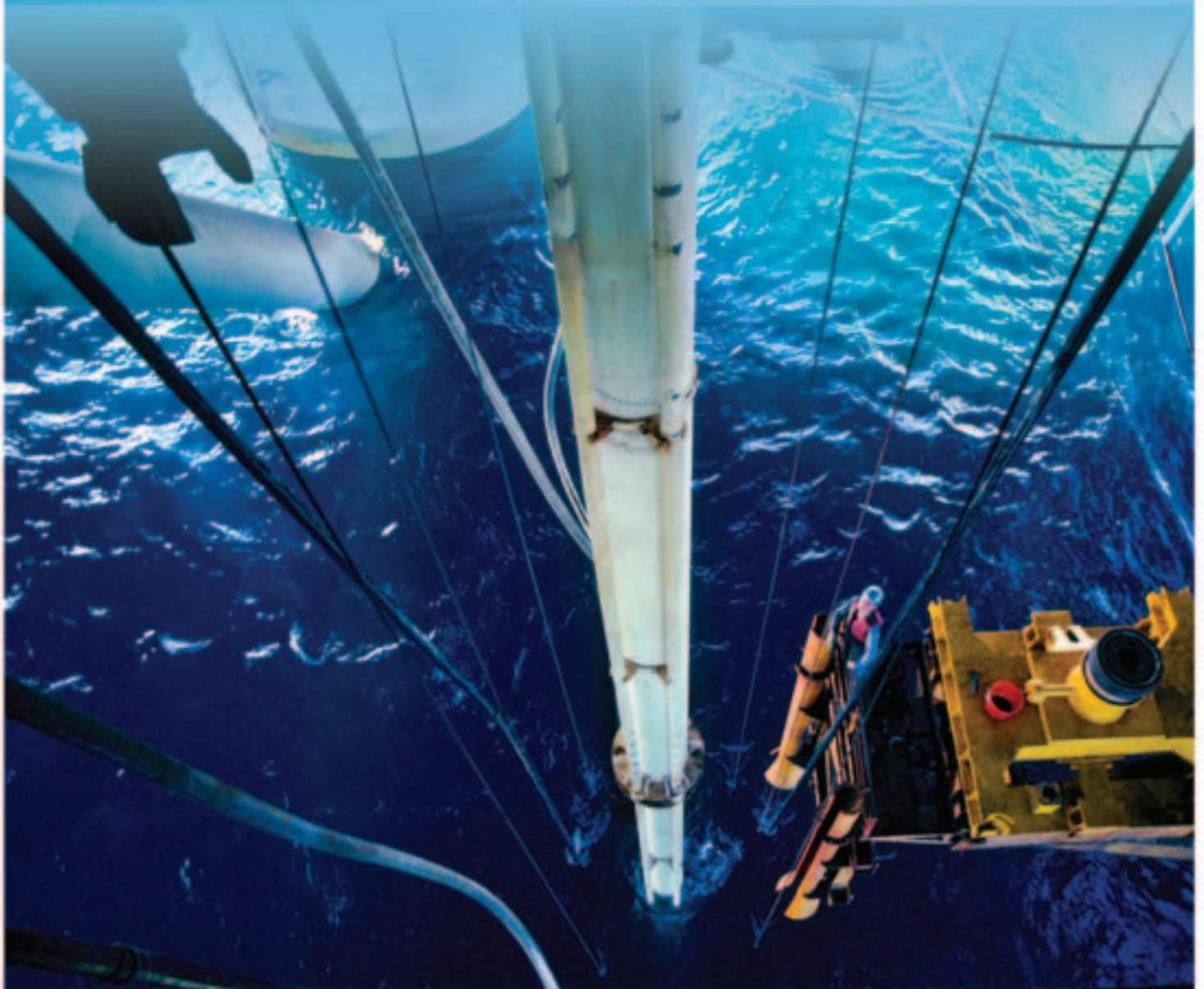


Halton Marine

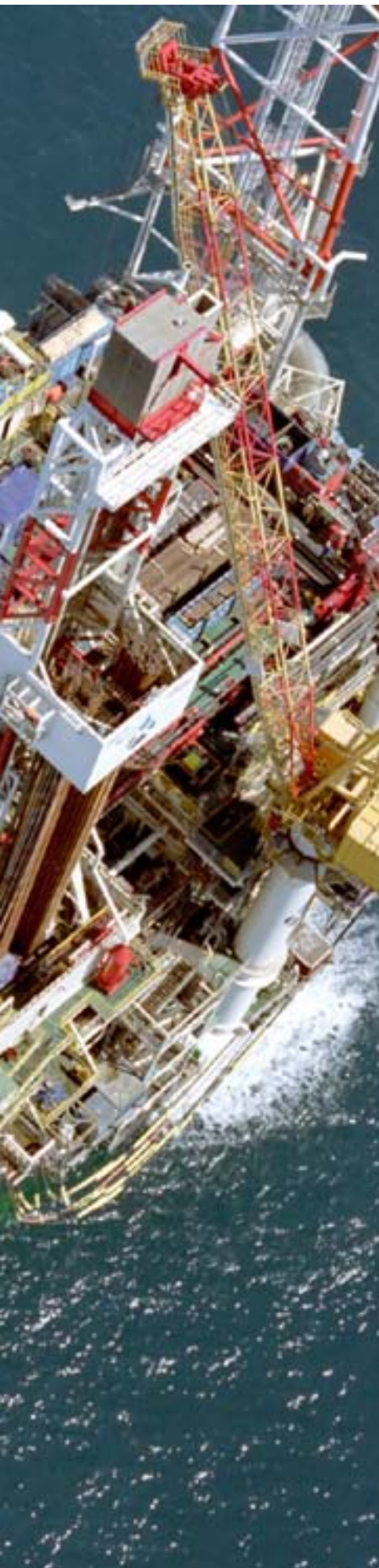
– HVAC products for Oil & Gas industry



Care for Indoor Air

Halton
MARINE





When safety and comfort matter

Halton Marine, one of the world's leading suppliers of marine HVAC, develops, manufactures and markets reliable, high-quality ventilation solutions specifically designed for the oil & gas market. Halton Marine's main product groups are HVAC dampers, galley and cabin ventilation, airflow distribution and management products.

Halton Group specializes in indoor climate products and solutions, ranging from public and commercial buildings to foodservice facilities. Founded in Finland in 1969, Halton operates today in 21 countries around the world, with annual sales of € 175 million and over 1000 employees. The company has production facilities in Canada, China, France, Finland, Germany, Hungary, Malaysia, Norway, United Kingdom and USA.

HVAC dampers

– for safer conditions

Safety is the most important factor in extreme working conditions, where a fire could put people's life at risk unless necessary precautions are taken. Therefore it is essential that the equipment chosen to prevent fire progression within a ventilation ductwork is top-class. Because smoke and other toxic gases can be more dangerous than the fire itself, it is important that the fire dampers also prevent smoke from spreading. Halton is the manufacturer supplying smoke-tight fire dampers.

