Equipment Distributors, Inc.

PRODUCTS | SERVICES

TOTAL UNDERGROUND SOLUTIONS SINCE 1982

ENGINEERING

TRENCH BOXES

GUIDED AUGER BORING

TRENCH SHORING

800-836-5011

WWW.ICONJDS.COM

ICON'S HISTORY

The ICON Vision: We will revolutionize the trench shoring and guided auger boring industry by achieving new benchmarks of quality that exceed current industry standards through creativity, teamwork, and partnerships.

Brian Crandall incorporated ICON Equipment Distributors in 1982 to provide shoring services to the contracting industry. As an innovator for the industry, ICON was the first shoring distributor to receive engineering approval for the slide rail system from the City of New York, the NY/NJ Port Authority and dozens of Transportation Departments throughout the United States. From the start, ICON developed a reputation as a company that provides safe shoring solutions for both small and large construction projects. Even some of the most difficult excavations were able to be completed with ease due to the modularity of the system.

The 90's brought growth to the organization with the opening of branch offices in several East Coast cities. Many major projects were undertaken including the reconstruction of the Westside Highway in New York City. Systems were also designed and supplied for Washington Group International in Aswan, Egypt for the construction of water mains and sewers. Many other major projects were completed in New York, Chicago, Dallas, Orlando, Atlanta, Cleveland, Boston, Washington DC, Baltimore, Philadelphia, Tulsa, Pittsburgh, San Francisco, and Los Angeles.

In 2004, ICON became the national distributor and dealer for Bohrtec, Gmbh. Bohrtec is the world's leading manufacturer of a guided auger boring system that utilizes pilot tube technology to install sewers directly on line and grade. The addition of the Bohrtec machines has and will continue to enhance the company's ability to take on more interesting and challenging projects.

Currently, ICON serves over 1,600 customers across the U.S. and more than 8,000 slide rail projects have been completed to date. Built on site at ICON's manufacturing facilities, slide rail systems are rented and sold to contractors throughout the United States. In addition to slide rail systems, ICON provides steel and aluminum trench boxes, wire slings and lifting devices, hydraulic shoring, road plates and roadmats.

The idea of a full service shoring company that provides a wide range of equipment, on-site field technicians, and site specific engineering has been a hallmark of the way ICON has done business since its inception. ICON continues to extend its reach by improving customer service, expanding the rental fleet, and developing new systems to solve their customers' shoring problems.

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COMPETENT PERSON SAFETY TRAINING

OSHA'S EXCAVATION STANDARD contains many requirements and appendices that can seem confusing and overwhelming at first glance. The following was prepared by ICON to help summarize the main requirements in order to help our customers prepare the jobsite for OSHA inspections.

ICON'S COMPETENT PERSON TRAINING PROGRAM

ICON's Competent Person Training Program provides construction managers and employees with information and training regarding compliance with OSHA's Excavation Standard for trench shoring and trench box installation. This program includes the scope and application of protective systems, soil classification and handling an OSHA inspection.

The 8-hour seminar includes a session on trench shoring and trench safety supplemented by visual aids and hands-on demonstrations. Participants will take an exam and be expected to achieve a minimum grade of 80%.

Each participant will receive an ICON Competent Person Student Manual to keep. Upon satisfactory completion of the program, participant will receive a certificate of completion card.

Topics that will be covered:

- •Soil Mechanics
- •Job Planning
- •Manufacturer's Tabulated Data
- •General Requirements
- •Protective Systems
- •OSHA Standard Law

ICON provides OSHA Competent Person Training Program seminars either on-site, at a local hotel or at one of ICON's locations.

Contact ICON at (800) 836-5011 for a class schedule.

Qualification:

Certifying a Competent Person in the area of trench shoring and trench safety is the sole responsibility of the employer. Completion of this program does not automatically make an individual a "Competent Person". In order to be considered a "Competent Person", the individual must be designated competent by his or her employer. When applied to trench shoring and excavation operations, the "Competent Person" must have specific training in and be knowledgeable about soil analysis, the use of protective systems, and requirements of the OSHA Excavation Standard. In addition, the "Competent Person" must implement requirements of the standard and have authority to take immediate action if trench safety hazards exist.

OSHA 29 CFR 1926.650-.625 SUBPART P

- Prior to digging, the contractor shall locate and identify all underground utilities such as sewer, telephone, fuel, electric, water lines, etc. that may be encountered during the required work.
- The contractor must designate a competent person or qualified person to assess the excavation and determine that it is safe for project personnel to enter and work.
- All surface encumbrances such as signs, trees, fences, poles, sidewalks, etc. that create a hazard to employees must be removed or supported during the excavation.
- All excavating must maintain a minimum of ten-foot clearance from overhead power lines rated 50kV or less, with 0.4 in. of clearance added for every kV over 50.
- Support systems shall be provided to ensure stability of adjacent structures endangered by the excavation operation.
- If excavation is over 5 feet deep, a protective system such as a trench shield shall be used to prevent cave-in.
- The contractor must provide a safe means of entering or exiting an excavation over 4 feet deep.
- A means of egress from a trench, such as a ladder, ramp, or stairway shall be located within 25 feet of workers.
- In excavations over 4 feet in depth, the potential for the accumulation of hazardous gases or vapors must be realized.
- Shielding systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by any part of the support systems.
- Shielding systems shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of a sudden collapse.
- The bottom of the shield system cannot be positioned greater than 2 feet above the bottom of the excavation.

ICON EXCAVATION SAFETY

- Shielding systems and their components shall be securely connected to prevent predictable failures.
- The removed spoil shall not be stockpiled closer than 2 feet from the excavation's edge.
- Backfilling shall progress together with the removal of support systems from excavations.
- Any excavations left unattended must be barricaded, fenced or otherwise protected against accidental entry by pedestrians.
- Employees exposed to vehicular traffic must wear a high visibility vest, and the excavation must be protected from traffic.

In the above picture, ICON supplied and delivered a slide rail system over 200'L x 22'W x 20'H for the installation of large concrete box culverts at Towson State University, in Towson, MD.

- If the employees must cross over an open excavation, a safe means must be provided so that the employees do not have to jump across the trench.

- No workers shall enter or work in an excavation where standing water is visible unless adequate protection is used.

- No employee shall be permitted underneath loads handled by lifting or digging equipment.

- If the competent person finds evidence of a hazardous situation that may result in a cave-in, protective system failure, a hazardous at or other hazardous conditions, exposed employees shall be removed from the hazardous area until necessary precautions have been taken to ensure safety.

The picture above and to the right, are In Newark, NJ, where ICON supplied a light weight ICON-O-Lite aluminum trench shield that was used for various utility installations.

SOIL TYPE DESCRIPTIONS

■ "Soil Classification System" means, for the purpose of this subpart, a method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the characteristics of the deposits and the environmental conditions of exposure.

■ "Stable Rock", means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

■ "Submerged Soil", means soil which is underwater or is freely seeping.

■ TYPE A SOIL, means cohesive soils with an unconfined, compressive strength of 1.5 tsf (tons per square foot) (144 kPA) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam, in some cases silty clay or sandy clay loam, cemented soils such as caliche or hardpan are considered type A Soil.

■ NOT TYPE A SOIL, if the above soil is fissured, subject to vibration from heavy traffic, pile driving or similar effects. If the soil has been previously disturbed, is part of a sloped, layered system where the layers dip into the excavation on a slope of 4H : 1V.

■ TYPE B SOIL, means cohesive soils with an unconfined, compressive strength of greater than .5 tsf *(48 kPa)* but less than 1.5 tsf *(144 kPa)*; or granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and in some cases silty clay.

■ TYPE C SOIL, means cohesive soils with an unconfined, compressive strength of .5 tsf *(48 kPa)* or less; or granular soils including: sand, and loamy sand or submerged soil or soil from which the water is freely seeping or submerged rock that is not stable, or material in a slope, layered system where the layers dip into the excavation on a slope 4H : 1V or steeper.

