



Railway Maintenance...Sun keeps things moving...



Typical ballast distribution application showing operator remote control

Moving freight by train is big business, not only because of the giant sized equipment but also because the ability to transport large amounts of weight at one time, means this is one of the most economical ways of moving goods used today.

Making sure the trains run reliably, and safely, means the rail tracks need to be regularly inspected and maintained. Specialist rail

maintenance equipment shown here is used to carry a material known as ballast, (crushed stone) used to form the track bed, upon which the rails and the railroad ties are laid. Ballast is also packed in and around the ties, bearing their weight, and allowing water drainage while keeping vegetation away from the track.

As trains travel the tracks, vibration causes the ballast around the rails to loosen and move over time, requiring the it to be replaced. Track maintenance cars are used to carry the new stone material to the track area needed, and then use a series of hydraulically operated 'gates' under and on the side of the car to distribute the right amount of crushed stone exactly where needed.

Sun has recently been involved in an innovative solution that needed to be compact in size, hydraulically efficient, lightweight, straightforward to maintain and improved in several general areas, making the new version of the ballast car more reliable, safer and more operator friendly.

To further simplify the system, solar cells were mounted on each ballast car side panel to locally recharge 24VDC battery packs that supply a heavy duty DC motor connected to the pump in the hydraulic power unit.

Market Speak...

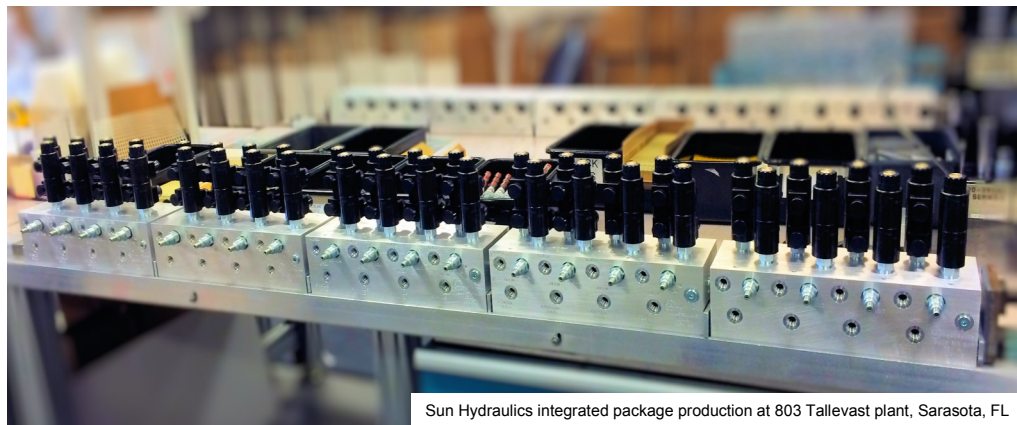


Ballast car mounted solar cell panel for recharging 24VDC battery pack

This green, simple self-contained, charging low-maintenance system removes the need for auxiliary airlines, long electrical cables with connector failure points or high maintenance engine driven generator sets to provide the electrical power needed to control the hydraulic gate systems.

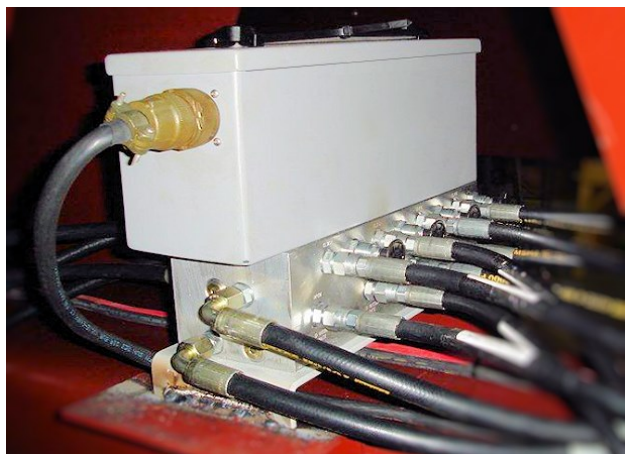
Each ballast car system uses multiple Sun **DMDC directional**, and several **CKCB pilot operated check and relief cartridge valves** in the circuit, all mounted into an **aluminum integrated package**.

Sun Hydraulics was chosen as the valve supplier on this project because of the proven compact manifold design capabilities, the industry leading efficiencies of the Sun cavity, and because historically, applications have indicated the delivered solution would provide reliable operation with low losses, and better efficiency, fully optimizing the available 24VDC hydraulic power pack output.



The Integrated package design group at 803 Tallevast road, successfully provided the customer with a unique and innovative hydro-mechanical answer that solved maintenance and reliability issues and produced a solution that was fit-for-purpose, long term operation and easy to install.

As can be seen from the pictures above and below, the manifolds are pre-assembled by Sun and sent to our authorized distributor who further mounts an electrical enclosure and sealed multi-pole quick connector, making a one-piece drop-in assembly that accepts both the electrical signals as well as hydraulics connections going to all the fluid power upstream components in the system, making hook-up errors a thing of the past.



Manifold with electrical enclosure mounting for smaller, 'no-error' drop-in solution

Sun Hydraulics works with our distribution channels and end users to provide unique hydraulics solutions like this in multiple established and emerging market areas.

Our proven ability to deliver a full range of cartridge valves that work up to 5000 PSI and ductile iron or aluminum manifolds, provide our customers with added-value, efficient options that demonstrate market creativity, especially when these mechanical and fluid power attributes are combined with our embedded or discrete electronic controls to make industry leading, highly versatile solutions.

If you need innovative designs like this, look on our website, click here ['where to buy'](#) or contact your local Sun Hydraulics distributor through one of our global offices listed below.



Sun Hydraulics Corp.
1500 West University Parkway
Sarasota, FL, 34243 U.S.A.
Ph.: (1) 941-362-1200
www.sunhydraulics.com

NASDAQ: **SNHY**

Sun Hydraulics Limited
Wheler Road
Coventry CV3 4LA
England.
Ph: +44-2476-217-400

Sun Hydraulics Korea Corp.
74 Cheongneung-daero
410-gil, Namdong-gu
Incheon 405-818
Korea.
Ph: +82-32-813-1350

Sun Hydraulik GmbH.
Brüsseler Allee 2
D-41812 Erkelenz
Germany.
Ph: +49-2431-8091-0

Sun Hydraulics China Co. Ltd
Hong Kong New World Tower
47th Floor
300, Huaihai Zhong Road
Shanghai 200021
P.R.China.
Ph: +86-21-5116-2862

Sun Hydraulics Corporation
Parc Innolin
6 Rue du Golf
33700 Merignac
France.
Ph: +33-673063371

Sun Hydraulics (India)
No. 48 'Regent Prime'
Unit No. 306, Level 3
Whitefield Main Road, Whitefield
Bangalore - 560 066
India.
Ph: +0091-80-28456325