

9-1-2016

Portable Modular Conveyor

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DOI: 10.5703/1288284316193

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Recommended Citation

ECT Team, Purdue, "Portable Modular Conveyor" (2016). *ECT Fact Sheets*. Paper 223.
<http://dx.doi.org/10.5703/1288284316193>

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PORTABLE MODULAR CONVEYOR

THE NEED

The Portable Modular Conveyor-Material Placer (PMC) is a **quick, easy, dependable and cost effective way to place materials** in the limits of the confined grade or work area. This specialized piece of equipment was developed to place concrete in front of a concrete slip form-paving machine. The typical method of placing concrete requires a self-propelled belt placer, which is very expensive to purchase and mobilize to the jobsite. The PMC creates a **significant cost savings** in labor and equipment with the PMC. It is a **direct replacement for conventional material placing equipment, including all in grade belt placing machines**. As well as placing concrete, it is capable of placing asphalt, aggregate, sand, topsoil, or any flow-able materials.



FIGURE 1 PLACING TRACK BALLAST OVER SIX FOOT BARRIER FOR THE CHICAGO TRANSIT AUTHORITY

The PORTABLE MODULAR CONVEYOR was conceived in the summer of 2007 to **minimize mobilization expense, increase portability, and enhanced productivity**. It is a **unique solution to material placement**, and has a **patent award** (Patent Number: 6034-01001) from the United States Patent Office. It was first used on the reconstruction of Carpenter Road in Ann Arbor, Michigan, in the fall of 2007. In August of 2008 the second Prototype was used on an I-75 reconstruction project near Saginaw, Michigan, on a concrete overlay project at the Cobb County Airport in Kennesaw, Georgia, at Detroit Metropolitan Airport North Terminal Project and various other paving projects in Michigan.





THE TECHNOLOGY

The Portable Modular Conveyor is **designed as an attachment for any front-end wheel loader of a 3 cubic yard capacity**, such as a Caterpillar 930, or larger, that is equipped to accept attachments, and is equipped with a third valve control. The conveyor is **operated from inside the loader cab** using the hydraulic controls and power of the wheel loader to propel the hydraulic motor. The low torque high speed hydraulic motor on the belt conveyor requires a pump feed of 40 gals per minute and 3000 psi. The unit is compact and lightweight at just 10,000 pounds. It has a **proven record of placing over 300 cubic yards of concrete per hour** to the road grade using dump trucks hauling 11 cubic yards per load. It has outperformed the conventional material transfer placer systems by two to one and **the initial cost is less than one fourth of the traditional machines used in this application**. The **operation, reliability, and maintenance expense are also much more cost-effective** than conventional placers and is simple to operate. It **replaces a very expensive dedicated piece of equipment** that would be parked idle when there is no material to place. With the Portable Modular Conveyor, the loader can perform other productive tasks and minimizing parked investment. It **will enhance productivity and material placement quality**. It will better maintain the integrity of the materials being placed.



FIGURE 2 TRANSPORTING MATERIAL PLACER ATTACHED TO WHEEL LOADER AT TEN FOOT WIDTH

FLEXIBILITY AND UTILITY

The PMC is **very dynamic and portable**. When loaded on a standard lowboy trailer for transportation, it is 8.5' wide and 21' long, making it a non-permit load for moving. When attached to the loader, the belt can be folded to a 10' length to travel in a single lane of traffic. The conveyor frame can also be shifted two feet left or right from center to adapt to dumping needs or conditions. Coupler deck can easily be switched to accommodate different brand wheel loaders.



MARKET SCOPE

Although it was designed for placing concrete the PMC has a broad application across the construction industry which include spreading topsoil, placing soil cement, sand, gravel, asphalt, or aggregates in road beds, backfilling sewer trenches, dams, retaining walls, agricultural goods or refuse, or anything that can be conveyed or transferred. By varying the size and style of the conveyor the unit can also serve as a shoulder spreader. The applications are endless. An 11' long conveyor option is currently available and a unit is being developed to attach to compact wheel loaders and skid steers.

THE BENEFITS

- The PMC provides a cost effective method of placing materials to construction grades without sacrificing productivity.
- It is very portable, maneuverable, and flexible.
- It can be adapted to work with any wheel loader and select other equipment.

STATUS

The Portable Modular Conveyor is in operation California, Iowa, Michigan, Oklahoma, Ohio, and Washington. Since sales and marketing efforts began in November of 2009, the PMC has been either sold to contractors around the country including the Kiewit of Dallas, TX, Kiewit Infrastructure, Chicago, Illinois, Angelo Iafrate Construction Company, Warren, Michigan, Shipley Contracting, Burlington, Iowa, Bocco Construction Company, Iron Mountain, Michigan, Sherwood Construction Company, Wichita, Kansas, Graham Construction, Inc, Spoken, Washington, Security Paving, Inc, Sun Valley California, Smith Paving , Inc. in Norwalk, Ohio, Stacey-Witbeck Corporation, Antiock, California, and Flatiron Corporation in San Marcos, California. Construction Equipment Magazine has recognized the Portable Modular Conveyor as one of their "Top 100 New Products of 2009". The Portable Modular Conveyor-Material Placer is the Recipient of the 2015 NOVA Award from the Construction Innovation Forum.



FIGURE 3 MATERIAL PLACER READY FOR CHARGING. TULSA AIR NATIONAL GUARD RUNWAY



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REVIEWERS

Peer reviewed as an emerging construction technology

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PUBLISHER

Emerging Construction Technologies, Division of Construction Engineering and Management, Purdue University, West Lafayette, Indiana