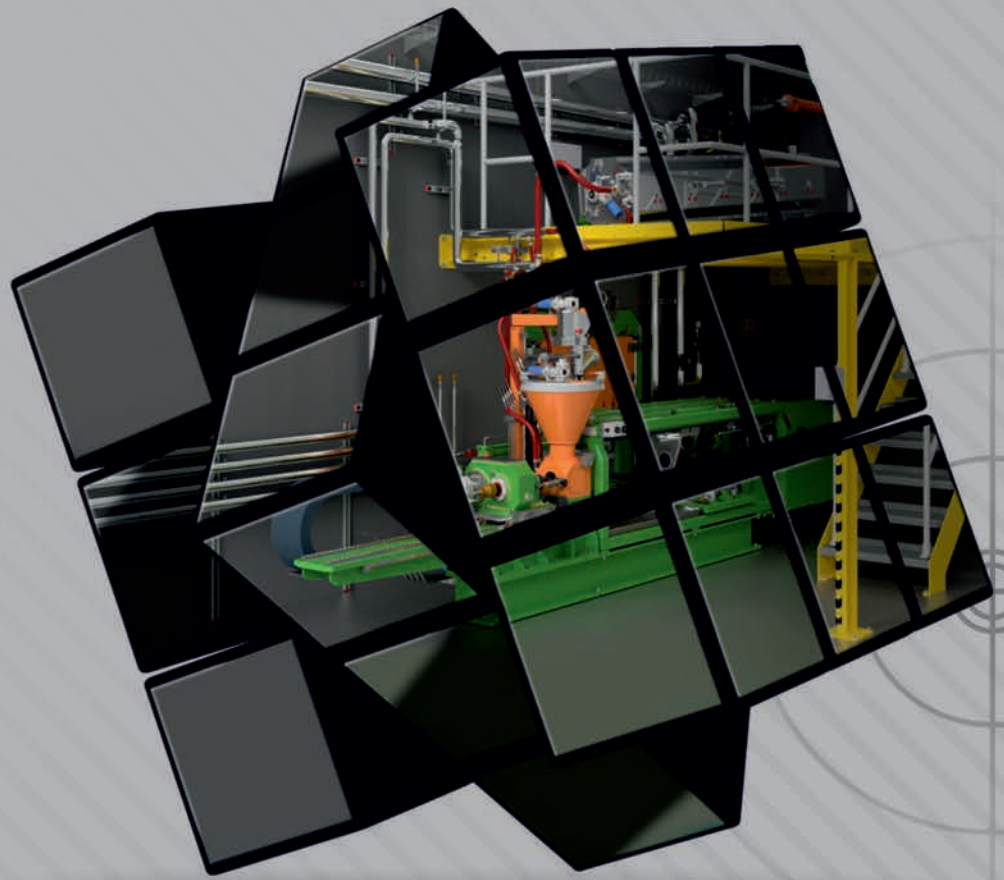
KONŠTRUKTA
INDUSTRY



ADVANCED
DEVELOPMENT
CUSTOMIZED
SOLUTION

www.kotaind.sk


KONŠTRUKTA
INDUSTRY

COMPANY PROFILE

KONŠTRUKTA – Industry, INC is a reliable and sought-after supplier of machines, equipment, complex solutions and services in field of technological equipment for the processing of explosive materials for military and civilian use. We offer quality products and services to customers in order to increase the competitiveness.

We are guided by five key manifestations that express our professionalism:

- exemplarity – we start from ourselves and apply our professionalism in everyday work through constat increasing of expertise, proactive approach, correct and decent behavior, etc;
- efectivity – we don´t say what would be good to do, we do it. If we can´t find solution by ourselves, we will invite other parties but we always come on time,
- cooperation – mutual sharing of knowledges and experiences, active listening of reasons and arguments;
- transparency – we maintain an independent approach to the facts, we commit ourselves only to what we can accomplish and we choose our suppliers on the basis of transparent criteria;
- control – represents irreplaceble role in knowing whether we are doing the right thing.

KONŠTRUKTA – Industry, INC has a long tradition and highly qualified employees, ensuring long-term growth through a motivating and stable working environment.

CONTENTS

PRODUCT PORTFOLIO

KONŠTRUKTA - Industry, a.s., is a reliable and famous supplier of machinery, equipment, comprehensive solutions and services in the field of:

AMMUNITION FILLING PLANTS

TECHNOLOGICAL LINE FOR FILLING OF AMMO BY THE METHOD OF SCREW EXTRUSION:

- **SA-11 MACHINE** for filling of artillery shells and mortar bombs from 76 mm up to 155 mm with TNT, TNT/RDX (50/50).
- **SA-12 MACHINE** for filling artillery and mortar ammunition from 60mm up to 105mm with TNT, TNT/RDX (50/50)
- **SA-14 MACHINE** for filling of artillery and mortar bombs of calibers from 60 mm up to 120 mm with TNT, TNT/RDX (50/50).

As successors to a successful line of machines SA-3, SA-5, SA-7, SA-8 and SA-10

TECHNOLOGICAL LINE FOR FILLING OF AMMO BY THE METHOD OF POURING

Customized filling plants designated for preparation of explosives suitable for direct pouring into artillery shells, mortar and aviation bombs. Explosive substance TNT and Binary explosives based on TNT (others on request).

AMMUNITION LOADING, ASSEMBLING & PACKING PLANT

LAP Line designated for cartridge case loading of fixed or separate loaded ammo; cartridge case assembly and crimping; testing operation (Loading ability check-up, testing of extraction force, sealing check-up); preservation and packing.

EXPLOSIVES PROCESSING AND TREATMENT PLANT

Easy operated technological line for preparation and production of composite explosives in the form of solid pieces and pellets of define shapes:

- **TNT OR TNT/RDX SOLID PIECES PRODUCTION PLANT**
- **TNT/RDX PELLETS PRODUCTION PLANT**
- **HAND GRENADES PRODUCTION PLANT**

PRODUCT PORTFOLIO

EQUIPMENT FOR SOLID PROPELLANT PRODUCTION

Customized single-purpose equipment & devices.

AMMUNITION DEMIL PROGRAM

Customized single-purpose equipment used in demilitarization of ammunition.

INDUSTRIAL EXPLOSIVES PRODUCTION FACILITIES

Single-purpose equipment & devices for the production of ANFO or Emulsion explosives used in civil industry.

OTHER COMPLEMENTARY EQUIPMENT

SERVICES

- Development, production and delivery of customized equipment.
- Modernization of production equipment as per request.
- Installation and commissioning of the equipment.
- Sales and after-sales services.
- Technical assistance and equipment´s inspection.
- Development partnerships with key customers.
- Off-Site and On-Site (as far as possible) Customer service training.
- Consultancy in the field of innovation, modernization, operational safety at the Customer Site; upgrade of used equipment and technological lines.

AMMUNITION FILLING PLANTS

FILLING OF AMMUNITION BY THE METHOD OF SCREW EXTRUSION

AMMUNITION FILLING PLANTS

FILLING OF AMMUNITION BY THE METHOD OF SCREW EXTRUSION

Screw extrusion is a highly efficient technology for filling of HE artillery ammunition as well as mortar bombs. This method is performed by hot screw and is based on continual pressing of explosive material layer by layer inside the shell cavity. The processed material keeps its primary properties which is the essential requirement to ensure constant quality of explosive charge.

BASIC SPECIFICATION

- Calibers range 60 ÷ 155mm
- Artillery shells & mortar bombs filling
- **Explosive substance:** TNT flakes as per MIL-T-248 C Type 1 or GOST V.7059-73
  TNT/RDX (50/50) granules

TABLE OF ACHIEVED DENSITIES

DENSITY OF TNT CHARGES – WITHOUT PREHEATING OF THE SHELL BODY (60MM – 100MM)	
Average density of the entire charge - minimum	1,48 g/cm^3
DENSITY OF TNT CHARGES – WITH PREHEATING OF THE SHELL BODY (105MM – 155MM)	
Average density of the entire charge - minimum	1,51 g/cm^3
DENSITY OF TNT/RDX (50/50) CHARGES – WITHOUT PREHEATING OF THE SHELL BODY (60MM – 100MM)	
Average density of the entire charge - minimum	1,53 g/cm^3
DENSITY OF TNT/RDX (50/50) CHARGES – WITH PREHEATING OF THE SHELL BODY (105MM – 155MM)	
Average density of the entire charge - minimum	1,54 g/cm^3

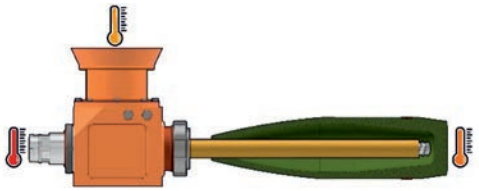
ADVANTAGES OF FILLING AMMUNITION BY SCREW EXTRUSION METHOD:

- Very efficient and short time of filling.
- Screw extrusion filling machine is placed in the bunker and works without the presence of operators to secure high level operational safety.
- The state of explosive charge immediately after the filling process allows to continue in other operations.
- It is not required quality control by X-Ray system. This method uses divided bodies for quality control.
- It is not necessary to change the state of explosive substance from solid to liquid phase and vice versa.
- Manufacturing process is continuous so, it is not necessary to collect big amount of filled shells in the production area.
- The screw extrusion process involves filling and milling the fuse cavities which is performed simultaneously.
- Screw extrusion filling machine is universal for filling caliber range from 60mm up to 155mm and in very short time can be re-adjusted for filling the different type of shell.
- The explosive charge has a specific structure which is low defect-prone like bubbles, cracks or other quality defects
- The explosive charges have very good capability of initiation from fuse and do not require boosters or supplementary charges.
- Low investment expenses for the installation of screw extrusion filling machine.
- Screw extrusion filling machine has low demands for utilities (electricity, steam, water, pressed air).
- Attendance of screw extrusion filling machine requires minimum number of workers.
- The technology of screw extrusion filling is environmentally friendly. It produces minimal amount of waste which can be reused.