JOBSITE DAILY CHECK LIST

DATE:_____TIME:_____

PLACE: _____

COMPLIANCE OFFICER'S NAME:_____

BADGE NUMBER:_____

OFFICE ADDRESS:_____

Did OSHA Compliance Officer Wait for Manager? Yes:___ No:___ If yes, how long?_____

Was opening conference held? Yes:___ No:___

Who was the Competent Person: _____

Depth of trench entered by employees: _____ Width of Trench:_____

Type of Soil: Stable Rock:_____ Type A:___Type B:___Type C:___

Type of Soil Test Taken: Pocket Penetrometer:_____ Other:_____

Employees in trench? Yes:___No:___

Water in trench? Yes:___No:___

Were pictures taken? Yes:___No:___

Was spoil back two feet? Yes:___No:___

Did the Competent Person do daily jobsite inspection prior to OSHA visit? Yes:___No:___

If the ditch was over five feet deep, was it:

Sloped? Yes:___No:___ At what angle?_____

Shored? Yes:___No:___ Other?_____

Was there a ladder? Yes:___No:___If no, why not?_____

Were all employees wearing hard hats? Yes:___No:___

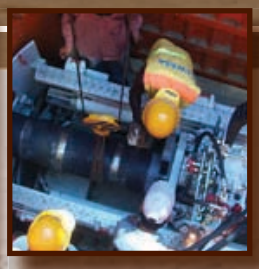
Were barricades and signs used properly? Yes:___No:___

Signed by Competent Person/Manager:_____

ICON Equipment has provided this Jobsite Daily Checklist as an example and guideline only based on our experience. If your local OSHA office requires other information that is not shown above then it is the competent person's responsibility to provide and add this information as needed

PILOT TUBE GUIDED AUGER BORING

By using the pilot tube trenchless method of installing underground utilities, waterlines and sanitary sewers you can reduce costs by 50% when compared to conventional micro tunneling.



WHAT IS PILOT TUBE GUIDED AUGER BORING?

Pilot tube guided auger boring was developed in Germany by Dr. Peter Uffman of Bohrtec for the installation of trenchless house connection sewer pipes. The technology was later developed further to install mainline sanitary sewer pipes on line and grade over 300' from manhole to manhole as an alternative to expensive tunnel boring machines. ICON Tunnel Systems is the exclusive distributor for Bohrtec pilot tube guided auger boring equipment in the United States and Canada.

HOW DOES IT WORK?

Pilot tube guided auger boring or pilot tube micro tunneling or guided auger boring equipment is used to install pipe that has an outside diameter from 4" to 55". Pilot tube guided auger boring is a trenchless method of installation for small diameter pipes with a grade and alignment accuracy that the gravity sewer and water industry demands. The pipe is installed in three ways – either a three-step installation, two-step installation, or a one-step installation starting with a launch and reception pit at either end of the proposed drive length.

When faced with a gravity sewer project that requires a precision installation with line and grade accuracy of 1" or better, the pilot tube guided auger boring system will provide the consistent accuracy required.

The Bohrtec pilot tube guided auger boring machines are available from ICON Tunnel Systems in three different styles and models: The first are our Small Compact units that can install up to 40" O.D. pipe in as little as a 6.5' round or square shaft. The second are our Long Frame units that can install up to 55" O.D. pipe in as little as an 8' x 13' rectangular shaft (Expansion legs can be purchased for this unit to install up to 50' long pipes if needed). The third are our Long Compact unit that can install up to 48" O.D. pipe in as little as a 12' round shaft or square shaft (Expansion legs can be purchased for this unit to install up to 50' long pipes if needed). Each meticulously designed model by Bohrtec is capable of providing at least 100 tons of jacking force and 50 tons of pullback with 8,850 foot lbs of rotational torque through the gear box and up to 36,878 foot lbs with the largest model.

WHERE DOES IT GET ITS POWER?

Bohrtec-designed hydraulic power packs provide constant power for the auger boring machine. These power packs provide a minimum of 67 horsepower or 50 kilowatts with a diesel engine and variable speed with a silencer built in. Each system will provide hydraulic flow of 0 to 34.8 gpm and up to 5,000 psi working pressure.

The above picture shows a BM400LS machine in one of ICON's slide rail jacking pits in the process of installing 365LF of double wall pilot tubes on 1" line and grade for a new 8" gravity sewer under a 4 lane highway.

The Bohrtec-designed hydraulic power pack is set away from the main boring unit and hydraulic hoses are run between the power pack and the main boring unit. The power pack is operated from the main boring unit in the launch shaft using a remote control. This allows the operator to control the power pack and engine functions from inside the launch pit.

Individual levers or sticks control the forward jacking, reverse pullback and rotational movement of the system. For ease of monitoring and recording the machines operation through out the installation, hydraulic gauges are mounted in the operator's line of sight, just above the individual levers or sticks.

WHAT MAKES OUR PILOT OPERATION BETTER THAN OUR COMPETITION?

The pilot tube operation itself is what makes the accuracy of the pilot tube guided auger boring system possible. Bohrtec's pilot tube rod construction is like no other in the world; they have perfected this design over the last two decades. Bohrtec is the only company operating in the United States that uses independent inside and outside pilot tube rods in their double wall pilot tube design. This means the inside rod turns and rotates the head only, not unlike a directional drill design. The outside pilot tube rod is essentially a steel jacking pipe with male and female threaded ends. It jacks in place, never turning during the steering operation of the pilot tubes.

By not having to rotate the inside and outside pilot rods simultaneously through the ground allows the pilot tube machine to use less torque during operation. As a result we do not have to introduce messy lubricants, gels or bentonite to reduce friction. This also reduces additional heat caused by rotating the outer skin, which can slow the operation and decrease production.

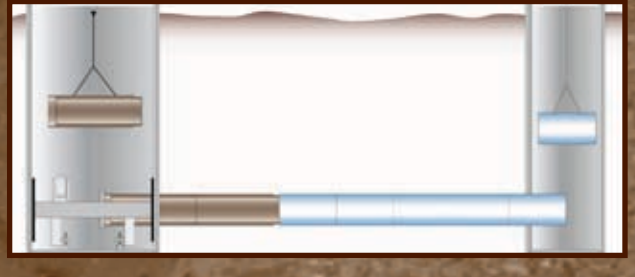
The above picture shows a BM400LS in an 18' round concrete shaft in the process of installing a "Dead End Bore" for the installation of multiple steel drainage lines.

PILOT TUBE GUIDED AUGER BORING

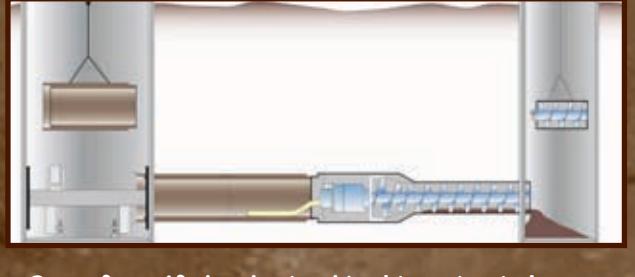
THREE-STEP INSTALLATION DIAGRAM

Step one: Install hollow pilot rods establishing 1" line and grade.

Step two: Install casings and augers behind the hollow pilot rods. Remove the pilot rods as they are pushed out in the end pit or reception area.



Step three: Install the desired jacking pipes behind the casings and augers as seen in Step 2. Remove the casings and augers as they are pushed out in the end pit or reception area.



Step four: If the desired jacking pipe is larger than the casings and augers used in Step 2, then an increase kit with hydraulic reamer can be installed to handle the larger jacking pipe.

THREE DIFFERENT APPLICATIONS WITH ONE SYSTEM

Pilot Tube: Application 1 (New Installation of Jacking Pipes for Gravity Sewers)

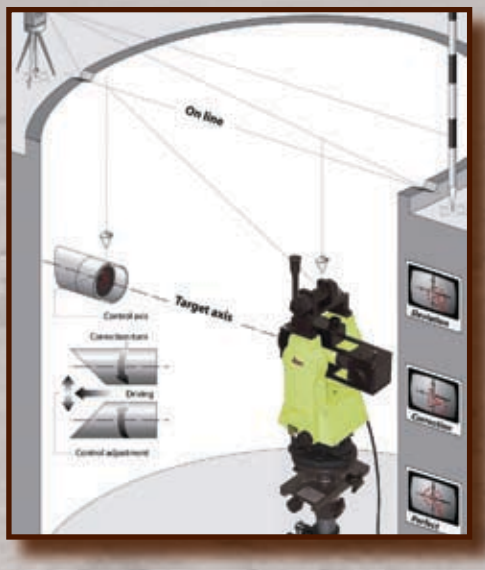
The first application is the trenchless installation of jacking pipes for gravity sewer projects. Owners, Engineers and Construction Managers demand these sewers be installed within extremely tight tolerances, leaving little room for error. With the pilot tube guided auger boring systems from ICON Tunnel Systems you can now meet these demands and install jacking pipes within a 1" line and grade for gravity sewer projects. Three-step installation required.

Pilot Tube: Application 2 (Exact 1" Line and Grade with simple adaptation to Auger Boring Machines)

The second application is for the trenchless installation of steel casing pipes for the auger boring industry. Thousands of contractors own diesel auger boring machines that run on steel tracks but lack the superior line and grade guidance of the pilot tube systems. ICON Tunnel Systems can easily adapt the BM400LS pilot tube machine to all boring machine models for establishing a 1" line and grade up to 500' in length depending on your soil conditions. Two-step installation required.

