

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

Brushless screwdrivers for automatic assembly machines



Vacuum pick up screwdrivers



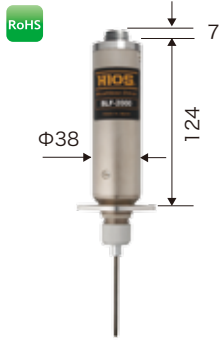
BLF Damper Unit

Power supply for brushless screwdrivers for automatic machines



- 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-2000



weight: Approx. 315g

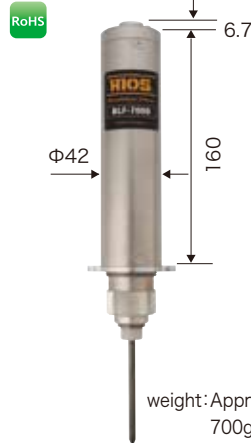
Unit: mm

BLF-5000



weight: Approx. 470g

**BLF-7000/BLF-7000X
BLF-7025X**



weight: Approx. 700g

Compatible power supply

Power Supply for Brushless Screwdriver "BLF series"

BLT-AY-6 I



BLT-AY-7 I



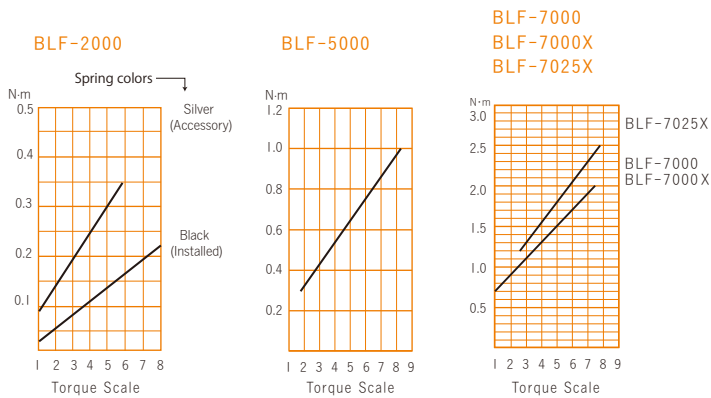
Combinations

Screwdriver BLF-2000 / BLF-5000	+	Power supply BLT-AY-6 I
BLF-7000 / BLF-7000X BLF-7025X	+	BLT-AY-7 I

Variation

Suction BLFQ
For deep hole fastening Suction BLFR (special order)

Approximate Guidance of Output Torque (at HI input)



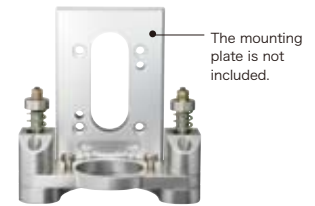
*For the torque adjustment spring for BLF-2000, two types are available. The silver spring for high torque (accessory), the black spring for low torque (installed in the main body). Please select a suitable one for your work.
 •The torque lines in the guideline tables show values measured when the rotation 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.

Accessories

BLF Damper Unit

This unit absorbs the impact against the workpiece while the Z-axis is descending and reduces the load on screw and screwdriver.

Model BLF-DP



	Initial load 0mm	Approx.0.12N (1.2Kg)
Stroke 7mm		Approx.0.6 N (6Kg)

