

MODEL

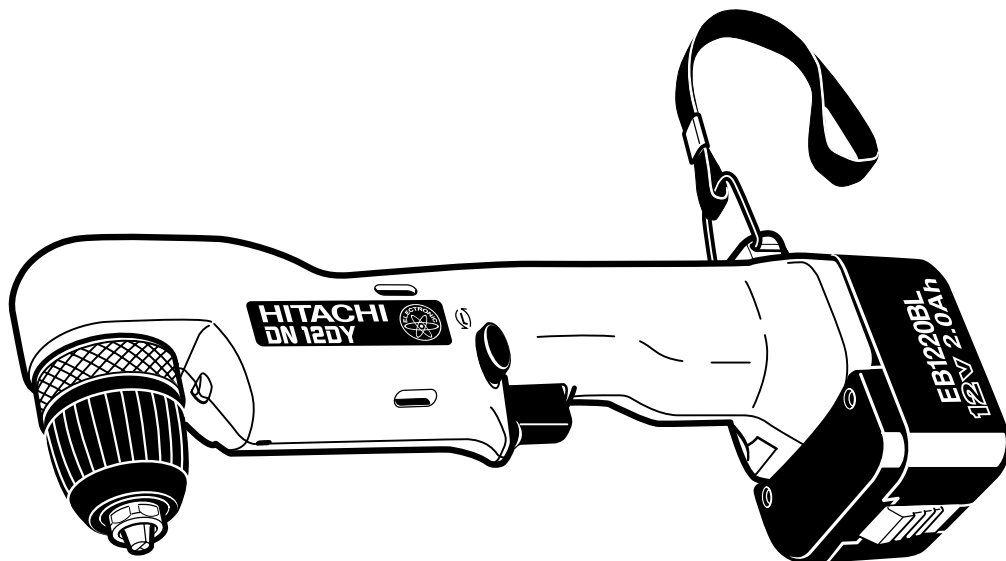
DN 12DY

HITACHI
POWER TOOLS

CORDLESS ANGLE DRILL
DN 12DY

TECHNICAL DATA
AND
SERVICE MANUAL

D



LIST No. F883

Mar. 2003

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

REMARK:

Throughout this TECHNICAL DATA AND SERVICE MANUAL, a symbol(s) is(are) used in the place of company name(s) and model name(s) of our competitor(s). The symbol(s) utilized here is(are) as follows:

Symbols Utilized	Competitors	
	Company Name	Model Name
C	MAKITA	DA312DW
P	DEWALT	DW965K