Pilot Tube: Application 3 (Establishing 1" Line and Grade with the PT Pullback Expander for large diameter plastic or ductile iron pipes)

The third application is for the trenchless installation of plastic or ductile iron pipes for gravity sewer projects. The PT (Pilot Tube) Pullback Expander effectively provides a 100% field proven alternative to Horizontal Directional Drilling that contractors can use to install these types of pipes for gravity sewers that will meet the required 1" line and grade that the water and sewer industry demands. The PT (Pilot Tube) Pullback Expander is an accessory item for our pilot tube systems. Three-step installation required. *Picture not shown, please visit *www.icontunnelsystems.com for more information.*

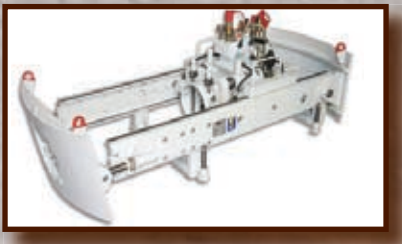


Digital Theodolite Camera

This device is the center of the Bohrtec pilot tube system and enables the machines to steer through the ground while constantly maintaining line and grade precision. The plumb bobs shown above act as control axis points, which are dropped down from a string line overhead. This allows for the proper setup of both digital theodolite camera and the pilot tube machine to the exact line and grade for the job before the start of the proposed drive.

MORE POWER. MORE TORQUE.

Selecting the right model and machine can be challenging at times. ICON can guide you through this process with the knowledge and experience you are looking for.



BM150D

Jacking Force: 56,202.24 lbf
Torque: 2,950.24 lbf
Pullback: 33,721.34 lbf
Hydraulic Stroke: 11.81”
Weight of Unit: 1,433 lbs
Minimum Pit Size: 5’ x 4’
Maximum Pipe O.D. 12”

BM150DT

Jacking Force: 35,070.2 lbf
Torque: 2,950.24 lbf
Pullback: 20,907.23 lbf
Hydraulic Stroke: 2” x 16.93”
Weight of Unit: 1,322.7 lbs
Minimum Pit Size: 3.93’
Maximum Pipe O.D. 12” Round.
Can be used inside a 48” pipe to drill out.

BM400

Jacking Force: 224,808.9 lbf
Torque: 8,850.73 lbf
Pullback: 112,404.5 lbf
Hydraulic Stroke: 2” x 23.62”
Weight of Unit: 4,409.24 lbs
Minimum Pit Size: 7’ dia.
Maximum Pipe O.D. 24”

BM400LS

Jacking Force: 300,000 lbf
Torque: 14,751.22 lbf
Pullback: 150,000 lbf
Hydraulic Stroke: 23.62”
Weight of Unit: 5,952.47 lbs
Frame Size: 7.38’ L x 5’ W
Maximum Pipe O.D. 36”

The image to the left shows a BM500 machine in a 10.5’ round jacking pit installing an increaser with hydraulic engine for large diameter jacking pipe.

PILOT TUBE GUIDED AUGER BORING

BM500

Jacking Force: 359,694.3 lbf
Torque: 17,701.46 lbf
Pullback: 179,847.2 lbf
Hydraulic Stroke: 3” x 29.52”
Weight of Unit: 12,125.41 lbs
Minimum Pit Size: 10.5” dia.
Maximum Pipe O.D. 42”

BM600LSC

Jacking Force: 562,022.4 lbf
Torque: 36,878 lbf
Pullback: 247,289.8 lbf
Hydraulic Stroke: 23.62”
Weight of Unit: 12,345.87 lbs
Frame Size: 8’ L x 6’ W
Maximum Pipe O.D. 48”

BM600LS

Jacking Force: 539,541.5 lbf
Torque: 22,186.83 lbf
Pullback: 247,289.8 lbf
Hydraulic Stroke: 15.35”
Weight of Unit: 10,141.25 lbs
Frame Size: 11.48’ L x 6.03’ W
Maximum Pipe O.D. 48”

BM800LS

Jacking Force: 708,148.20 lbf
Torque: 50,000.00 lbf
Pullback: 393,415.7 lbf
Hydraulic Stroke: 47.2”
Weight of Unit: 17,636 lbs
Frame Size: 12.63’ L x 7.05’ W
Maximum Pipe O.D. 55”

INCREASE YOUR VALUE

BM400LS, BM400LSC (not shown), BM600LS, BM600LSC and BM800LS can be used as a guided machine with pilot rods or as an unguided machine without pilot rods. The increased torque allows the contractor to use larger augers to install larger steel casings in various soils without steering, much like conventional auger boring machines. The dual functionality of these machines brings more value to the table.

WHERE HAS PILOT TUBE BEEN USED IN THE UNITED STATES?

Rognes Corporation - Ankeny, IA

In Carroll Iowa, Rognes Corporation installed over 3,200 LF of 20" diameter vitrified clay jacking pipe supplied by Mission Clay Products with the help of ICON's BM400LS (150 ton jacking force) pilot tube machine. ICON used the "patented water auger adaptor" to close the face of the tunnel & control the 12' to 14' of water table conditions on site.

DiFazio Industries - Staten Island, NY

DiFazio Industries installed over 330 LF of 18" VRCP supplied by Mission Clay Products with the help of ICON's BM400LS (150 ton jacking force) pilot tube machine. Open cut was determined "not an option" and the method was changed to pilot tube guided auger boring.

Austin & Bednash Construction, Inc. - New Castle, DE.

In Middletown, Delaware, Austin & Bednash Construction, Inc. installed over 600 LF of 12" diameter VRCP supplied by Mission Clay Products with the help of ICON's BM400LS (150 ton jacking force) pilot tube machine. This project was originally designed as an open cut excavation with an 8" PVC pipe to be installed. Open cut was determined "not an option" and the method was changed to pilot tube guided auger boring.

Trenchless Construction Serives L.L.C. - Arlington, WA

In Sedro Woolley, WA, Trenchless Construction installed over 3,400 LF of 15" and 24" diameter VRCP for the installation of gravity sewers on a 16% grade. This project was the first pilot tube project of its kind in the State of Washington.

FRONT STEER GUIDED AUGER BORING

What is Front Steer Guided Auger Boring?

The Front Steer Guided Auger Boring Method shall be defined as a steerable microtunneling auger system for the trenchless installation of jacking pipes. The Front Steer Guided Auger Boring System is a multistage system which allows for the direct jacking of product pipes (without the use of permanently installed steel casing) while providing a 1" or better line and grade in hard non-displaceable soil conditions up to a possible maximum of 2,900 PSI or 20 MPa. The Front Steer Guided Auger system being proposed consists of a Front Steer Boring Unit (FSBU) with open face cutting wheel and articulating head, temporary steel casings with hollow stem augers, pilot tube machine with jacking cylinders, and a hydraulic power pack. The FSBU guidance system consists of a digital theodolite electronic camera, an L.E.D. illuminated target, and a control monitor for real time constant monitoring and maintaining of line and grade. Water conditions of up to 10' can be controlled with a soil plug using the patented "Water Auger Adaptor" in conjunction with the FSBU.

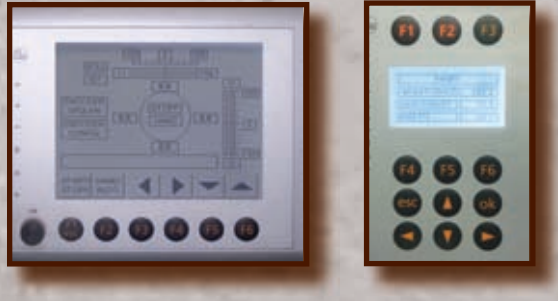
Front Steer Boring Unit (FSBU) with open face cutting wheel.

Backside of Front Steer Boring Unit (FSBU) showing hollow stem auger which allows for constant viewing of the illuminated LED Target directly behind the open face cutting wheel.

Digital Theodolite Camera

This system has already been proven and is the same digital theodolite camera system that our already popular Pilot Tube Systems have been using in the field for over 25 years. The use of this camera system allows the contractor to constantly monitor the illuminated LED Target and FSBU in order to make steering corrections as the FSBU advances through the ground for Line and Grade.

Control Panel



A guidance control station allows the contractor to constantly monitor and make immediate steering corrections in order to maintain line and grade throughout the drive length.

Key Features of the Front Steer Boring Unit

Two high pressure water jets are located on the bottom side of the open face cutting wheel to ease the movement of material through the system.

Hydraulic fluid is sent to the FSBU and causes an articulated movement which instantly makes corrections to the intended Line and Grade.

The open face cutting wheel can be removed and unbolted for maintenance and insertion of the illuminated LED Target.

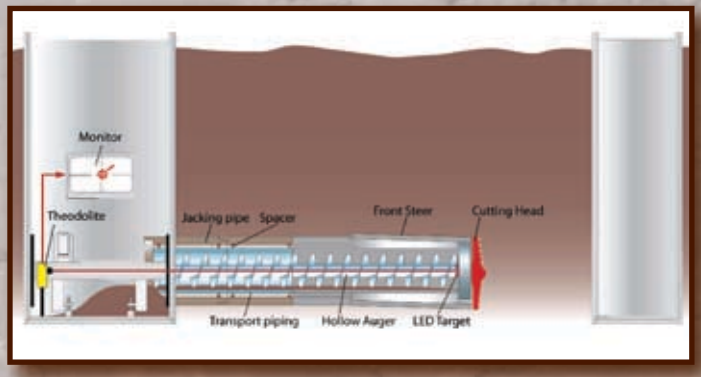
A special hardened cutting edge helps excavate and maintain overcut in harder soil conditions.

