































SPECIALISED FORCE
HYDRAULIC TOOLS & PTY. LTD.
ELECTRICAL CONTRACTORS EQUIPMENT

EXCLUSIVE DISTRIBUTOR OF

alkitronic®

HOME OF TORQUE POWER



TYPE	SERIES						
ELECTRIC	E-PG	 X-E E-PG					
	EC	 X-EC-S	 X-EC-A	 X-EC-R	 X-EC-SG		
	EF	 X-EF-S	 X-EF-A	 X-EF-R	 X-EF-SG		
	BATTERY	EAF	 X-EAF-S	 X-EAF-W	 X-EAF-N		
EB		 X-EB-S					
PNEUMATIC	PC	 X-PC-S CLD	 X-PC-F CLS/CLS2	 X-PC-N CLD-N	 X-PC-R RCL2	 X-PC-SG CLS2-SG	 X-PC-SD CLSD
	PV	 X-PV-F 1/2", 3/4" & 1"					
MANUAL	XCE	 X-M HG	 X-M SD	 X-ML	 XCE		
ACC.	Flange Boy						
	Maintenance unit						
	Batteries & Chargers	 Ozito battery kit to suit EB Series			 Metabo battery kit to suit EAF Series		
Accessories	CL SERIES STACO - Hex. standard sockets		SERIES STABI- Standard connector		DMA - Reaction devices		

TYPE	SERIES	PAGE	MODELS	
ELECTRIC	E-PG	X-E	4 PG 2/80, PG 2/150, PG 2/250, PG 2/350, PG 2/600, PG 2/800	
	EC	X-EC-S	5-6	EC-S 10, EC-S 20, EC-S 30, EC-S 35, EC-S 40, EC-S 50, EC-S 60, EC-S 65, EC-S 70, EC-S 80, EC-S 90, EC-S 100
		X-EC-A	5-6	EC-A 50, EC-A 60, EC-A 65, EC-A 70, EC-A 80, EC-A 90, EC-A 100
		X-EC-R	7-8	EC-R 80
		X-EC-SG	7-8	EC-SG 80
	EF	X-EF-S	9-10	EF-S 250, EF-S 300, EF-S 400, EF-S 600, EF-S 800, EF-S 1000, EF-S 2000, EF-S 4000
		X-EF-A	9-10	EF-A 400, EF-A 600, EF-A 800, EF-A 1000
		X-EF-R	11-12	EF-R 80
		X-EF-SG	11-12	EF-SG 80
	BATTERY	EAF	X-EAF-S	13 EAF 2/80, EAF 2/100, EAF 2/150, EAF 2/280, EAF 2/300, EAF 2/400, EAF 2/600
X-EAFW			14 EAFW2 / 280, EAFW2 / 300, EAFW2 / 400, EAFW2 / 600	
X-EAF-N			15 EAF 2/80 N12, EAF 2/100 N12, EAF 2/150 N12, EAF 2/280 N12, EAF 2/280 N18	
EB	X-EB-S	16-17	EB-S 80, EB-S 150, EB-S 180, EB-S 250, EB-S 350, EB-S 480, EB-S 600	
PNEUMATIC	PC	X-PC-S	18-19	CLD 85, CLD 105, CLD 125, CLD 155, CLD 225, CLD 280, CLD 380, CLD 580, CLD 780, CLD 980
		X-PC-F	18-19	CLS 25, CLS 15, CLS 35, CLS 45, CLS 75, CLS 95, CLS 135, CLS 175, CLS 315, CLS 255
		X-PC-F	18-19	CLS 2/100, CLS 2/150, CLS 2/300, CLS 2/400, CLS 2/600, CLS 2/800, CLS 2/1000, CLS 2/1700, CLS 2/3400, CLS 2/4800
		X-PC-N	20	CLD 225 N12, CLD 280 N12, CLD 225 N18, CLD 280 N18
		X-PC-R	21-22	RCL 2/36, RCL 2/80
		X-PC-SG	21-22	CLS2-SG 80
		X-PC-SD	23-24	CLSD 100, CLSD 200, CLSD 400
PV	X-PV-F	1/2"	25	CLV 15, CLV 25
		3/4"	25	CLV 15, CLV 25, CLV 35, CLV 45, CLV75, CLV95
		1"	25	CLV135, CLV175, CLV255, CLV315
MANUAL	XCE & X-ML	X-M HG	26	HG 10, HG 15, HG 20, HG 30, HG 40, HG 50, HG 60, HG 80
		X-M-SD	27-28	HSD 100, HSD 200, HSD 400
		X-ML	29-30	M-ML 1/2" - 4:1 Ratio, M-ML 3/4" - 4:1 Ratio, M-ML 3/4" - 6:1 Ratio
		XCE	29-30	XCE Link 3/4" - 3:1 Ratio, XCE Link - 1" 3:1 Ratio, XCE Link 3/4" - 4:1 Ratio, XCE Link 1" - 4:1 Ratio
ACC.	Flange Boy	-	31	ANSI (ASA) Flange and British Standard Flange Dimensions, DIN Flange Dimensions
	Maintenance unit	-	32	alkitronic® 203S0F Maintenance Unit
	Batteries & Chargers	-	33	Ozito battery kit to suit Alkitronic EB Series, Metabo battery kit to suit Alkitronic EAF Series
	Accessories	-	34-36	CL SERIES STACO - Hex. standard sockets, SERIES STABI- Standard connector, DMA - Reaction devices

E-PG Series Electric Torque Wrench

alkitronic®

Applications

- alkitronic® E-PG, 2-speed torque multiplier for torques from 370 Nm to 10,000 Nm (270 ft.lbs- 7,375 ft.lbs).
- The indestructible workaday torque tool is used to loosen or tighten heavy-duty bolted connections with high on-the-job safety and short assembly times.
- Permanently higher joint quality, compared to ratchet torque tools or tools with impact mechanism, by continuous rotation of the square drive.
- Efficient operation with short fastening cycles: Fast gear for run down and power gear for highest torques and precision.

Advantages

- Ease of operation: Fast switching direction of rotation as well as speedchanges. Wide torque range, choice from seven torque values pro gear.
- Operator convenience and health-consideration: Lightweight ergonomically designed tool. The 360 degree rotating handle ensures convenient working. None of the reaction forces are transferred to the operator.
- Smart processor-controlled, switch-off electronics for consistently precise reproduction of the pre-selected torque.

alkitronic® Specials

- Break-proof, impact-proof and resistant to corrosion: Robust Motor housing made of special polymer.
- Proven modular high-performance gears, produced in a chipfree high-precision process.

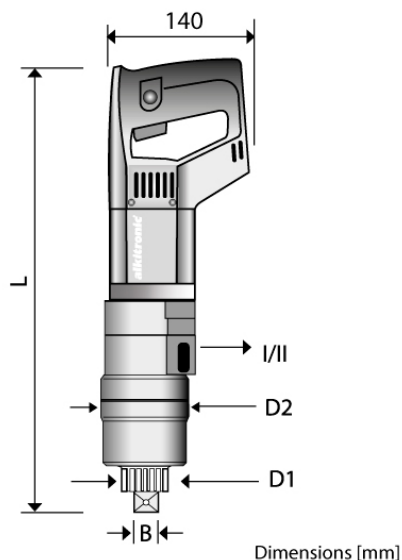


Technical Data: Models alkitronic® E-PG

Type		E-PG 2 / 80	E-PG 2 / 150	E-PG 2 / 250	E-PG 2 / 350	E-PG 2 / 600	E-PG 2 / 800
Torque range (approx.) gear 2 *	Nm	370 - 580	540 - 915	600 - 1100	650 - 1230	800 - 2330	900 - 2960
Torque range (approx.) gear 1 *	Nm	480 - 890	735 - 1500	1000 - 2500	1180 - 3500	2000 - 6000	2370 - 8000
Torque range (approx.) gear 2 *	ft.lbs	270 - 425	400 - 675	440 - 810	480 - 910	590 - 1720	665 - 2185
Torque range (approx.) gear 1 *	ft.lbs	355 - 655	540 - 1105	735 - 1845	870 - 2580	1475 - 4425	1750 - 5900
Square drive	B	3/4 "	3/4 "	1 "	1 1/2 "	1 1/2 "	1 1/2 "
Diameter (approx.)	D1	mm	41	41	54	72	72
Diameter (approx.)	D2	mm	88	88	88	98	109
Length (approx.)	L	mm	480	480	530	550	565
Weight without DMA (approx.) **		kg	6,5	6,5	8	9,5	12
Idle speed gear 2r/min			46	20	9	6	4
Idle speed gear 1r/min			15	7	3	1,8	1,1

*(When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will be pleased to help you with your choice. **) Torque reaction arm

Dimensions



Technical informations



Electrical data: Mains supply 230V/50Hz.
Repeat shut-off accuracy $\pm 4\%$ for the same bolting application.
Housing: Protection category I, protection class IP 20.

EC SERIES

alkitronic®

Applications

- alkitronic® EC-S / EC-A electric torque multipliers from 75 to 6,530 Nm (55 to 4,815 ft.lbs).
- Consistent torque accuracy on all international power supplies 100 - 253 V / 45 - 66 Hz.
- Precise shut-off with on-site voltage-controlled portable generators.
- Models alkitronic® EC-A angled tools, low height for difficult access applications.

Advantages

- Safe interruption-free work in any weather (moisture, rain) - thanks to protection class IP54.
- Low running costs: Low-wear, maintenance-free, brushless synchronous motor.
- Permanent higher joint quality by continuous rotation of the square drive.
- Simple 1-finger trigger operation for forward and reverse.
- OLED-Display anti-glare and high contrast - for perfect reading under all weather conditions.
- Menu-guided intuitive operation, with control and warning signals.
- Ergonomic and comfortable operation: The 360 degree rotating handle prevents reaction forces being transferred to the operator.

alkitronic® Specials

- High-quality bolting, according to torque/angle procedure.
- Highly innovative generation of electric torque multipliers with new sensorless control motor technology. Lower power consumption increases the service life of the electronic components.
- Repeat shut-off accuracy ± 2% for the same bolting application.
- Precise reproduction of preselected torque through intelligent, processor-controlled motor with automatic shut-off.
- Longer service life: Low heat generation - thus highest reliability and almost no downtime.
- Robust and long lasting: Motor housing of cast aluminum.

Specifications

Bolting programs:

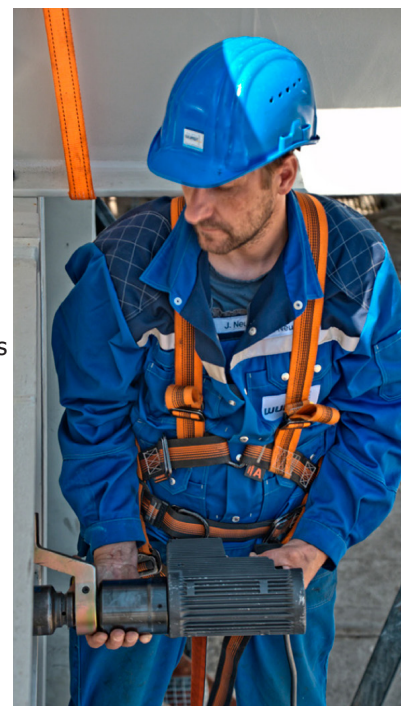
For user-specific applications, the manufacturer can activate optional modular software (alkitronic® EC-S / EC-A from serial number 712700).

- Software suite 1:** Torque controlled bolting (pre-installed)
- Software suite 2:** Torque/angle procedure for high-quality bolting connections
- Premium:** Torque/angle procedure with adjustable max. torque limit
- Software suite 3:** Bolting with preset rotations and torque limit
- Software suite 4:** Bolting parameters according to individual customer requirements
- Software suite 5:** Bluetooth transmission via alkitronic® APP
Documentation of the bolted joints (target-actual status, recording for each joint)

Special solution: Preset torque increment according to customer's requirement (10 Nm / 10 ft.lbs min). All alkitronic® torque multipliers with CE-certification.

Electrical data:

Universal AC input 100 V – 253 V, frequency 45 Hz – 66 Hz, power max. 1100 W, protection category I, protection class IP 54 (standard).



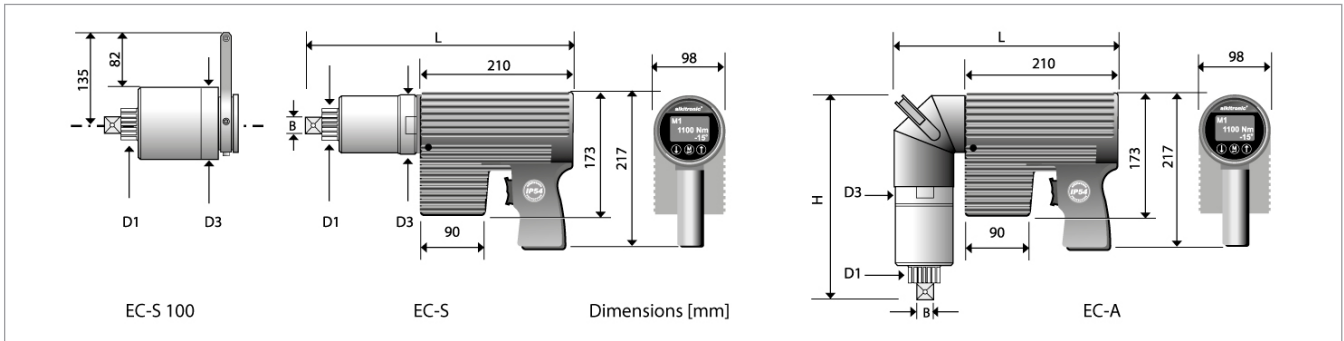
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EC-A & EC-S SERIES



TECHNICAL DATA



Models EC-S

Type		EC-S10	EC-S20	EC-S30	EC-S35	EC-S40	EC-S50	EC-S60	EC-S65	EC-S70	EC-S80	EC-S90	EC-S100
Torque range (approx.) *	Nm	75-420	80-680	100-940	150-1300	150-1590	190-1870	250-2340	290-2930	350-3470	440-4400	500-5300	650-6530
	ft.lbs	55-305	60-500	75-690	110-960	110-1170	140-1380	185-1725	215-2160	260-2560	325-3245	370-3910	480-4815
Square drive	B	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1 / 1 1/2"	1 1/2"	1 1/2"	1 1/2"
Diameter (approx.)	D1 mm	41	41	41	41	54	54	54	54	72	72	72	72
Diameter (approx.)	D3 mm	88	88	88	88	88	88	88	88	98	98	109	109
Length (approx.)	L mm	330	330	330	352	382	382	388	388	406	406	405	430
Weight without DMA (approx.)	kg	9	9	9	9	10	10	11	11	13	13	14.5	15.5
Idle speed	rpm	70	40	30	22	15	14	11	8	7	5	4	3

Models EC-A

Type		EC-A 50	EC-A 60	EC-A 65	EC-A 70	EC-A 80	EC-A 90	EC-A 100
Torque range (approx.) *	Nm	190-1870	250-2340	290-2930	350-3470	440-4400	500-5300	650-6530
	ft.lbs	140-1340	185-1725	215-2135	260-2540	325-3205	370-3730	480-4800
Square drive	B	1"	1"	1"	1 / 1 1/2"	1 1/2"	1 1/2"	1 1/2"
Diameter (approx.)	D1 mm	54	54	54	72	72	72	72
Diameter (approx.)	D3 mm	88	88	88	98	98	109	109
Length (approx.)	L mm	310	310	310	318	318	326	315
Height (approx.)	H mm	300	305	305	315	315	345	350
Weight without DMA (approx.)	kg	14	14	14	16	16	17	18
Idle speed	rpm	14	11	8	7	5	4	3

*(When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will be pleased to help you with your choice. **) Torque reaction arm

Display views

Software suite 1 (mode 1) and software suite 2 (mode 2)

Mode 1 / M1 (Standard)



Bolting via torque.
Automatic relief according to pre-set angle degrees.

