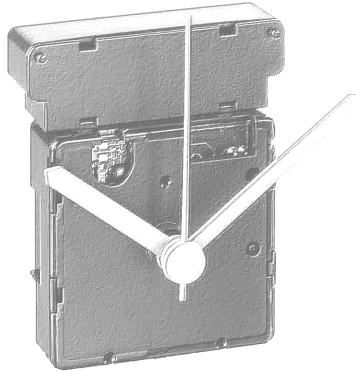


**PRODUCT
SPECIFICATION
731XXX**

Doc. No. **583 172**

**Version Date:
19.05.03**

**Automatic switching
40/60 kHz
JJY RC-Movement**



U.T.S. Präzisionstechnik GmbH

Address:

***U.T.S. Präzisionstechnik
GmbH***
Gewerbestrasse 31

Written by:
M. Schneider

Dept.:
R & D

Checked:

Dept.:

Customer:
NN

**Checked by
customer:**

Dept.:

Description:

Fully automatic RC-movement, which receives and adjusts to the Japanese JJY timecode transmitter.
Automatic functions are: Initial setup with receiving and adjusting of hands, automatic switching to the transmitter frequency (40/60kHz) with best reception.
Checking of internal time during normal run and adjust hands position to correct time.

List of Changes

Description (shortform) of changes		Page	Date	Changed pages copied to
Description	Name			
1st version	Schneider			
delay of light and receiving time per frequency changed	Schneider	4	09.05.03	
method for hands setting, auto.receive-manual setting	Schneider	4, 5	28.08.03	
Add HighTorque table in 3.1.2	Schneider	6	22.07.04	

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1.Introduction

The discribed movement is a two motors, 3 hands analog RC-movement, designed for use with the japanese timecode transmitter **JJY 40** and 60kHz.

It is able to switch **automaticly** between the two frequencies to enable best reception in any place of Japan.

Initial setting function and error correction are automatic. The movement starts automaticly after put in the battery, without pressing any knob.

A "**handssetting**" function for easy assembly and a "**receive by hand**", are provided. If no reception is possible, the movement can also be run in "**quarz mode**".

customer: NN

supplier: U.T.S. Präzisionstechnik GmbH
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2.Function

After putting in a battery, the hands are driven to one of the positions 4:00, 8:00 or 12:00. The one which is closest to the actual position of the hands will be used.

After the hands have reached this position the motors will be stopped and the receiver is switched on. First the clock tries to get the information from the 40kHz transmitter (most of the time this will be successful) and after about 1 minute without success, the receiver will turned over to the 60kHz. If this is not successful within another about 1 min. the receiver will be switched again to 40kHz and so on, until receiving has success.

After the receiving process has finished the hands are driven to show the correct time and the movement starts normal run.

During normal run the movement tries to connect the transmitter every two hours and checks internal time with this information. The frequency of success(40 or 60kHz) is saved inside the movement and will be used for start.

A correction is done if necessary (if a difference between received and displayed time occurs).

The correct hands position is checked two times per day and automaticly corrected if necessary.

2.1 Special functions

None

2.2 Hands setting help function

The movement has a hands setting help function. This can be started by shortcutting the two special pins, before plug in the battery. Then put in the battery and the gear will be driven staight to the 12 o'clock position. After the motors stopped, set all hands on their shafts exactly adjusted to 12 o'clock, remove the shortcut and restart the movement again.

2.3 Automatic Receiving – Manual Setting Mode

After put in the battery the movement first drives the hands to one of the initial places (see Pt. 2.). When the hands stopped the receiver is switched ON automatically. While the time of receiving the user has the ability to press the knob on the back-side of the movement and adjust the hands to correct place manually. The movement is now in “Manual Setting Mode”, until the battery is removed and put in again for a new receiving. While a movement is in manual setting mode, it will never try to receive the JJY-signal, it's running like a quartz-clock.

If the movement has run in automatic receiving mode, the knob on the backside has changed it's function to “receive by hand”, if the knob is pressed in this mode, the hands will be driven to one of the initial places and the receiver will be switched on.

Attention: For switching from one to the other mode (both directions) it's necessary to remove and replug the battery!

3. Environment

3.1 Conditions of use

The movement is designed for in house use with a single AA-size alkaline battery
Temperature range is -5 to + 55 °C and max. humidity of 95%

3.1.1. Technical Data

Technical Data for RC-Movement 731 XXX JJY 40 / 60 kHz

Technical Data	Standard
Receiving frequency	40/60 kHz
Dimensions	acc. drawing page
Mounting diameter	77mm
Battery	A A / LR6 (Alkaline recommended)
Operating voltage	1,25 - 1,7 V
Current consumption	160 µA
Battery life time	1 year
Operating temperature range	-5°C to+55°C
Storage temperature	-20°C to+70°C
Receiving time	2 - 10 min
Settingtime after reception	max. 2min, 50 sec.
Autom. summer-winter time setting	max. 2min .35 sec.
Operating noise (DIN 8325)	32 dBA
Antenna	Ferrite core internal
Antenna adjust tolerance 60kHz	±250 Hz
Antenna adjust tolerance 40kHz	±500 Hz
Reception	14x / day
Peak currentl	9mA
Sensitivity (40/60kHz)	<70 / 50 µV/m ***
Quartzadjustment (DIN 8325)	0,65 s/d

All dates measured at T = 25 °C (if not specified)

** The final sensitivity [µV/m] belongs to the construction of the clockhousing.
The final sensitivity is to be measured with the final product.

3.1.2. Mechanical data

Mounting centrscrew	M8 x 0,75		
Max.torque for fixation nut	100 Nm		
Max. mounting pressure for hands	25N (h/min) , 10N (sec)		
Weight without battery	62g		
Max. weight on hanger (metalhanger)	25N		
Torque :		Standard (7310XX)	High Torq. (7313xx)
second	torque (1,35V)	50 µJNm	100 µNm
minute	torque (1,35V)	300 µJNm	700 µNm
Spec.for length of hands see drawing	582086		
Recommendation for bushing	582017, 582279, 581112		
Accessory	582087		

4. Documentation

The documentation for the built in electronic circuit will be made by **U-T-S** and contents:

- functional description
- technical data
- case drawing sheet with connections assingment

5. Using Period

Not specified

6. Marking

Refer to drawing No. 583 171

7. Enclosure

- Appendix1

Case drawing sheet No. 583 171