Additional Liability Company “Severodonetsk Plant of Chemical Non-Standardized Equipment” is one of the leaders in production of non-standardized equipment for enterprises of chemical, oil-and-gas and metallurgical industries.

Effective company management, increase of its productive and business parameters requires commitment of a number of obligations for our partners.

We appreciate cooperation with professionals; therefore our work is based on three main principles: efficiency; competence; responsibility.

We constantly intend to increase manufacturing efficiency and to the compliance with the highest world standards. That allows us not just keep leading positions in chemical machine building, but that also allows us to constantly achieve our goals.

We selected a team of professionals. High qualification of our staff, its devotion to the common cause is the driving force that helps us masterfully achieve the goals, and the main goal is to create the Machine Building Plant of European level.

The management system of Additional Liability Company “Severodonetsk Plant of Chemical Non-Standardized Equipment” was evaluated and certified in compliance with ISO 9001:2008. Partnership with our plant is to minimize costs and time, for we are the direct manufacturer of the equipment.

Additional Liability Company “Severodonetsk Plant of Chemical Non-Standardized Equipment” is known far beyond Ukraine. Partners of our company are from Russia, Turkmenistan, Belarus, Kazakhstan, Estonia, Uzbekistan, Moldova, and Azerbaijan.

We are sure that our partnership is the way to new possibilities, and it can contribute to further growth of your business efficiency.

Миссия ОДО «СЗХНО»/The MISSION of Additional Liability Company "Severodonetsk Plant of Chemical Non-Standardized Equipment"

ALC "Severodonetsk Plant of Chemical Non-Standardized Equipment" has a policy of stable progressive growth of its business, with the intention to become one of the leading companies of Ukraine in the field of equipment manufacturing for enterprises of oil, chemical, petrochemical, gas and metallurgical industries. Also, the equipment for power - generating companies.

Key tasks of ALC "Severodonetsk Plant of Chemical Non-Standardized Equipment":

- technical modernization and development of operation base;
- acquiring of new technologies;
- implementation of headmost processes of business running and management;
- production output of high quality;
- increase of sales volume and sales efficiency;

- strengthening of competitiveness by means of capturing leading roles both in home market and in international markets.

The plant consolidates modern manufacturing technologies and headmost business solutions with a view to compliance of manufactured equipment with the World's highest quality standards. AlC "Severodonetsk Plant of Chemical Non-Standardized Equipment" increases economical efficiency and operational safety of oil and gas processing companies by means of delivering reliable and quality equipment.

With the ability to adapt to changes of the environment, AlC "Severodonetsk Plant of Chemical Non-Standardized Equipment" functions and develops successfully.

We appreciate contribution of each staff member to the common clause. We give possibilities for professional growth and for education providing the chance for constant increase of qualification and self-fulfillment.

HISTORY OF THE PLANT.

ALC "Severodonetsk Plant of Chemical Non-Standardized Equipment" (formerly, "Severodonetsk Experimental Plant TechEnergoKhimProm) was founded in 1966 with a view to providing industries with complex technological equipment.

Engineering capabilities and the equipment of the plant, possibility of projection and development of operating design documentation by engineering department, and also cooperation with design Institutes, allow to produce up-to-date equipment of any complexity made from carbon, anticorrosion steel, titanium, zirconium and aluminum alloys. The plant is equipped with the means for Electroslug welding, and for the gas-shielded welding; with metal –cutting machines (parts up to 4200mm diameter), with press equipment (with a

pressing force of Q=800t/cm.), and with the roll-bending machines for processing of flat and rolled steel and pipes.

(В настоящее время завод выпускает:)/ The list of currently manufactured equipment:

Dear Partners! The plant is equipped with universal and special equipment and has a significant technological mobility. More than 40 years of operational experience allows us to manufacture quality standardized as well as non-standardized equipment by individual projects and customer`s technical requirements.

The list of currently manufactured equipment:

- heat exchangers of the "tube-in -tube" type, heat exchangers with a U- tube bundle, tube-and-shell heat exchangers with fixed tube sheets, with or without a compensator, and with a floating head;

- equipment with mixing devices;

- column devices: packed and with trays of different types;

- pressurized and vacuum filters;

- power equipment: boiler components, economizers, steam superheaters, heat generators, water-treating equipment;

- processing equipment for different industries: crystallizers, dephlegmators, separators, gravity separators(wall thickness – 90 mm and more), granulators, hydraulic seals, converters, electrolytic furnaces, cyclones, dust separators, autoclaves, adsorbers, absorbers (up to 7000 mm in diameter),chemical reactors, oil and moisture separators and other equipment and accessories for foundry and metallurgical engineering: molding frames, casting forms,

ammonia pressure holders, gas cleaning scrubbers of cooling section, tube systems, rotary drum mixers, heating sections;

- tanks and vessels (up to 4500 mm in diameter), LPG vessels, a high-pressure injection tanks, associated gas disposal tanks, gauging tanks, receivers, drums, containers, cisterns, tanks (V = up to 600 m^3), vessels for transportation of different products, settling equipment, expansion tanks, fuel gas pipelines (up to 3720 x 10 mm in diameter);

- pressed elliptical bottoms (diameter – from 100 to 4500 mm, thickness – from 6 to 90 mm), pressed spherical petal-type bottoms (6500 mm in diameter), toroidal petal-type junctions of any diameter;

- corrugated expansion joints, sliding expansion joints, disk expansion joints;

- pipelines and pressed pipeline components: tapered swages, leadaway pipes;

- metal frameworks for different purposes.

