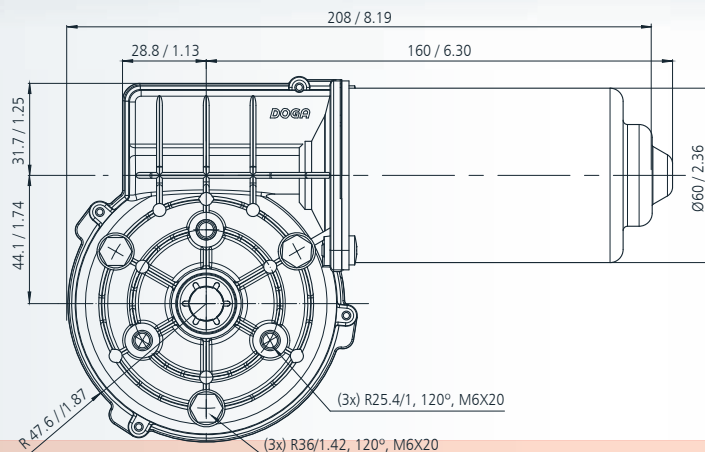
CUSTOMIZED

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



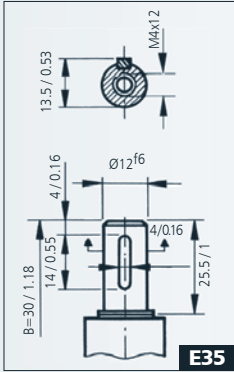
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSION NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 UNTERSETZUNG	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATER TIGHTNESS ÉTANCHÉITÉ FEUCHTIGKEITSSCHUTZKLASSE	MATERIAL RUEDA WHEEL MATERIAL MATERIAU ROUE MAT. DES SCHNECKENRADES	DESIGN: A,B,C DESSIN: A,B,C ABBILDUNG: A,B,C	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			
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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	IP65	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	IP65	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	IP65	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	IP65	PLA	a	60
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319.3820.20.00	12	9 / 79.6	30	7	50 / 442	28	E35	C37	EE4	81:1	1.7 / 4.55	IP65	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	IP65	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	IP65	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	IP65	BRO	a	61
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319.3845.30.00	24	6 / 53.1	65	4	40 / 354	25	E35	C37	EE4	78:2	1.7 / 4.55	IP65	PLA	a	67
319.3846.20.00	12	4 / 35	85	7	40 / 354	60	E35	C37	EE4	78:2	1.7 / 4.55	IP65	PLA	a	62
319.3846.30.00	24	4 / 35	85	3.5	40 / 354	30	E35	C37	EE4	78:2	1.7 / 4.55	IP65	PLA	a	62
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319.3862.30.00	24	9 / 79.6	45	3	60 / 531	25	E35	C37	EE4	81:1	1.7 / 4.55	IP65	PLA	a	61
319.9059.30.00	24	2.2 / 19.47	230	4	20 / 177	36	E35	C37	EE4	68:4	1.7 / 4.55	IP65	PLA	a	65
319.9128.30.00	24	2.2 / 19.47	230	4	20 / 177	36	E35/E66	C38	EE4	68:4	1.7 / 4.55	IP40	PLA	b	65
319.9137.20.00	12	2 / 17.7	155	8	20 / 177	60	E35	C38	EE4	68:4	1.7 / 4.55	IP65	PLA	a	66
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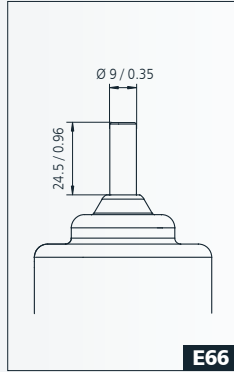
mm / inch

DOGA

EJE - SHAFT - ARBRE - WELLE

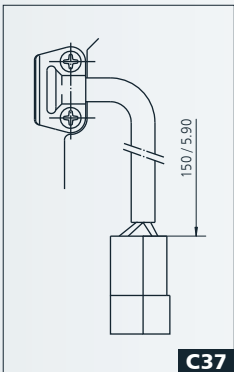


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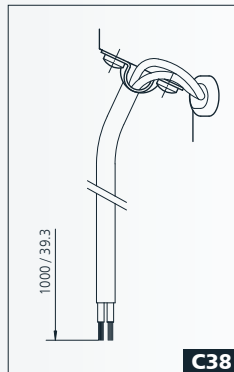


E66

CONEXIONES - CONNECTIONS
CONNEXIONS - ANSCHLUSSART

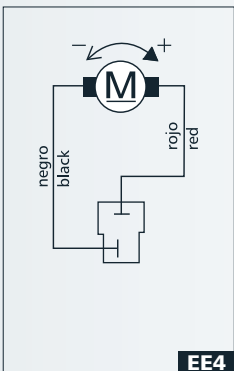


C37

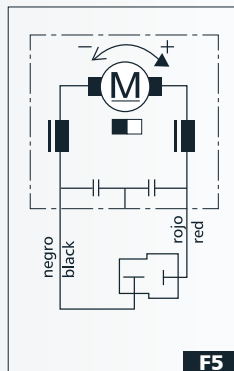


C38

ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHEMA ÉLECTRIQUE - SCHALTBIKD

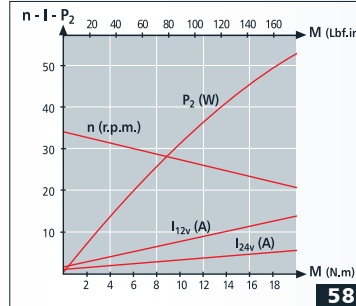


EE4

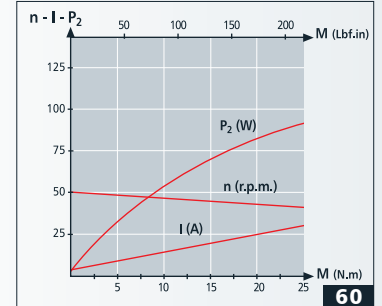


F5

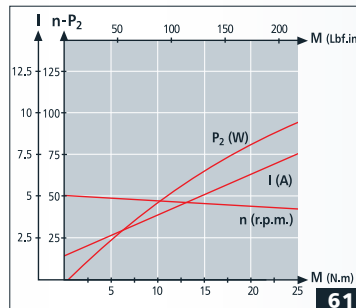
CURVAS - CURVES - COURBES - KURVEN



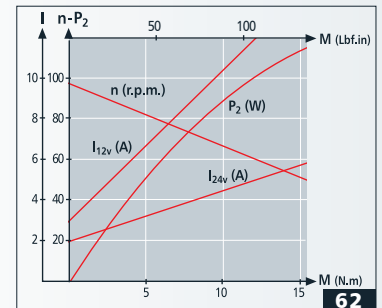
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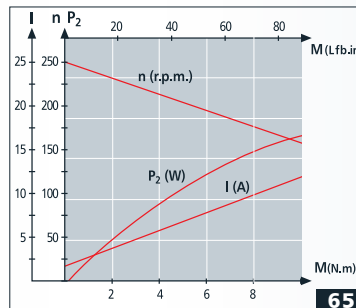
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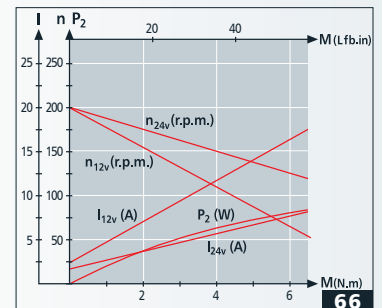
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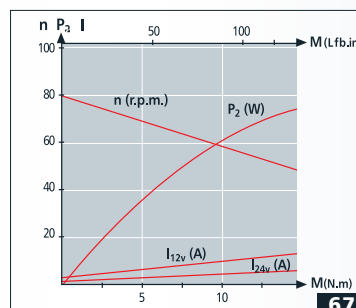
62



