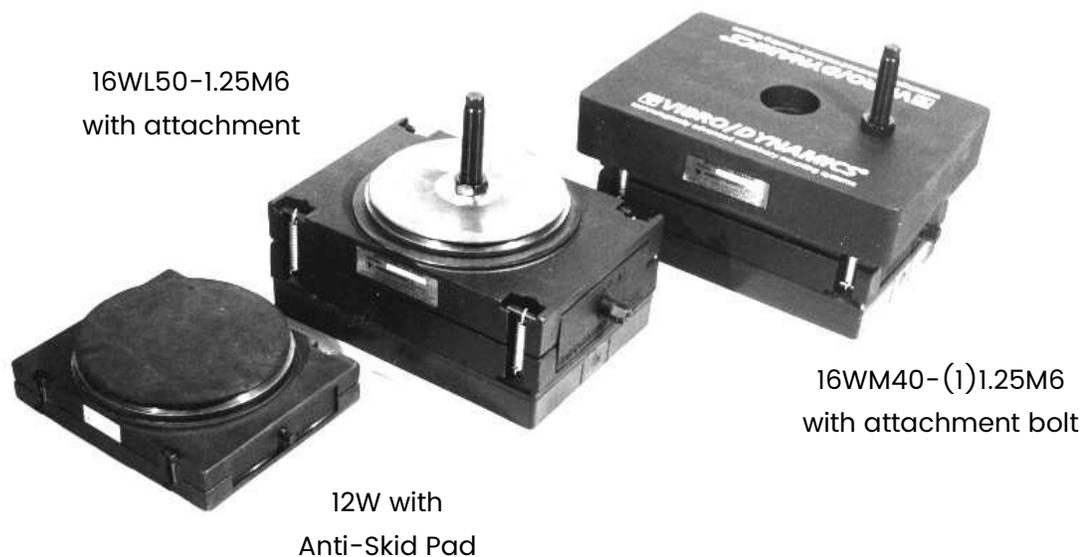


Installation and Leveling Instructions for Micro/Level® Wedge Style Isolators



Vibro/Dynamics Technologically Advanced Machinery Mounting Systems are an investment in productivity and efficiency. To realize the full potential of your investment, familiarize yourself with these instructions and use them as a reference during the installation.

Our Wedge Isolators are designed to help maximize your productivity. Because they are freestanding machinery mounts, installations are faster. There are no anchor bolts, grout, or shims; and welding to I-beams in the floor is not required.

Vibro/Dynamics Wedge Isolators are precision leveling and alignment devices. Case Studies of punch presses installed on Vibro/Dynamics Isolators have shown significant improvements in tooling and press life.

Field studies on Plastic Injection Molding machines have shown that Vibro/Dynamics Wedge Isolators also help maintain dynamic machine alignment. Less wear and tear on tie bars, guide pins, and molds are all direct benefits.

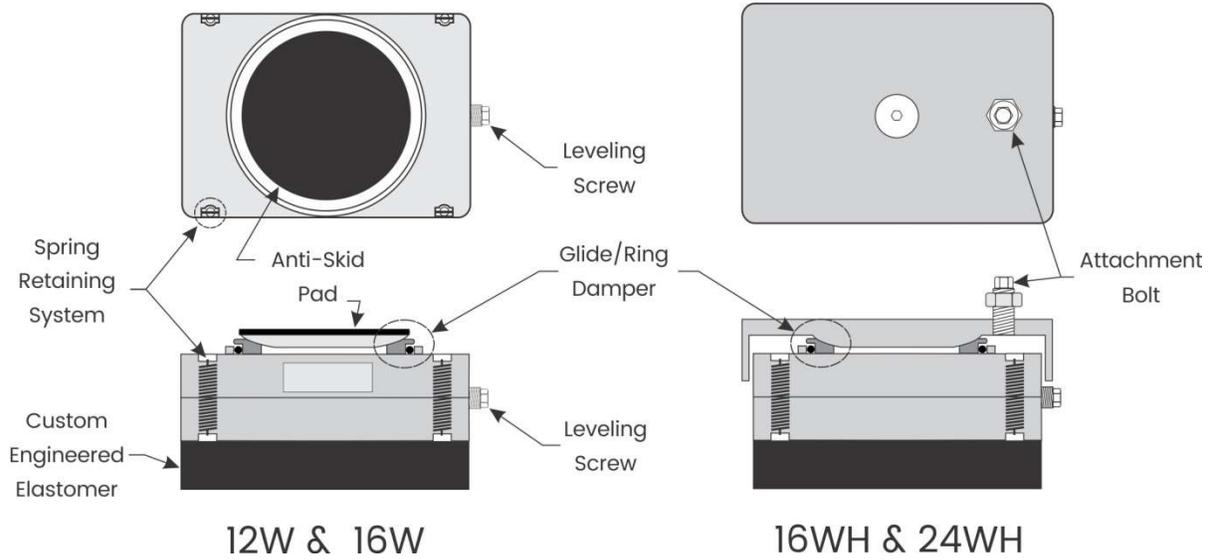
Vibro/Dynamics Wedge Isolators feature our patented Glide/Ring™ damper. This unique, built-in device allows the displacement of the machine as a rigid body when horizontal inertia forces occur, like those caused by the opening and closing of a mold, or from an E-stop. This allows the machine to return to its equilibrium position without walking.