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1. PRODUCT NAME

Hitachi 12 V Cordless Angle Drill, Model DN 12DY

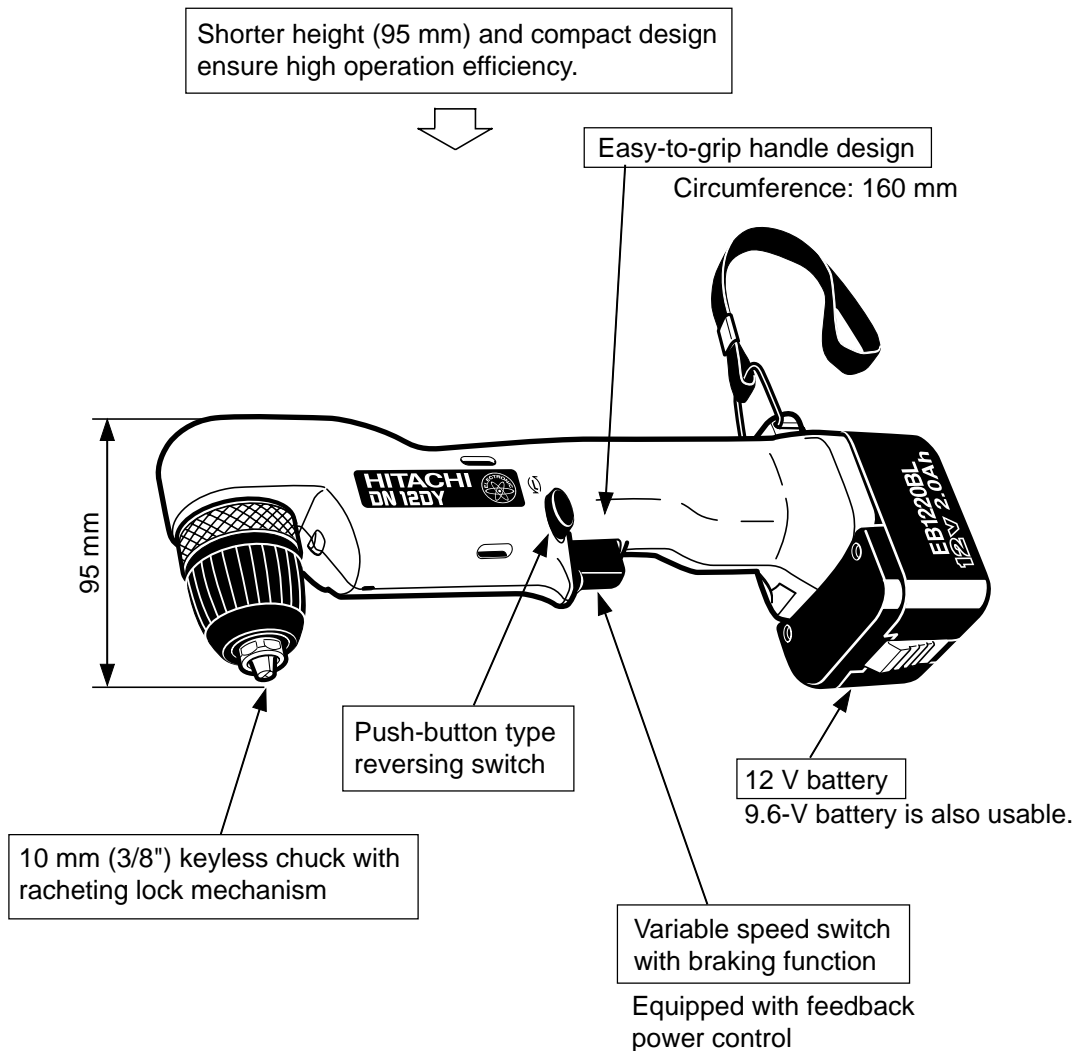
2. MARKETING OBJECTIVE

The new Model DN 12DY is a 12-V version of the well-reputed Model DN 10DY. The torque and the operation efficiency are higher than those of the Model DN 10DY. With the Model DN 12DY, we aim to enhance our share.

3. APPLICATIONS

- Drilling holes in wood, mild steel, plastic and similar materials
- Tightening and removing of wood screws and tapping screws

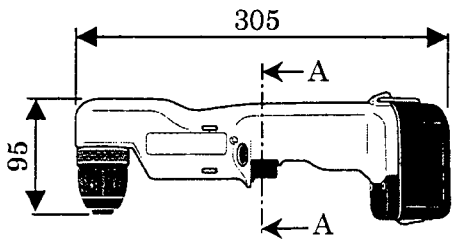
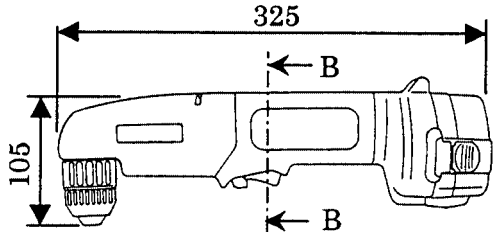
4. SELLING POINTS

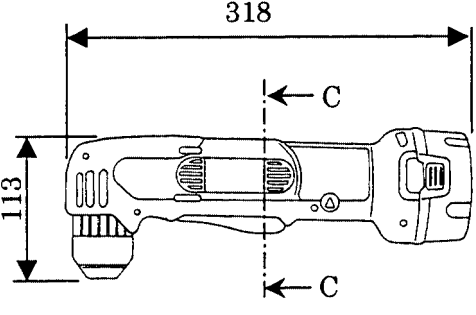


4-1. Selling Point Descriptions

4-1-1. Shorter height and compact design

Table 1

Maker	HITACHI	C
Model	DN 12DY	
Overall length x height (mm)	 <p>A-A circumference 160 mm</p>	 <p>B-B circumference 174 mm</p>

Maker	P
Model	
Overall length x height (mm)	 <p>C-C circumference 198 mm</p>

4-1-2. 10 mm (3/8") keyless chuck with ratcheting lock mechanism

This model is equipped with ratcheting lock mechanism to prevent the chuck from loosening.

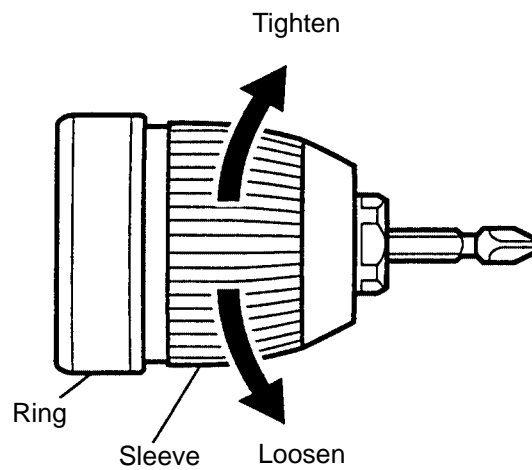


Fig. 1

4-1-3. Variable speed switch with braking function

The braking function allows the driver unit to stop rotation immediately when the trigger switch is released, which is a convenient feature during actual working. Also, the feedback system ensures a sufficiently large torque even in the variable speed range.

4-1-4. 9.6-V battery is also usable

The Model DN 12DY can also operate on the 9.6-V battery. However, the working performance is about 80% of that when operating on the 12-V battery due to the lower voltage. Refer to "7. WORKING PERFORMANCE PER SINGLE CHARGE" for working performance of the Model DN 12DY per charge.

Charger (Model UC 12SD) (for type EB 1212S battery)		<ul style="list-style-type: none"> • Overcharge prevention circuit: A thermostat monitors the surface temperature of the battery and, on detecting the temperature rise which occurs on completion of charging, automatically turns off the unit to prevent the battery from overcharge. • Power input: 51 W • Charging time: Approx. 60 minutes [for type EB 1212S battery at 20°C (68°F)] • Indication method Pilot lamp indicator of battery charging • Function: On During charging Off Charging completed
Weight	Net	<ul style="list-style-type: none"> • Main body (including EB 1220BL/EB 1230HL) 1.4 kg (3.1 lbs.) • Main body (including EB 1212S) 1.3 kg (2.9 lbs.) • Charger unit (UC 12SD) (including cord) 1.5 kg (3.3 lbs.) • Charger unit (UC 14YF2) (including cord) 1.3 kg (2.9 lbs.) • Charger unit (UC 24YFA) (including cord) 0.6 kg (1.3 lbs.)
	Gross	<ul style="list-style-type: none"> • With 2 batteries (EB 1220BL or EB 1230HL) and charger (UC 14YF2), case 4.8 kg (10.6 lbs.) • With 2 batteries (EB 1220BL or EB 1230HL) and charger (UC 24YF2), case 4.1 kg (9.0 lbs.) • With 1 battery (EB 1220BL or EB 1230HL) and charger (UC 14YF2), case 4.1 kg (9.0 lbs.) • With 1 battery (EB 1220BL or EB 1230HL) and charger (UC 24YFA), case 3.4 kg (7.5 lbs.) • With 2 batteries (EB 1212S) and charger (UC 12SD), case 4.5 kg (9.9 lbs.)
Standard accessories		<ul style="list-style-type: none"> Charger (UC 12SD or UC 14YF2 or UC 24YFA) 1 Cross-recessed head (plus) driver bit (No.2) 1 Case 1

