

Cal. VD50B

ϕ 29.50 mm

H 4.57 mm

Item	Version No.
Specification - 1	Version 2
Specification - 2	Version 1
Appearance	Version 1
Casing	Version 2
Hand Fitting	Version 2
Hand Setting Stem	Version 3
Dial	Version 1
Assembly Plan - 1	Version 1
Assembly Plan - 2	Version 1
Hands	Version 1

MOVEMENT SPECIFICATION - 1

CAL.VD50B 12 3 / 4 Ligne Quartz Movement

Three Hands with 3 Eyes / Date (Chrono. 1/10 retro-grade second, Chrono. Second, Chrono. Minute & Calendar)

1. MOVEMENT DIMENSIONS

- Outside diameter ϕ 29.50mm (12H~6H) x 26.00mm (3H~9H)
- Casing diameter ϕ 28.80mm (12H~6H)
- Total height 4.57 mm
- Dimensions of small hands away from center 7.50 mm

2. TIME STANDARD

- Type of quartz oscillator Tuning fork
- Frequency of quartz oscillator 32,768 Hz
- Accuracy Monthly rate: Less than 20 seconds per month at normal temperature range
- Regulation device Nil
- Regulation hands unbalance
 - Second : Less than 0.09 μ N·m (9mg·mm)
 - Minute : Less than 0.60 μ N·m (60mg·mm)
 - Hour : Less than 0.50 μ N·m (50mg·mm)
 - Chronograph hands : Less than 0.05 μ N·m (5mg·mm)
- Additional function
 - Stopwatch : up to 1 minute in 1/10 second
 - : up to 60 minutes in 1 second split time

3. BATTERY

- Type Silver oxide battery
- Voltage 1.55 V
- Size ϕ 9.5 x t 2.0 (mm)
- Battery life Approx. 2 years
- Recommended battery SR920SW (SEIZAIKEN)

4. STEPPING MOTOR

- Number of units 3 pieces
- Type Two pole stepping motor
- Step 180° every second

5. JEWEL

0 jewel

6. ANTIMAGNETISM

(direct current magnetic field)

≥ 1600 A / m

7. SHOCK RESISTANCE

On equal level with general quartz movement

8. OPERATING TEMPERATURE RANGE

From - 5 °C to + 50 °C

9. TEST OF ACCURACY

- Equipment to be used
 - SEIKO Quartz Tester QT - 99
 - Greiner Quartz Timer - C
 - Witschi Q-Tester 4000
- Duration of measurement 10 seconds
- Microphone to be used Electromagnetic detection type

10. ATTACHED PARTS

Parts Name	Parts Code
Hand setting stem	0351 - 1770 (Regular) / 0351 - 1220 (Long)
Silver oxide battery	3013 - 14G0
Sticker	0110 - 3570

*** All specifications are subject to change without notice.**

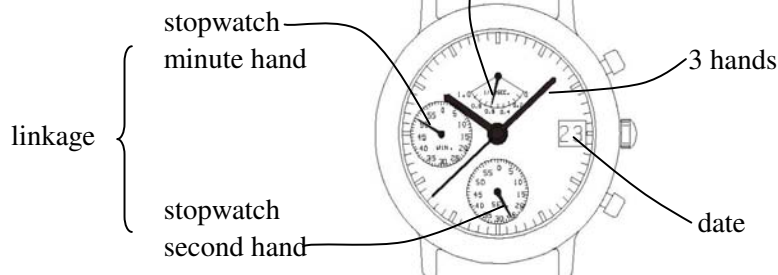
Movement Specification - 2

CAL. VD50B

OPERATION

3 step motors (3 hands with calendar, 1 / 10 sec. chrono. maximum to 60 minutes)

Press button A, stopwatch 1/10 sec. hand indicates 1/10 unit of measurement time during stopwatch 1/10 second hand moves for a first minute.



Normal position



START
STOP

FREE

RESET

1st click
adjusting calendar
(clockwise)



START
STOP
ADJUSTING
CALENDAR
RESET

2nd click
adjusting minute, hour & chrono. hands



ADJUSTING THE
STOPWATCH 1/10 SEC.
HAND POSITION
(MOVES 1 CIRCLE
CLOCKWISE)

TIMING SETTING
RESET SWITCH
SECOND SETTING DEVICE

ADJUSTING THE
STOPWATCH SEC. & MIN.
HAND POSITION
(CLOCKWISE)