Connections for hydraulic and electric to the FSBU, which is protected by a steel cover plate (not shown), are conveniently located at the back of the unit.

FRONT STEER GUIDED AUGER BORING

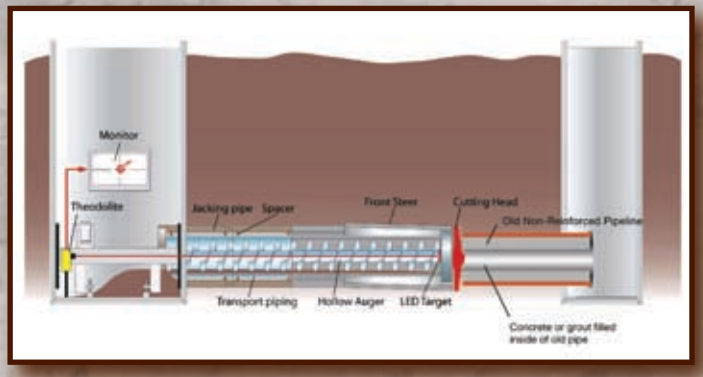
Front Steer Applications: Three Different Applications with One System

Application 1:
New Installation of Jacking Pipes for Gravity Sewers



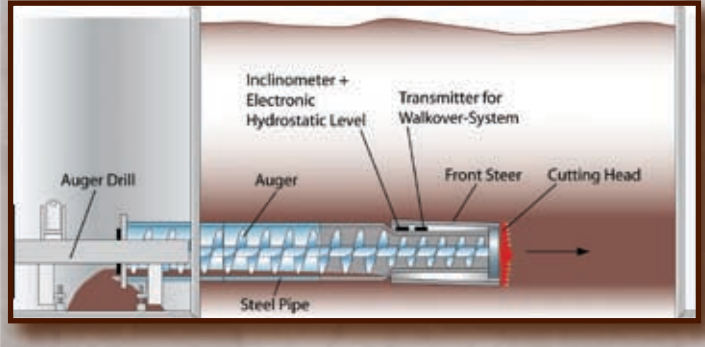
The first application is an alternative method to micro-tunneling known as “Front Steer Guided Auger Boring”. Microtunneling is used as a trenchless method for installing new pipelines within very tight tolerances typically for longer drive lengths in excess of 400 feet. Using Front Steer Guided Auger Boring allows the contractor to install shorter drive lengths under 400 feet within 1” or better line and grade exactly the same as microtunneling for half the purchase price with half the equipment needed.

Application 2:
Front Steer Pipe Eating



The second application is an alternative method to Pipe Bursting known as “Pipe Eating”. Pipe Bursting is used as a trenchless replacement method for non-reinforced pipelines in displaceable soil which follows the existing line and as a result will follow any problems that pipeline may have had to begin with. The Front Steer Pipe Eating system allows for the removal of the existing pipeline while installing a new pipeline on the designed line and grade, removing the problems of the old pipeline.

Application 3: Front Steer Boring Unit Method for Steel Casings



The third application is the trenchless installation of steel casing for the auger boring industry. Thousands of contractors own conventional auger boring machines for trenchless crossings but lack the superior line and grade guidance of the Front Steer Guided Boring System needed for sanitary sewer work. That is why the FSBU system is designed to be used as an attachment and can adapt to any auger boring machine on the market today. Accurately install steel casings on the designed line and grade for the project up to 500’ in length or better depending on your machine and the soil conditions of the job. “The Front Steer Boring Unit (FSBU) Method uses a built-in digital water level and simple but very accurate line control system to constantly monitor line and grade so you can make immediate corrections throughout the bore path.”

The Front Steer Guided Auger Boring system can excavate extremely hard ground up to 100 blow counts/12" or up to 2,900 psi soils and as small as 16" in diameter.

ICON provides the maximum amount of training on each Front Steer Guided Auger Boring rental or sale of a system to our customers.

SLIDE RAIL SYSTEMS

"Dig and Push" method of installation eliminates the need for vibratory hammers, increases production by 50% and decreases labor by 30% to 40% on average versus conventional sheeting.

Slide rail systems are extremely versatile and can be used to shore simple pits or very elaborate excavations with utility problems, overhead clearance problems and difficult soil conditions on various projects.

ICON is known as the original pioneer of this type of shoring system in the U.S. ICON's slide rail shoring systems are made of high yield, Grade 50 steel and are comprised of lineal panels, rails or posts and bracing that enable the contractor to install 2- 3- and 4-sided pits and trenches for a variety of excavations and different soil conditions. ICON manufactures slide rails in either a single, double or triple rail design with a choice of Roller Rail Frames (Struts) or Fixed Position Braces for the contractor to choose from.

WHERE CAN A SLIDE RAIL SYSTEM BE USED?

ICON's Slide Rail system can be utilized on numerous excavations for:

- Large and small sewer lines
- Large water mains
- Tunnel access pits or shafts
- Tank installations
- Environmental remediation and clean-up
- Large and small diameter vaults
- Pump stations, lift stations, wet wells, manholes and junction boxes
- Bridge footings and wing walls
- And many more

WHAT MAJOR AGENCIES AND AUTHORITIES HAVE USED THE SLIDE RAIL SYSTEM?

ICON's slide rail system has been approved for use by the following agencies and authorities as an effective solution for temporary tight sheeting.

Agencies:

NJDOT, NJ Turnpike Authority, NJ Highway Authority, NJ Transit Authority, NYDOT, NYDEP, NYDDC, Washington, DCDOT, PennDOT, SEPTA, OHDOT, ILDOT, Chicago Department of Sewers, Chicago Metropolitan Sewer District, CALTRANS, U.S. EPA, U.S. Dept of State/Foreign Aid Office, Dallas Area Rapid Transit, U.S. Army Corps of Engineers.

Public Companies:

Exxon, Shell, Citgo, Sun Oil Co., PSE&G, Con Edison, Long Island Lighting Company, PECO, CSX Railroad, Consolidated Rail Corporation, Norfolk Southern Railroad, Merck Pharmaceuticals, Pfizer Pharmaceuticals, Bristol-Myers Squibb, etc.

HOW DO YOU INSTALL A SLIDE RAIL SYSTEM?

ICON's slide rail system is installed simultaneously as the trench or pit is excavated. Start by excavating the trench to 4 feet deep. Next, install the rails and plates and then square up the system. Continue to dig on the inside of the system removing the excavated soil as needed. Add more panels and rails incrementally using the "dig and push" method until the required sub-grade is reached.

The above picture shows a 1 bay slide rail pit 13.12' x 13.12' inches away from an existing multistory building for a soil remediation project.

4-SIDED PITS AND TRENCHES

Work In Tight Areas

- Installation and excavation take place together, decreasing costs by 50%.
- Minimal vibration during installation minimizes damage to adjacent utilities and surrounding buildings.
- More working room wall-to-wall without the use of inside waler beams.

The pictures to the right show a multiple bay slide rail trenching system being used under an existing Metro-North railroad bridge for the installation of concrete encased duct banks.

Sheet and shore around existing or adjacent utilities, safely and quickly.

- With the use of ICON's internal and utility crossing frames, utilities can be easily sheeted and shored as you advance the system.
- Vertical panels, overlapping sheeting or vertical wood can be inserted into the crossing frame to shore around the existing utility.

Rebracing or tying back of the slide rail system allows the contractor to remove all cross bracing.

- Removal of cross braces can be easily done by tying back to large-wide-flange steel beams.
- Rebrace pit designs are available up to 40' W x 62' L and a maximum of 20' in depth.

Triple slide rail systems are used for large, deep and difficult jobs.

- Built to last for even the largest and toughest soil conditions.
- Can sheet as deep as 36' in C60 soil.
- Can provide up to a 15' working room clearance under the bottom brace.

4-WAY RAILS are specially designed for use on environmental remediation sites.

- Allows the contractor to continue working without having to backfill the system and reinstall.
- Installation of plates down the backside of the rail allows you to move in any direction from your original starting point.
- Install multiple cells and maintain a solid wall of plates between your clean backfill and contaminated soil. before the concrete vaults were installed.

SLIDE RAIL SYSTEMS

Kinsley Construction - York, PA

In Swiftwater, Pennsylvania, Kinsley Construction installed a large slide rail pit, 38' long x 32' wide x 16' deep for the final installation of two large concrete vaults 4' away from traffic on Route 611. Shown in the picture, a pipe ramming operation was performed by Linde Enterprises before the concrete vaults were installed.

