MACHINE TOOL SERVICE

SERVICE

**FORK LIFT TRUCKS** 



# 10-65 tons FORK LIFT TRUCKS WITH HEART





What are your requirements?

# THE RIGHT FORK LIFT TRUCK FOR YOUR JOB

Kone cranes has hundreds of heavy industry customers around the world and deep knowledge of heavy industry customers around the world and deep knowledge of heavy industry requirements for fork lift trucks. Choose your fork lift according to the weight of the material you need to handle and the diversity of tasks you need it to perform. You will find the right lifting capacity, features, and attachments in our range. KONECT



# EXPERIENCE AT YOUR SERVICE

Konecranes fork lift trucks are remarkably adaptable to industrial material handling. We have a long track record of meeting specialized industrial handling requirements like yours.

What is your industry? What kind of material do you need to lift and move? Contact us. You'll probably find we have lots of experience in your industry and can provide the ideal fork lift truck.

#### **Industries we serve**

- · Steel, aluminum, and mining
- · Wood and building materials
- · Container ports and terminals
- · Transport, shipping, and logistics
- Pulp and paper
- · Concrete, bricks, and rock
- Automotive
- · General manufacturing
- · Oil and gas
- · Wind power
- Nuclear
- · Waste-to-energy
- · Shipyards and marinas









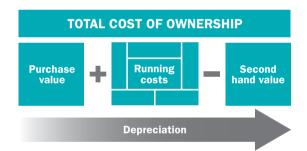
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## Made with heart in every detail

### SMARTER WHERE IT MATTERS

Konecranes has been manufacturing, selling, and supporting heavy-duty fork lift trucks for some 60 years. The first truck we ever made and delivered, back in the 1950s, was a fork lift truck. Buy one from us today and you will get the latest technology, the lowest Total Cost of Ownership, and a fork lift truck made with heart.

We claim the lowest Total Cost of Ownership with our fork lift trucks, understood as an equation running over a time period of years as shown below. When you're shopping around the suppliers and comparing prices, our truck will probably not be the cheapest. But it will provide the best value over time.



#### **Close to you**

We sell our lift trucks around the world in two main ways: directly via our own sales and service organizations, and indirectly via distributors. In both cases, our fork lift trucks are fully supported with spare parts and personalized service. Konecranes has the widest service reach of any company in the lifting business. And our distributors are some of the most respected in the business.

#### **Service made easy**

To reduce lifetime running and maintenance costs, we have extended the service interval of the engine by 500 hours, the gearbox by 1000 hours, and the hydraulics by 4000 hours.

Our HLL ultra-fine filter system extends the hydraulic oil change interval from 4000 up to 12000 hours. In practice, you will use up to 80% less hydraulic oil than with a conventional hydraulic system.

#### **GENUINE KONECRANES PARTS**

Genuine Konecranes parts are the best protection for your investment. They pay off in truck performance and uptime.

