

**Maximizing Production Potential:
Innovative Silos for the Plastic Industry**



A close-up photograph of a person's hand holding a large quantity of small, blue, circular pellets. The pellets are piled in the palm and spill slightly over the fingers. The background is a dense field of the same blue pellets, creating a textured, monochromatic effect. The lighting is bright, highlighting the texture of the hand and the individual pellets.

Tailored Storage Solutions and Accessories

Here you will find some information about BM Silo and how our products can support your business in the plastic industry.

We specialize in providing customized storage and buffer solutions, along with various standard options, seamlessly integrated into process plants. Additionally, we offer mobile solutions, augers, and accessories to meet your specific needs.

Our key offerings include:

- Squared silos: Customized to meet specific needs or available as a standard solution.
- Mobile silos: Both mobile silos and hoppers as well as stackable options are available.
- Mixing silo: Ensuring homogeneous granulates for consistent product quality.
- Auger: Efficient material transport with both customized and standard options
- 3D drawings: Detailed visualizations for easy integration planning
- EN1090 certification: Full traceability of materials used.
- Eurocode Compliance: On request, silos can be designed to withstand earthquakes, snow loads, and wind loads.
- CE marking: Compliance with relevant standards and regulations
- Environmental benefits: Significantly lower CO2 footprint compared to aluminum alternatives. CO2 emission pr. Silo can be calculated on request.
- Optimal utilization of space available due to design
- Modular Design: Flat-pack shipping for cost-effective freight and quick installation.

Contact us today and unlock the full potential of our innovative storage solutions and accessories. Our team of experts is ready to assist you in finding the perfect customized or standard silo for your needs.

Contact our sales department at:

sales@bmsilo.com

+45 97 43 50 66

BM Silo Available quality documentation

Your security!

When documentation is a demand, we stand behind the following regulations.



EN 1090 – Full traceability at materials



On request, Silos will be calculated and designed to resist earthquake, wind load, and snow load



On request, CO2 emission per cubic meter silo can be calculated. We can be scope 3 in your LCA.



Atex can be calculated when there is a risk of explosion from the material.



All documentation for CE marking is available.

Table of Contents

6	Product range
8	Modular silo
10	Clean silo
12	Auger discharge silo
14	Auger Mixing silo
16	Gravity Mixing silo
18	Outdoor Modular silo
21	Accessories - adaptation to your needs
22	Indoor auger mixing silo put to the test - mixing 50 tons of plastic granulate a day
25	Contact us today to learn more about our products!

Product range

We have chosen a specific range of products, that we will present for you. On the next pages, we will dig into the details and the wide range of accessories.

When you cooperate with BM Silo 3D drawings, you will always get Detailed visualizations for easy integration planning. All models are made as outdoor versions. We can do static calculations on all the shown silos.



Modulsilo

- The first one
- 900kg/m³
- Up to 86m³
- Max height 12.4 m
- Footprint 1x1m -3.5x3.5m
- Most compact shipping



Cleansilo

- 100 % emptying
- 900kg/m³
- Up to 67m³
- Max height 10.3 m
- Footprint 1x1m -3x3m



Auger discharge silo

- Cone: 60°/90°
- 650 kg/m³
- Up to 62m³
- Max height 9.61 m
- Through auger 152/250 mm
- Difficult flowing materials
- Agitator



Auger Mixing silo

- Cone: 60°
- 900 kg/m³
- Up to 66 m³
- Max height 10.7m
- Footprint 1.5x1.5m – 3x3m
- Auger 3.200kg/ hour at 50 rpm.
- Up to 14mm particles



Gravity mixer

- Cone: 60°
- 900 kg/m³
- Up to 66 m³
- Max height 10.7m
- Footprint 1x1m – 3x3m



Outdoor modular silo

- 900kg/m³
- Up to 71.54m³
- Max height 10.9 m
- Footprint 1.5x1.5m -3.5x3.5m
- Corrosion class C2 option C5



Modular silo

Storage for the same product, day after day!

Choose the Modular silo when you have a free-flowing material in your processing line for raw materials, inter-media storage, or storing your finished product.

Galvanized sections provide long-life durability, ensuring good internal hygiene and optimum silo discharge. The panels can resist high-pressure cleaning.

The modular system is flexible, providing various combinations and the sections are ready for easy on-site assembly.

