

R/SG

for Plate Heat Exchanger



designed for your needs

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.



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



Product information Remote Control

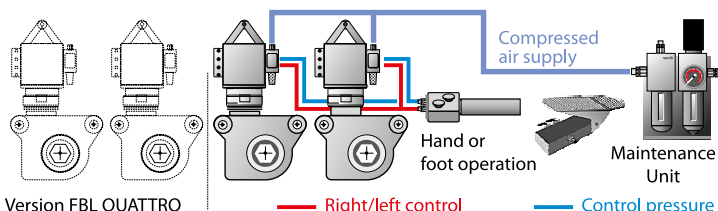
alkitronic® CLV-R or CLV-SG

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.

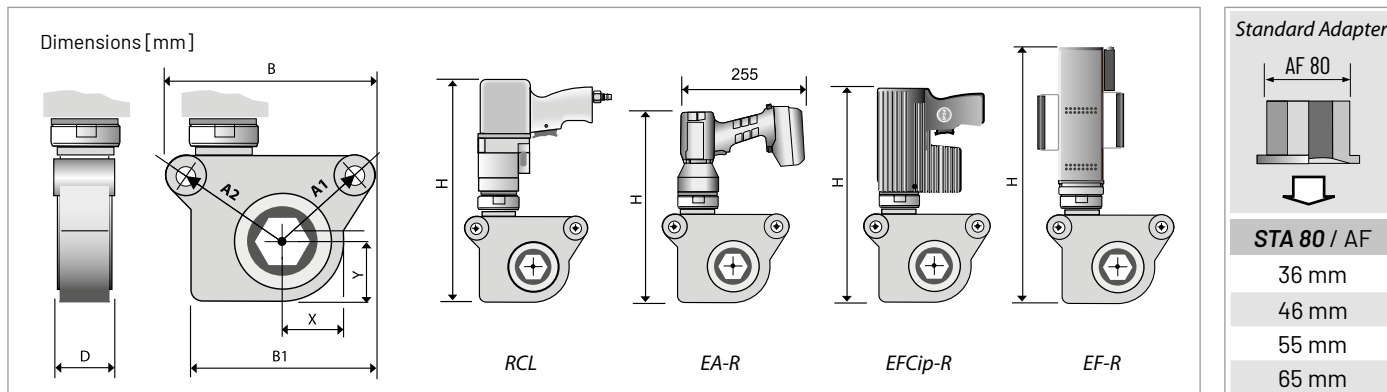
For highly efficient bolting connections with one or up to four **alkitronic® CLV** torque multipliers, preconfigured **alkitronic® Remote Systems** are already available.

FBL DUO for two **CLV** torque multiplier, **FBL QUATTRO** available on request.



Technical Data

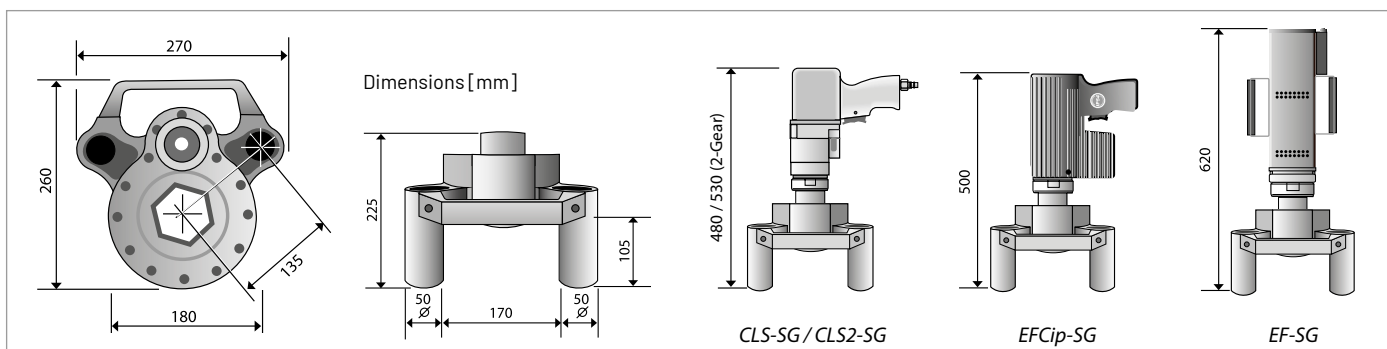
alkitronic® Radial Gearing (R)



