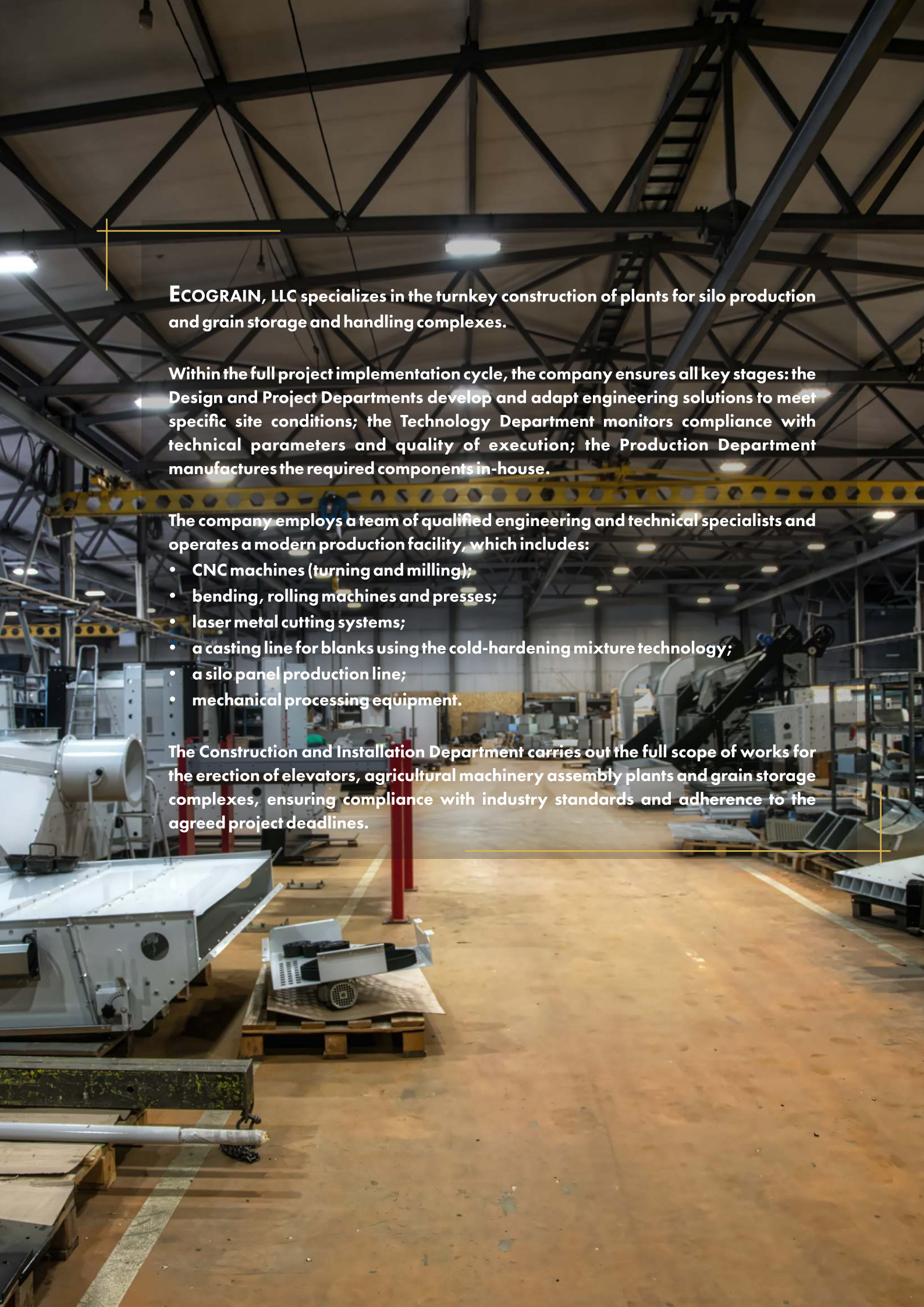




PRODUCT CATALOG



ECOGRAIN, LLC specializes in the turnkey construction of plants for silo production and grain storage and handling complexes.

Within the full project implementation cycle, the company ensures all key stages: the Design and Project Departments develop and adapt engineering solutions to meet specific site conditions; the Technology Department monitors compliance with technical parameters and quality of execution; the Production Department manufactures the required components in-house.

The company employs a team of qualified engineering and technical specialists and operates a modern production facility, which includes:

- **CNC machines (turning and milling);**
- **bending, rolling machines and presses;**
- **laser metal cutting systems;**
- **a casting line for blanks using the cold-hardening mixture technology;**
- **a silo panel production line;**
- **mechanical processing equipment.**

The Construction and Installation Department carries out the full scope of works for the erection of elevators, agricultural machinery assembly plants and grain storage complexes, ensuring compliance with industry standards and adherence to the agreed project deadlines.



GRAIN DRYING EQUIPMENT

VENTUM mine Grain Dryer

	dimensions [mm]			weight [t]	storage capacity [t]	power		capacity [t/h] wheat 125° when drying from 20% to 15%
	height	width	length			heat [MWth]	electric [kW]	
VENTUM-10	6875	2200	6300	5,4	14,0	0,9	17,2	10,0
VENTUM-15	9075	2200	6300	6,6	19,4	1,3	25,1	16,0
VENTUM-20	10725	2200	6300	7,5	23,4	1,6	33,3	20,0
VENTUM-25	11825	2200	6300	8,1	26,1	2,3	43,1	25,0
VENTUM-30	13475	2200	6300	9,0	30,8	2,3	50,6	31,0
VENTUM-40	12375	3200	6300	11,8	41,3	3,2	58,5	40,0
VENTUM-50	12375	4200	6300	15,0	55,0	4,6	86,2	52,0
VENTUM-60	14025	4200	6300	16,5	63,1	4,6	93,7	61,0
VENTUM-70	13475	5200	6300	19,6	75,5	4,8	114,6	70,0
VENTUM-80	12925	6200	6300	22,6	86,5	6,9	129,2	80,0
VENTUM-90	14025	6200	6300	24,0	94,6	7,8	147,2	89,0
VENTUM-100	12375	8200	6300	28,3	110,0	9,2	172,4	108,0
VENTUM-120	14025	8200	6300	31,0	126,2	9,2	187,4	124,0

complete set

shaft (pyramidal-conical drying boxes);

medium-pressure fan (galvanized casing, diffuser, capacity 16000 cubic m/h);

reserve hopper (galvanized, 3 vibration level sensors, temperature sensor, volume from 6 cubic meters);

combustion space (combustion chamber made of stainless heat-resistant steel, diesel / gas burner with power control);

heat carrier supply system (galvanized metal);

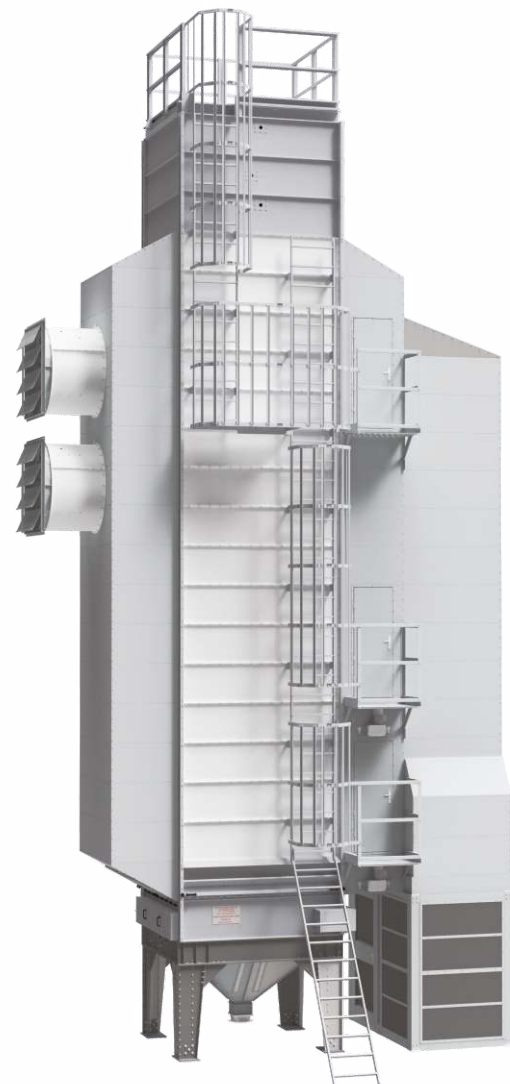
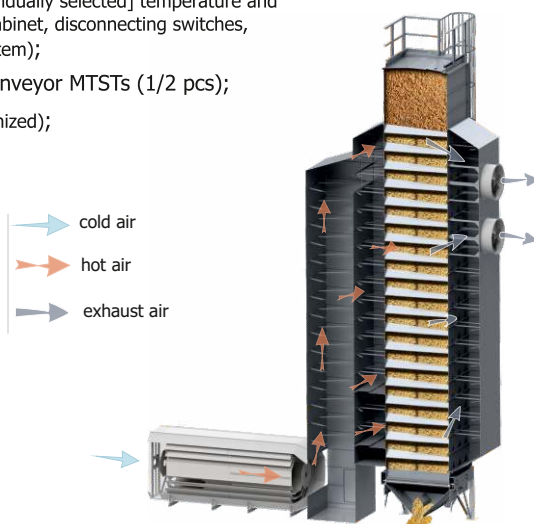
burner (diesel / gas; UNIGAS production, Italy);

automation system ([individually selected] temperature and load level sensors; control cabinet, disconnecting switches, wiring cables; fire safety system);

elevators NPZ (2 pcs); conveyor MTSTs (1/2 pcs);

steel constructions (galvanized);

set of grain pipes.



Structural and investment advantages of VENTUM grain dryers

the modular system allows further refinement / modification of assembly units and mechanisms without changing the basic functionality and frame elements;

the pyramidal shape of the boxes ensures balanced drying;

the low-maintenance roller unloading mechanism ensures stable operation;

the control system is easy to learn and well-designed for the convenience of the operator;

the maintenance high speed is ensured by a convenient system of access to the assembly units;

the possibility of using gas or liquid fuel burners;

quick payback due to high production efficiency;

full technical support from the manufacturer – the guarantee of uninterrupted operation;

1 year guarantee because we are confident in the quality of our equipment.

