2022 BLASTHOLE DRILLING

MAMMOTH TECHNOLOGIES

Over 20 years of design & manufacturing experience in the mining & drilling industry

CONTENTS

COMPANY OVERVIEW

Introduction

Mammoth Technologies is a design & manufacturing corporation within the mining & drilling industry, creating a dynamic presence in the international market The Mammoth Breakout Wrench drew attention to our innovative yet uncomplicated approach to problem-solving within the global market when we first introduced it in 1999. Development and product refinement and improvement is a continuous process in the business. Our product development drive has been shaped and guided by the requirements, needs & frustrations gleaned from our clients in the global market. This has led us to develop a reasonably priced range of durable, cost-effective products in the various sectors of the mining industry. They were designed for: improving safety; simplifying operation; lowering maintenance costs.

Vision Statement

Our vision is to be a well-established brand in the mining & drilling industry, leading the way through safety, quality, service & price, driven by ethical standards and time tested values.

Mission Statement

To produce better products that are affordable, safer to use and easier to work with. Better. Affordable. Safer. Easier

Expertise

Mammoth Technologies takes responsibility for all the phases of the process including conceptualization, market research, design, manufacturing & testing, through to distribution and service. All manufacturing (including process manufacturing) is done in-house.

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Distributor/Agent

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Email: _____

Mammoth Services

Mammoth Technologies offers a wide range of versatility in our field of expertise.

General Services

- R&D
- CAD drawings, 3D/solids, simulations and more
- Innovative solutions to relative problems
- Conceptualization
- Hydraulic Design
- Electrical Design
- Application Specific Hardware Design
- Application Specific Software Design
- Manufacturing
- Process Manufacturing
- Reverse Engineering
- Patent Searches / Patents Processing
- Specific problem solving and research
- Product marketing solutions

Innovative and Consumable Services

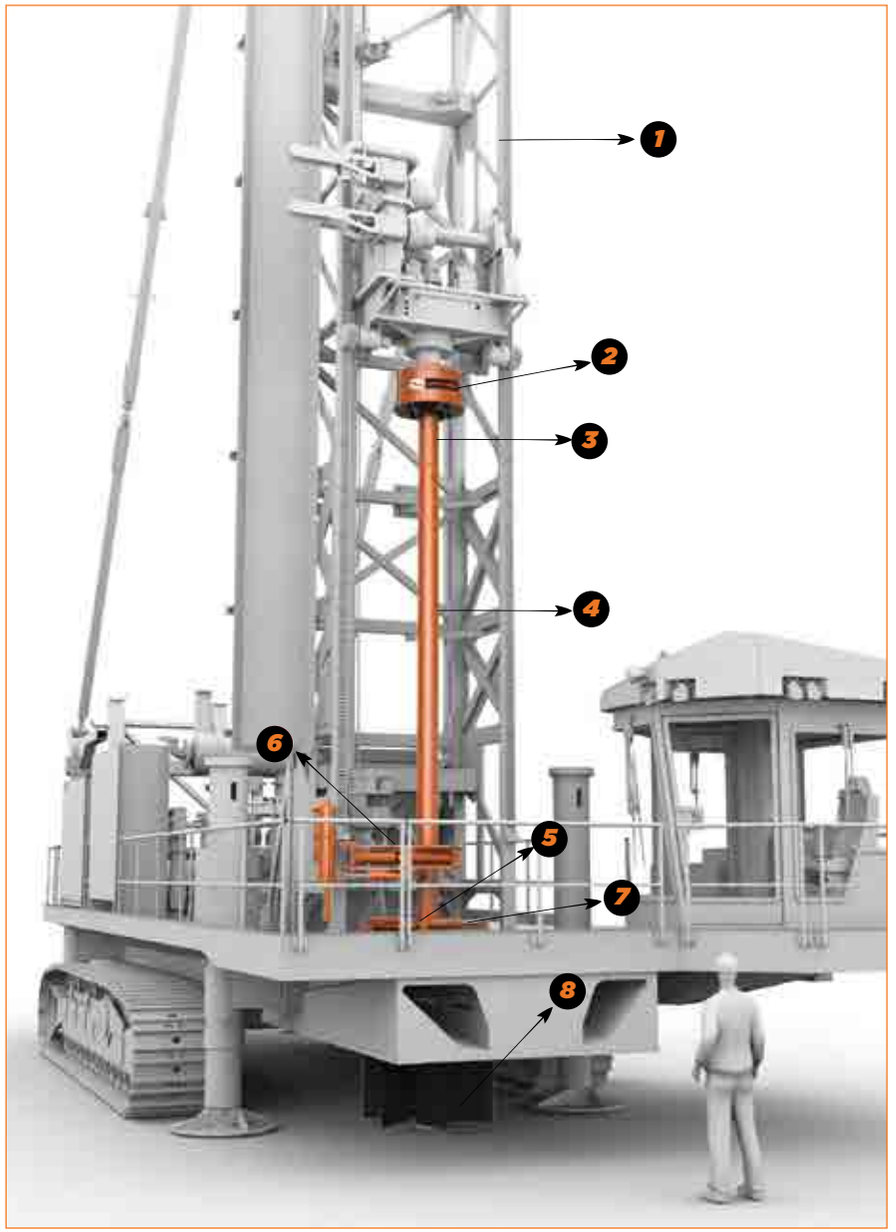
- Servicing and repairs of Mammoth innovative products
- Breakout benches for breaking of tight joints, due to tension build up during drilling
- Straightening and repairs of drill rods

Repairs/Services/Refurbishment
repairs@mammothtech.co.za
For all general repairs, services, and refurbishments on Mammoth products, including existing products, regardless of manufacturer or origin.

Product Quality

Because of our uncompromising commitment to safety, quality and functionality it is essential that only approved genuine parts and consumables are used on the Mammoth product range.

Product Map



1 Mast

2 Shock Sub

3 Top Sub

4 Drill Rod

5 Bottom Sub

6 Breakout Wrench

7 Stem Lock

8 Hole Sweeper

Product

Tricone Drill Bit

Stabilizer

Breakout Bench

Rod Pot

Thread Grease Bin

Thread Grease

Bits & Jaws

Rod Support

Hydraulic Cylinder

01

MAMMOTH BREAKOUT WRENCH

Mammoth Breakout Wrench

The Mammoth Breakout Wrench was developed to meet the requirements of a hands-free breakout wrench for all conditions and any OEM Drill Rig.

Mammoth Breakout Wrench is designed to address:

- Locked joints found in the drill stem
- Wrench-slip when loosening drill rods, hammers and bits
- The lack of compatible Cross-Platform Breakout Wrenches
- Unsafe breakout procedures

Benefits of the Mammoth Breakout Wrench

- SAFETY: Fully automated, hands-free operation
- SAFETY: Compliance with Mine SAFETY requirements for operators
- Versatile enough to adapt & fit the requirements of an OEM Drill Rig
- Electrical controls & hydraulics - integrated into the drill rig system
- The clamp action is slip-proof & fits any specific OD requirement
- Clamp action is unaffected by rod wear within the design parameters
- Mammoth's patented moveable bracket allows the wrench to be set at any operating height
- Mountable on conveniently placed stand or directly on the mast.
- It can be adapted to suit the specific requirements of angle drilling
- Deck Bush wear does not affect the breakout action
- The torque can be increased for extreme conditions and requirements
- Can be bolt mounted on either side of the column mast
- Wrenches have been designed to handle drill rod ranges from 3" to 15"
- Fully repairable

Wrench Configuration Options

Complete Mammoth Breakout Wrench

- Complete, Fully Automated Mammoth Breakout Wrench
- Automated or Manually Bolt Adjustable Mounting Bracket
- Stand-Alone Bracket, Right Mast Mounted & Left Mast Mounted is hydraulically adjustable & manually bolt adjustable
- Full Hydraulic System
- Full Electrical System
- Jaws/Bits
- Installation Manual

