

Watch Movement Specification and Drawing

WORLD TIME & ALARM

Cal. YM26A

Movement Size

12'''

Casing Diameter

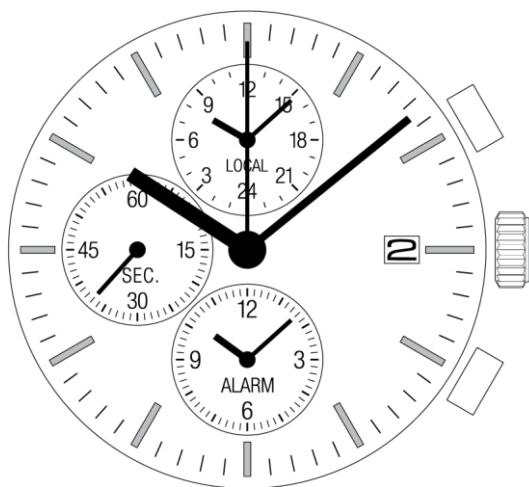
Ø 27.0mm

Height

3.70mm

Battery Life

3 years

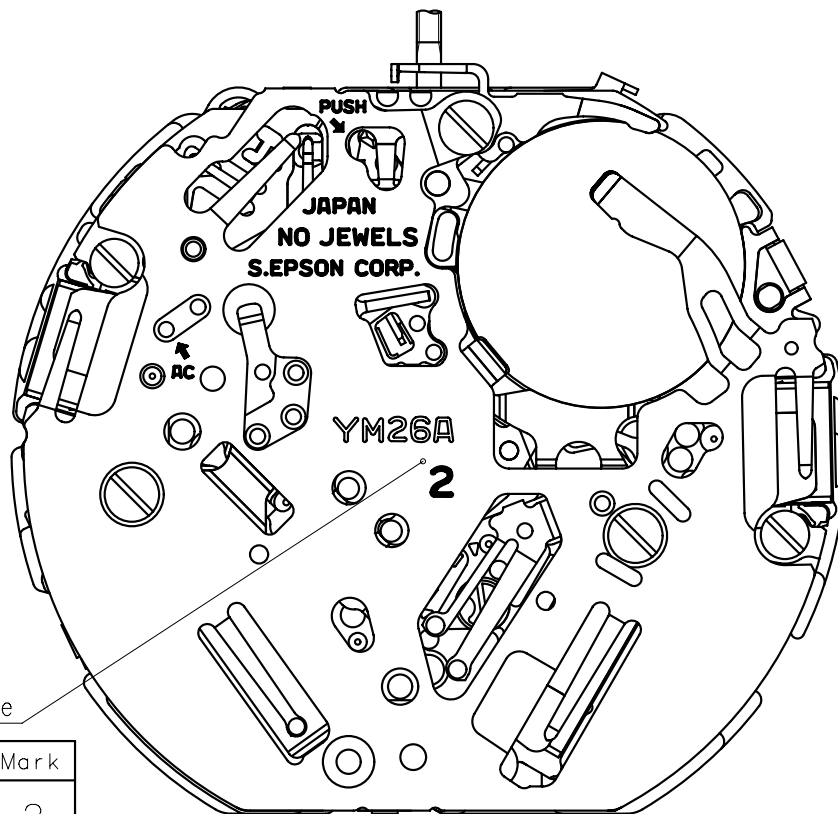


Date: 22/Aug./'23

Cal. YM26A

Items	Rev.	Page
Specifications	02	1
Appearance	01	2
Casing	04	3
Hand fitting	02	4
Hand setting stem	02	5
Magnetic shield plate	01	6
Dial-01	01	7-01
Dial-02	01	7-02
Holding ring for dial	03	8
Attention for assembly	02	9
Attention of casing part structure-01	01	10-01
Attention of casing part structure-02	00	10-02
Attention of design	00	11
Operation-01	01	12-01
Operation-02	01	12-02

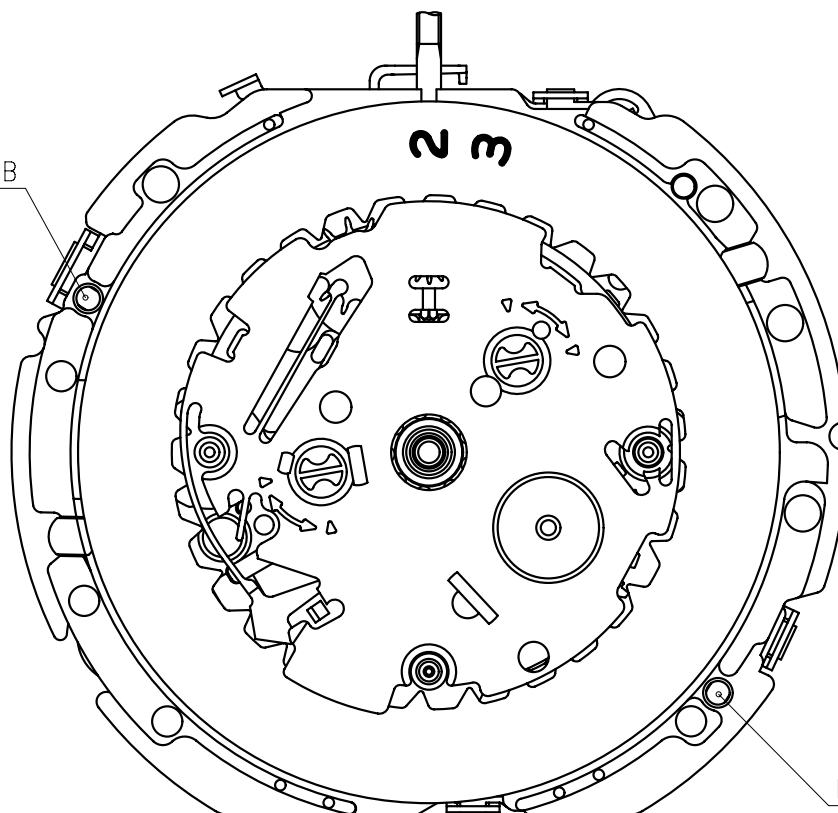
Cal.	YM26A	Specifications	Date : 22/Aug./'23
			Rev. : 02
Analog Quartz 12''' World time & Alarm Movement			
1. MOVEMENT DIMENSIONS			
Outside diameter	φ 27.60mm (12H-6H) × 24.00mm (3H-9H)		
Casing diameter	φ 27.00mm (12H-6H)		
Total height	3.7mm (including battery)		
2. TIME STANDARD			
Type of quartz oscillator	Tuning fork		
Frequency of quartz oscillator	32,768 Hz		
Accuracy	±20 seconds per month (on wrist)		
Operating temperature range	−5°C to +50°C		
Regulation device	Nil (Pre-adjusted)		
3. INDICATOR / FUNCTIONS			
3 Hands	Hour / Minute / City (Center)		
Small hands	World time hour and minute (12H) / Alarm hour and minute (6H)		
	Small second (9H)		
Calendar	Instant setting device for date calendar		
Reset switch			
System-reset switch			
Power depletion warning function (BLD)			
(Small second hand moves at 2-second intervals)			
Alarm			
World time			
4. FEATURES			
Jewels	0 Jewels		
Anti-magnetism	Over 1600A/m (Direct current magnetic field)		
Maximum unbalance of hands	Small second hand	: 0.03 μ N•m	
	World time minute hand	: 0.03 μ N•m	
	World time hour hand	: 0.025 μ N•m	
	Alarm minute hand	: 0.03 μ N•m	
	Alarm hour hand	: 0.025 μ N•m	
	City hand	: 0.06 μ N•m	
	Minute hand	: 0.70 μ N•m	
Moment of Inertia	City hand	: less than 0.2 μ g•m ²	
5. BATTERY			
Type / Size	Silver oxide battery / φ 9.5mm × t 2.73mm		
Recommended battery	SR927W		
Nominal voltage	1.55 V		
Battery life	Approx. 3 years		
	(20 seconds alarm operation per day)		
Driving current consumption	Approx. 0.80 μ A		
Operation stopping voltage	0.9 V		
6. SEPARATED PARTS (Parts code)			
Hand setting stem	0351584 (Standard)		
Holding ring for dial	0866650 (Standard)		
Battery	SR927W		
Magnetic shield plate	4259519		
Piezoelectric element	4589801		
A.C. comment seal	0110705		
7. TEST OF ACCURACY			
Equipment to be used	SEIKO quartz tester QT-99, QT2100		
	Greiner quartz timer-C , Witschi Q-tester 4000		
Duration of measurement	10 seconds		
Microphone to be used	Electromagnetic detection type		
All specifications are subject to change without notice.			



