

DIYnamics Technics Table Parts List

The parts used to build the DIYnamics Technics Table can be purchased online. This document lists necessary components and where to order them. Prices and links reflect time of writing (September 1st, 2020). The Estimated Times of Arrival (ETA) below reflect time to ship to Los Angeles, California.

Required Components

The DIYnamics Technics Table is a modular system. **Required Components** are used to build the base setup; LEGO powered rotating platform with tank. **Optional Components** enable community developed add-ons that expand the functionality of the DIYnamics Technics Table.

OXO Lazy Susan

The OXO Lazy Susan provides a stable rotating platform. Its 16 inch diameter provides the flexibility to mount tanks of multiple sizes.

Purchase 1 OXO Lazy Susan for \$17.99 from <http://a.co/16P3tM1> (ETA <1 week)
If not available, search for “OXO Good Grips 16” Turntable” from other vendors.



LEGO Components

The LEGO Components are used to build the LEGO Assembly that supports a battery powered drive wheel rotating the OXO Lazy Susan. Power Functions parts consist of motors and battery boxes. Pick-a-Brick parts consist of individual bricks.

If you are upgrading from the DIYnamics LEGO to Technics Table, please see the Upgrade Parts List for the LEGO Components to buy instead.

Picture	Part Name	Link and ETA	Quantity
	LEGO® Power Functions XL-Motor	https://tinyurl.com/legoxlmotor (ETA 1 week) or https://www.amazon.com/LEGO-Functions-Power-XL-Motor-8882/dp/B003S832A6 (ETA 1 week)	1 (\$9.99 each) **
	LEGO® Power Functions AAA Battery Box *	https://tinyurl.com/legoaaabatterybox (ETA 1 week) or https://www.amazon.com/LEGO-Power-Functions-Battery-88000/dp/B004RF301U (ETA 1 week)	1 (\$12.99 each) **
	LEGO® Classic Green Baseplate	https://tinyurl.com/legogreenbaseplate (ETA 1 week)	1 (\$7.99 each)
Subtotal Cost			\$30.97

* Requires 6 AAA batteries

** Reflects MSRP for Power Functions parts. As the product line is phased out, the components are becoming more expensive and may cost more than MSRP.

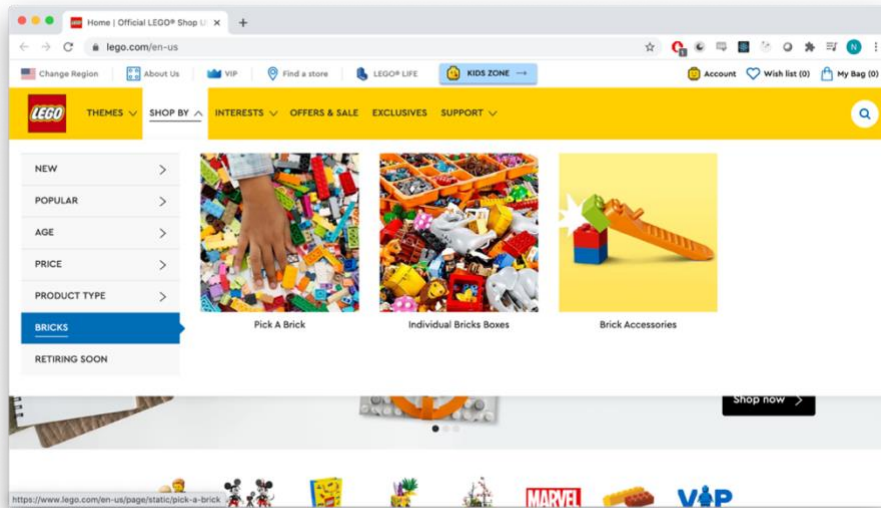
Note that LEGO is discontinuing the Power Functions product line per reports.

As a result, the XL-Motor and AAA Battery Box are no longer available for purchase from the LEGO website and feature a markup at other retailers. An option is to replace LEGO parts is to purchase off-brand but compatible parts. AliExpress features multiple vendors such as <https://www.aliexpress.com/item/4000332971058.html> - choose equivalent motors and battery boxes based on picture. Note that we have experience using AliExpress parts successfully but cannot guarantee that they will match the performance of LEGO parts. Feel free to reach out to us via email at dynamicsteam@gmail.com or Twitter at <https://twitter.com/dynamicsteam> regarding your experiences with non-LEGO parts.

