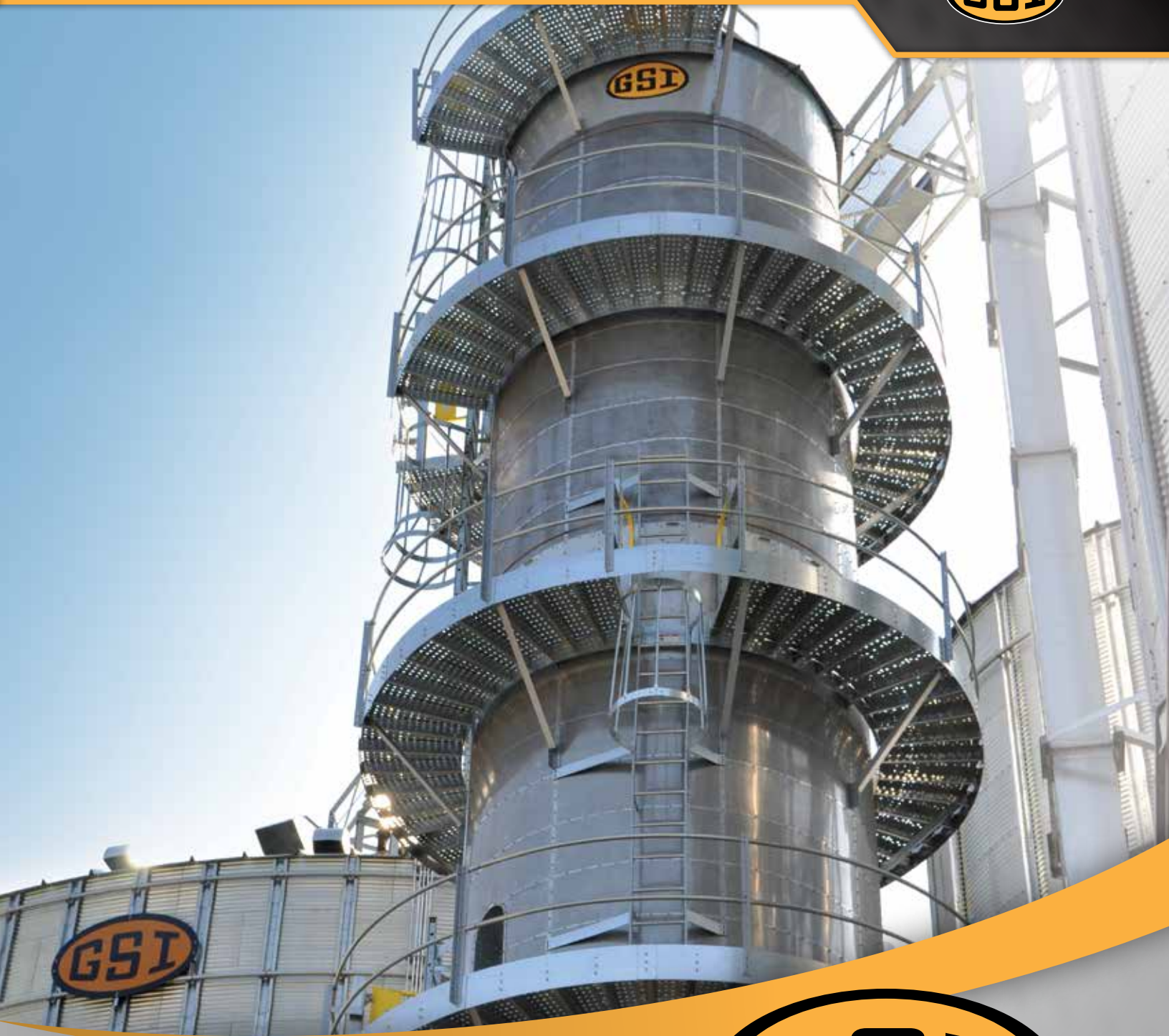


COMMERCIAL GRAIN DRYERS

# GSI TOWER DRYERS



**PROVEN & DEPENDABLE™**

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# PROMISING QUALITY

# UNRIVALED ENGINEERING

# BUILT TO OUTLAST

# BUILT TO PERFORM

As the commercial grain industry expanded in the early 1970s, so did the need for higher capacity dryers with greater drying efficiencies and improved pollution controls.