We offer:

- H0(H120)-class fire dampers
- A0(A60)-class fire and gas dampers
- Non-return dampers
- Pressure-relief dampers
- Shut-off, balancing and gas dampers
- Blast dampers

Features:

- Pneumatic, electrical, spring-actuated or mechanical operation systems
- A wide range of explosion-proof accessories and special steels combined with structural flexibility
- ATEX approved products
- Product manufactured according to ISO 15138 standard available as an option
- Excellent quality recognized by the leading oil-companies and the major classification societies worldwide









Cabin ventilation – comfortable conditions

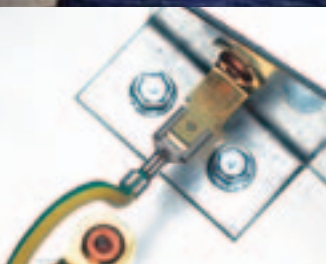
The Halton Marine cabin ventilation solution is a total air-condition package that is specifically designed for different types of cabins and other spaces that require a good air-conditioning. The package includes a CAV/VAV unit with plug-and-play controllers plus supply and exhaust products. Controllers consist of an input-output unit, an intelligent room thermostat and an interconnection cable. CAV/VAV unit can operate as stand-alone units or in series. A LON or Ethernet network enables that cabin units can be controlled, monitored and adjusted by using a simple PC software.