Specifications

		Standard	BLF-2000	BLF-5000	BLF-7000	BLF-7000X	BLF-7025X
Model name	Vacuum	BLFQ	BLFQ-2000	BLFQ-5000	BLFQ-7000	BLFR-7000X	BLFR-7025X
		BLFR (special order)		BLFR-5000			
Controlled Torque Range	N·m		0.03-0.35	0.3-1	0.7-2	0.7-2	1-2.5
	lbf·in		0.26-3.0	2.6-8.8	6-17	6-17	9-22
	(Kgf·cm)		(0.3-3.5)	(3-10)	(7-20)	(7-20)	(10-25)
Torque Switching			Steppless Adjustment	Steppless Adjustment	Steppless Adjustment	Steppless Adjustment	Steppless Adjustment
Unloaded Rotation Speed (r.p.m) +/-10%	LOW rotation 11-step switching for 05-15		120-345 r.p.m	115-320 r.p.m	150-450 r.p.m	150-450 r.p.m	120-350 r.p.m
	HI rotation 11-step switching		690-975 r.p.m	660-940 r.p.m	495-735 r.p.m	495-735 r.p.m	400-600 r.p.m
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 & 5HEX	Hios H5	1/4HEX	1/4HEX
	Vacuum	BLFQ BLFR				1/4HEX	1/4HEX
Weight(g)	Standard		315g	470g	700g	700g	700g
	Vacuum	BLFQ BLFR	390g	560g 700g	830g		
Accessories	Driver Cord	Length (m)	3m(10P)	3m(10P)	3m(10P)	3m(10P)	3m(10P)
		Weigth (g)	320g	320g	320g	320g	320g
		Order Code	BLF7-061 I	BLF7-061 I	BLF7-061 I	BLF7-061 I	BLF7-061 I
	Spring		Silver				

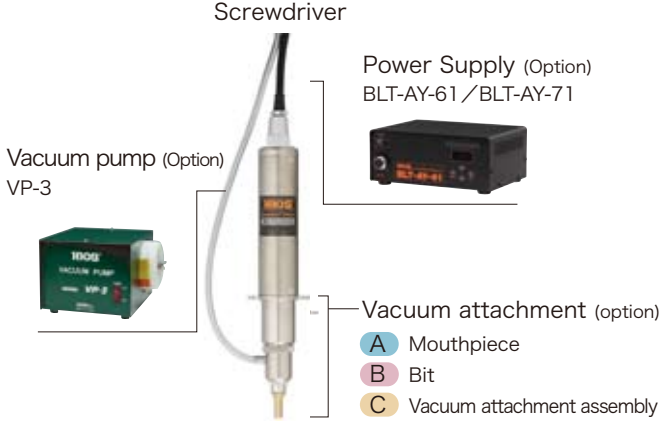
Vacuum pick up driver

BLFQ

BLFQ tools connected to an optional vacuum pump can pick up ferrous or non ferrous screws and will also remove chips created by driving screws.

Compatible screwdrivers: BLFQ-2000, BLFQ-5000, BLFQ-7000

Construction of vacuum pick up



Screwdriver

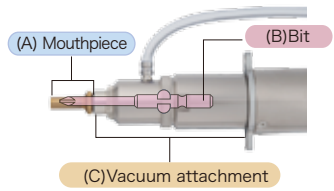
Power Supply (Option)
BLT-AY-61 / BLT-AY-71

Vacuum pump (Option)
VP-3

Vacuum attachment (option)

- A Mouthpiece
- B Bit
- C Vacuum attachment assembly

Special note for BLFQ



BLFQ Order Guide

1. When you order a vacuum pick up model, (A) and (B) must be purchased separately.
2. To adapt an existing tool to vacuum pick up, (A), (B) and (C) must be purchased separately.

For details of (A), (B) and (C) refer to P.4 for the BLFQ vacuum pick up parts.

Deep Hole Fastening

Vacuum pick up driver

BLFR

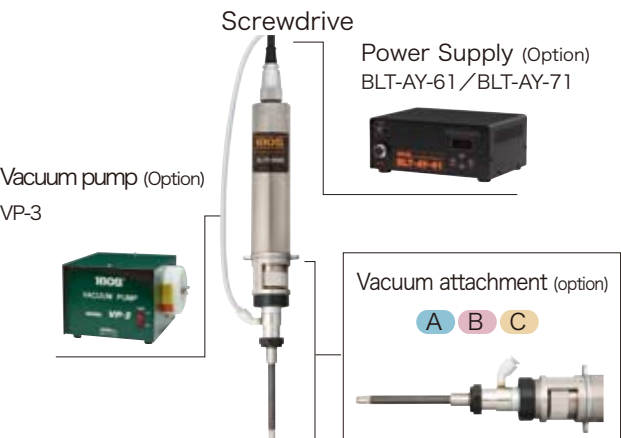
(special order)

The BLFR Attachment is ideal for fasteners in recesses locations.

