

SECTION F-F and G-G see drawing C.0.04.0021

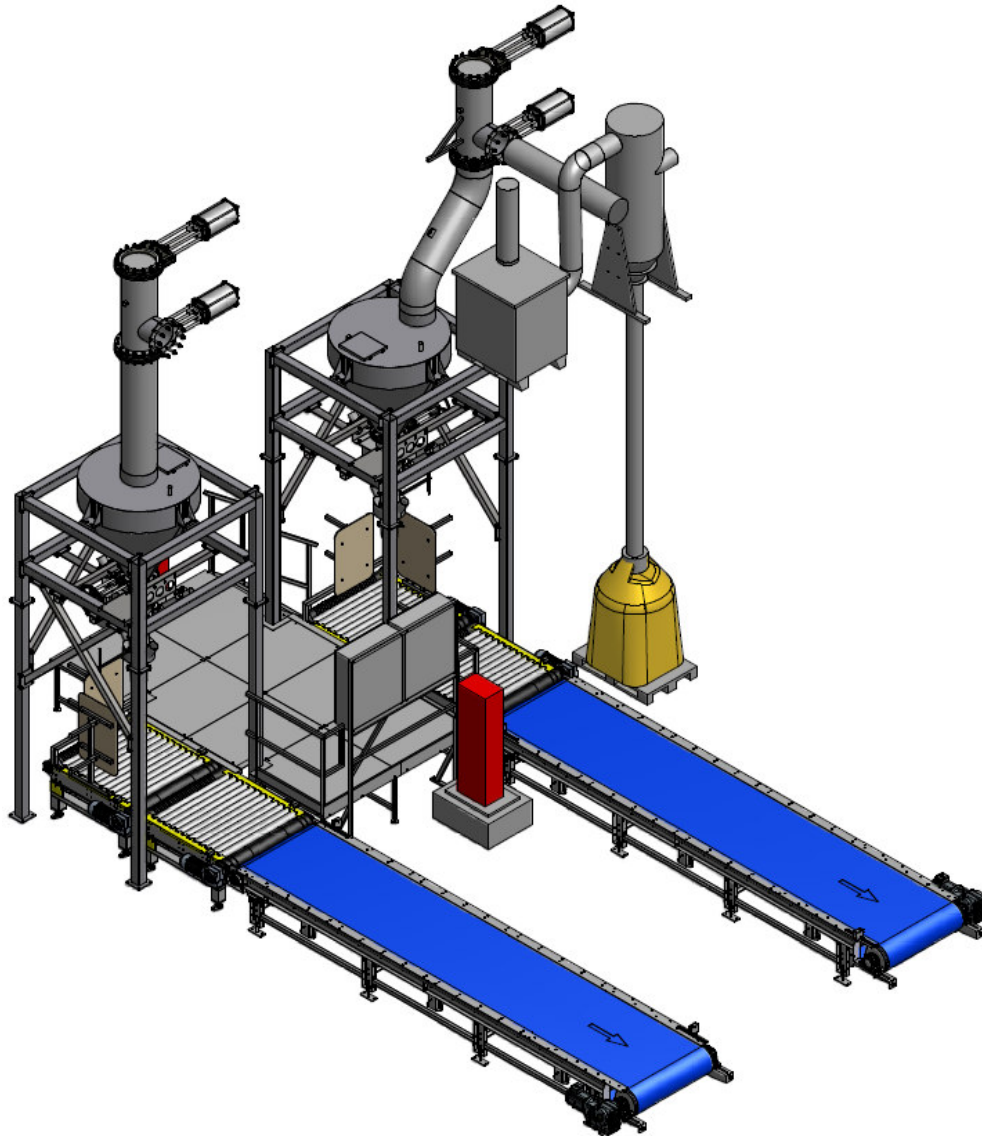
TS-No.: 7/15215.2 bagging stations		
01.00	product feed	customer supply
02.00	intermediate plate	Fairhah
03.00	HAYER Hfg speed dosing unit	H&B
04.00	HAYER high speed electronic net weigher	H&B
05.00	weighing unit frame	Fairhah
06.00	intermediate platform	customer supply
07.00	discharge funnel	Fairhah
08.00	HAYER high capacity bagging spout	H&B
09.00	operator platform, incl. empty bag table	Fairhah
10.00	HAYER operator panel	H&B
11.00	heat sealing machine for plastic bags	H&B
12.00	standard bag sealing machine	Fairhah
13.00	HAYER control panel	H&B
14.00	extension of electrical control	H&B
15.00	bus communication interface	H&B
16.00	set of electric connection cables	Fairhah
17.00	discharge flat belt conveyor, AA 10m	Fairhah
18.00	flat belt conveyor with bag lay down device	Fairhah

TS-No.: 7/15275.2 truck loading		
01.00	HAYER check weigher	H&B
02.00	hinged flat belt conveyor for bag rejecting	Fairhah
03.00	spiral chute for rejected bags	Fairhah
04.00	hinged flat belt conveyor-manually operated	Fairhah
05.00	bag chute for manual palletizing	Fairhah
06.00	horizontal flat belt conveyor, AA 1,75m	Fairhah
07.00	ascending flat belt conveyor, AA 8m	Fairhah
08.00	bag flattener / grass belt conveyor	Fairhah
09.00	horizontal flat belt conveyor, AA 5,5m	Fairhah
10.00	horizontal flat belt conveyor, AA 14,75m	Fairhah
11.00	horizontal flat belt conveyor, AA 14m	Fairhah
12.00	horizontal flat belt conveyor, AA 21,25m	Fairhah
13.00	horizontal flat belt conveyor, AA 26,5m	Fairhah
14.00	horizontal flat belt conveyor, AA 31,75m	Fairhah
15.00	horizontal flat belt conveyor, AA 37m	Fairhah
16.00	flexible gravity storage roller conveyor	Fairhah
17.00	flexing flat belt conveyor, AA 3m	Fairhah
18.00	90° bag chute with conical rollers	Fairhah
19.00	HAYER truck loading machine, type HB 17	H&B

ÄNDERUNG REVISION			
NO.	DATE	BY	REVISION

NO. 53/228601	ÄNDERUNG REVISION	DA FÜR DATE	NACH NAME
		KHI	KPIC
			IRAN

GENERAL LAYOUT HAVER BAGGING PLANT 7 x 1 NWEDD				C.0.04.0020		10 A0	
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TECHNICAL SPECIFICATION Q20004-3

KERMANSHAH Petrochemicals Industries Company (KPIC)
2nd Ammonia & Urea Project – KPIC II
Req. No.: 2UA-229-52-MH-REQ-10282

1x FIBC / Big-Bag Filling Station for UREA Granules

2022/04/25

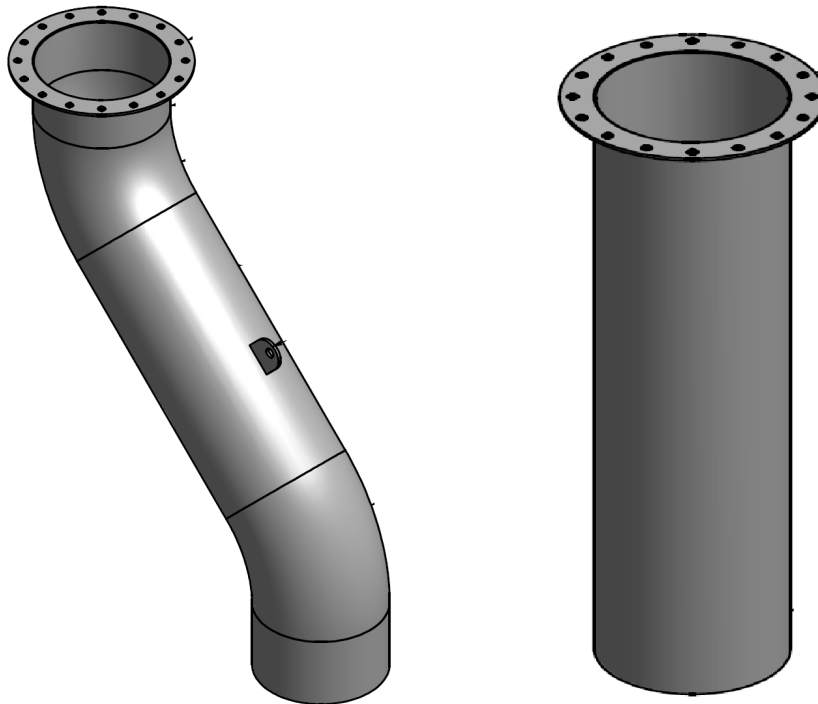
III. Technical Conditions

1.0 Characteristic of the product to be filled			
1.1	Product	Fertilizer Granular - UREA	<ul style="list-style-type: none"> - granular - free flowing - non aggressive - non toxic - non explosion hazardous - non flammable - light abrasive - hygroscopic - corrosive - angle of repose: 27 -30°
1.2	Grain size	granular between 2,0 – 4,0 mm	
	grain size distribution standard size	min. 90% between 2 – 4 mm max. 5% less than 2 – 4 mm	
1.3	Bulk density	750 – 800 kg/m ³	
1.4	Temperature	max. 45°C	
1.5	Filling weight	Safety Working Load (SWL): 500kg 600kg 750kg 1000kg Diameter: xx xx xx xx Filling height: xx xx xx xx Total height: xx xx xx xx To be confirmed at later stage.	To be clarified!
1.6	Capacity	500 kg 600 kg 750 kg 1000 kg UREA 70 T/h 70 T/h 70+ T/h 70+ T/h	By using of single loop Portabulk® bags with bottle-type inliner
1.7	Required operating personnel	<ul style="list-style-type: none"> - one (1) operator for each filling line - forklift-truck operation for picking up of filled bags. 	

