

**Electrical
solutions
for tightening
operations.
Simple,
ergonomic,
reliable.**

**Brushless electric screwdrivers BL
Electric screwdrivers CL and α**

- Torque range: from 0.02 up to 3.4 Nm
- Automatic electric shut-off

Fiam®

PEOPLE AND SOLUTIONS

Electric screwdrivers

Maximum accuracy, minimum maintenance. Freedom of tightening is brushless.

Wide range of **electric screwdrivers** designed and made by the Japanese HIOS, one of the world's foremost tool-making companies.

Featuring extremely practical controls, they are **easy, quick and comfortable to use.**

They are particularly suitable for specific assembly work with **small and very small screws and nuts** and are therefore used in the following sectors: electronic and electromechanical components, toys, plastic objects, eyewear, etc.

Innovative **brushless motors** are particularly **efficacy**; thanks to the absence of maintenance and of the coal dust in the working environment (characteristics of the standard motors with brushes), they guarantee:

- **greater reliability** in time
- **absence of pollution** in the working environment
- **greater productivity** for a considerable increase of the performances.

.....
BL 2000 ESD
Real size 1:1



.....
BL 7000

CL 2000
Real size 1:1



CL 4000 NL



α 6500 HTNL



BL 5000



CL 7000 NL





Single driver unit and controller



Extremely compact dimensions



Ideal in the eyewear field



Ideal for assembling electronic components

Be demanding

Reliability

Long lifetime of the components thanks to careful design and to quality of the productive process which results in less maintenance and repair costs

The absence of maintenance of the brushless motor of the BL models (replacement of brushes/rotor) guarantees **long lifetime** equal to **four times of a standard motor with brushes**

For BL models **the absence of the coal and copper dust** doesn't damage the internal components of the screwdrivers and reduces the maintenance and repair costs

The components of the tool's starting system avoid every electrical contact and **guarantees always reliable starts**

The **controller** (built into the driver unit), **sole for all range**, automatically cuts off the electrical supply to the screwdriver upon reaching the torque that has been set on the tool

They have a **control system with automatic motor shut off** that, interacting with the controller, cuts off the power supply to the tool upon reaching the established tightening value

They ensure **high repeatability** of the tightening torque and **great accuracy**, even with **very low torques**

The **sturdiness and long life** of the internal parts ensure constant, lasting performance as well as extremely reduced maintenance costs

Where very small screws have to be used the **micro screwdrivers CL2000 and BL 2000 ESD** are recommended since they guarantee **high repeatability of torque** starting from 0.02 Nm

The **BL models in the ESD version** (Electro Static Discharge) protect against any electrostatic discharge the assemblies of electronic components CL models in the ESD version are available upon request

Don't be satisfied with the maximum

Productivity

Considerable increase of the efficiency of the tightening cycle thanks to innovative systems

The internal parts ensure a high motor speed of rotation with consequent **reduction in the tightening time-cycle**

The extreme **simplicity in adjusting the tightening torque control system** permits to reduce the tool's starting time

The tightening torque control system reduces to a minimum the need for quality control at the end of assembly work, resulting in a **considerable increase in the tightening cycle output**

They come with a **device** that acts **both as driver unit and controller**: it guarantees excellent operation and fully exploits the capacities of the screwdriver

The driver unit supplies the correct voltage to the screwdriver and **offers a choice between two tool speeds of rotation**: the speed given by the screwdriver and a speed that is approx. 30% lower

The absence of maintenance operations guarantees high **productive continuity**

BL models in the version OPC permit also the **monitoring of the tightening cycle** avoiding the manual check of the assembled products

For CL and **α** models the **adjustment** of the torque control device is **easy and practical** through rotation of the external ring nut

Models CL and **α** may be combined with **the screw suction system** and **the selection tray** to make assembly operations quicker and more practical (see accessories available on request)

Perfection is in
your hands

Ergonomics

Optimization of the tool performances in regard to ergonomics and operator safety

For maximum operator's comfort and safeguard of the hand-arm system, all models (except mod. CL, α and BL2000...) **are supplied with a device to convert the starting mechanism from lever-start to push-to-start** (and viceversa) depending on type of application

These solutions ensure maximum safety of use due to **low voltage operation** (24 Volt) and **perfect thermal insulation**

Extremely small and lightweight for utmost operator comfort

All the models are fitted with a **handy, practical reversibility device**

In line with ergonomic requirements, they ensure **very low noise level, minimum vibrations and maximum safety** (low supply voltage)

They offer total **electromagnetic compatibility in the work environment**

Outstandingly lightweight from only 210 g.