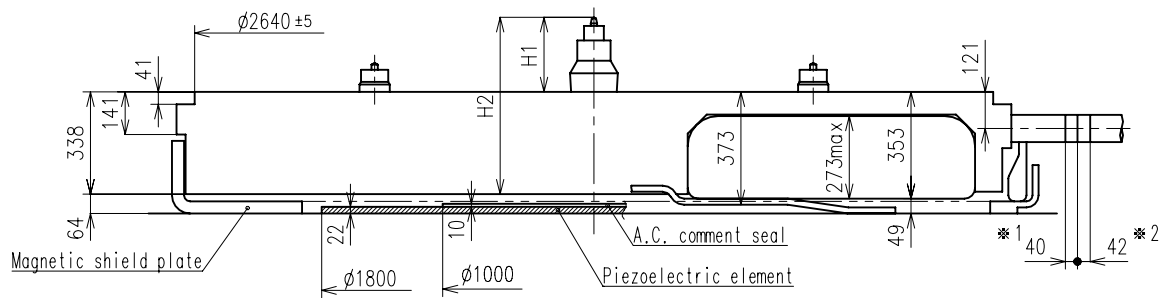
Hands type

	Mark
Type(M) YM26A**	2

Dial leg hole B

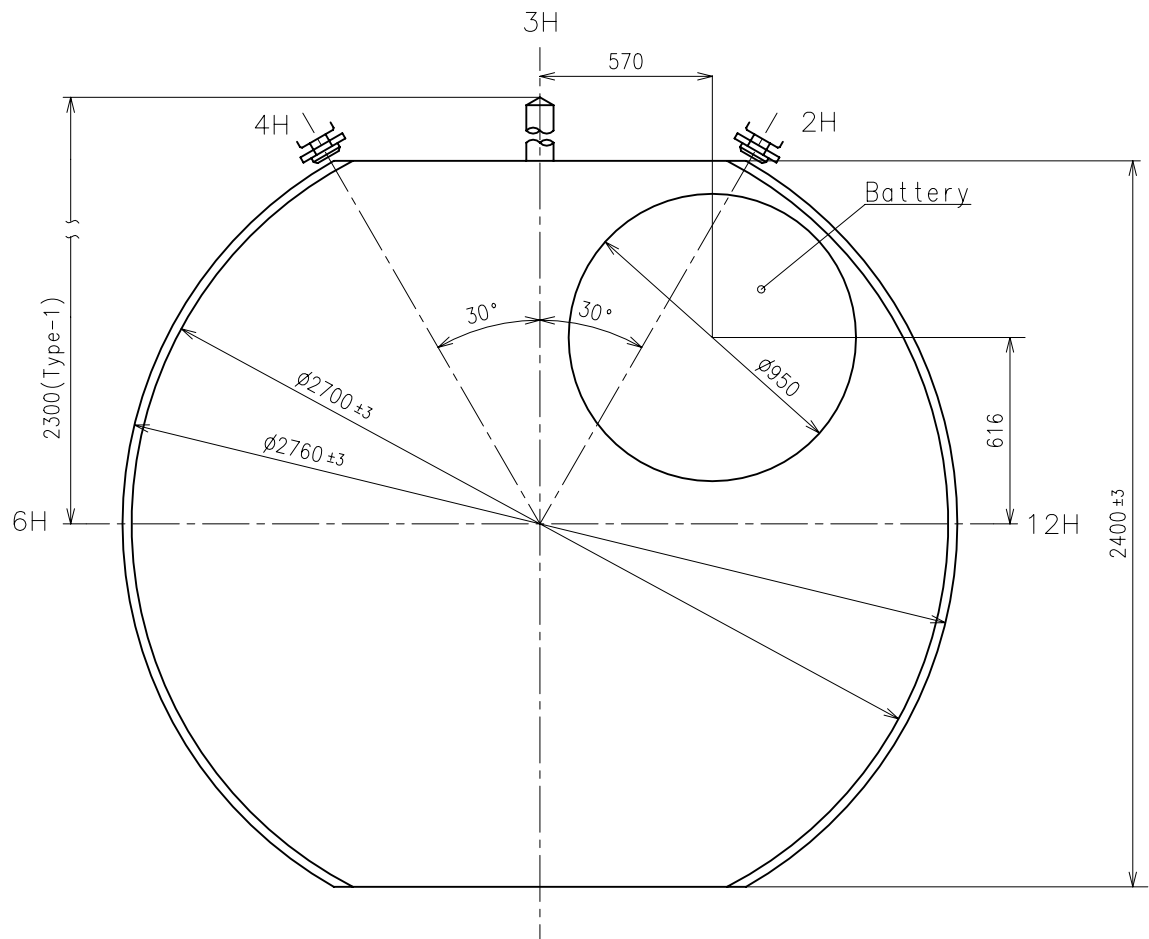
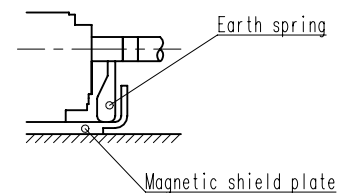
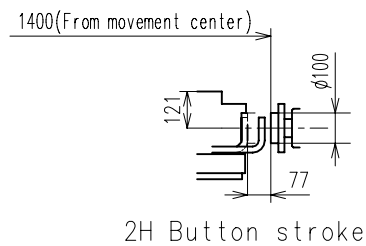
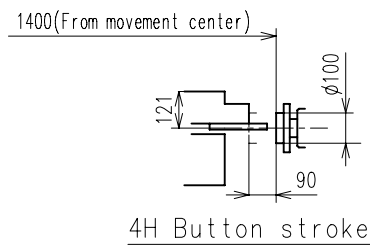


