
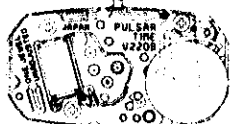




PARTS CATALOGUE/TECHNICAL GUIDE

Cal. WWW2A

[SPECIFICATIONS]



Item	Cal. No.	WWW2A	
		V803A	V220B
Movement			
			
		(x 1.5)	(x 1.5)
Movement size	Outside diameter	18.4 mm between 6 o'clock and 12 o'clock sides 15.3 mm between 3 o'clock and 9 o'clock sides	15.5 mm between 6 o'clock and 12 o'clock sides 8.4 mm between 3 o'clock and 9 o'clock sides
	Casing diameter	φ18.1 mm 17.8 mm between 6 o'clock and 12 o'clock sides	15.1 mm between 6 o'clock and 12 o'clock sides
	Height	2.5 mm	2.2 mm
Time indication	3 hands	2 hands (Hand motion: 20-second step)	
Driving system	Step motor (Load compensated driving pulse type)	Step motor (Fixed-width pulse system)	
Additional mechanism	<ul style="list-style-type: none"> • Electronic circuit reset switch • Train wheel setting device 		
Loss/gain	Monthly rate at normal temperature range: less than 20 seconds		
Regulation system	Nil		
Measuring gate by quartz tester	Use 10-second gate.		
Battery	SEIKO SR621SW, Maxell SR621SW, SONY SR621SW, EVEREADY 364 Battery life is approximately 2 years. Voltage: 1.55V	SEIKO SR521SW, Maxell SR521SW, SONY SR521SW, EVEREADY 379 Battery life is approximately 3 years. Voltage: 1.55V	
Jewels	1 jewel		


HATTORI SEIKO CO., LTD.