We offer:

- Single- and double-duct cabin units (B15)
- Airflow units for large volumes with heating
- Low sound levels and pressure drop
- Cost-efficient commissioning due to plug-and-play technology
- Pressure-independent operation system
- Programmable CAV/VAV unit controllers

Several safety features:

- Low surface temperature heating coils
- Tailored safety functions for airflow handling
- Double-safety (SW & HW) to avoid overheating
- Possibility to connect additional sensors, e.g. pressure and fire detection in cabin units
- Network solution opens numerous possibilities to include additional safety features in cabin units according to customers needs which can be operated, adjusted and controlled by HMI (Human Machine Interface)
- Pressure level handling in over pressure areas
- Heating control for explosion-proof areas



For ultra-clean galley ducts

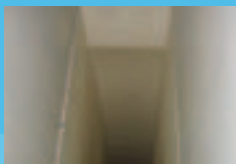
Halton Marine is the leading supplier of galley ventilation equipment for cruise ships. As the forerunner in UV-light technology, Halton offers the most efficient filtration technology in the field that adds value in fire safety, improve hygienic conditions and reduces the need to clean galley ducts.

We offer:

- Wide range of options for different heat loads and applications
- Automatic galley water wash hoods
- Galley hoods and canopies
- Control cabinets
- Certified wet chemical fire suppression systems
- Stainless steel diffusers

Features:

- UV-light technology – the most efficient grease filtration technology in the market. Improved fire safety. Reduced maintenance times and duct cleaning costs
- Automatic washing cycle
- Capture Jet technology - low airflow rates
- In-built certified fire damper in the exhaust connection closes automatically in the event of fire
- Construction according to USPHS available
- Continuously welded construction in water wash hoods and condensate canopies
- Available for new-buildings and refurbishments



With UV-light technology



Without UV-light technology







At your service

According to customer's needs

Halton Marine bases its business on flexibility, reliability and customer-orientation. Production emphasizes tailoring, which means that solutions are adapted for each customer's specific needs. Halton Marine supplies solutions not only for new-buildings, but also for refurbishments of existing ones.

The comprehensive project management includes product design, delivery, commissioning and testing of product assemblies, and a spare part service. Training services of Halton Marine products and solutions as well as network engineering services are available through Halton Marine sales offices.

In addition to Halton Marine's own personnel, an extensive network of Halton Marine distributors and agents are at your service.

