

## Standalone Perpetual Calendar Description

### Description of parts and tables

The main parts are a piece that is fixed in place and a moving window. The moving window, which actually has three windows, is in the top part in Figure 1 below and the piece that is fixed in place is the bottom part. There are two year tables, a day-of-week table (SWTWTFSS) and three windows on the moving window piece. There are two month tables and a day-of-month table (numbers 1 to 31) on the piece that is fixed in place. All commercially available slider calendars that I am aware of have a face with a day-of-week table and one window, and a slider with a day-of-month table. They are not standalone. The unique features of my standalone perpetual calendar are the year table and the month table.

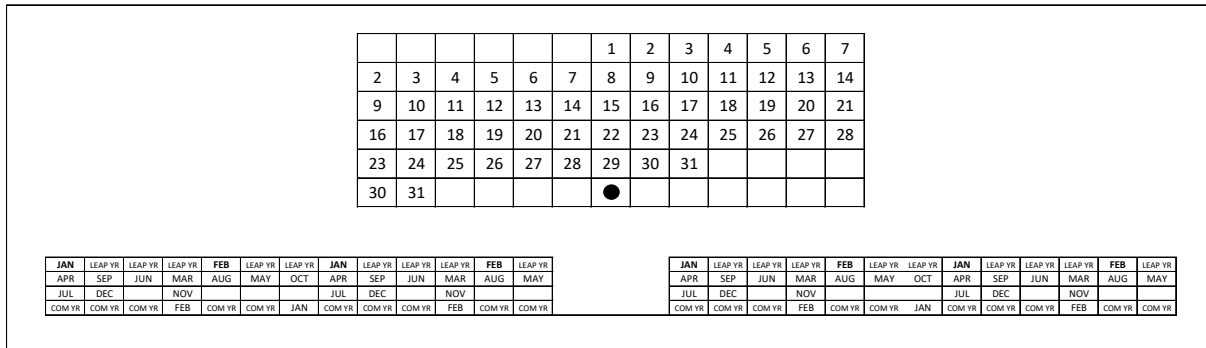
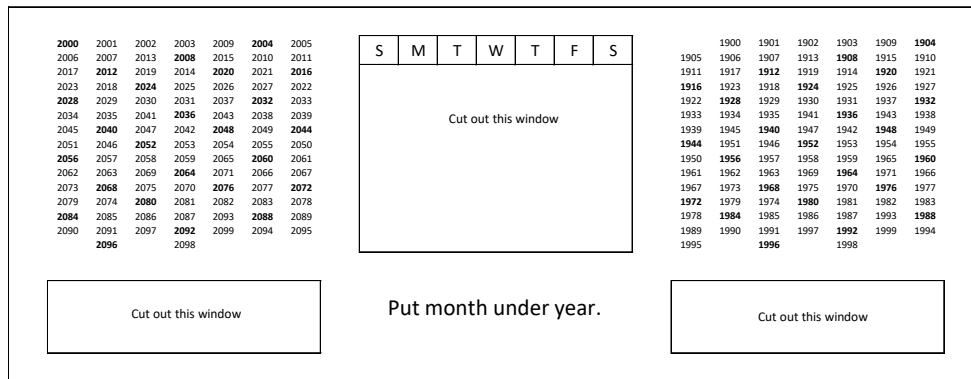


Figure 1: Pieces of the standalone perpetual calendar.

In Figure 1, the top piece moves and the bottom piece is fixed in place. The instruction says “Put month under year”. This instruction applies when the top piece is fixed in place and the bottom piece moves. When the top piece moves, the instruction should be “Put year over month”.