FLATUM louvered Grain Dryer

MODEL RANGE

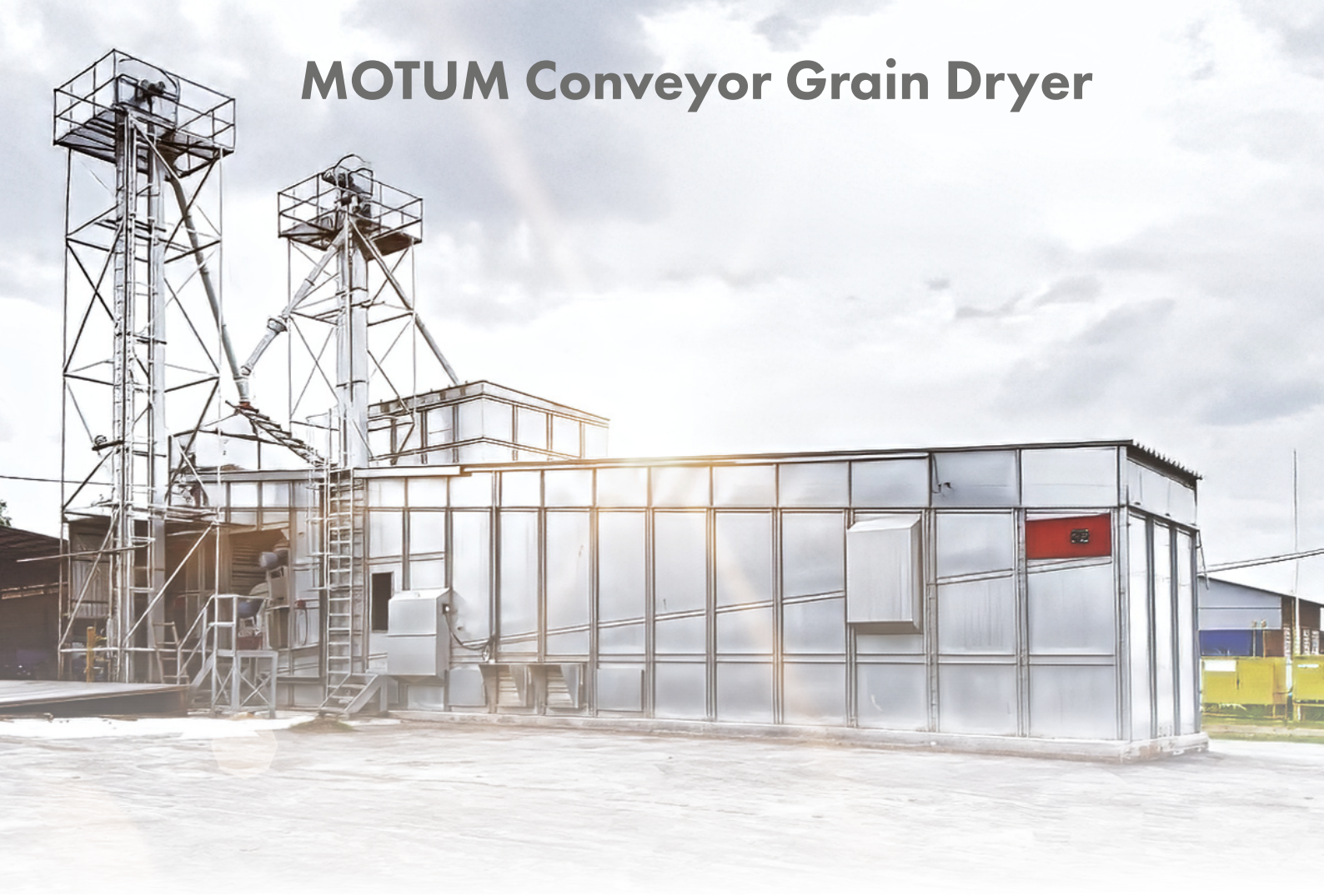
Series 8 (from 15 to 40 t/h)	FLATUM 3-8	FLATUM 4-8	FLATUM 5-8	FLATUM 6-8	FLATUM 7-8	FLATUM 8-8
CAPACITY, [t/h] (wheat: 20–15% moisture content; drying agent temperature 120 ± 5 °C under atmospheric conditions; product initial temperature +15 °C; cooling in 1 section)	16	17	25	26	27	34
Series 10 (from 20 to 60 t/h)	FLATUM 3-10	FLATUM 4-10	FLATUM 7-10	FLATUM 8-10		
CAPACITY, [t/h]	23	31	48	56		
Series 12 (from 30 to 60 t/h)	FLATUM 5-12	FLATUM 6-12	FLATUM 7-12	FLATUM 8-12		
CAPACITY, [t/h]	34	35	51	52		
Series 14 (from 45 to 70 t/h)	FLATUM 5-14	FLATUM 6-14	FLATUM 7-14			
CAPACITY, [t/h]	49	57	66			
Series 16 (from 45 to 70 t/h)	FLATUM 5-16	FLATUM 6-16	FLATUM 7-16	FLATUM 8-16		
CAPACITY, [t/h]	50	52	68	69		
Series 18 (from 60 to 100 t/h)	FLATUM 5-18	FLATUM 6-18	FLATUM 7-18	FLATUM 8-18		
CAPACITY, [t/h]	63	73	88	98		
Series 24 (from 70 to 110 t/h)	FLATUM 6-24	FLATUM 7-24	FLATUM 8-24	FLATUM 9-24		
CAPACITY, [t/h]	77	80	103	106		
Series 28 (from 135 to 220 t/h)	FLATUM 6-28	FLATUM 7-28	FLATUM 8-28	FLATUM 9-28		
CAPACITY, [t/h]	117	131	157	176		



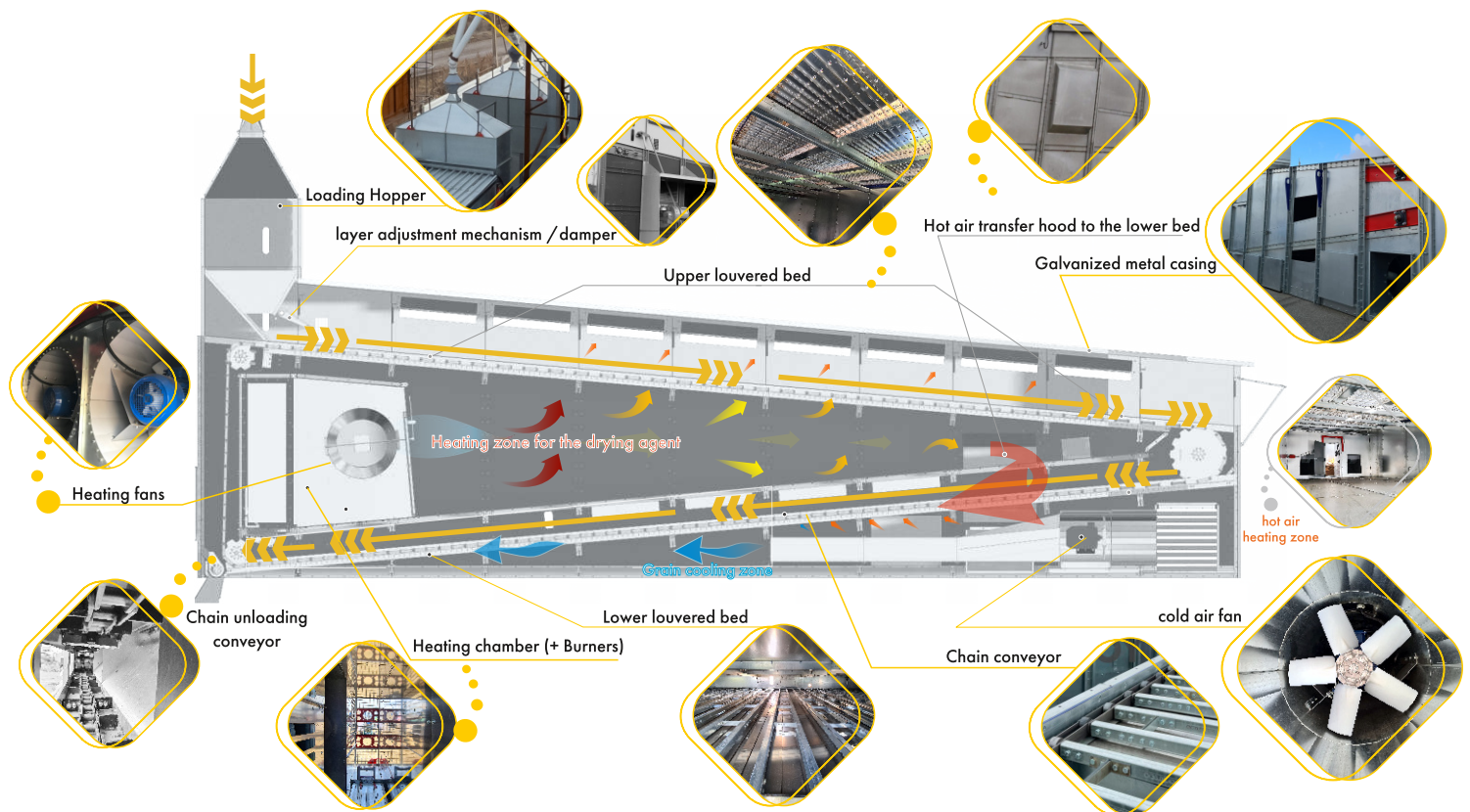
TECHNICAL SPECIFICATIONS

SERIES	Quantity [pcs]				Dimensions in working position, not more than [mm]			Structural weight, not more than [kg]	Capacity [m³]	
	Modules	Louvered columns per module	Burners [pcs]		Height	Width (without service ladder)	Length (without dust collector)		Hopper (damper)	Drying tower
			Flare (gas/diesel)	Linear						
8	3—8	8	1/1	1 (2)	11860—22210	5230	10450—12310	13720—29690	11,4	19,6—52,3
10	3—8	10	1/1 (2/2)	1 (2)	11860—22210	5865	11380—13250	17380—37570	14,8	24,5—65,4
12	5—8	12	2/2	1(2)	16290—22500	6500	13250	28640—42110	16,7	49,0—78,47
14	5—8	14	2/2 (3/3)	1(2)	16290—22500	7135	13250	34260—51850	20,8	57,2—91,5
16	5—8	16	2/2 (3/3)	1(2)	16290—22500	7800	13250	38760—54980	22,4	65,4—104,6
18	5—8	18	2/2 (3/3) (4/4)	1(2)	16290—22500	8405	13250	46430—65820	26,8	73,5—117,6
24	6—9	24	3/3 (4/4) (5/5)	1(2)	19730—25940	10130	13250	65740—92420	33,5	117,6—176,5
28	6—9	28	5/5 (6/6)	2	19730—25940	10945	13250	85240—120060	38,8	137,3—205,9

MOTUM Conveyor Grain Dryer

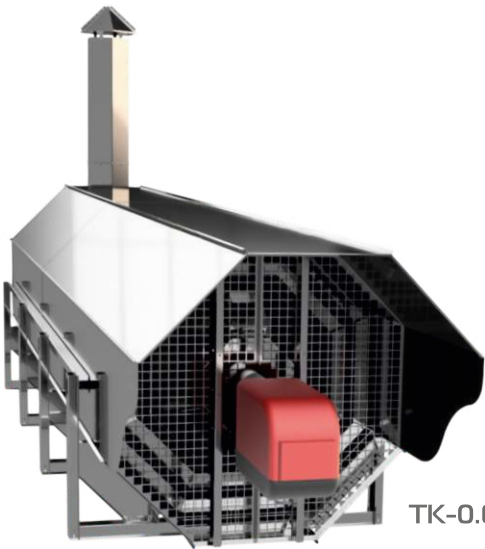


LAYOUT AND WORKING PRINCIPLE DIAGRAM OF A CONVEYOR GRAIN DRYER



HEAT GENERATOR TBB 2.5

Industrial combustion space and heat exchangers are used for provision of grain dryers with clean drying agent (without flue gases).



