

ROCK TOOLS

ADVANCED MANUFACTURING METHODS FOR CONSISTENTLY HIGHER QUALITY



MMC RYOTEC Corporation

A Group Company of  **MITSUBISHI MATERIALS**



MMC RYOTEC Corporation

A Group Company of  MITSUBISHI MATERIALS

MMC RYOTEC CORPORATION has been developing percussion rock drilling tools for over 60 years in Japan. MMC RYOTEC is truly a worldwide player and is offering high quality products to the global market. Currently MMC RYOTEC is supplying over 50 countries and continues to increase the number of sales districts.

DIAEDGE ROCK TOOLS products are manufactured from highly wear resistant steel and our own in house Japanese produced cemented carbide inserts. These carbide inserts are designed and produced by experienced engineers using the most advanced computer technology. Using this new computer technology, these carbide inserts are combined with the special steel bodies developed by MMC RYOTEC to provide the client with unbeatable consistent quality. What is more, each bit body is marked with a manufacturing lot number that allows precise tracking and control through the full history of the manufacturing process of carbide inserts and steel bodies. MMC RYOTEC has been a leader in helping to achieve remarkable technological innovations that have propelled the mining, construction and quarry industries to the highest drilling efficiencies. State-of-the-art technology in our Rock Tools have kept pace with

the new breed of hydraulic drilling machines. Incorporating our products with these new drilling machines has resulted in additional labor savings, greater efficiencies, and safety for the clients. In order to allow the new drills to display their maximum capacities and efficiencies, our Rock Tools products undergo refined laboratory studies and are put in extensive field experiments in every conceivable rock drilling condition. Testing of our Rock Tools products in the field is done by qualified engineers who report in detail the findings to the client's management, and these test results are used to determine the correct products for the best overall drilling economy. MMC RYOTEC is constantly striving to improve rock drilling excellence and continues to research new our Rock Tools products and develop new technology to lower drilling costs. We produce for you a product which is the most consistent, highest quality drilling tool manufactured in the world today. At MMC RYOTEC we believe that the our Rock Tools products we produce will meet your every request and give you the best possible drilling economy to make your operation more profitable. Please contact MMC RYOTEC and get in contact with your nearest representative to start lowering your drilling costs today.

CONTENTS

4

PRODUCT GUIDE

- 4...PLATINUM SERIES
 - 6...PRODUCT IDENTIFICATION CODE
 - 12...CARBIDE GRADE
 - 13...TYPE OF THREAD
 - 14...SELECTION GUIDE - Drifting and tunnelling equipment
 - 15...FAQ - Drifting and tunnelling equipment
 - 16...SELECTION GUIDE - Bench & Long hole drilling equipment
 - 17...FAQ - Bench & Long hole drilling equipment
-

19

INTEGRAL DRILL STEEL & TAPERED EQUIPMENT

- 20...INTEGRAL DRILL STEEL
 - 21...TAPERED EQUIPMENT
-

25

DRIFTING & TUNNELLING EQUIPMENT

- 26...R25 SERIES
 - 28...R28 SERIES
 - 30...R32 SERIES
 - 34...NR34 SERIES
 - 36...R35 SERIES
-

39

BENCH & LONG HOLE DRILLING EQUIPMENT

- 40...T38 SERIES
 - 44...T45 SERIES
 - 48...T51 SERIES
 - 52...GM60 SERIES
 - 54...ST58 SERIES
 - 56...ST68 SERIES
-

59

SHANK ADAPTER

77

DOWN THE HOLE BIT

82

CORPORATE SOCIAL RESPONSIBILITY

84

PART NUMBER INDEX

Chosen by drillers every where!



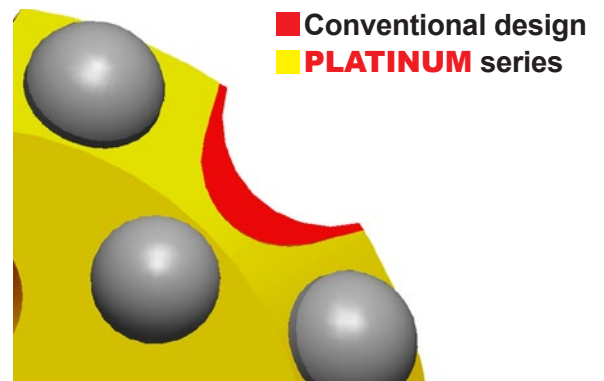
DIA EDGE

ROCK TOOLS PLATINUM

MMC RYOTEC CORPORATION is proud to introduce **DIAEDGE ROCK TOOLS PLATINUM** series! Our new **PLATINUM** series designs are the most innovated designs available. The goal of **PLATINUM** series is to offer faster drilling, more wear resistant and extended tool life.

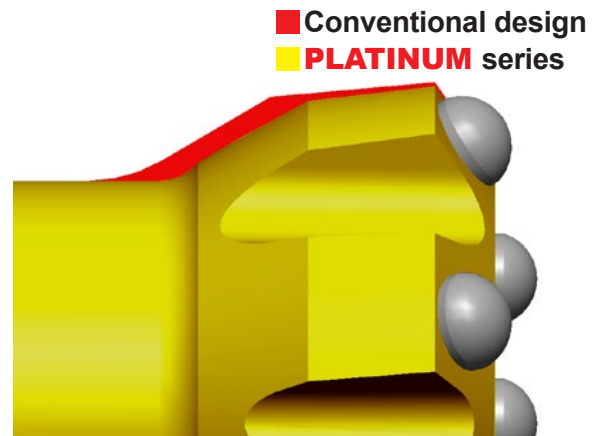
FLUSHING GROOVE:

- Designed to remove cuttings more efficiently
- Deeper and larger grooves provide smooth flushing and removes material faster
- Provides longer tool life



LATERAL BIT HEAD:

- Designed the lateral section of the bit head
- Increased clearance angle and shortened bit head to offer highest penetration rate
- Reduces drilling time



BUTTON CONFIGURATIONS:

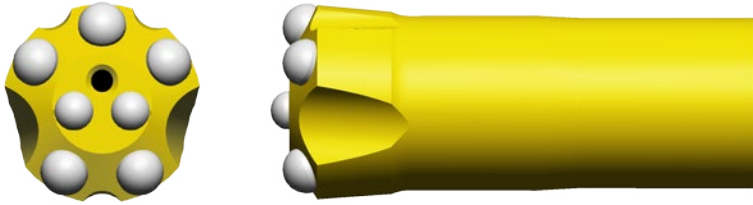
- Design of button layout and location
- Optimized rock breakage with each turn of the bit
- Offers longer tool life