Radial Gearing Models			Pneumatic drive			Electric drive					
			RCL (2-Gear)			EA-R (2-Gear)		EFCip-R			EF-R
Type			RCL 36	RCL 46	RCL 80	EA-R 36	EA-R 46	EFCip-R 36	EFCip-R 46	EFCip-R 80	EF-R 80
Torque range 2nd gear (approx.)		Nm	160-470	250-780	670-1975	150-450	250-730	-	-	-	-
Torque range 1st gear (approx.)		Nm	500-1500	800-2500	1645-4840	500-1500	750-2500	150-1590	250-2530	480-3840	560-3780
Width across flat (AF)		mm	36	46	80	36	46	36	46	80	80
Height (approx.)		H mm	400	435	450	400	450	385	425	475	600
Width (approx.)		B/B1 mm	230/190	252/215	325/240	230/190	252/215	230/190	252/215	325/240	325/240
Bolt distance (approx.)		A1/A2 mm	100/128	112/145	156/194	100/128	112/145	100/128	112/145	156/194	156/194
Dimensions (approx.)		X/Y mm	56/56	75/75	98/98	56/56	75/75	56/56	75/75	98/98	98/98
Dimension (approx.)		D mm	90	94	94	90	94	90	94	94	94
Weight (approx.)		kg	11	13.5	21	11	13.5	12	14.5	21	24.5
Idle speed 1st gear (approx.)		rpm	5	4.5	4	3	3	8	7	7	9
Idle speed 2nd gear (approx.)		rpm	15	14	12	10	10	-	-	-	-

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

alkitronic® Tangential Gearing (SG)



Tangential Gearing Models		Pneumatic drive		Electric drive	
		CLS-SG	CLS2-SG (2-Gear)	EFCip-SG	EF-SG
Type		CLS-SG 80	CLS2-SG 80	EFCip-SG 80	EF-SG 80
Torque range 2nd gear (approx.)	Nm	-	440-1330	-	-
Torque range 1st gear (approx.)	Nm	1330-3780	1400-3780	560-3780	560-3780
Width across flat (AF)	mm	80	80	80	80
Weight (approx.)	kg	17	17	19	22
Idle speed 1st gear (approx.)	rpm	3,5	3,5	6	10
Idle speed 2nd gear (approx.)	rpm	-	10	-	-



YOUR PLUS FOR MORE PERFORMANCE

Increased quality

- Premium production
- Highest quality materials
- Long product life cycles
- Since 1984 experience in bolting technology
- Made in Germany – international patents

Increased precision

- Precise, customer-specific torques
- High repeatability
- Reliability in permanent operation
- Dokumentation of tightening results
- Automatic shut-off

Increased productivity

- Quicker tightening without reworking
- No environmentally caused failures (IP54, ATEX)
- High work safety
- Easy to use: clear, simple instructions
- Low maintenance and cost efficient

Better service

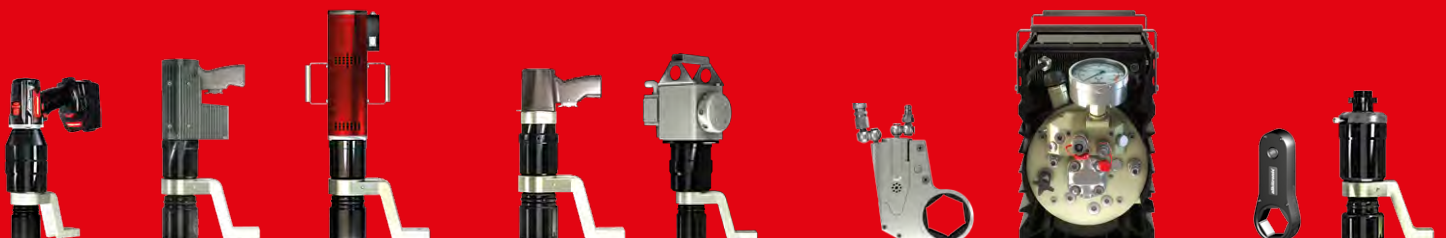
- Technical advice on site
- Training offers
- Manufacturer's calibration and certification
- Lifecycle support
- Spare part and repair service

alki TECHNIK GmbH

Development, Production and Distribution of Bolting Systems

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EXTRACT FROM OUR PRODUCT RANGE



