





FIRMTECH >>>
HARD ROCK PILING EXPERT

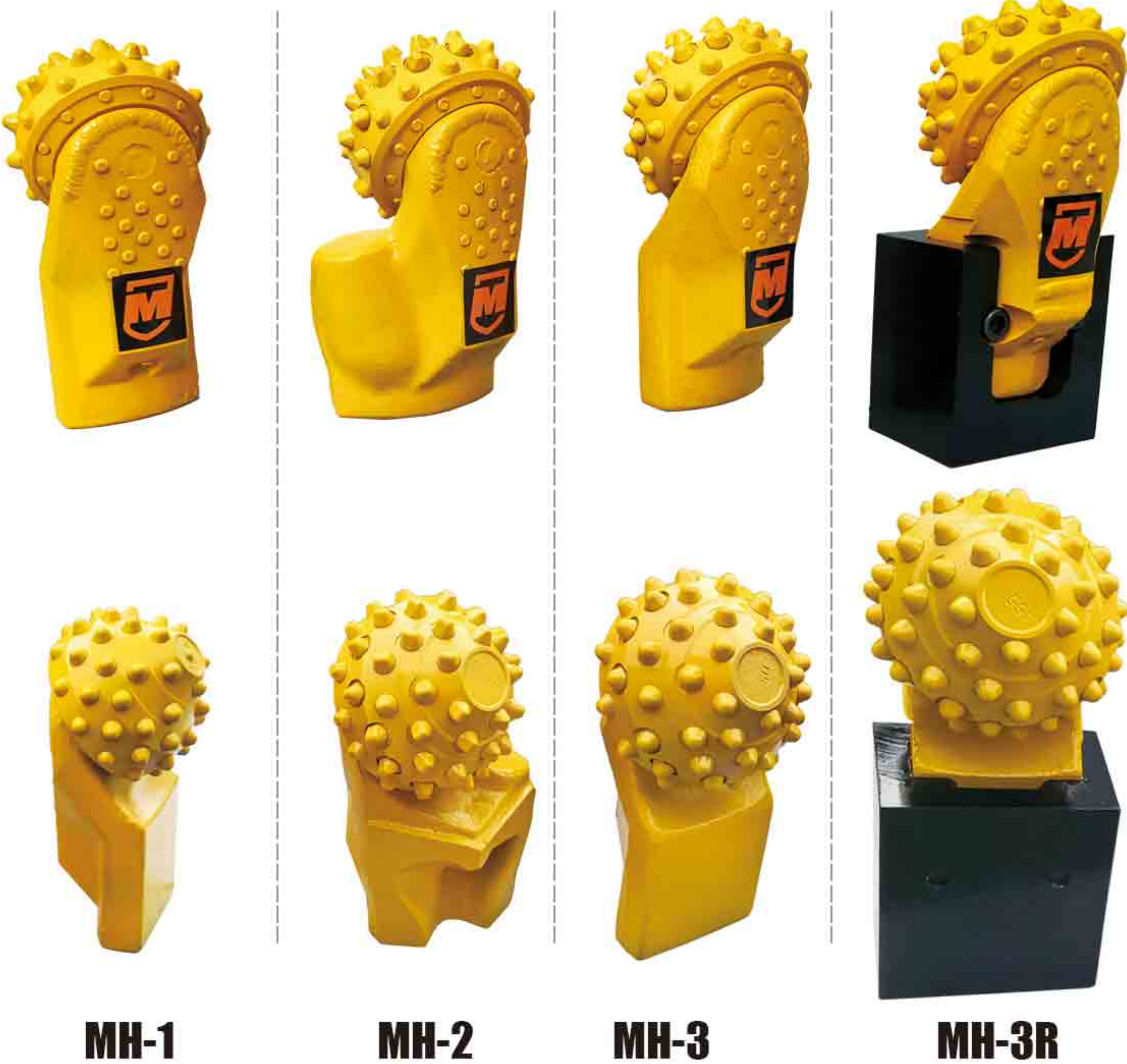
FIRMTECH (Cangzhou firmtech drilling equipment Co., Ltd.) is a roller bit manufacturer in Hebei province, China.

The company established in 2010 and positions itself as a leading expert on Piling rock drilling industry.

With years dedicated work, the company earns its trust in both domestic and overseas market. The company has a good reputation in Shenzhen, Guangzhou, and rapidly expands products and services in Malaysia, Singapore, Sri Lanka and the Middle East.

“Deep knowledge of industry pain”is our core value. We believe our strength is from consistent learning the customer problem and application challenges.

With deep industry understanding, the company develops a full range of roller bit for all kinds application in piling roller bit, MH-1, MH-2, MH-3 & MH-3R, and bring the conventional oil & gas tools into new generations, truly made for piling.