65



66



67

319H

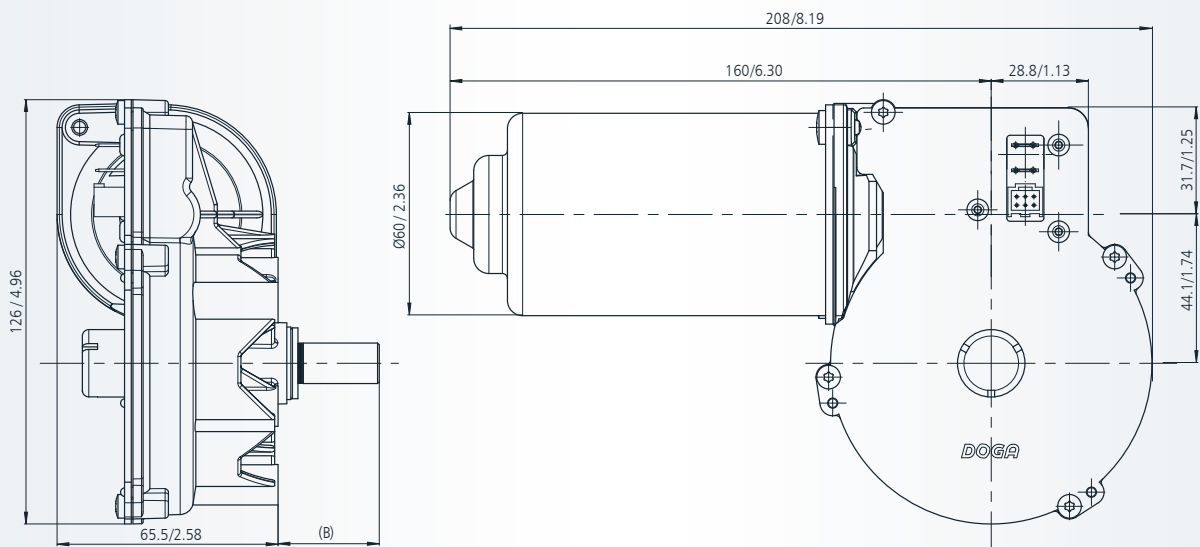
CUSTOMIZED

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



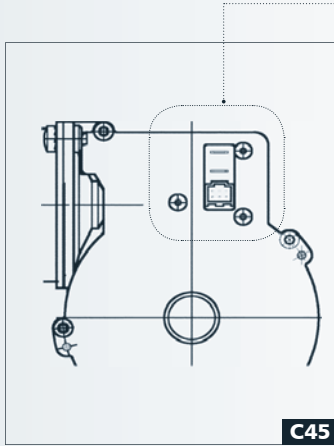
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 UNTERSEITZUNG	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	Nº PULSOS PULSES NUM. NUM. PULSES 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	C45	F6	78:2	1.7 / 4.55	IP40	PLA	62	468
319.4846.30.00	24	4 / 35	100	3	40 / 354	30	E35	C45	F6	78:2	1.7 / 4.55	IP40	PLA	62	468
319.4860.20.00	12	9 / 79.6	30	7	50 / 442	28	E35	C45	F6	81:1	1.7 / 4.55	IP40	PLA	58	972
319.4860.30.00	24	9 / 79.6	30	3	50 / 442	15	E35	C45	F6	81:1	1.7 / 4.55	IP40	PLA	58	972
319.4862.20.00	12	8 / 70.8	45	6	50 / 442	50	E35	C45	F6	81:1	1.7 / 4.55	IP40	PLA	60	972
319.4862.30.00	24	9 / 79.6	45	3	60 / 531	25	E35	C45	F6	81:1	1.7 / 4.55	IP40	PLA	61	972



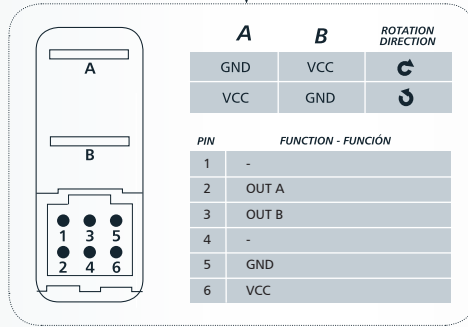
mm / inch

DOGA

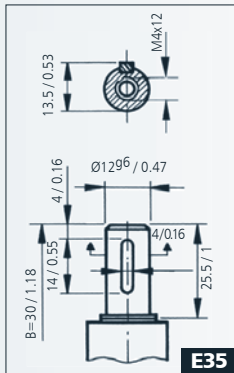
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



C45

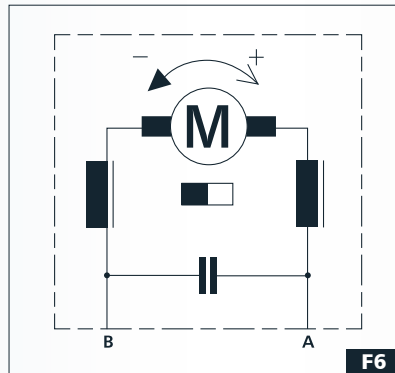


EJE - SHAFT - ARBRE - WELLE



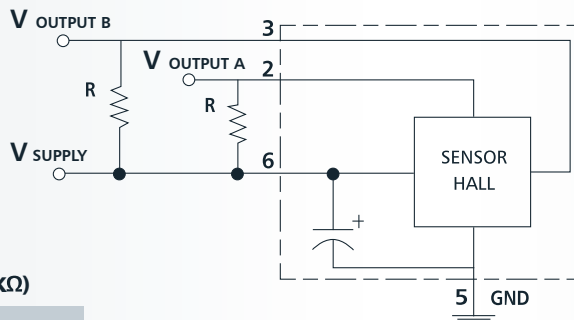
E35

ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHEMA ÉLECTRIQUE - SCHALTBIKD



F6

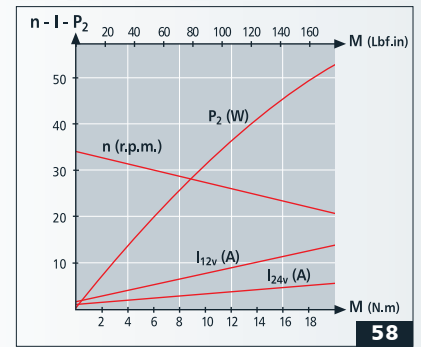
ESQUEMA SENSOR HALL - SENSOR HALL DIAGRAM - SCHEMA SENSOR HALL - SCHALTBIKD HALLSENSOR



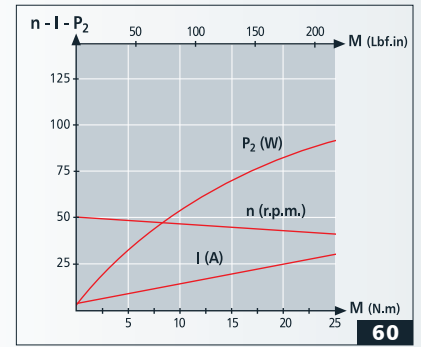
Vout = Vin **R (KΩ)**

5V	0.5
12V	1.2
24V	2.4

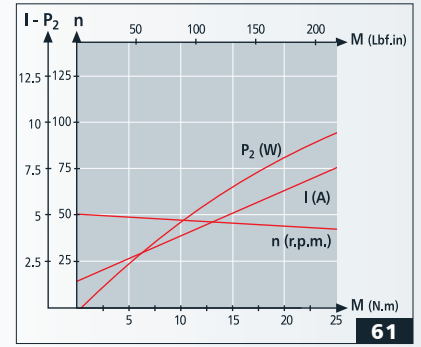
CURVAS - CURVES - COURBES - KURVEN



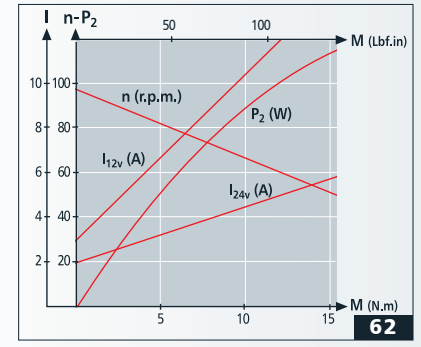
58



60



61



62

SEÑAL DE SALIDA - OUTPUT SIGNAL
SIGNALISATION DE SORTIE - AUSGANGSSIGNAL





PLANETARY GEAR

- REDUCTORES PLANETARIOS: combinables con la serie 162. Ver sección especial en catálogo.
- PLANETARY GEARS: combinable with 162 series. See special section in catalogue.
- REDUCTEURS PLANETAIRES: combinables avec la série 162. Consultez section spécial du catalogue.
- PLANETENGETRIEBE: Mit der Reihe 162 kombinierbar. Sehen Sie Sonderabschnitt im Katalog.