Electric Torque Multiplier

Pneumatic Torque Multiplier

Hydraulic Wrenches and Pumps

Manual Torque Multiplier

CL

Pneumatic
Torque Multiplier



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 2,555 ft.lbs (75 to 3,460 Nm).
- **alkitronic® CLD comfortable torque multiplier** with rotating handle for torques of 225 to 7,225 ft.lbs (305 to 9,795 Nm).
- **alkitronic® CLS2** high-performance 2-gear machine for torques of 90 to 35,855 ft.lbs (120 to 48,610 Nm).

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.
- **alkitronic® CLS2** with fast gear for turning in and simple, quick switching to power gear (is used for applying the final torque).

alkitronic® specials

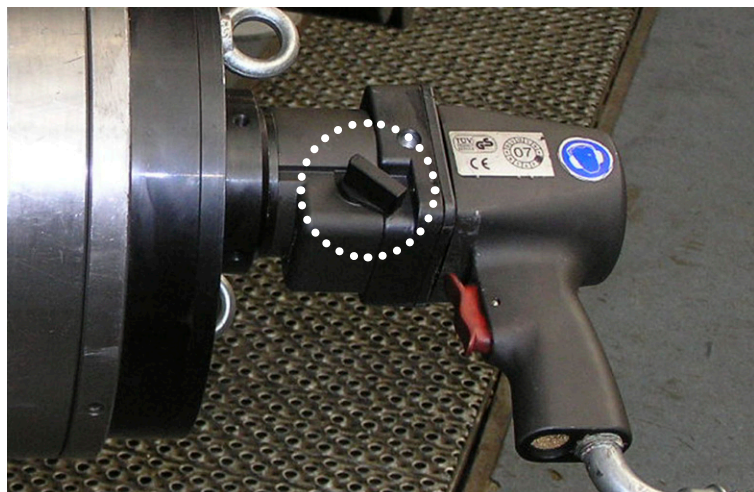
- **Simple 1-finger operation** for right/left rotation, option to enable the reaction to be locked in one position.
- **Robust cast aluminum housing** with proven pneumatic drive.
- **Proven high-performance gears**, produced in a chip-free, high-precision process produce high loads with low wear.
- **alkitronic® CLS2** with uniquely high torque - 35,855 ft.lbs. (48,610 Nm)
- **Optional silencer levels** to reduce the noise from the motor exhaust on 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 29-101 psi (2-7 bar) at a volume flow of approx. 21.2-31.8 cfm (10-15 l/sec). The torque accuracy depends on the stability of the supply system.

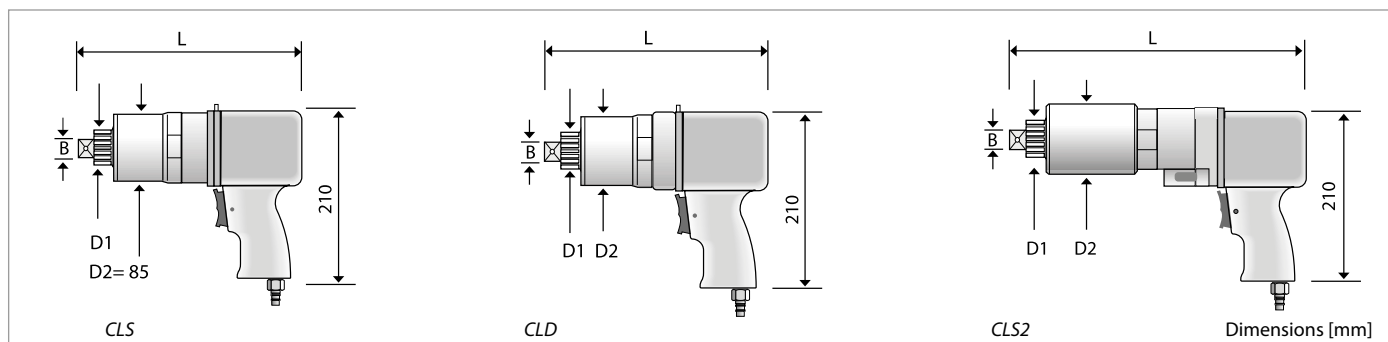


alkitronic® CLS2, 2-gear pneumatic torque multiplier. Mechanically switchable from fast gear to power gear.