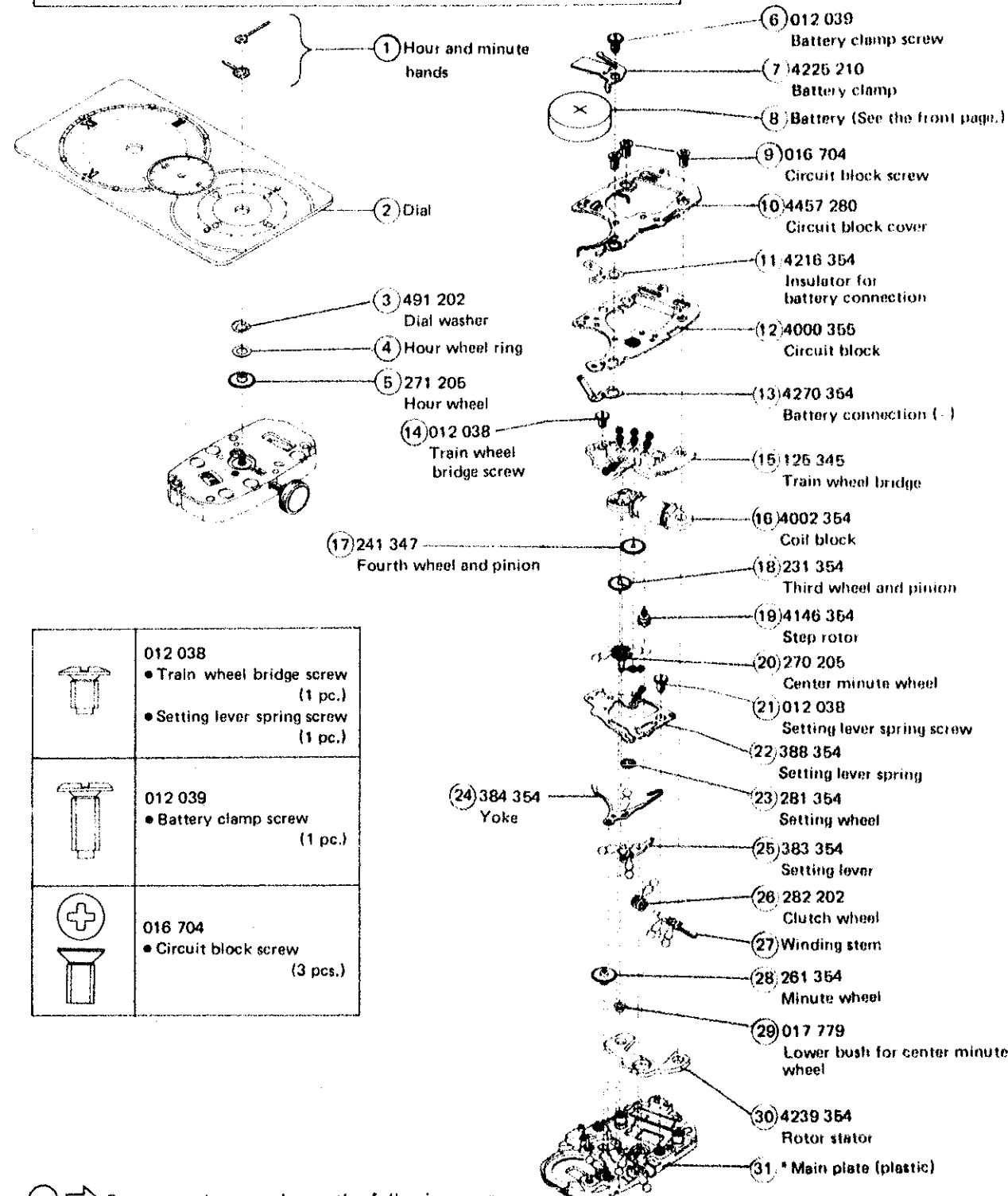
PARTS CATALOGUE

Cal. V220B

Disassembling procedures Figs.: ① → ③①
 Reassembling procedures Figs.: ③① → ①

Lubricating: Types of oil
 Moebius A
 SEIKO Watch Oil S-6

Oil quantity
 Normal quantity



① Hour and minute hands

② Dial

③ 491 202 Dial washer

④ Hour wheel ring

⑤ 271 205 Hour wheel

⑬ 4270 354 Battery connection (-)

⑭ 012 038 Train wheel bridge screw

⑰ 241 347 Fourth wheel and pinion

⑥ 012 039 Battery clamp screw

⑦ 4225 210 Battery clamp

⑧ Battery (See the front page.)

⑨ 016 704 Circuit block screw

⑩ 4457 280 Circuit block cover

⑪ 4216 354 Insulator for battery connection

⑫ 4000 355 Circuit block

⑮ 125 345 Train wheel bridge

⑯ 4002 354 Coil block

⑰ 231 354 Third wheel and pinion

⑱ 4146 354 Step rotor

⑳ 270 205 Center minute wheel

㉑ 012 038 Setting lever spring screw

㉒ 388 354 Setting lever spring

㉓ 281 354 Setting wheel

㉔ 383 354 Setting lever

㉕ 282 202 Clutch wheel




㉖ Winding stem

㉗ 261 354 Minute wheel

㉘ 017 779 Lower bush for center minute wheel

㉙ 4239 354 Rotor stator

㉚ * Main plate (plastic)

	012 038 • Train wheel bridge screw (1 pc.) • Setting lever spring screw (1 pc.)
	012 039 • Battery clamp screw (1 pc.)
	016 704 • Circuit block screw (3 pcs.)

➡ Please see the remarks on the following pages.

* Unavailable for supply

PARTS CATALOGUE

Cal. V803A

Disassembling procedures Figs.: (1) → (33)

Reassembling procedures Figs.: (33) → (1)

