GOMACO has taken its years of experience working with different methods, mixes and job-site conditions to design the ultimate tool for concrete paving with dowel bar insertion, a machine that will meet the strictest specifications. Several actual pours simulating ob-site conditions were performed at the Ida Grove, Iowa, USA test site. Bar positioning was continually checked and verified during the bar placement process. Our research and development teams have literally spent years perfecting the system. Core samples from a project in Nevada have proven the reliability, exacting bar placement and superior consolidation of concrete around the inserted bars. The IDBI has been used on several major projects, including mainline paving, railroad yards, and airport runways. Service is available through our distributors and our own manufacturing support for setup and training.

On a project in Phoenix, Arizona, someone accidentally drove through the new slab and the damaged section had to be saw cut and removed. The remaining, undamaged slab revealed that the bars were at the proper slab depth for bar placement accuracy. The cross section also showed excellent consolidation of the concrete around the inserted bars and through the slab depth.

Performance data is based on various site conditions and may vary slightly from actual use. Performance may be affected by unforeseen site conditions and environment.

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Step by Step: IDBI

In-The-Pan Dowel Bar Inserter

The IDBI is a fully automated system for two-track or four-track pavers. The computer controls the timing and operation of the IDBI functions. The process begins with every tray being loaded with a dowel bar by the paver header traveling across the paving width. The accuracy of this patented loading system accounts for the proper number of bars inserted into the slab. Several patents are held by the IDBI concepts, systems and components. The following photos offer a brief explanation of the insertion process:

The forks wait in the standby mode for the insertion point to be signaled by the IDBI computer. The New Generation IDBI has adjustable bar-loading trays and insertion forks that allow the adjustment of center-to-center bar spacing to meet specific project specifications. (see page 6)

Vibration is applied to the forks on insertion to consolidate and close the concrete around the inserted bars. The paver header stops during the insertion process. GOMACO's exclusive computer-controlled "smart" cylinder technology provides the state-of-the-art system to maintain the accountability of the depth of the bars upon insertion into the slab.

A tamper bar, unique oscillating straightedge, paving pan and stainless repair the scattering in the slab.

The patented insertion forks have been designed to provide the industry standard in bar placement accuracy. The forks reduce the amount of scattering on insertion and vibration enhances consolidation of material around the bars. The IDBI computer manages all bar inserters (front, rear, and IDBI). The space in the tray, pictured above, is where a bar is skipped for a longitudinal joint.

Many jobs require both dowel and tie bars be inserted into the slab. The IDBI computer manages all bar inserters (front, rear, and IDBI). The space in the tray, pictured above, is where a bar is skipped for a longitudinal joint.

The patented insertion forks are designed to provide the industry standard in bar placement accuracy. The forks reduce the amount of scattering on insertion and vibration enhances consolidation of material around the bars. The New Generation IDBI has adjustable bar-loading trays and insertion forks that allow the adjustment of center-to-center bar spacing to meet specific project specifications. The bar-loading trays will accommodate dowel bars ranging in size from 1 in. (25 mm) to 15 in. (38 mm) in diameter and from 18 in. (457 mm) to 20 in. (508 mm) in length. If job specifications require a 20 in. (508 mm) dowel bar length, extended framework will need to be added or you can remove the tie bar inserter.
New Generation IDBI Provides Versatility

Versatility on the New Generation IDBI provides adjustable bar-loading tassels and insertion forks that allow the adjustment of center-to-center bar spacing to meet specific project specifications. The bar-holding tray keeps the bar in a parallel position until the patented insertion forks are cycled to insert the bars into the slab.

The new fork-holding beam is designed to allow the fork-holding boxes to be positioned anywhere along the beam. This feature provides the ability to accurately align the forks with the bar-holding trays for any changes in bar spacing.

Hydraulic cylinders on the fork-holding beam have the new, exclusive, heavy-duty “smart” cylinders. These unique cylinders have the structural integrity to support the fork beam of the IDBI and incorporates the GOMACO “smart” cylinder technology. The cylinders lower the beam and forks to the position needed for accurate bar insertion depth.