AC FUNCTIONS

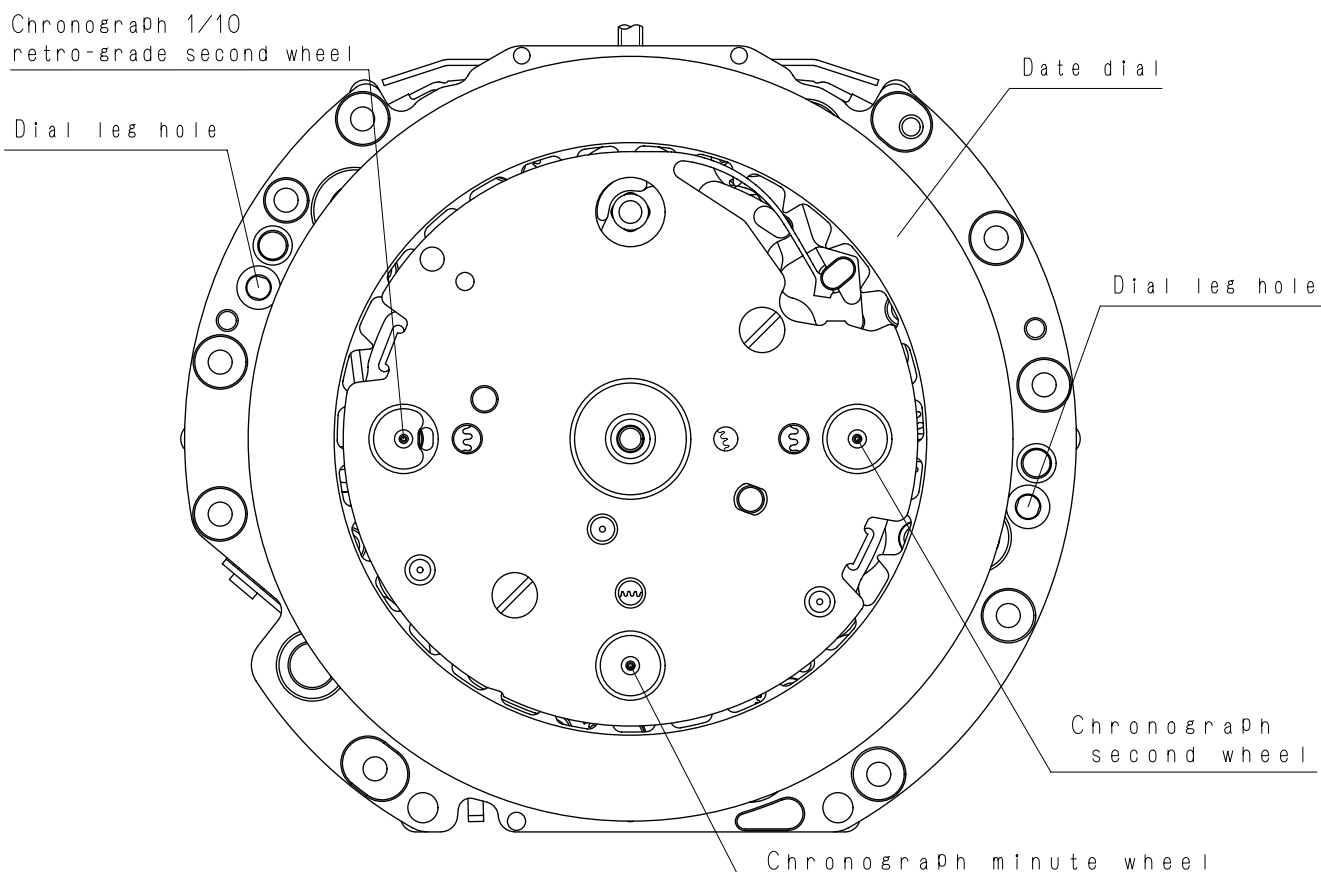
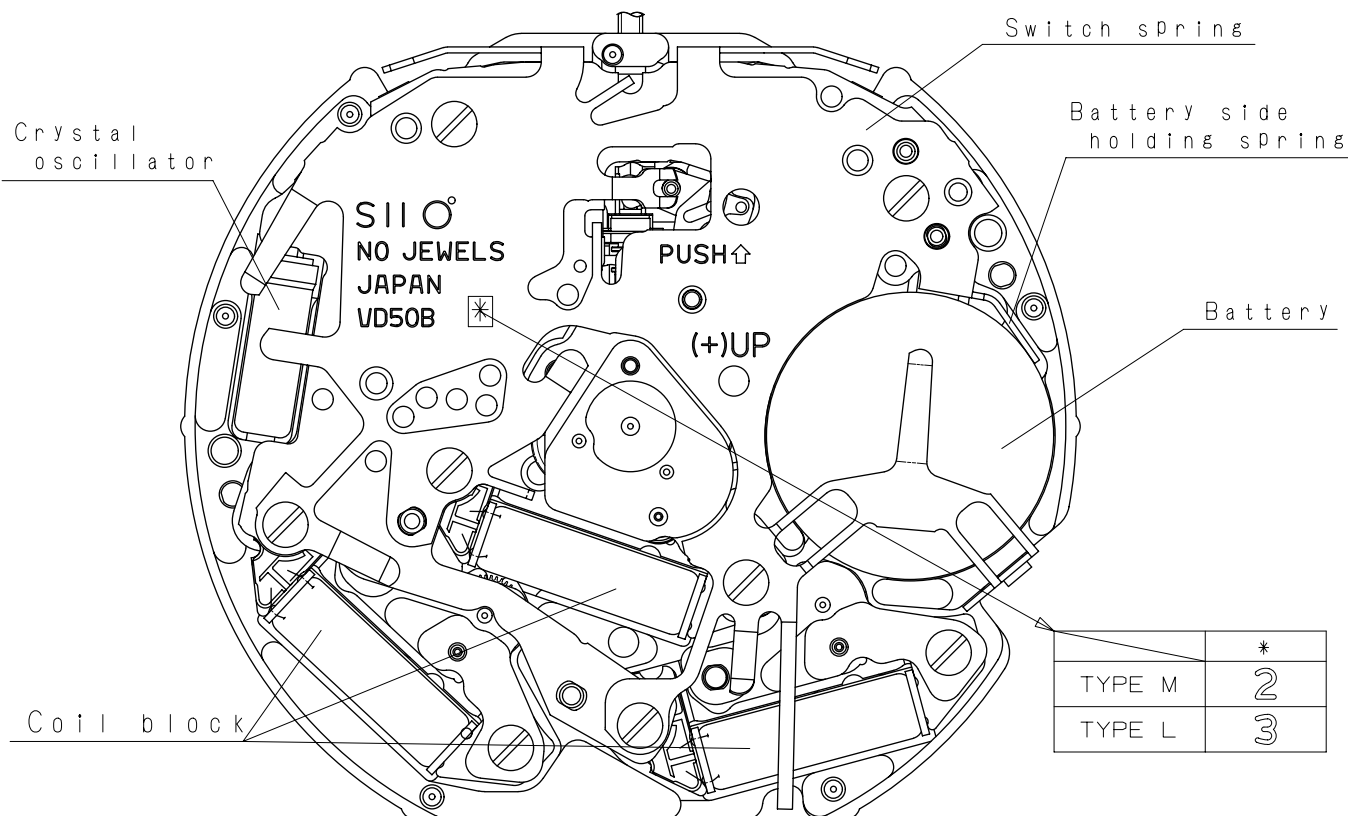
(KEEP
BUTTONS
"A" AND "B"
PRESSED AT
THE SAME TIME
FOR 2 SECONDS,
AND THEN,
RELEASE THE
BUTTONS)

- * Stopwatch 1/10 second hand moves for a first minute.
- * Pull the crown to 2nd click to adjust the stopwatch hand position.
- * AC functions is available if stopwatch hand position is disorderly.
- * When using AC functions, stopwatch hand moves back and returned to where it was (second hand moves 1/2 circle counterclockwise and 1/2 circle clockwise, 1/10 second hand moves 1 circle clockwise)