Dial leg hole A



Center post		Type M (2) YM26A**
Maximum height from dial support	H1	246.5
Total height including movement	H2	584.5

*1:First pullout stroke
*2:Second pullout stroke

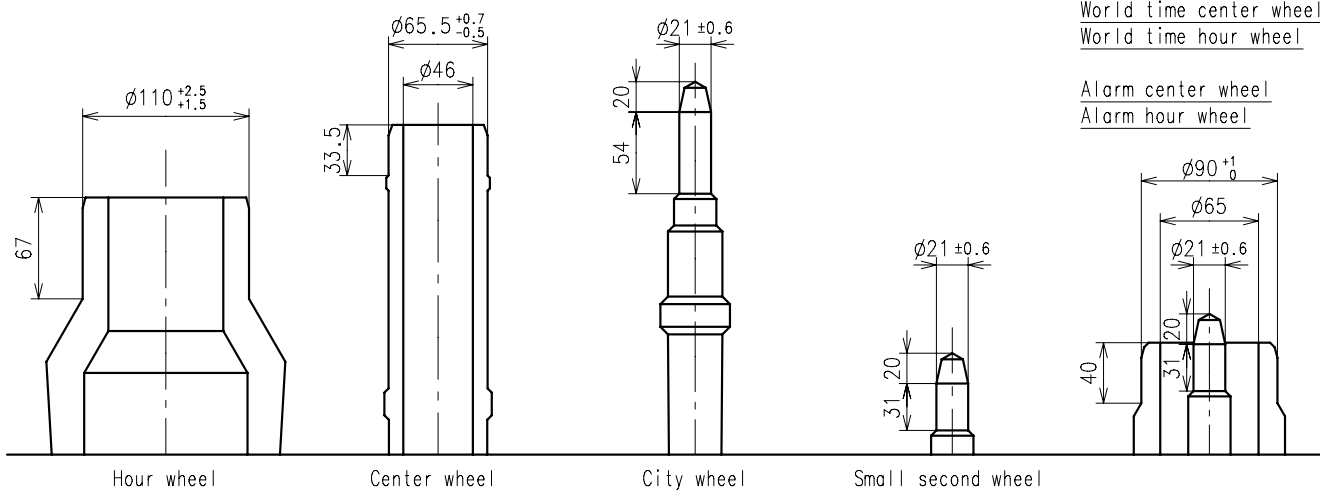


*Unbalance

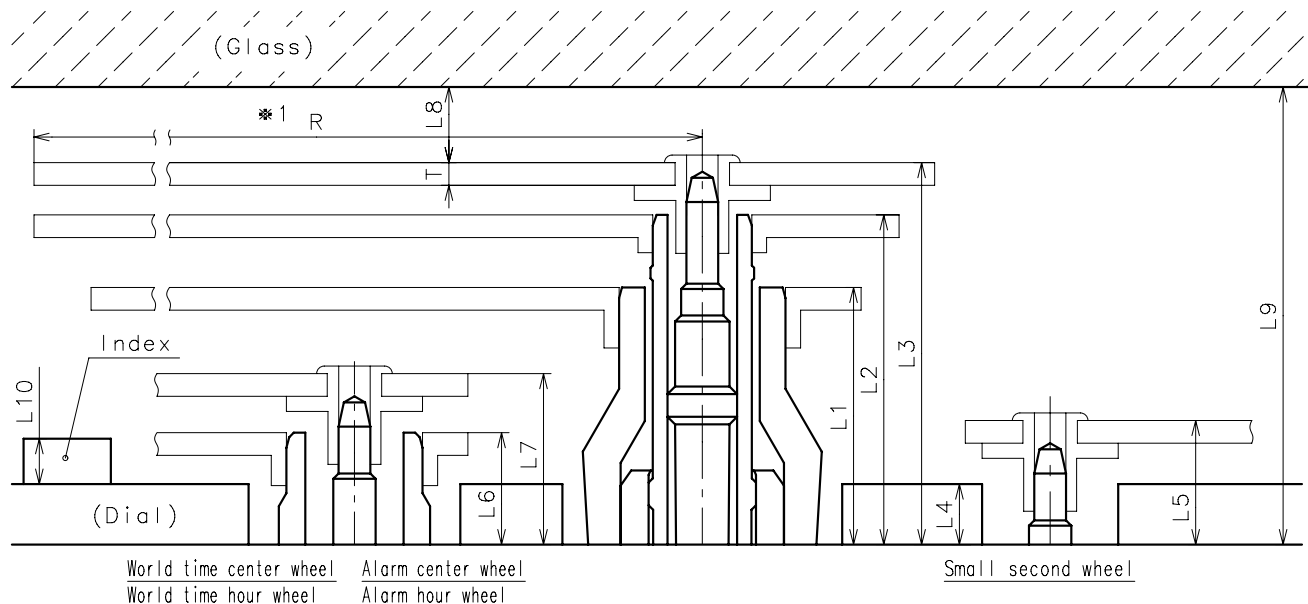
· Small second hand	$\leq 0.03\mu \text{ N} \cdot \text{m}$	$(3\mu \text{ g} \cdot \text{m})$
· World time minute hand	$\leq 0.03\mu \text{ N} \cdot \text{m}$	$(3\mu \text{ g} \cdot \text{m})$
· World time hour hand	$\leq 0.025\mu \text{ N} \cdot \text{m}$	$(2.5\mu \text{ g} \cdot \text{m})$
· Alarm minute hand	$\leq 0.03\mu \text{ N} \cdot \text{m}$	$(3\mu \text{ g} \cdot \text{m})$
· Alarm hour hand	$\leq 0.025\mu \text{ N} \cdot \text{m}$	$(2.5\mu \text{ g} \cdot \text{m})$
· City hand	$\leq 0.06\mu \text{ N} \cdot \text{m}$	$(6\mu \text{ g} \cdot \text{m})$
· Minute hand	$\leq 0.70\mu \text{ N} \cdot \text{m}$	$(70\mu \text{ g} \cdot \text{m})$

*Moment of inertia

· City hand	$\leq 0.2\mu \text{ g} \cdot \text{m}^2$
-------------	------------------------------------------

