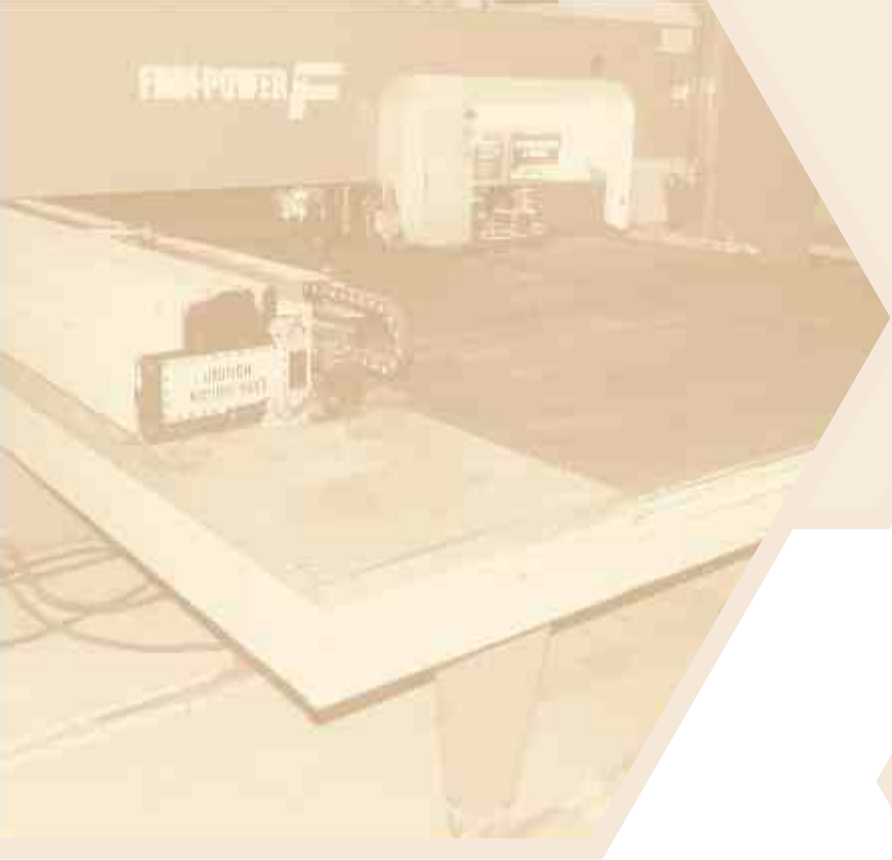


LLC "CCC"

world quality at ukrainian prices







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LLC "CCC" offers services on the producing of equipment for the acceptance, transportation, cleaning, drying and storage of any kind of grain crops. The scope of the company includes a whole range of services: design, development of drawings with the use of the latest programs for working with graphic programs and the use of advanced analysis methods, the direct manufacture of equipment and metal structures, installation and adjustment of equipment with subsequent service throughout the life of the operation.

In addition to the standard equipment, LLC "CCC" is engaged in the development and production of non-standard equipment. Due to its own production facilities, the company has the ability to manufacture metal structures of any complexity, handle sheet metal of different grades (sheets in the thickness from 0.5 to 100 mm), which extends the scope of our activities. The presence of its advanced equipment allows you to significantly reduce the time of production of any order and provide a value that can satisfy any customer.

LLC "CCC" not only offers quality products, but also provides warranty and post-warranty service.



Directions of activity of LLC "CCC":

The company "CCC" offers a huge range of services for the manufacture and installation of equipment for the agro-industrial complex:

- technological equipment for receiving, transportation, cleaning, drying and storage of any types of bulk materials;
- aspiration equipment for elevators and granaries;
- silos and bunkers for storage of bulk materials;
- metal constructions of any complexity.

Our advantages:

- producing of European quality objects "turnkey";
- long-term cooperation with partners who have proven themselves at the highest level of the local and western markets;
- the ability to supply equipment, both local and imported, thus meeting the requirements of any customer;
- own production facilities, which allow to shorten the production time and reduce the cost of the order, maintaining the highest quality;
- significant experience of each individual employee.