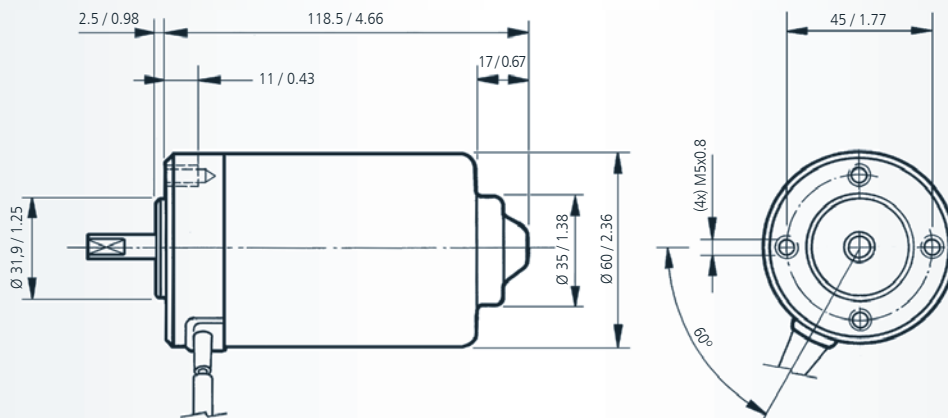
A



B

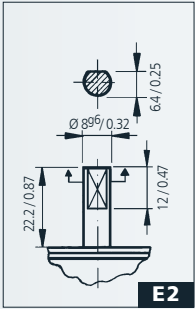


REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSION NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	PAR DE ARRANQUE STARTING TORQUE COUPLE DE 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 SCHALTBIKD	PESO APROXIMADO APPROXIMATE WEIGHT POIDS APPROXIMATIF GEWICHT (ca.)	GRADO DE ESTANQUEIDAD WATERTIGHTNESS 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		
162.4101.20.00	12	0.18 / 1.59	2800	7.5	1.0 / 8.85	33	E2	C2	EE2	1.1 / 2.95	IP53	a	32
162.4101.30.00	24	0.20 / 1.77	3000	4	1.0 / 8.85	18	E2	C2	EE2	1.1 / 2.95	IP53	a	33
162.4102.20.00	12	0.20 / 1.77	2000	6	1.0 / 8.85	24	E2	C3	EE2	1.1 / 2.95	IP53	a	34
162.4102.30.00	24	0.20 / 1.77	2000	3	1.0 / 8.85	12	E2	C3	EE2	1.1 / 2.95	IP53	a	34
162.4106.20.00	12	0.18 / 1.59	2800	7.5	1.0 / 8.85	33	E4	C2	EE2	1.1 / 2.95	IP53	a	32
162.4106.30.00	24	0.20 / 1.77	3000	4	1.0 / 8.85	18	E4	C2	EE2	1.1 / 2.95	IP53	a	33
162.4107.30.00E	24	0.20 / 1.77	2000	3	1.0 / 8.85	12	E5	C5	F3	1.1 / 2.95	IP53	a	34
162.4108.20.00	12	0.18 / 1.59	1500	5	0.8 / 7.08	17	E2	C3	EE2	1.1 / 2.95	IP53	a	35
162.4108.30.00	24	0.18 / 1.59	1500	2.5	0.8 / 7.08	8.5	E2	C3	EE2	1.1 / 2.95	IP53	a	35
162.4109.30.00	24	0.18 / 1.59	1500	2.5	0.8 / 7.08	8.5	E38	C35	EE3	1.1 / 2.95	IP53	a	35
162.4109.50.00	48	0.18 / 1.59	1500	1,3	0.8 / 7.08	4,5	E38	C35	EE3	1.1 / 2.95	IP53	a	35
162.4113.30.00	24	0.12 / 1.06	3000	2.5	1.0 / 8.85	15	E3	C4	F3	1.1 / 2.95	IP40	a	36
162.4116.30.00	24	0.20 / 1.77	3000	4	1.0 / 8.85	18	E58/E57	C2	EE2	1.1 / 2.95	IP40	b	33

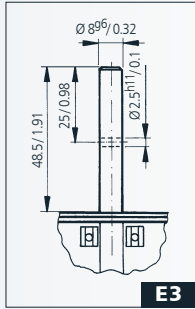


EJE - SHAFT - ARBRE - WELLE

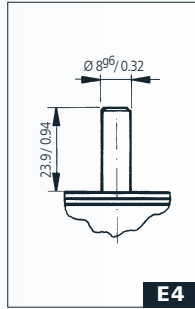
CURVAS - CURVES - COURBES - KURVEN



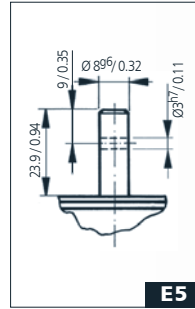
E2



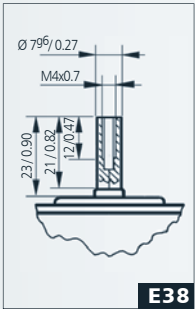
E3



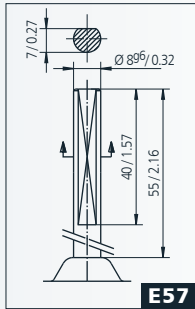
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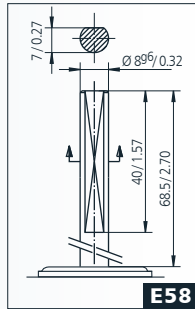
E5



E38



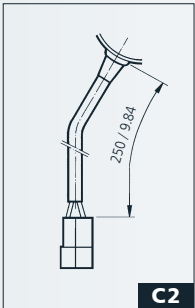
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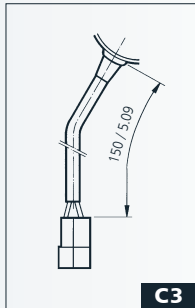
E58

CONEXIONES - CONNECTIONS
CONNEXIONS - ANSCHLUSSART

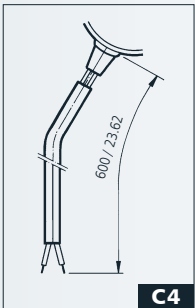
ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHEMA ÉLECTRIQUE - SCHALTBILD



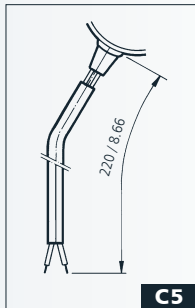
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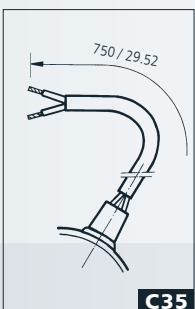
C3



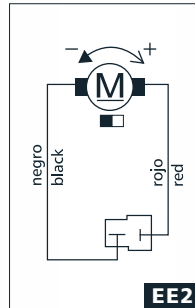
C4



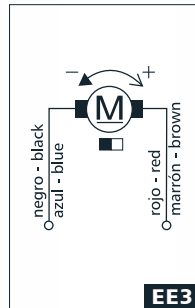
C5



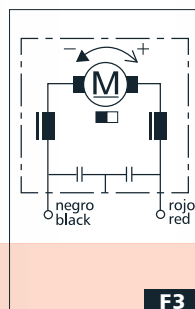
C35



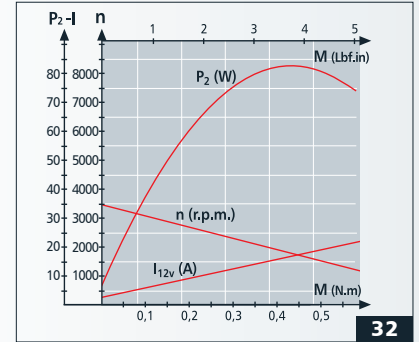
EE2



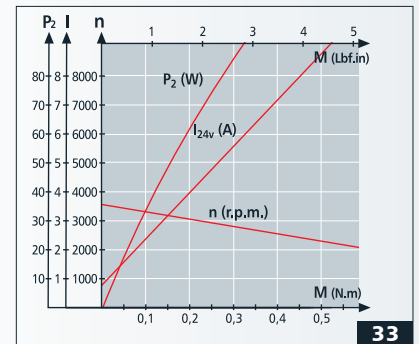
EE3



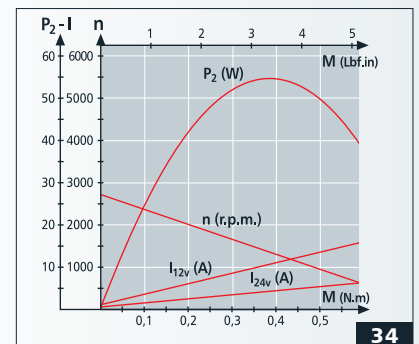
F3



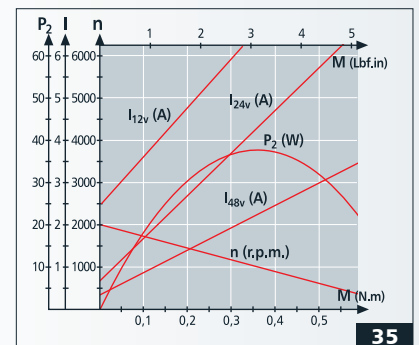
32



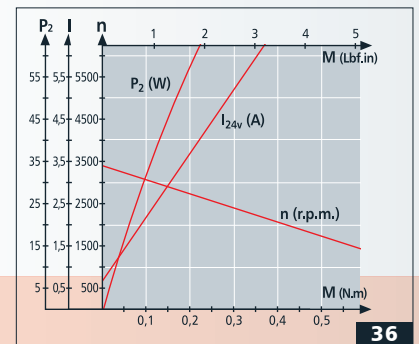
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34



