Models No. ► BTW151

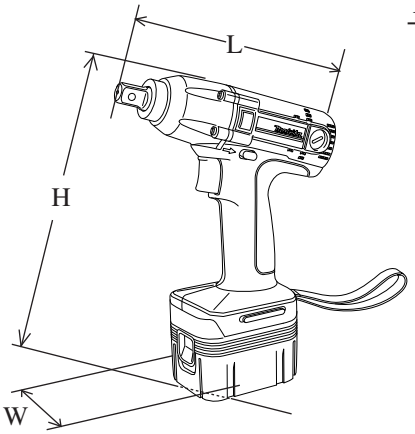
Description ► 14.4V Cordless Impact Wrench

CONCEPTION AND MAIN APPLICATIONS

Because of the over-tightening, it was a problem to employ impact wrench in the working field where the even controlled fastening torque is required.
However, the above mentioned BTW151 has solved this problem with the "BPM preselection system".
Of course, BTW151 is equipped with newly developed battery system as Model BTW150.

Below listed standard type model is only available.

Model No.	Battery	Charger	Plastic case
BTW151BSA	Ni-MH BH1420 / 14.4V / 2.0Ah	DC14SA	Yes



Dimensions : mm (")	
Length (L)	193 (7-5/8)
Height (H)	*253 (10)
Width (W)	78 (3-1/16)

*253 (10) is the height with battery BH1420.

► Specification

Model No.		BTW151
Voltage (V)		14.4
No load speed (min-1=rpm)		0 - 2,300
Impact per minute (min-1=bpm)		0 - 3,000
Driving shank : mm (")		Square 12.7 (1/2)
Capacities	**Standard bolt**	M10 - M16 (3/8 - 5/8)
	High Tensile bolt	M8 - M12 (5/16 - 1/2)
	Machine screw	
	Self drilling screw	
	Course thread	
Max. fastening torque		150N.m 1,530Kgf.cm 1,330in.lbs
Electric brake		Yes
Variable speed control switch		Yes
Reverse switch		Yes
Net weight: kg (lbs)		1.9 (4.3) including battery BH1420

► Standard equipment

* Socket 19-38 ..... 1 pc.
* Pin 4 ..... 1 pc.
* O ring 24 ..... 1 pc. (Except North American market)
* Plastic case ..... 1 pc. (only for Model BTW151BSA)

< Note > The standard equipment for the tool shown may differ from country to country.

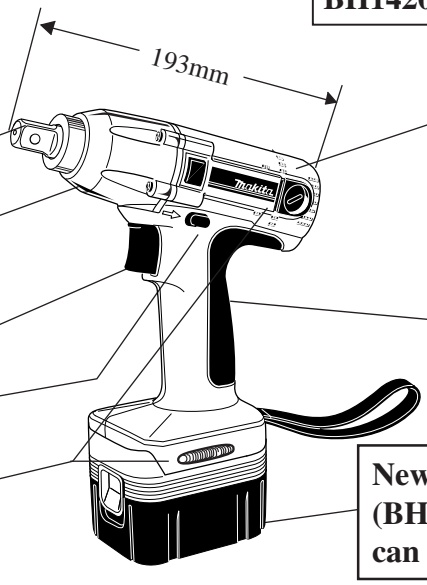
► Optional accessories

* Various socket
* Battery BH1420 (2.0Ah)
* Battery BH1433 (3.3Ah)
* Charger DC14SA

Model BTW151

Compact overall length : only 193 mm

Only 1.9 Kg (4.3 lbs) including battery BH1420



12.7mm (1/2") square drive

Sturdy Aluminum hammer case

Variable speed control switch

Push button for reversing

Bumper to protect the surface of materials from scratch

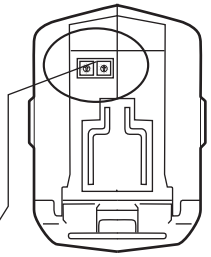
Long life DC motor with the following features
* 2 ball bearings
* Replaceable armature
* Externally accessible brush

Palm fitly soft and slim grip with ergonomically shape for comfortable gripping

Newly developed 24V Ni-MH batteries (BH1420 / 2.0 Ah and BH1433 / 3.3 Ah) can be used for Mod.BTW151.