2.0 Technical data			
2.1	Power supply	400 V (TN-S) 50 Hz 3 Ph Installed power: ~25 kW, to be confirmed once final scope is settled	Supplied by the customer to control panel
2.2	Compressed air	Dry, operational pressure: min. 5 bar, dew point: max. + 2°C. Consumption: ~15 Nm ³ /h, to be confirmed once final scope is settled	Supplied by the customer to control panel
2.3	Installation height	max. 6,5 m Zależnie od konstrukcji i wysokości worków	To be confirmed at later stage
2.4	Weights and loads	Detailed weights and loads will be provided upon order	To be confirmed once final scope is settled

IV. Technical Specification

- | | | |
|--------------|---|-----------|
| 01.00 | 1 Product feeding equipment and distribution equipment | CS |
| | the product is to be provided by the customer in sufficient quantity, continuously and free from lumps and foreign bodies | |
| 01.01 | 1 Storage silo – volume approx. 25,0 m³ | CS |
| | the storage silo incl. filling level indication via load cell | |
| 01.02 | 1 Set of filling level indication | CS |
| | the storage silo incl. filling level indication via load cell | |
| 02.00 | 1 Slide gate valve – manual operation | |
| | knife gate valve operated manually or pneumatically | |
| 02.01 | 1 Feeding pipe with flexible intermediate piece | |
| | connected by a flange DN 300 / 400, feeds the product from the silo to the Big Bag filling station, made of stainless steel 1.4301, equipped with an intermediate flexible piece for compresenation of the height differences | |



- | | | |
|--------------|---|--|
| 02.02 | 1 Intermediate hopper approx. 2m³ of capacity | |
| | used for store of min. 1x dosage of 1000 kg, to ensure quick and stable dosing process, equipped in access lid, dedusting spout, mounting console for knocking device and spout | |



TECHNICAL DATA BOOK
Technical Specification & Description
No.: AV / 6100001 / 01

KERMANSHAH Petrochemicals Industries Company (KPIC)
2nd Ammonia & Urea Project – KPIC II
Req. No.: 2UA-229-52-MH-REQ-10282

7x NWEDO Bagging Stations for UREA Granules

2022/07/07

III. Technical Conditions

AVENTUS BAGGING TECHNOLOGY 7x Bagging Station of Type NWED O

Machine data

Filling machine type:	7x NWED O – filling station only
Design of machine:	<ul style="list-style-type: none">- semi-automatic machine operation- manual empty big-bag placing- automatic weighing & filling of the big-bags- manual closing of the filled big-bag- automatic empty & full pallet transport system- stationary machine installation
Noise / sound level:	The equivalent noise pressure level is less than 85 dB(A) as a rule, measured according EN ISO 11202 at measure points at a height of 1,60 m and in a distance of 1,00 m from the machine, but finally depending on the operating and installation conditions.
Material:	All parts coming directly into contact with the product are made of stainless steel material 1.4571 (AISI 316 Ti). Storage hopper, dedusting filter unit and piping are made of made from stainless steel material 1.4301 (AISI 304). All parts having no direct contact with the product and parts are made of carbon steel, material 1.0037, specially painted as per description. Sealing and gaskets are made of fertilizer resistant material.
Explosion proof:	not required / not necessary / not applicable

Weighing system

Weight accuracy:	<u>based on filling of 50 kg</u> +/- 30 g deviation as an average of 10 consecutive weighings, +/- 50 g deviation from the average of an individual weighing, after optimization by the dribble feed regulation device provided that magnetic fields and vibrations do not effect OR according to OIML regulations
Weighing range:	25 - 50 kg
Weighing system:	The weighing unit / system is suitable for calibration, however not calibrated.

Product data

No.	Product name	Grain size mm	Bulk density kg/dm ³ bulked	Temp. max. °C	Humidity max. % H ₂ O	Properties or remarks
1	UREA	2,00 – 4,00	0,75 – 0,80	45	max. 0,3 wt% (bounded in the product)	<ul style="list-style-type: none"> - granular - free flowing - non aggressive - non toxic - non explosion hazardous - non flammable - light abrasive - hygroscopic - corrosive - angle of repose: 27 -30°

- angle of response for UREA granular : 27 – 30 degree

-grain size distribution - standard size : min. 90% between 2 – 4 mm
max. 5% less than 2 – 4 mm

Data on machine performance and packaging material

No	design / top limit machine capacity bags/h	filling weight kg (net weight)	packaging material / bag design
1	12x 1200	50	top open mouth bag designed as pillow bag and made from woven polypropylene (PP) with PE-inliner bag

No	operational machine capacity bags/h	filling weight kg (net weight)	packaging material / bag design
2	12x min. 700	50	top open mouth bag designed as pillow bag and made from woven polypropylene (PP) with PE-inliner bag

Machine capacity: With continuous, trouble-free operation of the machine, depending on the product and bag characteristics as well as depending on the dexterity of the operating personnel, as well as the time for changing of the trucks into the loading position (driving time into loading position is not considered)

Design of machine:

- semi-automatic operation
- manual empty bag application by operator
- manual closing of the filed bag by operator
- manual loading of the filled bags onto the truck
- stationary installation

Empty bag dimension: empty bag dimension (assumed)
bag width : 520 – 570 mm
bag length : 1000 – 1050 mm

	filling weight	: 50 kg
Filled bag dimension:	filled bag dimension (assumed)	
	bag width	: 500 – 550 mm
	bag length	: 800 – 900 mm
	bag height	: 200 mm
	filling weight	: 50 kg

The mentioned bag dimensions are based on our experience and have to be confirmed or corrected by the customer.

Plant Data

Compressed air consumption:	for each Bagging Line	
	- bagging equipment	: approx. 70 Nm ³ /h
	- <u>dedusting filter plant</u>	: <u>approx. 25 Nm³/h</u>
	Total consumption – one bagging line	: approx. 95 Nm ³ /h

Total compressed air consumption:	for 12x bagging lines in operation	
	approx. 1140 Nm ³ /h	

Compressed air required:	quality acc. ISO 8573.1	
	particle size	: 5 µm
	concentration	: 5 mg/m ³
	pressure dew point	: min. + 2° C max. - 20° C
	residual oil quantity	: max. 25 mg/m ³
	over pressure	: min. 5,0 barg

Dedusting air consumption:	for each Bagging Line:	
	- HAVER net weighing unit	: approx. 750 m ³ /h
	- <u>HAVER filling spout</u>	: <u>approx. 1.000 m³/h</u>
	Total consumption – one bagging line	: approx. 1.750 m ³ /h

Total de-dusting air consumption:	for 12x bagging lines in operation	
	approx. 21.000 Nm ³ /h	

Dedusting air required:	dedusting air quantity with negative pressure (vacuum)	
	of min. 8 mbar at the dedusting points	

Noise pressure level:	The equivalent noise pressure level is less than 85 dB(A) as a rule, measured according EN ISO 11202 at measuring points at a height of 1,60 m and in a distance of 1.00 m from the machine, but dependent on the operating and installation conditions.
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Ambient conditions

Installation above sea level:	max. 1850 m
Ambient temperature inside the building:	max. +48° Celsius min. + 5° Celsius

Ambient temperature outside the building: max. +48° Celsius
min. - 27° Celsius

Relative humidity inside/outside the building: max. 71 %

Electrical connection data

Operating voltage: 380 / 400 VAC +5 % - 5 %
Frequency: 50 Hz +/- 2%
Net form: TN-net 3 Ph, N, PE
Control voltage: 220 / 230 VAC produced in the control panel
- lighting inside control panel
- plug-in socket inside control panel

Control voltage: 24 VDC produced in the control panel
- motor-contactors
- solenoid valves
- proximity switches, light barriers
- programmable logic controller (PLC)
- weighing electronic
- motor brakes
- emergency stop and safety circuits
- instrumentation

Protection class: General : IP 55 / IP 65
Control panel : IP 55
Instrumentation : IP 65
Motors : IP 55
Gear-box motors : IP 55
Junction boxes : IP 55 / IP 65

Exception: - for control panels installed in a separate room: IP 54
- cooling units on the control panel / boxes: IP54

Insulation class: Iso F
Short circuit: 35 kA

Designing electrical components: Electrical equipment is being designed for operation at the stipulated capacity in above mentioned ambient conditions. If any special design request applies, it will be stated itemized in the technical specification.

Painting

COLOR code AVENTUS
main color RAL 9010 (white)
design aspects RAL 7016 (anthracite) / RAL 3000 (red)
motors RAL 9005 (deep black)

or

as per previous colour code of already delivered machines and equipment, subject of agreement between both parties

for high-alloyed material 1.4301 (AISI 304) or better in direct contact with the product:

- pickled and passivated

Other

AV-Drawing:	similar to drawing. no. C.0.04.0005 similar to drawing. no. C.0.04.0013 similar to drawing. no. C.0.04.0014
Plant operation:	qualified staff trained by AVENTUS One (1) operator for supervision of plant and for placing the empty FIBC / big-bags onto the filling spout. Sufficient number of fork-lift trucks for feeding the consumables as well as for removing the big-bags / filled pallet stack.

Information:

Equipment is determined in acc. to the above mentioned "Technical Conditions". Furthermore the specified equipment is designed acc. to AVENTUS standards, considering the EN standards, DIN and VDE standards as far as technically reasonable. In case of requests for changes AVENTUS reserves the right of price correction at any stage of the project.

Framework conditions for 3D drawings:

For the implementation of 3D drawings, the following formats can be used:

1. Lam/ipt (Inventor)
2. Step (neutral format)
3. Parasolid XT (Solidworks)
4. SAT, IGES, etc. (neutral format)

It should be noted that the data export can only be done as multi-body part. The 3D drawing does not include any standard parts, bores, radii, chamfers and hollow spaces, and internal components are removed. Protective grating and grates should be replaced by textures.

In case these conditions are not met, AVENTUS reserves the right to change prices.

AVENTUS output format for 3D drawings is:

1. Step (neutral format)
2. Parasolid XT (Solidworks)
3. SAT, IGES, etc. (neutral format)

IV. Technical Specification

AVENTUS BAGGING TECHNOLOGY 7x Bagging Station of Type NWED O

Consisting of:

- | | | | |
|--------------|----------|--|-----------|
| 01.00 | 1 | Product feeding equipment and distribution equipment | CS |
| | | the product is to be provided by the customer in sufficient quantity, continuously and free from lumps and foreign bodies | |
| 02.00 | 7 | Storage hopper (volume approx. 25,0 m³) | CS |
| | | the storage silo incl. filling level indication via load cell | |
| 02.02 | 7 | Set of filling level indication | CS |
| | | filling level indication via load cell incl. filling level switches for max.max. and min. min. filling level detection | |
| 02.03 | 7 | Slide gate valve – manual operation
2-V-5279 A-G | |
| | | arranged beneath the storage silo,
manually operated with hand wheel,
made of stainless steel, at least material 1.4301 (AISI 304) | |
| | | inlet dimension 300 x 360 mm, | |
| 02.04 | 7 | Flexible intermediate piece | |
| | | For the connection of the silo outlet / discharge spout with the dosing unit of the bagging machine in such a way to allow compensation of length and height difference. | |
| | | consisting of: | |
| | | - the outlet spout mounted the storage silo flange | |
| | | - the inlet spout mounted to the dosing unit | |
| | | - the flexible sleeve, made from NEOPRENE light colour | |
| | | - the tension straps for fixing the sleeve | |
| | | - diameter / size of the spout acc. to the flange size of the dosing unit | |
| | | The flexible connection piece made from stainless steel, material 1.4301 (AISI 304). | |
| 03.00 | 7 | AVENTUS Net Weigher H
2-V-5220 A-G | |
| | | for dosing and weighing of bulk materials in coarse and fine flow | |
| | | consisting of: | |