MAIN FEATURE

MODEL NO.	CONE	LEG	GREASE SYTERM	WEIGHT (KG)
MH-1	2nd	3rd	Piling Vacuum	12.05
MH-2	1st	3rd	Piling Vacuum	13.84
MH-3	3rd	3rd	Piling Vacuum	12.75
MH-3R	3rd	3rd	Piling Vacuum	19.95

MH-1 >>>>

PILING ROLLER BIT

MH-1 is FIRMTECH entrance level bit. It has the most favorable price rate, but combined the latest 3rd generation leg and 2nd generation cone.

It is idea piling bit for limited budget project. It has a sound performance for the core barrel less than 1500mm.



2ND GENERATION DRILLING INSERT LAYOUT

- Piling Design
- No grooves
- 1.6kg inserts
- 118mm OD.
- Small blind spot on the gap between 2 rows inserts
- Medium Duration & penetration rates



3RD GENERATION FLAT XL BODY

- Piling Design
- Flat & regular leg body
- Easy & quick welding
- High torque & drilling weight capacity (6.5 ton)
- Reach to 2500mm core barrel application
- No heat damage from any cutting



PILING VACUUM GREASE SYSTEM

- Special design for Piling
- 0.6Mpa consistent pushing pressure
- No air & rubber component, less vulnerable for heat
- Increase 20% bearing life



GAUGE PROTECTION INSERTS

16 pieces tungsten carbide inserts protect the drilling gauge and roller bit body.



SUGGEST BIT NO. FOR ROCK CORE BARREL

DRILLING DIA. (MM)	BARREL LENGTH(MM)	BARREL THICKNESS(MM)	ROLLER BIT (PCS)
600	1200	16	4
700	1200	16	4
800	1200	16	6
900	1200	16	6
1000	1200	16	8
1200	1200	16	8
1250	1200	16	10
1300	1200	16	10
1400	1200	16	12
1500	1200	16	12
1600	1200	16	14
1800	1000	20	16
2000	800	20	18
2200	800	20	18
2500	800	20	20

MH-2 >>>>

PILING ROLLER BIT

MH-2 is FIRMTECH hottest product for years. With all the customers approval, you can expect its stability and outperformance in your most challenging hard rock piling.

The classic 1st generation leg design last more than 100 years started from Baker Hughes USA.

The latest 3rd generation cone with full clothed random inserts, more than 2 kg insert applying in one cone. The monster drilling performance is from this design.