WARNING! What Can Lie Beneath The Surface With Unproven DBI Systems

The GOMACO system does not drop the bars onto the concrete and then push the bars into the material. The IDBI bar-holding tray holds the parallel position of the bars and the fork design holds that position as the bars are inserted into the concrete slab.

On-the-go bar placement is necessary to maintain rideability in the paving process. The IDBI system travels with the paver during the insertion process. One of the purposes of the unique heel and toe design of the forks is to hold the position as the bars are placed transversely across the width of the slab.

New Generation IDBI

The IDBI is GOMACO’s patented system of putting dowel bars into a concrete slab during the paving process. Car engineers have designed a complete system that is accurate and easy-to-use, while assuring you, our customer, has a piece of equipment that can be adjusted to provide exact tolerances for any job specification.

The New Generation In-The-Pan Dowel Bar Inserter (DBI) is far superior to others on the market for accuracy in bar placement location, productivity and meeting rideability specifications.

For over two decades, we have sent out field representatives and engineers to work with the job sites to study our dowel/insertion process and make improvements to our system continues to be the most advanced and operator-friendly dowel placement method in the industry. Inspectors and civil engineers expect accuracy in the bar location in the slab and contractors want the process incorporated in the paver without using additional equipment and setup.

The IDBI does this. The New Generation IDBI system fits within the length of a standard paver and does not require the massive rear extensions to the frame of the paver that other DBI systems demand. Longer DBI frameworks are available for 24 in. (60 mm) long dowel bars while using a rear pan-mounted tie bar inserter.

The insertion forks on the new IDBI have been designed to provide the industry standard in bar placement accuracy. The fork design also reduces the amount of scarring on insertion and vibration consolidates and closes material around the inserted bars. At the bar, unique oscillating straightedge, paving pan and stainless steel the scarring in the slab.

The computer control system GOMACO has develop for the IDBI continues to improve all the systems in an easy to understand display. The computer controls the timing and operations of the IDBI functions, including sending the trolley, positioning the IDBI in standby, and activating the system for bar insertion.

Prefetching and adjusting joint spacing for IDBI activation is easy to understand and simple to program. Bar inserters for longitudinal joints can be programmed and controlled through this same system. The operator has to know exactly where the IDBI is during the paving process and the touch screen for the IDBI menu was designed with that in mind. A handheld, remote touch screen with a centrally mounted computer is available. Performing self-diagnostics and all programming is a simple task on the touch-screen system.

GOMACO has designed special software to allow smooth transitions from crown to flat and vice versa. The Power Transition Adjuster (PTA) in the front pan, the IDBI and the finishing pan are all synchronized to make the necessary adjustments as they reach specific stations in the transition.

Another feature with the IDBI system includes the telescoping aluminum rear work platform. GOMACO Corporation holds domestic patents on the bar-loading trolley, computerization program, and the In-The-Pan DBI, with other patents pending.

GOMACO has proven its commitment to the automatic insertion of dowel bars through our years of testing and research. That is why GOMACO is the leader with the IDBI system and we will continue to bring our customers the best innovations in concrete construction equipment.
Proven and tested throughout the world, the exclusive IDBI system provides superior on-the-go dowel bar placement accuracy on this mainline paving project in Villa Mercedes, Argentina. This four-track GHP-2800, with the patented IDBI system, provides high-production and reliability results. The GOMACO T/C-400 follows the paver and provides texturing and curing to the slab.

GOMACO’s patented In-The-Pan Dowel Bar Inserter (IDBI) system has a universal design, allowing it to be used on variable width paving operations.

Whether it’s mid-range or mainline slipforming, the IDBI has provided proven results with on-the-go accuracy for the placement of dowel bars and maintaining rideability in the paving process. This unique IDBI system is available on the GOMACO GHP-2800 and GP-4000 pavers.