We are experienced in manufacturing block-modular modification of the equipment. The equipment, units and assembly manufactured by our plant are mounted and operate successfully for enterprises of chemical, metallurgical, oil -refining and food industries both on the territory of our country and abroad.

(ЭНЕРГЕТИЧЕСКОЕ И ГАЗОИСПОЛЬЗУЮЩЕЕ ОБОРУДОВАНИЕ)

POWER AND GAS-USING EQUIPMENT

Used by power-generating companies..Also, the equipment for the gas transportation system of oil and gas producers and distribution companies.

ALC "Severodonetsk Plant of Chemical Non-Standardized Equipment" is ready to offer you a wide range of high-technology gas and power equipment used for meeting the needs of power-generating, oil and gas producing and gas distributing companies, videlicet:

1. Manufacturing and delivering of natural gas heaters with operating consumption of 5 000 m^3/h, 10 000 m^3/h, 15 000 m^3/h and 30 000 m^3/h, 50000 m^3/h.

2. Manufacturing and delivering of gas filters.

3. Manufacturing and delivering of Automated Gas Distribution Station.

4. Manufacturing and delivering of mini petroleum refinery according to technical requirements or as individual project plan.

5. Manufacturing and delivering of skids for Gas Distribution Station, according to technical requirements or as individual project plan.

6. Manufacturing and delivering of Gas - Control Units, Gas - Distributing Units, according to technical requirements or as individual project plan.

7. Manufacturing and delivering of heat-exchange equipment included in current plant catalogues (drafts), or according to drafts of the customer

(among others is a tubular regenerative heat exchanger for units ГТ-750-6, ГТК-10).

8. Manufacturing and delivering of drying units for associated and petroleum gas, according to technical requirements of the customer.

9. Manufacturing and delivering of filters – separators for associated and petroleum gas, according to technical requirements of the customer, or of those included in the plant catalogue.

10. Conducting repairs at Gas Distribution Station:

1) Manufacturing and upgrade of gas heaters of ПТПГ - 10, ПТПГ - 15, ПТПГ – 30 type:

- primary burner substitution;
- valve unit upgrade using up-to-date valves of 'ThermoBrest' type;
- gas-control unit upgrade using up-to-date taps, regulators like " Actaris Ukraina", using meters of accuracy class 1.0 and with an access (pipe bend) to an equalizer;
- manufacturing of tube bundles to substitute those out-of-order (stainless steel or black);
- assembly, disassembly of the bundles;
- substitution of field control unit with electric wiring;
- starting and trial running after reconstruction;
- thermotechnical maintenance.

2) manufacturing of components according to technical requirements of the customer, or as individual project plan:

- filters;
- cyclones;
- separators;

3) Computerized Control Systems implementation working alongside contractors.

11. Manufacturing and delivering of individual gas metering units, according to technical requirements of the customer.

12. Manufacturing and delivering of petroleum heaters with intermediate heat medium of ПНПТ – 0, 3 Г type.

13. Manufacturing and delivering of separators for liquids.

14. Manufacturing and delivering of the equipment for boilers as an individual project plan, or of equipment included in the plant catalogue, videlicet:

- superheaters, units of primary, secondary superheater of boilers;
- air heater tanks;
- corrugated expansion joints of any configuration;
- water – wall surfaces of boiler units;
- economizers (of their components);
- air preheaters;
- heating surfaces;

- steam releasing surfaces;

15. Customized manufacturing and delivering :

- heat generators;
- water treating equipment;
- tube sheets, tube bundles;
- boiler headers;
- boilers of ПТВМ - 30, - 50 type;
- Air - Cooling Units.

and also, any other gas and power equipment (including non-standardized, customized, and with usage of customer’s drawings).

(Испарительные пакеты)/Evaporating units (stacks)

Evaporative section of exhaust heat boiler KH-80/40.

PURPOSE: It is used for cooling nitrous gases during manufacturing of weak nitric acid.

(Модернизация участка ПТПГ – 30 (Подогревателя газа))

Section ПТПГ – 30 Upgrade (Gas Heater Upgrade).

- Mounting of regulator like "Actaris Ukraina", with the meter of accuracy class 1.0 and with access (pipe bend) to an equalizer;
- Mounting valves of 'ThermoBrest' type;
- Mounting of upgraded burner.

Reliability of gas supply and measuring precision of gas consumption were increased. Also, the increase of safety performance for the gas heater, the increase of coefficient of performance for the burner, the decrease of environmental discharge.

(РЕГЕНЕРАТОР. ТЕПЛООБМЕННИКИ – РЕГЕНЕРАТОРЫ ТРУБЧАТЫЕ ДЛЯ АГРЕГАТОВ ГТ-750-б)

Regenerator. Tubular regenerative heat exchangers for units ГТ-750-б.

PURPOSE: They are designed to regenerate the heat from exhaust gases in Gas -Turbine Cycle; used in heating cycle for unit ГТ-750-б in order to increase its coefficient of performance and its output after substitution of a plate heat exchanger.

(ПОДОГРЕВАТЕЛИ ГАЗА)

GAS HEATERS.