HOW DOES THE SCREW EXTRUSION FILLING WORK?

1. The basic unit of the filling machine represents the screw with riffled tube which work together as a continual press. The hollow extruding screw is heated by hot water as well as all parts of the machine coming into the contact with the processed explosive.

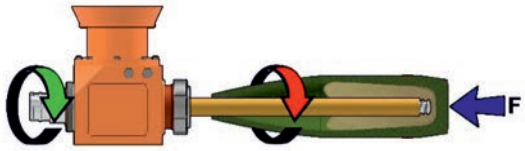
Shells and explosives are pre-heated for better quality of explosive charges. Shells are pre-heated to a lower temperature than the explosive. Filling starts from the initial position where the end of the extruding screw is approximately 5mm from the bottom of the shell´s cavity.



Initial position of screw extrusion filling

2. When screw rotates, compression of explosive substance runs in two phases:

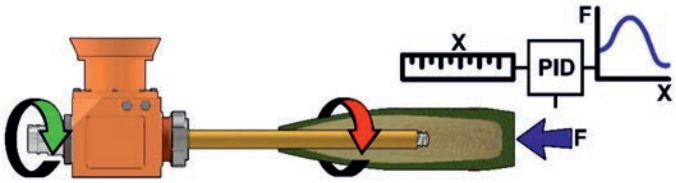
- **1st phase** – compression in the conical part of the screw and during the delivery of the explosive substance inside the riffled tube
- **2nd phase** – secondary compression results from resistance to movement of the material into the shell. This resistance is controlled by back pressure of hydraulic cylinder, which creates a force acting on the shell body and creates contact pressure between the screw and the explosive.
- A thin layer of explosive substance is continuously heated to near melting point during its movement in the rifled tube. At the outlet of the tube and screw thread, the molten layer of the explosive substance is mixed with heated explosive substance in solid state.



Pre-filling period of screw extrusion filling

3. The screw filling process consists of two phases. The first phase - when shell is not moving is called "**Pre-Filling Phase**". In the initial position, the screw starts to rotate and delivers pre-compressed explosive into the shell´s cavity. At the same time, shell rotates in the same way to stabilize the structure, symmetricity and charge balance. Shell is holded by a defined "pre-filling force" in the initial position.

4. When the force generated by the explosive pressed into the shell cavity excess of the "pre-filling force" the shell begins to move back (down from the screw) and the second period of filling begins – "**Main Filling Period**".



Main filling period

By controlling the force acting on the shell against the direction of movement of the shell, the whole charge density along the cavity is controlled. During the filling process, the shell position is constantly measured. Subsequently, the resistance force is controlled based on a pre-defined force curve at any point of the charge.

5. When the shell is completely filled, the screw and shell stop and filling process is finished.

Final position (end) of screw extrusion filling

QUALITY CONTROL

The quality and structure of explosive charges is checked by divided and volumetric bodies. The divided bodies have the same cavity shape as regular bodies. During the production process, the divided and volumetric bodies are included into each lot in a certain order according to the technological instruction. After filling, the cooled divided bodies are disassembled and explosive charges are removed from the divided bodies for further control. Explosive charges obtained from the divided bodies are cut into two halves. One half is used for density control, the other half is used to check the structure and quality of the explosive charge. The rules for evaluating the quality of explosive charges and measuring the density are described in the technological documentation supplied with the machine.

Arrangement of Divided shells into the production LOTs.

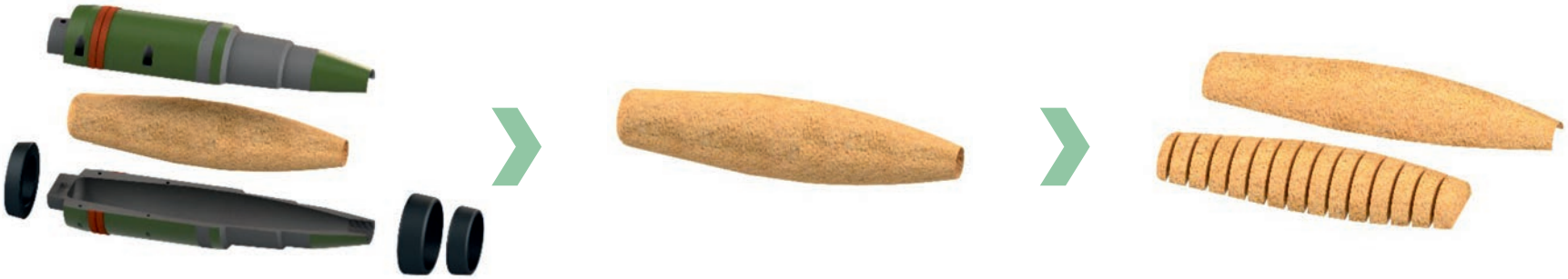
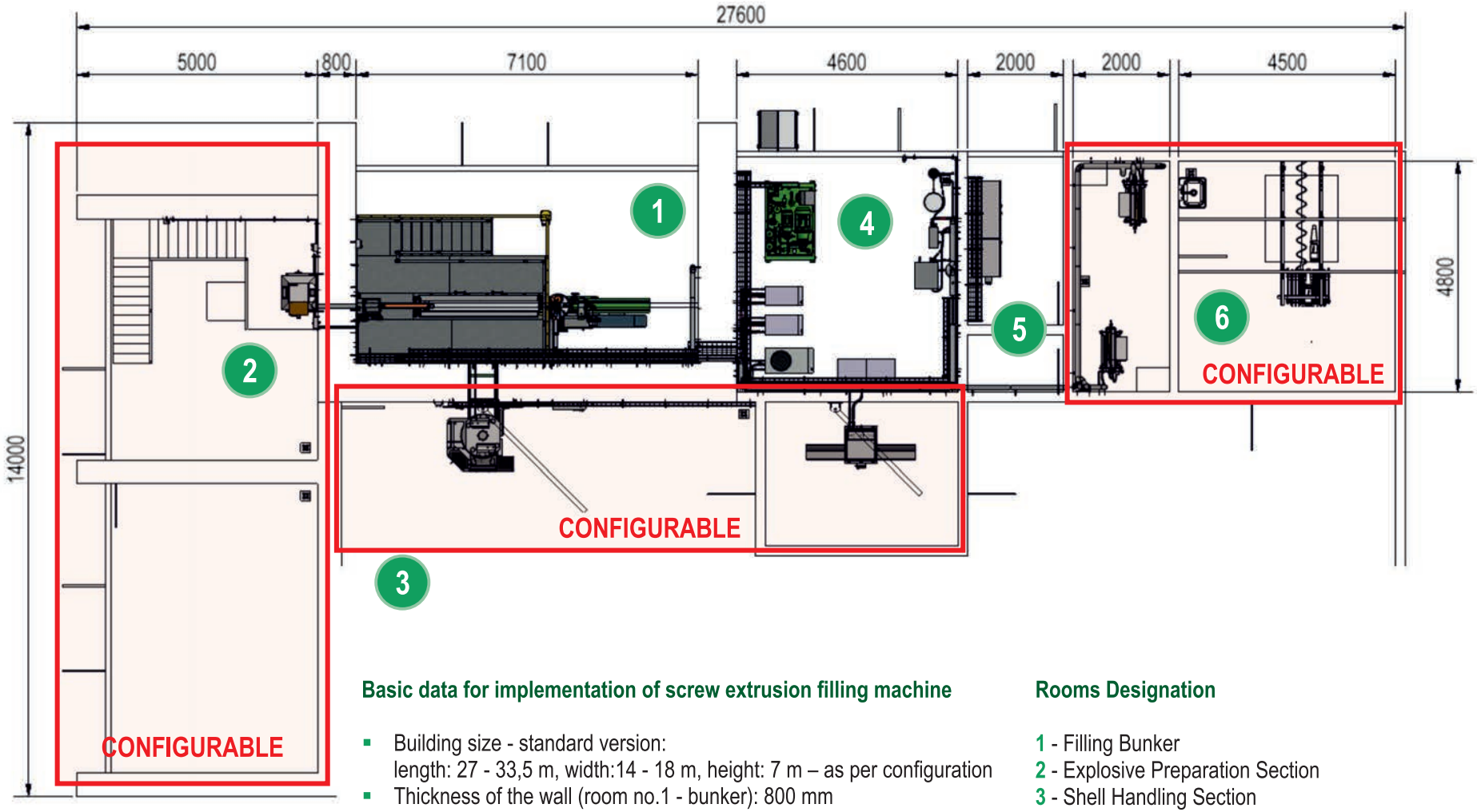


Illustration of Divided shell principle and Explosive charge evaluation.

