

HIOS®

New Quality for Automation.

New brushless screwdrivers for automation, feature high durability and stable torque accuracy for use on XY robots or automatic assembly machines.

For Automatic Machine
Brushless® Screwdriver
BLF Series





Contents

For Automatic Machine

01 **BLF Series**

Specifications

Approximate Guidance of Output Torque

Exterior Dimensions

Vacuum pick up driver

04 **BLFQ Series**

Exterior Dimensions

Deep Hole Fastening Vacuum pick up driver

07 **BLFR Series** (Special order)

Exterior Dimensions

Accessories and peripherals

10 **Accessories**

11 **Power supply**



Characteristics of "BLF" automated screwdriver

- Simplified controls and increased durability.
- Tools provide accurate torque for uniform fastening quality.
- 11 different RPM settings available at both the high and low speed setting.
- The BLFQ and BLFR versions are available for vacuum pick up, the new BLFR versions are designed for fasteners located in deep recesses and support the bit to minimize run-out.
- The power supply can run the tool in reverse and switch between two speed settings.
- All model drivers share a common mount to simplify changing models as requirements change.
- Drivers have a round body to simplify mounting.



BLF Series

BLF-2000



BLF-5000



BLF-7000



BLF-7000X



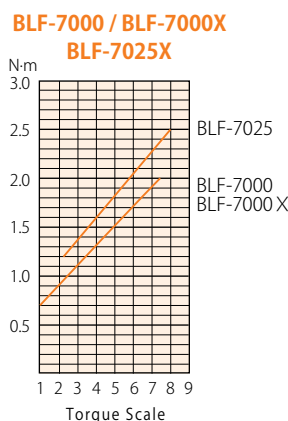
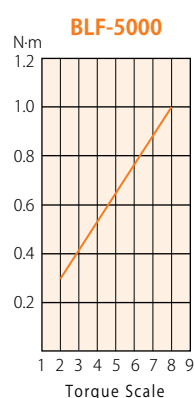
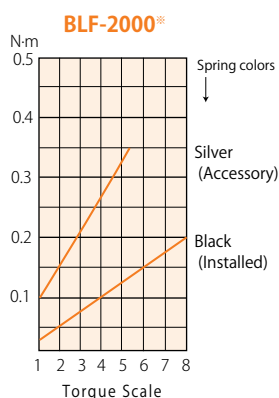
BLF-7025X



BLF Series Specifications

Model name	Standard		BLF-2000	BLF-5000	BLF-7000	BLF-7000X	BLF-7025X
	Suction (Vacuum)	BLFQ Series BLFR Series	BLFQ-2000	BLFQ-5000 BLFR-5000	BLFQ-7000	- BLFR-7000X	- BLFR-7025X
Controlled Torque Range	N•m (kgf•cm)		0.03-0.35 (0.3-3.5)	0.3-1 (3-10)	0.7-2 (7-20)	0.7-2 (7-20)	1.2-2.5 (12-25)
Torque Switching			Steppless Adjustment	Steppless Adjustment	Steppless Adjustment	Steppless Adjustment	Steppless Adjustment
Unloaded Rotation Speed (r.p.m) +/-10%	HI 11 Steps (05 to 15)		120-345	115-320	150-450	150-450	120-350
	LOW 11 Steps (20 to 30)		690-975	660-940	495-735	495-735	400-600
Available Screws (mm)	Machine Screw		1.0-2.3	2.0-3.0	3.0-4.0	3.0-4.0	3.0-4.0
	Tapping Screw		1.0-2.0	2.0-2.6	3.0-4.0	3.0-4.0	3.0-4.0
Bit type	Standard		Hios H4	Hios H5 and shank 5HEX	Hios shank H5	HEX shank 1/4HEX	HEX shank 1/4HEX
	Suction (Vacuum)	BLFQ Series				-	-
		BLFR Series	-	-	HEX shank 1/4HEX	HEX shank 1/4HEX	
Power Supply	BLT-AY-61		○	○	-	-	-
	BLT-AY-71		-	-	○	○	○
Weight(g)	BLF Series		315g	470g	700g	700g	700g
	Suction (Vacuum)	BLFQ Series	390g	560g	830g	-	-
		BLFR Series	-	700g	-	1,070g	1,070g
Accessories	Spring		Silver	-	-	-	-
	Driver Cord (m)		3m (10P)	3m (10P)	3m (10P)	3m (10P)	3m (10P)

Output Torque guide (at HI input)



*For the torque adjustment spring for BLF-2000, two types are available. The silver spring for high torque (accessory), the black spring for low torque (installed in the main body). Please select a suitable one for your work.

- The torque lines in the guideline tables show values measured when the rotation speed is set to 30. Use them for guidance.
- Torque measurement is performed using a combination of a torque meter (HP) and fidaptor manufactured by HIOS.