6. COMPARISONS WITH SIMILAR PRODUCTS

Maker		HITACHI			C	P	
Model		DN 12DY	DN 10DY (9.6 V)				
Max. capacity	Drilling	Mild steel	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	
		Aluminum	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	
		Wood	18 mm (11/16")	15 mm (19/32")	12 mm (15/32")	25 mm (1")	
Max. capacity	Screw driving	Wood screw	5.1 dia. x 40 (#11 x 1-9/16")	5.1 dia. x 35 (#11 x 1-3/8")	4.8 dia. (#10)	Not indicated	
Rotation speed		0 – 800/min	0 – 800/min	0 – 800/min	0 – 800/min	0 – 400/0 – 1200 min	
Max. torque		9.0 N•m 92 kgf•cm (80 in-lbs.)	7.8 N•m 80 kgf•cm (71 in-lbs.)	4.9 N•m 51 kgf•cm (44 in-lbs.)	*1 20.3 N•m 207 kgf•cm (180 in-lbs.)		
Drill chuck	Type	Keyless	Keyless	Keyless	Keyless	Keyless	
	Capacity	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	10 mm (3/8")	
	Positive lock	Equipped	None	None	None	None	
Switch	Type	Variable speed	Variable speed	Variable speed	Variable speed	Variable speed	
	Feedback circuit	Equipped	Equipped	Not indicated	Not indicated	Not indicated	
	Electric brake	Equipped	Equipped	Equipped	Equipped	Equipped	
Reversing switch		Push-button	Push-button	Lever	Push-button		
Strap		Equipped	Equipped	None	None		
Battery	Nominal capacity	1.2 Ah	2.0 Ah	3.0 Ah	2.0 Ah	2.6 Ah	1.3 Ah
	Nominal voltage	12 V		9.6 V	12 V	12 V	
Dimensions	Overall length	^{296 mm} (11-21/32")	305 mm (12")	305 mm (12")	325 mm (12-51/64")	318 mm (12-33/64")	
	Overall height	95 mm (3-3/4")		97 mm (3-13/16")	105 mm (4-9/64")	113 mm (4-29/64")	
Weight		1.3 kg	1.4 kg	1.3 kg	1.4 kg	1.85 kg	
		(2.9 lbs.)	(3.1 lbs.)	(2.9 lbs.)	(3.1 lbs.)	(4.1 lbs.)	

Remarks *1 at low speed

7. WORKING PERFORMANCE PER SINGLE CHARGE

Drilling and fastening performance comparison per charge

Test conditions	Maker	Model name	No. of drilling or fastening operations per charge (*1)				Working time (sec./pc.)
			0	200	400	600	
<p>HSS Drill bit 6.5mm dia. (1/4") T1.6 (1/16") Mild steel</p>	HITACHI (12 V)	DN 12DY (W/EB 1230HL)	120				18
		DN 12DY (W/EB 1220BL)	80				18
		DN 12DY (W/EB 1212S)	48				18
	HITACHI (9.6 V)	DN 12Y (W/EB 9B)	65				23
		DN 10DY (W/EB 9B)	54				21
	C	116				19	
	P	35				15	
<p>Wood boring 15mm dia. (19/32") T18 (11/16") Pine</p>	HITACHI (12 V)	DN 12DY (W/EB 1230HL)	366				1.9
		DN 12DY (W/EB 1220BL)	244				1.9
		DN 12DY (W/EB 1212S)	146				1.9
	HITACHI (9.6 V)	DN 12Y (W/EB 9B)	204				2.5
		DN 10DY (W/EB 9B)	204				2.0
	C	338				2.1	
	P	121				1.7	
<p>Wood screw 5.1mm dia. (#11) 32mm (1-1/4") Pine</p>	HITACHI (12 V)	DN 12DY (W/EB 1230HL)	541				1.2
		DN 12DY (W/EB 1220BL)	360				1.2
		DN 12DY (W/EB 1212S)	216				1.2
	HITACHI (9.6 V)	DN 12Y (W/EB 9B)	308				1.6
		DN 10DY (W/EB 9B)	248				1.5
	C	477				1.4	
	P	182				1.1	

Remarks*1: Number of holes or fasteners per charge

The above table shows an example of test data obtained using the battery which is standard for this tool.

As actually measured values listed in the above table may vary depending on sharpness of drill bit, workpiece hardness (particularly in wood materials), moisture content of wood, charging condition, operator skill, etc. This data should be used as a comparative guide only.

8. PRECAUTIONS IN SALES PROMOTION

8-1. Safety Instructions

In the interest of promoting the safest and most efficient use of the Model DN 12DY cordless angle drill by all of our customers, it is very important that at the time of sale, the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions, and fully understands the meaning of the precautions listed on the Caution Plate and Name Plate attached to each tool.

A. Handling Instructions

Salespersons must be thoroughly familiar with the contents of the Handling Instructions in order to give pertinent advice to the customer. In particular, they must have a thorough understanding of the precautions for use of the cordless tools which are different from those of ordinary electric power tools.

(1) Before use, ensure that the unit is fully charged.

