The smart pallet shuttle system for maximum performance:
DAMBACH MULTIFLEX
CARRIER

The newly developed DAMBACH CARRIER sets standards when it comes to approach dimensions and performance. It functions as a transport unit for the COMPACT SHUTTLE with or without load and can be repositioned as required with the vertical conveyor. Eight running wheels ensure stable, safe transport at mechanical interfaces. Its lightweight design reduces energy consumption.

A new generation of high-performance power caps plus inductive energy transmission reduce the installation requirements and hence the cost of the investment. Energy recovery lowers the energy consumption even further. All components are designed for use in cold stores as standard.

To ensure maximum functional reliability, there is a permanent point-to-point radio link between the CARRIER and the COMPACT SHUTTLE. All the movements of the CARRIER are monitored by the integral DAMBACH control system and compared with the COMPACT SHUTTLE. No need for complicated external controls and monitoring.

Top features:
- Speed: up to 300 m/min
- Acceleration: up to 1.2 m/s²
- Rated load: up to 1.500 kg
- Load-handling: pallets, special load carriers
- Repositioned by vertical conveyor
- Compact design
- Less installation work
- Low energy consumption
- Power supply: inductive/conductor rail
- Integral control
- Cold store compatibility down to –30 °C

LIFT

LIFT is the DAMBACH vertical conveyor that has already proved its worth in many materials-handling systems. Based on a modular design, it can be configured as required – as a high-performance conveyor with belt drive or as a stable 45 m version.

The DAMBACH energy recovery option is ideal for improving economy.

Top features:
- Vertical travel speeds of up to 120 m/min
- Vertical acceleration: up to 1.5 m/s²
- Rated load: up to 1.500 kg
- Height: up to 45 m
- Low transfer height at base of mast
- Variable frame arrangement
- Load-handling equipment for a huge range of load carriers
- Robust design
- Integral energy management (DSE): good energy efficiency
- Especially easy servicing
- Cold store compatibility down to –30 °C

COMPACT SHUTTLE:

For many years, the COMPACT SHUTTLE has been proving its efficiency in multi-deep storage – with storage positions up to 30 deep and in 24-hour operations. The power supply for the COMPACT SHUTTLE is stored in efficient power caps. The COMPACT SHUTTLE runs on conventional rails in the storage lanes. In the MULTIFLEX system, it forms a logical unit with the CARRIER.

Top features:
- Speed: up to 160 m/min
- Acceleration: 1.6 m/s²
- Raising/lowering time: 2 s
- Rated load: up to 1.500 kg
- Minimal charging time: 8 s
- Load-handling: pallets, special load CARRIERS
- Cold-store model: for temperatures down to –30 °C
Variable and powerful:
MULTIFLEX sets new standards for throughput, flexibility and efficiency.

Advantages:
- High throughput rates
- Compact design for high storage density
- Scalable, for further increases in performance
- Low energy consumption
- Lightweight construction for low self-weight
- Optimum use of space with any building layout
- High availability
- Cold store compatibility
- Easily adapted to suit any individual requirements
- Can be retrofitted in existing warehouses
- Suitable for a huge range of load carriers
Full scalability and innovative technologies turn the DAMBACH MULTIFLEX into a smart solution for multi-deep storage and highly dynamic warehousing concepts. Optimum space utilization thanks to variable storage layouts.

Three modules, fully scalable

The MULTIFLEX system comprises three perfectly coordinated modules with seamless interfaces: the tried-and-tested COMPACT SHUTTLE, the LIFT high-performance vertical conveyor and the newly developed CARRIER.

With this modular structure, MULTIFLEX remains fully scalable. Additional COMPACT SHUTTLES and CARRIERS can be easily integrated at any time. So the system offers maximum flexibility and maximum security for your investment.

Perfect access

No matter how MULTIFLEX is operated, the system can also be deployed in complex building layouts. With its adaptable modular design, it is also ideal for upgrading the most diverse types of existing warehouses, e.g. setups using industrial forklifts or high bay warehouses. Combined with DAMBACH rail-guided stacker cranes, MULTIFLEX can achieve optimum space utilization, throughput and economy.

Clever control, low consumption

The integral DAMBACH control makes existing warehouses and value-creation chains even smarter. It enables different modules to achieve flexible operations. For example, it is easily possible to cut the throughput time of a warehouse and improve the utilization of the space at any time.

Innovative power caps, charging concepts and DAMBACH Smart Energy Management (DSE) minimize the energy consumption of the system and reduce operating costs. This is a crucial advantage for cold stores in particular.

1. The COMPACT SHUTTLE takes the load out of the storage channel.
2. The COMPACT SHUTTLE drives with the load onto the CARRIER.
3. The CARRIER transports the COMPACT SHUTTLE with the load to the end of the aisle.
4. The CARRIER transfers the load to the chain conveyor in front of the LIFT.
5. The LIFT takes on the vertical transport of the load to the apron.
A variable system: MULTIFLEX can be adapted to suit the most diverse specifications and operated in one of three configurations.

System 1: Level-Bound

CARRIER and COMPACT SHUTTLE are permanently assigned to each other and one aisle level.

The COMPACT SHUTTLE retrieves the unit load from the racking and transfers this to the CARRIER, which then transports the load to the vertical conveyor at the end of the aisle. The vertical conveyor forms the link to the apron.

Advantage: especially high throughput rates.

System 2: Free-Moving CARRIER

At least two COMPACT SHUTTLES are assigned to one CARRIER.

In this configuration, each of the efficient COMPACT SHUTTLES is allocated to one aisle and level. The COMPACT SHUTTLES retrieve unit loads from the racking and position these ready for transferring to the CARRIER. The CARRIER then either transfers the load to a vertical conveyor or positions itself in the conveyor. Vertical transport allows the CARRIER to operate on several levels of an aisle. At the same time, the COMPACT SHUTTLES continue to operate independently and position unit loads ready for collection. Complex order-picking strategies can therefore be implemented right from the retrieval of the load.

Advantage: average throughput and flexible warehousing strategies.

System 3: Free-Moving Unit

A fixed CARRIER – COMPACT SHUTTLE combination that can move over all aisle levels – acting as one unit.

Depending on the warehousing strategy, the CARRIER and COMPACT SHUTTLE or the load are repositioned by means of vertical conveyors. To increase flexibility and performance, further CARRIER – COMPACT SHUTTLE pairs can be integrated into the existing system at a later time.

Advantage: easy scalability and highly diverse applications.