#### **PARTS ONLINE**

> Easy to find, easy to buy

#### **REAL-TIME SHIPMENT INFORMATION**

> You know where your parts are

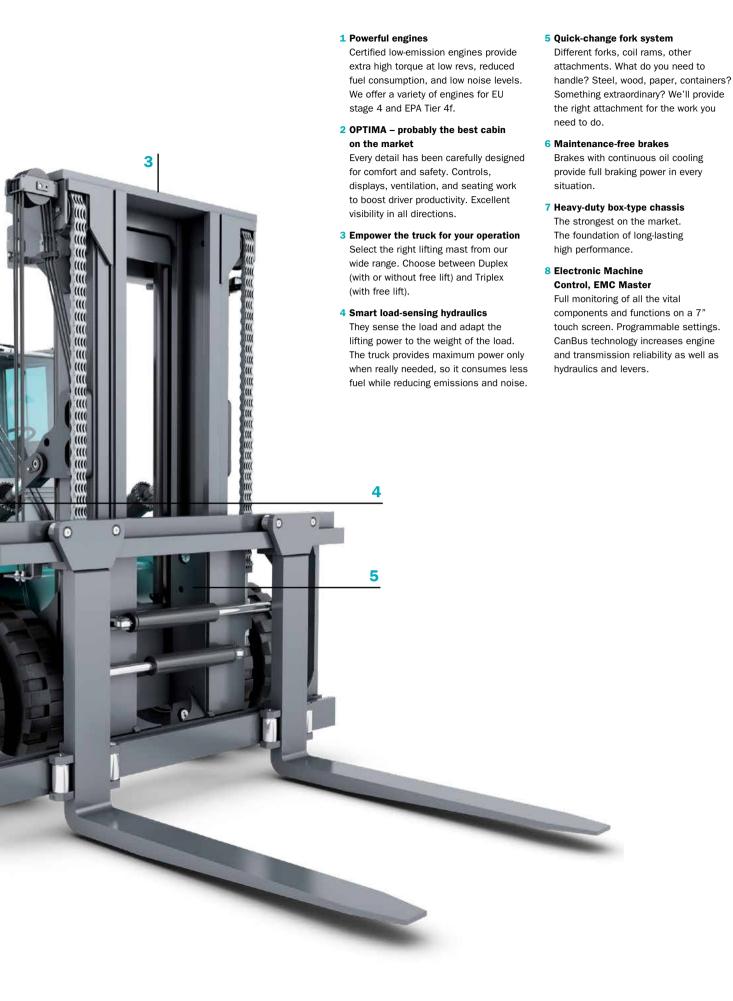
#### **FAST DELIVERY**

> Parts in stock are in your hands within 1–3 days

#### **PROTECTION BOX**

> All the filters you need, in one package





























# ENHANCED SPACIOUSNESS AND VISIBILITY

#### Customized for your container handling needs.

When you step inside OPTIMA cabin, you find outstanding spaciousness and superior visibility. That makes operating the lift truck safe and efficient, along with valuable extra equipment.

The remarkable visibility is made possible by very large, lowered windows with no corner posts, thin but very strong roof crossmember, and curved panels. Sightlines to key working areas are clear both in the front, to the sides, and to the rear.

New EMC Master with MD4 7" touch screen enables a more spacious cabin with its integrated solutions. There is also more space for operating the foot pedals.

The positioning of the instrumentation improves operating ergonomics. Instrumentation has been moved from the driver's left side to his right, above his seat, where it is conveniently accessible.

OPTIMA is customizable for your exact operational needs. You can select levers or joystick, mini-wheel steering, lever steering, the driver's seat, and precisely the instrumentation that you need. The cabin can be raised from the standard position by 250 up to 700 mm if required.

#### 1 Remarkable visibility

Visibility is very difficult to measure objectively: you just know it when you see it. Sit down in OPTIMA, see what visibility from a lift truck cabin can be.

#### 2 Electronic Machine Control, EMC Master

Full monitoring of all the vital components and functions on a MD4 7" touch screen. Programmable settings.

CanBus technology increases engine and transmission reliability as well as hydraulics and levers.

#### 3 Left armrest lever or mini-steering

Optional, ergonomic steering solutions that improve productivity.

#### 4 Ergonomic instrumentation

Whatever extra equipment you need, we can install it as part of an ergonomic instrumentation layout. OPTIMA is truly spacious.

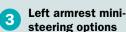
#### 5 Comfort

An excellent seat, powerful cabin heating and ventilation, air conditioning – the driver is provided with every possible comfort.

#### 6 Lifting controls - levers

Available as standard, the lifting levers offer super-smooth touch control at every point of a handling operation.







Lever steering with return











#### A world of options

# BOOSTING SAFETY AND EFFICIENCY

Konecranes invests significantly in fork lift truck R&D to be the first to offer new technologies that improve performance and safety. We also ensure that our fork lifts are fully compliant with current emissions regulations, anticipating their evolution as a normal part of our product development process.