CHAIN CONVEYORS

Chain scraper conveyors are designed for horizontal and oblique displacement of well-flowing pulverized, granular and lumpy cargoes. The transport length is up to 50 m, the capacity of the conveyor is 2 t ... 1,000 t / h. The traction element is a sleeve-roller chain, to the outer plates of which are attached scrapers. The gear of the conveyor is reducer. The conveyor length, capacity, the number of unloading and pass-through sections and the angle of ascent are indicated while ordering. The length of the sections is 2 m.

All conveyors are equipped with gear locking devices in case if the chain is broken and the product is supported. The tensioning screw device is equipped with a movable rear wall, which repeats the contour of the movement of the scrapers and excludes the possibility of accumulation of the product behind the star. Sections with intermediate unloading are equipped with a conveyor bolt, the design of which prevents the accumulation of product between the gate and the bottom of the section.

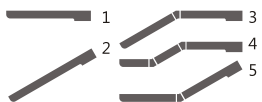


PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Conveyor type conveyor with submerged scrapers;
conveyor with a double bottom;
conveyor with a double trellised bottom;
reversible conveyor;
conveyor with a splitter under the pit

Productivity, t/h: Till 1 000 t/h

Conveyor execution:



1. Horizontal
2. Inclined
3. Inverted knee section
4. Double knee section
5. Knee section

EQUIPMENT (OPTIONS):

Gear type: Without gear;
motor-reducer with a hollow shaft;
geared motor + flexible coupling;
the motor + reducer + belt drive;
explosion-proof design of the drive

Gear manufacturer: STM S.p.a. (Italy);
SEW-EURODRIVE (Germany);
NORD (Germany);
MOTOVARIO (Italy);
TRAMEC (Italy);
Bonfiglioli (Italy);

Bearing units: NSK;
SNR;
SKF

Corrosion protection: primer + enamel;
galvanized steel;
stainless steel

Scraper materia : metal;
metal with a polymeric overlay

Availability of sensors: backstop, rotation speed,
open circuit

Lining of the conveyor bottom: caprolon;
polyurethane;
Steel Hardox 450

Lining of the side walls of the conveyor: caprolon;
polyurethane;
Steel Hardox 450

Lining of discharging sleeve: caprolon;
polyurethane;
steel Hardox 450

For intermediate landings: devices for stripping the chain from product penetration;
availability of back scoops on the chain;
Sub-conveyor latches with manual / el. gear

Additionally point filters of own production;
transparent hatches;
availability of a frequency converter;
availability of an additional service drive

BUCKET BELT / CHAIN ELEVATORS

Bucket elevator is meant for operation within technological process with continuous running duty both indoors and out of doors at mills, combined feed-processing and other grain-processing plants as well at grain storage barns.

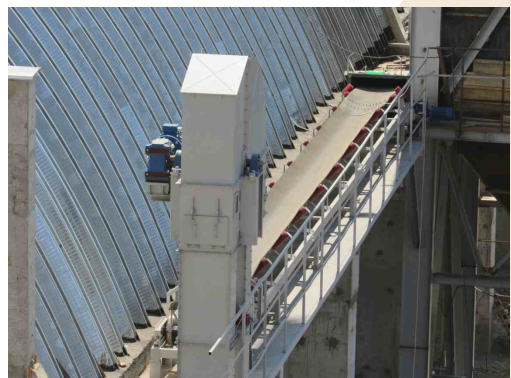
Elevator is used for transportation of dust-type cargos and granular bulk cargoes in vertical direction from the starting point to final point without interim loading and unloading.





PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Type:	belt chain
Capacity, t/h	up to 1 000 t/h
EQUIPMENT (OPTIONS):	
Type of drive:	without driving gear; motor gear with hollow-shaft; motor gear + flexible connector; motor + reducing gear + belt transmission; explosion-proof design
Manufacturer of driving unit:	STM S.p.a. (Italy); SEW-EURODRIVE (Germany); NORD (Germany); MOTOVARIO (Italy); TRAMEC (Italy); Bonfiglioli (Italy);
Bearing units:	NSK; SNR; SKF
Anticorrosion protection:	prime coat + enamel; galvanized steel; stainless steel
Elevator belt (band):	BKNL-65; TK-200; Muller Beltex (Netherlands) belts
Bucket material:	structural steel; reinforced steel; polymer
Belt-tensioning pulley (drum):	solid; rattle-type (squirrel wheel type)
Aspiration:	aspiration sleeves; spot filters of own design;
Lining of loading/unloading areas:	polyurethane; steel Hardox 450
Availability of switches:	bearing, rotation rates, run-off switches
Additionally:	transparent observation holes; elevator boot of self-cleaning design; elevator loading adjustment valves; adapter sleeve at elevator head for self-flowing equipment; additional loading toe-cap; explosion relieving screens; frequency converter; additional service drive (for bucket assembling)



BELT CONVEYORS

OPEN-TYPE

Belt conveyor is a non-stop device of transportation with combined load-carrying and pulling mechanism in form of a closed flexible band. Along its full length the conveyor belt is supported by rollers and starts moving due to friction force between the belt and driving drum.

