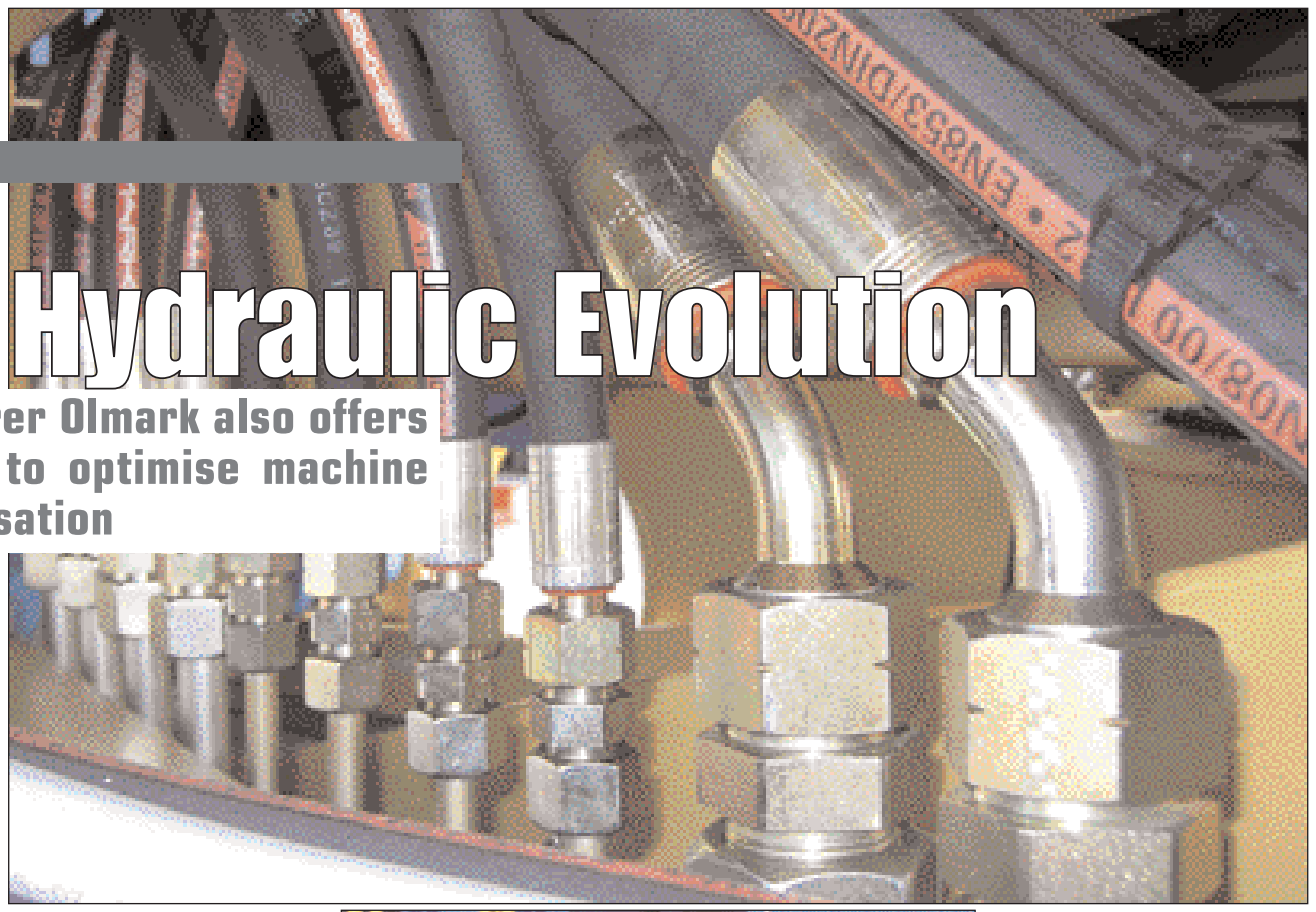
PARTS, ACCESSORIES and COMPONENTS

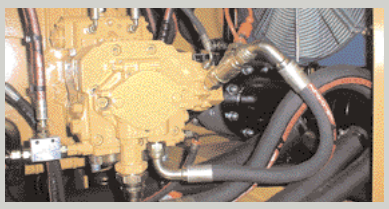


Hydraulic Evolution

Hydraulic component manufacturer Olmark also offers Companies service consultancy to optimise machine equipment layout and industrialisation