High-capacity dosing unit

consisting of:

- radial flap
- maintenance flap
- servo drive

Weighing Unit

consisting of:

- frame with 2 maintenance doors
- weighing bin (81 – 125 l contents)
- pneumatically actuated double bottom flap
- 3 load cells
- anti-vibration machine pads

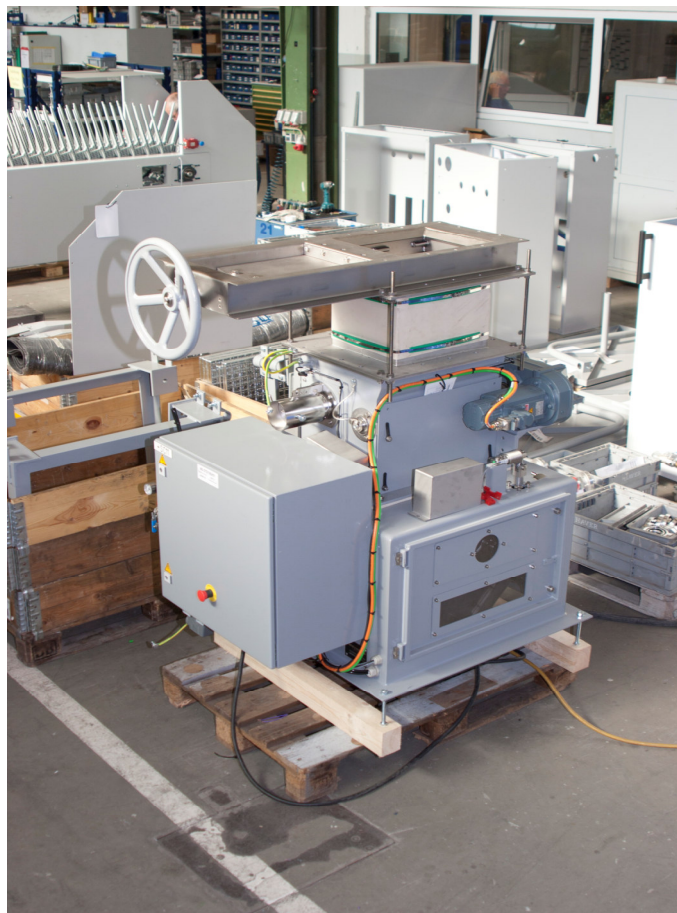
HAVER Microprocessor Weigher Control MEC®

consisting of:

- operating- and display terminal, protection class IP 65
- dialogue-based operation in German and English language and in another language to be agreed upon
- 99-grades storage
- EC type-examination certificate (PTB)
- OIML certificate

Design with local terminal

for the weighing electronics



-
- 03.01** **7** **Sealing strips**
for the bottom flap
- 03.02** **7** **Weigher frame with supports**
made of profile steel to support one net weigher, with height compensation elements
- 03.03** **7** **Discharge funnel**
for connection of the outlet of the weighing bin with the product infeed funnel / product acceleration funnel of the bagging machine, made from stainless steel, material 1.4571 (AISI 316 Ti)
- 03.04** **7** **Execution of the dosing unit in SALT / FERTILIZER design**
Designed for long-term operation in the salt / fertilizer industries, according to AVENTUS standards.
- 03.05** **7** **Execution of the weighing unit in SALT / FERTILIZER design**
Designed for long-term operation in the salt / fertilizer industries, according to AVENTUS standards.
- 03.06** **7** **Execution of the weighing unit from stainless steel**
made of stainless steel, material 1.4301 (AISI 304)
- for supports and cover plates
- for the local control board / panel
- 03.07** **7** **Weigher frame made of stainless steel**
The weigher frame and supports are made from stainless steel, material 1.4301 (AISI 304) as far as technical possible
- 04.00** **1** **Common steel structure / platform for the storage silos and the net weighing units** **CS**
to take up the storage silos, net weighing unit as well as all auxiliary equipment and machines
- 04.01** **1** **Delivery of layout and arrangement drawings of the platform** **CS**
provision of drawings with foundation and load data incl. all necessary all detail information for manufacturing of the platform
- 04.02** **7** **Intermediate / product transfer funnel**
for connection of the weighing unit discharge funnel with the product infeed of the

bagging machine,
made from stainless steel, material 1.4571 (AISI 316 Ti)

05.00 7 HAVER high capacity bagging spout, Type: 7040 2-V-5221 A-G

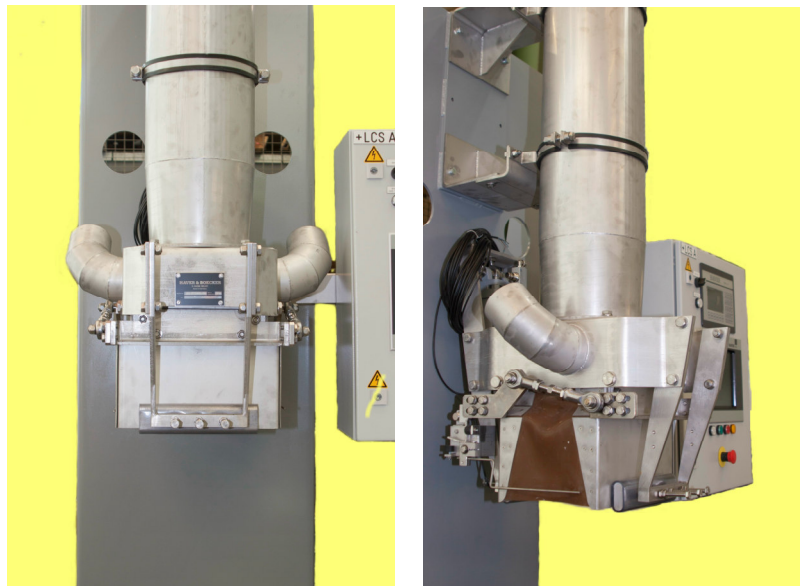
for open-mouth bags

consisting of:

- base frame with inlet flange and outlet tube
- pneumatically actuated spread flaps for bags with a flattened bag width of 500 – 550 mm
- rubber aprons
- manually adjustable clamping jaws
- the two (2) lateral dedusting connections
- the two (2) electrical filling contacts, manually actuated

the control

installed in a housing,
with all necessary control elements for the bagging spout



05.01 7 Stand / supporting structure to take-up the bagging spout



05.02 **7** **Operator platform** **CS**

for the bagging spout,
made of profile steel with grating floor covering and empty bag table

05.03 **7** **Operator panel incl. operator terminal**

fixed to the machine near by the operator stand

protection classification IP 65

all equipment necessary for the function and operation of the bagging and loading line is installed

- operator terminal, with

* the infrared touch technology

* the 12" active colour TFT display, 256 colours,
640 * 480 pixel, 1/4 VGA, background lighting
and scratch-resistant safety laminated glass

* the graphic supported operator terminal, with:

- display of operating status and error messages
- buffer for error messages
- operation
- parameter programming
- help text for operation
- deactivated on-/ off switching of all drives for
maintenance and repair operation in test mode

- operator terminal for the weighing electronic
(for countries with obligatory calibration)

- integrated conventional Emergency-Stop switch as
well as push buttons and lamps for main operation

pre-wired to terminal connectors material, manufacture and testing are in accordance
with current VDE regulations

06.00 **7** **Complete full bag transport system incl. sewing machine** **CS**

the complete full bag transport system incl. all belt conveyors, check weighing units,
sewing machines as well as the truck loading machines have to be supplied by the
customer

07.00 **7** **Set of instrument / compressed air pipes** **CS**

between the main feeding point near by the machines
and all consumables and devices at the equipment and units,
incl. the piping and tubing supports with fixing material,
total length: approx. 10,0 m

connection flange according to AISI / ANSI standard

Remark:

07.00 7 Bag sewing machine – single sewing head 2-V-5224 A-G

Description:

The sewing system is fixed to the floor and designed for closure of paper, woven polypropylene or polyethylene bags.

Operation mode:

The already reshaped bag is introduced into the sewing head by hand via the operator. The sewing process starts when the photo sensor detects the bag. At the end the pneumatic chain pusher pushes the chain into the knives to cut it.

Remark:

To have a smooth operation of the system, a conveyor is required.

the sewing system equipped with the following components

Mechanic features:

- the manual height adjustable column (range: 500 mm) to take up the sewing head (distance from ground to needle: min. 610 mm, max. 1100 mm)
- adjustable overarm
- the low vibration sewing head with shear type knife and the photo sensors for automatic start and stop function
- the pneumatic chain pusher incl. thread cutting knives
- the thread holders
- stitch length : standard 9 mm, adjustable from 7 - 11,5 m
- linear speed of the system: standard 11 m/min, adjustable
- noise pressure level 77 dB(A)
- colour: billowy grey

Electrical features:

- the control panel incl. wiring
- start / stop function of the sewing process controlled by photo sensor
- motor of the sewing head : 0,37 kW, 1450 rpm
- power supply : 400 VAC, 50 Hz (3 Ph, N, PE)
- control circuit : 24 VAC, 50 Hz
- degree of protection : IP 55
- isolation class : Iso F
- total power : 2,0 kW – 5 ampere

Sewing head features:

- pressurised self-lubricating system with external oil filter
- sewing head equipped with presser foot
- gear oil pump
- sealed in oil against dust, dirt and foreign particles
- variable pulley for easy synchronisation with conveyor speed
- two thread version, stitch type 401
- chain cutting shear type knife

08.00 7 Flat belt conveyor with bag turning and relocating device 2-V-5225 A-G

for laying down and turning the standing bags with bottom seam ahead

Technical Data

center distance: 3000 mm

belt width: 1200 mm

consisting of:

- driving station mit driving drum
- diverting station mit diverting drum
- belt frame
- belt
- supports
- gear motor
- adjustable guide tube for relocating the standing bags
- bag guide pulley
- guide rails

08.01 7 Bag flattener / press roller

a spring loaded roller will flatten the full bags in order to improve the bag shape, incl. the perforation device

09.00 7 Protection class IP 65 for instrumentation of the bagging line – installation in the field

special protection class of IP 65 for all instrumentation of the bagging machines, which is installed in the field near by the machines and equipment, as far as technically possible and not otherwise specified

exceptions are:

- sewing machines
- sealing machines
- drives and motors
- cooling devices
- devices and components inside the control panels
- heating device on the dedusting filter plant

09.01 7 Set of internal compressed air pipes

between the main feeding point near by the machines and all consumables and devices at the equipment and units, incl. the piping and tubing supports with fixing material, total length: approx. 10,0 m

connection flange according to AISI / ANSI standard

Remark:

The main air feeding pipe incl. counter flange have to be provided and installed by others.

