



Lovemore Bros.

MACHINE MOVING AND RIGGING CONTRACTORS

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Simply getting on with it.

Stainless steel tanks – for Plascon tank farm

A delicate operation – the tanks had to be lowered vertically between existing tanks



Lovemore Bros' Heavy Rigging Division recently delivered a consignment of 21 stainless steel tanks to a tank farm which is being commissioned at Plascon, the paint specialist company, at its premises on South Coast Road, Durban.

The stainless steel tanks which were manufactured in Pinetown by LHL Engineering form part of a large tank farm and will contain resin and emulsion for paint production.

Simon Griesse, Heavy Rigging Manager at Lovemore Bros said the tanks were uplifted from LHL's manufacturing facility in Pinetown and stored at Lovemore's yard before delivery to Plascon was required.

"In total there were eleven 60m³ tanks, six 40m³ tanks and four 30m³ which had to be taken to the tank farm. At the site we lowered them onto plinths to allow the fitters and turners to carry out the piping and subsequent commissioning," said Griesse.


He pointed out that the bigger tanks were rated as "Borderline Abnormal" but below police escort size meaning that Lovemore Bros' own escort bakkies were used in the transportation.


Lowering the large tanks into their vertical position on site involved some intricate top and tail rigging work using two cranes, but Griesse said this type of work is what

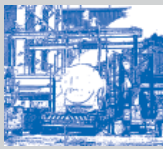
Lovemore Bros specialises in and the job was carried out without a hitch.

Malvin Govender, Project Engineer at Plascon said the workmanship of the Lovemore team was most impressive. "This was a delicate task because of the complexity caused

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 Lovemore Bros fabricated a permanent maintenance gantry in order to cost-effectively rebuild a rusted diffuser head at a Zimbabwe sugar mill **2**

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 Lovemore Bros moved a massive power generator plant 560 km to Swaziland where they rigged and installed it **4**

by existing tanks in the vicinity. It required some very accurate rigging.

"Lovemore Bros have certainly shown why they are the leading rigging company in the Province and we look forward for future dealings with them," he said. ■



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– Malvin Govender, Plascon Project Engineer*

Rigging

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Zimbabwe operation – Mechanical Division rebuilds diffuser head

... but first they cut expenses by fabricating a permanent maintenance gantry

The diversity of Lovemore Bros' Mechanical and Projects Division was called upon to strip out and rebuild the drive head of a diffuser at Hippo Valley Sugar Estate Mill in Zimbabwe. The main columns and support structure had rusted and were in danger of collapsing from both its own weight and the forces imposed when in operation.

The mill had been undergoing an extensive refurbishment programme to rehabilitate it to its former productive form.

The support structure is required to carry the loads of the 12,6 ton press water drum, 5,8 ton kicker and 25 ton headshaft as well as the steel body and chains. The initial option was to rig out these three large objects, using a minimum 200 ton crane which would need to be brought in from South Africa.

This would have required two separate site establishments, one for the removal and

one for the reinstallation. Lovemore Bros proposed the cost saving option of supplying and building a permanent overhead gantry structure, capable of supporting the loads individually. This alternative method and assessment was put forward to Hippo Valley Estates and SiVEST, a Durban based project management company, who at the time were project managing the refurbishment programme.

"The decision was made to build and suspend from the gantry structure, which we supplied and built as a permanent structure so that it could be used for future maintenance projects. Using the chain blocks and standard rigging gear, we raised the PWD, headshaft and kicker, cut out and removed all side walls, internals and support skeleton structure, then replaced and rebuilt the entire drive end," said Hugh de Borchgrave

who heads the Mechanical and Projects Division.

Replacement steel was supplied in green form, from both South Africa and Zimbabwe, and together the team comprising SiVest Eng, Hippo Valley Estates Machine Shop and Lovemore Bros Rigging and Boiler Making, developed, profiled and built a new diffuser structure on site.

Special mention must be made of the joint team effort of all personnel involved, resulting in the completion of a job that required imagination, planning and commitment, and resulted in huge cost savings.

The diffuser was started up again after completion and ran continuously from the initial start-up without any problems. ■



27 ton condenser – moved by Lovemore to Nestlé's plant in Estcourt

The local rigging department of Lovemore Bros had their work cut out recently when they had to transport a massive condenser weighing 27 tons with a diameter of about two metres and a length of 11 metres from the manufacturers in Durban to Nestlé's plant in Estcourt in the KZN Midlands.

The condenser which is to be used for Nestlé's new coffee section proved to be a highly challenging task because the 220 ton

mobile crane from Elcon Crane Hire had to be manoeuvred inside the yard and reach over the wall to hoist the condenser inside Nestlé's premises.

"Our rigger Roland Rungasamy had to use his considerable skills for the task, but he did an exemplary job that was applauded by both Nestlé's staff and his colleagues, said Seelan Govender who was in charge of the project.

In fact, said Seelan, Nestlé's technicians were so impressed that Lovemore Bros was again contracted to carry out another rigging job this time to position the piping around the condenser. This entailed closing off the road after a police permit had been secured and lifting the pipes 50 to 60 metres upwards in order to lower the piping into place. ■

Tank rigging – A delicate operation at the Ola Ice Cream factory

The suspended ceiling and roof sheeting over the tanks had to be removed first

Just in time to beat summer's heat, machine mover and rigging specialist Lovemore Bros replaced a number of giant stainless steel mix tanks in an operation that required superb rigging skills at the Ola Ice Cream factory in Queensburgh, Durban.