Version 1

Appearance

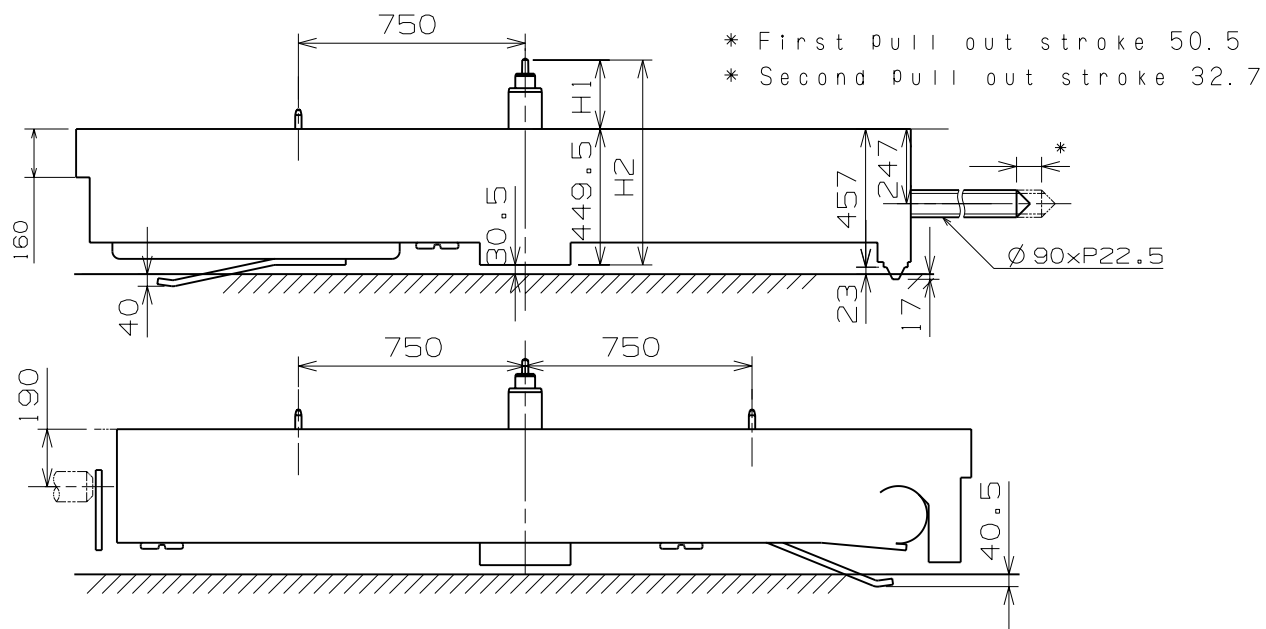
Cal. VD50B



Scale : 4/1

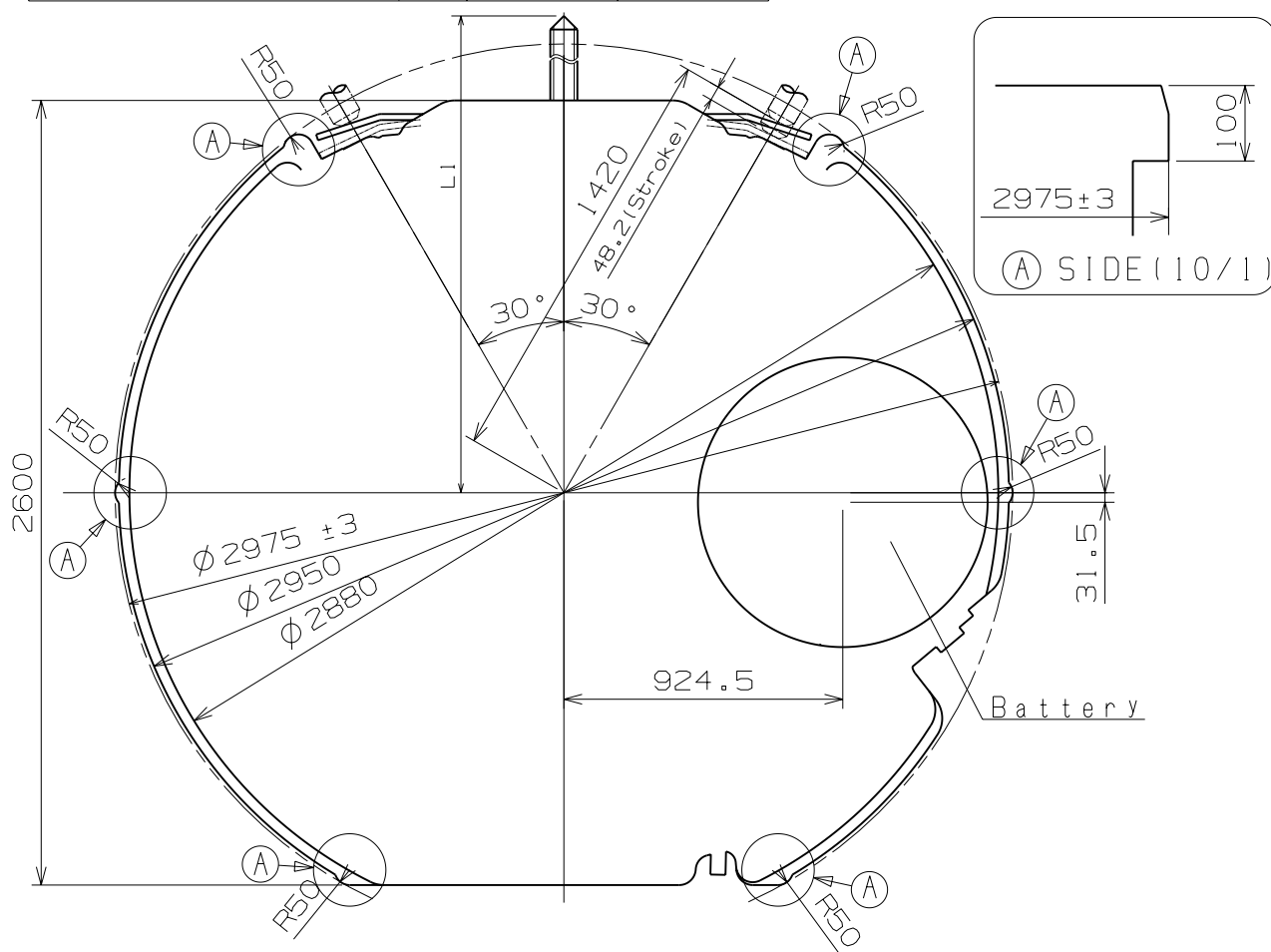
Unit : 1=1/100mm

Version:1



Center Post		TYPE M	TYPE L
Maximum height from main plate surface	H1	228	273
Total height incl. movement	H2	677.5	722.5

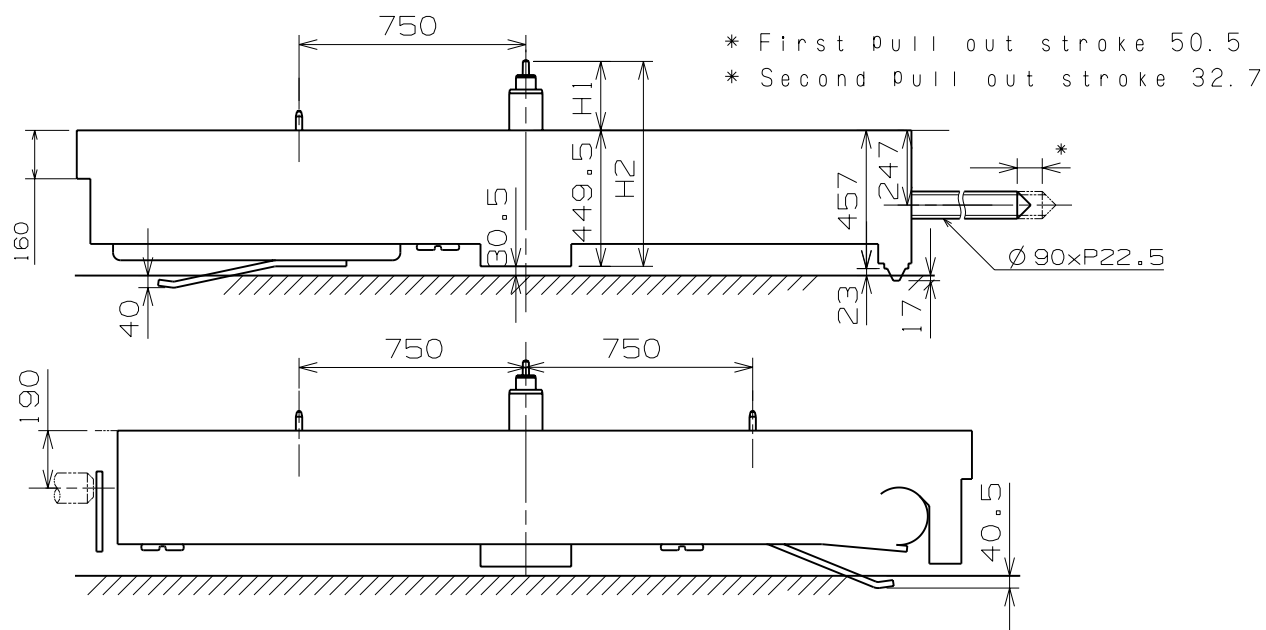
Hand Setting Stem	TYPE A	TYPE B
L 1	2285	2861