Conti Enterprises - Plainfield, NJ

In New Brunswick, New Jersey, Conti Enterprises installed a multiple bay slide rail pit 105' long x 16' wide x 16' deep for the construction of the concrete median bridge piers for the New Street Bridge in the middle of busy Route 18.

Spazzarini Construction - Enfield, CT

In Avon, Connecticut, Spazzarini Construction installed a 5 bay Triple slide rail trenching system, 100' long x 15' wide x 20' deep for the construction of concrete retaining walls along Route 44 for the CTDOT.

Bell BCI - Bethesda, MD

In Bethesda, Maryland, Bell BCI installed a multiple bay slide rail pit system with many utility frames, 36' long x 16' wide x 22' deep. On this particular project ICON effectively shored around 5 existing 36" utility lines that crossed the excavation.

Reliable Contracting & Equipment Co. Inc. - Chicago, IL.

In Chicago, Illinois, Reliable Contracting Company Inc. installed several slide rail pit systems on the Dan Ryan Expressway for the installation of water, sewer mains and manholes and junction boxes. The slide rail systems supplied by ICON were 36' long x 16' wide and ranged from 24' to 36' deep in various locations up and down the eight-lane superhighway.

W.L. Hailey & Company Inc. - Nashville, TN.

In Richmond, Virginia, W.L. Hailey & Company Inc. rented a multiple bay slide rail pit system, 65' long x 20' wide x 16' deep for the installation of a concrete bypass structure for a major water main construction project.

Washington Group/Lane Construction (AJV) -Louisville, KY

In Louisville, Kentucky, Washington Group/Lane Construction (AJV) rented several slide rail pit and trenching systems for the installation of a run of large 12' x 12' box culverts for a major construction project at the McAlpine Lock and Dam Expansion.

Andrew Papac & Sons - South El Monte, CA.

In California, Andrew Papac & Sons installed a multiple bay slide rail trenching system, 100' long x 10' wide x 28' deep for the installation of a major 60" diameter RCP sewer project.

STEEL TRENCH BOXES

Steel trench boxes are a fast, safe and effective way to shore up your trenches and shield your employees from a potential excavation collapse or fatal cave in.

SPREADER SETS

MODEL	DESCRIPTION	WEIGHT (Lbs.)
SPR8-024	24" (2') Spreaders	350
SPR8-030	30" (2.5') Spreaders	430
SPR8-036	36" (3') Spreaders	520
SPR8-042	42" (3.5') Spreaders	610
SPR8-048	48" (4') Spreaders	695
SPR8-054	54" (4.5') Spreaders	780
SPR8-060	60" (5') Spreaders	870
SPR8-072	72" (6') Spreaders	1040
SPR8-084	84" (7') Spreaders	1215
SPR8-096	96" (8') Spreaders	1390
SPR8-108	108" (9') Spreaders	1560
SPR8-120	120" (10') Spreaders	1736
SPR8-132	132" (11') Spreaders	1910
SPR8-144	144" (12') Spreaders	2085
SPR8-156	156" (13') Spreaders	2255
SPR8-168	168" (14') Spreaders	2430
SPR8-180	180" (15') Spreaders	2600

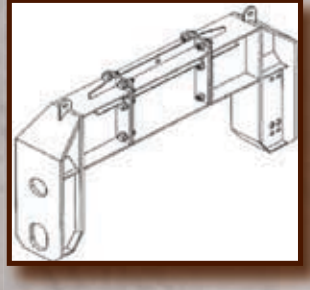
4-INCH DOUBLE WALL

MODEL	DIMENSIONS H (Ft.)	L	PIPE CLEARANCE (In.)	WEIGHT (Lbs.)	SHIELD CAPACITY (Psf)	ALLOWABLE DEPTH (Ft.) by soil type ** A	B	C(60)	C
TS-0408-DW4	4	8	20	2430	5540	50	50	50	50
TS-0410-DW4	4	10	20	2780	3390	50	50	50	43
TS-0412-DW4	4	12	20	3150	2280	50	50	38	29
TS-0416-DW4	4	16	20	3730	1230	47	27	21	16
TS-0420-DW4	4	20	20	4420	770	29	17	13	10
TS-0608-DW4	6	8	42	3300	4330	50	50	50	50
TS-0610-DW4	6	10	42	3840	3420	50	50	50	45
TS-0612-DW4	6	12	42	4320	2310	50	50	40	31
TS-0616-DW4	6	16	42	5785	1250	49	29	22	17
TS-0620-DW4	6	20	42	7435	880	34	20	16	13
TS-0808-DW4	8	8	62	4220	2100	50	48	37	29
TS-0810-DW4	8	10	62	4435	1680	50	39	30	24
TS-0812-DW4	8	12	62	5200	1400	50	33	26	21
TS-0816-DW4	8	16	62	7350	1250	50	30	24	19
TS-0820-DW4	8	20	62	9550	900	36	22	18	14

6-INCH DOUBLE WALL

MODEL	DIMENSIONS H (Ft.)	L	PIPE CLEARANCE (In.)	WEIGHT (Lbs.)	SHIELD CAPACITY (Psf)	ALLOWABLE DEPTH (Ft.) by soil type ** A	B	C(60)	C
TS-0412-DW6	4	12	20	3720	3680	50	50	50	47
TS-0416-DW6	4	16	20	4590	1990	50	44	34	26
TS-0420-DW6	4	20	20	5240	1250	48	28	22	17
TS-0424-DW6	4	24	20	6300	850	32	19	15	12
TS-0428-DW6	4	24	20	7230	620	23	14	11	9
TS-0612-DW6	6	12	42	5465	3690	50	50	50	48
TS-0616-DW6	6	16	42	6610	2000	50	50	35	27
TS-0620-DW6	6	20	42	8370	1250	49	29	23	18
TS-0624-DW6	6	24	42	9540	950	37	22	18	14
TS-0628-DW6	6	28	42	11540	740	29	17	15	11
TS-0812-DW6	8	12	65	6860	2030	50	47	36	28
TS-0816-DW6	8	16	65	8525	2000	50	46	36	28
TS-0820-DW6	8	20	65	9960	1250	50	30	24	19
TS-0824-DW6	8	24	65	12400	960	38	24	19	15
TS-0828-DW6	8	28	65	15650	790	32	20	16	13
TS-1012-DW6	10	12	86	8410	1600	50	38	30	24
TS-1016-DW6	10	16	86	10560	1200	49	31	24	19
TS-1020-DW6	10	20	86	12540	960	40	25	20	16
TS-1024-DW6	10	24	86	15035	860	35	22	18	15
TS-1028-DW6	10	28	86	19880	770	32	20	16	13

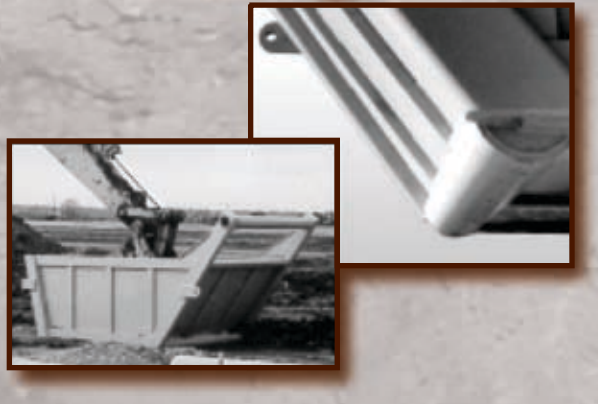
*ICON has listed 4" and 6" double wall steel boxes in this printed brochure only but 3" single wall and 8" double wall boxes can be ordered upon request. More information on these boxes can also be found by going to our website www.iconjds.com.



HIGH ARCH SPREADER

Let ICON customize a high arch spreader to your next bore project or large diameter pipe project today. All orders are job specific.

This picture shows multiple steel trench boxes being used in a 20' deep trench for the installation of drainage lines.



STONE BOXES

- High-Tensile Steel Construction for extra-long service life.
- Half-Inch Steel Bottoms and Ends minimize routine bucket contact wear and tear.
- High-Strength Tubular Frame for durability and structural integrity.
- Standard Skid Bottoms reduce wear from dragging and walking movement.
- Radius-Pipe Skid Bar reduces material accumulation (plowing effect) while pushing forward.
- Standard Lifting/Pulling Lugs for easy sling attachment and box movement.
- Sloped Ends for efficient bucket access and retrieval of bedding material.
- Standard Lift/Walk Bars for added ease of handling with the excavator.