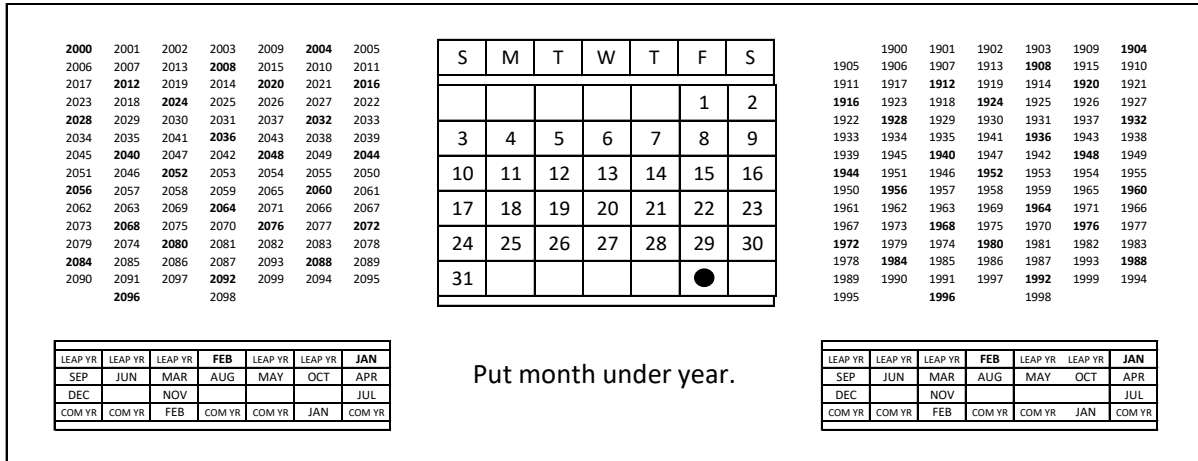


Figure 2: Assembled calendar

For the year 2024, the setting in Figure 2 applies to March and November. If 2024 were not a leap year, the setting would also apply to February. In the month tables on the fixed piece, the top row applies to January and February of a leap year, the middle two rows apply to March to December of all years, and the bottom row applies to January and February of a common year. To bring attention to leap years, JAN and FEB are in bold in the top row and leap years are also in bold in the year table. The calendar always displays 31 days for the month, with 29, 30 and 31 to be ignored as applicable.

If you imagine that the columns in a year table are labeled Sunday to Saturday from left to right, common years are under the day of the week that January 1 falls on and leap years are under the day of the week after the day that January 1 falls on. In a month table, the months are in columns that the day of the week that first of the month falls on relative to the day of the week that the first of January falls on.

To reduce the height of the year tables, there are no empty cells. Thus, the first three rows in the left-hand year table are:

<b>2000</b>	2001	2002	2003	2009	<b>2004</b>	2005
2006	2007	2013	<b>2008</b>	2015	2010	2011
2017	<b>2012</b>	2019	2014	<b>2020</b>	2021	<b>2016</b>

If there were empty cells, the table would be

<b>2000</b>	2001	2002	2003		<b>2004</b>	2005
2006	2007		<b>2008</b>	2009	2010	2011
	<b>2012</b>	2013	2014	2015		<b>2016</b>
2017		2019		<b>2020</b>	2021	

Finding a year in a compacted table is a little more difficult than in a table that is consecutive with blanks. However, keeping the height of the standalone perpetual calendar at the bottom as low as possible enhances the overall appearance of the small perpetual calendar.

The following are enlargements of the tables in the above figures.

Left Year Table

<b>2000</b>	2001	2002	2003	2009	<b>2004</b>	2005
2006	2007	2013	<b>2008</b>	2015	2010	2011
2017	<b>2012</b>	2019	2014	<b>2020</b>	2021	<b>2016</b>
2023	2018	<b>2024</b>	2025	2026	2027	2022
<b>2028</b>	2029	2030	2031	2037	<b>2032</b>	2033
2034	2035	2041	<b>2036</b>	2043	2038	2039
2045	<b>2040</b>	2047	2042	<b>2048</b>	2049	<b>2044</b>
2051	2046	<b>2052</b>	2053	2054	2055	2050
<b>2056</b>	2057	2058	2059	2065	<b>2060</b>	2061
2062	2063	2069	<b>2064</b>	2071	2066	2067
2073	<b>2068</b>	2075	2070	<b>2076</b>	2077	<b>2072</b>
2079	2074	<b>2080</b>	2081	2082	2083	2078
<b>2084</b>	2085	2086	2087	2093	<b>2088</b>	2089
2090	2091	2097	<b>2092</b>	2099	2094	2095
	<b>2096</b>		2098			

Right Year Table

	1900	1901	1902	1903	1909	<b>1904</b>
1905	1906	1907	1913	<b>1908</b>	1915	1910
1911	1917	<b>1912</b>	1919	1914	<b>1920</b>	1921
<b>1916</b>	1923	1918	<b>1924</b>	1925	1926	1927
1922	<b>1928</b>	1929	1930	1931	1937	<b>1932</b>
1933	1934	1935	1941	<b>1936</b>	1943	1938
1939	1945	<b>1940</b>	1947	1942	<b>1948</b>	1949
<b>1944</b>	1951	1946	<b>1952</b>	1953	1954	1955
1950	<b>1956</b>	1957	1958	1959	1965	<b>1960</b>
1961	1962	1963	1969	<b>1964</b>	1971	1966
1967	1973	<b>1968</b>	1975	1970	<b>1976</b>	1977
<b>1972</b>	1979	1974	<b>1980</b>	1981	1982	1983
1978	<b>1984</b>	1985	1986	1987	1993	<b>1988</b>
1989	1990	1991	1997	<b>1992</b>	1999	1994
1995		<b>1996</b>		1998		

