



# NEWSLETTER

Vol. 33 – No. 4  
July - August 2021

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**Current Central Station 3 Version – 2.3.1 (8)**  
**Current Central Station 2 Version – 4.2.13 (14)**  
**Current Mobile Station 2 Version – 3.121**

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Last month we were able to attend our first show in over a year and hopefully we can continue to attend more in the coming months. We attended a local show in the San Francisco Bay Area, and it was a great turnout. The show was highly successful, which was enhanced by the enthusiasm of the local club leaders. We are looking forward to the rest of this year and we are optimistic about attending a full schedule of shows next year. We hope to connect with the friends in other regions that we have missed seeing during this trying time.

Another good thing is that we still receive our Märklin items that we ordered, so we have new items to play with. The latest item we received was the new C-Track turntable. We're still evaluating it so we can learn and answer questions. Please note that there is a revised manual for the turntable with an updated illustration.

Our first article is about using older generation analog signals / turnouts with a new M83. The second article will give tips on the physical installation of the new turntable into a layout.

## **M83 Uses**

Recently we have had questions from people on how to use older Märklin accessories with the new controllers. We have already covered the usefulness of an m84 to control accessories that use a sustained on or off state, but we haven't covered the use of an m83 for accessories that require a momentary pulse to control them. Such as turnouts, signals, or universal relays from pre-digital.

Like many of you, I have a few older incandescent signals laying around and was wondering how to incorporate them into a newer digital layout. And the good news is, it is conceivable that someone could set up a modern digital layout using older components. This will give you the nostalgic look of an analog layout but with modern digital control.

I started by installing an m83 and registering it into my CS using simple block signal (item # 7188). I kept the m83 configuration in the “default” mode as it comes from the factory, which is set for a 200ms setting. This is the length of time the CS will send the command to the M83 not the length of time the m83 sends a pulse to the solenoid device.

One thing that should be mentioned is that the m83 is configurable like an m84 (Digital Newsletter July-Aug. 2019). This means it can be set for different modes. The difference is that an m84 must use an external power supply to power an accessory (a light bulb for example), while the m83 will do the same thing but it will use track power to turn on a light bulb. What this means is that if an m83 is used for these older signals, track power will be used to light them, which may require the use of a booster depending on how many signals are being used.

With that said, there is a way around this power consumption problem. If a 66367 Power Supply (or 66360 220v) is used to power the m83, then track power is not used. The 66367 will operate the m83 and supply power to the accessory through it. This has the advantage of freeing up track power because both the m83s and m84s will be plugged into each other and supplied power by the 66367. One thing I did notice is if the “STOP” bar is pressed and track power is off, the signal will stay lit. This is because the output of the m83 is no longer being supplied with track power, therefore the light stays on.

The connections are straightforward if one is familiar with analog wiring. The blue wires will connect to the outer ports of the m83, and the yellow wire will connect to the center port (Fig. 1).

If C-Track or Trix track is used, a brown ground wire needs to be connected to the metal base of the signal since the roadbed is plastic (Fig. 2). An analog semaphore will wire to the m83 the same as a light signal (Fig. 3.)

In researching the m83 for this article we were able to answer a few questions that we have been wondering about. Also, there are still a couple of things that the m83 is capable of and we will cover those in a future article once we have tested them.

Enjoy your hobbies!

