



David  
Manufacturing Co.

*Stir-Ators*

MAKING PRODUCTS AS RELIABLE AS THE PEOPLE WHO USE THEM.

**Efficient**

**Reliable**

**Accurate**



**Design III & Red Giant**

**Stir-Ators**

# Design III Stir-Ators

## Durable and Economical

### Why Choose a DMC Stir-Ator?

DMC's Stir-Ator machines provide the most thorough, systematic, and time-tested stirring pattern on the market.

Whether purchasing a new bin or updating present storage for drying, a Stir-Ator can cut drying time by 50% in a low temperature bin. A Stir-Ator can also help store grain by serving as a management tool for grain conditioning.

The DMC Design III uses a spiral stirring pattern that stirs the entire grain mass every stirring cycle. This is the ONLY stirring pattern that allows the augers to spend more time stirring the outside of the bin, rather than the center of the bin. This is important because 50% of the grain in a bin is in the outside 1/3 of the bin, making it more efficient than other stirring devices.

Choose a DMC Stir-Ator with two or three augers for 18 to 48 foot bins.



### Batch System

A Design III Stir-Ator turns any drying bin into a self-contained drying and storage system. With a Stir-Ator in your bin, you have wet holding, drying, and storage all in the same unit.

The bin can be filled with the Stir-Ator running to stir the grain and insure that the maximum amount of drying air can be pushed through the grain to increase

drying capacity. A complete bin full of grain can be dried in one filling with this method. While this method is not the quickest, it is efficient and maintains some of the highest grain quality of all drying systems.

A Stir-Ator decreases static pressure by "fluffing" or loosening grain to allow maximum airflow. Grain is mixed so it dries faster, thus avoiding the problem of over-drying the bottom layers of grain while the top layers are still wet.

When all the grain is dry, a Design III Stir-Ator equipped bin can be used for storage. Periodically running the Stir-Ator (with or without aeration) helps prevent grain spoilage and damage when storing grain over a long period of time.

◀ Double Auger Stir-Ator Loosening Grain.



### Continuous-Flow System

Stir-Ators work well with an in-bin continuous-flow system, such as a DMC Grain Flow, to increase drying capacity. The dry grain is continuously removed from the bottom of the bin as it dries.

Stirring augers should be cut off 30 inches above the floor to avoid disturbing the drying front. The grain above this zone (grain depths of up to 16 feet) is constantly stirred, thereby allowing greater airflow and heat to move up through the wet grain for greater drying capacity and maximum efficiency.

Phone 217-226-5100 Fax 217-226-5070

# Stirring All Grain Equally is Important

## Red Giant 4 & 6 Auger Stir-Ators

### Standard Features

The Design III Stir-Ator was engineered for minimal maintenance and remains one of the most popular selling stirring machines ever built.

The following features are STANDARD with DMC's Stir-Ators.

1. **Rugged Drive:** A strong 3/16" aircraft cable drives the machine. No reversing switches.
2. **Disconnect Box:** Fused disconnect box protects motors.
3. **Automatic Shut-Off:** Shuts the Stir-Ator down if the trolley binds.
4. **Fused Gear Motor:** Protects against electrical problems.
5. **Sealed Bearings:** Low maintenance.
6. **Solid State Electronic Tilt Switch:** replaces the mercury switch. No moving parts and controls the forward motion of the machine.
7. **Gear Motor Ratio:** DMC's Stir-Ators use a 9 RPM gear motor, compared to the 1 RPM gear motors used by most manufacturers, making it the most aggressive machine on the market for grain stirring.

Typical stirring pattern after 3 cycles.



1 Cycle      2 Cycles      3 Cycles

### Available Options

1. **Stir-Guard:** Protects grain from over-stirring. If the Stir-Ator does not move forward within 45 minutes, Stir-Guard shuts the Stir-Ator down.
2. **Hard Surfaced Down Augers:** Unlike the thin, strip-welded hard surface offered by other manufacturers, DMC down augers feature a smooth, powder surfacing compound covering the entire lifting surface.
3. **Graduated Pitch Augers:** Easier start ups and more flighting at the bottom of the auger where the most grain is stirred.
4. **DMC Air Tubes:** Help prevent bin wall grain spoilage.
5. **In-Out Ladder:** Since DMC Stir-Ators stir all the way to the bin wall, removal of the inside attached ladders is recommended. DMC's strong and lightweight alloy steel tubing In-Out Ladder allows for easy entry into the bin.



▲ Red Giant Stir-Ator with 4 Augers

The Red Giant Stir-Ator is a 4 or 6 auger stirring machine designed for drying bins using high heat and large airflows. The extra augers provide the additional stirring required with high drying rates.

The Red Giant uses a roller chain positive drive system to move the trolley in and out as the Stir-Ator moves around the bin to generate the familiar DMC spiral stirring pattern.

The trolley is designed so that the augers in the center of the bin rotate slower than the augers at the bin wall. This prevents over-stirring the grain in the center of the bin.

The gentle stirring at the center of the bin makes the Red Giant an excellent choice for drying rice.