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Vibro/Dynamics LLC

TECHNICAL BULLETIN: M/L-685



Please familiarize yourself with the different wedge isolator styles below. All styles are available with either an Attachment bolt or an Anti-Skid pad. Isolators equipped with an Attachment bolt are designated by a screw size following the isolator's part number (i.e. 12WK950 - **.75M6**, 16WHL53 - **1.25M8**).

INSTALLATION AND LEVELING INSTRUCTIONS

Preparation

1. The concrete surface under the isolator must be uniform, clean, and flat, without any holes, cracks, or lumps directly under the isolator. The concrete surface should have a troweled finish, which is also known as a type C finish. Very smooth surfaces such as epoxy or steel surfaces should be avoided as they limit the friction developed between the elastomeric portion of the isolator and its support surface. Avoid conditions where the isolators is placed over a joint in the surface, such as a concrete expansion joint.

Note: Preventative maintenance of the support surface must be performed throughout the lifetime of the installation to keep the area under and around the isolator clean and dry.

2. Variation in flatness of the support surface underneath the isolator must be within $\pm .04"$ (1 mm).
3. The slope of the foundation underneath the isolator must be under 3 degrees, or $.63"/ft$ (52 mm/m).
4. Clean and inspect the machine feet and legs, repairing any cracks or damage. The bottom of each machine foot must be clean and flat where it contacts the top of the isolator.
5. Clean debris from the mounting holes for installation using attachment bolts.

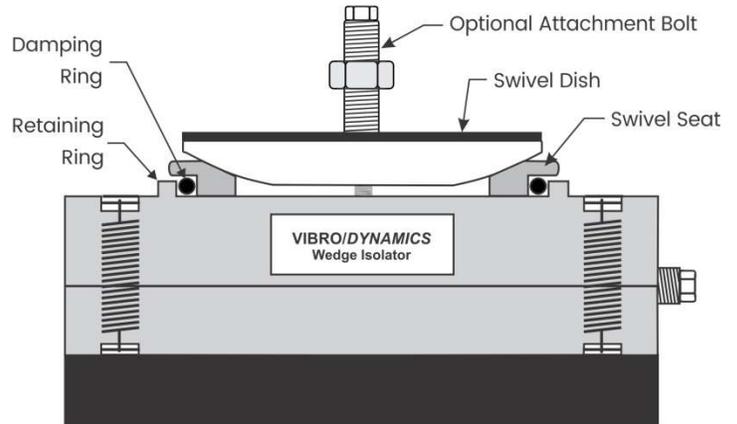


FIGURE 1

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Installation

- Position each isolator under the machine foot.
- For isolators equipped with Attachment Bolts, position the isolator so that the tapped hole in the isolator is concentric with the machine's mounting hole. **Note:** If the Attachment Bolt is positioned on the opposite side of the isolator than desired, use the procedure outlined in Appendix B to reposition the isolator housing. Some isolators may have more than one tapped hole. Use the one that best positions the leveling screw for easy access for making leveling adjustments.

- Lower the machine onto the isolator.

Note: For isolators equipped with an Attachment Bolt, insert the Attachment Bolt through the hole in the machine foot and thread into the tapped hole in the top of the isolator. Be careful not to turn the Attachment Bolt in too far since it can interfere with the operation of the Swivel Assembly. **0.75-10UNC** bolts should not be turned in more than **nine** turns and **1.25-12UN** bolts any more than **ten** turns. Tighten the Lock Nuts on the Attachment Bolts.