Featuring concepts like vacuum cooling, stainless steel sidewall sheets, and dryers built for efficiency, cleanliness, and high capacity, GSI's Commercial Tower Dryer was developed to address these concerns.

Today, we carry on the tradition of providing commercial grain dryers that incorporate innovative engineering, premium components, and the highest regarded service program available.



Moving grain is your business. Anything less than moving grain efficiently and effectively is not an option. From field to transport, your customers depend on you to have the best equipment to condition, handle, and store their grain.

Not all tower dryers are created equal. What sets GSI apart from the competition is the combination of over 50 years of innovative design expertise and industry proven drying principles. The result is an easy-to-operate, easy-to-maintain, durable, fuel-efficient grain dryer, supported by an expert dealer network that delivers peace of mind year after year.

Maximizing your productivity and profitability is our goal. It is built into every aspect of what we deliver. Starting with the design, GSI Commercial Tower Dryers are bolted together instead of being welded, which makes construction much simpler. The natural slope of their hopper bottom design combined with GSI's patented metering drum provide an efficient grain discharge system and simple clean out. Long-lasting galvanized steel is used with stainless steel exterior sheeting protecting the dryer from the elements, promoting a longer dryer life and improved appearance.

Designed to handle up to 7,000 bushels per hour, from the time the grain enters to when it leaves, GSI Commercial Tower Dryers are designed to be gentle on the grain and provide the highest quality product for you and your customers. We stand behind everything we build with a full two-year warranty and five years on frames and internal infrastructure.

# THE GSI DIFFERENCE

## **GRAIN PROTECTION - STARTING RIGHT FROM THE TOP**

The GSI Tower Dryer is designed to provide the optimum balance of time, airflow, and temperature to maintain premium grain quality.

Grain enters the dryer at the top and falls into a self-cleaning grain receiving chamber. The chamber creates a grain cushion, and with grain falling on grain, helps reduce plenum roof wear. This chamber also provides a means of distributing grain evenly around the dryer.

At the top of the dryer, the garner bin has a full 40 inches of wet grain storage and the area is completely sealed to help retain grain dust and particulates.



Grain moves down out of the garner area, and enters 12-3/4 inch wide grain drying columns in the heat section of the dryer.

Large column holding capacities result in long grain retention times in the drying section of the dryer. This long retention time, combined with low drying airflows and temperatures result in high quality, efficiently dried grain.