Mode 2 / M2 (Option)

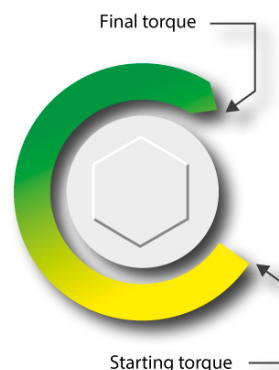


Torque/angle procedure for high-quality bolting connections. Display example of pre-torque, angle and loosening angle.

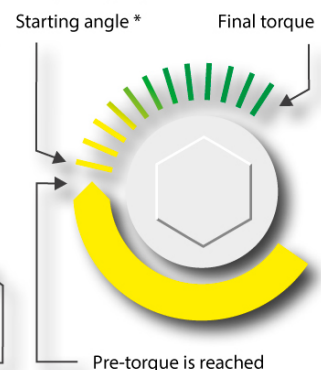
During the bolting process, the current torque value is shown in the display. Reaching the set value is indicated by an "OK". If the selected value cannot be achieved, the bolting operation is evaluated as "nOK".

Scheme bolting programs

Torque controlled bolting mode 1



Torque/angle procedure mode 2



* Information on rotational angle setting for torque/angle method:

- The angle of rotation is specified specifically for the bolting connection.
- The angle of rotation can be determined individually and easily with alkitronic HSD. We will gladly provide you with detailed product information.

EC-R & EC-SG SERIES

alkitronic®

Applications

- These tools are ideally specialized for bolting connections on plate heat exchangers, e.g. in the food and beverage sector, the paper industry, and the chemical industry. They save much time when tightening and loosening plate packs where perfect retention and absolute tightness are essential.
- Reliable, low-wear operation due to continuous rotation when bolting with spindles or long threaded bolts.
- Depending on the application, electrical or pneumatic driven torque multipliers: torque up to 4,800 Nm.

Advantages

- Load-free operation, with short assembly time.
- Fast simultaneous tightening of large plate packs when using two or more torque multipliers diagonally.
- alkitronic® RCL, CL2-SG and battery driven torque multiplier EA with fast gear for turning in and simple, quick switching to power gear.

alkitronic® specials

- Targeted types for convenient working in every tightening situation: among other options between radial gearing (R) with high-performance worm drive; tangential gearing (SG) with highly efficient spur gear.
- Long lifetime due to extremely robust motor housing made of cast aluminum or break-proof polymer.

Specifications

- Pneumatic driven models: Prerequisites for best work with the indicated torques are an operating pressure of 2-7 bar at a volume flow of approx. 10-15 l/s. The torque accuracy depends on the stability of the supply system.
- Electric driven models: Universal AC input 100 V – 253 V, frequency 45 Hz – 66 Hz, power max. 2000 W, protection category I, EFCip with protection class IP 54 (EF optional). EA models with two lithium-ion battery packs 18 V, 5.2 Ah, and battery charger.

Product information Remote Control

alkitronic® CLV-R or CLV-SG Model range with convenient remote control and individual pneumatic drive. When using several torque multipliers with radial (R) or tangential (SG) gearing, large packs can be tightened fast, simultaneously, and evenly.

- Operation of up to four torque multipliers simultaneously. Especially effective for multiple bolting connections and serial assemblies in semi-automatic operations.
- Low-level sound emission due to integrated sound reduction.

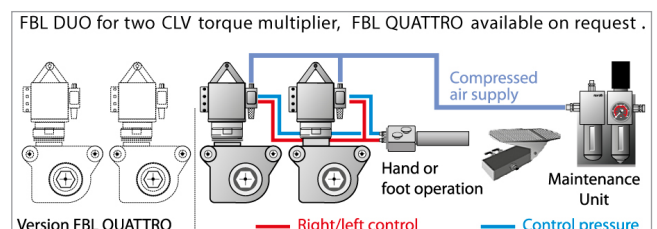
For highly efficient bolting connections with one or up to four alkitronic® CLV torque multipliers, preconfigured alkitronic® Remote Systems are already available.



Image above: alkitronic® RCL pneumatic torque multiplier in operation on a plate heat exchanger. Image below: alkitronic® CLV-R



Image above: alkitronic® EFCip-SG in operation on a plate heat exchanger. Image below: PHE of Alfa Laval

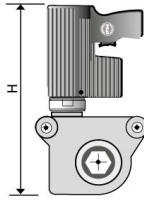


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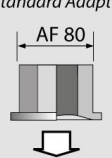
EC-R & EC-SG SERIES

TECHNICAL DATA alkitronic® Radial Gearing (R)



EC-R

Standard Adapter



STA 80 / AF

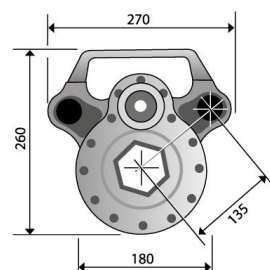
- 36 mm
- 46 mm
- 55 mm
- 65 mm

Models EC-R

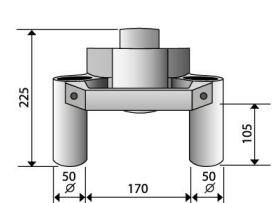
Radial Gearing Models	Electric
	EC-R
Type	EC-R 80
Torque range 2nd gear (approx.) Nm	-
Torque range 1st gear (approx.) Nm	480-3840
Width across flat (AF) mm	80
Height (approx.) H mm	475
Width (approx.) B/B1 mm	325/240
Bolt distance (approx.) A1/A2 mm	156/194
Dimensions (approx.) X/Y mm	98/98
Dimension (approx.) D mm	94
Weight (approx.) kg	21
Idle speed 1st gear (approx.) rpm	7

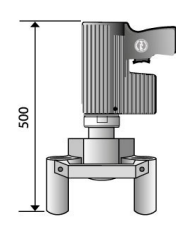
When loosening a bolted connection, up to 20% higher torque may be required (loosening torque). We will gladly advise you in detail.

TECHNICAL DATA alkitronic® Tangential Gearing (SG)



Dimensions [mm]





EC-SG

Models EC-SG

Tangential Gearing Models	Electric drive
	EC-SG
Type	EC-SG 80
Torque range 2nd gear (approx.) Nm	-
Torque range 1st gear (approx.) Nm	560-3780
Width across flat (AF) mm	80
Weight (approx.) kg	19
Idle speed 1st gear (approx.) rpm	6
Idle speed 2nd gear (approx.) rpm	-

EF-S & EF-A SERIES



Applications

- alkitronic® EF-S electrical torque multipliers for torques of 430 to 42,000 Nm (315 to 30,980 ft.lbs).
- Consistent torque accuracy on all international power supplies.
- Precise shut-off torque also operates with voltage-controlled portable generators.
- Models alkitronic® EF-A in angled design with high operating comfort in confined spaces for torques of 900 to 9,800 Nm (665 to 7,230 ft.lbs).

Advantages

- Low running costs due to maintenance-free, low-wear, brushless synchronous motor with excellent efficiency.
- High motor speed: Up to three times faster than conventional electrical torque multipliers.
- Permanent higher joint quality compared to ratchet torque tools by continuous rotation of the square drive.
- Menu-guided intuitive operation, with control and warning signals.
- OLED-Display anti-glare and high contrast - for perfect reading under all weather conditions.
- Comfortable working due to the 360° rotatable motor unit; in addition, hardly any reaction forces are transmitted to the user.



alkitronic® Specials

- Quality bolting with torque/angle method.
- Innovative motor protection with automatic shutdown to ensure bolting quality.
- Intelligent processor-controlled shut-off electronics for constant exact reproduction of the preselected torque.
- Repeat shut-off accuracy ± 2% for the same bolting application.
- Exceptionally robust motor housing (aluminum alloy).
- For safe, comfortable tool guidance, model-specific operating and holding handles are included in the scope of delivery. These can be mounted as required at several fastening points provided.

Specifications

All alkitronic® electric torque multipliers have CE-certification. Universal AC input 100 V - 253 V, frequency 45 Hz - 66 Hz, power max. 1400 W. Protection category I.

Bolting programs:

For user-specific applications, modular software packages can be optionally purchased.

- Software suite 1:** Torque controlled bolting (standard)
- Software suite 2:** Torque/angle procedure for high-quality bolting connections
- Premium:** Torque/angle procedure with adjustable min./max. torque limitation
- Software suite 3:** Bolting with preset rotations and torque limit
- Software suite 4:** Bolting parameters according to individual customer requirements
- Software suite 5:** Bluetooth transmission via alkitronic® APP
Documentation of the bolted joints (target-actual status, recording for each joint)

Software suite 1 is pre-installed in the basic equipment. The setting steps of the torque values are in increments of 10 Nm or 10 ft.lbs.

Display views

Software suite 1 (mode 1) and software suite 2 (mode 2)

Mode 1 / M1 (Standard)



Bolting via torque. Automatic release according to pre-set angle degrees.

Mode 2 / M2 (Option)



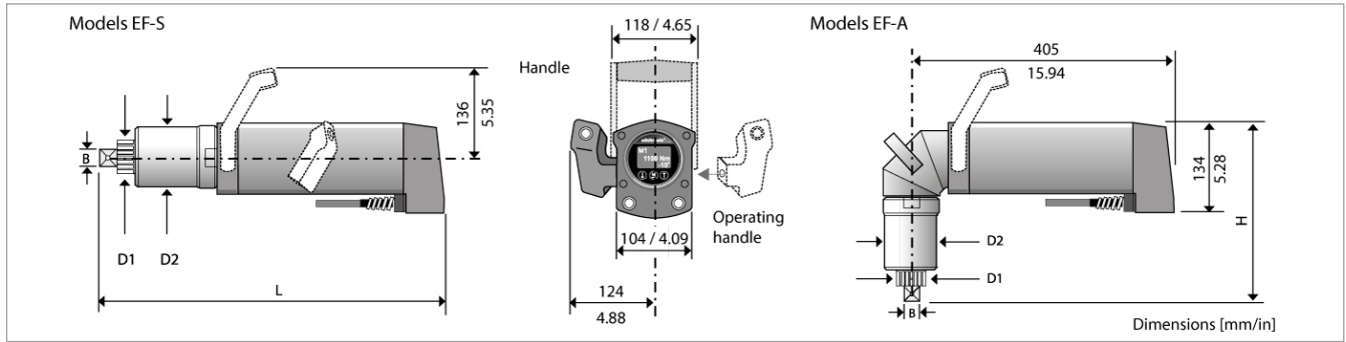
Torque/angle procedure for high-quality bolting connections. Display example of pre-torque, angle and release angle.

During the bolting process, the current torque value is shown in the display. Reaching the set value is indicated by an "OK". If the selected value cannot be achieved, the bolting operation is evaluated as "nOK".

ELECTRIC SERIES

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EF-S & EF-A SERIES



Models EF-S

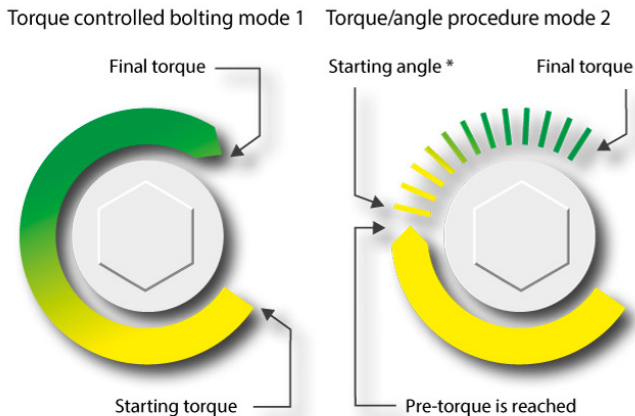
Type		EF-S 250	EF-S 300	EF-S 400	EF-S 600	EF-S 800	EF-S 1000	EF-S 2000	EF-S 4000
Torque range (approx.) *	Nm	430-2700	500-3100	900-4300	1150-6200	2000-7800	2050-9500	3500-20600	6200-42000
	ft.lbs	315-1990	370-2285	665-3170	850-4575	1475-5755	1510-7010	2580-15195	4575-30980
Square drive	B	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2 1/2"	2 1/2"
Diameter (approx.)	D1 mm/in	54 / 2.13	72 / 2.83	72 / 2.83	72 / 2.83	72 / 2.83	91 / 3.58	SW 120 / A/F 4.7	SW 120 / A/F 4.7
Diameter (approx.)	D2 mm/in	85 / 3.35	98 / 3.86	98 / 3.86	109 / 4.29	133 / 5.24	173 / 6.8	275 / 10.83	275 / 10.83
Length (approx.)	L mm/in	515 / 20.3	535 / 21	535 / 21	550 / 21.6	550 / 21.6	565 / 22.2	760 / 30	760 / 30
Weight without DMA (approx.)	kg/lbs	13 / 29	14 / 31	14.5 / 32	16 / 35	19.5 / 43	27 / 59.5	60 / 132	62 / 137
Idle speed	rpm	10	8	6	5	4	3	1	0.7

Models EF-A

Type		EF-A 400	EF-A 600	EF-A 800	EF-A 1000
Torque range (approx.) *	Nm	900-4300	1150-6200	1060-8000	2050-9800
	ft.lbs	665-3170	850-4575	780-5900	1510-7230
Square drive	B	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Diameter (approx.)	D1 mm/in	72 / 2.83	72 / 2.83	72 / 2.83	91 / 3.58
Diameter (approx.)	D2 mm/in	98 / 3.86	109 / 4.29	133 / 5.24	173 / 6.8
Height (approx.)	H mm/in	320 / 12.6	350 / 13.8	350 / 13.8	380 / 15
Weight without DMA (approx.)	kg/lbs	15.5 / 34	17.5 / 38.6	20 / 44	29 / 64
Idle speed	rpm	5	4	3	2

*(When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will be pleased to help you with your choice. **) Torque reaction arm

Scheme bolting programs



Accessories: Remote control with operating handles



- * Information on rotational angle setting for torque/angle method.
- The angle of rotation is specified by the design for the bolting connection.
- The angle of rotation can be determined individually and easily with alkitronic * HSD. We will gladly provide you with detailed product information.