Torque adjustment is possible without removing the BLFR attachment, or removing the driver from the machine. The BLFR attachment uses threaded insert style bits which means replacement bits are less costly than long bits.

Compatible screwdrivers: BLFR-5000, BLFR-7000X, BLFR-7025X

Construction of Vacuum pick up driver



Screwdriver

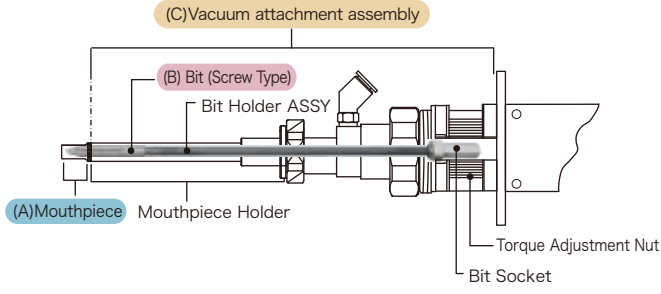
Power Supply (Option)
BLT-AY-61 / BLT-AY-71

Vacuum pump (Option)
VP-3

Vacuum attachment (option)

- A B C

External View of Vacuum pick up



BLFR (Custom Product) Order Guide

1. When you order a vacuum pick up, (A) and (B) must be purchased separately.
2. To adapt an existing tool to vacuum pick up, (A), (B) and (C) must be purchased separately.
3. Vacuum hose ordered separately.

For details of (A), (B) and (C) refer to P.4 for the BLFQ vacuum pick up parts.

BLFQ

Model name	(A) Mouthpiece※			(B) Bit			(C) Vacuum Attachment ASSY	
	Type	length	Exterior dimensions	Type (a)	length (b)	Exterior dimensions	Standard product	Pre-Attached Accessory: Tube 3.5m (L/Dφ4×O/Dφ7)
BLQ-2000	F3	18mm		Hios H4 (Φ4)	60mm		BLFQ2-SET	
BLFQ-5000	F6	31mm		Hios H5 (Φ5)	100mm		BLFQ5-SET	
BLFQ-7000							BLFQ7-SET	

*The inner diameter of the mouthpiece varies depending on the screw diameter. For sizes, refer to P.6.

BLFR (special order)

(A) Mouthpiece

Configuration of Mouthpiece/ Mouthpiece Holder ASSY

Optional Mouthpiece with spring

Ideal for fasteners located in deep recesses since the mouthpiece diameter can be smaller than the head diameter of the fastener. Contact us for different options.

Mouthpiece Specifications

Model	Screw Type	Screw Nominal Diameter	Part No. (marked No.)
BLFR-5000	Pan	M2.6 M3.0	RF-55 (55)
	Binding	M2.6 M3.0	RF-55 (55) RF-63 (63)
BLFR-7000X BLFR-7025X	Pan	M2.6 M3.0	RF-55 (55)
	Binding	M2.6 M3.0	RF-55 (55) RF-63 (63)

(C) Vacuum attachment assembly

Vacuum attachment specifications

Model	Vacuum Attachment ASSY Part No.	Remarks
BLFR-5000	BLFR5-SA	Hose (optional) Inner diameter Φ4
BLFR-7000X BLFR-7025X	BLFR7-SA	External diameter Φ6 Length 3.5 m

(B) Compatible Bits

Configuration of Screw Type Bit/Bit Holder ASSY

Screw Type Bit/Bit ASSY Holder ASSY Specifications

Model	Screw Type Bit			Bit Holder ASSY		
	Tip Shape	Length (L size)	Diameter	Part No.	Single Bit Holder Length	Bit Socket Shape
BLFR-5000	+ #1, + #2	40mm	Φ4	BLFR5-3060	122.8 mm	Hexagonal Shank 5HEX
BLFR-7000X BLFR-7025X	+ #1, + #2	40mm	Φ4	BLFR7-3060	122.8mm	Hexagonal Shank 1/4HEX

Options for Vacuum pick up drivers

Vacuum Pump VP-3

A vacuum is generated to pick up and hold the screw on the bit end.

