CYNTECH
A KELLER COMPANY

Stability by design

- Helical pile foundations
- Pipeline anchor systems

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Cyntech—Pioneering since 1981

With hard work and an entrepreneurial mindset, Cyntech has grown to become a global leader for helical pile foundations and pipeline anchors. After four decades of hands-on experience, Cyntech excels at providing innovative, cost effective and reliable solutions for the energy, petrochemical, infrastructure, and commercial construction industries.

Global strength and local focus

Cyntech is part of Keller, where the strongest local construction projects are built on a foundation of connected global experience. Our in-depth knowledge of local markets and ground conditions enables us to understand and respond to specific project challenges.

We harness the power of our global network and knowledge base, to safely deliver the optimum solution for whatever your project requires.

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HELICAL PILES

A faster, lower-cost, more efficient high-capacity deep foundation technique

Since 1981, Cyntech's high-capacity helical pile foundations have been used to permanently support aboveground structures for the energy, power, industrial and commercial construction industries. We took what was once viewed as a novel method of underpinning a home's cracked foundation and, through extensive engineering, research, development, and trial and error, advanced the technology to what it is today—a faster, lower-cost, more efficient high-capacity deep foundation technique that provides significant load resistance (greater than 1,000 kips or 4500 kN) with less impact to your jobsite and the environment.

Whether you need a stable foundation for an aboveground storage tank, a new refinery expansion, or 1,000 miles of electrical transmission towers, think of Cyntech to provide safe, efficient, high-capacity helical pile foundation designs.

ENGINEERING

Each pile we propose and ultimately produce is custom designed for a client's specific load case and geotechnical situation.

Our experience in the engineered design and application of large-diameter 7-48 in. (178-1,219 mm) O.D. helical piles is what truly sets Cyntech apart from the pack.

Each of our project managers, who are with your project from the beginning of the design and estimating process to the final as-built sign-off, are licensed professional engineers.

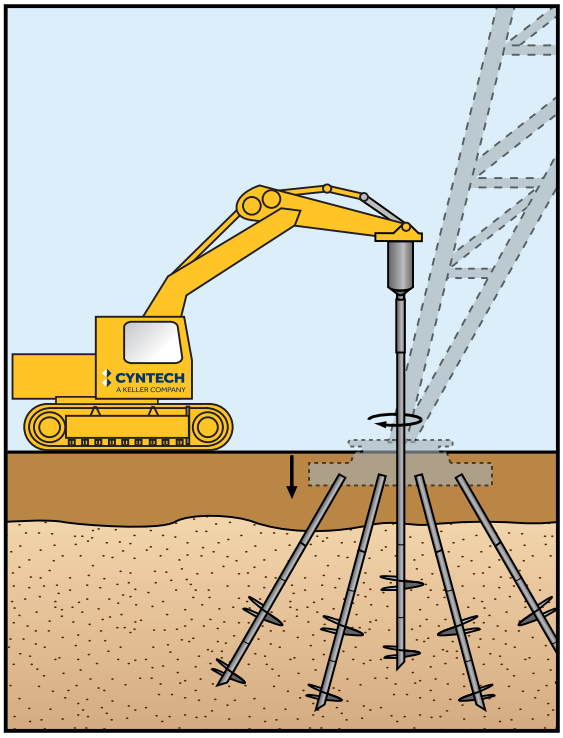
MANUFACTURING

For all U.S. customers and projects, we manufacture 100% of our helical piles, pile extensions and pile caps in our Houston (Plantersville), Texas facility. Our Calgary, Alberta location serves the Canadian and overseas markets. Our state-of-the-art facilities include CNC-automated cutting, bending and welding to produce exact, uniform quality for all parts.

We produce all sizes and configurations of helical piles and pile caps, from 1.5 in. (38 mm) and 1.75 in. (44 mm) high-strength solid square bar anchors, up to 48 in. (1,219 mm) diameter round shaft piles.