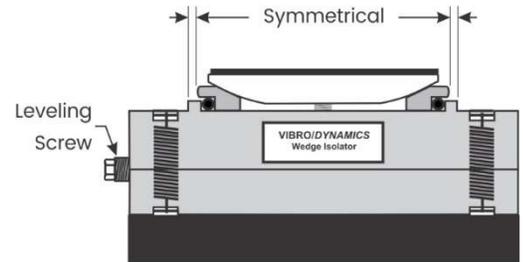


FIGURE 2

- Once all the isolators are installed under the machine, inspect each isolator to see if the Swivel Assembly remained centered in the Retaining Ring. There should be a symmetrical amount of spacing between the Swivel Seat and the Retaining Ring as per Figure 2. For 16WH and 24WH models, check for uniform clearance between the housing and the isolator body. If isolator is not centered, jack the machine up at that point and center the isolator.
- Inspect all of the isolators to make sure they are carrying load. For isolators not carrying load, adjust the isolator upward using the horizontal leveling adjustment screw. See Figure 2.
- If your machine has only one isolator per machine foot, then proceed to Step 10.

For machines with more than one isolator under a machine foot, it is critical that the load be equalized on each isolator under the machine foot.

- Place a hydraulic cylinder(s) near the isolators to be adjusted. Due to the high concentrated load, the cylinder should be located under a foot/leg gusset, tie rod, etc. See Figure 3.
 - Lift the machine foot only enough to unload both isolators.
 - Adjust all the isolators upward until each isolator just touches the bottom of the machine foot.
- Note:** From this point on, all adjustments must be made equally to both isolators.
- Lower the hydraulic cylinders.
 - Repeat at all support locations.

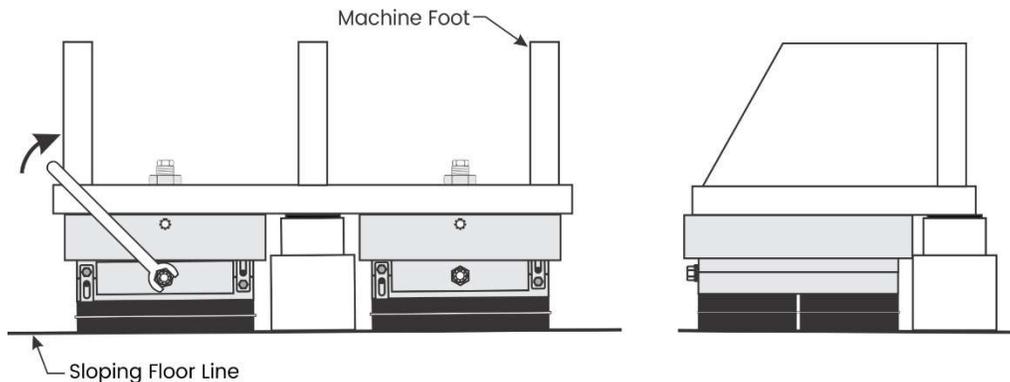


FIGURE 3

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Leveling

12. Refer to the machine manual for the machine's leveling locations and tolerances.
13. Wedge Isolators are adjusted by turning the horizontal screw located on one of the short sides of the isolator. A six-pointed socket or box wrench is recommended to make the adjustments. Turn the screw clockwise to increase isolator height. See the table below for wrench sizes, maximum torque values, and the amount of height adjustment for each full turn of the leveling screw. A Torque vs. Load Chart can also be found in Appendix A. Hydraulic jacks should be used for torque values exceeding those shown in the table.

Isolator Model	Wrench Size	Torque (ft./lbs.)		Maximum Lifting Capacity (lbs.)	Height adjustment for every full turn of leveling screw*
		Lifting	Lowering		
12W & 12WH	14 mm	75	25	30,000	0.017" (0.42 mm)
16W & 16WH	18 mm	300	50	76,000	0.022" (0.56 mm)
24W & 24WH	28 mm	300	170	52,000	0.017" (0.42 mm)