Installation in existing buildings is easy, as all silo parts can pass through a standard doorway.

The bottom cone is available with two different angles. The 45° cone is suitable for easy-flowing materials. The discharge measures 300x300 mm and has one shut-off slide. The 60° cone is the perfect choice for materials with flow challenges such as small flakes. The discharge flange is 500x500 mm and has two shut-off slides measuring 250x500mm.

The leg length allows most standard suction boxes, inlets, and augers to be fitted under the silo. The discharge height can be adjusted as required using our full range of extension legs.

Standard equipment offers an inspection hatch with a window, a manually operated shut-off slide, and a steel cover.

Optional equipment such as reinforced cover, Injection unit with tanker connection flange, cyclone, and piping, guardrails, level sensors, load cells with display, vibrators, and connecting pieces for augers and feed system inlets can be delivered.

Applications for Modular silo

The BM modular silo is the perfect choice for bulk storage of cereals, granulates, meal feed, pellets and more.



Product assortment – Modular silo

Measurements mm	Height m	Contents m ³	Load metre	Indicative installation hours for 2 persons
1050 x 1050	1.27 - 5.04	0.14 - 3.40	0.53.	5 - 9.5
1300 x 1300	1.39 - 5.04	0.18 - 4.56	0.81	3.4 - 10
1550 x 1550	1.57 - 5.34	0.50 - 8.24	0.93	3.5 - 12
2050 x 2050	1.80 - 10.88	1.23 - 35.56	1.00	6 - 17
2550 x 2550	2.05 - 12.02	2.45 - 60.91	1.60 - 2.65	7 - 24
3000 x 3000	2.06 - 12.40	4.06 - 86.35	2.10 - 3.15	7 - 36.5
3546 x 3546	2.71 - 9.64	6.40 - 80.10	3.701	9.5 - 42

**All our silos are industrial design protected
All rights reserved

Clean silo

Self-emptying, state-of-the-art solution.

Choose the Clean silo when you change product type or color to store, or you just want to be sure that it is 100% clean each time.

The bin is without inner stiffeners. All the bolts and nuts are mounted externally, offering full discharge, and preventing foreign objects to interfere with the material flow.

Galvanized - all panel sections are galvanized to ensure long-life durability. The smooth steel panels ensure good internal hygiene and optimum silo discharge.

The modular system provides a wide range of combinations that can easily be adapted to your needs and space. Each module is made of metal sheets, easy to install on-site. Additional sections can be added to increase the volume.

Installation in existing buildings is easy, as all silo parts can pass through a standard doorway.

The bottom cone of C-100, C-125, and C-150 is 60° with an outlet flange of 300x300mm. C-200, C-250 and C-300 are available with 45° and 60°

cone. The outlet flange is 300x300 by 45° cone and 500x500 by 60° cone. The inspection hatch is placed in the cone on C-200, C250, and C-300. That gives good access also when clean silos are standing side by side or in a block.

Standard equipment – The Clean Silos are supplied with a split steel cover with a square adaptor plate 415x415mm for a wide range of adaptors, which ensures easy connection to filling equipment in the center of the cover.

Optional equipment such as reinforced cover, Injection unit with tanker connection flange, cyclone, and piping, guardrails, level sensors, load cells with display, vibrators, and connecting pieces for augers and feed system inlets can be delivered.

Applications for Clean silo

The Clean Silo is a generation of silos, created with the purpose to cover different needs in the market, offering an efficient and optimised discharge of the silo with no residues left behind.



Product assortment for Clean 100 -150/ 200 – 300

Measurements mm	Height m	Contents m ³	Load metre	Indicative installation hours for 2 persons
1080 x 1080	1.25 - 6.05	0.25- 4.65	0.50	3.5 - 9.5
1330 x 1330	1.25 - 6.05	0.5- 7.46	0.81	3.5 - 10
1580 x 1580	1.55- 6.35	0.87 - 10.95	0.93	3.5 - 12
2125 x 2125	1.79 - 10.68	1.23- 34.91	1.26	6 - 21
2711 x 2711	2.05 - 8.85	2.45- 42.01	1.77	7 - 26
3147 x 3147	2.06 - 10.26	4.02 - 66.93	2.10 - 3.15	7 - 32

**All our silos are industrial design protected
All rights reserved

Auger discharge silo

Choose Auger discharge silo when you have a low-density product, that is sticky or bridging as it is not flowing all the time. Ensure a flow in your process line. Even on not-so-free-flowing materials!