All models are **fitted with a tool suspension device** to lessen operator effort

For ergonomic tightening operations on vertical surfaces that do not place a load on the hand-arm system, **auxiliary grips for transforming the straight grip into a pistol grip tool** are available on request

Naturally
Innovative

Ecology

Innovative systems designed paying even more attention with respect to environment and of its safeguard

More healthy and breathable working environments thanks to **absence of coal and copper dust** (motor without brushes)

Greater output of the motors guarantees **less electric energy consumptions**

These screwdrivers are made with **recyclable materials**; all the parts may therefore be easily disposed of and do not represent a hazard for environmental pollution or personal safety

The electrical solutions safeguard the workplace since there is absolutely **no oil fog in the air**, which is sometimes present when using air tools

Models in the ESD version (Electro Static Discharge); it is designed for **assembling electronic components** in order to protect against any electrostatic discharge. For other models, this option is possible only upon request.

Eco-contribution WEEE acquitted: Fiam carries out its obligations of producer, with full respect for the environment, and without any extra charge for the customer

The monitoring of tightening cycle accelerates your production cycles!

The BL - OPC models equipped with driver with screws counter BLOP-STC are **practical and inexpensive monitoring systems, poka-yoke type** (anti-errorsystem) to verify in real time the tightening cycle, guaranteeing the reliability of the tightening process regardless of the operator's ability.

The use of these systems accelerates the production cycles avoiding the manual check of the assembled products (for example to check the number of tightened screws) thus ensuring the good quality of the assembled product.



EUROPEAN
DIRECTIVE
2004/108:
ELECTROMAGNETIC
COMPATIBILITY

The electric screwdrivers are in **compliance with European Directive 2004/108** (15th December 2004).

They do not create any electromagnetic problems in the environment and are not influenced by them either. They are therefore suitable for operation even in presence of other electronic equipment, without compromising their regular operation.

All screwdrivers comply with directives in force.

Electric screwdrivers

Type of screwdrivers	Grip	Tightening torque on soft joint		Idle speed	Starting system	Reversibility	Weight	Dimensions (mm)	Power consumption	Accessories	Noise level	Vibrations		
		min.	max.										min.	max.
Model	Code	Type	Nm	in lb	r.p.m.	Type	Type	kg	lb	Øxl	Volt	Drive	dBA	m/s ²
CL 2000	111313960		0,02 ÷ 2	0.177 ÷ 1.77	680			0,21	0.462	28x166	24	HIOS H4	58	<2,5
CL 4000 NL	111313920		0,1 ÷ 0,5	0.885 ÷ 4.425	1000			0,38	0.836	33x195	24	⬡ F1/4"	58	<2,5
CL 6500 NL	111313925		0,3 ÷ 1,4	2.655 ÷ 12.39	900			0,64	1.408	37x235	24	⬡ F1/4"	58	<2,5
CL 7000 NL	111313930		0,5 ÷ 2,2	4.425 ÷ 19.47	750			0,75	1.65	37x255	24	⬡ F1/4"	58	<2,5
α 6500 NL	111313935		0,8 ÷ 2	7.08 ÷ 17.7	1500			0,68	1.496	37x235	24	⬡ F1/4"	58	<2,5
α 6500 HT NL	111313940		0,4 ÷ 2,6	3.54 ÷ 23.01	700			0,67	1.474	37x235	24	⬡ F1/4"	58	<2,5
Models available upon request														
CL 4000 PS NL	111313320		0,1 ÷ 0,5	0.885 ÷ 4.425	1000			0,43	0.946	37x197	24	⬡ F1/4"	58	<2,5
CL 6500 PS NL	111313310		0,3 ÷ 1,4	2.655 ÷ 12.39	900			0,64	1.408	37x235	24	⬡ F1/4"	58	<2,5
CL 7000 PS NL	111313315		0,5 ÷ 2,2	4.425 ÷ 19.47	750			0,75	1.65	37x235	24	⬡ F1/4"	58	<2,5

Brushless Electric Screwdrivers

Model	Code	Type	Nm	in lb	r.p.m.	Type	Type	kg	lb	Øxl	Volt	Drive	dBA	m/s ²
BL 5000	111313401		0,2 ÷ 1,2	1.77 ÷ 10.62	900			0,360	0.792	32x207	24	⬡ F1/4"	58	<2,5
BL 5020	111313402		0,5 ÷ 2	4.425 ÷ 17.7	750			0,360	0.792	32x207	24	⬡ F1/4"	58	<2,5
BL 7000 20	111313408		0,5 ÷ 1,5	4.425 ÷ 13.275	2200			0,640	1.408	36x239	24	⬡ F1/4"	58	<2,5
BL 7000X HT	111313403		0,7 ÷ 3,4	6.195 ÷ 30.09	740			0,640	1.408	36x239	24	⬡ F1/4"	58	<2,5