PURPOSE: Natural gas heaters with intermediate heat medium of ПГПТ type (hereafter referred to as “heater”) serve for indirect gas heating before reduction in Gas Distribution Station regulating systems (GDS), as well as for other pre-heated gas consumers to increase the reliability of GDS processing equipment and gas - distributing systems designed to deliver gas to a consumer.

The heater ensures indirect heating and automatically maintains gas temperature at the outflow of the heater. The heaters are manufactured with regard to gas operating consumption of 5 000, 10 000, 15 000 and 30 000 Ncm/h, and there are two versions:

- ПГПТ - 5, ПГПТ - 10, ПГПТ - 15, ПГПТ - 30 – У1 climatic version, Industry Standard 15150. The ambient temperature is no less than “–“ 30 C°;
- ПГПТ - 5М, ПГПТ - 10М, ПГПТ - 15М, ПГПТ - 30М – УХЛ1climatic version, Industry Standard 15150. The ambient temperature is no less than “–“ 55 C°.

(ПАКЕТЫ ЭКОНОМАЙЗЕРА (ВОДЯНОЙ))/STACKS OF ECONOMIZER (FEED -WATER ECONOMIZER)

The part of exhaust heat boiler КН-80/40.

It consists of two stacked modules of heating surfaces.

МЕТАЛЛОКОНСТРУКЦИИ И БЛОКИ ТЕХНОЛОГИЧЕСКИЕ В СБОРЕ ДЛЯ СИСТЕМ ГАЗООЧИСТКИ)/METAL FRAMEWORKS AND PROCESSING UNITS AS AN ASSEMBLY FOR GAS CLEANING SYSTEMS.

A wide range of manufactured equipment, and also, the increased requirements for orders fulfillment for large industrial groups in recent years determined to change certain select types of equipment delivery for complete delivery by units of industrial equipment and processing lines.

ALC “Severodonetsk Plant of Chemical Non-Standardized Equipment” has ready engineering solutions and experience of manufacturing and delivering of processing units for natural gas cleaning pipelines. Metal frameworks of the processing unit are designed to be used at the facilities of gas, oil and allied industries.

They are delivered to the assembly area as fully assembled, or as deliverable assembly units.

СЕПАРАЦИОННОЕ ОБОРУДОВАНИЕ/Separation equipment

PURPOSE: The separation equipment is used for cleaning of natural and associated petroleum gases from fluid and mechanical impurity in field installations of gas treating for its further transportation, at gas-compressor stations of the main gas pipelines, in underground storages and in oil-refinery and gas production operations and in other industries.

The list of manufactured equipment:

- perforated gas separators (ГС) with diameter of 600, 800, 1200, 1600, 2000 mm, for cleaning of natural gas from impurities;

- gas-oil separators (НГС);

- inlet separators of high pressure up to 15,2 MPa;

- СДЖ fluid perforated filters for pipelines

Every order is projected and manufactured individually with taking into account specific operating conditions and requirements of the customer.

Сепаратор гравитационный/Gravitational Separator СГ12,5-3,0-1600

Separator СМЦ – 140 – 65/ 10,0

Purpose: it is used to remove finely dispersed and pellicular moisture with mechanical impurities out of natural gas flow.

Техническая характеристика/Specification:

Operating capacity, m^3 /min	2083
Operating pressure, MPa (kgf / sm^2)	12,5 (125)
Operating temperature, C^o	from +1 to +71
Capacity, m^3	5,328
Diameter, mm	1600
Shell thickness, mm	80
Bottoms' thickness, mm	90
Structural material	Steel 09Г2С – 12
Over-all weight, kg	19600

Разделитель жидкости РЖ-1400-6,3\Separator of liquids РЖ-1400-6,3

Purpose: it is used for gravitational separation of undissolving liquids and gases in field installations for treating of natural gas and its condensate.

Сепаратор НГС-1200-10/Separator НГС-1200-10

Purpose: it is used for degassing of non-foaming oils and for cleaning of associated gas in field installations of collecting and treating of oil and gas from oil-fields.

Колонные Аппараты/ Columns

Purpose: Columns are steel and welded, with different types of contact devices (trays). They are used for the implementation of processes of rectification, absorption, desorption, cooling and cleaning of gases in chemical and other industries.

Column devices are made of carbon steel, nickel-containing and molybdenum-containing steels, as well as of the alloys 06XH28МДТ, XH65MB, of titanium BT1-0.

The following types of devices are manufactured:

- all-welded column with trays;
- all-welded packed column;
- ring column with trays;
- hollow column.
- packed ring column;

The type of a tray and a packing is determined by the customer depending on operating process, pressure and temperature; on the ratio of gas and liquid loading, requirements to product purity, tendency to polymerization, etc.

Column devices can be equipped with the following types of contact devices (trays):

- T1 – bubble trays (bubble cap plate) (ОСТ 26-01-66-86);

- T2 – perforated trays, perforated-valving, valve-type trays (OCT 26-01-108-85);

- T3 – louvered-valve-type trays (OCT 26-01-417-85);

- T4 – grid trays (OCT 26-675-78 ATK 24.202.01-90);

- T5 - direct-flow valve-type trays (ATK 26-02-1-89);

- T6 – perforated trays with demister pads, single-flow and double-flow trays (ATK 216-02-3-89);

- T7 – S-shaped valve-type trays, single-flow (ATK 24-202.02-90).