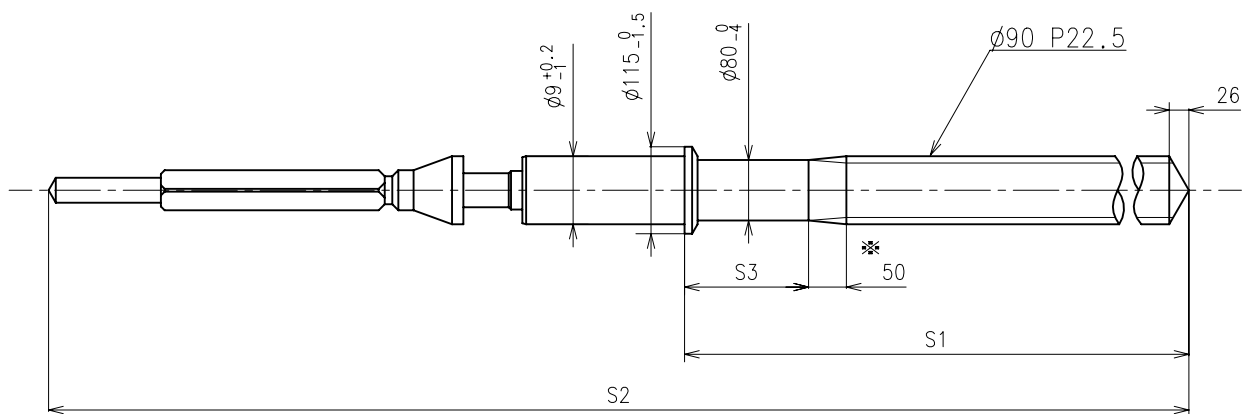


	Parts No.							
	Hour wheel	Center wheel	City wheel	Small second wheel	World time center wheel	World time hour wheel	Alarm center wheel	Alarm hour wheel
Type M (2) YM26A**	0271588	0221583	0888582	0240580	0270582	0278581	0270582	0271583



	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	T	*1 R
Type M (2) YM26A**	170	218	252.5	40	77	74	113	MIN: 50	MIN: 302.5	MAX: 50	15	MAX: 1250

*1: It is the size taken into consideration for hands attachment.
Please observe some standard value specified in unbalance and moment of inertia
when using long hands.