The alkitronic® EF bolting system. Extremely flexible with the alkitronic® remote control as an accessory: alkitronic® FB - EF - cable length 5 m or 10 m

EF-R & EF-SG SERIES



Applications

- These tools are ideally specialized for bolting connections on plate heat exchangers, e.g. in the food and beverage sector, the paper industry, and the chemical industry. They save much time when tightening and loosening plate packs where perfect retention and absolute tightness are essential.
- Reliable, low-wear operation due to continuous rotation when bolting with spindles or long threaded bolts.
- Depending on the application, electrical or pneumatic driven torque multipliers: torque up to 4,800 Nm.

Advantages

- Load-free operation, with short assembly time.
- Fast simultaneous tightening of large plate packs when using two or more torque multipliers diagonally.
- alkitronic® RCL, CL2-SG and battery driven torque multiplier EA with fast gear for turning in and simple, quick switching to power gear.

alkitronic® specials

- Targeted types for convenient working in every tightening situation: among other options between radial gearing (R) with high-performance worm drive; tangential gearing (SG) with highly efficient spur gear.
- Long lifetime due to extremely robust motor housing made of cast aluminum or break-proof polymer.

Specifications

- Pneumatic driven models: Prerequisites for best work with the indicated torques are an operating pressure of 2-7 bar at a volume flow of approx. 10-15 l/s. The torque accuracy depends on the stability of the supply system.
- Electric driven models: Universal AC input 100 V – 253 V, frequency 45 Hz – 66 Hz, power max. 2000 W, protection category I, EFCip with protection class IP 54 (EF optional). EA models with two lithium-ion battery packs 18 V, 5.2 Ah, and battery charger.

Product information Remote Control

alkitronic® CLV-R or CLV-SG Model range with convenient remote control and individual pneumatic drive. When using several torque multipliers with radial (R) or tangential (SG) gearing, large packs can be tightened fast, simultaneously, and evenly.

- Operation of up to four torque multipliers simultaneously. Especially effective for multiple bolting connections and serial assemblies in semi-automatic operations.
- Low-level sound emission due to integrated sound reduction.

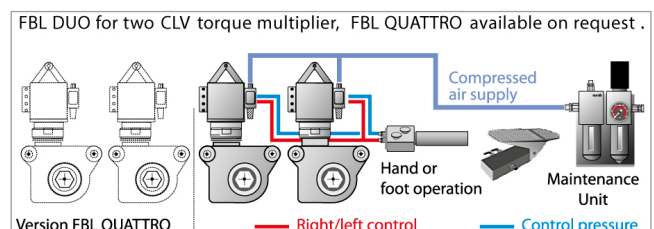
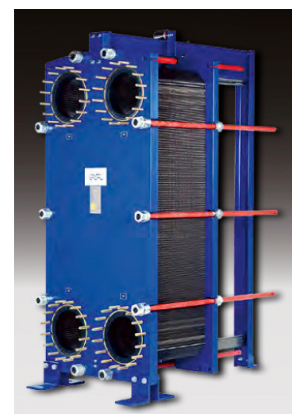
For highly efficient bolting connections with one or up to four alkitronic® CLV torque multipliers, preconfigured alkitronic® Remote Systems are already available.



Image above: alkitronic® RCL pneumatic torque multiplier in operation on a plate heat exchanger. Image below: alkitronic® CLV-R



Image above: alkitronic® EFCip-SG in operation on a plate heat exchanger. Image below: PHE of Alfa Laval



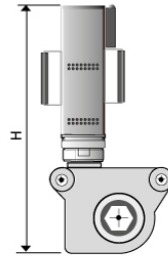
ELECTRIC SERIES

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EF-R & EF-SG SERIES

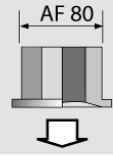
Technical Data

Dimensions [mm] alkitronic® Radial Gearing (R)



EF-R

Standard Adapter



STA 80 / AF

36 mm

46 mm

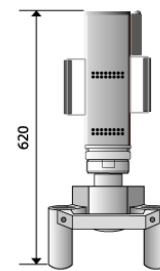
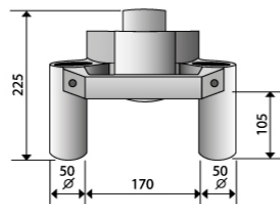
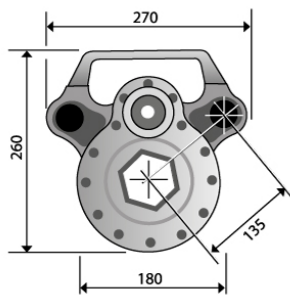
55 mm

65 mm

Radial Gearing Models		Electric drive
		EF-R
Type		EF-R 80
Torque range 2nd gear (approx.)	Nm	-
Torque range 1st gear (approx.)	Nm	560-3780
Width across flat (AF)	mm	80
Height (approx.)	H mm	600
Width (approx.)	B/B1 mm	325/240
Bolt distance (approx.)	A1/A2 mm	156/194
Dimensions (approx.)	X/Y mm	98/98
Dimension (approx.)	D mm	94
Weight (approx.)	kg	24.5
Idle speed 1st gear (approx.)	rpm	9
Idle speed 2nd gear (approx.)	rpm	-

*) When loosening a bolted connection, up to 20% higher torque may be required (loosening torque). We will gladly advise you in detail.

Dimensions [mm] alkitronic® Tangential Gearing (SG)



EF-SG

Tangential Gearing Models		Electric drive
		EF-SG
Type		EF-SG 80
Torque range 2nd gear (approx.)	Nm	-
Torque range 1st gear (approx.)	Nm	560-3780
Width across flat (AF)	mm	80
Weight (approx.)	kg	22
Idle speed 1st gear (approx.)	rpm	10
Idle speed 2nd gear (approx.)	rpm	-

EAF SERIES



Applications

- alkitronic® EAF: Battery driven 2-speed torque multiplier from 130 Nm to 6,000 Nm / 95 ft.lbs to 4,430 ft.lbs.
- Short fastening cycles: Fast gear for run down and power gear for highest torques and precision.
- Mobile and always ready for use: Compact design for convenient working in limited spaces or without power supply.
- Efficient operation: Fast and easy gear-changing, great torque range - you can choose from 22 torque values.

Advantages

Integrated fully-automatic release function: Caused by high torsional force, it is often impossible repositioning the multiplier on the next bolt joint. The automatic release function enables a fast, secure "run free" of the reaction absorber DMA and also relieves stresses within the multiplier.

- Low running costs: The low-wear, synchronous motor is maintenance free.
- Health-preserving: Low weight, ergonomically designed, low noise emissions. No noise protection necessary.
- High performance: Two lithium-ion battery packs ensure up to 360 screw joints in a row. Each battery features an LED charge level indicator.
- Exact shut-off torque even at low battery levels.

alkitronic® Specials

- Very low susceptibility to damage and failure: Motor housing made of special polymer: Break-proof, impact-proof and resistant to corrosion.
- Intelligent energy management and faster workflow: Electronics protects battery cells from overcharging and depth discharge. Cooled battery packs during recharging. This reduces charging times and enhances maximum performance and durability.
- High-performance gears, produced in a chip-free high-precision process.

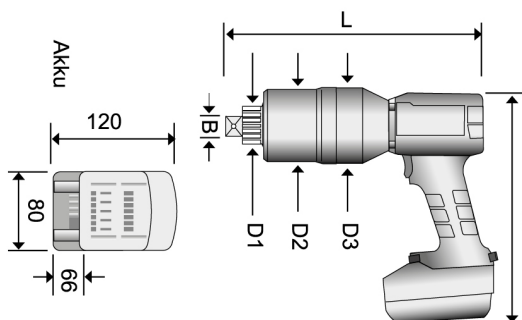


Technical Data

Type		EAF2 / 80	EAF2 / 100	EAF2 / 150	EAF2 / 280	EAF2 / 300	EAF2 / 400	EAF2 / 600
Torque range (approx.) *	Nm	130-850	130-1100	220-1400	300-2800	320-3200	380-4100	500-6000
	ft.lbs	95-625	95-811	160-1035	220-2065	235-2360	280-3025	370-4430
Square drive B		3/4 "	3/4 "	3/4 "	1 "	1 "	1 1/2 "	1 1/2 "
Diameter (approx.)	D1 mm	41	41	41	54	72	72	72
Diameter (approx.)	D2 mm	85	85	85	85	93	93	109
Diameter (approx.)	D3 mm	88	88	88	88	97	97	109
Length (approx.)	L mm	295	295	295	350	370	370	380
Weight without DMA (approx.) **	kg	5,6	5,6	5,6	7,5	7,5	9,2	9,0
Idle speed 1st gear	rpm	8,0	4,0	4,0	1,8	1,5	1,5	0,8
Idle speed 2nd gear	rpm	26,0	14,0	14,0	6,5	6,0	5,4	3,0

*(When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will be pleased to help you with your choice.**) Torque reaction arm

Measurements



2 lithium-ion battery packs 18 V, 5.2 Ah, battery charger, tool case supplied as standard



Repeat shut-off accuracy ± 3% (same bolting connection). All alkitronic® torque multipliers are CE-certified.



BATTERY SERIES

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EAFW SERIES



Applications

- alkitronic® EAFW: Battery-powered 2-speed torque multiplier for torques from 300 Nm to 6,000 Nm. Angled design with high operating comfort.
- Mobile and always ready for use: Compact design for convenient working in limited spaces or without power supply.
- Extremely short fastening cycles: Fast gear for run down and power gear for highest torques and precision.
- Efficient operation: Fast and easy gear-changing, great torque range - each gear has eleven torque values to choose from.

Advantages

- Low running costs: The low-wear brushless synchronous motor is maintenance free.
- Health-preserving: Low weight, ergonomically designed, low noise emissions. No noise protection necessary.
- High performance: Two lithium-ion battery packs ensure up to 360 screw joints in a row. Each battery features a LED charge level indicator.
- Exact shut-off torque even at low battery levels.

alkitronic® Specials

- Very low repair requirements: Robust motor housing made of special polymer. It is break-proof, impact-proof and resistant to corrosion.
- Angle-drive with optimised efficiency and great running characteristics.
- Intelligent energy management: Smart electronics protect every battery cell from overcharging and depth discharge.

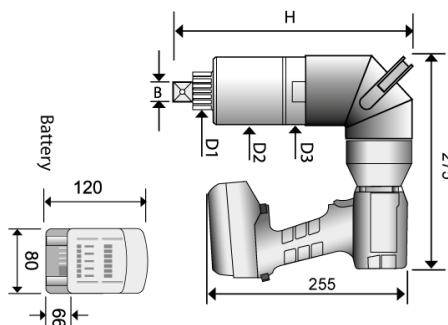


Technical Data

Type		EAFW2 / 280	EAFW2 / 300	EAFW2 / 400	EAFW2 / 600
Torque range (approx.) *	Nm	300-2800	360-3200	500-4100	500-6000
	ft.lbs	220-2065	265-2360	370-3025	370-4430
Square drive B		1 "	1 "	1 1/2 "	1 1/2 "
Diameter (approx.)	D1 mm	54	72	72	72
	D2 mm	85	93	93	109
	D3 mm	88	97	97	109
Length (approx.)	L mm	305	310	320	330
Weight without DMA (approx.) **	kg	9,5	9,5	11,2	11.0
Idle speed 1st gear	rpm	1,7	1,5	1,0	0.8
Idle speed 2nd gear	rpm	6,0	5,0	4,0	3.0

*(When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will be pleased to help you with your choice.**) Torque reaction arm

Measurements



2 lithium-ion battery packs 18 V, 5.2 Ah, battery charger, tool case supplied as standard



Repeat shut-off accuracy ± 3% (same bolting connection). All alkitronic® torque multipliers are CE-certified.



EAF-N SERIES



Applications

Battery torque multipliers for continuous rotation by tightening or loosening hard-to-reach, heavy-duty bolted connections, and deep-bed rims of heavy vehicles (mining industry). Torques from 190 Nm up to 2,800 Nm, dependent on type.

Advantages

- Economic, safe operation. No weather-related costly downtime.
- Comfortable to operate. The motor unit can be rotated 360 degrees. One handed operation with CW/CCW.
- Permanently higher joint quality (compared to impact and hydraulic wrenches) by continuous rotation of the square drive.
- Heavy duty, rugged housing made of cast aluminum. EA2-N motor housing made of special polymer: break-proof, and resistant to corrosion.

EAF2-N, Li-Ion battery driven 2-speed models with release function:

- Low weight, ergonomically designed, low noise emissions.
- No noise protection necessary.

alkitronic® Specials

EAF2-N with two battery packs ensure up to 360 screw joints in a row. **Pneumatic driven models: ATEX** approval on request.