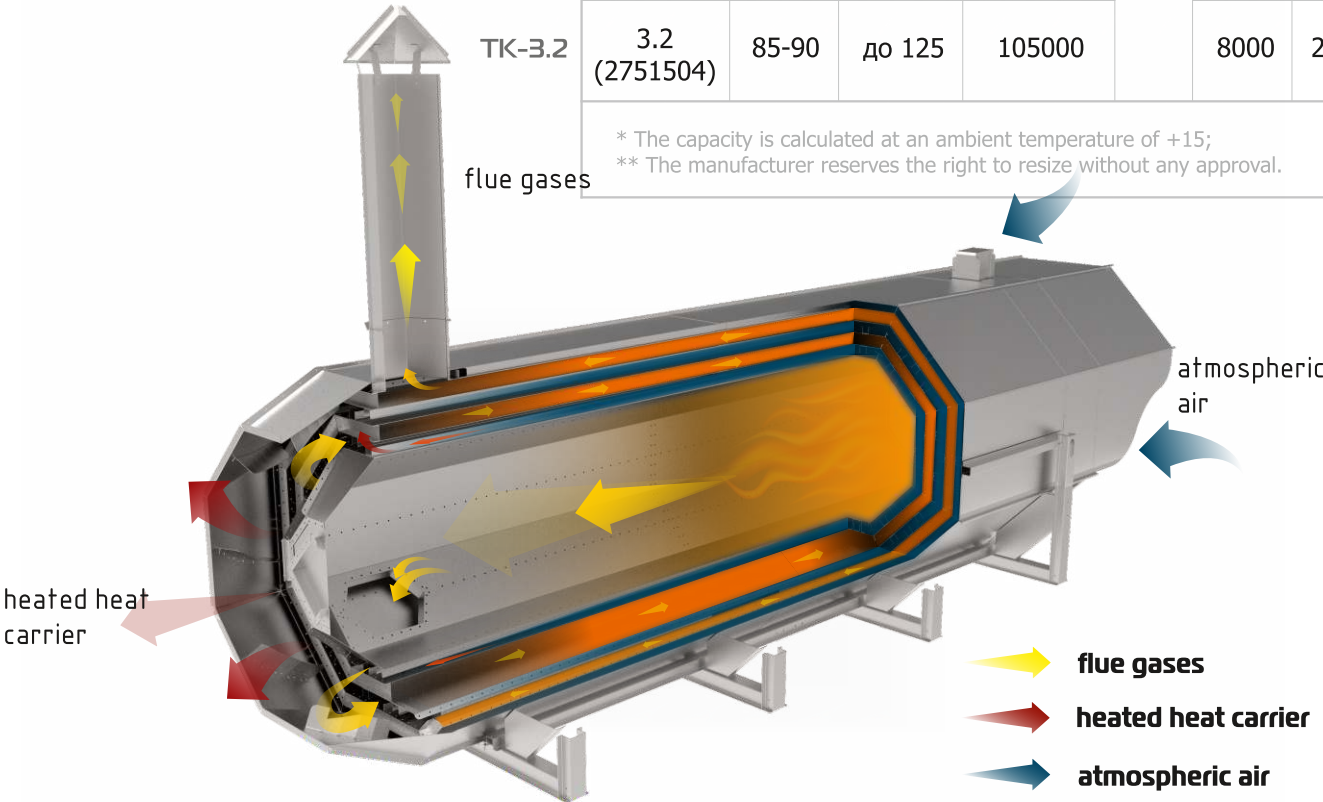
TK-0.6

Combustion chambers of indirect heating of the heat generator (bolted)

	Maximum heat output * [MW/h] (kcal/hour)	performance index (%)	Maximum temperature of heated air (C°)	Nominal consumption of heated air m³/h	Fuel type	Dimensions**		
						length [mm]	width [mm]	height [mm]
TK-0.6	0.6 (515907)	85-90	до 125	до 40000	according to burner selection	4230	1350	2450
TK-0.8	0.8 (687876)	85-90	до 125	до 40000		4230	1350	2450
TK-1.2	1.2 (1031814)	85-90	до 125	50000		5800	2106	3740
TK-1.6	1.6 (1375752)	85-90	до 125	60000		5800	2106	3740
TK-2.5	2.5 (2149613)	85-90	до 125	90000		6986	2106	3740
TK-3.2	3.2 (2751504)	85-90	до 125	105000		8000	2106	3740

* The capacity is calculated at an ambient temperature of +15;
** The manufacturer reserves the right to resize without any approval.

flue gases



heated heat carrier

flue gases

heated heat carrier

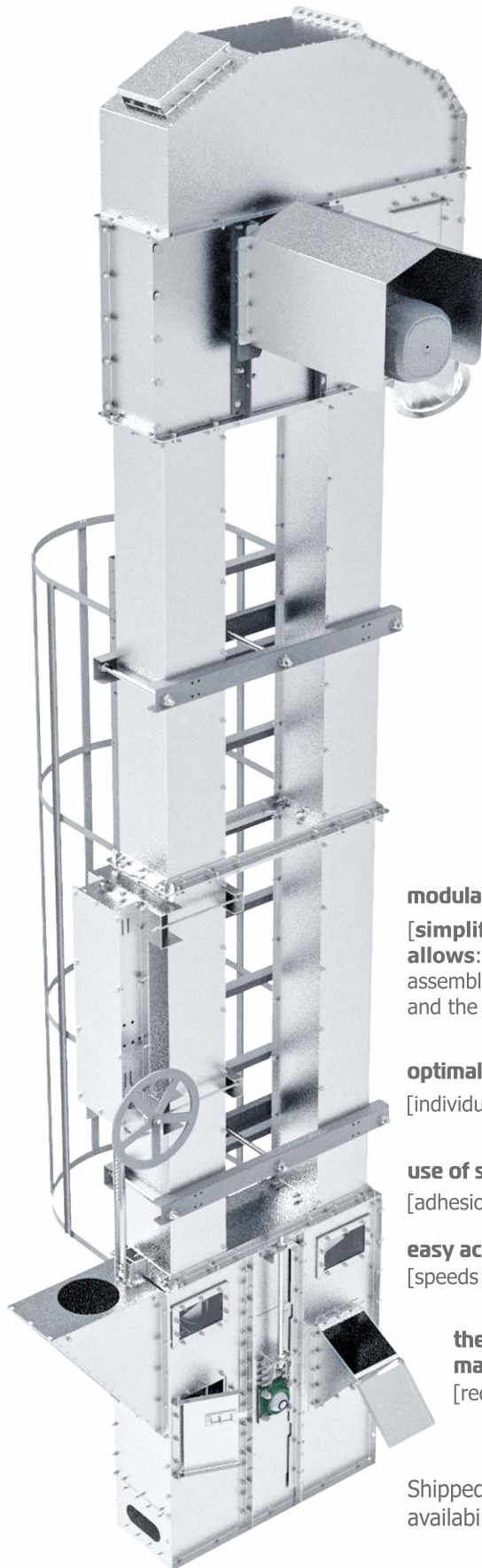
atmospheric air



GRAIN TRANSPORTATION EQUIPMENT

NPZ ELEVATORS (BUCKET ELEVATORS)

are designed for vertical transportation of bulk materials (grain, seeds of bean cultures, pellets, etc.). They provide accuracy and continuity of material transportation. They are used in production lines of processing, cleaning, storage of grain, animal feed.



Model	mNPZ	NPZ
Height [m]	4 — 25	5 — 50
Capacity [t/h]	4 — 50	5 — 350

Complete set

upper head	
motor gear	Bonfiglioli F series mounted motor gear
shafts	
conveyor belt	GOST 20-85
buckets	UKZ under TR 5141-001-23523924-04 optional: MASTU under TR 5141-001-17823007-2010
damper	
drive mechanism	hand or electric
lower head (boot end)	lining with high molecular weight polymer PE9000
sensor assembly (ROSTECHNADZOR requirement)	product back pressure, belt running-off, belt speed
elevator load sensor	optional
frequency converter	optional
smooth start	optional
operating platform	optional
explosion vents	optional

Structural advantages of elevators of AGROSTROY Group of Companies

modular design

[**simplifies:** transportation and installation, switching from right to left;
allows: our development department to make further improvement of separate parts and assembly units without changing the basic design and functionality, and the Customer – to modify and increase the capacity of the already purchased product]

optimal transportation of any bulk material

[individual adjustment (various versions of buckets, speed adjustment, etc.)]

use of slatted drums (patented)

[adhesion to the belt is enhanced; excludes blocking of the drum by the product]

easy access to bearings, units and gear

[speeds up and facilitates maintenance]

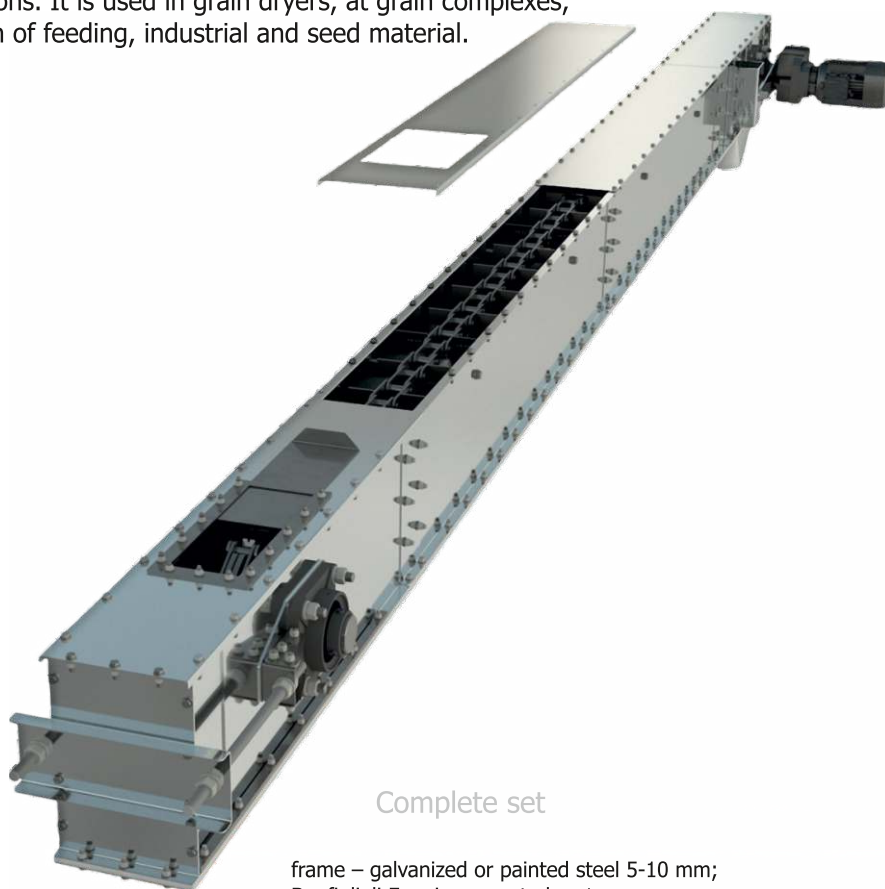
the inner coating of the elevator parts is made of wear-resistant polymer material PE 9000

[reduces trauma of grain; excludes corrosion and impurities sticking]

Shipped fully loaded taking into account the requirements of ROSTEKHNADZOR; availability of all parts and assembly units from warehouse.

CHAIN SCRAPING CONVEYOR TSTS

is designed for transportation of grain, products of its processing, other bulk materials, lump, piece materials in horizontal and inclined directions. It is used in grain dryers, at grain complexes, in grain storage systems for transportation of feeding, industrial and seed material.



head section

frame – galvanized or painted steel 5-10 mm;
Bonfiglioli F series mounted motor gear;
gear shaft with conveyor sprocket;
frequency converter;
safety valve [optional];
speed sensors, product back pressure,
open circuit [optional];
unloading window [optional];

unloading
section

discharge valves;

line
section

box shape;
lined bottom;
supporting rollers for the upper line of the scraper
chain;

loading
section

nozzle, tension device; redler damper;
unloading window and valve back pressure [reversible execution].

tension
section

galvanized sheet or painted steel 3-6 mm;
pulling chain with scrapers (in polymer or rubber-metal version);
tension pulley on the axis, tension device.

length [m]	4 — 60
power [kW]	2,2 — 132
capacity [t/h]	33 — 1100

h/w version

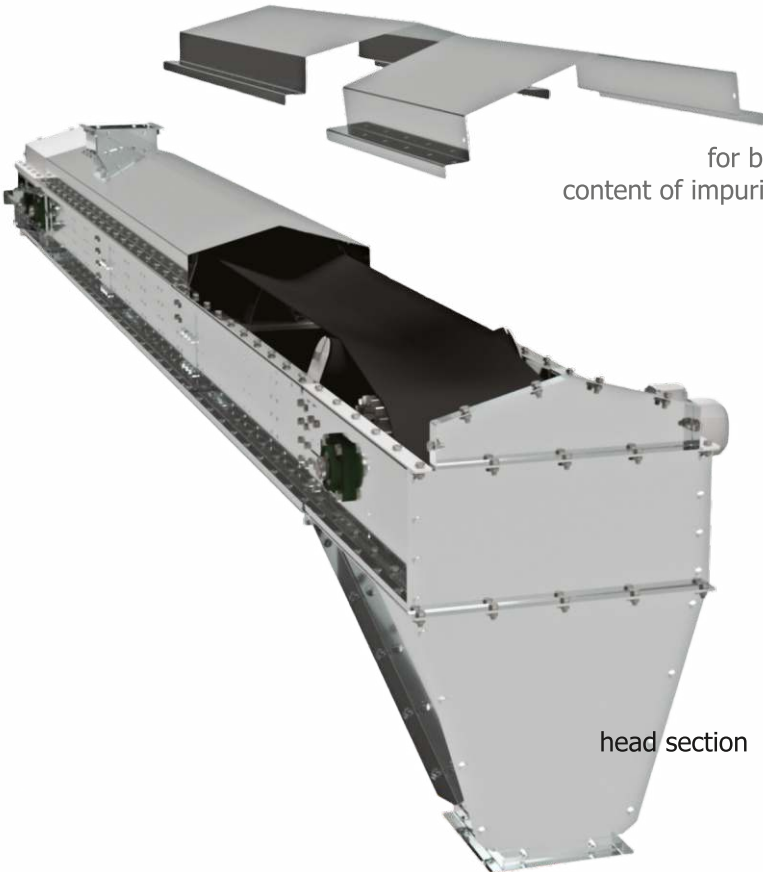
galvanized

painted

lining

The exact calculation of the length of transportation, capacity and complete set of the conveyors can be done on the website and by phone (473) 200-63-50, 200-93-57, (47372) 9-06-39.

