



# KOTZUR

## COMMERCIAL GAS-SEALED GRAIN SILOS



A family  
owned  
Australian  
business



### APPLICATION

#### Commercial Grain Storage

Long term Grain Storage  
with phosphine or controlled  
atmosphere insect control.

Ask for further information on  
the importance of sealed silos  
in the drive to control insects  
and maintain grain free of  
chemical residue.

### FEATURES

- All galvanized construction.
- Pest eradication without chemical residue and risk of insect resistance.
- Bin is protected with high capacity of oil bath relief valve.
- Clean Design - no internal stiffeners.
- All structural seals use high quality, long lasting materials.
- Sight glass level indication (one in each 1100mm wall strake).
- Range of unload and sweep auger combinations to suit each application.
- Kotzur 5 year warranty.

### ENGINEERING STANDARDS & DESIGN REFERENCES

- AS 3774 Loads on Bulk Solids Containers (Equivalent to Eurocode 1, Part 4, Silos and Tanks)
- AS 1170.2 Wind Actions
- AS 1170.4 Earthquake Actions
- AS 4100 Steel Structures
- AS 2628 Sealing Grain Silos for Fumigation
- Design of Steel Bins for Storage of Bulk Solids - Gaylord and Gaylord
- AWRA Technical Note 14 - Design and Construction of Welded Steel Bins
- Structural Design of Steel Bins for Bulk Solids - Trahair et. al.

## SPECIFICATIONS Effective 12 April 2023

GP 15 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 15-13	1583	1314	1456	11.4	17.7	14.8
GP 15-14	1696	1408	1560	11.4	18.8	15.9
GP 15-15	1809	1502	1664	11.4	19.9	17.0
GP 15-16	1922	1595	1768	11.4	21.0	18.1
GP 15-17	2035	1689	1872	11.4	22.1	19.2
GP 15-18	2148	1783	1976	11.4	23.2	20.3
GP 18 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 18-10	1829	1518	1683	13.7	15.2	11.5
GP 18-11	1991	1653	1832	13.7	16.3	12.6
GP 18-12	2153	1787	1981	13.7	17.4	13.7
GP 18-13	2315	1921	2130	13.7	18.5	14.8
GP 18-14	2477	2056	2279	13.7	19.6	15.9
GP 18-15	2639	2190	2428	13.7	20.7	17.0
GP 18-16	2801	2325	2577	13.7	21.8	18.1
GP 20 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 20-10	2258	1874	2077	15.2	16.0	11.5
GP 20-11	2457	2040	2261	15.2	17.1	12.6
GP 20-12	2657	2205	2444	15.2	18.2	13.7
GP 20-13	2856	2370	2628	15.2	19.3	14.8
GP 20-14	3055	2536	2811	15.2	20.4	15.9
GP 20-15	3255	2701	2994	15.2	21.5	17.0
GP 20-16	3454	2867	3178	15.2	22.6	18.1
GP 20-17	3653	3032	3361	15.2	23.7	19.2
GP 20-18	3853	3198	3545	15.2	24.8	20.3
GP 20-19	4052	3363	3728	15.2	25.9	21.4
GP 20-20	4251	3529	3911	15.2	27.0	22.5

**1** - Wheat capacity based on typical consolidated/compacted bulk density in silo. **2** - Max. Load based on engineering design for wheat at 920kg/m<sup>3</sup> - this load will vary for products with differing properties.