Brushless Electric Screwdrivers version ESD

Model	Code	Type	Nm	in lb	r.p.m.	Type	Type	kg	lb	Øxl	Volt	Drive	dBA	m/s ²
BL 2000 ESD	111313400		0,02 ÷ 0,2	0.177 ÷ 1.77	990			0,254	0.5588	26x172	24	HIOS H4	58	<2,5
BL 3000 ESD	111313409		0,2 ÷ 0,55	1.77 ÷ 4.8675	980			0,320	0.704	32x132	24	⬡ F1/4"	58	<2,5
BL 5000 ESD	111313407		0,2 ÷ 1,2	1.77 ÷ 10.62	900			0,360	0.792	32x207	24	⬡ F1/4"	58	<2,5
BL 5020 ESD	111313405		0,5 ÷ 2,0	4.425 ÷ 17.7	750			0,360	0.792	32x207	24	⬡ F1/4"	58	<2,5
BL 7000X HT ESD	111313404		0,7 ÷ 3,4	6.195 ÷ 30.09	740			0,640	1.408	36x239	24	⬡ F1/4"	58	<2,5

Brushless Electric Screwdrivers with cycle monitoring

Model	Code	Type	Nm	in lb	r.p.m.	Type	Type	kg	lb	Øxl	Volt	Drive	dBA	m/s ²
BL 2000 OPC	111313410		0,02 ÷ 0,2	0.177 ÷ 1.77	990			0,254	0.5588	26x172	24	HIOS H4	58	<2,5
BL 3000 OPC	111313411		0,2 ÷ 0,55	1.77 ÷ 4.8675	980			0,320	0.704	32x132	24	⬡ F1/4"	58	<2,5
BL 5000 OPC	111313412		0,2 ÷ 1,2	1.77 ÷ 10.62	900			0,360	0.792	32x207	24	⬡ F1/4"	58	<2,5
BL 5020 OPC	111313406		0,5 ÷ 2,0	4.425 ÷ 17.7	750			0,360	0.792	32x207	24	⬡ F1/4"	58	<2,5
BL 7000 OPC	111313413		0,7 ÷ 2,8	6.195 ÷ 24.78	960			0,640	1.408	36x239	24	⬡ F1/4"	58	<2,5

Legend

Reversibility: All models are suitable for tightening and untightening operation

Lever start

Push start

Lever start or push to start

All models (except mod. CL, α, BL 2000 ESD and BL 2000 OPC) permit to convert the starting mechanism from lever-start to push-to-start and viceversa

The torque values are purely indicative and may be influenced by the softness of the type of joint, by the type and length of the screw. For all further details, please apply to the Fiam Technical Consultancy Service.

- The tightening torque values has been measured in accordance with ISO 5393 standard.
- Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards.
- Vibrations level has been measured in accordance with ISO 8662-1 and ISO 8662-7 standard.
- Accessory drive: female hexagonal drive 1/4" 6,35 mm (ISO 1173); except for modd. BL 2000 ESD and BL 2000 OPC: they have HIOS H4 drive (see accessories on next page).
- The code number must be used when ordering.
- The quoted speeds have been measured using Fiam electrical driver units. With these driver units the idle speeds given in the table could vary by ± 10%.

Models available upon request

- Models with screws suction system
- Models version ESD for CL, α and BL... OPC

Standard equipment (supplied with the tool)

Models CL and α:

- Carbon brushes (except for CL 2000)
- 1 spring for minimum torque (except for α series)
- 3 bits (2 bits for crosslot screws for CL 2000)

Models BL:

- 3 bits (except modd. BL 2000 ESD and BL 2000 OPC: 2 bits)

For other models:

- Hanging ring
- Use and maintenance manual
- Eco-friendly packaging

Accessories available upon request for CL and α models

Driver CLT-60-EU-UK (for CL series)

It is necessary to **convert the local power feed** (230 Volt CA - 50 Hz) into direct current (20/30 Volt CC - 1,5 A max). It has a **built-in torque control device** able to stop automatically the power of the tool the moment the preset torque is reached. It offers a choice between two tool speeds of rotation: the speed given by the screwdriver and a speed that is approx. 30% lower.



Code	Power W	Weight Kg	Weight lb	Length mm	High mm	Depth mm	Length of cable supplied with m
676000090	65	0,8	1,76	88	52	210	1,8

Driver CLT-65-220-VDE (for α series)

It is necessary to convert the local power feed (230 Volt CA - 50 Hz) into direct current (20/30 Volt CC - 3,5 A max). It has a **built-in torque control device** able to stop automatically the power of the tool the moment the preset torque is reached. It offers a choice between two tool speeds of rotation: the speed given by the screwdriver and a speed that is approx. 30% lower.