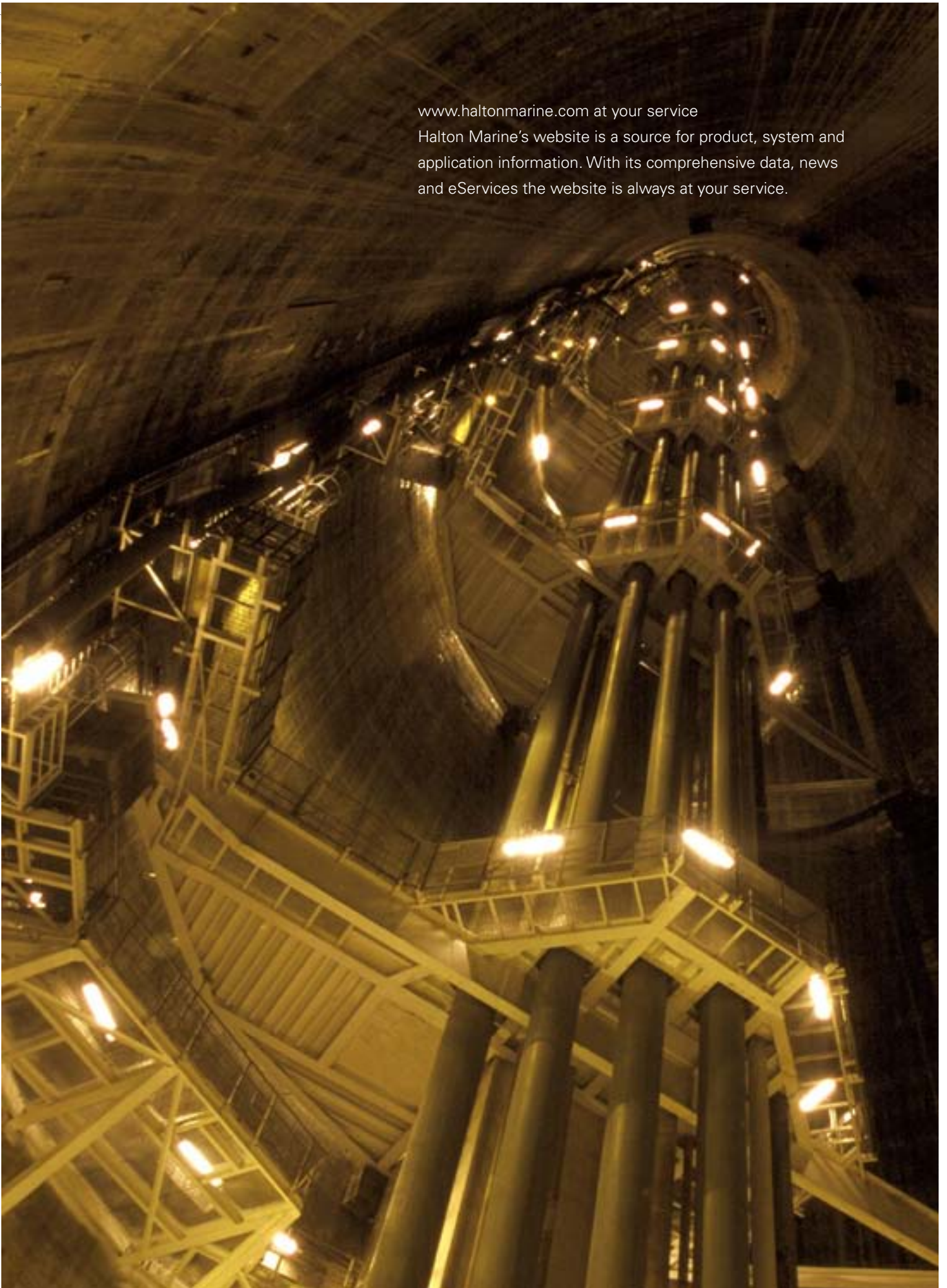
Product development and testing

The technical quality and proper function of Halton's solutions, built in state-of-the-art production facilities, are tested in Halton's own laboratories and in independent research laboratories around the world. Typically Halton Marine tests include:

- Leakage tests
- Fire tests
- Shock tests
- FAT for each project

Halton's Research & Development Centers offer customers Indoor Climate Testing (ranging from simplified tests to more detailed mock-ups) to test and verify the performance of each solution.

www.haltonmarine.com at your service
Halton Marine's website is a source for product, system and application information. With its comprehensive data, news and eServices the website is always at your service.



Halton Marine, Oil & Gas
Pulttikatu 2
FIN-15700 Lahti, Finland
Tel. +358 (0)2079 2200
Fax +358 (0)2079 22060

haltonmarine@halton.com
www.haltonmarine.com

Halton Marine's distributors
are listed at www.haltonmarine.com

Sales office, China
Tel. +86 21 5868 4388
Fax +86 21 5868 4568

Sales office, France
Tel. +33 (0)6 3450 2922

Sales office, Norway
Tel. +47 5169 8308

Sales office, USA
Tel. +1 713 590 3777
Fax +1 713 590 3778

HALTON MARINE, OIL & GAS PRODUCT RANGE

Fire dampers

- FEX H0(H120) fire dampers
- FDB2 A0(A60) fire and gas dampers
- FDL A0(A60) fire dampers
- FDD A0(60) fire and gas dampers

Flow control dampers

- UTP balancing dampers
- UTG shut-off, balancing and gas dampers
- UTK balancing dampers
- UTT shut-off, balancing and gas dampers
- PRA adjustment and measurement units
- PTS shut-off, adjustment, balancing units

Blast dampers

- HV-series

Non-return and pressure-relief dampers

- BLD non-return dampers
- BRD pressure-relief dampers

Galley automatic water wash hoods

- KWT with supply air, UV-light as an option
- KWH without supply air, UV-light as an option

Galley hoods

- KVF with supply air, UV-light as an option
- KVI without supply air, UV-light as an option

Galley canopies

- KVM condensate canopy

Wet chemical fire suppression systems for hoods

- K5-galley

Cabin units

- HMF single duct cabin units
- HMR dual duct cabin units
- HFR/M multi-connection cabin units
- HME sound attenuator and balancing boxes
- HMM manual, single duct cabin units
- HMC manual, single duct cabin units

Airflow units for large air volumes

- HML airflow units with centralized airflow heating

Cabin supply and exhaust products

- TDM, TDM/P circular cabin diffusers
- TBM, TBM/P rectangular cabin diffusers
- TCL cabin diffusers
- AWE, AWU universal grilles
- WSD, WDD grilles with adjustable vanes
- URH exhaust valves

Intelligent network options for cabin ventilation

- LON
- Ethernet

Network supervision software

Water separators and louvres

- WSN high-efficiency water separators
- USS louvres

H0(H120) fire dampers - Oil & Gas damper

ATEX

Frame: AISI 316 or AISI 316 with painted steel. Thickness 3 or 3-5 mm.

