

# Getting the balance right with panel hardware selection

Selecting the correct panel hardware – whether locks, hinges or handles – all comes down to the application in which the enclosure is to be used. **Terry Cantle**, managing director of FDB Panel Fittings, comments

**F**DB Panel Fittings has many years of experience in supplying panel hardware, and over this time we have found that the selection process for correct panel hardware is largely to do with the application. There is, for example, little point in fitting low cost, light duty locks and hinges to enclosures destined for use in shipbuilding or mining as they will only work for a short amount of time. Conversely, it should not be assumed that fitting expensive stainless steel fittings is the answer.

As with most things, the optimum solution is based on more than one factor – and it can make important differences in terms of cost and reliability. To meet requirements, FDB is able to provide independent advice and can often act in a Project Management role to find the optimal application solution.

*‘During recent years there have been many new developments in enclosure hardware and today there are products available for almost all industrial applications – not only locks and hinges but a whole raft of complementary products including grab rails and handles, stays, door seals and numerous accessories’*

For instance, it is possible to balance such factors as weather-ability, corrosion resistance, strength/ruggedness and supply constraints by matching a stainless handle with a polyamide housing – there is a compromise of performance/cost between polyamide at the low cost end and stainless at the high cost end.

A good example is the latest ‘Buzz’ technology in enclosure hardware – Compression Locking – which was confined to a somewhat limited range of applications until it recently came out of patent protection. A number of manufacturers seem to have had their own parallel version of this technology under development for some years and have been able to quickly bring their expertise in design/manufacture to provision of a very greatly expanded range of compression latch variants.

However, is a compression facility beneficial and where? Certainly the anti-vibration role of these locks is

excellent in preventing the opening of panels such as on trucks, railway rolling stock gen-sets, air-con and heating and ventilating systems.

Similarly the ability to provide ‘soft’ gasket compression is valuable on cabinets with EMC gaskets to ensure a firm contact; or on large door panels where the closure force needs to be distributed over substantial distances or adjusted to allow for manufacturing tolerances. Compression technology also provides several millimeters of soft gasket compression and cam depth adjustment.

The result is that FDB customers are finding they are now in a position to consider ‘soft-close’ compression technology for quarter-turn locks, swing handles, T handles, etc. This could be for where different closure feel is important, or where the additional degree of anti-tamper

performance conferred by the design is a valuable security factor.

This is just one of many trends in cabinet hardware which tends to work over fairly long time frames.

## Developments

During recent years there have been many new developments in enclosure hardware and today there are products available for almost all industrial applications – not only locks and hinges but a whole raft of complementary products including grab rails



**T45's now with FDB zoned locking (Image appears with permission of BVT Surface Fleet)**

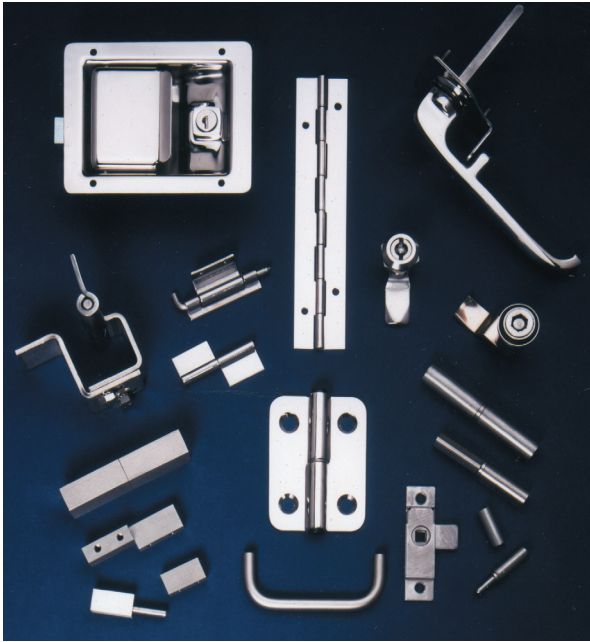
and handles, stays, door seals and numerous accessories.

IPxx degree of sealing is by now a well recognised front line consideration and most engineers will be aware that, while potentially suitable for external use, IP54 or IP55 is not weatherproof or waterproof.

FDB, however, looks beyond this to the complete picture, including: frequency of use, ease of operation, degree of corrosive environment, the cost/material balance, key possibilities, zonal security requirements, walk-by clothing entanglement, gloved hand usage, vibrational considerations (eg. where vehicle mounted), wash down and pressure hose use, type of gasket used, door type and opening required, and special industry standards (e.g. railway, offshore, mining, machine tool guarding).