TUNGSTEN CARBIDE:

- Continuous improvements and new tungsten carbide grades
- For a variety of ground conditions, we offer a variety of tungsten carbide grades and shapes

THREADED BIT

Drifting & Tunnelling equipment

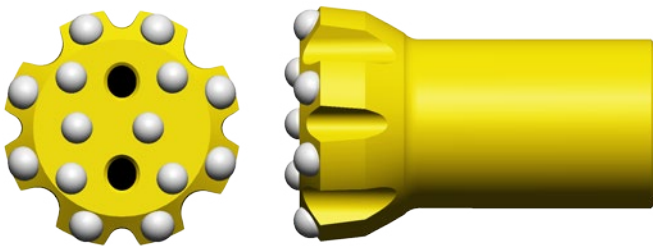


32RT P V S 45 R 06 M

- Gauge angle (**L**: 30°, **M**: 35°, **H**: 40°)
- Face design (Refer to page.14)
- Carbide shape (**R**: Round, **BB**: Semi-ballistic, **B**: Ballistic, **SA**: Spike)
- Gauge diameter(mm)
- Skirt type (**S**: Straight skirt, **R**: Retrac skirt)
- Flushing hole type (**V**: Face flushing, **W**: Face + Side flushing, **J**: Face + Reverse flushing)
- Bit type (**P**: Button type, **C**: Cross type)
- Thread type (**25RT**: R25, **28RT**: R28, **32RT**: R32, **34NR**: NR34, **35RT**: R35)

THREADED BIT

Bench & Long hole drilling equipment



38M P V S 64 R 15 M

- Gauge angle (**L**: 30°, **M**: 35°, **H**: 40°)
- Face design (Refer to page.16)
- Carbide shape (**R**: Round, **BB**: Semi-ballistic, **B**: Ballistic, **SA**: Spike)
- Gauge diameter(mm)
- Skirt type (**S**: Straight skirt, **R**: Retrac skirt)
- Flushing hole type (**V**: Face flushing, **W**: Face + Side flushing, **J**: Face + Reverse flushing)
- Bit type (**P**: Button type, **X**: Cross type)
- Thread type (**38M**: T38, **45M**: T45, **51M**: T51, **58WD**: ST58, **68WD**: ST68)

DRIFTING ROD



E H32 M38 R32 - 4310

— Total length (mm)

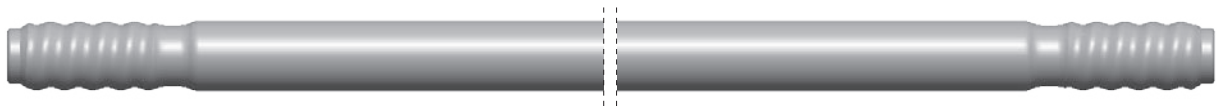
— Thread type (**R32**: 32RT on bit end)

— Thread type (**M38**: T38 on shank end)

— Rod section (**H32**: Hex 32mm (1 1/4"), **H25**: Hex 25mm (1"), **H28**: Hex 28mm (1 1/8"), **H35**: Hex 35mm (1 3/8"))

— **E**: Extension rod

EXTENSION ROD



E R38 M38 - 3050

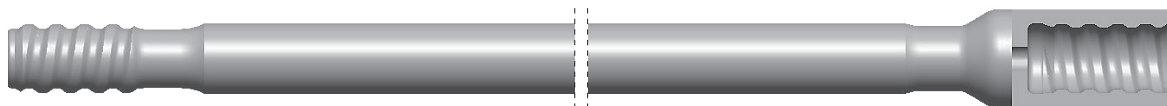
— Total length (mm)

— Thread type (**M38**: T38 on each end)

— Rod section (**R38**: Round \varnothing 38mm (1 1/2"))

— **E**: Extension rod

MALE / FEMALE ROD



E R45 M45 MF - 3660

— Length (mm)

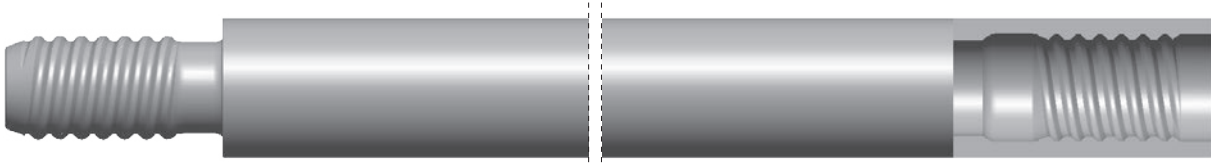
— **MF**: Male / Female thread rod

— Thread type (**M45**: T45 on each end)

— Rod section (**R45**: Round \varnothing 45mm (1 3/4"))

— **E**: Extension rod

DRILL TUBE



G R87 WD68 MF - 1830

Length (mm)

MF: Male / Female thread rod

Thread type (WD68: ST68 thread on each end)

Rod section (R87: Round \varnothing 87mm (3 2/5"))

G: Drill tube

SHANK ADAPTER



S142 M38 SF B

Total length (Serial Number)

SF: Separate flushing , Alphabet code: Flushing tube type

Thread type (M38: 38mm (1 1/2") T thread)

Drifer model (Serial number)

COUPLING SLEEVE

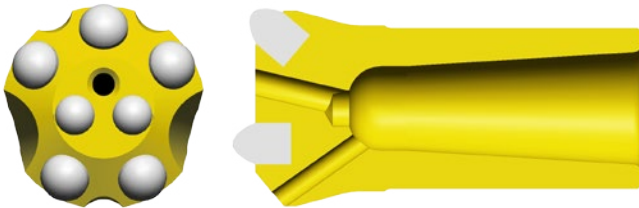


C M38

Thread type (M38: 38mm (1 1/2") T thread)

C : Coupling sleeve

TAPERED BIT



T 22 P 32 C BB 06

- T : Tapered bit
- 22 : Inner diameter of bit skirt 22mm (7/8")
- Bit type (**P**: Button type, **C**: Cross type, **I**: Chisel type)
- Gauge diameter(mm)
- **C** : Taper angle (Refer to page.21)
- Carbide shape (**R**: Round, **BB**: Semi-ballistic, **SA**: Spike)
- Face design (**06**: 7 buttons, **03**: 9 buttons)

