Ok guys, now it may get a bit techy in this post 😁 I collected A LOT of information about transmissions over the past months and i’d like to put them all together into one single post. A lot of information is floating around the internet but it’s tricky to puzzle it all together, keep the overview and sort out the wrong information.

This post is focusing on the 1970-1974 240Z only and will not include a lot of information about later transmissions. Trust me, it’s complicated enough.

And just sayin – some Data may be incorrect but i tried my best to get it right 😊

1. Transmission type code key / identification

Before we start, first a Key to understand the transmission type code.

I already listed this in the past, but decided to make a better graphic for easy overview.

Note that this chart is only about Manual transmissions:
2. Factory transmissions:

2.1. Overview:

Depending on the country and year, there were different Factory Transmission options. But there are two main groups used in the 240Z:

- **Early “A-type”** (1970 to late 1971, varying a bit depending on country and Type)
- **Later “B-Type”** (1972 to 1974, Also used in later Generation Z’s and other cars)

The “Type-Letter” is referring to the last Letter in the transmission model code.

Early type for example is FS5C71A, later type FS5C71B, and so on, see code chart below.

Within each of these two main Groups, there are similar three subgroups:

**Nissan 4-Speed Manual, Nissan 5-speed Manual and JATCO 3-speed Auto.**

I made an overview including the Type-code for easier understanding (click for full size):

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**Datsun 240Z Manual transmission type Code Key / Identification**

<table>
<thead>
<tr>
<th>F</th>
<th>S</th>
<th>5</th>
<th>C</th>
<th>71</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sequential model version suffix, alphabetical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A = first generation design, “A-type”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B = Second generation design, “B-type”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C = Third generation design, “C-type” (not used in 240Z)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gear-pair center-to-center spacing in mm</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Letters, indicating distance between mainshaft and countershaft in mm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Drive / Synchro type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F = Front wheel drive (Not used in 240Z)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R = rear wheel drive (Not used in 240Z)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W = Warner type Brass synchros</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C = “Compettition” Steel porsche style servo synchros</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of Forward speeds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = 3-speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 = 4-speed</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5 = 5-speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transmission Style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S = special overdrive top gear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ (No Letter) = direct drive top gear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type of Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F = Floor (direct)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R = Remote</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.2. Transmissions according to Markets:
Which transmission was available in your cars market? Well – you can find this information in your FSM (Service Manual) but here’s an overview:

- **USA & Canada (LHD):** 4-speed Manual and 3-speed Auto*
- **Europe (LHD):** 5-Speed Manual
- **UK (Europe RHD):** 5-Speed Manual
- **Australia (RHD):** 5-Speed Manual, 3-speed Auto
- **Japan (RHD):** 5-Speed Manual, 3-speed Auto

*Optional and competition transmissions are not included in this chart

Here is an Example of the 1972-1974 Service manual listing all B-type transmissions according to the dedicated market-model (first row).

For earlier model years, just replace all “B” with “A” in the transmission type code 😊
3. Optional transmissions and Gearing

In Europe and Japan there were optional competition and racing Gearsets and complete gearboxes available for the Z's. Here for E.g. JDM "Nissan Sports options":

This service manual is applicable to the 1972 model S30 series vehicles which are listed below:

HLS30-46001
HS30-01501

<table>
<thead>
<tr>
<th>Models</th>
<th>Engine type</th>
<th>Transmission type-speed*2</th>
<th>Final gear ratio</th>
<th>Tire size</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLS30UV</td>
<td>L24*1</td>
<td>F4W71B-4</td>
<td>3.364</td>
<td>175HR-14</td>
<td>U.S.A. and Canada</td>
</tr>
<tr>
<td>HLS30AUV</td>
<td>L24</td>
<td>3N71B-3</td>
<td>3.545</td>
<td>L.H. Drive</td>
<td></td>
</tr>
<tr>
<td>HLS30</td>
<td>L24</td>
<td>FS5C71B-5</td>
<td>3.900</td>
<td>6.45H-14</td>
<td></td>
</tr>
<tr>
<td>HLS30A</td>
<td>L24</td>
<td>3N71B-3</td>
<td>3.545</td>
<td>R.H. Drive</td>
<td></td>
</tr>
<tr>
<td>HS30U</td>
<td>L24</td>
<td>FS5C71B-5</td>
<td>3.900</td>
<td>6.45H-14</td>
<td></td>
</tr>
<tr>
<td>HS30AU</td>
<td>L24</td>
<td>3N71B-3</td>
<td>3.545</td>
<td>R.H. Drive for Europe</td>
<td></td>
</tr>
<tr>
<td>HLS30Q</td>
<td>L24</td>
<td>FS5C71B-5</td>
<td>3.900</td>
<td>175HR-14</td>
<td></td>
</tr>
<tr>
<td>HS30Q</td>
<td>L24</td>
<td>FS5C71B-5</td>
<td>3.900</td>
<td>R.H. Drive for Europe</td>
<td></td>
</tr>
</tbody>
</table>

*1 Engine with emission control device.