Day-of-Week Table

S	M	T	W	T	F	S
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Day-of-Month Table

						1	2	3	4	5	6	7
2	3	4	5	6	7	8	9	10	11	12	13	14
9	10	11	12	13	14	15	16	17	18	19	20	21
16	17	18	19	20	21	22	23	24	25	26	27	28
23	24	25	26	27	28	29	30	31				
30	31					●						

Left and Right Month Tables

<b>JAN</b>	LEAP YR	LEAP YR	LEAP YR	<b>FEB</b>	LEAP YR	LEAP YR	<b>JAN</b>	LEAP YR	LEAP YR	LEAP YR	<b>FEB</b>	LEAP YR
APR	SEP	JUN	MAR	AUG	MAY	OCT	APR	SEP	JUN	MAR	AUG	MAY
JUL	DEC		NOV				JUL	DEC		NOV		
COM YR	COM YR	COM YR	FEB	COM YR	COM YR	JAN	COM YR	COM YR	COM YR	FEB	COM YR	COM YR

**Using Excel to make graphics**

This section explains how to use Excel to make the graphics for the face and slider. You can skip this section if you plan to print my files without modification.

I use Excel to make my graphics. It is certainly not a powerful graphics program, but it is widely available and easy to use. Excel features that are useful for making perpetual calendar tables include: a wide range of fonts available, the capability to draw borders around selected cells, the capability to scale the document when printing, the capability to change row heights and column widths, and the capability to merge cells. A disadvantage of Excel is that row heights are usually set as points, where 1 point = 1/72 inches, and column widths are usually set as the number of zero characters ("0") that will fill the cell. The website <https://www.officetuto.com/column-width-and-row-height-units-in-excel/> describes a procedure for changing the units to inches or centimeters, but it is complicated. By adjusting cell heights and widths in the usual way and by scaling, I am able to obtain piece sizes close what I would make them if I were able to set exact dimensions.

Figure 3 below shows the Excel graphics for the two parts of the standalone perpetual calendar that is mounted below the stick calendar.