# THE INVERTER ADVANTAGE

## GSI TOWER DRYERS



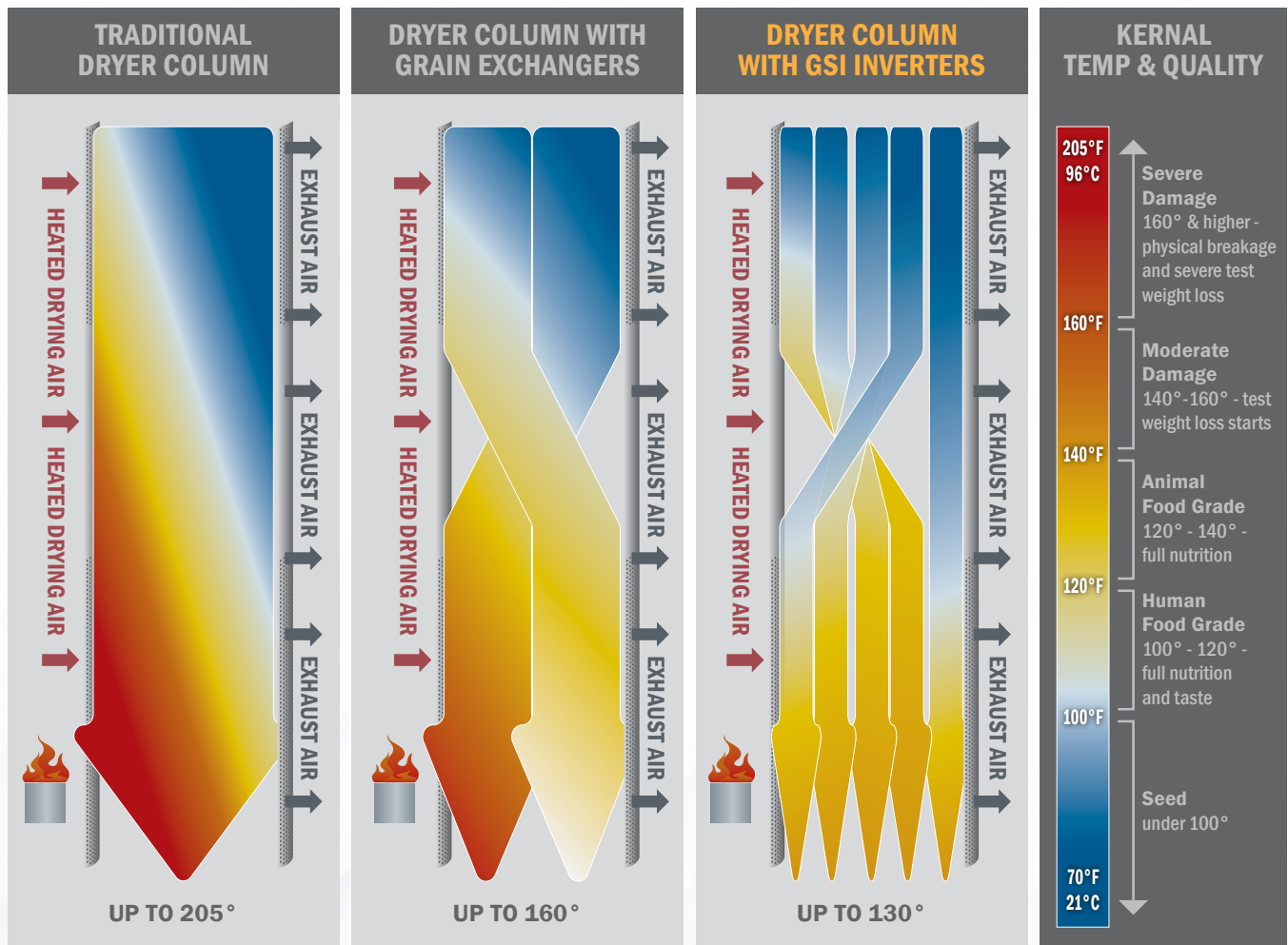
### CONSISTENT, EVEN DRYING

Midway down the heat section of the dryer are GSI's patented (US6035544) grain inverters. By inverting all but the outside two inches of grain from the outside of the grain column to the inside, inverters promote more uniformly dried grain, even and consistent drying, higher test weights, maximum grain quality and reduced fuel usage.

GSI's grain inverters eliminate over-dried grain and maximize drying efficiency and grain quality.

The inverters redirect the warmest grain from the inside of the column to the wettest grain at the outside of the column. The wet grain remaining at the outer 2 inch of the column is dried using the captured heat, which would have otherwise escaped the dryer.

This process maintains optimal grain temperature, thus maximizing grain quality while using less fuel and significantly reducing operating costs. A convenient clean-out door also provides easy access for quick maintenance.



# TOUCH SCREEN CONTROLS



## EASY TO OPERATE, EASY TO MAINTAIN

Operation of the dryer is performed with a state-of-the-art Allen-Bradley CompactLogix™ Programmable Logic Controller (PLC). This provides not only a complete safety monitoring and trouble-shooting menu but performs system verification and operator prompts during start-up and operation. GSI PLC controls reduce timers, switches, and mechanics while providing built-in expandability and flexibility designed to meet changing operational and drying needs.

A large, high quality Allen-Bradley PanelView™ Plus 1000 touch screen controls all dryer functions and self-diagnoses dryer problems, eliminating the guesswork associated with traditional controllers. GSI's intuitive PLC design means that facility employees can be brought up to speed on how to operate the dryer quickly and efficiently.

The GSI control box is housed in a metal NEMA IV enclosure. The windowed design of the box allows all dryer operations to be viewed through the lockable windowed door and also protects all switches, indicators and controls. For convenient access to the monitor, the control box can be remote mounted up to 1,000-feet away or mounted at the dryer. The touch screen communicates with the dryer power box via an ethernet communication link.



## Features

- Provides the operator with instant information on a large backlit color display and makes the operation of the dryer simple.
- The easy-to-use touch screen provides continuous visual feedback on the current dryer status as well as a convenient means of setting operating parameters and options.
- Most set points and status screens are accessed by simply touching an on-screen object.
- Calculates total dryer time, bushels per hour and total bushels dried.
- Memory features maintain a history of past dryer operation and a permanent service record.
- The GSI tower dryer constantly monitors for malfunctions and displays every fault eliminating any guess work while troubleshooting.