Blades: AISI 316. Blades as standard without seals. Sizes: from 100x100 to 1200x1200 mm at 1 mm intervals. Circular connection pieces from 100 to 1250 mm. Modules case by case.

Note: special drilling patterns are available as an option.

Automatic electrical, pneumatic or spring-actuated operation system and fusible link.

FEX H0(H120)



A0(A60) fire and gas dampers - Marine, Oil & Gas damper

ATEX

Frame: AISI 316 or painted or galvanized steel. Thickness 3 or 3-5 mm.

shock-tested

Blades: AISI 316 or galvanized steel. Blades contain thermal expansion and special seals.

Sizes from 100x100 to 1200x1600 mm at 1 mm intervals. Circular connection pieces from 100 to 1250 mm. Modules possible. Note: special drilling patterns are available

as an option. Automatic electrical, pneumatic or spring-actuated operation system and fusible link.

FDB2 A0(A60)



A0(A60) fire dampers - Marine, Oil & Gas damper

ATEX

Frame: AISI 316 or galvanized or painted steel. Thickness 3 or 3-5 mm.

Blades: AISI 316 or galvanized or painted steel. Blades without seals. Sizes from 100x100 to 1300x1200 mm at 1 mm intervals. Circular connection pieces from 100 to 1250 mm.

Modules possible. Note: special drilling patterns are available as an option.

Automatic electrical, pneumatic or spring-actuated operation system and fusible link.

FDL A0(A60)



A0(A60) fire and gas dampers - Marine, Oil & Gas damper

Frame: AISI 316 or galvanized or painted steel. Thickness min. 3 mm.

Blade: AISI 316. Blade contains thermal expansion and glass fibre seals. Sizes Ø100, 125, 160, 200, 250, 315 mm. Note: flanges and special drilling patterns are available as an option.

Automatic electrical, pneumatic or spring-actuated operation system and fusible link.

FDD A0(60)



Balancing Dampers / Heavy model

ATEX

Frame: AISI 316 or galvanized or painted steel. Thickness 3 or 3-5 mm.

Blades: AISI 316 or galvanized steel. Blades without seals. Sizes from 100x100 to 1200x1200 mm at 1 mm intervals. Larger sizes case by case. Circular connection pieces available from 100 to 1250 mm. Modules possible. Operation system: electrical, pneumatic or manual. Note: special drilling patterns are available as an option.

UTP



Shut-off, Balancing and Gas Dampers / Heavy model

ATEX

Frame: AISI 316 or galvanized or painted steel. Thickness 3 or 3-5 mm.

Blades: AISI 316 or galvanized steel. Blades contain special seals. Sizes from 100x100 to 1200x1200 mm at 1 mm intervals. Larger sizes case by case. Circular connection pieces from 100 to 1250 mm. Modules possible. Operation system: electrical, pneumatic or manual. Note: special drilling patterns are available as an option.

UTG



Balancing Dampers

ATEX

Frame: AISI 316 or galvanized steel. Thickness 1 mm.

Blades: AISI 316 or galvanized steel. Blades contain seals (tightness class 1).

Sizes from 100x100 to 2400x2400 mm at 50 mm intervals (special sizes available).

Circular connection pieces from 100 to 1250 mm. Modules possible. Operation system: electrical, pneumatic or manual.

UTK



Shut-off, Balancing and Gas Dampers

ATEX

shock-tested

Frame: AISI 316 or galvanized steel. Thickness 1 mm.

Blades: AISI 316 or galvanized steel. Blades are insulated and contain seals (tightness class 4 available). Sizes: from 100x100 to 2400x2400 mm at 50 mm intervals (special sizes available). Circular connection pieces from 100 to 1250 mm. Modules possible. Operation system: electrical, pneumatic or manual.

