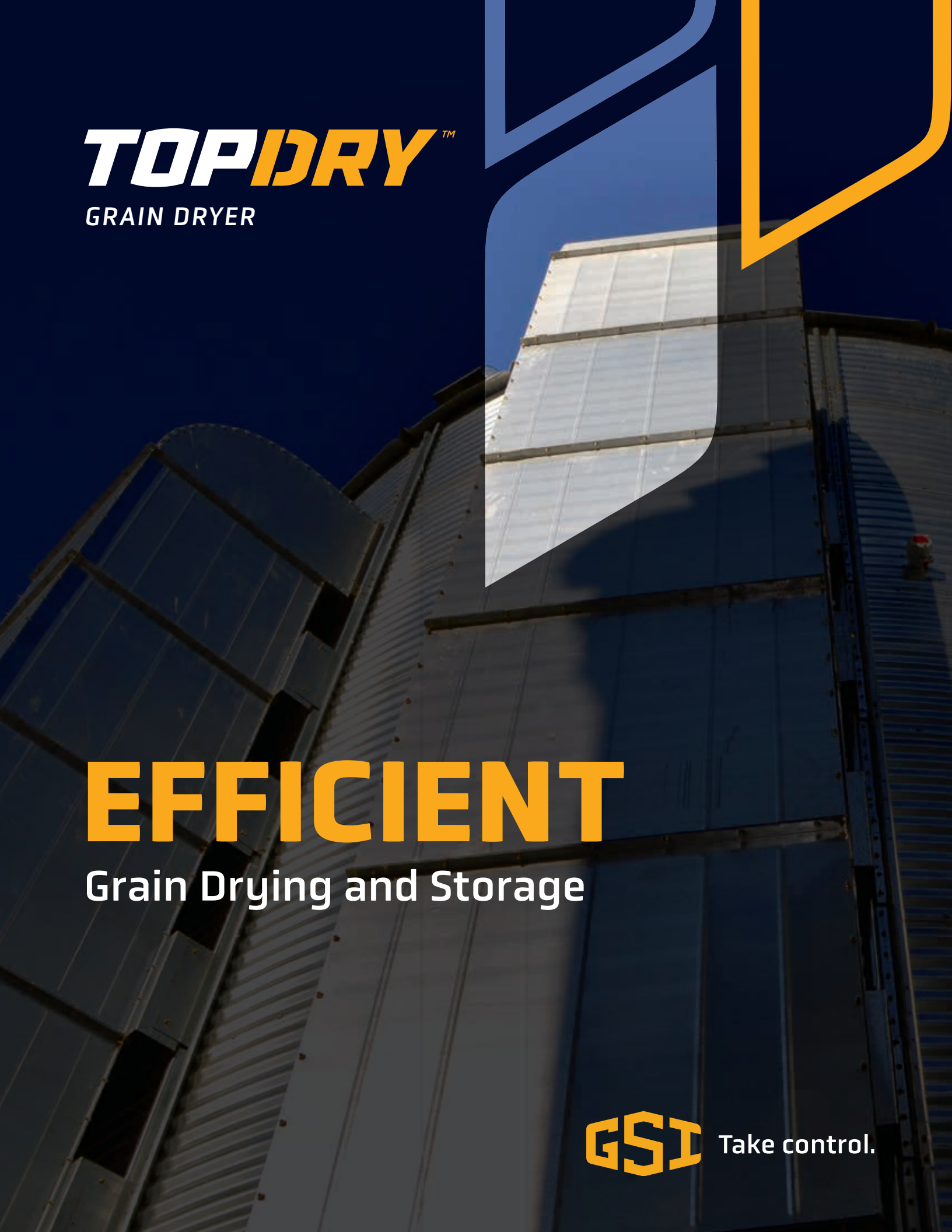


TOPDRY™

GRAIN DRYER

EFFICIENT

Grain Drying and Storage

GSI Take control.

THE TOPDRY GRAIN DRYER ADVANTAGE.

With the GSI TopDry Grain Dryer, you get the best of both worlds – a highly efficient grain dryer with the added benefit of grain storage up to 32,549 bushels.

TopDry utilizes a grain bin with the addition of a peaked drying floor inside the top of the bin. The grain flows into the top of the bin where leveling bands keep the grain at a uniform depth without requiring a leveling device, while the pitched floor of the dryer provides increased surface area for maximum drying capacity.

