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CONCRETE VIBRATORS & DOWEL PIN DRILLS

2010 Newsletter

*The #1 Company In
Vibrator Technology.....*



**Just Became The #1 Company In
Dowel Pin Drill Technology!**

NEW!
Patent Pending



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**New Wireless
Winning Awards
Costello**

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Wireless Proven on the Job

How do you give your operator a safer work environment while increasing production? The answer is Minnich Manufacturing's new wireless dowel pin drill units. The new wireless control box, patent pending, offers superior operator safety and comfort with increased production thus saving the Contractor valuable time and money.

Minnich's new wireless unit allows the operator to step off the drill and stand down in the grade, keeping the operator away from the noise and heat of the compressor and the noise and dust of the drill unit. Being in the grade keeps your operator out of jobsite traffic and allows him time to react to lane traffic. The new remote box is light weight to help against operator fatigue. The operator is in better position to align the machine for the next hole locations. He simply stays in the grade aligns the pointer and drills. While the unit is drilling he can walk out of the noise and dust and the unit will automatically shut drills off and retract at the desired depth. Don Weaver, Vice-President of Weaver Bailey Construction, tells of his

experience with the new wireless dowel pin drill on the Little Rock Airport's runway 18 and taxiway D project. "The OSHA office overlooked the jobsite," Don stated, "The OSHA officials came down to the jobsite and watched the wireless unit drill. They were very impressed with the ability of the operator to move out of the dust." Joey Sullivan, Estimator and Senior Project Manager with Salinas Construction, believes the new drill is safer and much more comfortable for the drill operators.

It is obvious that the new wireless drill unit is safer but how can something be safer and yet increase production? Simple, Minnich made some giant leaps in technology to allow for increased production. Let's start with the wireless control box. As stated this allows your operator to stay on-grade to align the drill unit. From this vantage point the operator can easily align the pointer to the last hole and the unit is in position for the next set of holes. In the past, operators riding on the machine would have to climb on and off the machine to properly align the unit or try to rely on a mirror,



which still made for difficult alignment. Simply drive and drill, the operator only has to walk along with the machine.

Don't you have to raise and lower the bed while position between holes? Absolutely not, Minnich's crab steering feature allows the operator to just drive to the next hole location. Simply position the drill unit, lower the bed, hit the crab steering lock and drive on down the slab. The crab feature automatically positions the wheels so that while you drive down the slab the bed stays tight against the face of the slab. Not having to raise and lower the bed between each hole location drastically increases the hole production rate.

Minnich changed the way auto controls work to allow for more accuracy and faster results. Minnich uses magnetic sensors on the cylinders to tell the unit when the hole depth is achieved. The unit will not retract or shut off the hammers until this depth is achieved. On the competitor's units a switch is hit to turn off the hammers when the depth is achieved and then the operator has to hit the switches to retract the hammers. This causes some confusion if a hammer stalls and the depth is not achieved. The operator does not realize that the stalled drill has not reached its proper depth. All he knows is that it is no longer drilling, so he retracts the drill and moves to the next set leaving the hole too shallow. However, this is not realized until the drill is gone, the epoxy is applied to the hole and the bar is inserted. What do you do now? With the Minnich system, the unit does not shut off or retract the hammers until the sensors are tripped. There is no confusion on whether the depth was achieved. Minnich's system automatically shuts the drills off and retracts them; all the operator has to do is drive the unit to the next position and flip one switch to start the unit on the next set of holes.

Has the Minnich wireless dowel pin drill been proven on the job? Weaver Bailey Construction used the new wireless on two jobs this summer. Little Rock Airport's runway 18 and taxiway D and I-430 & 630 interchange. The Little Rock airport project consisted of six strips 1000' long, 15" hole spacing, 12" deep and 1-1/2" hole diameter. The I-430 & 630 interchange was a 3 mile stretch,



down and back, drilling 3/4" holes, 15" deep on 30" centers. Don, 30 plus years of experience in concrete construction, was impressed with the production of the wireless machine and believes it is a giant step in drilling technology. Joey, 17 years experience, believes the wireless unit was an essential tool in completing all three of his projects on time. The projects, Taxilane Kilo North Snohomish County Airport, Runway 16R-34L Rehabilitation Snohomish County Airport and US395 – Columbia Drive to SR 240 Rebuild Interchange, consisted of 9200 holes that needed to be drilled. Joey Sullivan said "All three projects were on very tight schedules. The Runway project had liquidated damages of \$10000.00 per hour and we had to move fast. The new drill was part of making the schedules."

Minnich Manufacturing is pleased with the new wireless drill units' performances on jobs all across the United States and would like to thank the many contractors that had faith in the units first year of production. Minnich's new wireless drill units are the safest and most productive units on the market, no strings attached.

ACPA Award Winners

In December 2009 the National American Concrete Paving Association (ACPA) recognized leaders in the paving industry. The ACPA gave out gold and silver awards to paving contractors in several job categories. Minnich Manufacturing would like to congratulate all of the award recipients for their great efforts and are proud to be business partners with the majority of the paving contractors recognized in the 2009 ceremony.