TAPERED ROD



T H22 L 09 C

- T : Tapered rod
- Rod section (**H22**: Hex 22mm (7/8"), **H25**: Hex 25mm (1"))
- Shank length (**L**: 108mm (Long shank))
- Effective length (**09**: 0.9m)
- **C** : Taper angle (Refer to page.21)

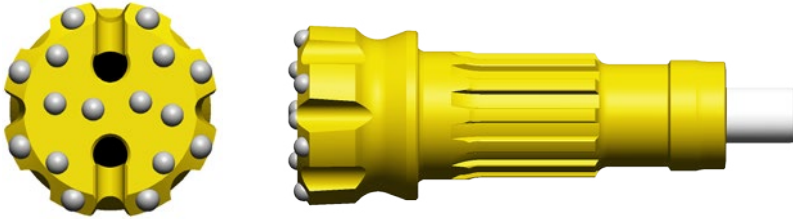
INTEGRAL DRILL STEEL



I H22 L 39 18

- I : Integral drill steel
- Rod section (**H22**: Hex 22mm (7/8"), **H25**: Hex 25mm (1"))
- Shank length (**L**: 108mm (Long shank))
- Bit diameter(mm)
- Effective length (**18**: 1.8m)

DOWN THE HOLE BIT



DH360 P 165 R 2 5

- 5: Heavy-duty carbide type, 1: Light-duty carbide type
- Face design (2: Flat face, 6: Concave, 8: Convex)
- Carbide shape (R: Round, BB: Semi-ballistic, SA: Spike)
- Gauge diameter (mm)
- Bit type (P: Button type)
- Hammer model

Cemented carbides

Carbide tools

Manufacturing supports modern civilization by machining iron, cement, copper, glass, plastics and various other materials. Carbide tools are one of the major tools used in this machining. These tools are made from cemented carbides, which combines tungsten carbide (WC) and cobalt (Co). Carbide tools have three main applications;

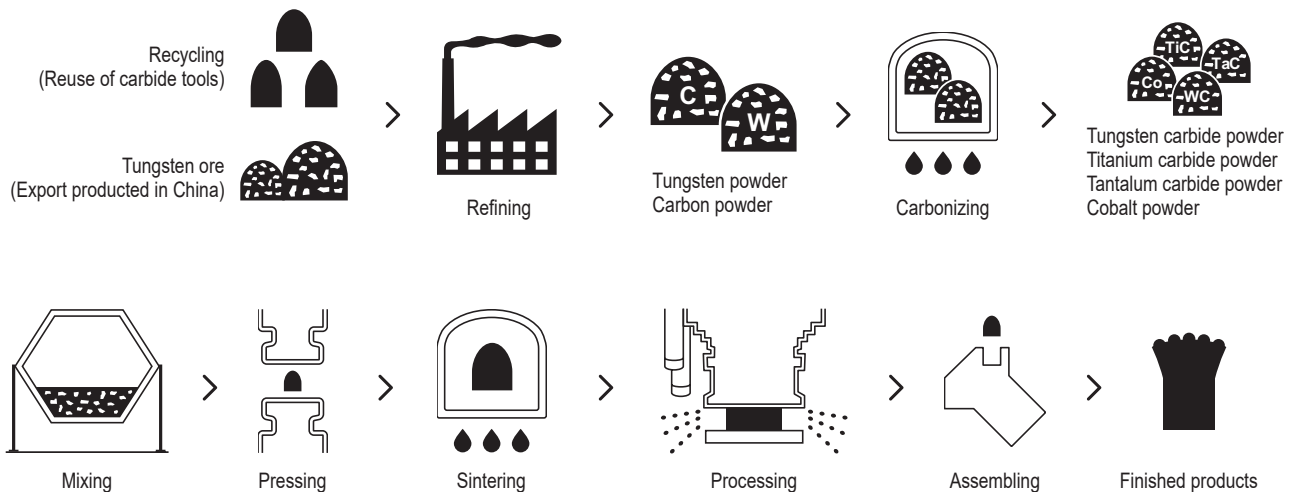
- 1) rock drilling tools, essential for mine excavations and infrastructural development for tunnels and roads, and
- 2) cutting tools for automotive and aerospace machining applications;
- 3) wear resistant tools used as molds for sanitary goods manufacturing, rolls for metal rolling, coating tools for LCD television displays and more.

History

- 1947: Established Rock Tools plant for integral drill steels, tapered bits and tapered rods
- 1948: Began sales operation in the domestic market
- 1956: Started export to Asian Countries
- 1963: Expanded sales operation globally
Developed button bits with high-quality cemented carbides
- 1983: Button bits became our main product
- 1992: Developed Super Max Bit system
- 1996: Developed Super Max Bit E-system
- 2003: Developed Super Max Bit G-system
- 2006: Developed Ultra Max Bit

Manufacturing system

MMC RYOTEC carbide manufacturing system integrates development, manufacturing and recycling of materials through to the finished product.

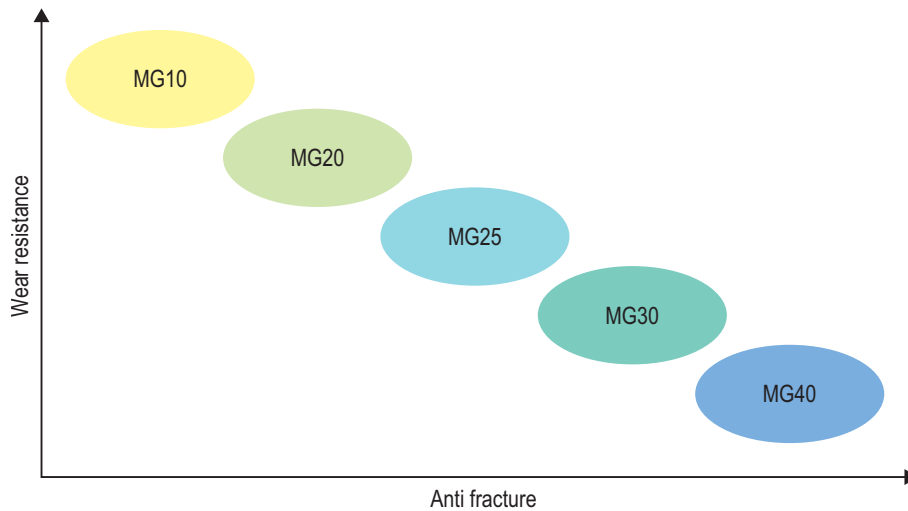


Bits application guide


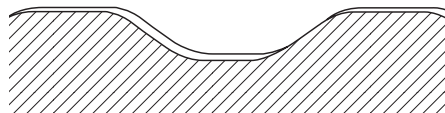
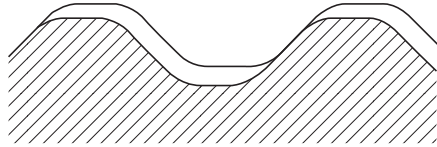
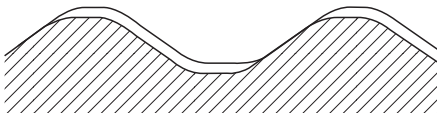
Standard Carbide Grade