BATTERY SERIES

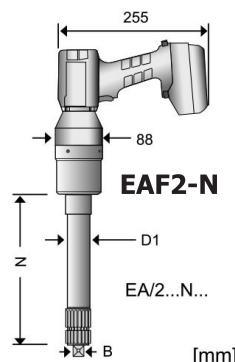
Technical Data: N-Tools

Drive		electric (battery)			
Model N-Tool (-N)		EAF2/80	EAF2/100	EAF2/150	EAF2/280
Torque range *	Nm	190-850	130-1100	150-1400	300-2800
Square drive	B	3/4"	3/4"	3/4"	1"
Diameter (approx.) D1	mm	46	46	46	56
Length extension N..	inch (e.g. EFA2/80 N12)	N 12	N 12	N 12	N12 N18
Idle speed 1st Gear 2nd Gear rpm		7 24	6 20	4 13	1.7 6

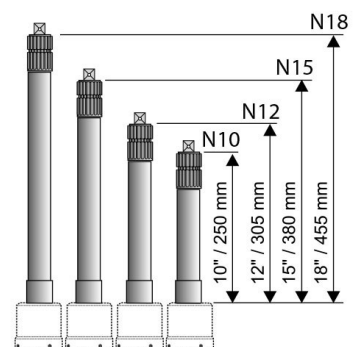
*) When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will gladly advise you in detail.

**) Prerequisites for best work with the indicated torques are an operating pressure of 2-7 bar at a volume flow of approx. 10-15 l/s. The torque accuracy depends on the stability of the supply system.

Dimensions



Length „N“ extension in inch/mm



EB SERIES

Applications

- alkitronic® EB: Battery-driven torque multiplier from 170 Nm to 6,000 Nm /125 ft.lbs to 4,425 ft.lbs.
- Extremely mobile and always ready for use: Innovative product design for comfortable working - independent of external power supply.
- Permanent higher joint quality by continuous rotation of the square drive.

Advantages

- Ergonomic design: Ultra grippy housing for your safety and a secure bolting procedure.
- OLED-display: Anti-glare and high contrast – for perfect reading under all weather conditions.
- High quality bolting: The brushless synchronous motor with excellent efficiency and the smart processor-controlled automatic shutdown ensures amazing increased productivity and low running costs.
- Low noise emissions, no noise protection necessary.
- alkitronic® smart service: Enabling wireless documentation and information.
- Unique 1-finger trigger: Unbeatable efficiency through fast, simple change of direction of rotation.
- Maximum flexibility: Thanks to the application-specific, modular-software packages from alkitronic® - e.g. bolting according to the torque/rotation angle method with adjustable min./max. torque limitation. Can also be retrofitted later if the bolting application changes.
- Repeat shut-off accuracy $\pm 3\%$ for the same bolting application.

alkitronic® Specials

- Simple navigation: Intuitive interface drastically reduces operating errors and misadjustments.
- Health and safety first: Due to a new technology patented by alkitronic® the reaction torques are decoupled. This leads to an extreme reduction of radial forces on the wrist to 1 Nm and thus actively contributes to the occupational health and safety of the worker.
- Outstanding battery concept: Vast increase in operating time thanks to innovative switching from 4 to 6 Ah.

Bolting programs:

The software suite 1 is pre-installed in the basic equipment. For user-specific applications, the manufacturer can activate optional modular software:

- Software suite 1:** Torque controlled bolting (standard)
- Software suite 2:** Torque/angle procedure for high-quality bolting connections
- Premium:** Torque/angle procedure with adjustable min./max. torque limitation
- Software suite 3:** Bolting with preset rotations and torque limit
- Software suite 4:** Bolting parameters according to individual customer requirements
- Software suite 5:** Bluetooth transmission via alkitronic® APP
Documentation of the bolted joints (target-actual status, recording for each joint)

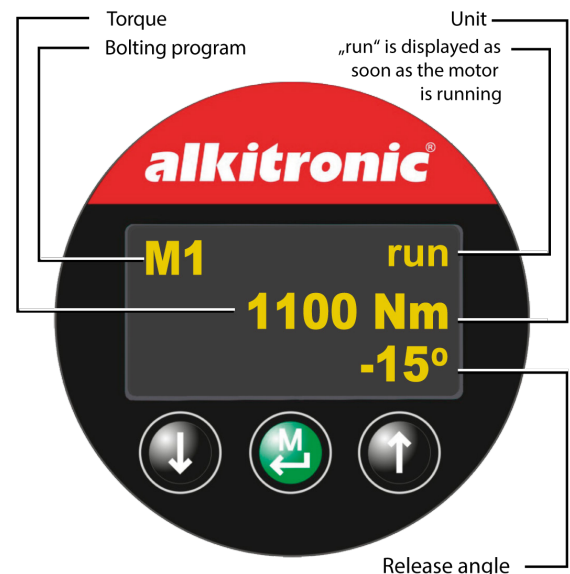
Specifications

All alkitronic® EB torque multipliers with CE-certification. Caution! The Li-Ion battery is preset to 4 Ah (72 Wh) so that it can be shipped or transported in accordance with special regulation 188.

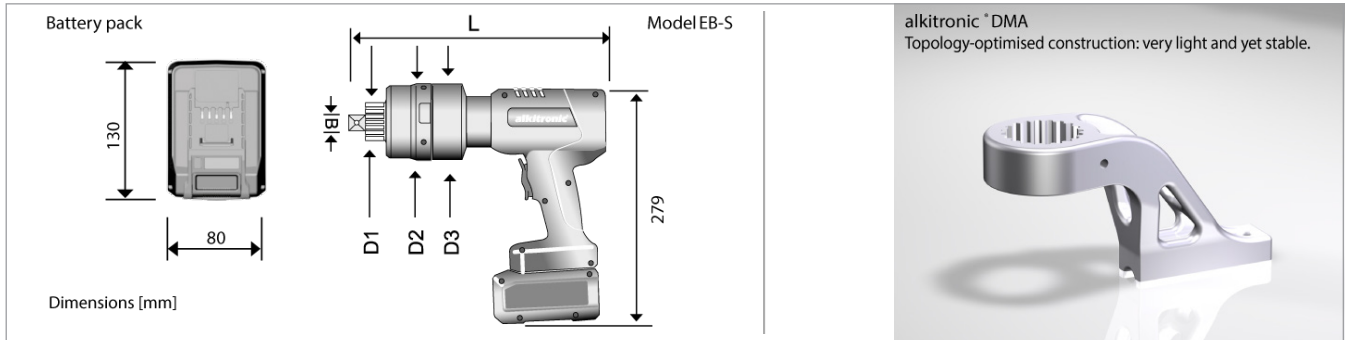
alkitronic®



Operating panel



EB SERIES



Models EB-S

Type	EB-S 80	EB-S 150	EB-S 180	EB-S 250	EB-S 350	EB-S 480	EB-S 600
Torque ranges (approx.) * Nm	170-850	280-1400	360-1800	500-2500	700-3500	960-4800	1200-6000
ft.lbs	125-625	205-1035	265-1330	365-1845	515-2580	705-3540	885-4425
Square drive B	3/4"	3/4"	1"	1"	1"	1 1/2"	1 1/2"
Diameter (approx.) D1 mm	41	41	41	54	54	72	72
Diameter (approx.) D2 mm	88	88	88	88	88	98	109
Diameter (approx.) D3 mm	88	88	88	88	88	88	88
Length (approx.) L mm	330	330	375	382	382	400	407
Weight without DMA** (approx.) kg	6,2	6,2	7,7	8,3	8,3	10,3	11,5

*(When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will be pleased to help you with your choice. **) Torque reaction arm



Scope of delivery in the machine case



alkitronic® DMA torque reaction arm



Ozito Li-Ion Battery pack (2)



Ozito Battery charger

Display views

Software suite 1 (mode 1) and software suite 2 (mode 2)

Mode 1 / M1 (Standard)



Bolting via torque. Automatic release according to pre-set angle degrees.

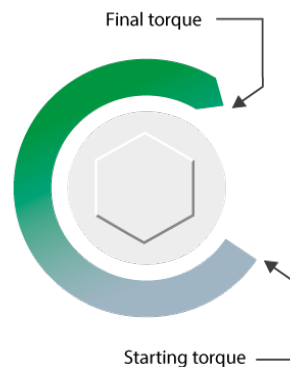
Mode 2 / M2 (Option)



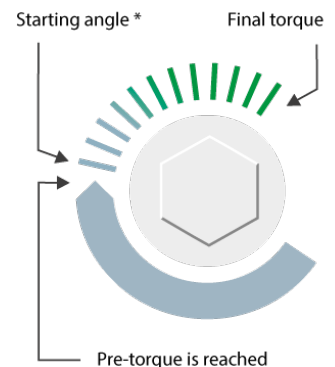
Torque/angle procedure for high-quality bolting connections. Display example of pre-torque, angle and release angle.

Scheme bolting programs Mode 1 und Mode 2

Torque controlled bolting mode 1



Torque/angle procedure mode 2



During the bolting process, the current torque value is shown in the display. Reaching the set value is indicated by an "OK". If the selected value cannot be achieved, the bolting operation is evaluated as "nOK".

* Information on rotational angle setting for torque/angle method.
• The angle of rotation is specified by the design for the bolting connection.
• The angle of rotation can be determined individually and easily with alkitronic® HSD. We will gladly provide you with detailed product information.

CL SERIES

Applications

- Continuous rotation, tightening, or loosening for all heavy duty fastening connections.
- Perfect for bolted applications in hazardous, explosive environments.
- alkitronic® CLS quick, compact torque multiplier for torques of 55 to 1,070 ft.lbs.
- alkitronic® CLD comfortable torque multiplier with rotating handle for torques of 225 to 7,225 ft.lbs.
- alkitronic® CLS2 high-performance 2-gear machine for torques of 90 to 35,855 ft.lbs.

Advantages

- Permanently higher joint quality (compared to impact and hydraulic wrenches) by continuous rotation of the square drive.
- alkitronic® CLD - the 360 degree rotating handle ensures comfortable operation. Barely any reaction forces are transferred to the user. switching to power gear
- (is used for applying the final torque). alkitronic®
- CLS2 with fast gear for turning in and simple, quick switching to power gear (is used for applying the final torque).

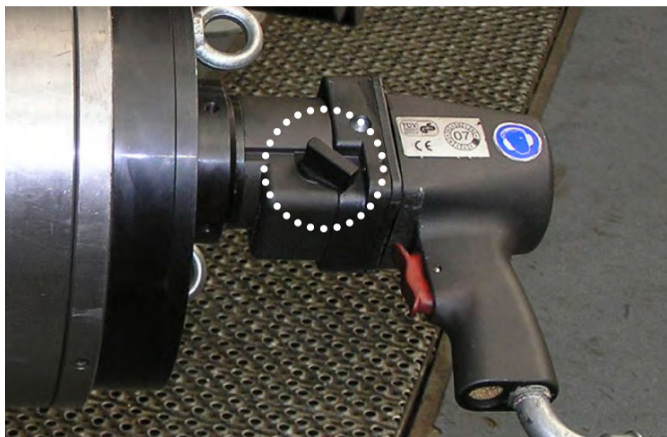
alkitronic® Specials

- Simple 1-finger operation for right/left rotation, option to enable thereaction to be locked in one position.
- Robust cast aluminum housing with proven pneumatic drive.
- Proven high-performance gears, produced in a chip-free, highprecisionprocess produce high loads with low wear.
- alkitronic® CLS2 with uniquely high torque - 35,855 ft.lbs.
- Optional silencer levels to reduce the noise from the motor exhauston request.

Specifications

On request, you will receive our pneumatic multipliers with ATEX-Certification: II 2 G D c IIB T6
 Prerequisites for best work with the indicated torques are an operating pressure of 29-10,000 psi at a volume flow of approx. 122-915 cu.in./min. The torque accuracy depends on the stability of the supply system.

alkitronic®

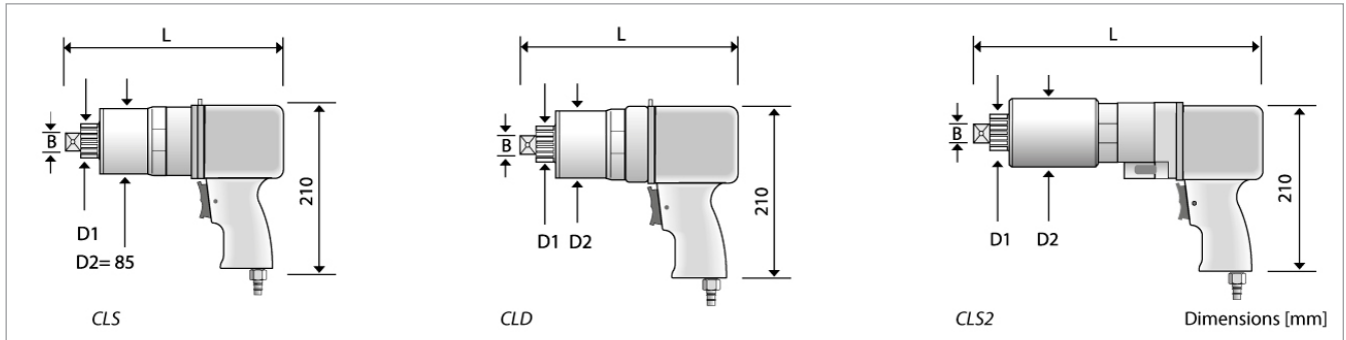


alkitronic® CLS2, 2-gear pneumatic torque multiplier. Mechanically switchable from fast gear to power gear.

alkitronic® CLD torque multipliers in use (figures on the right). Screw connections at a bolt circle and a diesel unit for large construction machines



CL SERIES



Models CLS

Type	CLS 15	CLS 25	CLS 35	CLS 45	CLS 75	CLS 95	CLS 135	CLS 175	CLS 255	CLS 315
Torque range (approx.) * Nm	75-225	95-280	135-390	165-485	305-895	365-1080	495-1450	645-1900	910-2670	1180-3460
ft.lbs	55-165	70-205	100-290	120-360	225-660	270-795	365-1070	475-1400	670-1970	870-2555
Square drive B	1/2" / 3/4"	1/2" / 3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"
Diameter (approx.) D1 mm	41	41	41	41	41	41	54	54	54	54
Length (approx.) L mm	255	255	255	255	277	277	300	300	330	330
Weight without DMA (approx.) kg	6	6	6	6	7	7	8	8	8,5	8,5
Idle speed rpm	60	38	34	27	19	13	9	7	6	4

Models CLD

Type	CLD 85	CLD 105	CLD 125	CLD 175	CLD 225	CLD 280	CLD 380	CLD 580	CLD 780	CLD 980
Torque range (approx.) *Nm	305-895	365-1080	495-1450	645-1900	910-2670	1180-3460	1490-4380	2080-6115	2610-7675	3330-9795
ft.lbs	225-660	270-795	365-1070	475-1400	670-1970	870-2555	1100-3230	1535-4510	1925-5665	2460-7225
Square drive B	3/4"	3/4"	3/4"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Diameter (approx.) D1 mm	41	41	41	54	54	54	72	72	72	91
Diameter (approx.) D2 mm	85	85	85	85	85	85	98	109	133	173
Length (approx.) L mm	275	275	275	300	300	300	320	350	350	370
Weight without DMA (approx.) kg	7	7	7	7	8,5	8,5	10,5	13	15	25
Idle speed rpm	19	13	9	7	5	4	3	2	1,5	1

Models CLS2

Type	CLS2/100	CLS2/150	CLS2/300	CLS2/400	CLS2/600	CLS2/800	CLS2/1000	CLS2/3400	CLS2/4800
Torque range 2nd gear (approx.) *Nm	120-355	170-505	385-1130	540-1585	840-2470	1010-2965	1175-3455	3310-9720	4725-13890
ft.lbs	90-260	125-375	285-835	400-1170	620-1820	745-2185	865-2550	2440-7170	3485-10245
Torque range 1st gear (approx.) *Nm	380-1125	550-1615	1225-3595	1720-5055	2675-7865	3210-9435	3745-11010	11575-34025	16540-48610
ft.lbs	280-830	405-1190	900-2650	1270-3730	1975-5800	2370-6960	2765-8120	8540-25100	12200-35855
Square drive B	3/4"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2 1/2"	2 1/2"
Diameter (approx.) D1 mm	41	54	54	72	72	72	91		
Diameter (approx.) D2 mm	85	85	85	98	109	133	173		
Length (approx.) L mm	330	330	360	380	410	410	430		
Weight without DMA (approx.) kg	7	7,5	9	11	12	16	24	58	58
Idle speed 2nd gear rpm	36	21	15	9	6	5	4		
Idle speed 1st gear rpm	12	7	5	3	2	1,5	1	further details upon request	

*) When loosening a bolted connection, up to 20% higher torque may be required (loosening torque). We will gladly advise you with details.

