



MATERIAL CONTROL, INC

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MODEL AD BIN AERATOR

WARNING:

DEATH or SERIOUS INJURY may occur.

Before installing or adjusting, shut down and physically lock-out the conveyor system.

Introduction:

The Model AD Aerators provide positive flow of dry, finely ground materials from any bin using the proven principle of aeration.

Low-pressure air is introduced into the product, restoring its natural ability to flow. In this way, congestion, bridging and rat holing are overcome without resorting to brute force. Almost all flow problems inherent to dry, fine materials are caused by compaction. When low-pressure air is introduced into a finely ground material, it will flow like water – uniformly and quickly.

Model AD Aerators are non-clogging and provide equal distribution and consumption of air. They feature simple and quick installation: simply drill a 7/16" hole in the bin wall, insert the special tank nipple through the hole and secure with the lock nut.

Materials Responding to Aeration:

Aeration gives the best results on materials with a 60 mesh size or smaller and a 3% or less moisture content. Specific materials that respond well to aeration are: lime, Portland cement, carbon black, diatomaceous earth, flour, soda ash, gypsum, fly ash, pigments, soap powders, bentonite, bran, clay, cereals, fullers earth, detergents, and many others. For questionable materials, please contact our sales department.

Models:

AD-C Zinc plated steel body with galvanized steel mesh and cotton diffuser. Includes brass tank nipple and locknut, with spacer washers and rubber gasket.

AD-F Same as AD-C, except with fiberglass diffuser, recommended when material temperatures exceed 200°F.

AD-SSC T316 stainless steel body with stainless steel mesh and cotton diffuser. Includes nickel-plated brass tank nipple and locknut, with spacer washers and rubber gasket.

AD-SSF Same as AD-SSC except with fiberglass diffuser.

AD-K Optional mounting kit includes two positive sealing gaskets, adapter, and clamp. Use with any of the above models when mounting from outside of the bin.

Aerator Selection:

For best results, locate lower aerators as close to the discharge outlet as possible. If material is held in the bin for long periods and/or compacted in transport, we recommend aerators be installed on 12” centers.

Aerators on 12” Centers		Aerators on 15” Centers	
Length of Sloping Bin Wall	Number of Aerators Per Row	Length of Sloping Bin Wall	Number of Aerators Per Row
1’ 8” – 2’ 7”	2	1’ 11” – 3’ 1”	2
2’ 8” – 3’ 7”	3	3’ 2” – 4’ 4”	3
3’ 8” – 4’ 7”	4	4’ 5” – 5’ 7”	4
4’ 8” – 5’ 7”	5	5’ 8” – 6’ 10”	5
5’ 8” – 6’ 7”	6	6’ 11” – 8’ 1”	6
6’ 8” – 7’ 7”	7	8’ 2” – 9’ 4”	7
7’ 8” – 8’ 7”	8	9’ 5” – 10’ 7”	8
8’ 8” – 9’ 7”	9	10’ 8” – 11’ 10”	9
9’ 8” – 10’ 7”	10	11’ 11” – 13’ 1”	10

Generally, four rows of aerators on 12” or 15” centers are recommended. On conical bins, these rows are spaced equally. On pyramidal bins, rows are spaced equally on sloping sides or in valleys if material tends to hang up in these valleys.

Air Supply:

Air supply must be clean and dry. We recommend positive displacement, low-pressure blowers. Plant air can be used, but the pressure must be reduced to 3-5 psi, and a filter or moisture trap used on the low-pressure side. The volume of air needed is a limiting factor on the use of plant air.

Manifold Piping Size Guide		Air Consumption Guide per Aerator	
Piping Size	Number of Aerators in a Row	Air Pressure, psi	Cubic Feet Per Minute
3/4”	1-5	1	4.2
		2	5.7
1”	6-9	*3	6.5
		4	7.1
1-1/4”	10-12	5	7.6
		*Recommended for most applications	

Installation:

Drill 7/16” holes through bin wall on predetermined centers (12” or 15” or customer’s preference). Insert special tank nipple through hole and lock into place with locknut. Rubber gasket and spacer washers are furnished.