Carbide grade	Suitable tools	Rock hardness	Uniaxial compressive strength of rock [MPa]
MG10	Threaded button bit	Extremely hard	200 -
MG20	Threaded button bit, Tapered button bit, DTH bit	Medium-hard to Hard	100 - 200
MG25*	Threaded button bit, Tapered button bit	Medium-hard	80 - 150
MG30	Tapered button bit, Threaded cross bit	Medium-hard	80 - 120
MG40	Threaded cross bit	Soft to Medium-hard	- 100

* Carbide grade "M2" is equivalent to "MG25"



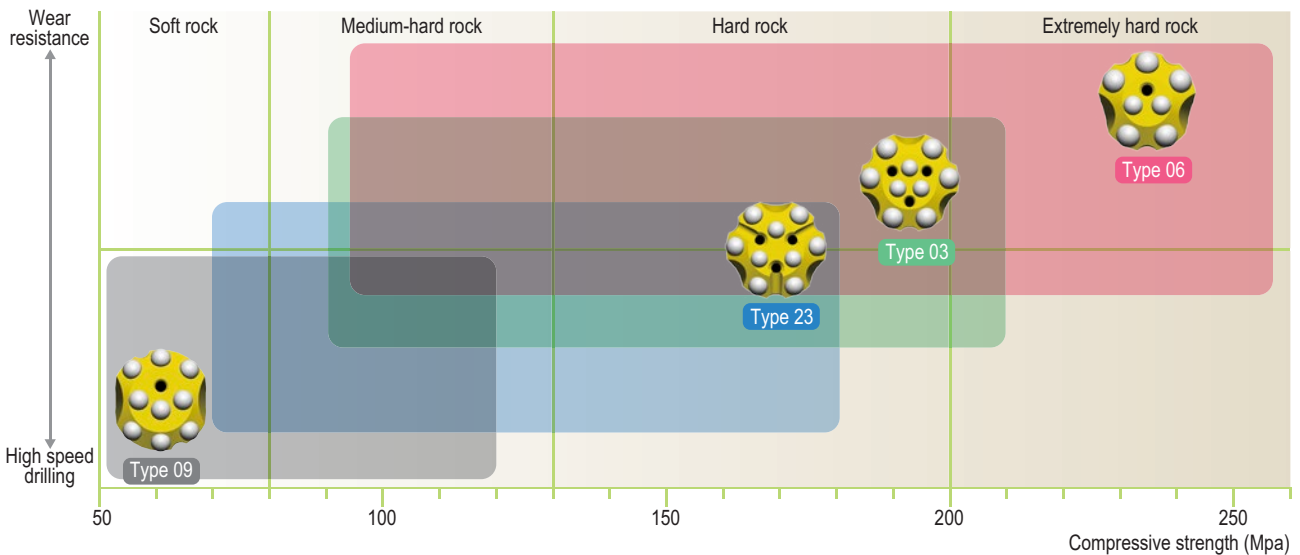
Thread Compatibility

Thread form	Thread type	MMC RYOTEC Thread
Rope thread 	R25	R25
	R28	R28
	R32	R32
	R35	R35
	R38	R38
T thread (M thread) 	T38	M38
	T45	M45
	T51	M51
ST thread (WD thread)  	ST58	WD58
	ST68	WD68

Selection guide

For Drifting & Tunnelling bits (R25, R28, R32, NR34, R35)

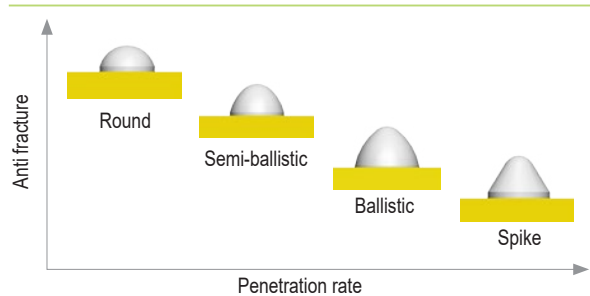
Type		Type 06	Type 03	Type 23	Type 09	Type 08	Cross
Face configuration							
Rock hardness	Hard	○	○	●	○	○	○
	Medium-hard	○	●	○	○	○	○
	Soft			○	●	●	○
Character	High speed drilling		○	○	○	○	
	Wear resistance	●	○				
	Straightness						○
		Wear resistant bit for medium-hard to hard rock formations.	High speed drilling bit for medium-hard to hard rock formations.	Wear resistant bit for soft to medium-hard rock formations.	High speed drilling bit for soft to medium-hard rock formations.	High speed drilling bit for soft rock formations. * Advantage for face buttons regrinding.	Straightest drilling bit. *Low speed drilling.



Carbide shape variety

R : Round	BB : Semi ballistic	B : Ballistic	SA : Spike
Utility carbide shape. Strong configuration against carbide fracture.	Combined wear resistance and high penetration rate. Recommended for medium-hard rock with moderate abrasivity.	Higher penetrating carbide shape than Semi ballistic shape. Recommended for soft rock.	Highest penetrating carbide shape. *Weak configuration against carbide fracture. Recommended for soft to medium-hard rock.

Carbide feature








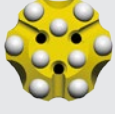






Flushing hole variety









V : Face flushing hole	W : Face and side flushing hole
Normal flushing hole design.	Effective in case of plugged face flushing hole.

Skirt variety

S : Straight skirt	R : Retrac skirt (R32 thread bitØ51 or larger)
Normal bit skirt design.	Retrac wings help to guide the bit in and out of the hole. Effective in straight hole drilling.