New units are not fully charged. Even if the units were fully charged at the factory, long periods of inactivity, such as during shipping, cause the storage battery to lose its charge. Customers must be instructed to fully charge the unit prior to use.

(2) Connect the charger to an AC power outlet only.

Use of any other power source (DC outlet, fuel powered generator, etc.) will cause the charger to overheat and burn out.

(3) Do not use any voltage increasing equipment (transformer, etc.) between the power source and the charger.

If the charger is used with voltage higher than that indicated on the unit, it will not function properly.

(4) Conduct battery charging at an ambient temperature range of 0 °C – 40 °C (32°F – 104°F).

Special temperature sensitive devices are employed in the charger to permit rapid charging. Ensure that customers are instructed to use the charger at the indicated ambient temperature range. At temperature under 0°C (32°F) the thermostat will not function properly, and the storage battery may be overcharged. At temperature over 40 °C (104 °F), the storage battery cannot be sufficiently charged. The optimum temperature range is 20 °C – 25 °C (68 °F – 77 °F).

(5) The battery charger should not be used continuously.

At high ambient temperature, if over three storage batteries are charged in succession, the temperature of the coils on the transformer will rise and there is a chance that the temperature fuse inserted in the interior of the transformer will inadvertently melt. After charging one battery, please wait about 15 minutes before charging the next battery.

(6) Do not insert foreign objects into the air vents on the charger.

The charger case is equipped with air vents to protect the internal electronic components from overheating. Caution the customer not to allow foreign materials, such as metallic or flammable objects, to be dropped or inserted into the air vents. This could cause electrical shock, fire, or other serious hazards.

(7) Do not attempt to disassemble the storage battery or the charger.

Special devices, such as a thermostat, are built into the storage battery and charger to permit rapid charging. Incorrect parts replacement and/or wiring will cause malfunctions which could result in fire or other hazards. Instruct the customer to bring these units to an authorized service center in the event repair or replacement is necessary.

(8) Disposal of the Type EB 1212S, EB 1220BL or EB 1230HL storage battery

Ensure that all customers understand that Type EB 1212S, EB 1220BL or EB 1230HL storage battery should be returned to the Hitachi power tool sales outlet or the authorized service center when it is no longer capable of being recharged or repaired. If thrown into a fire, the battery may explode, or, if discarded indiscriminately, leakage of the cadmium compound contained in the battery may cause environmental pollution.

B. Caution plates

(1) The following cautions are listed on the Name Plate attached to the main body of each tool.

For the U.S.A. and Canada

Warning

- To reduce the risk of injury, user must read and understand Instruction Manual.

AVERTISSEMENT

- Afin de réduire le risque de blessures, l'utilisateur doit lire et bien comprendre le mode d'emploi.

(2) The following cautions are listed on the Name Plate attached to each Type EB 1212S, EB 1220BL or EB 1230HL storage battery.

For Europe, Asia and Oceania

CAUTION

- Read thoroughly HANDLING INSTRUCTIONS before use.
- Do not disassemble nor throw into fire.

For the U.S.A. and Canada

CAUTION

- For safe operation, see Instruction Manual.
- Use HITACHI charger recommended in instruction manual for recharging.

(3) The following caution is listed on the Name Plate attached to the Model UC 24YFA charger.

For the U.S.A. and Canada

CAUTION

- For safe operation, see instruction Manual.
- Charge HITACHI rechargeable batteries types EB 7, EB 9, EB 12, EB 14, EB 18 series and EB 24B. Other types of batteries may burst causing personal injury and damage.
- Charge between 32 and 104 °F.
- Indoor use only.
- Replace defective cord immediately.

8-2. Inherent Drawbacks of Cordless Angle Drills Requiring Particular Attention During Sales Promotion

The cordless angle drill offers many advantages; it can be used in places where no power source is available, the absence of a cord allows easy use, etc. However, any cordless tool has certain inherent drawbacks.

Salespersons must be thoroughly familiar with these drawbacks in order to properly advise the customer in the most efficient use of the tool.

A. Suggestions and precautions for the efficient use of the tool

(1) Use the cordless angle drill for comparatively light work.

Because they are battery driven, the output of the motor in cordless angle drills is rather low in comparison with conventional electric power tools. Accordingly, they are not suitable for continuous drilling of many holes in succession, or for drilling into particularly hard materials which creates a heavy load. Salespersons should recommend conventional electric power tools for such heavy work.

(2) Do not insert a foreign object into body vent holes.

The body of this tool has vent holes for improving the cooling efficiency. As a fan is built into the motor, a foreign object inserted through a vent hole may cause a failure. Please instruct customers to never insert a foreign object into the vent hole.

(3) Avoid "Locking" of the motor.

Locking of the motor will cause an overload current that could result in burning of the motor and/or rapid deterioration of the battery. Salespersons should advise the customer to immediately release the switch and stop operation if the motor becomes locked. (A jammed drill bit can be disengaged from the workpiece material by setting the switch to reverse rotation, or by manually turning the main body of the tool.)

(4) Variation in amount of work possible per charge

Although the nominal chargeable capacity of the storage batteries used with the Model DN 12DY is 1.2 Ah, 2.0 Ah or 3.0 Ah, the actual capacity may vary within 10% of that value depending on the ambient temperature during use and charging, and the number of times the batteries have been recharged. It should be noted that other factors which may have a bearing on the amount of work possible per charge are the working conditions (ambient temperature, type and moisture content of the workpiece, sharpness of the drill bit, etc.) and the operational skill of the user.

