ATLAS COPCO ROAD

CONSTRUCTION



PROCESS OPTIMIZATION

SIXTH GENERATION ASPHALT ROLLERS BRING COMPACTION TO A HIGHER LEVEL

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#01

A MAGAZINE FROM ATLAS COPCO ROAD CONSTRUCTION NO. 1/2016

Atlas Copco

Welcome to Atlas Copco Road Construction at Bauma stand F1108 (outdoors)

It is with great pleasure we welcome you to the Atlas Copco stand at Bauma 2016. More than ever before are we able to show innovative news and offer the best solutions for our customers.

Innovation is always key when we develop something, whether it is a product, a service or a feature. It would be easy to settle for good enough, but we rather ask ourselves how we can move our business a little further. For us, innovation means exploiting new technology and employing out-of-the-box thinking to generate new value and to bring about significant changes. This is not easy, we challenge ourselves and it is sometimes daring to be a pioneer.

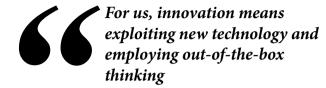
By surveying and having conversations with our customers, we can understand your problems and needs. Having our mind set on innovation brings you a better product which in turn enables you to deliver beyond your client's expectations.

It is not just the invention of a new idea that is important, but it is actually "bringing it to market", putting it into practice and exploiting it in a manner that leads to new products, services or systems that add value to our customers and improve quality. We strongly believe we have succeeded in this and the products we show at Bauma will prove us right.

In this magazine you can read about some of them before seeing them at Bauma: The sixth generation asphalt roller range CC4200 - 6200, the SD1800 citypaver, the CA1400 soil compactor and the gigantic MF2500 feeder with SwingApp. At Bauma you can also try the Dyn@Lyzer simulator or have a look at the new paver features SetAssist and TruckAssist. Adding to this, you will see our biggest pneumatic roller and our large SD pavers with new screeds. There is also a story about a new fleet management system and how a it is used by our customer Heijman's - the system will of course be demoed at Bauma as well.

Our product experts will be at Bauma the full week to give you all information you need. They are also keen to listen to your valuable feedback – and with your help, we will bring innovations even further.

There's always a better way!





Atlas Copco Road Construction @ Bauma MF2500CS with SwingApp **CG2300** SD2500CS with V6000TVH CC1200C SD2500WS with V5100TV CC900 SD1800C **CA6000D** SD1800W **CA2500D** F2500CS with V6000TV **CA1400D** F1200CS **CA1300** Fleet Management CS1400 **CP2700** Demo CC5200 **DYN@LYZER Simulator** CC4200 **After Market**

ROAD CONSTRUCTION

PUBLISHER Anna Stenlund anna.stenlund@se.atlascopco.com PRODUCTION Communication, Road Construction COPYRIGHT 2016, Atlas Copco AB, Stockholm WEB www.atlascopco.com, www.dynapac.com COVER PHOTO: Malou van Breevoort

Unmatched operator comfort with full process control

New Dynapac SD1800 Citypavers



SUPERIOR PAVING QUALITY

To achieve the best paving quality you need to rely on a high-performance screed, smooth material flow and an efficient, powerful drive. All the material flow is now controlled by proportional sensors, providing smoothness to both conveyor and auger reactions and avoiding segregation. To shape the mix, the Citypavers now count on the new V3500, featuring easy and precise adjustments. Additionally, every paving operational function can be controlled by Pavemanager 2.0, present in the SD series, monitoring and giving constant feedback of the paving results. With all this in hand, a perfect mat is easily achieved.

OPERATING COMFORT

The operator's comfort is a top priority for us. We focus on providing an ergonomic, high-end work place. The ergonomic seats are pivotable and are placed in a slidable station, providing excellent visibility. The roof is extendable for extra protection. New dashboards and controls take the operating experience to the next level. The innovative TruckAssist system helps trucks to dock correctly and safely with the paver. Present in the SD series, PaveManager 2.0 control system offers an unmatched experience in paving control for all application situations.

SMART MOBILITY

We know that when it comes to city paving, mobility is crucial. The new Citypaver is quick and easy in every aspect. A series of smart system has been introduced to the new generation to make costs & emission levels

Stable screed design for excellent surfaces for all working widths

Quick set up and convenient transport dimensions

Intelligent control system gives best-in-class paving results

life easier before paving starts. With the new SetAssist, the paver driver now has the possibility to save the position of the auger and screed before moving from one section to the next with one push of a button. Transport is made easy by the convenient dimensions that allows truck transportation even with one set of extensions attached, in a configuration capable of paving up to 4,10 m width. When more width is needed, the new extension's easy coupling system makes the extensions attachment quick and safe.