Product information

alkitronic® CLV models
Pneumatic torque multipliers with remote control for multiple bolted connections and serial assembly in semi-automatic operation. Torques up to 2,555 ft.lbs.

We will gladly provide you with comprehensive information on this.



The torque control of the pneumatic alkitronic® torque multiplier takes place via the air supply or pressure regulator of the Maintenance Unit.

Accessories
Maintenance Unit, complete with filter, regulator, oiler and 5 m/16.4 ft hose, incl. couplings.



PNEUMATIC SERIES

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PC-N SERIES

Applications

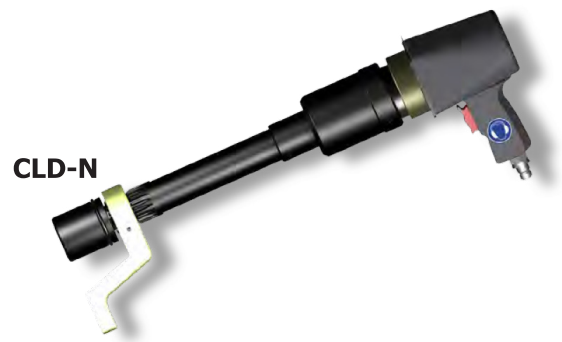
Pneumatic torque multipliers for continuous rotation by tightening or loosening hard-to-reach, heavy-duty bolted connections, and deep-bed rims of heavy vehicles (mining industry). Torques from 100 Nm up to 3,500 Nm, dependent on type.

Advantages

- Economic, safe operation. No weather-related costly downtime.
- Comfortable to operate. The motor unit can be rotated 360 degrees. One handed operation with CW/CCW.
- Permanently higher joint quality (compared to impact and hydraulic wrenches) by continuous rotation of the square drive.
- Heavy duty, rugged housing made of cast aluminum. EA2-N motor housing made of special polymer: break-proof, and resistant to corrosion.

CLD-N, pneumatic driven Models:

- Ideal for use in explosion-proof working environment.
- World proven reliable pneumatic drive motor.

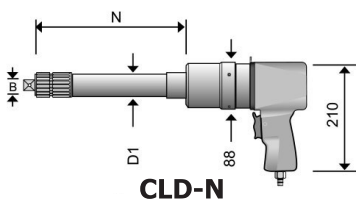


Technical Data: N-Tools

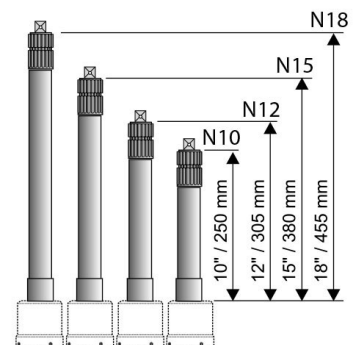
Drive		pneumatic	
Model N-Tool (-N)		CLD225	CLD280
Torque range *	Nm	900-2700	1200-3500
Square drive	B	1"	1"
Diameter (approx.) D1	mm	56	56
Length extension N..	inch (e.g. EFA2/80 N12)	N12 N18	N12 N18
Idle speed 1st Gear 2nd Gear	rpm	5	4

*) When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will gladly advise you in detail.
 **) Prerequisites for best work with the indicated torques are an operating pressure of 2-7 bar at a volume flow of approx. 10-15 l/s. The torque accuracy depends on the stability of the supply system.

Dimensions



Length „N“ extension in inch/mm



PC-R & PC-SG SERIES

alkitronic®

Applications

- These tools are ideally specialized for bolting connections on plate heat exchangers, e.g. in the food and beverage sector, the paper industry, and the chemical industry. They save much time when tightening and loosening plate packs where perfect retention and absolute tightness are essential.
- Reliable, low-wear operation due to continuous rotation when bolting with spindles or long threaded bolts.
- Depending on the application, electrical or pneumatic driven torque multipliers: torque up to 4,800 Nm.

Advantages

- Load-free operation, with short assembly time.
- Fast simultaneous tightening of large plate packs when using two or more torque multipliers diagonally.
- alkitronic® RCL, CL2-SG and battery driven torque multiplier EA with fast gear for turning in and simple, quick switching to power gear.

alkitronic® specials

- Targeted types for convenient working in every tightening situation: among other options between radial gearing (R) with high-performance worm drive; tangential gearing (SG) with highly efficient spur gear.
- Long lifetime due to extremely robust motor housing made of cast aluminum or break-proof polymer.

Specifications

- Pneumatic driven models: Prerequisites for best work with the indicated torques are an operating pressure of 2-7 bar at a volume flow of approx. 10-15 l/s. The torque accuracy depends on the stability of the supply system.
- Electric driven models: Universal AC input 100 V – 253 V, frequency 45 Hz – 66 Hz, power max. 2000 W, protection category I, EFCip with protection class IP 54 (EF optional). EA models with two lithium-ion battery packs 18 V, 5.2 Ah, and battery charger.

Product information Remote Control

alkitronic® CLV-R or CLV-SG Model range with convenient remote control and individual pneumatic drive. When using several torque multipliers with radial (R) or tangential (SG) gearing, large packs can be tightened fast, simultaneously, and evenly.

- Operation of up to four torque multipliers simultaneously. Especially effective for multiple bolting connections and serial assemblies in semi-automatic operations.
- Low-level sound emission due to integrated sound reduction.

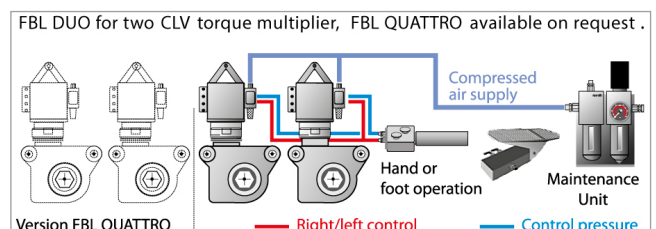
For highly efficient bolting connections with one or up to four alkitronic® CLV torque multipliers, preconfigured alkitronic® Remote Systems are already available.



Image above: alkitronic® RCL pneumatic torque multiplier in operation on a plate heat exchanger. Image below: alkitronic® CLV-R



Image above: alkitronic® EFCip-SG in operation on a plate heat exchanger. Image below: PHE of Alfa Laval



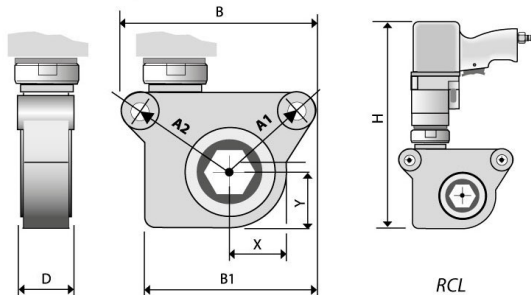
PNEUMATIC SERIES

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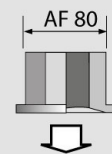
PC-R & PC-SG SERIES

Technical Data

Dimensions [mm] alkitronic® Radial Gearing (R)



Standard Adapter



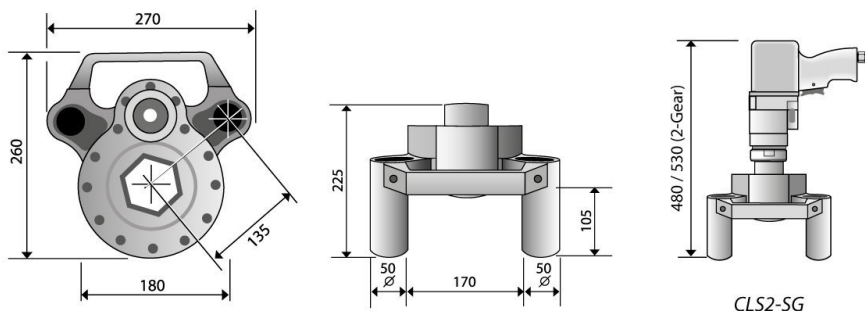
STA 80 / AF

- 36 mm
- 46 mm
- 55 mm
- 65 mm

Radial Gearing Models		Pneumatic drive	
		RCL	
Type		RCL 36p	RCL 80p
Torque range 2nd gear (approx.)	Nm	160-470	670-1975
Torque range 1st gear (approx.)	Nm	500-1500	1645-4840
Width across flat (AF)	mm	36	80
Height (approx.)	H mm	400	450
Width (approx.)	B/B1 mm	230/190	325/240
Bolt distance (approx.)	A1/A2 mm	100/128	156/194
Dimensions (approx.)	X/Y mm	56/56	98/98
Dimension (approx.)	D mm	90	94
Weight (approx.)	kg	11	21
Idle speed 1st gear (approx.)	rpm	5	4
Idle speed 2nd gear (approx.)	rpm	15	12

*) When loosening a bolted connection, up to 20% higher torque may be required (loosening torque). We will gladly advise you in detail.

Dimensions [mm] alkitronic® Tangential Gearing (SG)



Tangential Gearing Models		Pneumatic drive	
		CLS2-SG (2-Gear)	
Type		CLS2-SG 80	
Torque range 2nd gear (approx.)	Nm	440-1330	
Torque range 1st gear (approx.)	Nm	1400-3780	
Width across flat (AF)	mm	80	
Weight (approx.)	kg	17	
Idle speed 1st gear (approx.)	rpm	3,5	
Idle speed 2nd gear (approx.)	rpm	10	

PC-SD SERIES Integrated torque sensor

alkitronic®

Applications

High quality bolt-connections place the highest demands on bolting technology. The powerful mounting documentation system alkitronic® MDS provides a fast, complete and flawless collection of torque data. alkitronic® MDS helps to fulfill legal regulations and to comply with international quality standards (documentation to the end user, traceable bolting parameters).

- The product range includes:
The manually operated alkitronic® HSD, the pneumatic operated alkitronic® CLSD, and the battery driven alkitronic® EASD. The torque multipliers are used for torque controlled bolting and reliable measurement data recording on the spot.

Advantages

General

- Optimized process safety and work safety.
- Guaranteed traceability and documented bolted joints.
- Torque can be set and record on site.
- Control panel with OLED display, display of torque in Nm or lbf.ft.

alkitronic® HSD

- Repeatability in tightening – independent of disturbances.
- Torque/torque angle procedure, manual setting, and documentation on site.
- High mobility: independent of external power supply.

alkitronic® CLSD

- Robust motor housing of cast aluminum with proven pneumatic drive.

alkitronic® EASD

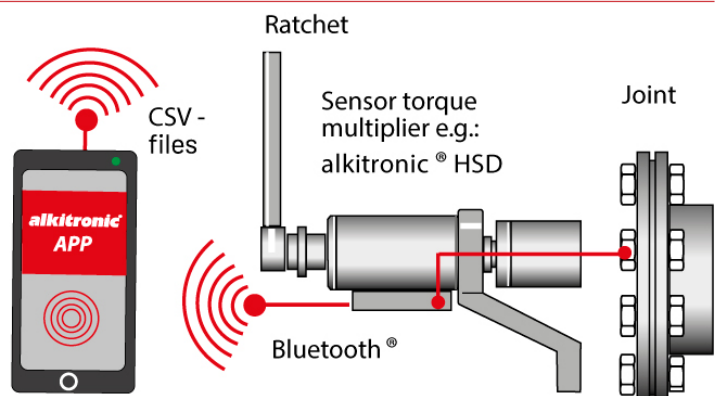
- Health preserving: ergonomically designed, low noise emission.
- No noise protection necessary.
- Powerful and independent: Two lithium-ion battery packs ensure up to 360 screw joints in a row.
- Exact shut-off torque even at low battery levels.

alkitronic® specials

- Torque recording and sensors directly on the square drive.
- Select individual bolting- and measurement method, several preset programs can be chosen.
- Menu-guided multilingual operation, using visual and acoustic control- or warning signals.
- Data transmission via the Bluetooth interface for communication with mobile phones and other devices, such as tablets.
- alkitronic® APP developed for measurement data recording and fast data transmission.

alkitronic® APP application scheme

- alkitronic® APP app for iOS® and android® mobiles and platform independent data exchange via CSV file transfer.
- Image on the upper right: alkitronic® HSD and on the lower right: alkitronic® CLSD and alkitronic® EASD.



