

T1R Synchronous Clock Movements

For up to four exterior dials
up to 1,800mm diameter
via transmission gears

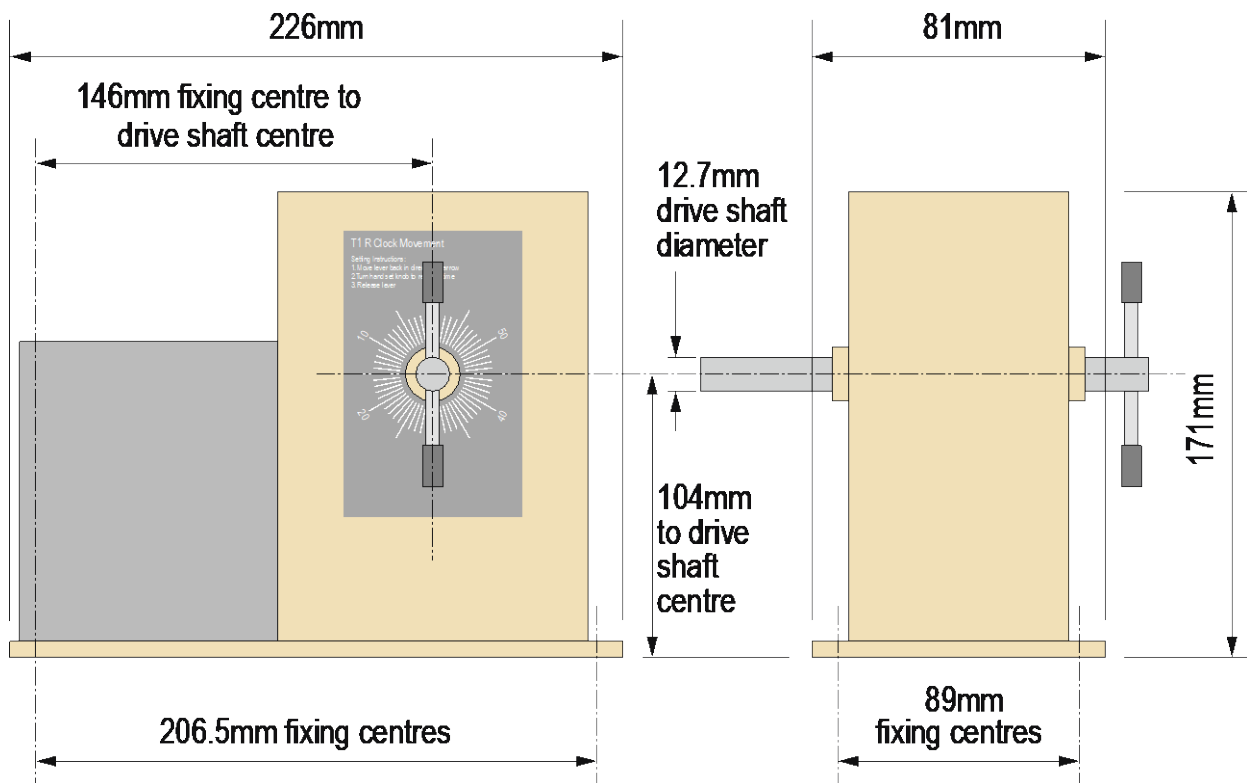
Document ref: T1R Data

Issue date: 01 May 2018



- Accurate timekeeping controlled by mains frequency.
- Reliably drives large weather exposed exterior hands.
- Drives hands through new or original shafts and gears.
- Replacement for virtually any existing electro-mechanical or weight driven movement.
- Strike and chime let-off options
- Easy time adjustment.
- Automatic power failure backup and time correction options.
- Excellent build quality giving many years of service.
- UK designed and manufactured.

Dimensions



Applications

The T1-R is fully interchangeable with its predecessor, the Smith of Derby T1 movement. The T1-R can also be used to replace other types of electric movements. It can also be used to drive the time side of an existing weight driven mechanism, subject to conservation approval.

The T1-R can power up to four individual dials. It provides a direct drive at minute hand speed and requires separate dial works - these are usually retained from an original installation if the T1-R is used as a replacement movement.

The T1-R can also be equipped to perform the “let-off” for mechanical or electrically powered bell strike and chimes.

The T1-R is self-starting, and if powered through a Smith of Derby back-up system it is also self-correcting.

Installation requirements

Dial diameters

Maximum dial diameters refer to overall sweep of the tip of the hour hand on an exterior dial (without dial cover) or interior/protected (with a cover glass over the hands or dial located indoors).