A fan and heater unit dry a shallow layer of grain located in the overhead drying chamber. In a Batch TopDry, the grain depth never exceeds 32" while drying. Once dried, the grain is dumped into the holding area below for storage. A smaller cooling/aeration fan captures heat from the previously dried grain and pushes it upward to help dry the next load. The AutoFlow is similar except it utilizes a declining grain depth for continuous staged auto operation.

Fan units are located on the ground via ductwork for easy operation and maintenance. Similar to a tower dryer, all cooling airflow and heat are recovered and recycled into the air and heat from the main fans, which provides the best efficiency possible. The 4"-wide, 44"-tall corrugated galvanized sidewall sheets with stiffeners are used to ensure long life.

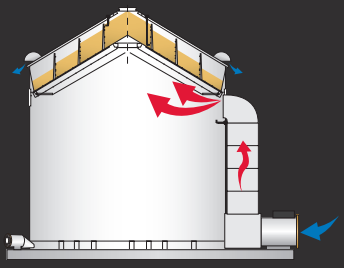
	BATCH/AUTOBATCH			AUTOFLOW		
DIAMETER	24'	30'	36'	24'	30'	36'
BPH (5-POINT CAPACITY)	607 - 742	677 - 1,112	694 - 1,744	791 - 1,109	835 - 1,730	1,227 - 2,176
RING HEIGHTS	5 - 10 RINGS	5 - 11 RINGS	6 - 12 RINGS	5 - 10 RINGS	5 - 11 RINGS	6 - 12 RINGS
MAX. STORAGE	4,813 - 11,738 BU.	7,459 – 20,443 BU.	13,859 – 32,549 BU.	4,373 – 11,298 BU.	6,804 - 19,788 BU.	4,813 - 32,549 BU.


GSI

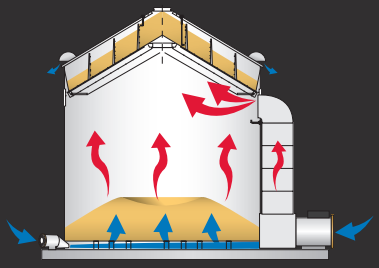
AUTOFLOW TOPDRY MODES OF OPERATION

The AutoFlow floor has a series of leveling bands that provide declining grain depth as the grain moves to the outside of the bin.

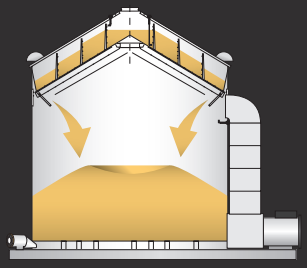
HOW AUTOFLOW TOPDRY GRAIN DRYING WORKS



Step 1. One or two fan(s) and heater(s) force hot air through varied depth layers of wet grain in the drying chamber directly or through ductwork.



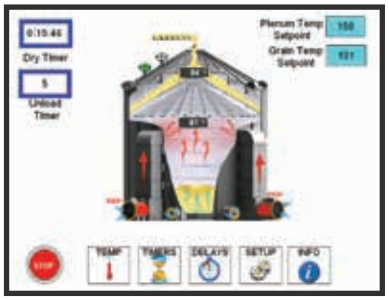
Step 2. Outside air from the cooling fan captures heat from previously dried grain and is then reused in the continuing drying process.



Step 3. When grain has dried to a predetermined temperature, the dump chutes open automatically, letting 1/4 of the dried grain in a 36', or 1/3 in the 24' or 30', fall into the cooling and storage area. The drying chamber is then automatically refilled, and drying continues until the grain supply is empty.

TERMINAL AUTOFLOW CONTROL PANEL

TopDry Terminal increases control and access to TopDry settings and historical data. TopDry Terminal is the standard control for AutoFlow and AutoBatch TopDry, utilizing the same Allen Bradley CompactLogix PLC used in our Zimmerman Tower Dryers, the TopDry Terminal features an easy-to-read, large color touch-screen with unmatched options and settings to get the exact performance required. The system uses advanced graphics and animation to give a visual representation of the TopDry's operation.



The TopDry Terminal is completely automated with full control over the fill system, fan(s), heater(s) and dump chutes with monitoring and safety equipment in place. It can be controlled by straight-time, grain temperature using four electronic temperature sensors or a combination of both. With the microprocessor-based AutoFlow System, you can control two fans and heaters, two separate load augers and two aeration fans. The system will indicate the cause of any malfunction and automatically shut down.