#### **Emissions-compliant diesel engines**

We offer a wide range of powerful Volvo and Scania engines certified according to EU stage 4 and US EPA Tier 4f.

#### **EMC Master**

Our Electronic Machine Control system, EMC Master, provides the following functions as standard:

- · Full truck monitoring
- · ECO-Drive and fuel management
- · Productivity counter management
- · Driver log-in (20 drivers)
- Auto accelerator / power control
- · Data logging of alarms and errors

#### The following functions are optional:

- Electronic weight scale
- · Mini-wheel steering
- · Lever steering
- · Auto engine shut-down
- Auto parking brake
- · Auto tilt-to-zero of lift mast
- · Drive speed limitation (unloaded/loaded)
- Remote Access Service via GPRS/(3G)
- · TRUCONNECT Remote Services
- Joystick with auto accelerator/power control

#### **TRUCONNECT Remote monitoring for lift trucks**

The TRUCONNECT Remote Monitoring service enables you to track the real usage of your lift trucks through a remote connection. It provides you with an online view as well as periodic PDF and Excel reports that illustrate the actual use of your lift trucks. The data gives you confidence to not only plan your actions but also to make informed decisions regarding maintenance investments and productivity.

#### TRUCONNECT Basic

- · Safety alerts
- · Machine status
- · Average fuel consumption
- · Average fuel consumption per lifted load
- · Total fuel consumption
- · Traveling distance
- Average traveling speed
- · Load spectrum
- · Total load lifted
- · Alarm fault codes from engine and transmission

#### TRUCONNECT Premium

- All the features included in TRUCONNECT Basic AND
- · Tyre pressure monitoring
- · Shock sensors
- · Alarm on emails and SMS
- · GPS signal
- · Data on command

#### TRUCONNECT Premium+

- · Features included in TRUCONNECT Basic
- Features included in TRUCONNECT Premium AND
- · Hydraulic oil particles counter and water content

#### **Tire pressure monitor**

Under-inflated tires can increase fuel consumption by as much as 15% while impairing stability and drivability. Our tire pressure monitor makes it easy to keep your lift truck tires properly inflated. It's installed in minutes. If you combine it with the drive speed limitation provided by EMC Master, you can extend the life of your tires even further.

#### Fire alarm and suppression system

We offer an effective fire alarm and suppression system that can be activated either manually or automatically. When the lift truck is in use, the system discharges in three ways: manually from inside the cabin; manually from outside via a mudguard trigger; automatically by sensors in the engine compartment. When the fork lift is not in use, i.e. when the master power switch is turned off, the system discharges automatically when the fire alarm goes off.

#### Other safety options

- Parking Distance Control (PDC): with sensors for driving in reverse
- Breath Analyzer: an alcohol test unit which requires the driver to take a breath test before starting the lift truck
- Camera Supervision System: can be mounted as a reversing camera on the rear of the lift truck, or as a forward camera mounted on for example the mast
  - **1** EMC Master full monitoring of all the vital components and functions on a 7" touch screen
  - 2 TRUCONNECT Remote monitoring for lift trucks
  - **3** Cabin options: keyboard, reading lamp, side mirror, side-mounted roof wiper, sun visor roof & front, compressor seat etc.













Modem





#### What do you need to lift?

## WE HAVE THE ATTACHMENT

You'll find your lifting solution in our complete range of lifting masts, fork/carriage combinations, fork/shaft systems, and attachments. What you see here is just a sample of what we offer.



