

Memória Justificativa da capacidade instalada

UP02 – Portinhos

Recria de frangas para produção de ovos em jaula melhorada

Recria de frangas para produção de ovos no solo ou ar livre

Outubro de 2019

PROC.º REAP N.º 3719/02/C

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Introdução

O presente documento tem por objetivo justificar o aumento da capacidade instalada do pavilhão 1 da exploração UP02 – Portinhos da Aviduarte, Lda., através da demonstração de que a mesma se encontra reduzida face ao equipamento ali instalado e que, no equipamento existente, é possível recriar mais aves, mantendo o bem-estar animal, não havendo lugar a qualquer alteração no equipamento.

Pretende-se ainda justificar a capacidade instalada do pavilhão 2, que será dedicado à recria de frangas para produção de ovos no solo ou ao ar livre. As futuras galinhas poedeiras devem ser criadas num sistema similar àquele onde irão produzir de forma a permitir uma adaptação melhor e mais rápida quando são transferidas para instalações de produção de ovos. No sistema de produção de ovos no solo as aves têm acesso ao equipamento onde se encontram os sistemas de fornecimento de ração e água e os ninhos, no entanto as aves têm liberdade para esvoaçar para o solo ou outros locais, onde podem esgravatar e espanejar livremente.

Na fase de recria, o equipamento permite às aves explorar comportamentos similares.

Capacidade instalada no pavilhão 1 (jaula)

A capacidade instalada autorizada foi calculada para uma densidade de 25 aves por jaula, totalizando 38 400 frangas, tal como apresentado na tabela abaixo.

Tabela 1 – Capacidade instalada tendo por base condicionantes para jaula melhorada.

Pavilhão	Número Total Jaulas	Frangas/jaula	Capacidade instalada
1	1 536	25	38 400

Tendo em conta que não existe legislação de bem-estar animal aplicável a instalações de recria de frangas para produção de ovos, realizou-se uma análise às recomendações dos guias de manejo das várias estirpes de galinhas poedeiras no que respeita a recria, tendo em conta que estas recomendações deverão ir ao encontro das características que permitam uma recria

saudável, uniforme e capaz de apresentar bons resultados em postura, pois só garantindo bons resultados se pode prosperar no negócio da venda das pintas para recria.

Assim consultaram-se diversos guias de manejo, no sentido de verificar quais as densidades e disponibilidade de comedouro e bebedouro aconselhadas. Os resultados resumidos apresentam-se na tabela abaixo.

Tabela 2 – Densidades e disponibilidades de comedouros e bebedouros aconselhados.

	Área (cm ² /ave)	Comedouro (cm/ave)	Aves/bebedouro
Lohman (Rearing of pulets - Mangement guide)	285	5	8
Manual avicultura	310	5	8
Hy-Line	310,0	8	8
ISA Brown	350,0	6	10
Mínimo	285,0	5,0	8 a 10

Características do sistema de alojamento das aves

O equipamento de recria instalado é o Univent Starter UV-S 680 da Big Dutchman.

As jaulas encontram-se equipadas com sistemas de fornecimento de ração e água. A ração é fornecida em alturas específicas e controladas, tendo em conta as especificações fornecidas no manual de manejo da estirpe. A água é fornecida sem limitações, e permanentemente acessível.

A tabela abaixo apresenta as características das jaulas de alojamento das aves.

Tabela 3 – Características das jaulas Univent Starter UV-S 680/a da Big Dutchman.

Profundidade (cm)	Largura (cm) = Comedouro (cm)	Área jaula (cm ²)	Bebedouros/jaula
68	120,6	8 200,8	3

Pode consultar-se o esquema do equipamento no Anexo I. Apresenta-se ainda a contabilização de jaulas por pavilhão.

Tabela 4 – Contabilização de jaulas do pavilhão 1.

Filas	Andares	Jaulas/ fila	Número Total Jaulas
4	4	48	1536

Número de aves por secção tendo por base valores mínimos de densidade e disponibilidade de comedouro e bebedouro aconselhadas

Os resultados obtidos indicam que a densidade animal, tendo por base a metodologia sugerida poderá ser de 27 aves por jaula.

Tabela 5 – Densidade animal no pavilhão 1.

N.º aves/jaula	Área disponível (cm²/ave)	Comedouro (cm/ave)	Água (aves/bebedouro)
27	303,73	4,47	9,00

Como se pode verificar são cumpridos os limites para os descritores área disponível e n.º de aves por bebedouro, com a densidade animal calculada. O acesso a comedouro encontra-se ligeiramente abaixo dos 5 cm/ave, mas esse défice pode ser facilmente controlado através da distribuição de ração mais vezes por dia.

A capacidade de alojamento máxima da instalação tendo por base estas densidades será de 41 472 aves, tal como apresentado na tabela abaixo.

Tabela 6 – Capacidade instalada tendo por base condicionantes para jaula melhorada.

PAVILHÃO	Número Total Jaulas	Frangas/jaula	Capacidade instalada
1	1 536	27	41 472

Salienta-se ainda que, de acordo com a documentação técnica do equipamento (Anexo I) é referido que podem ser utilizadas três densidades por jaula diferentes durante a recria – 25, 27 e 30 aves por jaula, correspondendo a essas densidades, as seguintes áreas disponíveis por ave:

Tabela 7 – Área disponível (cm²/ave) aconselhada pelo fabricante.

Aves/Jaula	Área disponível (cm²/ave)
30	250
27	300
25	330

Capacidade instalada no pavilhão 2 (solo)

Metodologia de cálculo e características do sistema de alojamento das aves

A capacidade instalada para o pavilhão 2 foi dada pelas recomendações do fabricante, que pode ser consultada no Anexo II.

Os equipamentos a instalar são da marca Big Dutchmann. O modelo do equipamento é o Natura Primus 1800.

Neste equipamento, com plataformas internas, o treino das aves inicia-se desde o primeiro dia. A possibilidade de elevação das plataformas integradas, dos bebedouros e comedouros para níveis cada vez mais elevados permite acompanhar o crescimento das aves. Esta característica impele as aves a percorrer os diferentes níveis do equipamento.

No dia de chegada, as pintas são instaladas apenas num andar, conforme sucede nas recrias em jaula, e são gradualmente distribuídas pelos diferentes equipamentos. Ao atingir as 6 semanas de idade, o equipamento é totalmente aberto, e as aves podem mover-se em liberdade, dentro do pavilhão.

Durante a noite, enquanto as aves descansam nos poleiros integrados no equipamento, o operador pode facilmente fechar as aves novamente de forma a fazer os procedimentos de vacinação e controlo necessários e até mesmo a apanha no final do ciclo de recria.

Todos os andares estão equipados com passadeiras de recolha de estrume e tubagem para arejamento que promovem a secagem do estrume e ajudam na renovação do ar interior.

Dimensões do equipamento

De acordo com o fabricante, o dimensionamento da capacidade instalada deve ser feito com base em 460 aves por secção, conforme orçamento apresentado no Anexo III.