Figure 1: Typical Layouts

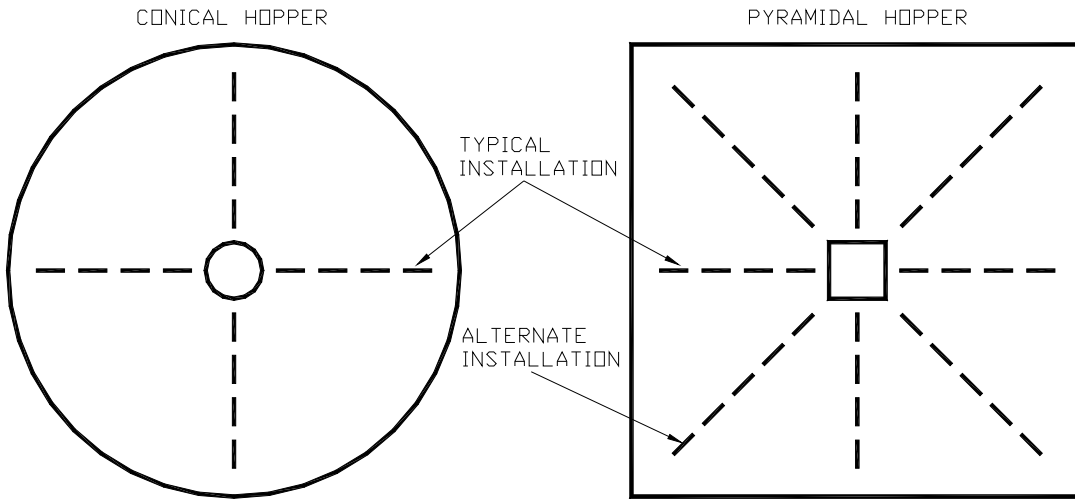
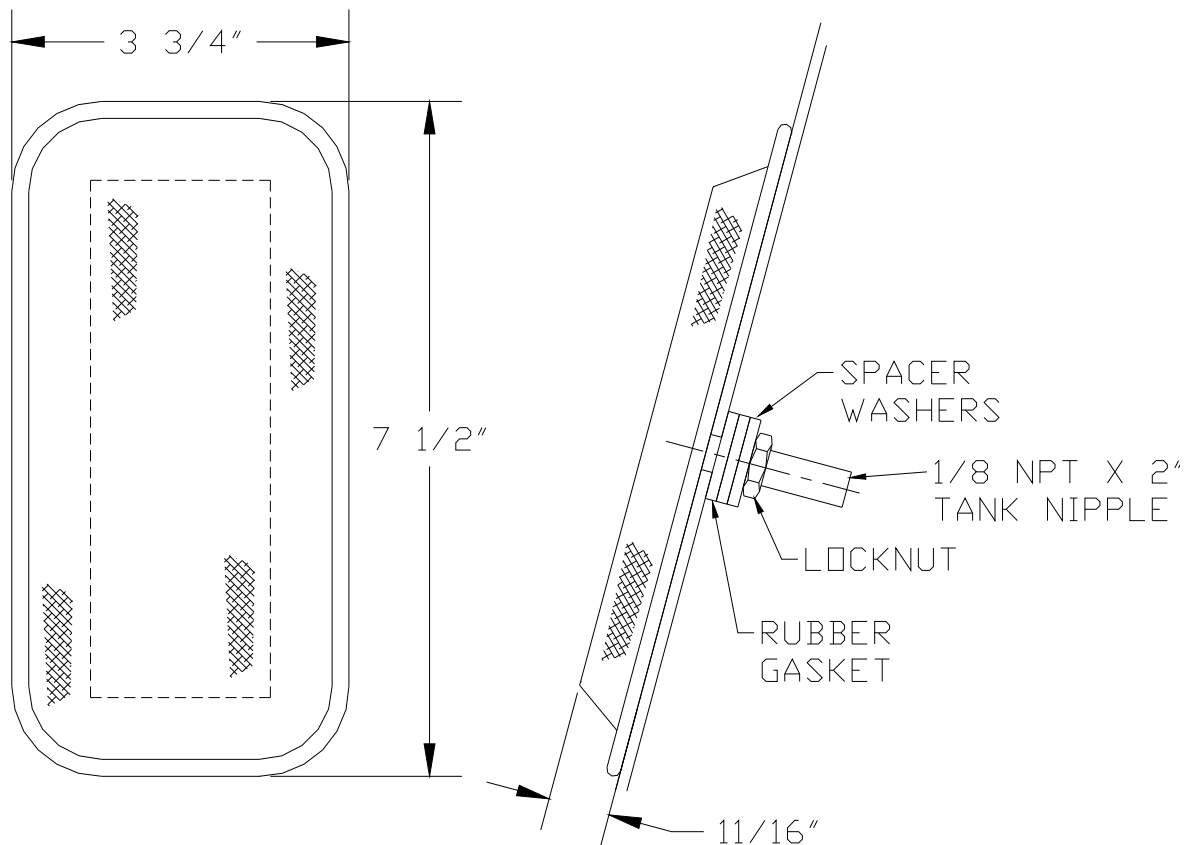