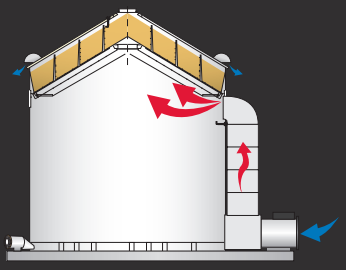
TopDry Terminal AutoFlow Features:

- 10.4" Allen Bradley PanelView Plus 1000 – touch screen, animated, graphical interface
- Control box can be installed on the drying bin or remotely in a separate control room
- Control multiple augers, emptying each cycle for easy start-up
- Adjustable staged starting of fans and heaters
- Four grain-temperature sensors for moisture control with sensors individually monitored for better feedback and easier maintenance
- Memory recall for running history and troubleshooting info on the last 512 events

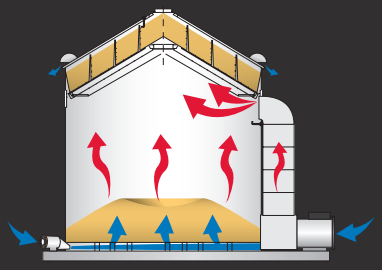
MANUAL BATCH TOPDRY MODES OF OPERATION

In a Batch TopDry, the grain depth never exceeds 32" while drying. Once dried, the grain is dumped into the holding area below for storage. A smaller cooling/aeration fan captures heat from the previously dried grain and pushes it upward to help dry the next load.

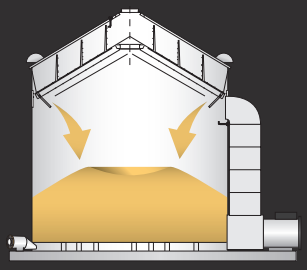
HOW BATCH TOPDRY GRAIN DRYING WORKS



Step 1. One or two fan(s) and heater(s) force hot air through an even layer of wet grain in the drying chamber directly or through ductwork.



Step 2. Outside air from the cooling fan captures heat from previously dried grain and that heat and aeration air is used to help dry the next batch.

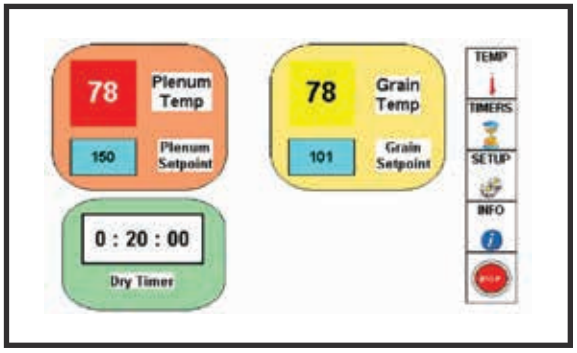


Step 3. When the column of grain has dried to a predetermined temperature, the fan(s) and heater(s) stop, and the operator manually opens the dump chutes letting the hot dried grain fall into the cooling and storage area below. The drying chamber is then manually refilled, and the operator can start the next batch drying.

TERMINAL MANUAL BATCH CONTROL PANEL

TopDry Terminal for Batch TopDry control features a simple-to-use PLC and is a more cost-competitive solution to the Autoflow option.

The TopDry Terminal Manual Batch control uses an Allen Bradley Micro 820 PLC, and features a color touch-screen with options and settings to get the exact performance required.



TopDry Terminal Batch Features:

- 4.3" Allen Bradley PanelView 7 Touchscreen
- Control box can be installed on drying bin or remotely in a separate control room
- Four grain-temperature sensors for accurate temperature control with series parallel averaging
- Memory recall for running history and troubleshooting information on the last 10 batches
- Diagnostic screen for IO status

INTERIOR FEATURES

TopDry offers many features and accessories that provide additional convenience, reduce maintenance and operation costs and produce quality grain-drying results.