Packed column devices for equal partitioning of fluids on the surface of a packing are equipped with partitioning trays OCT 26-705-798, the type of TCH-3 and repartitioning trays of the TCH-2 type.

Every delivery order is projected and manufactured individually with taking into account specific operational conditions and requirements of the customer.

Ректификационные и абсорбционные колонные аппараты/ Column devices for rectification and absorption.

Column devices for rectification and absorption are widely used in chemical, petrochemical and in other industries. Columns are equipped with mass-transfer trays or packed grid trays. Their choice depends on chemical-technological parameters; they are used for mass-transfer processes.

Material of structural components - steel 09Г2С.

Over-all dimensions – 19000 x 3450 x 3230/D 2200, б36 mm.

Capacity – V=60m^3.

This equipment of ‘Severodonetsk Plant of Chemical Non-Standardized Equipment’ ALC was manufactured for the corporation ‘Rosneft’, was delivered to Vankorskoye oil field for installation and bringing into service.

Колонна Отбензинивания со встроенными кипятильниками/Topping Column with integrated reboilers.

This column is manufactured for mini oil-refinery situated in the Republic of Azerbaijan. Column diameter – 1200 mm, column height – 23000 mm, shell material - steel 09Г2С. Internal devices – cascade trays. Material of internal devices – steel 12х18Н10Т.

Колонна К1/ Column K1

Columns are widely used in the oil refining industry.

Vacuum distillation takes place in this column. It is the process of distillation of fractions out of fuel oil (residue of atmospheric distillation). These fractions are useful for processing them into engine oils, paraffin and other products of oil refining and petrochemical synthesizing. Heavy residue is left after these processes; it is sludge which can be used for preparation of bitumen.

The column is equipped with internal contact devices (cascade and valve-type trays).

Material of structural components – steel 09Г2С.

Over-all dimensions– 3200 x 3200 x 17810; D1600/2400/1400mm.

Capacity – 59m^3.

This equipment of ‘Severodonetsk Plant of Chemical Non-Standardized Equipment’ ALC was manufactured for the company «SPARKLING OIL STAR Ltd».

Колонна Контактор/ Contactor Column

Purpose: Contactor Column is a cylindrical vertical device.

The column is equipped inside with valve-type trays to provide the increasing of effectiveness of mass-transfer by means of dispergation of two media.

Material of structural components– steel 09Г2С.

Over-all dimensions– 3132 x 2975 x 13893; D2200mm; б = 36mm.

This equipment of ‘Severodonetsk Plant of Chemical Non-Standardized Equipment’ ALC was manufactured for the company «Neftekhimtekhnologia, Ltd».

Блоки Колонны Удаления Меркаптанов/Sections of the DA-105 Mercaptan Removing Column.

Purpose: These sections are used to remove light mercaptans in naphtha hydrotreater from catalytic cracking ОАО УНПЗ.

Теплообменное Оборудование/Heat-Exchange Equipment:

Heat exchangers are used for carrying out thermal processes: heating, cooling, evaporating, condensation and boiling in oil-refinery, petrochemical, chemical, gas and other industries.

The heat-exchange equipment is manufactured of various types with working pressure up to 25 MPa (250 kgf/cm^2), with temperature from -210 °C to +700 °C:

- horizontal and vertical heat exchangers with fixed tube sheets and a compensator on a shell, type of ТН, ТК;

- devices of ТНВ, ТКВ types;

- horizontal and vertical coolers with fixed tube sheets and a compensator on a shell, the ХН, ХК type;

- horizontal and vertical evaporators with fixed tube sheets and a compensator on a shell, the ИН, ИК type;

- horizontal coolers with a floating head, the ХП type and tube bundles for them;

- horizontal heat exchangers with a floating head, the ТП type and tube bundles for them;

- devices with pipe length of 3000 mm, the ТПВ, ХПВ type;

- horizontal heat exchangers with a U- tube bundle of the U-tube type and tube bundles for them;

- evaporators having a condenser chamber with a floating head of the ИП type and a U- tube bundle of the ИУ type and tube bundles for them;

-thermosyphon evaporators of the ИНТ и ИКТ type;

- thermosyphon evaporators of the ИПТ type;

- heat exchangers of the "tube-in -tube";

- single-flow non-dismountable heat exchangers (ТТОН);

- dismountable small-sized heat exchangers (ТТРМ);

- vaporizing devices;

- steam water heaters and water-to-water heaters for heating supply systems;

- non-standardized devices.

Heat exchangers can be made of carbon, anticorrosion steels, titanium and nickel-based alloys.

Every order is projected and manufactured individually with taking into account specific conditions of operation and requirements of the customer.

Теплообменник кожухотрубчатый/ Tube-and-shell Heat Exchanger

PURPOSE: Tube-and-shell heat exchanger with a floating head is meant for heat exchange of liquid and gaseous media in technological processes of chemical, petrochemical, oil and oil-refining, gas and other industries. Water or any other nontoxic, non-explosive, non-combustible liquid with the boiling point at pressure of 0,07 MPa above 60˚C is considered to be a heat - eliminating medium in condensers and coolers.