BELT CONVEYOR KNL



KNL structural advantages

min and max capacity

of the equipment from 65 to 750 t/h is calculated for bulk wheat with density of 0.75 t/m³, humidity of 18%, content of impurities up to 5% under normal environmental conditions;

horizontal and sloping (up to 15°) product transportation;

the equipment is equipped with a back pressure sensor and a speed control sensor.

Complete set

made of galvanized steel (zinc density not lower than 275 g/m²);
amplifiers from painted or galvanized steel with thickness of 3-5 mm;
cutter for directing the remains of the grain flow into the unloading section;
unloading nozzle;
traction element – layered belt with gaskets TK-200 or BKNL-65;
optional:
PVC belt, belt with a transverse profile;
trolley of intermediate unloading;
diagonal plow;
belt running-off control device;
frequency speed controller;

conveyor driving gear

Bonfiglioli F series mounted motor gear (1.5 - 24 kW);
the drive drum has a corrugated surface with transverse ribs;
optional:
proprietary countershaft;

stretching section

a set of support rollers with a diameter of at least 102 mm with pressure breakdown labyrinth;
support rollers are installed at an angle of 20° (allows you to form a deeper groove and reduce product spillage);
a return roller is installed under each support group;

tension section

galvanized sheet or painted steel 3-6 mm;
amplifiers and tension guides from steel 3 mm thick;
a receiving tray made of steel with a thickness of 2-3 mm. and includes a collar former;

length [m]	4 — 100	h/w version	galvanized
power [kW]	2,2 — 132		painted
capacity [t/h]	70 — 750		open construction
			enclosed

The exact calculation of the length of transportation, capacity and complete set of the conveyors can be done on the website and by phone (473) 200-63-50, 200-93-57, (47372) 9-06-39.

SCREW MODULAR CONVEYOR

its structural advantages

minimal damaging effect on the product;

share of grains damaged:

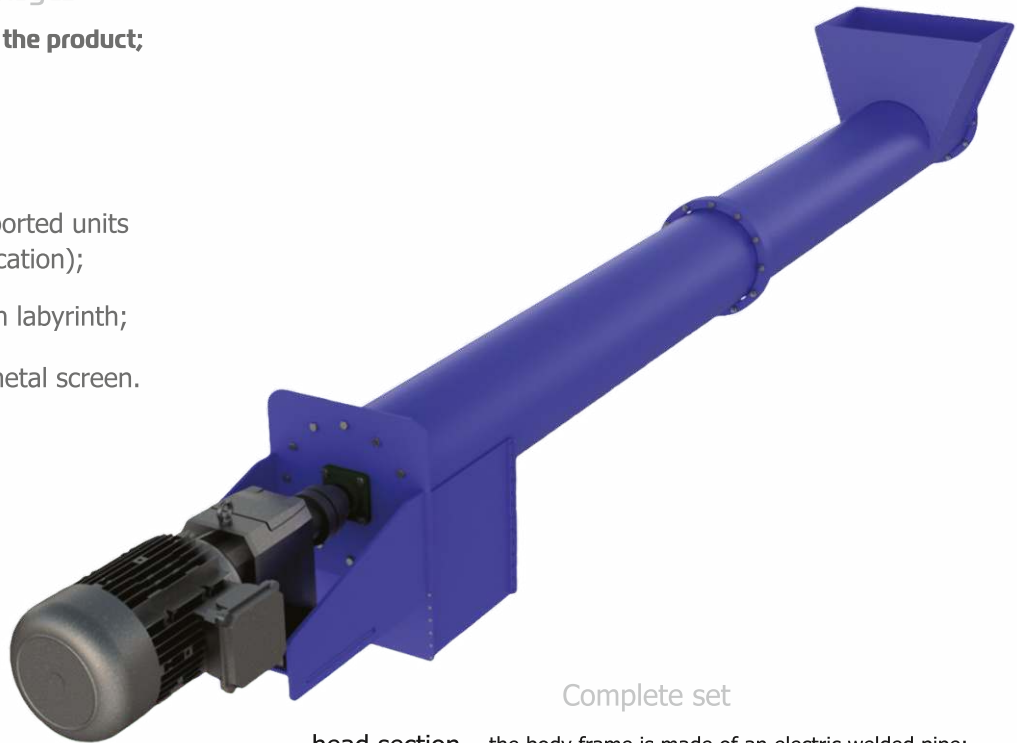
0,02 % - cereal crops

0,08 % - legumes;

double ball-bearing air-supported units
(do not need constant lubrication);

reliable pressure breakdown labyrinth;

additional felt seal with a metal screen.



Complete set

head section

the body frame is made of an electric welded pipe;
the flanges are made of steel [8 mm];
the drive gear is located on the welded frame;
the loading nozzle is made of steel [3 mm];

conveyor driving gear

Bonfiglioli motor gear;
possible use of a belt drive;

stretching section

made of an electric welded pipe [not less than 4 mm thick];
each section has a leveling hanger bearing at the end;
performed on bolted connections;

screw spiral

solid [carbon steel 4 mm];
the axis is made of a welded pipe with end journals;

unloading section

the body frame is made of an electric welded pipe;
the flanges are made of steel [8 mm];

length [m]	4 — 60
power [kW]	2,2 — 132
capacity [t/h]	33 — 1100

h/w version

galvanized

painted

lining

degradation factor of auger modular conveyor
depending on the canting angle

angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
factor	0,89	0,79	0,7	0,63	0,56	0,5	0,45	0,36	0,3

GRAIN PIPES, SELF-FLOWING PIPES, VALVES, DAMPERS



grain pipe
(welded self-flowing pipe)
L = 2000 (1250)
D = 150—300 mm



inputs
symmetrical
round SVS
D=200—380 mm
 $\alpha=36^\circ, 45^\circ, 54^\circ$



sector
flanged
for clamp or flange
D = 200—380 mm



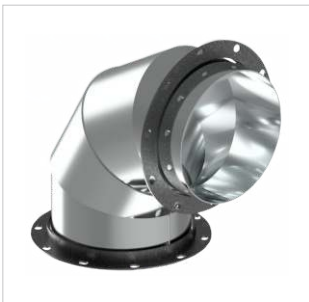
flange D = 200—380 mm



connection nozzle D = 200—380 mm



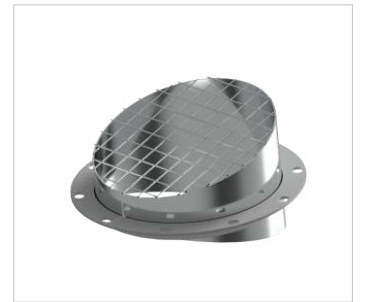
clamp D = 200—380 mm



bends
from segments
flanged
D = 200—380 mm



sector SZ
D = 150—300
 $\alpha = 27^\circ—54^\circ$



segment chamfer = 0—45°



adapter sleeve
(circle - square)
D = 150—300
square = 200x200
250x250
300x300



diverter valve
D = 150—300
 $\alpha=36^\circ, 45^\circ, 54^\circ$



electrically-driven
valve
(0,37 кВт)
H = 110 mm
charging door
150—450x150—500 mm

ECOGRAIN

- designs
- manufactures
- supplies
- installs

all piping and valving of the grain processing line for any complex
+ 7 (909) 214-50-72.

The advantages of the grain transportation equipment of ECOGRAIN, LLC

GRAIN TRANSPORTATION EQUIPMENT

Low maintenance charges, low power consumption:

for all conveyor models there can be chosen: the necessary shaft length and inclination angle, material for scrapers, drive motor power, frequency converter parameters

The steel used for manufacturing is cut on laser complexes and is formed on sheet-bending press

Chain conveyors are made in a form of a modular construction with a frame made of pipes 500 mm, 1000 mm and 2000 mm long. The modules are fastened to each other using bolted connections

Gentle transportation of material – minimum percentage of fraction damage:

KZ type conveyors are equipped with rubber-fabric scrapers; TSTs and KD TSTs type conveyors – plastic.

The chain scrapers are made with a back stop preventing them from bending. Screw conveyors can work in direct and reverse mode

Italian coaxial-cylindrical or conical drives (Bonfiglioli) are installed on all conveyors. Torque to drive drum with sprocket is transmitted via cam clutch

All rotating elements (shafts, sprockets, rollers) are sharpened along the full length and undergo thorough grinding.

The screw tension device has a belt speed sensor for signaling its reduction; tension is done manually. The tensioner stroke is 250–500 mm.

Conveyor drums (drive and tension) have a corrugated surface with transverse ribs

The unloading section is not blocked by the product; the end emergency valve prevents jamming of the conveyor; either a damper or a standard escape is installed in the unloading section; the feeding section is equipped with a dosing unit

Drive and tension sections are equipped with mounting and inspection windows

Full sealing allowing to transport material without noise and dust: the transport shafts are covered with a cover made of galvanized sheet steel

Additional options

Import chains and rollers or tested parts of domestic manufacturers are installed on conveyors

Depending on the operating conditions, grooved three-roller supports or triangular two-roller supports are installed. Lower supports are straight single-roller. Lower supports – straight single-roller

High grade wear-resistant lining materials (PE 9000)

On-site equipment installation

for full compliance with the operating mode of the production line, reducing investment costs and quick payback.

the structural accuracy of the parts is ensured and the net cost of the final product is reduced.

exact adjustment of modules to each other is provided, vibration of parts and product loss are reduced.

it is possible to use a conveyor for working with soft crops – wet wheat, soybeans, peas, sunflower intended for sowing; screw conveyors of our production have minimal damaging effect on grain; according to the results of the test transshipping, the share of damaged seeds of cereal crops amounted to 0.02%, legumes – 0.008% (quality certificate).

energy consumption according to European standards; long term in operation.

vibration is almost completely eliminated.

it provides maximum protection against slippage, smooth running of the belt and self-cleaning of its inner surface; no additional drum lining required, reduced weight and price.

accurate dosage of transported material is provided.

easier installation and maintenance of the conveyor.

reduced need for aspiration connections.

increased resistance to overloads and natural environment and climatic factors;

mobility and stability of the whole structure are provided; grain loss is significantly minimized;

long-term operation without repair and preventative measures;

installation 2-3 days; start-up and commissioning works 2 days;

We design and produce complex tracks comprising several conveyors with the required number of turns.