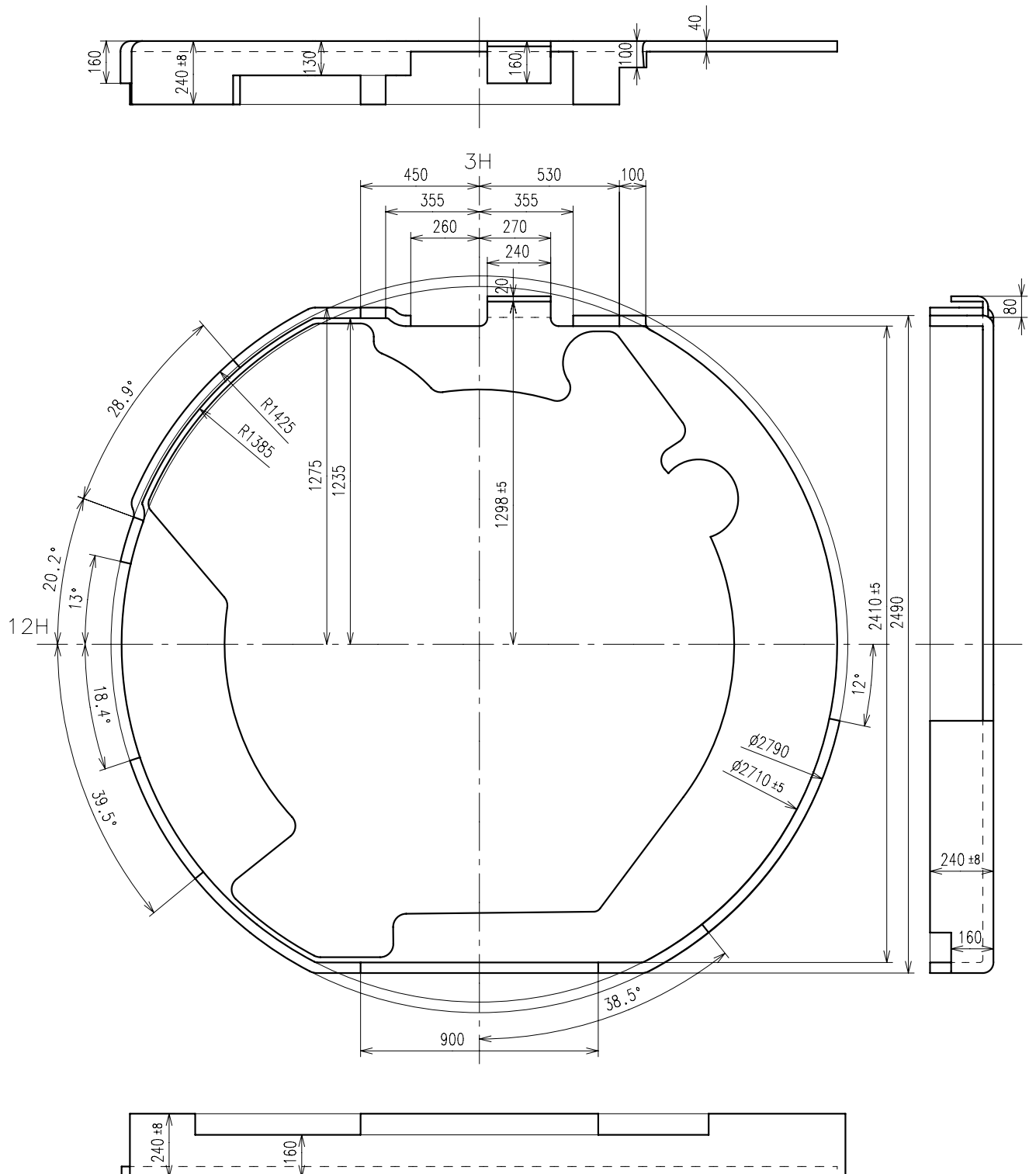
※ Not threaded

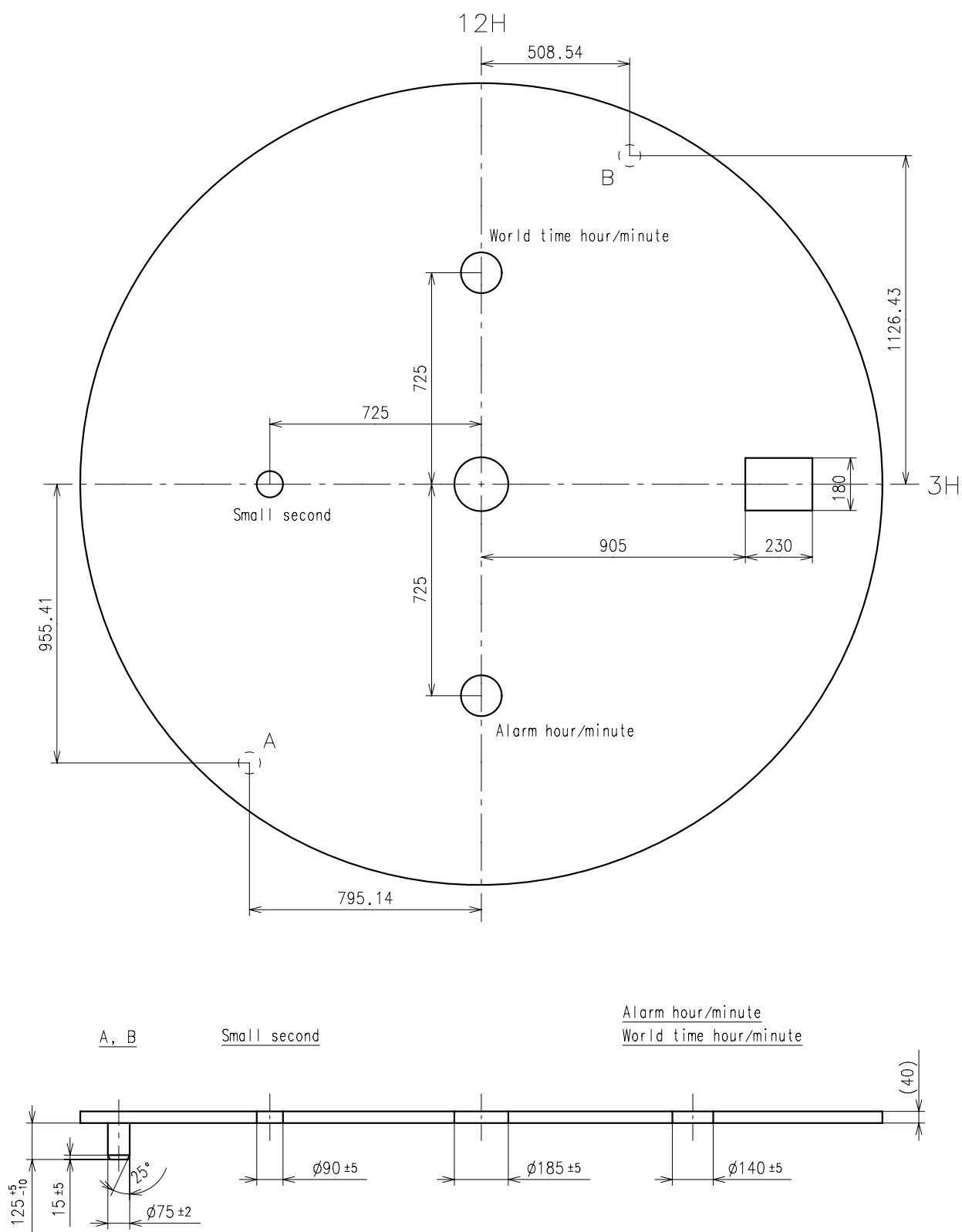
	Part No.	S1	S2	S3
Type-1 (Standard)	0351584	1164	2005.5	164

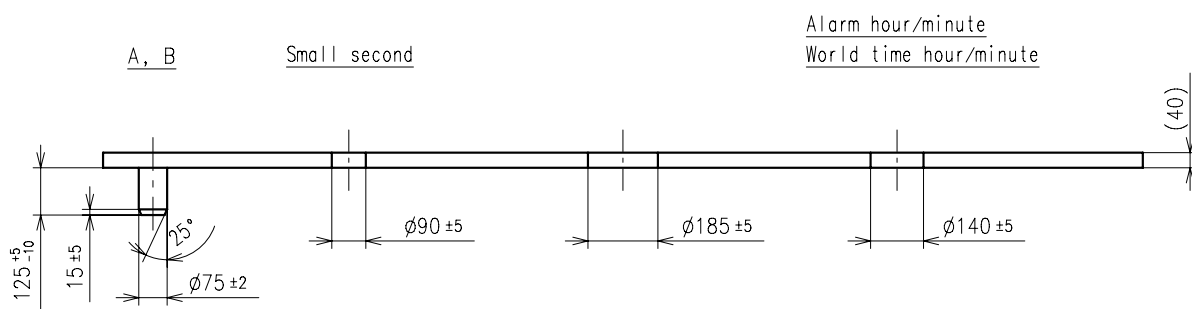
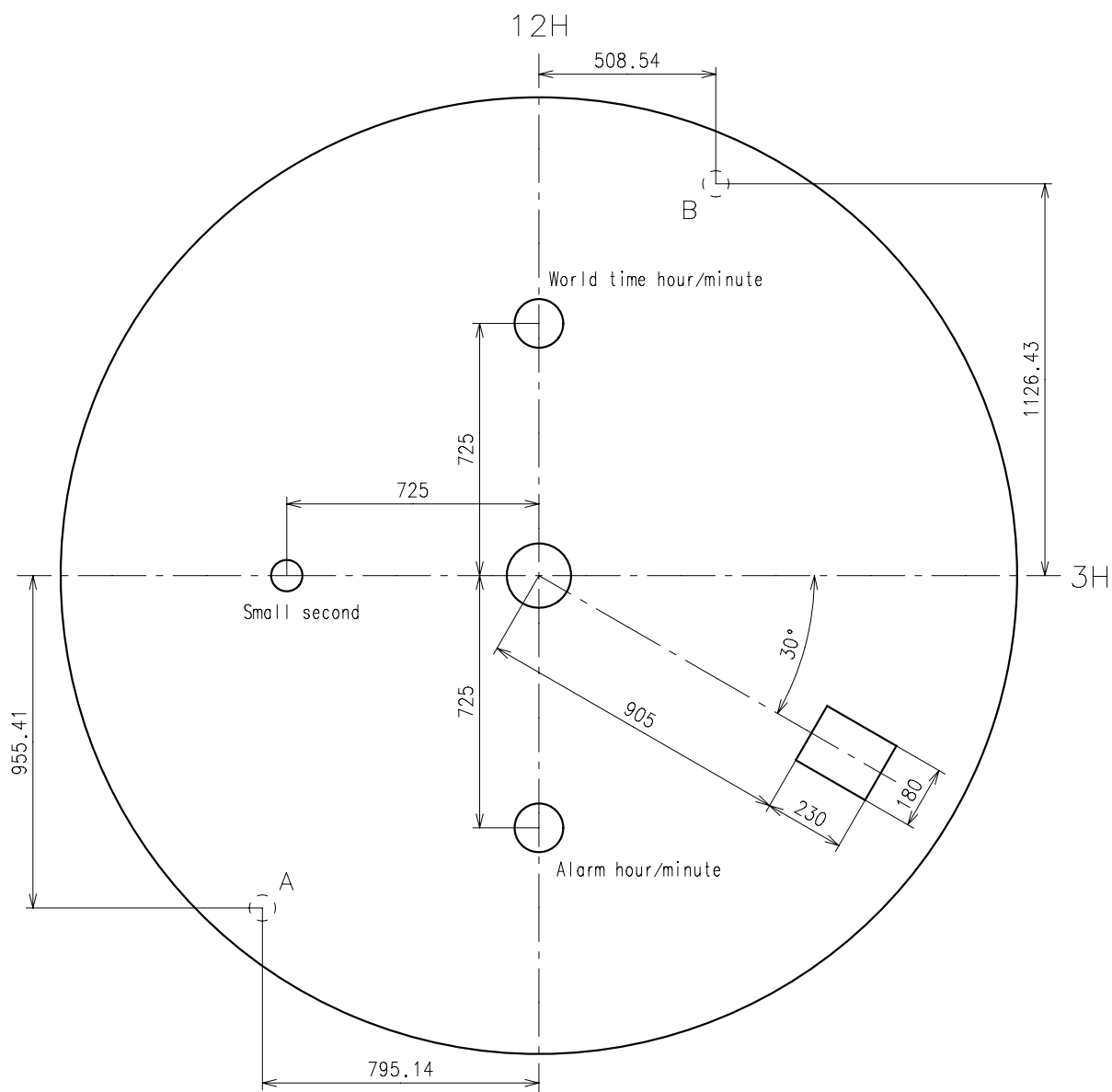
Material : Steel