RELIABLE POWER

The Citypaver has been developed to be the most efficient and modern paver product in the market. This has been achieved by using highly advanced technology in electro-hydraulic controls. The 54kW power provided by the Deutz T3/T4 engine is distributed to the paver functions through a smart, highly efficient system that ensures minimum power loss.

New large asphalt rollers takes compaction quality to a new level

The first generation of Dynapac large asphalt rollers, the CC40, was introduced in 1964. Atlas Copco is now introducing the sixth generation, the CC4200 - CC6200. The machines are extremely operator friendly, offering unmatched ease of operation, excellent maneuverability and highest quality compaction.

Text: David Bennett Photo: Anna Stenlund

Versatile driving position, excellent visibility

When designing the new generation we had, as always, the operator first in mind. The seat and steering module can be swiveled and are slidable from the left side of the roller to the right. This makes it possible for the operator to slide over and see the drum edges in a more ergonomic way.

As an option you can swivel the seat so that the operator is facing fully to the rear, allowing him or her to work with the same good ergonomics on both sides of the roller when moving backwards. This eliminates the limitations of defined forward and reverse working directions.

Together with this option comes the electronic mini-steering wheel that makes it even easier to steer the roller smoothly and accurately, taking the ergonomics and maneuverability to an even higher level.

Simpler controls, more intelligent machine

The new instrument panel and controls were developed with "simplicity" as the key concept. The big touch screen ensures maximum visibility and, for those who prefer, there is a display control which can be used instead. The latest technology simplifies roller operation, ensures optimized handling and thus increases the quality of the compaction job.

The start-up procedure is another example of simplicity. Turn the ignition key, set the forward/reverse lever in neutral and push the start/stop button. The machine intelligence takes care of the rest, including pre-heating, and the engine starts when ready.

Advanced steering gives unmatched maneuverability

Much appreciated by machine operators, Atlas Copco has for some time created offset on its Dynapac asphalt rollers by the unique method of combining articulated steering with a steerable rear drum. Now Atlas Copco has taken it a step further by increasing the offset to 500 mm and using the front drum for offset for even better driving accuracy.

The increased offset to 500 mm gives a very small turning radius when used in combination with the steering hitch. It makes it possible to move a larger portion of the machine mass inwards on the road when compacting weak road edges, thus making the roller more stable. It also increases the surface capacity when making the final static passes to get rid of marks in the mat.

Using the front drum for offset means that the roller operator will



have very good control of the front drum edges and can follow a curb or other obstacles with a high degree of accuracy.

Fast, effective compaction for thin layers

High vibration frequency compaction has long been an important feature on Dynapac asphalt rollers. Modern thin layers need to be compacted fast because they cool off quickly. A higher amplitude will compact fast but might crush the aggregate material.

Emissions and fuel consumption reduced

During the development of the large asphalt rollers the focus has been on sustainability and the working environment. Accordingly, the machines incorporate the latest emission reduction technology, which complies with the regulations in Europe and North America for Stage IV/T4 Final engines. For markets that do not yet have ultra-low sulfur fuel available, Atlas Copco offers a Stage IIIA/T3 engine alternative.

As an option an ECO mode system can be added that will optimize the required rpm, always keeping it as low as possible but still with the correct vibration frequency. The ECO system gives up to 15% lower fuel consumption and a lower noise level.

Advanced water system ensures reliability

All rollers in the range are equipped with Automatic Water Control, a sprinkler timer, full flow sprinkler button, dual sprinkler pumps and dual sprinkler bars. Reliability is further enhanced by three-stage filtering, including a strainer in the fill hole, a filter located close to the pump, and a strainer on each nozzle.



IT'S TIME FOR TELEIJATICS

There is much talk about Telematics and Fleet Management in the construction industry nowadays and we decided to sort things out. We had a chat with Kristof Gijbels, Product Manager Large Pavers at Road Construction, who helped us understand what Fleet Management is and what it does.

Can you please explain what Fleet Management is?

Fleet management is the combination of systems, products and services that enables our customers to get the best return on the investment they made in their machines.

All equipment experiences wear and tear, that can't be avoided. Parts, filters and oils need to be replaced at any given time. But if you do that too soon, you'll be replacing parts and consumables that haven't reached the end of their lifecycle yet, essentially wasting money. If you're too late, your equipment may break down unexpectedly, which is also very expensive. And of course breakdowns always occur when you really need those machines. So the key is knowledge: when do your machines have to have maintenance? And what kind of maintenance? This is where our Fleet-Link solution can help.