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



Technical Data



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.)	D ₁	mm	41	41	41	41	41	54	54	54	54
Length (approx.)	L	mm	255	255	255	255	277	277	300	300	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.)	D ₁	mm	41	41	41	54	54	54	72	72	91
Diameter (approx.)	D ₂	mm	85	85	85	85	85	85	98	109	133
Length (approx.)	L	mm	275	275	275	300	300	300	320	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.)	D ₁	mm	41	54	54	72	72	72	91	
Diameter (approx.)	D ₂	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	

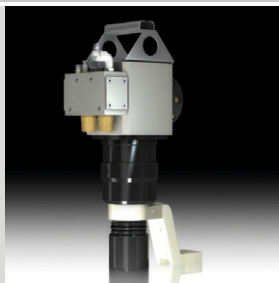
*) When loosening a bolted connection, up to 20% higher torque may be required (loosening torque). We will gladly advise you with details.

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 (3,460 Nm).

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.



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Premium production
Highest quality materials
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Precise, customer-specific torques
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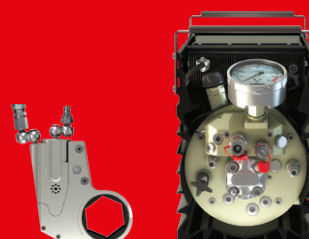
alkitronic XE-SERIES

THE ELECTRICS



alkitronic XP-SERIES

THE PNEUMATICS



alkitronic XH-SERIES

THE HYDRAULICS



alkitronic XM-SERIES

THE MANUALS

CL

Pneumatic
Torque Multiplier



Applications

- **Continuous rotation**, tightening, or loosening for all heavy duty fastening connections.
- **Perfect for bolted applications** in hazardous, explosive environments.
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- **alkitronic® CLS2** high-performance 2-gear machine for torques of 90 to 35,855 ft.lbs (120 to 48,610 Nm).

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alkitronic® specials

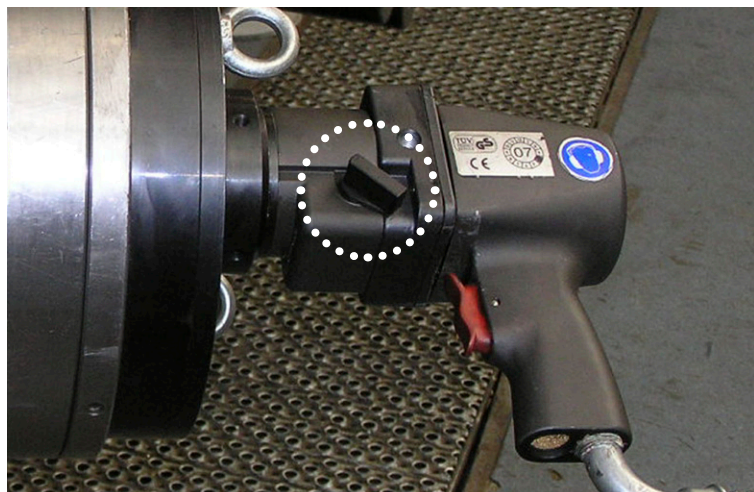
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Prerequisites for best work with the indicated torques are an operating pressure of 29-101 psi (2-7 bar) at a volume flow of approx. 21.2-31.8 cfm (10-15 l/sec). The torque accuracy depends on the stability of the supply system.