Belt conveyor consists of the following basic elements: conveyor belt, driving gear, body with supporting rollers, loading device and tensioning device. Also conveyers are equipped with belt catchers, cleaning mechanisms. Driving gear consists of an electric motor, reducing gear, joint sleeves and driving drums. Conveyor loading devices are designed in shape of a receiving cone with boards directing the cargo flow. Tension section is screw-shaped. At immobile conveyers the tensioning device of gravity type can be used.

Hermetic closed-type conveyor is used at premises in a dustproof design, and also for installation of the conveyor outdoors for protection from precipitations and operational product losses.



PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Type of conveyor open belt-type;
covered belt-type;
reversal open/covered belt-type

Capacity, t/h: up to 1 000 t/h

EQUIPMENT (OPTIONS):

Type of drive: without driving gear;
motor gear with hollow-shaft;
motor gear + flexible connector;
motor + reducing gear +
belt transmission;

Manufacturers of driving unit: STM S.p.a. (Italy);
SEW-EURODRIVE (Germany);
NORD (Germany);
MOTOVARIO (Italy);
TRAMEC (Italy);
Bonfiglioli (Italy);

Bearing units: NSK;
SNR;
SKF

Anticorrosion protection: prime coat + enamel;
galvanized steel;
stainless steel

Transportation belt: BKNL-65;
TK-200;
shevron-type;
with crimped board;
food-type;
Muller Beltex
conveyor belts (Netherlands)

Availability of switches: bearing;
rotation rates;
run-off switches

Conveyor inside bottom lining
(for rollerless support of empty (return) belt): caprolon;
polyurethane;
steel Hardox 450

Lining of discharging sleeve: caprolon;
polyurethane;
steel Hardox 450

Additionally: spot filters of own design;
transparent observation holes at covered conveyor body;
availability of frequency converter;
drum scraping cleaners;
service platforms;
throw-off carriage for open belt conveyor;

Anticorrosive protection: prime coat + enamel;
galvanized steel;
stainless steel



BELT CONVEYORS

CLOSED-TYPE

Hermetic closed-type conveyor is used at premises in a dustproof design, and also for installation of the conveyor outdoors for protection from precipitations and operational product losses.



SCREW CONVEYERS (SCREWS)

Screw conveyers are designed for horizontal and inclined transportation of pulverized, granular and fine materials. Screw conveyers can be manufactured both immobile and mobile, in a chute or in a tube, of pickling or pushing type. Immobile screw conveyers can be used as feeders, mixing facilities and volumetric measuring devices with enterprises of various branches of industry with capacity up to 100 t/h. Mobile conveyers are usually used at warehouses and at mechanized sites for loading of grain into motor cars and railway carriages.

A screw with solid surface of uniform cross-section serves as a pulling element of the screw conveyor. Removed end bearings prevent intrusion of product and dust. Pitch of screw is subject to variation depending on angle of slope of the conveyor and type of conveying load.

PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Conveyor body type: trunk
tube

EQUIPMENT (OPTIONS):

Drive type: drive-free;
gear-motor drive + flexible connector;

Manufacturers of driving unit: STM S.p.a. (Italy);
SEW-EURODRIVE (Germany);
NORD (Germany);
MOTOVARIO (Italy);
TRAMEC (Italy);
Bonfiglioli (Italy);