Scale : 4 / 1

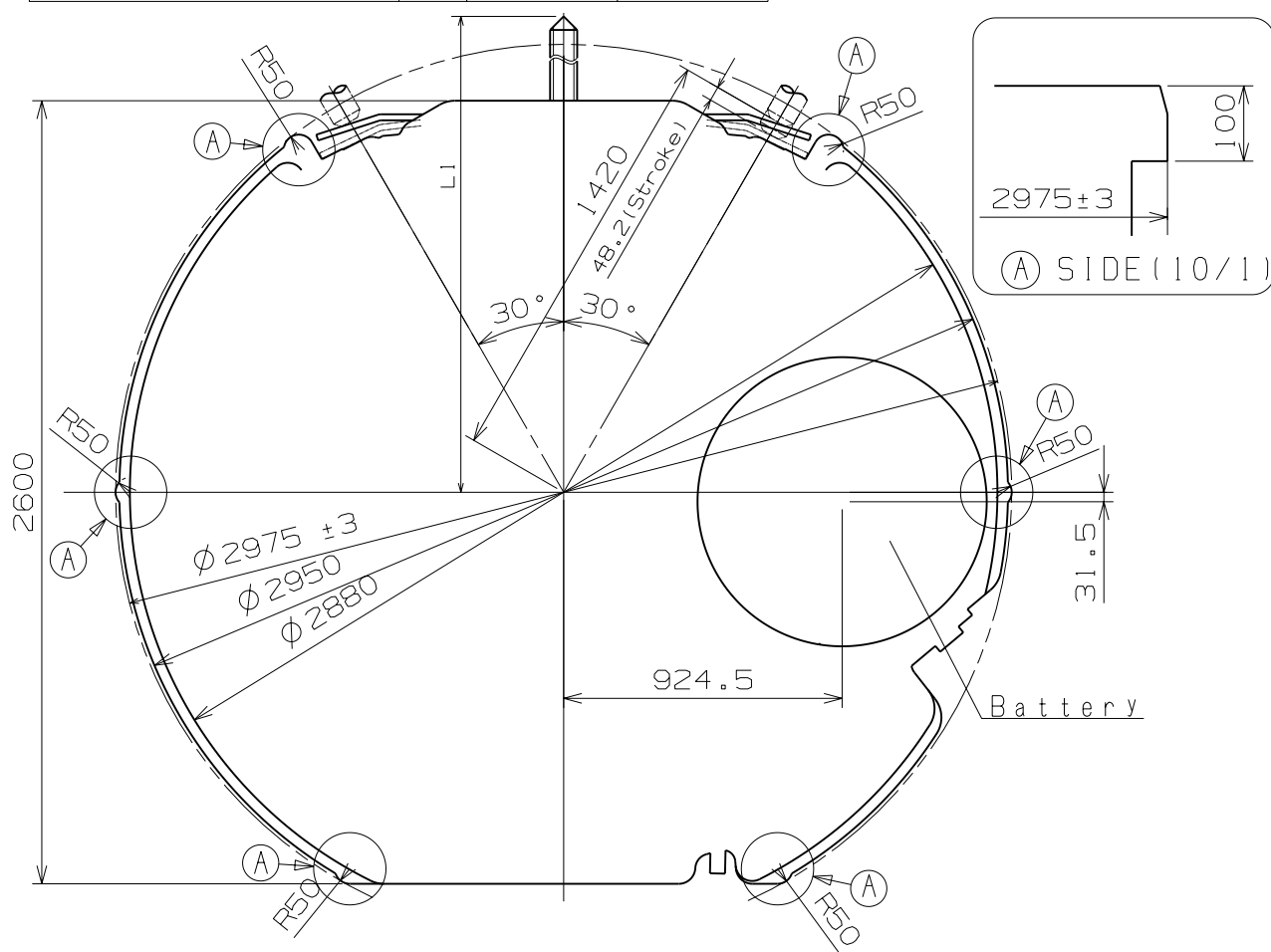
Unit : 1 = 1/100mm

Version: 2



Center post 中心柱位		Type M 一般針高	Type L 高針
Maximum height from main plate surface 與機芯平面之最大高度	H 1	2 2 8	2 7 3
Total height incl. movement 機芯總高度	H 2	6 7 7 . 5	7 2 2 . 5

Hand Setting Stem	TYPE A	TYPE B
L 1	2285	2861



Scale : 4 / 1

Unit : 1 = 1/100 mm

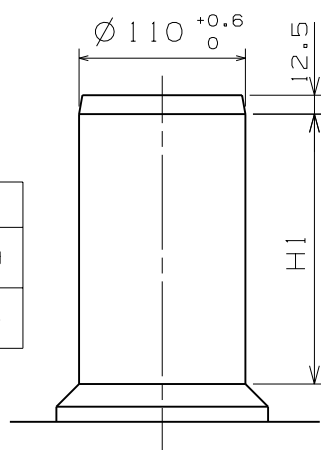
Version: 2

Hand fitting

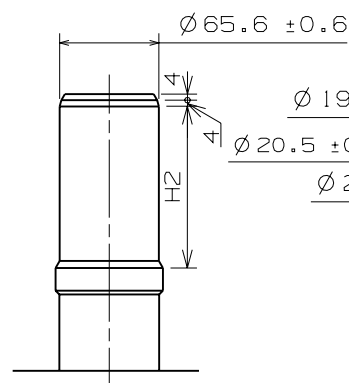
Cal. VD50B

- * Hour hand unbalance $\leq 0.5 \mu\text{N} \cdot \text{m}$ (50mg·mm)
- * Minute hand unbalance $\leq 0.6 \mu\text{N} \cdot \text{m}$ (60mg·mm)
- * Second hand unbalance $\leq 0.09 \mu\text{N} \cdot \text{m}$ (9mg·mm)
- * Chronograph hand unbalance $\leq 0.05 \mu\text{N} \cdot \text{m}$ (5mg·mm)

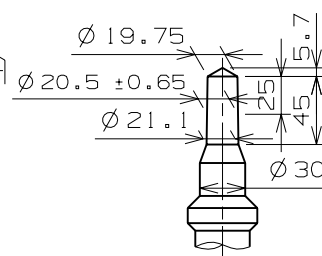
	H1	H2
TYPE M	178.5	109
TYPE L	223.5	154