Hardness : Vickers 600±50

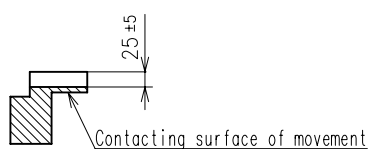
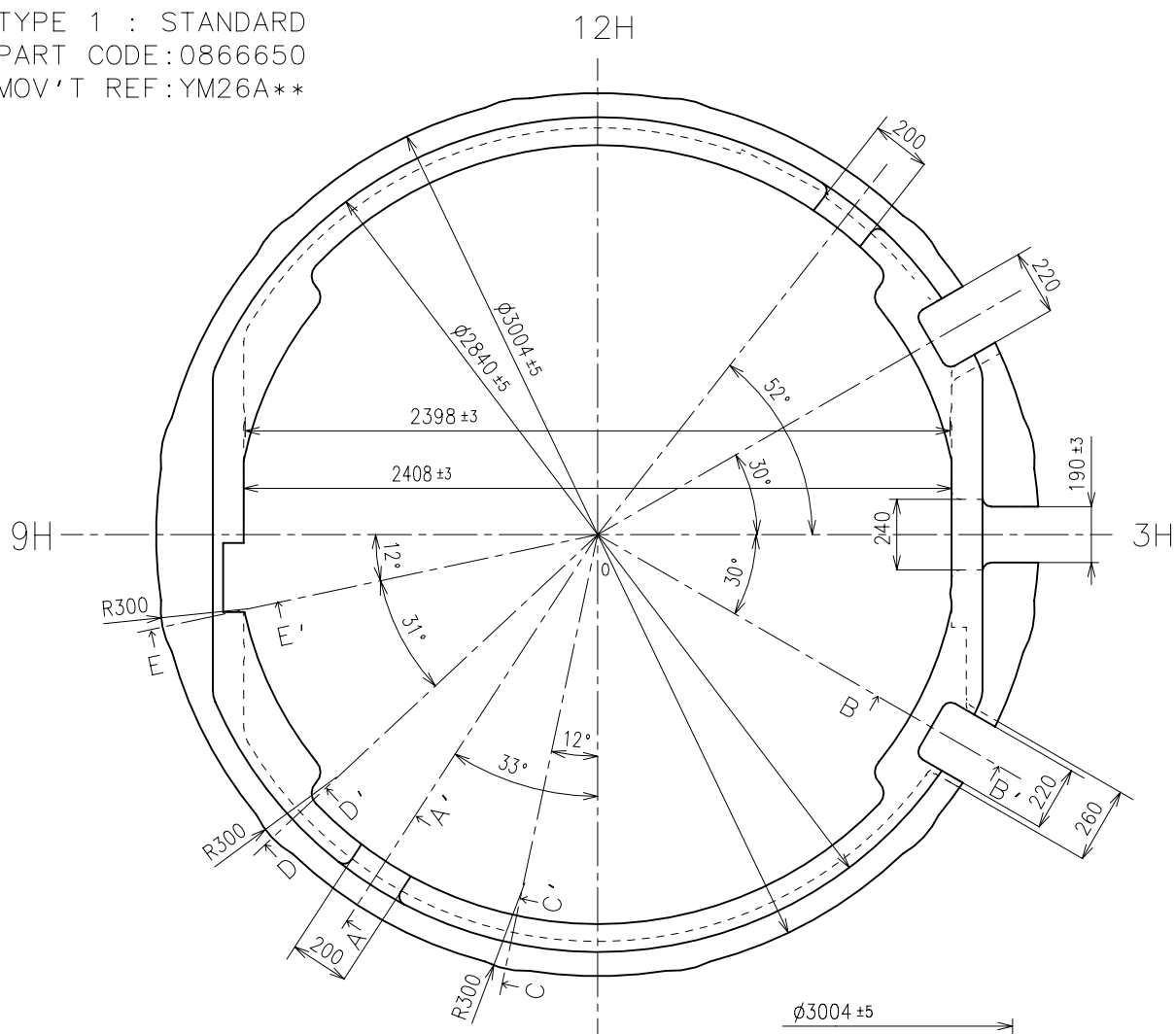
Part No. : 4259519



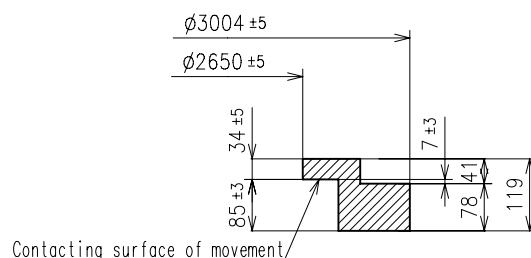




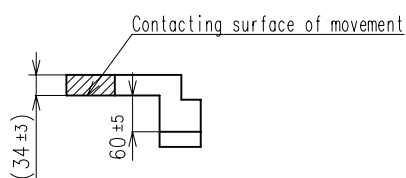
TYPE 1 : STANDARD
PART CODE:0866650
MOV'T REF:YM26A**