*2 F4W71B and FS5C71B : Manual Transmission
3N71B       : Automatic Transmission

http://www.jdmjunkies.ch/wordpress/2016-06-07/240z-transmissions-ma...
In USA however it was a bit different since they never got the 5-speed Manual Box:

– They offered Retrofit-Kits to install the Roadster 2000 (SR311) FS5C71A Transmission to the 240Z
– From 1977-1983 the 280Z FS5C71B Gearbox got available with optional competition Gearsets (and probably as a complete gearbox) which was also used as competition or racing part in the 240Z's (with optional shifter-kit if used in an 1970-1971 car!)
– Anyhow a few sources mention that at least at some point the Euro / JDM A- and B-Box was also sold officially as an optional part.

Here's a Pic of the 1978 USA Datsun 240Z Sports Option catalogue:
See complete list of Factory and optional transmissions / gearsets below.

4. Differences between A-, A- and B-type(s)
First a bit of history. The early 5-Speed “A-Type” Transmission was not developed for the 240Z, but carried over from the Datsun roadster 2000 (SLR311) and probably also used in other older Datsun models.
To fit the L-series motor and the 240Z Specs, the 240Z-Transmission was fitted with a different clutch bell housing, longer mainshaft, tail Extension casing and one of the shift rods is different too.
That’s why the Roadster Gearbox is often referred to as “short tail” and the Z-Gearbox as “Long tail” Fs5C71A Transmission.
The US market got 4-speed non-overdrive gearing, but im not sure if there was an A-type 4-speed maybe used previously in other datsun’s as well..
Here’s a picture of a FS5C71A “short tail” from a Datsun Roadster (From the Roadster FSM)
While here is a view of the FS5C71A “Long tail” from the Datsun 240Z (Picture from the Nissan Motorsports schematic Catalogue). Also see the first Pic at the top of this post, which is the FS5C71A Factory European Spec 5-speed that came with my two early 1972 240Z’s.

http://www.jdmjunkies.ch/wordpress/2016-06-07/240z-transmissions-ma...
Then there is the B-Type from the 1972+ 240Z which is a complete redesign of the “A-type” transmissions.
– The biggest difference is the two-piece Bellhousing of the A, while later B-type has a single piece bellhousing.
– Another visual difference are the Cast-fins on the outside of the housings as seen in the pictures above and here:
- The A-type got the infamous so-called “Monkey Motion” rubber mounted shifter-stick while the B-type shifters have a solid cross pin. Later Model C-types are retained in a top cover plate by a circlip (Called “Top Loader” in american trannies):

- The gear ratios were different on both A- and B-types (both in 4- and 5-speeds)
- Due to the redesign the Shifter stick position is moved slightly to the front in the “B-type” (See below).
- There were also other changes so be careful when swapping transmissions!
- Note that the B-type Transmission was used over a Long time and in several cars after the 240Z, so it got various design-changes in later models which will or will not fit the 240Z 1:1.

Here’s a Comparison between the 240Z transmissions, Left to right:
FS5C71A “Long tail” 5speed from the 1970-1971 240Z (non-US)
FS5C71B 5speed from the 1972+ 240Z (non-US)
FS5W71C from Later Datsun / Nissan model cars
3N71B Spline Type 3-speed Automatic (1972+ non-Euro 240Z)

4.1. Transmission interchangeability
4.1.1 Datsun Roadster 2000 FS5C71A into 240Z:
In America People used to install the Roadster 2000 FS5C71A transmission to get a 5-speed into their Z. This Retrofit was officially sold by Nissan / NISMO USA.
I was able to find a receipt of someone who bought this swap at a nissan dealer including all the part numbers needed:

4.4.2 A-type with A-type
Swapping an Manual A-type 4-speed to a 5-speed should be a simple thing without any modifications needed since both have similar length and shifter positions.

### 4.4.3 A-type to B-type

Here you can see a A-type US-spec 4-speed Transmission (front) and a B-type US-spec 4- or 5-speed in the rear. According to the source, both transmissions are within a small fraction of an Inch of each other in total length. The 510 Transmission identification Manual (See Documents below), Says that all 4- and 5-speed both A- and B-types of the 240Z have a total length of 31.5In / 775mm, so this might just be within the tolerances.

You can see the Centerline of the "A"-Shifter in the foreground (line #3) sits about 2.25 inches behind the Center line of the B-type Transmission (rear, line #1). Line #2 is the rear end of both transmissions.
To install a Later B-type five Speed, which was sold as Competition Part in US at one Point in a car that was initially equipped with an A-type (four Speed) Transmission, Nissan sold the “Shifter Kit” (Part number 99996-E3030) as seen on the B-type Transmission in the back. It’s basically a bent stick where the original one is straight. The Shifter kit is not available anymore (Courtesy Nissan Information to my request in 2016) but i guess you can just bend the original stick. Also a different propeller shaft is needed.