(5) Precautions in the use of HSS drill bits

Although the Model DN 12DY is designed for drilling capacities of 18 mm (11/16") in wood, and 10 mm (3/8") in aluminum and mild steel, this capability is not as efficient as conventional electric power tools. In particular, when drilling through aluminum material with a 10 mm (3/8") drill bit, the drill tends to become locked when the drill bit penetrates through the material. For this reason, the customer should be cautioned to reduce the thrust on the main body of the drill when drilling completely through the material to avoid locking the tool. Repeated locking of the drill causes excessive current flow from the batteries which not only decreases the amount of work possible per charge, but could also result in burning of the motor.

(6) Securely tighten the sleeve of the keyless chuck.

The keyless chuck may slip during operation if the shape of the drill bit shank is cylindrical depending on the surface conditions, materials, etc. Please instruct the customers to retighten the keyless chuck more securely if the keyless chuck slips during operation. The holding force of the keyless chuck is increased as the tightening force of the keyless chuck is increased. The Model DN 12DY is equipped with the locking device to prevent loosening of the keyless chuck. The sleeve makes noise when tightening or loosening. This is because of the locking device and there is no problem.

(7) Avoid continuous use.

Although the Model DN 12DY can bear continuous operation under certain conditions, operating conditions are different depending on material of workpiece and sharpness of the drill bit in use. Please instruct the customers to avoid continuous use of the Model DN 12DY and take a pause about 15 minutes after a single charge operation as a guide.

B. Suggestions and precautions for the efficient use of the charger and storage batteries

If any of the storage batteries Types EB 1212S, EB 1220BL and EB 1230HL is exposed to direct sunlight for an extended period or if the temperature of the battery is high immediately after it has been used in the tool, the pilot lamp (red) may not be turned on when the battery is connected to the charger. Chargeable temperature ranges of each type of battery are specified as follows.

Types EB 1212S and EB 1220BL: from -5°C to 60°C (from 23°F to 140°F)

Type EB 1230HL: from 0°C to 45°C (from 32°F to 113°F)

In such a case, the customer should be advised to place the battery in a shaded area with a good airflow, and allows sufficient cooling before recharging. This phenomenon is common to all existing batteries that employ a thermostat. The cooling time required before charging varies from a few minutes to about 30 minutes, depending on the load, duration of use, and ambient temperature.

9. REFERENCE MATERIALS

9-1. Speed Control Mechanism

Spindle rotation speed of the Model DN 12DY can be controlled by simply varying the amount by which the trigger switch is depressed. The relationship between the amount the trigger switch is depressed (in millimeters) and the rotation speed is illustrated in Fig. 2.

Note: The gradient and values illustrated in Fig. 2 are intended for reference only, and will vary slightly due to differences in the discharge condition of the battery, the ambient temperature, and individual speed-control element accuracy.

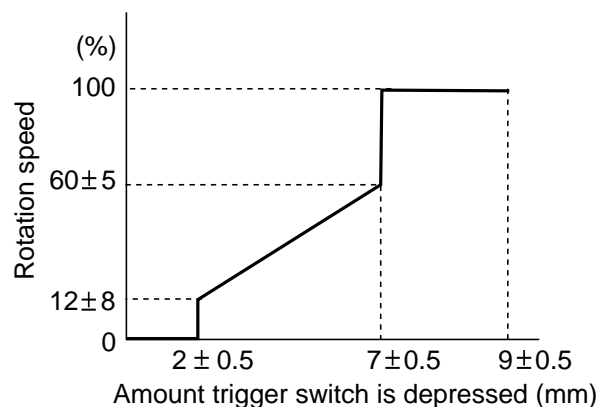


Fig. 2

10. REPAIR GUIDE

Be sure to remove the storage batteries from the main body before servicing. Inadvertent triggering of the switch with the storage battery connected will result in a danger of accidental turning of the motor.

10-1. Precautions in Disassembly and Reassembly

The **[Bold]** numbers in the description below correspond to the item numbers in the Parts List and exploded assembly diagram for the Model DN 12DY.

10-1-1. Disassembly

(1) Remove the Hook **[19]**.

Place your fingers inside the Hook **[19]**, and expand it outward enough so that it can be removed from the main body.

(2) Disassembly of Housing (B):

Remove the seven Tapping Screws (W/Flange) D3 x 16 **[13]** which fix the main body. Then grasp the lower portions of Housing (A) and Housing (B) where the battery is inserted, and gently separate them.

(3) Disassembly of the Motor, Switch:

When Housing (B) has been removed, the Motor **[8]**, DC-Speed Control Switch **[16]** can be taken out together in a single assembled unit. These assembled components can be disassembled as follows: With a soldering iron, disconnect Internal Wires (A) **[9]** **[10]** of the Motor **[8]**.

Remove the single Bind Screw M3 x 7 **[5]**, and disassemble the Fin **[6]** from the FET (Field Effect Transistor) of the DC-Speed Control Switch **[16]**.

[Note] Do not disconnect the three FET internal wires that are soldered to the DC-Speed Control Switch **[16]**.

(4) Removal of the Drill Chuck 10TLRJ-N:

The Drill Chuck 10TLRJ-N (W/O Chuck Wrench) **[3]** can be removed from the Spindle **[2]** as follows:

(a) Fully open the jaws of the Drill Chuck 10TLRJ-N (W/O Chuck Wrench) **[3]**.

(b) Fit a J-217 spindle lock jig (special repair tool, Code No. 970998) onto the flat surfaces provided on the Spindle **[2]**, secure it in a vise, and remove the Flat Hd. Screw (Left Hand) M5 x 17 **[4]** by turning it clockwise (to the right) with a straight edge screwdriver.