10.00 7 AVENTUS control panel

separate, standalone control panel close to the bagging station / system or in separate control room,

protection classification IP 54 / IP 55,

all electrical components and devices are installed for proper operation and function of the bagging station / system:

- main switch for power supply
- control voltage transformer
- power protectors and motor protection switches

- programmable logic controller, for linkage of the control sequences, make Siemens, Type S-7 1500

the control panel pre-wired to terminal connectors

all components and devices are in accordance with the current VDE regulations

other requirements may result in additional charges

10.01 7 BUS communication interface

for data exchange between PLC S7-1500 of the bagging machine and customer's control by means of Industrial Ethernet (Modbus or Profibus can be used optional)

consisting of:

- communication modules for the PLC
- bus connectors
- specification of standard data and standard protocol
- generation of the standard data exchange table (standard software package)
- configuring of the bagging machine control as a user (the customer is responsible for the organization of BUS system)

10.02 7 Set of connecting cables

between the components of the packing plant and the control cabinet, approx. 30 m developed length

10.03 7 Cable duct

cable basket tray, stainless steel, incl. fixing material, approx. 30 m developed length

10.04 7 Cable- and core numbering

for the following packing machines:

- AVENTUS net weighing unit
- AVENTUS open mouth bag filling station
- inside the control panels

consisting of:

- core numbering for the machine control cabinets (target character based)
- cable tags for cables at the machine
- design and execution as per manufacturer standard

10.05 7 Main power infeed / power supply

CS

main power supply and infeed to be provided by the customer or others

11.00 1 Special design and execution for the fertilizer industry

consisting of:

- plant components and parts in direct contact with the product are made of stainless steel, at least material 1.4301 (AISI 304)
- machine free of nonferrous material as far as technical possible
- where nonferrous materials must be used, there parts are painted
- pneumatic screwing are Ni coated, system Camozzi
- piston rods of pneumatic cylinders made of stainless steel
- toggle link sockets made of material 1.4301 (AISI 304) with PTFE slide coating
- housing of bearings are special painted
- usage of bearing with lifetime-lubrication
- connecting screws made of stainless steel as far as technical possible
Otherwise the screws are painted
- adjustment screws and spindles made of stainless steel, at least 1.4301 (AISI 304)
- drives in special corrosion execution
- tensioning and diverting drums in rubberized execution

the following plant equipment and parts remain in manufacturer standard:

- drives and gear-box motors
- sealing machine
- sewing machine

11.01 1 Special surface treatment specific for the fertilizer industry

for parts made of mild steel and nonferrous heavy materials consisting of:

tinder-free steel plates are degreased

- sandblasting : standard of surface cleaning SA 2,5
- prime coat : 2 component epoxy-resin paint
- final coat : 2 component epoxy-resin paint
- total coating thickness : min. 80 - 120 µm

- colour RAL 9010 (pure white) for mild steel parts
- colour RAL 7016 (anthracite) / RAL 3000 (red) for design aspects
- colour RAL 9005 (deep black) for safety guard including frame
- colour RAL 1003 (signal yellow) for plant guard supports

for parts made of stainless steel, material 1.4301 (AISI 304) or better:

- pickled and passivated

the following plant equipment and parts remain in manufacturer standard:

- drives and gear-box motors
- sealing machine
- sewing machine

Differing colour against extra charges!

Purchased parts remain in manufacturer standards!

PART II - AVENTUS TRUCK LOADING TECHNOLOGY

Machinetype: 7x Truck Loading Machines of Type AV 17 incl. Full Bag Transport System

consisting of:

12.00 7 Aventus check weighing unit 2-V-5272 A-G

Technical data

table length	: 1300 mm
belt width	: 600 / 700 m
belt height	: standard height 600 – 760 mm

electronic check weigher for automatic compensation of the packing machine weighers, incl. statistic data of filling spouts, patented system

with the following technical features:

- maintenance-free, self-luminous digital display
- classification into 5 classes with plain text indication
- indication of gross or net weight - to be selected
- conversational input of parameters in plain text
- memory for 99 sorts of product
- production statistics
- weighing system up to 50 kg nominal load
- data exchange for the HAVER-patented filling spout correction system

The statistic data can be transferred to an external PC with DPS software.

If required the customer has to provide an additional separate supporting structure which is vibration-free and torsion-free in order to achieve the requirements for an optimum operation.

12.01 7 Hinged flat belt conveyor - bag rejecting device - for inline bag discharge

in order to discharge lying bags

center distance:1000 mm
belt width:650 mm

consisting of:

- the belt frame with drive and tension station incl. drive motor
- the hoisting device with supporting construction and drive motor
- the rubber belt
- the proximity switch for supervising the position
- the protective casing

12.02 7 Spiral chute for rejected bags 2-V-5272-01 A-G

height approx. 3,0 m

12.03 4 Hinged flat belt conveyor - manually operated by hand winch 2-BC-5373 A-D

in order to discharge lying bags

center distance:1000 mm
belt width:650 mm

consisting of:

- the belt frame with drive and tension station incl. drive motor
- the hoisting device with supporting construction and manual hoisting
- the rubber belt
- the proximity switch for supervising the position
- the protective casing

12.04 4 Bag chute for manual palletizing 2-BC-5273-01 A-D

height approx. 3,0 m, with 2 bag stop plate / rollers

12.05 3 Horizontal flat belt conveyor 2-BC-5273 E-G

technical data

center distance	: 1,00 m
belt width	: 650 mm
construction height	: 600 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

13.00 7 Ascending flat belt conveyor, AA: 6,0 m 2-BC-5275 A-G

technical data

belt guiding ascending	: 5,00 m
belt guiding horizontal	: 1,00 m
center distance	: 6,00 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**14.00 1 Horizontal flat belt conveyor, AA: 4,5 m
2-BC-5276 A**

technical data

center distance	: 4,50 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**14.01 1 Horizontal flat belt conveyor, AA: 9,75 m
2-BC-5276 B**

technical data

center distance	: 9,75 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**14.02 1 Horizontal flat belt conveyor, AA: 15,0 m
2-BC-5276 C**

technical data

center distance	: 15,0 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**14.03 1 Horizontal flat belt conveyor, AA: 20,25 m
2-BC-5276 D**

technical data

center distance	: 20,25 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor

- the rubber belt
- the conveyor frame incl. adjustable supports

**14.04 1 Horizontal flat belt conveyor, AA: 25,5 m
2-BC-5276 E**

technical data

center distance	: 9,75 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**14.05 1 Horizontal flat belt conveyor, AA: 30,75 m
2-BC-5276 F**

technical data

center distance	: 30,75 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**14.06 1 Horizontal flat belt conveyor, AA: 36,0 m
2-BC-5276 G**

technical data

center distance	: 36,0 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:

- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**15.00 7 Stop / timing belt conveyor with accumulator
2-BC-5278 A-G**

technical data

center distance	: 2,00 m
belt width	: 650 mm
construction height	: 3.000 mm
conveying speed	: 0,80 m/s

consisting of:
- the belt frame with drive and tension station incl. gear-box motor
- the rubber belt
- the conveyor frame incl. adjustable supports

**16.00 7 90° - bag chute
 2-BC-5277 A-G**

with conical idlers

**17.00 7 AVENTUS truck loading machine, type: AV17
 2-BC-5270 A-G**

for loading of open top trucks from the top

Technical data

center distance feed belt conveyor	: 12.000 mm
center distance inclined conveyor	: 6.050 mm
travelling way	: 11,50 m
belt width	: 650 mm
track width	: 1.300 mm
conveying speed	: 1,00 m/s
travelling speed	: 0,25 m/min
belt drive	: 2,20 kW
travelling drive	: 0,55 kW
lifting drive	: 2,20 kW
total power installed	: 4,95 kW

consisting of:

the mobile feed belt conveyor

of welded steel plate construction, the belt drive, the tension and return pulleys, the idlers, the rubber belt, the wheels, the travelling drive

the liftable and lowerable troughed belt conveyor

made of welded steel plate construction, with hinge joints and chain drive to the feed belt, tension and return pulley, with idlers, rubber belt

the adjustable bag take-off table

at the head of the belt

the electric hoist / lifting gear

of special design, with two rope pulleys, the two carrying ropes, the driving unit and limit switches

the electrical installation

with steel plate control cabinet, complete with main switch and all required electrical components, pushbuttons on both sides of the bag take-off table, the pendant push-button station for operation of the truck loading machine

the control panel heater – truck loading machine

for the truck loading machine
mounted on the control panel

the control panel cooling unit – truck loading machine

for the truck loading machine
mounted in the control panel, for cooling the cabinet's internal air

17.01 **Special design and execution of the truck loading machine for the fertilizer industry**

consisting of:

- machine free of nonferrous heavy metal as far as possible
- pneumatic screw connection nickel-plated
- piston rods of pneumatic cylinders made of stainless steel 1.4301 (AISI 304)
- toggle link sockets made of 1.4301 (AISI 304) with PTFE slide coating
- belt drums rubberized
- adjustment screws and spindles made of 1.4301 (AISI 304) or better
- drives in special corrosion execution

17.02 **7 Set of flexible connection cables**

the flexible cable connection for power supply
incl. terminal box and rail, without supports,
for the travelling way of approx. 12,0 m
made of stainless steel, material 1.4301 (AISI 304)

17.03 **7 Set of travelling rails for the truck loading machine**

CS

Part and scope of supply of the steel structure!

Technical data:

profile steel: 40 x 60 mm
(Upper edges rounded off with a radius of 10 mm)

material: St 52-2

overall length of double-rail: 29,5 m

for manually operated truck- and railcar loading machines, movable on rails
Depending on the design of the building, the rails are welded or anchored by
the customer
Safety fences located in the area of the rails have to be provided by customer.

18.00 **7 Protection class IP 65 for instrumentation of the truck loading machine and bag transport system – installation in the field**

special protection class of IP 65 for all instrumentation of the truck loading line, which
is installed in the field near by the machines and equipment,
as far as technically possible and not otherwise specified

exceptions are:

- check weighing unit
- 2x hinged belt conveyors
- 2x horizontal belt conveyor
- ascending belt conveyor
- stop / timing belt conveyor
- truck loading machine AV 17

18.01 **7 Set of internal compressed air pipes**

between the main feeding point near by the machines and all consumables and devices at the equipment and units, incl. the piping and tubing supports with fixing material, total length: approx. 10,0 m

connection flange according to AISI / ANSI standard

Remark:

The main air feeding pipe incl. counter flange have to be provided and installed by others.