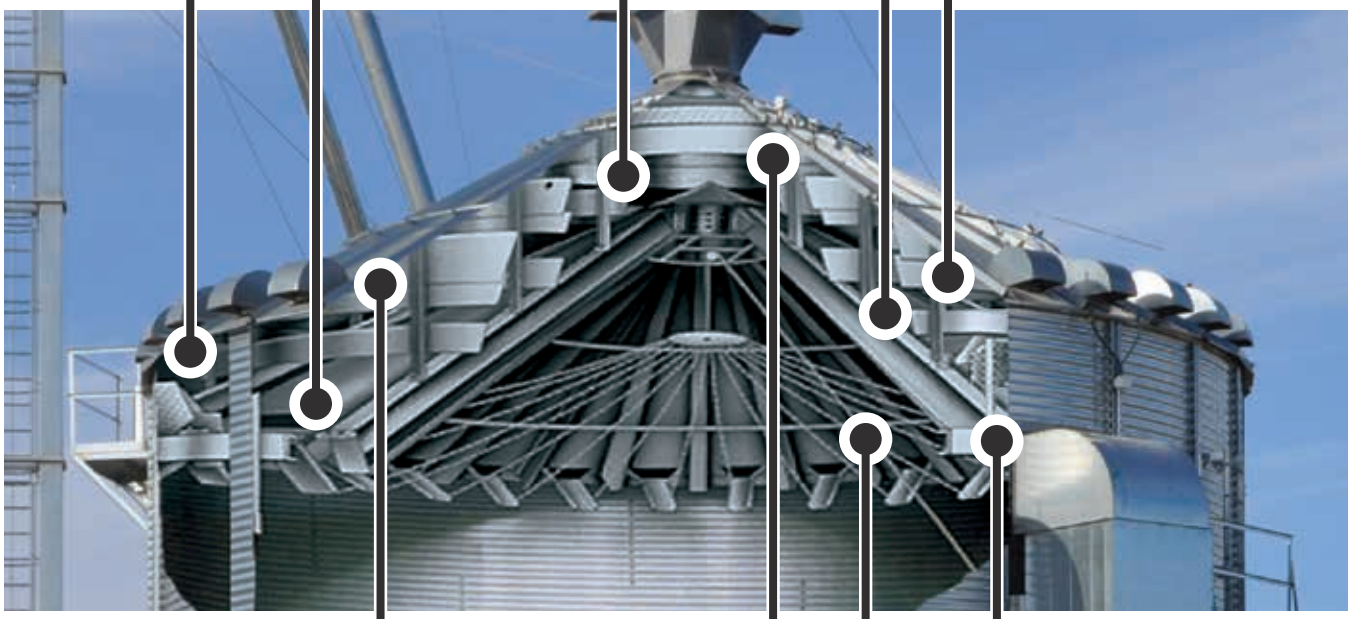
Perforated eave flashing around the outer edge of the upper floor improves airflow in this critical area.

Strategically-located, sealed, grain-temperature sensors monitor and provide moisture control.

Gravity moves the grain and fines so they are not concentrated in the center.

Wide ribbed floor sheets fasten and nest on the rafters to provide a strong integrated structure.

Upper floor beams form a box structure, providing solid floor support and preventing sagging. The perimeter "C" channel takes downward forces from the rafters to ensure the bin stays round.



Leveling bands maintain even grain depth.

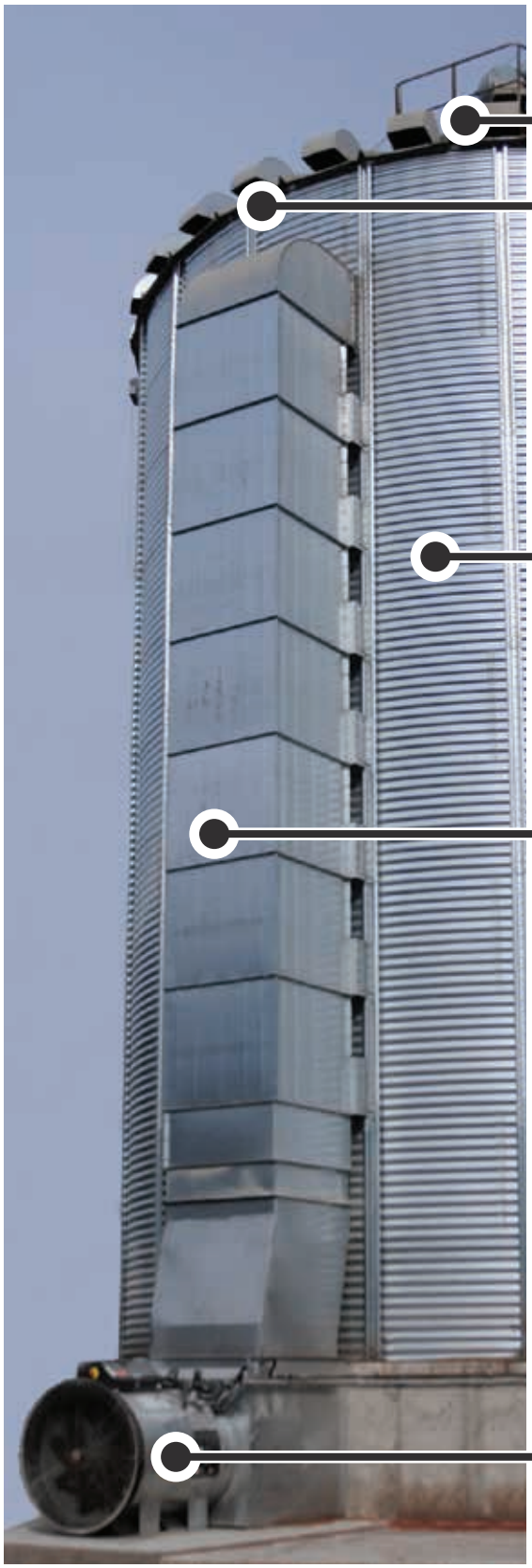
Industrial rotary switches mounted in the bin wall and roof indicate drying and storage chamber levels. This allows the AutoFlow's automatic operation and will stop either model if the storage chamber becomes full. On a Batch TopDry, a horn signals when the drying chamber is full.