MODEL	DIMENSIONS H (Ft.)	L	PIPE CLEARANCE (In.)	WEIGHT (Lbs.)	SHIELD CAPACITY (Psf)	ALLOWABLE DEPTH (Ft.) by soil type ** A	B	C(60)	C
Single-Wall									
MHS-0808-SW	8	8	45	3590	1200	49	29	24	19
MHS-0810-SW	8	10	45	4650	750	32	20	15	13
MHS-0812-SW	8	12	45	5555	520	22	14	11	10
Double-Wall									
MHS-0808-DW	8	8	45	4115	2000	50	47	36	29
MHS-0810-DW	8	10	45	5336	1750	50	41	32	25
MHS-0812-DW	8	12	45	6431	1200	49	29	24	19
Double-Wall W/Replaceable Cut-Outs*									
MHS-0808-RC	8	8	45	4295	2000	50	47	36	29
MHS-0810-RC	8	10	45	5470	1750	50	41	32	25
MHS-0812-RC	8	12	45	6585	1200	49	29	24	19

Psf= Pounds per square foot

MANHOLE BOXES

**ICON is a proud distributor of the Speed Shore Corporation out of Houston, Texas for all steel trench boxes, manhole boxes, high arch spreaders and other specialty items.*

ICON-O-LITE

ICON-O-LITE

ICON offers the most advanced line of lightweight aluminum shoring products in the world with the ICON-O-LITE modular aluminum trench box system. The system is designed by ICON and certified by a Registered Professional Engineer to meet the highest quality and utmost strength with an ultra lightweight design. The system is comprised of modular panels, corners, vertical rails, spreaders and the only specially designed steel pullbar in the industry.

The lightweight modular nature of the design allows the contractor to quickly and easily transport the shoring system in a ½-ton pickup truck. It can be assembled quickly in a 2, 3 or 4-sided configuration for various types of projects. A two-man crew can assemble the ICON-O-LITE system by hand for rapid placement in the excavation by a small excavator or backhoe.

The aluminum panels of the system are available in a full range of standard sizes up to 14 feet in length with corner and vertical rails in 4 and 6 foot lengths. We have a variety of spreader options available that include adjustable screw struts or jacks, adjustable telescopic steel spreaders or steel pipe spreaders. A hardened steel gravity locking pin makes it even easier to assemble into the desired size of box on site.

The ICON-O-LITE aluminum trench box system is ideal for utility maintenance and repair jobs, cable splice pits, plumbing repairs, gas, sewer and water taps and other shallow utility installations. Let's not forget about trenchless entry and exit pits. ICON Equipment and the ICON-O-LITE aluminum trench box system are the preferred choices for municipalities, contractors and utilities seeking an extremely versatile lightweight trench safety system.

ICON-O-LITE Offers Quality, Safety and Versatility

- **High Grade Aluminum Construction**
  All components are designed to maximize strength and corrosion resistance.
- **Minimal Wall Thickness**
  A 2.5" wall thickness can maximize your interior room while limiting your excavating footprint.
- **Lightweight Modular Design**
  Quickly and easily transport the shoring system in a ½-ton pickup truck. Assemble in 2, 3 or 4-sided configurations.
- **Dual Purpose Corner Rails**
  Use the corner rails to assemble panels or spreaders in various locations.
- **Hollow Double Wall Panels**
  Eliminate accumulation of water, dirt and debris.
- **Tongue and Groove Panel Design**
  Easier assembly and helps keep panels in place.
- **Gravity Fed Hardened Locking Pins**
  The easiest assembly and disassembly by hand in the industry, with no need for special tools.

PANELS				
MODEL #	**HEIGHT**	**LENGTH**	**WEIGHT**	**C60 DEPTH RATING**
DL23	2’	3’	36 lbs.	25’
DL24	2’	4’	61 lbs.	25’
DL25	2’	5’	77 lbs.	25’
DL26	2’	6’	91 lbs.	25’
DL28	2’	8’	122 lbs.	21’
DL10	2’	10’	152 lbs.	18’
DL12	2’	12’	182 lbs.	14’
DL14	2’	14’	212 lbs.	9.5’
ADJUSTABLE STRUT SPREADERS				
MODEL		**SIZE**	**WEIGHT**	
DL2436		2’X3’	16 lbs.	
DL3660		3’X5’	20 lbs.	
DL6084		5’X7’	26 lbs.	
VERTICAL & CORNER CONNECTORS				
MODEL	**HEIGHT**		**WEIGHT**	
DL4VC	4’		20 lbs.	
DL6VC	6’		30 lbs.	

Model # DL14 aluminum shoring panels are only designed for use in a 2-sided configuration and should never be used in a 3 or 4-sided configuration.

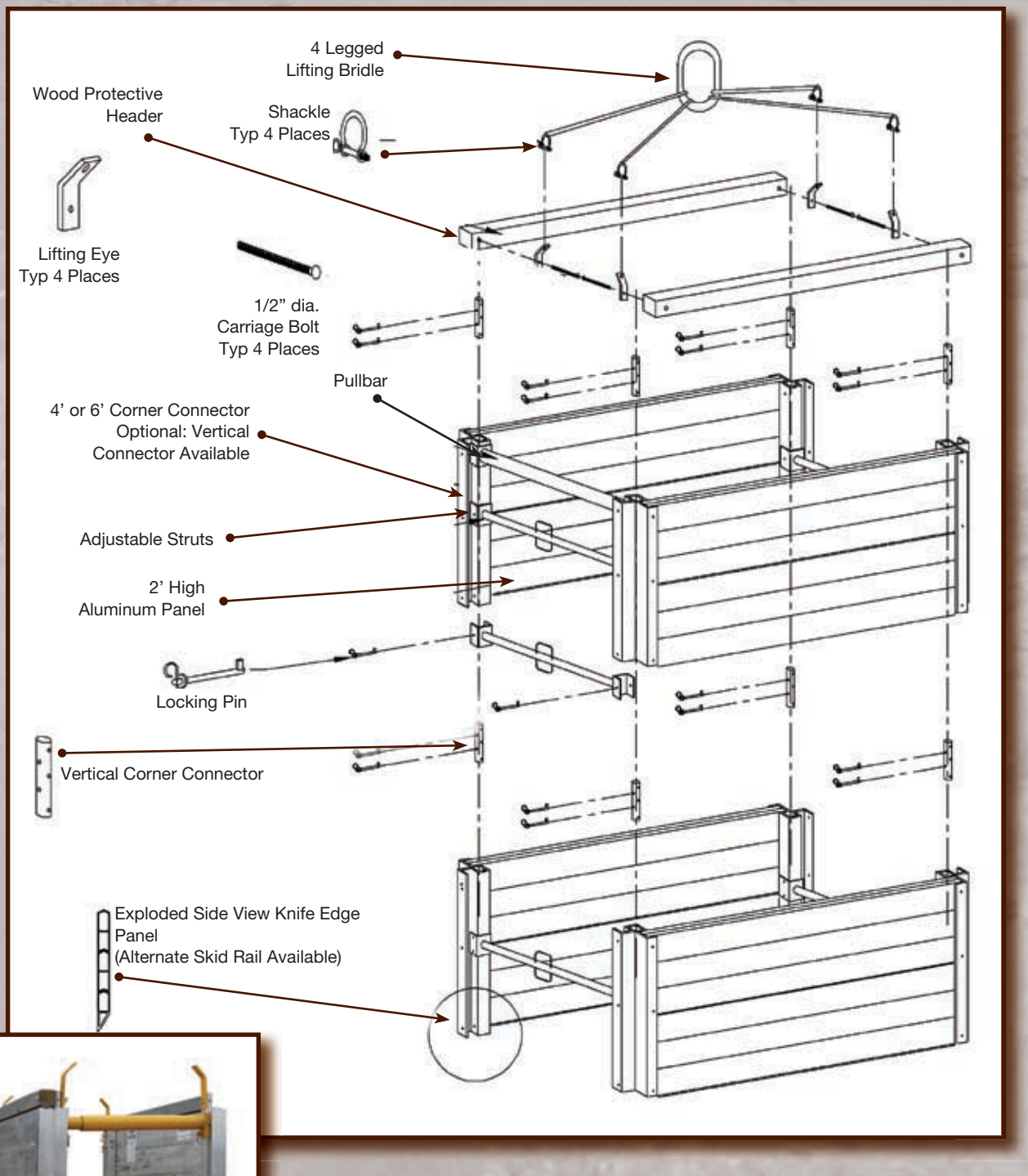
1

2

3

Everyone knows that when you get on the job everything tends to change. Wouldn’t you like the ability to switch gears and reconfigure your trench box at will? Now you can with the ICON-O-LITE modular aluminum system by ICON.

In this image the contractor rented multiple 2-sided ICON-O-LITE aluminum trench boxes for the installation of shallow utilities along a busy street for Verizon.



All system components are in compliance with O.S.H.A. (29 CFR Part 1926.650-652, Subpart P).

Panels and vertical connectors constructed of extruded structural aluminum alloy 6061-T6.

ICON-O-LITE Dealer

Why Become an ICON-O-LITE Dealer?

