

BB's Telescoping Column URC Parts List, VERSION 3 - by BBF TX

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Part	Manufacturer	Supplier	Approx.Price	Notes:
Ultrasonic Cleaner Sonix ST136 (6-qt), or Sonix ST126 (10.8 qt), or other option. 60 khz or 80 khz machines recommended	Sonix IV	Finders' Outlet	\$500 ST136 \$600 ST126	These machine operates at 60 kHz, which cleans smaller features better, and reduces the risk of cavitation damage, compared to 40kHz cleaners. 80kHz would be even better. Zenith Ultrasonics has an 80kHz machine starting around \$1400.
Spindle Motor: AllElectronics 1/10RPM, or Herbach Rademan 6 RPH 115VAC Motor #H1-47	Synchron (H&R) or Autotrol (AE)	Herbach & Rademan, or AllElectronics	H&R \$21 AllElec \$4	AllElectronics motor is out of stock in 115v as of now, but they have 230V version!
3-wire line cord		hardware store	\$3	Ground the motor case, which connects to the column and shaft supports
Rubber grommet 5/16 ID		hardware store		For power cord hole in electrical box
hose clamp		hardware store		strain relief for power cord inside electrical box
4"x4"x2" metal electrical box with cover to house motor		hardware store	\$5	Lots of different options for this box
Illuminated 125V spst Paddle Switch CR102JPRS215QF7	C&K	Mouser	\$2	Lots of options, but I had a couple of these nice switches on hand
Sintered Aluminum Pillow Block Bearing Housing. Part # A 7Z28-P038 Bore size is 3/8"	Stock Drive Products/ Sterling Instrument	https://sdp-si.com/eStore/	\$6	Can set up the output shaft and bearing supports using 1/4" components. I used 9/32 since I had extras from my earlier builds
2 Sintered bronze flanged bearings. Part # A 7B 4- SF081203 0.252" I.D., 0.377" O.D.	Stock Drive Products/ Sterling Instrument	https://sdp-si.com/eStore/	2 x \$1	This a 1/4" ID bushing. Needs to be press- fit into pillow block, but there are many other options for this bearing setup
Shaft Coupler 1/4" to 1/4"	Servo City	Servo City	\$5	This connects motor shaft from AllElectronics motor to short shaft with bearing supports. H&R Motor has 1/8" output shaft.
1/4" Steel D-Shaft 2.5 to 3.5" inches depending on your motor and bearing design Iron or steel disc on shaft to mate with magnet. Here is an example if you have to buy something: Roller chain sprocket B0045JJNRI 1/4" ID, 1.25" OD	Servo City	Servo City	\$2	Use some steel scrap or a small iron/steel gear, 1/4" ID, to mount on the short shaft using a set screw. Your magnetic spindle will mount on this disc, so match diameter of this disc to diameter of your magnet.
Rubber Washer - 1.25" OD, 5/16"ID, 1/16" thick		hardware store	\$2.00	Use contact cement to glue to the steel disc to which the magnet mates. Prevents chipping of the magnet and makes it easier to remove magnet and spindle from the machine
Hammond Electrical enclosure 1411BU 2.7 x 2.2 x 1.6	Hammond	Mouser	\$5	Small box to house and mount bearings, lots of different options for this.
Magnet mounting guide				I drilled a 1-1/4" hole in 3/16" thick aluminum and screwed it to the box face. This positions the magnet properly to mate with the motor shaft output.

9/32" diameter x10" long pole spear shaft extension, 6mm threads on both ends	Riffe	Divers Direct	2 shafts x \$16	Perfect diameter for record spindle. Mates directly to female threaded stud magnet
Neodymium mounting magnet, cup magnet with female M6 thread MM-D-32		K&J Magnetics	2 x 6.37	Mates directly with the pole spear spindle. Overkill, as this is a large 1.25" diameter magnet. But I like it. Very strong; be careful Or can use 1" square aluminum tubing from your hardware store. I believe EZTube will precut your lengths for a small fee. Or hacksaw yourself. I cut mine on my table saw using non-ferrous blade. 2 9" lengths, 2 7" lengths, 1 4" length, 1 10" length for column
100-100 1" Square Aluminum Tube 4ft length, black	EZTube	EZTube	\$13	Snap locks make the frame collapsible, easy to setup
100-300-C Snap Lock System Connector - Ell	EZTube	EZTube	2 x \$7	Snap locks make the frame collapsible, easy to setup
100-316-C Snap Lock System Connector - 4-way	EZTube	EZTube	\$10	
1 ft length of 1 1/4" x .110" 6005A-T6 square Aluminum Tubing (thick wall)	ALCobra	ALCobra	\$7	This is a heavy duty tube on which you'll mount your motor and shaft bearings.
Plastic End Cap for 1.25" square tube		ALCobra	\$2	Optional, but gives a nice finished look
Plastic end caps 1" square tube		Hardware store or EZ Tube	4 x \$1	Optional, but gives a nice finished look
100-400 Snap Button Metal Inserts (same as used in EZTube connectors)	EZTube	EZTube	2x \$0.80	Used to support and lock telescoping column in loading and washing heights; another option would be to use cotterless hitch pin
Non-slip, 0.75" square rubber feet with adhesive		hardware store	3 to 5 at \$0.50 each	Put on bottom of frame tubing to keep frame from sliding on table
Hook up wire, wire- connectors, .187" wire connectors, screws, bolts, nuts, lock washers, etc.		Hardware store	~\$10	
Pump & Filter System Record Spacers				See Version 2 Parts List See Version 2 Parts List