UTT



Adjustment and Measurement Units

Casing and blades galvanized steel. Circular construction 100...315 mm and 350...1000 mm with inside stiffeners. Adjustable cone and airflow measurement taps for differential pressure adjustment. Classification of casing leakage, EN 1751 Class C.

Single blade dampers

Casing and blades galvanized steel. Circular construction 100...500 mm. Different models for shut-off, adjustment, balancing or control damper. Casing leakage classification EN 1751 class C. Tightness classification of shut-off damper EN 1751, class 4. Available as manual damper or with electrical actuator.

Blast Valves

Material: galvanized steel or AISI 316. Blast protection up to 1 bar, 14,5 Psi. Standard sizes from 300x300 to 1500x1500 mm. Modular construction available for high airflows and large ducts. Fully maintenance-free design. Minimum leakage on pass-through pressure and impulse. Minimum turbulence and pressure drop.

Non-Return and Pressure-relief dampers ATEX

Frame: AISI 316 or galvanized or painted steel. Thickness 3 mm. Blades: AISI 316 or galvanized steel. Blades contain special seals. Sizes from 100x100 to 1200x1400 mm at 1 mm intervals. Circular connection pieces from 100 to 1250 mm. Modules possible. Note: special drilling patterns are available as an option. BRD dampers include counter weights.

Galley Water Wash Hoods with Supply Air

Material stainless steel AISI304. Continuously welded construction. Manufactured according to USPHS requirements. With lighting and certified fire damper. Automatic water wash system for cleaning the exhaust plenum and grease filters. High-efficiency grease filtration. Halton Capture Jet technology decreases the required exhaust airflow rate. Supply air unit located on a front panel of the hood (KWT). UV-light technology available as an option.

Capture Jet Hoods with Supply Air

Material stainless steel AISI304. Supplied as standard with lighting. High-efficiency grease filtration. Halton Capture Jet technology decreases the required exhaust airflow rate. Supply air unit located on the front panel of the hood (KVF). UV-light technology available as an option.

Condensate canopies

Material stainless steel AISI304. Continuously welded construction. Manufactured according to USPHS requirements. Supplied as standard with lighting. To capture and remove steam from exhaust airflow. The KVM is a choice when grease filtration is not needed.

Wet Chemical Fire Suppression Systems

Stainless steel construction. Electrically actuated. Real time system monitoring. Audible and visual alarms. Simple and compact design with Halton Marine galley hoods. No high pressure gas cartridges, mechanical pulleys, tensioning devices, levels or spring loaded plungers. Direct integration to alarm systems.

PRA



PTS



HV-SERIES



BLD/BRD



KWT/KWH



KVF/KVI



KVM



K5-GALLEY

in picture with galley hood



Single duct cabin units

Casing galvanized steel. Mineral wool insulation, thickness 25 mm. MED approved. Automatic cabin unit with pressure independent or dependent operation system. Electrical reheater options: 400W, 800W, 400W + 800W, 1200W, 1800W. Operation pressure range 200...1000 Pa. Spigots (male or female): inlet spigot D100...125 mm, outlet spigot D160...250 mm. Applicable to B-0 and B-15 installations.

Double duct cabin units

Casing galvanized steel. Mineral wool insulation, thickness 25 mm. MED approved. Automatic cabin unit with pressure independent operation system. Operation pressure range 200...1000 Pa. Spigots (male or female): inlet spigot D100/125 mm, outlet spigots D160...250 mm. Applicable to B-0 and B-15 installations.

Multi-connection cabin units for suites

Casing galvanized steel. Mineral wool insulation, thickness 25 mm. Automatic cabin unit with pressure independent operation system. Electrical reheater options: 400W, 800W, 400W + 800W, 1200W, 1800W. Operation pressure 200...1000 Pa. Spigots (male or female): inlet spigot D125...200 mm, outlet(s) spigots D125...200 mm (1-3 pcs).

Sound attenuator and balancing boxes

Casing galvanized steel. Mineral wool insulation, thickness 25 mm. MED approved. Operation pressure range 0...200 Pa. Spigots (male or female): inlet spigot D100...160 mm, outlet spigots D160...250 mm. Applicable to B-0 and B-15 installations.