Rick Sinclair

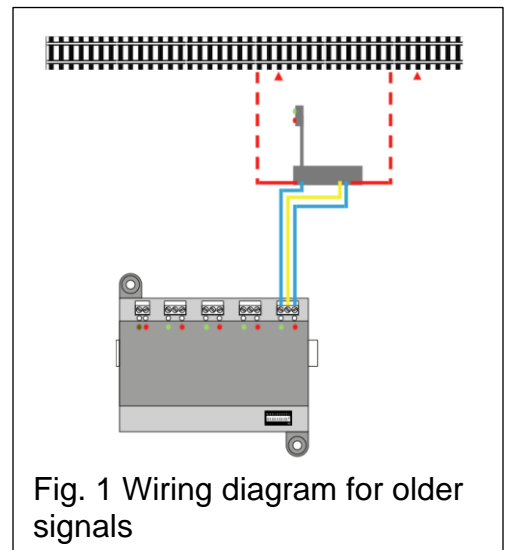


Fig. 1 Wiring diagram for older signals

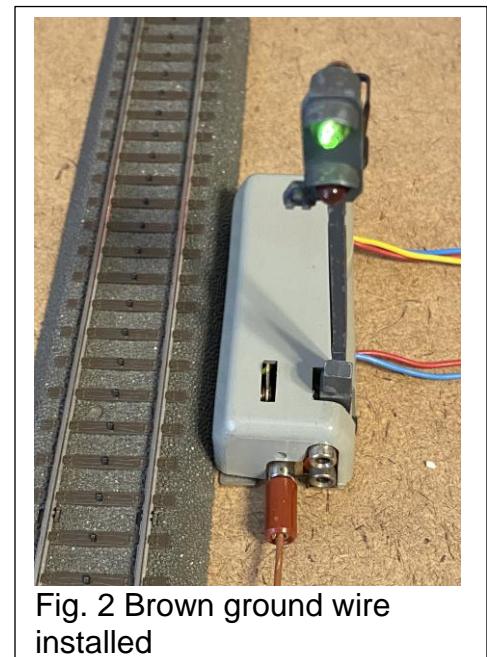


Fig. 2 Brown ground wire installed

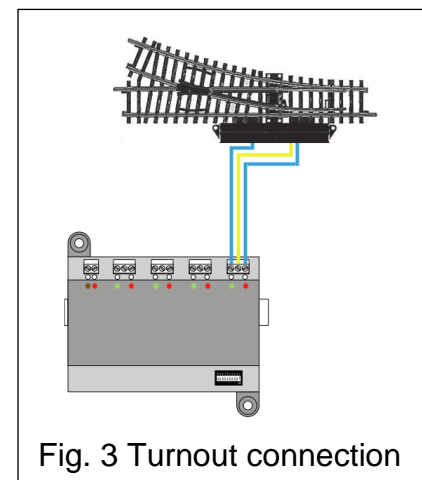


Fig. 3 Turnout connection

## Märklin's New Turntable #74861 Installation

Märklin has produced a new turntable to fit in seamlessly with their C-track architecture. In this issue of the Digital Club Newsletter, I will discuss the turntable as well as some tips and ideas for installing into your bench work.

### What's in the Box

The box includes the turntable with six track spurs, an installation template for mounting, all mounting brackets and screws, spur parts for track placement adjustment, the manual, an information sheet for storage and tool requirements, and a warranty card. The spur parts are essentially extra side pieces which are interchangeable. They are like the 60971 short tracks commonly used for high-speed turnouts. You change the sides based on whether there is an adjacent track spur or if its butt up against a 'concrete' spur side w/o track. There are also some extra turntable parts in the bag that are for detail parts.

### Preparing for the Cutout

Before you cut into your benchwork, you'll want to be sure to have enough clearance underneath for the turntable mechanism. Märklin recommends a depth of 38 mm (1-1/2"). I'm going to assume you have enough benchwork real estate around the hole, since you're planning to install a turntable to begin with (we'll talk about the hole in a bit.) Märklin also recommends a mounting board thickness of 16 mm (5/8").

To locate where you want the turntable to be, use the included template and line it up with your desired entry tracks (if you're integrating the turntable into existing track plan). This was enough to give me either centering measurements, or a place to jab a pin or nail to mark the center point. (Fig. 1).

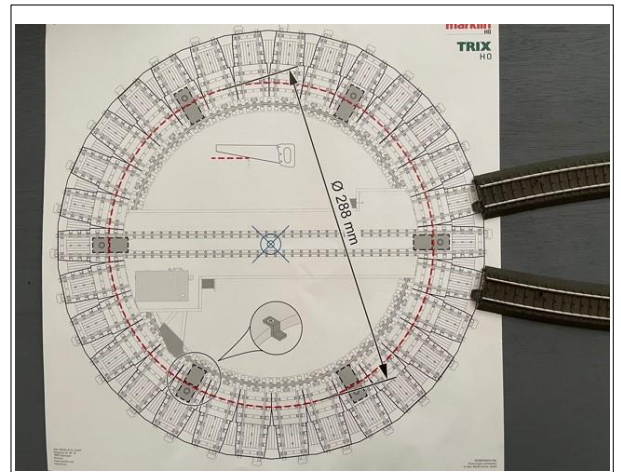


Fig. 1: Lining up the turntable template with track

The manual has good diagrams for fitting the turntable in with the C-track geometry. This helps with keeping multiple lines evenly spaced. I have included an image from the manual (Fig. 2).