O pavilhão será equipado com 3 filas, cada uma com 69 secções do tipo 2 412 e 1 secção do tipo 1 206 (secção com metade do tamanho da anterior).

A tabela abaixo apresenta as dimensões de cada secção, em termos de área útil.

Tabela 8- Dimensões de cada secção, em termos de área útil.

	Secção 2412	Secção 1206
Comprimento (m)	2,412	1,206
Largura (m)	1,866	1,866
N.º andares	3,000	3,000
Área/secção (m²)	13,502	6,751
N.º secções	69	3
	70,5	

A capacidade instalada do pavilhão 2 será de 32 430 aves, conforme a tabela abaixo.

Tabela 9 – Capacidade instalada por pavilhão.

Filas	3
Secções / fila	23,5
N.º total de secções	70,5
N.º Aves/secção	460
N.º total de aves	32 430

Apresentam-se abaixo as restantes características do equipamento, tendo ainda em conta o número de secções a instalar no pavilhão 2.

Tabela 10 – Área disponível.

Pavilhão	
Largura	12,07
Comprimento	63,98
Área do pavilhão	772,2386
N.º aves/m² pavilhão	42,0
Área pavilhão/ave	238,1
Equipamento	
Área/secção	13,502
Área total equipamento	952
N.º aves/m² equipamento	34,1
Área equipamento/ave	293,5

Tabela 11 – Bebedouros.

Linhas/secção	6
Bebedouros/linha	10
N.º total de bebedouros	4 230
Aves/bebedouro	7,67

Tabela 12 – Comedouros.

n.º circuitos/secção	9
Comprimento circuito/secção (m)	4,824
Comprimento total circuito comedouros	2 040,5
Espaço de comedouro/ave (cm/ave)	6,29

Tabela 13 – Poleiros.

Comedouro (m)	2040,6
Linha de bebedouro (m)	1020,3
Poleiros (m)	1020,3
Comprimento total de poleiro (m)	4081,104
Comprimento de poleiro/ave (cm/ave)	12,6

Capacidade instalada total da exploração

A capacidade instalada da exploração, após ampliação será assim de 73 902 frangas de recria para produção de ovos, conforme a tabela abaixo.

Tabela 14 – Capacidade instalada atual e futura da exploração.

PAVILHÃO	Capacidade instalada atual	Capacidade instalada futura
1	38 400	41 472
2	--	32 430
Total	38 400	73 902

Anexo I - Documentação Técnica da Big Dutchmann para o modelo Univent Starter UV-S 680/a



Big Dutchman®



UNIVENT Starter

Manure belt battery cages
for rearing pullets

UNIVENT Starter – Battery cage for

With the UNIVENT Starter rearing battery cage from Big Dutchman you choose to go the right way, because UNIVENT Starter not only stands for excellent rearing results but also for excellent system quality.

To meet varied requirements of all our customers in an ideal way, we offer UNIVENT Starter with or without ventilation.

To satisfy the different needs of day-olds and pullets, our rearing battery cages consist of two different areas:

- the start tier and
- the grow tier.

Quality and uniformity of pullets are crucial factors which later influence their laying performance. Hence, the essential criteria for a successful rearing period are:

- uniform feed supply;
- rapid feed distribution;

- no manure in feed trough positioned outside the cage;
- sufficient and hygienic drinking water;
- wire partitions for improved bird control;
- high functional reliability;
- easy to operate;
- reduction of ammonia emissions.

Manure drying:

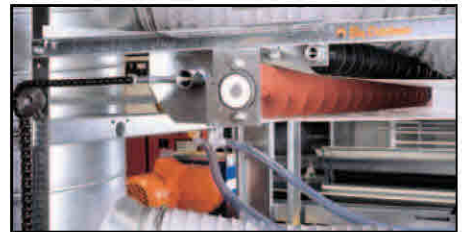
Air is channelled, via air ducts, into the individual cages, to the birds and the manure. Fresh air can be warmed up with an air mixer (mixing fresh air with house air) or heat exchanger. Both systems are controlled automatically. This additional ventilation aids in bird comfort and more uniform temperature throughout the house.

Manure belt idler unit:

In addition to the standard system, Big Dutchman offers a cleaning auger, which also cleans the manure belt during its return circuit.



Idler roller for manure belt (Standard)



Idler roller for manure belt with cleaning auger

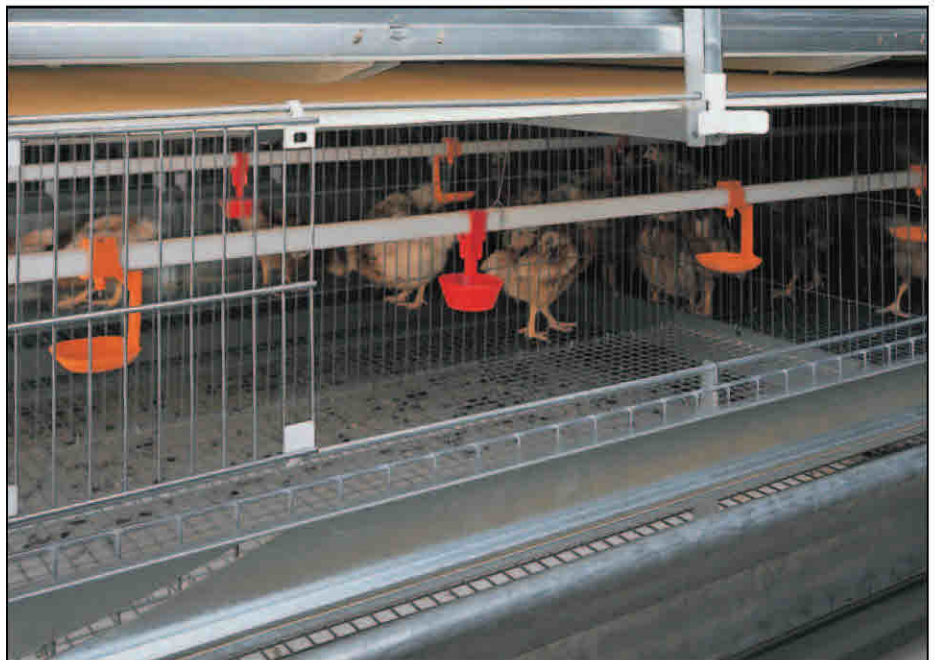
The start tier

Two thirds of each of the two large sliding doors per cage compartment can be opened. This is an important advantage when the birds have to be moved in, out, or to other cages. Bottoms have a mesh size of 1" x 1 1/2" (25 x 38 mm; both start and grow tiers) which, with an insert mat, ensures a secure foothold for the chicks (especially during their first days of life). Cleaning is fast and easy.

Feed supply

The chicks can easily reach the feed in the trough positioned outside of the cage from day one. The most important advantage of this is that the chicks can reach the feed without standing in it. By means of the adjustable rail, access to the feed is easily controlled centrally and continuously according to the birds' age. The inner rim of the trough prevents feed waste.

The Big Dutchman CHAMPION feed chain distributes feed rapidly, reliably and uniformly to each tier. The feed level in the trough can easily be adjusted with the slide adjustment at the feeder.



