

Specialist Enclosure locks, handles, hinges and gasket for HVAC panels

by Andy Billingham, Managing Director – EMKA (UK) Ltd

The global HVAC industry is rapidly changing with a trend to natural refrigeration systems, although these still need controls and compartments. Such systems match the needs of a growing building industry worldwide including stores and offices with a parallel demand for large HVAC installations.

This, together with constant upgrading of old systems with more efficient, lower energy equipment, means that the specialist hardware for HVAC packages is in increasing demand. EMKA manufactures a continually expanding range of products for the HVAC industry and much of the range is modular, thus offering the designer and end user many options. This covers products that meet the relevant European standards such as: DIN EN 1886 and VDI 6022.

Traditionally HVAC cabinets have had a unique combination of requirements which call for a specialist mix of hardware accessories. From the beginning we at EMKA have sought to meet the needs of the HVAC industry – a process which has culminated in availability of a complete program dealing with thick doors, IP65 sealing, personal safety (inner door handles etc.), large handles (for gloved hands), corrosion-resistance, heavy door weights, external viewing requirement, multi-level access (e.g. padlocking), inset handles, compression locking, pressure relief prior to opening, corner frame pieces, lifting lugs and much more.

For EMKA this has culminated in a very special package of panel hardware – in fact “everything but the enclosure” for the HVAC panel builder. Designed for HVAC installations to meet the needs and regulations of HVAC enclosures and cabinets.

This includes thick insulated doors and panels requiring plastic handles to give a more comfortable grip, and plastic components to eliminate thermal bridging from one side to the other. Large operating elements such as handles allow for thick gloves and safety features are needed, such as the ability to open doors from inside.

The extensive range derived from these requirements features long bodies for ¼ turn as well as traditional T and L compression handles with full 6mm gasket pull down facility. Where complete panel removal is required then a bridge clamp system is offered, along with lifting handles. Heavy duty and adjustable hinges facilitate door fitment – while frame components include corner pieces and heavy duty lifting/transport lugs.

In particular EMKA have recently launched an innovative new compression locking hinge for HVAC installations which provides HVAC manufacturers with a full multi-function hinge/latch/lock for securing of big air conditioning units and similar. It provides door adjustment for correct sealing, 5mm gasket pull down with pressure relief and the ability to be used as both door lock and hinge.

This remarkable new locking hinge provides an independent 3D adjustable hinge facility integrated into a compression latch/lock with decompression function. Users can thereby adjust door alignment and open the door, either right hand or left hand hinged – or remove completely. The decompression feature is important for HVAC allowing any over/under-pressure to be vented safely before opening. Locking options include standard round cylinder options.

The EMKA Compression Latch-Hinge is designed to meet the particular demands of HVAC applications with features that provide ease of assembly, adjustability, pressure differential accommodation, and flexibility for the end user. Once assembled to the door the EMKA compression latch can be adjusted to properly mate to the cabinet by moving both vertically and horizontally. Then after installation the alignment of the latch can be adjusted to eliminate leaks. The latch will then prevent the door from opening fully until pressure has been equalised.

This enables service engineers to remove panels to improve access, e.g. in windy conditions, also for internal and external opening doors. This ensures that the door will not blow open which would otherwise happen if the pressure were not relieved. This is especially applicable to main units of HVAC systems where gaining access to electro-mechanical equipment, e.g. at big supermarkets etc.

The EMKA series of specialist handles for thick doors are designed to accommodate thermally insulated or sound proofed panels of unusual thickness. They are also designed with large handles for operation with gloved hands, for example in cold rooms, or HVAC air conditioning installations – they are suitable for package generator sets and sound proofed rooms. They are also suited to other thick panel applications such as specialist trailers and vehicle bodies or for agricultural use in situations where gloves are normally worn.

Heavy duty program 1046 weld-on or bolt-on hinges with concealed fittings and removable hinge pins accommodate both the weight of large doors and the need to remove them quickly – factors which can also call for adjustable hinges. Frequently the 1054 3D hinge is required to deal with this situation.

A compatible program of specialist handles for thick doors are designed to accommodate thermally insulated or sound proofed panels of unusual thickness for operation with gloved hands, for example in cold rooms, or air conditioning installations. This range of thick door latches and L handles also includes padlockable versions, recessed pull handles and hinges. To assist design engineers in their task EMKA provides a simple, and efficient service including free samples where possible. Standard product solid modules may be downloaded from www.emka.co.uk for insertion into designs, either in STEP or IGES formats and are searchable either by part number or product group – they are generated in Pro/Engineer for widest possible compatibility and may be downloaded from www.emka.com/uk_en/products/cad-files/.