(c) Turn the hexagonal portion at the tip of the Drill Chuck 10TLRJ-N (W/O Chuck Wrench) **[3]** counterclockwise with a 16 mm socket wrench to remove the Drill Chuck 10TLRJ-N (W/O Chuck Wrench) **[3]** as shown in Fig. 3. If it is difficult to loosen, use a pipe extension or similar tool.

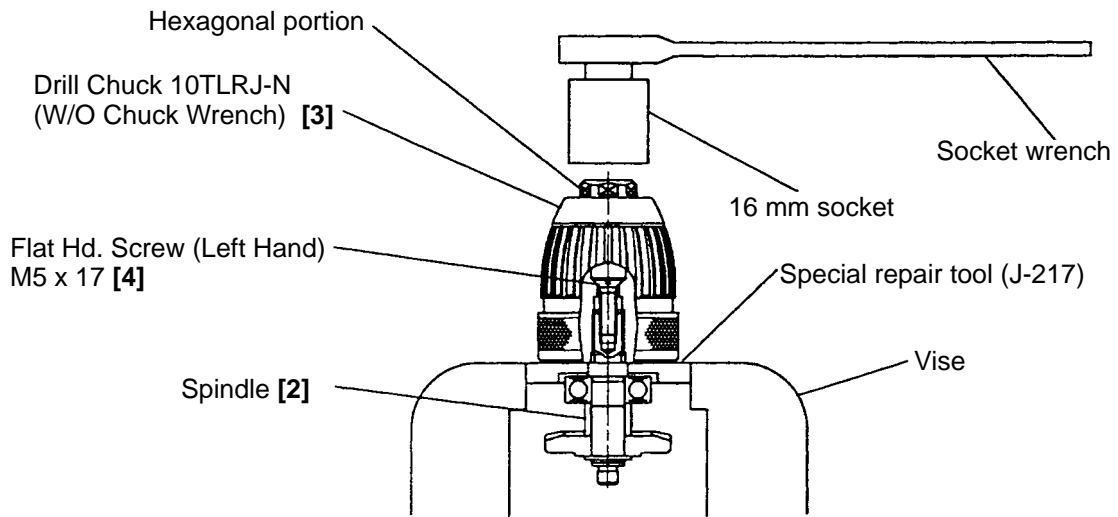


Fig. 3

10-1-2. Reassembly

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following points.

(1) Ensure that the wiring of the Model DN 12DY is connected as shown in the diagram in Fig. 4.

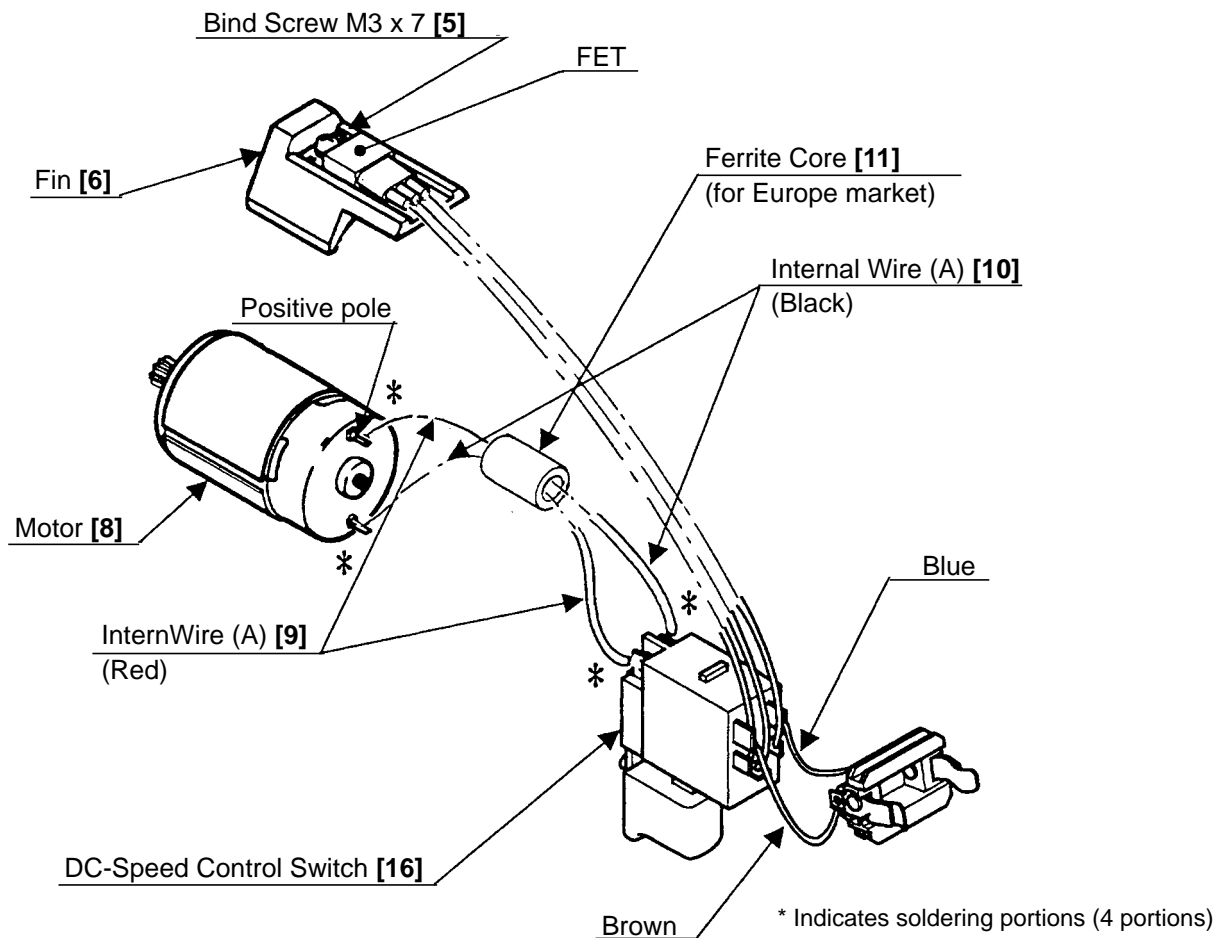


Fig. 4

(2) When soldering Internal Wires (A) [9] (Red) and [10] (Black) onto the Motor [8], be very careful to ensure correct motor polarity. As illustrated in Fig. 5, there is a red mark close to the terminal which indicates the positive pole.

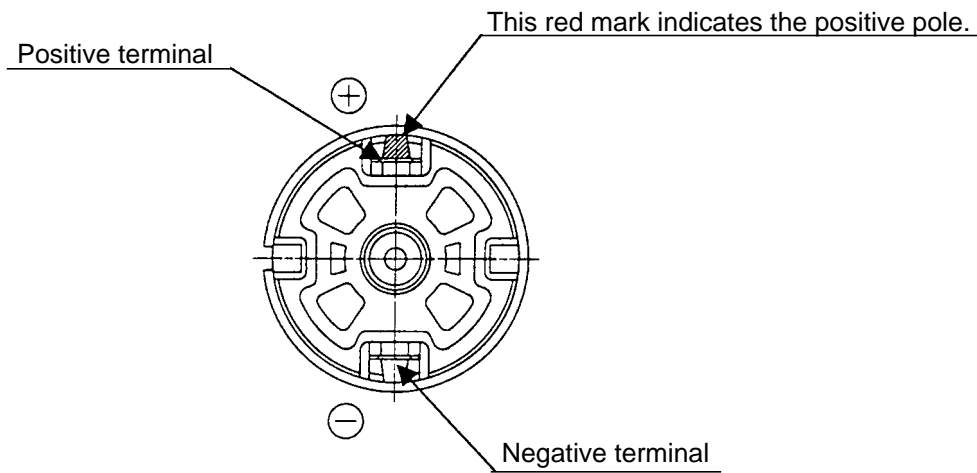


Fig. 5

(3) Be very careful not to bend or otherwise damage the base portions of the leadwires of the FET which are connected to the DC-Speed Control Switch [16].

(4) Tighten each fastening screw with the appropriate tightening torque indicated below.

- Tapping Screw (W/Flange) D3 x 16 [13] 1.1 – 1.9 N·m (11 – 19 kgf·cm, 9.5 – 16.5 in-lbs.)
- Bind Screw M3 x 7 [5] 0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in-lbs.)
- Flat Hd. Screw (Left Hand) M5 x 17 [4] 2.9 – 3.9 N·m (30 – 40 kgf·cm, 26 – 34.7 in-lbs.)
- Drill Chuck 10TLRJ-N (W/O Chuck Wrench) [3] 12.7 – 14.8 N·m (130 – 170 kgf·cm, 112 – 148 in-lbs.)

(5) Lubrication

Apply NPC SEP-3A (Code No. 930035) to the following.

- Teeth portion of the Spindle [2]
- Teeth portion of the Second Pinion [7]
- Pinion of the Motor [8]

(6) Confirm that the rotation direction of the spindle conforms to the rotation direction setting of the pushing button. When the pushing button is set to the "R" position, the spindle must turn to the right (clockwise) when viewed from the tail end of the tool (the end opposite the drill chuck). With a 9-mm dia. test bar (special repair tool J-222-3: Code No. 305-714 is available for supply) mounted in the drill chuck, ensure that run-out is not more than 0.5 mm when measured at a distance of 85 mm from the end of the chuck.

10-2. Precautions in Disassembly and Reassembly of Battery Charger

Please refer to the Technical Data and Service Manual for precautions in disassembly and reassembly of the Battery Charger UC 12SD, UC 14YF2 and UC 24YFA.