The auxiliary engine is not required for the patented IDBI system on this single-lane project in Michigan. The four-track GHP-2800 slipformed this 12 ft. (3.66 m) wide lane and slab depth of 7 5/8 in. (191 mm). Paving production with the IDBI averaged 16 ft. (4.88 m) a minute.

This two-track GP-4000 is equipped with the world’s most accurate IDBI system, providing ease and accuracy of dowel bar placement on this highway project in Utah. The GOMACO IDBI system is the only one in the industry that is available for a two-track and four-track paver.

The New Generation IDBI system fits within the length of a standard paver and does not require the massive rear extensions to the frame of the paver that other DBI systems demand.

IDBI “Touch-Screen” Controls

The New Generation IDBI has operator-friendly, “touch-screen” controls and programming that give the operator quick and easy control over the entire operation. These screens are samples of some of the touch screens. The computer is responsible for controlling the timing and operation of the IDBI functions, including the sending of the trolley, positioning the IDBI, and activating the IDBI system for bar insertion. At the touch of a fingertip, the operator can see exactly where the IDBI currently is in its cycle. The unique GOMACO IDBI “touch-screen” control also features the ability to change from English to another language.

This GP-4000 four-track slipform paver, equipped with the GOMACO patented In-The-Pan Dowel Bar Inserter (IDBI) system, meets all specification requirements on the Sky Harbor Airport in Phoenix, Arizona. High production on runways and aprons is achieved while slipforming paving depths up to 19 in. (483 mm) and 50 ft. (15.24 m) wide.
EXCLUSIVE IDBI SYSTEM

Proven and tested throughout the world, the exclusive IDBI system provides superior on-the-go dowel bar placement accuracy on this mainline paving project in Villa Mercedes, Argentina. This four-track GHP-2800, with the patented IDBI system, provides high-production and rideability results. The GOMACO T/C-400 follows the paver and provides texturing and curing to the slab.

GOMACO’s patented In-The-Pan Dowel Bar Inserter (IDBI) system has a universal design, allowing it to be used on variable width paving operations.

Whether it’s mid-range or mainline slipforming, the IDBI has provided proven results with on-the-go accuracy for the placement of dowel bars and maintaining rideability in the paving process. This unique IDBI system is available on the GOMACO GHP-2800 and GP-4000 pavers.

The auxiliary engine is not required for the patented IDBI system on this single-lane project in Michigan. The four-track GHP-2800 slipformed this 12 ft. (3.66 m) wide lane and slab depth of 7.5 in. (191 mm). Paving production with the IDBI averaged 16 ft. (4.88 m) a minute.

This two-track GP-4000 is equipped with the world’s most accurate IDBI system, providing ease and accuracy of dowel bar placement on this highway project in Utah. The GOMACO IDBI system is the only one in the industry that is available for a two-track and four-track paver.

The New Generation IDBI system fits within the length of a standard paver and does not require the massive rear extensions to the frame of the paver that other DBI systems demand.

IDBI “Touch-Screen” Controls

The New Generation IDBI has operator-friendly, “touch-screen” controls and programming that give the operator quick and easy control over the entire operation. These three screens are samples of some of the touch screens. The computer is responsible for controlling the timing and operation of the IDBI functions, including the sending of a trolley, positioning the IDB, in standby, and activating the IDBI system for bar insertion. At the touch of a fingertip, the operator can see exactly where the IDBI currently is in its cycle. The unique GOMACO IDBI “touch-screen” control also features the ability to change from English to another language.

This GP-4000 four-track slipform paver, equipped with the GOMACO patented In-The-Pan Dowel Bar Inserter (IDBI) system, meets all specification requirements on the Sky Harbor Airport in Phoenix, Arizona. High production on runways and aprons is achieved while slipforming paving depths up to 19 in. (483 mm) and 50 ft. (15.24 m) wide.
New Generation IDBI Provides Versatility

Versatility on the New Generation IDBI provides adjustable bar-loading trays and insertion forks that allow the adjustment of center-to-center bar spacing to meet specific project specifications. The bar-holding tray keeps the bars in a parallel position until the patented insertion forks are cycled to insert the bars into the slab.