Drifting & Tunnelling equipment FAQ

Customer's request	Recommendation	
1. Hard rock drilling	Type 06	
	Type 03	
	Round button	
	Type 08	
2. Soft rock drilling	Type 09	
	Type 23	
	Semi-ballistic button	
	Spike button	
3. Improvement of penetration rate	Type 09	
	Type 23	
	Semi-ballistic button	
	Spike button	

Customer's request	Recommendation	
4. Resistant to abrasive rock	Type 06	
	Type 03	
	Round button	
5. Anti carbide fracture	Type 06	
	Round button	
6. Against deviation	Cross bit	
	Retrac skirt	
7. Flushing hole plugged	Side flushing hole	

Selection guide

For Bench & Long hole drilling bits (T38, T45, T51, GM60, ST58, ST68)

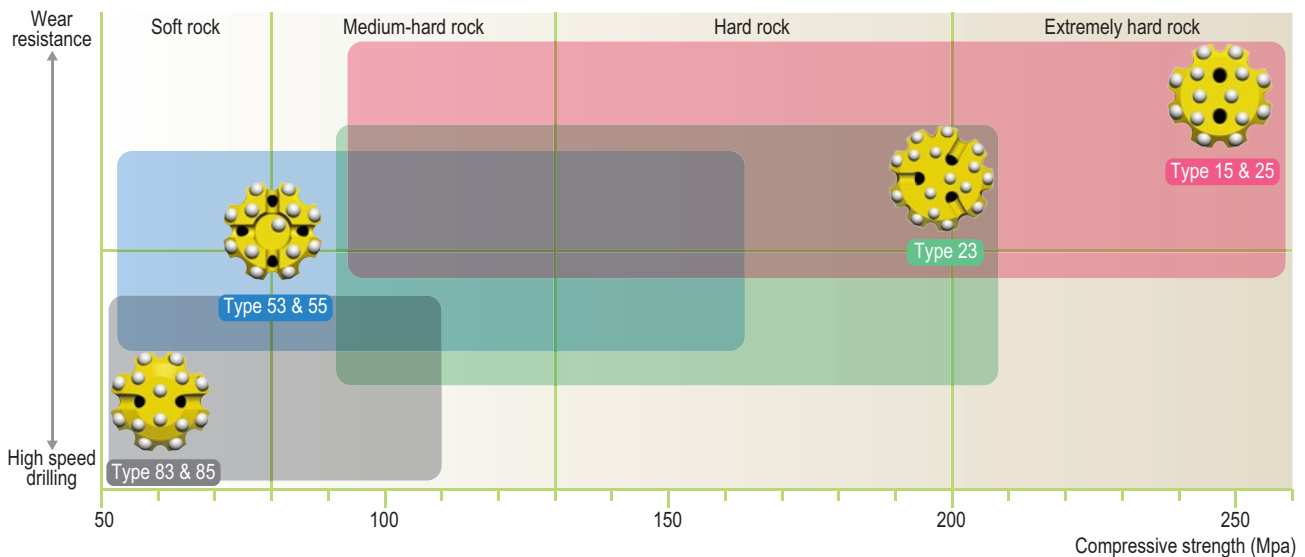
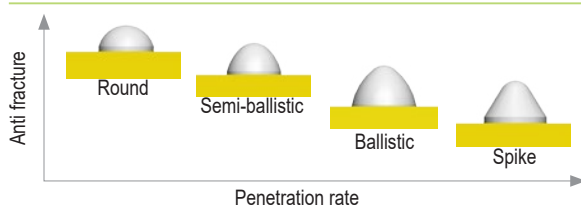
Type		Type 15 & Type 25	Type 23	Type 53 & 55	Type 83 & 85
Face configuration					
Rock hardness	Hard	○	○		
	Medium-hard	○	○	○	
	Soft			○	○
Character	High speed drilling		○		○
	Wear resistance	○	○	○	
	Straightness			○	
		Wear resistant bit for medium-hard to hard rock formations. Type 25 is recommended for large sized bits.	High speed drilling bit for medium-hard rock formations.	Wear resistant bit for soft to medium-hard rock formations. Recommended to eliminate hole deviation.	High speed drilling bit for soft rock formations.

Type		Type 14	Cross
Face configuration			
Rock hardness	Hard	○	
	Medium-hard	○	○
	Soft	○	○
Character	High speed drilling	○	
	Wear resistance		
	Straightness		○
		Dedicated to low power drifter.	Straightest drilling bit. *Low speed drilling.

Carbide shape variety

R : Round	BB : Semi ballistic	B : Ballistic	SA : Spike
Utility carbide shape. Strong configuration against carbide fracture.	Combined wear resistance and high penetration rate. Recommended for medium-hard rock with moderate abrasivity.	Higher penetrating carbide shape than Semi ballistic shape. Recommended for soft rock.	Highest penetrating carbide shape. *Weak configuration against carbide fracture. Recommended for soft to medium-hard rock.

Carbide feature



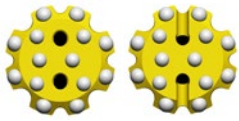
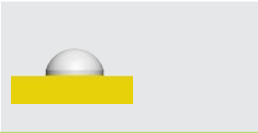
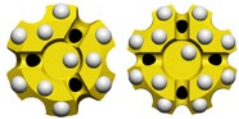
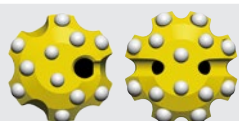
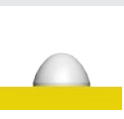
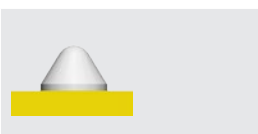



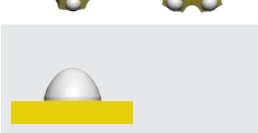

Flushing hole variety

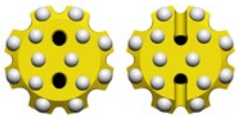
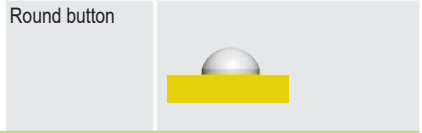
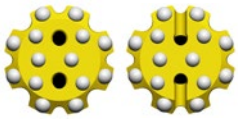
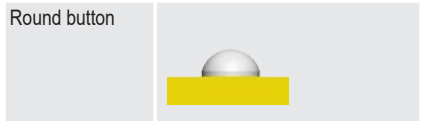

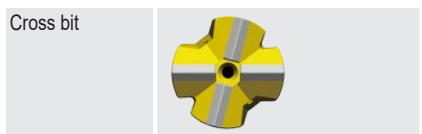
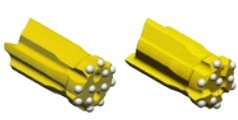
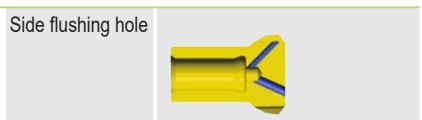

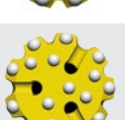
V : Face flushing hole	W : Face and side flushing hole
Normal flushing hole design.	Offers optimized flushing against plugging.