LAYOUT OF SA-11 FILLING PLANT

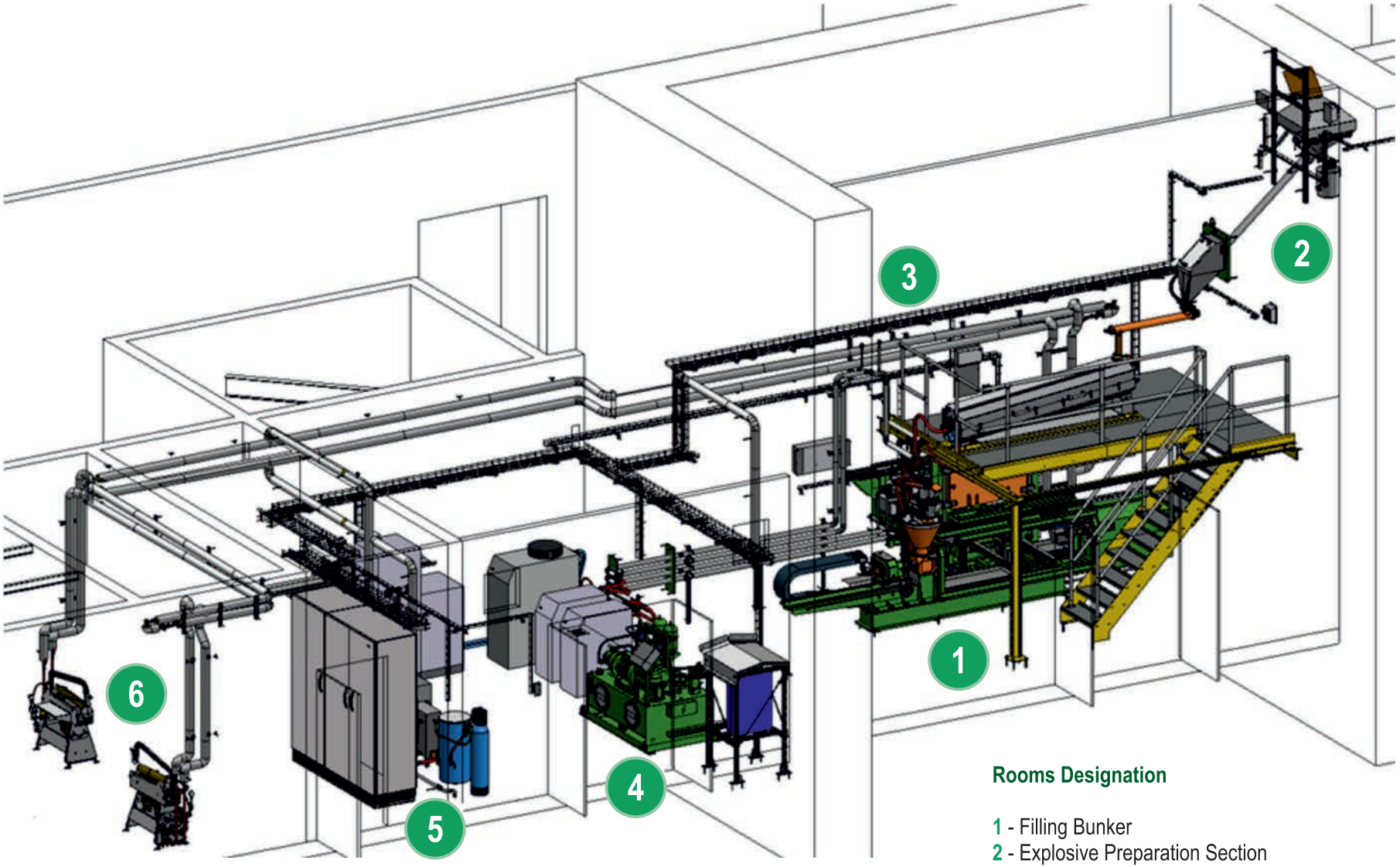


Basic data for implementation of screw extrusion filling machine

- Building size - standard version:
  length: 27 - 33,5 m, width:14 - 18 m, height: 7 m – as per configuration
- Thickness of the wall (room no.1 - bunker): 800 mm
- Operating staff – 4 persons
- Required Utilities – electricity, water,
- Total power Input / Rated Current: 115 kW / 100Amps.
- Rated Power Input in Steady State Operation: 50 kW
- Voltage system: 3 PEN ~50 Hz 400 V/TN-C (other on request)

Rooms Designation

1 - Filling Bunker
2 - Explosive Preparation Section
3 - Shell Handling Section
4 - Machine Room
5 - Switchboard Room
6 - Quality Control Section (Divided Shell Handling and Charge Cutting)



Rooms Designation

1 - Filling Bunker
2 - Explosive Preparation Section
3 - Shell Handling Section
4 - Machine Room
5 - Switchboard Room
6 - Quality Control Section (Divided Shell Handling and Charge Cutting)

Illustrative overall view on SA-11 filling plant

SA-11 SCREW EXTRUSION FILLING MACHINE

It is specially designed for filling large caliber HE ammunitions with regard to high variability, efficiency and product quality. Operational safety is one of the high standards of our design that diversifies this product to the top line on the market. In addition to the main feature - filling in a safe environment, the fuze cavity milling is performed simultaneously within the same operating cycle in order to achieve higher effectivity.

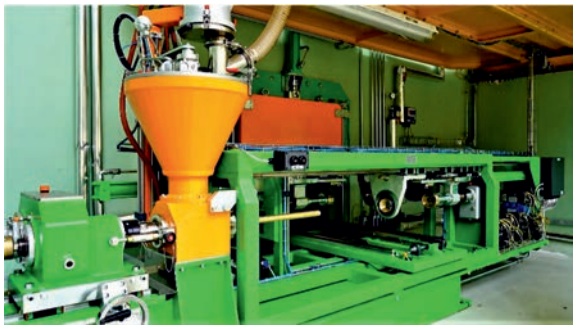
SPECIFICATION

- Caliber range 76 ÷ 155 mm
- Artillery shells & mortar bombs filling
- Explosive substance: TNT flakes, TNT/RDX (50/50) granules

FEATURES

- Manual or semiautomatic mode of operation
- Low energy and labor demand
- Total power input 115 kW Steady state operation approx. 50 kW
- Sieving and preheating of TNT flakes
- Density control of explosive charge
- High quality of explosive charge
- Quality control by means of divided shells (x-ray not required)
- Short-time of re-adjustment to another type of shell – high flexibility
- High safety of operation

Sections of the filled artillery shells



OPTIONS IN SHELL HANDLING SYSTEM (SHS)

OPTION 1
MANUAL SHELL HANDLING SYSTEM

- The operator manually loads the empty shell on the conveyor
- After the filling operation, the conveyor returns the filled shell to its original position
- The operator manually unloads the filled shell, and loads a new empty shell for the same process
- Operating staff: min. 2 men

Illustration of Manual Shell Handling System

OPTION 2
SEMI - AUTOMATIC SHELL HANDLING SYSTEM

- The operator inserts the carriage with empty shells to be filled into the docking station of the system
- Thereafter, the shell handling system loads one of empty shells for filling operation, at the same time the shell handling system automatically unloads the already filled shell onto the carriage
- After all the shells on carriage have been filled, the system unloads the carriage and asks for another
- Operating staff: min. 1 man

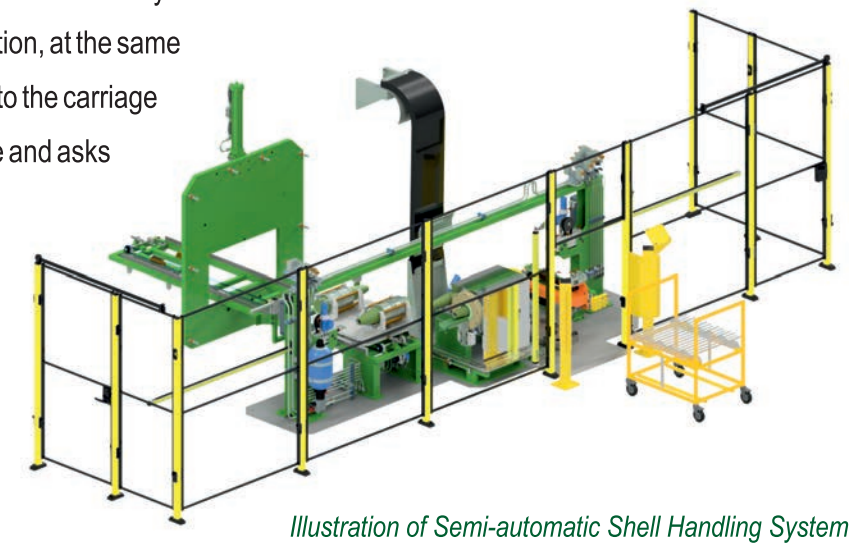


Illustration of Semi-automatic Shell Handling System

SA-11 CAPACITY OF AMMUNITION FILLING FOR DIFFERENT TYPE OF SHELLS

PRODUCT		MANUAL Pcs / HOUR		SEMI-AUTOMATIC (1) Pcs / HOUR	
		TNT	TNT/RDX	TNT	TNT/RDX
1.	76 OF	37	33	30	26
2.	M 81	37	33	30	26
3.	85 OF	37	33	30	26
4.	100 OF	30	27	24	21
5.	105 HE	30	27	24	21
6.	M 120	24	21	20	17
7.	122 OF	22	19	18	15
8.	125 OF	30	27	24	21
9.	130 OF	25	22	20	21
10.	152 OF	17	14	14	11
11.	155 HE M107	19	17	15	13
12.	155 ERFB	17	15	14	12

(1) Because of continual development and improvement of our systems, mentioned values are valid for models available in the year 2019, real capacity depends on actual system configuration

OTHER REQUIREMENTS AND PARAMETERS

	MANUAL SHS	SEMI -AUTOMATIC SHS
Operating Staff - Minimum	3	2
Operating Staff - Recommended	5	4
Technological Water Consumption	0,1 m3/hour (3)	
Technological Water Filtration	25 µm	
Voltage System	3-ph. ~50Hz, 400 V/TN-C (other on request)	
Main Power Supply Fusing	250 Amps.	

(3) Water may be recycled, not contaminated, for pressurizing and cooling of heating circuits.