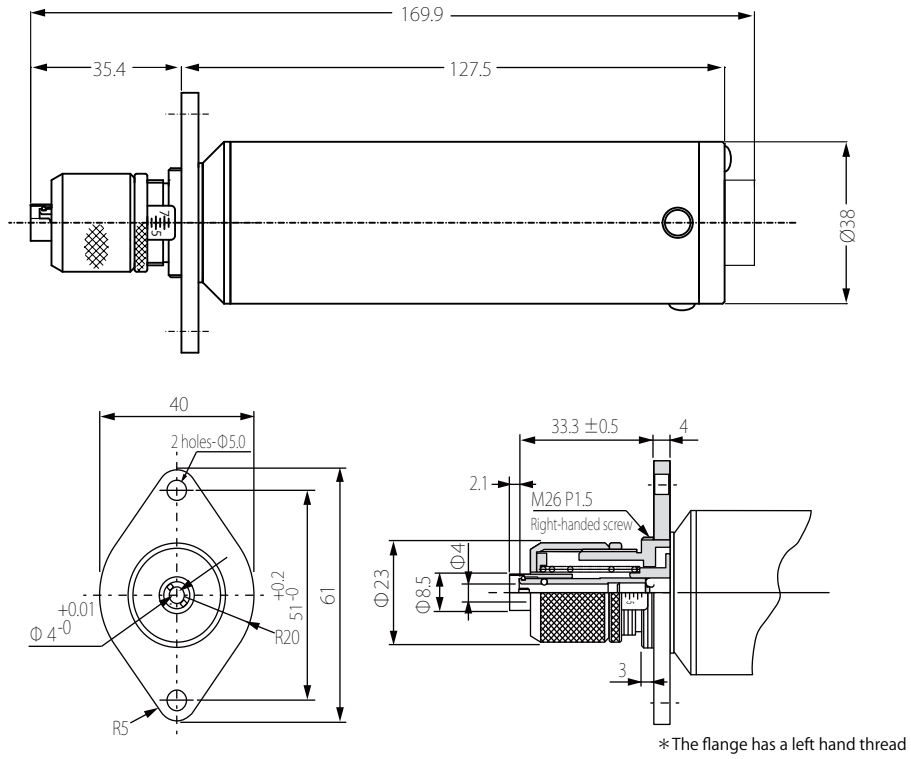
Dimensions of BLF series

DXF File

Details of the dimensions are available from HIOS web site as dxf format.
www.hios.com

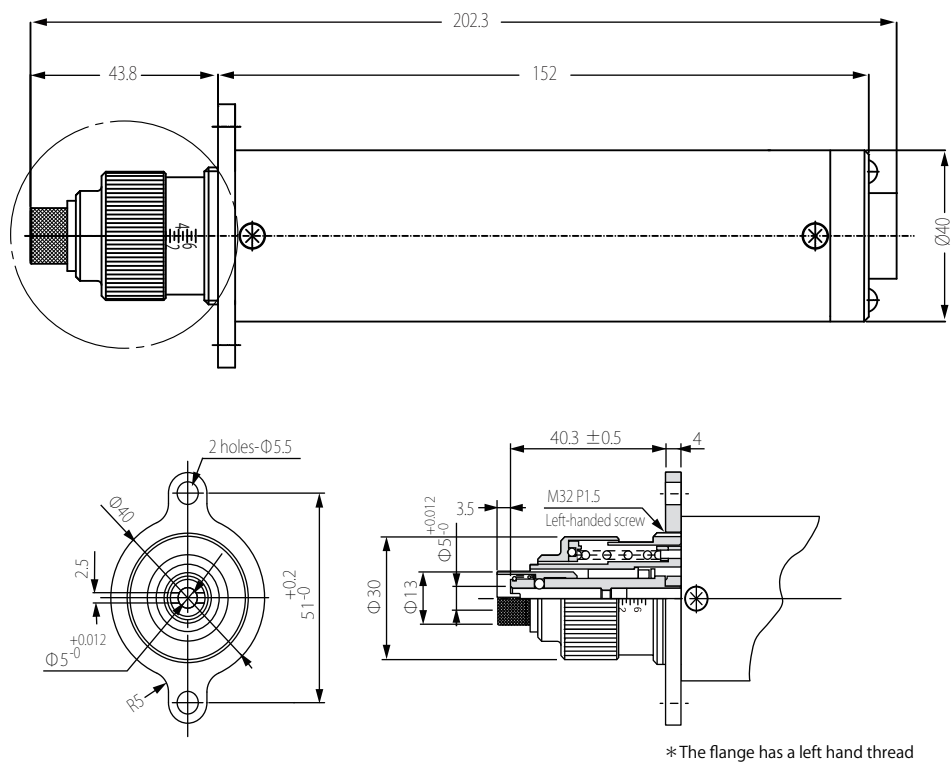
BLF-2000 (Hios H4)

Unit : mm



BLF-5000 (Hios H5)

Unit : mm



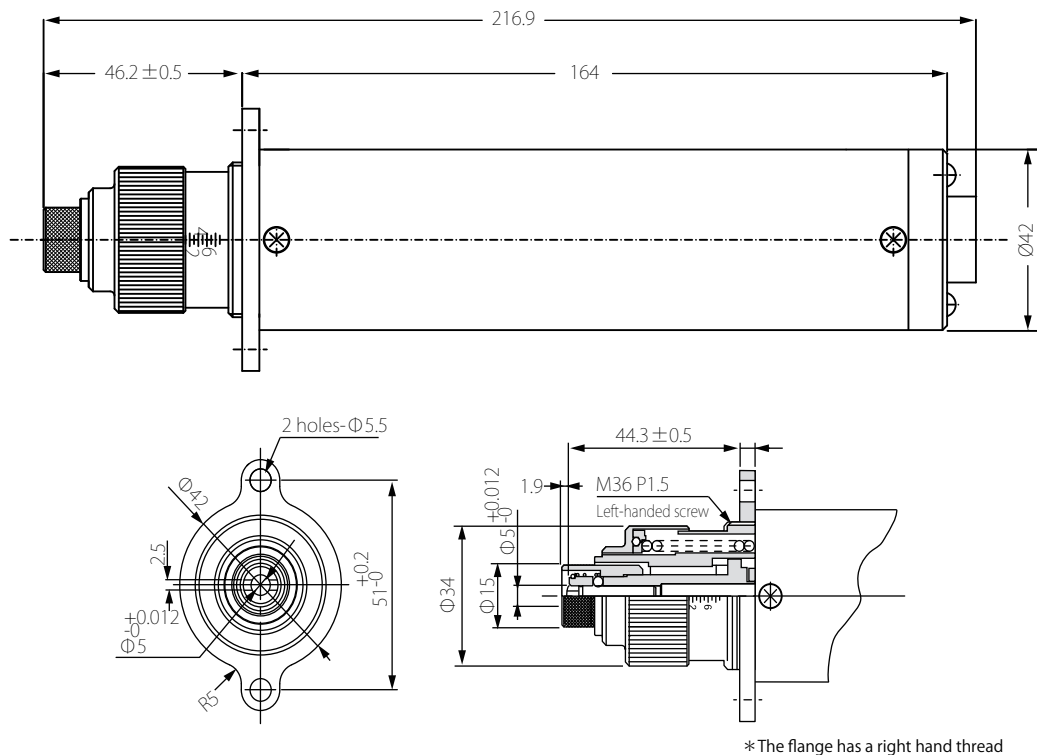
Dimensions of BLF series

DXF File

Details of the dimensions are available from HIOS web site as dxf format.
www.hios.com