A major long term trend has been toward greater use of stainless steel hardware; consequently FDB has a comprehensive range of stainless steel locks, hinges and handles suited to petrochemical plants, hospitals, food processing establishments, medical environments, outdoor installations, marine and offshore industries.

The range includes piano hinges, integral recessed lock/handles, weld-on hinges, bolt-on hinges, grab handles, spanner locks, rod locks, concealed hinges, lever and T handles. Importantly for marine/offshore installation, many are available in stainless grade 316 as well as the more common 303 and 304 with satin and electro polished finishes.



**Suiting requirements**

In one recent project, FDB was called in to supply locks for the new T45 warships. Like any very large single community the T45s face security issues for their personnel, so in this case the requirement was for a zone based wing lock system to cover personal lockers, wardrobes and other storage areas. With typically over 2000 locks on each ship, a project based master key system was specified for crew cabins and furniture or lockers in communal areas.

The specialists at FDB carried out planning, supply, specialist project packaging, administration of coding/delivery and long-term backup support. Not only was it important to have a zoned security with key operated wing locks offering a very high number of 'differs' – up to 5000 different combinations with master keys – it was also important that the locks and keys were separately labelled for specific locations and delivered at a very early stage so that they could be brought together later during final fit out.

Another example was the requirement for quarter-turn latches to suit 18,000 galvanised steel water meter boxes for domestic installation in the Middle East. For security, a plastic clip-in, quarter-turn latch was specified by the customer – these were simple to fit and relatively low in cost.

However, FDB felt that the latch would be unsuitable for the service conditions that were likely to be encountered by the boxes. So, a small but extremely robust die-cast lock with steel cam was suggested for evaluation by the client.

In order to stay within the budget constraints it was proposed that the lock be supplied zinc-plated rather than with its usual chrome-plated finish. A further problem was the very short delivery period for the boxes themselves – a period of just three months for the fully equipped boxes with a fixed completion date and no possibility of slippage with container shipment pre-booked.

FDB was able to deliver at the required rate of 1500 locks a week, but after four weeks increased this to 2000, thus allowing the contract to be met in ten weeks.

The company has also successfully tendered for the supply of panel hardware to many diverse and prestigious projects including: London's Millennium Wheel, The Channel Tunnel, Russian Oil Pipeline, Hungarian Buses, The Thames Barrier, the T45 Destroyer fleet and the London Underground flood defences.

Stainless steel fittings are suited to control cabinets, electrical equipment and instrument housings, especially where exposed to the elements or frequent wash down processes. These stainless products are, of course, designed to complement the standard range of die-cast and mild steel fittings and in many cases are interchangeable with them.

**Stainless steel panel fittings**

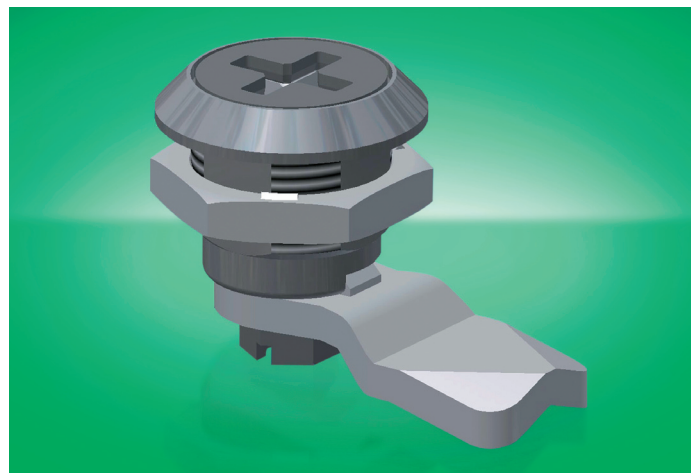
**FDB Panel Fittings**  
**T: 020 8568 1616**  
**www.fdb.co.uk**



**New low profile anti-vibration IP65 latch in stainless steel**

**F**DB Panel Fittings are increasingly being asked to supply stainless steel locks and latches for external vibration prone applications. So we are delighted to announce an attractive low profile latch in stainless steel that is ideal for access panels and doors on mobile plant, static and moving machinery, mobile generators, vehicles, HVAC units, floor access maintenance panels and specialised installations such as wind turbines.

**FDB Panel Fittings T: 020 8568 1616 www.fdb.co.uk**



**New FIAT key IP65 1/4 turn spanner lock**

**F**DB Panel Fittings are delighted to now offer a new IP65 quarter-turn spanner lock that can only be opened by use of a special non-standard key. This new lock is provided with a FIAT insert making it ideal for situations where a conventional lock could be easily opened by unauthorised persons using readily available keys or simple tools. Typically this includes manufacturing environments or controls of service equipment where only qualified service engineers are permitted access to electrical/electronic enclosures or service access panels.

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