The delicate manoeuvre necessitated replacing the four aged and smaller mix tanks with new larger ones that the rigging team only barely managed to squeeze in between the iron roof girders on one side and catwalks on the other.

Exacerbating the problem, the crane's reach had to be extended with a fly jib making it harder to lower the tanks into place and ensure that the process was done without so much as a scratch on the tanks' fragile sides.

According to Luke Smith, Technical Consultant at Lovemore Bros, the project called for the removal of the double-sided mix tanks because the inner skin had started leaking.

"Before commencing with the project, the suspended ceiling and roof sheeting above the tanks had to be removed. We then called on the expertise of Vaughan Billson, Lovemore Bros' Rigging Engineer to assess the factory's clearances using the *Autodesk Inventor* three-dimensional software."

The software models the building and tanks to see where the obstacles are and how

they can be overcome. We call on his expertise every time a precision assessment needs to be made."

One by one the four tanks were removed and lowered onto Lovemore Bros' low bed trailers using the top and tail method to lay them on their sides onto cradles. They were too high to transport in the upright position.

The new tanks, weighing about three tons each and measuring about a meter higher and half a meter wider than the previous ones made the replacement job a lot trickier.

"We literally had only a few millimeters between the metal roof trusses on the one side and the catwalk on the other. But our prior assessment and measurements proved it could be done and we did it. There was a heart stopping moment though. While we were busy lowering the last one the wind started to pick up, but in the nick of time we were able to complete the job satisfactorily," added Smith.

Lindani Ncwane Project Engineer at Ola Ice Cream said the installation of the tanks was a job that required some very delicate precision work. "It was carried out exactly according to plan and we were very impressed at the professional manner in which it was done," he said. ■



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– Lindani Ncwane, Ola Project Engineer

Transporting, rigging and installing a power generation plant in Swaziland is all in a day's work

Lovemore Bros recently won a contract from project management company SiVEST for the transportation and installation of a condenser, turbine and generator to provide the power requirements for the Royal Swaziland Sugar Corporation (RSSC) mill at Simunye, in the country's north-eastern lowveld.

RSSC is one of the largest companies in Swaziland employing more than 3 500 people and producing two-thirds of the country's sugar. The power generator provides power to the Estate by burning bagasse, a sugar by-product.

Phase one of the project, involved loading the 43 ton condenser directly onto a Lovemore 60 ton lowbed from the vessel at Durban harbour and transporting it along the 560 km route to the mill. There it was rigged into position onto plinths 3,5 meters above

ground level, using a 200 ton LPG powered mobile gantry.

"This fairly complex task was achieved by purpose-building a cross travel system which allowed us to traverse the condenser load with the gantry beams at 10 meters from the initial lift position off the lowbed to the final position. The control achieved by the gantry enabled the condenser to be positioned within a 5mm tolerance in all three axes," said Hugh de Borchgrave who heads the Mechanical and Projects Division at Lovemore Bros.

Phase two required loading the 65 ton generator onto Lovemore's 100 ton lowbed at Durban Harbour while the turbine and its baseplate weighing 49 tons, was offloaded onto a 60 ton lowbed and ferried to Simunye.

Working in conjunction with the civil engineers, the 3,5 meter suspended concrete slab

on which the generator, turbine and gearbox was to be placed was also purpose-built. Two open "runways" accommodated the same 200 ton gantry tracks at ground level allowing the gantry to suspend the generator and turbine, "travel" 24 meters and lowered onto its final resting position on the slab within a 10 mm tolerance.

"We believe that the project was successful mainly due to the cooperation and contributions of all parties concerned and the 'homework' we all put in. This included creating a three-dimensional computerised AutoCAD rigging study in advance, selecting the correct lowbeds for both transport and site access, and the use of sound rigging practises and equipment," added de Borchgrave. ■



Cooling spray ponds – refurbished at a Zimbabwean sugar estate

Lovemore Bros Mechanical division was invited by SiVest, an Umhlanga Rocks based project management company, to be involved in the rehabilitation of spray ponds and flash tanks during the, rehabilitation program run at Hippo Valley Sugar Estates, Zimbabwe.

The first part of the project involved the setting out and flange bolting of 720 m of new stainless steel spray pond piping, ranging from 700 mm to 75mm diameter piping, fabricated and supplied by a Durban based company. The purpose of the spray ponds is to cool water used in the mill process, which is pumped hot from the mill to the ponds, cooled by aeration and returned to the mill ready for use.

The second part of the project involved stripping out five flash tanks from within the main mill building on ground level. This was a pure rigging operation involving the use of mechanical chain blocks, forklift and trained rigging staff, all of which was provided by Lovemore Bros. These were then replaced by new tanks of similar dimensions which were again fabricated and supplied from the Durban based company.

The project was required to be completed within a 12 day window, which the team managed to achieve, thanks to the collective efforts of SiVest and Lovemore who worked together on the project. ■