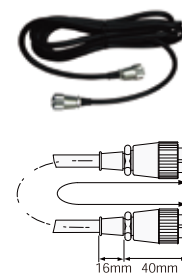


Model	VP-3
Primary power input	AC100V, 120V or 220-240V ±5%
Maximum power consumption	39W ±20%
Vacuum attained	-350mm Hg
Air volume	39 ±20%
Dimensions (mm)	200 × 188 × 142 (H)
Weight (kg)	3.8kg

Driver Cord BLF7-0611 RoHS

Compatible model:
BLF-2000
BLF-5000
BLF-7000
BLF-7000X
BLF-7025X

Model	BLF7-0611
Length	3m
Weight	320g




■ 2WS(2 Speed) and REV(Reversing) capabilities formerly optional are now standard in the power supply.

■ Can be connected to external controls, such as a PLC or sequencer to operate the tool in forward, reverse or shift to a lower speed.

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

Multiple input (AC100V-240V)
Compatible models:
BLF-2000
BLF-5000




CE RoHS

Primary input power source	AC100-240V (47-63Hz)
Secondary output voltage	LOW:5V-15V, HI:20V-30V (11-step switching for both LOW and HI)
External dimensions (mm)	202(W)×143(D)×187(H)mm
Weight(Kg)	1.75kg
Accessories	Power Supply Cord 1.8m (1pc), Terminal block connector 1 piece
Plug type	A-I

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

Multiple input (AC100V-240V)
Compatible models:
BLF-7000
BLF-7000X
BLF-7025X



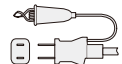
RoHS

Primary input power source	AC100-240V (47-63Hz)
Secondary output voltage	LOW:5V-15V, HI:20V-30V (11-step switching for both LOW and HI)
External dimensions (mm)	202(W)×143(D)×187(H)mm
Weight(Kg)	1.75kg
Accessories	Power Supply Cord 1.8m (1pc), Terminal block connector 1 piece
Plug type	A-I

* Driving fasteners with left hand thread requires a special driver, contact us for details.

* The applicable power supply will vary depending on the driver selection. Make sure the driver and power supply are compatible before purchasing.

Plug

Voltage	100V
Plug type	Type A-I 

Relationship between Screwdriver Rotation Speed and Torque (Reference Values)

Model BLF-2000/BLF-5000

Model	BLF-2000			BLF-5000						
	Rotation Setting	Rotation Speed (r.p.m.)	Torque Value (N·m)	Rotation Speed (r.p.m.)	Torque Value (N·m)					
			Max.	Min.	Max	Min				
LOW 11-step switching	05	120	0.35	0.03	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-step switching	20			690		0.35	0.03	1.2	0.3
		21			720					
		22			750					
		23			780					
24		810								
25		825								
26		870								
27		975								
28		975								
29		975								
30		975								

*Consider the no-load rotation speed values in the table with an allowance of ±10%

Model BLF-7000/BLF-7000X/BLF-7025X

Model	BLF-7000 BLF-7000X			BLF-7025X							
	Rotation Setting	Rotation Speed (r.p.m.)	Torque Value (N·m)		Rotation Speed (r.p.m.)	Torque Value (N·m)					
			Max	Min		Max	Min				
LOW 11-step switching	05	150	1.1	0.7	1.4	1.0					
	06	180									
	07	210									
	08	240									
	09	270									
	10	300									
	11	330									
	12	360									
	13	390									
	14	420									
	15	450									
	HIGH 11-step switching	20					495	2	0.7	2.5	1.0
		21					510				
		22					540				
		23					570				
24		600									
25		615									
26		645									
27		735									
28		735									
29		735									
30		735									

*Consider the no-load rotation speed values in the table with an allowance of ±10%

(A) Mouthpiece	OrderNo.	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)
					JIS Cross recess head (Small Screw)	JCIS Cross recess head	JIS Slotted head (Small Screw)
F3 Standard 18 mm (total length)	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.

