PARTS LIST/TECHNICAL GUIDE Automatic Chronograph Cal. 8R48A/8R49A

[SPECIFICATIONS]

| Item | | Cal. No. | 8R48A/8R49A | | | | |
|-----------------------------|---------------------------------|---|---|----------------------|--------------------------------------|----------------------------|----------------|
| Calendar (Date: Date disk) | | | Movement Image: Side State Stat | | | | Calendar side] |
| Driving sys | stem | | Automati | c winding wit | h manual wind | ling mechanis | m |
| Additional function | | Stopwatch function Measures up to 12 hours Semi-instantaneous date change mechanism Second hand stop function | | | | | |
| Crown oper | Crown operation Normal position | | Manual winding (clockwise only) | | | | |
| | | 1st click position | Date setting (counterclockwise only) | | | | |
| | | 2nd click position | Time setting (Hour and minute) | | | | |
| Vibration | per h | our | 28,800 (8 beats per second) | | | | |
| Daily Date | | + 25 / - 15 seconds at normal temperature range (Between 5°C and 35°C) | | | | | |
| Loss/Gain | Loss/Gain | | | Inst (Fu | antaneous rate a lly wound condit | lsochronous fault | |
| | for n | novement | Testing positions | Dial upward | 6 o'clock at the top up | 9 o'clock at the top up | Dial upward |
| | | Measurement (daily rate in seconds:s/d) | + 15 s/d – 5 s/d | + 20 s/d - 10 s/d | + 20 s/d - 10 s/d | ± 10 s/d | |
| Regulation system | | ETACHRON system | | | | | |
| Lift angle of the escapment | | 52 ° | | | | | |
| Coutinuous operating time | | From fully wound to stoppage: Approximately 45 hours | | | | | |
| Number of jewels | | 34 jewels | | | | | |

SEIKO WATCH CORPORATION

SPECIFICATIONS

















• List of screw

| Parts code | Parts name | Parts code | Parts name | Parts code | Parts name |
|------------|--|------------|---|------------|--|
| 0012 092 | (15) Second counting wheel | 0012 354 | 49 Unit intermediate spacer screw | 0012 420 | 59 Balance bridge screw |
| | 17) Chronograph bridge screw (x5) | | 61 Pallet bridge screw (x2) | | 69 Barrel and train screw (x3) |
| | 33 Operation lever spring screw | | 64 Automatic train bridge screw (x2) | 0012 168 | |
| | Cperation cam jumper | | Lower plate for barrel and train wheel bridge screw | | 85 Yoke spring screw (x2) |
| | Chronograph coupling lever spring screw | | 79 Center wheel bridge screw | | |
| | 58 Main plate screw (x4) | 0012 201 | | 0016 709 | ② Hour wheel guard screw (x3) |
| 0012 919 | 67Ratchet wheel screw | | 45 Operatig cam screw | | Date indicator maintaining plate screw |

9 Date dial

| Parts code | Position of crown | Position of date frame | Color of numbers | Color of background |
|------------|-------------------|---------------------------|------------------|-------------------------|
| 0878 109 | ЗН | ЗН | Black | Silver (Plain metal) |
| 0878 108 | ЗН | 3H | White | Black |

*All parts code are subject to change without notice.

• How to find the correct parts, if not determined by 4 digit caliber number

Following parts are determined based on the design of watches, such as hands height, dial color, and design of cases. Please refer to the SEIKO WATCH PARTS CATALOGUE in order to choose corresponding parts.

① Oscillating weight with ball bearing 0509 *** • 1509 ***

(9) DATE DISK 0878 ***

(9) WINDING STEM 0351200

*For screw down crown models, the stem is assembled to the crown and is not available separately.

| (18) Chronograph bridge | 0190 *** |
|------------------------------------|----------|
| A Minute counting wheel | 0902 *** |
| 25 Hour counting wheel | 0902 *** |
| (44) Seconds wheel | 0240 *** |
| 60-1 Balance complete without stud | 0310 *** |

| CAL Hand Height | | (18)Chronograph bridge | (19)Minute counting wheel (20)Hour counting wheel | 44 Seconds wheel | 60-1) Balance complete without stud | |
|-----------------|-------------|---------------------------|--|---------------------|---|--|
| 0040 | 3 (LONG) | 0190192 | 0902184 | 0240178 | 0210055 | |
| 0040 | 4 (SPECIAL) | 0190193 | 0902191 | 0240191 | 0310055 | |
| 8R49 | 3 (LONG) | 0190192 | 0902184 | 0240178 | 0310277 | |