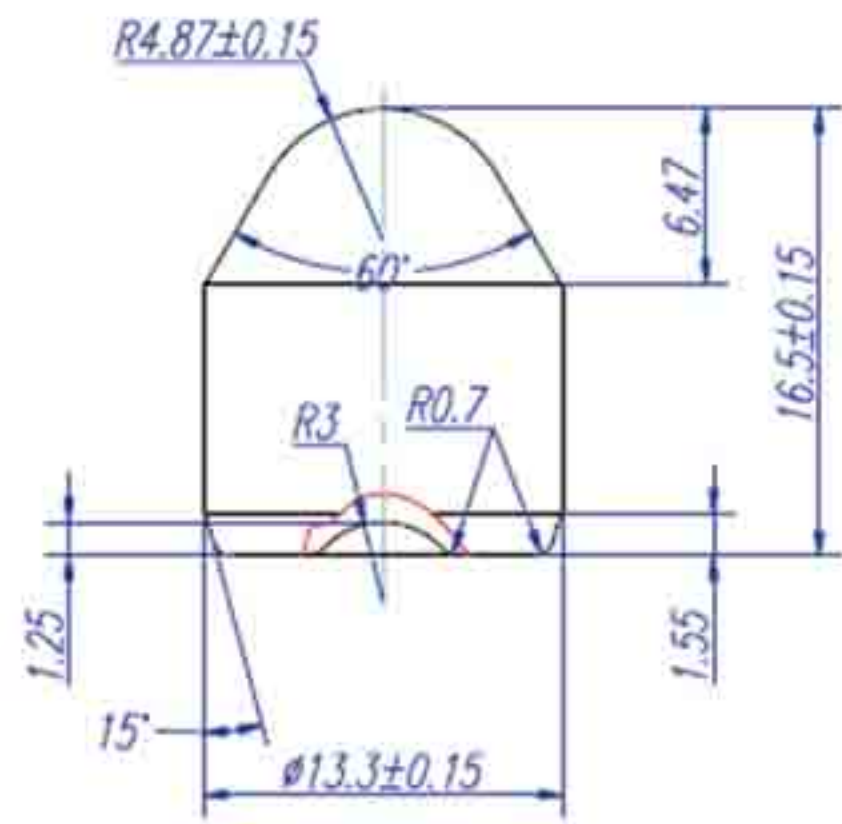
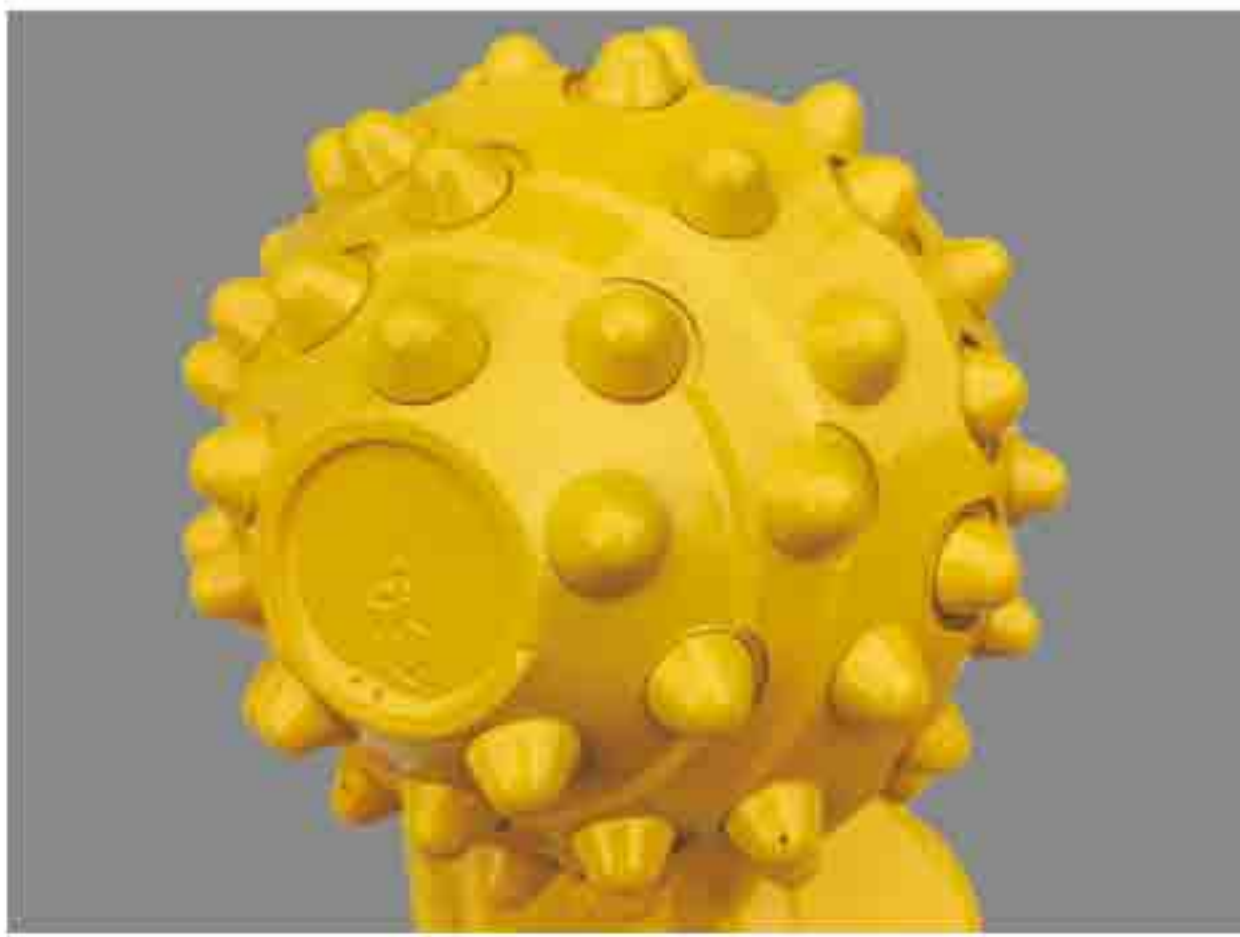
PILING VACUUM GREASE SYSTEM