There used to be a system called Dyn@Link – what is the difference between Dyn@Link and FleetLink?

Atlas Copco's Road Construction Equipment Division and Portable Energy Division have teamed up and will now launch a common FleetLink platform allowing customers to manage their entire fleet in one portal. Whether it's a compressor, generator, roller, paver or any other equipment offered by these divisions, customers will have access to all relevant machine, service and performance data through Atlas Copco's FleetLink system.

So, FleetLink connects the machines in the field to the office environment...

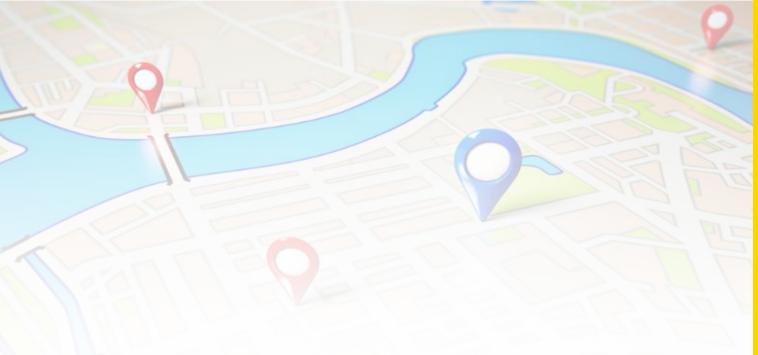
Exactly. The trend in the construction industry is to increase efficiency and productivity. With FleetLink, a manager, team leader, planner, project manager or anyone else with a need for detailed information can simply log on to a secure web page and retrieve all relevant machine data online. Whenever, wherever.

How does FleetLink help our customers optimize their operations?

First of all, the standard FleetLink package records the location of a customer's equipment once every hour — both Atlas Copco made machines and equipment made by other manufacturers. The last known location of each machine is visible on a map in FleetLink online portal. Geo-fences can be defined so that when a machine leaves a certain area, an alert is sent to a predefined e-mail address.

So construction companies can track the whereabouts of their equipment. But what does FleetLink offer in terms of equipment usage?

FleetLink logs the hours each connected machine has worked and the distance they've traveled. So if you set up a maintenance schedule in FleetLink, the system will automatically send e-mail notifications when a machine's next servicing is almost due. Also, the maintenance overview in the FleetLink portal quickly shows the service status of every machine in the fleet, helping our customers to plan maintenance of all their equipment in line with the workload. Downtime is minimized and unexpected breakdowns and costly business disruptions are avoided.



This is all part of the standard FleetLink package. What else is there?

There are two more packages called FleetLink Advanced and FleetLink Pro. Let's have a look at FleetLink Advanced first. On top of the features of FleetLink, FleetLink Advanced offers several interesting additional features supporting a full optimization of the machine park. It registers the equipment location every minute and logs a lot of extra machine parameters including: fuel consumption, engine load and coolant temperature.

This allows customers to analyze fuel consumption per hour for instance, or compare the performance of different machines. Other things that help them get a grip on their operations are productivity analyses, based on operating and idle times. For example, you can see that a specific compactor is standing idle at a time when you wouldn't expect it. With this information you can talk to the operators on the ground, find the cause, and come up with a solution. Perhaps the amount of idle time can be reduced by making some planning changes. Without the data provided by FleetLink Advanced you wouldn't have known about the problem in the first place.

How can FleetLink Advanced provide such detailed information?

Well FleetLink Advanced interfaces with the CAN-Bus systems of the Atlas Copco equipment. An advantage of this, is that it also feeds FleetLink Advanced with the equipment's failure codes and warnings. For instance the diesel level can be tracked through the FleetLink portal. FleetLink Advanced also captures and displays the machines' warning and errors in the online portal. By using this remote diagnostic feature, a maintenance expert can spot problems without having to drive to the jobsite all the time. He can also use this comprehensive information to plan the required maintenance or repairs in advance to minimize downtime.

"Whether it's a compressor, generator, roller, paver or any other equipment offered by these divisions. customers will have access to all relevant machine, service and performance data through Atlas Copco's **FleetLink** system."

Is there one more package available?