35

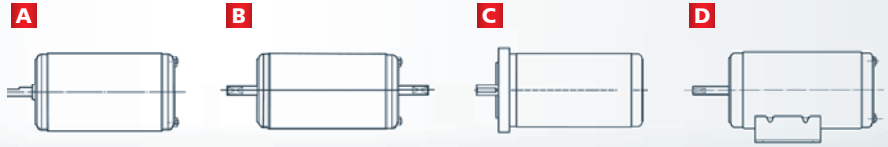


36

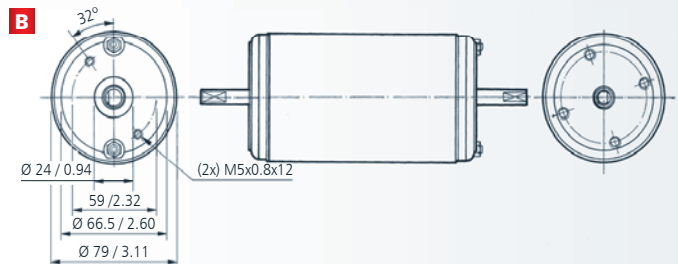
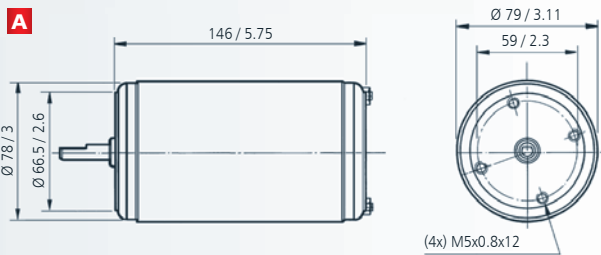


PLANETARY GEAR

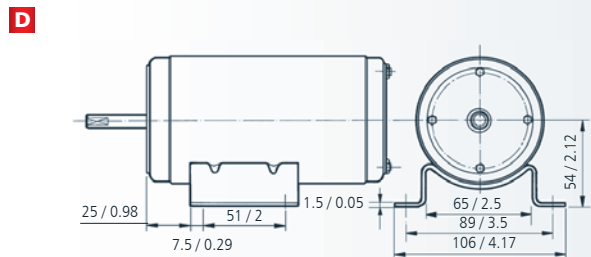
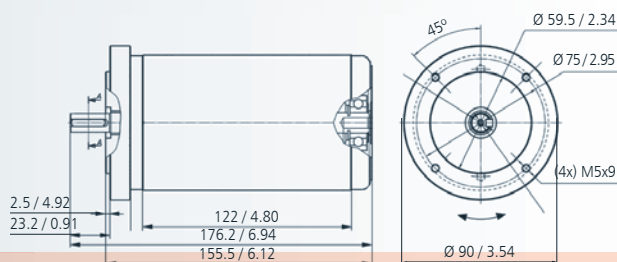
- REDUCTORES PLANETARIOS: combinables con la serie 168. Ver sección especial en catálogo.
- PLANETARY GEARS: combinable with 168 series. See special section in catalogue.
- REDUCTEURS PLANETAIRES: combinables avec la série 168. Consultez section spécial du catalogue.
- PLANETENGETRIEBE: Mit der Reihe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



REFERENCIA REFERENCE REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSIONNOMINALE 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 ELECTRICO WIRING DIAGRAM SCHEMA ELECTRIQUE 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./lbf.in)	Pn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				P (kg/lb.t)	IP		
168.4105.20.04	12	0.50 / 4.42	1900	14	3.0 / 26.5	64	E8	C8	EE1	2.6 / 6.9	IP40	a	37
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

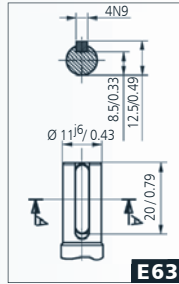
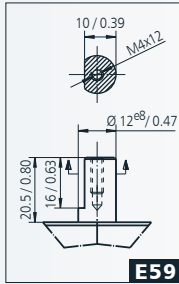
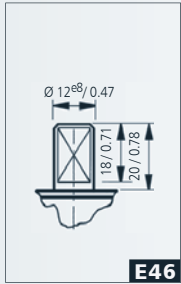
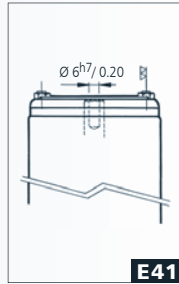
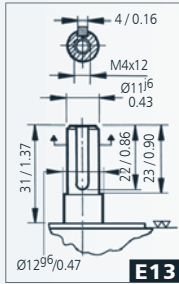
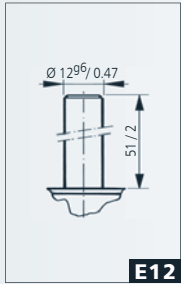
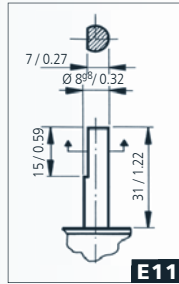
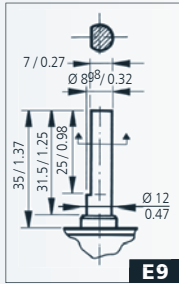
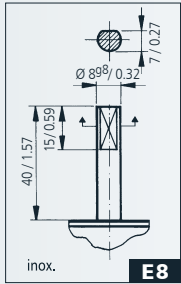


C Flange according to IEC 63 B14 - Puntos de anclaje según IEC 63 B14

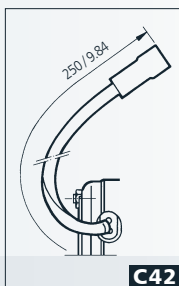
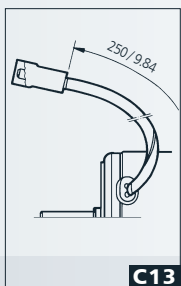
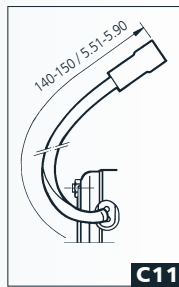
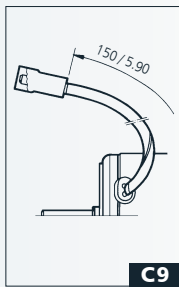
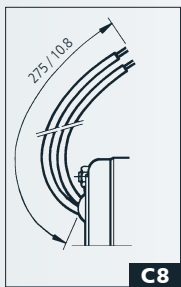


mm / inch

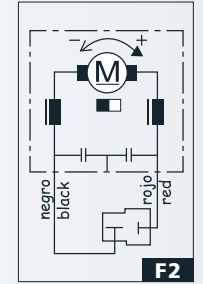
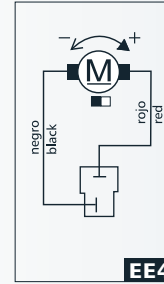
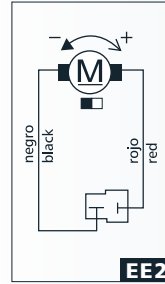
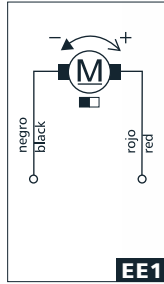
EJE - SHAFT - ARBRE - WELLE



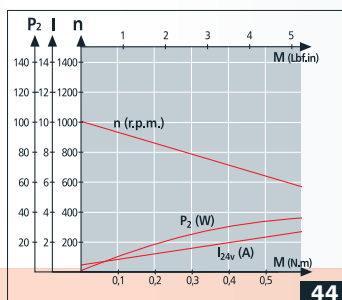
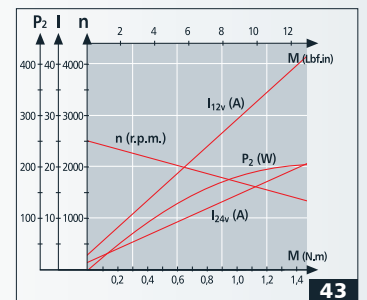
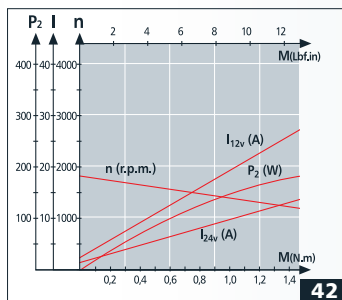
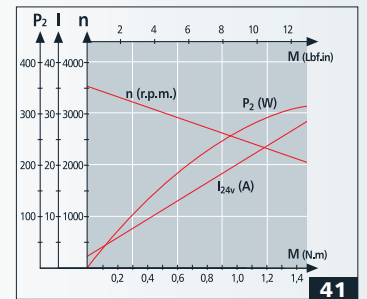
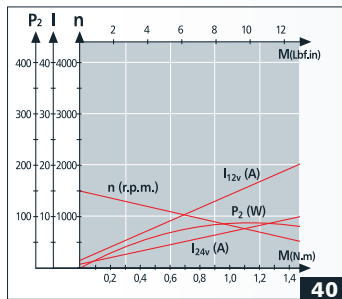
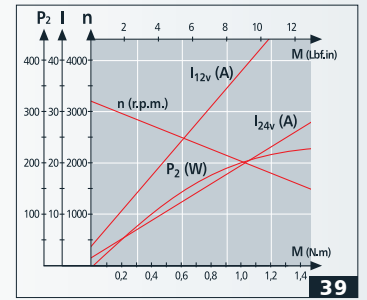
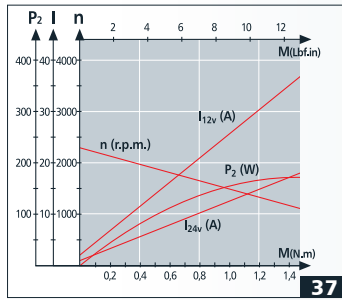
ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHEMA ÉLECTRIQUE - SCHALTBIKD ESQUEMA ELÉCTRICO



CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



CURVAS - CURVES - COURBES - KURVEN



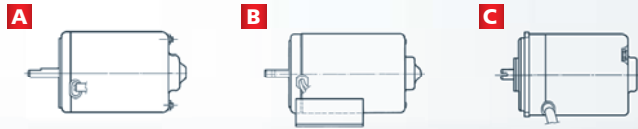
PLANETARY GEAR

- 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.

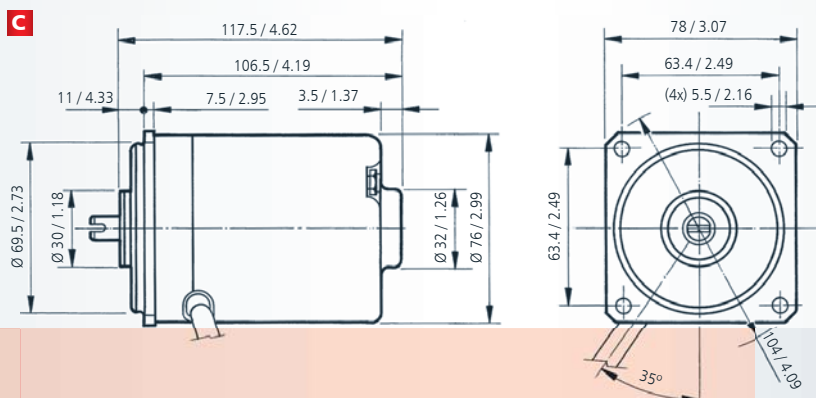
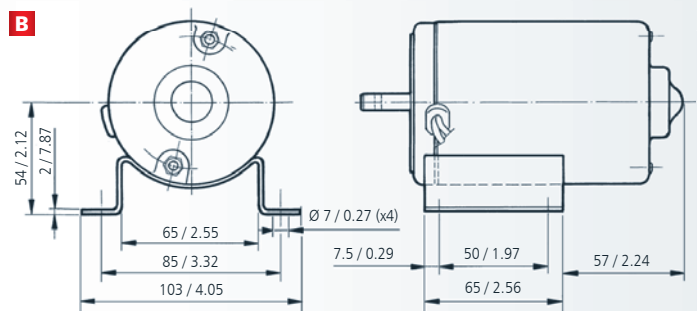
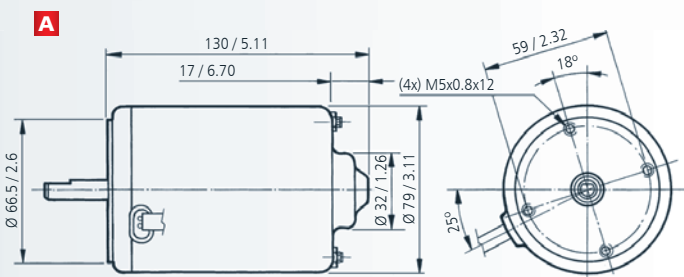


2 POLOS
2 POLES
2 PÔLES
2 PHASEN

4 POLOS
4 POLES
4 PÔLES
4 PHASEN



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 ÉTANCHEITÉ FEUCHTIGKEITSSCHUTZKLASSE	DISEÑO: A-B DESIGN: A-B DESSIN: A-B ABBILDUNG: A-B	CURVA CURVE COURBE KURVE
	Un (V)	Mn (N.m./lbf.in)	Pn (r.p.m.)	In (A)	Ma (N.m./lbf.in)	Ia (A)				P (kg/lb.t)	IP		
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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



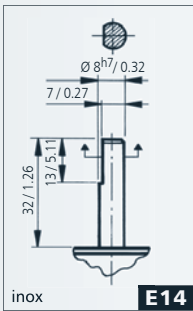
mm / inch

DOGA

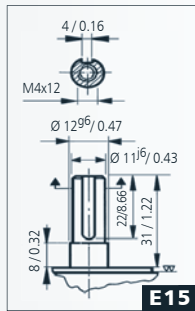
EJE - SHAFT - ARBRE - WELLE

CONEXIONES - CONNECTIONS
CONNEXIONS - ANSCHLUSSART

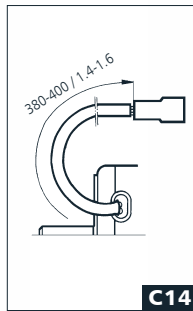
CURVAS - CURVES - COURBES - KURVEN



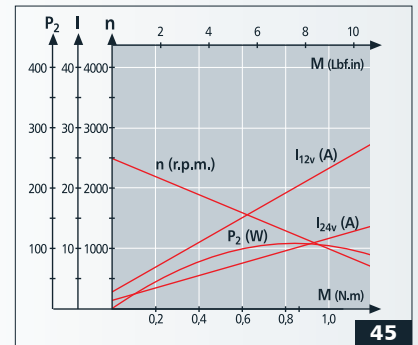
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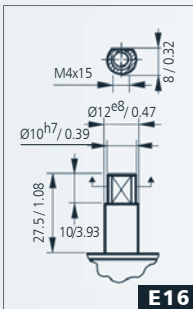
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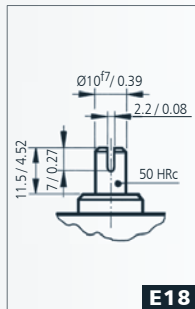
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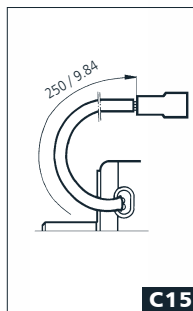
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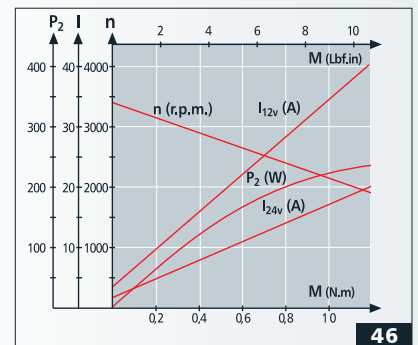
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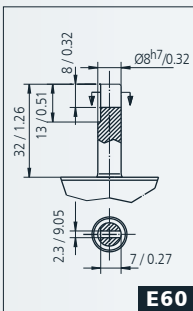
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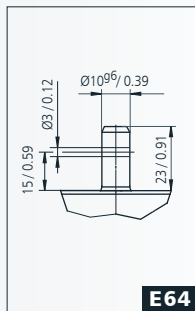
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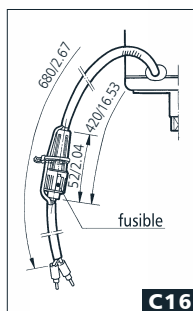
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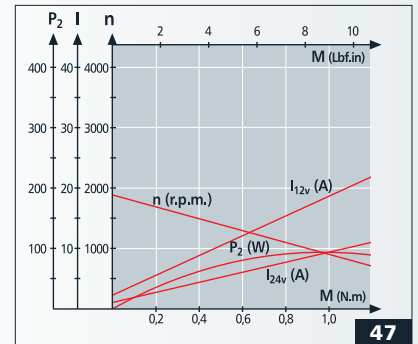
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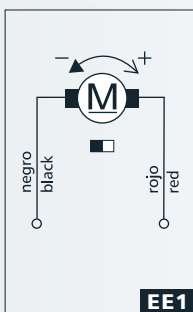


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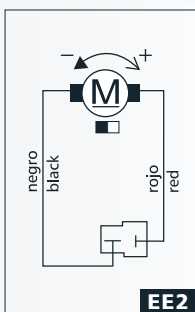