Start tier of UV-S 630 with open round cup for easy water intake during the first days of rearing

Water supply

The nipple drinker line in the start tier can be adjusted in height centrally according to the size of the birds. Thus, an adequate water supply is provided from day one. The drinker line is suspended every 60 cm (23.63 inches) ensuring good stability. In the standard version, there are 3

nipples with drip-water cup in each cage. Upon request, the number of nipples/cage can also be increased. The central cup can be detached and replaced by an open round cup. This makes drinking easier for the chicks during their first days of life.

or uniform pullets and dry manure



Start tier with continuous eating aperture and inner trough rim against feed losses

Advantages

- simple assembly of 3 to 8 tiers;
- feed troughs are mounted on supports for trough stability and long service life;
- feed trough with inner rim provides minimal feed losses;
- upper walkway for batteries with more than 5 tiers = easy bird control;
- better thermal economy (reduced heating expenses and reduced investment costs per bird) is achieved with systems of 4 or more tiers due to increased density;
- remarkably low bird mortality during rearing.

The grow tier

After approx. 6 weeks, the pullets are distributed evenly to all tiers of the battery. UNIVENT Starter is also available with start only on all tiers. As an option, Big Dutchman offers a step system that is built into the feed troughs.

Feed supply

The birds eat directly from the feed trough. The adjustable rail in the start tier should be at the very bottom, so that pullets eat over the rail until they are moved out during their 18th week of life. The speed of the feed chain can either be 12 or 36 m/min (39.3 or 11.8 ft/min). The result is impressive: uniform growth among the pullets!

Water supply

In grow tiers the nipple drinker is installed at the back wall of the cage where each bird can easily reach four stainless steel nipples. We also recommend using a rinsing system with a ball tank.



Grow tier UV-S 630 – four stainless steel nipples provide fresh water for the birds

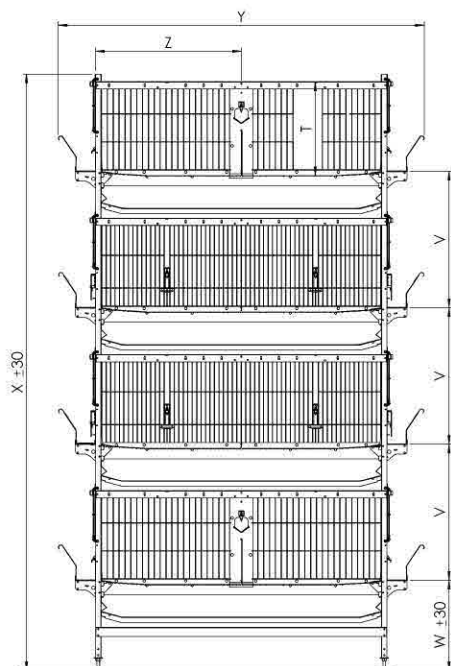
Manure removal

The manure drops on continuous PP belts underneath the cages. Air reaches the manure via air ducts, which are located above the manure belts, to assist with manure drying. A very important advantage of

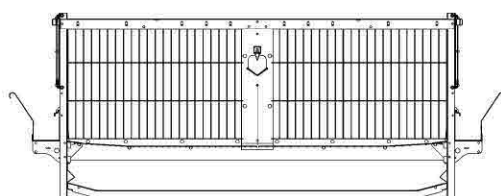
manure drying is that ammonia emissions in the house are significantly reduced. This minimises any harm to the environment, promotes the birds' well-being and reduces mortality.

Technical data

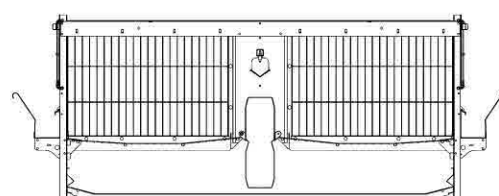
Typ of system	UV-S 680 /a		UV-S 630 A	
System height (X) in mm / inch				
3 tiers	1990	78.4	2110	83.1
4 tiers	2580	101.6	2740	107.9
6 tiers	3960	155.9	4200	165.4
7 tiers	4550	179.2	4830	190.2
8 tiers	5140	202.4	5460	215.0
Tier distance (V) in mm / inch	590	23.3	630	24.8
Height 1 st tier (W) in mm / inch	390	15.4	420	16.6
Battery width (Y) in mm / inch	1700	66.9	1700	66.9
Cage depth (Z) in mm / inch	680	26.8	630	24.8
Cage height (T) in mm / inch	405	16.0	415	16.3
Cage length in mm / inch	1206	47.5	1206	47.5
Cage surface (cm ²) / square inch	8200	1271	7598	1178
Birds/cage				
* with 250 cm ² /bird	30		28	
* with 300 cm ² /bird	27		25	
* with 330 cm ² /bird	25		23	
Rows/Passage in cm / inch				
* when house is 12 m wide	4/104	4/40.9	4/104	4/40.9
* when house is 14 m wide	5/91.7	5/36.1	5/91.7	5/36.1



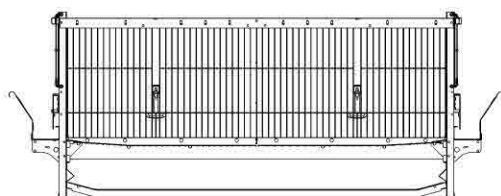
Cage cross sections



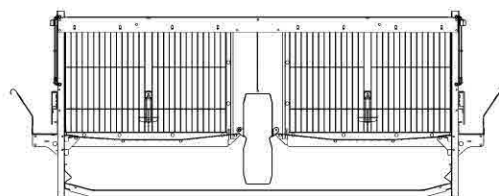
UV-S 680 – Grow tier without air duct



UV-S 630 A – Grow tier with large air duct



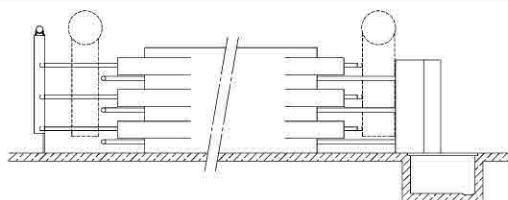
UV-S 680 – Start tier without air duct



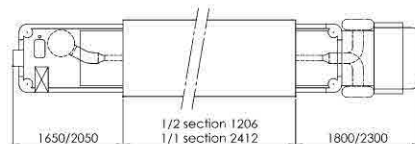
UV-S 630 A – Start tier with large air duct

Planning example UV-S 630 A

Side view



Top view



Our recommendation:

Compatibility among the individual components of a pullet house including cages, house ventilation and manure storage is essential to achieve optimal results.

Allow our specialists to advise on application of Big Dutchman equipment and technology to successfully manage flocks.



Big Dutchman.

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Anexo II - Documentação Técnica da Big Dutchmann para o modelo Natura Primus 1800



Big Dutchman®



NATURA Primus

The professional rearing aviary
for healthy, vital, uniform pullets

NATURA Primus – rearing aviary for professionals

NATURA Primus is a 3-tier rearing aviary developed by Big Dutchman which meets the requirements of day-old chicks and pullets in an optimal way. The bottom and centre tiers are equipped with feed and water lines.