#### Fork and carriage combinations



Standard carriage, integrated forks, sideshift, and fork positioning



Carriage with kissing forks for steel handling



Carriage with reinforced forks for round cargo

#### Forks and fork shaft systems (fss)



Different cross-sections, lengths, tapering, and reinforcements



Fork shaft system hook-type



Fork shaft system, pin-type

#### **Coil rams**



Single coil ram with fork shaft



Double coil ram with fork shaft



Single coil ram, integral version

#### **Lifting masts**



Duplex, 2-stage, no freelift



Duplex, 2-stage with freelift



Triplex, 3-stage with freelift



Carriage with one leveling fork (up/down) for sensitive cargo like saw mill products



Carriage with center leveling (2 forks) for sensitive cargo



Carriage with fork shaft system (multi-function), pintype and hook-type versions

#### **Attachments**



Different container spreaders with inverted forks and fork shafts



Multiple paper roll clamp (single or double)



Fork rotator carriage



Concrete tube clamp (different versions)

#### Also available

- Fork extensions: pantograph, lifting hook, lifting jib
- Pipe and tube clamp
- · Pallet handlers: double, triple
- Magnets for lifting steel

And more available upon request

# THE WORLD'S HARDEST-WORKING FORK LIFT TRUCKS

#### Fork lift trucks, 10 to 18 tons



MODEL NAME	CAPACITY	WHEELBASE
SMV 10-600 C	10 tons at 600 mm	3000 mm
SMV 12-600 C	12 tons at 600 mm	3000 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 10-1200 C	10 tons at 1200 mm	3250 mm
SMV 13.6-600 C	13.6 tons at 600 mm	3250 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 12-1200 C	12 tons at 1200 mm	3500 mm
SMV 16-600 C	16 tons at 600 mm	3500 mm
SMV 16-900 C	16 tons at 900 mm	3500 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 15-1200 C	15 tons at 1200 mm	3750 mm
SMV 16-1200 C	16 tons at 1200 mm	3750 mm
SMV 18-600 C	18 tons at 600 mm	3750 mm
SMV 18-900 C	18 tons at 900 mm	3750 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 18-1200 C	18 tons at 1200 mm	4000 mm
SMV 20-1200 C	20 tons at 1200 mm	4000 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 22-1200 C	22 tons at 1200 mm	4250 mm
SMV 23.6-1200 C	23.6 tons at 1200 mm	4250 mm
SMV 25-1200 C	25 tons at 1200 mm	4250 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 28-1200 C	28 tons at 1200 mm	4500 mm
SMV 32-1200 C	32 tons at 1200 mm	4750 mm
SMV 33-1200 C	33 tons at 1200 mm	4750 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 28-1200 B RoRo	28 tons at 1200 mm	4500 mm
SMV 32-1200 B RoRo	32 tons at 1200 mm	4750 mm

#### **37 to 65 tons**



MODEL NAME	CAPACITY	WHEELBASE
SMV 37-1200 C	37 tons at 1200 mm	5000 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 42-1200 C	42 tons at 1200 mm	5500 mm
SMV 45-1200 C	45 tons at 1200 mm	5500 mm
SMV 50-1200 C	50 tons at 1200 mm	6000 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 52-1200 C	52 tons at 1200 mm	6000 mm
SMV 55-1200 C	55 tons at 1200 mm	6000 mm



MODEL NAME	CAPACITY	WHEELBASE
SMV 60-1500 C	60 tons at 1500 mm	6000 mm
SMV 65-1200 C	65 tons at 1200 mm	6000 mm

### HOW TO REDUCE TOTAL COST OF OWNERSHIP

Keep to preventive maintenance schedules no matter how much operational pressure and temptation prevent you from doing so.

#### **USE KONECRANES GENUINE SPARE PARTS**

#### VALUE

When you're in the market for a spare or replacement part, how do you calculate its value? Is price your only consideration? We all know that you can look online and find non-OEM suppliers offering cheap prices. However, are these cheap parts truly a value? We don't believe they are. Instead, We believe there's inherent value in purchasing from the original manufacturer of the equipment. That value is reflected in engineering expertise, upgrades and new features not available elsewhere. Ultimately, it will also be reflected in optimal operational performance.