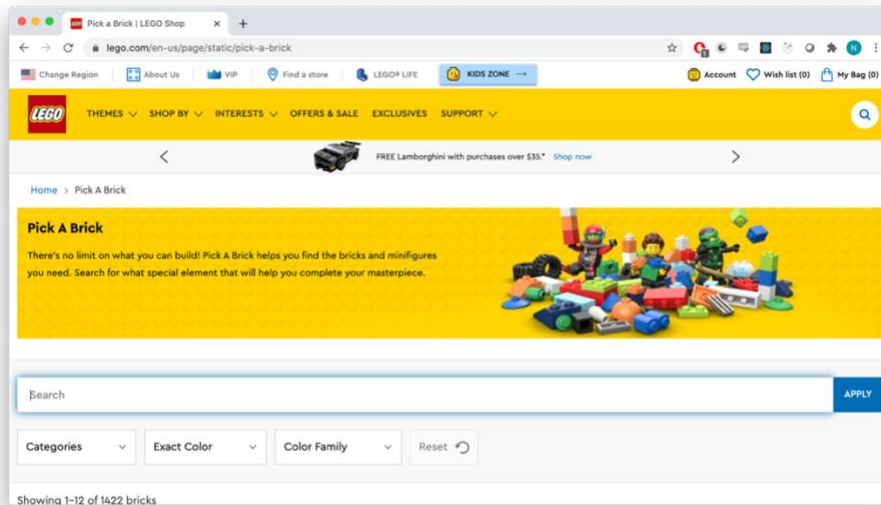
Note that Pick-a-Brick parts have an ETA of approximately 4-6 weeks.

To purchase individual bricks from Pick-a-Brick:

- Go to the Pick-a-Brick section of the <https://lego.com/> website



- Scroll down to the 'Search' box and input the following Design ID codes



- Select parts and their quantity using the 'Pick' box


Picture	Part Name	Design ID	Quantity
	Brick 2x2	3003	4 (\$0.14 each)

	Plate 1x8	3460	4 (\$0.17 each)
	Plate 2x4	3020	5 (\$0.14 each)
	Plate 6x16	3027	2 (\$1.52 each)
	Technic Brick 1X2, Ø4.9	3700	4 (\$0.10 each)
	Technic Brick 1X4, Ø4,9	3701	10 (\$0.17 each)
	Technic Brick 1X14, Ø4,9	32018	4 (\$0.50 each)
	Technic 3M Beam	32523	6 (\$0.09 each)
	Technic 15M Beam	64871	3 (\$0.33 each)

	Connector Peg W. Friction	2780	39 (\$0.06 each)
	1/2 Bush	42136	2 (\$0.06 each)
	Cross Axle 5M	32073	1 (\$0.12 each)
	Rim Wide 18/14 W. Cross Ø4.8	55982	1 (\$0.21 each)
	Tyre Normal Wide Ø30,4 X 14	92402	1 (\$0.68 each)
Subtotal Cost			\$14.08

Tank

The Tank sits atop the OXO Lazy Susan and holds water serving as the medium for fluid flows. The following option is our recommended choice *** and different tanks have been used to success.

If searching for a different tank option, we recommend considering the following criteria:

- Cylindrical shape
- Flat bottom
- Large diameter and height
- Clear walls

Purchase 1 Royal Imports Flower Acrylic Vase 8" diameter x 4" height for \$10.99
<https://www.amazon.com/dp/B07TBHBVS1> (ETA <1 week)



*** We previously recommended a smaller version of the tank from the same manufacturer. If upgrading from the DIYnamics LEGO to Technics Table, we recommend purchasing the larger version of the tank.

Food Coloring

The Food Coloring is used to visualize fluid flows in the Tank.

Purchase 1 pack of assorted food coloring for \$3.99

<https://www.amazon.com/dp/B00GNHIBZU> (ETA <1 week)



Required components total cost: \$78.02

Optional Components

External Power Supply Components

The External Power Supply Components are used to power the DIYNamics Technics Table drive wheel with wall power instead of batteries. The approach utilizes an adjustable power supply adapter to enable precise changes in rotation rate. Learn more about the approach in the External Power Supply Guide.



Picture	Part Name	Link and ETA	Quantity
	Adjustable Power Supply Adapter	https://www.amazon.com/dp/B07K1LV2CM (ETA <1 week)	1 (\$16.99 each)
	Power Jack to Alligator Clip Connector	https://www.amazon.com/dp/B07F616YLV (ETA <1 week)	1 (\$5.59 each)
	GFCI Plug ****	https://www.amazon.com/dp/B000XVG72G (ETA <1 week)	1 (\$20.69 each)
	LEGO® Power Functions Extension Wire	https://tinyurl.com/legoextensionwire (ETA 1 week)	1 (\$2.99 each)
Total Cost			\$46.26

**** GFCIs halt power in the event of a fault. The devices are a vital safety measure in situations involving water and electricity. If you have access to a GFCI outlet for your experiment or already own a GFCI plug, feel free to omit the GFCI plug from your purchase.

External Power Supply Components Total Cost: \$46.26

Rotating Frame Camera Mount Components

The Rotating Frame Camera Mount Components are used to mount a camera in the rotating frame. Taking footage in the OXO Lazy Susan as it rotates highlights fluid motions from the Tank's, rather than an outside, frame of reference. Learn more about the approach in the Rotating Frame Camera Mount Guide.

Picture	Part Name	Link and ETA	Quantity
	Clear Acrylic Bookends	https://www.amazon.com/dp/B07R3XK2D9 (ETA <1 week)	1 (\$18.99 each)
	Small $\frac{3}{4}$ Inch Binder Clips (36 Count) *****	https://www.amazon.com/dp/B00T8W2U6S (ETA <1 week)	1 (\$5.29 each)
Total Cost			\$24.28



***** The approach requires 8 $\frac{3}{4}$ inch wide binder clips. Larger binder clips or other clamp solutions are suitable. If you already own these materials, feel free to omit the binder clips from your purchase.