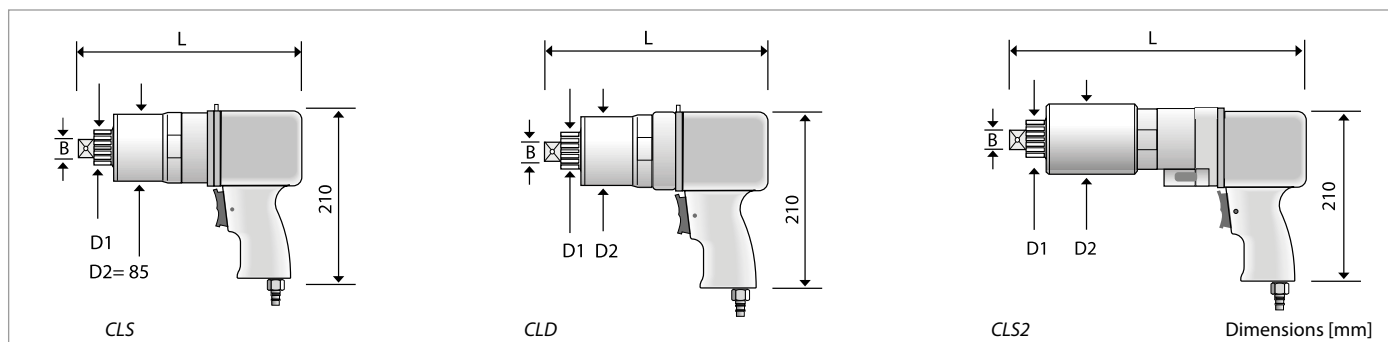


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alkitronic® CLD torque multipliers in use (figures on the right). Screw connections at a bolt circle and a diesel unit for large construction machines



Technical Data



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.)	D ₁	mm	41	41	41	41	41	54	54	54	54
Length (approx.)	L	mm	255	255	255	255	277	277	300	300	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.)	D ₁	mm	41	41	41	54	54	54	72	72	91
Diameter (approx.)	D ₂	mm	85	85	85	85	85	85	98	109	133
Length (approx.)	L	mm	275	275	275	300	300	300	320	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
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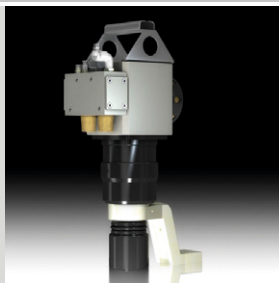
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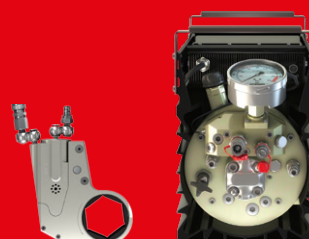
alkitronic XE-SERIES

THE ELECTRICS



alkitronic XP-SERIES

THE PNEUMATICS



alkitronic XH-SERIES

THE HYDRAULICS



alkitronic XM-SERIES

THE MANUALS

N-Tools

Torque Multipliers for
Mining Trucks



Applications

Pneumatic and electric 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.

EFCip-N, Models with protection class IP 54:

- Low running costs.** Maintenance-free, brushless, synchronous motor.
- Easy connection** to all international power grids, **no adjustments** necessary.

EA2-N, Li-Ion battery driven 2-speed models with release function:

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

CLD-N, pneumatic driven Models:

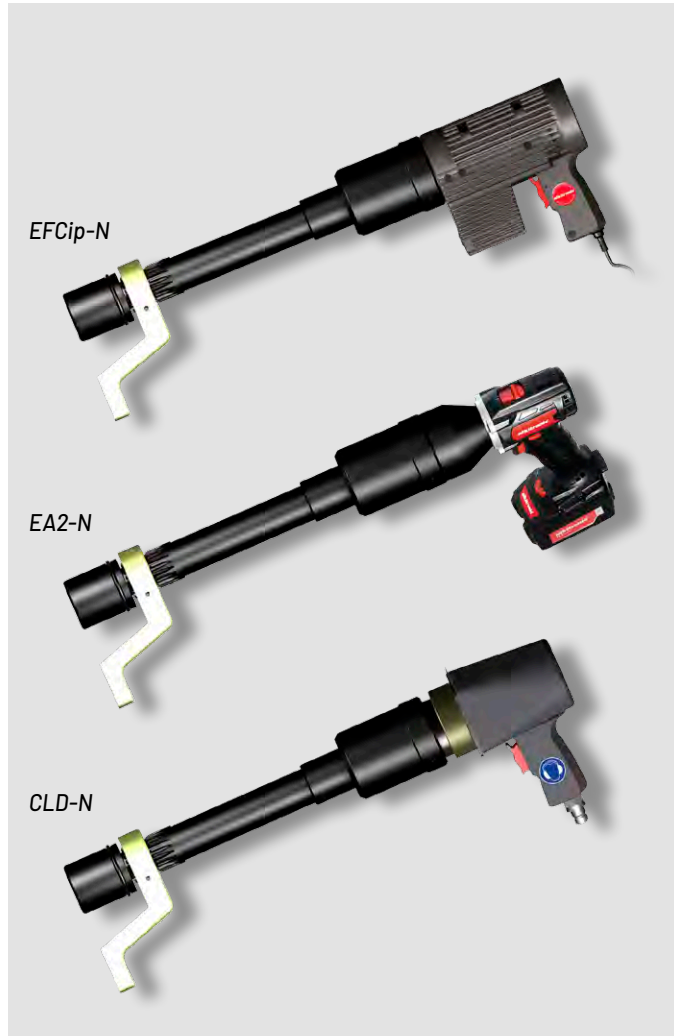
- Ideal for use in explosion-proof working environment.
- World proven reliable pneumatic drive motor.