ENERGY CONSUMPTION PER FILLED SHELL

PRODUCT		kWh / shell (2)
1.	76 OF	0,4
2.	85 OF	0,48
3.	100 OF	0,55
4.	105 HE	0,72
5.	122 OF	1,0
6.	125 OF	1,0
7.	130 OF	1,1
8.	152 OF	1,5
9.	155 HE M107	1,5
10.	155 ERFB	1,65

(2) Masured in steady state continual production, values are informative, depends on machine configuration

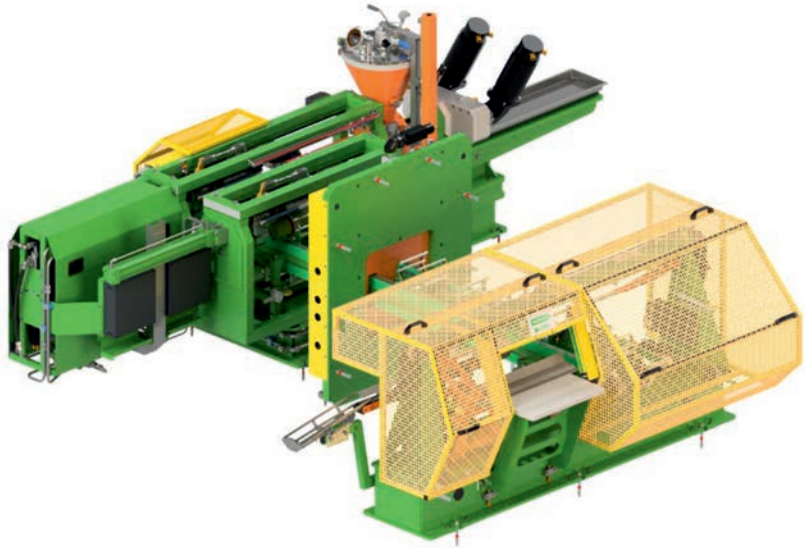
All information necessary for filling plant implementation i.e. raw drawings of the building, utility requirements, technological process description will be submitted to the Customer in “Technological Design” as a part of the Delivery.

SA-14 SCREW EXTRUSION FILLING MACHINE

It is designed for high-capacity filling of medium caliber HE artillery shells and mortar bombs by the method of screw extrusion. The design of the machine is focused on variability, efficiency, operator´s comfort and product quality. Operational safety is one of the cornerstones of design. In addition to the filling, the fuse cavity is performed simultaneously within the same operation cycle.

SPECIFICATION

- Caliber range 60 ÷ 120 mm
- Artillery shells & mortar bombs filling
- Explosive substance: TNT flakes, TNT/RDX (50/50) granules



FEATURES

- Semiautomatic mode of operation
- Total power input 90 kW
- Steady state operation approx. 35 kW
- Sieving ad preheating of explosive
- Density control of explosive charge
- High quality of explosive charge
- Quality control by means of divided shells
- (x-ray not required)
- Short-time of re-adjustment to another
- type of shell – high flexibility
- High safety of operation
- High capacity

SA-14 CAPACITY OF AMMUNITION FILLING FOR DIFFERENT TYPE OF SHELLS

PRODUCT		PCS / HOUR	
		TNT	TNT/RDX
1.	M 60 mm	90	80
2.	73 mm SPG9	63	55
3.	76 mm HE	67	57
4.	M 81 mm	63	53
5.	M 98 mm	52	44
6.	100 mm HE	50	42
7.	105 mm HE	48	40
8.	M 120 mm	36	30
9.	120 mm HE	31	25

(1) Because of continual development and improvement of our systems, mentioned values are valid for models available in the year 2019, real capacity depends on actual system configuration

OTHER REQUIREMENTS AND PARAMETERS

	SA-14
Operating Staff - Minimum	3
Operating Staff - Recommended	4
Technological Water Consumption	0,1 m3/hour (3)
Technological Water Filtration	25 µm
Voltage System	3-ph. ~50Hz, 400 V/TN-C (other on request)
Main Power Supply Fusing	250 Amps.

(3) Because of continual development and improvement of our systems, mentioned values are valid for models available in the year 2019, real capacity depends on actual system configuration

Konštrukta - Industry, a.s., performs design, development, production, erection and commissioning of customized plants with respect to all recommendation of European safety standards. Konštrukta - Industry, a.s., provides services and spare parts also for the previously produced products of “SA family line” SA-5, SA-7, SA-8 and SA-10.

AMMUNITION LOADING, ASSEMBLING & PACKING PLANT (LAP PLANT)

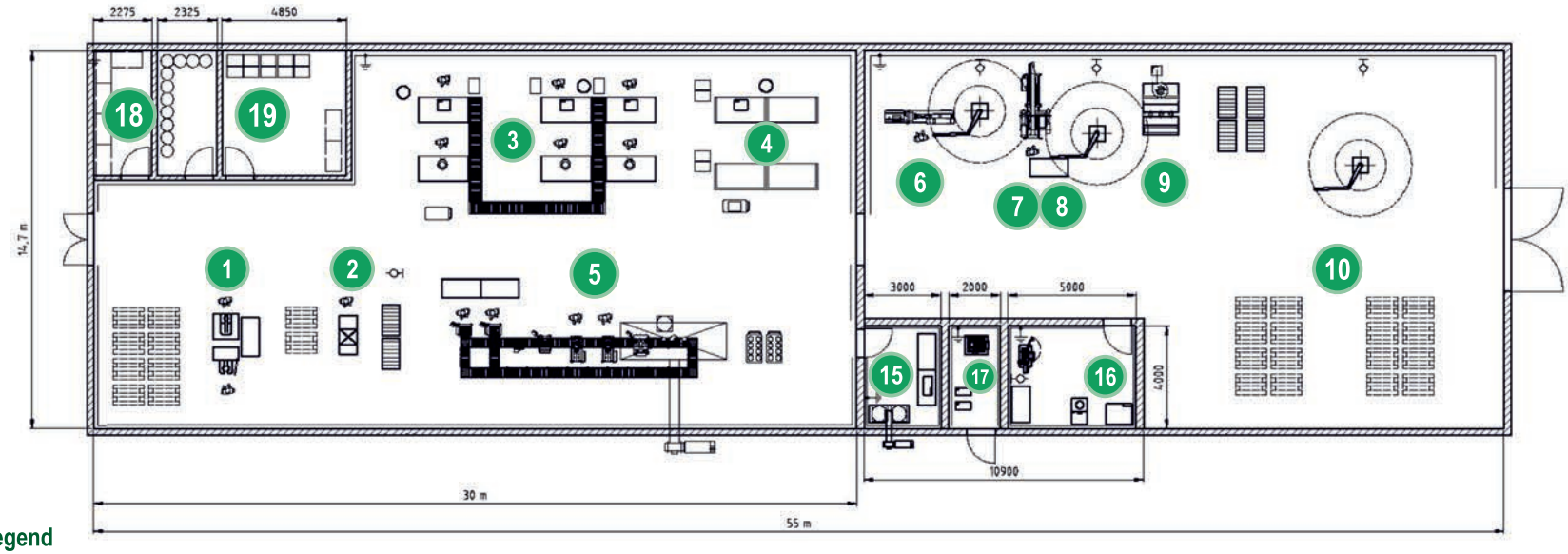
It is customized technological plant completed with preparation and finishing equipment for the final assembly of different fixed or separately loaded ammunition.

SPECIFICATION

- Caliber range: 57 ÷ 155 mm (as per request)
- Cartridge case loading & assembling
- Artillery & mortar ammo assembling
- Other as per request
- Caliber range 76 ÷ 155 mm
- Artillery shells & mortar bombs filling
- Explosive substance: TNT flakes, TNT/RDX (50/50) granules or flakes

FEATURES

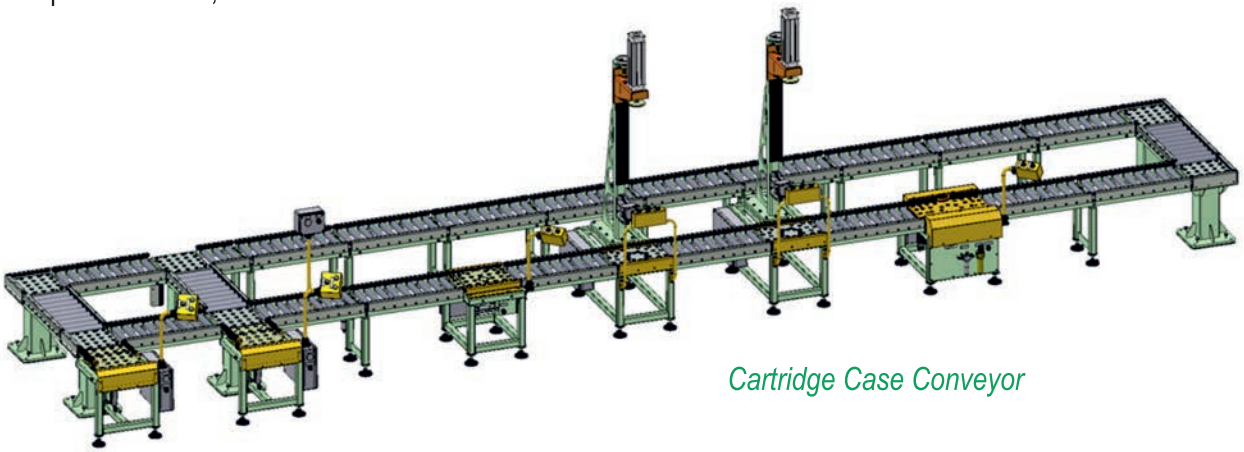
- Modular configuration with respect to the technological process
- Ready-made ammunition testing
- Loading ability check-up
- Sealing check-up
- Pull-apart force check-up
- Short-time readjustment for different caliber
- High safety work