(B) Compatible Bits

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)
JCIS Cross recess head	M1.4 type I	BP-H4- #0-1.8-40(※)	BP4018040(※)
	M1.4-M1.7	BP-H4- #0-2.0-40(60)	BP4020040(60)
JIS Slotted head	M2.0-M2.6	BP-H4- #0-2.5-40(60)	BP4025040(60)
	M1.2	BS-H4-2.0-40(60)	BS420040(60)
JIS Slotted head	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 number inside () in the table indicates that the bit total length is 60 mm.
● Consult us for special order product 1.8x40. (※)

F3 Standard 18 mm (total length)

Diagram of Mouthpiece

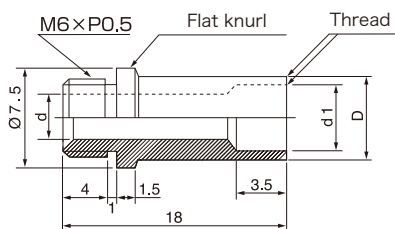


Table of Mouthpieces and Fasteners Standard parts are of BS only.

(A) Mouthpiece	Diagram	OrderNo.	Standard Mouthpiece Dimensions (mm)					Type of screw head configuration	
			D	D1	d	d1	d2	JIS Cross recess head (Small Screw)	JIS Slotted head (Small Screw)
								JIS Cross recess head (Small Screw)	JIS Slotted head (Small Screw)
F6 Standard 31 mm (total length)	B	F6-00	8.0		ブランク			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
	A	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
	A	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					Pan, Round M3.0/Binding M2.6	Pan, Round M3.0/Binding M2.6
	B	F6-05	7.5					Countersunk, Oval countersunk M3.0	Truss M2.6
	B	F6-06	8.5					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
	B	F6-11	7.7					Binding M3.0	Binding M3.0
	B	F6-13	9.7					Binding M4.0	
	B	F6-16*	9.4					Countersunk, Oval countersunk M4.0	
	B	F6-22*	9.7						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

Head recess	Screw size	Adaptive screwdriver bit	Order code
JIS Cross recess head	M2.0-M2.6	BP-H5- #1-3.0x80	BP5130080
	M3.0-M5.0	BP-H5- #2-5.0x80	BP5250080
JIS Slotted head	M2.0-M2.3	BS-H5-3.0x80	BS530080
	M3.0-M4.0	BS-H5-5.0x80	BS550080

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
JIS Slotted head	M3.0-M4.0	BS-H5-5.0-100	BS550100

● Truss: Use #1 for M3.0

F6 Standard 31 mm (total length)