Теплообменный аппарат типа ТН/Heat Exchanger of TH type

Purpose: Heat exchanger of TH type with heat-exchange surface F=376m2

Ø 800x45 H=10140mm and with a tank of V=1,25 m3 Ø 400x22 mm, H=10300mm, referred to the 1-st group of equipment, and are meant for heat exchange of gaseous (liquid) media in gas (chemical, petrochemical, oil refining, oil) industry. Operating pressure is 1,6MPa (160 kgf /cm^2);

Operating temperature T =“-“60 ÷ +50˚ C.

Weight: 25080 kg (21980 kg +3100 kg).

Пучок Трубный/Tube bundle

Purpose: Tube bundle is the main assembly unit of heat exchanger. It consists of heat- exchange pipes, tube sheets and baffles.

Material of structural components: heat-exchange pipe steel 15Х5М. Tube sheet steel 15Х5М. Heat-exchange surface, m^2 816. Over-all weight, kg 17335. Over-all dimensions, mm 9000x1504x1504. This equipment of ‘Severodonetsk Plant of Chemical Non-Standardized Equipment’ ALC was manufactured for the company «NORDCOMGLOBAL».

Техническая Характеристика пучка трубного 1400ТП-25-М4/25Г-9-К-4/Tube

bundle technical specification 1400ТП-25-М4/25Г-9-К-4:

	Tube side	Shell side
Operating pressure, MPa (kgf/cm^2)	1,9(19,0)	1,6(16,0)
Permissible temperature of walls, C°	from -30to +204	from -30 to+140
Specified temperature, C°	+300	+300

Трубчатый холодильник для газа ХПГ 3000/Tube Type Gas Cooler ХПГ 3000

Purpose: Tube type cooler with horizontal pipes is meant for primary cooling of coke-oven gas. Heat-exchange surface may be expanded or reduced according to engineering design.

Секции Трубные/Pipe Sections

Purpose: Pipe sections (photo, p.12) are meant to cool exhaust gases. They are used in manufacturing of ammonia and nitric acid.

Теплообменник/Heat Exchanger

Purpose: “Tube-in-tube” heat exchangers are used for heating and cooling of media during technological processes in oil-refinery, chemical, petrochemical, gas industry and in other industries.

“Tube-in-tube” heat exchanger is comprised of several stacked units. Each unit consists of two tubes: outside tube of a larger diameter, and a concentrically placed tube of a smaller diameter inside of it. Inside tubes of units are cascade-connected; the same for outside tubes. For the purpose of wiping, the inside tubes are connected with the help of removable U-bends. Thanks to small cross - section, high velocity of heat-transfer media is easy to achieve in these heat exchangers both in tube side and in shell side. Having a considerable amount of heat-transfer media, heat-exchanger is made of several parallel sections connected to share collectors.

Technical Specification:	Tube Side	Shell Side
Operating pressure, MPa (kgf/cm^2)	1,9(19,0)	1,9(19,0)
Permissible temperature of walls, C^0	from +5 to +350	from +5 to +350
Specified temperature, C^0	+350	+280

Теплообменник 1400 ТКВИ/ Heat Exchanger 1400 ТКВИ

Heat-exchange surface 502 m2; operating pressure, MPA (kgf/cm^2): tube side – 0,73/7,3; shell side – 0,43/7,3; permissible temperature of walls, C^0 : tube side – from -15 to +180; shell side – from -15 to +260; operating temperature of walls, C^0 : tube side +180, shell side +260. The heat exchanger is used by shops for manufacturing of nitric acid.

Ёмкостное Оборудование/Tanks and vessels

They are used for receiving, holding, processing and outputting of aggressive, toxic and non-toxic, explosive and non-explosive and other fluid and gaseous products at excessive pressure up to 25 MPa (250 kg/cm^2) and temperatures from – 210C^0 to +700C^0; and also at atmospheric pressure and under vacuum in chemical, petrochemical, food and other industries.

Tanks and vessels can be delivered to the customer as a single-unit delivery and as a modular modification.

The modular modification delivery of tanks and vessels includes:

- frame;
- operating decks;
- shut-off and control valves;
- control equipment;
- other equipment on request of the customer.

Tanks and vessels also can be made of carbon, anticorrosion steel, titanium and nickel-based alloys.

The list of manufactured equipment:

- horizontal (ГЭЭ, ГКК, ЕП, ЕПП) and vertical (ВЭЭ, ВЭП, ВПП, ВКП) types of tanks and vessels with simple internal devices like stairs, plates and baffles, and also with internal and external heat-exchange devices;

- steel, welded vessels;
- horizontal vessels with elliptic heads and tube bundle;
- vertical vessels with elliptic heads, with a flat top and a jacket;
- vertical vessel with lower conic and upper flat bottoms;
- vertical vessels with flat bottoms;
- vertical vessels with flat bottoms, with a serpentine;
- tanks and vessels for gases and fluids;
- tanks for propane and butane;
- open-type deaerator ;
- air receivers;
- cyclones;
- underground drainage tanks;
- oil depositing tanks;
- water depositing tanks;
- tanks for oil products;
- horizontal all-welded vessels with conic unbeaded heads;
- vessels with mixing devices;
- non-standardized vessels and tanks:
- washing tanks;
- reactivation tanks;
- extractors;
- contact equipment (catalyst cases);
- mixing devices;

- preneutralizing tanks;

- distillation stills;

- oxidizing agents;

- reactors;

- chlorinators.