A lift plate, cable and chain configuration is a simple but effective means of controlling grain discharge from the drying chamber.

TopDry air diffusers are a simple, effective means of distributing airflow evenly throughout the plenum.

EXTERIOR FEATURES

TopDry's exterior is designed to stand up to tough weather conditions while offering easy access for maintenance and operation.



Flatop three vent assembly mounts like a traditional Flatop, providing a strong base for downspout support while allowing physical access and full vent opening with the peak closed to weather. High-mount roof vents can be used as an alternative if the peak cap must be closed and the Flatop three vent assembly can't be used.

The Auto-Vent is a revolutionary concept in vent design, eliminating any restriction from a screen or grill and reducing the chance of air restriction due to trash build-up.

Galvanized platforms, ladders and stairways with handrails are built to comply with OSHA specs and are beneficial for servicing, ascending and descending the grain bin.

The corrugated sidewalls are made using high-tensile steel with 65,000-PSI minimum strength and feature long-lasting G-90 bright spangle galvanized coating.

Ductwork mounting allows the fan and heaters to be located at ground level. This makes operation and maintenance much easier, and insures that the heat mix will be near perfect before it enters the drying chamber. On Batch models, this may eliminate the need for a remote control station.

Several size offerings in both single and three phase allow for many options of drying capacity and for potential future expansion. Every unit comes standard with a durable, vinyl fan cover.

Cooling components consist of aeration fan, transition, perforated floor and floor supports.

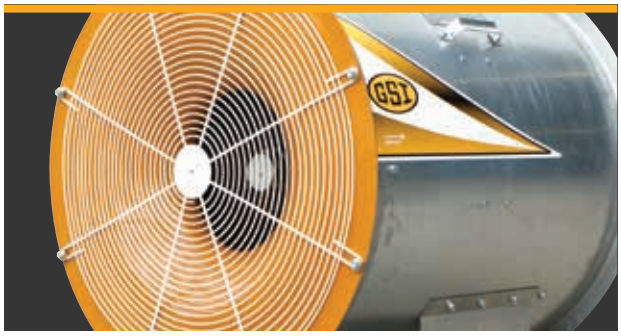
Optional heavy-gauge, galvanized steel bin step can be ordered to provide easier access to the walk-in door.

UPPER ACCESS
TopDry bins feature a large one-ring access door in the second ring from the top. The door offers access for monitoring grain stored in the TopDry bin.

LOWER STORAGE ACCESS
Walk-in doors provide easy entrance to the storage area. Specially designed lever latches multiply the inner door opening force by 20 times to counteract friction set from grain loads, requiring no use of wrenches or tools.

PLATFORMS & SIDEWALL LADDERS
GSI platforms provide a large, stable work area for monitoring or servicing the fans. Sturdy OSHA spec ladders or stairs are available for easy access to and from the bin roof or inspection platforms.

TOPDRY DUCTWORK
Ductwork is installed on every TopDry, placing the drying fans on the ground. This provides a better heat mix, giving your dryer a more even plenum temp which leads to consistent moisture levels and higher efficiencies.



INLINE CENTRIFUGAL FANS
Standard on TopDry Systems, GSI's Inline Centrifugal fans operate at 3500 RPM and are the most economical choice for all but the largest TopDry installations. Inline Centrifugal fans provide the same amount of air across a wide range of static pressures. The chart on the back page will help determine which fan is best for each TopDry model.