Yes, FleetLink Pro is the most extensive package that we offer and especially useful in combination with for example our asphalt pavers. On top of what FleetLink Advanced offers, it includes paving parameters like screed width and layer thickness values, all linked to the geographical location of the paver. In case of Asphalt Pavers, FleetLink Pro also offers an integrated interface with BPO ASPHALT, a construction process optimization tool that allows contractors to optimize planning, execution and documentation of construction projects.

On a slightly different note, is the FleetLink online portal flexible for the user?

Yes it is. It's very user-friendly actually. The FleetLink portal can be customized for different measurement units, map settings and notification frequency, depending on a user's personal preferences and requirements. There are also various filters and personal settings for graphs that can all be adapted to meet a user's own requirements. This makes it very easy to learn and use the FleetLink web portal.

If someone uses FleetLink and sees that a machine needs maintenance or repairs, the next step would be to order parts or get a service technician on-site...

Yes, we offer various forms of support – not just for customers who use FleetLink, but for the entire Atlas Copco community. Atlas Copco users who want to do their own maintenance can simply go online and order parts and consumables through the online Atlas Copco shop. They can immediately see the stock availability and the prices at any time they want, 24 hours a day, 7 days a week.

Thank you Kristof. This has been very interesting.

PROCESS OPTIN



MIZATION



Time is money when it comes to resurfacing a runway at Amsterdam's busy Schiphol airport. Project leader Heijmans, a nearly century-old Dutch-based construction company, went looking for a state-of-the-art resource management system, and it found one that works perfectly with Atlas Copco equipment. The system results in more efficient logistics, less waste and a smaller environmental impact.

Text: Jan Tazelaar Photos: Malou van Breevoort

A damp and foggy morning at Amsterdam's Schiphol airport in the Netherlands. Some of the five runways are in normal use, but one of them shows a different kind of activity. At a slow but steady pace, a small army of bright yellow machines is repaving the surface. The project is being carried out by Heijmans, one of the largest road-building contractors in the Netherlands.

The job of refurbishing the runway is scheduled to take seven weeks. It includes stripping the top layer, resurfacing the entire length with asphalt and reinstalling gutters and runway lighting. Time is money, in this industry as in others, so road builders are constantly seeking to streamline and modernize their operations.

Peter van Hinthem is Innovation Manager Roads at Heijmans. "Since 2010 we have constantly been upgrading aspects of our business," he says. "In 2014 we finalized a navigation system for road rollers. Next we turned our attention to the logistics chain." He and his team went searching for any available resource management systems, and they found three candidates. One of those was BPO ASPHALT, a software solution developed by the German company Volz Consulting (BPO stands for Building Process Optimization). Heijmans decided to initiate a test run of the software.





A comprehensive solution

BPO ASPHALT delivers a comprehensive solution for planning projects, allocating resources, calculating material requirements, following up on projects in real time, monitoring truck locations, communicating and handling and change management. It also generates reports for later reference. The system is web-based, meaning it can be run on tablet PCs, iPads and smartphones. BPO ASPHALT creates a totally transparent platform by which supervisors on site, drivers of asphalt delivery trucks and staff at the asphalt plant are constantly kept informed about the progress of the work. They can communicate with one another and make last-minute adjustments.

BPO ASPHALT takes its cues from sensors on the road-paving equipment and from GPS receivers on the delivery trucks. This enables close monitoring of logistics and of quantities used, which in turn facilitates just-in-time delivery of asphalt on site. As van Hinthem explains, this is a crucial advantage of the program. "The asphalt leaves the mill at a temperature of over 150 degrees Celsius [300 degrees Fahrenheit].

For a smooth operation, it is essential to process it as hot as possible. If the asphalt cools down to below 80 degrees Celsius [175 degrees Fahrenheit], it becomes useless. So waiting time on site should be kept to a minimum. And since the sensors tell you exactly in real time how much asphalt is being used, you can make on-the-spot adjustments of the amounts ordered, so the delivery of expensive surplus quantities can be avoided."

User-friendly, flexible, versatile

Atlas Copco has established a cooperation with Volz Consulting, the company behind BPO ASPHALT. "We decided early on to leave the development of software to specialists and work with them," says Kristof Gijbels, Product Manager Large Pavers at Atlas Copco CR. "This has resulted in a very user-friendly, flexible and versatile system." Atlas Copco road construction equipment works perfectly well with BPO ASPHALT, and if required it can be delivered with all the necessary sensors, including a server-to-server connection from Atlas Copco's Dyn@Link fleet management system.