BPM. pre-selection system

The machine stops automatically, when the equipped bpm. sensor perceives the pre-selected bpm.
And the over tightening can be avoided with BPM. pre-selection system.
Consequently, Mod.BTW151 is suitable for fastening work in the section where the fastening torque is directed in advance.

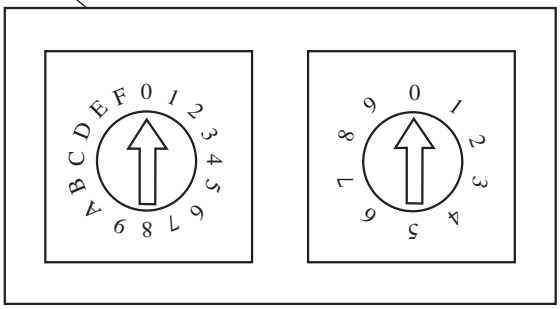


Bottom view of grip end
(View from terminal side)

BPM. pre-select dial

How to pre-select BPM.

BPM. pre-select dial is located in the grip end as illustrated above,
and it can be found easily, when the battery is taken off.
BPM. can be set by turning the dial with flat head screwdriver so that the dial's arrow align with the numbers or alphabet indicated on the machine's body.
The figures mean as illustrated in Fig.A - Fig.C.
See next page.

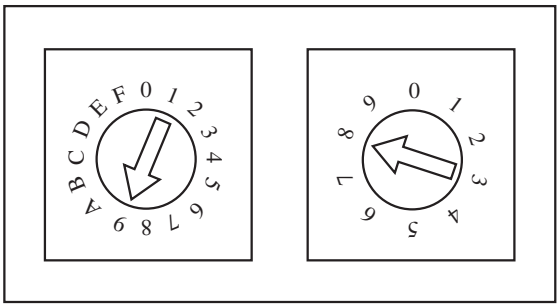


The second digit
(The alphabet means working mode for special employment.)

The first digit

Features and benefits

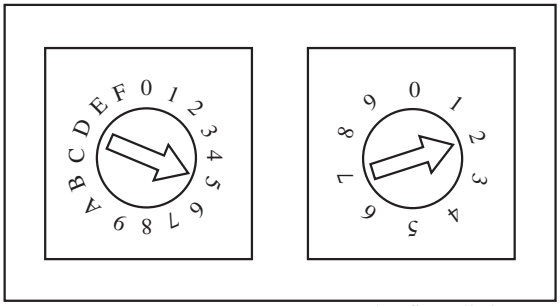
If you want 196 bpm., align the pre-setting dial of the second digit with 9 and the same of the first digit with 8 as illustrated in Fig.A. Namely, 98 x 2 = 196 bpm.



The second digit The first digit

Fig.A

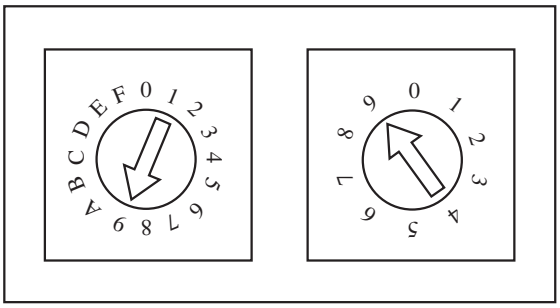
If you want 104 bpm., align the pre-setting dial of the second digit with 5 and the same of the first digit with 2 as illustrated in Fig.B. Namely, 52 x 2 = 104 bpm.



The second digit The first digit

Fig.B

If you want more than 200 BPM., align the both pre-setting dials with 9 as illustrated in Fig. C. In this case, Mod.BTW151 is used as an normal cordless impact driver with 0 - 3,000 bpm.