Diagram of Mouthpiece A

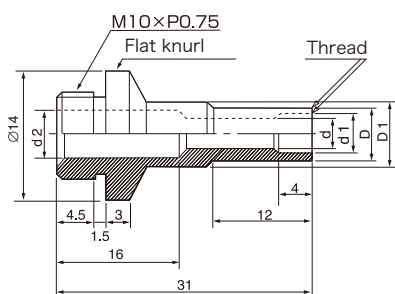


Diagram of Mouthpiece B

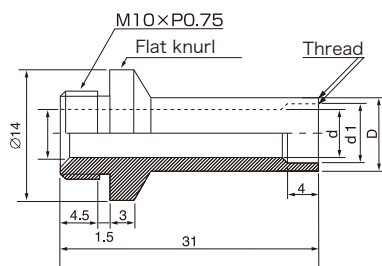


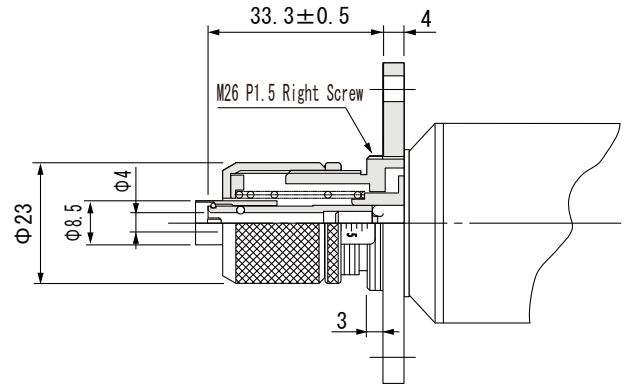
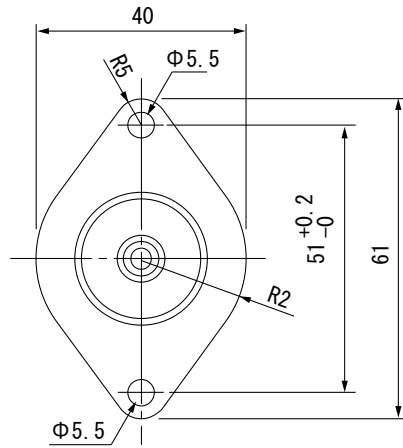
Table of Mouthpieces and Fasteners Standard parts are of BS only.

Blank Mouthpiece Order Code No.

Model	Order Code	Size (mm)	Package
Blank Mouthpiece	F3-00	φ8x18	3 pieces/1 PACK
	F6-00	φ8x31	3 pieces/1 PACK
	F6-10	φ14.0x31	3 pieces/1 PACK

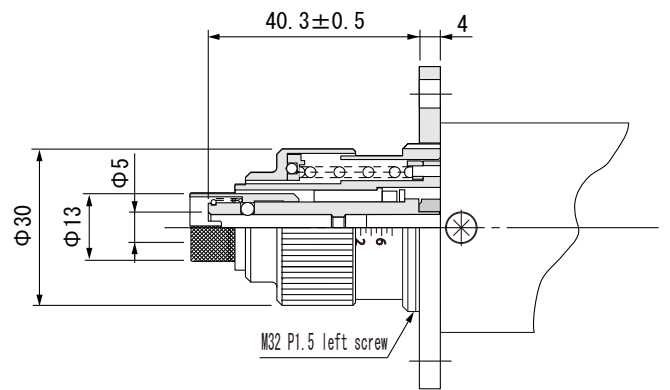
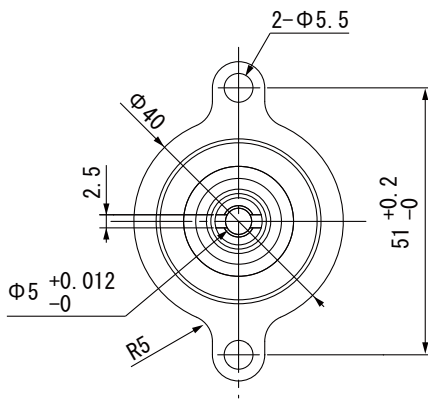
Exterior Dimensions BLF(Standard)

BLF-2000



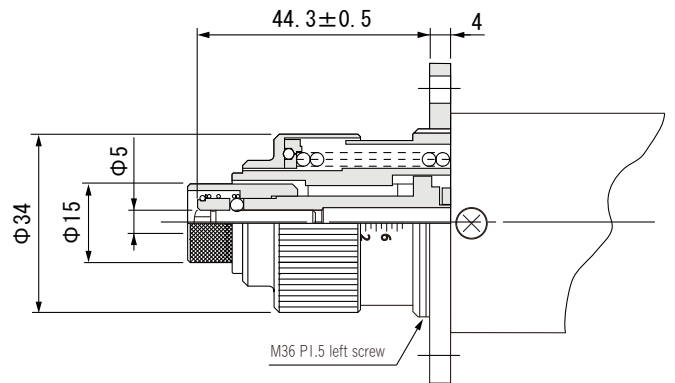
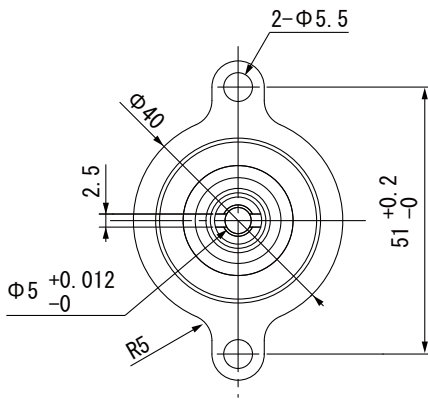
The flange can be removed by turning it counterclockwise.