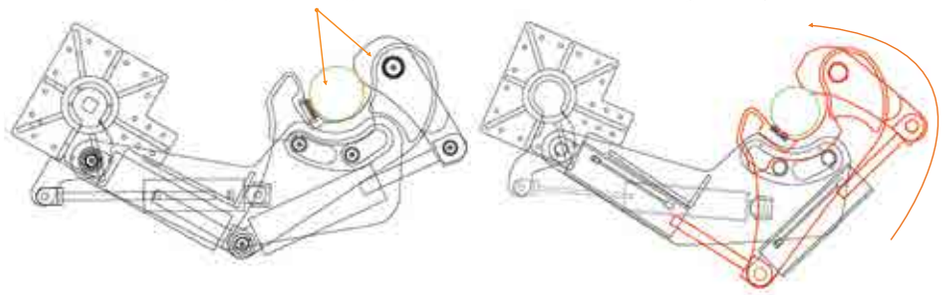
Basic Mammoth Breakout Wrench (Optional)

- Complete, Fully Automated Mammoth Breakout Wrench
- Manually Bolt Adjustable Mounting Bracket
- Stand-Alone Bracket, Right Mast Mounted & Left Mast Mounted is manually bolt adjustable
- No Hydraulic System
- No Electrical System
- Jaws/Bits
- Installation Manual

Product Benefits & Comparisons

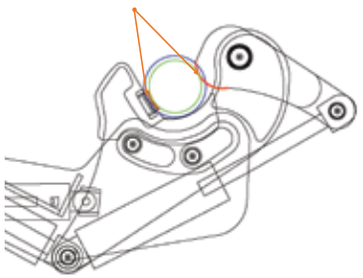
High Clamping Force

High Torque Rotation

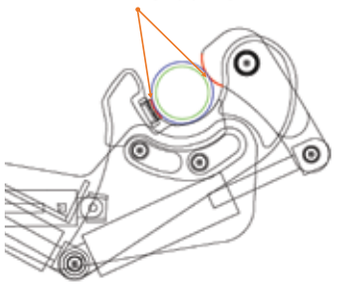


Up to 2” Wear Factor

Breakout Wrench gripping Drill Rod

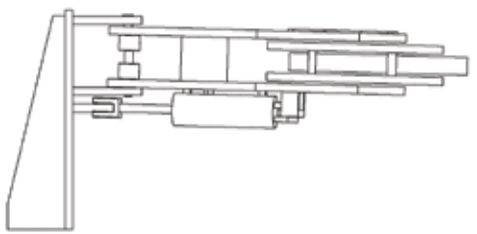


Breakout Wrench gripping Hammer

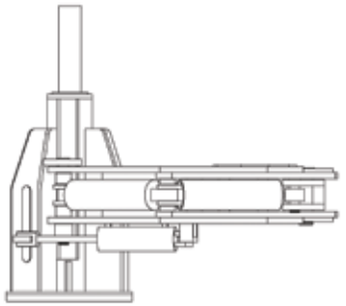


Conventional Breakout Wrench

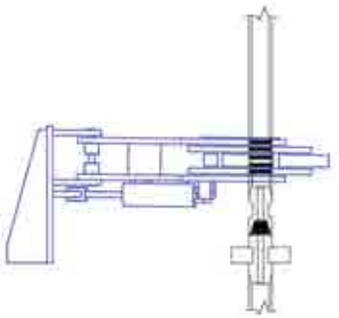
Mild Steel: Bends under strain



Product Benefits & Comparisons



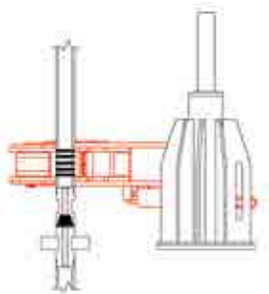
Mammoth Breakout Wrench made from high tensile steel to minimise bending & increase durability.



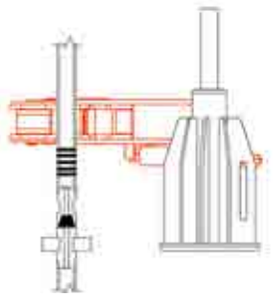
Conventional Breakout Wrench static position Restricted to one height only. Lacks versatility

Mammoth Breakout Wrench

Adjustable mounting bracket to grip the drill string above the flats and hard facing



Grip on Hard Facing
Not recommended
Reduces lifespan of Jaws/Bits
Breakout Action
Not Reliable



Grip on Hard Facing
Not recommended
Reduces lifespan of Jaws/Bits
Breakout Action
Not Reliable

Mammoth Breakout Wrench manufactured to fit:

EPIROC				
DM25	DM45E	DMG	DMH	PV235
DM25SP	DM45-EMD6	DML	DMH100	PV270
DM30	DM45HP	DML-60	DMH-D	PV270SP
DM35	DM45SP	DML-HP	DMM3	PV271
DM40	DM50K	DML-LP	DM70	PV271SP
DM40SP	DM50	DML-SP	DM70E	PV275
DM45	DM50E	DML-XL	DMM	PV351
DM45/HP	DM50XL	T4BH	DMM2	PV351E
C14	DM60	DM30-2	DMM25SPH	

SANDVIK				
C40K	D45K	D25KS	D90KS	1190E
C60K	D45KS	D245KS	D90K-SP	1190DSP
C75K	D50K	D75K	D90KS-SP	DKII
C55SP	D50KS	D75KS	D55SP	DR460
D40K	D60K	D80K	D55SPH	D60KL
D40KS	D60KS	D90K	D75KL	T60K
D75EX	T60KS			

JOY GLOBAL (P&H)				
70HA	100B	250XP-DL	250XPC	120A
100A	100XP	250XP-ST	320XPC	

GARDNER DENVER			
GD45	GD60	GD80	GD120
GD100	GD70H	GD70	GD130

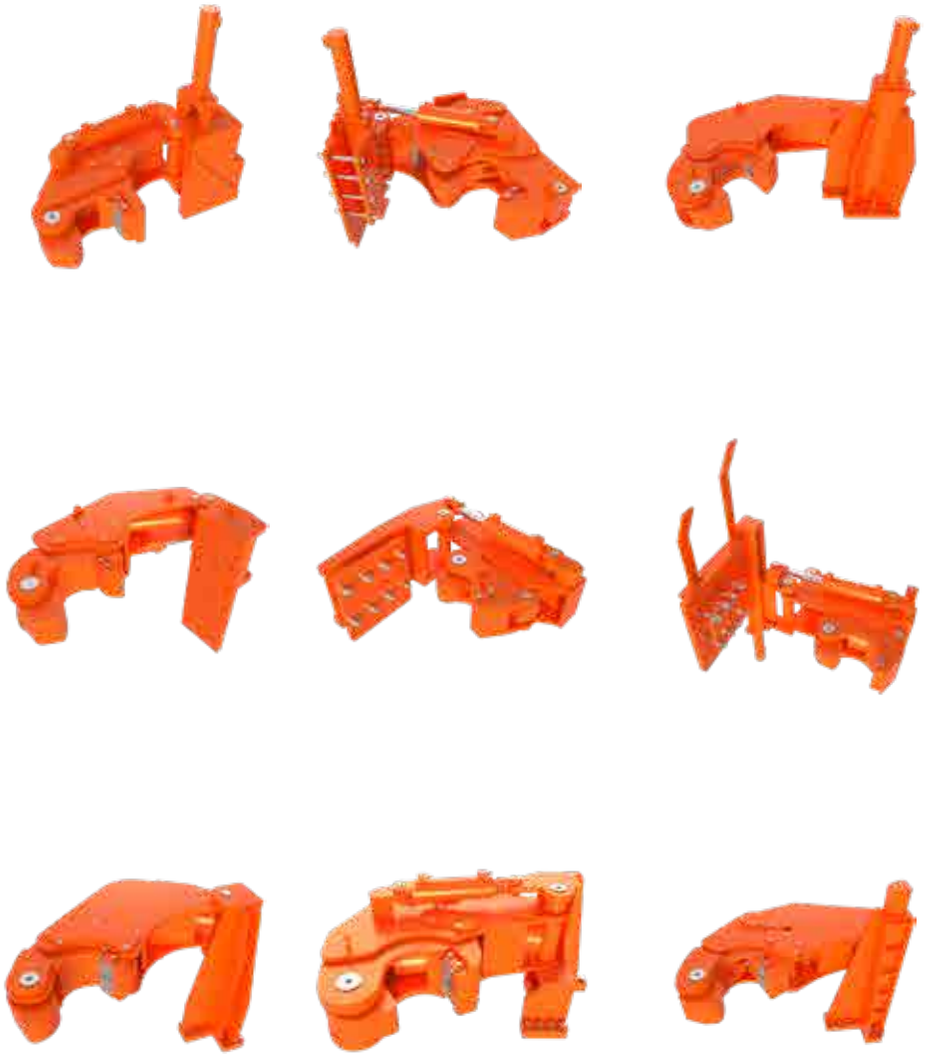
Mammoth Breakout Wrench manufactured to fit:

CATERPILLAR (Bucyrus, Reedrill, Marion, Terex)					
33HR	49HR	MII	SK25	SK60II	SKS
33HR-SP	49R	M2	SK30I	SK70	SKS-12
35HR	49RH	M3	SK35	SK70E	SKS-15
35R	49RII	M3B	SK40	SK75	SKS-16
35RII	49RIII	M4	SK40/50	SKF	SKS-W
37HR	50R	M5	SK45I	SKF-11	SKSS
39HR	55R	MD6240	SK50	SKF-11.5	SKSS-12
39R	59HR	MD6290	SK50I	SKF-12	SKSS-13
40R	59R	MD6420	SK50T	SKF-15	SKSS-15
45R	60R	MD6540	SK60	67R	SKSS-16
47R	60RII	MD6640	SK60E	SKT	SKTT
61R	60RIV	MD6750	SK60I		SKTT

Product Configurations - Wrench types available in:

Unit Sizes		
4”	4 ½”	5”
5 ¼”	5 ½”	6”
6 ⅜”	6 ½”	7”
7 ½”	7 ⅝”	8”
8 ½”	8 ⅝”	9”
9 ¼”	9 ½”	10”
10 ½”	10 ¾”	11”
11 ½”	11 ¾”	12 ¼”
12 ½”	12 ¾”	13 ⅜”

Product Configurations



Product Configurations - Mounting Brackets

Mast Mounted Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Right Mounted

Mast Mounted Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Right Mounted

Mast Mounted Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Right Mounted

Product Configurations - Mounting Brackets

Stand Alone
Adjustable Bracket

- Manually Bolted Hydraulic Adjustable Bracket
- Left Mounted

Stand Alone
Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Left Mounted

Stand Alone
Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Left Mounted

Stand Alone
Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Right Mounted

Product Configurations - Mounting Brackets

Mast Mounted Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Left Mounted

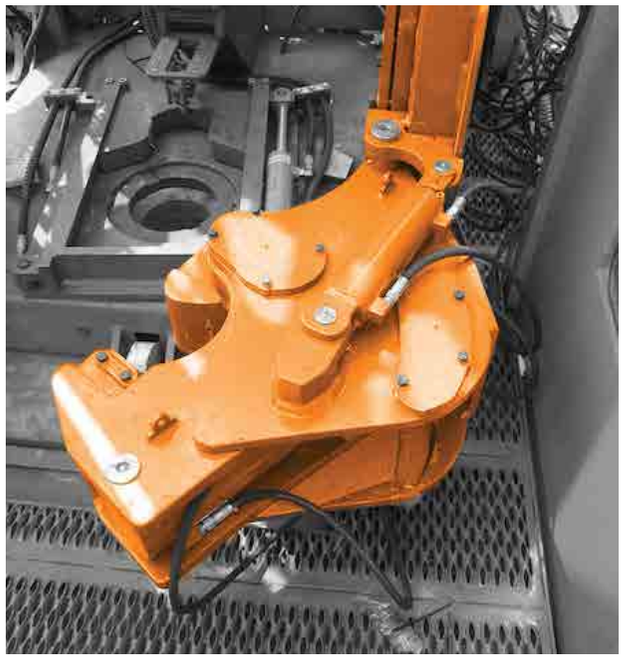
Mast Mounted Adjustable Bracket

- Automated Hydraulic Adjustable Bracket
- Left Mounted

Mast Mounted Fixed Bracket

- Manually Bolted Adjustable Bracket
- Left Mounted

Mammoth Breakout Wrench Series



The Mammoth Breakout Wrench fitted to a DMM2 / CDM 75 Rig

The Mammoth Breakout Wrench fitted to a DM30II/ CDM30 Rig

The Mammoth Breakout Wrench Series

The Mammoth Breakout Wrench fitted to a PV351 Rig

The Mammoth Breakout Wrench fitted to a BE49R Rig

Mammoth Breakout Wrench Series

The Mammoth Breakout Wrench fitted to a T4BH Rig

Mammoth Breakout Wrench Series (T4BH Rig)

The Mammoth Breakout Wrench in Parked Position (T4BH Rig)

The Mammoth Breakout Wrench in Engaged Position

Mammoth Breakout Wrench fitted to a PV271 / PV275

Technical Specifications

Range One	Mammoth Technologies
Technical Specifications	All designs, specifications & components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.
Wrench Type	Fully-automated wrench or fully-automated basic wrench
Clamp Type	Slide Clamp or Cam Clamp
Pressure Requirements	2,500 PSI
Breakout Torque	80,120 N.M | 59,09 FT/LB
Range	4" up to 9"
Bracket Mounting	Fully-Automated Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Breakout Wrench | Manually Bolted Adjustable Bracket Fully-Automated Basic Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Basic Breakout Wrench | Manually Bolted Adjustable Bracket
Adjustable Bracket Travel	250mm (Standard)
Jaw/Bit Type	Tungsten Carbide Hardened Steel Alloy (Standard)

The Mammoth Breakout Wrench can be designed to fit any OEM machine application. The Mammoth Breakout Wrench is not limited to any specific range only.

It is recommended that only genuine OEM spare parts and consumables are used on the Mammoth product range, to ensure full performance and operational stability. Utilising unauthorised spare parts and consumables can result in injury and potentially void warranty claims.

Enquire for Rigs not displayed here.

Technical Specifications

Range One	Mammoth Technologies
Technical Specifications	All designs, specifications and components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.
Wrench Type	Fully-automated wrench Fully-automated basic wrench
Clamp Type	Slide Clamp or Cam Clamp
Pressure Requirements	2,500 PSI
Breakout Torque	66,200 N.M | 48,82 FT/LB
Range	4" up to 9"
Bracket Mounting	Fully-Automated Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Breakout Wrench | Manually Bolted Adjustable Bracket Fully-Automated Basic Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Basic Breakout Wrench | Manually Bolted Adjustable Bracket
Adjustable Bracket Travel	300mm (Standard)
Jaw/Bit Type	Tungsten Carbide Hardened Steel Alloy (Standard)

The Mammoth Breakout Wrench can be designed to fit any OEM machine application. The Mammoth Breakout Wrench is not limited to any specific range only.

It is recommended that only genuine OEM spare parts and consumables are used on the Mammoth product range, to ensure full performance and operational stability. Utilising unauthorised spare parts and consumables can result in injury and potentially void warranty claims.

Enquire for Rigs not displayed here.