Every order is projected and manufactured individually with taking into account specific conditions of operation and requirements of the customer.

Ёмкость Позиция 410 Д004/ Tank Position 410 Д004

Purpose: Tank position 410 Д004 is horizontal, capacity is 170 m3, used for storing of recent (raw) VCM (vinyl chloride monomer). It is referred to the 1-st class of equipment. This equipment is used in the operational line of the VCM production plant by company 'Carpathneftekhim'. Operating pressure 0,19 ÷ 1,463 MPa, operating temperature T = $+15^0$ ÷ 165^0 C. Overall dimension Ø4500x22(s=25)x11700mm. Weight 37430 kg.

Сборник СВ-100/ Collector СВ-100

Purpose: it is meant for receiving and storing of petroleum products.

Газоход/ Gas Ducts

Purpose: Gas ducts of Ø3200; Ø2500, mounted in pipelines with fuel gases of gas steam plants with wattage of 303 MW.

Эллиптические днища/ Elliptical Bottoms

Purpose: pressed elliptical bottoms, diameter from 100 to 2000mm and elliptical petal-type bottoms up to diameter of 6000mm, thickness of up to 90mm, are the units of the pressurized equipment, are entitled to operate according to 'Pressure Equipment Safety Regulation User Guide'. Thickness 100 mm. Thickness 60 mm.

Печи Трубчатые Нефтехимические/ Pipe-Still heaters

Purpose: Pipe-still heaters are used for high-temperature heating of oil and oil products during their processing. If needed, pipe-still heaters can be used for heating of hydrocarbon gases, water, inert gas, and other media.

Ёмкость Вдувания/ Injection Tank

Coal-Injection Plant.

Purpose: Tanks are the part of the plant used for coal cracking and injection (pulverized coal spray plant). Operating pressure 0,4 ÷ 1,2 MPa, T= +20 ÷ 110^0 C. Operating medium - pulverized coal fuel.

Material of structural components – 09Г2С.

Overall dimension - 7000×4450×4000/Д 2500, б 22 mm/ 16650×4000×4000 Д 3600, б 20 mm.

Capacity – V=26, 2 m^3, 112 m^3

It was developed according to the "Küttner" engineering company project.

This equipment is used in processing lines of iron-and-steel works such as OJSC “Alchevsk Iron and Steel Works” and “Zaporozhstal” Open JSC.

Емкость Одоранта/ Odorant Vessel

Purpose: it is used to provide operating (reserve) amount of the odorant for odorizers of various types, as well as storage and transportation vessels. It is a horizontal vessel with elliptical bottoms, with inlet and outlet connections. According to the design, vessels can be above-ground and underground.

Аппарат Горизонтальный С Эллиптическими Днищами/Horizontal Vessel with Elliptical Bottoms

Purpose: they are used for storage and outputting of liquefied hydrocarbon gases in storage facilities and during manufacturing activity.

Емкость позиции Е-11/ Tank of PositionE-11.

Purpose: Tank position E-11, horizontal, capacity is 6,3 m^3, used for receiving, storing, heating of 15% solution of MEA, H_2S – 1,56%.

Heat-exchange surface, m^2 2,6. Over-all weight 4245 kg. Over-all dimensions, 3555x1960x2475mm. This equipment of 'Severodonetsk Plant of Chemical Non-Standardized Equipment' ALC was manufactured for Trading Company «Khimresurs Voronezh» Ltd.

Technical Specification:	Shell	Heater
Operating pressure, MPa (kgf/cm^2)	0,55(5,5)	1,2(12,0)
Permissible temperature of walls, C^0	from - 37 to +100	from- 37 to +150
Specified temperature, C^0	+100	+200
Material of structural components:	09Г2С	steel 20 С

Сосуды Цилиндрические Горизонтальные Для Наземного Хранения Сжиженных Углеводородных Газов/Horizontal

cylinder-shaped vessels for ground storage of liquefied hydrocarbon gases

Purpose: they are used for ground storage of liquefied hydrocarbon gases such as propane and butane at a temperature of the walls' metal depending on the product temperature and the ambient temperature from "-" 60 C° up to "+" 50 C°. They are installed in enterprises of oil refining, petrochemical, chemical, gas and other allied industries, as well as at the gas-filling stations.

Фильтр Очистки Доменного Газа/ Blast-Furnace Gas Cleaning Filter.

Purpose: The filter is designed for fine and dry cleaning of exhaust blast-furnace gases. It is used at iron-and-steel works for manufacturing of cast iron and steel.

Верхняя Часть Промежуточного Абсорбера К2200/The Upper Part Of Intermediate AbsorberК2200

Purpose: The upper part of intermediate absorber К2200. The sulfuric acid production unit with the output of 1280 tons per day. Inner diameter is Ø6520 mm.

It was manufactured for "Crimea Titan" Closed JSC

Реактор ДАЦ-250/ Reactor ДАЦ-250

Purpose: It was manufactured for ‘Mariupol Ilyich Metallurgical Integrated Works’ Open JSC for the zinc coating line.

Реактор Каталитической Очистки/Catalytic-Cleaning Reactor

Purpose: The high-temperature catalytic-cleaning reactor with horizontal cylinder-shaped shell serves for catalytic decomposition of nitric oxides in exhaust gas by natural gas performing as deoxidizing agent. Such construction choice is predetermined by necessity of the process implementation with gas space velocity which is 15-20 thousand m^3/h, and with a catalyst elevation level of 0,5 m.