Interstate Highway Construction Inc. (IHC) was the recipient of four gold awards. The categories were: Commercial Service and Military Airports, Concrete Pavement Rehabilitation, Divided Highway Rural and Divided Highway Urban. Minnich Manufacturing's vibrators were on three of the four projects: Edwards Air Force Base, Denver International Airport and I-25 Cheyenne.

Edwards AFB is truly a national asset; Edwards AFB is the premier military flight test facility in the world. The 15,000ft by 300ft runway is the central hub for US Air Force flight testing missions and the California landing site for the Space Shuttle. Built in 1952, the concrete runway was showing significant distress due to Alkali Silica Reaction. This \$94 million design build project involved moving 44,000 truckloads of rock, sand, and asphalt and more than 800,000 cubic yards of earthwork,

placed 28 miles of concrete pavement 33ft to 38ft wide, demolished 445,000 square yards of concrete, replaced the airfield electrical/lighting system and constructed a new aircraft arresting system. A CMI 550 paver was used to slip form concrete to 20 inch depth while meeting strict specifications.

Denver International Airport was a \$16.7 million Concrete Pavement Restoration (CPR) project that removed and replaced 83,000 square yards of heavy duty, 17 inch thick airfield pavement on taxiways and runways in four different areas, including more than 450 in-pavement lights. In addition to the traditional construction processes involved with panel replacement, the project also included 500 cubic feet of spall repair, replacement of heavy duty expansion joints, 34 panels stabilized with mud-jacking, joint and crack sealing and 400 square yards of surface grinding to eliminate ponding of water. A Guntert and Zimmerman S-850 was used to place 82,847 square yards of concrete in 11.77 lane miles.

I-25 Cheyenne was \$15.5 million project for the Wyoming DOT. It removed and replaced 7.64 miles of nearly fifty year old plain concrete pavement on NB I-25 from Cheyenne to the Colorado state line with new 10in, jointed, doweled concrete pavement and shoulders. The project scope included rehabilitation of four bridges, concrete white topping of the Port of Entry while replacing static and weigh-in motion scales, installation of median cable guardrail, new ROW fencing, a roadway management system, interchange lighting and winter road closure station. A Guntert and Zimmerman S-1500 with DBI was used to place 183,000 square yards in 7.64 miles of mainline, 38 feet wide.



IHC on Denver International Airport

Cal Thomas, IHC's corporate equipment manager who has been with IHC for 22 years, said "We have used Minnich vibrators on our slip form pavers for over 25 years. They have proven to be reliable and capable of standing up to the severe conditions that come with slip form concrete paving." Cal continued, "These vibrators are subjected to very severe conditions and we routinely have to send them in to be rebuilt. The service life of these vibrators is as good as or better than any others available on the market."



Ajax on US-131

When asked what Cal thought of the Auto Vibe Monitoring System he stated that they routinely equip all their medium and large size slip form pavers with the system. Cal said that it has been common that these systems are required in major job specification. Cal does see a benefit in having the system installed on his pavers. "This (Auto Vibe System) allows us to monitor the vibrator system and ensure that all of the vibrators are functioning correctly and at the appropriate VPM. This has improved our efficiency, consistency and overall quality of the concrete pavements we have placed since we began using the systems over 10 years ago," said Cal.

Ajax paving was the recipient of a gold award in the Overlays category for their US-131 Freeway – West River Drive to 10 Mile Rd project in Kent, Michigan. This was an unbounded concrete overlay project which had to maintain a minimum of 6.5in concrete overlay thickness.

Ajax has been a partner of Minnich since 1991. Hugh Luedtke, Project Manager who has been with Ajax since 1987, said, "We started using Minnich vibrators as it came as standard equipment on Gomaco pavers. Over the years we have had good success with the products and support from Minnich. This experience has resulted in building a close relationship between Ajax Paving and Minnich. We have purchased numerous vibrators, vibrator monitoring systems and drill rigs over the

years. We have had employees trained by Minnich Personnel on the procedures of re-building our concrete vibrators. Every year we re-build our fleet of vibrators and have had great success and very low failure rates with these vibrators. Our current fleet of pavers includes three Gomaco Commander III's, two Gomaco 2800's, two Gomaco 2600's, one Gomaco 3000 and a 500 CMI. All of these pavers are equipped with Minnich vibrators. In addition to our paving equipment, we have four Minnich triple drill (A-3SC) and one single drill rigs (A-1-48)."

Both Ajax and IHC agree that the life of the vibrator is not the only reason to use Minnich. "The service we receive from Minnich and Foster Equipment (Minnich's Denver dealer) has been outstanding and we can always rely on them for technical support when we need it," stated Cal. Hugh said, "Ajax has been doing business with Minnich since 1991, during that time, we have been faced with problems and challenges that have required our friends at Minnich to assist us in overcoming. Minnich and the whole staff always has been available, responsive and committed to the paving industry and with that commitment, Ajax plans to continue our relationship with Minnich."