Bearing units: NSK;
SNR;
SKF

Discharging pipe lining: caprolon;
polyurethane;
steel Hardox 450

Anticorrosion protection: prime coat + enamel;
stainless steel

Availability of switches: bearing, of rotation rates

Additionally: cleanout hatches;
frequency converter

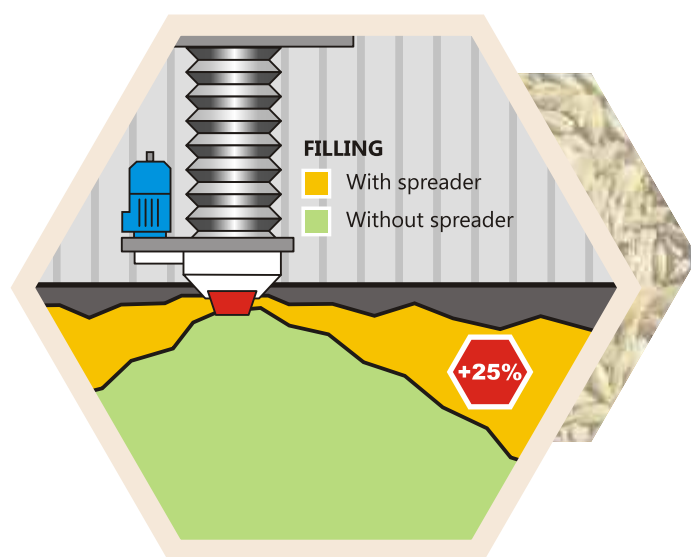


FEEDING DEVICE WITH SPREADER: FOR CLOSED HIGH-BULK FEEDING

Telescopic feeding device with spreader is meant for feeding of road and railway tanks, hopper cars with materials which angle of natural slip is more than 30° (sunflower seeds, granulated / not granulated meal, etc.). Such materials during free filling do not fill the tank to 100%, which results in increasing transportation expenditures and inefficient use of space in tanks (cars).

Feeding device has in its bottom part a high-capacity spreader to provide even distribution of material inside of transport facilities. It results in maximum filling of transport facilities and financial saving.

Operating practice confirms the following data: while using our system during feeding of granulated meal the guaranteed weight of filled/loaded car increases for 5-7 tons as compared with gravity loading using manual labor. Taking into consideration market value of soybean meal equal to 10 000 UAH, the saving rate at loading of one car is min. 50 000 UAH.



RACK AND PINION GATES

The gates are meant for opening and closing of flow pipes and discharge of product from bunkers, storage tankers and processing facilities. Closing (locking) devices include: manual gate valves and electrically driven gate valves, rack and pinion gates, screw gates, roller and slide (sliding in a guide) gates, and also multi-section non-standard gates for receiving facilities with large opening area for uniform discharge of product from bunkers and intake pits. As an electric drive of electric valve serves a worm gear motor, or in some cases an activating mechanism consisting of an electric motor and screw drive. Limiting positions of the gate are fixed by final limit switches. Manual gate valve coming as standard is equipped with a hand wheel. If necessary at restricted access places (e.g., at stations of unloading to motor cars or railway carriages), we propose to complete a manual gate valve with a round-link chain pulley. This removes the necessity to use additional service areas.

Sub-conveyor gate is meant for discharge of grain and its derivative products from drag conveyors and is installed at the interim or boundary discharge sections of a conveyor.

PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Type of gate roller
for bulk products: roller-free

EQUIPMENT (OPTIONS):

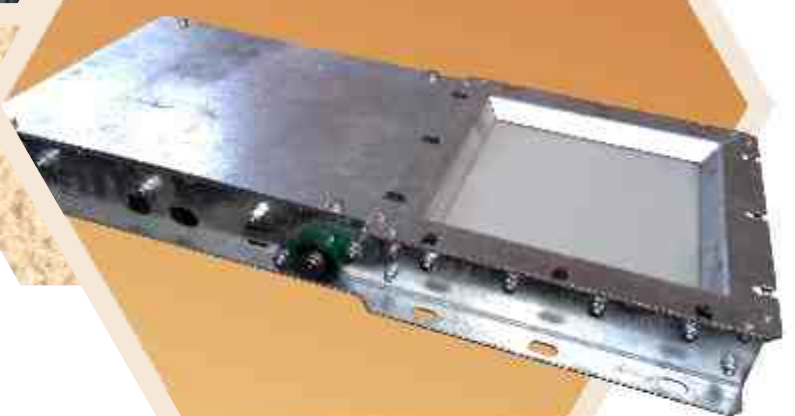
Anticorrosive coating of body: prime coat + enamel;
galvanized metal;
stainless steel

Type of drive: manual;
customer's drive end frame assembly;
gear-motor drive;
explosion-proof design of drive

Manufacturers of driving unit: STM S.p.a. (Italy);
SEW-EURODRIVE (Germany)

Manufacturers of limit switch: Schneider-electric (France);
Lovato (Italy)

Details of construction: reinforced construction (for bin gates);
polyurethane seal o valve gates;
lined valve gate of Hardox 450;
edged valve gate eliminating dust at operation;
completed with lined adapter sleeves;
any specific passage section.