LOGISTICS

Transport of the products to your jobsite, laydown yard, railyard or port is an often overlooked detail of the overall process—one that Cyntech has proudly perfected in the nearly four decades we've been in the business. Our full-time logistics coordinators have the skills and experience needed to select the absolute best delivery option for your specific situation, ensuring the trucks will show up where and when you need them.



EQUIPMENT RENTAL

Cyntech owns and continually maintains the world's largest fleet of hydraulic drive motor attachments for helical pile installations. From 12,000 to 375,000 ft-lbs we have the attachment and power source you need to put your excavator, telehandler, skidsteer loader or telescopic crane to work. And every rental comes with 24/7 technical support.

Typical applications for Cyntech's helical pile system include foundations for:

- Pipe racks & bridges
- Valves & scraper traps
- Skid mounted buildings & equipment
- Street lights & signs
- Electrical transmission towers
- Solar modules
- Wind turbines
- Commercial buildings
- or to replace any deep foundation where wood, concrete, steel or augercast piles are being considered.

Helical pile advantages:

- Reduced construction time
- No excavation or spoil removal
- Installation unaffected by weather
- Load capacity verified during installation
- No harmful vibrations during installation
- Ideal for areas of limited access or restricted workspace
- Construction unaffected by high water table
- Removable and reusable
- Installs with common construction equipment
- Lightweight, easy to handle and transport
- Minimum laydown area required
- Lower cost

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PIPELINE ANCHORS

Advanced technology for pipeline buoyancy control

We've built a solid reputation as the world leader in the design and manufacturing of pipeline anchor systems and accessories. Our anchor systems have been proven to hold up under field conditions in numerous installations by leading corporations in the pipeline industry. Over 100,000 Cyntech anchor systems are currently in service on operating pipelines around the world.

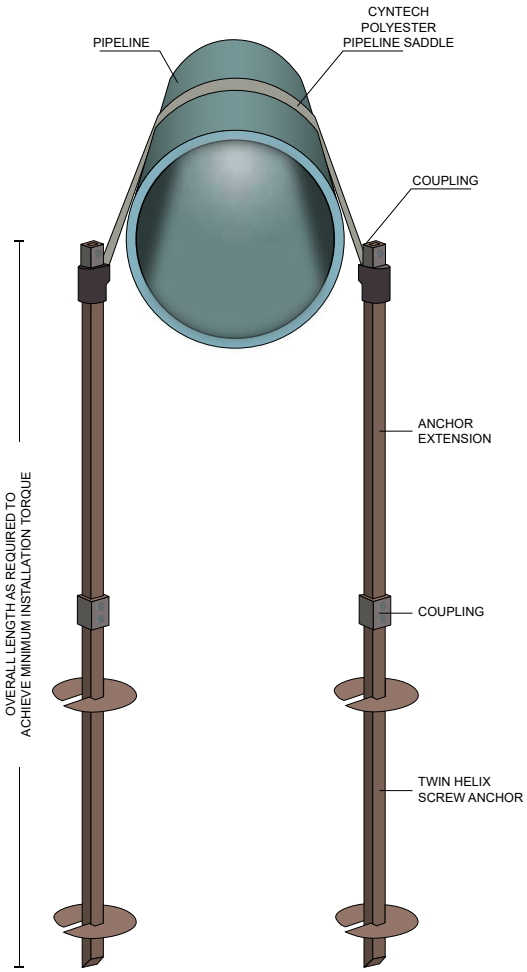
An anchor system can be custom designed for your specific application and our professional engineers and technicians will work with you to specify the optimum anchor system for your project. Our advanced anchor designs, combined with our patented, non-corroding, low stress polyester pipe saddles, provide unparalleled performance and longevity, regardless of the installation environment.

Significant cost savings

Cost savings up to 80% can be achieved over traditional pipeline buoyancy control methods. Cyntech's anchor systems eliminate the need for concrete weights or concrete coated pipe to control buoyancy. Personnel and transportation costs are all reduced significantly with our exclusive anchor system.