The day-old chicks should be placed in the central tier → better heat supply. After approx. 10 days half of the birds can be moved into the bottom tier to provide more freedom of movement. The upper tier which is also equipped with a nipple

drinker will later on serve as resting area. NATURA Primus is available in different variants. Let our experts advise you how to find the best solution for your individual requirements.



3-tier aviary for pullet rearing

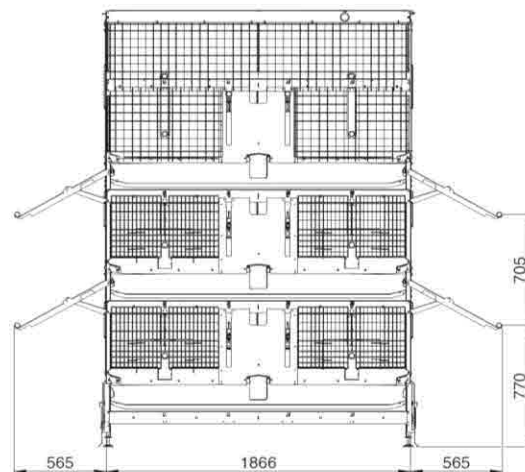
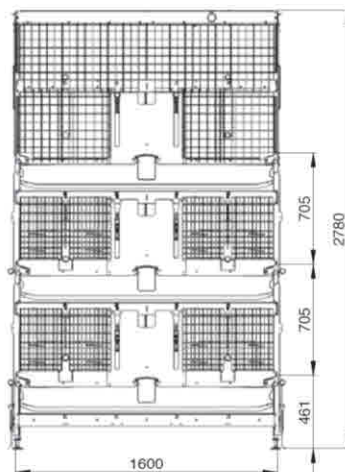
Features

- ✓ flexible front grilles → optimal accessibility, easy inspection;
- ✓ height-adjustable pipe above the feed trough protects the trough against dirt and reduces feed wastage;
- ✓ zinc-aluminium coated floor grilles → good protection against corrosion;
- ✓ foldable partition in the standard version every 2.40 m (optional every 1.20 m) → stress-free moving in and out, as well as catching for vaccination purposes;
- ✓ foldable approach perches → easy access at any time;
- ✓ available with or without air duct.

Additional note on the extendible approach perches: During the day the perches help the pullets to change easily between the three levels. During the night the perches are folded in so that the birds cannot sleep on the perches during the night. The pullets look for a place to sleep inside the aviary.

Technical specifications

NATURA Primus	Type 1600	1800
Width (mm)	1600	1866
- incl. approach perches (mm)	2730	2996
Height (mm)	2780	2780



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Anexo III - Orçamento do equipamento instalado no pavilhão 2, com cálculos da capacidade instalada

QUOTATION NO. 35690 - 1

Quotation for Aviduarte, Lda.

Aviduarte, Lda.

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Marinha

PT-2425-837 Souto da Carpalhosa

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E-Mail big@bigdutchman.de

www.bigdutchman.de

Dear Madam and Sir,

Thank you for your enquiry regarding Big Dutchman equipment. We have pleasure in sending you the enclosed quotation. If you have any queries just call our sales manager who will be pleased to help you.

Our dedicated staff, innovative, well-built products and reliable customer service have made Big Dutchman the market leader world-wide. Farmers from more than 100 countries now rely on our experience and efficiency.

We hope our quotation meets your needs, and we look forward to hearing from you.

Yours sincerely,

Jens Schuling

Big Dutchman International GmbH

House A - Project summary

House dimensions:

- Length: 63.98 m
- Width: 12.07 m
- Eaves height: 3.2 m
- Ridge height: 4.26 m

Power supply:

- Voltage: 400 V
- Frequency: 50 Hz
- Phases: 3

System dimensions:

- System length incl. end sets: 60.6 m
- Aisle widths: 1.62 m
- Space in front of the end set: 2 m
- Space behind end set: 1.38 m

Number of birds per house: 32429

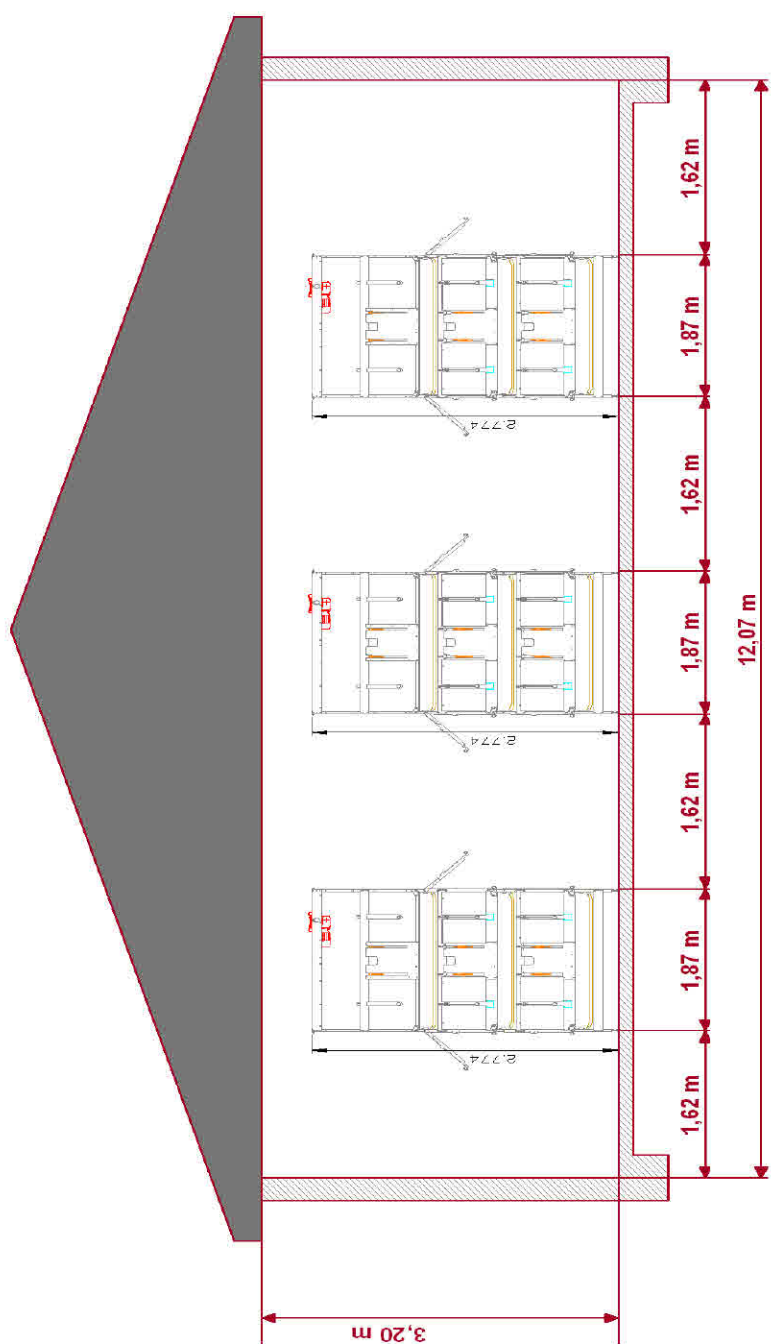
House A - Bird calculation

Parameter	Required*	Total available	Limitation of animals	Calculated values**
Perch space per bird	> 12.58 cm	408124.50 cm	32429	12.58 cm
Trough space per bird	> 4.19 cm	204051.29 cm	48643	6.29 cm
Birds per nipple	< 8.52	4230 pcs.	36033	7.67