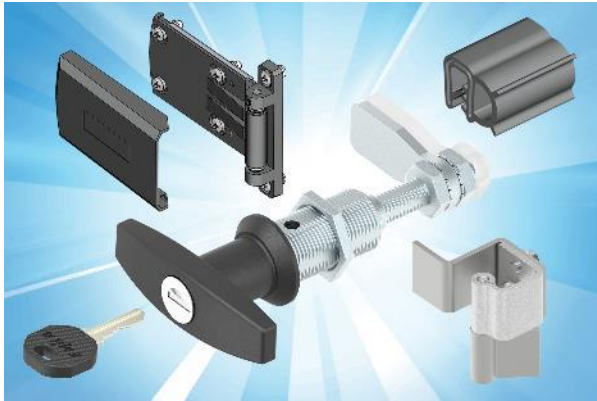
Installing panels that do not leak is probably the main challenge of the HVAC industry. EMKA has solutions for both positive and negative differential pressure demands and are gasket experts providing custom fit solutions to a wide variety of applications. They provide Silicon, EPDM, and PVC gaskets, in a wide variety of profiles and are able to provide 90° corners with mitre cuts for complete no-gap seals. Pre-assembled gasket frames with sealed mitred corners and sealed joined ends are available to maximise sealing for pressurised systems.

The HVAC standard component range includes a viewing window with clear polycarbonate glass and annular spacer in black polyamide, using a black galvanised steel fixing ring and foamed seal. The viewing window is adjustable to fit from 35 to 55 mm door thickness by rotating the spacer ring, while excellent sealing is ensured by foamed in place gaskets – so there are no loose O-rings or Silicone sealants required.

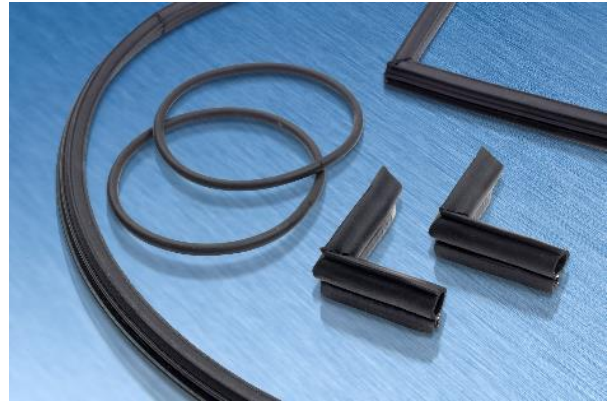
Other accessories complete the program – such as Crane brackets or transport lugs in steel or stainless steel for safe transport of completed units. They are easy to assemble and to disassemble and may be designed to customer specification. Compression locks with adjustable depth cams offering 6mm compression, rod control systems with internal L

handles for easy operation, bridge clamp wing knobs to enable positive pull down for secure door sealing and to allow removal of complete panels. Recessed pull handles to fit thick door panels, specialist door stops and many more fitting accessories for locks and handles such as ramped cams and an anti-rotation device for fitting long bodied quarter turn locks into sandwich construction door panels.

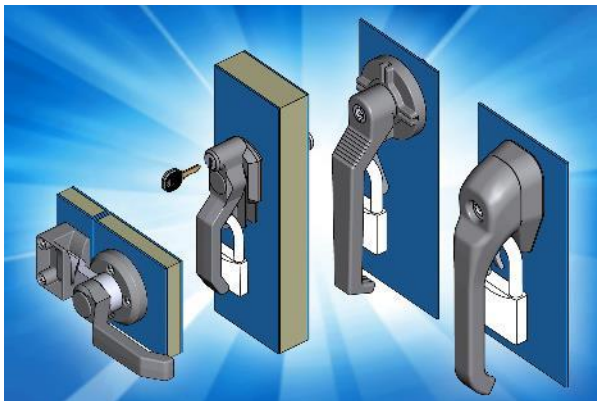
The new EMKA HVAC Brochure – free from EMKA UK – also contains details of a variable locking L handle, pull handle, surface mounted 10mm compression locks, 2D hinge, 3D hinge, 180° screw-on hinge and a range of sealing profiles.



Enclosure hardware from EMKA for Air Conditioning Systems



Pre-assembled gasket rings and frames from EMKA



Specialist handles for thick doors from EMKA



EMKA Compression locking hinge for HVAC installations



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