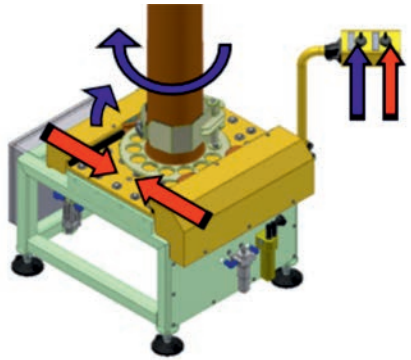
Legend

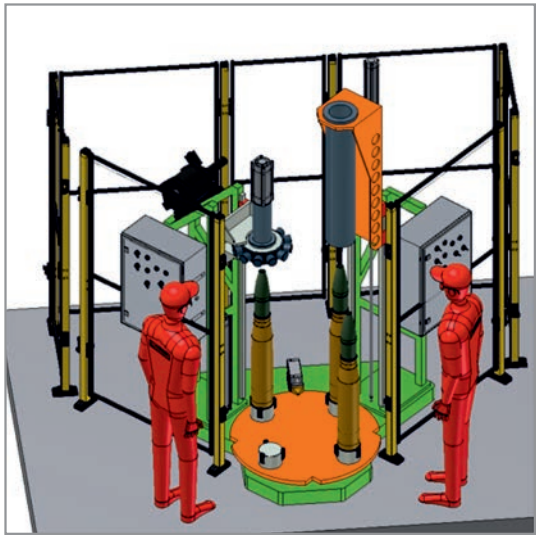
1 – Primer screw-in/pressing-in
2 – Cartridge case stenciling
3 – Propellant charges weighting and assembly
4 – Additional components preparation
5 – Cartridge case loading and assembling (LAP Line)
6 – Crimping of single loaded ammunition
7 – Loading ability checking
8 – Primer screw-in (if required)
9 – Preservation
10 – Packing
15 – Sealing agent preparation
16 – Quality control
17 – Machine room
18 – Tools, exchangeable parts storage
19 – Pyrotechnical components storage

The cartridge case conveyor is designated as a set of modular devices used for the gradual loading and assembling of fixed or separate loaded ammo. In the technological process, it is possible to position the cartridge case and insert the individual components according to laboratory instructions, vibrate the bulk powder in the cartridge case, press the caps and seal the cartridge cases by means of sealing material. The conveyor may be arranged in any configuration in terms of technological process, capacity, direction of material flow, etc. The drive of devices is pneumatic. The cartridge cases on the conveyor move manually in special carriers, that differ for each caliber.

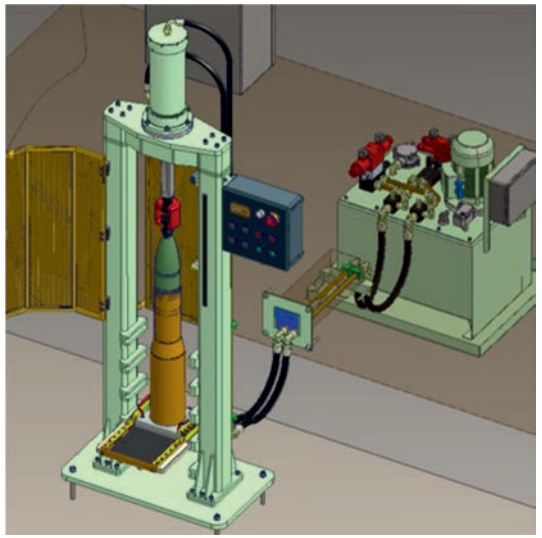


Cartridge Case Conveyor





Crimping of Single Loaded Ammo a nd Loading Ability Check up



Pull-Apart Machine

CASTING METHOD OF FILLING AMMUNITION

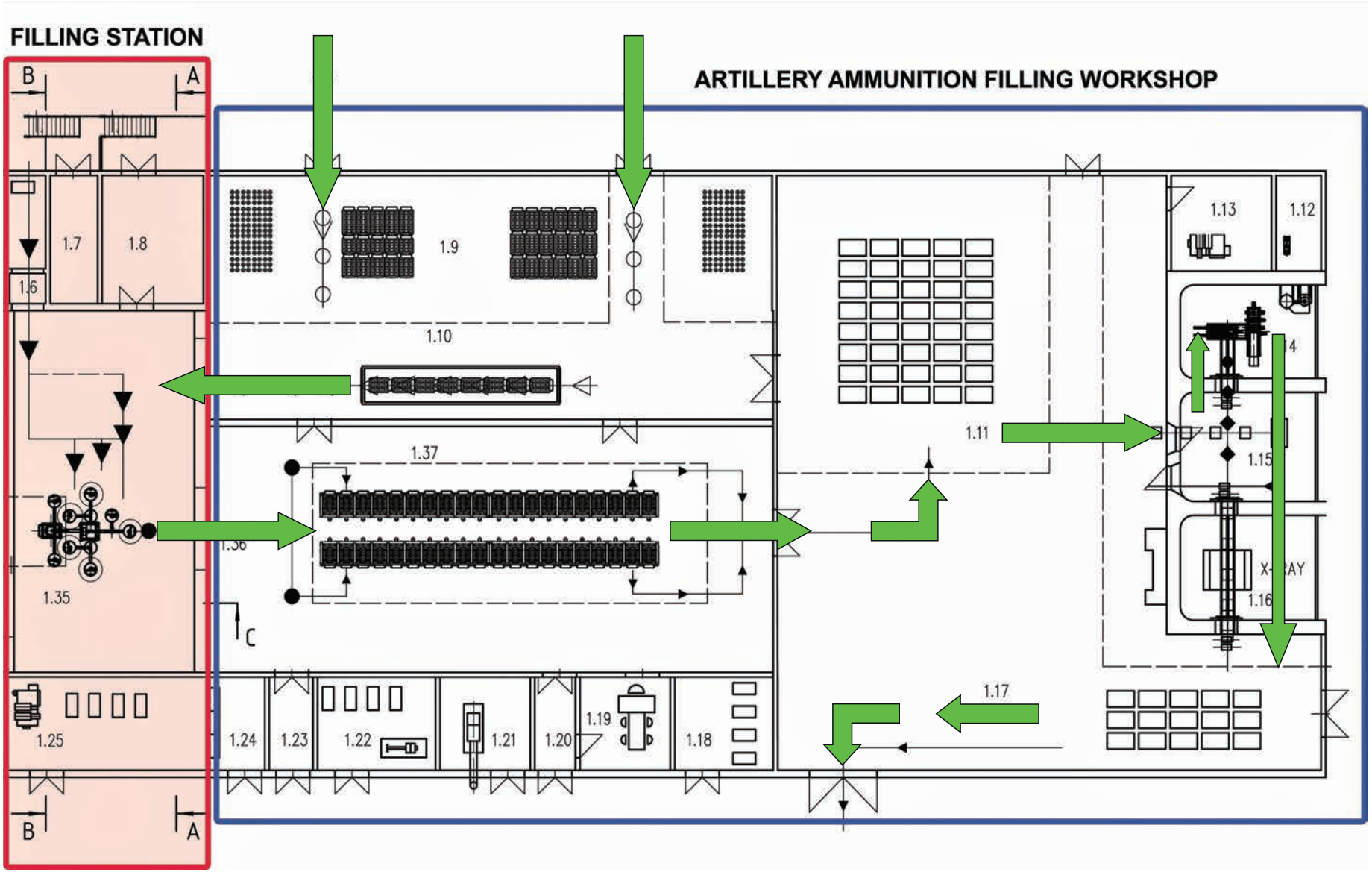
Ammunition filling by casting method is the most common way of filling ammunition. This method is suitable almost for all ammo shapes and types. The basic explosive used for casting is TNT alone or in a composition with non-meltable explosives and additives. A large amount of ammunition can be filled by the casting method in a relatively short time. Subsequent operations – solidification of explosive charges, disassembly of funnels, milling and cleaning of cavities, are however demanding on energy, time and personnel.

SPECIFICATION

- Caliber range: all calibers over 40 mm
- Artillery shells, mortar & avia bombs
- Explosive substance: TNT flakes, TNT/RDX, TNT/RDX/Al and others on request