***Note:** the isolator's elastomer compresses as weight is added, offsetting the height adjustment.

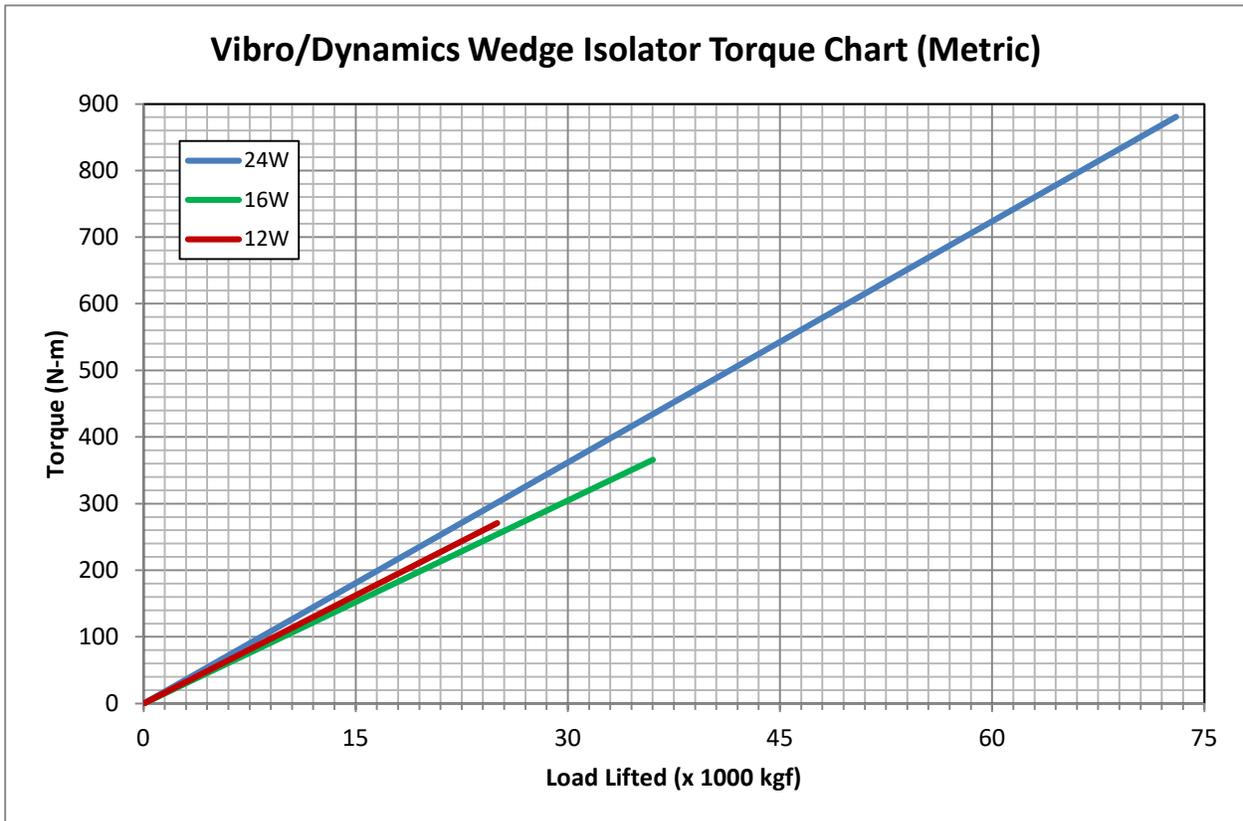
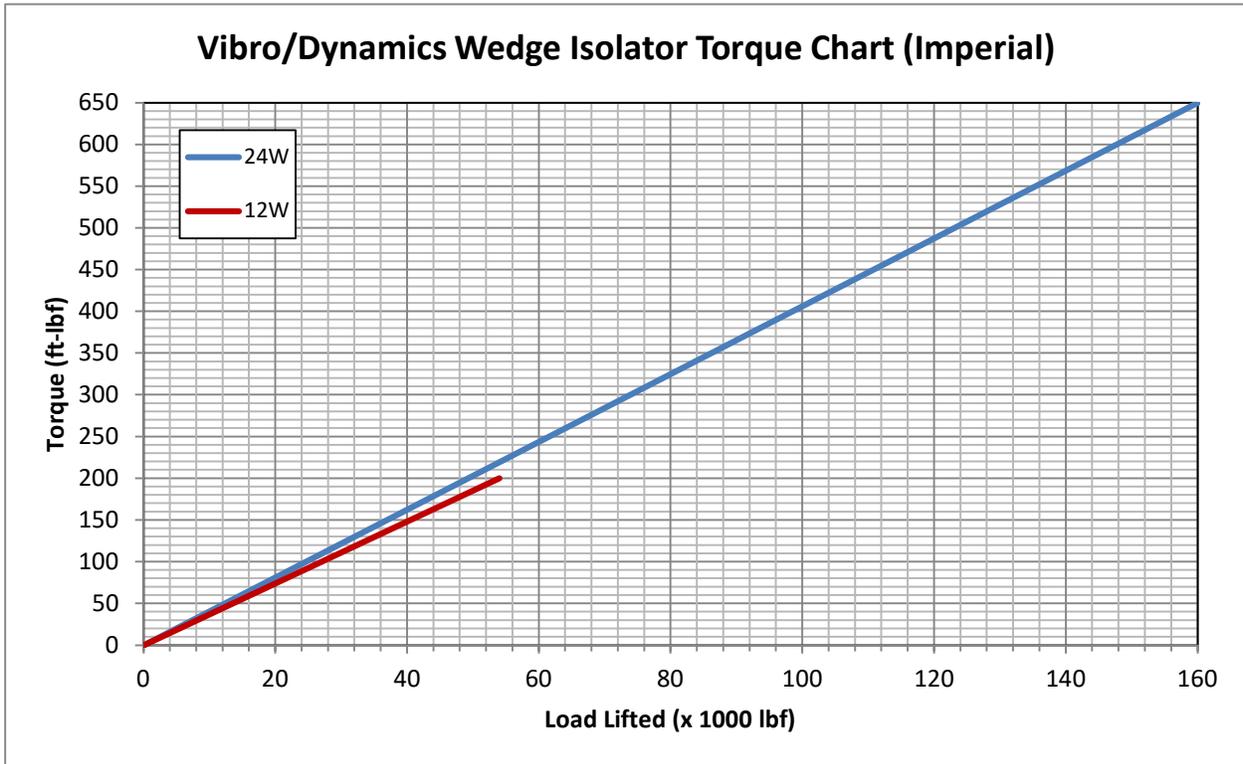
14. Measuring and adjusting the torque on an isolator should only be done when trying to equalize the load carrying by a group of isolators that should be carrying similar loads. Measuring the torque is handy when installing machines that have many isolators located close together, such as plastic injection molding machines, die casters, machining centers, etc.
15. For machines with more than four points of support, analyze the machine's support point layout and determine those support points that should have similar loads. The isolators under those points should have similar torque values. If not, adjust the isolators accordingly. All isolators should be carrying load before leveling is attempted.
16. For machines with four points of support (i.e. stamping presses), leveling and alignment readings should be used since the load carrying by each isolator can vary widely and so will the corresponding torque values. Before making level adjustments, make sure all isolators are supporting some portion of the load.
17. Using a precision machinists' level, or laser, determine the machine's low side in the front-to-back direction. Raise all of the isolators on the low side an equal amount until the machine is level in that direction.
18. Repeat procedure in the left-to-right direction.
19. If appropriate, recheck the isolator torque amounts and adjust if necessary.
20. Repeat the above steps until the machine is level.

