

# Portable CPT Pushing Systems



The 10 Ton Portable Cone Penetrometer (CPT) hydraulic load frame is the lightest, most portable hydraulic CPT unit available. The hydraulic power pack and the hydraulic cylinders are independent and coupled by hydraulic quick disconnects. The aluminum twin cylinders and power pack weigh only 195 kg (430 lbs) and 160 kg (355 lbs) respectively. They are designed so that the handle weight is less than 10 kg (25 lbs) when tilted for travel. The large tires, 40 cm (16”) in diameter and 10 cm (4”) wide make each unit easy to roll. The twin cylinders are coupled by a platen that pushes and pulls digital electronic or mechanical cones and water or soil samplers. Cones, rods, and sampling tools are furnished separately.

**Specifications:**

Push Capacity:	10,000 kg
Pull Capacity:	12,000 kg
Power Unit:	8 kw (11 Hp) @ 3000 RPM (gasoline engine)
Length:	127 cm (50”)
Width:	80 cm (31”)
Height:	135 cm (53”)
Weight:	160 kg (355 lbs)
Twin Cylinder Ass’y:	All aluminum construction (except the chrome steel rods)
Length:	84 cm (33”)
Width:	120 cm (47”)
Height:	190 cm (75”)
Weight:	195 kg (430 lbs)
Stroke:	107 cm (42”)

**Options:**

- Hydraulic Anchoring
- Automatic Clamp
- Digital Electronic Cone System
- Water sampling tools
- Soil sampling tools

# Trailers



The Hogentogler line of trailer mounted penetrometers comes in 10 and 20 ton configurations. They come mounted on high speed single axle (20 ton can also have a double axle) trailers designed for over the road and rough terrain towing capabilities. They have two double acting hydraulic cylinders coupled by a platen and bridge assembly. They can be configured to mount either hydraulic load cells for mechanical soundings or digital electronic cones. Both models are powered by 11 horsepower gas engines with a manual starter, and the hydraulic pump is mounted externally from the oil reservoir to facilitate easy maintenance. The penetrometer has a heavy duty air filter for the engine and an automatic overload protection feature. The frame of the penetrometer is built as light weight as possible, but can amply resist the stresses produced during penetration and withdrawal of the sounding tubes. The hydraulic cylinders have, on the 10 ton unit, a 10 ton pushing and a 13 ton extraction capability. The 20 ton unit has a 20 ton pushing and a 26 ton extraction capability. The frame has a bridge assembly to allow for mounting of hold down beams where screw augers can be attached for added reaction weight. The unit is equipped with mechanical leveling jacks (automatic hydraulic leveling jacks can be furnished) and is totally self-contained. Cones, rods, hydraulic anchoring and other accessories are furnished separately.

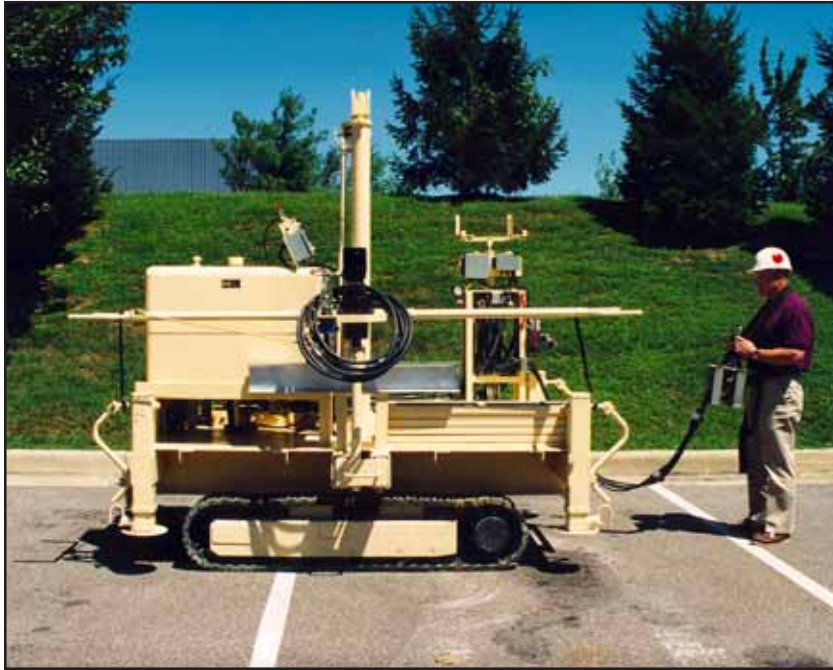
**Specifications:**

10 Ton	20 Ton
Length	17'7"
Width	7'6"
Weight	8,800 lbs. (fully loaded)

**Options:**

- Hydraulic Leveling
- Hydraulic Anchoring
- Cone penetrometers, Samplers, etc.
- Single axle  
(double axle available for 20 ton trailer)

# Crawlers: Light Weight



The 10 ton lightweight, track mounted penetrometer system is a self propelled, hydraulic, remote controlled CPT system designed for rough terrain or areas where low ground pressure is required for access. It has two double acting hydraulic ram cylinders coupled by a platen that pushes and pulls digital electronic cones and other tools. It is powered by a 29 Hp diesel engine with an electric starter. The frame has a bridge assembly allowing for anchoring of the crawler to obtain the maximum 10 ton reaction weight. A hand held hydraulically powered anchoring system is available that can quickly screw anchors into the ground to achieve a 10 ton reaction weight. The unit is equipped with mechanical leveling. Optional hydraulic leveling jacks are available. Cones, rods, and other accessories are furnished separately.

**Specifications:**

Push Capacity	10 Tons
Pull Capacity	13 Tons
Power	29 Hp diesel
Length	117"
Width	63"
Weight	6,200 Pounds (depending on tools)
Top Speed	2 Miles Per Hour
Operation	Hydraulic Remote Control (Walk behind)
Track Weight Capacity	9,900 Pounds
Ground Pressure	2.9 Pounds Per Square Inch (Based on 6,200 Pound Weight)

**Options:**

- Hydraulic leveling
- 20 Ton Ram set
- Cone penetrometers, samplers, ect.

# Crawlers: Medium Weight



The 20 ton medium weight, track mounted penetrometer system is a self propelled, hydraulic, remote controlled CPT system designed for rough terrain or areas where low ground pressure is required for access. The CPT is mounted on tracks serviceable throughout the world. It has two double acting hydraulic cylinders coupled by a platen that pushes and pulls electronic cones and other tools. It is powered by a 29 Hp diesel engine with an electric starter. An hydraulically powered anchoring system can quickly screw anchors into the ground to achieve 20 tons of reaction weight. The unit is equipped with mechanical leveling. Optional hydraulic leveling jacks are available. Cones, rods, and other accessories are furnished separately.

**Specifications:**

Push Capacity	20 Tons
Pull Capacity	26 Tons
Power	29 Hp diesel
Length	117"
Width	63"
Weight	12,200 Pounds (depending on tools)
Top Speed	2 Miles Per Hour
Operation	Hydraulic Remote Control (Walk behind)
Track Weight Capacity	15,000 Pounds
Ground Pressure	4.5 Pounds Per Square Inch (Based on 12,200 Pound Weight)

**Options:**

- Tilt back rams
- Hydraulic leveling
- Cone penetrometers, samplers, ect.

# Crawlers: Heavy Weight



The 20-Ton heavyweight track mounted penetrometer system is a self propelled, hydraulic remote controlled CPT system designed for rough terrain or areas where low ground pressure is required for access. The CPT is mounted on tracks serviceable throughout the world. It has a 20-ton push ram set that is capable of utilizing clamping devices that push a variety of sizes of CPT and casing rods. The unit can be manufactured either in our United States fabrication facility or our Singapore fabrication facility on new or used under carriages. It is powered by a 131 Hp Cummings diesel turbo charged engine and can be constructed either on an open deck or with an air-conditioned enclosure. The crawler is typically transported by low-boy trailer or can be manufactured with special high extension hydraulic cylinders that allow for a multi-axle truck to slide under it and transport it from site to site. Cones, rods and other accessories are available separately.

**Specifications:**

Push Capacity	20 Tons
Pull Capacity	26 Tons
Power	131 Hp diesel
Length	248"
Width	96"
Height	119"
Weight	44,000 pounds (depending on tools)
Top Speed	2 Miles Per Hour
Operation	
Hydraulic Remote Control	(Walk behind)
Track Weight Capacity	50,000 pounds
Ground Pressure	5.0 Pounds per Square Inch

(Based on 44,000 Pound Weight)

**Options:**

Hydraulic leveling w/extension for truck transport.  
Cone Penetrometers, samplers etc.

## Trucks: Light Weight



Mounted on the back of a Ford chassis cab, this 200 kN penetrometer is designed to be an economical way to provide cone penetrometer data. The optional environmental and water/soil sampling packages further widen the vehicle's capabilities.

The Ford F-Super Duty series vehicle fits this application well. Because of its size it does not require special permits, licenses or increased insurance costs. In most states and countries it can be licensed as a pickup truck. The 7.3 liter Diesel engine provides durable, low-cost power. The combination of size and weight allows access to the most difficult sites while providing economical operation and maintenance. The vehicle can be provided by either the customer or Hogentogler & Co. Other chassis manufacturers can be utilized.

The unit is furnished standard with a penetrometer system capable of applying 200 kN of down feed force and 260 kN pullout force, manifolded hydraulic controls and valving, hydraulic oil reservoir, and reaction weight of 8 tons.

Choice of cones, mechanical or digital electronic, onboard Field Computer System with the capacity to reduce all data from Hogentogler digital electronic cones plus cone profile plotting software are all available and can be purchased separately depending upon individual requirements.

Available options include: Environmental Package, Lightweight Drilling Package for soil and water/environmental sampling, Mud Injection System for deeper soundings, Pressurized Water Supply, Hydraulic Leveling Jacks for quicker setups on site, Hydraulic Anchoring for increased reaction weight, and an Automatic System Shut-Off safety feature.

Each vehicle is built to the customer's specifications to meet specific needs. Please contact Hogentogler & Co. or our representatives, so that we may discuss your particular application in detail and explain the advantages of cone penetrometer testing as it applies to in-situ testing and engineering practices.

## Trucks: Medium Weight



The 200 kN penetrometer is mounted on a medium weight vehicle to provide greater versatility in sounding tests. The reaction weight of 12 tons allows for soundings to greater depths, generally of 11 tons, without the use of anchoring systems. This allows for more time to be spent on actual soundings and less time setting up and taking down the anchors. Also, the larger working platform on the back of the vehicle allows for a wider range of body styles. It can be supplied with an open deck or with an enclosed van body designed to the user's specifications and needs.

The vehicle is designed around a Ford F800 cab and chassis. Power is from a 9.0 liter Diesel motor with a manual transmission. Standard Ford options, such as A/C, power steering, etc., can be supplied as requested. The vehicle can be provided by Hogentogler & Co. or purchased by the customer. Other chassis manufacturers can be utilized.

The unit is furnished with a penetrometer system capable of applying 200 kN of downfeed force and 260 kN of pullout force, manifolded hydraulic controls and valving, hydraulic oil reservoir, a reaction weight of 12 tons and an hydraulic leveling system for quicker on site setups.

The customer can design the system best suited to his applications and budget by choosing between the mechanical or digital electronic cones with on-board Field Computer Systems with the capacity to reduce all data from Hogentogler digital electronic cones and do cone plotting. These items are purchased separately to meet individual system requirements.

Available options include: Van Body Enclosure, Environmental Package, Lightweight Drilling Package for soil/water/environmental sampling, Mud Injection System for deeper sounding capability, Pressurized Water Supply, Hydraulic Anchoring for increased reaction weight, Automatic System Shutoff safety feature and more.

Each vehicle is built to meet an individual customer's testing requirements. As such, please contact our sales engineers or our representatives, to discuss your particular application in detail. Let us share with you our knowledge of the cone penetrometer as it applies to in-situ testing and engineering practices.

## Trucks: Heavy Weight



The combination of a 200kN cone penetrometer with a purpose-built enclosed van body permits a vehicle designed for maximum production. It is fully enclosed for operation in any weather and fully ballasted to reduce setup times on-site. All controls are placed within easy reach of the operator. It can be built on a conventional twin screw rear drive chassis or, for maximum mobility, on a 6x6 all-wheel drive chassis. It is engineered to provide optimum performance on production jobs.