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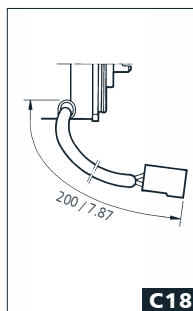
ESQUEMA ELÉCTRICO - WIRING DIAGRAM
SCHEMA ÉLECTRIQUE - SCHALTBIKD



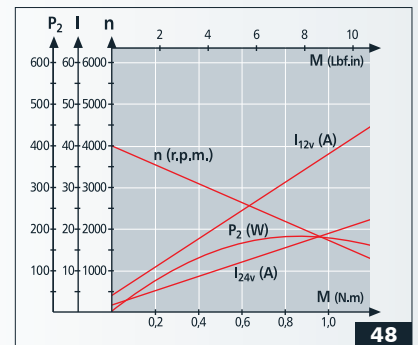
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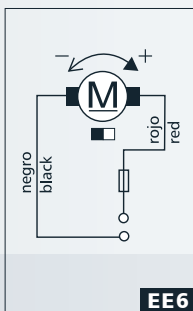
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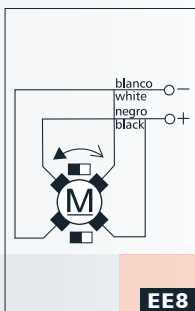
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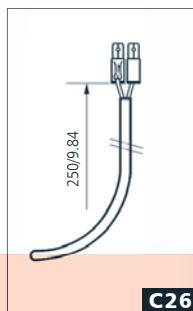
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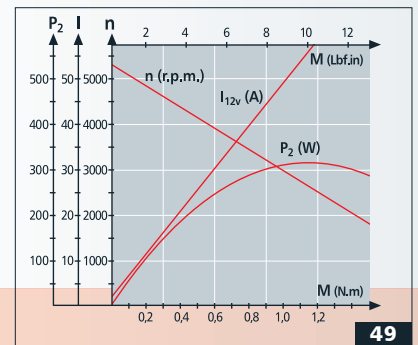
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EE8



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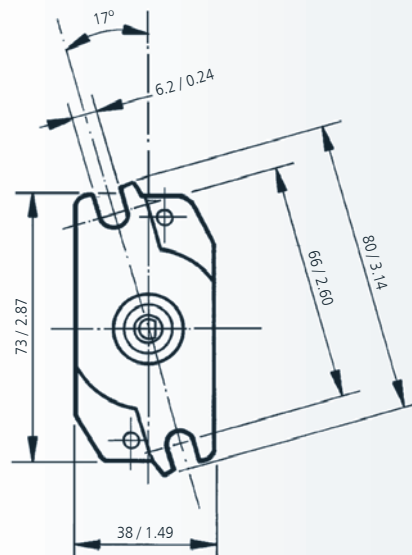
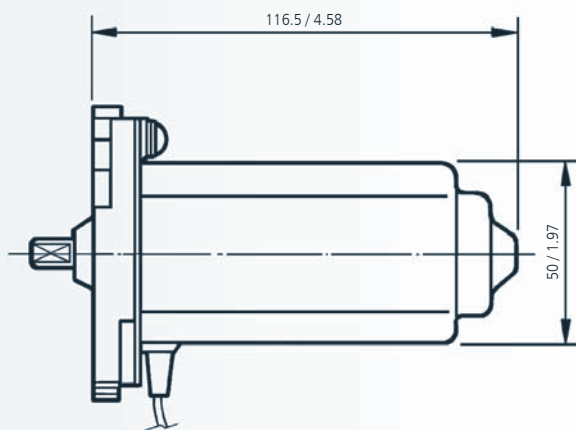
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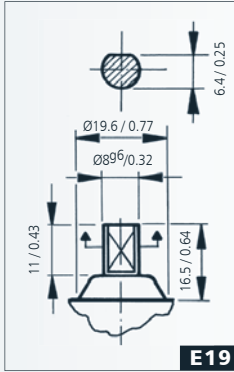


REFERENCIA
REFERENCE NUMBER
REFERENZNUMMERN

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 WATER-TIGHTNESS ÉTANCHEITE 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		
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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
260.0111.30.04	24	0.08 / 0.70	3000	2.5	0.4 / 3.54	11	E19	C21	EE2	0.7 / 1.87	IP40	50

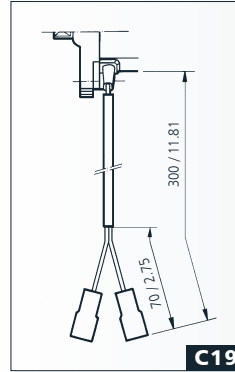


EJE - SHAFT - ARBRE - WELLE

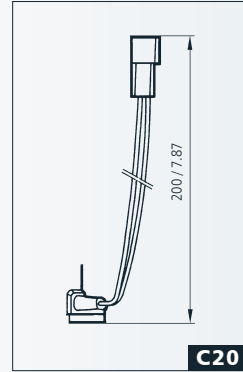


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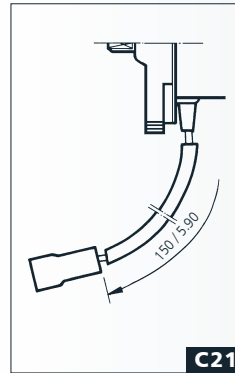
CONEXIONES - CONNECTIONS - CONNEXIONS - ANSCHLUSSART



C19

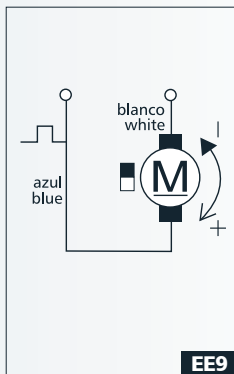


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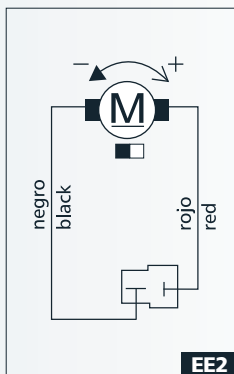


C21

ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBIKD

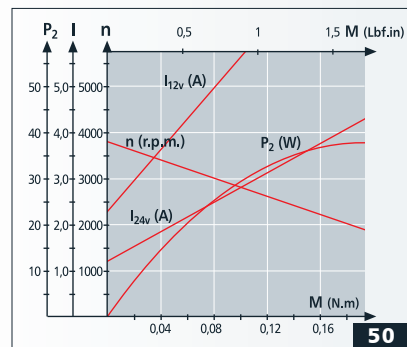


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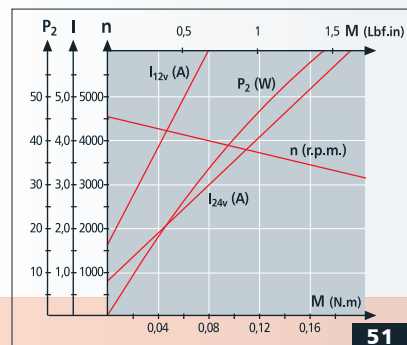


EE2

CURVAS - CURVES - COURBES - KURVEN



50

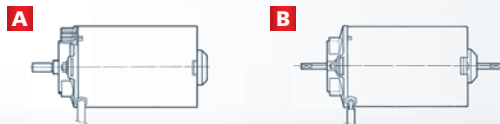


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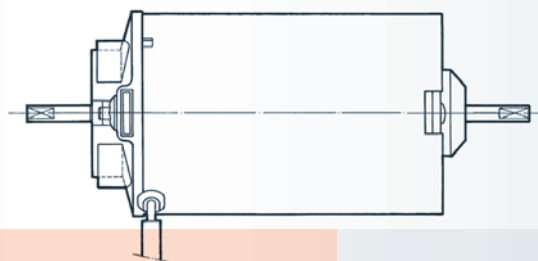
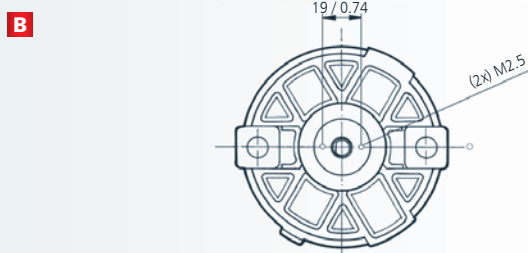
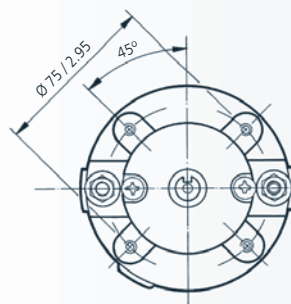
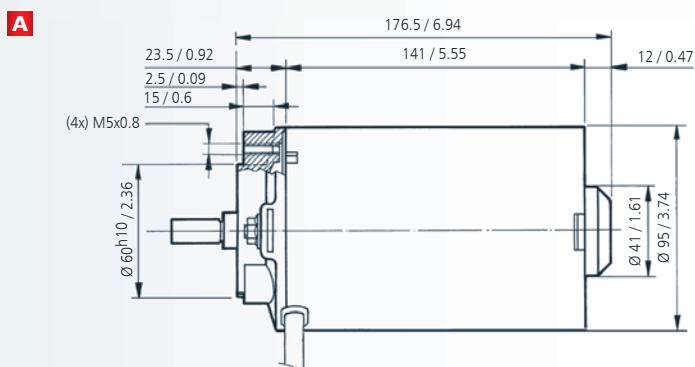