**THE ONLY TECHNOLOGY ON THE MARKET THAT ALLOWS YOU TO CONTROL YOUR GRAIN DRYER FROM, WELL ... ANYWHERE!**



**WATCHDOG™  
ENGINEERING SUCCESS**

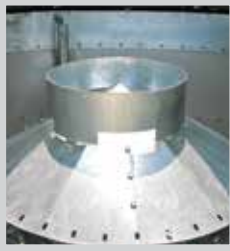
Need more hands-on control over your drying? The optional WatchDog Remote Dryer Monitor is the perfect complement to the already innovative GSI PLC control system that is defining the next generation in dryer controls.

WatchDog, a web-based application, works with the GSI PLC dryer control system to allow remote monitoring of various dryer functions, such as moisture, temperature and dryer status, all from the convenience of any web-enabled device.

Except for the start-up menu, WatchDog lets you control anything remotely that can be controlled via the GSI PLC touch screen.



# GSI TOWER DRYERS



Self cleaning cushion box on plenum roof reduces grain damage and plenum roof wear. **SEE PAGE 4 FOR MORE INFO.**

The 12-3/4 inch grain columns surrounding the heat plenum chamber allow the grain to receive all BTU's from the burner, improving efficiency.



Inside and outside safety ladders, cages and catwalks provide safe and easy access to all areas of the dryer. **SEE PAGE 12 FOR MORE INFO.**

Patented (US6035544) Grain Inverters equalize moisture content and temperature of the grain column, improving quality and efficiency. **SEE PAGE 5 FOR MORE INFO.**



In-line Maxon NP-LE-AL series burners provide even heat and efficient combustion from either natural gas or LP vapor. **SEE PAGE 10 FOR MORE INFO.**

Walk-in heat section provides easy access for interior cleaning.



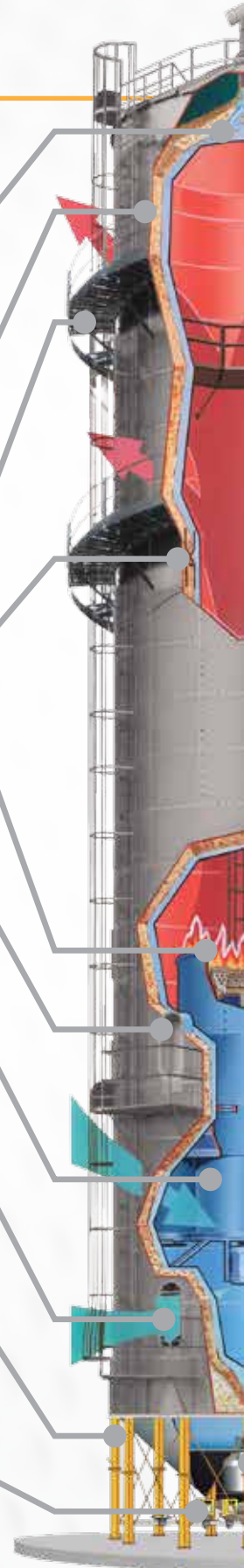
Internal inline, mixed flow centrifugal blowers deliver high volumetric airflow to the pressure heat and vacuum cool sections. **SEE PAGE 10 FOR MORE INFO.**

Walk-in cool section provides easy access to blowers and metering system.



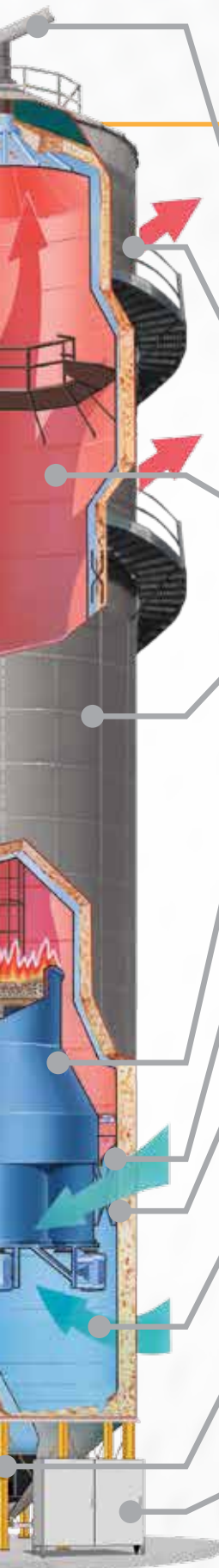
Optional 24 inch leg extensions are available if more clearance is needed.