19.00 7 Dedusting filter plant – fertilizer execution

Using of one (1) dedusting filter unit for each bagging spout & net weigher, instead of connection to one common dedusting filter system.

Installation of each filter unit in the area of the bagging spout.

Advantages:

- saving of operational costs due to switching on the filter unit only for the line in operation (energy a.s.o)
- saving of material costs by reducing the total length of the dust-laden piping
- saving of installation / erection costs of the dust-laden piping
- reducing the total suction air volume of the common filter plant by approx. 10.000 up to 15.000 m³/h
- less wear and tear of the equipment
- easy maintenance on the small filter units
- save operation of each small filter unit compared to one common filter plant

The dedusting filter equipped with the following components:

Dedusting Filter with Automatic Compressed Air Cleaning

Technical data:

exhaust air volume:	min. 1500 – 2000 m ³ /h
raw gas dust contents:	< 2000 mg/Nm ³
clean gas dust contents:	< 5 mg/Nm ³
filter design:	round filter
maintenance opening:	in front
installation of filter elements:	at the side of raw gas
mode of operation:	sucking
kind of filter element:	filter cartridges
quantity:	10 - 12 pieces
dimensions:	145*1200 mm (D*L)
quality:	polyester fleece with PTFE coating

equipped with:

- construction in stainless steel execution, inspection opening
- bottom part of filter with dust discharge spout and dust collecting hopper underneath, contents 35 liter
- clean gas part with cleaning unit with compressed air storage, nozzle pipes and compressed air maintenance unit
- filter elements

- pressure measuring connector and U-tube pressure gauge for differential pressure measurement
- raw- and clean gas spout with connecting flanges
- built-on fan in one-sided suction design with flanged motor and impeller directly arranged on the motor shaft
- earthing bolts and –cables at the filter
- filter elements coming into contact with the product and on the raw gas side executed in stainless steel 1.4301

Raw gas piping – Ø graded:

in stainless steel design, including all adaptor- and fitting pieces, bends and clamping rings, with gaskets and standard fastening material
pipe length: approx. 5,0 m

Filter blow-out hood:

combination hood with inserted sound-insulating material, for reduction of the continuous sound pressure level of fan and clean gas blowout to < 80 dB(A), measured in a distance of 1,5 m.

Control panel / filter plant control:

for control of the complete filter incl. the fan,
consisting of:

- the valve impulse control with adjustable interval- and impulse times as well as the down-time cleaning for the cleaning of the filter
- the fan ON/OFF-control in direct connection (up to 5,5 kW) or star-delta connection (from 7,5 kW)
- potential free out- and input for operating and fault report

the complete circuit wiring according to VDE-regulations and built into a stainless steel panel, make BADER, RITTAL or similar.

Electrical connection:

- power supply voltage	(V/Hz)	400 / 50
- control voltage	(V/Hz)	230 / 50
- solenoid valve voltage	(VDC)	24
- protection Class	(IP)	65

The switchgear / control cabinet is ready is directly installed / mounted to the machine frame of filter unit.

Insulation and heating of lower / conical part of filter

consisting of:

- mineral wool / wired mats quilted unilaterally on wire cloth, thickness approx. 80 mm
- surface protection of aluminium plate, thickness 1,0 mm (execution of insulation according to DIN 18421)
- insulated heating cable
- temperature controller with thermostat
- safety controller for disconnection of the maximum temperature
- temperature gauge for indication of the minimum temperature

The complete control / switch of the conical heating device are integrated in the control panel / box of the dedusting filter plant.

20.00

Extension of the control panel

extension of the separate, standalone control panel of the bagging line with all equipment and parts of the truck loading line, installation close to the bag packaging system or in separate control room,

protection classification IP 54 / IP 55,

all electrical components and devices are installed for proper operation and function of the truck loading line:

- main switch for power supply
- control voltage transformer
- power protectors and motor protection switches

- additional software for the programmable logic controller of the bagging line, for linkage of the control sequences, basis for software is Siemens, Type S-7 1500

pre-wired to terminal connectors

all components and devices are in accordance with the current VDE regulations other requirements may result in additional charges

20.01 7 Set of connecting cables

between the components of the packing plant and the control cabinet, approx. 30 m developed length

20.02 7 Cable duct

cable basket tray, stainless steel, incl. fixing material, approx. 30 m developed length

20.03 7 Cable- and core numbering

for the following loading and transport machines:

- AVENTUS truck loading machine
- control boxes in the field
- inside the control panels

consisting of:

- core numbering for the machine control cabinets (target character based)
- cable tags for cables at the machine
- design and execution as per manufacturer standard

20.04 7 Main power infeed / power supply

CS

main power supply and infeed to be provided by the customer or others

21.00 1 Special design and execution for the fertilizer industry

consisting of:

- plant components and parts in direct contact with the product are made of stainless steel, at least material 1.4301 (AISI 304)

- machine free of nonferrous material as far as technical possible
- where nonferrous materials must be used, there parts are painted
- pneumatic screwing are Ni coated, system Camozzi
- piston rods of pneumatic cylinders made of stainless steel
- toggle link sockets made of material 1.4301 (AISI 304) with PTFE slide coating
- housing of bearings are special painted
- usage of bearing with lifetime-lubrication
- connecting screws made of stainless steel as far as technical possible
Otherwise the screws are painted
- adjustment screws and spindles made of stainless steel, at least 1.4301 (AISI 304)
- drives in special corrosion execution
- tensioning and diverting drums in rubberized execution

the following plant equipment and parts remain in manufacturer standard:

- drives and gear-box motors
- check weighing unit

21.01 1 Special surface treatment specific for the fertilizer industry

for parts made of mild steel and nonferrous heavy materials consisting of:

tinder-free steel plates are degreased

- sandblasting : standard of surface cleaning SA 2,5
- prime coat : 2 component epoxy-resin paint
- final coat : 2 component epoxy-resin paint
- total coating thickness : min. 80 - 120 µm

- colour RAL 9010 (pure white) for mild steel parts
- colour RAL 7016 (anthracite) / RAL 3000 (red) for design aspects
- colour RAL 9005 (deep black) for safety guard including frame
- colour RAL 1003 (signal yellow) for plant guard supports

for parts made of stainless steel, material 1.4301 (AISI 304) or better:

- pickled and passivated

the following plant equipment and parts remain in manufacturer standard:

- drives and gear-box motors
- check weighing unit

Differing colour against extra charges!

Purchased parts remain in manufacturer standards!

PART III – MISCELLANEOUS & SERVICE

consisting of:

22.00 1 Engineering & project coordination

Engineering:

The engineering consisting of:

- the basic engineering with:
 - * detailed technical description and specification
 - * detailed commercial quotation
 - * clarification of scope of supply
 - * coordination and description of battery limits
 - * analysis of product sample (approx. 5 kg) in the AVENTUS R&D Center (if required)
 - * clarification of interfaces to upstream and downstream suppliers
 - * planning of the AVENTUS scope of delivery
 - * discussions and meetings of the project
- the detailed engineering with:
 - * dynamic and foundation loads data
 - * specification of the foundation bolts and anchorages
 - * connection points for main power supply / infeed
 - * connection points for instrument / compressed air
 - * connection points for dedusting system
 - * connection sizes and information at the project boundaries
 - * clarification & description of all technical data of equipment and machines
 - * coordination of the complete project and scope of supply
 - * coordination of all sub-suppliers
 - * coordination of installation, commissioning and training

Meetings:

- one (1) Kick-Off-Meeting (KOM) at site
- one (1) clarification meeting during order execution in Germany

22.01 1 Seismic calculation

The AVENTUS scope of supply includes the seismic calculation for the following equipment and parts:

a.) seismic calculation on the anchor bolts of the equipment

All other machine and equipment frames as well as supports will be designed according to manufacturer standard.

A seismic calculation on these frames and supports is not applicable and technically possible!

23.00 1 Anchor screws and bolts

for the scope of supply our delivery includes all anchor screws and bolts for fixing of the machines and equipment

23.01 1 Special tools

For service & maintenance works special tools are not necessary!

In case special tools are required, AVENTUS will supply free of charge these tools with the spare part package for the starting phase to the customer.

24.00 1 Factory inspection and no-load workshop test

factory inspection and no-load workshop test:

All quoted machines and equipment will be functional tested in our workshop before delivery will take place.

- Dry Test of Machineries and Equipment without any Product -

All test results are recorded in a FAT report during the time of tests and signed by both parties.

Expediting cost for the customer personnel attending the factory acceptance test (FAT) are not included.

Such expenses have to be borne by customer himself, at actual costs.

24.01 1 Expediting costs for additional meetings and pre-inspection

additional expediting cost for meetings and pre-inspection essentially consisting of:

- costs for one (1) additional clarification meeting
- costs for intermediate inspection during order execution
- costs for travelling charges, hotels and accommodation of AV personnel

Other meetings are possible and have to be paid by the customer at actual costs!

25.00 1 AVENTUS documentation (English language)

Our scope of delivery comprises the documentation in compliance with the **EC Machinery Directive 2006/42/EC** in the **English** language, submitted as follows:

- one (2x) paper copy in English language (print out)
- one (2x) digital USB flash drive in English language (pdf files)

consisting of:

- * electrical documentation with
 - circuit diagrams
 - terminal plans
 - schematic diagrams
 - arrangement drawings
 - installation schemes / installation overview
 - program print-out in FUP
 - reference lists (inputs, outputs, flag, times)
 - cross reference lists
 - the program disc
 - hardware documentation is created with the CAD system ELCAD by Aucotec

- * technical specification with
 - installation drawings with all main and connecting dimensions

- foundation and load plans
- the operating and maintenance instruction
- safety marking on the machine
- safety instructions
- spare parts lists
- list of lubricants
- motor list
- pneumatic connection diagrams

* CE Mark and Declaration of Conformity as defined in the EC Machinery Directive 2006/42/EC, Annex II A

The entire documentation is prepared as our standards.
Additional documents are available at an extra charge.

Operating manuals for purchased parts (such as engines, gears, couplings, etc.) shall be supplied, if available, in the language spoken in the country of installation.

If the operating manuals are not available in that language, the supplier shall choose alternative languages.