The shifter sticks are not interchangeable between A and B-type and 4- and 5-speeds.

4.4.3.1 Center Consoles A- and B-Type?

There are two different types of Center consoles. One with the Ashtray in front of the stick (1970-1971) and one behind (1972 and later). Some sources say that's because of the difference in shifter stick Position in A- and B-transmissions (See above). I Made a picture for comparison:
I cannot confirm above information, since both of my cars came with the Early A-type 5-speed and the later Center console with the ashtray behind the stick (See picture below). This would be a wrong combination according to the sources but i’m pretty sure this was the factory equipment in both of my cars:

4.4.4 Later Datsun / Nissan transmission swaps:
There are possibilities to swap to a huge array of different Datsun / Nissan Transmissions, but to not make it more complicated for the Moment, i will make a separate post about this Topic later.

5. Transmission / gearing overview:
I made an overview based on existing overviews and doublechecked everything with FSM’s, schematics, competition catalogues, E-Fast database, Original Micro-fiches and so on for hours. however sometimes some data was not 100% clear. anyhow i think this is the most complete overview about 240Z Transmissions and (later) Options.

Note that this list is not 100% complete since there were also optional single gears to choose and 4-speed optional gears which i didn’t include in the list.

Also note that the part number for the same part may be different in different markets or may have changed over the time.

<table>
<thead>
<tr>
<th>Factory Nissan / Datsun Transmissions and Options (240Z and later options)</th>
<th>1. Complex Transmission, 6. Gearset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>Car</td>
</tr>
<tr>
<td>1969-71</td>
<td>240Z</td>
</tr>
<tr>
<td>1969-71</td>
<td>JF, EU, UK, AU</td>
</tr>
<tr>
<td>1969-71</td>
<td>USA, CAR, LA</td>
</tr>
<tr>
<td>2016-17</td>
<td>USA, CAR, LA</td>
</tr>
<tr>
<td>No one Options for US Market R50 or R53 option Japan</td>
<td></td>
</tr>
<tr>
<td>No one Gearshift Options with different options Japan</td>
<td></td>
</tr>
<tr>
<td>Note that there are several other Datsun / Nissan 71A/B Transmissions and Gear kits which will fit the original transmission and / or L-Series motor but not listed above since they were used in different cars. The list above only contains transmissions which were used by factory or sold as option through nissan for the 240Z / Fairlady S30 in different markets.</td>
<td></td>
</tr>
</tbody>
</table>


There are both Porsche style steel servo synchros and Warner style Brass synchros. What’s the difference? I have no own experiences but i found following information online:

- The porsche type reacts slower than the warner type
- Porsche type shifts smoother than Warner type
- Porsche type synchros dislike being "speed shifted" (probably due to lower reaction times)

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If something is coloured in a certain colour this means the “source” with the same colour mentioned this data, while all the other sources mentioned the black text. Sometimes it seems obviously a type but in some cases i'm not sure.

Also note that there are several other Datsun / Nissan 71A/B Transmissions and Gear kits which will fit the original transmission and / or L-Series motor but not listed above since they were used in different cars. The list above only contains transmissions which were used by factory or sold as option through nissan for the 240Z / Fairlady S30 in different markets.
– Warner type is great for drag racing (Fast shifting possible due to fast reaction times)
Since all “competition” transmissions came with porsche synchros despite having slower reaction times, i guess they can handle slightly more power and / or last longer under heavy usage compared to brass synchros. Otherwise it would not make a lot of sense to have these in “competition” (or non-US standard) gearboxes.

7. Spareparts
Spareparts – especially for the early manual 5-speed are hard to find these days, but below you find some addresses that still sell some parts:
http://www.swmotorsport.com.au
http://www.drivetrain.com/parts_catalog/manual_transmission_part...

8. Transmission Service Manuals and useful Links
“Five and dime” 510 Magazine Volume 11, Issue 4, Datsun / Nissan Transmission identification guide (See Pages 04-09 Tons of informations!)
– Five and Dime vol11 issue 04 (Nissan Transmission Identification)

Datsun FS5C71A transmission service manual (From Roadster 2000 SR311 Manual, Will also work for 240Z 5-speed except a few design changes):
– FS5C71A transmission service manual (Roadster 2000)

FS5C71A / F5C71B Parts exploded view / Partlist:
– NissanMotorsportsSchematicCatalog (99996-M8015)

Datsun / Jatco 3N71A Automatic transmission Manual:

An overview about different nissan / Datsun transmissions and gearing:
– http://www.gracieland.org/cars/techtalk/gearing2.html

9. Thanks for reading
I thank anyone who provided some information for this Post.
If you find any mistakes and can prove it with an official document, please let me know so i can update this post with the correct Information!