Once you have the center point marked, the cavity for the turntable needs to be cut out. The diameter of the hole is 288 mm diameter or 144 mm radius (5.669 or 5-5/8"). Since I didn't have a compass that large, I stuck two nails in a board 144 mm apart, jabbed one nail in the center mark and etched my circle with the other nail. I drew a line into the etched mark to better see it while cutting.

If you're like me, I don't make the cleanest free hand cut lines with a jigsaw. This is okay, because there was plenty of wiggle room for the turntable to shift around when lining up the actual connecting tracks. I would recommend that you don't cut outside the scribe line because you'll need enough material for the support bracket screws to attach to.

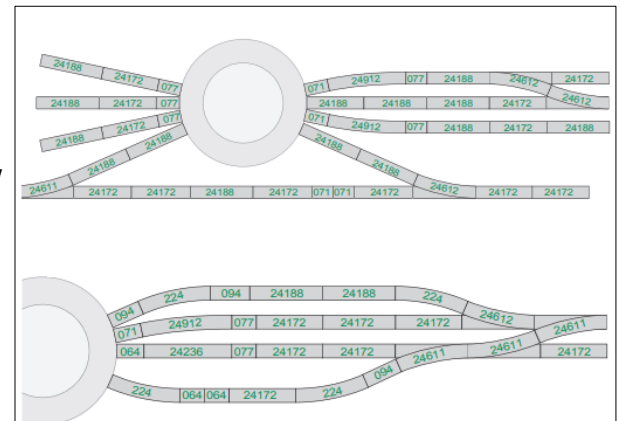


Fig. 2: Turntable with C-track Geometry

## Mounting the first brackets

The turntable comes with six mounting support brackets and screws. These will need to be placed along the center line of each spur piece. I pulled two spurs out of the turntable at 180 degrees opposite each other. The manual suggests using a small screwdriver to push at a bottom notch of the spur and lift. Alternatively, I found that when I have access to the underside, I could pull back on the center tab with a fingernail and push up on the spur (Fig.3). It may seem clumsy at first, but I found that I could do it by feel if I could get my hand underneath the turntable. This was an easier method for me, but you do need to have access to the underside. The spurs lifted out rather easily, especially when compared to the older K-track turntable.



Fig. 3: Extracting spurs: 1. Push & lift, 2. Pull & push

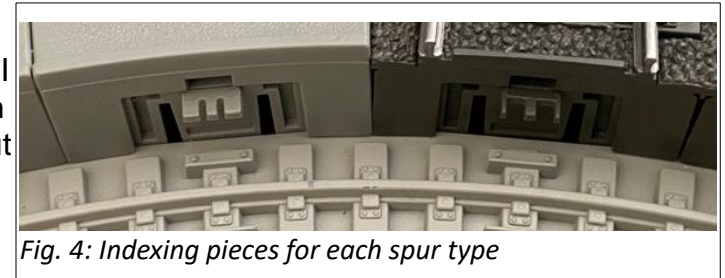


Fig. 4: Indexing pieces for each spur type

While pulling the spurs from the top of the turntable, you should be aware of the indexing pieces inserted on each spur. These are the tiny 'fingers' which protrude from the center of the spur. There are two different index pieces for either the track or the concrete block spur. Track spurs have a larger gap between each finger. These can be dislodged if you pull too aggressively from the top. You need to be careful not to lose them when you shift the spurs around.

If you do knock them loose, there are two alignment holes that you can re-insert them into. There is also a top and bottom side to the index pieces. You want the side with the flange (with the insertion pins) to be facing down. The flange is on the right side of Fig. 5. This information has been updated for the online manual and may not be reflected in your printed manual.

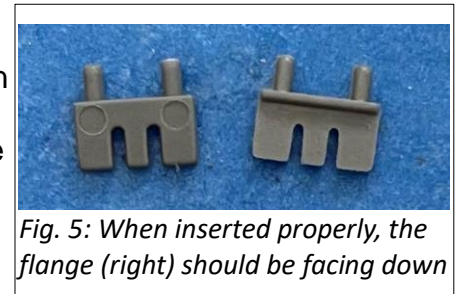


Fig. 5: When inserted properly, the flange (right) should be facing down

Once I pulled the two opposing spurs out from the turntable, I was able to set it into the hole. If possible, connect some layout track to the track spurs for better turntable alignment. I found that I could grasp the turntable bridge around the neck (center) to lift it enough to place a mounting bracket and mark my first two drill points (Fig. 6). This made it easier to center the bracket under the spur. Be sure to remove the bracket before drilling.