Code	Power W	Weight Kg	Weight lb	Length mm	High mm	Depth mm	Length of cable supplied with m
676000085	68	4 ca.	8,8	182	132	140	1,8

Screws suction system

For easier and safer pick up and positioning of the screws; applicable on all CL, α screwdrivers: it is sufficient to match a **special head** connected with a vacuum pump. Available 4 types of heads (see chart). To the head is connected particular brass nozzle customized according to the screws or of the piece to be assembled, that you send us as sample. The bits too can be offered according to the types of screws.



Head

Suction head for	Code
CL - 4000 NL	676010002
CL - 65000 NL, CL - 7000 NL	676010003
α	676010018
CL - 2000	676010072

Vacuum pump

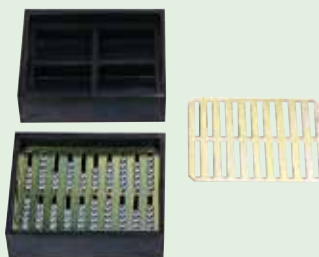
Necessary for the screw suction, it has 220Volt-50 Hz voltage and only takes 45 Watt power.



Model	Code
VP - 3 - 230EU	676000028

Shaker tray box

In order to vertically position the screws having the head on the top therefore making easy screw pick-up, you can use a **shaker tray box with interchangeable grid plates**. Grid width varies according to screws different shank diameter (maximum shank length 15 mm).



Model	Code
Shaker tray box	676010007

Grid plates

Screw shank \varnothing	Code
1,1	676010024
1,4	676010010
1,7	676010011
2,0	676010012
2,3	676010013
2,6	676010014
3,0	676010015
4,0	676010016

Angle head

A 90° angle head is available for the CL models of screwdrivers, which may be applied directly to the tool for tightening operations in restricted spaces (models CL - 2000, CL - 4000 NL and push-to-start models excluded). The head drive is fitted with a quick-change chuck for 1/4" bits. The head can rotate 360° in relation to the tool axis and must be fitted in place of the torque adjusting ring nut.



Angle head for	Code
CL - 6500 NL, CL - 7000 NL, α - 6500 NL, α - 6500 HT NL	676010001

Pistol grip

This accessory allows the CL and α models to be converted from straight grip to pistol grip screwdrivers. Starting is by push button. Not available in models CL - 2000, CL - 4000 NL.



Model	Code
Grip	676010031

Accessories available upon request for BL models

Driver T-70-BL

It is necessary to **convert the local power feed** (230 Volt CA - 50 Hz) into direct current (20/30 Volt CC - 2,5 A max).

It has a **built-in torque control device** able to stop automatically the power of the tool the moment the preset torque is reached.

It permits the **choice between two tool speed rotation**: the speed given by the screwdriver and a speed that is approx. 30% lower



Code	Power		Weight		Length		Length of cable supplied with
	W	Kg	lb	mm	mm	mm	
676000088	70	0,8	1.76	88	52	210	1,8

Driver with screws counter BLOP-STC

It can be used only with BL electric screwdrivers version OPC and connected only to one tool; besides features of the T -70 BL driver above described, it has the following features:

- Possibility to set **1 sequence of tightening**
- Each tightening sequence **can count up to 99 screws**
- For each tightening sequence, it is possible to **program the maximum number of tightening attempts for KO screws**
- **Automatic check of tightening time** which can be adjusted by setting the cycle time thus discriminating the different KO results
- **Visual indicators of the tightening status**
- **Electric signal for "end cycle OK"** to release pallet/jig (or manual with key selector)
- **Electric feed**: 110/220VAC, 50/60Hz

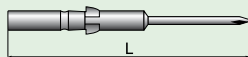
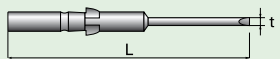
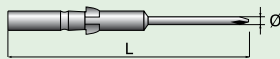


Code	Power		Weight		Length		Length of cable supplied with
	W	Kg	lb	mm	mm	mm	
676000089	80	1,850	4.07	130	80	220	1,5

BITS, SOCKETS, BALANCERS

Please see the "Accessories" catalogue

Bits for CL 2000, BL 2000 ESD and BL 2000 OPC



Imprint		mm		Length L.		Code	
Cross-slotted	PH. 00	ø 1,5		60 mm		601056005	
	PH. 0	ø 2,0		60 mm		601056010	
	PH. 0	ø 2,5		60 mm		601056015	
	PH. 1	ø 3,0		60 mm		601056020	
Slotted		t = 1,3	s = 0,3	60 mm		601016005	
		t = 1,5	s = 0,3	60 mm		601016010	
		t = 1,8	s = 0,4	60 mm		601016015	
		t = 2,0	s = 0,4	60 mm		601016020	
Torx	T3			60 mm		601086005	
	T4			60 mm		601086010	
	T5			60 mm		601086015	