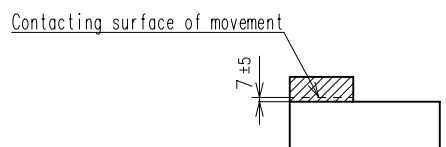
A-A' section



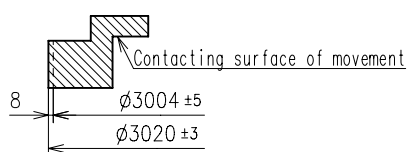
0-12H section



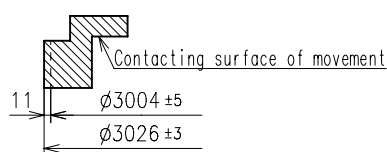
B-B' section



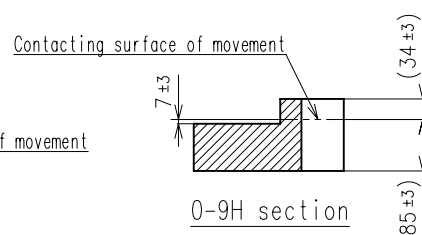
0-3H section



C-C' section



D-D' section



0-9H section

1.How to replace the battery

- Please use the specified battery to keep the stable performance for a long time.
- Please install the minus part of the battery towards inside of the watch.
- When installing or changing the battery, it is recommended to remove three battery clamp screws first, then remove the battery clamp not to damage the movement parts.
If you install the battery without removing the battery clamp, please install the battery from [→] direction as illustrated below Fig.[1].
- Install the battery under the circuit cover as illustrated below Fig.[1] and Fig.[2].
- System-reset is required as below.
After installing battery, short the circuit pattern "AC" to battery clamp for more than 2 seconds.
Then, under time setting condition, set the world time, city and alarm time.

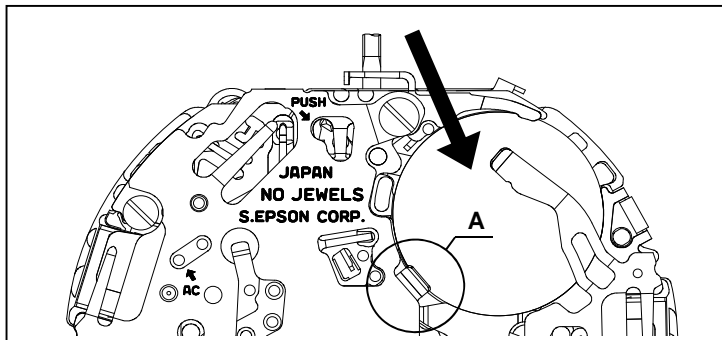


Fig.[1]

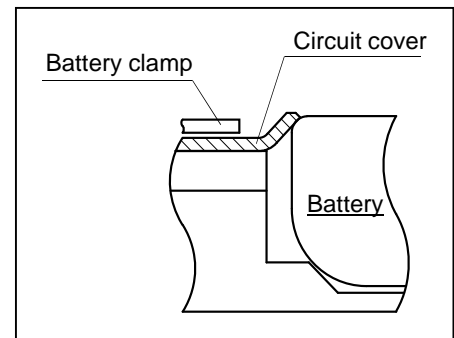


Fig.[2] A section

2.How to remove the stem

- When removing the stem, pull out the crown at 1st click position and then remove the stem while pressing the hollow portion of setting lever by tweezers. (Refer to the Fig.[3].)
- Please do not transform the earth spring.

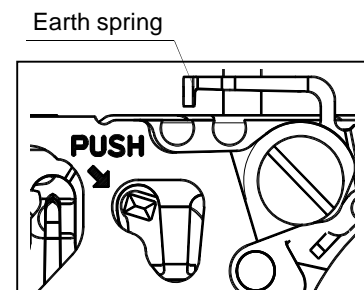


Fig.[3] Crown pulled out at 1st click

3.How to set the hands

- Each hand moves at step interval. Set the each hand at correct position according to the scale on the dial in order not to make a mistake in reading time.
- Do not turn the hand forcibly.

4.How to remove the hands

- When removing the hands, use exclusive fork-shaped tools.
- Do not remove the dial under the condition that any hands are set.

5.How to test the accuracy

When measuring the time accuracy, use specified Quartz Tester and change the gate time in 10 seconds.

1.Minute hand

The center wheel have a safety stopper structure to prevent the minute hand from being pressed too much. However pay attention to the contact between hour hand and minute hand.

2.Holding ring for dial

Use the specified holding ring for dial to prevent rotation of the movement inside of the case in order to stabilize the button operation.

Refer to the [Holding ring for dial] page instruction as to the shape and tolerance.

3.Case

Use the metal case to prevent from the movement mal-function by static electricity.

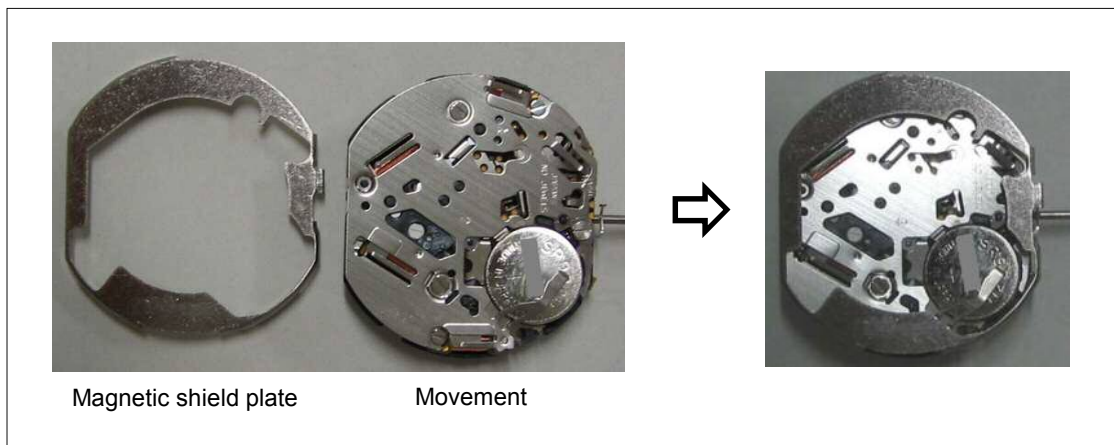
4.Hour wheel

When set and remove the hour hand repeatedly, it may reduce the hand fixing torque because the hour wheel is made by plastic.

To ensure the enough fixing torque, it isn't recommended to re-assemble the hour hand more than five times.

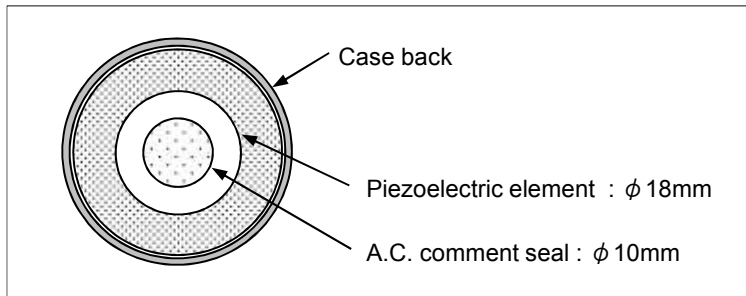
5.Magnetic shield plate

Install magnetic shield plate on the movement(on battery clamp) before assembling the case back. Refer to the following picture not to install magnetic shield plate incorrect direction.