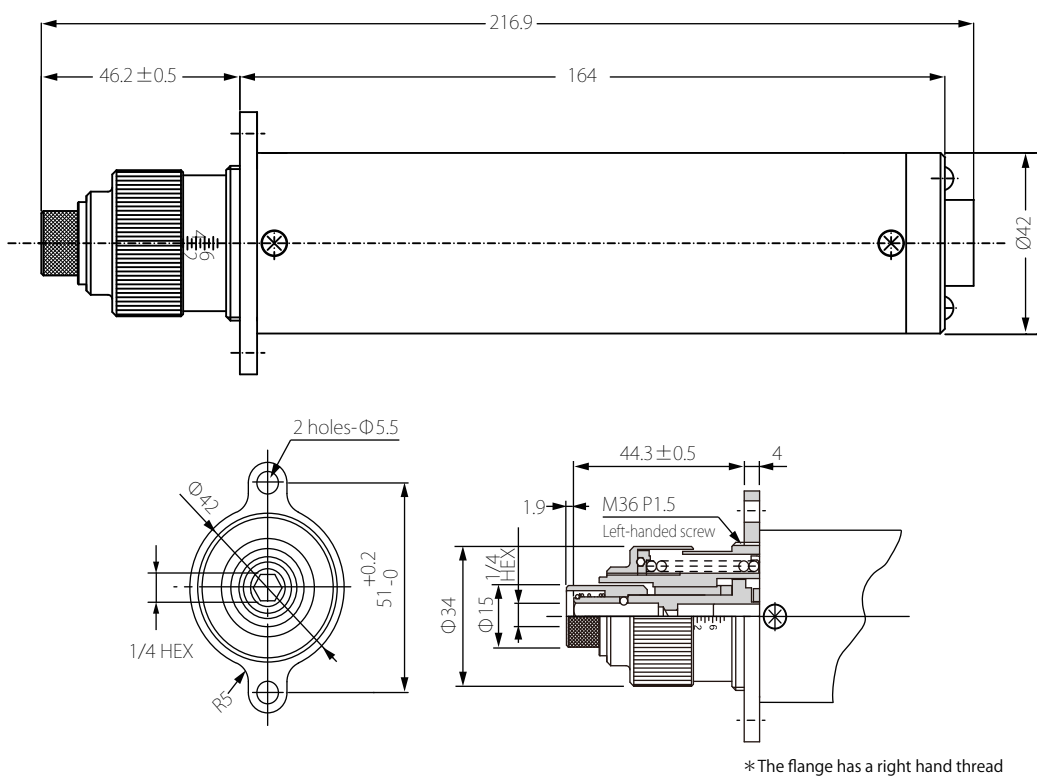
BLF-7000 (Hios H5)

Unit : mm



BLF-7000X / BLF-7025X (1/4HEX)

Unit : mm





Suction (Vacuum) Attachment BLFQ Series

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Compatible screwdrivers **BLFQ-2000 / BLFQ-5000 / BLFQ-7000**

Construction of Suction (Vacuum pick up) Screwdrivers

Power Supply (Option)
BLT-AY-61 / BLT-AY-71

Vacuum pump (Option)
VP-3

Suction unit (Option)

- A Mouthpiece
- B Bit
- C Suction Attachment Assy

Appearance of the suction unit

List of Suction(Vacuum) Attachment accessories (Option)

Model	(A) Mouthpiece	(B) Bit	(C) Suction Attachment Assy	
BLQ-2000	F3-Standerd18mm (Refer to P.6.)	HIOS Shank H4 60mm (Refer to P.6.)	BLFQ2-SET	Accessories: Tube3.5m (I/D:Ø4×O/D:Ø7)
BLQ-5000	F6-Standerd31mm (Refer to P.6.)	HIOS Shank H5 100mm (Refer to P.6.)	BLFQ5-SET	
BLQ-7000	F6-Standerd31mm (Refer to P.6.)	HIOS Shank H5 100mm (Refer to P.6.)	BLFQ7-SET	

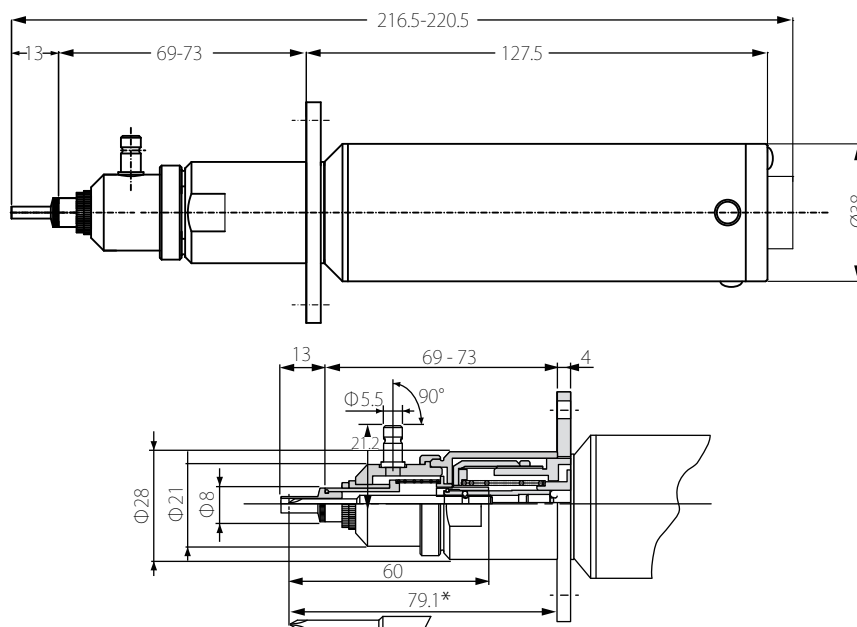
Note: If the bit has the HEX Shank with the width across flats of 6.35mm (1/4HEX), the Suction Attachment cannot be used.

Dimensions of BLFQ series

BLFQ-2000 (Mouthpiece: F3 Length: 18mm as standard)

- For bit H4-60mm, dimension from tip of bit to flange is 79.1mm
- Dimension of *part depends on the actual length of bit.