Industrial quality components (including Maxon valves and burners) ensure years of reliable service. Automatic motorized Maxon valves are available.





# FEATURES



Gravity inlet does not require leveling auger, reducing the number of moving parts.

Stainless steel outside sheets greatly extend dryer life. The screens utilize different size perforations to reduce particulate emissions. **SEE PAGE 11 FOR MORE INFO.**

Uniform low velocity heated air improves efficiency and quality as well as reducing particulate emissions. **SEE PAGE 11 FOR MORE INFO.**

Heavy-duty overall construction results in an extra rigid structure on minimal of ground space.

Reducer cone equalizes air velocity past burners for optimum combustion and provides step-in access to burner assembly.

Self cleaning divider hopper separates the heating and cooling sections while preventing build-up of particulate matter.

Internal mounting provides the added benefit of ultra quiet operation as the surrounding grain creates a natural noise barrier.

Recycling heat from the cooling grain results in significant fuel savings.

Flow control system houses the moisture control sensor. This insures a constant accurate reading from the sensor to the moisture control system.

Weather-proof NEMA IV cabinets and NEMA rated electrical components ensure safe and reliable operation in all conditions. **SEE PAGE 6 FOR MORE INFO.**



# MIXED-FLOW BLOWERS



## **HIGH-VOLUME AIRFLOW, EFFICIENT HEAT DISTRIBUTION**

All GSI dryers are optimized to provide just the right amount of airflow. Too little airflow adversely affects capacity, too much airflow adversely affects the efficiency. Depending on the dryer size, one, three, or four industrial-duty mixed-flow blowers are used. Internally mounted, these in-line mixed flow blowers operate at slow speeds, which means low noise levels, low electrical usage and results in long blower and motor life.

Unlike centrifugal fan designs on other dryers, airflow from the GSI blowers is ducted across a Maxon Low Emission line burner, eliminating hot spots on the dryer and achieving optimal efficiency with airflow and heat distribution. The burner can operate on either natural gas or LP vapor. The burners are sized and profiled to provide even, efficient heat distribution to the drying section of the dryer. Aluminum burner body reduces burner maintenance. Fuel oil burners are optional.

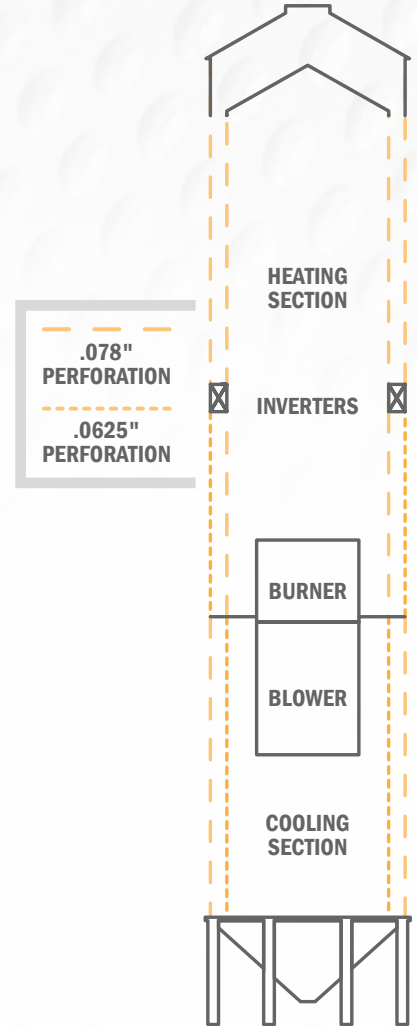


**MAXIMUM PARTICULATE RETENTION**

GSI tower dryers are designed to retain bees' wings and particulate matter within the drying columns. The largest standard hole size on the exterior screening of the dryer is 0.078 inch diameter perforation. After the grain is turned, the perforation size drops to a diameter of 0.0625 inches.

Solid non-perforated exterior sheets are used at the grain inverters and at the top and bottom of the grain columns to help ensure that particulates are not expelled from the dryer.