Self-flowing intake pit

total hopper volume [m ³]	dimensions [m]		
	width	length	height
до 55	4,5	7	4,5



Complete set

intake hopper	one straight and three inclined (45°) walls; сталь 3 мм с грунтовым покрытием;
protection screen	арматура металлическая, ячейки 60x60 мм (500 кг на 1 м ³);
travel traps	две поддерживающие поперечные балки; огрунтованы, окрашены;
shed (sheltered space / roof)	кровля односкатная, огрунтована, окрашена [опционально];

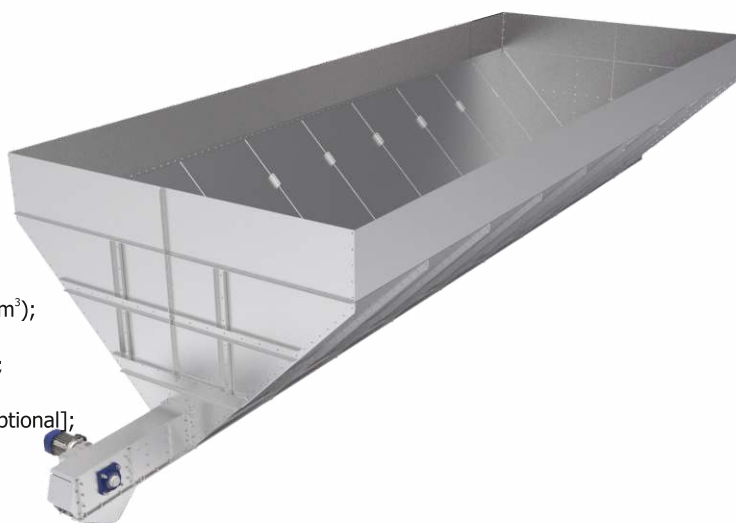
Mechanized intake pits (slotted)

TSTsP (50 — 150)

hopper			conveyor		
volume [m ³]	mass [t]	length [m]	length [m]	length of receiving part [m]	drive power [kW]
28,5 — 152	22,8 — 121,6	6 — 32	8,5 — 34	4 — 30	4,0 — 22,0

Complete set

intake hopper	Bonfiglioli motor gear; gently-sloping scraper conveyor with capacity of 25 t/h; polymer bottom lining; emergency product discharge valve;
protection screen	metal fittings, cells 60x60 mm (500 kg per 1 m ³);
travel traps	two supporting crossbeams; primed, painted;
shed (sheltered space / roof)	the roof is single-pitched, primed, painted [optional];
ramps	



The dimensions of the pit, manufacturing material and additional elements are selected based on the needs of the project under construction / reconstruction and are agreed with the Customer: tel. +7 (909) 214-50-72.

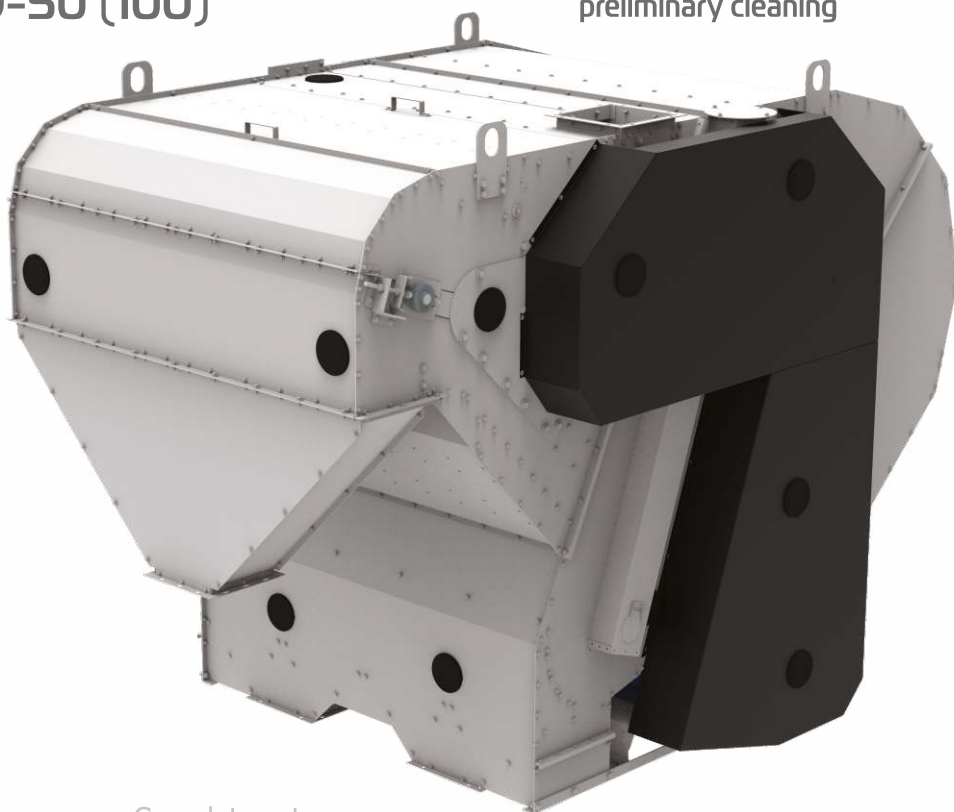


GRAIN CLEANING EQUIPMENT

Grain preliminary cleaning machine

MPO-50 (100)

preliminary cleaning



Complete set

MPO 50**receiving device:**

loading screw;

dust-precipitation chamber:fan (12 blades; rotation frequency – 690),
throttle flap, screw of light impurities;**separator:**mesh-belt conveyor,
baler,
straw clamps;**MPO 100****receiving device:**

loading screw;

dust-precipitation chamber:fan (24 blades; rotation frequency – 900),
beater*, throttle flap,
screw of light impurities;**separator:**mesh-belt conveyor,
baler, straw clamps;

* beater (feeding roller) loosens the grain flow and more evenly distributes it along the depth of the channel. This, along with the other structural modifications of the aspiration channel, increases the MPO throughput to 80 or more tons per hour.

mesh options arrangement for MPO-50 (MPO-100):

10 mm*10 mm*1.4; 12 mm*12 mm*1.8; 15 mm*15 mm*2; 20 mm*20 mm*2; 25 mm*25 mm*2.2

capacity (for wheat with the natural weight of raw material up to 760 g/l, with humidity up to 20% with foreign material content up to 10%, including straw up to 1% not less than) [t/h]	machine weight with a complete set of working tools [kg]	dimensions [mm]			installed power [kW]
		width	length	height	
50	1041	1850	2850	2050	7,5

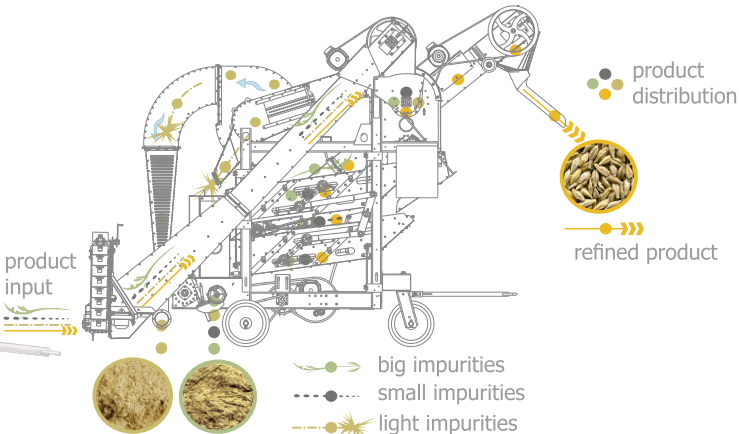
capacity (for wheat with the natural weight of raw material up to 760 g/l, with humidity up to 20% with foreign material content up to 10%, including straw up to 1% not less than) [t/h]	machine weight with a complete set of working tools [kg]	dimensions [mm]			installed power [kW]
		width	length	height	
80	1290	1940	2850	2120	11

Self-mobile thrashed heap cleaning machine OVS-25

preliminary cleaning

complete set

scraper feeder and conveyor; receiving chamber; centrifugal fan; set of shoes; unloading conveyor; brush cleaning mechanism (on the basis of the countershaft); running mechanism (speed is set by the frequency converter, Bonfiglioli motor gear; disconnecting clutches).



capacity [t/h]	machine weight with a complete set of working tools [kg]	dimensions [mm]		
		width working/transport	length working/transport	height
25 (preliminary) 12,5 (primary)	1950	5460—2770	4730—4580	3310

screen shoe	quantity [pcs/mm]	total square [m²]
	8 (790 x 990)	6,26

Fixed thrashed heap cleaning machine OVS-25S



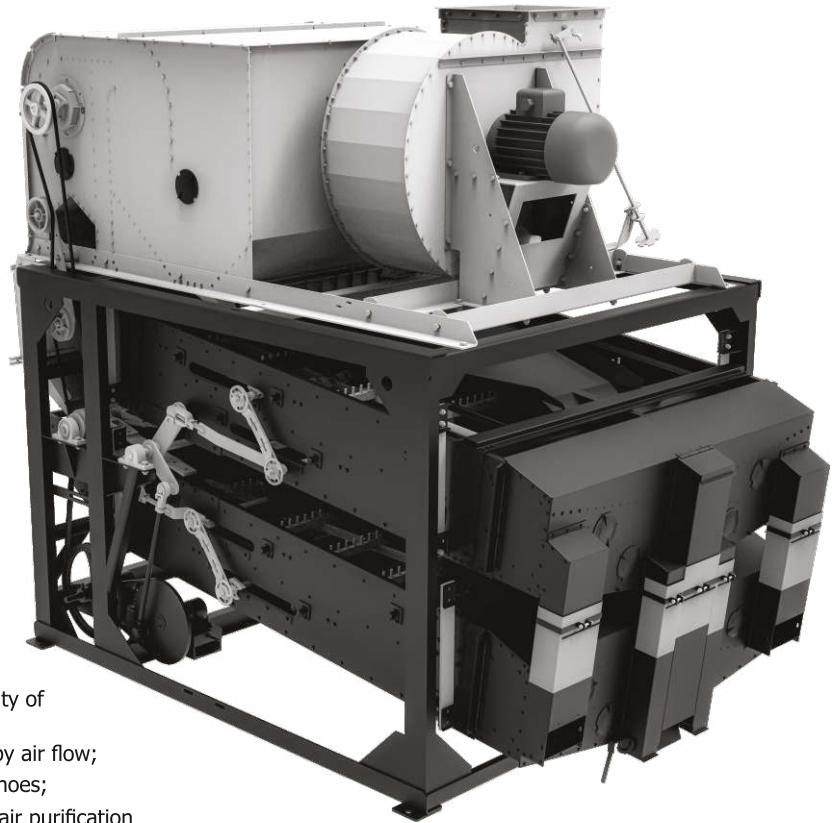
capacity [t/h]	machine weight with a complete set of working tools [kg]	dimensions [mm]		
		width	length	height
25 (preliminary) 12,5 (primary)	1090	1750	2660	2350

screen shoe	quantity [pcs/mm]	total square [m²]
	8 (790 x 990)	6,26

Grain primary cleaning machine ZVS-20A

primary cleaning

Fixed screen machine ZVS-20 is designed for primary cleaning of grain, leguminous and oilseeds from light, small and big foreign impurities and grain impurities. ZVS-20 is used in production lines ZAV-20 (40), preparing the product for further processing and storage at high quality standards.