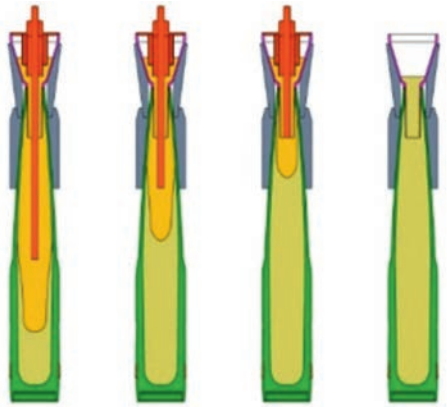
FEATURES

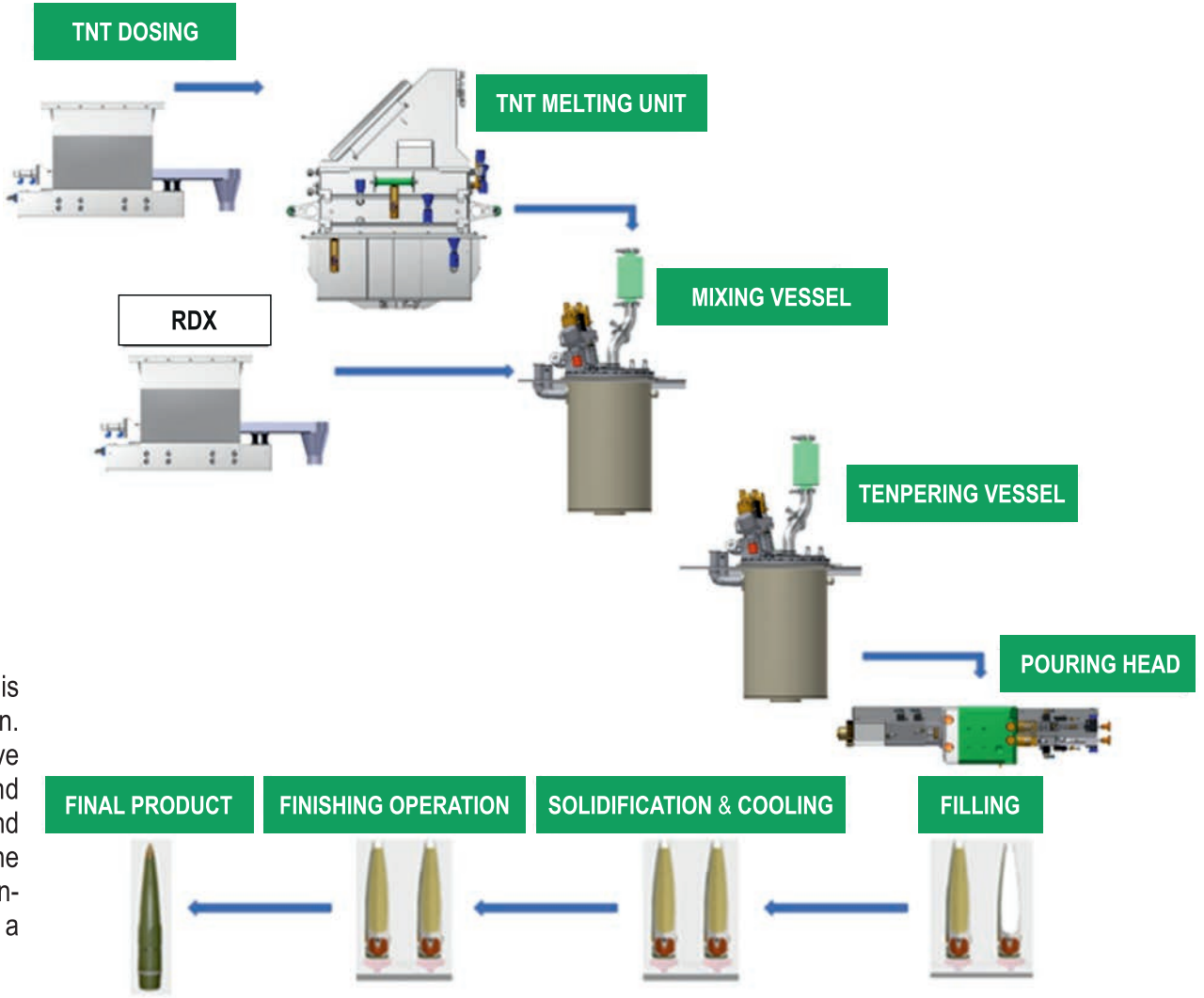
- Explosive preparation + preparation of empty shells (filling pallet)
- Melting, mixing and tempering of explosives
- Input components preparation, preheating
- Pouring to shells / grenades
- Controlled solidification, cooling
- Finishing operation, quality control
- Customized technological tools & exchangeable parts


FILLING STATION
ARTILLERY AMMUNITION FILLING WORKSHOP
B
A
1.6
1.7
1.8
1.9
1.10
1.11
1.12
1.13
1.14
1.15
1.16
X-RAY
1.17
1.18
1.19
1.20
1.21
1.22
1.23
1.24
1.25
1.35
1.36
1.37
C

FEATURES

- Prepared explosive direct pouring in
- High production capacity
- Balanced energy requirement of pouring and cooling system
- Multi-purpose system for different calibers
- The compact/homogeneous density through the whole volume of the charge
- Filling of shells with complicated cavity shape
- Filling of products with different shapes/cavity shapes
- Manual or semiautomatic mode





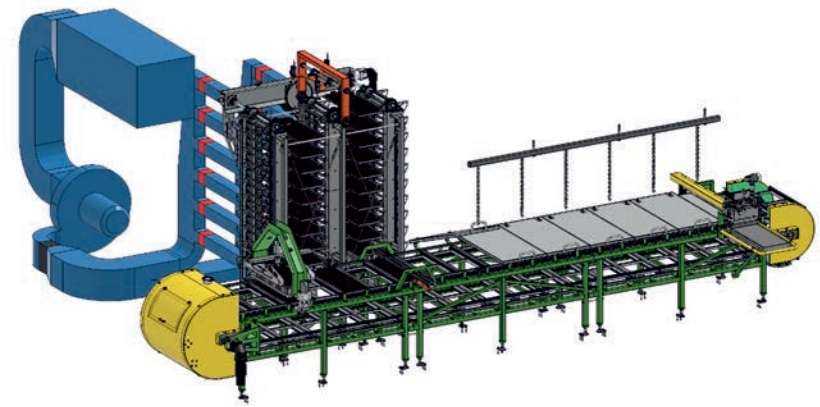
By pouring method in a relatively short time it is possible to fill a large amount of ammunition. Subsequent operations - solidification of explosive charges, disassembly of funnels, milling and cleaning of cavities, however, are energy, time and personnel demanding. Quality checkup of the explosive charges has to be executed by non-destructive method using X-ray equipment (not a part of delivery).

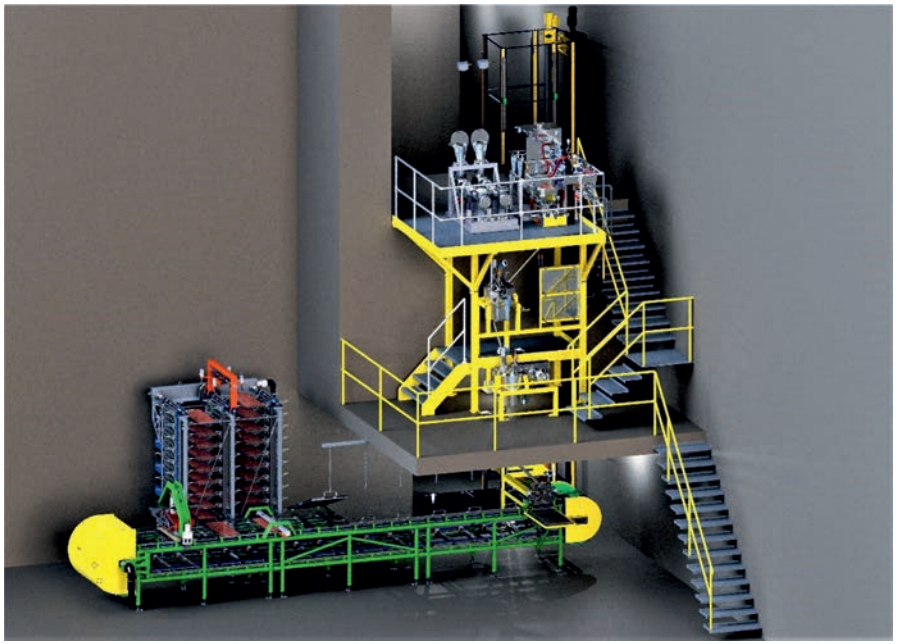
SOLID PIECES PRODUCTION PLANT

The solid pieces production plant is easy-operated technological line designated for production of hemispherical solid pieces by pouring of prepared TNT or composite explosives (on request) into molding plates equipped with defined shape used for filling aviation bombs.

SPECIFICATION

- Product size: 23 - 25 mm (others on request)
- Capacity: 200 kg/hour
- Explosive substance: TNT, TNT/RDX, TNT/RDX/Al and others on request





TNT/RDX FLAKES PRODUCTION PLANT

TNT/RDX flakes production plant is easy-operated technological line designated for production of composite explosive (on request) on flakes of shape used for filling artillery and mortar ammunition.

SPECIFICATION

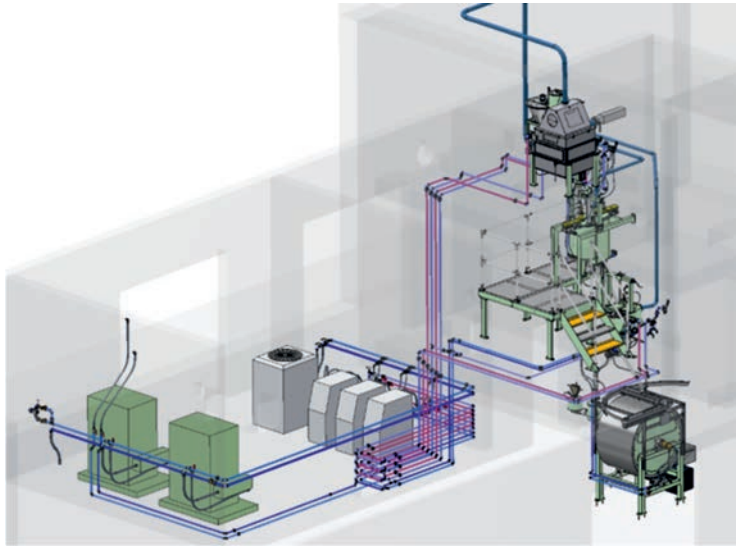
- Product size: 3 - 5 mm
- Capacity: 80 kg/hour
- Explosive substance: TNT/RDX (on request)

PRODUCT

- TNT/RDX flakes

APPLICATION

- Filling artillery shells & mortar shells by screw extrusion method



HAND GRENADES PRODUCTION PLANT

The production plant is designated for semiautomatic production of hand grenades filled by TNT/RDX explosive or other on request.