The auger silo is modular and shares not only components with the BM Modular silo, but also advantages such as long service life, galvanized plate sections, many combination options, and good hygiene.

Installation in existing buildings is easy as all parts of the silo can pass through a standard door opening.

The trough auger is open along the section length. The auger flight has two different pitches to allow uniform discharge.

The Q-16, Q-24, or 500x500 outlet of the trough augers is located outside the silo so that the contents only flow when the auger is running.

A version with a center outlet with double capacity is available. This version needs a separate shutter.

The discharge auger is in range from one $\varnothing 152$ mm auger up to twin $\varnothing 250$ auger.

Discharge capacity from 7 to 83 cubic meters per hour.

The augers are powered by heavy-duty worm gear motors, operating at a standard speed. A wide range of worm gear

motors allows you to change the auger capacity to your needs.

The agitator can be mounted for particularly difficult flowing materials. A separate worm gear motor is driving the Agitator making sure that the agitator only runs when necessary.

The leg length has been adjusted to allow trough augers and screw conveyors to be mounted under the silo discharge. Naturally, the outlet height can be changed as required using our wide range of extension legs.

Standard equipment - the auger discharge silo is supplied with an inspection door, inspection glass, steel cover, and trough auger with a worm gear motor. The silo can also as standard be supplied with an injection unit complete with tanker lorry connection flange, piping, cyclone, and filter bag.

Optional equipment such as agitators, level sensors, vibrators, and connecting pieces for augers and feed system inlets, etc can be ordered.

Applications for Auger discharge silo

Auger discharge silo allows optimum emptying efficiency of light materials that often cause bridging. The system is designed with two different pitches to allow uniform discharge.



Kg/m³



Meal feed



Flakes



Product assortment – Auger silo

Measurements mm	Height m	Contents m ³	Load metre	Indicative installation hours for 2 persons
1050 x 1050	1.39 - 4.91	0.34 - 3.50	0.50	5 - 11
1300 x 1300	1.52 - 5.04	0.46 - 5.50	0.81	5 - 12
1550 x 1550	1.94 - 5.46	1.27 - 8.67	0.93	5 - 13
2050 x 2050	2.28 - 5.82	3.15 - 16.55	1.00	7 - 18.5
2550 x 2550	2.68 - 7.72	6.29 - 36.53	1.60 - 2.65	9 - 25
3000 x 3000	3.05 - 8.09	10.47 - 52.79	2.10 - 3.15	9 - 32

**All our silos are industrial design protected
All rights reserved

Auger Mixing silo

This is often used in a process for homogenizing in the recycling industry. The biggest one is often chosen, to have an equal melting point. Up to 86 cubic meters pending on the density.

Bm auger mixing silo is a further development of the bm clean silo. a specialized mixing system including a smooth, ledge. It is a highly functional product that in the same way as all the products by BM Silo can be shipped all over the world. The silo can be delivered as an indoor or outdoor mixing silo.

The modular system offers a multitude of combinations and easy adaptation which, combined with the square construction, ensures optimal space utilization. The silo is constructed according to the Eurocodes. Installation, service, and maintenance of worn parts can be done within confined spaces.

The mixing system creates the ability to offer homogenized material which can be used in various industries (plastic etc.). The homogenized material can contribute to a more streamlined production with more consistent results. Mixing the product while filling the silo ensures a quick throughput. The unique design of the Auger Mixing Silo means also means that calibration between batches becomes needless resulting in a more efficient production time. Motor and bearing are designed for 15.000 hours or around 2.500 batches at 6 hours mixing time.

Hot-dip galvanized all panel sections on this silo are galvanized to give a long service life – as are all the silos manufactured at BM Silo. The smooth steel panels ensure good internal hygiene and optimum silo discharge.

The bottom cone is specialized for the Mixing silo which has a higher flow than a regular Clean silo.

Compact kit it is well known that the silos at BM Silo are delivered as kits that are stackable. This means that all our products can be delivered to any destination and can fit through a regular house door. Your production does not need to be set on pause during delivery and installation.

Steel cover unlike our other modular silos the Auger Mixing Silo is delivered as standard with a reinforced cover with mixing silo attachments and hatches with a safety grid for inspection or service of the screw.