	PIPELINE ANCHORS	CONCRETE WEIGHTS
DESIGN	Cytech's anchor system is designed to provide a hold-down capacity of 2.5 times the buoyant force of the empty pipeline	Concrete weights typically provide a weight of 1.1 times the buoyant force of the empty pipeline
SPACING	Typical spacing for NPS-24 pipeline is 108.3 ft (33 m)	Typical spacing for NPS-24 pipeline is 18.4 ft (5.6 meters)
STORAGE	Pipeline anchor materials for 6.2 mi (10 km) of NPS-24 pipeline would require 98.4 ft^2 (30 m^2) of storage space	Concrete weights for 6.2 mi (10 km) of NPS-24 pipeline would require 2,841.1 ft^2 (866 m^2) of storage space
TRANSPORTATION	Pipeline anchor materials for 6.2 mi (10 km) of NPS-24 pipeline would require 3 truckloads	Concrete weights for 6.2 mi (10 km) of NPS-24 pipeline would require 199 truckloads
INSTALLATION	A typical anchor installation crew would consist of an excavator with hydraulic drive unit, an operator and two laborers	A typical weight installation crew would consist of an excavator, an operator and two laborers

CYNTECH PIPELINE SCREW ANCHOR SYSTEM



Pipeline anchor system features:

- 10-56 in. (254-1422.4 mm) pipe sizes
- Helical and grouted anchor options
- Compact and lightweight
- Corrosion-resistant saddle design
- Low profile=no extra trench depth
- Minimal transportation costs
- Reduced right-of-way traffic
- No steel in contact with the pipe coating
- Positive hold-down without overweighting (mass neutral)
- Standardized parts and accessories
- Engineering and installation assistance

PIPELINE STRESS MITIGATION

Stress mitigation anchor system

The advancement of sophisticated pipeline stress analysis methods have allowed for a greater understanding of why pipelines fail and what can be done to prevent it. Collaborating with the world's premier pipeline engineering firms, Cyntech's designers developed a simple, but effective method of reducing thermal expansion induced overbend stresses.

Our stress mitigation anchor systems are similar to our standard anchor systems, but are designed to resist greater uplift forces and utilize specialized saddles to distribute these higher loads over a greater contact area of pipeline. Multiple anchor options allow for installation in all types of geotechnical conditions, from extremely weak organic clays to solid rock.

Well-known players in the pipeline industry have adopted Cyntech's stress mitigation anchor systems to permanently protect against excessive stress, upheaval, and buckling.

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SUSTAINABILITY

As a part of Keller, Cyntech is dedicated to sustainability.

Environment

Construction significantly impacts the environment through use of materials and energy, producing waste and greenhouse gas emissions. The Keller companies comply with environmental regulations and manage equipment, materials and processes to produce a lean, efficient operation, thus helping to reduce the company's carbon footprint.

Quality

Exceptional quality in construction creates lean operations, reduces waste, and improves efficiency. All of this leads to more efficient, economical operations and also to a reduction in our carbon footprint. The Keller companies lead the industry in the development and implementation of computerized quality monitoring and control as well as conventional quality control programs.

Integrity

Engineering and construction carries the responsibility of ensuring public safety. Integrity is integral in designing and constructing safe facilities. Honesty and accuracy guide all our processes.

Diversity & inclusion

We endeavor to model our company after society's increasing diversity. Having a truly diverse organization, with all backgrounds and viewpoints, enables us to maintain our leadership in our industry. The Keller companies ensure that all people are accorded equal opportunities for recruitment, training, promotion and transfer, and equal terms and conditions of employment.

Community

We act responsibly and respectfully towards the communities we work in – because we are part of them. We seek to play a positive and beneficial role in the wider community through charitable partnerships and by encouraging and supporting our employees to participate in community events.

THINK SAFE,
WORK SAFE,
GO HOME SAFE

HEALTH & SAFETY

The Keller companies are dedicated to fostering a healthy and safe work environment.