BLF-5000



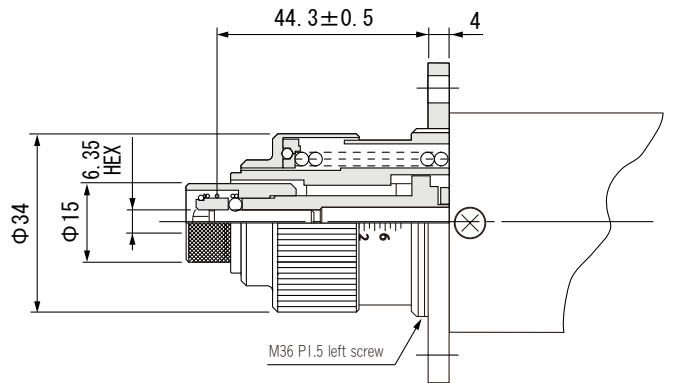
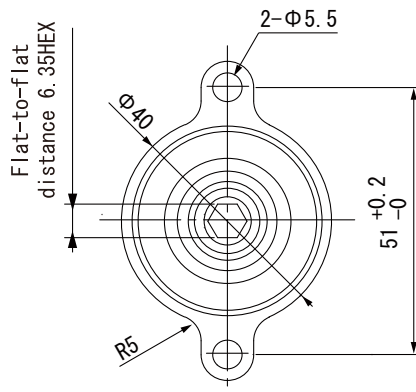
The flange has a left hand thread