Hour wheel

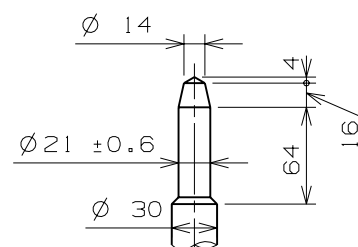


Center wheel



Fourth wheel

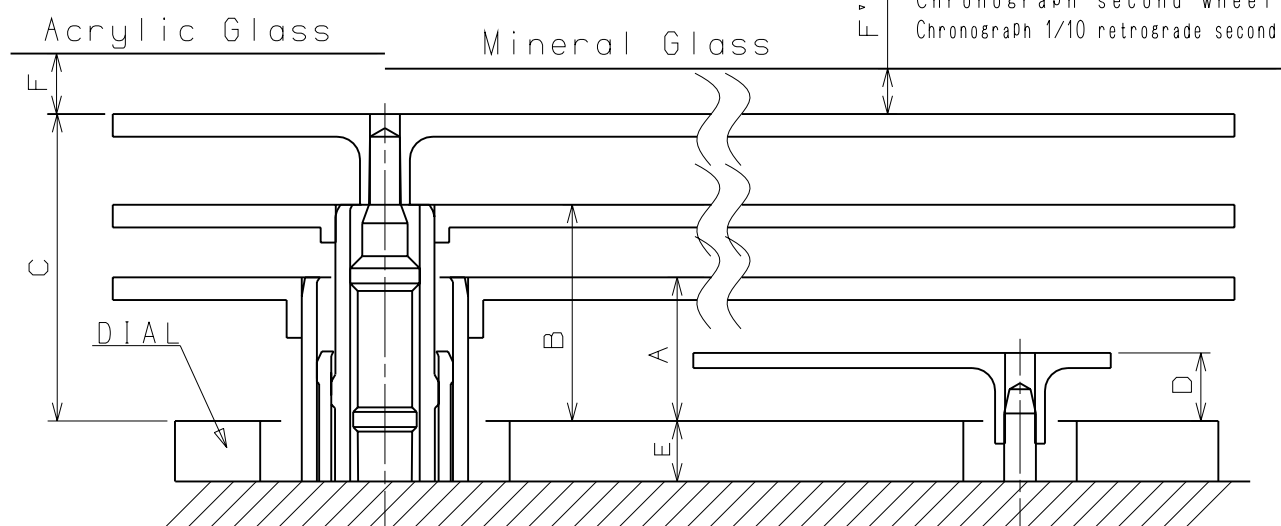
Part name	Part No.	
	TYPE M	TYPE L
Hour wheel	0271 4070	0273 0370
Center wheel	0221 1570	0221 0780
Fourth wheel	0241 1780	0241 4890
Chronograph minute wheel	0902 0080	0902 0040
Chronograph second wheel	0888 0090	0888 0110
Chronograph 1/10 retrograde second wheel	0888 0090	0888 0110



Chronograph minute wheel

Chronograph second wheel

Chronograph 1/10 retrograde second wheel



	A	B	C	D	E	F	F'
TYPE M	95	143	203	45	40	50	40
TYPE L	95	143	203	45	85	50	40

Scale : 20/1

Unit : 1=1/100mm

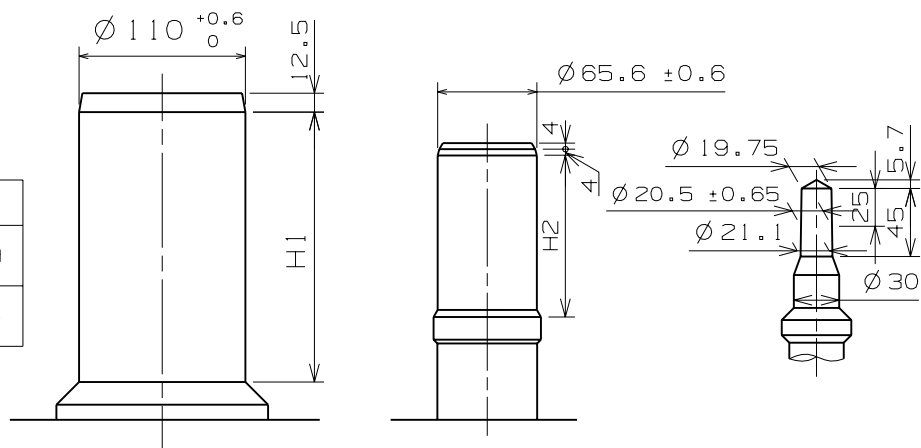
Version : 2

Hand fitting

Cal. VD50B

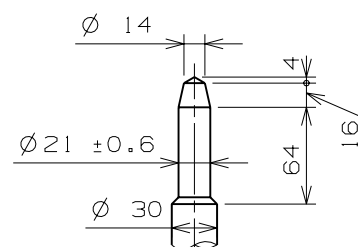
- * Hour hand unbalance $\leq 0.5 \mu\text{N} \cdot \text{m}$ (50mg·mm)
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- * Second hand unbalance $\leq 0.09 \mu\text{N} \cdot \text{m}$ (9mg·mm)
- * Chronograph hand unbalance $\leq 0.05 \mu\text{N} \cdot \text{m}$ (5mg·mm)

	H1	H2
TYPE M 一般針高	178.5	109
TYPE L 高針	223.5	154

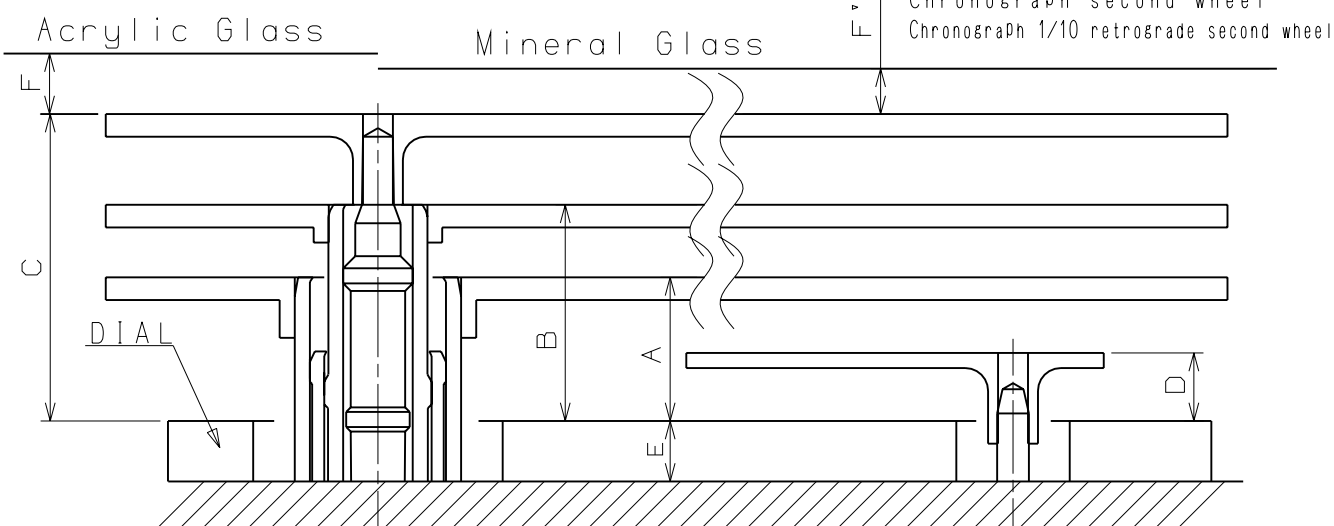


Hour wheel Center wheel Fourth wheel

Part name	Part No.	
	TYPE M 一般針高	TYPE L 高針
Hour wheel 時針輪	0271 4070	0273 0370
Center wheel 分針輪	0221 1570	0221 0780
Fourth wheel 秒針輪	0241 1780	0241 4890
Chronograph minute wheel 計時分輪	0902 0080	0902 0040
Chronograph second wheel 計時秒輪	0888 0090	0888 0110
Chronograph 1/10 retrograde second wheel 計時1/10回彈秒輪	0888 0090	0888 0110