Complete set

receiving chamber (dismountable) distribution screw;
control valve for equalizing the intensity of the flow across the width;
aspiration channel for cleaning grain by air flow;
divider of grain flow in half into two shoes;
precipitation chamber for preliminary air purification from heavy fractions and light impurities;

centrifugal fan the casing on bolted connections;
the impeller is welded and balanced;
5.5 kW drive;

frame (factory assembly stand, welded) hot-rolled reinforced angle;
divider for balanced loading of two planes of screens;
shaped products of laser cutting;

set of shoes bolted connections
(no thermal distortion and metal weakening);
hot rolled steel, 2 mm;
laser cutting followed by stamping;

brush cleaning mechanism (on the basis of the countershaft) power take-off through the main driving shaft from the main drive;
the brush stroke is adjustable, the entire surface of the screens is cleaned;
adjustable brush tightening.

All elements (except the engine) are of own production.

The driving shafts are sharpened along the entire length (vibration is reduced to a minimum).

In an aspiration system, pressure losses along the entire length are minimized, due to which the draft is increased and the maximum amount of light impurities is removed from the material.

The vibrating screens are made of galvanized steel, characterized by quality and wear resistance (approved for food contact).

Dimensions and characteristics of screens can vary within:

screen metal thickness – 2 mm;
diameter of round cells – 0.6-14 mm;
width and length of oval cells – 0.8-6 mm.

capacity [t/h]	machine weight with a complete set of working tools [kg]	dimensions [mm]		
		width	length	height
25 (primary cleaning)	1805	2030	3070	2750
40 (preliminary cleaning)				

screen shoe	quantity [pcs/mm]	total square [m ²]
	16 (740 x 990)	11,72

Universal Cleaner machine (VRM-K 52.7)

Air-screen grain cleaning machine with multi-tiered screen modules VRM-K52.7 is designed for processing cereal crops, grains, and legumes – exclusion of big, small, light impurities and nongrade grain from the general flow, as well as calibration of the product across the width.



All elements (except the engine) are of own production. Hardware versions – galvanized and painted on bolted connections.

The driving shafts are sharpened along the entire length (vibration is reduced to a minimum).

The vibrating screens are made of galvanized steel, characterized by quality and wear resistance (approved for food contact).

Brush cleaning of grain screens.

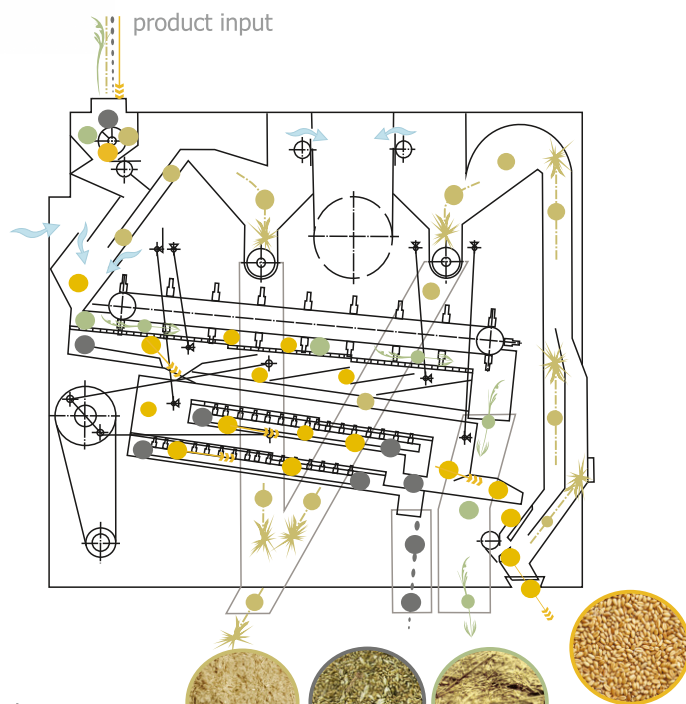
Capacity and quality of cleaning is determined by the selection of grain screens. A set of screens is formed according to customer technical specification.

Complete set

receiving chamber and feeding device;
upper screen shoe; lower screen shoe;
air system (controlled by the operator)
aspiration system (engine 11 kW; two cyclones TsOL-6)

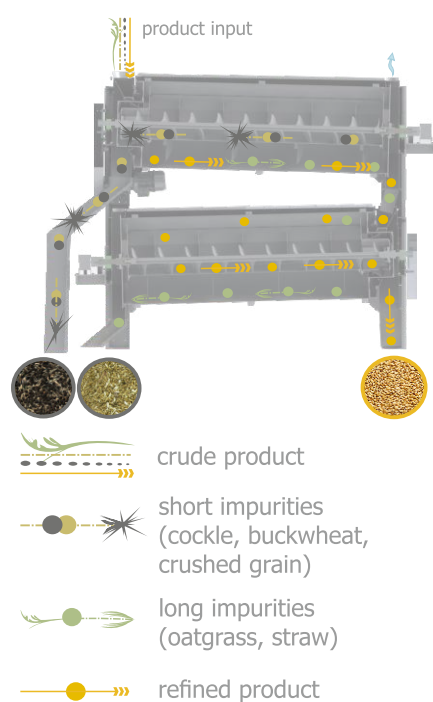
Capacity [t/h]	machine weight with a complete set of working tools [kg]	dimensions [mm]		
		width	length	height
45	2300	2600	3000	2640

screen shoe	quantity [pcs/mm]	total square [m ²]
	35 (714 x 292)	7,3



Indented cylinder separator AZTB 07.800

secondary cleaning



complete set

receiving chamber (on removable connections);
working cylinder (made of 3 (4) segments);
tray (built-in screw for withdrawal of a product from the tray);
unloading socket (welded in the assembly stand).

Tables
of selection of indented surfaces

processed crop	cell diameter for impurities removal (mm)	
	short	long
wheat	5,0	8,5; 9,5
rye	5,0; 6,3	8,5; 9,5
barley	5,0; 6,3	11,2
oat	8,5; 9,5	
rice	6,3	11,2
maize	6,3	9,5
sugar beat		9,5; 11,2
flax	3,6	5,0
charlock	2,8	5,0
red clover	1,8	2,5; 2,8
medick	1,8	2,5; 2,8
camelina	1,8	2,8

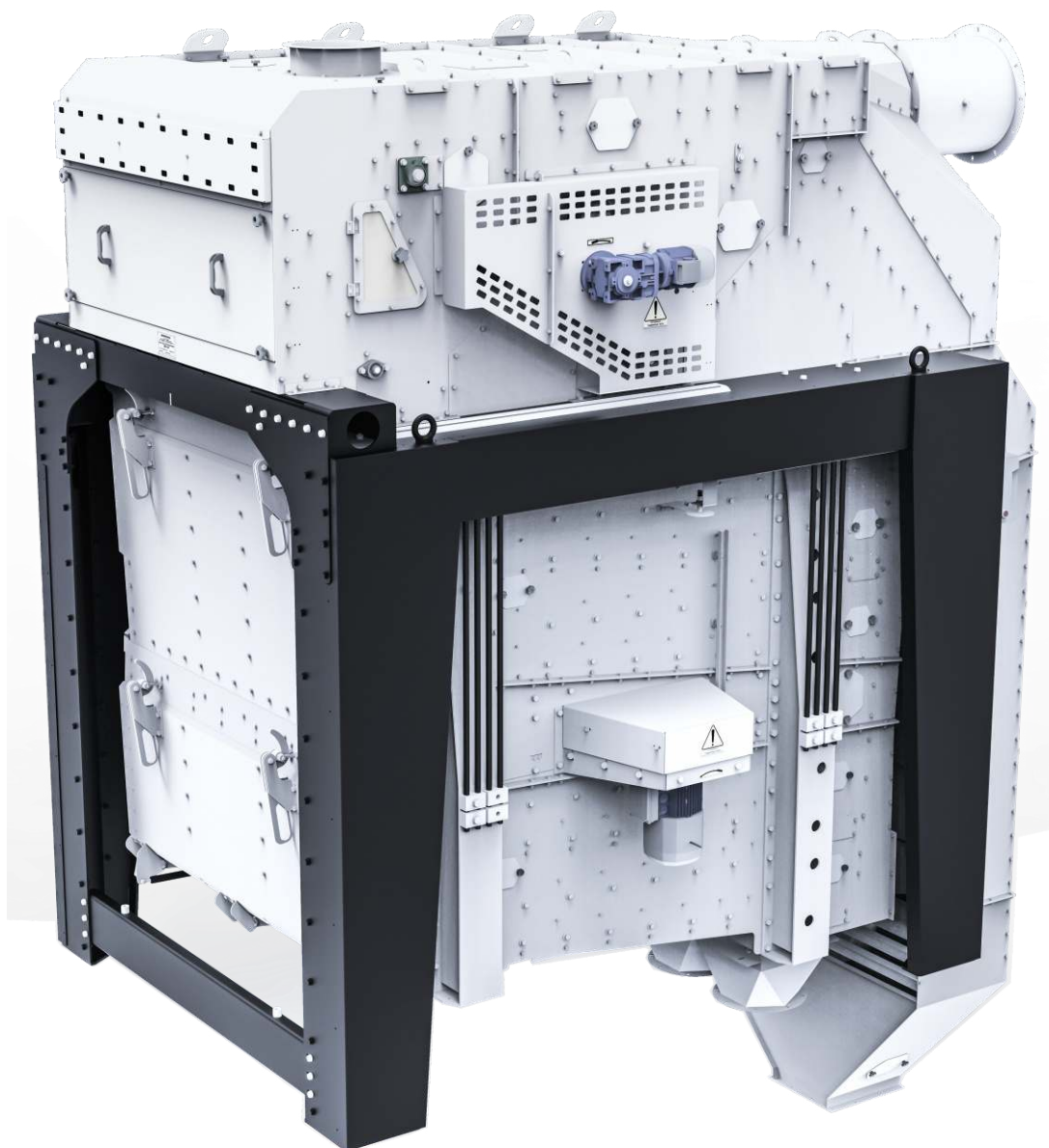
	capacity in the secondary cleaning mode (GOST) (t/h)	dimensions			weight as a complete package no more [kg]
		length (mm)	width (mm)	height (mm)	
indented cylinder (cockle remover)	5,8	3153	1054	1355	506
indented cylinder (oatgrass remover)	5,8	3153	1054	1355	508
AZTB 07.800	5,8	3620	1054	2574	1025

Process critical quality attributes
(basic seeds, reproduction seeds, reproduction seeds for commercial output)

seed category according to GOST R 52325, not lower	80
completeness of removal of long and short impurities, %, not less than	5,0
content of seeds of the main crop in by-products, %, no more	0,2
seed crushing, %, no more	0,2

UNIVERSAL CLEANER MACHINE

DOGMA - 120/160/250

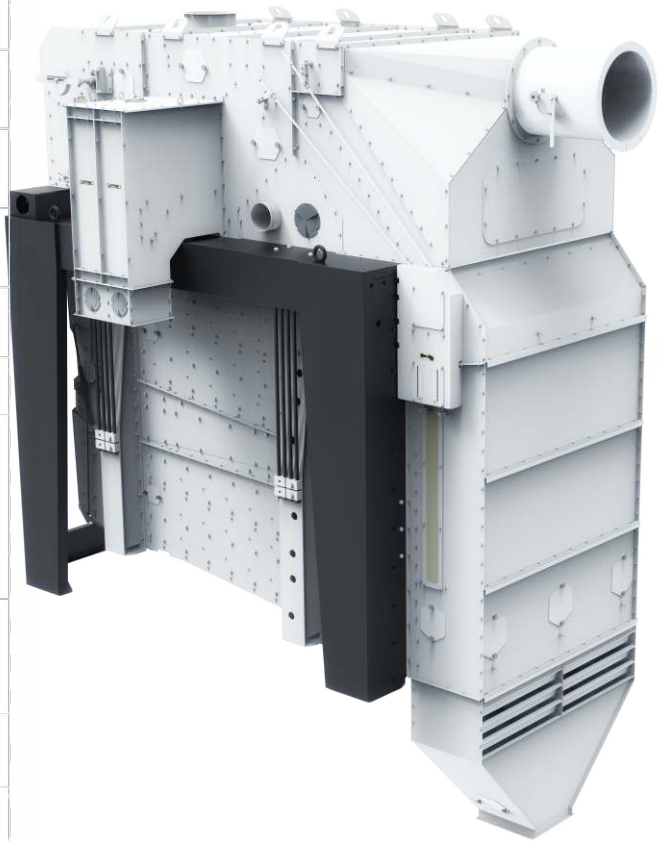


The high-performance separator is designed for preliminary (reception), primary (commodity) and secondary (main) purification of seeds of cereals, cereals and leguminous crops, industrial and oilseeds from light, large and small impurities separated by air flow and sieves.