If you are already involved in the heavy construction industry and have steady customers that rent excavators, backhoes or other excavating machines, then you can cross sell or rent these lightweight aluminum trench boxes to your customers and add to your bottom line with our help.

AS A NEW DEALER OF ICON-O-LITE PRODUCTS YOU WILL BENEFIT FROM THE FOLLOWING: ON SITE PRODUCT AND SALES TRAINING

Full Service Sales and Quoting Support

- Let ICON be your support staff and save on payroll

Full Service Engineering Support

- ICON can provide P.E. Stamping and site specific designs for all 50 states

Fast Parts Delivery

- All small parts and other replacements delivered in 48 hours*

100% Financing Options Available

- Fast approval
- Contact ICON for more Details

ALUMINUM HYDRAULIC SHORING

When O&G/Kiewit (AJV) needed several hundred feet of vertical aluminum hydraulics for the installation of approximately 10 miles of high voltage duct bank for Northeast Utilities, ICON was there.

ICON offers lightweight aluminum hydraulic shoring as one of the safest, most versatile means and methods of shoring, even in the most difficult excavation. Typically, one worker can safely and effectively shore a trench as quickly as it is excavated, allowing the excavator to operate at full digging capacity. Active preloading of trench walls maintains the vertical trench sides, preventing soil from moving or collapsing inward.

The best jobsites for use with vertical shores are those with limited working room or where spot bracing is needed around existing utilities. Vertical shores are also commonly used in conjunction with trench boxes or other conventional shoring methods. When conditions indicate sloughing or raveling of the trench walls, then you may use OSHA approved plywood, finform and similar sheeting in conjunction with the vertical shores. In more stable ground conditions, vertical shores can be used directly against the trench face.

Vertical Shores Offer Maximum Versatility & Safety

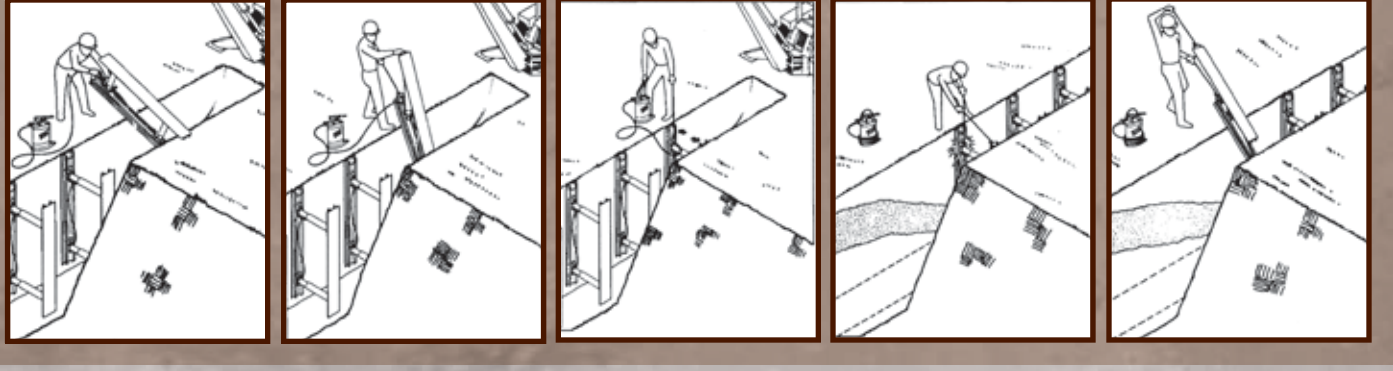
- **100% Above-Ground Installation**
  Eliminates worker exposure to dangerous trench collapses.
- **Aluminum Alloy Construction**
  Means lightweight and extremely portable systems of exceptional strength.
- **Easy-To-Use Hydraulic System**
  Allows for a one-man installation and removal. Safety bleed-off ports eliminate overextension of cylinders while gauge-regulated pumps ensure even loading.
- **Hinged, Flat Cylinder Pads**
  Ensure even load distribution to rails with no load-bearing on critical connecting pins.
- **C-60 Soil Certification**
  Means that our standard vertical shores are P.E. Certified for use in A, B or C-60 soils.
- **Optional One-Piece Extensions**
  Are easily installed at the jobsite, extending the operation ranges of the vertical shores to cover a variety of trench widths.

Standard Vertical Shores Chart

MODEL	RAIL LENGTH (Ft.)	CYLINDER RANGE (In.)	CYLINDER STROKE (In.)	WEIGHT (Lbs.)
V-01.5-27	1.5	17 - 27	10	21
V-01.5-36	1.5	22 - 36	14	23
V-01.5-46	1.5	28 - 46	18	25
V-01.5-55	1.5	34 - 55	21	28
V-01.5-64	1.5	40 - 64	24	30
V-01.5-88	1.5	52 - 88	36	36
V-03.5-27	3.5	17 - 27	10	44
V-03.5-36	3.5	22 - 36	14	50
V-03.5-46	3.5	28 - 46	18	55
V-03.5-55	3.5	34 - 55	21	60
V-03.5-64	3.5	40 - 64	24	68
V-03.5-88	3.5	52 - 88	36	77
V-05-27	5	17 - 27	10	55
V-05-36	5	22 - 36	14	60
V-05-46	5	28 - 46	18	65
V-05-55	5	34 - 55	21	70
V-05-64	5	40 - 64	24	77
V-05-88	5	52 - 88	36	87
V-07-27	7	17 - 27	10	65
V-07-36	7	22 - 36	14	70
V-07-46	7	28 - 46	18	75
V-07-55	7	34 - 55	21	80
V-07-64	7	40 - 64	24	89
V-07-88	7	52 - 88	36	97

Shown above is a 7' shore, a 1.5' spot shore and a trench box all in the same excavation. Vertical or Horizontal aluminum hydraulics are available in a number of different sizes. You can mix and match them in order to work around existing utilities or various obstacles to provide the best protection possible.

100% Above-ground Installation and Removal Eliminates Exposure to Trench Collapse.
Installation is Fast and Easy-Place As You Dig-Safe and Quick Removal.



Set-up and position shore at edge of trench and connect pump hose

Slide shore into place from above-ground

Pump cylinders up to proper pressure, then disconnect pump hose

Bleed-off shoring fluid, allowing shore to contract

Lift shore out of trench safely from above-ground

ALUMINUM HYDRAULIC SHORING

NOTES TO TABLES

TABLE 1: When four feet of horizontal spacing is exceeded, the open spaces between the sheeting must be monitored for sloughing and raveling of the excavation face.

TABLE 2: Two-inch cylinders shall have a structural steel tube oversleeve 3.5 x 3.5 x 0.1875 inches extension (installed over the aluminum oversleeve) that extends the full retracted length of the cylinder. CAUTION: In either case, the aluminum load transfer plug and the aluminum innersleeve shall be used or a steel load transfer plug shall be welded securely in place inside the steel oversleeve to transfer the load through the steel oversleeve to the socket pad.

HORIZONTAL & VERTICAL ALLOWED SPACING FOR USE WITH HYDRAULICS

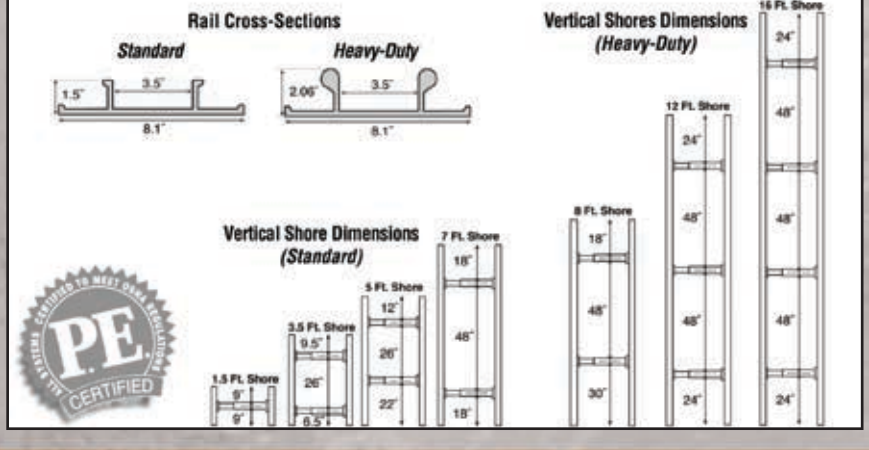
DEPTH OF EXCAVATION	MAXIMUM HORIZONTAL SPACING (FT)	MAXIMUM VERTICAL SPACING (FT)
0 to 15 ft	6 (note 1)	4
0 to 20 ft	4	4
0 to 25 ft	4	4

MINIMUM CYLINDER DIAMETER SIZE FOR USE WITH HYDRAULICS TYPE "C" SOIL

DEPTH OF EXCAVATION	WIDTH OF TRENCH 0 TO 8 FT	WIDTH OF TRENCH 8 TO 12 FT	WIDTH OF TRENCH 12 TO 15 FT
0 to 15 ft	2"	2"	2" (note 2)
0 to 20 ft	2"	2" (note 1)	2" (note 2)
0 to 25 ft	2"	2" (note 1)	N/A

The above tables reference depth ranges of 0-25 ft and widths from 0-15 ft. This type of equipment is meant to be used in stable ground and is not recommended for unstable ground conditions. Single Length verticals are available for purchase and may be required when dealing with over 10' depth of excavation.