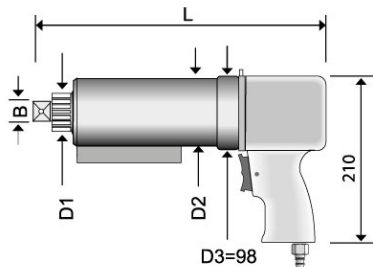
PNEUMATIC SERIES

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PC-SD SERIES Integrated torque sensor

Technical Data

Dimensions [mm] alkitronic® Tntegrated torque sensor (SD)



alkitronic® CLSD

Type		Pneumatic drive		
		CLSD 100	CLSD 200	CLSD 400
Measuring range approx.	Nm	100-1000	200-2000	400-4000
Power (max)	Nm	1000	2000	4000
Square drive	B	1"	1"	1 1/2"
Diameter (approx.)	D1	mm	54	72
Diameter (approx.)	D2	mm	88	98
Length (approx.)	L	mm	360	410
Weight without DMA approx.kg			10	11,25
Idle speed gear I	r/min	11	5	3,5
Idle speed gear II	r/min	-	-	-

Operation panel/sensoric: Measurement accuracy: +/- 1% / Temperature range: 0 to + 50 degree C

Overview of the programs 1 to 5 (Programs for HSD: 1-4, for CLSD / EASD: 1 and 5, only)

- Tightening with specified torque
 - Torque controlled bolting, bolt connections with target values and tolerance levels.
- Tightening with torque/angle procedure
 - Pre-torque and angle can be preset.
 - Tolerance specification for the final torque (control of bolting quality).
 - Storage of actual torque and angle.
- Checking of torque
 - Monitoring of already tightened bolt connections.

- Determination of already loosened torque values.
- Repeatable testing method with specified angle.
- CCW: Determination of the starting torque.
- 4 Determination of required angle
 - For testing and development purposes. Pre-torque and target resp. final torque are specified.
 - Measurement and storage of the reached angle.
- 5 Display actual torque only with models EASD and CLSD
 - Display and recording of the actual torque.

Operating range HSD / CLSD / EASD with OLED graphic display

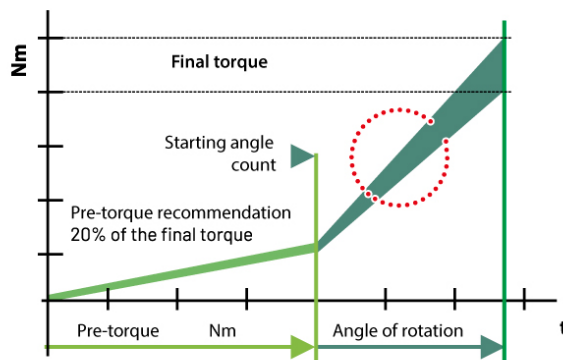
Example for menu-guided operation (HSD)



Examples Display image in mode "Program 1"

Select units (Nm/ft.lb) and language (German, English) during setting (image 2). Image 3 shows setting of bolting parameters. Image 4 shows the amount of boltings. Alarms and other notifications made by visual and acoustic signals.

Diagram for program 2 and 4



Information on rotational angle setting for torque/angle procedure

- A pre-torque and angle of rotation are specified constructively for the bolting connection.
- B The angle of rotation can be determined individually and easily with the alkitronic® HSD.

CLV SERIES



Applications

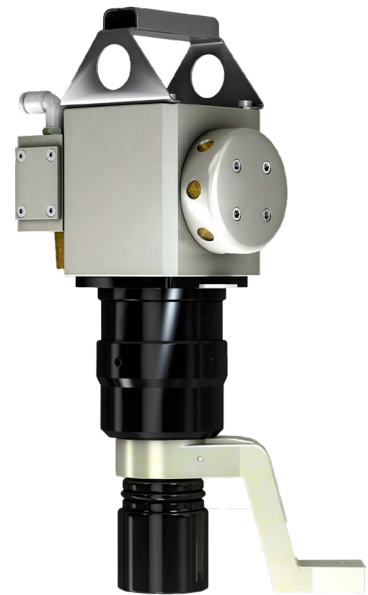
- Pneumatic torque multipliers for torques up to 3,460 Nm.
- Multiple fastening connections and series assembly in semi-automatic operations.
- Perfect for bolted applications in hazardous, explosive environments.

Advantages

- Permanently higher joint quality (compared to impact and hydraulic wrenches) by continuous rotation of the square drive.
- Concurrent, even bolted connection, crosswise with several alkitronic® CLV torque multipliers.
- Comfortable remote control for right-left rotation.
- Low noise emission by integrated muffling.

alkitronic® Specials

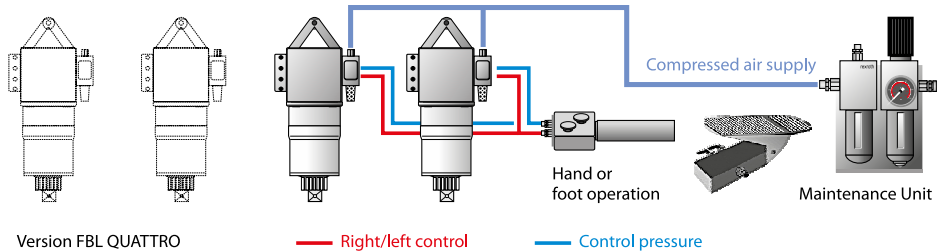
- Universal valve block for pneumatic steering according to specific requirements.
- Robust pneumatic drive with sophisticated high-performance gear, reliably used around the world .
- alkitronic® CLV remote systems for one to four CLV torque multipliers.
- alkitronic® exhaust system for a workplace without air swirls (optional).



alkitronic® CLV Remote Systems

Chart:
FBL DUO for two CLV torque multipliers

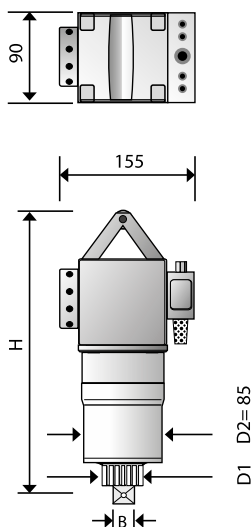
The FBL QUATTRO version for four CLV torque multipliers more details on request.



Models CLV

Type	CLV 15	CLV 25	CLV 35	CLV 45	CLV 75	CLV 95	CLV 135	CLV 175	CLV 255	CLV 315
Torque range (approx.) * Nm	60-220	90-280	130-400	160-500	300-900	360-1100	490-1450	650-1900	900-2700	1200-3500
Square drive B	1/2" / 3/4"	1/2" / 3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"
Diameter (approx.) D1 mm	41	41	41	41	41	41	54	54	54	54
Height (approx.) L mm	296	296	296	296	318	318	320	340	372	372
Weight without DMA (approx.) kg	5.5	5.5	6	6	6.5	6.5	6.5	6.5	7	7
Idle speed rpm	60	38	34	27	19	13	9	7	6	4
Idle speedrpm	60	38	34	27	19	13	9	7	6	4

Specifications



Prerequisites for best work with the indicated torques are an operating pressure of 2-7 bar at a volume flow of approx. 10-15 l/s. The torque accuracy depends on the stability of the supply system. The torque control of the pneumatic alkitronic® torque multiplier takes place via the air supply or pressure regulator of the Maintenance Unit.

Accessories:
Maintenance Unit, complete with filter, regulator, oiler and 5m hose, incl. couplings.



alki TECHNIK GmbH reserves the right to change specifications without prior notice



alkitronic® CLV operating in a preassembly and final assembly workstation. Remote controlled continuous tightening in semiautomatic operation.

PNEUMATIC SERIES

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M SERIES

Applications

- alkitronic® M manual torque multiplier - for energy independent precise tightening and loosening of heavy-duty bolt connections.
- Torques from 200 Nm up to 50,000 Nm.
- The ideal torque tool in high explosion-risk areas
- alkitronic® M provide safe, economic, problem-free operation. They replace impact wrenches, pipe extensions and other inadequate methods.

Advantages

- Maintenance-free, compact and robust design. They improve on-the-job safety and have short assembly times.
- Low energy input - high torque transfer.
- Integrated anti wind-up ratchet allows jobs to be performed easily, efficiently and safely.

alkitronic® Specials

- The components of the alkitronic® power gears are manufactured using a high-precision chipless process - in order to ensure the highest possible operational demands with lowest wear.
- The shearing pin built into the drive shaft protects against input overload.

Specifications

- Torque Multiplier input via: 3/4" internal square socket torque wrench or conventional ratchets external hexagonal socket SW 36 mm.
- Handwheel - for rough turning loose bolts/nuts.
- alkitronic® manual torque multipliers are supplied with a support foot (DMA) as standard version. For support rings, back stops, ratchets, torque wrenches, and other components, please see our alkitronic® catalog of accessories.

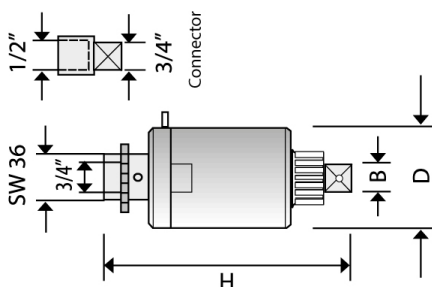
alkitronic®



Technical Data: HG (with ratchet)

Type		HG10	HG15	HG20	HG30	HG40	HG50	HG60	HG80
Torque up to (approx.) *	Nm	1400	1400	3500	5000	6000	8000	11500	50000
	lbf.ft	1035	1035	2580	3690	4425	5900	8480	36880
Square drive	B	1/2" / 3/4"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2 1/2"
Reduction ratio		4	4	16	18	20	24	28	180
Diameter	D mm	85	85	85	98	109	133	173	275
Height	H mm	180	200	235	250	280	280	290	360
Weight (approx.)	kg	3.5	4	5	6.5	7	11	19	58

*) When loosening a bolted connection, up to 20% higher torque may be required (loosening torque). We will gladly advise you in detail.



Connector:
1/2" internal square socket -
3/4" external square socket



alkitronic® - power gear components



alkitronic® M operating on electricity pylons. Accurate tightening via torque wrench.

M-SD traceable bolting solution

alkitronic®

Applications

High quality bolt-connections place the highest demands on bolting technology. The powerful mounting documentation system alkitronic® MDS provides a fast, complete and flawless collection of torque data. alkitronic® MDS helps to fulfill legal regulations and to comply with international quality standards (documentation to the end user, traceable bolting parameters).

- The product range includes:
The manually operated alkitronic® HSD, the pneumatic operated alkitronic® CLSD, and the battery driven alkitronic® EASD. The torque multipliers are used for torque controlled bolting and reliable measurement data recording on the spot.

Advantages

General

- Optimized process safety and work safety.
- Guaranteed traceability and documented bolted joints.
- Torque can be set and record on site.
- Control panel with OLED display, display of torque in Nm or lbf.ft.

alkitronic® HSD

- Repeatability in tightening – independent of disturbances.
- Torque/torque angle procedure, manual setting, and documentation on site.
- High mobility: independent of external power supply.

alkitronic® CLSD

- Robust motor housing of cast aluminum with proven pneumatic drive.

alkitronic® EASD

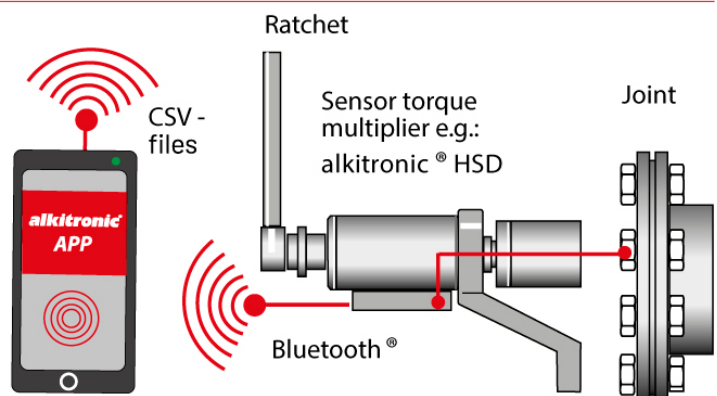
- Health preserving: ergonomically designed, low noise emission.
- No noise protection necessary.
- Powerful and independent: Two lithium-ion battery packs ensure up to 360 screw joints in a row.
- Exact shut-off torque even at low battery levels.

alkitronic® specials

- Torque recording and sensors directly on the square drive.
- Select individual bolting- and measurement method, several preset programs can be chosen.
- Menu-guided multilingual operation, using visual and acoustic control- or warning signals.
- Data transmission via the Bluetooth interface for communication with mobile phones and other devices, such as tablets.
- alkitronic® APP developed for measurement data recording and fast data transmission.

alkitronic® APP application scheme

- alkitronic® APP app for iOS® and android® mobiles and platform independent data exchange via CSV file transfer.
- Image on the upper right: alkitronic® HSD and on the lower right: alkitronic® CLSD and alkitronic® EASD.



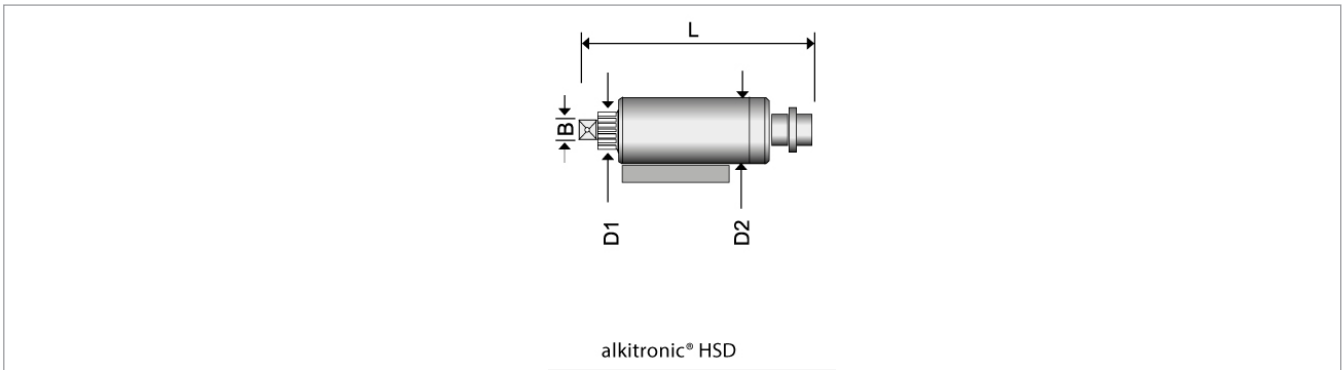
MANUAL SERIES

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M-SD traceable bolting solution



Technical Data



Type		HSD		
		HSD 100	HSD 200	HSD 400
Measuring range approx.	Nm	100-1000	200-2000	400-4000
Power (max)	Nm	1000	2000	4000
Square drive	B	1"	1"	1 1/2"
Diameter (approx.)	D1	mm	54	72
Diameter (approx.)	D2	mm	88	98
Length (approx.)	L	mm	220	320
Weight without DMA approx.kg			6,4	7,6
Idle speed gear I	r/min	-	-	-
Idle speed gear II	r/min	-	-	-

Operation panel/sensoric: Measurement accuracy: +/- 1% / Temperature range: 0 to + 50 degree C

Overview of the programs 1 to 5 (Programs for HSD: 1-4, for CLSD / EASD: 1 and 5, only)

- 1 Tightening with specified torque
 - Torque controlled bolting, bolt connections with target values and tolerance levels.
- 2 Tightening with torque/angle procedure
 - Pre-torque and angle can be preset.
 - Tolerance specification for the final torque (control of bolting quality).
 - Storage of actual torque and angle.
- 3 Checking of torque
 - Monitoring of already tightened bolt connections.