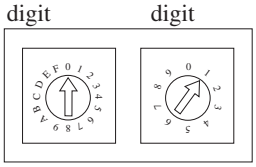
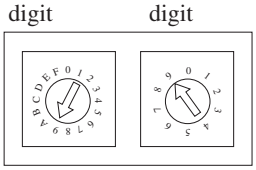
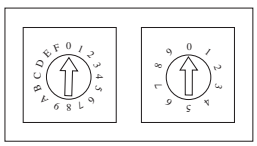


The second digit The first digit

Fig.C

Indications and functions

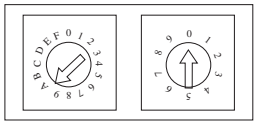
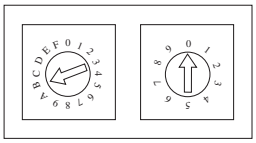
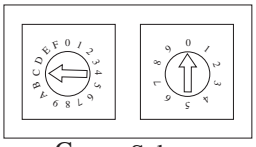
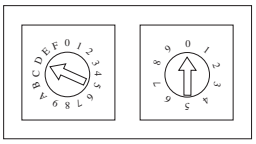
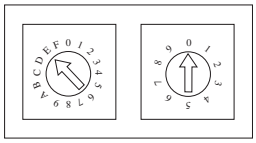
Fastening of bolts

Dial pre-selection	Mode of reverse switch		Purpose
	Clockwise rotation	Anti-clockwise rotation	
The second digit / The first digit  0 - 9 1 - 8	The machine stops automatically, when its sensor perceives the pre-selected bpm which is equivalent to double of the figures selected with dial.	The machine starts or stops with operation of the trigger switch.	The fastening work of bolts for which the bpm. control is required.
The second digit / The first digit  9 9	The machine starts or stops with operation of the trigger switch.		The fastening work of bolts for which more than 200 bpm. is required, or bpm. control is not required.
The second digit / The first digit  0 0	The machine does not start in spite of operation of switch trigger.	The machine starts or stops with operation of the trigger switch.	———