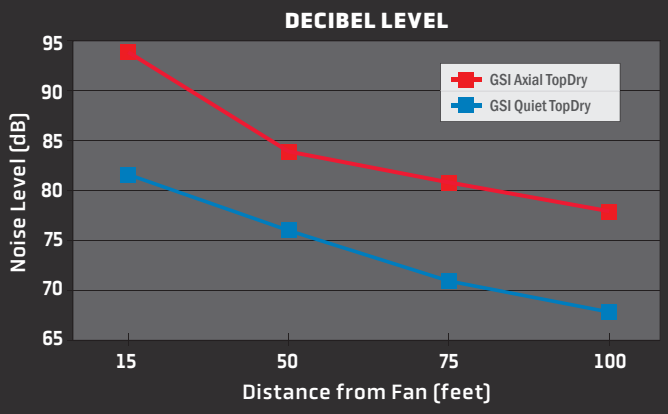
1750 RPM CENTRIFUGAL FANS
GSI 1750 RPM Centrifugal Fans are built with a heavy galvanized steel, scroll-type housing and inverted inlet venturi. Perfect for larger TopDry models where efficient delivery of large volumes of cooling air are needed. Because it's important to have the correct airflow, only the designated fan combos shown on back page should be used.

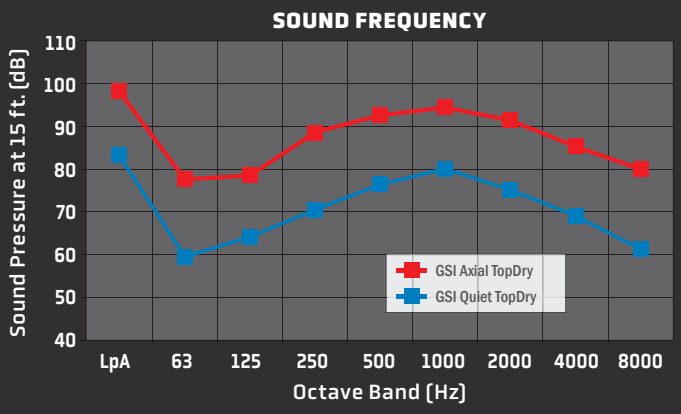
QUIET TOPDRY

The Quiet TopDry is 50% quieter than a vane axial TopDry, with no loss in capacity, horsepower or air flow. The optional Quiet TopDry incorporates the same best-in-class, commercial grade blower used in GSI Quiet Portable Dryers and Zimmerman Tower Dryers.

YOU HAVE TO HEAR IT TO BELIEVE IT

Noise is one of the most common occupational hazards. More farmers want to reduce the noise levels around their grain systems, and the GSI Quiet TopDry does just that. The first time you hear one, you'll wonder how it can be so quiet and realize just how much the reduced the noise level and tone improve the comfort levels of the work area.