- Determination of already loosened torque values.
- Repeatable testing method with specified angle.
- CCW: Determination of the starting torque.
- 4 Determination of required angle
 - For testing and development purposes. Pre-torque and target resp. final torque are specified.
 - Measurement and storage of the reached angle.
- 5 Display actual torque only with models EASD and CLSD
 - Display and recording of the actual torque.

Operating range HSD / CLSD / EASD with OLED graphic display

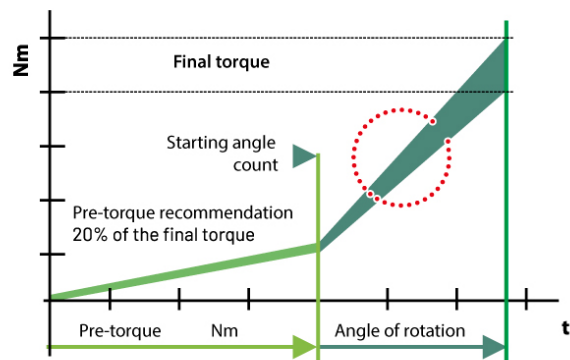
Example for menu-guided operation (HSD)



Examples Display image in mode "Program 1"

Select units (Nm/ft.lb) and language (German, English) during setting (image 2). Image 3 shows setting of bolting parameters. Image 4 shows the amount of boltings. Alarms and other notifications made by visual and acoustic signals.

Diagram for program 2 and 4



Information on rotational angle setting for torque/angle procedure

- A pre-torque and angle of rotation are specified constructively for the bolting connection.
- B The angle of rotation can be determined individually and easily with the alkitronic® HSD.

XCE & X-ML SERIES

alkitronic® Norwolf specialty products

The alkitronic® Norwolf Missing Link™ - the most revolutionary manual torque multiplier for applications where standard tools don't fit. The alkitronic® Norwolf XCE Link™ is essentially a Missing Link™ with the ability to turn continuously.

Missing Link

The Missing Link™ torque multiplier fits into tightly confined areas where sockets will not fit. The Missing Link™ has become standard in the wind industry for generator feet and yaw pucks. Available in 4:1 or 6:1 ratios. The newly re-designed 6:1 Missing Link™ fits in the narrowest of confines while maintaining a high power to weight ratio.

Advantages

- Accurate - operates using levers, not gears.
- No overload pins to break - creates safer working environment.
- Uses ratchet or non-ratchet wrenches.
- Optional reaction arm permits operator to react on the same plane.
- Input force is same direction as reaction force for maximum operator convenience.

XCE Link

The alkitronic® Norwolf XCE Link™ is the ultimate answer for gaining access where standard pneumatic multipliers are too tall or bulky to fit application. Available in 3:1 or 4:1 ratios. There are two available styles. The standard style has a sliding pin with which to react with any standard torque multiplier. The hub style has a specific splined hub to match the input tool of choice.

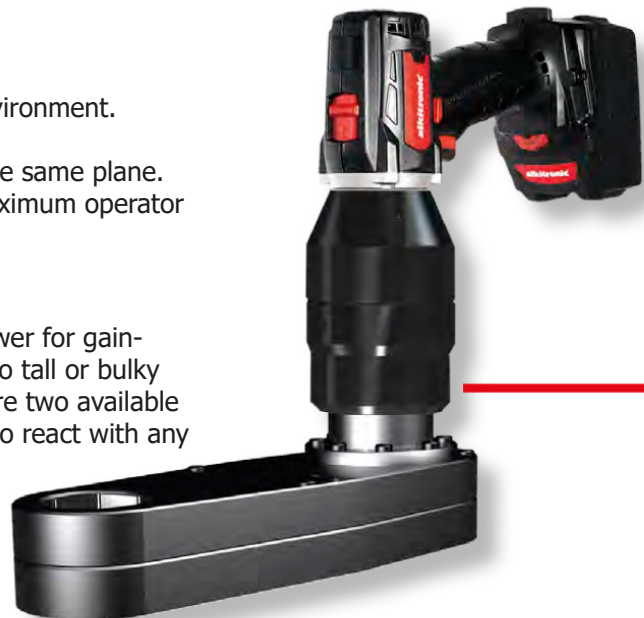
Advantages

- Totally enclosed aluminum housing.
- Available in two styles: pin or hub reaction.
- Continuous rotation for use with any alkitronic® pneumatic or electric multiplier.
- Available in special configurations.
- Gearless internal design offers long service life..



Application Example: The Missing Link™ when fitting a coupling in plant construction. The Missing Link™ fits more applications than any other wrench.

alkitronic®



XCE Link™ with hub style to match the input of all alkitronic® torque tools. Continuous rotation for use with any electric or pneumatic driven torque multiplier.



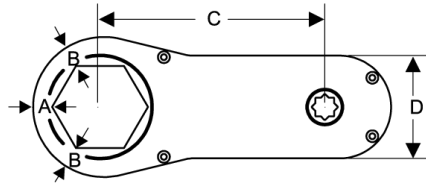
Missing Link™ - the manual torque multipliers are available with spanner sizes from 22 mm to max. 80 mm and ratios of 4:1, 6:1. The Missing Link™, the most suitable multiplier for every bolting connection.

MANUAL SERIES

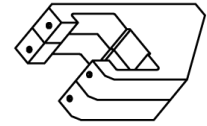
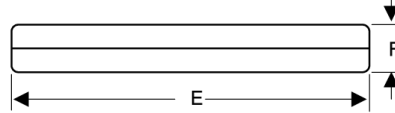
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XCE SERIES

Technical Data



Model Missing Link



Optional reaction arm

Models Missing Link M-ML - 1/2", 4:1 Ratio - max. 340 Nm input / 1360 Nm output

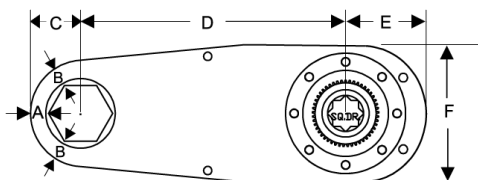
SW	22	24	27	30	32	36	41	46	50	55	60	C 151mm
A mm	13,5	12	11.1	12	11.1	11.1	11.1	11.1	11.1	11.1	11.1	D 70mm
B mm	15.1	13.5	12.7	13,5	12.7	12.7	12.7	12.7	12.7	12.7	12.7	F 32mm
E mm	222	222	222	226	226	228	231	234	236	239	242	

Models Missing Link M-ML - 3/4", 4:1 Ratio - max. 815 Nm input / 3260 Nm output

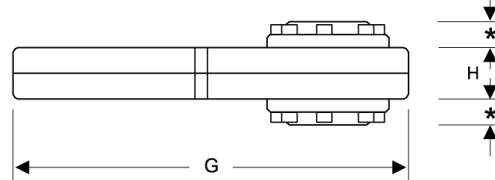
SW	22	24	27	30	32	36	41	46	50	55	60	65	70	75	80	C 212mm
A mm	21.3	20.3	18.8	17.3	16.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	D 95mm
B mm	23.6	22.6	21.1	19.6	18.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	F 45mm
E mm	309	309	309	309	309	309	312	315	317	320	323	325	328	331	334	

Models Missing Link M-ML - 3/4", 6:1 Ratio - max. 815 Nm input / 4890 Nm output

SW	32	36	41	46	50	55	60	65	70	C 355mm
A mm	23.3	21.3	18.8	14.3	16.3	14.3	14.3	14.3	14.3	D 102mm
B mm	25.6	23.6	21.1	18.6	16.6	16.6	16.6	16.6	16.6	F 45mm
E mm	476	476	476	476	476	479	481	484	487	



Model XCE Link



* This thickness is determined by the input drive.

Models XCE Link - 3/4", 3:1 Ratio - max. 1150 Nm input / 3450 Nm output

SW	24	27	32	36	41	46	50	55	60	65	70	75	80	D 156 mm
A mm	10	11	11	12	12	13	13	14	14	15	15	16	16	E 60 mm
B mm	11	11	12	12	13	13	14	14	15	15	16	16	17	F 102 mm
C mm	25	27	30	33	36	40	42	46	49	53	56	59	63	H 38mm
G mm	241	243	246	249	252	256	258	262	265	269	272	275	279	

Models XCE Link - 1", 3:1 Ratio - max. 2440 Nm input / 7320 Nm output

SW	50	55	60	65	70	75	80	90	100	105	110	115	120	D 208 mm
A mm	13	14	14	15	15	16	16	17	18	19	20	20	21	E 80 mm
B mm	14	14	15	15	16	16	17	18	19	19	20	20	21	F 137 mm
C mm	42	46	49	53	56	59	63	70	76	80	83	87	90	H 51 mm
G mm	330	334	337	341	344	347	351	358	364	368	371	375	378	

Models XCE Link - 3/4", 4:1 Ratio - max. 1150 Nm input / 4600 Nm output

SW	24	27	32	36	41	46	50	55	60	65	70	75	80	D 196 mm
A mm	10	11	11	12	12	13	13	14	14	15	15	16	16	E 60 mm
B mm	11	11	12	12	13	13	14	14	15	15	16	16	17	F 102 mm
C mm	25	27	30	33	36	40	42	46	49	53	56	59	63	H 38 mm
G mm	281	283	286	289	292	296	298	302	305	309	312	315	319	

Models XCE Link - 1", 4:1 Ratio - max. 2440 Nm input / 9760 Nm output

SW	50	55	60	65	70	75	80	90	100	105	110	115	120	D 262 mm
A mm	13	14	14	15	15	16	16	17	18	19	20	20	21	E 80 mm
B mm	14	14	15	15	16	16	17	18	19	19	20	20	21	F 137 mm
C mm	42	46	49	53	56	59	63	70	76	80	83	87	90	H 51 mm
G mm	384	388	391	395	398	401	405	412	418	422	425	429	432	

FLANGE BOY

Application and Advantages

- Easy and safe mechanical separation of piping flanges.
- All parts manufactured with highest quality materials.
- FLANGE BOY is proven in international tests.

Operation instructions

Insert the FLANGE BOY in one of the bolt holes of a flange. Slip the bolt support plate, which is held by a chain, between the flange facings underneath the setscrew. Once the FLANGE BOY is jammed tight, continue turning with a wrench until a position is reached where a gasket can be replaced or a spade set. Then, slacken back the setscrew to the point where the support plate can be removed, and tap the setscrew with a hammer to free the FLANGE BOY from the bolt hole. Recommend the use of two FLANGE BOYS in cases where the transfer of very great force is required. Insert the second FLANGE BOY in the corresponding hole of the companion flange. The force, applied will act on the same support plate. You will, thus, be able to apply heavy loads without risking damage to the support plate. Due to the flange proportions, it is not possible to increase the thickness of the support plate.

Do not load a plate on side while using great force!

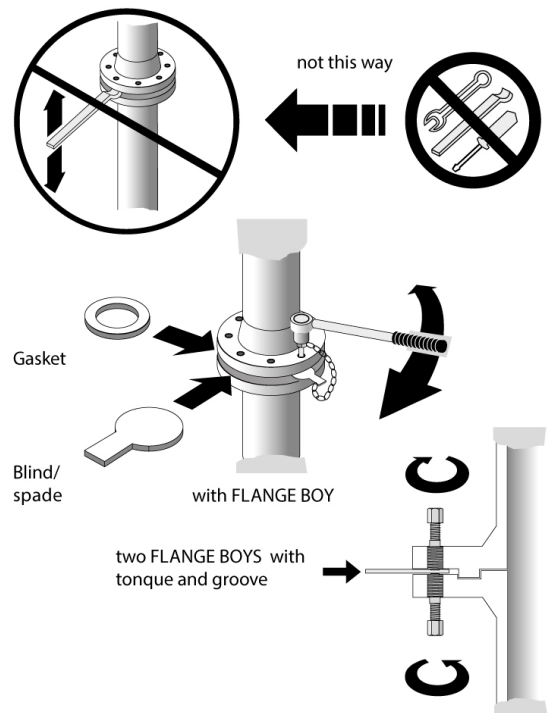
Grease the threads well before using!

Warning: To avoid serious injuries, never put your fingers between the separated flanges!