## SPECIFICATIONS Effective 12 April 2023

GP 22 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 22-10	2777	2304	2555	16.7	16.4	11.5
GP 22-11	3020	2506	2778	16.7	17.5	12.6
GP 22-12	3262	2707	3001	16.7	18.6	13.7
GP 22-13	3505	2909	3224	16.7	19.7	14.8
GP 22-14	3747	3110	3447	16.7	20.8	15.9
GP 22-15	3990	3311	3670	16.7	21.9	17.0
GP 22-16	4232	3513	3893	16.7	23.0	18.1
GP 22-17	4475	3714	4117	16.7	24.1	19.2
GP 22-18	4717	3915	4340	16.7	25.2	20.3
GP 22-19	4960	4116	4563	16.7	26.3	21.4
GP 22-20	5202	4318	4786	16.7	27.4	22.5
GP 22-21	5445	4519	5009	16.7	28.5	23.6
GP 22-22	5687	4720	5232	16.7	29.6	24.7
GP 24 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 24-12	3899	3236	3587	18.2	18.7	13.2
GP 24-13	4186	3474	3851	18.2	19.8	14.3
GP 24-14	4473	3712	4115	18.2	20.9	15.4
GP 24-15	4759	3950	4379	18.2	22.0	16.5
GP 24-16	5046	4188	4643	18.2	23.1	17.6
GP 24-17	5333	4426	4906	18.2	24.2	18.7
GP 24-18	5620	4664	5170	18.2	25.3	19.8
GP 24-19	5907	4902	5434	18.2	26.4	20.9
GP 24-20	6193	5141	5698	18.2	27.5	22.0
GP 24-21	6480	5379	5962	18.2	28.6	23.1
GP 24-22	6767	5617	6226	18.2	29.7	24.2
GP 24-23	7054	5855	6489	18.2	30.8	25.3
GP 24-24	7341	6093	6753	18.2	31.9	26.4
GP 24-25	7627	6331	7017	18.2	33.0	27.5
GP 24-26	7914	6569	7281	18.2	34.1	28.6

**1** - Wheat capacity based on typical consolidated/compacted bulk density in silo. **2** - Max. Load based on engineering design for wheat at 920kg/m<sup>3</sup> - this load will vary for products with differing properties.

## SPECIFICATIONS Effective 12 April 2023

GP 26 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 26-12	4624	3838	4254	19.7	19.4	13.2
GP 26-13	4961	4117	4564	19.7	20.5	14.3
GP 26-14	5297	4397	4874	19.7	21.6	15.4
GP 26-15	5634	4676	5184	19.7	22.7	16.5
GP 26-16	5971	4956	5493	19.7	23.8	17.6
GP 26-17	6308	5236	5803	19.7	24.9	18.7
GP 26-18	6645	5515	6113	19.7	26.0	19.8
GP 26-19	6982	5795	6423	19.7	27.1	20.9
GP 26-20	7318	6074	6733	19.7	28.2	22.0
GP 26-21	7655	6354	7043	19.7	29.3	23.1
GP 26-22	7992	6633	7353	19.7	30.4	24.2
GP 26-23	8329	6913	7663	19.7	31.5	25.3
GP 26-24	8666	7193	7973	19.7	32.6	26.4
GP 26-25	9003	7472	8282	19.7	33.7	27.5
GP 26-26	9339	7752	8592	19.7	34.8	28.6
GP 30 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 30-12	6297	5227	5793	22.8	20.0	13.2
GP 30-13	6747	5600	6207	22.8	21.1	14.3
GP 30-14	7197	5973	6621	22.8	22.2	15.4
GP 30-15	7647	6347	7035	22.8	23.3	16.5
GP 30-16	8096	6720	7449	22.8	24.4	17.6
GP 30-17	8546	7093	7863	22.8	25.5	18.7
GP 30-18	8996	7467	8276	22.8	26.6	19.8
GP 30-19	9446	7840	8690	22.8	27.7	20.9
GP 30-20	9896	8214	9104	22.8	28.8	22.0
GP 30-21	10346	8587	9518	22.8	29.9	23.1
GP 30-22	10796	8960	9932	22.8	31.0	24.2
GP 30-23	11245	9334	10345	22.8	32.1	25.3
GP 30-24	11695	9707	10760	22.8	33.2	26.4
GP 30-25	12145	10080	11173	22.8	34.3	27.5
GP 30-26	12595	10454	11587	22.8	35.4	28.6

1 - Wheat capacity based on typical consolidated/compacted bulk density in silo. 2 - Max. Load based on engineering design for wheat at 920kg/m<sup>3</sup> - this load will vary for products with differing properties.