VERTICAL SHORE CONFIGURATIONS



PUMPS AND TOOLS

Aluminum Hydraulic Shoring and shields are rapidly installed (pressurized) with three specifically designed shoring pumps. The economical HP-100 has a 5 gallon fluid reservoir, and is light enough to hand carry. The HVP-2000 has a 7.5 gallon fluid reservoir in a rugged, rust-resistant polyurethane housing and features a high volume pump mechanism. The battery-powered HP-200 has a 12-gallon reservoir and is wheel-mounted for ease of transport along the trench. All pumps must have easy-to-read pressure gauges and convenient control valves. The water-based summer and winter-grade shoring fluids are environmentally safe, cost-effective and cover a full range of operating temperatures.

Specifically designed Shoring Tools make for easy installation and removal of shores. They are available in 30", 48" and 96" lengths.

HP-100

HVP-2000

HP-200

RELEASE TOOLS

H-BEAM AND PLATE

ICON offers our customers a very economical solution as an alternative to more conventional and expensive methods of shoring. Our H-Beam and Plate shoring systems require design by a Registered Professional Engineer and are tailored to your specific jobsite criteria and soil conditions.

This type of shoring method has been proven to be very cost effective on thousands of jobs across the country when compared to steel driven sheet piling. By using Steel H-Beams and Steel Road Plates on 4' to 8' spacing between the beams, a lot of your driving time can be eliminated. The result is a faster and more cost-effective installation. These types of shoring are generally used for one-sided cantilevered walls, larger excavations or longer duration projects.

Typically, Steel H-Beam sizes available are HP or Wide Flange Beams 12" or 14" thick used in combination with steel road plates to form 1, 2, 3 or 4 sided configurations for various types of wall, trench and pit excavations. Typical depths are going to range from 8' to 20' deep for this type of shoring. Internal steel beams or cross braces may be needed to support the walls depending on the Engineered Plan and P.E. Design that is required.

H-Beam and Plate offers Versatility, Reliability and Strength

- **Less Vibration or No Vibration**
  Fewer pieces can be vibrated into the ground, or H-Beams can be pre-auger drilled to eliminate any vibration that may have been caused by other methods.
- **Fast and Easy Removal**
  H-beams and plates can be removed by an excavator as you are backfilling.
- **Minimal Liquidation Costs**
  Liquidation costs incurred from cutoffs and damaged sheet piling is minimized.
- **Dual Uses for your project**
  The steel road plates used to construct the shoring system can be used for trench cover or as street plate in other areas on your project after the job is done and removed.

VERTICAL & CORNER CONNECTORS		
TYPE	**SIZE**	**LENGTH**
HP	12 X 53	25'
WF	14 X 90	35'

ICON supplied Pizzagalli Construction with approximately 1,000 linear feet of H-Beam and Plate shoring for a significant BNR expansion upgrade at the Mattawoman WWTP in La Plata, MD as a less expensive alternative to sheet piling.

Large pits for tank removals and installations can be easily developed using an ICON-supplied H-Beam and Plate Shoring System.

UTILITY & CONSTRUCTION MATTING SYSTEMS

ICON offers a full line of wood and composite matting systems for the utility and construction industry. Whether you are looking for matting systems needed for crane support, pipeline projects, temporary road access, trestle bridges or other unique applications we can supply a product built to your unique specifications that meets the strictest industry standards, ensuring you a superior product every time. Available mat products include but are not limited to: crane mats, dragline mats, Emtek® engineered laminated mats and durable and re-usable composite DuraDeck mats.

ICON has partnered with some of the nation's largest suppliers so we can always provide competitive pricing, fast delivery and the best personalized customer service.

WOOD MATS

Heavy-Duty

Wood mats are used by the utility, construction and drilling industry to support the heaviest machinery and equipment the market has to offer. Mat lengths available up to 40' long and can be 3.5" to 18" thick depending on the application. Loading and unloading of wood mats is generally done with a forklift, loader, excavator or crane onsite. Shipping can be handled by outside carrier flat bed load or by train depending on the quantity ordered for rental or sale.

Crane/Dragline Mats

Constructed using mixed hardwood, Douglas Fir or Oak timbers.

- Sizes up to 40' in length
- Thickness from 6" to 18"
- Exposed bolts or cable

Laminated Mats

- Standard 8'x16', 3-ply mats or special order
- Cables or chains

Emtek® Mats

- Engineered hardwood glue-laminated mats
- Thickness from 3.5" to 7.5"

DURADECK MATS

Lightweight Composite Mats

Composite mats both protect your expensive turf and provide access and traction over sand, mud and other difficult surfaces. DuraDeck access mats may be used to create temporary roadways for vehicles, trucks, equipment, large working pads for drilling operations, administrative compounds, bone yards, temporary flooring or other industrial applications.

The DuraDeck composite access mat is a unique molded plastic mat that is durable, lightweight and extremely strong. Sections are engineered to provide ground protection, access over soft surfaces, provide a firm support base and traction for numerous other activities. DuraDeck sections can be carried by 1-2 persons and positioned easily as required on a jobsite. No tools are required for installation or removal of the mats.

Support up to 80-ton loads with a lightweight mat system

DURADECK SPECIFICATIONS			
MODEL	SIZE	WEIGHT	RECOMMENDED SUPPORTING
DD1	4’ X 8’	86 lbs.	19+ Tons
DD1	3’ x 8’	65.5 lbs.	18+ Tons
DD1	2’ x 8’	43 lbs.	8+ Tons

**All mat orders for purchase come with a choice of color Black or White.*

Perfect for sporting events, concerts, political functions, county fair grounds and other high pedestrian traffic areas.

STEEL ROAD PLATES & LIFTING DEVICES

STEEL ROAD PLATES

Steel Road Plates are used by almost every utility and construction company around the world for covering trenches, protecting roadways or used in a vertical shoring application such as H-Beam and Plate. ICON rents, sells and services 32,000 square feet of steel road plate and our inventory is growing every year. Our engineering department can provide P.E. stamped drawings and calculations for H-20 traffic loading as well as bridge decking designs for custom projects.

ICON supplies all rentals of road plates with the Lock-N-Lift system shown in these pictures.

AVAILABLE ROAD PLATE SIZES
4’ X 10’
8’ X 10’
8’ X 12’
8’ X 15’
8’ X 20’

**Custom size road plates can be fabricated to fit your next project. Lead time may vary.*

LOCK-N-LIFT SYSTEM

ICON rents, sells and services the Lock-N-Lift system for promoting the safe handling of steel road plates or street plates. The Lock-N-Lift system makes it easier, safer and faster than using chains and other dangerous methods. The unique dovetail design of the Lock-N-Lift system makes it the best and strongest road plate lifting device in the industry. This lifting device is ideal for use in open cut and cover work, roadway repair, manhole cover and industrial flooring lifting.

The Lock-N-Lift's patented dovetail-style design is industry benchmark for safe and easy handling of road plates.

ICON has a variety of wire rope slings in stock at all times for purchase.

LOCK-N-LIFT KEY FEATURES:

- Weld-in receiver plate is flush with cover plate surface - no trip hazard
- Receiver plate welds in from one side only, no need to flip cover plate
- Single point center lift for better balance and control
- Simple, safe, fast hookup with steel road plates
- No need to ever reach under a plate
- Trench cover plates can be stacked plate-to-plate
- No need to place wood/dunnage between plates
- No threads to clean or cross thread ever
- Allows for a flat lift and placement over a trench

WIRE ROPE SLINGS

ICON sells a variety of wire rope slings that are field proven, and recommended by ICON for the proper lifting and handling of our slide rail shoring systems and steel trench boxes, even at depths of up to 28' in C80 soil conditions. However, these cables can be used for lifting various pieces of equipment or materials if the equipment and material are rated properly.

***Wire rope cables supplied by ICON come standard with internationally made hardware. USA made Crosby hardware can be ordered upon request. There may be an additional price for this.**

ICON stocks 35' long wire rope tie-back cables with wire clamps for use in the rebracing procedure during installation of our slide rail systems for purchase.

ICON EQUIPMENT DISTRIBUTORS, INC. LOCATIONS:

Corporate Address • 300 Ryders Lane • East Brunswick, NJ 08816
Toll Free: (800) 836-5011 • Fax: (732) 254-0101 • www.iconjds.com

BRANCHES

New England Location
North Haven, CT

Maryland Location
North East, MD

Pennsylvania Location
Myerstown, PA