BLF-7000



The flange has a left hand thread

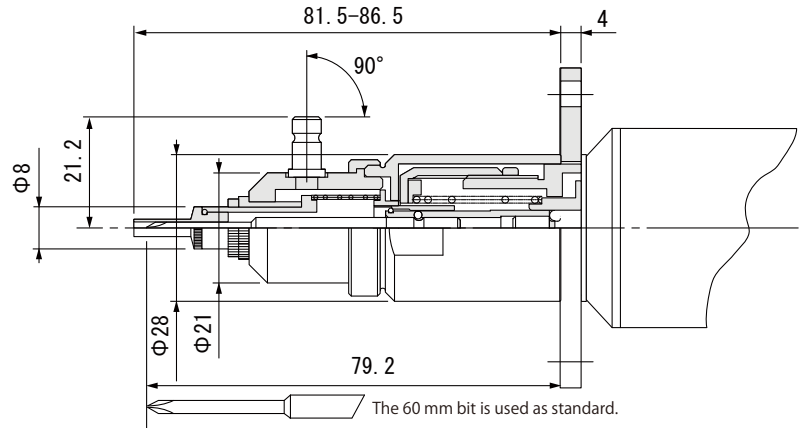
BLF-7000X
BLF-7025X



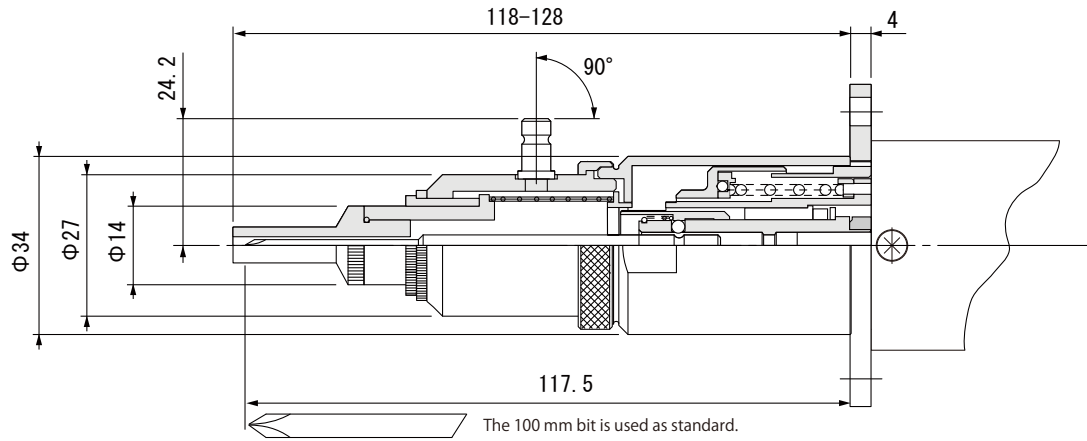
The flange has a left hand thread

Exterior Dimensions BLFQ vacuum attachment

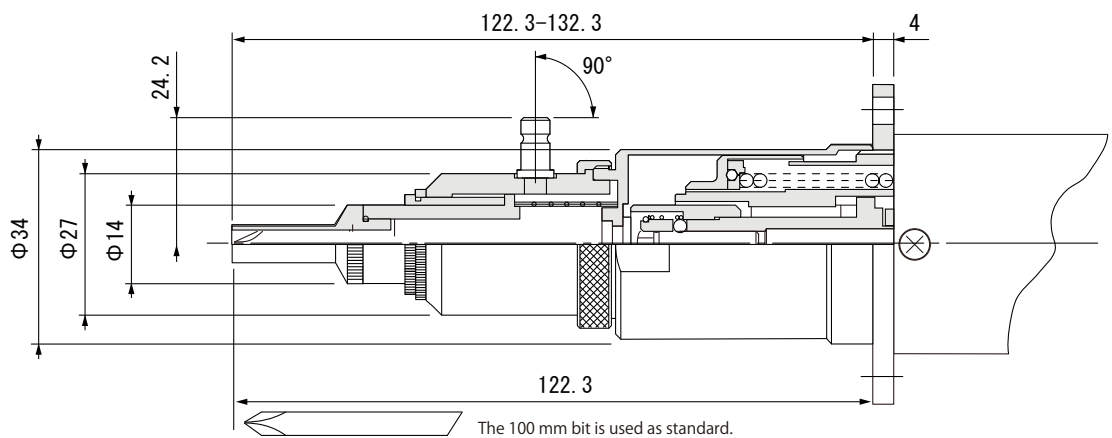
BLFQ-2000



BLFQ-5000



BLFQ-7000



Contact us for external dimensions of BLFR (special order).

BLF series CHECK

Dear valued customers,

Please fill out the request for quotation (RFQ) sheet and send it in for a quotation.

Issued date(dd/mm/yyyy)			
*End User Name (Country)			
Attn:		TEL:	
Address:			
Email:			

Please fill in the blanks for your application.

Screwdriver	BLF-	Q'ty	
	BLFQ-	Q'ty	
Power Supply	BLT-AY-6I	Q'ty	
	BLT-AY-7I	Q'ty	
Screw	Type	<input type="checkbox"/> Cross recess <input type="checkbox"/> Torx <input type="checkbox"/> Other ()	
	Head	<input type="checkbox"/> Pan <input type="checkbox"/> Truss <input type="checkbox"/> Binding <input type="checkbox"/> Flat (<input type="checkbox"/> Sems <input type="checkbox"/> with washer) <input type="checkbox"/> Other ()	
	Size	M × mm	
Target Torque	N·m	Rotation Speed	r.p.m.
Screw Feeder	<input type="checkbox"/> HSII RB <input type="checkbox"/> HSIII- RB <input type="checkbox"/> HSV- RB Other brand ()		
Mouthpiece (=size)	F6= F3=	FR=	(<input type="checkbox"/> With/ <input type="checkbox"/> Without
Bit	No.	#0 #1 #2 #3 Other ()	
	Length	Total (L) mm < Stepped(L) mm >	
Joint Shaft	H4(HIOS 4) H5(HIOS 5) 1/4HEX		
Material of Application	<input type="checkbox"/> Resin <input type="checkbox"/> Steel <input type="checkbox"/> Other ()		
External Control Unit	<input type="checkbox"/> Sequencer <input type="checkbox"/> Desktop Robot <input type="checkbox"/> Single Spindle		
Drawing (Ex.application)			
Remarks			

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ISO9001:
Headquarters/ Yamagata Factory

ISO14001:
Headquarters/ Yamagata Factory

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