The Stir-Guard is a standard feature on the Red Giant.

### How do you tell if an auger is good?

DMC builds all these performance features into their hard surfaced augers.

1. **Square edges:** on auger flighting provides the most efficient stirring as compared to any other shape. Square edges move more grain to the top, thereby blending grain with all levels of moisture and temperatures. Square edges on augers also helps the augers travel through the grain faster than rounded edges, which gives you more complete stirring in a shorter period of time.
2. **Auger flighting with smooth surfaces:** rough, uneven welds damage grain, creating fines that can complicate drying and cause storage problems. Rough surfaces also move less grain upward.
3. **Hardest flighting possible and consistent wear area:** hardness is directly related to wearability. The harder the auger, the longer it will last.



# Ideal for Use in **Drying and Managing** the Quality of Stored Grain

## CORN CHART

## RICE CHART

Bin Size & Air Flow					
Bin Size	Fan H.P.	Drying Rate Multiplier* For More Fans		CFM for 1 Fan	Static Pressure for 1 Fan
		2	3		
18	5.0	1.2	na	5,400	3.0
	10.0	1.2	na	6,200	3.7
21	5.0	1.3	na	6,500	2.5
	7.0	1.2	na	7,300	3.0
	10.0	1.2	na	8,000	3.4
	15 28'	1.2	na	10,500	5.2
24	7.0	1.2	na	8,500	2.5
	10.0	1.2	na	9,300	2.9
	10C	1.5	na	11,000	3.7
	15 28'	1.2	na	12,500	4.5
	15C	1.4	na	12,700	4.6
	20C	1.3	na	15,400	6.2
27	7.0	1.4	na	9,400	2.1
	10.0	1.2	na	10,300	2.4
	10C	1.6	na	11,500	2.8
	15 28'	1.3	na	14,000	3.7
	15C	1.5	na	13,800	3.7
	20C	1.5	na	16,500	4.8
30	10.0	1.3	na	20,600	6.7
	10.0	1.5	na	11,000	2.0
	10C	1.7	na	11,900	2.2
	15 28'	1.4	na	15,200	3.0
	15C	1.6	na	14,600	2.9
	20C	1.6	na	17,200	3.7
33	30C	1.5	na	21,800	5.3
	10.0	1.5	na	11,600	1.6
	10C	1.8	na	12,180	1.7
	15 28'	1.5	na	16,200	2.6
	15C	1.6	na	15,100	2.3
	20C	1.7	na	17,800	3.0
36	30C	1.6	na	22,600	4.2
	10C	1.8	na	12,400	1.4
	15 28'	1.6	na	17,000	2.2
	15C	1.7	na	15,400	1.9
	20C	1.8	na	18,300	2.4
	30C	1.7	na	23,200	3.4
42	15 28'	1.7	2.1	18,100	1.5
	15C	1.8	2.4	15,800	1.3
	20C	1.8	2.5	18,900	1.6
	30C	1.8	2.4	24,200	2.3
	40C	1.7	2.1	29,700	3.1
	15 28'	1.7	2.3	18,800	1.3
48	15C	1.9	2.6	16,100	1.0
	20C	1.9	2.6	19,200	1.3
	30C	1.8	2.5	24,800	1.7
	40C	1.8	2.4	30,600	2.2

Corn Drying Capacity (BU/ 24 Hrs) & Recommended Number of Augers											
Drying Capacity (BU/ 24 Hrs) Recommended Number of Stirring Augers Heat Rise Above Ambient Temperature											
25°		50°		75°		100°		125°			
Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers
264	2	600	2	960	2	1344	2	1752	3		
288	2	696	2	1128	2	1536	2	2016	3		
312	2	720	2	1176	2	1632	3	2112	3		
360	2	816	2	1320	2	1824	3	2376	3		
384	2	888	2	1440	2	1992	3	2568	3		
480	2	1152	2	1896	3	2616	3	3384	3		
408	2	936	2	1536	3	2112	3	2736	4		
432	2	1032	2	1680	3	2304	3	2976	4		
504	2	1224	2	1992	3	2736	3	3552	4		
576	2	1368	2	2256	3	3096	3	4032	4		
600	2	1416	2	2304	3	3198	4	4128	4		
720	2	1704	3	2784	3	3840	4	4992	4		
432	2	1032	2	1704	3	2328	3	3024	4		
480	2	1128	2	1872	3	2568	3	3336	4		
528	2	1272	2	2064	3	2880	3	3720	4		
648	2	1536	2	2544	3	3480	4	4512	4		
648	2	1512	2	2496	3	3432	4	4464	4		
744	2	1800	3	2976	3	4080	4	5304	4		
936	2	2256	3	3720	4	5112	4	6648	4		
504	2	1224	2	1992	3	2760	4	3576	4		
552	2	1320	2	2160	3	2976	4	3840	4		
696	2	1680	2	2736	3	3792	4	4896	4		
672	2	1608	3	2640	3	3624	4	4704	4		
762	2	1896	3	3096	4	4272	4	5544	4		
984	2	2400	3	3936	4	5424	4	7056	4		
504	2	1272	2	2088	3	2880	4	3744	4		
576	2	1344	2	2208	3	3048	4	3936	4		
744	2	1776	2	2928	3	4032	4	5232	4		
696	2	1656	3	2712	3	3744	4	4872	4		
816	2	1944	3	3216	4	4416	4	5736	4		
1032	2	2472	3	4056	4	5592	4	7272	4		
576	2	1368	2	2232	3	3096	4	4008	6		
768	2	1872	3	3072	3	4224	6	5472	6		
696	2	1680	3	2784	4	3816	6	4968	6		
840	2	1992	3	3288	6	4536	6	5904	6		
1056	2	2544	3	4176	6	5784	6	7488	6		
816	2	1992	3	3264	3	4488	6	5832	6		
720	2	1752	3	2856	4	3936	6	5112	6		
864	2	2064	3	3408	6	4680	6	6096	6		
1104	2	2640	3	4368	6	6024	6	7800	6		
1344	3	3240	4	5352	6	7392	6	9576	6		
864	2	2064	3	3384	6	4680	6	6072	6		
744	2	1776	3	2904	6	4008	6	5208	6		
888	2	2112	3	3480	6	4776	6	6216	6		
1128	3	2712	6	4464	6	6144	6	7992	6		
1392	3	3360	6	5520	6	7608	6	9888	6		

