



EasyDrill

Principles and Technologies

Technical Introduction

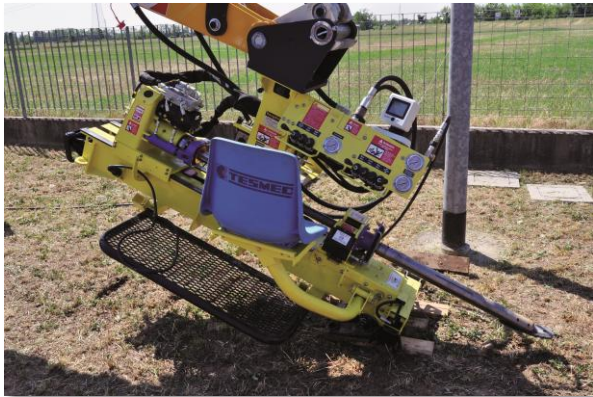
Products



1. Short introduction

1.1 EasyDrill

The EasyDrill is a unique fully functional directional drill designed as an attachment “tool” for excavators and backhoes.



With its ability to be surface launched, pit launched, inverted and with set up angles of +/- 90 degrees and full 360 degree rotation this award winning drill is the ultimate machine for last mile fiber connections.

1.2 Overview

EASYDRILL allows to match the High Versatility of an Excavator and the NO-DIG Technology.

EXCAVATOR + NO-DIG Technology → EASYDRILL



2. Main features

2.1 Pit launched

If you need to get down to depth immediately just excavate the pit, attach the drill, lower to the desired depth and pitch, and you are ready to drill.



2.1 Drill Uphill

Thanks to his versatility EasyDrill allows you to drill uphill, no other directional driller can do that.



2.3 +/- 90° Set up angles

All directional drills can launch $0^{\circ} \div 20^{\circ}$, maybe even $0^{\circ} \div 30^{\circ}$ degrees down. EasyDrill can launch right through to 90° degrees down.



2.4 360° degrees rotation

The 360° swivel plate on drill/excavator interface allows the EasyDrill to reach into corners, over fences, and even into buildings, rotate around and drill back under the excavator.



2.5 Hydraulic Bracing

The EasyDrill utilizes 3 hydraulic bracing arms to quickly and efficiently hold the drill in place during drilling.



3. Components

Talking about EasyDrill we can identify 3 basic components:

- **Drill Unit**



- **Fluid System**



- **Tools**

- **Paddle Bits**
- **Reamers**
- **Pulling eyes**
- **Locator System**
- **Drill rods**
- **Rod Basket**



3.1 Drill Unit: technical features



DRILLING UNIT DIMENSIONS	METRIC	U.S.
LENGTH	2.00 m	78 in
WIDTH	0.68 m	27 in
HEIGHT	0.93 m	37 in
OPERATING MASS	425 kg	937 lb

OPERATION		
SPINDLE SPEED, MAX	110 rpm	
SPINDLE TORQUE, MAX	1660 Nm	1225 lbf·ft
THRUST FORCE	35600 N	8000 lbf
PULLBACK FORCE	46700 N	10500 lbf
MAX BORE DIAMETER(*)	355 mm	14 in
MAX BORE LENGTH (*) (**)	~ 70 m	~ 230 ft
ENTRY ANGLE	0 ÷ 90°	

EXCAVATOR REQUIREMENTS		
HYDRAULIC FLOW RANGE, (MIN & MAX)	60 ÷ 80 l/min	16 ÷ 21 gal/min
HYDRAULIC PRESSURE, (MIN & MAX)	220 ÷ 227 bar	3200 ÷ 3300 PSI

3.2 Fluid System: technical features

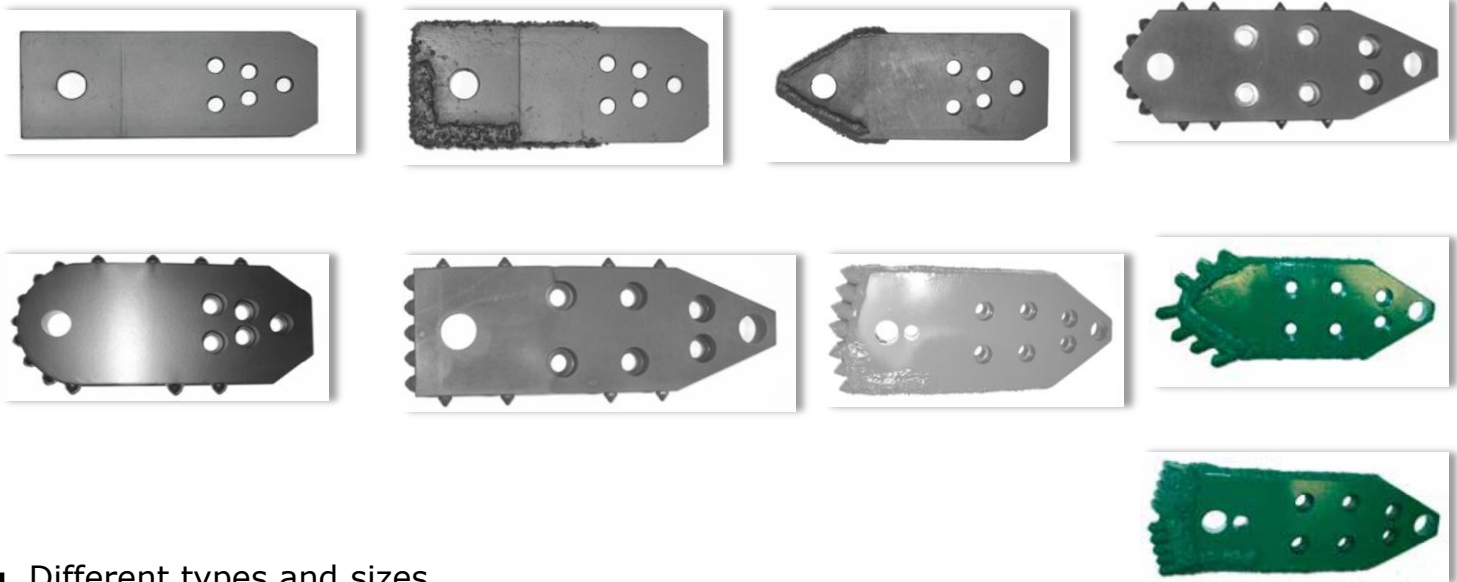


DRILLING FLUID SYSTEM	METRIC	U.S.
LENGTH	1.40 m	55 in
WIDTH	1.28 m	50 in
HEIGHT	0.90 m	35.4 in
MASS (empty)	128 kg	282 lb
DRILLING FLUID PRESSURE, MAX	40 bar	580 PSI
DRILLING FLUID FLOW, MAX	40 l/min	10.5 gal/min
FLUID TANK CAPACITY	300 l	79 gal
DRILLING FLUID	WATER OR WATER/POLYMER (SOIL DEPENDENT)	
ENGINE MOTOR	HONDA 5.5 HP	

- Mountable on the front excavator blade;
- Wash down gun.

3.3 Tools: technical features

3.3.1 Paddle Bits



- Different types and sizes
- Made with Ballistic Armor Plate
- Tungsten Carbide Embedding Hardfacing Process
- From 2 to 8 times better wear life than typical hardfaced alloy

SOIL TYPE vs PADDLE BITS - CHART

SOIL TYPE	PILOT BIT TYPE								
	ACC	AR	RB	CB	CE	CH	TB	STH	ARS
SAND									
SANDY LOAM									
SAND with COBBLE									
DRY CLAY									
WET CLAY									
CLAY with COBBLE									

RATING SYSTEM	
	NOT RECOMMENDED
	FAIR
	GOOD
	BEST

3.3.2 Reamers



- Different types and sizes
- Heat treated
- Swivel or Draw bar rear connection
- Shark teeth or Conical teeth

SOIL TYPE vs REAMERS - CHART

SOIL TYPE	BACKREAMER TYPE					
	FR	FS	W	C	FC	TB
SAND	●	●	●	●	●	●
SANDY LOAM	●	●	●	●	●	●
SAND with COBBLE	●	●	●	●	●	●
DRY CLAY	●	●	●	●	●	●
WET CLAY	●	●	●	●	●	●
CLAY with COBBLE	●	●	●	●	●	●

RATING SYSTEM	
●	NOT RECOMMENDED
●	FAIR
●	GOOD
●	BEST

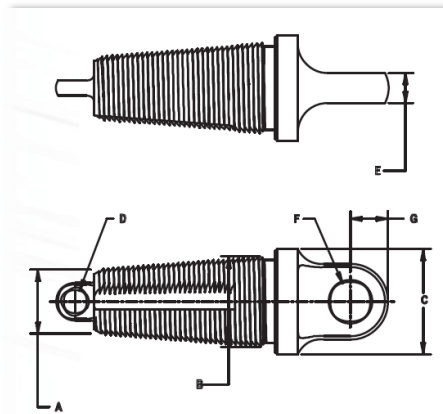
3.3.3 Drill Rods & Rod Basket



DRILL ROD	METRIC	U.S.
NOMINAL LENGTH	93 cm	37 in
DIAMETER	46 mm	1.8 in
BEND RADIUS, MIN	18.2 m	60 ft
WEIGHT	7.7 kg	17 lb
STANDARD N° OF RODS(*)	50	

ROD BASKET DIMENSIONS		
LENGTH	1.00 m	39 in
WIDTH	0.70 m	27.5 in
HEIGHT	0.74 m	29 in
MASS (with 50 rods)	420 kg	926 lb
MASS (empty)	35 kg	77 lb
MAX n° of RODS	50	

3.3.4 Pulling Eyes



- PE and PVC Pulling Eyes
- Swivel Head
- Fixed Head
- Clevis Head
- From 18 to 195mm ID Diameter

3.3.5 Locator System



- Digitrack SE Receiver
- Digitrack ST Transmitter
- Remote Display
- Up to 15.2 m depth

3.3.6 Sonde Housing

- Designed for location and depth
- Manufactured from 1054 MPa chrome-moly steel for superior strength and durability
- The side load feature provides quick and easy field installation and removal of transmitter sonde and batteries
- Screw-in, heat treated replaceable nozzles for maximum durability and steering



3.3.7 Drive Collar



- Designed to connect the API and easy straight thread together
- Made of heat treated chrome-moly with or without hardfacing. Hardfacing increases the life of the product by 2x

3.3.8 Lead Rod



- Are manufactured out of 4340 Nickel Steel, which adds 207 MPa of tensile strength.
- Provides a quick disconnect and allows the rod to flex for improved steering

3.3.9 Tail Piece & Crossover

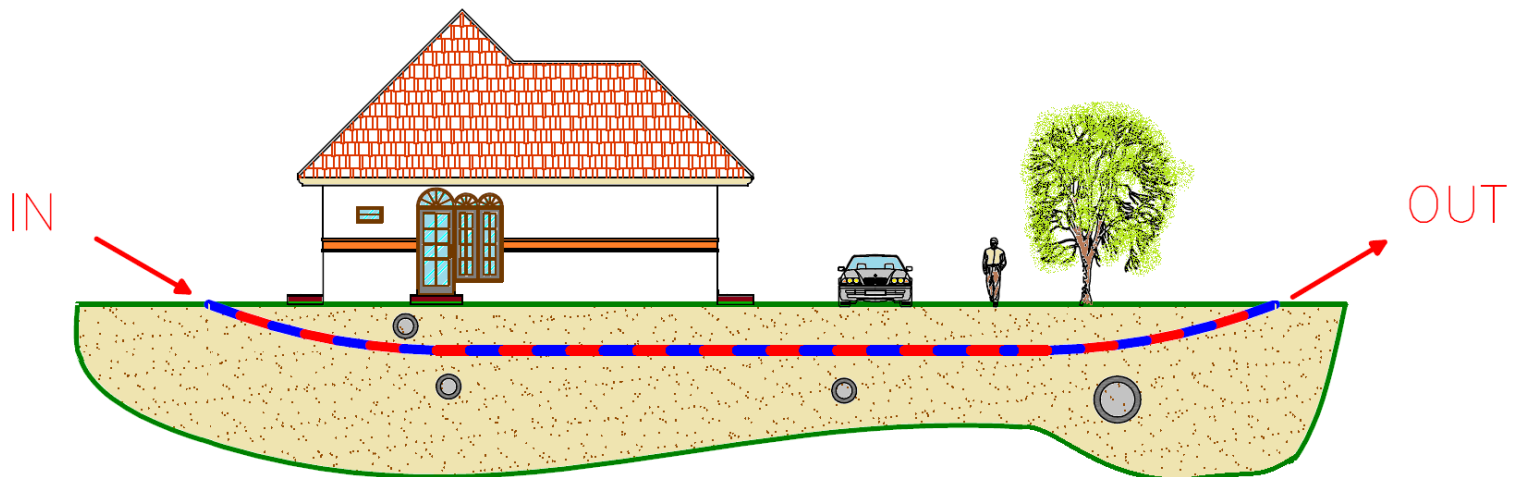


- Crossover allow to share tooling amongst different manufacture's machines
- Tail piece extend the life and versatility of Sonde Housing
- Manufactured out of Chrome-moly

3.3.10 Swivel Link for Paddle Bits



EasyDrill, the best for the "last mile" utilities installation





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