AUTOFLOW TOPDRY SPECIFICATIONS

					24' DIA. 1-FAN		30' DIA. 1-FAN		30' DIA. 2-FAN		36' DIA. 1-FAN		36' DIA. 2-FAN	
VAN AXIAL TOPDRY FAN	QUIET TOPDRY FAN	HEATER	PLENUM TEMP	MOISTURE CONTENT WET BASIS	BPH	DUMP INTERVAL MINUTES	BPH	DUMP INTERVAL MINUTES	BPH	DUMP INTERVAL MINUTES	BPH	DUMP INTERVAL MINUTES	BPH	DUMP INTERVAL MINUTES
3615 36" Fan 15 HP	365-15 49" Fan 15 HP	30" 4.5 million BTU	160° F	20%	528	21.6	557	31.9	939	18.9			993	19.4
				25%	334	34.1	353	50.4	595	29.9			629	30.6
				30%	209	54.6	220	80.8	371	47.9			393	49.0
			180° F	20%	675★	16.8★	713★	24.9★	1202	14.8			1271	15.1
				25%	428★	26.6★	451★	39.4★	761	23.4			805	23.9
				30%	267★	42.6★	282★	63.1★	475	37.4			503	38.3
			200° F	20%	791★	14.4★	835★	21.3★	1407★	12.6★			1488★	12.9★
				25%	501★	22.7★	529★	33.6★	891★	19.9★			943★	20.4★
				30%	313★	36.4★	330★	53.9★	557★	32.0★			589★	32.7★
4015 40" Fan 15 HP	365-15 49" Fan 15 HP	40" 5.75 million BTU	160° F	20%	648	17.5	711	25.0	1154	15.4			1269	15.2
				25%	411	27.7	450	39.5	731	24.3			803	24.0
				30%	256	44.4	281	63.3	457	39.0			502	38.4
			180° F	20%	830★	13.7★	909★	19.5★	1477	12.0			1623	11.9
				25%	525★	21.6★	576★	30.9★	936	19.0			1028	18.7
				30%	328★	34.7★	360★	49.5★	584	30.4			642	30.0
			200° F	20%	971★	11.7★	1065★	16.7★	1730★	10.2★			1901	10.1★
				25%	615★	18.5★	674★	26.4★	1096★	16.2★			1204	16.0★
				30%	384★	29.6★	421★	42.2★	684★	26.0★			752	25.6★
4230 42" Fan 30 HP	402-30 54" Fan 30 HP	42" 8.75 million BTU	160° F	20%	740	15.4	806	22.0			819	23.5	1452	13.2
				25%	469	24.3	511	34.8			519	37.1	920	20.9
				30%	293	38.9	319	55.8			324	59.4	574	33.5
			180° F	20%	947	12.0	1032	17.2			1048	18.3	1858	10.4
				25%	600	19.0	653	27.2			664	29	1177	16.3
				30%	375	30.4	408	43.6			415	46.4	735	26.1
			200° F	20%	1109	10.2	1208	14.7			1227	15.6	2176	8.8
				25%	702	16.2	765	23.2			777	24.7	1378	14.0
				30%	439	25.9	478	37.2			486	39.6	861	22.4
4240 42" Fan 40 HP	402-40 54" Fan 40 HP	42" 10.25 million BTU	160° F	20%			920	19.3			950	20.2		
				25%			583	30.5			602	32		
				30%			364	48.9			376	51.2		
			180° F	20%			1178	15.1			1216	15.8		
				25%			746	23.8			770	25		
				30%			466	38.2			481	40		
			200° F	20%			1379	12.9			1424	13.5		
				25%			873	20.3			902	21.3		
				30%			545	32.6			563	34.2		

★ Insufficient burner BTUs for 45 deg. ambient temp

Final moisture 15% after complete cooling.

Estimated at 45 deg. F. ambient temperature, 65% relative humidity. 1/3 CFM/Bu. Cooling Rate.

Capacities listed are wet bushels/tonnes, for mature unfrozen #2 yellow shelled dent corn at listed moisture content and are estimates based on drying principles, field results and computer simulation. Variance may occur due to grain's physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, adverse weather conditions, etc.

BATCH TOPDRY SPECIFICATIONS

					24' DIA. 1-FAN		30' DIA. 1-FAN		30' DIA. 2-FAN		36' DIA. 1-FAN		36' DIA. 2-FAN	
VAN AXIAL TOPDRY FAN	QUIET TOPDRY FAN	HEATER	PLENUM TEMP	MOISTURE CONTENT WET BASIS	BPH	BATCH TIME HOURS	BPH	BATCH TIME HOURS	BPH	BATCH TIME HOURS	BPH	BATCH TIME HOURS	BPH	BATCH TIME HOURS
3615 36" Fan 15 HP	365-15 49" Fan 15 HP	30" 4.5 million BTU	140° F	20%	398	2.5	461	3.3	728	1.9	521	3.1	841	2.0
				25%	252	3.8	292	5.1	461	3.3	330	4.9	533	3.0
				30%	157	6.1	182	8.2	288	5.2	206	7.8	333	4.9
			160° F	20%	474	2.0	550	2.8	869	1.8	622	2.6	1004	1.6
				25%	300	3.2	348	4.4	550	2.7	394	4.1	636	2.6
				30%	178	5.2	218	6.8	344	4.4	246	6.5	397	4.1
			180° F	20%	607	1.6	677★	2.4★	1112	1.4	694★	2.6★	1284	1.2
				25%	384	2.6	429★	3.7★	704	2.1	440★	3.9★	814	2.0
				30%	240	4.0	268★	6.0★	440	3.4	274★	6.2★	508	3.2
4015 40" Fan 15 HP	365-15 49" Fan 15 HP	40" 5.75 million BTU	140° F	20%	486	2.0	562	2.7			650	2.5	1022	1.6
				25%	308	3.1	356	4.2			411	3.9	647	2.5
				30%	192	4.9	222	6.7			257	6.3	404	4.0
			160° F	20%	580	1.6	670	2.2			775	2.1	1219	1.4
				25%	367	2.6	425	3.5			491	3.3	772	2.1
				30%	230	4.2	265	5.6			306	5.3	482	3.4
			180° F	20%	742	1.3	858	1.8			890★	2.0★	1560	1.1
				25%	470	2.0	543	2.7			564★	3.1★	988	1.7
				30%	294	3.3	339	4.4			352★	4.9★	617	2.6
4230 42" Fan 30 HP	402-30 54" Fan 30 HP	42" 8.75 million BTU	140° F	20%			638	2.4			717	2.2	1142	1.4
				25%			405	3.6			454	3.5	723	2.2
				30%			253	5.9			284	5.6	452	3.5
			160° F	20%			762	2.0			856	1.9	1363	1.1
				25%			482	3.1			542	3.0	863	1.9
				30%			302	4.9			338	4.8	539	3.0
			180° F	20%			975	1.5			1095	1.5	1744	1.0
				25%			618	2.4			694	2.3	1105	1.5
				30%			386	3.9			433	3.7	690	2.4
4240 42" Fan 40 HP	402-40 54" Fan 40 HP	42" 10.25 million BTU	140° F	20%			726	2.1			810	2.0		
				25%			460	3.3			513	3.2		
				30%			287	5.2			320	5.0		
			160° F	20%			867	1.8			966	1.7		
				25%			549	2.7			612	2.6		
				30%			343	4.4			382	4.2		
			180° F	20%			1110	1.4			1236	1.4		
				25%			702	2.1			783	2.0		
				30%			439	3.4			489	3.3		