25.01 1 Additional & special documentation (English language)

The following additional documentation will be executed and provided by AVENTUS, as follows:

- two (2x) paper copy in English language (print out)
- two (2x) digital USB flash drive in English language (pdf files)
- General arrangement drawing
- Load and foundation plan
- Detailed and sectional drawings (if necessary)
- MFD / PFD (Material Flow Diagram / Process Flow Diagram)
- Control schematics incl. terminal diagrams
- Terminal list / wiring diagram
- Utility consumption list
- Signal exchange data (BUS communication)
- I/O Data
- Lubricant list
- Operation manuals
- Maintenance instruction
- Quality records (AV standard check reports)
- Spare and wear parts list
- Delivery time schedule
- Workshop test schedule for FAT
- Site test schedule for SAT
- Advice of readiness for dispatch
- Packing list
- CE certificate

Remark:

The vendor document list as per inquiry specification will be agreed and issued by both parties latest during the KOM.

OPTION – RECOMMENDED SPARE PARTS

consisting of:

26.00 1 Set of recommended spare parts for the starting phase OE

the starting phase consisting of:
- the mechanical installation
- the electrical installation
- the test run (dry test)
- the commissioning

26.01 1 Set of recommended spare parts for 2-years operation OE

recommended set of spare parts for approx. 2-years operating period
(minimum supply of spare parts)

Remark:
Please note that the quoted spare part package does not include all spare parts.

26.02 1 Set of recommended capital spare parts OE

the capital spare parts essentially consisting of:
- the CPU as spare part
- the I / O modules as spare part
- other special electronic parts
- parts indicated as long delivery items

Remark:
Please note that the quoted spare part package does not include all spare parts.

OPTION – SERVICE Installation and Commissioning, incl. Training

Consisting of:

27.00 1 Off-loading of the goods and equipment CS

The Customer will delegate the team of specialist for the off-loading works and transport of the machines and equipment at the site.

**7x Bagging Station of Type NWED O
7x Truck Loading Machines of Type AV 17 incl. Conveyors**

Duration: four (4) days

based on a working week of 6 working days
of 10 hours each

Personnel: 1 Team for Off-Loading - by customer

**27.01 1 PART I – bagging technology OE
Complete installation (mechanical and electrical)**

Supervision of installation by AVENTUS.

7x Bagging Station of Type NWED O

Duration: thirty (30) days – mechanical
ten (10) days – electrical
plus two (2) travelling days

based on a working week of 6 working days
of 10 hours each

Personnel: 1 AVENTUS Supervisor
2 Specialist - by customer (locksmith)
1 Specialist – by customer (electrician)
1 Helper - by customer
1 Site manager - by customer (timewise)

If, at customer's request, AVENTUS performs support activities related to the delivery at another place than the place of fulfillment of the installation, the risk remains with the customer, as agreed. AVENTUS will be liable only for damages caused deliberately or due to gross negligence.

27.02 1 PART II – truck loading and full bag technology Complete installation (mechanical and electrical) OE

Supervision of installation by AVENTUS.

7x Truck Loading Machines of Type AV 17 incl. Conveyors

Duration: thirty (30) days – transport system
ten (10) days – stretch-hood

based on a working week of 6 working days
of 10 hours each

Personnel: 1 AVENTUS Supervisor
2 Specialist - by customer (locksmith)
1 Specialist – by customer (electrician)
1 Helper - by customer
1 Site manager - by customer (timewise)

If, at customer's request, AVENTUS performs support activities related to the delivery at another place than the place of fulfillment of the installation, the risk remains with the customer, as agreed. AVENTUS will be liable only for damages caused deliberately or due to gross negligence.

27.03 1 PART I – bagging technology Commissioning OE

Basic commissioning with one (1) product as well as one bag size (500 kg) incl. acceptance test

7x Bagging Station of Type NWED O

Duration: thirty (30) working days for commissioning
ten (10) working day for performance test
plus two (2) travelling days

based on a working week of 6 working days
of 10 hours each

Personnel: 1 AVENTUS Service technician
 1 Specialist - by customer (electrician)
 1 Specialist - by customer (mechanic - timewise)
 1 Site manager - by customer (timewise)

If, at customer's request, AVENTUS performs support activities related to the delivery at another place than the place of fulfillment of the installation, the risk remains with the customer, as agreed. AVENTUS will be liable only for damages caused deliberately or due to gross negligence.

**27.04 1 PART II – truck loading and full bag technology OE
 Commissioning**

Basic commissioning with one (1) product incl. acceptance test

7x Truck Loading Machines of Type AV 17 incl. Conveyors

Duration: thirty (30) working days for commissioning
 ten (10) working day for performance test
 plus two (2) travelling days

based on a working week of 6 working days
 of 10 hours each

Personnel: 1 AV Service technician
 1 Specialist - by customer (electrician)
 1 Specialist - by customer (mechanic - timewise)
 1 Site manager - by customer (timewise)

If, at customer's request, AVENTUS performs support activities related to the delivery at another place than the place of fulfillment of the installation, the risk remains with the customer, as agreed. AVENTUS will be liable only for damages caused deliberately or due to gross negligence.

27.05 1 Separate training at site KPIC, Kermanshah, Iran OE

Training of the customer's operation and maintenance personnel on the bagging line.

The training is hold in German / English language during the commissioning of the bagging and filling station / line.

(Translator / interpreter have to be provided by the customer.)

Duration: **complete bagging station incl. truck loading**
 - four (4) working days –bagging machine
 - four (4) working days – truck loading line, auxiliary
 equipment – filter a.s.o.

Personnel: 1 AVENTUS Service technician
 3 - 4 Operators - by customer
 3 - 4 Specialists - by customer

27.06 1 Training at site / at the machines during commissioning phase OE

Training of the customer's operation and maintenance personnel directly at the

machines.

The training is hold in German / English language during the commissioning of the bagging and filling station / line.
(Translator / interpreter have to be provided by the customer.)

Duration: **complete bagging station incl. truck loading**
- four (4) working days –bagging machine
- four (4) working days – truck loading line, auxiliary equipment – filter a.s.o.

Personnel: 1 AV Service technician

3 - 4 Operators - by customer
3 - 4 Specialists - by customer

The following works are not included during the time of installation, commissioning as well training and must be carried out by the customer:

- Works on the building
- Insulation test

The first calibration

is carried out by the customer during the commissioning phase under the supervision of an AV commissioning specialist.

If the first calibration is carried out outside the commissioning phase requiring an additional journey of our commissioning engineer, it will be charged on basis of our service conditions.

The time schedule

will be made under the consideration that all structural modifications are carried out by the customer and the installation and commissioning can be effected without any interruption.

If the stay of our personnel on site is longer than scheduled for reasons we are not responsible for, the additional time will be charged at expense on basis of our service conditions.

The contractor

has to put an Internet connection and a phone connection at the disposal of supplier's personnel free of charge for business purpose.

Work under extremely hazardous

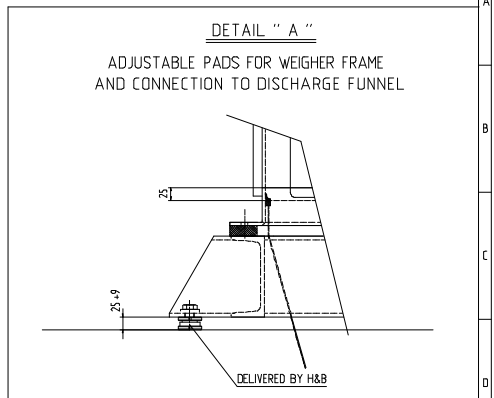
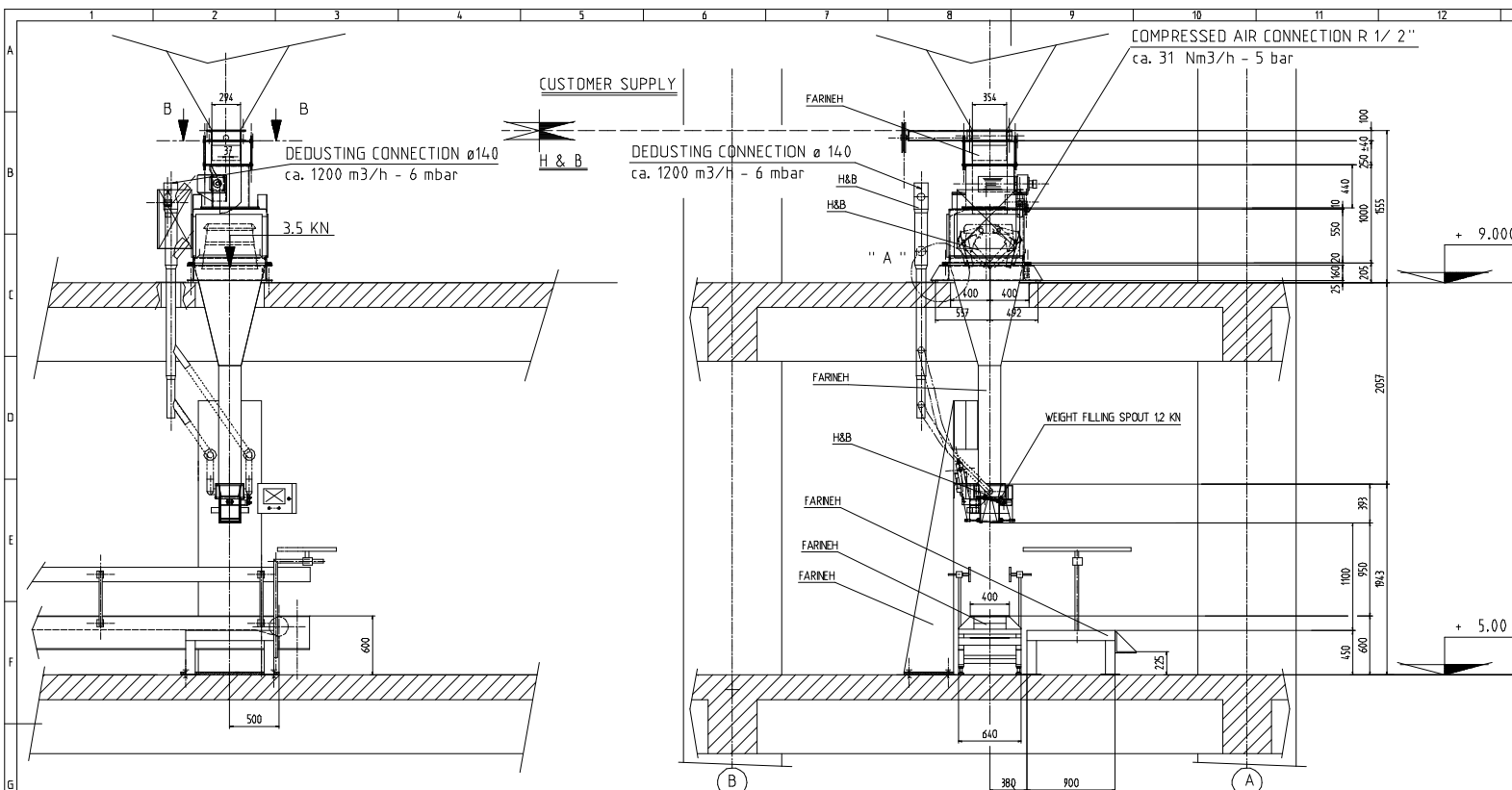
or dirty conditions shall be subject to an additional charge - this additional charge is to be agreed with you.

