

AB Motala Verkstad produces technologically advanced mechanical products independently and is a partner, developer and manufacturer for national and international customers. The range consists of railway vehicles, axles, pumps and moving bridges as well as servicing. Motala Verkstad is currently one of Sweden's leading companies within the construction, servicing and repair of moving bridges.



## “The Expander system should be part of the Bridge standard”

Motala Verkstad has manufactured approximately 800 moving bridges in Sweden since it started in 1822. The latest is a roller bridge in Malfors, Ljungsbro, which was opened at the beginning of 2006. “But it is not enough to just make bridges”, says Project Manager Sören Tegehed, “they require regular maintenance! More often than not this work was time consuming and difficult, but this is no longer the case since we became aware of the Expander system!”

The railway bridge over the Göta Canal in Norsholm, built in 1989.

“The 8 ton main lift cylinders must be renovated, as a normal maintenance procedure, approximately every 15 years. The reason for the work was that Banverket had discovered that the main lift cylinders were leaking oil. We received the task of examining and remedying the fault”, says Sören, “and after removing the shafts we found gaps in both cylinder mountings. More seriously, the gaps were so large that they could not be repaired using a conventional shaft on any of the sides.”

The Expander system eliminated the gaps.

“One solution was to replace the entire cylinder mounting”, says Sören, “but due to time and, above all, costs, this was not a realistic option. During the last 10-15 years we have solved similar problems using the Expander system with extremely good results. A system that is based on an expanding sleeve with the ability to fill the gap, in principle, regardless of the degree of wear.”

**Crevice corrosion is not a problem!**

“During almost every repair, like the one in Norsholm, we are faced with the problem of crevice corrosion that makes removing a traditional shaft both time consuming and expensive. With the Expander system the fasteners are slackened off; the shaft slides out for inspection and



corrective action – and then reassembled in a corresponding easy manner.”

**Time-saving – an extremely important factor**

“Renovating a canal bridge, like the one over the Göta Canal, means that, as a rule, there are no additional problems other than the usual traffic. Railway or road traffic is not affected as much when the bridge is lowered”, says ▶

Sören, "and carrying out maintenance in the winter means we avoid affecting the tourist boats. But other routes that are open all year round, such as around Lilla Edet over the Göta Älv for example, means that we do not get much time to carry out maintenance work. The Expander system, with its quick and easy features, has therefore been the obvious choice for us, to use and recommend, for more than 10 years." "This naturally saves a lot of time", says Sören, "particularly at initial removal".

**The Expander system covers all dimensions.**

"The shafts in Norsholm were 300 mm in diameter and 460 mm in length. The large dimensions were not a problem, the bolts came complete and ready after a few weeks and, as far as I know, Expander caters for all dimensions."

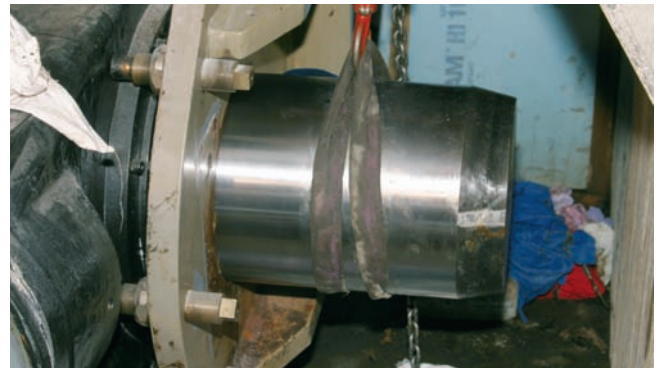
**"The Expander system should be part of the Bridge standard!"**

"My feelings are that the Expander system should be a standard; that the system should be part of the Bridge standard. The regulations that apply today only regard material properties. The Expander system introduces an entirely new way of thinking; a system solution that makes operation safer, maintenance work easier and, not least, saves a lot of money! We will have to wait and see what happens with the Bridge standards. In the meantime we will continue to work with the Expander system as an invaluable 'replacement part'." concludes Sören Tegehed.

## From traditional shaft to Expander® System



The existing shaft is removed in order to repair the hydraulic cylinder. Double sided gap in the mountings is discovered. Alternative corrective action is to replace both the cylinder mountings or replace the shaft with the Expander system.



The Expander system is delivered and the 260 kilo shaft is lifted into position for installation.



The hydraulic jack slides the shaft into position.



The Expander system is installed. When tightening for the final time, the conical sleeves expand and fill the gap in the mountings on both sides.



10 year function warranty on Expander® System

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