SPECIFICATION

- Filling of hand grenades
- Capacity: 1200 pcs/shift
- Explosive substance: Comp. B (others on request)

FEATURES

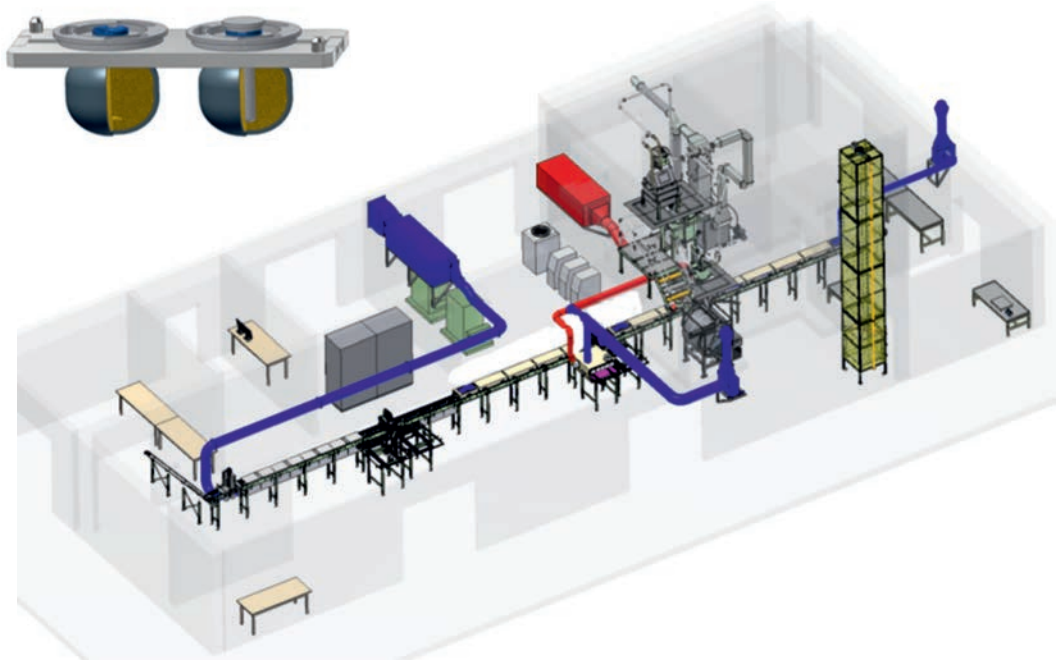
- Manual mode
- Semiautomatic mode

PLANT CONFIGURATION

- Preparation of explosive
- Preparation of grenades
- Explosive substance pouring
- Explosive charge-controlled solidification
- Explosive charge cooling
- Finishing operations
- Customized technological tools & exchangeable parts
- Handling system
- Exhausting system

PRODUCT

- Hand grenades

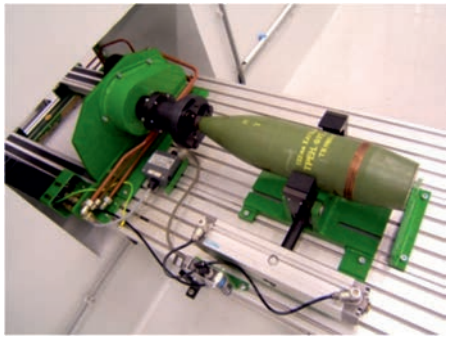


The hand grenade production plant is designated to meet high demand on safety, comfort of operation and quality of output products. The continuous filling and solidification system allow the production of hand grenades of the same quality throughout the production process.

OTHER ADDITIONAL EQUIPMENT

SINGLE-PURPOSE EQUIPMENT USED IN DEMILITARIZATION OF AMMUNITION / CUSTOMIZED EQUIPMENT FOR DEMILITARIZATION

The single purpose equipment is designated for demilitarization of expired ammunition starting from complete disassembly of mechanical parts, discharging of explosive charges.

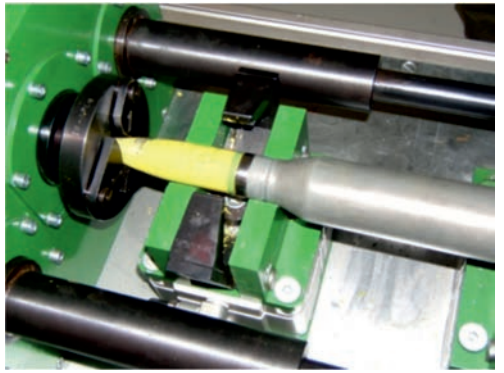


SPECIFICATION

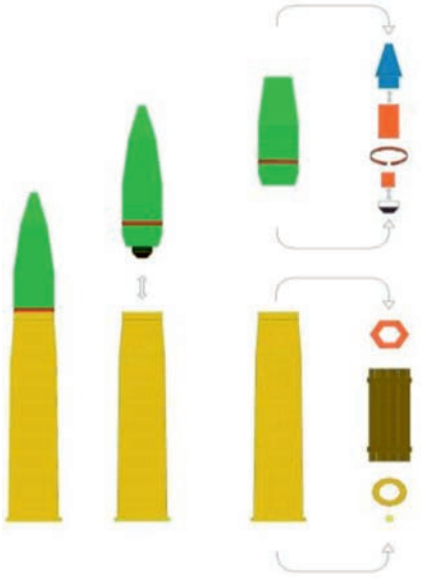
- Aircraft and anti-aircraft ammunition, caliber range 20 – 40mm
- Artillery fixed ammunition, caliber range 57 – 115mm
- Mortar bombs, caliber 60 – 120mm

FEATURES

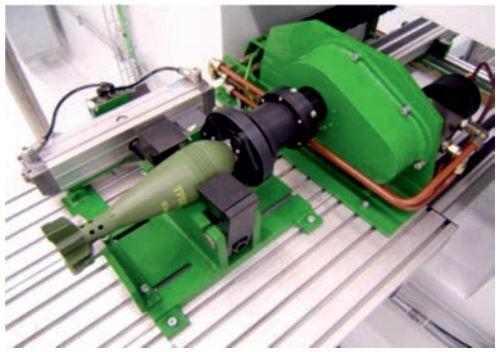
- Safety aspect of the whole technological procedure
- Exclusion of personnel attendance/automatization and protection at dangerous operations – dangerous operations are performed behind the protection shield
- Separation of ammunition elements resp. components
- Separation of metal and plastic materials as secondary raw material
- Ecological aspect of ammunition demilitarization
- Economical aspect and financial return of the whole demilitarization process



The process of developing the equipment starts with the ammunition and the responses for the following question:



Is it safe to move the ammunition?
If no, then the ammunition is not suitable for demilitarization by other than controlled "on-Site" demolitions.



CUSTOMIZED EQUIPMENT FOR SOLID PROPELLANT PRODUCTION

Customized equipment for the production of solid propellants.

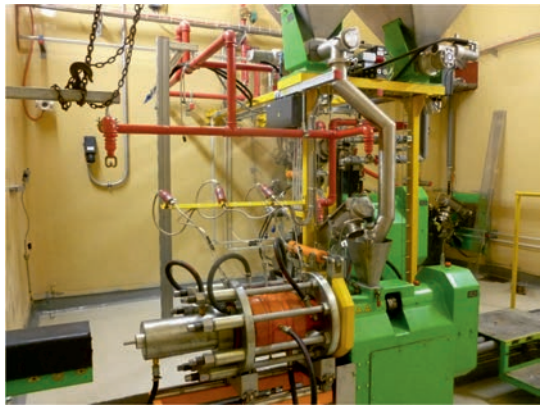
SPECIFICATION

- Gun tubular grains
- Short cut powder grains
- Solid rocket propellants (rods, tubes)
- Other shapes on customer request

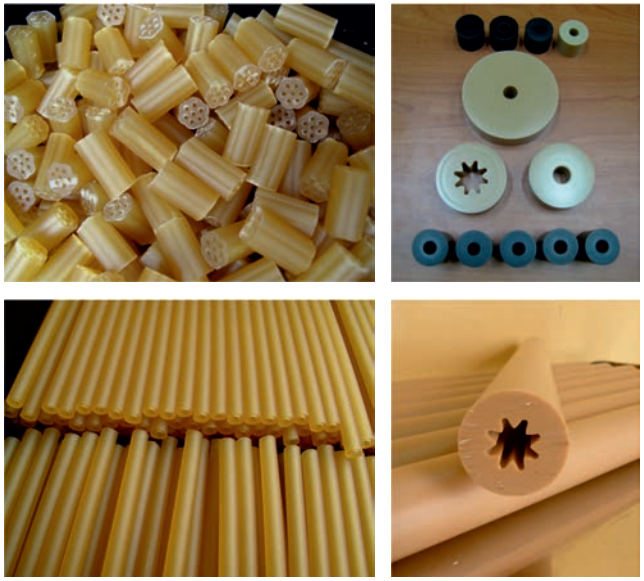
DESIGNATION OF EQUIPMENT

- Dosing and supply – dosers, conveyors
- Dewatering of wet paste
- Rolling
- Extrusion
- Cutting

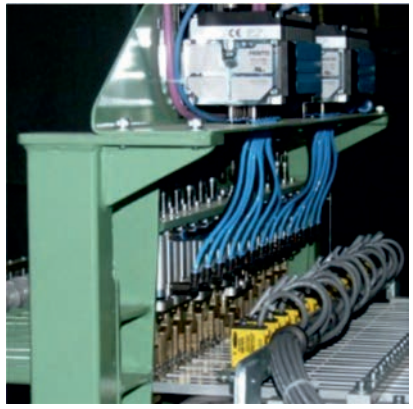
Continual Rolling Mill



Homogenizing & Forming Extruders



Final Products

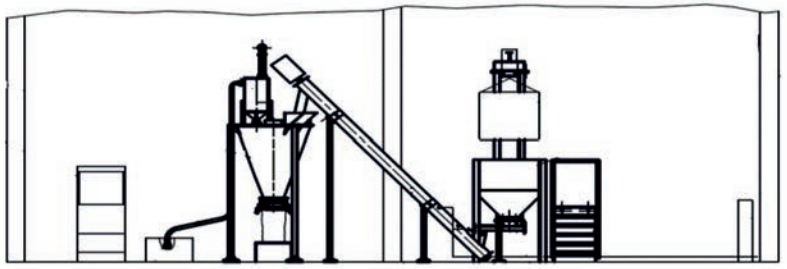


Artillery Tube Powder Cutter

Solid Rocket Propellant Cutter

INDUSTRIAL EXPLOSIVES PRODUCTION FACILITIES

Customized single-purpose equipment & devices for the production of ANFO (Ammonium Nitrate/Fuel Oil) or Emulsion explosives used in civil industry (mining, demolition).