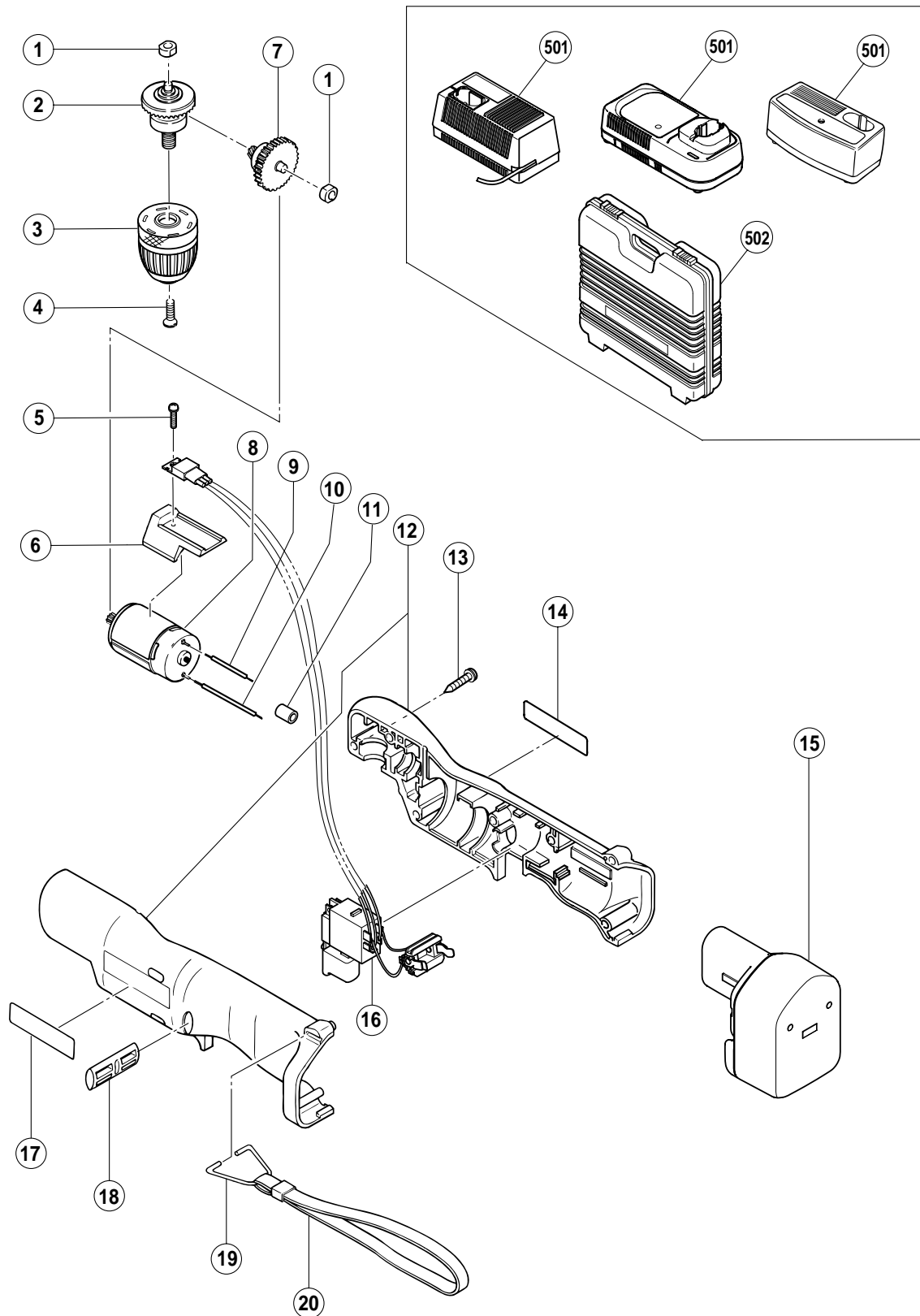
11. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60
	Fixed							
DN 12DY		Work Flow						
	General Assembly			Housing (A).(B) Set Motor DC-Speed Control Switch				
				Drill Chuck (Keyless) Metal x 2 Spindle Second Pinion				

ELECTRIC TOOL PARTS LIST

■ CORDLESS ANGLE DRILL Model DN 12DY

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(E1)



PARTS

DN 12DY

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	997-752	METAL	2	
2	321-964	SPINDLE	1	
3	321-870	DRILL CHUCK 10TLRJ-N (W/O CHUCK WRENCH)	1	
4	992-077	FLAT HD. SCREW (LEFT HAND) M5X17	1	
5	306-039	BIND SCREW M3X7	1	
6	308-311	FIN	1	
7	321-965	SECOND PINION	1	
8	321-968	MOTOR	1	
*	9	321-973	INTERNAL WIRE (A) 60L (RED)	1
*	9	308-307	INTERNAL WIRE (A) 40L (RED)	1 FOR NZL, AUS, USA, CAN
*	10	321-974	INTERNAL WIRE (A) 80L (BLACK)	1
*	10	308-308	INTERNAL WIRE (A) 65L (BLACK)	1 FOR NZL, AUS, USA, CAN
*	11	318-247	FERRITE CORE	1 FOR GBR, FRG, NOR, SWE, DEN
	12	321-972	HOUSING (A).(B) SET	1
	13	313-687	TAPPING SCREW (W/FLANGE) D3X16 (BLACK)	7
	14		NAME PLATE	1
*	15	320-387	BATTERY EB 1220BL (W/ENGLISH N.P.)	1
*	15	320-386	BATTERY EB 1220BL (W/ENGLISH N.P.)	1 FOR USA, CAN
*	15	320-685	BATTERY EB 1220BL (W/ENGLISH N.P.)	1 FOR NZL
	16	321-967	DC-SPEED CONTROL SWITCH	1
	17		HITACHI LABEL	1
	18	306-951	PUSHING BUTTON	1
	19	980-838	HOOK	1
	20	306-952	STRAP (BLACK)	1

STANDARD ACCESSORIES

DN 12DY

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
* 501		CHARGER (MODEL UC 14YF2)	1	
* 501		CHARGER (MODEL UC 24YFA)	1	
* 501		CHARGER (MODEL UC 12SD)	1	
502	321-941	CASE	1	

OPTIONAL ACCESSORIES

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
* 601	320-388	BATTERY EB 1230HL (W/ENGLISH N.P.)	1	
* 601	321-652	BATTERY EB 1212S (W/ENGLISH N.P.)	1	FOR USA, CAN
602	955-656	- DRIVER BIT (A) 3MMX50L	1	
603	955-657	- DRIVER BIT (A) 3MMX70L	1	
604	955-658	- DRIVER BIT (A) 4MMX50L	1	
605	955-659	- DRIVER BIT (A) 4MMX70L	1	
606	955-673	- DRIVER BIT (A) 6MMX50L	1	
607	955-674	- DRIVER BIT (A) 6MMX70L	1	
608	983-005	+ DRIVER BIT (A) NO.2 45L	1	
609	983-010	+ DRIVER BIT (A) NO.3 45L	1	
610	983-004	+ DRIVER BIT NO.1 65L	1	
611	983-006	+ DRIVER BIT NO.2 65L	1	
612	983-011	+ DRIVER BIT NO.3 65L	1	

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	