#### WARRANTY

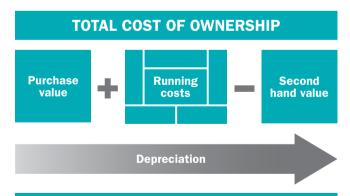
KONECRANES Genuine Parts are covered by a 6-month warranty and are the only replacement parts that will not impact the validity of your KONECRANES's manufacturer's warranty.

- All Konecranes lift trucks are equipped with a load-sensing hydraulic system. This system uses the engine power only as needed at each moment of the lift, based on the load and required lifting speed. It always provides power-on-demand. If you are driving and not lifting, the system turns off the oil flow. The result is reduced fuel consumption and reduced engine and drive train wear.
- Use TRUCONNECT Remote Monitoring and Reporting for Lift Trucks, a first in the industry. TRUCONNECT allows you to track the real usage of your trucks through a remote connection. It provides online views and reports containing information that will prove invaluable in efforts to improve fleet efficiency, productivity and safety.
- TRUCONNECT Premium+ includes for example a tire pressure management system to reduce tire wear, save fuel an increase safety. Proper inflation of tires provides proper stability, allowing work at the rated maximum load. It extends tire life by as much as 25–50 %, and cuts fuel consumption by as much as 10–25 %. Shock sensors in order to detect possible safety concerns and to increase production efficiency. Hydraulic oil particles counter and water content in order to measure the particles and the amount of water content in the hydraulic oil. This gives you a better insight into how your oil is doing and when it's actually time to either clean or replace it.
- Extend the hydraulic oil change interval by using the Hydraulic Long Life (HLL) filter. Using an HLL filter makes it possible to extend the recommended oil change interval from 4,000 running hours to 12,000 running hours. You save money and increase truck uptime while helping to preserve the environment. Meanwhile, the HLL filter helps to keep the entire hydraulic system clean: filtration particle size is max. 3 microns. It also reduces the amount of condensed water that gets into the oil tank. All of the hydraulic components work better with the HLL filter.



- Use the "auto-throttle" function to optimize engine speed settings.
- Use the drive speed limiting function to limit the maximum travel speed for example, 15–25 km/h (unloaded) and 10–20 km/h (loaded). These speeds are adjustable and programmable.
- Use the automatic engine shut-off feature. The limit for idling can be programmed between 2–10 minutes.
- Reduce fuel, lubricating oil and filters consumption to prolong the life of the engine and achieve a lower noise level.
- Start using the Konecranes EcoDrive module to monitor driving habits. Use the EcoDrive fuel graph, running the engine in the green-to-yellow field only, and try to avoid the red field. The EcoDrive module records driving data so that trucks and drivers can be benchmarked and compared. It's an operational tool for training your drivers to operate your trucks in the most economical and environmentally friendly ways.
- Konecranes reach stackers are equipped with auto-throttle.
  Autothrottle/automatic engine RPM increase (transmission in neutral) when the boom and/or spreader is being operated, maximizing productivity and optimizing fuel consumption. This smart feature is available for every Konecranes lift truck as an option: EMC 114 Electronic Servo Control.
- Konecranes reach stackers and container lift trucks comes as standard with traveling mode function. This function prevents the operator from driving at full speed if the container is not in the correct driving position, helping to minimize breakdowns and reduce wear and tear. The load distribution should be 1/3 on the two steering tires and 2/3 on the four drive tires.
- Carry out annual inspections of your lift truck fleet. It's a simple fact that preventive maintenance and repairs are much more cost-effective than post-breakdown maintenance and repairs. Konecranes offers an annual fleet inspection service that will maximize your fleet uptime over the long haul. It provides detailed reports on the status of each truck and expert recommendations for keeping your trucks running at peak performance.
- Do you operate your trucks in a cold, hot or dusty climate?

  If you work in a cold climate, start using our pre-heaters for
  the engine, transmission and hydraulics. If your trucks work in
  a hot environment, e.g. steel production, use our heat protection
  options. If it's a dusty environment, look into our filter options.