Number of birds per house**: 32429

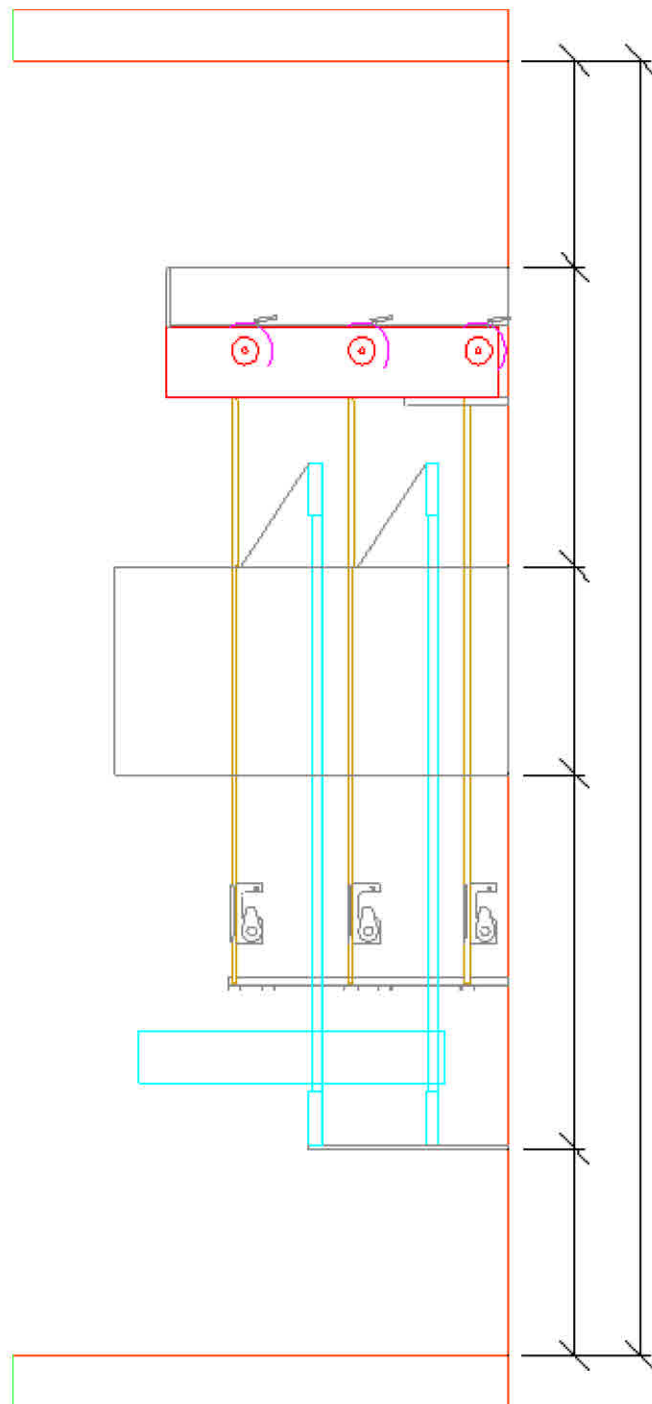
* Bird calculation according to 460 birds / section Nat Primus 1800

** Subject to max. number of birds according to limiting factor(s)



reference illustration

👁 Viewing direction:
In the transport direction of the manure belt.



reference illustration

Natura Primus 1800 without air duct

This Big Dutchman system meets the requirements of day-old chicks and pullets in an optimal way, offering you the possibility to obtain healthy, vital and uniform pullets reared in an aviary. The system is equipped with systems for feed and water supply as well as with perches.

Each compartment is 2.412 m or 1.206 m long and 1.87 m wide.

All metal parts are galvanised and all meshes are coated with a zinc-aluminium alloy (GALFAN®) and thus optimally protected against corrosion.

Technical information/data in the quotation:

- | | |
|---------------------------------------|--------------------|
| - Number of rows: | 3 |
| - Number of 2412 sections: | 23 per row |
| - Number of 1206 sections: | 1 per row |
| - Number of additional feed circuits: | 3 (above the rows) |

End set MPF & manure removal:

- | | |
|--|-------------|
| - End set feeding with 0.75 KW MPF drives | |
| - Feed supply via: | Feed column |
| - Water supply: | Front |
| - Manure belt removal system type HD 0.75 KW | |
| - Manure curtain for MB drive | |
| - Idler unit XHD with auger | |
| - 1.2 mm manure belt | |

Partitions:

- | | |
|--------------------------------------|-------|
| - Number of cross partitions: | 3 |
| - Type of partitions in the system: | solid |
| - Number of longitudinal partitions: | 3 |

In addition to the standard scope of supply, the quotation includes the following items:

- | | |
|---|----------------------|
| - Cover plate (for non-elevated rows): | collapsible |
| - Central adjustment for sliding door (tiers 1 and 2) | |
| - Front wire Mesh door - 3rd tier: | sliding central adj. |
| - Feed trough with fixed perch (tiers 1 and 2) | |
| - Adjustable drinker on third tier | |

- Separation above the system (longitudinal separation)
- Doors in aisles: for end sets and cross partitions

Water connection unit:

The water connection unit is installed between the water system and the pressure regulator and consists of a water filter, a water meter, a pressure reducer and a bypass to connect a medicator with the corresponding connecting material.

Technical information/data in the quotation:

- Flow rate: 500-6500l/h
- Type: 2" x 1" electrical (unassembled)
- Type of filter: reversible flow filter DUO

Medicator:

The medicator is installed inside the water connection unit and dispenses the required vitamins and/or medicine into the drinking water.

Technical information/data in the quotation:

- Type of medicator: Medicator 0,2-2,0%
- Medicine mixing tank: 60 L

Description	Quantity
Base-Section NAT-Primus (2.412)	69 pc
Base-Section NAT-Primus (1.206)	3 pc
End-set manure removal	3 pc
End-set feeding	3 pc
Cross Compartments	3 pc
Accessories for water supply	1 pc
Add. feeding loop on top of the row - Natura Primus 1800	3 pc
Door in aisles for end sets and cross partitions	1 pc
Separation above the system (longitudinal separation): horizontal above litter aisle	1 pc

Lighting

Correct lighting is an important factor, not only for layer management, but also in pullet rearing. Big Dutchman offers you a lighting system made to ensure an optimum light supply.