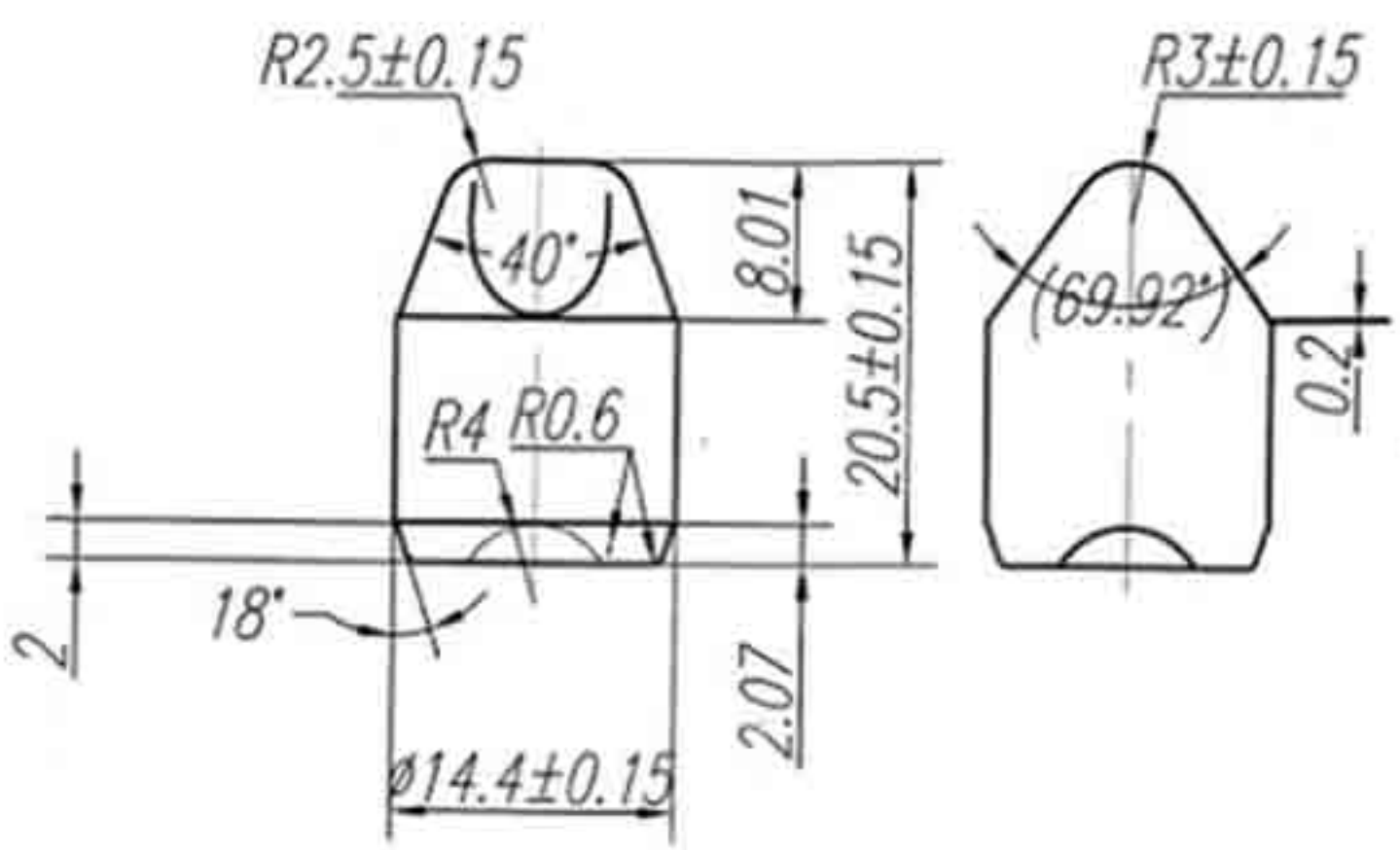
- Special design for Piling
- 0.6Mpa consistent pushing pressure
- No air & rubber component, less vulnerable to heat
- Increase 20% bearing life