Heijmans has been testing BPO ASPHALT for several weeks now, and van Hinthem is pleased with the initial results. "Since 20 years' warranty on pavement is not uncommon any more, it is getting essential to be able to trace the origins of any given patch of asphalt," he says. "Moreover, quality is more important than ever, since construction contractors will nowadays be fined for any traffic jam caused by extra repair work made necessary because of a flawed job."

Quicker turnover, lower costs

Obviously it was time for the industry to beef up its logistics management with a modern solution, and some major players have successfully worked together to deliver one. "The new BPO ASPHALT software reflects our ambition to provide the best possible product for demanding end customers," Gijbels says. "With BPO ASPHALT, Volz Consulting has created a software tool that ensures more efficient logistics, less waste and therefore less environmental impact, a better and more consistent quality and a better traceability, which all translate into quicker turnover times and lower costs."



Fast facts

Project Buitenveldertbaan

Location: Schiphol International Airport,

Amsterdam

Job: Total runway makeover

Contractor: Heijmans

Duration: Seven weeks, working 24/7

Dynapac equipment used: Two SD2500CS pavers with a V5100TVE screed, Moba sensors and Dyn@Link fleet management system for use with

BPO ASPHALT software.

Heijmans is a listed company that was established in 1923 and has grown to be one of the leaders in its industry in the Netherlands, Belgium and Germany. The company has more than 6 500 employees and had revenue of 2 billion euros in 2015. Its Roads Division operates a fleet including pavers, road rollers and other road construction equipment. About 40 percent of it is Dynapac equipment.

Dynapac CA 1400 features

High static linear load in a compact format



The Dynapac CA1400 soil compactor is a vibratory roller designed for compaction operations in pipe trenches, compacting roads, streets and parking lots. Due to the small size and exceptional maneuverability, the rollers are also well suited for compaction on large building foundations and industrial construction sites and in cramped spaces in connection with refilling work. The rollers are also suitable for repair work and gives good maneuverability even on very steep slopes. All types of supporting and reinforcement courses can be compacted.

Both the D and PD versions have drum drive, the PD equipped with pads and especially suitable for the compaction of silt and clayey soils. The PD version can be equipped with levelling blade and the D version with pad shell.

TWO AMPLITUDES AND TWO SPEEDS

Compaction width is 1676 mm (66") and static linear load 20 kg/cm (112 pli) giving the ability to compact sand and gravel down to 50 cm (20"). Two amplitudes, high at 1,7 mm (0.067") and low at 0,8 mm

(0.032"), makes the machine versatile and suited for all supporting and reinforcement courses. The PD version can compact silt and clay at a depth of 45 cm (18").

STAGE IIIB/TIER4FINAL ENGINE WITH ECO AS STANDARD

Machines are equipped with Kubota Stage IIIB/ Tier4final engine at 55 kW (75 hp), latest emission standard and ECO is standard. This means low fuel consumption and low CO2 emissions and also a very low noise level at all times. The engine is transversally mounted to get perfect service access standing on ground and air inlet for both combustion air and cooling air is high located to minimize dust intake. A 12 volts outlet is located in the engine compartment to facilitate service even during night operation.



Dynapac MF2500 - Mobile Feeder with SwingApp

SwingApp – unique & innovative!

The Dynapac MF2500CS mobile feeder features a high performance conveying system that can empty a truck in less than 35 seconds! Being a 2.55 m wide feeder, the Dynapac MF2500CS is easy and cost-effective to transport, with no special permission needed.

SwingApp for maximum flexibility

Equipped as standard with a short conveyor, the Dynapac MF2500CS mobile feeder can also work with an add-on SwingApp. The SwingApp transforms the Dynapac MF2500CS into a feeder suitable for offset feeding application; feeding two pavers side by side, feeding one paver from a different lane, fill medians etc. The SwingApp conveyor can swing 55° to both sides presenting a best in market maximum feed capacity of 2000t/h.

SwingApp - saving cost

Innovative design helps to keep the investment costs low as the SwingApp can transform a Dynapac MF2500CS to an 'offset feeder'. The same SwingApp can be mounted on any Dynapac MF2500CS allowing optimal fleet management. Faster reaction time to various jobsite requirements offer a huge advantage thanks to a mount / dismount time that is under 45 minutes!

Full control

The Dynapac MF2500CS operation is fully automated by steering, distance and feeding sensors. The new 'platform lift' option gives the operator excellent visibility, especially while working with the SwingApp mounted on the DynapacMF2500CS.