PLANETARY GEAR

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

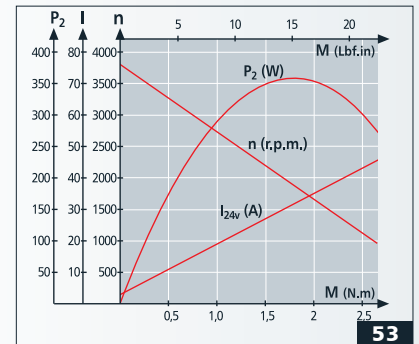
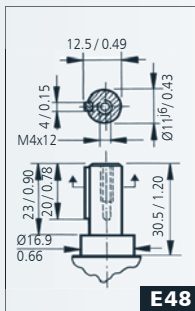
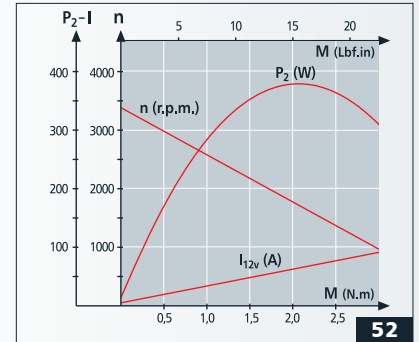
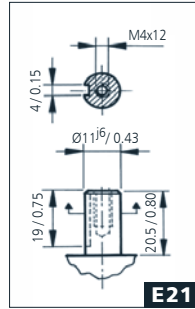
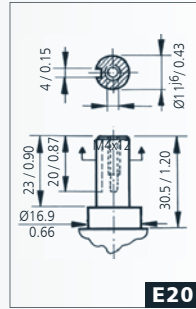
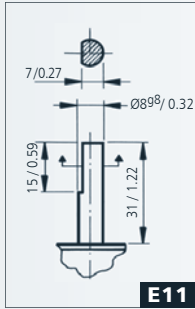


REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSION NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANUNG	PAR NOMINAL NOMINAL TORQUE COUPLE NOMINAL DREHMOMENT NOMINAL	VELOCIDAD NOMINAL NOMINAL SPEED VITESSE NOMINALE GESCHWINDIGKEIT NOMINAL	CORRIENTE NOMINAL NOMINAL CURRENT COURANT NOMINAL NOMINALSTROM	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 ANSCHLUSSEART	ESQUEMA ELÉCTRICO WIRING DIAGRAM SCHEMA ÉLECTRIQUE 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./lbf.in)	Pn (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

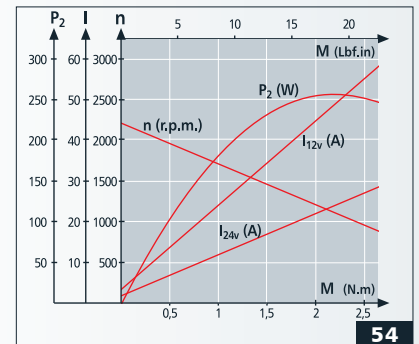
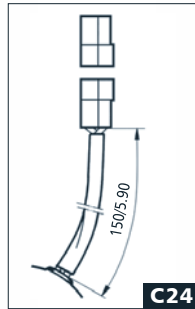
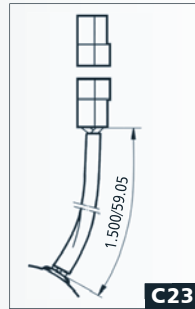
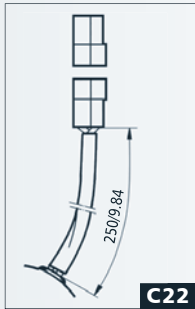


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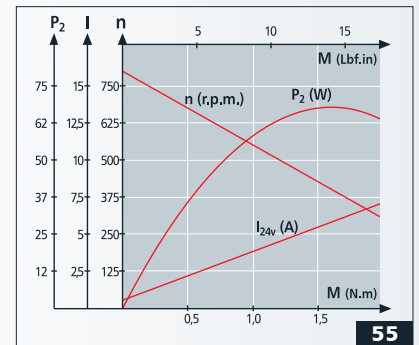
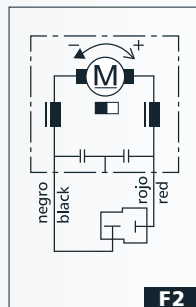
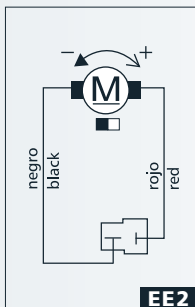
CURVAS - CURVES - COURBES - KURVEN







EJE - SHAFT - ARBRE - WELLE



ESQUEMA ELÉCTRICO - WIRING DIAGRAM - SCHÉME ÉLECTRIQUE - SCHALTBILD



		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	MORE OPTIONS 
		<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 DIAMÈTRE DURCHMESSER	<i>mm</i>	60	79	79	95		
	<i>in</i>	2.36	3.11	3.11	3.74		

		Ø 52 mm Ø 2.05 in			Ø 62 mm Ø 2.44 in			Ø 72 mm Ø 2.83 in			Ø 81 mm 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												MORE OPTIONS 	
	(2) PAR EN SERVICIO CONTINUO CONTINUOUS TORQUE COUPLE EN SERVICE CONTINU NENNDREHMOMENT	<i>max N.m.</i>	4	12	25	8	25	50	14	42	84	20	60		120
		<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) 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.

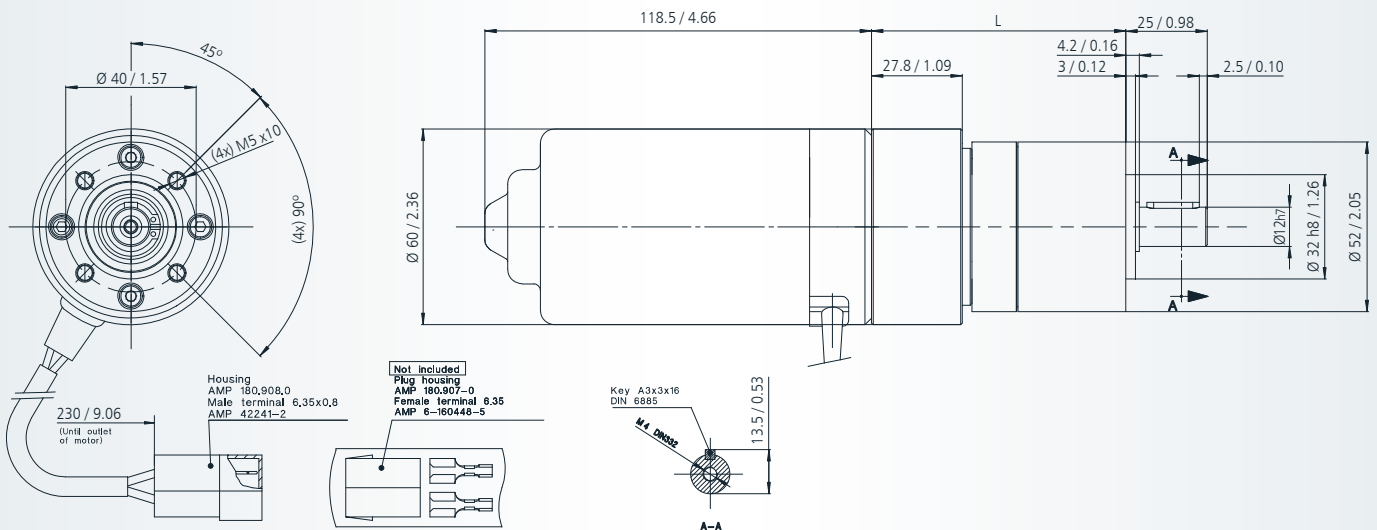
- (1) In each motor series we have different power configurations. Here we show one of them. See motor catalogue for others
 (2) The Torque capacity will be precisele defined for each motor and gear combination and for each application. Values indicated per 1, 2 & 3 stages respectively. In certain conditions the mentioned torque can be exceeded.
 (3) Approximate values for each nr. of stages combination.