Minnich Manufacturing believes that the effort these contractors put forth helps promote concrete paving and works hard to build a reliable product and to offer the support to help make their jobs easier and projects superior.

Costello Industries Inc.

In mid-2009, William (Bill) Demas, Equipment Manager with Costello Industries Inc., contacted Minnich Manufacturing about a machine mounted drill unit. Minnich Manufacturing traveled to South Carolina and demonstrated a standard A-4 drill unit. After several correspondences with Bill, Minnich designed a unit to meet his specific needs.

After the initial demo Minnich and Costello Industries discussed some additional needs. Costello Industries was concerned with the weight of the machine in comparison to the size of their operator. They were also concerned with the availability of parts for the rock drills. In their previous experience with a different manufacturer, Costello had a hard time getting parts to their jobsites, which cost them time and money. Minnich explained that we have all the rock drill parts in stock and, with our own machine and welding departments we can ship any special designed parts in one business day. "Having a vendor that has parts available here in the USA that we do not have to wait for is a selling point for us," said Bill. Minnich designed a smaller machine, with a balance point

closer to the hub. Locking pins were also installed in two positions to help with positioning from hole set to hole set. After several correspondences it was decided that they liked the design and Minnich produced the machine and delivered it to the jobsite. Bill said, "Minnich Manufacturing is very flexible in the equipment they design and allowed us to address issues we had and provided us with a better solution for drilling dowel holes." Bill continued "Their willingness to work with us with a 'yes we can' attitude was the one key difference that made the decision of what manufacturer to go with very easy to make."

Costello Industries had 5500 holes to drill on I-95 Dillion to Florence. The holes were 10" deep and 18" on centers. The drill completed the job and is set to be moved on to the next jobsite.

With an on-site engineering staff, Minnich Manufacturing is capable of addressing your specific drill needs. Minnich Manufacturing prides itself on taking on a unique drilling requirement and designing the perfect unit to fit the job.



Three Changes for 2010

Minnich has been manufacturing concrete vibrators since 1968. Since that time the principals of vibrations have not changed. However, the vibrators themselves have. Minnich Manufacturing strives to make our vibrators the best on the market. Minnich utilizes on staff Engineers, 24-7 test lab and friends in the industry to constantly make improvements in quality and life of our vibrators. Starting in 2010 Minnich has made three changes to the hydraulic motor that we believe will give our customers longer life and higher horsepower out of our hydraulic vibrators.

After two years of testing in our 24-7 lab and one year testing in the field with paving contractors, Minnich has decided to make a change to our drive shaft seal assembly. Minnich has switched to a KALREZ o-ring seal. These seals resist hardening and embrittlement, the principal heat-related causes of seal degradation and failure, and retain a rubber like elasticity and recovery properties at temperatures up to 600 degrees Fahrenheit in continuous service and 650 degrees Fahrenheit in intermittent service. KALREZ has demonstrated

After 6 Months

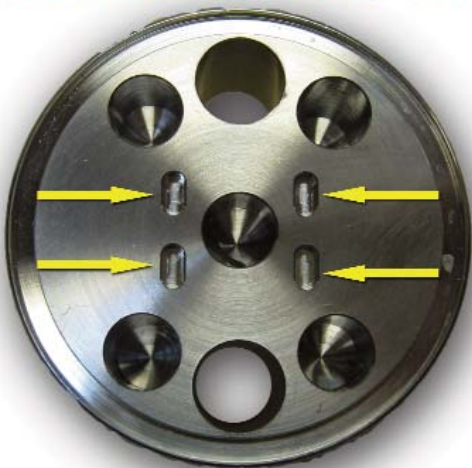
No wear marks with new seal material.



Wear marks from old seal material.



**Increased length of the relief canal for trapped oil between meshing gears.
Increased efficiency 15%.**



long-term resistance to more than 1600 chemicals and solvents. This seal rides on the drive shaft where it is subject to high temperatures due to friction. Minnich believes this change will drastically improve the seal life of the vibrator, which is the number one reason for vibrator failure in the field, and has been proven to do so in the lab and the field.

Minnich also switched the type of aluminum used to manufacture our motor bodies to a harder aluminum. This new alloy has an increase of 15% in ultimate tension and 30% increase in tension yield. This switch will protect the motor body from the drive gear wearing into the motor body. Tests have proven that the switch will help reduce the frequency of which this failure may happen.

Minnich not only strives to increase the life of the vibrators but also the efficiency of the vibrator. Minnich found that by slightly increasing the relief canals, under where the gears are meshing, it increases the efficiency. Preliminary results showed a 15% increase in efficiency.

Through constant testing by our engineers, Minnich has found three ways to improve the vibrator and released the improved product in January 2010.

Minnich is on the job!



A-3SCW



AB-4.5



A-2V



HBP-FS



A-3SC



HCV-3

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