Unit : mm



Dimensions of BLFQ series

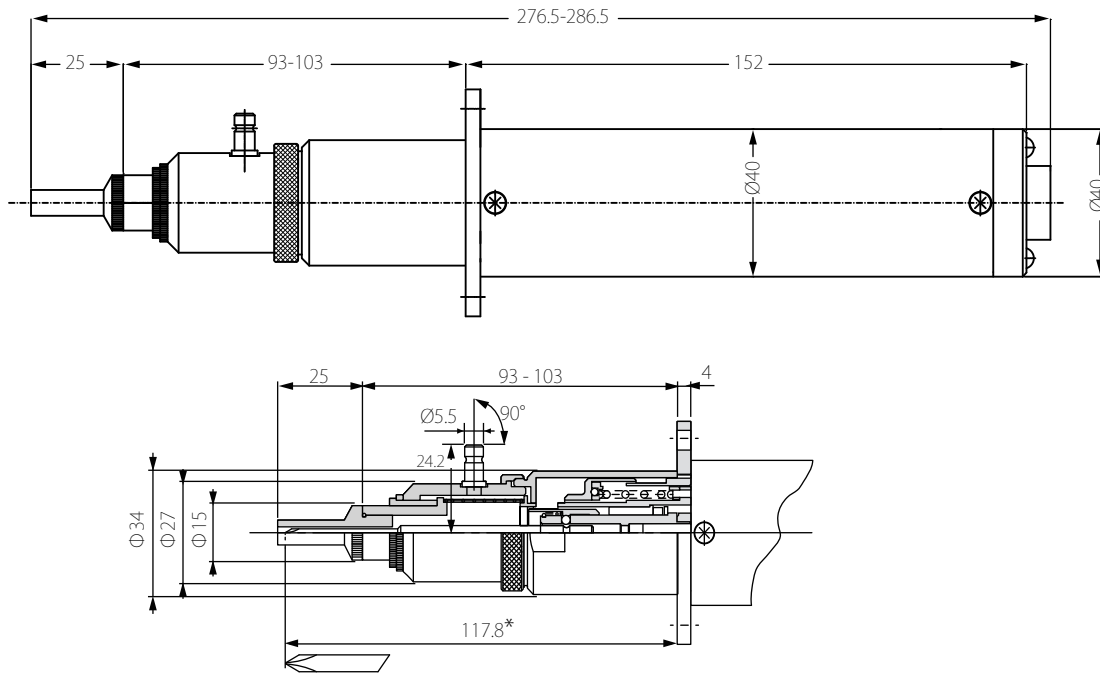
DXF File

Details of the dimensions are available from HIOS web site as dxf format.
www.hios.com

BLFQ-5000 (Mouthpiece: F6 Length: 31 mm as standard)

Unit : mm

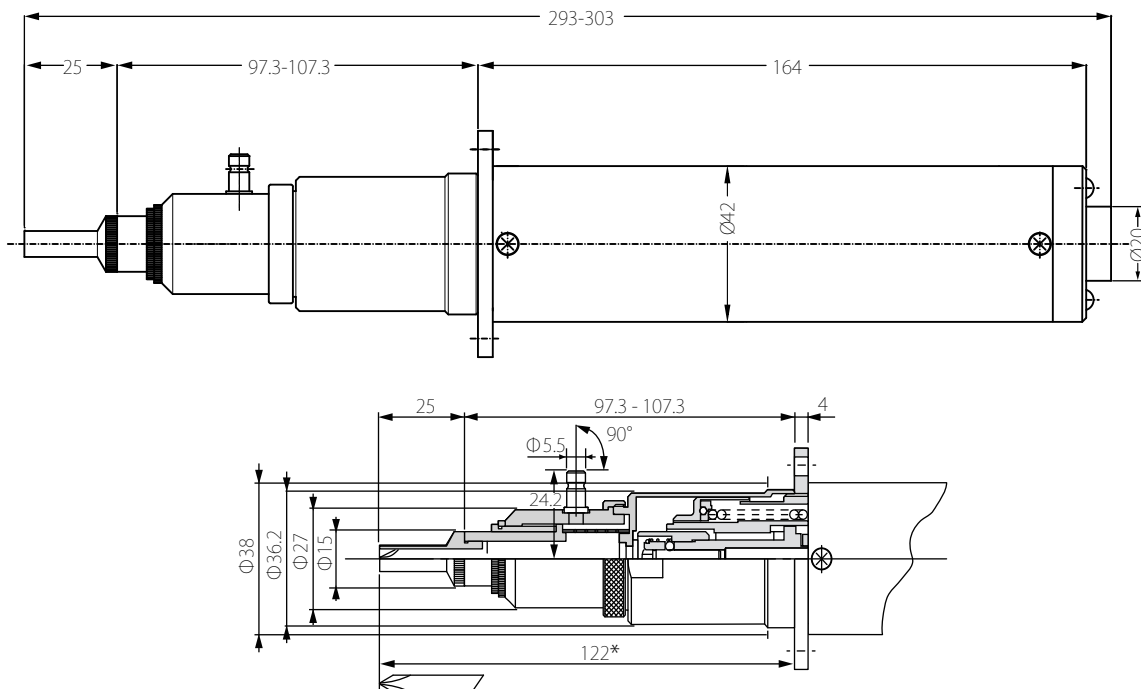
- For bit H5-100mm, dimension from tip of bit to flange is 117.8mm
- Dimension of *part depends on the actual length of bit.



BLFQ-7000 (Mouthpiece: F6 Length: 31 mm as standard)

Unit : mm

- For bit H5-100mm, dimension from tip of bit to flange is 117.8mm
- Dimension of *part depends on the actual length of bit.



(A) Mouthpiece

BLFQ-2000

F3 Standard 18 mm (total length)

Diagram of Mouthpiece

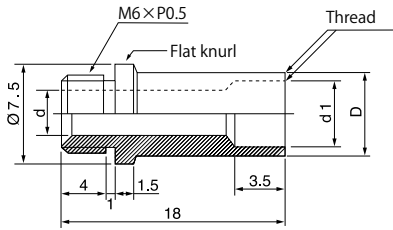


Table of Mouthpieces and Fasteners Standard parts are of BS only.