#### **RUNNING COSTS COMPRISE:**

- 1. Cost of fuel
- 2. Cost of tires and rims
- 3. Cost of scheduled maintenance including lubricants, filters, grease and labor
- 4. Cost of wear and tear (consumables)
- 5. Cost of breakdown repairs
- 6. Cost of labor

### Sapa Heat Transfer AB, Finspång, Sweden

### TOUGH TRUCKS, SOFT TOUCH

With over 400 years of metalworking experience and history, Sapa Heat Transfer AB faces unique challenges. Twelve customized fork lift trucks from Konecranes seamlessly connect the company's past, present and future for more efficient production and improved safety.

Founded in 1580, the Sapa Heat Transfer factory in idyllic Finspång, Sweden has a long history in metalworking. Cannons produced at the site were used as far afield as the American Revolutionary War. So it's safe to say they know what they're doing at this sprawling, 120,000 square meter production site, which today specializes in the production of aluminum strips for heat exchangers, mainly for the automotive industry. In fact, the company holds an impressive 14% of the global market in this segment and has its sights set on even more.

In recent years, Sapa Heat Transfer has made strategic investments to ensure the highest levels of safety, improve quality, and make production more efficient. Of course, integrating cutting-edge technology and a centuries-old production facility presents a number of special challenges, not least when it comes to lift trucks. At first Sapa tested electric fork lift trucks, but they proved unable to handle the pace of production. They needed a better solution fast. "Konecranes was the clear choice. No other company could meet all of our specific needs," asserts Rolf Andersen, Truck Coordinator, who's been making sure that the company's lift trucks are safe and working well since 2009.

Sapa had many requirements but three were "musthave": excellent maneuverability combined with high lifting stability, reliability in constant use, and safety/ ergonomics. The twelve 10-ton Konecranes fork lift trucks busily crisscrossing the facility today prove that Sapa found its answer.

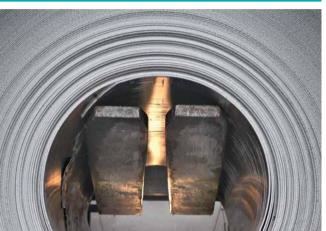
"Our aluminum casting, rolling, and finishing are carried out across a large production infrastructure that's been here for hundreds of years," explains Andersen. "To maneuver around buildings through narrow roads, we need trucks with a much shorter wheelbase than normal."



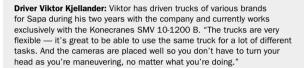


"Even with a shorter wheelbase, these are stronger and more stable than other trucks. I feel completely secure lifting anything I need to lift."

Viktor Kjellander, Driver









#### With their tailor-made 2,800 mm wheelbase,

Sapa's Konecranes SMV 10-1200 B fork lift trucks fit easily wherever they need to go. Thanks to a 5-ton counterweight added to the back of the sturdy, box-type chassis, these trucks can handle their daily loads with ease. "Other trucks practically threw me on my nose sometimes. That never happens with our trucks now," says Andersen. "I mean, how many people put a 16-ton upright mast on a 10-ton truck? Yet it's still more stable and secure, by far, than any other truck we've had." Driver Viktor Kjellander agrees: "Even with a shorter wheelbase, these are stronger and more stable than other trucks. I feel completely secure lifting anything I need to lift."

The powerful, low-emission Volvo TAD 660 VE engines provide the much-needed reliability for Sapa's demanding production schedules. "We run practically 24/7, and we drive at 98% max. capacity all the time. The trucks in our rolling mill log about 5,000 hours per year," explains Andersen. "It's extremely important for us that our trucks are rolling all the time," confirms Anna Stenlund, Communication Manager for Sapa Heat Transfer.

#### It's also important for Sapa that these tough trucks

can handle the most delicate materials. Each aluminum coil can weigh anywhere from 8 to 12 tons. Meanwhile, some of the coiled aluminum strips are a mere 0.05 mm thick. They need to be handled very carefully in the midst of a fast-paced production environment. The coils are valuable. "I tell our drivers that damaging one of these coils is like damaging a brand new car," shares Stenlund. The auto tilt-to-zero feature in the lift mast minimizes costly damage to the material during offloading. According to Andersen, it does a better job than a driver can do manually and it's more secure.