Skirt variety

S : Straight skirt	R : Retrac skirt
Normal bit skirt design.	Retrac wings help to guide the bit in and out of the hole. Effective in straight hole drilling.

Bench & Long hole drilling equipment FAQ

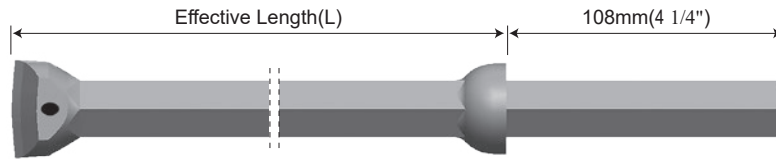
Customer's request	Recommendation	
1. Hard rock drilling	Type 15 , 25	
	Round button	
2. Soft rock drilling	Type 53 , 55	
	Type 83 , 85	
	Semi-ballistic button	
	Spike button	
3. Low power drifter	Type 14	
4. Improvement of penetration rate	Type 23	
	Type 83 , 85	
	Semi-ballistic button	
	Spike button	

Customer's request	Recommendation	
5. Resistant to abrasive rock	Type 15 , 25	
	Round button	
6. Anti carbide fracture	Type 15 , 25	
	Round button	
7. Against deviation	Type 53 , 55	
	Cross bit	
	Retrac skirt	
8. Flushing hole plugged	Side flushing hole	
9. Smooth flushing	Type 25	
	Type 23	

INTEGRAL DRILL STEEL & TAPERED EQUIPMENT



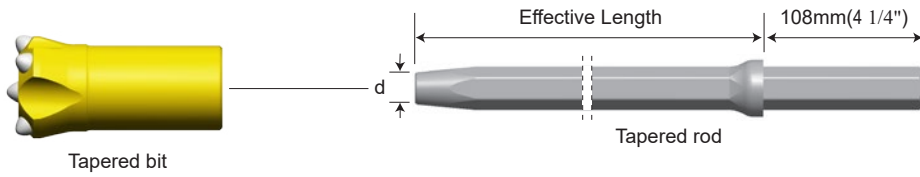
INTEGRAL EQUIPMENT



Shank hex		Rod hex		Shank length		Effective Length(L)		Gauge diameter		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[ft/in]	[mm]	[in]		
22	7/8"	22	7/8"	108	4 1/4"	600	2'	35	1 3/8"	3.2	IH22L3506
						600	2'	41	1 5/8"	3.2	IH22L4106
						800	2' 7 1/2"	34	1 11/32"	4	IH22L3408
						800	2' 7 1/2"	40	1 9/16"	4	IH22L4008
						1200	4'	34	1 11/32"	5.7	IH22L3412
						1200	4'	40	1 9/16"	5.7	IH22L4012
						1600	5' 4"	39	1 17/32"	7.3	IH22L3916
						1800	6'	33	1 5/16"	8.2	IH22L3318
						1800	6'	39	1 17/32"	8.2	IH22L3918
						2400	8'	32	1 1/4"	10.7	IH22L3224
						2400	8'	38	1 1/2"	10.7	IH22L3824
						3200	10' 6"	31	1 7/32"	14	IH22L3132
						3200	10' 6"	37	1 15/32"	14	IH22L3732
						4000	13' 1 1/2"	36	1 13/32"	17.4	IH22L3640
						4800	16'	35	1 3/8"	20.7	IH22L3548
5600	18' 4 1/2"	34	1 11/32"	24.1	IH22L3456						

TAPERED EQUIPMENT

Hex22 SERIES



Hex	Taper angle	Rod point dia. (d)	Type	Taper style
22	7°	16	T22F	Long Skirt
22	11°	17.7	T22G	Short Skirt
22	12°	15.2	T22C	Long Skirt
25	7°	19.6	T25B	Long Skirt
25	7°	21.2	T25F	Short Skirt

Hex22 7° tapered bit for long skirt



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
30	1 3/16"	35	5×7	2×6	2	1	0.3	T22P30FBB06
31	1 7/32"	35	5×7	2×6	2	1	0.3	T22P31FBB06
32	1 1/4"	35	5×7	2×7	1	1	0.3	T22P32FBB065
33	1 5/16"	35	5×7	2×7	1	1	0.4	T22P33FBB065
34	1 11/32"	35	5×7	2×7	1	1	0.4	T22P34FBB065
35	1 3/8"	35	5×8	2×8	2	1	0.4	T22P35FBB065
38	1 1/2"	40	5×8	2×8	1	1	0.5	T22P38FBB065Z
40	1 9/16"	40	5×9	2×8	1	1	0.6	T22P40FBB065Z
41	1 5/8"	40	5×9	2×8	1	1	0.6	T22P41FBB065Z

Hex22 7° tapered rod for long skirt



Effective Length(L)		Weight [Kg]	Part number
[mm]	[ft/in]		
900	3'	3.4	TH22L09F
1800	6'	6.4	TH22L18F
3000	10'	10.4	TH22L30F

TAPERED EQUIPMENT

Hex22 SERIES

Hex22 11° tapered bit for short skirt



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
32	1 1/4"	35	5×7	2×7	1	1	0.3	T22P32GBB065
33	1 5/16"	40	5×7	2×7	1	1	0.4	T22P33GBB065Z
35	1 3/8"	40	5×7	2×7	1	1	0.4	T22P35GBB065Z1
36	1 13/32"	40	5×8	2×7	1	1	0.5	T22P36GBB065Z2
38	1 1/2"	40	5×9	2×7	1	1	0.5	T22P38GBB065Z2
40	1 9/16"	40	5×9	2×8	1	1	0.6	T22P40GBB065Z1
41	1 5/8"	40	5×9	2×8	1	1	0.6	T22P41GBB065Z3