3RD GENERATION FULL CLOTHED INSERTS

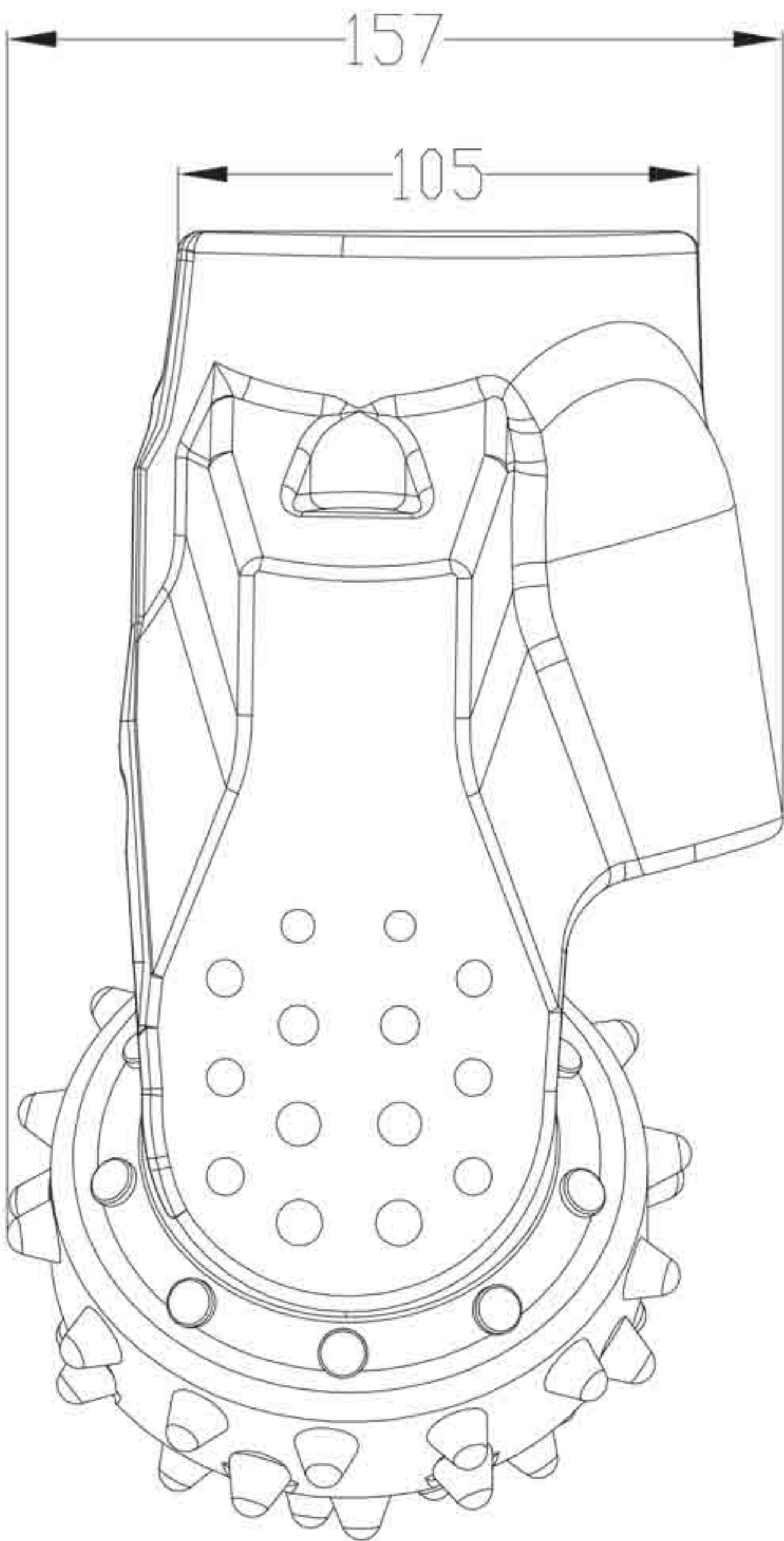
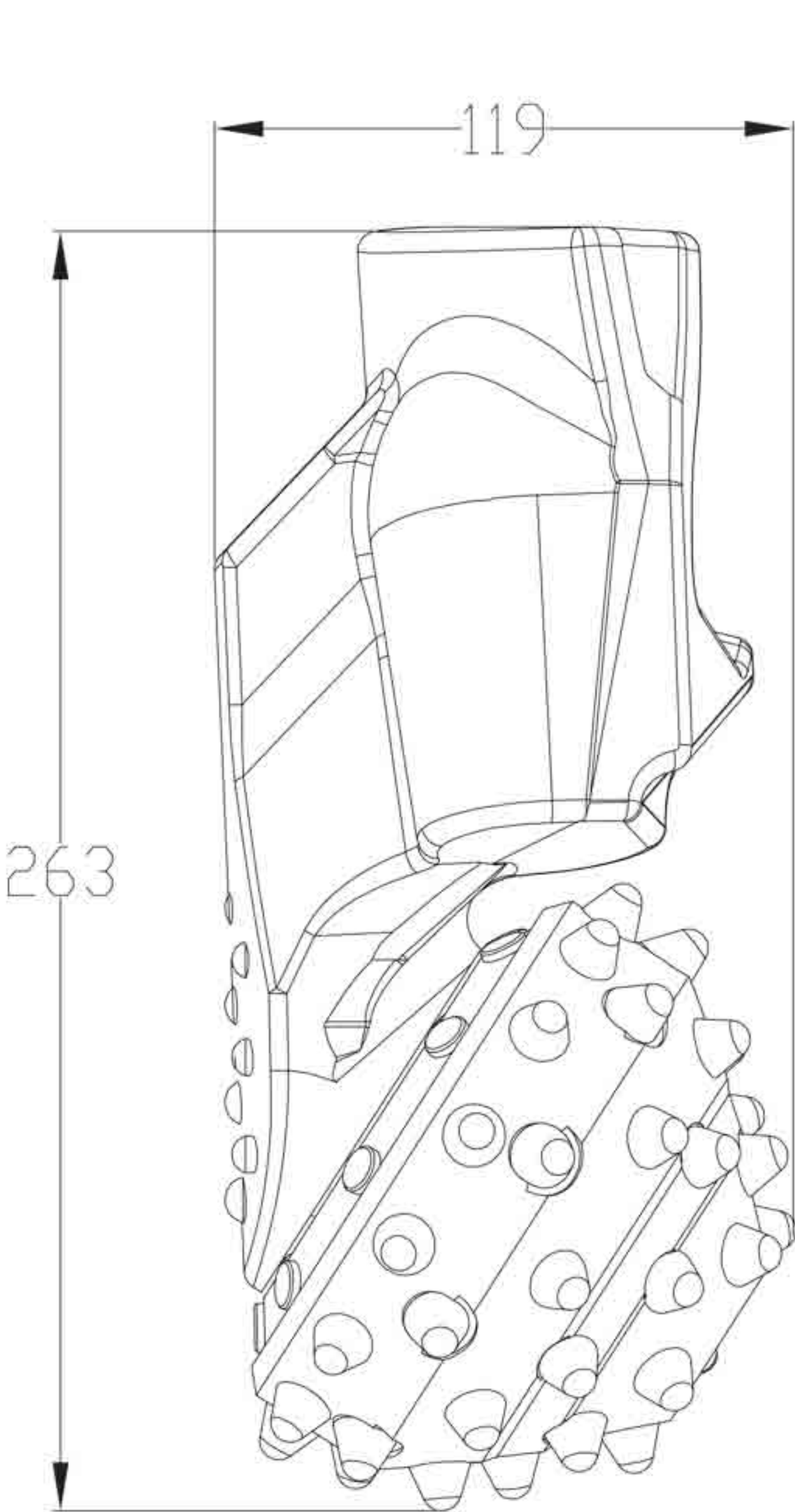
- Full clothed random insert
- No blind spots
- More than 2 kg insert used
- 120mm OD.
- Maximum Duration & penetration rates