Location and access

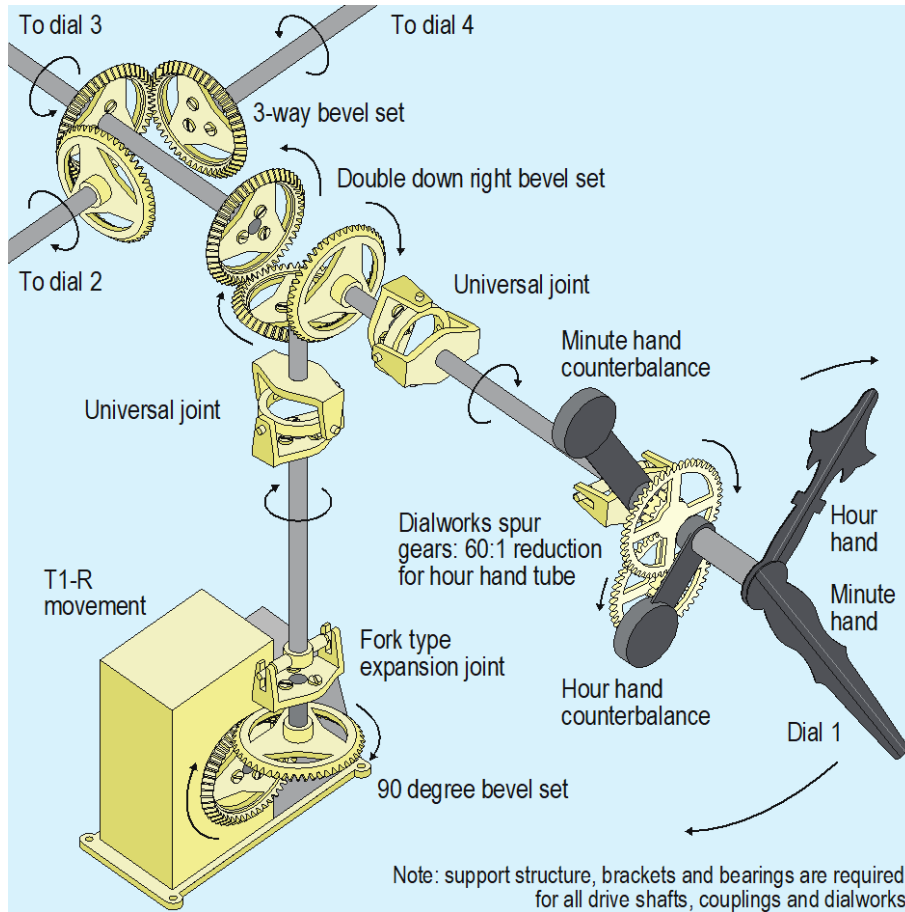
Although it will drive external hands, the T1R unit itself must be weather protected.

Adequate clearances must be provided if the T1R is to be installed in a housing, cabinet or enclosure.

The T1R must be installed where access is possible for maintenance.

Time adjustment may be done from the back of the movement. If access is not convenient, it must be driven via a Smith of Derby Auto Restart or Inverter Charger back-up system.

Installation methods



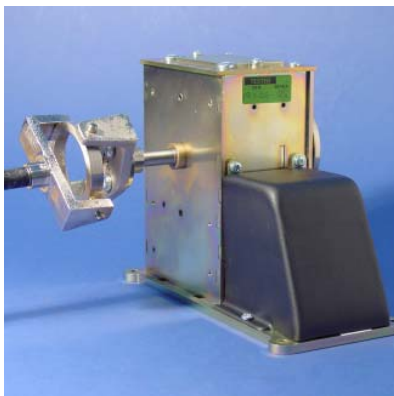
The illustration shows a multi-dial installation using a vertical drive and bevel gears.

This is a typical arrangement where the T1-R is located in a similar position to an original weight driven clock movement.

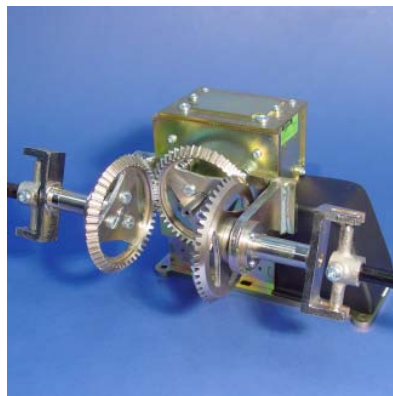
Examples of other drive configurations are shown in the photos.

The function of dialworks is to split the one rev. per hour transmission rod into an outer tube for the hour hand and an inner shaft for the minute hand.