## SPECIFICATIONS Effective 12 April 2023

GP 32 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 32-18	10269	8523	9447	24.3	27.1	19.8
GP 32-19	10779	8947	9917	24.3	28.2	20.9
GP 32-20	11289	9370	10386	24.3	29.3	22.0
GP 32-21	11800	9794	10856	24.3	30.4	23.1
GP 32-22	12310	10217	11325	24.3	31.5	24.2
GP 32-23	12820	10641	11795	24.3	32.6	25.3
GP 32-24	13330	11064	12264	24.3	33.7	26.4
GP 32-25	13841	11488	12733	24.3	34.8	27.5
GP 32-26	14351	11911	13203	24.3	35.9	28.6
GP 32-27	14861	12335	13672	24.3	37.0	29.7
GP 32-28	15371	12758	14142	24.3	38.1	30.8
GP 32-29	15882	13182	14611	24.3	39.2	31.9
GP 32-30	16392	13605	15080	24.3	40.3	33.0

GP 36 SERIES	CAPACITY M <sup>3</sup>	CAPACITY WHEAT <sup>(1)</sup> T	MAX LOAD T <sup>(2)</sup>	DIAMETER M	HEIGHT TO CENTRE	HEIGHT TO EAVE
GP 36-18	13168	10929	12115	27.4	28.0	19.8
GP 36-19	13814	11466	12709	27.4	29.1	20.9
GP 36-20	14460	12002	13303	27.4	30.2	22.0
GP 36-21	15106	12538	13897	27.4	31.3	23.1
GP 36-22	15752	13074	14491	27.4	32.4	24.2
GP 36-23	16398	13610	15086	27.4	33.5	25.3
GP 36-24	17043	14146	15680	27.4	34.6	26.4
GP 36-25	17689	14682	16274	27.4	35.7	27.5
GP 36-26	18335	15218	16868	27.4	36.8	28.6
GP 36-27	18987	15759	17468	27.4	37.9	29.7
GP 36-28	19627	16290	18057	27.4	39.0	30.8
GP 36-29	20273	16827	18651	27.4	40.1	31.9
GP 36-30	20919	17363	19245	27.4	41.2	33.0

1 - Wheat capacity based on typical consolidated/compacted bulk density in silo. 2 - Max. Load based on engineering design for wheat at 920kg/m<sup>3</sup> - this load will vary for products with differing properties.

## COMMERCIAL AND SPECIAL REQUIREMENTS

The Company has a range of non-standard options and variations for specific applications. These include;

- Range of unloader size and duty cycle designs
- Roof loads to carry conveyors.
- Designs for high wind and seismic regions.
- Storage of products other than grain.
- Design and construct of integrated storage and conveying systems
- Custom size/geometry silos.

**WARRANTY** - Kotzur Pty Ltd are confident in the quality of the products they design, manufacture and supply. The company guarantees its product for a period of five years from date of purchase. This guarantee covers faulty design, engineering and workmanship however does not include problems arising from factors over which they have no control. These factors include footings constructed by others, negligent damage, unintended use of products, poor maintenance of care, normal wear and tear. Please note that this warranty excludes Consequential losses.

Whilst every care has been made in the preparation of this brochure, the company does not accept responsibility for inadvertent errors. It reserves the right to make changes and improvements to its products without further notice 12/04/2023



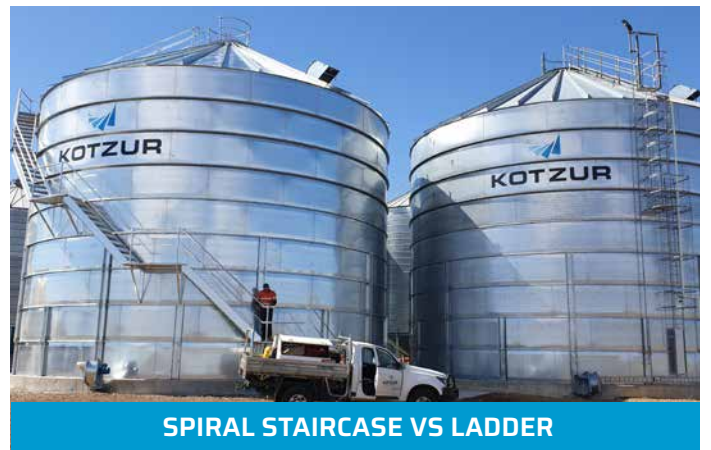


**SPIRAL STAIRCASE & WALKWAY BETWEEN SILOS**

## SILO ACCESS OPTIONS

All of our flat bottom silos can be fitted with a spiral staircase or ladder, as well as being combined with a walkway between silos that are positioned next to each other.

Our spiral staircase system was introduced in 2014 and, as with our ladders, all components are designed by Kotzur and fully comply with relevant Australian quality and safety standards.