Chronograph minute wheel
Chronograph second wheel
Chronograph 1/10 retrograde second wheel

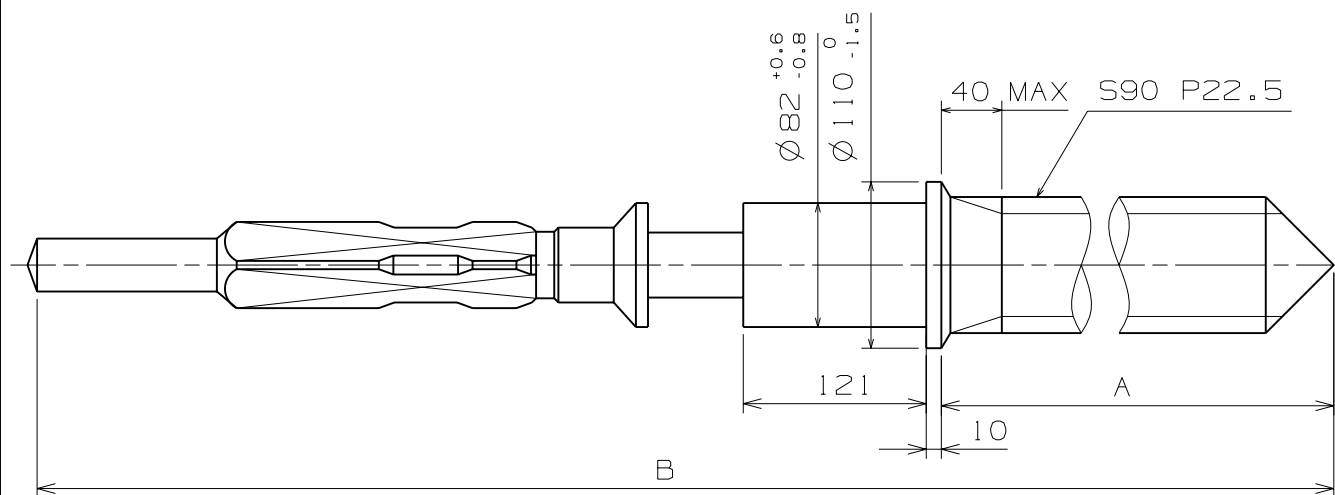


	A	B	C	D	E	F	F'
TYPE M 一般針高	95	143	203	45	40	50	40
TYPE L 高針	95	143	203	45	85	50	40