The following issues are to be organized by the customer and put at our disposal free of charge:

Sanitary facilities
Changing rooms
Auxiliaries (current, water, etc.)
Necessary mounting tools, lifting and hoisting devices as well as welding torches

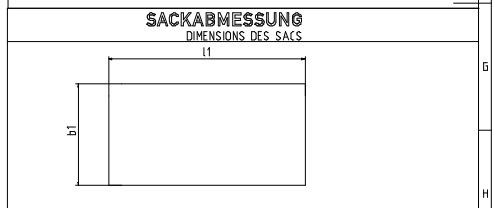
The following costs are included in the price:

Travel costs
Hotel accommodation according to European standard
Board / daily allowance



BEMERKUNGEN
REMARKS:

ALLE LASTANGABEN ENTSPRECHEN STATISCHEN BELASTUNGEN
ALL LOAD DATA ARE STATIC LOADS ONLY
DYNAMISCHE BELASTUNGEN SIND WÄHREND DES NORMALBETRIEBS CA. 30% HÖHER
DYNAMIC LOADS ARE DURING NORMAL OPERATING CONDITIONS APPROX. 30% HIGHER
MAX. DURCHBIEGUNG DER BÜHNE IM BEREICH DER NETTO
WAAGEN 0.001 x L
THE MAX. DEFLECTION OF THE PLATFORM IN THE
AREA OF THE WEIGHERS HAS TO BE LESS THAN 0.001 x L
DIE RESULTIERENDE DYNAMISCHE SCHWINGUNG IM BEREICH DER
NETTO - WAAGEN DARF 20 Hz NICHT UNTERSCHREITEN
THE RESULTING DYNAMIC VIBRATION OF THE WEIGHER PLATFORM HAS TO BE GREATER THEN 20 Hz
DIE ANLAGENKOMPONENTEN WERDEN ERST NACH ENDGÜLTIGER
MONTAGE BEFESTIGT
THE PLANT COMPONENTS WILL BE FASTENED ONLY AFTER FINAL ERECTION



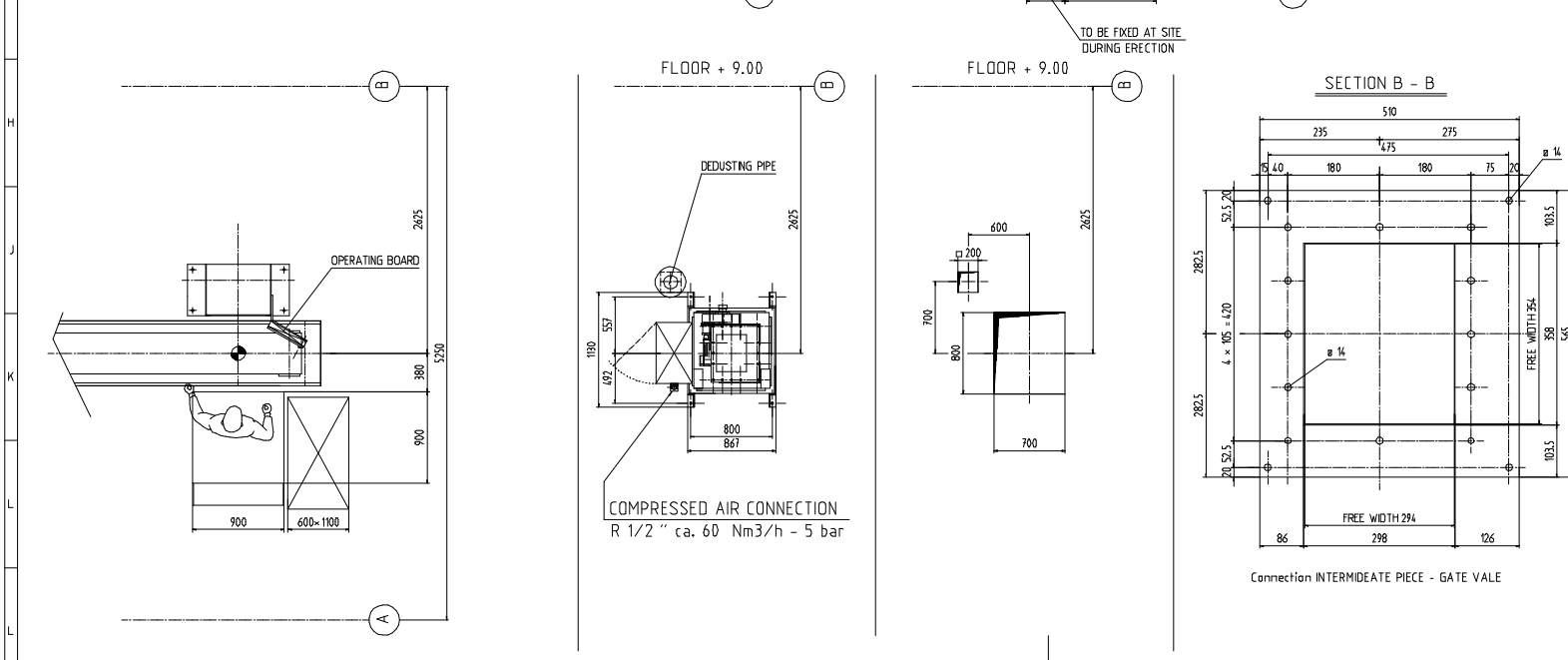
l1 LÄNGE : LONGUEUR	1050 mm
b1 BREITE : LARGEUR	570 mm

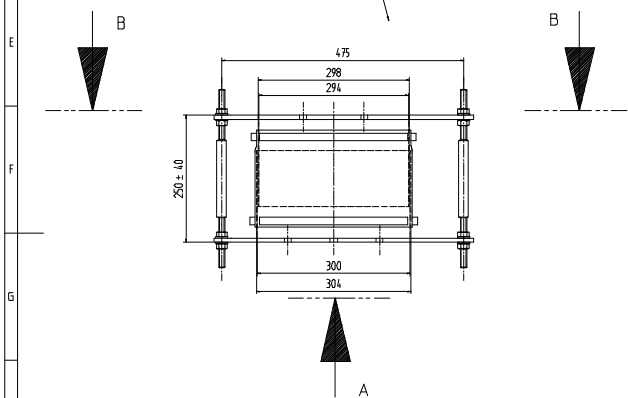
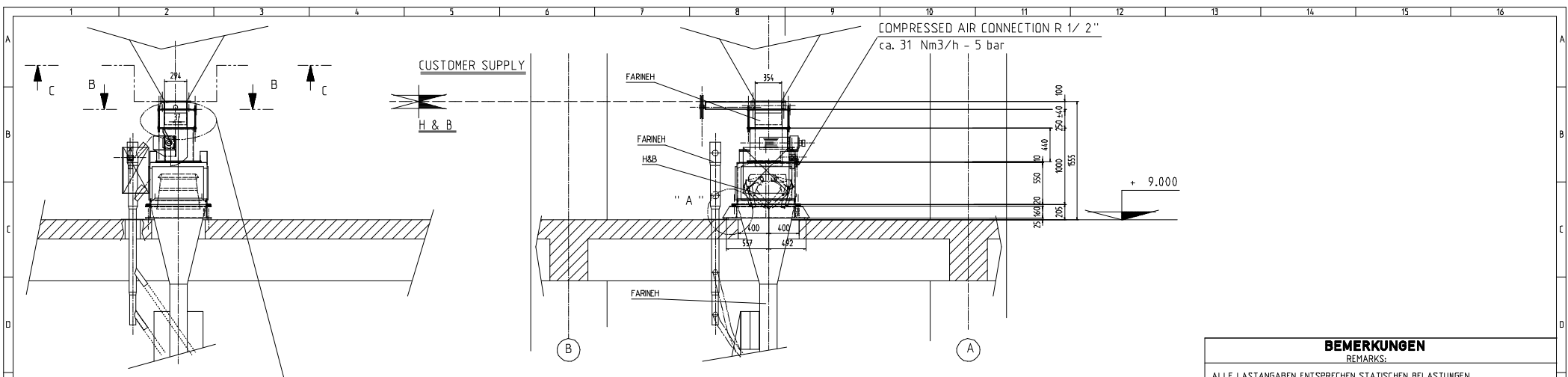
ZUSÄTZLICHE ZEICHNUNGEN
ADDITIONAL DRAWINGS

TITEL TITLE	ZEICHNUNGSNUMMER DRAWING - NUMBER
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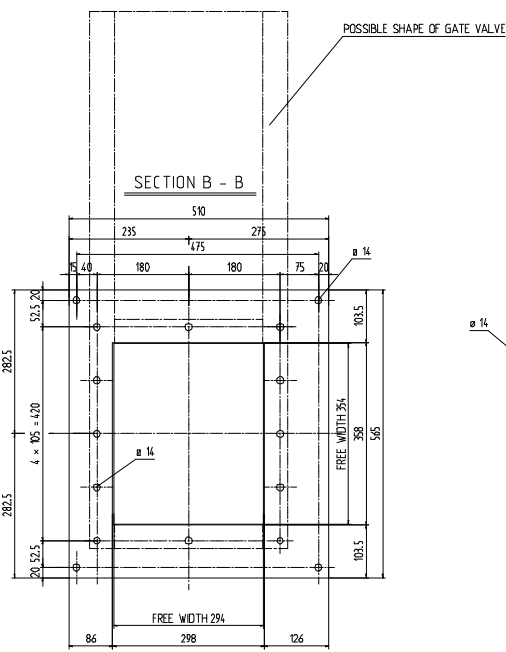
ÄNDERUNG REVISION			
NR. NO.	ÄNDERUNG REVISION	DATUM DATE	NAMEN NAME
AUFR.-NR. COMMISSION	KUNDEN CUSTOMER		

NR. NO.	ÄNDERUNG REVISION	DATUM DATE	NAMEN NAME
53/228607	KHI		KPIC
This drawing is only allowed to be changed in the cad system For this drawing we reserve all rights according to DIN 34. Qualification: surrender to this series etc. are portable and stable to damages.		DATE 16.01.04	NAME KALPMANN
description HAVER Bagging Station 1 NWEDO		scale 1:25	sheet no. 01
replacement no.		total no. 01	total sheets 01