Additional Considerations

There should not be any solid connections between the machine and the foundation or building structure. Flexible connections are recommended for plumbing and electrical conduit. Floor plates, walkways, railings, etc. should not be attached to both the machine and the floor, foundation or building. Hard connections will "short-circuit" isolation effectiveness.

Caution: Micro/Level Wedge Isolators do not bolt to the floor and should not be used to mount machines that depend on anchor bolts to keep them from tipping or collapsing.

APPENDIX A



APPENDIX B

Repositioning Wedge Isolator Housing

Depending on how your machine foot is constructed and the location of the machine's mounting hole, it may be desirable to reposition the isolator's housing so that the attachment bolt is on the opposite side. Follow the procedure below to rotate the housing 180 degrees.

- A. Remove On-Center Attachment Bolt Plate Assembly if supplied with the Isolator. (See Figure 4).
- B. Loosen and remove the assembly bolt and washers.
- C. Lift and rotate the housing 180 degrees.

CAUTION! Do **not** remove Swivel Seat and Retainer Ring. Reassembly may be difficult!

If Swivel Seat and Retainer Ring are removed, reassemble as follows.

- a. Stretch Damping Ring around the Swivel Seat until both ends come together and hold.
- b. Insert the Swivel Seat and Damping Ring, while still holding the Damping Ring ends together, into the Retaining Ring area. Slightly rotating the unit while inserting it usually aids in the installation.
- D. Lower Housing onto the Swivel Seat.
- E. Reinsert the assembly bolt and washers and fasten finger tight. (Thread-Locking Compound is recommended.)
- F. Reassemble the On-Center Attachment Bolt Plate Assembly if equipped with Isolator.