Features and benefits

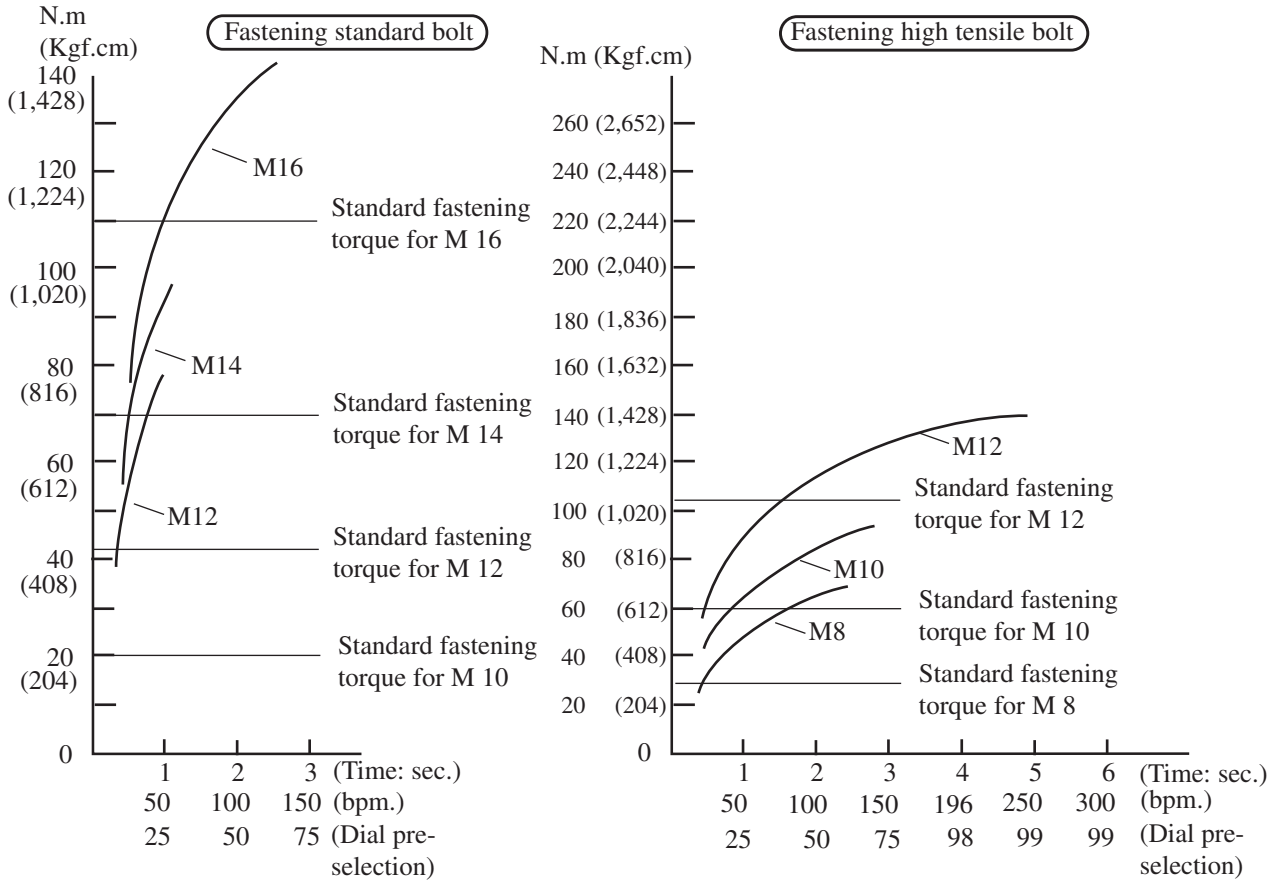
Indications and functions

Special purpose

Dial pre-selection	Mode of reverse switch		Purpose
	Clockwise rotation	Anti-clockwise rotation	
The second digit / The first digit  A Select any of 0 - 9	If the dial of second digit is set on "A", the machine does not start in spite of pulling trigger switch.		———
The second digit / The first digit  B Select any of 0 - 9	The machine stops after the first blow is perceived, depending on the pre-selected figures of the first digit. For instance, 0 : Stop at one 1 : Stop 0.1 sec. later 2 : Stop 0.2 sec. later 9 : Stop 0.9 sec. later	The machine starts or stops with operation of the trigger switch.	Preliminary fastening of bolts
The second digit / The first digit  C Select any of 0 - 9	The machine starts or stops with operation of the trigger switch.	Depending on the pre-selected figures of the first digit, the machine stops when its blow is not perceived. For instance, 0 : Stop at one 1 : Stop 0.1 sec. later 2 : Stop 0.2 sec. later 9 : Stop 0.9 sec. later	Loosening of bolts
The second digit / The first digit  D Select any of 0 - 9	If the dial of second digit is set on "D", the machine does not start in spite of pulling trigger switch.		———
The second digit / The first digit  E Select any of 0 - 9	The machine does not start in spite of pulling switch trigger, but buzzers 2 sec. after pulling switch trigger, depending on the pre-selected figure of the first digit. For instance, 0 : one alarm of buzzer 1 : two alarms of buzzer 2 : three alarms of buzzer 9 : ten alarms of buzzer	The machine stops depending on the pre-selected figure of the first digit, after the the blow is perceived. For instance, 0 : stop with one blow 1 : stop with two blows 2 : stop with three blows 9 : stop with ten blows	Checking the functions mentioned below. For instance * BPM. pre-select dial * Stop of motor * Buzzer