The leg length the discharge height can be adjusted as required by adjusting the length of the legs. A specialization that is possible here as with all silos at BM Silo.

Mixing screw the Ø230mm mixing screw with continuous incremental pitch gives a high capacity at 50 rpm and a low temperature to avoid stringing. A specialized function that creates the ability to mix without emptying.

Maintenance inspection, service, or maintenance can be performed according to BM Procedure Manuals

Applications for Auger Mixing silo

BM Outdoor Modular Silo is the perfect choice for bulk storage of your dry materials such as wheat, barley, oats, meal feed or pellets.



MAX
650
Kg/m³



MAX
900
Kg/m³



Cereals



Meal feed



Pellets



Granulat



Product assortment for Auger Mixing silo

Measurements mm	Height m	Contents m ³	Load metre	Indicative installation hours for 2 persons
1580x1580	3,15-6,75	3,37-10,9	1	7,0-24
2125x2125	3,52-11,08	6,11-34,75	1,4	12,0-42
2711x2711	3,45-8,85	9,51-41,86	2,7-4,5	14,0-52
3147x3147	4,36-10,66	14,33-66,77	3,2-6,4	14,0-64

**All our silos are industrial design protected
All rights reserved

Gravity Mixing silo

For use when you have a mixed product that can demix by unloading. This is a similar function as a pipe blending silo but with 12 different levels of blending.

It doesn't use any power for mixing.

It can also be used for blending when you have external equipment for reloading this mixer.

Bm gravity mixing silo is a further development of the BM Clean Silo but has extra built-in channels that control the flow. It is a highly functional product that in the same way as all the products by BM Silo can be shipped all over the world. The silo can be delivered as an indoor or outdoor mixing silo.

The modular system offers a multitude of combinations and easy adaptation which, combined with the square construction, ensures optimal space utilization. The silo is constructed according to the Eurocodes. The silo can fit through a regular doorway and be assembled on-site. Installation, service, and maintenance of worn parts can be done within confined spaces.

The mixing system is done in the flow when unloading. This is to ensure no demixing of the material which can be used in various industries (plastic etc.). The homogenized material can contribute to a more streamlined production with more consistent results. Mixing the product while emptying the silo ensures a mixing without any power consumption. The unique design of the Gravity Mixing Silo means also means that calibration between batches becomes needless resulting in a more efficient production time.

Hot-dip galvanized All panel sections on this silo are galvanized to give a long service life – as are all the silos manufactured at BM Silo. The smooth steel panels ensure good internal hygiene and optimum silo discharge.

The bottom cone is constructed for high flow all the way to the outlet. The cone is specialized for the Gravity Mixing silo which has a higher flow than a regular Modular or Clean silo.

Compact kit it is well known that the silos at BM Silo are delivered as kits that are stackable. This means that all our products can be delivered to any destination and can fit through a regular house door. Your production does not need to be set on pause during delivery and installation.

Standard equipment – The Gravity Mixing Silo is supplied with a split steel cover with a square adaptor plate 415x415mm for a wide range of adaptors, which ensures easy connection to filling equipment in the center of the cover.

Optional equipment such as reinforced cover, Injection unit with tanker connection flange, cyclone, and piping, guardrails, level sensors, load cells with display, vibrators, and connecting pieces for augers and feed system inlets can be delivered.

The leg length the discharge height can be adjusted as required by adjusting the length of the legs. A specialization that is possible here as with all silos at BM Silo.

Applications for Gravity mixing silo

BM Gravity mixing Silo is the perfect choice for mixing and bulk storage of your dry materials such as wheat, barley, oats, meal feed or pellets.



Kg/m³



Cereals



Meal feed



Pellets



Granulat



Product assortment for Gravity mixing silo 100 -150/ 200 – 300

Measurements mm	Height m	Contents m ³	Load metre	Indicative installation hours for 2 persons
2125x2125	4,74-10,68	12,28-34,83	1,4	9,0-31,5
2711x2711	4,8-8,85	17,63-41,93	2,7	10,5-39
3147x3147	5,31-10,26	25,26-66,85	3,2-6,4	10,5-48

**All our silos are industrial design protected
All rights reserved

Outdoor Modular silo

Any of our indoor silos are also to deliver as an outdoor version.