The forks themselves are also specially designed, with tapering starting 500 mm from the tip to allow the trucks to carry standard pallets for other daily tasks such as transporting scraps – adding valuable flexibility.

#### When deciding what truck brand and model to purchase,

Sapa assembled an extensive internal work group that determined the truck requirements. This work group included members of the company's industrial health service team. "We work with a safety-first philosophy. Ergonomics are key, not only for everyone's well-being, but also for boosting productivity," says Andersen.



#### "I tell our drivers that damaging one of these coils is like damaging a brand new car."

Anna Stenlund, Communication Manager



**Driver Mikael Lachan:** Mikael started working for Sapa Heat Transfer this year in a summer job, getting his start in lift truck driving with the 10-ton Konecranes SMV 10-1200 B fork lift truck after extensive fork lift training.

"The most complicated thing is getting a feel for the size of the vehicle. But learning to operate it isn't complicated, and it feels completely stable. You can hardly tell you're lifting something. It doesn't feel like anything's there. The cameras make it easy to see and maneuver, and getting orders through the PC makes it easy to know what you're supposed to be doing."

The finished requirement list was lengthy, detailed and unique. For example, at the rolling mill, the aluminum is heated to 500 degrees Celsius during hot rolling. When the driver picks up a load, it can be as hot as 350 degrees. This consideration, combined with the requirement of constant operation, led to the addition of strategic ventilation in the cabs, fire-proof hoses, and a semi-automatic fire extinguishing system that uses a water-based formula to smother fire inside the cab.

#### Konecranes built a long list of special features into

the SMV 10-1200 B fork lift trucks for Sapa, including personalized USB keys for each driver to log all driving statistics, integrated alcohol breath analyzers, an auto function which prevents the use of computer while in gear, rotating RoTo driver seats for added visibility, extra brake lights at eye level, reverse distance control, adjustable driver speed limits, and additional steps for a more natural climb into the cab. Even the specially ordered yellow body color is designed to increase safety.

When asked what the greatest advantage is in selecting Konecranes fork lift trucks, Andersen doesn't hesitate: "It's in getting quality trucks customized to our each and every need."

MAIN TECHNICAL DATA		
Fork lift trucks	SMV 18-900 B / Low	SMV 32-1200 B / Ro-Ro
Capacity	18 tons	32 tons
Load centre (LC)	900 mm	1200 mm
Mast type	Duplex freelift (low)	Duplex freelift (low)
Freelift height	1375 mm	1550 mm
Max. lift height	2750 mm	3100 mm
Cabin height	2905 mm	2925 mm
Closed mast height	3020 mm	2925 mm
Carriage type	Quick-change	Quick-change

VITAL STATISTICS		
Company	Sapa Heat Transfer AB	
Product	Rolled aluminum strips for brazed heat exchangers	
Location	Finspång in the Östergötland region of Sweden	
Year of founding	1580	
Ownership	Part of Sapa Holding AB, 100%-owned by Norwegian company Orkla ASA	
Number of employees	470	
Annual turnover	Around 267 million € (SEK 2,200 million)	
Exports	85% of tonnage produced	
Lift trucks used	12 Konecranes SMV 10-1200 B fork lift trucks	



INDUSTRIAL **CRANES CRANES** 



NUCLEAR



**CRANES** 



**SERVICE** LIFT TRUCKS

MACHINE TOOL SERVICE



Konecranes is a world-leading group of Lifting Businesses™ offering lifting equipment and services that improve productivity in a wide variety of industries. The company is listed on Nasdaq Helsinki Ltd (symbol: KCR1V). With almost 12,000 employees at 600 locations in nearly 50 countries we have the resources, technology and determination to deliver on the promise of Lifting Businesses™.

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