Scale : 20/1

Unit : 1=1/100mm

Version:2

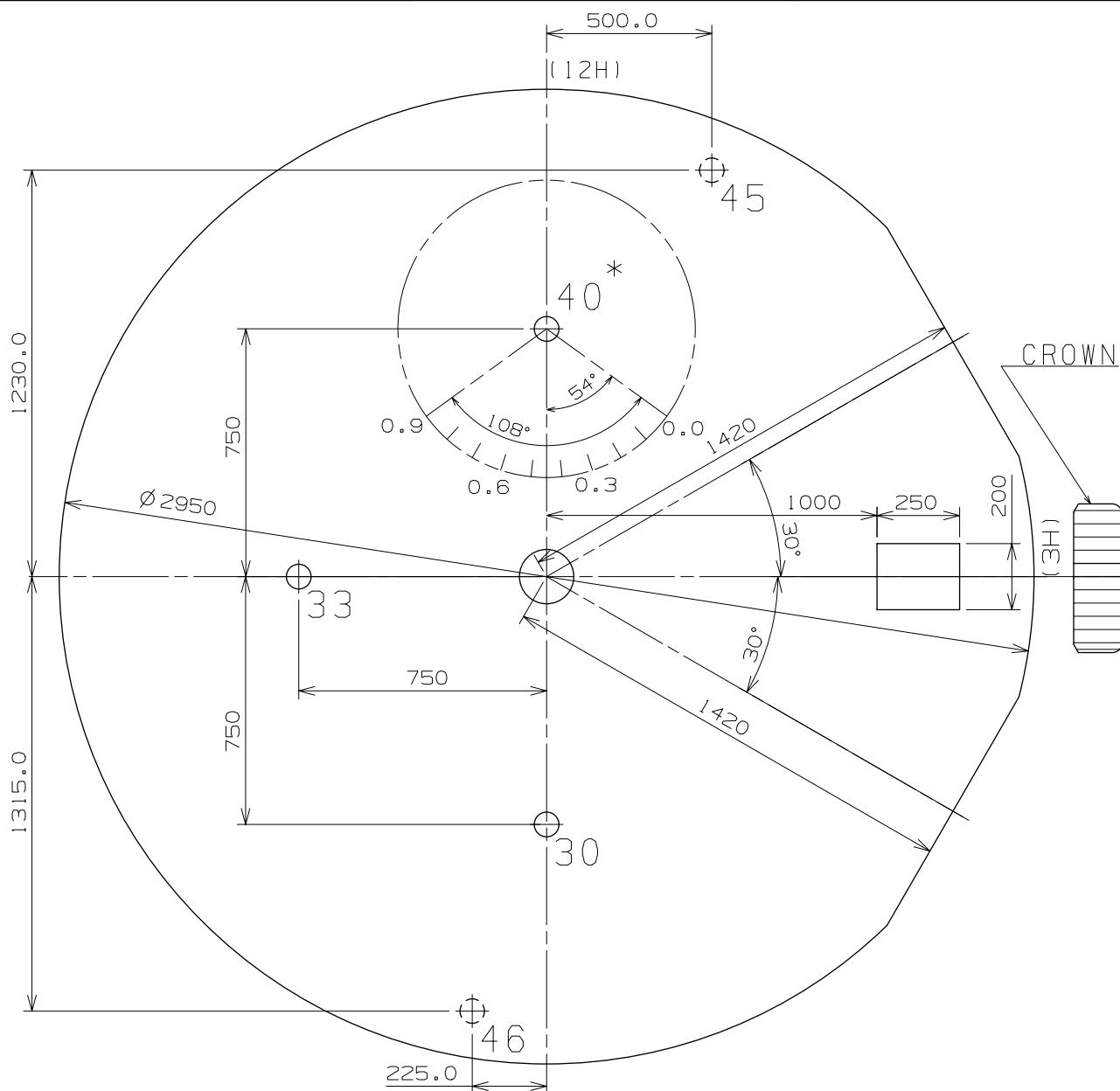


	Part. No.	A	B
TYPE A	0351 1770	1371	1969
TYPE B	0351 1220	1947	2545

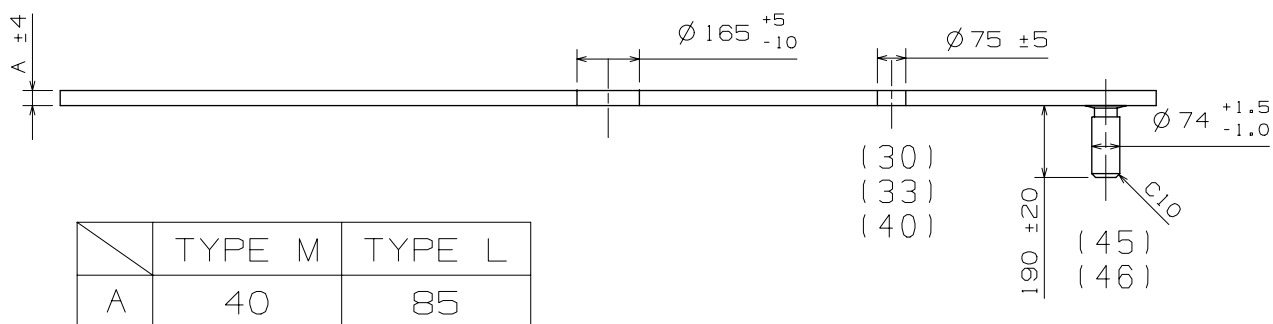
Scale : 20/1

Unit : 1 = 1/100mm

Version: 3



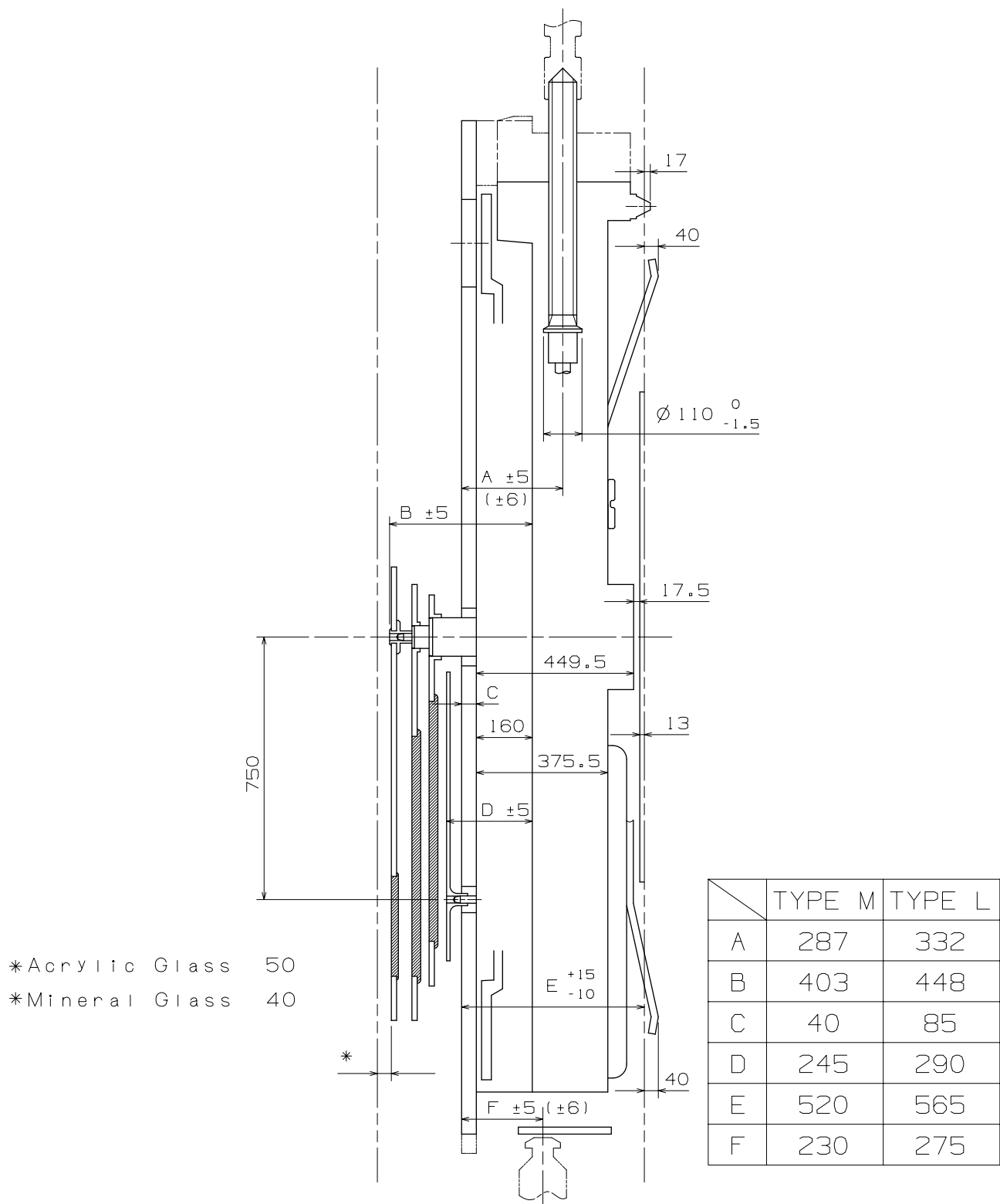
*Hands passing area, after AC or when adjusting Chronohands.