As grain exits the heat section of the dryer it enters the vacuum cooling section. Upon cooling, the warm air used to cool the grain is recycled through the blower(s), which means less energy is required to heat the air.



**STATIC MOISTURE SAMPLER**

Debris guards ensure a trash-free sample while a SideKick auger mixes and delivers a uniform representative sample to the test chamber. Get the most accurate results as the moisture reading used to monitor/calculate discharge grain moisture is only taken while the grain is static and not flowing.



**PATENTED METERING DRUM DISCHARGE**

GSI's field proven drum discharge rotates quickly, removing grain from every column nearly continuously and virtuously maintenance free. With the hopper bottom, the grain travels less than 3' with no damage on a standard stainless steel floor, while the VFD drive offers accurate, dependable operation.



# ACCESS

## CATWALKS, LADDERS AND CAGES

Strong structural design and heavy duty materials go into the manufacturing of catwalks, ladders and cages. Patent pending fan style catwalk conforms to fit the shape of the dryer.



## SWING GATES

Swing gates are installed on every platform access point for added safety.



## EASY ACCESS

All areas of the dryer can be accessed through up to four entry points making cleanout, inspection and maintenance easy.

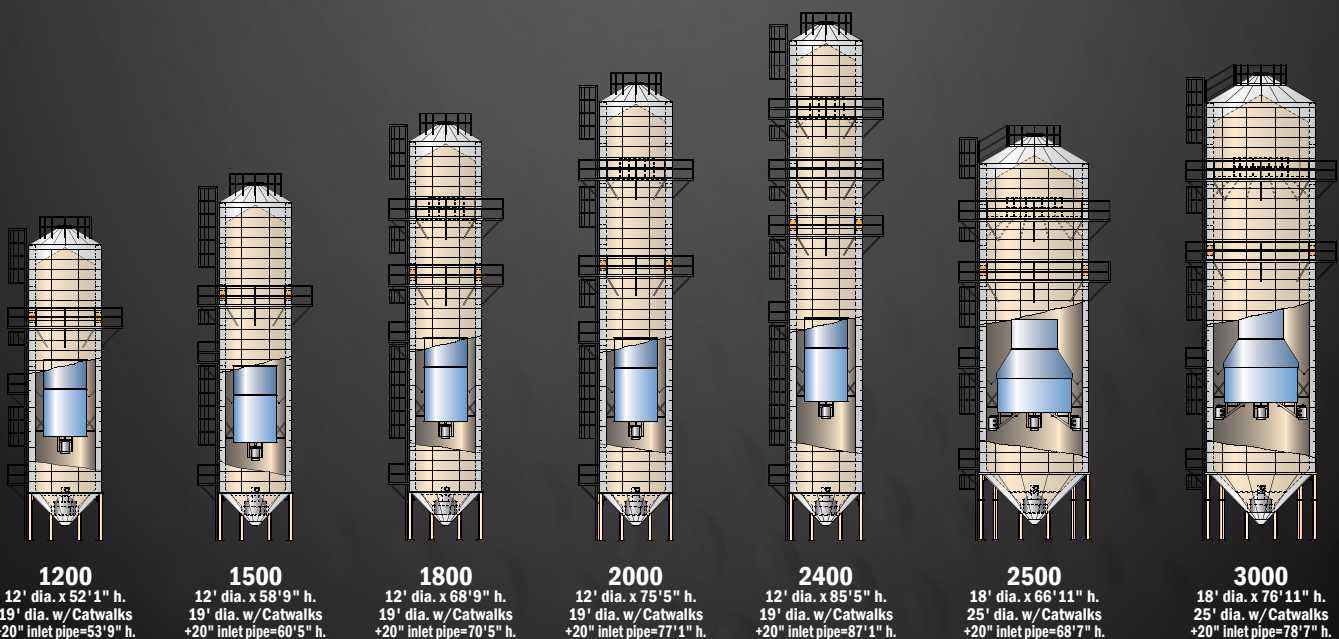


## GSI TOWER DRYERS



# SPECIFICATIONS

	1200	1500	1800	2000	2400	2500	3000
DRYING CFM	60,500	77,100	81,800	98,600	108,300	121,950	145,200
COOLING CFM	30,250	38,550	40,900	49,300	54,150	60,975	72,600
BLOWER HP	60	75	75	100	100	3-40	3-50
BURNER CAPACITY (BTU X 1000)	13,068	16,654	17,669	21,298	23,393	26,341	31,363
AVERAGE HEAT (BTU X 1000) <sup>1</sup>	7,514	9,576	10,160	12,246	13,451	15,146	18,034
GRAIN COLUMN	12-3/4"	12-3/4"	12-3/4"	12-3/4"	12-3/4"	12-3/4"	12-3/4"
TOWER DIAMETER <sup>2</sup>	12'	12'	12'	12'	12'	18'	18'
OVERALL HEIGHT	53'9"	60'5"	70'5"	77'1"	87'1"	68'7"	78'7"
WET HOLDING	335	335	335	335	335	731	731
HEAT HOLDING (BU)	719	914	1,158	1,256	1,499	1,511	1,813
COOL HOLDING (BU)	305	305	354	451	500	529	680
UNLOAD HOLDING	48	48	48	48	48	144	144
TOTAL COLUMN HOLDING	1,024	1,219	1,512	1,707	1,999	2,040	2,493
TOTAL DRYER HOLDING (BU)	1,427	1,622	1,915	2,110	2,401	2,977	3,340
BPH CAPACITY <sup>3</sup> (20% - 15%)	1,200	1,500	1,800	2,000	2,400	2,500	3,000
BPH CAPACITY <sup>3</sup> (25% - 15%)	720	900	1,080	1,200	1,440	1,500	1,800



All dryers are shown at relative size.