Nominal productivity for 1 hour of main time (tons per hour), not less than:

	DOGMA-120	DOGMA-160	DOGMA-250
on pre-cleaning of wheat dross with a content of not less than 740 grams per liter, with a moisture content of the raw material up to 18%, with a content of weed impurities up to 10%, including straw impurities up to 1%.	120	160	250
on the primary cleaning of wheat grains with the nature of not less than 760 grams per liter, with a moisture content of the raw material up to 16%, with a content of impurities up to 10%, including weeds up to 3%.	60	80	120
on secondary cleaning of wheat seeds with a content of not less than 780 grams per liter, with a moisture content of the source material up to 14%, with a waste content up to 5%, including seeds of other plants up to 200 pieces per kilogram, of which seeds of weeds up to 100 pieces per kilogram.	30	40	60

MAIN TECHNICAL DATA	DOGMA 120	DOGMA-160	DOGMA-250
Type of machine	stationary		
Drive	electric		
Type of energy consumed	AC voltage 380 v, frequency 50 hz		
Total installed power (without aspiration system fan), kW, not more than:	3,78	3,82	3,82
including: drive of sieve block	3,0	3,0	3,0
drive of screw conveyor and receiving chamber	0,75	0,75	0,75
lighting of the workplace	2×0,018	2×0,036	2×0,036
Overall dimensions in working position (millimeters): length	3 900	4 200	4 500
width	2 700	3 160	3 160
height	3 500	3 500	4 500
Weight with a set of working parts to perform the main technological operation (without fan and aspiration system), kilogram, no more:	6 300	7 200	8 700
Specific electricity consumption for wheat cleaning (kilowatt hour per ton), no more than:			
on pre-cleaning	0,04	0,03	0,02
on the primary cleaning	0,07	0,05	0,04
on secondary cleaning	0,15	0,10	0,07



DESIGN ADVANTAGES OF THE SEPARATOR DOGMA:

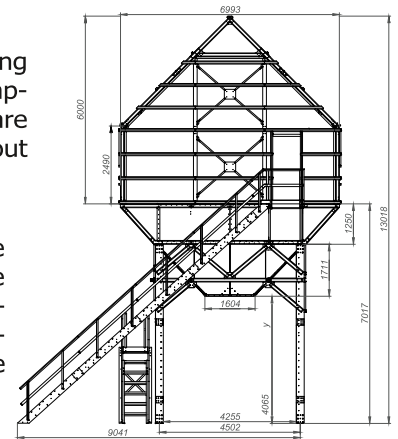
- The largest sieve surface area in its class, which ensures high productivity even if the grain is very wet and with a lot of impurities.
- A large selection of sieves, which allows you to choose the size of the cells individually, for any type of grain or oilseeds.
- Reliability in operation and long service life, because maintenance is minimal - the design is durable, wear parts are few, access to them is easy and convenient.

Steel construction, factory primed, are resistant to corrosion. Products are compliant with GOST and SNiP (Construction Codes and Regulations).

Steel constructions for a grain cleaning machine (1 — 6 bins)

AGROSTROY Group of Companies manufactures and installs steel constructions, taking into account all the peculiarities of the technological equipment of grain cleaning complexes (operating conditions, increased machine capacity, etc.). The constructions are mounted on supports from welded channels, the number of which depends on the layout of the complex itself, the number of machines and bins.

Designs and drawings of steel constructions for a grain cleaning machine correspond to one or another technological scheme. In a case of a typical project, the steel constructions are shipped from the warehouse within a few days after the order. In cases of designing a complex according to a unique technical task, when a different layout of the modules with different locations of bins is needed, our design engineers calculate all the loads from the equipment and operating conditions.



Storage bin

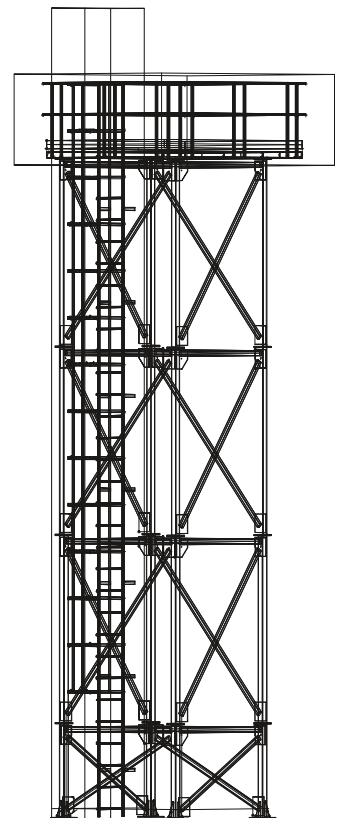
For temporary storage of bulk material, it is economical to use storage bins with the possibility of directional and metered discharge. AGROSTROY Group of Companies produces storage tanks of various forms equipped with a screw conveyor and weight control devices.

Elevator tower

Supporting steel constructions for servicing elevator drive stations; comply with the industrial and fire safety requirements. Constructions are assembled from separate sections (2m and 4m each, depending on the height of the tower).

Optional: arrangement of intermediate service platforms for machines, amplifiers for galleries adjacent to the construction.

Reliable work, a positive price advantage in comparison with analogues. Individual calculations of the construction bearing capacity, planning and manufacturing of elevator towers and service galleries according to the customer technical specification are possible.



The plant «ECOGRAIN» is equipped with the modern equipment allowing to produce the whole range of constructions for enterprises in the agricultural and processing industries. For grain cleaning, grain drying, seed complexes and elevators, the company offers an individual development of steel constructions according to the customer technical specification. Steel constructions comply with all necessary requirements and are manufactured on the basis of design documentation.

Constructions of fabric buildings and warehouses *

arch fabric buildings [typicals]

fabric building
length [m]
span variant [m]

50	60	70	80	90	100
15	18	21			

construction period 60 — 100 days

understructure	bored pile 3 m long, pitch 3 m; foundation grill 40 cm;
framing	arch [prefabrication]; metal grating (1340 mm pitch); covered with a roof sheeting profile 0.5 mm thick;
inner height ridge-oriented outer height	8,685 m; 9,035 m;
	gateway

arch fabric buildings [raising the wall by 1,5 m]

fabric building
length [m]
span variant [m]

50	60	70	80	90	100
15	18	21			

construction period 60 — 100 days

understructure	bored pile 3 m long, pitch 3 m; foundation grill 1,5m;
framing	arch [prefabrication]; metal grating (1340 mm pitch); covered with a roof sheeting profile 0.5 mm thick;
inner height ridge-oriented outer height	10,185 m; 9,535 m;
	gateway

duo-pitched fabric buildings

fabric building
length [m]
span variant [m]

50	60	70	80	90	100
24	28	32			

construction period 60 — 100 days

understructure	bored pile 4 m long, pitch 4 m; foundation grill 40cm;
framing	arch [prefabrication]; metal grating (1230 mm pitch); inner lining (around the entire inner perimeter sheathed with a profiled sheet 2 m high, for maximum nogo use of internal space); covered with a roof sheeting profile 0.5 mm thick;
inner height ridge-oriented outer height	7,3 m; 9,55 m;
	gateway

* Sizes of fabric buildings are typical and can be changed at the request of the customer;

- we have a large list of staff members of erection crews;
- we carry out erection supervision work.



GRAIN SILOS:

DESIGN, MANUFACTURE, AND FOUNDATION-MOUNTED INSTALLATION

- Flat-bottom silos for long-term grain storage
- Hopper-bottom silos for storage and in-process operations
- Self-unloading silos
- Equipped with temperature monitoring and sensor systems.

FLAT-BOTTOM SILOS

A bolted flat-bottom silo offers reliable long-term storage for large volumes of dry commodities — grain, seeds, granulated products, and feed mixes.



Our standard silos are designed for wind loads of 38 kg/m² and roof snow loads up to 320 kg/m². On request, we can supply silos designed to meet special wind, seismic, and snow load requirements specific to the customer's region.

The standard roof slope of 30° ensures maximum storage capacity even with a high angle of repose. Product quality can be maintained using an aeration system equipped with high-efficiency fans and a precise temperature control system.

Bolted flat-bottom silos can be equipped with the following options and equipment:

- aeration and temperature control systems;
- roof air outlets;
- galleries of various widths with different technical specifications for silo loading via conveyor;
- service platforms; snow protection barriers;
- larger-diameter maintenance hatches (available on customer's request).

The thermometry system includes:

- mounting elements for thermal cables on the roof;
- 1st-row thermal cable with sensors;
- 2nd-row thermal cable with sensors;
- thermal cable polling unit;
- power and connection unit;
- indication unit.

Sensor readings can be monitored visually — using a portable reader or via data transfer to the operator's computer.

HOPPER-BOTTOM / CONICAL-BOTTOM SILOS

The bolted hopper-bottom silo offers flexible storage solutions for grain: it suits both long- and short-term holding, covering the full cycle before and after processing.

LLC ECOGRAIN can meet all customer needs related to industrial or agricultural grain storage thanks to a wide range of hopper-bottom silos. The range includes models with diameters from 2.7 to 11 meters, working storage volumes from 14 to 1 778 m³, and cone angles of 45°, 55°, 60°, and 65°. (Detailed information available on request.)

The bolted hopper-bottom silo can be equipped with the following options and equipment:

- roof ventilation;
- transition walkways;
- side ladders and platforms;
- ventilation/ aspiration systems;
- roof ladders;
- larger-diameter maintenance hatches (available on customer's request);
- temperature measurement system;
- upper/lower level sensors, diaphragm type.

The bolted hopper-bottom silo are distinguished by fast installation and a low cost per tonne of storage capacity. Hopper-bottom silos have proven to be an optimal solution for frequent product unloading cycles. This design prevents residual product from remaining in the silo, minimizing the need for mechanized unloading equipment.

The profiled stiffening ribs support the vertical load of the silo on the compression ring. The stiffening ribs are equipped with connecting plates with a large cross-sectional area, arranged in an overlapping configuration. Silo wall panels, compression rings, and load-bearing metal structures are coated with zinc-containing paint. Hopper sheets are fastened from the inside using hexagonal bolts. The bolted connections are of strength class 8.8 and are galvanized. Smooth-walled hopper silos for low-flowability materials are available upon customer request.



COMPLEX SOLUTIONS FOR AGRIBUSINESS

LLC ECOGRAIN is ready to implement complex lines for grain cleaning, processing, and storage. We offer the optimal equipment solution and automation of its operational control. Our support covers the full cycle: from equipment delivery and installation to maintenance assistance and staff training. We apply a flexible pricing policy and cooperation terms. Regular customers benefit from priority order processing, discounted pricing, and tailored payment terms.