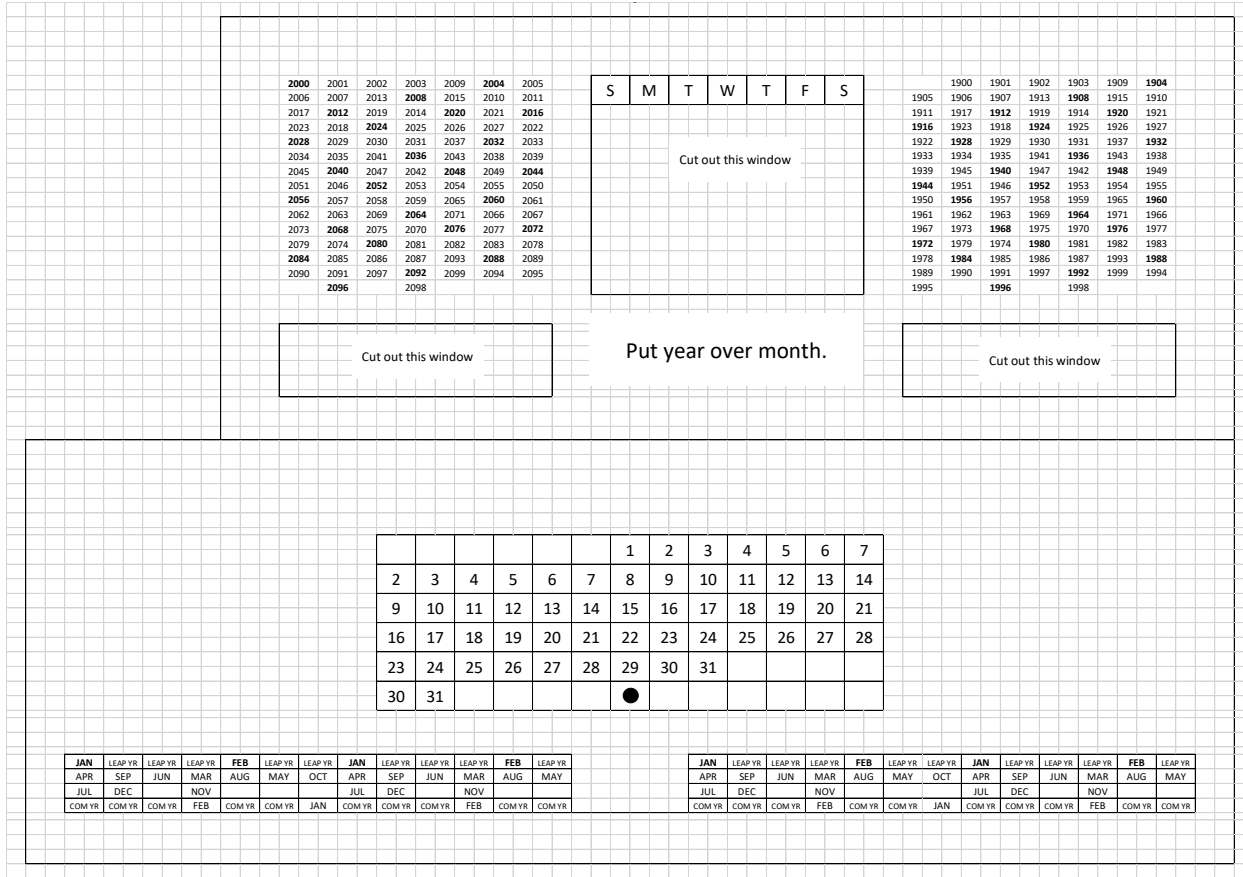


Figure 3: Excel graphic for standalone perpetual calendar parts

All column widths in this graphic are 3. Most row heights are 15. If making a graphic from scratch, start with all column widths set to 3 and all row heights set to 15. Then adjust row heights as required. The table below lists the row heights that are not 15:

Rows	Height	Notes
27 & 32	7.5	The windows that display the tables are one row with a height of 15 higher than the tables displayed. This is to provide a little extra room in the window if the table does not exactly line up vertically with the window. These two rows add height to the two bottom windows. One row with a height of 15 could have been used as is done for the centre window. An extra column is not required for horizontal tolerances because the edge of a column is always lined up with the edge of a window.
42 & 55	7.5	Making these rows half height puts the day-of-month table half a row above the bottom of the centre window.
58 & 63	7.5	Making these rows half height puts the two month tables half a row above the bottom of the two bottom windows.

The locations and fonts of the features on the graphic are as follows:

Feature	Cell Locations		Font	Note
	Upper Left	Lower Right		
Moving window outline	L6	BK35	None	1
Left year table	O10	AA24	Calibri 11	2
Day-of-Week table	AE10	AQ10	Calibri 18	3
Right year table	AU10	BG25	Calibri 11	
Centre window	AE12	AR24	None	
Left lower window	O27	AB32	None	
Right lower window	AU27	BH32	None	
Fixed piece outline	B36	BK66	None	
Day-of-Month table	T43	AR53	Calibri 18	4
Left month table	D59	AB62	Calibri 11 for months, Calibri 9 for COM YR and LEAP YR	
Right month table	AJ59	BH62	Same as left	

#### Notes

1. The years are in two merged horizontal cells. Thus, the year **2000** in the upper left corner of the left year table is in merged cells O10 and P10.
2. AA24 is the left of the two merged cells.
3. AE10 and AQ10 are the upper left cells in blocks of four merged cells.
4. The numbers are in four merged cells, which is the same as the Day-of-Week table.
5. The dot below the 29 in the day-of-month table is 0.55 cm in diameter. The dot locates a push pin when this piece is a moving slider behind the window. The dot is not needed when the window moves.
6. All lines on the face and slider are made by drawing borders around cells. Borders are used in the following areas:
  - The outlines of the two pieces
  - Tables for day-of-week, day-of-month, and month

#### Printing Parameters

1. Orientation: Landscape
2. Scaling: 50% of normal size
3. Margins: Top and bottom are 0.5, left and right are 0.2
4. Header and Footer: 0.8
5. Gridlines and row and column headings are disabled

Using the above information, the Excel spreadsheet graphics for the standalone perpetual calendar component of the new stick calendar can be made from scratch.