alkitronic® specials

EFCip-N: Precise shut-off torque and constant torque accuracy at 100-253V / 45-66 Hz, even when operating on mobile units.

EA2-N with two battery packs ensure up to 360 screw joints in a row.

Pneumatic driven models: **ATEX** approval on request.



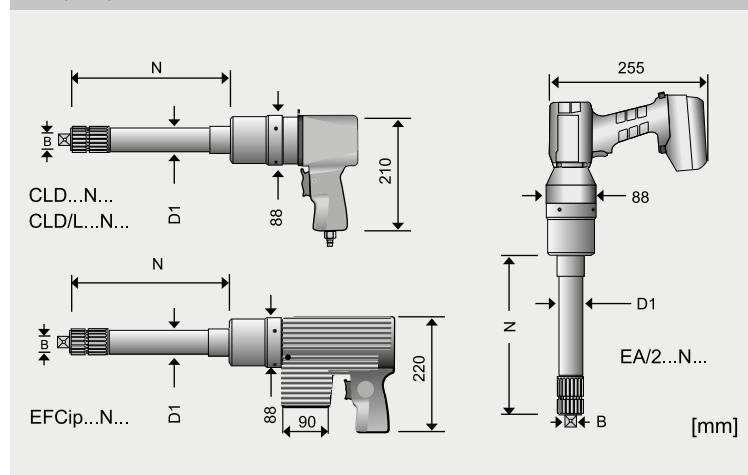
Technical Data

Drive		electric					electric (battery)					pneumatic **				
Model N-Tool (-N)		EFCip30	EFCip40	EFCip50	EFCip60	EFCip65	EA2/80	EA2/100	EA2/150	EA2/200	EA2/280	CLD/L5	CLD/L6	CLD155	CLD225	CLD280
Torque range *	Nm	100-940	150-1450	190-1850	250-2350	290-2900	190-850	130-1100	150-1400	250-2200	300-2800	365-1080	495-1450	600-1700	900-2700	1200-3500
Square drive	B	3/4"	3/4"	1"	1"	1"	3/4"	3/4"	3/4"	1"	1"	3/4"	3/4"	1"	1"	1"
Diameter (approx.) D ₁	mm	46	46	56	56	56	46	46	46	56	56	46	46	56	56	56
Length extension N..	inch	N 12	N 12	N10 N12	N10 N12	N10 N12	N 12	N 12	N 12	N10 N12	N10 N12	N 12	N 12	N10 N12	N10 N12	N10 N12
(e.g. EFCip30 N12)				N15 N18	N15 N18	N15 N18				N15 N18	N15 N18			N15 N18	N15 N18	N15 N18
Idle speed 1 st Gear/2 nd Gear rpm		30	15	14	11	8	7/24	6/20	4/13	2/6.5	1.7/6	16	12	7	5	4

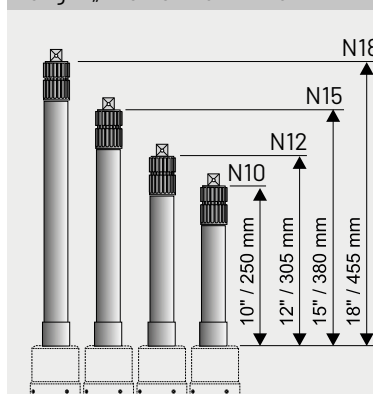
*) When loosening bolts, a higher torque (up to 20 %) may be necessary (release torque). We will gladly advise you in detail.

**) 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



Examples of product identification:
EA2/200 N10, CLD 155 N12, EFCip 50 N15,
EFCip 50 N18

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