Grain cleaning complex ZAV

Complete set

intake plant

intake pit 6 x 4 m, with a metal pit:

- set of sheets (steel) 3 mm;
- amplifiers;

canopy roof over the intake pit:

- space metal frame, hinges;
- profiled metal sheet;
- electric motor;

side and rear unloading ramp:

- two ramps (along the length of the pit);
- platform for the driver with a fence;

pass and exit ramps;

cleaning shop

ZAV metal module for 2 bins:

- a set of 6 columns (hot-rolled channel welded into a rigid frame structure);
- a set of roof ribs and trusses;
- levers and dampers;
- bin walls and division wall;
- bin pyramids;
- anchors;

earth connection and lightning rods:

- set of tires; lightning discharge rod; earthing loop;

gain:

- 4 pcs channels 16 for the machine support or 2 beams;
- braces;

platform and stairs for elevator service;

NPZ-25 loading elevator (height 17 m):

- powder coating;
- deep-drawn buckets;
- Bonfiglioli motor gear;

ZVS-20A primary grain cleaning machine:

- bolted connections; element-by-element coloring;
- aspiration system (Cyclone, duct system);

grain pipes:

- set of pipes D 200 mm (thickness 2 mm);
- set of sectors;

electrics

ZAV control panel:

- dust- and moisture proof housing;
- equipped with a starting switch;
- equipped with the necessary automatic protection;

sets of ZAV internal and external lighting;

set of cable electrical products:

- cable for connecting electric motors;
- metal hose; wire rope cable; bottlescrew; support brackets;
- junction boxes; disconnecting switches; circuit breaker.



When designing ZAV, the peculiarities of barn-floor exploitation are taken into account and the structural modifications are added to the standard projects:

the construction bearing capacity is calculated based on the set of machines (dynamic and static loads) which will be installed on the grain cleaning complex, the mass of the processed and operatively stored thrashed heap; and we add a certain safety margin to it in case the owner wants to integrate certain devices into the production line;

ZAV typical support columns from two welded channels, if necessary, are strengthened and extended (during reconstruction) to increase stability and strength there can be made additional connections that do not interfere with vehicles;

the unloading bin gate is located at a height of 3.5-4 m for loading any truck;

the height of the walls of the premises with the equipment is 2.5 meters to install various machines and aspiration systems;

Depending on the performance efficiency of the complex, the set of machines and customer requirements, we design and manufacture ZAV steel constructions, in which various placement of technological elements is possible (ZAV-40 or ZAV-100 bins can be placed in one or several rows, the storage capacity of the bins can be increased by building the bin walls in the existing steel constructions or by using the enlarged 4600*4600 bins in the newly constructed structure, provision is also made for the placement of different elevators and conveyors for connection to other installations at the site).

All steel constructions are assembled into large units, convenient for installation and transportation, allowing you to quickly assemble and install them at the facility. We can deliver the construction to any region of Russia, as well as install it by the forces of our erection crews who have long experience in working with ZAV and other complexes.

ZAV is equipped with the best equipment to date and provides for the possibility of upgrading to a grain cleaning and drying complex (KZS).

Grain cleaning and drying complex KZS



Selected and tested solutions for grain cleaning and drying, mounted in a line, solve the following problems: quick thrashed heap receiving from the field; preliminary cleaning; forming a drying batch; drying; product sorting and removal of hard-separable impurities; sorting by specific weight.

grain drying shop

SCE760.11T60 silo — 700 m³ (2 pcs);
 silo-top gallery;
 elevator tower 2 x 2 — 25000 mm;
 dry and wet grain elevator (2 pcs);
 TSTs-50 conveyor — 7000 mm (2 pcs);
 TSTs-50 conveyor — 6000 mm (2 pcs);
 TSTs-50 conveyor — 9000 mm;
 silo rack type damper (2 pcs):
 • size 400 x 400;
 • electric motor;
 diverter valve (5 pcs):
 • diameter 250;
 • electric motor
 Ventum 50 grain drying machine (direct heating);

Complete set

intake plant

intake pit 7 x 4 m, V - 50 m³, with a metal pit:
 • set of sheets (steel) 3 mm; amplifiers;
 canopy roof over the intake pit:
 • space metal frame, hinges;
 • profiled metal sheet;
 • electric motor;
 side and rear unloading ramp:
 • two ramps (along the length of the pit);
 platform for the driver with a fence;

cleaning shop

ZAV metal module for 4 bins

- a set of 10 columns (hot-rolled channel welded into a rigid frame structure);
- a set of roof ribs and trusses;
- levers and dampers;
- bin walls (4 sets) and division wall;
- additional unloading bin walls (1 set);
- bin pyramids (4 sets); anchors;

loading elevator tower 1.5 x 1.5, height 14 m;
 • platform and stairs for elevator service;

NPZ-50 loading elevator — 22 m;

NPZ-50 intermediate elevator — 20 m;

VRMk-52.7 primary grain cleaning machine;

- bolted connections; element-by-element coloring;
- aspiration system;

MPO-50 preliminary grain cleaning machine:

- Cyclone; duct system;

grain pipes:

- set of pipes D 200 mm (thickness 2 mm); set of sectors;

diverter valve:

- diameter 250 mm; electric motor;

electrics

KZS control panel:

- dust- and moisture proof housing;
- equipped with a starting switch;
- equipped with the necessary automatic protection;

sets of KZS internal and external lighting;

set of cable electrical products:

- cable for connecting electric motors;
- metal hose; wire rope cable; bottlescrew; support brackets;
- junction boxes; disconnecting switches; circuit breaker.

Seed line

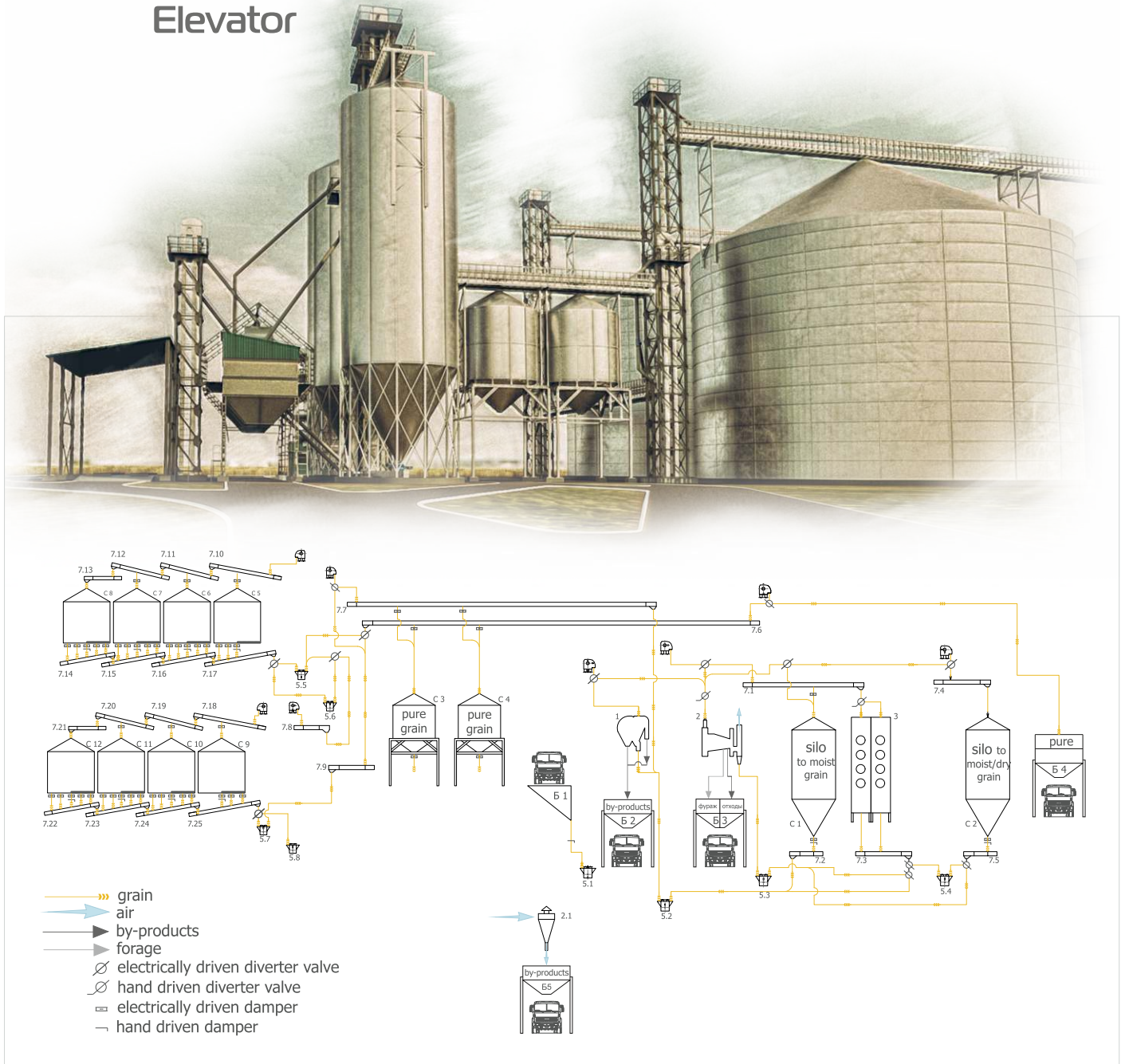
The complex is designed for standard grain cleaning and drying to condition required for dispatch for storage or its further processing. In this case, primary cleaning of the seed material is necessary and the entire technology should be developed with the condition of minimizing the cost of the line.



standard complete set

gentle grain collector	picks up grain from the floor without damaging it, cleans of light impurities, loads it into bags (big bags, containers); self-mobile;
loading device	non-traumatic loading belt conveyor with flow control;
conic silo	reception of seed material;
steel constructions (frames with work platforms and stairs to them for convenient equipment maintenance)	for installation of a cleaning and calibration machine, a pneumatic shake table and a treating machine;
elevators	for supplying seed material to platforms to cleaning and calibration machines;
indented cylinder separator AZTB 07.800	two autonomous screening plants for removal of small and big impurities, feeble attacked grain from the seeds and separation of two fractions of seeds by their size;
pneumatic sorting table	for fractional separation of highly productive seeds from seed material; divides seeds into three fractions by density: heavy, medium and light; at the same time removes hardly separated impurities;
grain treating machine	a gentle grain treating machine with a system for automatic control of the grain flow and liquid preparation in a predetermined ratio; [purchased by the customer independently]
cart and sack stitching machine	a special cart for a standard bag, which allows you to fix the sack and, if necessary, sew it with an automatic sack stitching machine directly on the cart; [purchased by the customer independently]
hopper	for continuous supply of seed material to correspondent line machines, $V = 3 \text{ m}^3$;
aspiration system	removes impurities and dust from seed material before it gets on a pneumatic shake table; removes dust raised by air as it passes through grain moving along the deck; removes feeble, lightweight, empty and attacked seeds separated from seed material directly from the deck.

Elevator



options of process organization

drawing 1.

The wet grain is unloaded from the motor vehicle, it goes through the elevator into the cleaning machine; after cleaning the grain goes through the elevator into the silo for the wet grain storage; from the silo, the wet grain is loaded into the cumulative type dryer where the drying process takes place to the parameters you need. Then through a pipeline (self-flowing), the dried grain goes into the elevator for loading into one of the silos. For unloading from the silos, the inclined screws are used, they are installed on each of the silos for long-term storage (the most inexpensive and reliable solution).

drawing 2.

The wet grain is unloaded from the car, it goes through the elevator into the cleaning machine, after cleaning the grain goes through the elevator into the silo for the wet grain storage; from the silo, the wet grain is loaded into the cumulative type dryer where the drying process takes place to the parameters you need. Then through a pipeline (self-flowing), the dried grain can be unloaded into the motor vehicle.



With 25 years of proven expertise, LLC ECOGRAIN has successfully delivered over 1 000 projects across Russia. Our international experience spans key markets in Eurasia, including Kazakhstan, Uzbekistan, Armenia, Belarus, and Moldova, as well as successful projects in Poland, Syria, France, and India.

For matters related to the supply of equipment and the construction of grain cleaning and storage facilities, kindly direct your inquiries to:

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