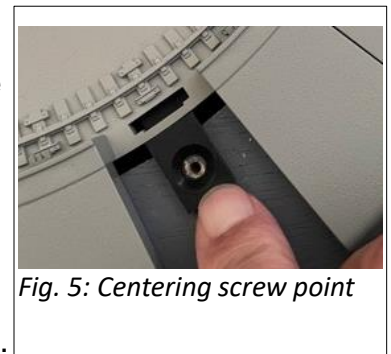


Fig. 5: Centering screw point

Adding the remaining brackets was easy once my primary alignment was done. The turntable has thirty spurs along with a support bracket placed under every 5th spur. I could pull the spur out and center it as I did in Fig. 6. Or, if the entire turntable was still free to rotate, you can rotate the entire bed to the previous two spurs that you removed. You can see how I did this in Fig. 7.

After all the support brackets are in place, you can insert the turntable. The turntable does not have to be fastened down and the fit should have some free play, which is good to accommodate any variance with track alignment and fitting.

### **Wiring**

There are five screw terminals on the underside of the track bed that are easy to identify. Two terminals for the track control feed, three for relaying track power to the rotating track bed. Of the two outer rail track connections, you can connect one of them to an S88 and use it for occupation detection on the CS3. Fig. 8 shows the wiring diagram from the manual. You can also jumper wires from the two control feed terminals to the track relays if it is more convenient to do so.

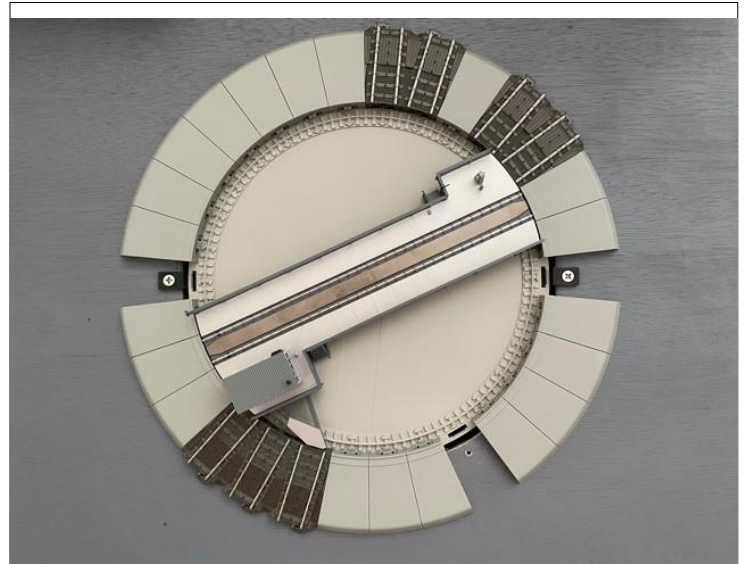


Fig. 7: Aligning the additional support bracket holes

Finally, the last bit of wiring is for the track spurs. The spurs do not have any direct contact points to draw power from the turntable track bed. Instead, you'll need to connect track power feeds for all the track spurs. Either directly to the spur or from any attached track.

The installation of a turntable into a layout can be a little concerning, because cutting a huge hole into your track bed is not something easily covered up if something goes wrong (sort of like cutting a hole in your roof to install an attic fan). Installation of Märklin's turntable was a piece of cake (a slice of pie if you're so inclined). I've included a picture of the turntable installation for a demonstration module along with some notes about the build (Fig. 9).

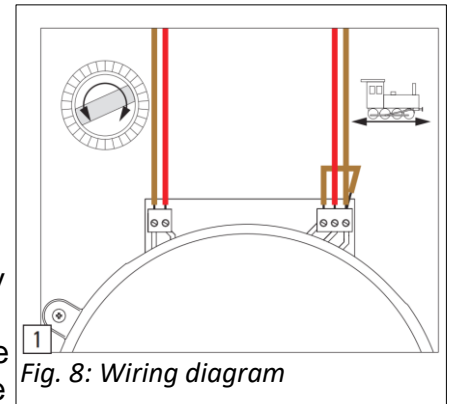


Fig. 8: Wiring diagram

### **Demo Layout and Additional Installation Notes**

You can see in Fig. 9, that the turntable is built as part of a series of demonstration modules. These are lightweight and reasonably stackable units that are mounted on 1/8" plywood boards. The boards are mounted on 1"x3" boards with 1"x2" cross braces. For the turntable installation, I placed additional cross braces to ensure a flat and rigid mounting platform. The modules were designed around the C-track geometry, which should be evident by the way the tracks align. It was nice that I could work the turntable into my existing platform geometry. I attribute this to the way the turntable is designed for C-track.