REVERSING VALVES

Reversing valves are meant for changing of flow direction of product and its distribution in one of two\three directions.

Reversing valves can be with manual control and with electric drive. A worm gear motor serves as an electric drive. Valve limiting positions are fixed by switches.

The construction of valves is pendulous without a center shaft. Such a construction prevents spillage of product and excludes wear and tear and blocking of rotating parts. Entry and exit sections of valves can be designed both square and round. At customer's request the valves can be equipped with quick detachable inspection ports. In the standard design the valve has 45° angle. If necessary, the valve can be designed at an angle of 27°, 36° or 54°

PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Type of pendulous reversing valve for bulk products: one-sided; symmetric (two-sided); three-sided

EQUIPMENT (OPTIONS):

Body design: steel 3; steel HARDOX 450

Inside lining: not required; steel HARDOX 450; reinforced polyurethane S=6mm

Anticorrosive coating of body: prime coat + enamel; galvanized metal; stainless steel

Type of drive: manual; customer's drive end frame assembly; gear-motor drive; explosion-proof design of drive

Manufacturer of driving unit: STM S.p.a. (Italy); SEW-EURODRIVE (Germany)

Manufacturer of limit switch: Schneider-electric (France); Lovato (Italy)

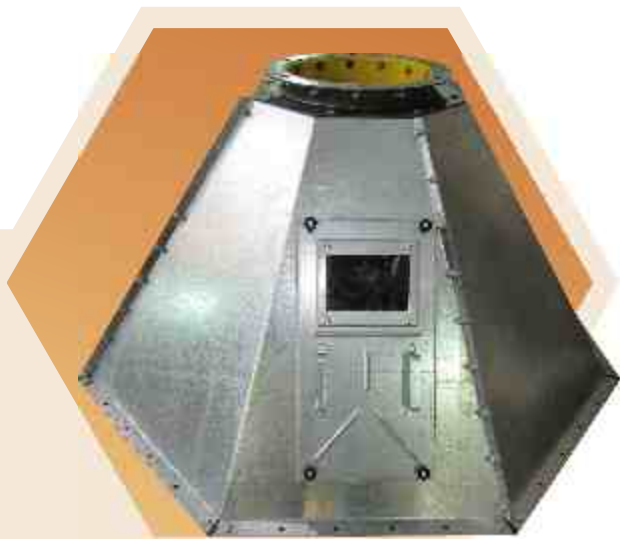
Details of construction: pendulum bearing assembly; completed with lined adapter sleeves; any specific passage section; explosion-proof design;

Product spillage preventing system: pendulum and a "collar" with additional protection from side leakage of product; polyurethane seal of pendulum bottom; protective visor in the front wall of the valve.



DISTRIBUTOR

Distributor is meant for change of direction of grain and its processing products from one point of loading to one of 4, 6, 8 or 12 directions, in automatic mode.



PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Number of outgoing flows 4/6/8/12

EQUIPMENT (OPTIONS):

Manufacturer of driving unit: STM S.p.a. (Italy); SEW-EURODRIVE (Germany); NORD (Germany);

Manufacturer of limit switch: Schneider-electric (France); Lovato (Italy)

Bearing units: NSK; SNR; SKF

Anticorrosive protection: prime coat + enamel; galvanized steel; stainless steel

Inside lining and outlet fittings lining: reinforced polyurethane S=6mm; steel Hardox 450

Construction peculiarities: explosion-proof design of drive; access holes with transparent inspection windows; swing pipe is equipped with a device protecting from intrusion of dust and product into non-operational area of distributor

ROTARY VALVE WITH POLYURETHANE ROTOR

Rotary valves (feeders) are the solution for high quality cleaning of air from solid inclusions at enterprises. The customers are attracted with a simple construction of rotary valves, independent operation and reliable operation.