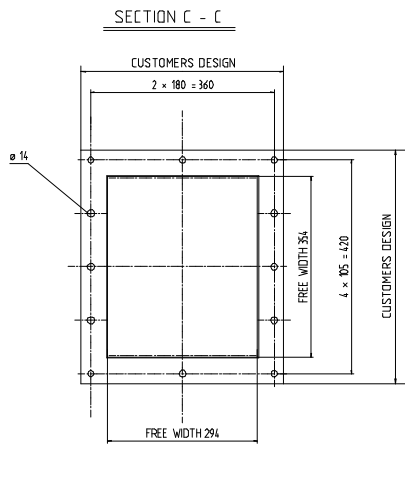




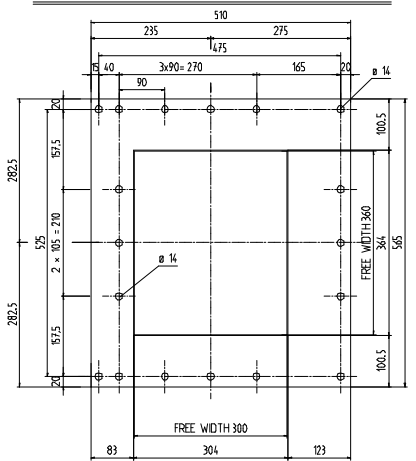
VIEW " A " CONNECTION TO WEIGHER INLET



Connection INTERMEDIATE PIECE - GATE VALE



Connection GATE VALE - SILO

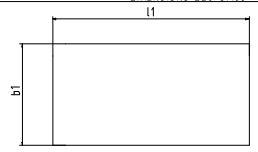


Connection WEIGHER - INTERMEDIATE PIECE

BEMERKUNGEN
REMARKS:

ALLE LASTANGABEN ENTSPRECHEN STATISCHEN BELASTUNGEN
ALL LOAD DATA ARE STATIC LOADS ONLY
DYNAMISCHE BELASTUNGEN SIND WÄHREND DES NORMALBETRIEBS CA. 30% HÖHER
DYNAMIC LOADS ARE DURING NORMAL OPERATING CONDITIONS APPROX. 30% HIGHER
MAX. DURCHBIEGUNG DER BÜHNE IM BEREICH DER NETTO
WAAGEN 0.001 × L
THE MAX. DEFLECTION OF THE PLATFORM IN THE
AREA OF THE WEIGHERS HAS TO BE LESS THAN 0.001 × L
DIE RESULTIERENDE DYNAMISCHE SCHWINGUNG IM BEREICH DER
NETTO - WAAGEN DARF 20 Hz NICHT UNTERSCHREITEN
THE RESULTING DYNAMIC VIBRATION OF THE WEIGHER PLATFORM HAS TO BE GREATER THEN 20 Hz
DIE ANLAGENKOMPONENTEN WERDEN ERST NACH ENDGÜLTIGER
MONTAGE BEFESTIGT
THE PLANT COMPONENTS WILL BE FASTENED ONLY AFTER FINAL ERECTION

SACKABMESSUNG
DIMENSIONS DES SACS



l1 LÄNGE : LONGUEUR	1050 mm
b1 BREITE : LARGEUR	570 mm

ZUSÄTZLICHE ZEICHNUNGEN
ADDITIONAL DRAWINGS

TITEL TITLE	ZEICHNUNGSNUMMER DRAWING - NUMBER
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ÄNDERUNG
REVISION

NR. NO.	ÄNDERUNG REVISION	DATUM DATE	NAMEN NAME
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AUFR.-NR. COMMISSION	KUNDE CUSTOMER	KHI	KPIC IRAN
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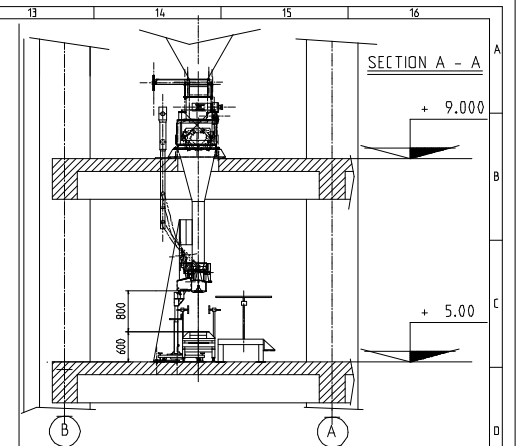
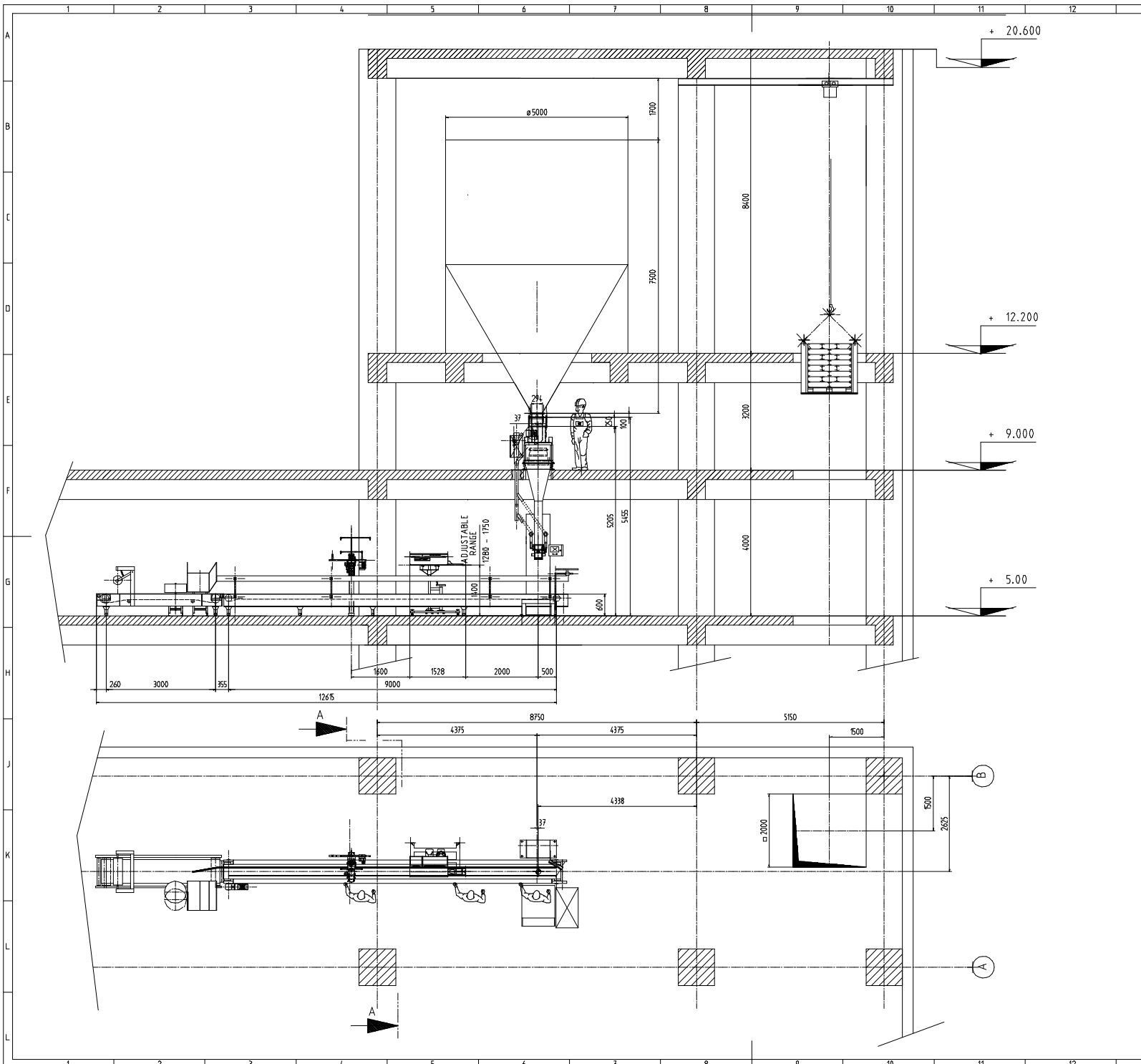
This drawing is only allowed to be changed in the cad system
For this drawing we reserve all rights according to DIN 34.
Qualification: surrender to title parties etc.
are portable and stable to damages.

DATE	DATE	DATE
22.01.04	KALPMANN	
checked		
copy		

HAVER & BOECKER
D-32929 Diele

description: Intermediate Piece for HAVER Bagging Station1 NWEDO

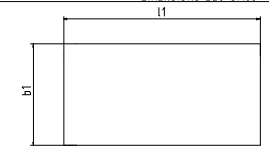
scale: 1:20
drawing no.: C.0.04.0013
sheet no.: 0
total sheets: 1
revision no.:
replaced by:



BEMERKUNGEN
REMARKS:

ALLE LASTANGABEN ENTSPRECHEN STATISCHEN BELASTUNGEN
 ALL LOAD DATA ARE STATIC LOADS ONLY
 DYNAMISCHE BELASTUNGEN SIND WÄHREND DES NORMALBETRIEBS CA. 30% HÖHER
 DYNAMIC LOADS ARE DURING NORMAL OPERATING CONDITIONS APPROX. 30% HIGHER
 MAX. DURCHBIEGUNG DER BÜHNE IM BEREICH DER NETTO
 WAAGEN 0.001 x L
 THE MAX. DEFLECTION OF THE PLATFORM IN THE
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 MONTAGE BEFESTIGT
 THE PLANT COMPONENTS WILL BE FASTENED ONLY AFTER FINAL ERECTION

SACKABMESSUNG
DIMENSIONS DES SACS



l1	LÄNGE : LONGUEUR	1050 mm
b1	BREITE : LARGEUR	570 mm

ZUSÄTZLICHE ZEICHNUNGEN
ADDITIONAL DRAWINGS

TITEL TITLE	ZEICHNUNGSNUMMER DRAWING - NUMBER
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ÄNDERUNG
REVISION

NR. NO.	ÄNDERUNG REVISION	DATUM DATE	NAMEN NAME
AUFR.-NR. COMMISSION	KUNDEN CUSTOMER		

53/228607	KHI	KPIC	IRAN
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This drawing is only allowed to be changed in the cad system
 For this drawing we reserve all rights according to DIN 34.
 Duplication, surrender to third parties etc.
 are punishable and liable to damages.

date	DATE	DATE	DATE
22.01.04	KALPMANN		
checked			
copy			

description: General Arrangement HAVER Bagging Station 1 NWEDO
 scale: 1:50
 drawing no.: C.0.04.0014
 sheet no.: 0
 size: A1
 replaced by: