

TECHNICAL SPECIFICATION MODEL PFM 2448 TERRAMAX® SYSTEM

The Model PFM 2448 TERRAMAX® System is a portable ID mount machine tool for beveling and facing 24" through 48" pipe. The tool's twin hydraulic motor drives power helical drive gears attached to the main spindle for smoother power delivery and optimal surface finish. A large diameter, single hydraulic cylinder with rapid and slow feed control, advance and feed the cutting head into the pipe. A large diameter mandrel shaft provides optimum stability during heavy cutting operations. An integrated flow control manifold minimizes hydraulic connections. The lifting frame does not require removal or separate lay down stands. The tool can be lifted for mounting in horizontal, vertical-up, or vertical-down positions for prepping onsite pipes.

The Model PFM 2448 TERRAMAX® System comes complete with:

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| • Model PFM 3248 Sub-Assembly | 1 ea. |
| • ID Tracking Tool Module Assembly | 3 ea. |
| • Mandrel Head Assembly | 1 ea. |
| • Hydraulically Powered Mandrel Head Shaft Assembly for 24"-48" | 1 ea. |
| • Lathe Lifting Frame Assembly | 1 ea. |
| • Drive Motor Assembly | 2 ea. |
| • Wrench Kit | 1 ea. |
| • Operator's Manual | 1 ea. |
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Accessories

- Counterbore Tool Module (6" maximum depth)
- Optional Pipe Mounting Kits
 - Base Machine PFM 2432 TERRAMAX® for 24"-32" pipe (includes 42" faceplate)
 - Mounting Kit for 32"-36" pipe: P/N 05-1496
 - Mounting Kit for 32"-48" pipe: P/N 05-1497 (includes 54" faceplate)
 - Base Machine PFM 4048 TERRAMAX® for 40"-48" pipe (includes 54" faceplate)
 - Mounting Kit for 24"-40" pipe: P/N 05-1499 (includes 42" faceplate)
 - Mounting Kit for 24"-40" pipe: P/N 05-1500 (does not include 42" faceplate)
 - Mounting Kit for 36"-40" pipe: P/N 05-1498
- Diesel (Tier 4/Euro 4) TERRAMAX® Hydraulic Power Unit
- 400/480VAC 50Hz/60Hz Electric TERRAMAX® Hydraulic Power Unit

Design and Operating Features

- Patent-pending hydraulic control circuit provides reliable control, load-sensing, on-control power, and use of only two hydraulic hoses (pressure and tank return) from HPU.
- The hydraulic system requires simple fixed-volume pressure supply and may be powered with either a Tri Tool Technologies Diesel or Electric HPU, a third-party power unit, or with most auxiliary hydraulic systems available on larger industrial construction equipment, such as an excavator or loader.
- Heavy-duty mandrel with expanding clamping feet provides fast, accurate self-centering and alignment to the pipe ID with optimal rigidity for high speed machining.
- The hydraulic-controlled mandrel head provides up to 138,000 lbs. clamping force at 2000 PSI hydraulic pressure, and is adjustable for soft metal applications where damage to the pipe ID due to clamping contact is a concern.
- Included mandrel head and mounting pads cover the full mounting range of the tool, 29.5" (749.3 mm) through 47" (1193.8 mm) ID pipe (optional mounting kits may be required).
- An integrated lifting frame and stand allows for convenient handling of the machine and self-supporting placement on the ground when not in use.
- Two available faceplate diameters provide optimal ground clearance and reduce the required blocking height of the pipe. The faceplate size may be changed over quickly without major disassembly of internal machine components.
- Seven inches of axial feed travel allow for faster and more forgiving placement in the pipe end and provide the travel needed for up to 6 inches deep counterboring with optional accessories.
- Three ID Tracking Tool Modules distribute the cut load evenly across the faceplate and over multiple cutting inserts, thereby maximizing tool life and machining quality. A fourth tool module may be added for ID chamfer or "K" type bevel geometries in heavy wall applications.
- The patent-pending faceplate bearing system and drive train was developed for ease of maintenance, and includes a single large diameter cross-roller bearing and modular drive pinion gear subassemblies for quick cleaning and lubrication.
- A Dual Hydraulic Drive System with two available motor sizes delivers optimal torque and cutting speed over a wide range of pipe sizes.
- Sliding chip guard doors with latches are included on both sides of the machine, each with an interlock switch to protect the operator and stop the machine if door is opened during operation.
- A safety interlock system monitors the state of the machine in real time and prevents the operator from unclamping the PFM while machining.
- A 'Jog' switch is supplied to slowly rotate the faceplate for safe and efficient tooling setup.
- All wrenches needed for operation are included with the system.

Specifications

Reference Drawings follow at end of document

Weight (approximate)

PFM 2432: 5550 lbs (2517 kg)

PFM 4048: 6950 lbs (3152 kg)

Pipe Cutting Capacities

Basic Pipe Sizes

Most schedules of 24" through 32" pipe with PFM2432.