As mentioned earlier, the turntable manual recommends 16mm (5/8") bench work, and I glued wood blocks to the 1/8" board to reinforce the support screw hold. The screws extended 3/8" into the mounting surface. I had two support mounts screwed into the cross braces and the rest into the

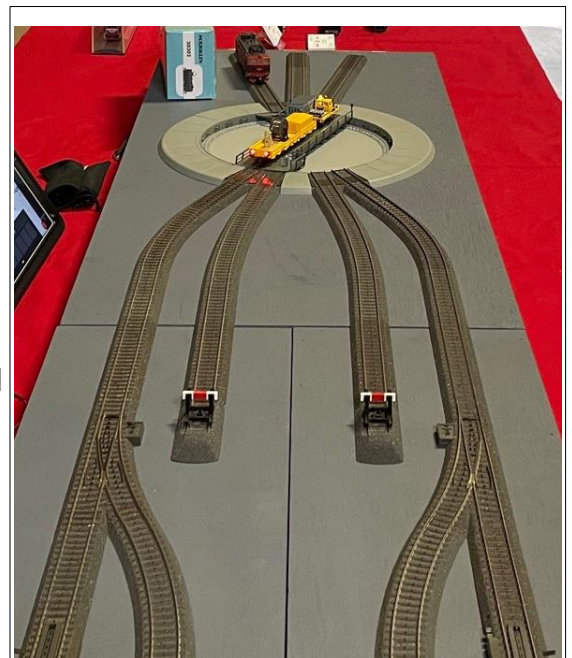


Fig. 6: Installed Turntable in a portable module

glued blocks. You can see the blocks in Fig. 10. Whether or not you choose to use 5/8" bench top or thinner, you can brace it accordingly for rigidity.

### **Wiring Notes**

Like many other accessories on my layout, I may often need to lift out a part for maintenance or examination. I think the screw terminals used for wiring were a big improvement over the older plug system. However, unscrewing a wire can leave long attached lines either hanging or being pulled out from under your track bed. Also, if you must test the device off the layout, you'd have to re-attach some wires.



*Fig. 7: Underside detail of mounting and wiring*

My usual solution is to wire the device with some short lead wires (6-12" usually). Under the layout, I have more secure set wiring which won't be flexed or pulled whenever I pull off any attached device. The connection point between the wires are some spring clip terminals. The spring clips are a fast and easy way to disconnect and reconnect my wiring without risk of affecting any of the main wires. I do not have a manufacturer or part number for these, but they can be found online at a web store (See Fig. 10). Notice that I reserved one of the rails for connection to an S88 feedback module (a grey wire at the top of the spring clip).

If you are using cross braces, you should consider where you want to align the underside of the turntable. Obviously, this could affect your track spur location, but that is easily remedied. For my application, I wanted to be sure that the terminals were close to their connection point.

### **Thoughts on Free Rotation of Table and a Flat Mounting Surface**

It is generally understood that you must have a flat and rigid surface for the turntable to sit on. This allows for smooth rotation of the track bed.

At each end of the track bed there is a function which seems to have caused some speculation on any rotational hitch. Hopefully, the description here will help to dispel any sort of misinformation. On the shed end of the track bed, is an optical sensor. This is the end where the indexing 'fingers' are read through the decoder to distinguish between a track piece and a concrete spur. The spacing between the optical 'lenses' is about 3mm. This is plenty of space for the fingers to glide between without inhibiting or touching the sensor. It is a good idea to be sure to check that all spur fingers are secure and in position.

At the opposite end is the locking mechanism for the turntable track. It is driven by a small servo motor which retracts from a spur slot to freely rotate the turntable track. A software command from your controller will pull back the lock latch (or 'tongue') and activate the rotational motor to allow the track to rotate to its indexed position. Then it will extend the lock latch and stop the rotation motor. If there is any unevenness to the turntable where the spurs are not uniformly seated, it is more likely to create some tolerance issues causing friction between the latch and the spur wall.

As always, be safe and have fun!  
Curtis Jeung

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**Upcoming appearances:**

**Märklin Digital Webinar #15**

**Open Forum Q & A**

August 11<sup>th</sup> 11:00 – 12:00 PST

Login details will be emailed

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**To contact Rick and Curtis for help with your Digital, technical and product related questions:**

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