Hydraulics is becoming increasingly important on jobsite machinery and tooling, as for industry in general. Today, after years of evolution that started in the aftermath of WWII when technology found a host of different applications, the moment has come to further increasingly improve hydraulic system projects for longer system life and reliability.
This is a well-known fact to construction machinery manufacturers. They used to leave hydraulics at the end of their production cycles once upon a time but nowadays develop hydraulic systems in parallel with production cycles, with great attention starting from the design stage.
Among the Italian Companies leading the hydraulic component production business, **OLMARK** stands out as a hydraulic circuit designer and manufacturer and has been on the market for 25 years. Its series product range includes radiused medium and high-pressure hoses, 5 to76mm diameter shaped piping, connections and many special items designed and built to specific Customer drawings. Olmark has held ISO9001 Quality System and ISO14001 Environmental Impact Production System Conformity certification for years now. The Lentigione, Reggio Emilia Company developed by privileging quality of a complete product range, specialising in Customer consultancy in proper component installation and by implementing reliable systems with faster installation and consequent optimised end product industrialisation. This means all-new hydraulic system design jointly with Customer designers added to existing plant optimisation. Ibc followed Olmark Engineering expert Mirko Violi in his analysis of the Officine Meccaniche di Ponzano Veneto, Treviso Apollo crusher, identifying some improvements to be introduced onto the machine.
Five years after excellent service, the Veneto Company's medium to high range model is ready for restyling also thought out to open up the US market doors.
"The relationship grew as time went on – OM Marketing Manager Luca Ortoncelli told us – since Olmark has turned fron a mere component Vendor into a Partner capable of offering such technical know-how as to enable constant evolution of our machinery systems. To date, this cooperation has enabled us to rationalise production and implement custom-ma-

Concrete anywhere and anyhow

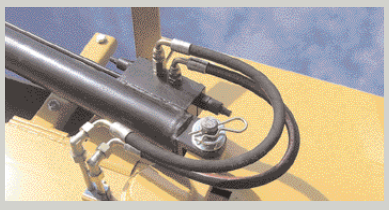


Less adaptors

The picture shows the suction ducts of a Lindo piston pump mounted with two adaptors. The objective is to eliminate adaptors to improved hose to pump connection. In fact, the greater the number of adaptors, the higher the chance of leakage; assembly times are also longer. The same picture also shows a nearly parallel connection duct with an unsuitable bend leading to tube distortion. Installation of a rigid connection is advisable in this case.

Remove elbows

Here we can see two rigid pipes connecting two pressed elbows located at 90° to make flow continue along two flex hoses. We instead propose installing 90° shaped rigid pipes connected to the hoses after the curve. This eliminates the use of pressed elbows and offers an economic advantage, faster two-hand installation and less possible leakage points.



A pressed connection is better

Here we see two hoses reaching a lock valve at the base of a hydraulic cylinder. The outer hose is provided with a column to make the two hoses run parallel. We advise using a pressed connector on the longer hose for direct connection to the valve. In essence, eliminate the column and keep the hoses one above the other. Also, the rigid pipe could be bent 90°at its bottom for direct connection above the hose and do without the 90° pressed connection.

The importance of direct connection

In this situation we can see the intermediate junction nipples inserted between the rigid pipes and the flex hoses. Olmark recommends direct junction of DIN 24 rigid sealed connections with the hoses, thus eliminating components of the one same type.