Choose the outdoor modular silo when you have limited space outside also. Often used with ladder, catwalk for easy access. It can be raw storage or unloading bins.

Galvanized sections offer long-life durability, ensuring good internal hygiene and optimum silo discharge. The panels can resist high-pressure cleaning. The silos are also available in stainless steel.

All the silo's side panels have external flanges with down-folded edges that seal the horizontal joints. The flanges are sealed with a polyurethane-based sealer to ensure that the silo is completely sealed.

45° roof with an efficient cyclone and injection pipe is standard. The cyclone top venting unit is protected by a rain cap. The silo is also available without the injection system when filled using mechanical conveying systems.

The bottom cone is available with two different angles. The 45° cone is suitable for easy-flowing materials. The discharge flange is 300x300 mm and supplied with one shut-off slide. The 60° cone is ideal for materials with flow challenges. The discharge flange is 500x500mm and has two 250x500mm shut-off slides.

By using the two outlets alternately you can ensure that old materials are never left behind in the silo.

The leg length can be adapted to allow most suction boxes, inlets, and augers to be fitted under the silo. The discharge height can be adjusted as required through our full range of extension legs.

Standard equipment - Injection pipe, injection connection flange, cyclone with rain cap or vent pipe, inspection door with window, manually operated shut-off slide, and expansion bolts for fastening to the base.

Applications for Outdoor modular silo

BM Outdoor Modular Silo is the perfect choice for bulk storage of your dry materials such as wheat, barley, oats, meal feed or pellets.



MAX
650

Kg/m³



MAX
900

Kg/m³



Cereals



Meal feed



Pellets



Granulat



Product assortment – Outdoor modular silo

Measurements mm	Height m	Contents m ³	Load metre	Indicative installation hours for 2 persons
1550 x 1550	2.11-5.73m	1.24-8.64 cbm	0.93	6-14.5
2050 x 2050	2.32-6.03m	2.46-16.73	1.0	8.5-19.5
2550 x 2550	2.85-13.30	4.90-59.58	1.6-2.65	9.5-27.5
3000 x 3000	3.31-14.13	8.06-85.06	2.1-3.15	9.5-38
3546 x 3546	4.11-9.93	12.5-73.0	3.7	12-36

*Here shown with ladder
and catwalk.*

**All our silos are industrial
design protected*

**All rights reserved*

Other silo sizes and models can be delivered for outdoor conditions on request.



Accessories - adaptation to your needs

We offer a wide range of silo accessories that allow you to design a silo solution in accordance with your project needs. All our BM's features are designed to offer unmatched durability and a trouble-free performance to your silos

- Pipes
- Clips
- Outlets
- Tanker flanges
- Cyclone
- Filterbag
- Inlets
- Inspection door
- Slide gates
- Bends
- Ladder, catwalk, and guardrail
- Display
- Cables
- Load cells
- Levels control
- Vibrators
- Transitions
- Cover plates
- Sealer
- Diverters with motor and auxiliary switch

For a detailed description of your desired features, please check our silo catalog or contact our sales team.

Indoor auger mixing silo put to the test - mixing 50 tons of plastic granulate a day

Norway-based Quantafuel has recently received the newest model silo from Protec Scandinavia, manufactured by BM Silo. The model has been specially designed to fit their needs – a design that is now available as a standard model for all customers. The design is the result of a collaboration between the company itself, the development team at BM Silo, and the machine supplier for the recycling industry Protec Scandinavia.

Establishing a brand-new company specializing in recycling plastic and vending plastic granulates to other operators in the industry, requires special equipment of the highest standard.

Norwegian Quantafuel recently had to do just that. They recently had two auger mixing silos from BM Silo installed at their brand-new premises.

“The two silos are a very important part of our business. We are a new company which means we have started from scratch regarding how we process. These silos mean that we can mix while filling, stabilizing the product and achieving a much better result,” Business Development Manager at Quantafuel Brede Hammerø Mordal says.

The Auger Mixing Silo is a further development of the BM Clean Silo. However, it incorporates a unique mixing system that creates the ability to offer homogenized material which can be used in various industries, especially within recycling plastic. The

homogenized material can contribute to a more streamlined production with more consistent results.