Operating organizations often face a number of problems during work with rotary valves of standard design:

- inadequate reliability of a sectional rotor;
- progressive increase of gaps between cast-iron housing and a rotor;
- uncounted air leaks.

Rotary-valve feeder with undue hermiticity will keep operating, but technical parameters of dusting system in whole will gradually get worsen. Finally the customer will have to perform repair or substitution of feeder.

However, the design itself of traditional and standard valves already has major shortcomings impossible to remove. It results in impossibility to keep hermiticity within long period of time, however these are functions they are meant for.

Rotary valves manufactured by LLC "CCC" have a polyurethane rotor without any shortcomings of standard valves and are designed to operate 24 hours a day. Polyurethane has a number properties required exactly for rotary valves:

- wearability;
- elasticity;
- durability;
- resistance to large size abrasives;
- initial distortion ability.



PARAMETERS OF CHAIN CONVEYORS LLC «CCC»

Body design: steel 3;
steel HARDOX 450

EQUIPMENT (OPTIONS):

Anticorrosive coating of body: prime coat + enamel;
stainless steel

Type of drive: gear-motor drive;
explosion-proof design of drive

Manufacturer of driving unit: STM S.p.a. (Italy);
SEW-EURODRIVE (Germany)

Bearing units: NSK;
SNR;
SKF

Design peculiarities: rotor bearing units;
complete set of lined
adapter sleeves with transparent windows;
any non-standard opening;
explosion-proof design.



VIBRATING BOTTOM

Vibrating bottom or bin activator is a device shaped as inverted cone which is used for easy unloading of bulk, powder and granular materials. Due to directional vibration the process of unloading of materials from storage tanks and bunkers is simplified. Their constant discharge to the transportation system is provided. The device is used for optimal process of material extraction, decreasing damming and hanging up effects.

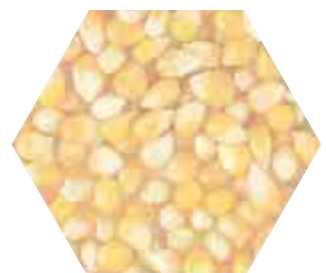
Vibrating bottom construction includes the following elements:

- cone made of carbon or stainless steel,
- deflector for material load accommodation,
- sealing made of wear-resistant substance,
- dumpers for connection with a storage tank and electrical vibrators (one or several).

Before installation the lower part of the bunker cone is preliminary cut down, and instead of it a counter flange is welded onto it to be supplied complete with. By means of dumpers the cone is hung to the flange, and an insert element between them provides hermiticity, thus preventing spillage and dusting of the product.

EQUIPMENT (OPTIONS):

Inside lining	without lining Hardox 450, S=6mm reinforced polyurethane, S=6mm
Lining of outlet fittings	without lining Hardox 450, S=6mm reinforced polyurethane, S=6mm
Anticorrosive coating of body	prime coat + enamel galvanized metal stainless steel



ASPIRATION EQUIPMENT

ASPIRATION FILTERS

Air pollution is an inevitable part of many production processes. To maintain the established sanitary standards of air purity, use aspiration processes. With their help, it is possible to effectively remove dust, dirt, fibers and other similar impurities. Aspiration is a suction, which is carried out by creating in the immediate vicinity of the source of contamination a region of low pressure. To create such systems, you need serious special knowledge and practical experience. Although the work of aspiration means is closely related to the functioning of ventilation systems, not every ventilation specialist will cope with the design and installation of this type of equipment. To achieve maximum efficiency, combined methods of ventilation and aspiration. The ventilation system in the production room must be supply and exhaust to ensure a constant supply of fresh air from the outside. Aspiration is widely used in such areas of industry as crushing, processing of cereals, processing of wood, manufacturing of consumer products and other processes, which are accompanied by the release of a large number of harmful substances.

LLC "CCC" produces the following aspiration equipment point filters, filter cyclones, cartridge filters, etc.



CYCLONE

Centrifugal Dust Separators by COL

Dust separators by COL are meant for separation of coarse dust from air coming out of elevator aspiration systems, mills, cereal and feed-milling plants.

At the customer's request cyclone separator can be completed with a setup box or diffuser.