Rotating Frame Camera Mount Components Total Cost: \$24.28

Sidewall Tank Components

The Sidewall Tank Components are used to affix an acrylic cylinder onto the OXO Lazy Susan. This creates an integrated rotating tank platform – the Sidewall Tank. A benefit of the Sidewall Tank is that it offers greater diameter and height than the default option. However, as of now, the DIYnamics Team has not found an affordable acrylic cylinder

for purchase. If one is available, learn more about the approach at <https://youtu.be/sN1ahWml17w>.

Picture	Part Name	Link and ETA	Quantity
	Silicone	https://www.amazon.com/Momentive-Performance-Materials-GE284-Waterproof/dp/B001JK5R0I (ETA <1 week)	1 (\$4.27 each)
	Compass	https://www.amazon.com/Mr-Professional-Geometry-Drafting-Woodworking/dp/B086R77B7Y (ETA <1 week)	1 (\$5.99 each)
Total Cost			\$10.26

Sidewall Tank Components Cost (Without Acrylic Cylinder): \$10.26

DIY Sidewall Tank Components




The DIY Sidewall Tank Components are used to create an integrated rotating tank platform. An acrylic cylinder is formed by bending an Acrylic Sheet into a circular shape and connecting the ends with Waterproof Tape. The acrylic cylinder is fixed onto the OXO Lazy Susan with Silicone. The end result is a combined lazy susan and tank that offers greater diameter and height than the default option. The DIY Sidewall Tank with a homemade acrylic cylinder is much cheaper than the Sidewall Tank with a purpose built acrylic cylinder. Learn more about the approach in the DIY Sidewall Tank Guide.

Note that personal protective equipment including goggles, gloves and a mask is recommended but not included in the parts list. Household items including a Tape

Measure (or ruler long enough to measure 48”), Sharpie, Duct Tape, Scotch Tape and a Table with a Cardboard Cover are assumed to be already available.

Core Components in italics refer to parts that are key to the DIY Sidewall Tank and should not be replaced. Only switch out *Core Components* if an alternative of similar specifications is available. Meanwhile, the remainder of parts can be replaced with household items already on hand that fill a similar role.

Picture	Part Name	Link and ETA	Quantity
	<i>Plastic Cutter</i>	https://www.amazon.com/Fletcher-05-111-Scoremate-Plastic-Cutter/dp/B000LNJYNA/ (ETA <1 week)	1 (\$6.50 each)
	12” x 48” x 1/16” <i>Acrylic Sheet</i> *****	https://www.homedepot.com/p/Falke-Design-12-in-x-48-in-x-1-16-in-Thick-Acrylic-Clear-Sheet-Falke-Design-ACRYLIC-CL-1-16-1248/308669974 (ETA 1 week)	1 (\$19.99 each)
	<i>Silicone</i>	https://www.homedepot.com/p/GE-Advanced-Silicone-2-2-8-oz-Clear-Kitchen-and-Bath-Caulk-2709136/100004845 (ETA 1 week)	1 (\$4.27 each)
	<i>Waterproof Tape</i>	https://www.homedepot.com/p/Gorilla-a-1-88-in-x-9-yds-Crystal-Clear-Tape-60270/204593167 (ETA 1 week)	1 (\$7.97 each)

	<p>Painters Tape *****</p>	<p>https://www.homedepot.com/p/3M-ScotchBlue-1-41-in-x-60-yds-Original-Multi-Surface-Painter-s-Tape-2090-36AP/202077779 (ETA 1 week)</p>	<p>1 (\$5.97 each)</p>
	<p>220 Grit Sandpaper *****</p>	<p>https://www.homedepot.com/p/3M-Pro-Grade-Precision-9-in-x-11-in-220-Grit-Fine-Advanced-Sanding-Sheets-4-Pack-26220PGP-4/205415923 (ETA 1 week)</p>	<p>1 (\$4.97 each)</p>
	<p>Metal Straight Edge *****</p>	<p>https://www.homedepot.com/p/Empire-48-in-Aluminum-Straight-Edge-Ruler-4004/100118266 (ETA 1 week)</p>	<p>1 (\$10.97 each)</p>
Total Cost			\$60.64
Core Components Cost			\$38.73

DIY Sidewall Tank Components Cost: \$60.64 (\$38.73 for Core Components)

***** The 12" x 48" x 1/16" Acrylic Sheet features enough material for 2 DIY Sidewall Tanks.

***** Alternatives can be used for the Painters Tape, 220 Grit Sandpaper and Metal Straight Edge.

- The Painters Tape temporarily fixes components in place and can be replaced by a strong yet removable tape such as Masking Tape.
- Only a hand sized patch of the 220 Grit Sandpaper is required and other objects for sanding down an edge can be used in its place.
- The Metal Straight Edge provides a guide for cutting and can be replaced by another straight beam.

Note that we recommend the listed parts for the remainder of components.