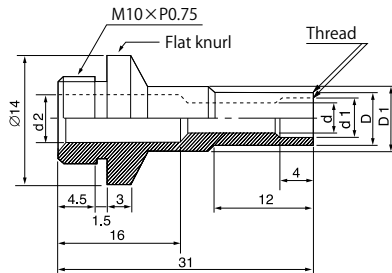
Order No.	Standard Mouthpiece Dimensions (mm)			Type of screw head configuration		
	D	d	d1	JIS Cross recess head (Small Screw)	JCIS Cross recess head	JIS Slotted head (Small Screw)
F3-00	7.5			User-finished part	User-finished part	User-finished part
F3-01	3.3	2.1	2.1		type 1 M1.4	
F3-02	3.6	2.6	2.6		type 1 M1.7/type 3 M1.4	
F3-03	4.1	3.1	3.1		type 1 M2.0/type 3 M1.7	
F3-04	4.6	3.6	3.6	Pan, Round M2.0	type 1 M2.3/type 3 M2.0	Pan, Round, Flat M2.0/Countersunk, Oval countersunk M1.7
F3-05	5.1	4.1	4.1	Pan, Round M2.3/Countersunk, Oval countersunk M2.0	type 1 M2.6/type 3 M2.3	Countersunk, Oval countersunk M2.0
F3-06	5.8	4.3	4.5	Pan, Round M2.6	type 3 M2.6	Binding M2.0
F3-07	7.0	4.3	5.5	Pan, Round M3.0/Binding M2.6		Pan, Round, Flat M3.0/Binding M2.6
F3-10	5.5	4.3	4.3	Binding M2.0		Pan, Round, Flat M2.3
F3-11	6.0	4.0	4.9	Binding M2.3		Binding M2.3
F3-15	3.8	2.8	2.8			Pan, Round, Flat M1.4
F3-16	3.5	2.5	2.5			Countersunk, Oval countersunk M1.2
F3-17	4.3	3.3	3.3			Pan, Round, Flat M1.7

● Consult us for special order products with other lengths or dimensions. ● Mouthpieces are supplied in packs of three.

BLFQ-5000 / BLFQ-7000

F6 Standard 31 mm (total length)

A Diagram of Mouthpiece



B Diagram of Mouthpiece

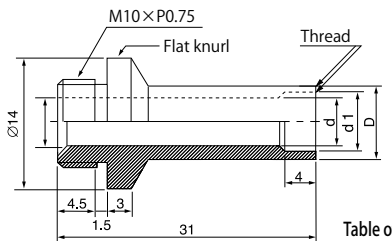


Table of Mouthpieces and Fasteners Standard parts are of BS only.

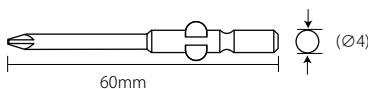
Diagram	Order No.	Standard Mouthpiece Dimensions (mm)					Type of screw head configuration	
		D	D1	d	d1	d2	JIS Cross recess head (Small Screw)	IS Slotted head (Small Screw)
B	F6-00	8.0		Blank			User-finished part	User-finished part
A	F6-01	4.6	7.0	3.5	3.6	5.5	Pan, Round M2.0	Pan, Round M2.0
	F6-02	5.1	7.0	3.5	4.1	5.5	Pan, Round M2.3/Countersunk, Oval countersunk M2.0	Pan, Round M2.3
	F6-03	5.8	7.0	3.5	4.5	5.5	Pan, Round M2.6/Binding, Truss M2.0	Binding, Truss M2.0
B	F6-04	7.0	-	5.5	5.5	-	Pan, Round M3.0/Binding M2.6	Pan, Round M3.0/Binding M2.6
	F6-05	7.5	-	5.5	6.0	-	Countersunk, Oval countersunk M3.0	Truss M2.6
	F6-06	8.5	-	5.5	7.0	-	Pan, Round M4.0/Truss M3.0	Pan, Round M4.0/Truss M3.0
A	F6-09	6.5	7.0	3.5	5.2	5.5	Countersunk, Oval countersunk M2.6	Truss M2.3
B	F6-10	14.0		Blank			User-finished part	User-finished part
	F6-11	7.7	-	5.5	6.3	-	Binding M3.0	Binding M3.0
	F6-13	9.7	-	5.5	8.3	-	Binding M4.0	
	F6-16*	9.4	-	5.5	8.0	-	Countersunk, Oval countersunk M4.0	
	F6-22*	9.7	-	7.5	8.3	-		Binding M4.0

*special order ● Consult us for special order products with other lengths or dimensions. ● Mouthpieces are supplied in packs of three.

(B) Compatible Bits

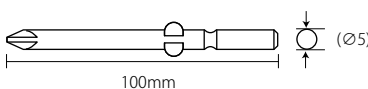
BLFQ-2000

H4(Ø4) Total length 60mm



BLFQ-5000 / BLFQ-7000

H5(Ø5) Total length 100mm



Head recess	Screw size	Adaptive screwdriver bit	Order code
JIS Cross recess head	M2.0-M2.6	BP-H4- # 1-3.0-40(60)	BP4130040(60)
	M3.0	BP-H4- # 2-4.0-40(60)	BP4240040(60)
	M1.4Class,Class1	BP-H4- # 0-1.8-40(S)	BP4018040(S)
JCIS Cross recess	M1.4-M1.7	BP-H4- # 0-2.0-40(60)	BP4020040(60)
	M2.0-M2.6	BP-H4- # 0-2.5-40(60)	BP4025040(60)
JIS Slotted head	M1.2	BS-H4-2.0-40(60)	BS420040(60)
	M1.4	BS-H4-2.5-40(60)	BS425040(60)
	M1.7-M2.0	BS-H4-3.0-40(60)	BS430040(60)
	M2.3-M3.0	BS-H4-4.0-40 (60)	BS440040(60)

● The () in the list means total length of bit. ● For special order item 1.8x40, please contact HIOS distributors.

Head recess	Screw size	Adaptive screwdriver bit	Order code
JIS Cross recess head	M2.0-M2.6	BP-H5- # 1-3.0-100	BP5130100
	M3.0-M5.0	BP-H5- # 2-5.0-100	BP5250100
JCIS Slotted head	M3.0-M4.0	BS-H5-5.0-100	BS550100

● Truss Use "+ #1" for M3.0.