Барабаны Стационарных Паровых Котлов/Fixed Steam Boilers’ Drums

Purpose: Fixed steam boilers’ drums with nominal operating pressure of saturated steam in a boiler drum from 0.9 MPa up to 10 MPa; capacity – Ø650 mm ÷ Ø2000 mm; thickness – 8 ÷ 60 mm. With elliptical bottoms made from plain carbon and low-alloyed steels.

Аппарат Вертикальный С Перемешивающим

Устройством/Vertical Process Vessel With Mixing Device.

Purpose:

The technological processes in which these process vessels used are the following:

- emulsification
- slurryfication
- homogenization
- heat-transfer enhancement
- mass transfer
- conducting of chemical reactions
- mixing of liquid homogeneous and heterogeneous systems

Depending on the environmental properties, they are completed with МПО-1 and МПО-2 motor-reducers of different wattage and rotary speed, with mechanical seals and gland seals. There are different kinds of mixing devices including propeller-type, turbine, blade, frame-like devices.

The process vessels can be demountable and all-welded, jacketed or not.

Specifications:

capacity m^3	up to 40							
er diameter,	0	0	0	0	0	0	0	0
gth, mm	0	5	5	5	5	0	0	0
lth, mm	0	5	5	5	5	0	0	0
ght, mm	0	5	5	5	5	5	5	0
ls' thickness	depends on pressure and temperature							
l temperature,	from -30 up to + 250							
erial of struction	plain carbon and stainless steel							
ght, kg	0	0	0	0	0	0	0	0

Technical Specification:

Parameters	n process vessel	In jacket
erating pressure, MPa (kgf/cm^2)	Atmospheric	0,1 (1)
missible temperature of walls, C°	from 0 to +200	from 0 to +200

terial of structural components	Steel Ст3сп5	Steel Ст3сп5
pacity, m^3	10	0,62
pentine heat - exchange surface, m^2	18	
xing device type	frame	
ttage of electric motor, kW	7,5	
tary speed, rotations per minute	64	
ight, kg	7415	
erall dimensions, mm	2360x2360x6839	

Технические Возможности/ENGINEERING CAPABILITIES.

The plant has very powerful manufacturing capabilities and a highly-skilled personnel, also has a very convenient access for automobile and railway transportation. Workshops are equipped with modern technological equipment and can make blank production, forging, assembling and welding operations, also the workshops are able to make a machining process of units and details made of different materials. The workshops can make flexible changes for technological operations.

BLANK PRODUCTION.

Equipment which is used in blank production, can cut, bend, and mold flat products with a thickness up to 160mm and also work on a profile iron.

MOLDING

- Max. width of the flat product for bending, 4500mm
- Max. thickness of the flat product for bending:

Bending of the cold material, 80mm

Bending of the hot material with a thickness up to 160mm - flanging machines for bending of flanges in hot condition.

FORGE-AND-PRESS LINE:

- hydraulic press with a pressing force of Q=800t/cm. for pressing of elliptical forms and parts of spherical heads, and also for details produced with the help of hot pressing.

- free forging pneumatic hammer with a falling weight up to 400kg;

- press equipment for cold pressing of details.

CUTTING

Max. thickness of flat product for cutting:

- guillotine shears for cutting of flat materials with a thickness from 1 up to 30mm and max. length of the line up to 3000mm.

- plasma up to 80mm – computer controlled plasma cutting machine for cutting irregular shape blanks out of high-alloy steel, carbon steel and nonferrous metal;

- gas-cutting thickness up to 250mm;

- automatic gas-cutting thickness up to 250mm – computer controlled gas cutting machine for up-to-size cutting of irregular shape blanks out of carbon steel

- band machines suitable for cutting of profile iron at an angle of 30-60°.

WELDING:

Used welding methods:

- Automatic hidden arc welding “ESAB” (Sweden);
- Automatic and mechanized gas-shielded welding with the help of solid or a flux cored wire “ESAB” (Sweden), “Fronius” (Austria);
- Orbital gas-shielded argon-arc welding with non-consumable electrode/Gas Tungsten Arc Welding of connections: “tube + tube”, “tube + tube sheet” “Fronius” (Austria), Polysoude (Freance);
- Semiautomatic gas-shielded welding “ESAB” (Sweden), “Fronius” (Austria);
- covered-electrode welding “ESAB” (Sweden);
- inert gas-shielded welding with non-consumable electrodes "ESAB" (Sweden), «Fronius» (Austria).

Thickness of the pieces to be welded – from 0,5 up to 160mm.

Steels and alloys possible for welding: low-carbon steel, low-alloyed steel, high-alloyed-steel, stainless steel, bimetals, aluminum and its alloys, titanium, zirconium.

Workshops are equipped with rotating rolls of a load-lifting capacity 10, 30, 40, 60, manipulators from 0,25 up to 3 tons. Max. height for moving a welding board is 5 meters.

Equipment in workshops is manufactured with the use of typical technological operations which are developed by the processing engineering department and by chief welder’s office.

All the produced equipment is tested hydrostatically at a pressure up to 25mPa.

