

# Intelligent Logistics in Aerosols Production

## Refined Intralogistics Lead the Motip Dupli Group to Higher Efficiency

**M**otip Dupli has a good name in the aerosol industry. The family-led enterprise with its headquarters in Hassmersheim, Germany is celebrating its 50th anniversary. The Motip Dupli Holding manages up-to-date production plants in Hassmersheim and Schwerte in Germany, Wolvega in The Netherlands, and further 12 subsidiaries, as well as additionally 20 dealers and 13 warehouses in European countries and Turkey. In the global market of paint aerosols and touch-up pencils the Group holds a share of 10%.

In the last years the European orientated and global acting management successfully introduced centralization measures and intelligent multi-brand strategies. In its expansion strategy, the group target is on Eastern Europe, the Near East, the USA, Brazil and India.

### Logistics for Colourful Mixture

Motip Dupli has just celebrated the production of its billionth spray can at the Hassmersheim production site near Heilbronn. The enterprise started here in 1955 with the production of the first chemical rust converter. Today the paint aerosol and touch-up pencils assortment consists of over 50,000 articles and covers more than 8,000 different colours. The filling capacity of cans runs from 12 ml up to 600 ml. Under an enormous logistic expenditure approximately 64 million spray cans (for Group), 5.5 million touch-up pencils and approximately 2,000t of putty are produced, labelled, packed, centrally stored, picked, loaded and delivered per year with an increasing tendency.

The Hassmersheim production plant possesses storage areas for various basic chemical production materials. Separate gas and solvent warehouses are furnished with large tank storages and unloading stations. Up to four gas and solvent tank trucks arrive daily.

Factories I and II share the same warehouses for raw materials and finished products. These storage areas as well as the space up to the stations of the transportation line in front of factory II are the area of operation of three OM electrical

forklifts with minimum dimensions. The two E8N- and the E10N- electric forklift trucks can turn 360° with an extremely small turning radius. These narrow, compact and dynamic forklift trucks are ideal for operating in warehouses with limited space, railway wagons, and containers. In the new factory III, the manufacturing of aerosols with a unique 2-component technology has recently started. Here a warehouse with pallet shelves is settled, in which a XE20ac electrical forklift truck transfers the entire pallet handling. In this facility three gates can be used to load and unload trucks. Company owned trucks transfer the palletized units between the factories I and III.

### Ring Transport for Optimal Supply

Within the plant area around factories I and II an „Express“ transportation line runs in order to ensure the fast flow of raw materials into the production supply ranges. It also serves for the transportation of palletized spray cans into the supply ranges of the warehouses. Furthermore it delivers ordered goods for dispatch.

The OM electrical forklift truck XE22ac pulls three trailers and helps loading and unloading at several stations and is described as a „double worker“. With a driving speed of 20km/h it is ranked among the fastest ones of its category and is very well suited for the express transportation line at Motip Dupli plant area. A steering angle of 103° in combination with co-ordinated functions of the driving axle allows rotation around its own axle. The minimized turning circle proves to be favourable during the loading procedures at the stops. The automatic speed decrease guarantees safe driving in curves. The forklift truck proves to be adequate on uncomfortable surfaces and shows good handling characteristics. The driver's seat is comfortable with an ergonomically designed cockpit. The design has been created in cooperation with the well-known Italian design studio Zagato.

Production lines for different processes are located in factory I. The plant manager coordinates the production of aerosols that must be available in storage for customers as well as for the production of unexpected individual orders on time. An automatic roller system provides the supply of



standard cans necessary for production from two trailers with a capacity of 33 pallets in each case.

Labelling of cans is merged into the automated processes. The labels are manufactured in the company owned printing department, for different language groups, including bar codes. Appropriate labels also carry warnings in braille. Control protocol documentation carries all the data of different quality management steps and provides the necessary retrace-ment. At the end of the manufacturing line the cans are automatically packed into different packing units, which are then closed and labelled. Afterwards XE20ac electrical forklift trucks transport the wrapped pallets into the warehouses.

### Warehouse as Intralogistics Turntable

The logistics center is located close to production in factory I. The receiving area, the warehouse, the picking area, the customs department, goods delivery and the dispatching department are located on a space of over 7,000 m<sup>2</sup>. The commodity warehouse management system IBM AS 400 controls all warehouse procedures in real time. Analysis and continuous control of sales figures allow quick reaction to the market tendency.

The warehouse plays a key role as an intralogistic turntable. It has a height of 8m and offers 12,000 storing positions for pallets. For more efficient intralogistics the Motip Dupli logisticians co-operate with OM service partner Artos. This partner provides professional service in the optimum usage of the OM forklift trucks fleet. All trucks are equipped with mobile scanner technology to read bar codes. The electrical rider transpallet TLR18 is used for loading and unloading trucks by means of a loading ramp also made for medium-long distance pallet transportation. With a loading capacity of 1.8 t it transports the equipped pallets between production, order picking and supply area. Here, three electrical XNAac VNA trucks for narrow spaces, in man up version, transfer the storage to the 22 aisles of the warehouse.

With the A.C technology the XNAac forklift truck increases the productivity up to 25%. Its ergonomic operator cockpit allows a direct view of the field of action of the pallet handling.

The manual control elements are appropriate for easier intuitive operation. For unloading operations, the operator is assisted by „electronic-technical assistants“, for the important working processes. Thanks to the optional vertical lifting pre

selection it can reach five pallet levels automatically and different storage procedures can be chosen. Weight sensors make speed regulation depending on weight and lifting height possible. The truck also offers an integrated mobile personal

protection system and end of aisle control. Powered by an 80-volt engine, the truck is engaged in high lift stacking and picking in very narrow spaces.

For fast and safe order picking five XOP2 vertical order pickers are continuously

working in the warehouse. Because each of them has a 1.2 t loading capacity and a picking height of approximately 8m, they are ideal for order picking of single units and pallets. The picking warehouse is equipped with two floors including roller shelves with 11,000 storing positions of different sizes for manual „picking“.

CL electrical high lift stackers fill the shelves from the backside, and the goods are taken from the front side. For efficient order picking the stored material is optimized and ergonomically arranged and marked according to languages, regions and access frequency.

Ordered goods go through the packing, weighing, address marking and final control stations on a roller conveyor. A vacuum lifting system facilitates the palletizing or shifting of the cardboard in trailers or containers for the dispatching of goods by external express and freight transport companies on several lines. Altogether the delivery department expedites up to 200,000 shipments to international customer's addresses and to the external storages.

For better and efficient intralogistics at Motip Dupli as well as for the operability of OM forklift trucks fleet Artos is responsible for after sale service.

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Five XOP2 vertical order pickers in man up version equipped with additional fork lengths for comfortable picking.