Bin Size & Air Flow					
Bin Size	Fan H.P.	Drying Rate Multiplier* For More Fans		CFM for 1 Fan	Static Pressure for 1 Fan
		2	3		
18	5.0	1.2	na	3,900	3.7
	7.0	1.1	na	4,000	3.9
21	5.0	1.2	na	4,800	3.3
	7.0	1.1	na	5,200	3.6
	10.0	1.2	na	5,500	3.9
	15 28'	na	na	7,700	6.1
24	7.0	1.2	na	6,300	3.3
	10.0	1.2	na	6,800	3.6
	15 28'	1.2	na	9,400	5.6
	10C	na	na	9,500	5.6
	15C	na	na	10,400	6.4
	20C	na	na	12,600	8.3
27	7.0	1.2	na	7,400	3.0
	10.0	1.2	na	8,100	3.4
	15 28'	1.2	na	11,000	5.0
	10C	1.4	na	10,300	4.6
	15C	na	na	11,700	5.5
	20C	na	na	14,400	7.2
30	10.0	1.2	na	9,100	3.0
	15 28'	1.3	na	12,400	4.5
	10C	1.5	na	10,900	3.8
	15C	1.4	na	12,700	4.6
	20C	1.3	na	15,500	6.0
	30C	1.2	na	19,200	8.1
33	10.0	1.3	na	9,900	2.6
	15 28'	1.3	na	13,600	3.9
	10C	1.6	na	11,400	3.1
	15C	1.5	na	13,600	3.9
	20C	1.5	na	16,400	5.0
	30C	1.4	na	20,500	6.8
36	15 28'	1.4	1.5	14,600	3.4
	10C	1.7	2.0	11,700	2.6
	15C	1.5	1.8	14,200	3.3
	20C	1.6	1.8	16,900	4.2
	30C	1.5	na	21,500	5.7
	15 28'	1.5	1.8	16,100	2.7
42	15C	1.7	2.1	15,000	2.4
	20C	1.7	2.1	17,800	3.0
	30C	1.7	2.0	22,600	4.1
	40C	1.5	1.7	27,600	5.3
	15 28'	1.6	2.0	17,100	2.1
	15C	1.8	2.3	15,400	1.8
48	20C	1.8	2.4	18,400	2.3
	30C	1.8	2.3	23,500	3.1
	40C	1.7	2.0	28,900	4.0

Rice Drying Capacity (BU/ 24 Hrs) & Recommended Number of Augers											
Drying Capacity (BU/ 24 Hrs) Recommended Number of Stirring Augers Heat Rise Above Ambient Temperature											
10°		20°		30°							
Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers	Augers
96	2	312	2	504	2						
96	2	312	2	528	2						
120	2	360	2	624	2						
120	2	384	2	672	2						
144	2	408	2	720	2						
168	2	576	2	984	2						
144	2	480	2	792	2						
168	2	504	2	864	2						
216	2	696	2	1200	3						
216	2	696	2	1200	3						
240	2	744	2	1320	3						
288	2	936	3	1584	3						
144	2	552	2	936	2						
168	2	576	2	1032	3						
240	2	816	2	1368	3						
216	2	768	2	1320	3						
264	2	864	2	1488	3						
288	2	1056	3	1824	3						
216	2	672	2	1152	3						
264	2	912	3	1584	3						
240	2	816	2	1392	3						
288	2	936	3	1632	3						
336	2	1152	3	1968	3						
408	3	1416	3	2448	4						
216	3	744	3	1248	3						
288	3	1008	3	1728	3						
240	3	840	3	1440	3						
288	3	1008	3	1728							