The flange disappears

Here we note that the hose is connected to the square valve by means of two intermediate connections (a column and a flange). It would be simpler to have a flanged connection directly to the hose group for direct connection with the valve. The same also holds true for the solution seen in the second picture.

Too many adaptors

In this case we see return discharge connection directly to inside the square filtre, using as many a four adaptors for connecting the flex to the filtre. It would be better to use a direct junction between the hose and the connection, by means of a shaped pipe pressed directly onto the hose, to do without the various large size and costly adaptors. Eliminate connections, increase system potential seal and faster assembly with less parts to keep in stock

colophon

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de systems for our units, especially regarding the string structural stress a crusher is submitted to."
"We worked hard – comments Olmark Marketing Manager for Italy Roberto Prandi – to fast bring us to significantly increase our presence in the construction equipment and earth moving machinery business. An important role in all this was played by the know-how and expertise of our technical personnel and the services Olmark offers its Customers. We have differentiated from our Competitors in the hydraulic component business both offering skill and services. We do not just supply connection, but propose complete made-to-Customer measure turnkey system solutions. These days, any modern hydraulic system must be designed to ensure shorter assembly times, limited product code identification parts management and targeted at achieving top performance levels by using high quality materials."
"To develop a new plant – Roberto Prandi went on to say – we first complete an advance study of the machine or project, then we analyse the entire system starting from the hydraulic diagram to check operating pressure, hose, piping and connection sizes based in specific individual flow, selection of the moist suitable threading before setting the position of the various actuators inn addition to studying the best overall size pipe and hose routes. We only start making up a prototype after completing examination of these items jointly with Manufacturer's Design and Engineering. We are supported in all these activities by our in-Company Testing and Experimental Department, where each component is submitted to severe cycles and tests before production is allowed to start. We have added a new CAD 3D technical programme for our design activities. Cooperation with OM is very constructive for Olmark, as we are faced with a Company featuring very diversified production to satisfy all jobsite requirements. It manufactures bigger machines than the Apollo, smaller and more versatile ones and is now looking at marking its products overseas and on extra-European markets."
From the words of these two gentlemen, one can easily perceive how much and well the relationship between the two Companies has developed and how great their mutual professional respect is. The moment has now come, however, to give the floor to Olmark's technician Violi to introduce the Apollo project and then actual touch some of the improvements to be introduced.
"We equip just about all OM machines and the Apollo is particularly interesting as it is a rather large unit fitted with a complex hydraulic system. Our Customer asked us to come to optimise the exiting system, particularly minimise the number of connections to increase overall machine reliability. We therefore have to identify all possible evolution areas and find the best solutions to also industrialise the Manufacturer's assembly process with production costs in mind. Then we have to understand which are the most stressed components by analysing operating pressure and delivery of this type of machine, after which we have to calculate proper dimensioning of components, which could be a connected flex hose, a rigid pipe or an individual adaptor. This is why we suggest the Customer should install a sealed product capable of ensuring system seal even in the presence of the stress detected. This is why the DIN 24 sealed connection system adapts perfectly well to the application. The Din Coror system can be used to connect a hose to an adaptor, a hose to a pipe and a pipe to an adaptor. Sealed connectors enable immediately efficient hydraulic system seal requiring no further tightening even after unit start-up. The proper choice of connection and pipe and hose components enable the Customer to optimise al connections to prevent over-sizing leading to money being wasted, too much machine operational space occupied and logistic storeroom management issues."
To summarise, Olmark's activity in evolution of the hydraulic system installed on the Apollo is based on the two theoretical approaches of industrialising the installation process with a specific product to save time and material ordering from the Vendor with consequent cost savings and eliminating the potential defects that could cause oil leakage caused by strong machine vibrations and high performance.
An excellent system also helps reduce hydraulic oil temperature. So, the basic issue on which to work are temperature, delivery and pressure.