Features and benefits

The relation between bpm. and fastening torque



Comparison of products

Specifications \ Model		Makita				
		BTW151		BTW150		* 6931D
	Cell	Ni-MH		Ni-MH		Ni-Cd
	Type	BH1420	BH1433	BH1420	BH1433	* 1402
Battery	Voltage (V)	14.4		14.4		14.4
	Current capacity (Ah)	2.0	3.3	2.0	3.3	4.0
	Energy Capacity (Wh)	28.8	47.5	28.8	47.5	57.6
No load speed (min-1=rpm)		0 - 2,300		0 - 2,300		0 - 1,900
Impacts per minute (min-1=ipm)		0 - 3,000		0 - 3,000		0 - 2,300
Fastening torque:N.m (kgf.cm)		150 (1,530)		150 (1,530)		147 (1,500)
Dimensions	Length : mm (")	193 (7-5/8)		193 (7-5/8)		* 225(7-5/8)
	Width : mm (")	78 (3-1/16)		78 (3-1/16)		* 60(3-1/16)
	Height : mm (")	253 (10)	276 (10-7/8)	253 (10)	276 (10-7/8)	* 235(10)
Net weight: kg (lbs)		1.9 (4.2) (including battery)	2.2 (4.9) (including battery)	1.9 (4.2) (including battery)	2.2 (4.9) (including battery)	4.2 (9.3) (including battery)

* 6931D : The power source is a shoulder slug type battery, to which Mod.6931D is connected with cable.

< 1 > Disassembling housing R and L

Remove hammer case from housing R and L. So, housing R can be separated from housing L.
Anvil can be disassembled from hammer case.

< Note > When assembling anvil to hammer case, put 0.1g MAKITA grease N No.1 to the cylindric part of anvil.

< 2 > Disassembling hammer

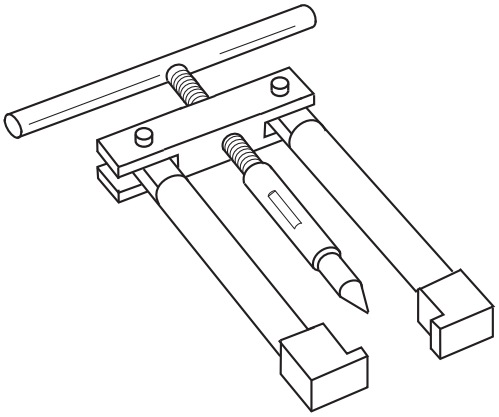
(1) Press down hammer with 1R045: Large gear extractor by turning the handle.

(2)Adjust the opening for steel ball inserting to the cam groove top of spindle.

(3)Take off 2 pcs. of steel balls 5.6 from spindle.

< Note > 25 steel balls 3.5 are installed in hammer. Check the quantity when assembling.

1R045 Large gear extractor



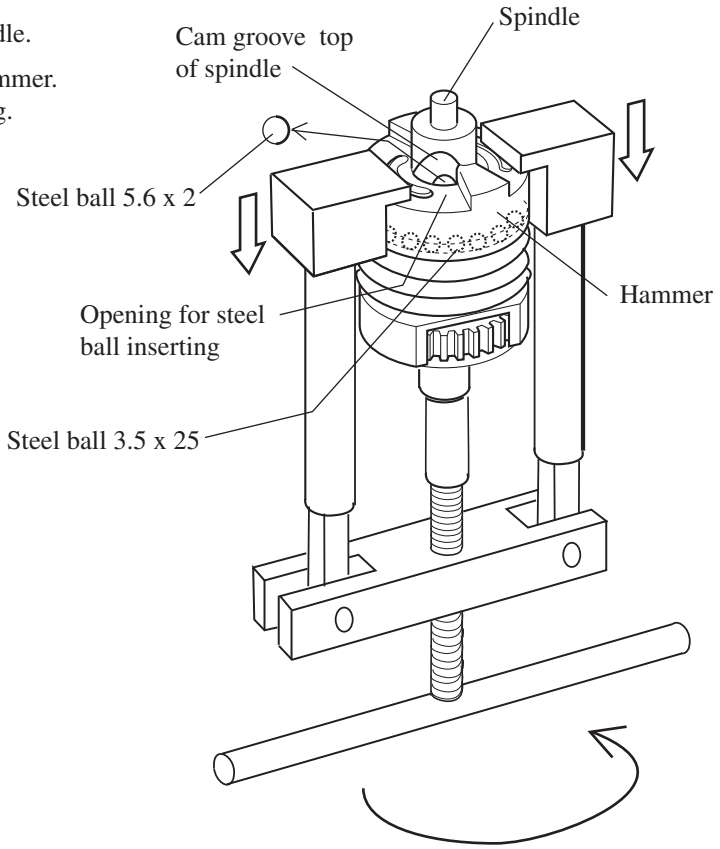


Fig. 1

(4) Apply grease to the position No. 1, 2, 3 and 4 as listed below, when assembling.