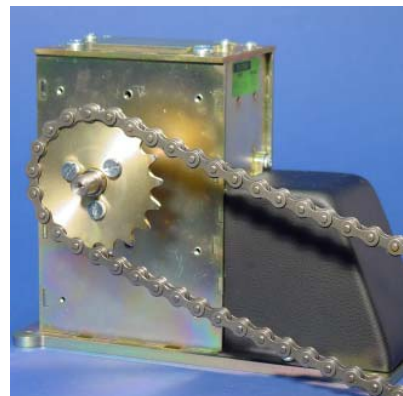
We usually re-use existing dialworks for T1-R installations.



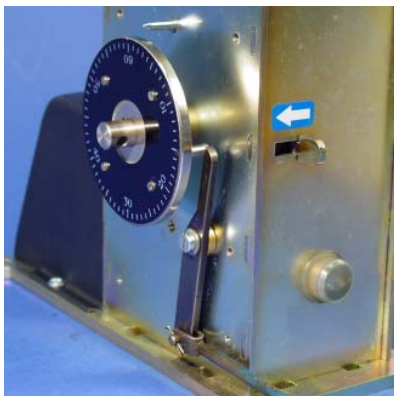
Straight-through drive, horizontal transmission via a universal joint.



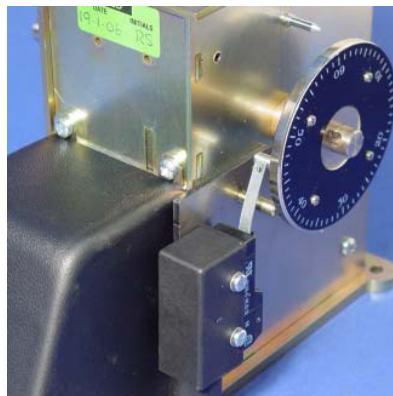
Bevel set for two opposite horizontal connecting rods.



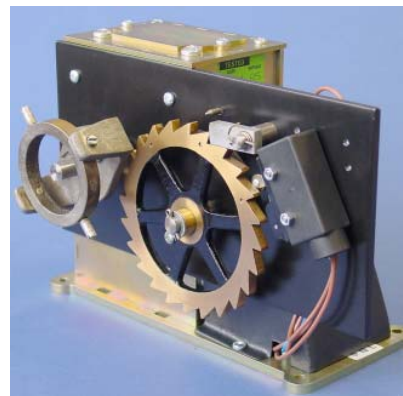
Sprocket drive to hour shaft of an existing mechanical movement.



Mechanical let-off for strike/chime with count wheel mechanism.



Microswitch let-off to an electrical strike and/or chime.



Night silencer for both mechanical and electrical strike/chime.

Safety requirements

The T1-R movement must only be installed and maintained by qualified persons and in accordance with all electrical regulations. No attempt must be made to dismantle, modify or repair the unit other than the procedures given in the operation and maintenance manual. Failure to comply may be dangerous and will automatically invalidate any warranty.

Power failure backup systems

We recommend driving the T1-R through our power failure back-up system (SA15/8 Auto Restart or SA19/1 Permanent Inverter Charger). These units include self-correction of timekeeping after power failures and automatic summer/winter changeover, and will control up to four individual synchronous movements (one per clock dial).

Electrical requirements

A power outlet to the correct specification must be provided by the client prior to installation of the T1-R movement and backup system.

Any fixed cabling required between the backup system and the T1-R movement must also be provided.

To comply with regulations both the above must be installed by an approved electrical contractor.

All wiring and connections must comply with local electrical regulations (BS7671 in the United Kingdom).

Maintenance

Smith of Derby offer a maintenance programme which includes one annual service visit within the UK mainland, and includes certain replacement or exchange parts and maintenance within the terms of the agreement. Please contact us for further details.

Guarantee

12 months warranty against failure through faulty workmanship or materials. Please see our full terms and conditions, available on our website or on request.

Specification

Timekeeping accuracy	via backup system	+/- 2 sec/year
	direct from mains	better than +/- 0.1 seconds over a 24 hour period (UK supply)
Weight (excluding transmission & gears)		6.0kg
Power requirements	standard	200-240V 50Hz AC
	special order	100-120V 50/60Hz AC
	fuse rating	5A
	power consumption	3w
Operating temperature range		-15 to +55 degrees Celsius
Maximum dial diameters	exterior	1,800mm
	interior/protected	2,200mm
Materials		corrosion resistant plated steel casing pre-lubricated long life bearings precision machined brass gear wheels bronze bearings