**SPIRAL STAIRCASE VS LADDER**



**LADDER & WALKWAY**



**SILO WALKWAY**



# SILO AERATION OPTIONS

Grain aeration is a powerful tool that offers harvest flexibility and better control of grain quality in storage; therefore increasing marketing opportunities both at harvest and during storage.

Without aeration, grain in storage will retain its harvest temperature and moisture for long periods of time. This can lead to increase insect activity, moulding and quality degradation.

## Aeration Cooling Solutions

Aeration cooling aims to maintain grain quality during storage. By maintaining low temperature and creating uniformity through the grain, mould and insects are less likely to develop. Cooling can be achieved with airflow rates of 2-3 l/s/T (litres per second per tonne).

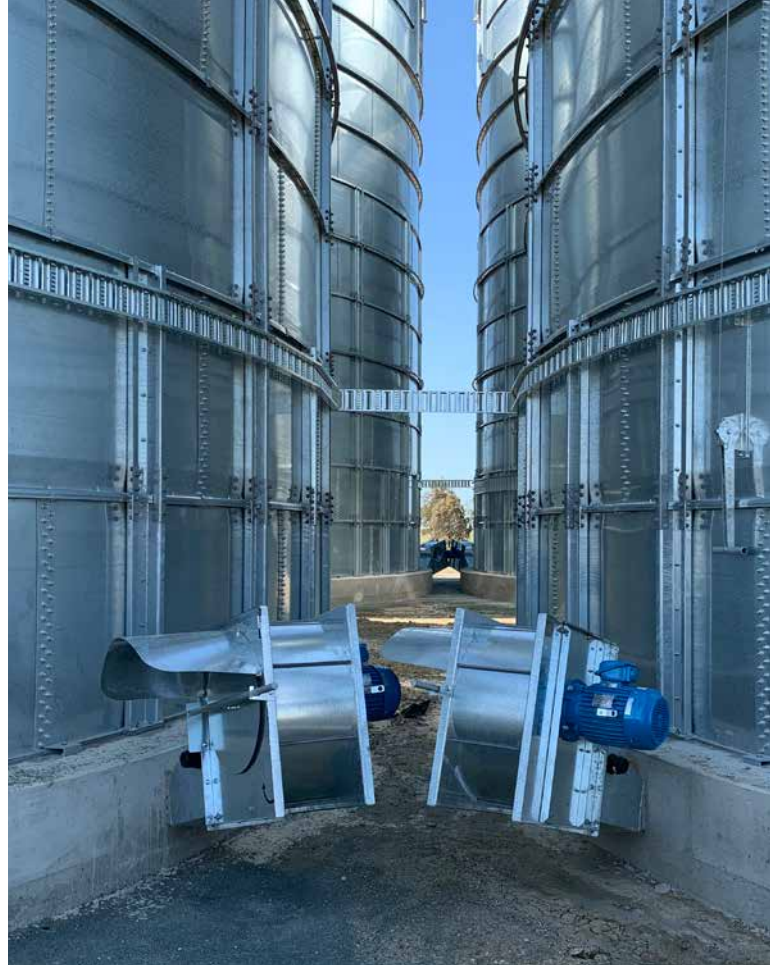
- **In-floor Aeration System:** Is the solution for flat bottom silos.

## Aeration Drying Solutions

Aeration drying relies on a high volume of air passing through the grain to slowly remove moisture.

Aeration drying requires higher airflow rates of 15-50l/s/T in order to effectively move drying fronts through and carry moisture out of the stored grain.

- **Full-floor Aeration System:** Aeration drying for flat bottom silos is achieved through full-floor aeration system. This ensures high volume of air passing through the grain.



## Kotzur Aeration Controller

The Kotzur Aeration Controller has been designed to operate the silo fans for a determined number of hours a day, when the ambient weather conditions are optimum for cooling.

The unit is equipped with a temperature and humidity sensor that reads the ambient temperature and humidity in 'real time'. These readings are used in the controller to calculate the 'wet bulb' temperature, which is then compared to a 'set point' temperature. When the wet bulb temperature is above the set point temperature the fans will automatically turn on.

The set point temperature is set initially at 15 °C. This temperature is automatically adjusted to account for actual weather conditions, for example; if the temperature does not drop below 15°C in one day, the set point temperature is increased, likewise if it does not rise above 15°C it will decrease.



IN-FLOOR AERATION SYSTEM



KOTZUR AERATION CONTROLLER



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