This equipment is available in 9 modifications, with a capacity from 1000 to 18000 m³/h

(at air entry velocity $V_{in} = 16 \dots 18$ m / sec, efficiency 70% - 93%)

Battery Systems of Cyclone Separators by 4BCSH

Battery Systems of Cyclone Separators by 4BCSH are meant for separation of medium size grain dust from air coming out of aspiration systems of elevators, mills, cereal and feed-milling plants.

This equipment is available in 10 modifications, with a capacity from 1190 to 9120 Q, m³ / h; at 18 m / sec.

Dust separators are completed with an in-frame rotary valve assembled with gear-motor drive. The height of dust separator frame is determined by the customer and option arrangement.



HORIZONTAL CYCLONE-SPARK ARRESTOR

The horizontal cyclone-spark arrestor is designed to reduce the dust load on the baghouse filter, screen out large particles and significantly reduce the amount of sparks entering the hose filter housing.

The horizontal cyclone does not take place on the gas cleaning site - it is mounted directly on the flue gas duct.

The principle of the cyclone operation: the dusty gas enters the inner part of the cyclone and is twisted by axial and radial swirlers, leading to the precipitation of coarse particles and sparks that enter the hopper and are then discharged by the sluice gate.

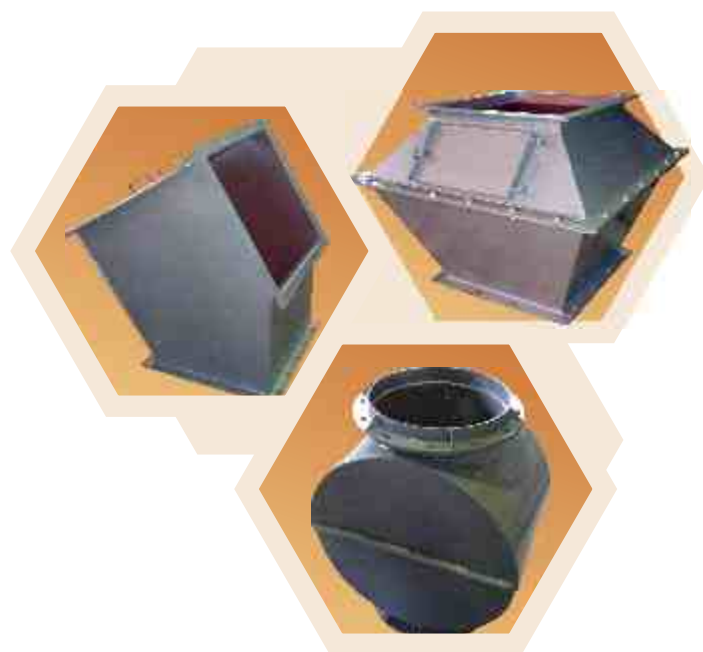


GRAVITY EQUIPMENT

FLOW DAMPENER

The flow damper is designed to reduce the flow velocity of bulk materials in places where the direction of its movement changes in a system of gravity pipelines.

The absorber is a welded construction of sheet metal with flow dividers inside. The possibility of changing the installation angle in the rotary absorbers facilitates the installation and shortens the time it takes. After installation, the absorber does not require additional maintenance and can be installed in places with limited access. Our enterprise produces dampers of a flow of such types: rotary, angular and direct flow.



FLOW DIVIDER

The flow divider is designed to divide the bulk product into two parts in order to increase the uniformity of the loading of the working bodies by means of an intermediate installation and fixing the divider slide in the housing with a locking device.



GRAVITY DEVICES

Gravity devices are widely used in grain storage facilities for loading and unloading silos, bunkers, interconnecting various technological and transporting machines located at different levels. Gravity devices include gravity pipes and shaped elements.

Gravity pipes are made of round, square and rectangular sections. The latter can be with a removable head. The throughput of a gravity pipe depends on its cross-section and the angle of inclination. The dimensions of the cross-section of the pipe are adopted depending on the productivity of the flow-transport lines and the type of cargo.

Shaped elements are designed for joining, branching, changing direction and cross-section of gravity pipes. Gravity devices are made of sheet steel (1.5 ... 8 mm), flanges - from sheet, strip and angular steel.

LLC "CCC" offers different versions of gravity equipment:

- made of black steel St3, thickness from 2 mm ... 12 mm;
- made of black steel St3 with inserts of polyurethane;
- made of steel Hardox 450 (Sweden).







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