1.1 Ballistic Inserts s for 110-180Mpa formation, equals to IADC 637.



1.2 Chisel Inserts for 80-110Mpa formation, equals to IADC 537.



MH-3 »»» PILING ROLLER BIT



3RD GENERATION FULL CLOTHED INSERTS

- Full clothed random insert
- No blind spots
- More than 2 kg insert used
- 120mm OD.
- Maximum Duration & penetration rates

3RD GENERATION FLAT XL LEG BODY

- Easy & Quick welding
- High torque and drilling weight (6.5 ton)
- Maximum drilling penetration rate.

PILING VACUUM GREASE SYSTEM

MH-3 bit abandons the conventional bowl type grease reservoir and adopts the new vacuum grease compensation system.

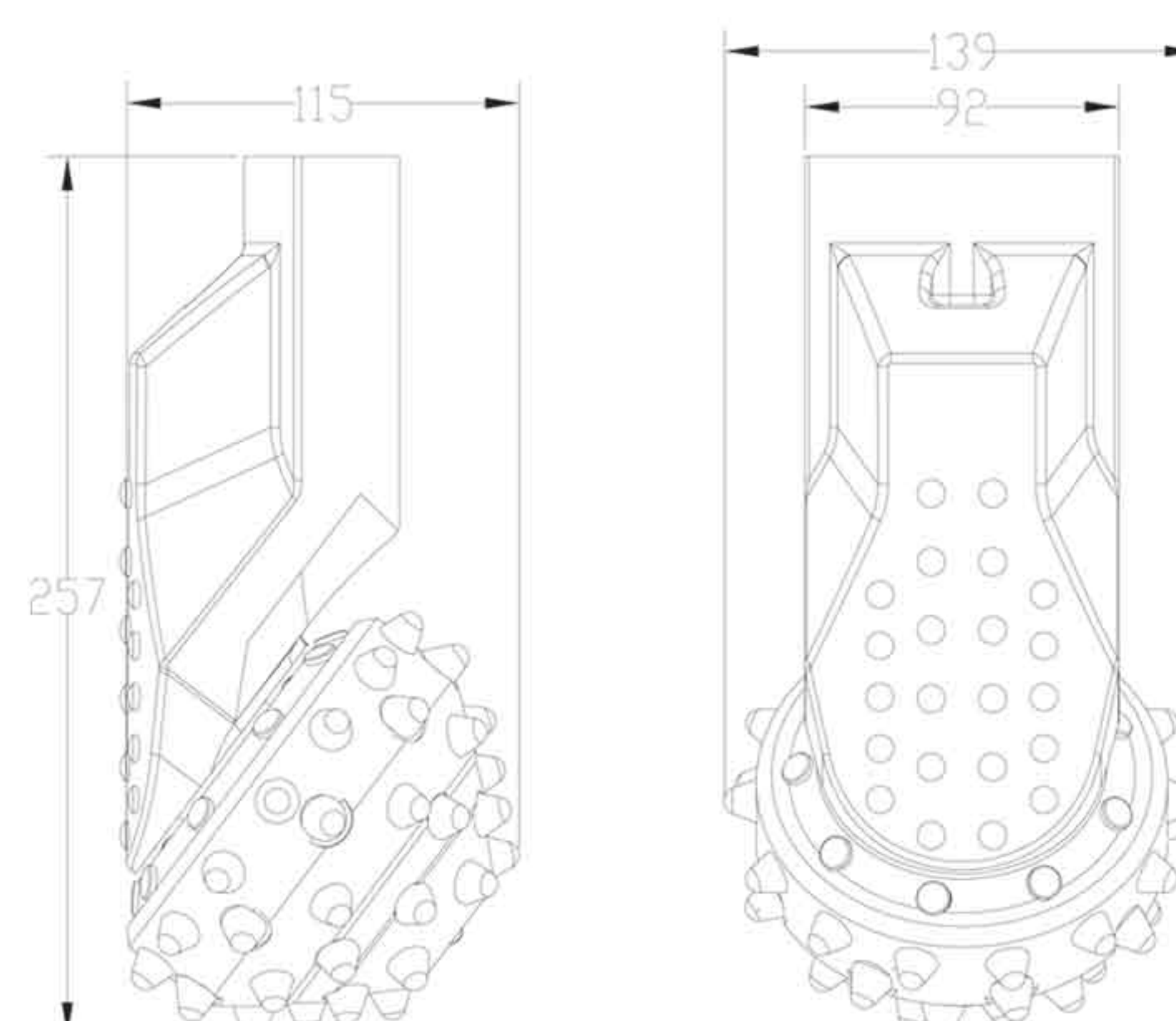
- Special design for Piling
- 0.6Mpa consistent pushing pressure
- No air & rubber component, less vulnerable for heat
- Increase 20% bearing life



DESIGN PATENTED

MH-3 is FIRMTECH latest and most promising design. It comes from long time working with clients, deeply understanding the industry pain. It solves the quick welding and high torque and drilling weight demand in same time.

Combined with the latest 3rd generation full clothed cone. You can expect it will outperform any bit in Piling industry.



MH-3R >>>

REPLACEABLE ROLLER BIT

With the obsession to make a TRULY replaceable piling bit, MH-3R comes out in life. The redesigned integral and XL holder makes the difference.

No old bit stuck during the replace; More stable new bit during the working.



TRULY REPLACEABLE

XL INTEGRAL HOLDER

- 125mm x 85mm x 140mm, 35mm thick bottom
- Integral one part, no separate bottom.
- Minimize the holder deformation generated by heat stress during the welding and working pressure.
- NO-Stuck in replacing & No move in working
- Truly replaceable



HAMMER POINT

- Hammer spot design
- Quick removing the old roller bit if the mud and rust stuck the bits.
- Headache free for replacing



MH-3 LEG & CONE

All the benefits of MH-3 roller bit pass on MH-3R replaceable bit.

- Full clothed random inserts
- Flat high torque and drilling weight body
- 0.6Mpa constant Vacuum grease system
- Enhanced body and gauge protection



PILING BIT EVOLUTION

CONE



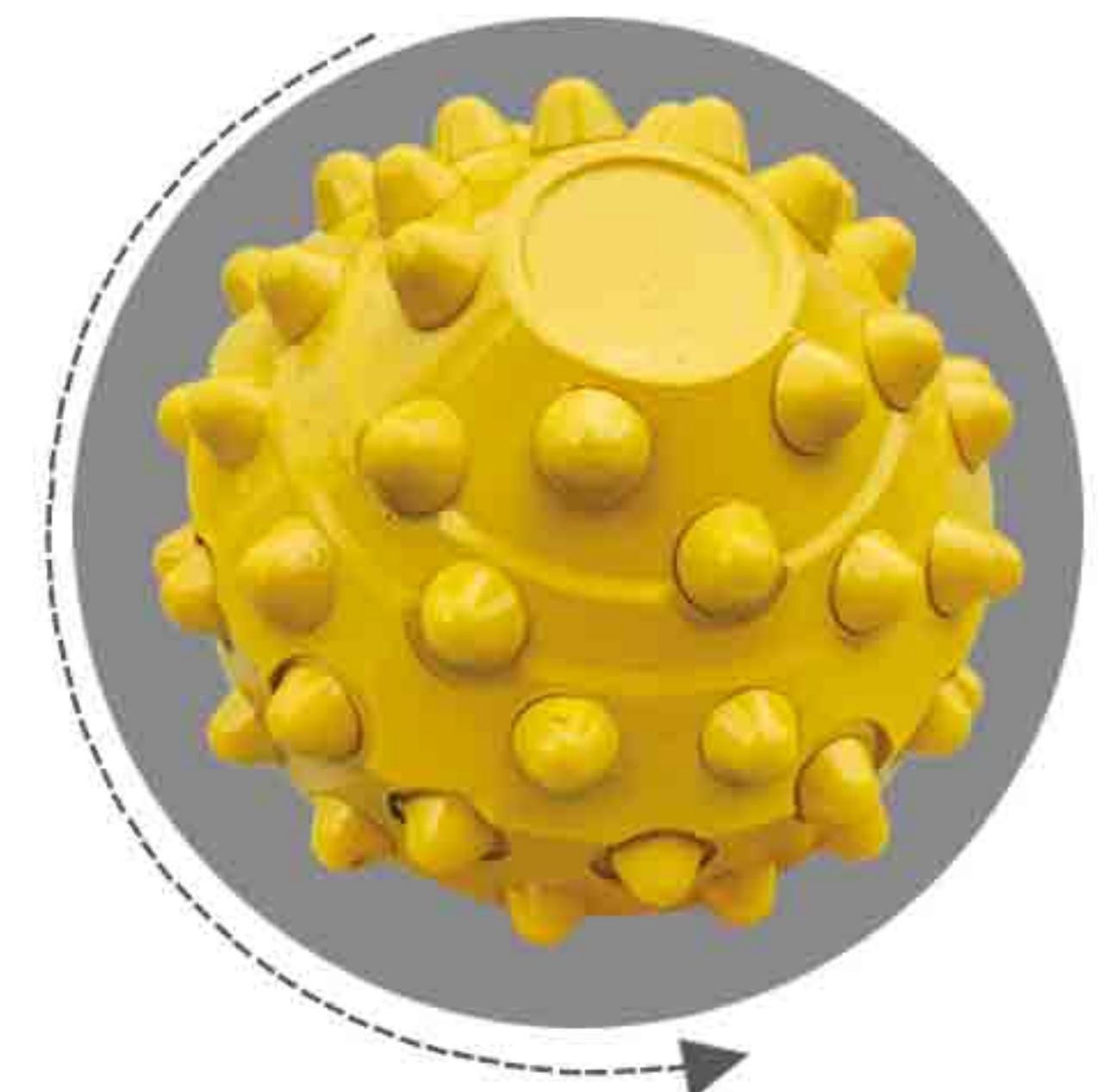
1ST GENERATION

- Oil & Gas design
- Big grooves between the insert rows
- 1.3kg inserts
- 118mm OD.
- Big blind point.
- Low Duration & penetration rate.



2ND GENERATION

- Piling Design
- No grooves
- 1.6kg inserts
- 118mm OD.
- Small blind spot on the gap between 2 rows inserts
- Medium Duration & penetration rates



3RD GENERATION

- Full clothed random insert
- No blind spots
- More than 2 kg insert used
- 120mm OD.
- Maximum Duration & penetration rates

LEG



1ST GENERATION

- Oil & Gas Tricone Design
- With nozzle spot
- High torque & Drilling weight capacity
- No regular leg shape, Hard for welding
- Heat damage once cutting the nozzle



2ND GENERATION

- Piling Design
- Flat & regular leg body
- Easy & quick welding
- Low torque & drilling weight capacity (2.5 ton)
- Reach to 1200mm core barrel application



3RD GENERATION

- Piling Design
- Flat & regular leg body
- Easy & quick welding
- High torque & drilling weight capacity (6.5 ton)
- Reach to 2500mm core barrel application

GREASE

NO GREASE SYSTEM

NO GREASE SYSTEM

- Grease offers bearing lubrication, and reduce bearing failure.
- No Grease system does not work well.



OIL & GAS GREASE SYSTEM

- Design for Oil & Gas
- Works only when external pressure higher than bit internal pressure
- Not work in piling application
- More vulnerable to welding heat (rubber component inside)



VACUUM GREASE SYSTEM

- Special design for Piling
- 0.6Mpa consistent pushing pressure
- No air & rubber component, less vulnerable for heat
- Increase 20% bearing life



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