	MAKITA grease N No.1	Molybdenum di-sulphide lubricant
(1)	0.5g	0.2g
(2)	0.5g	———
(3)	———	0.6g
(4)	1.0g	0.2g

< Note > Make sure that 25 pcs.of steel balls 3.5 are assembled in hammer, when assembling.

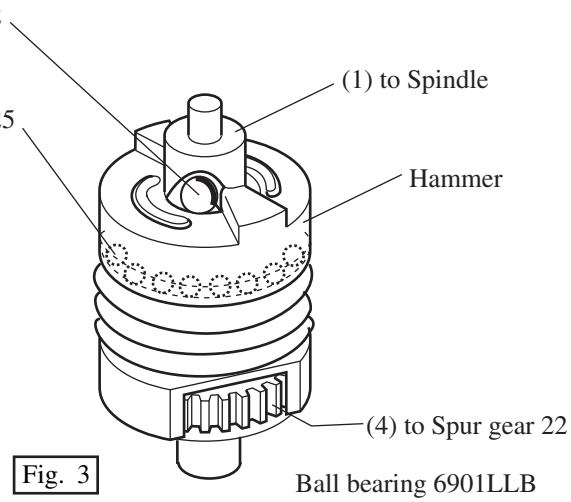


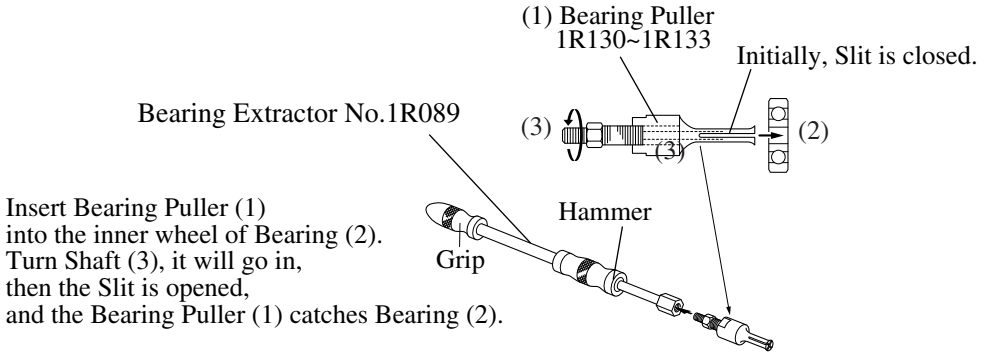
Fig. 3

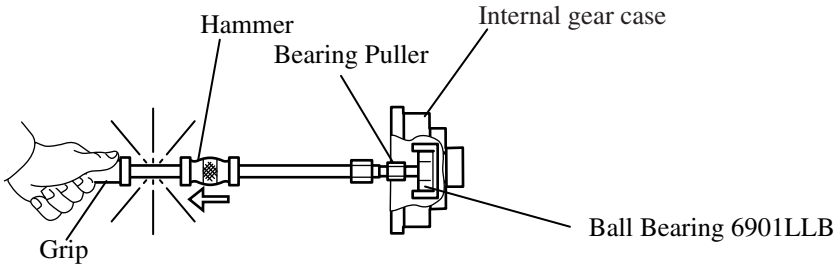
► Repair

< 4 > Removing ball bearing 6901LLB

Ball bearing 6901LLB is firmly assembled by pressing into internal gear case, and it is difficult to disassemble it without any tool. For disassembling it, the following repairing tools are required.