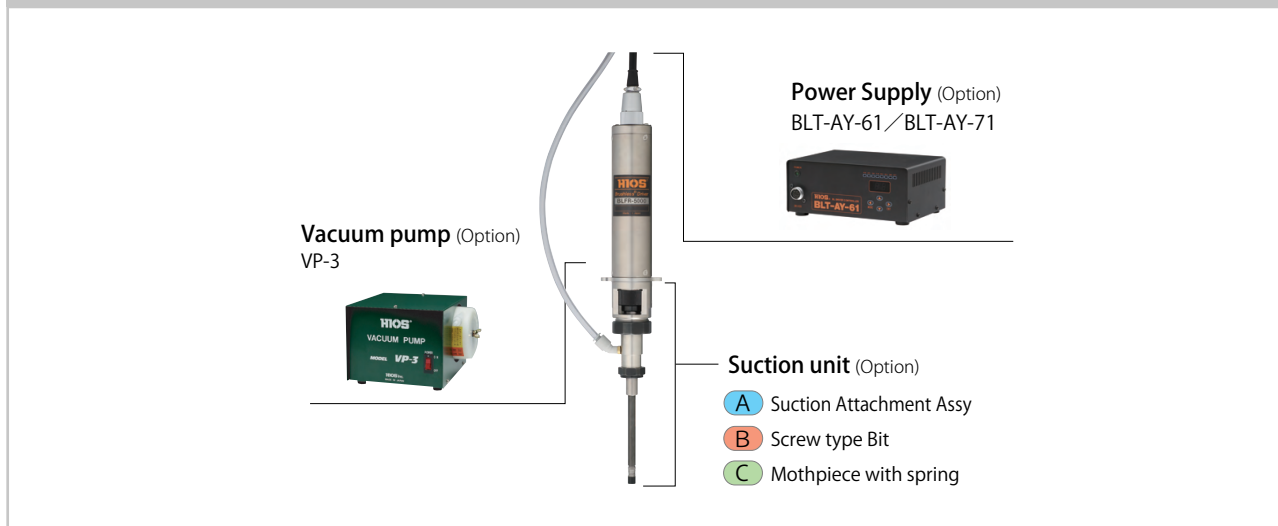
For deeply recessed screws

Special order **BLFR Series**

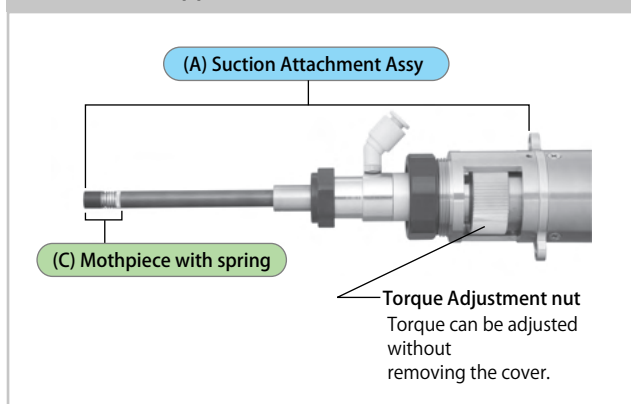
The BLFR Mouthpiece is double mouthpiece structure with a spring. There are 2 types of those. One is a self-adjustable inner mouthpiece type. The other one is a self-adjustable outer mouthpiece type. There is another special mouthpiece that does not touch work piece which prevents work piece from damaging. The long Bit Holder prevents cross threaded screws.

Compatible models BLFR-5000 / BLFR-7000X / BLFR-7025X

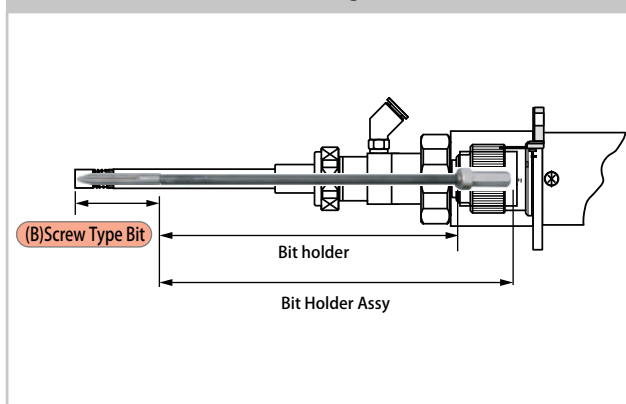
Construction of Suction (Vacuum pick up) Screwdrivers



Appearance the suction unit



Internal Configuration



List of Suction(Vacuum) attachment / Option

Model	(A) Suction Attachment ASSY*	(B) Screw Type Bit			(C) Mothpiece with spring
		Tip Shape	Order Code	Length	
BLFR-5000	BLFR5-SA	+	# 1	RBP4140S	40mm
			# 2	RBP4240S	
BLFR-7000X	BLFR-7-SA	+	# 1	RBP4140S	40mm
			# 2	RBP4240S	
BLFR-7025X	BLFR7-SA	+	# 1	RBP4140S	40mm
			# 2	RBP4240S	

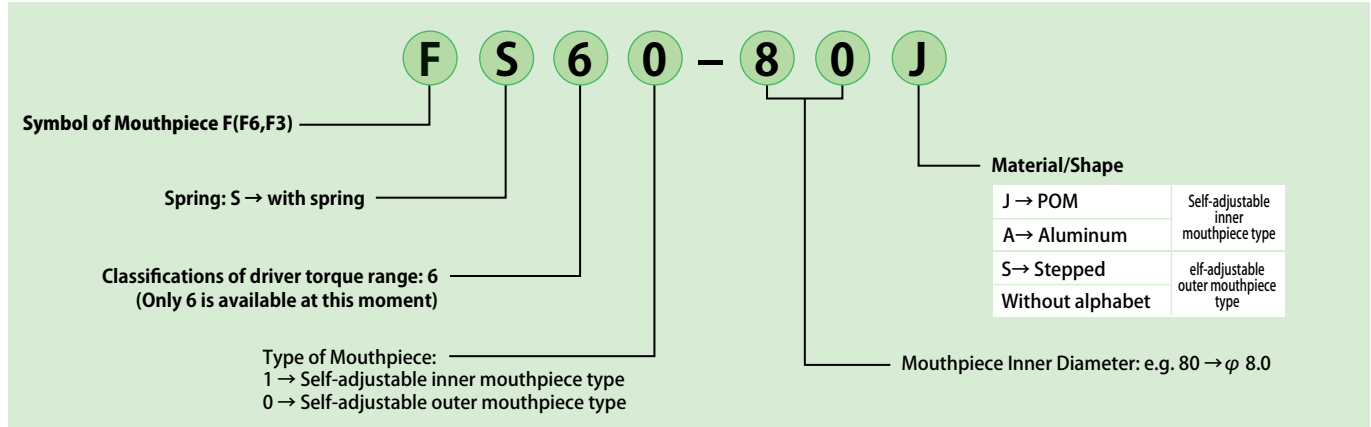
* Vinyl tube is not included. Available as option: RM-0850, order by the meter)