(Картинки Справа)

1. Press of 800 tons.

2. Specialized positioning machine for drilling (with Numerical Program Control) 2550 ОС1000МФ4.

3. Drilling Centre with Numerical Program Control CNC SEVENS.

4. Semiautomatic Chucker (with Numerical Program Control) 1П 756

5. Double-Column Merry-Go-Round Machine Model 145032

6. Centre of Automatic Welding.

7. Four-Roll Rolls (with Numerical Program Control) AHS 20-40x

MACHINING PROCESS (Механическая Обработка)

Equipment which is used in a machining process allows making of all types of edge cutting and abrasive machining of parts and units of various sizes.

Machining process allows performing of the following operations:

- to machine blank parts and units through screw-cutting lathes, vertical turning and boring lathes, planning machines, milling machines, horizontal boring mills and also through numerically controlled tool machines.

- drilling of blank parts through vertically oriented drilling and radial drilling machines;
- external, internal and flat grinding of parts.

METAL CUTTING MACHINES:

Lathe group – 16 unites, among them 2 have numerical program control;

Mill group – 8 units;

Drilling machines – 8 units;

Planning and slotting machines – 4 unites;

Grinding machines – 3 unites;

Drilling and machining centre with a numerical program control.

The structure of types and groups of metal cutting machines is specified by a high degree of versatility that provides enough flexibility and every year it allows developing new types of manufacturing products without fundamental change in the line of the equipment.

Every year all machinery has preventative and predictive maintenance activities and a geometrical accuracy check. Renovation and modernization of the equipment in general is made according to a planned schedule.

HEAT TREATMENT (Термообработка)

There are highly-skilled termists at the plant, who develop methods of hardening, normalization, annealing, and welding stress relief for all types of steels in compliance with required standards. The plant has technical capabilities for running a heat-treatment process in gas heating furnaces and also for out-of-furnace heat treatment.

PLANT LABORATORY and METROLOGY

For quality inspection of materials meant for manufacturing of the equipment, there is a laboratory which performs:

- rating and evaluation of lasting quality with the help of standard mechanical methods in different temperature conditions; of deformation and energy parameters of incoming engineering materials and welded seams;

- metallographic examination of macro- and microstructure of metals and welding seams during all phases of manufacturing process;

- inspection of chemical composition with a spectral and chemical analysis.

For inspection of the quality of welded seams, laboratory uses the following methods of non-destructive inspection:

radiographic imaging;

supersonic inspection;

dye penetrant flaw detection;

density control.

Personnel of the laboratory got proper qualification, and they are certificated for destructive and non-destructive methods of inspection.

ENGINEERING INSPECTION (Технический контроль на предприятии)

Quality control department of the plant provides quality control of products according to normative and technical documentation.

Quality control department serves control of incoming materials, half-finished materials, components; provides inspection control of production made by blank production and assembling workshops; provides step-by-step control including all phases of manufacturing; makes test report of manufactured production; does the paperwork for accepted equipment (orders, delivery notices, test reports, technical passports, requests for different types of laboratory checks,

certificates); prepares and sends to a customer technical passports for production.

A drafting department of the plant develops working drawings according to project plan. Working drawings are final engineering documentation for manufacturing of devices. Basing the construction documentation are developed production processes and inspection methods.

On the ground of all these documents, passports for production are developed.

Customer may check the quality of all operational processes at any time in the laboratory checks reports, in technological passports and in test reports. Customer may also control any phase of equipment manufacturing.

Actual quality management system determines the scheme of quality control in different departments and their powers, rights and responsibilities in terms of the quality.

TRANSPORTATION OF FINISHED ARTICLES (Транспортировка готовых изделий)

A choice of the means of transportation for shipment depends on finished articles' sizes and preferences of a customer:

Automobile transport:

Diameter of circumscribing circle – 4 500mm

Length – up to 18 000mm

Weight – up to 40 tons

Railway transport:

Diameter of circumscribing circle – 3 800mm

Length – up to 30 000mm

Weight – up to 55 tons

Engineering capabilities of load-lifting machines:

There are electric overhead load-lifting cranes:

Max. carrying capacity of one crane – 35 tons;

Max. weight of lifting product – 55 tons.

PAINTING and CONSERVATION (Покраска и Консервация)

Manufactured equipment is covered with enamel ПФ 115 or other paints according to preferences of a customer. A short-blasting cleaning of the articles of carbon and anticorrosion steels is made before coating.

Inner surface can be treated for preservation.

Fixing arrangements may be zinc-coated or exposed to chemical oxidation.

(Камера Дробеструйная/ Shot-Blasting Chamber)

(Покрасочная Камера/ Paint-Spraying Booth)

(Покрасочная Камера/ Coater Room)

(Сертификация Требованиям)

Certification complies with the requirements of ISO 9001:2008

In 2011 Quality Management System of ALC “Severodonetsk Plant of Chemical Non-Standardized Equipment” was evaluated and certified to comply with requirements of International Standard ISO 9001:2008 for the following types of activities:

Projecting and developing of working design documentation;

Manufacturing of column devices; heat-exchangers;

Manufacturing of vessels and tanks, among others, pressurized equipment.

Manufacturing of processing units for oil and gas industries;

Manufacturing of steam-water boilers’ components;

Manufacturing of elliptical and box type bottoms;

Manufacturing of industrial metal frameworks, also warranty service for the manufactured equipment.

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