Quantafuel daily processes 50 tons of plastic granulate, a job the silos are handling well, Brede Hammerø Mordal explains:

“Our silos can store 59 cubic meters of granulate each, we are a new company so we have not yet established our exact daily throughput, at the moment we are using the full capacity of both silos equal to 80 cubic meters worth of plastic.”

A personalized design-process

Together with their supplier Protec Scandinavia supplier of silos from BM Silo and the design team at BM Silo, they designed this new type of auger mixing silo.

“BM Silo has a very competent partner in Per Skjevik from Protec Scandinavia. We have known him for a while, he knows our business and understands our needs. Together with him and BM Silo, we were able to



The two people who have developed a new silo with a mixing system that is particularly suitable for the plastics industry. Technical Project Engineer Joakim Koldsø (right) and Key Account Manager James Olsen (left).

describe our needs for our manufacturing business exactly. We needed a silo exactly like the Auger Mixing Silo and, in a way, this is now a very visible example of the fruit of this collabo-

ration," says Brede Hammerø Mordal from Quantafuel.

The unique design of the Auger Mixing Silo also means that cali-

bration between batches becomes needless resulting in a more efficient production time. Motor and bearing are designed for 15.000 hours or around 2.500 batches at 6 hours of mixing time.

"We are very pleased with the process of having such a great influence on the design. The silos are working as they should, and they are a very important part of our production, ensuring a high-quality product for our customers," Brede Hammerø Mordal says.

"There is no other way"

Founder and Managing Director of Protec Scandinavia Per Skjevik has almost a decade of experience within the sector of recycling plastic and 30 years in plastic machinery. He has been part of the design process, where color and quality are improved using the auger mixing technology, he explains.

"The auger creates a constant upward movement via the fountain principle meaning that the mixing is

much more effective in improving both color and quality. The fountain principle also ensures a stable melt index so that the product after the granulate process has no variation in melting temperature.”

This new hardware technology is quite revolutionary for the recycled plastic industry. Without the auger mixing system manufacturers are forced

to either spend time calibrating machinery after each filling or transfer material from one silo to a smaller mixer to create a homogenous mass.

“There really is no good alternative on the market right now. When your production process requires you to mix almost four tons an hour, like Quantafuel, then you must have the right equipment for it. With the

auger mixing silo we can adjust the auger, adjusting mixing depending on the input and output requirements – and right now there is no other good way to do that,” he asserts.

59 cubic meter silo through a regular door frame

Furthermore, the auger mixing silo no matter the size is delivered in kit form and installed on-site. Lowering freight costs significantly.

“Another pro for Quantafuel is that it was delivered in a small package. Many silos are transported fully assembled, and when transporting a 60 or 74 cubic meter silo fully assembled it is very costly,” explains Per Skjervik who outside his role as Managing Director also leads the recycling team within Protec Scandinavia and Feddersen Group. Servicing customers in all of the Nordic and Baltic regions with machines and equipment for recycling.

Products by BM Silo are delivered as kits that are stackable. This means that all products can be delivered to any destination and can fit through a regular house door. The production at the end destination does not need to be set on pause during delivery and installation.



The new Mixing Silo from BM Silo, which is delivered compactly and assembled at the customer's location.

- Quantafuel is a newly founded company developing recycling solutions to waste problems.
- BM Silo and Protec Scandinavia recently developed a specialized silo for Quantafuel's specialized production.
- The Auger Mixing Silo includes a unique mixing system resulting in calibration between batches becoming needless making production time more efficient.

Contact us today to learn more about our products!

Please do not hesitate to contact us if you require any further information, have specific inquiries, or would like to discuss your requirements in more detail.



James Olsen
Key Account Manager
james@bmsilo.com
+45 96 13 50 67



Peter Thierry Kamper
Key Account Manager
ptk@bmsilo.com
+45 96 13 50 04



Jacob Lillelund
Area Sales Manager
jl@bmsilo.com
+45 20 43 03 43



Carsten D. Kristensen
Senior Project Manager
carsten@bmsilo.com
+45 96 13 50 03



Carsten B. Mortensen
Projects & Sales Support
cbm@bmsilo.com
+45 96 13 50 05



Claus Martinsen
Owner / R&D Director
claus@bmsilo.com
+45 96 13 05 09



Lisbeth Barnbæk Nielsen
CEO
lisbeth@bmsilo.com
+45 96 13 50 00