6. Piezoelectric element , A.C. comment seal

Stick piezoelectric element and A.C. comment seal to the center of case back.

**(1) Piezoelectric element**

Piezoelectric element must be stuck to case back by thermoplastic adhesive.

Thermoplastic adhesive is already printed to the surface of piezoelectric element.

Heating temperature and time to stick piezoelectric element is shown in the following table.

Material of case back	Heating temperature	Heating time
Stainless	250°C	5 seconds
Titanium	250°C	6 seconds

Check piezoelectric element is definitely stuck to case back after heating.

(2) Sticking position

- The amount of the misalignment between the center of case back and piezoelectric element : 0.35mm and less
- The amount of the misalignment between the center of piezoelectric element and A.C. comment seal : 0.50mm and less

If the sticking position of piezoelectric element and A.C. comment seal is drastically misaligned or if the electrical continuity is bad, no sound may occur.

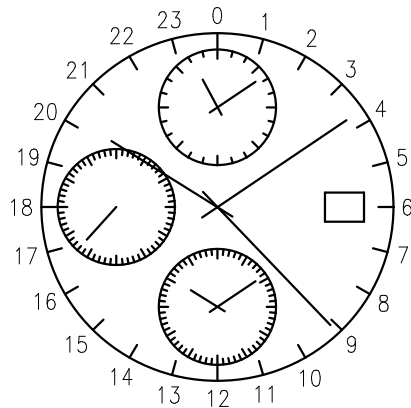
The design instruction of the city

The time in 24 cities is displayed.

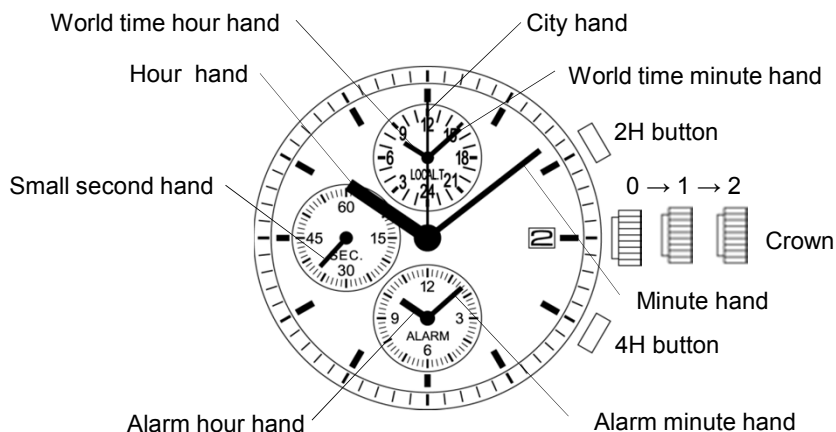
The each interval of city is 15 degree.

When designing a dial, it has to be checked whether time difference has been changed.

(Time difference at 2015/1)



Display position	Difference in hour from UTC	Representative city
0	±0	UTC / LONDON
1	+1	PARIS / ROME
2	+2	CAIRO
3	+3	JEDDAH
4	+4	DUBAI
5	+5	KARACHI
6	+6	DHAKA
7	+7	BANGKOK
8	+8	BEIJING
9	+9	TOKYO
10	+10	SYDNEY
11	+11	NOUMEA
12	+12	WELLINGTON
13	-11	MIDWAY
14	-10	HONOLULU
15	-9	ANCHORAGE
16	-8	LOS ANGELES
17	-7	DENVER
18	-6	CHICAGO
19	-5	NEW YORK
20	-4	SANTIAGO
21	-3	RIO DE JANEIRO
22	-2	-
23	-1	AZORES



	Crown position		
	0 click	1st click	2nd click
Crown	Free	Turn clockwise for date change	Time setting
2H button	World time city setting (Clockwise)	Sound demonstration (more than 2 seconds)	[*1]
4H button	World time city setting (Counterclockwise)	Alarm time setting (at 6H small circle)	[*1]

[*1] World time and alarm time setting / System-reset (Crown position : 2nd click)

How to set the world time and alarm time setting

Pull crown out to the 2nd click position.

Alarm time hands turn a full round and can be set to the time the main time hands indicates.

- ↓
- > Press 4H button repeatedly to set the alarm hands.
- ↓
- Press 2H button for 2 seconds.
City hand turns a full round and can be set to the city.
- ↓
- Press 4H button repeatedly to set the city hand.
- ↓
- Press 2H button for 2 seconds.
World time hands turns a full round and can be set the world time hands to the time of selected city.
- ↓
- Press 4H button repeatedly to set the world time hands.

Press 2H button for 2 seconds here will allow you to resume the procedure again as indicated by the arrow if necessary.

↓

Push crown back to normal position.

System-reset

Pull crown out to the 2nd click position.

↓

Press 2H and 4H buttons at the same time for longer than 2 seconds.

It is necessary to set the world time, city and alarm time after system-reset.

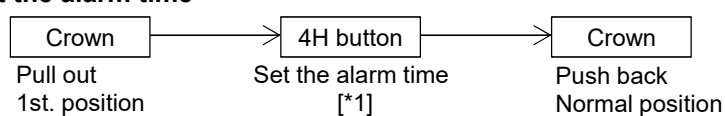
World time function

- The time in 24 cities is displayed by the 24 hour indication.
- Press the 2H or 4H button until the city hand points to the city whose time you wish to know.

Alarm function

- The alarm can be set to ring only once at a designated time within the coming 12 hours.
- The alarm time can be set in one minute increments.

■ Set the alarm time



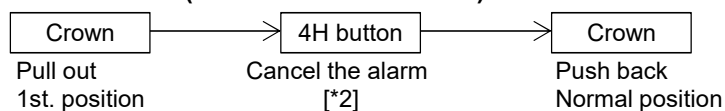
[*1]

Press 4H button repeatedly to set the alarm hands to the desired alarm time.
The alarm hands move quickly when the 4H button is kept pressed. They stop when the hands reach to the current time.
Release and press the 4H button, the alarm hands will start moving again.

■ Stop the alarm

- At the designated time the alarm rings for 20 seconds, and it is automatically disengaged as it stops.
It is possible to stop ringing manually when pressing any button.

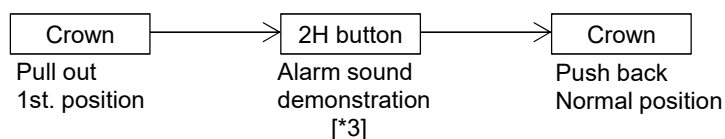
■ Cancel the alarm (when alarm time is set)



[*2]

Press and hold 4H button until alarm hands stop and indicate the current time.

■ Alarm sound demonstration



[*3]

Press and hold 2H button for longer than 2 seconds.
The alarm sound can be heard while the button is kept pressed.