Most schedules of 40" through 48" pipe with PFM4048.

Most schedules of 32" through 40" pipe with optional kits.

Wall Thickness Capacity

.375" to 1.25" (9.5mm to 32mm) wall for 24" through 36" OD tube or pipe.

.375" to 1.125" (9.5mm to 28.5mm) wall for 38" through 48" OD tube or pipe.

(Contact TRI TOOL Inc. for heavier wall pipe applications.)

Material Cutting Capabilities

Mild steels, chrome steels (Rc 35 max), API X42 through X85, stainless steel, copper-nickel alloys, aluminum, and Inconel-clad pipe.

Solid Inconel and other high-temperature alloys may require special procedures and/or special tooling. Contact Tri Tool Technologies for special application assistance.

Drive System

Dual Hydraulic Drive Motor for 24" through 48" Pipe

Requires a separate hydraulic power supply and 12 VDC electrical supply.

(Ref: Diesel TERRAMAX®; Hydraulic Power Unit; Technical Specifications)

Maximum Cutting Head Speed (at 53 GPM)

32 RPM: 24" through 36" OD

24 RPM: 36" through 48" OD

Mounting

Hydraulically actuated cylinder expands Mandrel Pins and Jaw Blocks.

Mandrel Pin Radial Travel

1" (25.4mm)

Available Axial Feed Travel

7" (178mm)