The new fork-holding beam is designed to allow the fork-holding boxes to be positioned anywhere along the beam. This feature provides the ability to accurately align the forks with the bar-holding trays for any changes in bar spacing.

Hydraulic cylinders on the fork-holding beam have the new, exclusive, heavy-duty “smart” cylinders. These unique cylinders have the structural integrity to support the fork-beam of the IDBI and incorporates the GOMACO “smart” cylinder technology. The cylinders lower the beam and forks to the position needed for accurate bar insertion depth.

WARNING! What Can Lie Beneath The Surface With Unproven DBI Systems

The GOMACO system does not drop the bars onto the concrete and then push the bars into the material. The IDBI bar-holding tray holds the parallel position of the bars and the fork design holds that position as the bars are inserted into the concrete slab.

On-the-go bar placement is necessary to maintain rideability in the paving process. The IDBI system travels with the paver during the insertion process. One of the purposes of the unique bed and tool design of the forks is to hold the position as the bars are placed transversely across the width of the slab.

New Generation IDBI

The IDBI is GOMACO’s patented system of putting dowel bars into a concrete slab during the paving process. Civ engineers have designed a complete system that is accurate and user-friendly, while assuring you, our customer, has a piece of equipment that can be adjusted to provide exact tolerances or any job specifications.

The New Generation In-The-Pan Dowel Bar Insert (IDBI) is far superior to others on the market for accuracy in bar placement location, productivity and meeting rideability specifications.

For over two decades, we have sent out field representatives and engineers to research and consult with clients to study our dowel bar insertion process and make improvements to assure our system continues to be the most advanced and operator-friendly dowel placement method in the industry. Inspectors and civil engineers expect accuracy in the bar location in the slab and contractors want the process incorporated in the paver without huge transport and setup demands.

The IDBI does this. The New Generation IDBI system fits within the length of a standard paver and does not require the massive rear extensions to the frame of the paver that other IDBI systems demand. Longer IDBI frameworks are available for 24 in. (610 mm) long dowel bars while using a rear pan-mounted tie bar inserter.

The insertion forks on the new IDBI have been designed to provide the industry standard in bar placement accuracy. The fork design also reduces the amount of scarring on insertion and consolidation and cleans material around the inserted bars. A tamper bar, unique oscillating straightedge, paving pan and stainless repair the scarring in the slab.

The computer control system GOMACO has developed for the IDBI has more than all the systems in an easy to understand display. The computer controls the timing and operations of the IDBI functions, including sending the trolley, positioning the IDBI in standby, and activating the IDBI system for bar insertion.

The presetting and adjusting joint spacing for IDBI activation is easy to understand and simple to program. Bar inserters for longitudinal joints can be programmed and controlled through this same system. The operator has to know exactly where the IDBI is during the paving process and the touch screen for the IDBI menu was designed with that in mind. A hand-held, remote touch screen with a centrally mounted computer is available. Performing self-diagnostics and all programming is a simple task on the touchscreen system.

GOMACO has designed special software to allow smooth transitions from crown to flat slope and vice versa. The Power Transition Adjuster (PTA) in the front pan, the IDBI and the finishing pan are all synchronized to make the necessary adjustments as they reach specific stations in the transition.

Another feature with the IDBI systems includes the telescoping aluminum rear work platform.

GOMACO Corporation holds domestic patents on the bar-loading, trolley, computerization program, and the In-The-Pan IDBI, with other patents pending.

GOMACO has proven its commitment to the automatic insertion of dowel bars through our years of testing and research. That is why GOMACO is the leader with the IDBI system and we will continue to bring our customers the best innovations in concrete construction equipment.