DIN Flange Dimensions (further sizes - upon request)								
Type	Bolt hole (Ø mm)	PN 10 DN	PN 16 DN	PN 25 DN	PN 40 DN	PN 64 DN	PN 100 DN	PN 160 DN
D 18	18	32-125	32-125	32-80	32-80	20-25	20-25	20-25
D 22	22	150-350	150-200	100	100	32-80	32-40	32-40
D 26	26	400-500	250-300	125-200	125-150	100	50-80	50-80
D 30	30		400	250-350	200	125	100	100
D 33	33			350	250-300	150	150-175	125-150
D 36	36			400	350	200-300	200	200
D 39	39				400	350	250	
D 42	42					400	300	250-300

ANSI (ASA) Flange and British Standard Flange Dimensions (further sizes - upon request)						
Type	Bolt hole (Ø mm)	150 lbs DN/Inch	300 lbs DN/Inch	600 lbs DN/Inch	900 lbs DN/Inch	1500 lbs DN/Inch
A 3/4	19	2, 2½, 3, 4	¾, 1, 2	¾, 1, 1¼, 2		
A 7/8	22	5, 6, 8	1, 1½, 2½, 3, 4, 6	1½, 2½, 3	½, ¾	½, ¾
A 1	25	10, 12	8	4	1, 2, 3	1, 2
A 1 1/8	28	14, 16	10	6	1½, 2½	1½, 2½
A 1 1/4	32	18, 20	12, 14	8	4, 6	3
A 1 3/8	35	24	16, 18, 20	10, 12		4
A 1 1/2	38		14	8, 10, 12	6	
A 1 5/8	41		24	16	14	

alkitronic®



Indispensable for separation of piping for DIN, ANSI (ASA) and B. Std. Flanges



DBP Nr. 2522817 • US Patent No. 4015324

ACCESSORIES

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alkitronic® 20350F Maintenance Unit

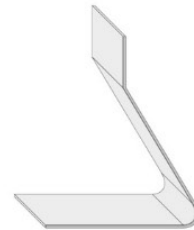
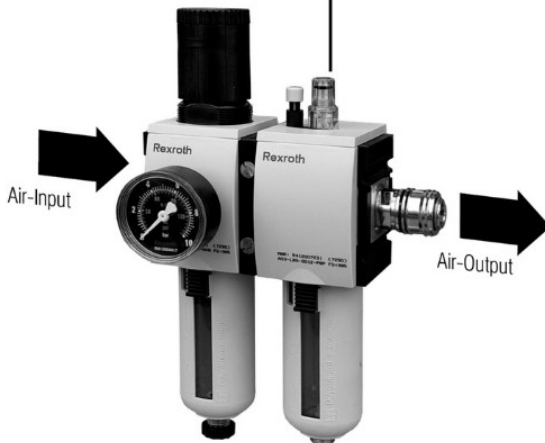
Alkitronic® pneumatic torque wrenches have adjustable torque which can be controlled by varying the input air pressure to the tool. The more accurately the air pressure is controlled the more accurate the tool output torque.

20350F Maintenance Unit is supplied with a metal stand, high quality Rexroth Filter Regulator-lubricator, 5 metre long air hose for connection between maintenance unit and tool via Cejn quick disconnect airline couplings. Filled with special oil and gauge shows PSI and bar.

alkitronic®



Pressure control valve Button for filling the oiler by suction on the lower part of the container



Connection for oil extraction and filling

Art. No. 20350 - Maintenance unit complete including 5 m hose, bracket and special oil



Ozito battery kit to suit Alkitronic EB Series

alkitronic®

Model No.	13176	131175
Description	Ozito 18V Battery 5.2Ah	Ozito 230V Charger



Metabo battery kit to suit Alkitronic EAF Series

Model No.	13102	13103
Description	Metabo 18V Battery 5.2Ah	Metabo 230V Charger

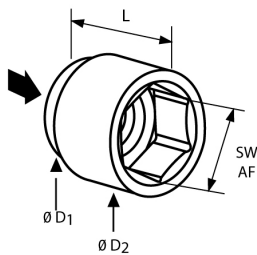
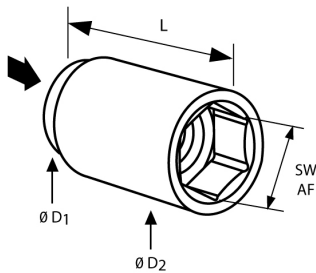
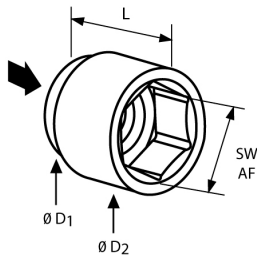
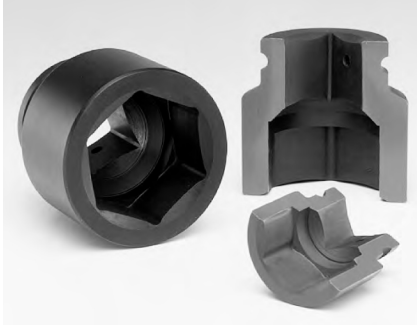


ACCESSORIES

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CL SERIES

alkitronic® STACO - Hex. standard sockets



Abtriebsvierkant / Square Drive	Gummiring / Rubber Ring	Stift / Pin
Bestell-Nr. / Order No.	Bestell-Nr. / Order No.	Bestell-Nr. / Order No.
Staco 3/4"	31620	31621
Staco-L 3/4"		
Staco 1"	31520	31521
Staco-L 1"		
Staco-K 1 1/2"	31420	31421
Staco-L 1 1/2"		
Staco 2 1/2"	31425	31426

alkitronic®	Staco 3/4"				Staco 1"				Staco 1 1/2"			
	44 mm				54 mm				85 mm			
D1	SW ¹	D2 ²	L	No.	SW ¹	D2 ²	L	No.	SW ¹	D2 ²	L	No.
	17	31	60	31601	19	37	82	31561	36	63	90	31471
	19	33	60	31602	22	40	82	31562	41	69	90	31472
	22	37	60	31603	24	43	82	31563	46	76	90	31473
	24	39	60	31604	27	45	82	31564	50	80	90	31474
	27	43	60	31605	30	46	82	31565	55	88	90	31475
	30	47	60	31606	32	52	82	31566	60	94	90	31476
	32	49	60	31607	36	56	82	31567				
	36	54	60	31608	41	64	82	31568				
	41	61	60	31609	46	70	82	31569				
	46	67	60	31610	50	76	82	31570				
					55	85	82	31512				
					60	87	82	31513				
					65	92	82	31514				

alkitronic®	Staco-L 3/4"				Staco-L 1"				Staco-L 1 1/2"			
	44 mm				54 mm				85 mm			
D1	SW ¹	D2 ²	L	No.	SW ¹	D2 ²	L	No.	SW ¹	D2 ²	L	No.
	17	31	100	31631	22	40	110	31531	36	63	110	31451
	19	33	100	31632	24	43	110	31532	41	69	110	31452
	22	37	100	31633	27	45	110	31533	46	76	110	31453
	24	39	100	31634	30	46	110	31534	50	80	110	31454
	27	43	100	31635	32	52	110	31535	55	88	110	31455
	30	47	100	31636	36	56	110	31536	60	94	110	31456
	32	49	100	31637	41	64	110	31537	65	99	110	31457
	36	54	100	31638	46	70	110	31538	70	107	110	31408
	41	61	100	31639	50	76	110	31539	75	113	110	31409
	46	67	100	31640	55	85	110	31540	80	119	116	31410
					60	87	110	31541	85	125	121	31411
					65	92	110	31542	90	132	127	31412
									95	138	127	31413

alkitronic®	Staco-L 3/4"				Staco-L 1"				Staco-L 1 1/2"			
	44 mm				54 mm				85 mm			
D1	SW ¹	D2 ²	L	No.	SW ¹	D2 ²	L	No.	SW ¹	D2 ²	L	No.
	65	106	138	31921	120	175	175	31932	36	63	110	31451
	70	113	140	31922	125	181	175	31933	41	69	110	31452
	75	119	143	31923	130	188	180	31934	46	76	110	31453
	80	125	150	31924	135	194	180	31935	50	80	110	31454
	85	132	155	31925	140	200	185	31936	55	88	110	31455
	90	138	160	31926	145	206	185	31937	60	94	110	31456
	95	144	160	31927	150	213	190	31938	65	99	110	31457
	100	150	165	31928	155	219	200	31939	70	107	110	31408
	105	156	165	31929	160	225	205	31940	75	113	110	31409
	110	163	170	31930	165	231	205	31941	80	119	116	31410
	115	169	175	31931	170	238	210	31942	85	125	121	31411

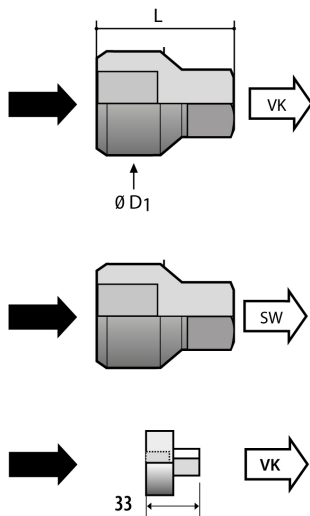
STABI SERIES



alkitronic® STABI- Standard connector



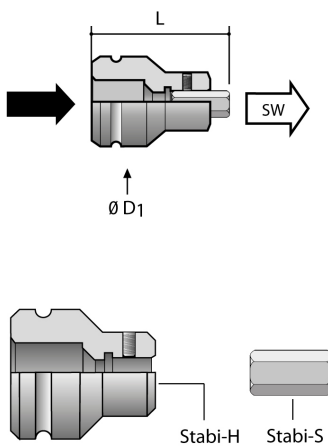
Stabi-H	Rubber ring	Stift Pin
Square Drive	Order No.	Order No.
STABI-H 3/4"	31620	31621
SATBI-H 1"	31520	31521
STABI-H 1 1/2"	31420	31421



alkitronic®	Stabi 3/4"		Stabi 1"		Stabi 1 1/2"		Stabi 2 1/2"	
D ₁	50 mm		60 mm		78 mm		127 mm	
L	75 mm		75 mm		105 mm		156 mm	
	VK	No.	VK	No.	VK	No.	VK	No.
1/2"	31305	3/4"	31205	1"	31105	1 1/2"	31101	
3/4"	31306	1"	31206	1 1/2"	31106			
1"	31307	1 1/2"	31207	2 1/2"	31107			
	SW1	No.	SW1	No.	SW1	No.		
	17	31312	24	31213	24	31112		
	19	31313	27	31214	27	31113		
	22	31314	30	31215	30	31114		
	24	31315	32	31216	32	31115		
	27	31316			36	31116		

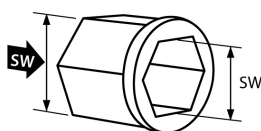
Connector	in	out	Order No.
	1/2"	VK 3/4"	31357-K

alkitronic® Stabi-Halter/Stabi-Stift Standard connector-H/-S



alkitronic®	Stabi H/S 3/4"		Stabi H/S 1"		Stabi H/S 1 1/2"						
D ₁	48 mm		54 mm		85 mm						
L	76 mm										
	Stabi-H	SW ¹	Stabi-S	Stabi-H	L	SW ¹	Stabi-S				
	31330	12	31250	31230	85	17	31252	31130	105	19	31253
	31331	14	31251	31231	85	19	31253	31131	105	22	31254
	31332	17	31252	31232	85	22	31254	31132	105	24	31255
	31333	19	31253	31233	87	24	31255	31133	105	27	31256
	31334	22	31254	31234	87	27	31256	31134	105	30	31257
	31335	24	31255	31235	87	30	31257	31135	105	32	31258
	31336	27	31256	31236	89	32	31258	31136	108	36	31259
								31137	120	41	31260
								31138	122	46	31261
								31139	122	50	31262
								31140	122	55	31263
								31141	122	60	31264
								31142	122	65	31265

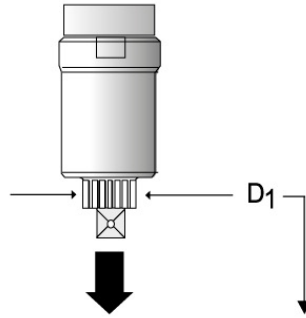
alkitronic® STA Standard adaptor



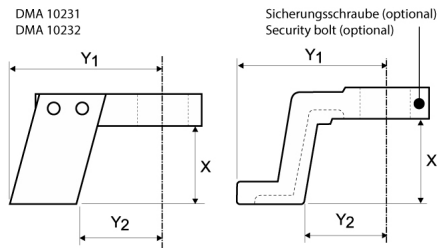
alkitronic®	Sta 36 mm		Sta 46 mm		Sta 55 mm		Sta 65 mm		Sta 70 mm		Sta 80 mm		Sta 105 mm	
	SW1	No.	SW1	No.	SW1	No.	SW1	No.	SW1	No.	SW1	No.	SW1	No.
	24	31705	36	31701	36	31711	36	31721	36	31731	46	31741	80	31861
	27	31706	41	31702	41	31712	41	31722	41	31732	50	31742	85	31863
	30	31707			46	31713	46	31723	46	31733	55	31743	95	31862
	32	31708					50	31724	50	31734	60	31744		
							55	31725	55	31735	65	31745		
									60	31736	70	31746		

alkitronic® DMA

Reaction devices

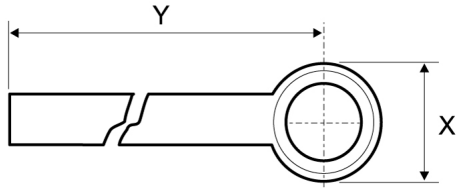


Reaction foot



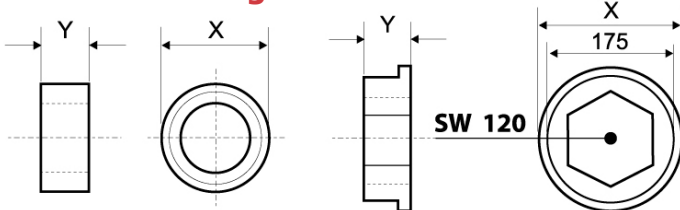
Abtriebsvierkant Square drive	mm	mm	mm		DMA No.
	D1	X	Y ₁	Y ₂	
3/4"	41	74	75	51	10231
3/4"	41	74	41	128	75
3/4"	41	65	120	70	10251
3/4"	54	83	54	83	130
1" (*)	54	83	150	85	10253
1", 1 1/2" (**)	72	85	72	85	194
1", 1 1/2"	72	85	194	110	10234
1 1/2"	72	123	220	120	10256
1 1/2"	91	123	220	120	10257

Toward support



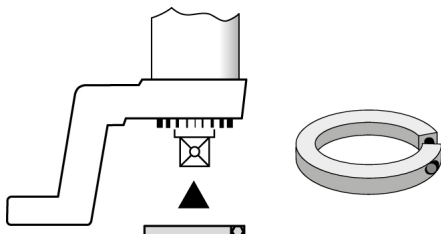
	D ₁	X	Y	DMA No.
3/4"	41	65	240	10261
1"	54	80	240	10262
1 1/2"	72	105	240	10265
1 1/2"	91	105	240	10267

Reaction ring



	D ₁	X	Y	DMA No.
3/4"	41	65	28	10246
1"	54	80	28	10247
1 1/2"	72	110	33	10248
1 1/2"	72	110	47	10249
1 1/2"	91	130	52	10250
2 1/2"	SW 120	180	57	10416

Security ring



	D ₁	DMAR No.
	41	10271
	54	10272
	72	10275
	91	10277