• Location of the jewels

| | | Upper | | Lower | |
|---------------------------|--|-----------|------------|-----------|------------|
| | | Cap jewel | Hole jewel | Cap jewel | Hole jewel |
| | (77) FORTH WHEEL | _ | ο | _ | - |
| GEAR TRAIN | (78) THIRD WHEEL | 0 | 0 | - | 0 |
| MECHANISM | 84 ESCAPE WHEEL | 0 | 0 | - | 0 |
| | (81) CENTER WHEEL | - | 0 | _ | 0 |
| | 66 2ND REDUCTION WHEEL | _ | 0 | _ | 0 |
| WINDING MECHANISM | (70) CROWN WHEEL (Assembled to the BARREL AND TRAIN WHEEL BRIDGE | _ | 0 | _ | - |
| | (74) 1ST REDUCTION WHEEL | - | 0 | - | 0 |
| | 12 INTERMEDIATE DATE WHEEL | - | 0 | - | - |
| | (22) MINUTE COUNTING 2ND INTERMEDIATE WHEEL | - | 0 | - | 0 |
| | (23) MINUTE COUNTING 1ST INTERMEDIATE WHEEL | - | 0 | - | 0 |
| CHRONOGRAPH | 25 HOUR COUNTING WHEEL | - | - | - | 0 |
| UNIT | (24) MINUTE COUNTING WHEEL | - | - | - | 0 |
| | (43) SECONDS COUNTING WHEEL | - | - | - | - |
| | (44) SECONDS WHEEL | - | - | - | 0 |
| | (47) CHRONOGRAPH WHEEL | - | 0 | - | 0 |
| | (60) BALANCE COMPLETE (WITH STUD) | 0 | 0 | 0 | 0 |
| | 63 PALLET FORK | - | ο | - | ο |
| BALANCE AND ESCAPEMENT | ENTRY PALLET JEWEL | 0 | | | |
| | EXIT PALLET JEWEL | 0 | | | |
| | ROLLER JEWELS | 0 | | | |
| TOTAL NUMBER OF JEWELS | | 34 jewels | | | |

• Tools and consumables required for disassembling/reassembling

Movement holder

UNIVERSAL MOVEMENT HOLDER (S-682)



• Watch oils

SEIKO watch grease S-6 and S-4. watch oil AO-3 (or Moebius A)



AO-3



S-4















8. Chronograph unit and Base unit (Disassembling and Reassembling)

Detach and reassemble the chronograph unit and base unit by taking off the screws (4pcs.)



Note:

Before attaching the chronograph unit, check that base unit operates correctly. When attaching chronograph unit on base unit, push button A for the START function, in order to ensure that the following wheels mesh perfectly with one another.

| Crown position | Base unit | Chronograph unit | Check point |
|-----------------------|--|--|-----------------|
| First click position | Date corrector setting transmission wheel D | Date corrector setting transmission wheel E | Date correction |
| Cocord aliak position | 56 Minutes transission wheel | Minute wheel pinion A | Hand setting |
| Second click position | 55 Seconds transmission wheel | Seconds counter intermediate wheel | Hand driving |

9. Identification and setting position of Dial washers

| Parts code | Parts code | Set po | osition | Note | |
|-----------------------------|------------|---|--|--|--|
| 20 Dial washer B (2 pcs) | 0491 181 | A CONTRACTOR OF | Minute counting wheel Hour counting wheel | Color of Brass Do not set it upside down | |
| (19) Dial washer C | 0491 182 | | Minute counter intermediate wheel and pinion B | • Color of Silver | |
| (21) Dial washer D | 0491 183 | | Second wheel | • Color of Brass | |



Cal. 8R48A/8R49A

TECHNICAL GUIDE

11. Setting position of oscillating weight

Before assembling oscillating weight.

Match the center of oscillating weight and winding stem.

Set the hole of first reduction whell gear on the imaginary line toward balance bridge guide pin. **Note:**

The procedure is necessary to maximize the performance of automatic winding.



Ratchet wheel

14. How to install Second / Minute / Hour chronograph hands

Place the movement directly on a flat metal plate.

We recommend the use of Universal movement holder to install hands.

- (1) Push button A (chronograph start)
- (2) Push button A (chronograph stop)
- (3) Push button B (chronograph reset)
- (4) After (1) ~ (3), install the second and hour chronograph hands at "12" o'clock position first, and install chronograph minute hand at "30" minute position.





* Do not reuse the chronograph hands once detached. Please change and use new hands.

Note:

During time setting, if the chronograph is started, chronograph hour and minute hands will rotate simultaneously. This is not a malfunction. Please reset chronograph by pushing button B. Chronograph hour and minute hands will return to their reset positions.

Cal. 8R48A/8R49A



1. How to set the time

- 1) Pull out the crown to the second click position.
- 2) Turn the crown to set hour and minute hands. (Check that AM / PM is set correctly.)
- 3) Push the crown back into the normal position.

Note:

During time setting, if the chronograph is started, chronograph hour and minute hands will rotate simultaneously. This is not a malfunction. Please reset chronograph by pushing button B. Chronograph hour and minute hands will return to their reset position.

2. How to set the date

- 1) Pull out the crown to the first click position.
- 2) Turn the crown to left for date setting.
- * Do not set the date between 8:00 P.M. and 2:00 A.M. as this will cause a malfunction.
- 3) Push the crown back into the normal position.

3. To wind up the mainspring

- 1) Manual winding ... Rotate the crown clockwise at normal position.
 - Fully wind up by turning the crown minumum 55 times.
 - Fully wind up by turning the ratchet wheel screw 8 times.
 - It will start to move naturally shaking slightly.
- 2) To wind up with winding machine.
 - Rotary speed : 30 rpm
 - Operating time : 60 minutes