The offered lighting concept includes the following components:

Lighting in the system:

- 144 x FlexLED (1800 mm) (6 W, dimmable)
- 3 x Dimmer unit stepless FlexLED 2x way out w/max 138 watts

Lighting in the aisles:

- 4 lamp rows x 12 Moisture-proof lamps, ceiling fix. (36 W, dimmable)
- 315 m x Cable - NYM-J 5x1,5

Description	Quantity
Lighting in the system - FlexLED (1800 mm)	1 pc
Lighting in the aisles - Moisture-proof lamps	1 pc

Feed storage

The required dimensions of the silos depend on the number of storage days and the daily feed consumption. In your case, the storage capacity amounts to approximately 4 days. The steel-sheet silos are ZAM coated (> 350 g/m²). To store feed hygienically and safely, Big Dutchman hereby offers you high-quality outside silos made of galvanized steel sheets.

Technical information/data in the quotation:

- Number of silos: 1
- Filling: Pneumatic / Mechanical
- Capacity: 27 m³ per silo
- Diameter: 2.75 m per silo
- Height: 7.19 m per silo
- Rings: 4 pcs. per silo
- Legs: 6 pcs. per silo
- Wind load zone: <= 2

In addition to the standard scope of supply, the quotation includes the following items:

- Silo ladder
- Safety cage

Description	Quantity
Silo BD-EU WL2 - capacity: 27 m ³ , diameter: 2.75 m, height: 7.19 m	1 pc

Feed supply

With Big Dutchman conveying systems, your feed passes from the silo into the house quickly and easily, safely and without any loss of quality. We offer you our well-proven Flex-Vey (90) system, which meets even the highest requirements.

Technical information/data in the quotation:

- Length of transport systems total
 - Flex Vey 90: 26.47 m
- Capacity of transport systems (horizontal)
 - Flex Vey 90: 2.500 kg/h

Description	Quantity
Boots	1 pc
Flex Vey 90 - 26.47 m - from outdoor silo 1 to House A (1)	1 pc
Accessories	1 pc

Combi Tunnel ventilation

The Combi Tunnel ventilation recommended by Big Dutchman is a combination of two ventilation systems in one house. This makes it possible to profit from the advantages of both systems:

- for low temperatures ventilation in side mode = uniform temperatures throughout the entire house
- for high temperatures ventilation in tunnel mode = high cooling efficiency at a low energy consumption

This solution is particularly suitable for climates that are characterized by strong fluctuations in temperatures – high temperatures in the summer, low temperatures in the winter, or major temperature differences between day and night.

Both ventilation systems are controlled by a climate computer. This also includes automatic switching between the two ventilation systems. When the system runs in tunnel mode the computer also records the air speed and therefore the wind chill effect.

Data calculated based on house's cross section::

- Flow rate per bird approx.: 6.64 m³/h
- Air velocity approx.: 2.04 m/s

Exhaust air:

7 x Fan BD-V130-5-1.50HP E15 41300m³ 400-3-50 unassembled

- Light trap LF50 f/V130 cpl

4 x Fan FF063-6DQ 3x400V 50/60Hz 1.3/1.5A

- Light trap LF30 f/EM30

Fresh air:

130 x Flange-fresh air inlet CL-1200-B/F

- Air direction plate short f/CL-1200 cpl incl. assem.-kit V13

130 x Light trap cpl for cowl CL-1200

130 x Cowl for fresh air inlet CL-1200 cpl 66.8x52.3x34.4cm

1 x Actuator 24V CL-175-600

Tunnel fresh air:

Pad system: Plastic pad type PP150-3 (plastic) with Rainmaker frame system

- (2 x bank(s), total length: 24m, Height: 2 m)
- 2 x Centrifugal pump (12m) Euroswim cpl incl connection material

Tunnel shutter system

18 x Fresh air inlet MVT-17M fully insulated

- Grid f/fresh air inlet MVT-17M

2 x Actuator 24V CL-175-300

Control components:

1 x Main unit ViperTouch 1520 without sensors

2 x Speed-control 6.8A f/MC135/235/236/Viper/CT2Touch 135/235pro

Alarm system:

1 x Alarm unit AC3-T A-S cpl with 2 x DOL-12 and phase control

1 x Warning horn w/warning light 12V/111mA FL

Sensors:

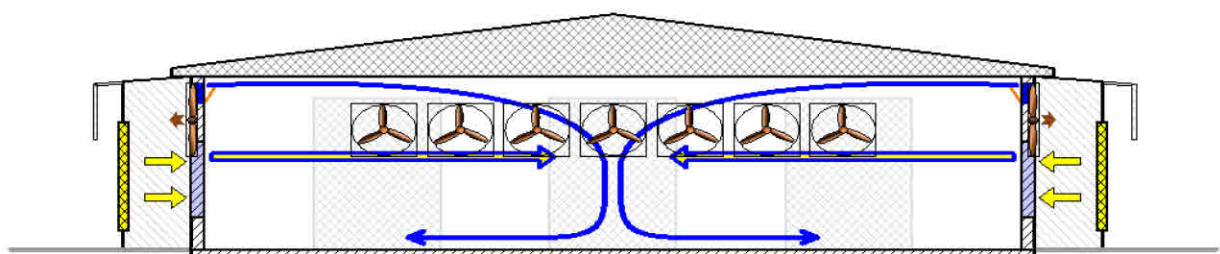
4 x Temperature probe DOL-12

1 x Sensor for humidity of air DOL-114 with plug

1 x Negative pressure indicator -10-600 Pa

Emergency opening:

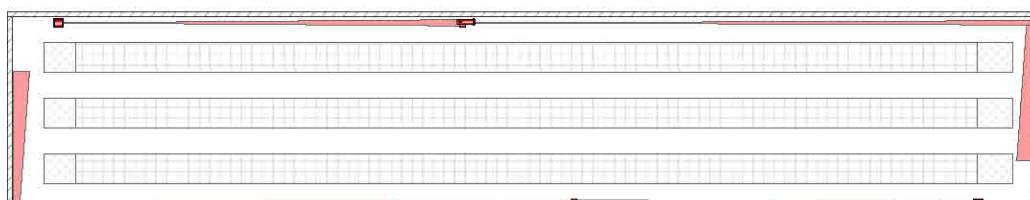
1 x Emergency opening 378CT 24V 8A temperature controlled



Description	Quantity
Side wall fresh Air - Unit CL	1 pc
Cooling - Pad Unit	1 pc
Fresh Air - Jalousie Unit	1 pc
Exhaust Air - Fan Unit	1 pc
Exhaust Air - Fan Unit	1 pc
Control Unit	1 pc

Heating - JetMaster

Optimum house temperatures greatly influence the well-being and thus the performance of the animals. For this reason, Big Dutchman is pleased to offer you a system with 2 fan heater(s) type GP70-BCU . Each heating device has an output of 70 KW so that the total heating power amounts to 140 KW.



reference illustration

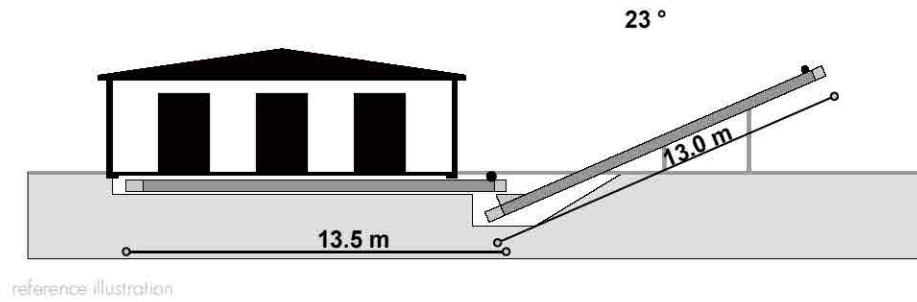
In addition to the standard scope of supply, the quotation includes the following items:

- Connection set Export

All supplying lines and, if applicable, fuel tanks, have to be provided on site.