Technical Specifications

Range Three	Mammoth Technologies
Technical Specifications	All designs, specifications and components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.
Wrench Type	Fully-automated wrench or fully-automated basic wrench
Clamp Type	Slide Clamp or Cam Clamp
Pressure Requirements	2,500 PSI
Breakout Torque	70,131 N.M | 51,72 FT/LB
Range	4" up to 9"
Bracket Mounting	Fully-Automated Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Breakout Wrench | Manually Bolted Adjustable Bracket Fully-Automated Basic Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Basic Breakout Wrench | Manually Bolted Adjustable Bracket
Adjustable Bracket Travel	300mm (Standard)
Jaw/Bit Type	Tungsten Carbide Hardened Steel Alloy (Standard)

The Mammoth Breakout Wrench can be designed to fit any OEM machine application.The Mammoth Breakout Wrench is not limited to any specific range only.

It is recommended that only genuine OEM spare parts and consumables are used on the Mammoth product range, to ensure full performance and operational stability. Utilising unauthorised spare parts and consumables can result in injury and potentially void warranty claims.

Enquire for Rigs not displayed here.

Technical Specifications

Range Four	Mammoth Technologies
Technical Specifications	All designs, specifications and components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.
Wrench Type	Fully-automated wrench or fully-automated basic wrench
Clamp Type	Slide Clamp or Cam Clamp
Pressure Requirements	2,500 PSI
Breakout Torque	157,000 N.M | 115,78 FT/LB
Range	6" up to 12"
Bracket Mounting	Fully-Automated Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Breakout Wrench | Manually Bolted Adjustable Bracket Fully-Automated Basic Breakout Wrench | Automated Hydraulic Adjustable Bracket Fully-Automated Basic Breakout Wrench | Manually Bolted Adjustable Bracket
Adjustable Bracket Travel	300mm (Standard)
Jaw/Bit Type	Tungsten Carbide Hardened Steel Alloy (Standard)

The Mammoth Breakout Wrench can be designed to fit any OEM machine application.
The Mammoth Breakout Wrench is not limited to any specific range only.

It is recommended that only genuine OEM spare parts and consumables are used on the Mammoth product range, to ensure full performance and operational stability. Utilising unauthorised spare parts and consumables can result in injury and potentially void warranty claims.

Enquire for Rigs not displayed here.

The Mammoth Breakout Wrench

Mammoth Breakout Wrench works with Flanders Automation System

02

MAMMOTH CLAMP WRENCH

Mammoth Clamp Wrench

The Mammoth C 14 Clamp Wrench with enhanced safety features is a well-designed, robust and compact unit for the break-out of drill rods/pipes. This uniquely designed wrench excels when it comes to providing a solution that can assist with faster and more sufficient breakouts.

Technical Specifications

Technical Specifications	All designs, specifications & components of theequipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.
Wrench Type	Clamp Wrench
Clamp Type	Slide Clamp
Pressure Requirements	2500 Psi
Range	2"-3.5"
Bracket Mounting	Floating Pivot Bracket
Bracket Travel	70mm
Wrench Pivot (Rotation)	70 Degrees
Jaws	Bits Hardened Steel Alloy

The Mammoth Clamp Wrench can be designed to fit any OEM machine application. The Mammoth Clamp Wrench is not limited to any specific range only.

It is recommended that only genuine OEM spare parts and consumables are used on the Mammoth product range, to ensure full performance and operational stability. Utilising unauthorised spare parts and consumables can result in injury and potentially void warranty claims.

Enquire for Rigs not displayed here.

Mammoth Clamp Wrench fitted to an Epiroc C14

03

MAMMOTH SHOCK SUB

Mammoth Shock Sub

The Mammoth Sealed Shock Sub is designed to reduce vibration and shock by absorbing these energies from being transferred to the powerhead during rotational pulldown and pullback operations to maximize the lifespan of the tooling and increase drilling productivity.

Mammoth Shock Sub is designed to address:

- Wear and tear on conventional shock sub systems
- Multidirectional absorbency limitations
- Inadequate seal characteristics
- Need for enhanced safety features

Benefits of using a Drill Rig

- Reduces drill rig maintenance by dampening torsional & axial shock loads.
- Increases penetration rates by keeping the bit in more uniform contact with ore formation.
- Allows use of higher pull-down force and increased rotary speeds in demanding drilling areas
- Increases bit life by dampening repeated shock loads normally transmitted to the bit bearings and cutting structure
- Decreases noise levels by eliminating metal to metal contact between rotary drive & drill pipe
- Rotary and DTH compatible

Standard Sizes:

8” Shock Sub

New 8” Shock Sub designed & manufactured for the Epiroc D65 drill rig.

10” Shock Sub

18” & 22” Shock Sub

24” & 28” Shock Sub

*The percentages and figures reflected are estimates based on testing of the product and are not guaranteed results. The percentages of improvement will vary depending on factors such as rock type, rock abrasiveness, groundwater and drilling parameters.

Technical Specifications - Standard Range

All designs, specifications and components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.

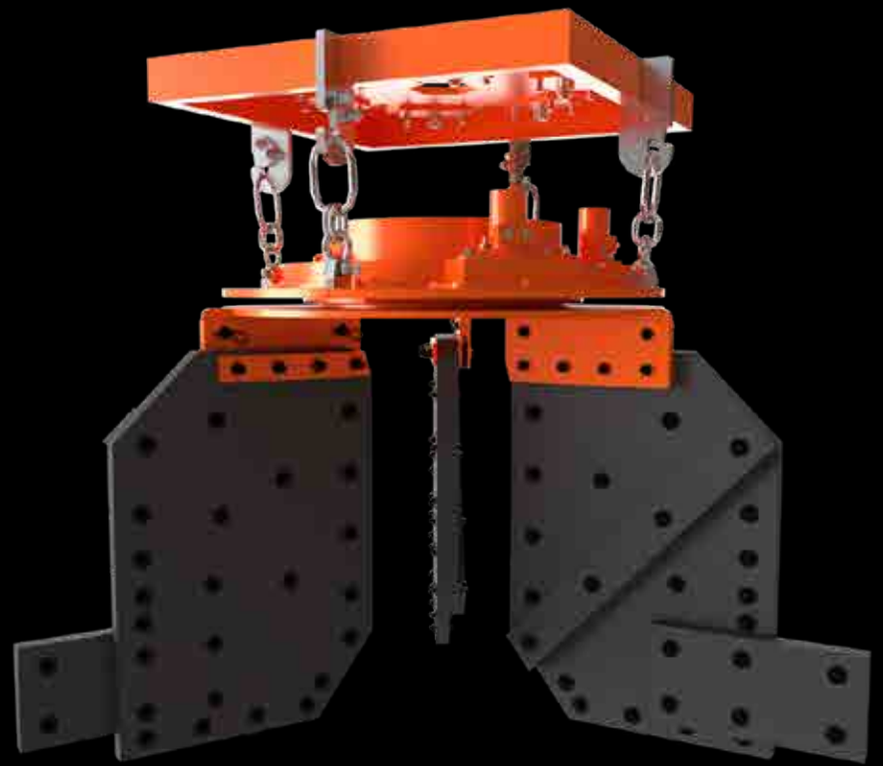
Model	Diameter Element	Shoulder to Shoulder Size (Standard)	Drill Pipe OD (Guidance Only)	Pull Down Force (LBS)	Approx Weight
10	10	Per customer request	3½ - 7"	30 000 to 55 000	100
15	15"	Per customer request	4½" - 7½"	30 000 to 60 000	350
18	18"	per customer request	6" - 7⅝"	50 000 to 121 000	450
22	22"	per customer request	7⅝" - 8 ⅝"	50 000 to 121 000	700
24	24"	per customer request	7⅝" - 8 ⅝"	50 000 to 121 000	800
28	28"	per customer request	8 ⅝" - 10 ¾"	100 000 to 150 000	1050
34	34"	per customer request	8 ⅝" - 13⅜"	100 000 to 150 000	1500

All Mammoth Shock Subs are based on a standard shoulder to shoulder length. Mammoth Shock Subs are not restricted to standard shoulder to shoulder lengths, as we can customize the shoulder to shoulder dimension according to client specifications.

It's recommended that only genuine OEM spare parts & consumables are used on the Mammoth product range, to ensure full performance & operational stability. Utilising unauthorised spare parts & consumables can result in injury & potentially void warranty claims.Enquire for Rigs not displayed here.

04

MAMMOTH HOLE SWEEPER



Mammoth Hole Sweeper

Mammoth Hole sweeper is a device fitted to the undercarriage of a drill rig with the function addressing chippings ejected from a blasthole & cleaning the collar of a blasthole with no manual labour.

Mammoth Hole Sweeper is designed with rotating sweeping flaps to deflect chippings ejected from the blasthole - thus preventing them from accumulating around the collar of the hole.

Mammoth Hole Sweeper is designed to address:

- Clogging below deck on the drill rig
- Chippings re-entering the blast hole
- Time lost due to slowed penetration rates
- Wear on the drill string

Benefits of the Mammoth Hole Sweeper

- Eliminates the necessity for manually cleaning the border of the holes
- Prevents chippings from piling up around the hole
- Increased penetration rates
- Increased bit life
- Increased drill steel life
- Increased life of the deckbush
- Decreased deck contamination

Hole Sweeper works with Flanders Automation System

Pressure Requirements: 1500-2800 PSI Range: 4.5” up to 15” Rotation: Gear drive
Power: 2 x Hydraulic Motors

Hole Without Sweeper

Hole With Sweeper

Performance Evaluation

Test Results with the Hole Sweeper fitted to PV351 Machine on Platinum Mine.

Pattern: 326-085

Rig	Holes	Penetration (m/h)
PV149	16	14.06
PV141	27	13.46
PV143 (Hole Sweeper fitted)	4	22.63
PV144	20	20.60
Total Average		16.28 (PV143 included in average)
Average		15.88 (PV143 not included)
% improvement with sweeper		42.54

Pattern: 329-043

Rig	Holes	Penetration (m/h)
PV145	37	19.19
PV141	25	21.18
PV144	5	14.23
PV143 (Hole Sweeper fitted)	85	24.46
Total Average		22.32 (PV143 included in average)
Average		19.57 (PV143 not included)
% improvement with sweeper		25.01

Pattern: 326-050

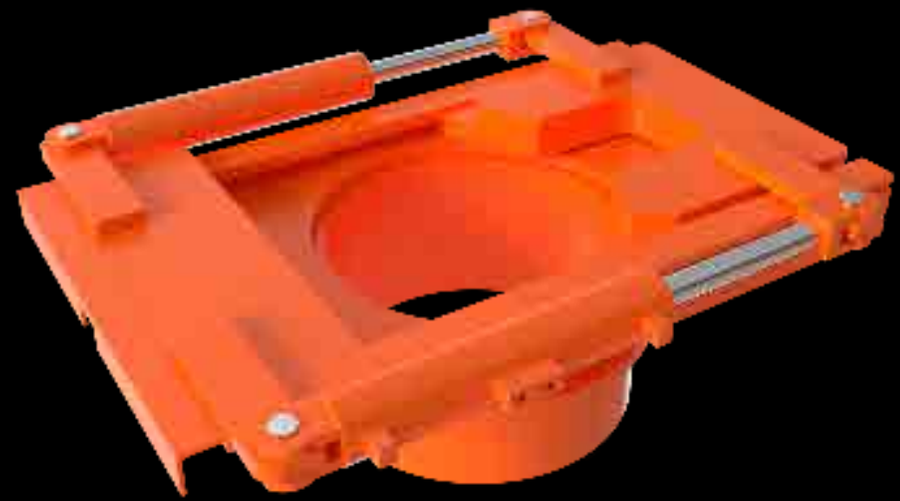
Rig	Holes	Penetration (m/h)
PV143 (Hole Sweeper fitted)	55	27.95
PV144	19	18.97
PV145	49	22.07
Total Average		23.49 (PV143 included in average)
Average		21.20 (PV143 not included)
% improvement with sweeper		31.81

It's recommended that only genuine OEM spare parts & consumables are used on the Mammoth product range, to ensure full performance and operational stability. Utilising unauthorised spare parts and consumables can result in injury and potentially void warranty claims.

Enquire for Rigs not displayed here.

05

MAMMOTH STEM LOCK



Mammoth Stem Lock

The Mammoth Stem Lock is designed and manufactured to secure the drill string securely, enabling the breakout of the drill rod and bit.

The Mammoth Stem Lock can be manufactured to individual requirements and specifications.

Requirements from Customer

- Drill manufacturer
- Drill model
- Drill rod diameter
- Spanner-flat size

Benefits of the Mammoth Stem Lock

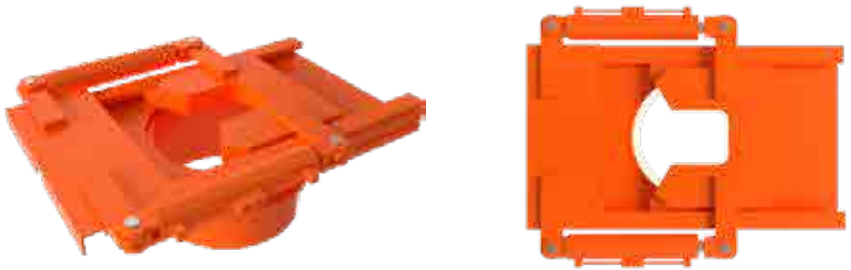
- Quality manufacturing
- Durability for best performance
- Produced to our standard quality manufacturing procedures

Stem Lock works with Flanders Automation System

Technical Specifications

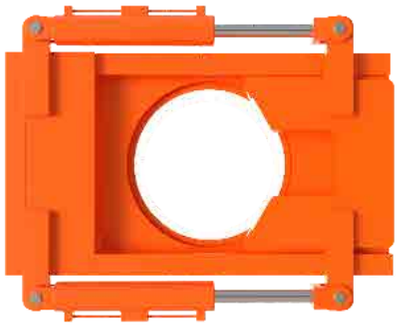
PV351 Stem Lock in the open position

PV351 Stem Lock in the engaged position

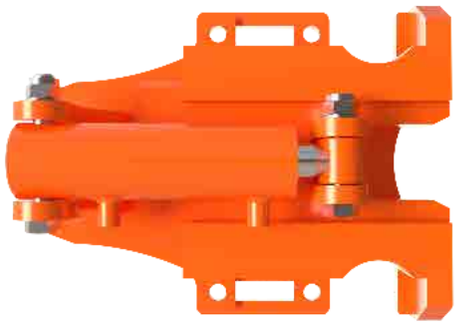


PV351 Stam Lock Fork & Cylinder

PV351 Type Stem Lock



DM30 Type Stem Lock



PV271 / PV275 Type Stem Lock

Operating Sequence

Stem Lock
Rest Position

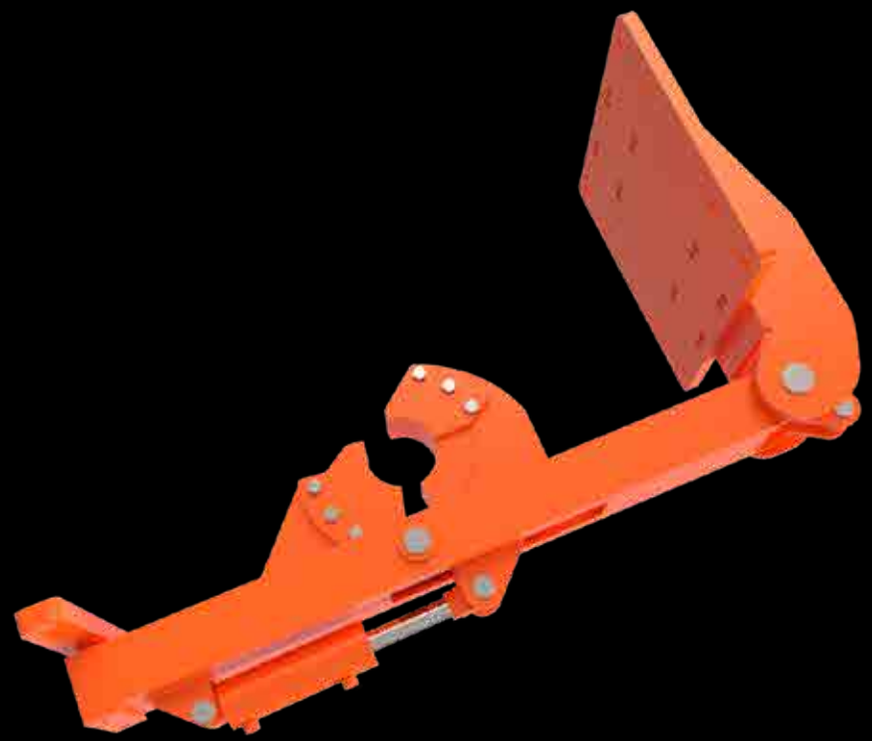
Align Drill Rod Flats With
Fork

Engage Stem Lock

Rotate Drill Rod,
Separate Connection

06

MAMMOTH ROD SUPPORT



Mammoth Rod Support

The Mammoth Rod Support holds the drill rod in place on a mast while you join or break apart drill rods/pipes even bits changes. It supports the drill string while tramming your drill rig.

Drill Rig Type	Drill Rod Diameter
DML	114 mm
DM 30	127 mm
DM 45	140 mm
PV 275	161 mm
PV 271	194 mm
PV 351	219 mm
	273 mm

07

MAMMOTH BREAKOUT BENCH

Mammoth Breakout Brench

Use the Mammoth Breakout Bench to easily break or loosen DTH hammers, chucks, back-heads, top subs and drill bits.

Technical Specifications - Breakout Bench

Breakout bench	
Clamp Type	Double Slide Clamp
Clamp Force Combined	432KN (44 Ton) Max @ 3000Psi
Torque	56 600N.m Max @ 3000Psi

Hydraulic Power pack	
Power	380Vac
Hydraulic Pressure	3000 Psi (max)
Flow Rate	10 L/min
Tank	40 L

Controls / Valve bank	
Valve Bank	3- Spool Directional Control

The hammer size of the breaout bench is 4” - 8”.

08 MAMMOTH DRILL ROD

Mammoth Drill Rod

The Mammoth Drill Rod is an addition to increasing the length of the hole depth to extend drilling penetration. The Mammoth Drill Rod can be manufactured to individual requirements and specifications.

Benefits of the Mammoth Drill Rods

Quality manufacturing
Durability for the best performance
Produced to our ISO 9001 : 2015 standard
Fully repairable dependant on wall thickness

Mammoth Repairable Drill Rods

We can repair drill rods.

Benefits of repairing drill rods:

Cost savings
Extended life of tube

Technical Specifications

Soft Rock Drilling
Shallower Drilled Holes
Repairability
High Wear
Cost Efficient

Graded Mild Steel Typically used in Nonabrasive Soft Rock Drilling Formations.

Tool joints are manufactured from selected heat-treated alloy steel for the greatest wear resistance and prolonged life.

Hard Rock Drilling
Deeper Drilled Holes
Repairability
Low Wear
Production Efficient

High Grade Alloy typically used in Abrasive Hard Rock Drilling Formations.

Tool joints are manufactured from selected heat-treated alloy steel for the greatest wear resistance and prolonged life.

Technical Specifications

Common Specifications		Mammoth Northern Cape All designs, specifications & components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.		
Outside Diameter (in)	Outside Diameter (mm)	Wall Thickness (in)	Wall Thickness (mm)	Recommended Connection
4½"	114.0mm	0.500"	13	3½" API & 3" BECO
5"	127.0mm	0.500"	13	3½" BECO
5"	127.0mm	0.750"	19	3½" BECO
5½"	139.7mm	0.500"	13	3½" BECO
5½"	139.7mm	0.750"	19	3½" BECO
6"	152.4mm	0.750"	19	4" BECO
6¼"	158.8mm	0.500"	13	4" BECO
6¼"	158.8mm	0.750"	19	4" BECO
6¼"	158.8mm	1.000"	25	4" BECO
6⅝"	168.3mm	0.864"	22	4½" BECO
7"	177.8mm	0.500"	13	4½" BECO
7"	177.8mm	0.750"	19	4½" BECO
7"	177.8mm	1.000"	25	5¼" BECO
7½"	190.5mm	1.000"	25	5¼" BECO
7⅝"	193.7mm	0.500"	13	5¼" BECO
7⅝"	193.7mm	0.750"	19	5¼" BECO
7⅝"	193.7mm	1.000"	25	5¼" BECO
8⅝"	219.1mm	0.750"	19	6" BECO
8⅝"	219.1mm	0.906"	23	6" BECO
8⅝"	219.1mm	1.000"	25	6" BECO
10¾"	273.1mm	1.000"	25	8" BECO
10¾"	273.1mm	1.250"	32	8" BECO

Mammoth Drill Rods can be manufactured to customer specifications. All thread types are available to suit your application.

09

MAMMOTH SUB ADAPTORS

Mammoth Sub Adaptors

The Mammoth Top Sub is a short length of drill collar that has male threads on one end and female on the other. It is screwed into the bottom of the top drive (rotary head) or shock sub and onto the drill rod. It serves as a crossover between the top drive (rotary head) or shock sub connections and the rod connection.

The Mammoth Bottom Sub is a short length of drill collar that has male threads on one end and female on the other. It is screwed onto the bottom of the drill rod and onto the drill bit. It serves as a crossover between the drill rod connections and the bit connection.

Benefits of the Mammoth Top/Bottom Subs

- Quality manufacturing
- Durability for the best performance
- Produced to our ISO 9001 : 2015 standard

Technical Specifications

Common Specifications		Mammoth Technologies All designs, specifications and components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.			
Outside Diameter (in)	Outside Diameter (mm)	Top Sub Pin: API Box: BECO/ API	Bottom Sub Pin: API/ BECO Box: API	Bit thread sizes to suit machine	Recommended Connection
4½"	114.0mm	Requirements from customer • Drill manufacturer • Drill model • Drill rod diameter • Shoulder to shoulder length • Actual thread size • Spanner flat position The Mammoth Top Sub | Bottom Sub can be designed to fit any OEM machine application. The Mammoth Top Sub | Bottom Sub is not limited to any specific range only.			3½" API & 3½" BECO
5"	127.0mm				3½" BECO
5"	127.0mm				3½" BECO
5½"	139.7mm				3½" BECO
5½"	139.7mm				3½" BECO
6"	152.4mm				4" BECO
6¼"	158.8mm				4" BECO
6¼"	158.8mm				4" BECO
6¼"	158.8mm				4" BECO
6⅝"	168.3mm				4½" BECO
7"	177.8mm				4½" BECO
7"	177.8mm				4½" BECO
7"	177.8mm				5¼" BECO
7½"	190.5mm				5¼" BECO
7⅝"	193.7mm				5¼" BECO
7⅝"	193.7mm				5¼" BECO
7⅝"	193.7mm				5¼" BECO
8⅝"	219.1mm				6" BECO
8⅝"	219.1mm				6" BECO
8⅝"	219.1mm				6" BECO
10¾"	273.1mm				8" BECO
10¾"	273.1mm				8" BECO

Mammoth Top Subs | Bottom Subs can be manufactured to customer specifications and thread requirements.

The Mammoth Top & Bottom Sub

When rods must be added to increase the depth of drilling, the loosening of the threads are now performed at the bottom end of the saver sub as opposed to the bottom of the top drive (rotary head) which is the most expensive part of the drill string. This means that the connection between the top end of the saver sub and top drive (rotary head) is seldom used, and suffers minimal wear and tear, whereas the lower connection is used in almost all cases displacing the most wear and tear from the rotary head connection to the much lower cost, saver sub which is expendable and does not represent a major investment. The top drive or rotary head component, on the other hand represent a significant capital outlay and considerable downtime when it needs to be replaced.

Bottle Neck Top Sub

Bottom Sub with Hardfacing

Top/Bottom Sub

10 MAMMOTH STABILIZER

Mammoth Stabilizer

The Mammoth Stabilizer is key to provide lateral stability to the drill bit during the drilling process.

Lateral stability is a key component to ensure optimal functioning of the drill bit. Stabilizers add to the efficient utilization of energy and force by limiting lateral movement of the drill bit.

Benefits of the Mammoth Stabilzer

- Quality manufacturing
- Durability for best performance
- Produced to our ISO 9001 : 2015 standard

Technical Specifications

Common Specifications		Mammoth Technologies All designs, specifications and components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.	
Outside Diameter (in)	Outside Diameter (mm)	Recommended Connection	Requirements from customer • Drill manufacturer • Drill model • Drill rod diameter • Shoulder to shoulder length • Actual thread size • Spanner flat position • Wear strips The Mammoth Stabilizer can be designed to fit any OEM machine application. The Mammoth Stabilizer is not limited to any specific range only.
4½"	114.0mm	3½" API & 3½" BECO	
5"	127.0mm	3½" BECO	
5"	127.0mm	3½" BECO	
5½"	139.7mm	3½" BECO	
5½"	139.7mm	3½" BECO	
6"	152.4mm	4" BECO	
6¼"	158.8mm	4" BECO	
6¼"	158.8mm	4" BECO	
6¼"	158.8mm	4" BECO	
6⅝"	168.3mm	4½" BECO	
7"	177.8mm	4½" BECO	
7"	177.8mm	4½" BECO	
7"	177.8mm	5¼" BECO	
7½"	190.5mm	5¼" BECO	
7⅝"	193.7mm	5¼" BECO	
7⅝"	193.7mm	5¼" BECO	
7⅝"	193.7mm	5¼" BECO	
8⅝"	219.1mm	6" BECO	
8⅝"	219.1mm	6" BECO	
8⅝"	219.1mm	6" BECO	
10¾"	273.1mm	8" BECO	
13 3/8"	339mm	10" BECO	

Mammoth Stabilizers can be manufactured to customer specifications. All thread types are available to suit your application.

11

MAMMOTH DECK BUSH

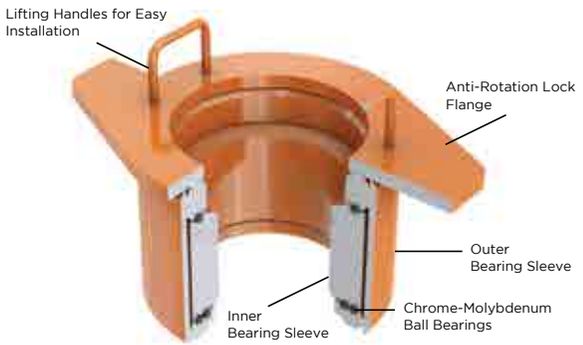
Mammoth Deck Bush

The Mammoth Deckbush is used for the purpose of stabilizing the centre of the drill rod.
The Mammoth Deckbush can be manufactured to individual requirements & specifications.

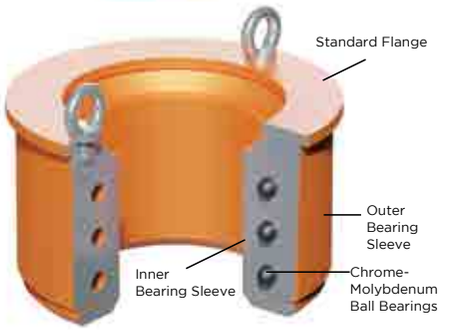
Benefits of the Mammoth Deck Bush

- Quality manufacturing
- Durability for the best performance
- Produced to our standard quality manufacturing procedures

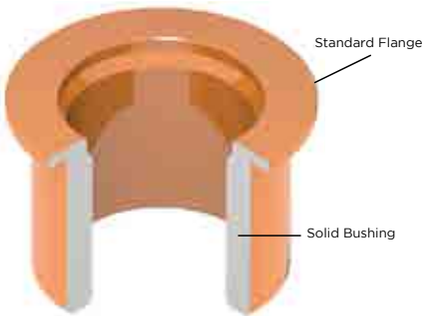
Roller Deck Bush



Roller Deck Bush



Static Deck Bush



Technical Specifications - Deck Bush

Specifications	Mammoth Technologies All designs, specifications & components of the equipment described herein are subject to change at the manufacturer's discretion at any time without prior notice.
Rotary Deckbush	2 or 3 Row, Solid Ball Races
OEM Machines The Mammoth Deckbush can be designed to fit any OEM machine application. The Mammoth Deckbush is not limited to the specified range to the right.	

Epiroc					
DM25	DM30	DM45	DM50	DML	DMM2
DMLSP	PV271	PV275	PV351	T4BH	DMM3

Tamrock - Drilltech				
D25K	D40K	D45K	D50K	D55SP
D60K	D80K	D90K	1190E	D75K

Reedrill						
SKF	SKT	SK35	SK40	SK45	SK50	SK55

Gardner Denver					
DG70	GD CL90	GD100	GD120	DD100	GD250XP

Bucyrus						
BE-35R	45R	47R	55R	49R	59R	60R

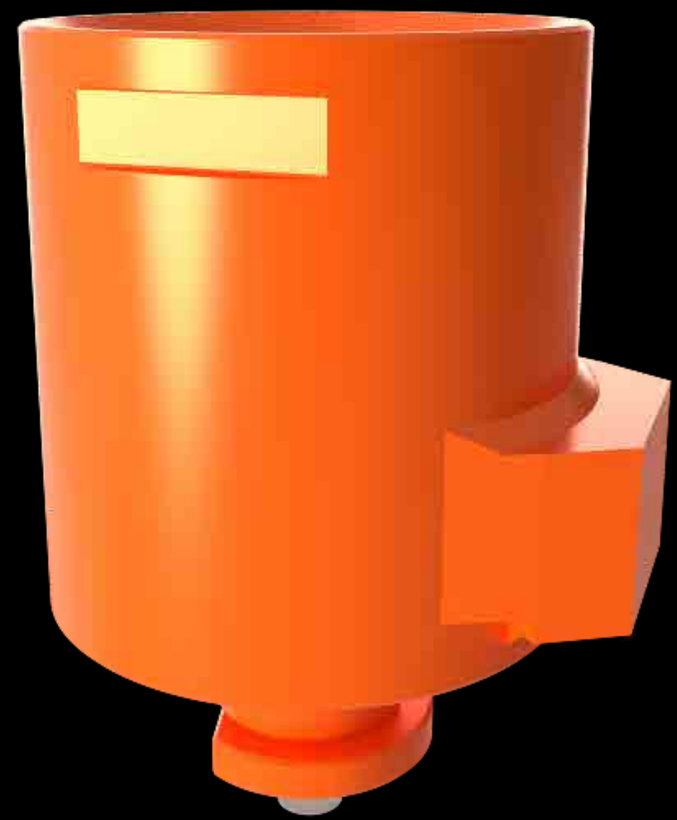
Revathi		
35HR	37HR	C750

P&H		
120	250	320

Requirements from customer	Drill manufacturer Drill model Deck opening Drill rod diameter Top flange dimensions Deck top slot dimensions

The Mammoth Deckbush can be manufactured to customer specifications

12 MAMMOTH ROD POTS



Mammoth Rod Pots

Use Mammoth Rod Pots to rack your drill rods in the carousel. Various sizes rod pots are available for various types of machines.