【Hose size】Inner diameter \varnothing 4.6 × Outer diameter \varnothing 6

(C) Mouthpiece with spring

BLFR-5000 / BLFR-7000X / BLFR-7025X

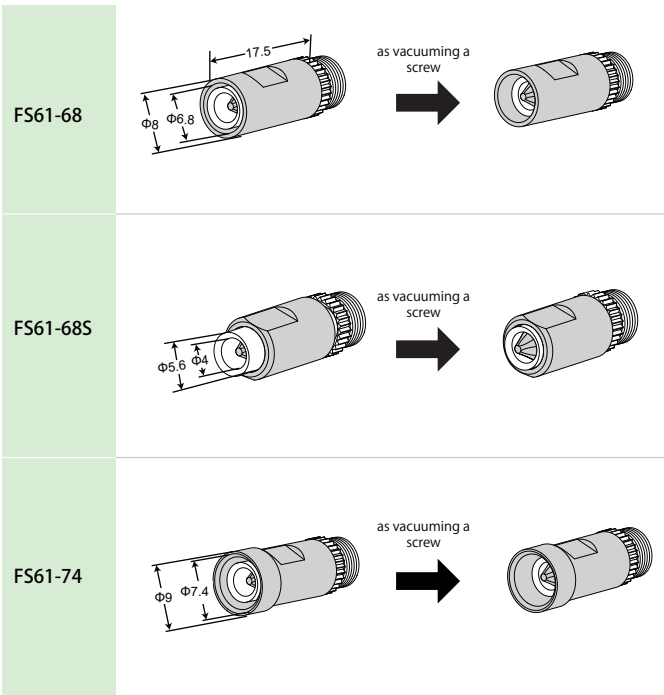
Identification of the BLFR Mouthpiece Order Code



Specifications

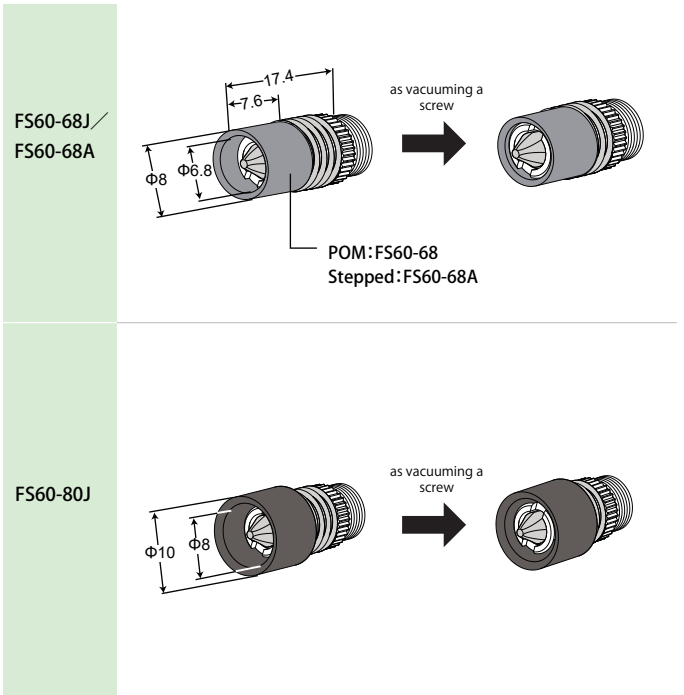
Self-adjustable inner mouthpiece type

Order Code



elf-adjustable outer mouthpiece type

Order Code



Adaptive screw size indications

	Screw Size	M2.6			M3.0			M4.0		
		Pan	Binding	Truss	Pan	Binding	Truss	Pan	Binding	Truss
Model	BLFR-5000									
	BLFR-7000X		FS61-68		FS61-68		FS60-68J	FS60-68J	-	-
	BLFR-7025X		FS61-68S		FS61-68S		FS60-68A	FS60-68A	FS60-80J	
							FS61-68S	FS61-68S		
							FS61-74	FS61-74		

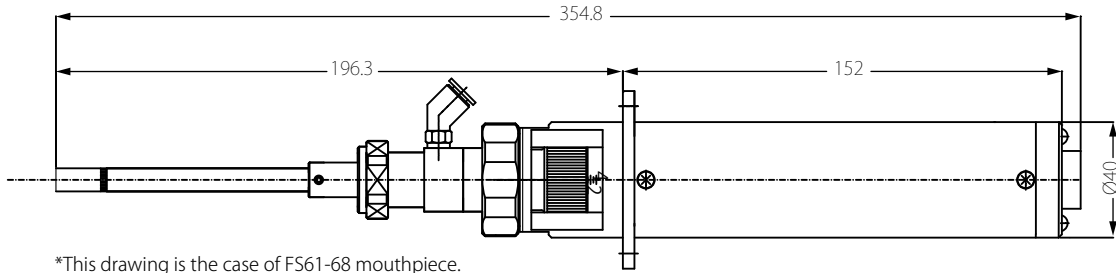
Dimensions of BLFR series

DXF File

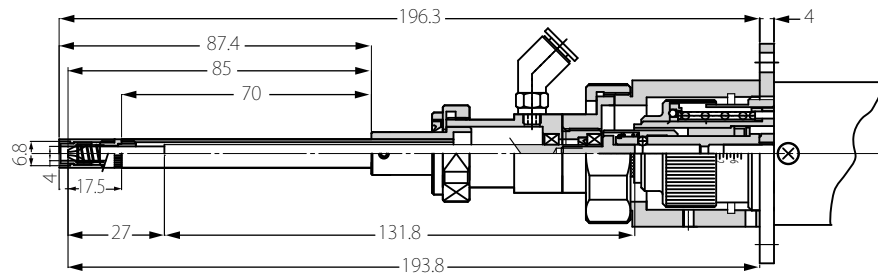
Details of the dimensions are available from HIOS web site as dxf format.
www.hios.com

BLFR-5000

Unit : mm

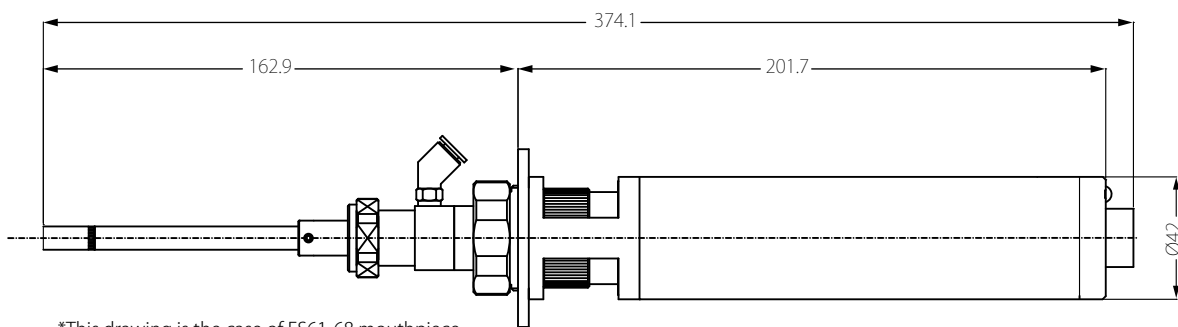


*This drawing is the case of FS61-68 mouthpiece.

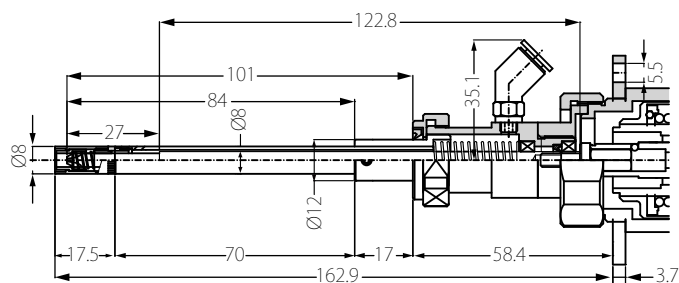


BLFR-7000X / BLFR-7025X

Unit : mm



*This drawing is the case of FS61-68 mouthpiece.





Power supply for Brushless drivers for automated machines

2WS(2 Speed) and REV(Reversing) capabilities formerly optional are in these power supply as standard. Can be connected to external devices, such as a PLC to control the direction and speed of driver rotation. Interface connector is slot type and easy to handle.

Model: BLT-AY-61 (for one screwdriver)

Multiple input (AC100V-240V)
Applicable screwdrivers:
BLF-2000
BLF-5000

RoHS CE

Primary input power source	AC100-240V, 47-63Hz
Secondary output voltage	LOW: 5V-15V, HI: 20V-30V (LOW and HI: switchable in 11 steps each)
External dimensions (mm)	202(W) × 143(D) × 87(H)mm
Weight (Kg)	1.75kg
Accessories	Power supply cord 1.8m with ground wire (1pc), Terminal block connector 1pc
Plug Type	A-1 / A2 / A3 / C / BF / S

Model: BLT-AY-71 (for one screwdriver)

Multiple input (AC100V-240V)
Applicable screwdrivers:
BLF-7000
BLF-7000X
BLF-7025X

RoHS

Primary input power source	AC100-240V, 47-63Hz
Secondary output voltage	LOW: 5V-15V, HI: 20V-30V (LOW and HI: switchable in 11 steps each)
External dimensions (mm)	202(W) × 143(D) × 87(H)mm
Weight (Kg)	1.75kg
Accessories	Power supply cord 1.8m with ground wire (1pc), Terminal block connector 1pc
Plug Type	A-1 / A2 / A3 / C / BF / S

* For left hand screws, please contact HIOS distributors.

* The power supply should be compatible with your screwdriver. Please check the combination before purchase.

Plug type

Type A-1 100V		Type C 220V	
Type A-2 120V		Type BF 220V-240V	
Type A-3 220V-240V		Type S 220V-240V	

Rotation speed of driver and its possible output torque.

Model	BLF-2000			BLF-5000			
	Rotation setting	Rotation Speed (r.p.m)	Torque (N·m)		Rotation Speed (r.p.m)	Torque (N·m)	
			Max.	Min.		Max.	Min.
LOW 11 steps	05	120	0.35	0.03	115	0.6	0.3
	06	150					
	07	165					
	08	187					
	09	210					
	10	232					
	11	270					
	12	285					
	13	300					
	14	315					
	15	345					
HIGH 11 steps	20	690	0.35	0.03	660	1.2	0.3
	21	720					
	22	750					
	23	780					
	24	810					
	25	825					
	26	870					
	27	975					
	28	975					
	29	975					
	30	975					

Model	BLF-7000 / BLF-7000X				BLF-7025X		
	Rotation setting	Rotation Speed (r.p.m)	Torque (N·m)		Rotation Speed (r.p.m)	Torque (N·m)	
			Max.	Min.		Max.	Min.
LOW 11 steps	05	150	1.1	0.8	120	1.4	1.2
	06	180					
	07	210					
	08	240					
	09	270					
	10	300					
	11	330					
	12	360					
	13	390					
	14	420					
	15	450					
HIGH 11 steps	20	495	2	0.8	400	2.5	1.2
	21	510					
	22	540					
	23	570					
	24	600					
	25	615					
	26	645					
	27	735					
	28	735					
	29	735					
	30	735					

* For the unloaded rotation speed, consider the value in the chart with the range of ±10%.

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ISO9001:
Headquarters/Yamagata Factory



ISO14001:
Headquarters/Yamagata Factory