

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

**Brushless electric screwdrivers BL**  
**Electric screwdrivers CL and  $\alpha$**

- 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  $\alpha$  models the **adjustment** of the torque control device is **easy and practical** through rotation of the external ring nut

Models CL and  $\alpha$  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,  $\alpha$  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  
ELECTROMAGNETIC  
COMPATIBILITY

The electric screwdrivers are in  
**compliance with European  
Directive 2014/30/UE.**

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.										
Model	Code	Type	Nm	in lb	r.p.m.	Type	Type	kg	lb	ØxL	Volt	Drive	dBA	m/s²
CL 2000	111313960		0,02 ÷ 0,2	0.177 ÷ 1.77	680			0,21	0.462	28x166	30	HIOS H4	58	<2,5
CL 4000 NL	111313920		0,1 ÷ 0,5	0.885 ÷ 4.425	1000			0,38	0.836	33x195	30	⬡ F1/4"	58	<2,5
CL 6500 NL	111313925		0,3 ÷ 1,4	2.655 ÷ 12.39	900			0,64	1.408	37x235	30	⬡ F1/4"	58	<2,5
CL 7000 NL	111313930		0,5 ÷ 2,2	4.425 ÷ 19.47	750			0,75	1.65	37x255	30	⬡ F1/4"	58	<2,5
α 6500 NL	111313935		0,8 ÷ 2	7.08 ÷ 17.7	1500			0,68	1.496	37x235	30	⬡ F1/4"	58	<2,5
α 6500 HT NL	111313940		0,4 ÷ 2,6	3.54 ÷ 23.01	700			0,67	1.474	37x235	30	⬡ 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	30	⬡ F1/4"	58	<2,5
CL 6500 PS NL	111313310		0,3 ÷ 1,4	2.655 ÷ 12.39	900			0,64	1.408	37x235	30	⬡ F1/4"	58	<2,5
CL 7000 PS NL	111313315		0,5 ÷ 2,2	4.425 ÷ 19.47	750			0,75	1.65	37x235	30	⬡ 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/s²
BL 5000	111313401		0,2 ÷ 1,2	1.77 ÷ 10.62	900			0,360	0.792	32x207	30	⬡ F1/4"	58	<2,5
BL 5020	111313402		0,5 ÷ 2	4.425 ÷ 17.7	750			0,360	0.792	32x207	30	⬡ F1/4"	58	<2,5
BL 7000 20	111313408		0,5 ÷ 1,5	4.425 ÷ 13.275	2200			0,640	1.408	36x239	30	⬡ F1/4"	58	<2,5
BL 7000X HT	111313403		0,7 ÷ 3,4	6.195 ÷ 30.09	740			0,640	1.408	36x239	30	⬡ 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/s²
BL 2000 ESD	111313400		0,02 ÷ 0,2	0.177 ÷ 1.77	990			0,254	0.5588	26x172	30	HIOS H4	58	<2,5
BL 3000 ESD	111313409		0,2 ÷ 0,55	1.77 ÷ 4.8675	980			0,320	0.704	32x132	30	⬡ F1/4"	58	<2,5
BL 5000 ESD	111313407		0,2 ÷ 1,2	1.77 ÷ 10.62	900			0,360	0.792	32x207	30	⬡ F1/4"	58	<2,5
BL 5020 ESD	111313405		0,5 ÷ 2,0	4.425 ÷ 17.7	750			0,360	0.792	32x207	30	⬡ F1/4"	58	<2,5
BL 7000X HT ESD	111313404		0,7 ÷ 3,4	6.195 ÷ 30.09	740			0,640	1.408	36x239	30	⬡ 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/s²
BL 2000 OPC	111313410		0,02 ÷ 0,2	0.177 ÷ 1.77	990			0,254	0.5588	26x172	30	HIOS H4	58	<2,5
BL 3000 OPC	111313411		0,2 ÷ 0,55	1.77 ÷ 4.8675	980			0,320	0.704	32x132	30	⬡ F1/4"	58	<2,5
BL 5000 OPC	111313412		0,2 ÷ 1,2	1.77 ÷ 10.62	900			0,360	0.792	32x207	30	⬡ F1/4"	58	<2,5
BL 5020 OPC	111313406		0,5 ÷ 2,0	4.425 ÷ 17.7	750			0,360	0.792	32x207	30	⬡ F1/4"	58	<2,5
BL 7000 OPC	111313413		0,7 ÷ 2,8	6.195 ÷ 24.78	960			0,640	1.408	36x239	30	⬡ 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 8662-2 standard.
- Accessory drive: female hexagonal drive 1/4"; 6,35 mm (ISO 1173); except for mod. 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 crossslot screws for CL 2000)

#### Models BL:

- 3 bits (except mod. 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 $\alpha$ models

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

It is necessary to **convert the local power feed** (100/240 Volt CA - 50/63 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	Weight	Length	High	Depth	Length of cable supplied with	
	W	Kg	lb	mm	mm	mm	m
676000090	65	0.8	1.76	88	52	210	1.8

### Driver CLT-65-220-VD E (for $\alpha$ series)

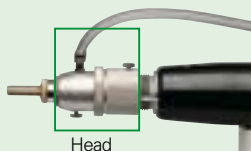
It is necessary to convert the local power feed (230 Volt CA - 50 Hz) into direct current (20/30 Volt CC - 3,5 A max). It has a **built-in torque control device** able to stop automatically the power of the tool the moment the preset torque is reached. It offers a choice between two tool speeds of rotation: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



Code	Power	Weight	Length	High	Depth	Length of cable supplied with	
676000085	W 68	Kg 4 ca.	lb 8.8	mm 182	mm 132	mm 140	m 1.8

### Screws suction system

For easier and safer pick up and positioning of the screws; applicable on all CL,  $\alpha$  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
$\alpha$	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

### 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, $\alpha$ - 6500 NL, $\alpha$ - 6500 HT NL	676010001

### Pistol grip

This accessory allows to be converted from straight grip to pistol grip screwdrivers.

Starting is by push button. Not available in models CL - 2000, CL - 4000 NL.

For the range BL is available only for the model BL 7000.



Model	Code
Grip for CL and $\alpha$	676010031
Grip for BL 7000	676010114

## 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	High	Depth	Length of cable supplied with	
676000088	W	Kg	lb	mm	mm	m	
	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

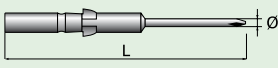
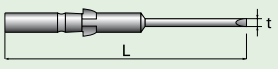
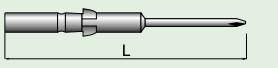


Code	Power	Weight	Length	Height	Depth	Length of cable supplied with	
	W	Kg	lb	mm	mm	mm	m
676000089	80	1,850	4.07	130	80	220	1,5

## 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

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