The twin hydraulic rams are capable of developing 200 kN of down feed force and 260 kN of pullout strength. The fully manifolded valve network provides the operator with extremely precise control of the sounding at all times. The sounding flow control valve permits the operator to designate the desired sounding speed independent of cone, sleeve or rod resistance or temperature variations in the hydraulic fluid. The manifold also contains a solenoid dump valve that is activated by the Field Computer System to stop a sounding if it senses a situation that could damage the cone.

The vehicle leveling system provides rapid, remote control leveling of the unit once it is on site. The front two jacks are rated to support 20 tons each. Both jacks can be optionally connected to a 24" x 84" reaction plate. The reaction plate may be staked to the ground to eliminate slipping on wet surfaces. The two rear jacks are rated to support 7.5 tons each. Each of the jacks has a 36" stroke and is encased in two sliding square tubes configured to remove all side loading from the cylinder rods. All four jacks are locked into position with hydraulic check valves to maintain their positions.

Due to the size and weight of these vehicles, certain criteria must be met when designing the unit. Our engineering staff will assist you with this step, giving their recommendations of chassis type, axles, transmissions, engines, etc. Most customers choose to provide their own vehicles; we can, however, provide them upon request.

The system Hogentogler & Co. provides includes the hydraulic system (rams, valving and plumbing, hydraulic reservoir), on-board Field Computer System with bubble or CMOS memory. Cones are purchased

# Cabin Interior & Decon Unit



separately to allow customers to select cones that will best serve their testing needs.

The van body is 15 1/2' x 8' x 7' wide, fabricated of white clad aluminum interior and exterior, and rigidly mounted on the truck chassis. It includes the following: 1 1/8" laminated oak flooring, two sliding screened windows per side, a locking rear door with a window and detachable access ladder, fluorescent lighting, electrical storage and pulse dampening, desk with drawer units, work bench with storage cabinet underneath for tools, 24,000 BTU air conditioning system, 2" thermal foam insulation, a telescoping roof section to accommodate the hydraulic rams, storage rack for sounding tubes and ballast to bring the vehicle weight up to 16 tons.

Because each vehicle is built to meet specific customer needs, there are numerous options available to tailor the design/construction to meet these needs. Our engineering staff will gladly discuss your requirements with you and design a system custom built for your applications.

## 200 kN VAN BODY OPTIONS

- Aerodynamic nose cone for front of van improves fuel economy and handling.
- Generator and electrical wiring to provide self-contained 120V/100 amp power to operate other equipment.
- Electric baseboard heating system.
- Transfer Switch for external power source.
- Electronic Governor to control engine speed during sounding.
- Viewing Window between cab and van body.
- Side Door.
- Steel Floor.
- Pressurized Water System.
- Hogentogler Installed Power Takeoffs.
- Environmental Package.
- Water/Soil Sampling Package.
- Rod clamp to prevent sounding tubes from sliding back down hole.
- 15 cm per second ram retraction speed (Standard speed is 8 cm/sec) . Automatic Sounding System Shutoff Safety feature.

# Drill Rig Conversions & Custom CPT Rigs

Hogentogler has years of experience customizing our rigs to our customer's specifications. If it is mechanically possible, Hogentogler can build it for you. We have put our rigs on barges for offshore testing, ATV's for heavy duty off-road testing, drill rig conversions and custom trailers. We also provide ongoing customer support that takes into account any special projects the customer might have.

Our years of working with sophisticated engineering firms and universities, with their specialized requirements, has given us a breadth of manufacturing knowledge unequalled in the industry. We have built specialized rigs and cone systems for customers such as the US Navy, Army Corps of Engineers, many state DOT's as well as many foreign Governments and institutions. This experience, plus our outstanding customer support, means that we can supply and service a vast array of CPT equipment. Every rig we sell can be customized to the customer's wishes.

Our engineers have proven themselves as creative and competent designers with a proven track record of satisfying the demands of our customers. If you have a tough testing challenge, call us with your special needs and we will custom engineer a solution for you.