Manure removal

After the manure has been transported by the longitudinal manure belt to the end of the row, it drops onto the trough-shaped cross belt (width: 500 mm), which transports the manure out of the house. This manure conveyor is very stable which allows for manure removal with just one conveyor on any farm complex.



Technical information/data in the quotation:

- Width cross/vertical manure conveyor: 0.5 m
- Length cross manure conveyor: 13.5 m
- Length vertical manure conveyor: 13 m
- Discharge height above ground: 3.35 m
- manure removal interval (days): 4
- Manure removal: all rows simultaneously

In addition to the standard scope of supply, the quotation includes the following items:

- Supports for vertical manure conveyor
- cover for vertical manure conveyor: 12 m
- Motor cover
- Control unit

Description	Quantity
Cross Manure Removal Conveyor	1 pc
Vertical Manure Removal Conveyor	1 pc

Electrical Equipment House

The following components are part of the electrical equipment:

- Feeding
- Ventilation
- Manure removal
- Alarm system
- Lighting

In addition to the standard scope of supply, the quotation includes the following items:

- Cabling (without Fixing material)

Description	Quantity
Control Cabinet at the front	1 pc
Control Cabinet at the back	1 pc
Cabling	1 pc
Motor Protection Switch Manue Removal	1 pc

Service - Farm

Description	Quantity
Freight	1 pc
Installation + Electrical	1 pc
Supervisor	1 pc
Commissioning	1 pc

Quotation summary

House A	
Description	Quantity
Natura Primus 1800	1 pc
Lighting	1 pc
Feed storage	1 pc
Feed supply	1 pc
Combi Tunnel ventilation	1 pc
Heating - JetMaster	1 pc
Manure removal	1 pc
Electrical Equipment House	1 pc
Service - Farm	
Description	Quantity
Freight	1 pc
Installation + Electrical	1 pc
Supervisor	1 pc
Commissioning	1 pc

Quotation price

256.500,00 €

Terms of payment:

Before delivery

Terms of delivery:

EXW (ex works)

Offer valid:

Our offer is valid until 13/07/2017

Value added tax rate:

All prices are exclusive of VAT.

Supplies and services are provided in accordance with our General Terms and Conditions. These can be found on our website: www.bigdutchman.com

General Terms and Conditions (GTC)

I. Scope of Application of these GTC

1. The following GTC apply to this and all subsequent contracts of Big Dutchman – hereinafter referred to as BD. The right to make changes is reserved.
2. BD shall not be bound by contradicting GTC of the Customer. These GTC shall also apply when BD performs services being aware of contradicting conditions of the Customer, even if BD does not expressly object to them. Any additional obligations accepted by BD shall not affect the application of these sales conditions.

II. Conclusion of Contract

1. The Customer shall be bound by its purchase order for five weeks. Any and all purchase orders received also by BD's employees and subsequent amendments of contracts concluded will only take effect upon a written order acknowledgement by BD (hereinafter referred to as OA) or by the performance of an ordered service. Any other behaviour or silence does not create an obligation for BD. Employees of BD are not authorised to waive the obligation to make an OA or to make promises deviating from its contents.
2. The contract shall be deemed to be concluded with the contents of the OA, unless the Customer objects to the OA, in writing, to BD, within 7 calendar days after receipt of the OA, at the latest.

III. Duty to Cooperate in Contracts with Assembly Service

1. The Customer shall ensure an adequate access to the construction site and provide sufficient space for unloading and it shall create the structural requirements for the assembly work; assembly rooms shall be heated in winter; the Customer shall be obligated to provide electrical energy, water, lighting. The Customer shall create the preconditions to perform test runs.

IV. Obligations of the Company BD

1. BD shall not be obligated to advise the Customer. If the agreed services require more detailed provisions, BD shall be entitled to make such by taking into account its own interests and the recognisable interests of the Customer.
2. When assembly is required, BD may request the Customer to perform partial acceptances for self-contained parts of the subject matter of the contract after their completion. Furthermore, BD may request acceptance upon completion. In the event of material defects, the Customer shall be entitled to refuse the (partial) acceptance. Any contractual and statutory warranty claims for defects reserved by the Customer upon (partial) acceptance shall remain unaffected.
3. Preconditions for the compliance with deadlines on the part of BD are and the customer shall be in default of acceptance if (a) the Customer fails to comply with its duty of cooperation required to render the services; (b) the dispatch of goods is delayed due to circumstances for which the Customer is responsible; (c) the Customer fails to provide, in due time, any documents, approvals or releases to be obtained.
4. BD shall only be obligated to perform when the Customer has made the agreed down payment and has complied with all other obligations incumbent upon it. BD's additional rights shall remain unaffected if the Customer is responsible for the non-compliance with its obligations. The delivery term will be reasonably extended in the event of force majeure or other hindrances not caused by BD.
5. For sold goods, the risk shall pass to the Customer upon loading, irrespective of who performs the transport. In the event of a delay of dispatch caused by circumstances for which the Customer is responsible, the risk shall pass to the Customer upon notification of the readiness for dispatch. In the event of assembly services, the risk shall pass to the Customer upon acceptance of the goods.
6. Irrespective of any other arrangements, in particular an agreement on relating Incoterm clauses, BD shall not be obligated to organise the transport of the goods, to insure the goods, to obtain any certificates or documents not expressly agreed, to obtain the licences, approvals or other formality to be observed for import or export, or to perform the customs clearance, to bear public charges arising outside of Vechta, to comply with measuring and weight systems, packaging, identification or labelling provisions applicable outside of Vechta or to take back packaging material from the Customer.