On this mainline paving project, the GOMACO GP-4000 four-track, equipped with the exclusive IDBI system, is slipforming 38.5 ft (11.75 m) wide paves. An optional power transition adjuster on the outside maul mount can raise and lower the mold. The IDBI has a transition of the outside edge of the slab when paving an integral shoulder.
Step by Step: IDBI
In-The-Pan Dowel Bar Inserter

The IDBI is a fully automated system for two-track or four-track pavers. The computer controls the timing and operation of the IDBI functions. The process starts with every tray being loaded with a dowel bar by a robot traveling across the paving width. The accuracy of this automated loading system accounts for the proper number of bars inserted into the slab. Several of the IDBI concepts, systems, and components hold United States patents. The following photos offer a brief explanation of the insertion process...

Vibration is applied to the forks on insertion to consolidate and close the concrete around the inserted bars. The paver feeder stops during the insertion process. GOMACO’s exclusive computer-controlled “smart” cylinder technology provides the state-of-the-art system to maintain the accountability of the depth of the bars upon insertion into the slab.

The patented In-The-Pan Dowel Bar Inserter (IDBI) is bar super or to others on the market in accuracy of bar placement location, productivity and meeting tolerability specifications. The IDBI’s finishing process includes a tamper bar, unique oscillating straightedge, paving pan and stainless that follow the bar insertion.

GOMACO’s exclusive computer-controlled, “smart” cylinder technology provides the state-of-the-art system to maintain the accountability of the depth of the bars upon insertion into the slab. The “smart” cylinder technology makes the GOMACO IDBI system the most accurate dowel bar placing system in the world. The new fork-riding beam is designed to allow the fork-holding boxes to be positioned anywhere along the beam. This feature provides the ability to accurately align the forks with the bar-holding trays for any changes in bar spacing.

The patented insertion forks have been designed to provide the industry standard in bar placement accuracy. The forks reduce the amount of scarring on insertion and vibration enhances consolidation of material around the bars. The New Generation IDBI has adjustable bar-loading trays and insertion forks that allow the adjustment of center-to-center bar spacing to meet specific project specifications. The bar-loading trays will accommodate dowel bars ranging in size from 1 in. (25 mm) to 1.5 in. (38 mm) in diameter and from 18 in. (457 mm) to 20 in. (508 mm) in length. If job specifications require a 20 in. (508 mm) dowel bar length, extended framework will need to be added or you can remove the tie bar inserter.

A tamper bar, unique oscillating straightedge, paving pan and stainless repair the scarring in the slab.

Many jobs require both doweled bars and tie bars be inserted into the slab. The IDBI computer manages all bar inserters (front, rear, and IDBI). The space in the tray, pictured above, is where a bar is skipped for a longitudinal joint.

The patented insertion forks are designed to provide the industry standard in bar placement accuracy. The forks reduce the amount of scarring on insertion and vibration enhances consolidation of material around the bars. The New Generation IDBI has adjustable bar-loading trays and insertion forks that allow the adjustment of center-to-center bar spacing to meet specific project specifications. The bar-loading trays will accommodate dowel bars ranging in size from 1 in. (25 mm) to 1.5 in. (38 mm) in diameter and from 18 in. (457 mm) to 20 in. (508 mm) in length. If job specifications require a 20 in. (508 mm) dowel bar length, extended framework will need to be added or you can remove the tie bar inserter.

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GOMACO has taken its years of experience working with different methods, mixes and job-site conditions to design the ultimate tool for concrete paving with dowel bar insertion, a machine that will meet the strictest specifications. Several actual pours simulating ob-site conditions were performed at the Ida Grove, Iowa, USA, test site. Bar positioning was continually checked and verified during the bar placement process. Our research and development teams have literally spent years perfecting the system. Core samples from a project in Nevada have proven the reliability, exacting bar placement and superior consolidation of concrete around the inserted bars. The IDBI has been used on several major projects, including mainline paving, railroad yards, and airport runways. Service is available through our distributors and our own manufacturing support for setup and training.

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