Power Requirements

Hydraulic Power Requirement

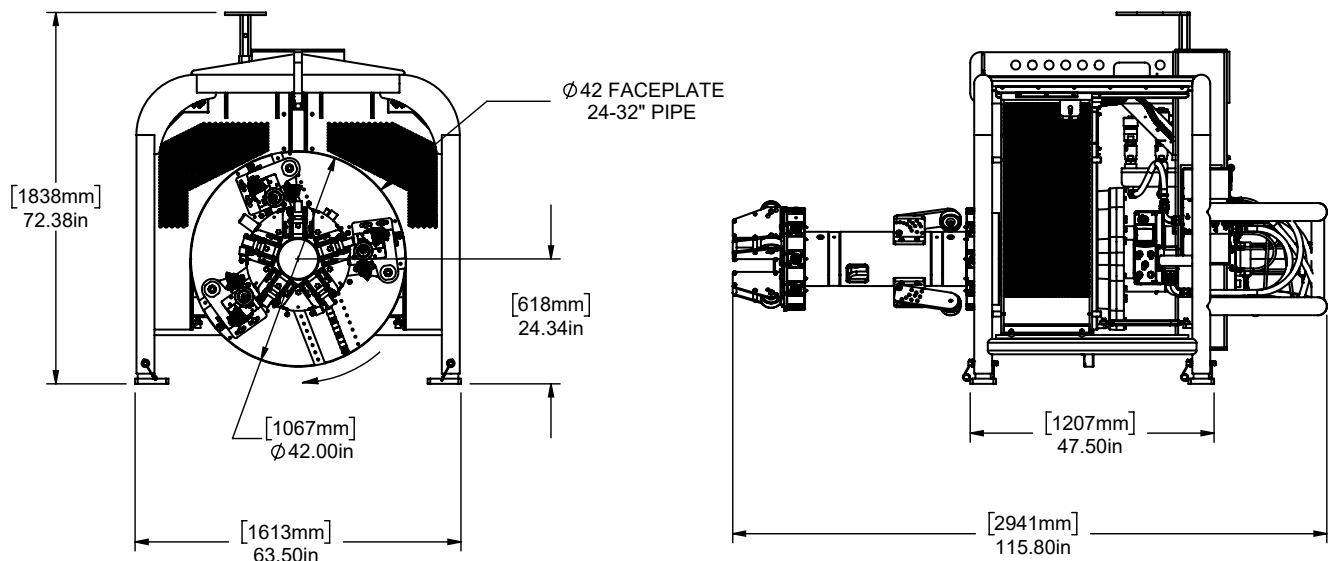
53 GPM at 2000 PSI

Electric Power Requirement

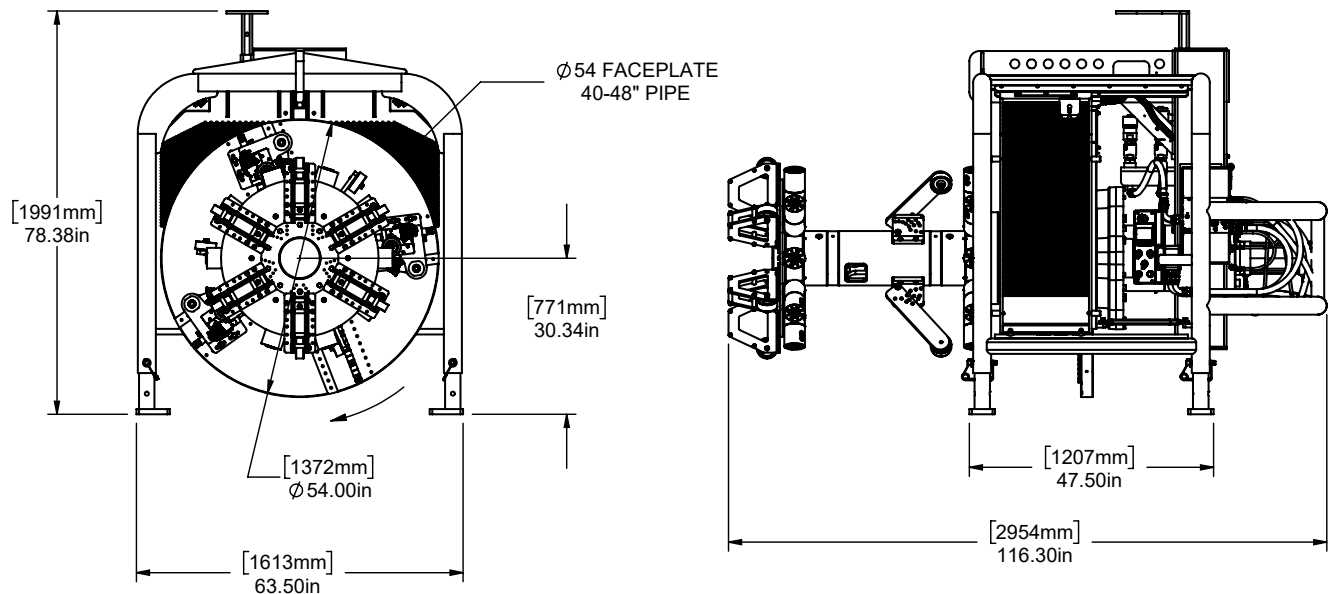
12 VDC at 15 amps

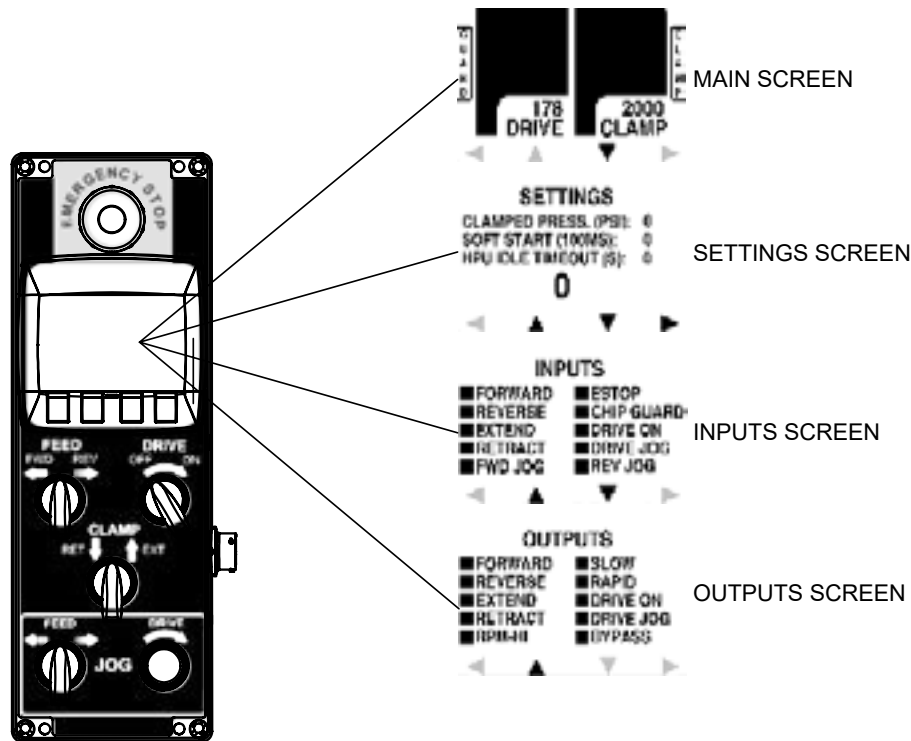
Clearance and Dimensions

Reference Drawing No. 77-1850 (PFM 2432 TERRAMAX®)



Reference Drawing No. 77-1851 (PFM 4048 TERRAMAX®)





Note To The Customer

Spare Parts and Standard Tool Bits are available from stock. Engineering design services for custom tool bits and special function modifications are available from the factory.

All Tri Tool Technologies and allied equipment products are subject to design improvements and specification changes at any time with no obligation to units already sold.

Warranty (limited): Parts and equipment are warranted against defects in material and workmanship for a period of one (1) year from date of purchase. Full details supplied on request and/or with the tools.



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