# SPECIFICATIONS

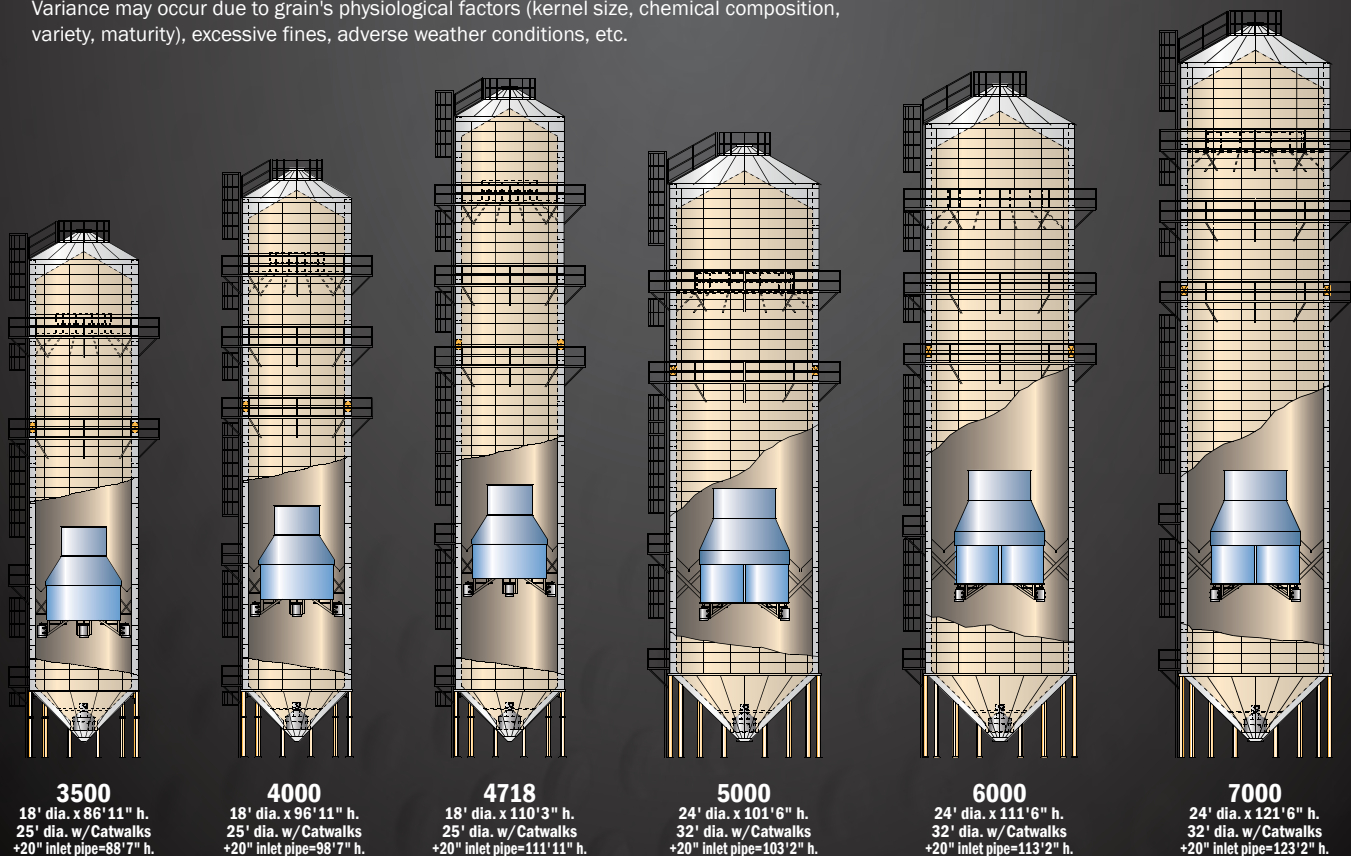
## GSI TOWER DRYERS

	3500	4000	4718	5000	6000	7000
DRYING CFM	175,800	192,750	213,600	282,000	304,800	337,500
COOLING CFM	87,900	96,375	106,800	141,000	152,400	168,750
BLOWER HP	3-60	3-75	3-75	3-100	3-100	3-125
BURNER CAPACITY (BTU X 1000)	37,973	41,634	46,138	60,192	65,837	72,900
AVERAGE HEAT (BTU X 1000)	21,834	23,940	26,529	35,024	37,856	41,918
GRAIN COLUMN	12-3/4"	12-3/4"	12-3/4"	12-3/4"	12-3/4"	12-3/4"
TOWER DIAMETER <sup>1</sup>	18'	18'	18'	24'	24'	24'
OVERALL HEIGHT <sup>2</sup>	88'7"	98'7"	111'11"	103'2"	113'2"	123'2"
WET HOLDING	731	731	731	1,279	1,279	1,279
HEAT HOLDING (BU)	2,210	2,512	2,964	3,479	4,042	4,452
COOL HOLDING (BU)	737	888	1,038	1,126	1,177	1,381
UNLOAD HOLDING	144	144	144	287	287	287
TOTAL COLUMN HOLDING	2,947	3,400	4,002	4,605	5,219	5,833
TOTAL DRYER HOLDING (BU)	3,883	4,337	4,939	6,294	6,908	7,522
BPH CAPACITY <sup>3</sup> (20% - 15%)	3,500	4,000	4,700	5,000	6,000	7,000
BPH CAPACITY <sup>3</sup> (25% - 15%)	2,100	2,400	2,820	3,000	3,600	4,200

<sup>1</sup> At 50 degrees ambient temperature.

<sup>2</sup> Dimensions exclude outside catwalk. See models below for diameter with catwalk.

<sup>3</sup> Capacities listed are wet bushels/tonnes, for mature #2 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.



# COMPLETE YOUR GSI SYSTEM

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## 40-SERIES™ GRAIN BIN

When determining the best system for your operation, we know that what's protected inside the bin is what counts most. Each GSI bin is efficiently designed to handle maximum loads for unmatched strength. All GSI bins are constructed using the highest-strength steel available.



## TOWERS AND CATWALKS

GSI offers a full line of structures to support your material handling equipment. Built to perform for the long haul, GSI structures are engineered to your facility's layout, taking wind seismic and snow loading into effect. GSI structures feature bolt-up assembly and hot-dipped galvanized finish.



## MATERIAL HANDLING

With lines of GSI and InterSystems Material Handling, we offer the broadest product portfolio of proven and dependable equipment in the industry. We design and manufacture products that withstand the conditions of any commercial grain facility, while handling the grain with care and efficiency.



## PREMIUM TRAINING, SERVICE & SUPPORT

Downtime is not an option in your business. When you are in the heat of the battle, you need your tower dryer in full operation. Our authorized dealer network is here to take care of your service needs, including installation, training and operation. Trained in all service aspects of the GSI tower dryer, GSI dealers can provide quick, reliable service when needed. To find your local GSI servicing dealer, to go [www.grainsystems.com](http://www.grainsystems.com).

**TO FIND YOUR LOCAL GSI DEALER,  
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