- (1) 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.



motor					gear		
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	VELOCIDAD EN VACÍO NO LOAD SPEED VITESSE À VIDE GESCHWINDIGKEIT IM LEERLAUF	CURVA CURVE COURBE KURVE	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSATZUNG	ETAPAS STAGES ETAGES STUFEN	(mm/inch)
	base motor nr. (*)	Un (V)	n0 (r.p.m.)		i		
162.9003.20.00	162.4101.20.00	12	3500	32	4:1	1	78.0/3.07
162.9003.30.00	162.4101.30.00	24	3500	33	4:1	1	78.0/3.07
162.9004.20.00	162.4101.20.00	12	3500	32	16:1	2	92.1/3.63
162.9004.30.00	162.4101.30.00	24	3500	33	16:1	2	92.1/3.63
162.9005.20.00	162.4101.20.00	12	3500	32	35:1	2	92.1/3.63
162.9005.30.00	162.4101.30.00	24	3500	33	35:1	2	92.1/3.63
162.9006.20.00	162.4101.20.00	12	3500	32	169:1	3	106.3/4.19
162.9006.30.00	162.4101.30.00	24	3500	33	169:1	3	106.3/4.19

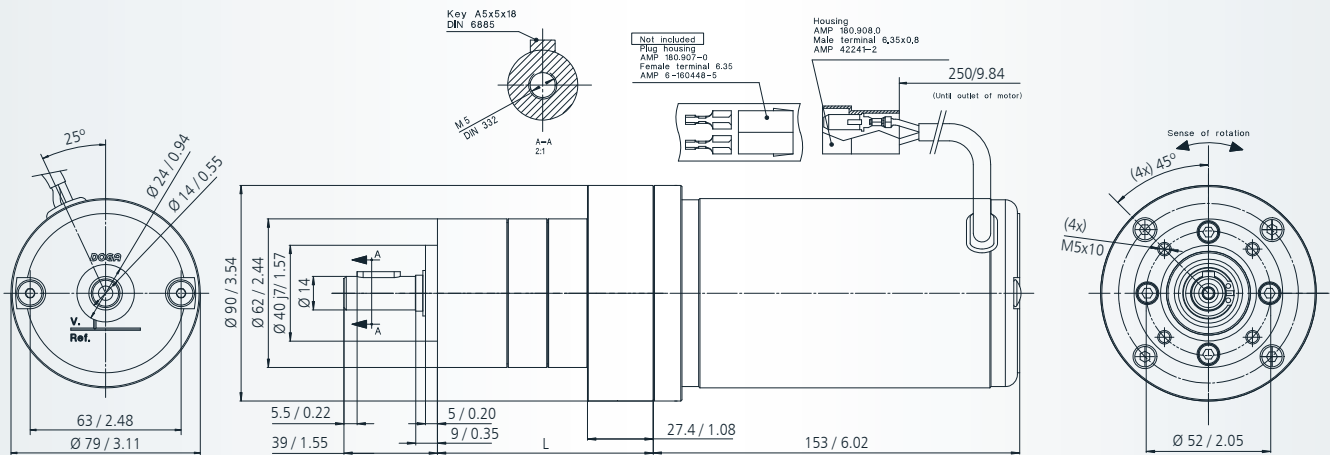
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motor					gear		
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	VELOCIDAD EN VACÍO NO LOAD SPEED VITESSE À VIDE GESCHWINDIGKEIT IM LEERLAUF	CURVA CURVE COURBE KURVE	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE RÉDUCTEUR UNTERSATZUNG	ETAPAS STAGES ÉTAGES STUFEN	(mm/inch)
	base motor nr. (*)	Un (V)	n0 (r.p.m.)		i		
168.4143.20.00	168.4108.20.04	12	3200	39	4:1	1	73.2/2.88
168.4143.30.00	168.4108.30.04	24	3200	39	4:1	1	73.2/2.88
168.4144.20.00	168.4108.20.04	12	3200	39	25:1	2	90.1/3.55
168.4144.30.00	168.4108.30.04	24	3200	39	25:1	2	90.1/3.55
168.4145.20.00	168.4108.20.04	12	3200	39	71:1	3	106.9/4.21
168.4145.30.00	168.4108.30.04	24	3200	39	71:1	3	106.9/4.21

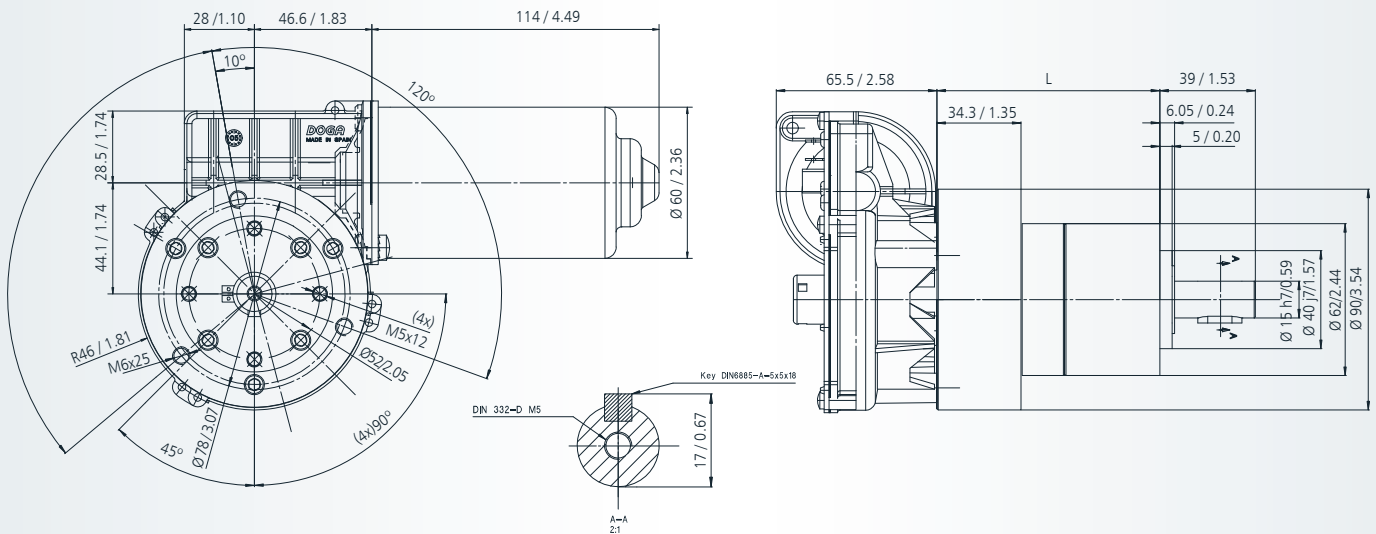
(*) página - page - Seite: 31





motor					gear		
REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	REFERENCIA REFERENCE NUMBER REFERENZNUMMERN	TENSIÓN NOMINAL NOMINAL VOLTAGE TENSION NOMINALE NENNSPANNUNG	VELOCIDAD EN VACO NO LOAD SPEED VITESSE À VIDE GESCHWINDIGKEIT IM LEERLAUF	CURBA CURVE COURBE KURVE (*)	RELACIÓN DE REDUCCIÓN TRANSMISSION RATIO RAPPORT DE REDUCTEUR UNTERSETZUNG	ETAPAS STAGES ETAGES STUFEN	L (mm/inch)
	base motor nr. (*)	Un (V)	n0 (r.p.m.)		i		
319.9701.20.00	319.3860.20.00	12	35	58	7:1	1	90.9/3.58
319.9701.30.00	319.3860.30.00	24	35	58	7:1	1	90.9/3.58

(*) página - page - Seite: 24

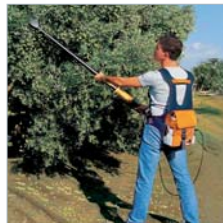




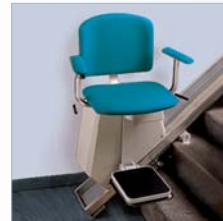
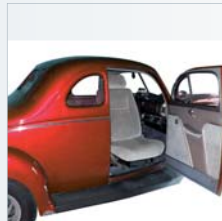
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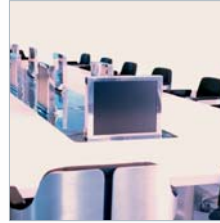
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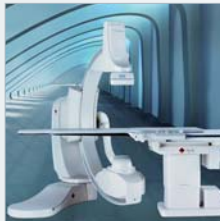
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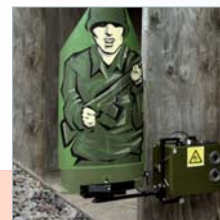
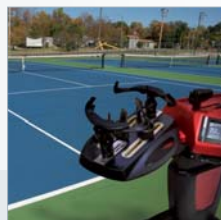
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