	TYPE M	TYPE L
A	40	85

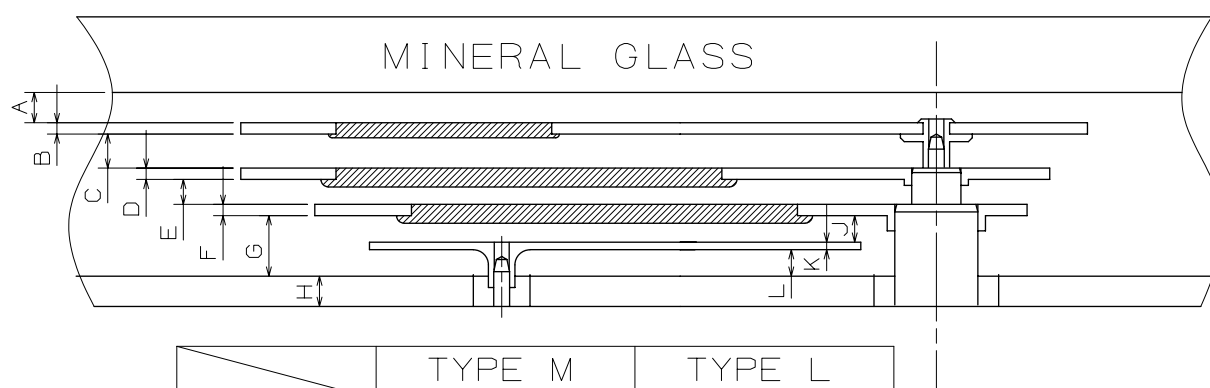
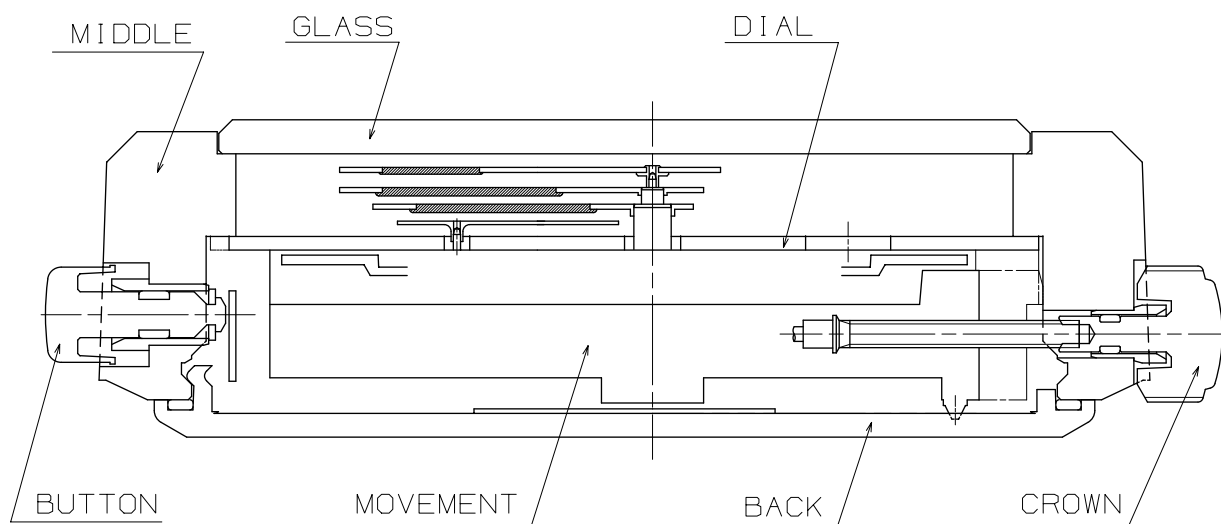
Scale : 5/1
Unit : 1=1/100mm

Version:1



Scale : $\neq$
Unit : 1=1/100mm

Version:1



	TYPE M	TYPE L
A	40	40
B	15	15
C	45	45
D	15	15
E	33	33
F	15	15
G	80	80
H	40	85
J	35	35
K	10	10
L	35	35

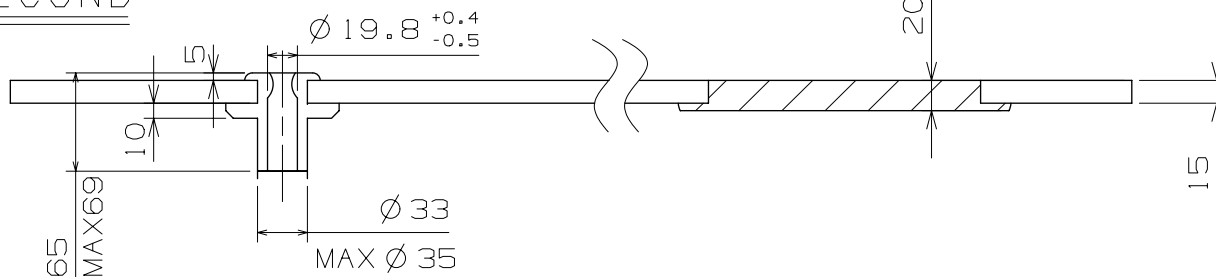
Scale : $\neq$
Unit : 1=1/100mm

Version:1

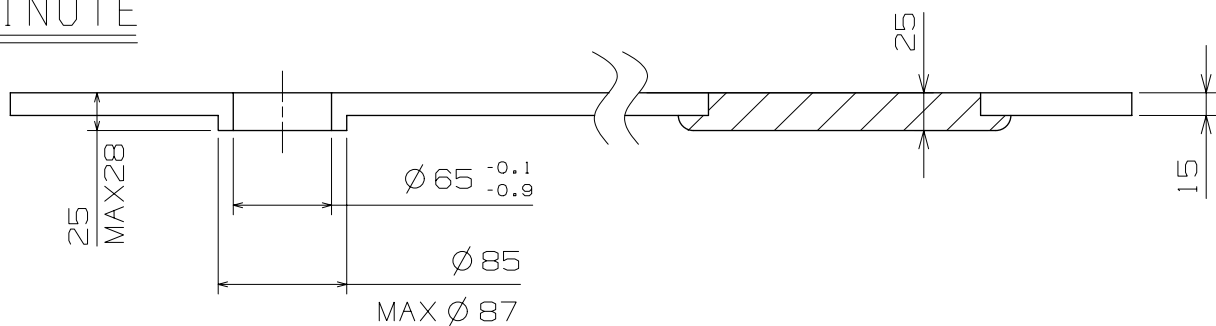
Hands

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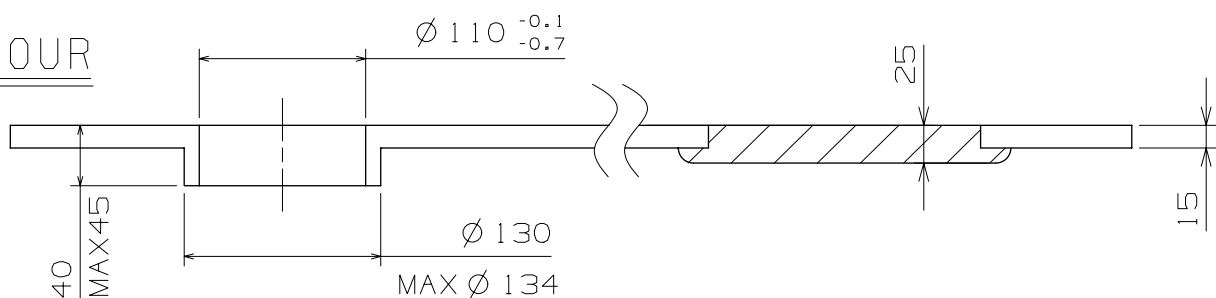
SECOND



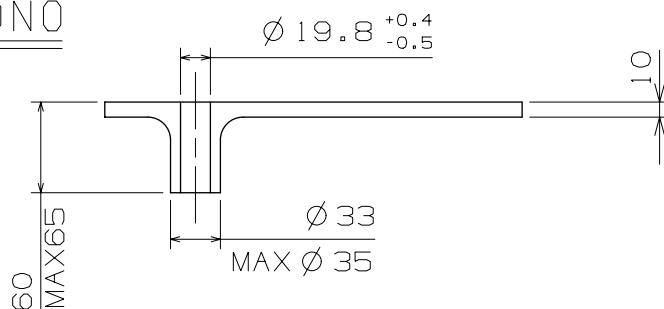
MINUTE



HOUR



CHRONO



Scale : 20/1
Unit : 1=1/100mm

Version : 1