Lubricating: Types of oil

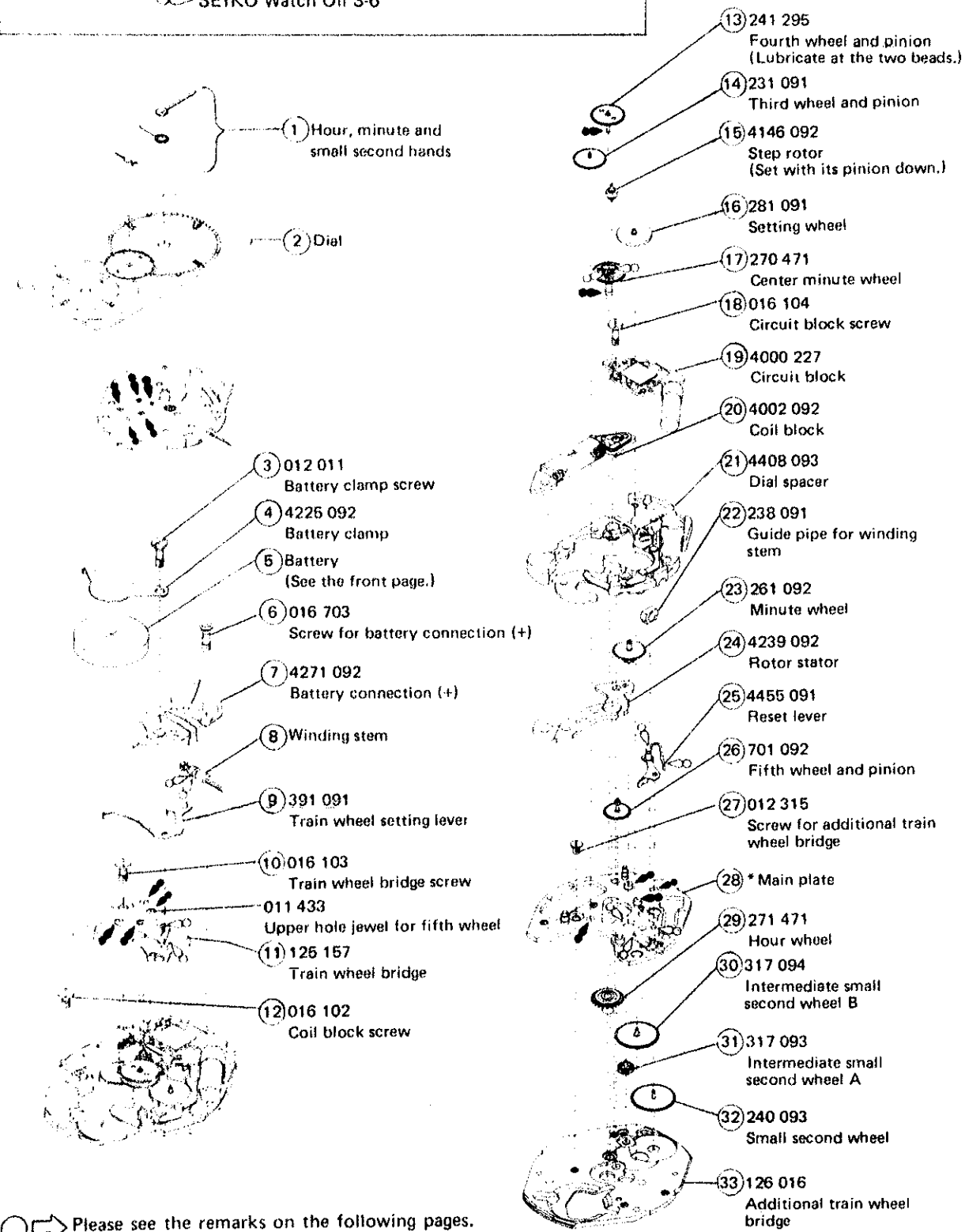
● Moebius A

○ SEIKO Watch Oil S-6

Oil quantity

○ Normal quantity

* Unavailable for supply



○ → Please see the remarks on the following pages.

• Cal. WWW2A is a dual-movement watch that has two movements; Cal. V220B and Cal. V803A. Therefore, the "PARTS CATALOGUE" and "TECHNICAL GUIDE" consist of two parts that pertain to respective calibres.

PARTS CATALOGUE

Cal. V220B

Remarks:

(4) Hour wheel ring

493 201 Height 0.03 mm
493 202 Height 0.05 mm
493 203 Height 0.07 mm

(10) Circuit block cover 4457 280

4457 279 Pulsar Time marking (for Pulsar watches)
4457 280 No Pulsar marking

(27) Winding stem 351 208 (φ80)/351 228 (φ90)

The type of winding stem is determined based on the design of cases. Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding winding stem.

PARTS CATALOGUE

Cal. V803A

Remarks:

(8) Winding stem 351 291

The type of winding stem is determined based on the design of cases. Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding winding stem.

LIST OF SCREWS USED

Shape	Part No.	Name	Shape	Part No.	Name
	012 315	Screw for additional train wheel bridge (1 pc.)		016 104	Circuit block screw (1 pc.)
	016 102	Coil block screw (1 pc.)		016 703	Screw for battery connection (+) (1 pc.)
	016 103	Train wheel bridge screw (1 pc.)		012 011	Battery clamp screw

TECHNICAL GUIDE

Cal. V220B

- The explanation here is only for value checking of Cal. V220B. For "STRUCTURE OF THE CIRCUIT BLOCK" and "REMARKS ON DISASSEMBLING AND REASSEMBLING", refer to the "PARTS CATALOGUE/TECHNICAL GUIDE for Cal. V220B".
- For the repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".

I. VALUE CHECKING (Cal. V220B)

- Coil block resistance:
1.7K Ω ~ 2.1K Ω
- Current consumption

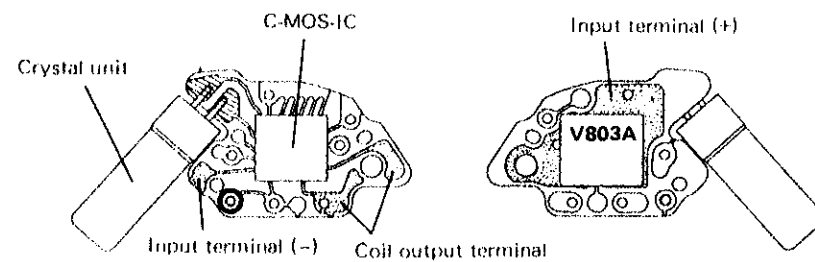
For the whole movement :	Less than 0.6 μ A
For the circuit block alone:	Less than 0.3 μ A

TECHNICAL GUIDE

Cal. V803A

- The explanation here is only for the particular points of Cal. V803A.
- For repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".

I. STRUCTURE OF THE CIRCUIT BLOCK



II. REMARKS ON DISASSEMBLING AND REASSEMBLING

Use the universal movement holder for disassembling and reassembling.

⑤ Battery

Note: Cal. WWW2A has two movements, and the lives of the batteries for the respective movements differ from each other. The battery for Cal. V803A lasts for approximately 2 years while that for Cal. V220B approximately 3 years. However, when either of the batteries expire, be sure to replace both batteries with new ones at a time.

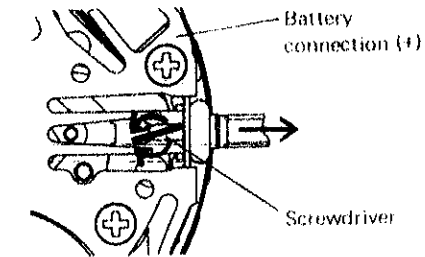
TECHNICAL GUIDE

Cal. V803A

⑧ Winding stem

• How to remove

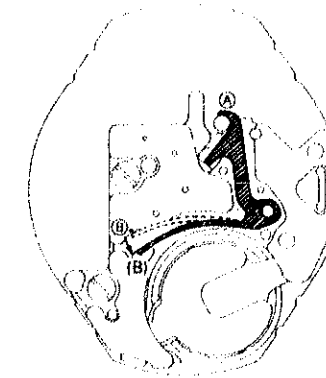
Using a slotted screwdriver with a little wider tip, twist it alternately right and left as shown by the arrows in the illustration below, and pull out the winding stem.



⑨ Train wheel setting lever

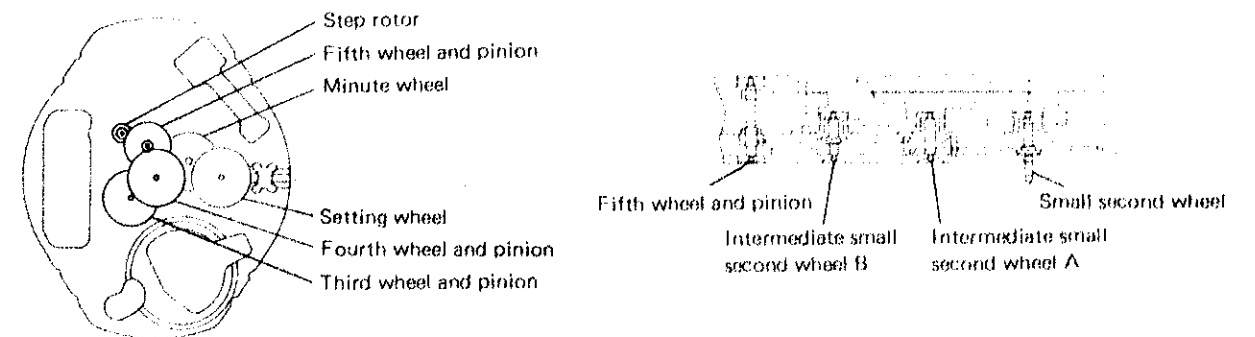
• Setting position

Set (A) portion first, and then insert (B) portion into the long slot (B) in the train wheel bridge. When setting (A) portion, check that it does not touch the fourth wheel and pinion.



⑪ Train wheel bridge

• Setting position



Note: Set the step rotor with its pinion facing toward the main plate side.

III. VALUE CHECKING (Cal. V803A)

- Coil block resistance

2.3K Ω ~ 2.7K Ω

- Current consumption

For the whole of the movement : less than 1.2 μ A

For the circuit block alone, : less than 0.4 μ A

Remarks:

When the current consumption exceeds the standard value for the whole of the movement but is less than the standard value for the circuit block alone, overhaul and clean the movement parts and then measure current consumption for the whole of the movement again. The driving pulse generated to compensate a heavy load that may apply on the gear train, etc. is considered to cause excessive current consumption for the whole of the movement.