Figure 2: Model AD Aerator Installed





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MODEL AD-K BIN AERATOR MOUNTING KIT

The Model AD-K aerator mounting kit completely eliminates the need to enter the bin to install or service aerators. By cutting a 2-5/8" x 6-3/8" [67 x 162 mm] hole in the bin wall, the new aerator can be completely installed and serviced from outside of the bin.

After the initial hole has been cut, the aerator can be mounted on the adapter assembly and inserted into the bin in less than two minutes. There are no other holes to drill, tapping or welding. The aerator is positively sealed and securely held in place in the bin. Removal is just as simple and quick.

These aerators are also adaptable for use on round bins. Installation is made with standard gaskets, and the 3/16" [5 mm] adhesive gasket (part ADK-3), on bins with a diameter of three feet or greater. For smaller diameter bins, a special gasket can be furnished.

Installation Instructions:

1. Cut a 2-5/8" x 6-3/8" [67 x 162 mm] hole in the bin wall (typically mounted 12" [305mm] center to center).
2. Peel off the protective tape on one side of thin gasket (part ADK-4) and attach to the front side of the adapter (part ADK-1). Refer to Figure 1.
3. Peel off the protective tape on other side of gasket (part ADK-4) and place aerator on gasket. Upturned edges on the outside of the adapter will prevent aerator from turning in the bin.
4. Peel off the protective tape on the thick gasket (part ADK-3) and attach to back side of adapter. Longer legs on the inside of the adapter keep adapter from turning when placed in bin wall hole.
5. Insert tank nipple into aerator and tighten. The end with fewer threads goes into the aerator. If the tank nipple is not secure in aerator, it may unthread when aerator is removed from bin.
6. Slip clamp (part ADK-2) over tank nipple with legs toward aerator and thread on brass locking nut (part AD-6).
7. Holding the aerator by the tank nipple, slip the entire assembly through bin wall. Rotate the clamp to bridge the opening and tighten locknut. The aerator is securely held in place and the hole in bin wall is positively sealed (refer to Figure 3).