The construction industry in which we operate poses significant health and safety challenges, but we do not accept that people will inevitably be injured. The goal of our global Keller Think Safe program is zero incidents. Management and employee commitment to this health and safety framework has produced awards and recognitions from industry professional societies, as well as our clients.

Our safety goal

Our ultimate goal is to have zero incidents through the effective management of safety in all our operations.

Our safety principles

Underpinning this goal are three fundamental Safety Principles:

All incidents are preventable

We believe that all injuries and occupational illnesses are preventable. We are all responsible for preventing and correcting unsafe behavior or work conditions.

No repeat occurrences

Reportable accidents and high potential near misses are investigated to determine the details and causes. The findings and necessary steps to prevent recurrence are disseminated and implemented throughout the company.

Maintain safety standards

We have adopted a common set of safety standards throughout Keller. Management at all levels is responsible for implementing and maintaining these safety standards.

THINK SAFE

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EXPERTISE TO GET THE JOB DONE

At Cyntech we have the experience to get the job done and the track record to prove it.

Whether large or small, complex or simple, we take the time to understand every subsurface problem and provide the optimal, project-specific solution. The size of the project is irrelevant to us—what drives us is sharing in our client's satisfaction of a job well done.

If you want faster and more effective results, ask us to work on your specific problem—we've likely solved a similar one before.

WESTERN ALBERTA TRANSMISSION LINE

Alberta, Canada

When a new 217.5 mi (350km) 500kV transmission line was needed to bolster Alberta's grid, the developers immediately knew which foundation type they wanted. Through extreme cold and the region's snowiest winter on record, hundreds of lattice and monopole tower foundations were completed faster and at a lower cost than traditional concrete drilled shaft techniques.

OWNER: Alta-Link
ENGINEER: Cyntech
PRIME CONTRACTOR: SNC-Lavalin

WHITING REFINERY MODERNIZATION PROJECT

Whiting, IN, USA

To accept the heavy bitumen produced by Canada's oilsands, an overhaul of BP's largest refinery was required. High-capacity helical piles were selected due to the heavy loads, congested working areas and proximity to sensitive operating process equipment. Over four thousand 12.75-in. helical piles were installed with zero impact to the refinery's daily output production.

OWNER: BP
ENGINEER: Cyntech/Fluor
PRIME CONTRACTOR: Fluor

TRANS-ANATOLIAN PIPELINE PROJECT

Turkey

The TANAP NPS 56 gas pipeline project was an immense undertaking which involved many of the industry's largest and most well-known engineers and contractors. Since vast areas along the 1,143.3 mi (1,841km) route consisted of liquefiable soil conditions, Cyntech's pipeline anchor systems were implemented on all construction spreads to mitigate the seismic risk.

OWNER: TANAP
ENGINEER: Cyntech/Worley Parsons
PRIME CONTRACTOR: multiple

REFICAR EXPANSION PROJECT

Cartegena, Colombia

The Reficar Expansion Project team faced the immense challenge of creating Latin America's most modern refinery while also doubling the facility's output. Cyntech designed, manufactured and delivered over 11,000 large diameter helical pile sections to support the facility's tallest and heaviest process components, and in doing so shortened the schedule and reduced costs.

OWNER: Ecopetrol
ENGINEER: Cyntech/CB&I
PRIME CONTRACTOR: CB&I Americas

FIFTH TRANSMISSION PIPELINE PROJECT

Rayong to Bangkok, Thailand

Constructing a 267.2 mi (430km) NPS 42 gas pipeline through weak and wet "Bangkok Clay" necessitated significant buoyancy control measures. Even with an average anchor length of over 39 ft (12 m), much deeper than a typical project, PTT still saved over $2 million and countless man-hours with their decision to use pipeline anchors instead of set-on weights or concrete coated pipe.

OWNER: PTT Public Co.
ENGINEER: Cyntech/Worley Parsons
PRIME CONTRACTOR: Kazstroy Service/ICBI Joint Venture

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Cyntech's team of engineers and project managers are available to provide the optimal solution to your geotechnical challenge.

CONTACT US TODAY.
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cyntechgroup.com

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