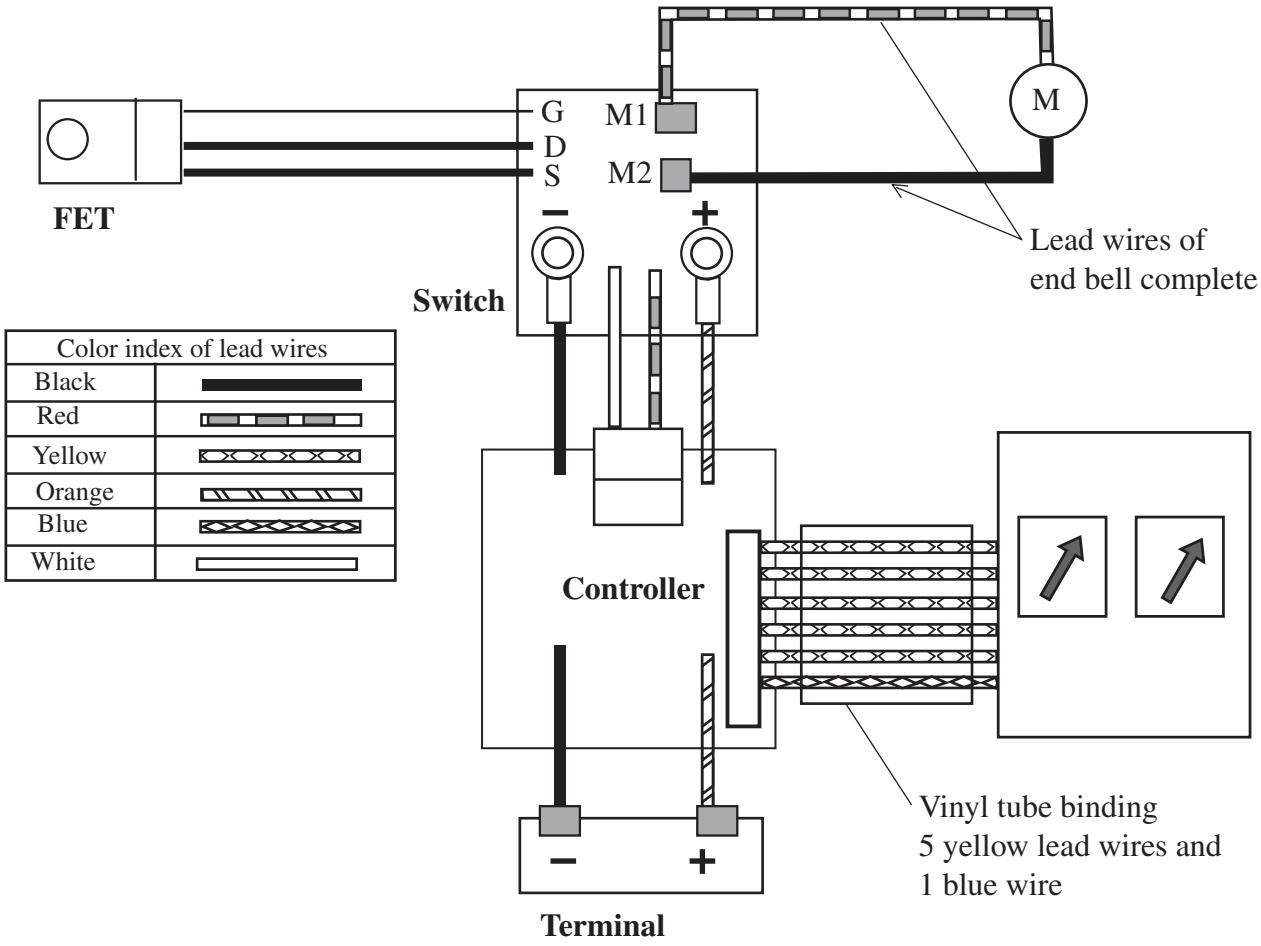
* Bearing pullers No. 1R130 - 133
* Bearing Extractor No.1R089





Hit Grip strongly with Hammer,
the Bearing is pulled out by the shock.

► Circuit diagram



► Wiring diagram