Figure 1: AD-K Kit Parts

- ADK-1: Adapter (front view)
- ADK-2: Spring steel clamp
- ADK-3: 3/16" [5 mm] thick gasket, adhesive one side
- ADK-4: 1/16" [1.6 mm] gasket with adhesive both sides

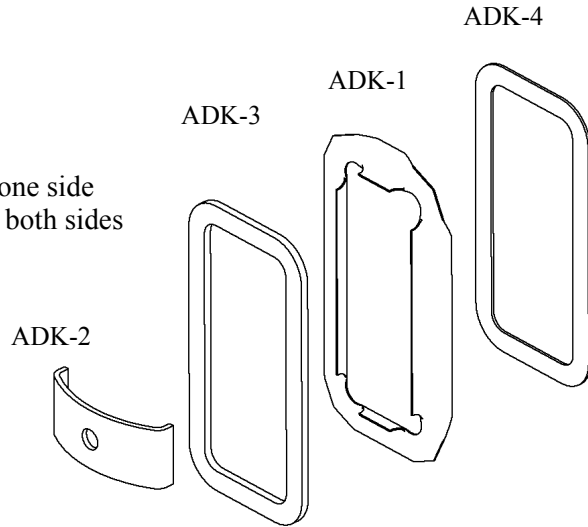


Figure 2: AD-K Kit Parts with AD Aerator and Mounting Hardware

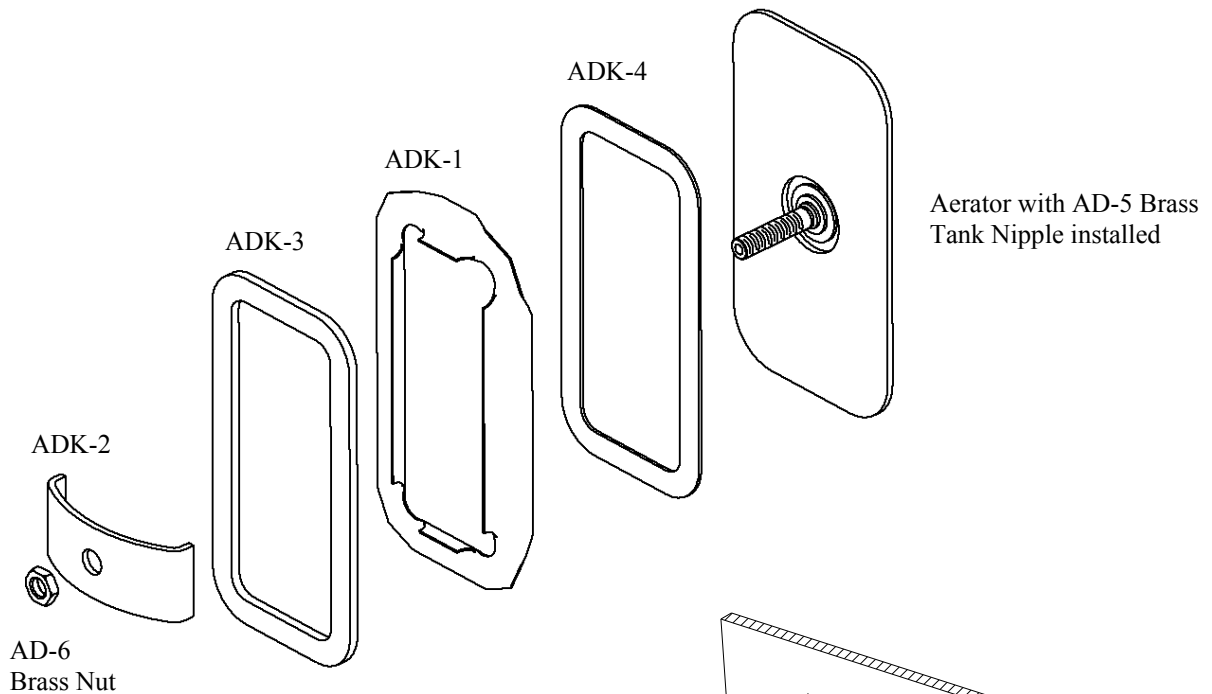


Figure 3: Aerator Kit Installed in Bin Wall