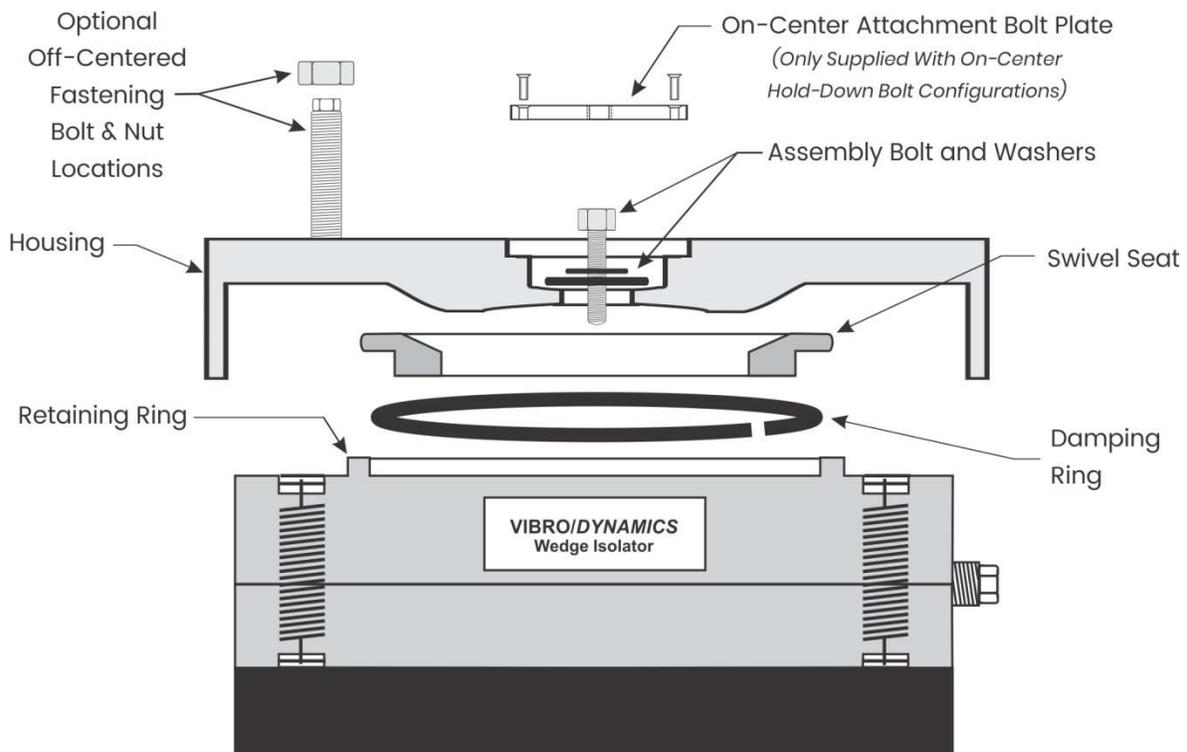


FIGURE 4

APPENDIX C Table One

VIBRO/DYNAMICS® LLC				
Model Number	Foundation Flatness		Foundation Slope Tolerance	
	Inches ±	mm ±	Inches/foot	mm/meter
12WNM880	0.07	1.7	0.04	3.7
12WNM1100	0.07	1.7	0.04	3.7
12WNL1500	0.04	1.0	0.03	2.3
12WNK2200	0.03	0.6	0.02	1.4
12WNM8802	0.07	1.7	0.09	7.4
12WNM11002	0.07	1.7	0.09	7.4
12WNL15002	0.04	1.0	0.05	4.5
12WNK22002	0.03	0.6	0.03	2.9
16WNM40	0.07	1.7	0.04	3.7
16WNM47	0.07	1.7	0.04	3.7
16WNL62	0.05	1.3	0.03	2.8
16WNK72	0.04	1.0	0.03	2.3
16WNX80	0.03	0.6	0.02	1.4
16WNM472	0.07	1.7	0.08	7.4
16WNL622	0.05	1.3	0.07	5.7
16WNK722	0.04	1.0	0.05	4.5
16WNX802	0.03	0.6	0.03	2.9
24WNM080	0.07	1.7	0.04	3.7
24WNM095	0.07	1.7	0.04	3.7
24WNL124	0.05	1.3	0.03	2.8
24WNK144	0.04	1.0	0.03	2.3
24WNX160	0.03	0.6	0.02	1.4
24WNM0802	0.07	1.7	0.09	7.4
24WNM0952	0.07	1.7	0.09	7.4
24WNL1242	0.05	1.3	0.07	5.7
24WNK1442	0.04	1.0	0.06	4.6
24WNX1602	0.03	0.6	0.03	2.9

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