Drill Rig Type	Drill Rod Diameter
DML	114 mm
DM 30	127 mm
DM 45	140 mm
PV 275	161 mm
PV 271	194 mm
PV 351	219 mm
	273 mm

13

MAMMOTH BITS & JAWS

Mammoth Bits & Jaws
Bit Configuration

Raised Tungsten Bit
TI25 / 9.5B

Tungsten Inserted jaws/
bits used for:

Hardened Casing Hammers

Alloy Steel Pipes

Normal Bit
B21L / B21R

Hardened Alloy Steel jaws/
bits used for:

Normal Steel Pipes (ST80)

Alloy Steel Pipes

B23 Bit

Hardened Alloy Steel
Jaws/Bits Used for:

Mild Steel Pipes

Alloy Steel Pipes

B25 Bit

Hardened Alloy Steel
Jaws/Bits Used for:

Mild Steel Pipes

Alloy Steel Pipes

Normal Bit
PV235 Jaws

Hardened Alloy Steel
Jaws/Bits Used for:

Mild Steel Pipes

Alloy Steel Pipes

Normal Bit
ROC L8 Bit

Hardened Alloy Steel
Jaws/Bits Used for:

Mild Steel Pipes

Alloy Steel Pipes

DR580 Head
Assembly

You can use the
PV235 for an
Epiroc drill rig or the
DR580 Sandvik
head assembly.

PV235 Head
Assembly

You can use the
PV235 for an
Epiroc drill rig or the
DR580 Sandvik
head assembly.

14 MAMMOTH THREAD GREASE & LUBRICATION SYSTEM

Mammoth Thread Grease

Mammoth's thread grease provides proper lubrication that will help prevent wear on threads and assist you to easily loosen or fasten bits.

The Mammoth thread grease bin protects grease from being contaminated on the drill rig deck. Bin opens using the foot pedal.

Mammoth Drill Rod Thread Lubrication System

MH 6020 Series 24VDC Grease Lubrication Assembly

The model E-6020 oumo is designed to pump IS ASTM NO. 1 and 2 grease from original 20-25KG/50KG/180KG grease drums.
Discharge Capacity - 100 grams per minute.
Maximum Pressure - 20MPa.
Discharge Connection - ¼" NPT MALE.

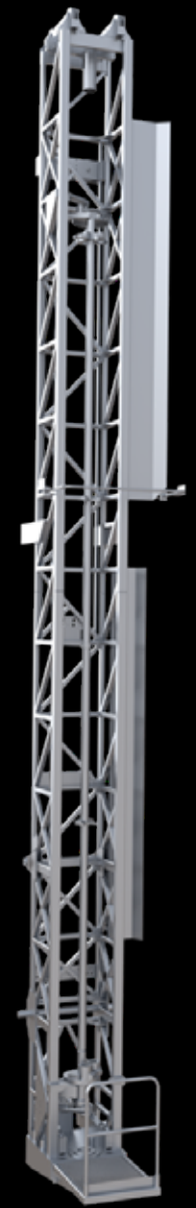
Operating Process

The pump comes standard with a High Pressure Hose and control nozzle for greasing of machinery. The pump may also be used in automatic centralized lubrication systems, using a control pannel to start and stop the pump.

When using the pump for normal single points greasing, the pump must be switched on and then grease will flow as soon as the control buttion is activated. Pressure will build up in the line when the button is not activated resulting in high pressure to the point where the built-in pressure switch will stop the motor. Activating the button pressure will be released and automatically restart the motor.

Always ensure that the grease drum has sufficient grease to aviod a dry pumping action which will lead to pump damage. Ensure that grease drums are free of contamination and always use a follower plate which will push the grease down and eliminate air pockets in the grease.

15 MAMMOTH MAST



Technical Specifications - DM30 Mast

The Mammoth DM30 Mast is designed for multi-pass drilling, capable of holding a 30 ft (9.1m) drill pipe, a 2-rod carousel (optional 4-rod carousel), with a total depth capacity of 150 ft (45.7m). The DM30 Mast comes standard with a safety Rod Catcher.

Additional Extras	2-Rod Carousel/4-Rod Carousel DM30 Stemlock DM30 Top Rod Support DM30 Rod Guide
Technical Data	
Drilling Method	Rotary or DTH – Multi Pass
Suitable Pipe Sizes	4 ½" - 6 ¾" (114mm - 171mm)
Estimated Weight	7055 Lb (3200kg)
Dimensions	
Length	7 ft 2.16 in (2.19m)
Height	41 ft 6.4 in (12.66m)
Width	5 ft 3 in (1.6m)

Please enquire for other drill rig mast models available.

16 MAMMOTH CRANE

Mammoth Crane

The Mammoth Crane is a lifting device designed to hoist drilling tools or components onto the drill rig. The device gets mounted on an opencast drill rig of any size and model.

Benefits of using the Mammoth Crane

- SAFETY: Fully automated, hands-free operation.
- SAFETY: Compliance with mine safety requirements for operators.
- Versatile enough to customise, adapt and fit, most OEM drill rig models and customer-specific applications.
- Eliminates the necessity of manual labour used to pick up heavy components onto the rig.
- Decrease downtime on changing of drill tools or other components.
- Specialised lifting attachments for lifting drill bits, stabilizers, top and bottom subs, shock sub, Mammoth breakout wrench with the additional option of a lifting hook used for other applications.

17 MAMMOTH ACCESSORIES

Mammoth Accessories

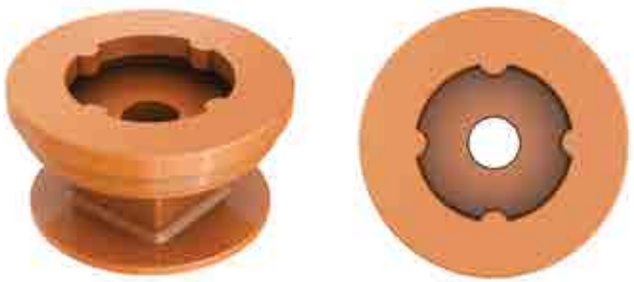
The Mammoth Bit Breakout Pot is used for the purpose of breaking the drill bit loose from the stabilizer or bottom sub. Our design allows for easy operation and removal of tricone and DTH drill bits.

Benefits of the Mammoth Bit Breakout Pot

- Quality manufacturing
- Durability for the best performance
- Produced to our ISO 9001 : 2015 standard

Mammoth Tricone Bit Breakout Pot

Mammoth DTH Bit Breakout Pot

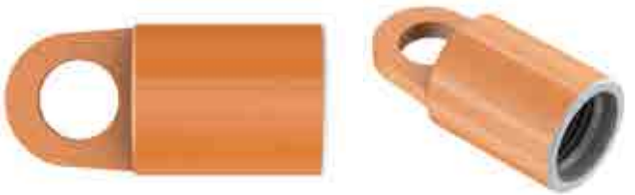


The Mammoth Lifting Bail

The Lifting Bail or Lifting Cup is used to lift the drill rod, sub adaptors, and stabilizer when they are changed on the drill rig.

The Mammoth Male Lifting Bail

The Mammoth Female Lifting Bail



Recommended Connection	
3½" API & 3½" BECO	3½" BECO
4" BECO	4½" BECO
5¼" BECO	6" BECO
8" BECO	10" BECO

2022 BLASTHOLE DRILLING

MAMMOTH TECHNOLOGIES