★ Insufficient burner BTUs for 45 deg. ambient temp

Batch Capacities exclude loading time. Final moisture 15% after complete cooling.

Estimated at 45 deg. F. ambient temperature, 65% relative humidity. 1/3 CFM/Bu. Cooling Rate.

Capacities listed are wet bushels/tonnes, for mature unfrozen #2 yellow shelled dent corn at listed moisture content and are estimates based on drying principles, field results and computer simulation. Variance may occur due to grain's physiological factors (kernel size, chemical composition, variety, maturity), excessive fines, adverse weather conditions, etc.

STORAGE CAPACITIES

BIN DIAMETER	BATCH	AUTOFLOW		RINGS	EAVE HEIGHT	PEAK HEIGHT	BATCH	AUTOFLOW
	BATCH SIZE (BU)	GRAIN IN PROCESS (BU)	DUMP SIZE (BU)				MAXIMUM STORAGE (BU)	MAXIMUM STORAGE (BU)
24'	1,000	560	187	5	18'5"	25'4"	4,813	4,373
				6	22'1"	29'0"	6,198	5,758
				7	25'9"	32'8"	7,583	7,143
				8	29'5"	36'4"	8,968	8,528
				9	33'1"	40'0"	10,353	9,913
				10	36'9"	43'8"	11,738	11,298
30'	1,500	845	282	5	18'5"	27'2"	7,459	6,804
				6	22'1"	30'10"	9,623	8,968
				7	25'9"	34'6"	11,787	11,132
				8	29'5"	38'2"	13,951	13,296
				9	33'1"	41'10"	16,115	15,460
				10	36'9"	45'6"	18,279	17,624
				11	40'5"	49'2"	20,443	19,788
36'	2,160	1,215	303	6	22'1"	32'7"	13,859	12,914
				7	25'9"	36'3"	16,974	16,029
				8	29'5"	39'11"	20,089	19,144
				9	33'1"	43'7"	23,204	22,259
				10	36'9"	47'3"	26,319	25,374
				11	40'5"	50'11"	29,434	28,489
				12	44'1"	54'7"	32,549	31,604

Maximum storage estimated with 12" aeration floor, level to bottom of fan entrance, with upper batch filled.

FAN COMBINATIONS

	MINIMUM FAN(S) 1/4 CFM	RECOMMENDED FAN(S) 1/3 CFM	MAXIMUM FAN(S) 1/2 CFM
24' 10-RING	3 HP 18" Inline	3 HP 24" Inline	15 HP 28" Inline
30' 11-RING	10 HP 28" Inline	15 HP 28" Inline	(2) 15 HP 28" Inline
		10 HP 1750 Centrifugal	
36' 11-RING	15 HP 28" Inline	(2) 10 HP 28" Inlines	(2) 15 HP 28" Inlines
		15 HP 1750 Centrifugal	20 HP 1750 Centrifugal

Visit grainsystems.com for product specs and info

Contact your GSI Dealer for more information.

AGCO Your Agriculture Company

GS-012 / FEB 2024