Single duct cabin units

Casing galvanized steel. Mineral wool insulation, thickness 25 mm. MED approved. Manually operating cabin unit. Electrical reheater available as an option: 400W, 800W, 1200W. Operation pressure 50...1000 Pa. Spigots (male or female): inlet D80...125 mm, outlet spigot D160...250 mm. Applicable to B-0 and B-15 installations.

Single duct cabin units

Casing galvanized steel. Mineral wool insulation, thickness 25 mm. MED approved. Manually operating cabin unit. Operation pressure 50...700 Pa. Spigots: inlet spigot D100 mm (male or female), outlet spigot D160 mm (female). Applicable to B-0 and B-15 installations.

Cabin unit diffusers

Manufactured from steel with epoxy paint finishing in white RAL9010 as a standard colour. For circular duct connections D160 mm (male). Outer dimensions 470x275 mm. Solid front plate with manual control knob. Specifically designed to be used in conjunction with HMC cabin unit. Applicable to B-15 installations.

Airflow units for large air volumes

Casing galvanized or stainless steel. Mineral wool insulation, thickness 50 mm, MED approved. Automatic VAV/CAV unit with pressure independent operation system. Electrical reheater options: 0,9...30kW. Operation pressure range 200...1000 Pa. Sizes from 200x200 to 900x900 mm. Circular connection pieces available from 200 mm to 900 mm.

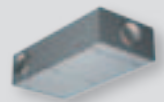
HMF



HMR



HFR/M



HME

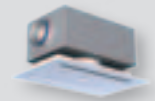


HMM



HMC

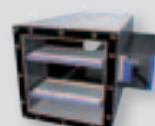
in picture with
TCL diffuser



TCL



HML



Circular ceiling diffusers

Manufactured from steel with epoxy paint finishing in white RAL9010 as a standard colour. For circular duct connections 160, 200 and 250 mm. With solid (TDM) or perforated (TDM/P) detachable front plate. Specifically designed for low spaces. Compatible with Halton Marine cabin units. A manual control knob is available as an option.

TDM, TDM/P



Rectangular ceiling diffusers

Manufactured from steel with epoxy paint finishing in white RAL9010 as a standard colour. For circular duct connections 160, 200 and 250 mm. With solid (TBM) or perforated (TBM/P) detachable front plate. Specifically designed for low spaces. Compatible with Halton Marine cabin units. A manual control knob is available as an option.

TBM, TBM/P



Universal grilles

With horizontal air supply. Suitable also for exhaust. Fixed front vanes. AWE 15 degrees vertical deflection, AWU with no vertical deflection. Adjustable rear vanes for horizontal deflection of airflow. Manufactured from aluminium with different finishing available. Sizes from 200x50 to 1500x500 mm. Continuous grilles available with modular construction.

AWE, AWU



Universal grilles

With horizontal air supply. Suitable also for exhaust. WDD with adjustable vertical front vanes and horizontal rear vanes. WSD with adjustable horizontal vanes. Manufactured from aluminium with different finishing available. Sizes from 200x100 to 1200x600 mm. WDD available with wax-bulb actuator for automatic air pattern change.

WSD, WDD



Exhaust valves

Manufactured from steel with epoxy paint finishing in white RAL9010 as a standard colour. For circular duct connections 100...200 mm. Ceiling or wall installation with a separate installation frame. Adjustable pressure loss. Attenuates duct noise. Airflow rate adjustment and measurement facility.

URH



Water separators

Manufactured from marine grade aluminium alloy with a painted finishing or stainless steel, painting available as an option. Tailored sizes and designs available according to customers' needs. Water removal capacity 200 l/h/m². Pressure drop of single stage model is 80 Pa and two stage system 200 Pa with face velocity 4 m/s.

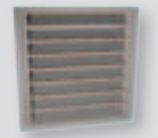
WSN



External louvres

Manufactured from galvanized steel or anodized aluminium. Finishing with epoxy paint. For air intake and exhaust to prevent rain, snow, leaf or animal ingress. Rainwater ingress penetration efficiency of appr. 95%. Sizes from 150x150 to 1200x1000 mm. Modular constructions available for large sizes.

USS



NETWORKS

Two different cabin ventilation networks available: LON or Ethernet (or a combination of both). Can be also embedded into existing network. All needed components, such as routers, switches and repeaters available. Commissioning and start-up services.

LON, Ethernet