ANFO EXPLOSIVES

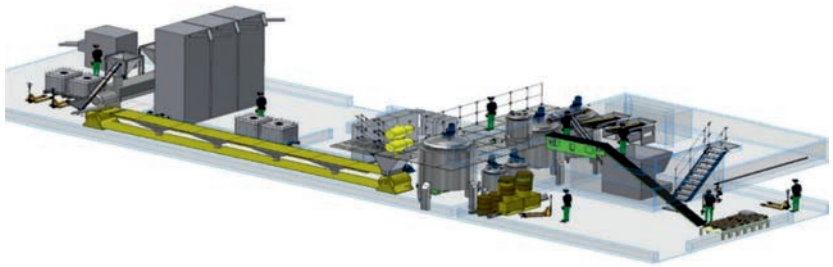
DESIGNATION OF EQUIPMENT

- Production of ANFO explosives used for blasting operation in civil industry (mining, demolitions, building, etc.)

EMULSION EXPLOSIVES

DESIGNATION OF EQUIPMENT

- Customized single-purpose equipment & devices for the production of emulsion explosives used for blasting operation in civil industry (mining, demolitions, building, etc.)

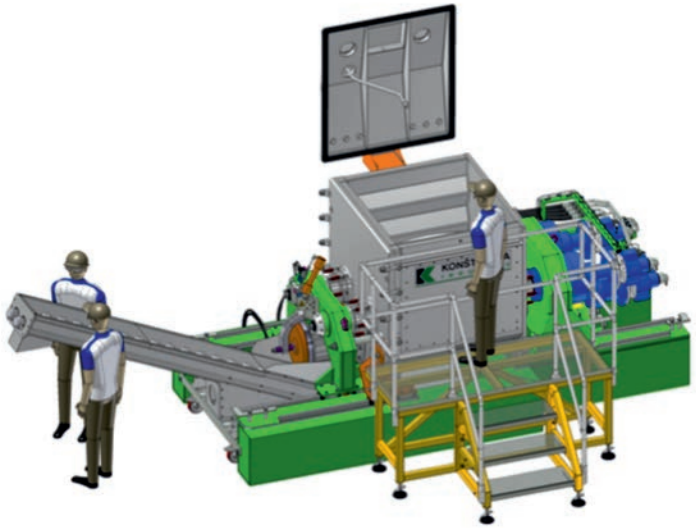


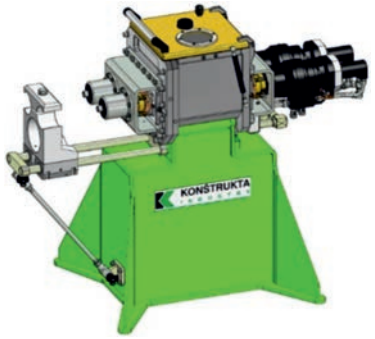
KNEADING TECHNOLOGY (MALAXER)

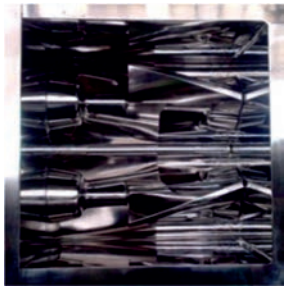
HORIZONTAL KNEADING MACHINES

FEATURES
- Customized single-purpose equipment & devices
- Heated or cooled double jacketed kneading bowl
- Vacuum system
- Ex-proof design
- Effective volume up to 2000 dm^3

DESIGNATION OF EQUIPMENT
- Explosive processing
- Chemical and plastic industry
- Pharmaceutical and cosmetic work







VERTICAL KNEADING MACHINES

FEATURES
- Customized single-purpose equipment & devices
- Heated or cooled double jacketed kneading bowl
- Vacuum system
- Ex-proof design
- Effective volume up to 2000 dm^3

DESIGNATION OF EQUIPMENT
- Explosive processing
- Chemical and plastic industry
- Pharmaceutical and cosmetic work

KONŠTRUKTA
INDUSTRY

WE ARE OFFERING

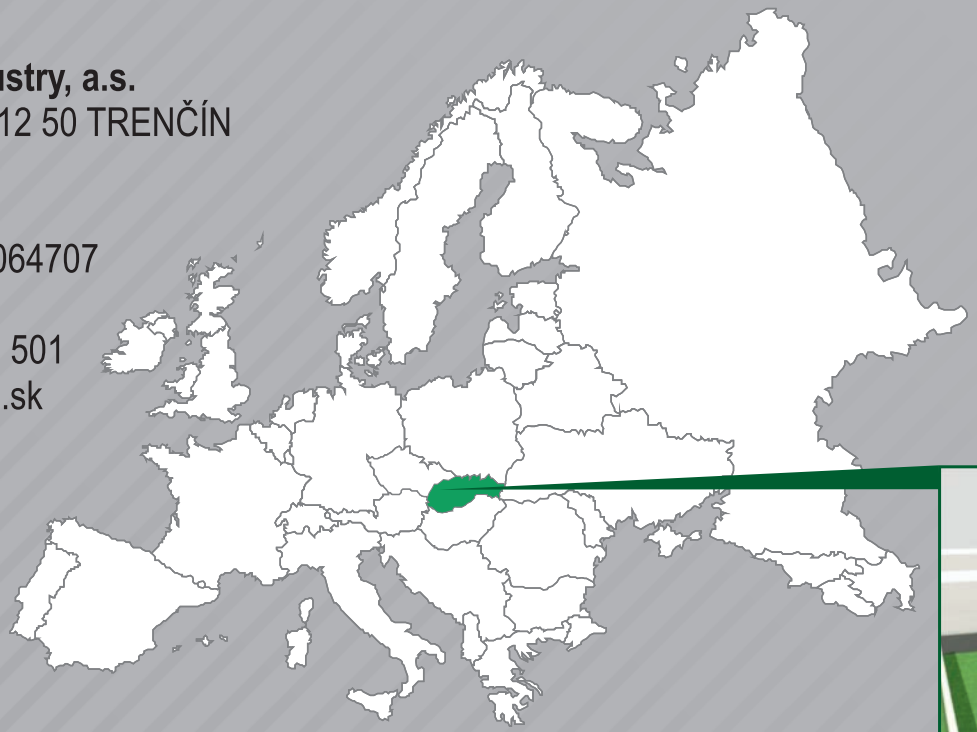
- TECHNOLOGICAL PROJECT
- PRODUCT
- TECHNICAL AND TECHNOLOGICAL DOCUMENTATION
- NECESSARY TECHNICAL SPECIFICATION FOR THE BUILDING
- ERECTION AND COMISSIONING
- INSPECTION OF THE BUILDING
- TRAINING
- SPARE PARTS
- TECHNICAL ASSISTANCE

CONTACT US

KONŠTRUKTA - Industry, a.s.
K VÝSTAVISKU 13, 912 50 TRENČÍN
SLOVAK REPUBLIC

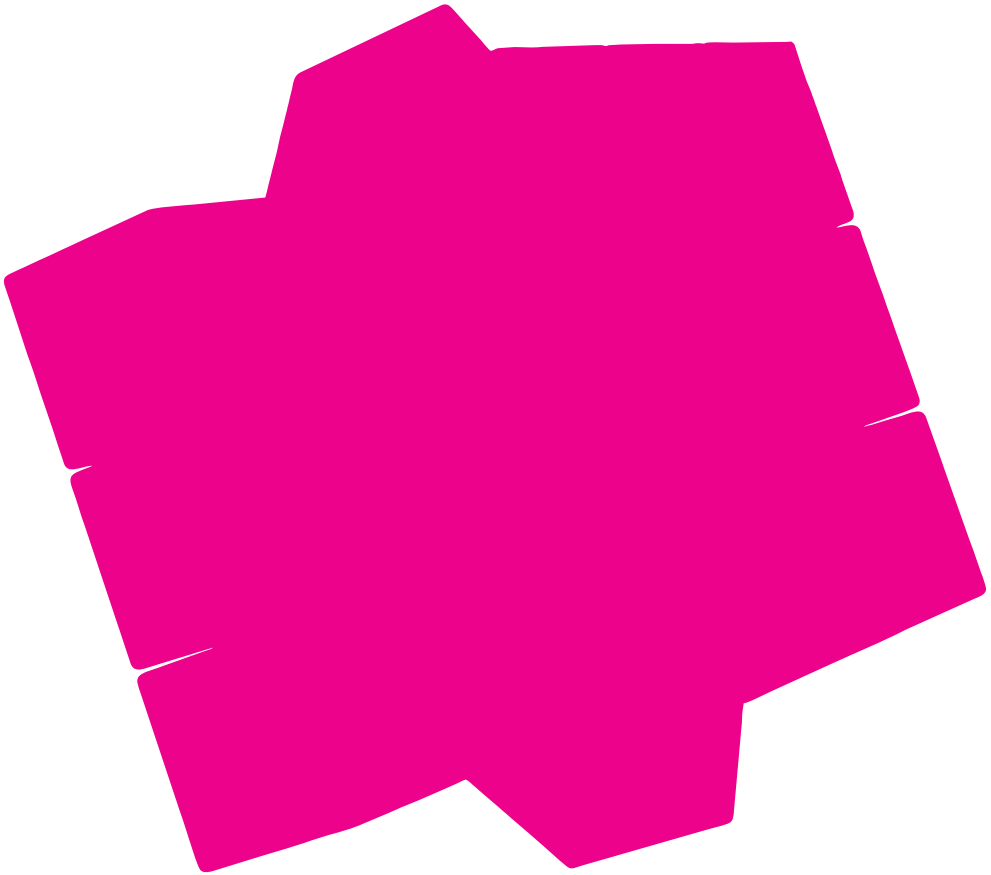
GPS: 48.888087, 18.064707

phone: +421 32 2856 501
email: sales@kotaind.sk



www.kotaind.sk

KONŠTRUKTA
INDUSTRY



ADVANCED
DEVELOPMENT
CUSTOMIZED
SOLUTION

KONŠTRUKTA
INDUSTRY