Fast facts MF2500 w SwingApp

UNMATCHED FLEXIBILITY

AMAZING PRODUCTIVITY

LOW COST OF OWNERSHIP

SIMPLE OPERATION

EASY MAINTENACE

Save energy and fuel in latest Dynapac mid-si

EFFICIENCY

Atlas Copco Road Construction Equipment is currently introducing a new range of mid-size Dynapac soil compactors, the CA2500 - CA3500. These machines incorporate "Efficiency Eccentrics", a patented system of optimized eccentric elements, and are equipped with Stage IV/T4 Final engines with ECO Mode. In combination these features offer a substantial savings in energy and fuel, while reducing the impact of machine operation on the environment.

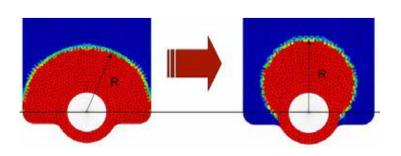
The Dynapac CA2500 - CA3500 have all the advanced features of Atlas Copco's fifth generation of Dynapac CA single drum vibratory rollers, but with a key difference. The CA2500 - CA3500 models are equipped with "Efficiency Eccentrics".

Same high performance, lower operating costs

Atlas Copco is the first to introduce the "Efficiency Eccentrics" system to the market. In the new soil compactors the system of eccentric elements has been optimized by moving the weight to the right side of the axle, so that less weight counteracts the movement at start-up.

The result is impressive. Almost 11 kW less power is required to initiate the vibratory action, reducing energy consumption at start-up by 50% and thus using less fuel. This lower power requirement has also made it possible to reduce engine sizes yet still offer the same compaction performance as machines equipped with more powerful engines.

The engines in the CA2500 and CA3500 have outputs of 89 kW and 97 kW, respectively, and incorporate the latest emission reduction technology, complying with the regulations in Europe and North America for Stage IV/T4 Final engines.



Almost 11 kW less power is required to initiate the vibratory action, reducing energy consumption at start-up by 50% and thus using less fuel.

ze soil compactors with

ECCENTRICS



ECO Mode gives up to 15% lower fuel consumption The Stage IV/T4 Final engines are equipped with the Dynapac ECO Mode fuel saving system that minimizes fuel consumption and CO2 emissions by ensuring that the roller does not consume more power than necessary at any time. This gives up to 15% less fuel consumption and a lower noise level.

Together, optimized engines with the same compaction performance combined with ECO Mode offer substantial savings in energy and operating costs, while

contributing to a "greener" soil compactor and sustainable productivity.

Same advanced features

Like the other fifth generation mid-size machines the Dynapac CA2500 and CA3500 feature cross-mounted engines, Active Bouncing Control (ABC), and advanced compaction monitoring. Extremely operator friendly, they offer unmatched ease of operation, excellent maneuverability and highest quality soil compaction.

LAUNCH PAD



LARGE PAVERS - PROCESS CONTROL & COMFORT

- Smooth material flow reduces segregation

 TruckAssist, Safe Impact System, low dumping height, enlarged material tunnel, optimized auger drive, hydraulic front hopper flaps (Plus)
- Unmatched operator comfort with full process control
 SetAssist, slidable platform, slidable and tiltable operator
 console, height adjustment of operator console, weather
 house, optimized noise protection, improved visibility
- Efficient drive concept reduces operating costs

 EcoMode and VarioSpeed (Plus), thermostatic controlled fan, heavy duty front wheel drive (option), hydrostatic brakes engine emission stage IIIA (T3), IIIB (T4i) and IV (T4f)
- Intelligent control system gives best-in-class paving results PaveManager 2, remote controls with integrated levelling software, FleetLink



DYN@LYZER - THE NEW COMPACTION ANALYZING TOOL

Dynapac's experience in Continuous Compaction Control (CCC) or Intelligent Compaction (IC) dates back to the late 70s. Since then we have offered our customers the opportunity to control the compaction work in real time and to document the completed work for improved quality control.

We offer the same advanced levels of control and documentation on both singe drum vibratory rollers for soil compaction and tandem vibratory rollers for asphalt compaction. We call it DYN@LYZER.

SCREEDS FOR ALL NEEDS

■ Dynapac has improved its well-known screed design. The screed side shields now have fully integrated wirings and are equipped with power outlets on the side shields, as well as convenient transport handles. Atlas Copco continues to offer a wide variety of side shields with this new design and has both gas and electric, standard and hydraulic side shields available.





ROAD MILLING TOOLS

■ Competitively priced milling bits that fits all types of milling machines regardless of brand.

Milling tools are sold by box and pallet.

A reliable choice with great performance