

## Re: 50 hz timer motor

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*Source:* <http://sci.tech--archive.net/Archive/sci.electronics.repair/2005-11/msg00877.html>

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- *From:* Sam Goldwasser <[sam@xxxxxxxxxxxxxxxxxxxxx](mailto:sam@xxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* 15 Nov 2005 08:37:08 -0500
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"Ron(UK)" <[ron@xxxxxxxxxxxxxxxxxxxxx](mailto:ron@xxxxxxxxxxxxxxxxxxxxx)> writes:

> Sam Goldwasser wrote:

- >> I now have the timer mechanism in my possession.
- >> There is a synchronous motor which drives 4 gears as follows:
- >> Driven Drive
- >> Shaft Teeth Teeth Gear:Gear Ratio Period (60Hz)
- >>

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- >> Motor 12 Motor:G1 12:50 1:4.17 15 Hz
  - >> G1 50 16 G1:G2 16:40 1:2.5 3.6 Hz
  - >> G2 40 10 G2:G3 10:45 1:4.5 1.44 Hz
  - >> G3 45 12 G3:G4 12:48 1:4 0.32 Hz
  - >> G4 48 0.08 Hz (12.5 s)
  - >> Gear G4 engages the inside of a funny large ring gear – it has teeth
  - >> missing
  - >> every 12th position. Every 12.5 s, the cam switch moves one position.
  - >> However, there is a lever in the middle of the mechanism which seems to
  - >> be wanting to engage something that isn't there. When that lever is
  - >> prevented from moving a certain way, the main cam doesn't step. However,
  - >> I can't quite see what it's really doing without further disassembly.
  - >> So, is it possible there is some escapement that is missing
  - >> on this unit? There are at least two posts that look like they may be
  - >> for additional gears or something but that's not conclusive.
  - >> Perhaps the original theory that something is missing deserves more
  - >> consideration.
  - >> One thing I'm quite sure of is that the 50/60 Hz thing is irrelevant
  - >> as
  - >> far as this mechanism is concerned. The motor feels like it has around
  - >> the 8 poles required to account for the 15 rps speed at which it is running
  - >> (at 60 Hz).
  - >> --- sam
  - >
  - > Sam, there's usually a kind of 'rocking lever' a bit like a clock
  - > escapement. It's difficult to see where any parts could go missing to
  - > unless it's been 'got at' previously.

Here's a photo. Sorry about the quality:

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<http://repairfaq.cis.upenn.edu/Misc/tmp/gears.jpg>

Just above the center hub, there is a white nylon tab sticking out, which is part of a lever that's mostly hidden behind the black plate. That's the lever I'm talking about. Now, it could just be an indicator to show what's going on but it could also be part of some type of escapement. There are also a post visible on either side of the white tab which are different than the other posts used to just key the top. They could be for missing parts (or optional parts).

The blue ring gear just visible through the window is moved by the final white gear – there is a mating gear on the other side of the black plate. The blue ring gear rotates freely inside the cam cylinder, but also cycles the position of the lever. When the lever moves into a certain position, it engages the cam cylinder and causes it to move by one click. Limiting the travel of the lever prevents this movement.

What would make the most sense is that there is something missing that's supposed to do every 4th rotation of the final white gear to move the cam. That would be one minute at 50 Hz.

Isn't there anyone at the French company who can answer the simple question as to whether just powering the timer should cause the cam to move in 1 minute increments? Don't confuse them with 50/60 Hz! :)

Thanks.

— sam | Sci.Electronics.Repair FAQ: <http://www.repairfaq.org/>  
Repair | Main Table of Contents: <http://www.repairfaq.org/REPAIR/>  
+Lasers | Sam's Laser FAQ: <http://www.repairfaq.org/sam/lasersam.htm>  
| Mirror Sites: [http://www.repairfaq.org/REPAIR/F\\_mirror.html](http://www.repairfaq.org/REPAIR/F_mirror.html)

Important: Anything sent to the email address in the message header above is ignored unless my full name is included in the subject line. Or, you can contact me via the Feedback Form in the FAQs.

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• *Follow-Ups:*

- ◆ **Re: 50 hz timer motor**  
    ◇ From: etphonehm
- ◆ **Re: 50 hz timer motor**  
    ◇ From: **\*\*THE-RFI-EMI-GUY\*\***
- ◆ **Re: 50 hz timer motor**  
    ◇ From: James Sweet

• *References:*

- ◆ **50 hz timer motor**  
    ◇ From: etphonehm
- ◆ **Re: 50 hz timer motor**

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◇ *From:* Sam Goldwasser

◆ ***Re: 50 hz timer motor***

◇ *From:* Ron(UK)

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