V. Price and Payment

1. In the event of agreed assembly, the payment shall fall due, in full, upon acceptance. If the services are accepted in parts, the agreed payment shall be made for each part upon its acceptance.
2. Payments shall be made in Euros, at the date specified in the OA, and without discount and charges. The receipt of the payment by BD shall be decisive for the timeliness of the payment.
3. BD shall, at its own discretion, be entitled to set off payments received with receivables due from the Customer at the time of payment which are based on its own or assigned rights.
4. In the event of default of payment, the Customer will be charged a handling fee of EUR 10 for each dunning letter, the costs of a judicial or extrajudicial litigation as well as interests in the amount defined in Art. 288 of BGB (German Civil Code).
5. If the Customer is in default of payment or in the event of other serious indications that the payment is endangered, BD shall, notwithstanding further claims, be entitled to request immediate payment for deliveries already made and prepayment or payment upon delivery for future deliveries, at its own option. As an alternative, BD may request the provision of sufficient securities.
6. The Customer shall not be entitled to offsetting against claims for payment against BD, unless the Customer's counter claim is based on its own right and is either judicially determined, accepted by BD in writing or undisputed. The Customer shall only be entitled to a right of retention or any other objection, if BD commits a serious breach of its obligations arising from the same contractual relationship and failed to offer an adequate security.
7. This clause shall apply in the case that the contract value exceeds 500,000 Euro and the period from the stipulation of the contract until the final delivery is longer than seven months. In the case that the purchase price for the primary material for steel and/or plastics should increase, in each case, compared to the indices: for steel: www.steelbb.com, (sheet metal Flat Products N.Europe domestic HDG – Ex Works), for plastics – www.kiweb.de (price chart KI polymer prices PP copolymers – S.) by only up to 10% after the conclusion of the contract, the net price for the object of purchase shall remain unchanged. In the case that the purchase price for the primary material for steel and/or plastics should increase, in each case, compared to the starting point mentioned above by more than 10% within the period from the signing of the contract to the calculation of the order, the net price (net value of the goods) for the object of purchase shall increase by 1.25% for each commenced 5% beyond the limit of 10% with regard to the respective ratio of material expenses (steel: 66%, plastics: 34% of the net purchase price for the object of purchase). In the case that the purchase price for the primary material for steel and/or plastics should increase by more than 15%, but not more than 20% compared

VI. Retention of Title

1. Goods delivered shall remain the property of BD until the Customer has fulfilled any and all of BD's claims arising from the business relationship, including claims arising in future under contracts concluded simultaneously or later.
2. In the event of resale of the goods under retention of title, the Customer shall be obligated to disclose BD's retention of title and to pass it on in a way that BD remains the owner on account of retention of title. Claims arising from resale are herewith assigned to BD. Income from resale shall

- be deemed to be received for BD and shall be paid to BD insofar as BD has outstanding debts. The Customer shall support BD in all legally admissible measures required to protect BD's property in the relating country. Any additional costs incurred as a result shall be borne by the buyer.
3. If the Customer violates the contract, in particular in the event of default of payment, BD shall be entitled to take the delivered objects back. Such repossession shall not be considered a withdrawing from the contract, unless BD expressly stated it in writing.
 4. BD undertakes to release securities if and insofar as their value exceeds 120 % of BD's claim; BD shall be responsible for selecting the securities to be released.

VII. Warranty, Liability

1. In the event of a defect, BD offers a warranty to the Customer under the following conditions:
2. The quality to be provided by BD as well as the quantity of the deliverable are exclusively subject to the specifications in the OA. Public statements by BD or BD's employees or by third parties on the goods to be provided shall not be taken into consideration in the determination of the quality of the service to be performed. BD's employees are not entitled to make guarantee statements, provide information on quality or information on profitability, outside of the OA.
3. BD will exclusively accept a guarantee (Art. 443 of BGB) if such is specified in the OA. In no event will other statements by BD or BD's employees constitute a guarantee.
4. The Customer shall inspect the goods immediately after transfer and shall check each individual delivery in any respect for recognisable and typical lack of conformity. If the Customer finds such lack of conformity, the Customer shall be obligated to directly inform BD of such in writing and as soon as possible.
5. Defects in partial deliveries will not entitle the Customer to reject the entire services.
6. If the Customer attempts to remedy defects themselves, without having granted BD a grace period for rework which expired without performance, BD's warranty will be cancelled.
7. In the event of justified complaints, BD will, at its own discretion, remedy the defect or provide a replacement. If the subsequent performance is unsuccessful, the Customer shall be entitled to deductions in price or to withdrawal.
8. Claims for damages against BD will exist only insofar as the damage was caused by gross negligence or intent. The same shall apply to any claim for the reimbursement of expenses under Art. 284 of BGB. The Customer's rights arising from Articles 283, 311 a of BGB as well as from the Product Liability Act (Produkthaftungsgesetz) as well as claims for damages as defined in Art. 309 no. 7 a of BGB shall remain unaffected thereby. The Customer shall be obligated to inform BD of special risks of damage prior to the conclusion of the contract.
9. In the event of construction services, the warranty period defined in VOB/B (Construction Contract Procedures, Part B) shall apply, in all other cases it shall be 24 months. Art. 479 of BGB shall remain unaffected.
10. The disclaimers and limitations above shall apply also as to the personal liability of bodies, employees, representatives and vicarious agents of BD.
11. BD will not accept any warranty that the goods are suitable for the purpose intended by the Customer and/or are in compliance with the legal provisions applicable in the Customer's country. The Customer shall, at its own expense, be responsible for obtaining any permits and authorisations which are required for use and/or delivery and/or assembly.

VIII. Withdrawal

1. Without prejudice to any other legal rights, BD shall be entitled to withdraw from the contract without replacement, if the Customer objects to the applicability of these GTC, if an application for the initiation of insolvency proceedings over the Customer's assets is filed, if the Customer fails to comply with material obligations towards BD or a third party, without giving a justified reason, if the Customer made untruthful statements about its creditworthiness, if BD receives information about a material deterioration of the Customer's asset situation after the conclusion of the contract, if BD does not receive correct or timely deliveries itself, without BD's fault, or if BD is, for other reasons, no longer able to comply with its service obligations by using means which are reasonable taking into account its own interests and the justified interests of the Customer recognisable at the time of conclusion of the contract as well as, in particular, in view of the agreed compensation.

IX. Miscellaneous Provisions

1. BD shall be entitled to store and process data about the Customer received as part of the business relationship, in compliance with the Federal Data Protection Act (Bundesdatenschutzgesetz).
2. BD reserves all copyrights, other industrial property rights and rights arising from know-how to all illustrations, drawings, calculations and other documents. Such shall not be disclosed to third parties and shall only be used for their intended purpose.

X. General Bases of Contract

1. Place of performance, payment and fulfilment for all obligations arising from this contract shall be Vechta. That shall apply irrespective of arrangements regarding the bearing of costs or an agreement on Incoterms clauses.
2. The laws of the Federal Republic of Germany shall apply to all rights and claims arising from this contract. The place of jurisdiction shall be Vechta.
3. All – contractual and non-contractual – disputes arising from contracts which are intended to fall under the applicability of these sales conditions shall be submitted to the locally and internationally exclusive jurisdiction of the courts competent for Vechta. Such competency excludes, in particular, any other competency which is legally stipulated based on a personal or factual connection. Moreover, the Customer shall not be entitled to raise any counterclaim, offsetting, third party notices or retention before any other than the court in Vechta which has exclusive jurisdiction. However, BD shall be entitled, in individual cases, to file actions at the Customer's registered office or before other courts competent based on domestic or foreign laws.