Hex22 11° tapered rod for short skirt



Effective Length(L)		Weight [Kg]	Part number
[mm]	[ft/in]		
600	2'	2.4	TH22L06G
1000	3' 4"	3.7	TH22L10G
1200	4'	4.4	TH22L12G
1500	5'	5.4	TH22L15G
1600	5' 4"	5.7	TH22L16G
1800	6'	6.4	TH22L18G
2000	6' 6 3/4"	7.1	TH22L20G
2400	8'	8.4	TH22L24G
3000	10'	10.4	TH22L30G

Hex22 12° tapered bit for long skirt



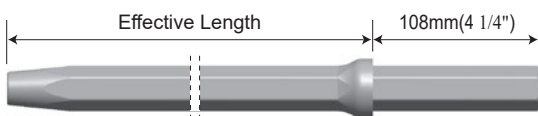
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
32	1 1/4"	35	5×7	2×7	1	1	0.3	T22P32CBB065
33	1 5/16"	35	5×7	2×7	1	1	0.4	T22P33CBB065
35	1 3/8"	35	5×8	2×8	1	1	0.4	T22P35CBB065
38	1 1/2"	35	5×8	2×8	1	1	0.5	T22P38CBB065

Hex22 12° tapered bit for long skirt



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
32	1 1/4"	40	6×7	2×7	1	2	0.3	T22P32CBB084
33	1 5/16"	40	6×7	2×7	1	2	0.4	T22P33CBB084
35	1 3/8"	40	6×8	2×7	2	2	0.4	T22P35CBB084
38	1 1/2"	30	6×8	2×7	1	2	0.5	T22P38CBB08Z

Hex22 12° tapered rod for long skirt



Effective Length(L)		Weight [Kg]	Part number
[mm]	[ft/in]		
500	1' 7 5/8"	2	TH22L05C
1800	6'	6.4	TH22L18C
2200	7' 4"	7.7	TH22L22C
2400	8'	8.4	TH22L24C
2600	8' 6"	9.1	TH22L26C
2900	9' 6 1/8"	10.1	TH22L29C
3900	13'	13.4	TH22L39C
4500	15'	15.4	TH22L45C
5400	18'	18.5	TH22L54C
6300	21'	21.5	TH22L63C

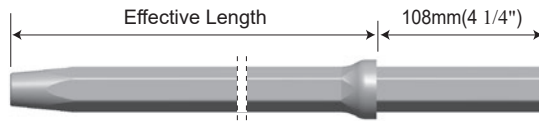
Hex25 SERIES

Hex25 7° tapered bit long skirt



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
41	1 5/8"	40	5×9	2×8	2	1	0.6	T25P41BBB065Z
43	1 11/16"	40	5×9	2×9	2	1	0.6	T25P43BBB06Z

Hex25 7° tapered rod for long skirt



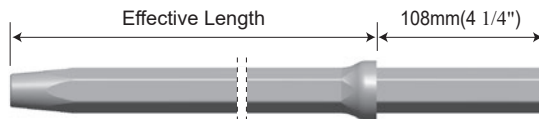
Effective Length(L)		Weight [Kg]	Part number
[mm]	[ft/in]		
1800	6'	8.2	TH25L18B
2200	7' 4"	9.9	TH25L22B
2400	8'	10.7	TH25L24B
2600	8' 6"	11.6	TH25L26B

Hex25 7° tapered bit short skirt



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
41	1 5/8"	40	5×9	2×8	2	1	0.6	T25P41FBB065Z
43	1 11/16"	40	5×9	2×9	2	1	0.6	T25P43FBB06Z

Hex25 7° tapered rod for short skirt



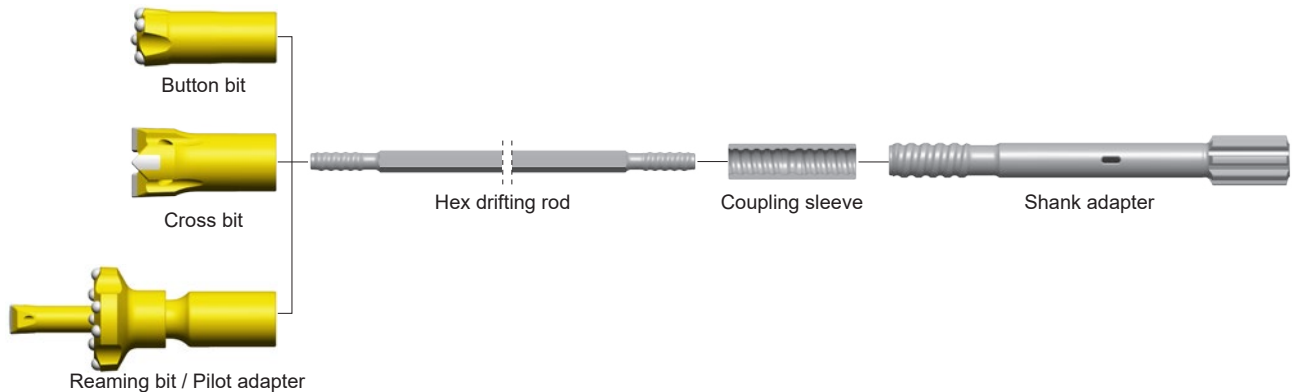
Effective Length(L)		Weight [Kg]	Part number
[mm]	[ft/in]		
1800	6'	8.2	TH25L18F
2200	7' 4"	9.9	TH25L22F
2400	8'	10.7	TH25L24F
2600	8' 6"	11.6	TH25L26F

D R I F T I N G & T U N N E L L I N G E Q U I P M E N T



DRIFTING & TUNNELLING EQUIPMENT

R25 (1") SERIES (Recommended gauge diameter Ø33 - Ø45)



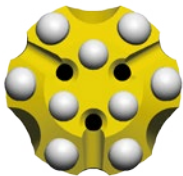
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.14

Button bit Type 06



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
33	1 5/16"	35	5×7	2×7	1	1	0.4	25RTPWS33R06M
33	1 5/16"	30	5×8	2×7	1	1	0.4	25RTPWS33R06L
35	1 3/8"	40	5×8	2×7	1	1	0.4	25RTPWS35R06H
37	1 15/32"	35	5×9	2×7	1	1	0.5	25RTPWS37R06M
38	1 1/2"	35	5×9	2×8	1	1	0.5	25RTPWS38R06M
41	1 5/8"	40	5×9	2×8	2	1	0.6	25RTPWS41R06H
43	1 11/16"	40	5×9	2×9	2	1	0.6	25RTPWS43R06H
45	1 3/4"	35	5×10	2×9	2	1	0.7	25RTPWS45R06M

Button bit Type 23



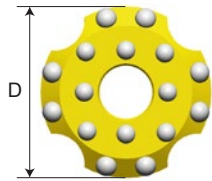
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
35	1 3/8"	35	6×7	3×7	1	3	0.4	25RTPWS35R23M
37	1 15/32"	35	6×7	3×7	1	3	0.5	25RTPWS37R23M
38	1 1/2"	35	6×8	3×7	1	3	0.5	25RTPWS38R23M
41	1 5/8"	40	6×8	3×7	1	3	0.6	25RTPWS41R23H
43	1 11/16"	35	6×9	3×8	1	3	0.6	25RTPWS43R23M
45	1 3/4"	30	6×9	3×8	1	3	0.7	25RTPWS45R23L

Cross bit



Gauge diameter		Carbide size W × H [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
35	1 3/8"	10×19	-	-	2	1	0.4	25RTC35V
38	1 1/2"	10×19	-	-	2	1	0.5	25RTC38V
41	1 5/8"	10×19	-	-	2	1	0.6	25RTC41V
45	1 3/4"	10×19	-	-	2	1	0.7	25RTC45V

Reaming bit / Pilot adapter 6° taper

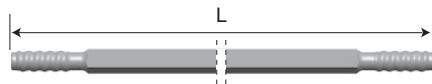


Gauge diameter(D)		Gauge angle [°]	Button x Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	30	6×9	3×8	-	-	1.0	WTHP64R11
76	3"	30	6×10	6×9	-	-	1.3	WTHP76R11
89	3 1/2"	30	8×11	8×10	-	-	1.7	WTHP89R15



Gauge diameter(D)		Carbide size [mm]	Button x Button dia. [mm]		Flushing hole	Weight [Kg]	Part number
[mm]	[in]		Gauge	Face			
26	1"	8	-	-	1	1.4	WR25THI26B

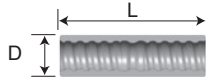
Hex drifting rod



Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
R25 - R32	25	1"	2200	7' 2"	8.8	EH25R32R25-2200
			2475	8' 2"	10.2	EH25R32R25-2475
			2600	8' 6"	10.7	EH25R32R25-2600
			2800	9' 2"	11.2	EH25R32R25-2800
			3100	10' 2"	12.7	EH25R32R25-3100

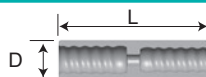
* Custom lengths may be available upon request

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R25 - R25	35	1 3/8"	160	6 1/4"	0.7	CR25
R32 - R32	45	1 3/4"	150	6"	1.0	CR32D

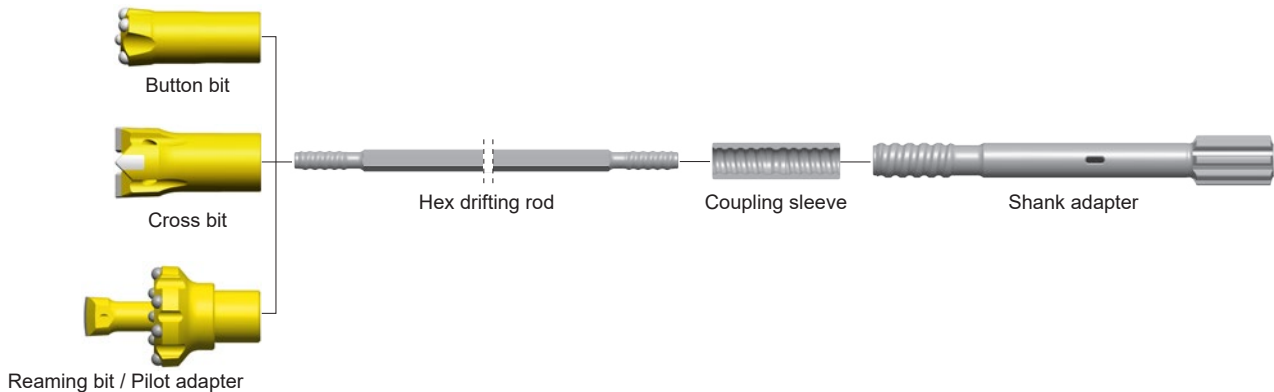
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R25 - R32	45	1 3/4"	175	6 7/8"	1.5	CR32R25

DRIFTING & TUNNELLING EQUIPMENT

R28 (1 1/8") SERIES (Recommended gauge diameter Ø37 - Ø45)



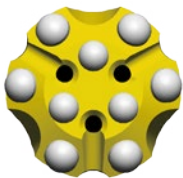
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.14

Button bit Type 06



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
37	1 15/32"	35	5×9	2×7	1	1	0.5	28RTPWS37R06M
38	1 1/2"	35	5×9	2×8	1	1	0.5	28RTPWS38R06M
41	1 5/8"	40	5×9	2×8	2	1	0.6	28RTPWS41R06H
43	1 11/16"	40	5×9	2×9	2	1	0.7	28RTPWS43R06H
45	1 3/4"	35	5×10	2×9	2	1	0.7	28RTPWS45R06M

Button bit Type 23



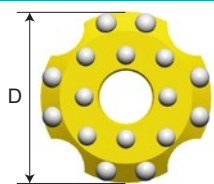
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
37	1 15/32"	35	6×7	3×7	1	3	0.5	28RTPWS37R23M
38	1 1/2"	35	6×8	3×7	1	3	0.5	28RTPWS38R23M
41	1 5/8"	40	6×8	3×7	1	3	0.6	28RTPWS41R23H
43	1 11/16"	35	6×9	3×8	1	3	0.7	28RTPWS43R23M
45	1 3/4"	30	6×9	3×8	1	3	0.7	28RTPWS45R23L

Cross bit



Gauge diameter		Carbide size W × H [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
38	1 1/2"	10×19	-	-	4	1	0.5	28RTC38V
41	1 5/8"	10×19	-	-	4	1	0.6	28RTC41V
43	1 11/16"	10×19	-	-	4	1	0.7	28RTC43V
45	1 3/4"	10×19	-	-	4	1	0.7	28RTC45V

Reaming bit / Pilot adapter 6° taper

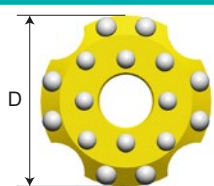


Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	30	6×9	3×8	-	-	1.0	WTHP64R11
76	3"	30	6×10	6×9	-	-	1.3	WTHP76R11
89	3 1/2"	30	8×11	8×10	-	-	1.7	WTHP89R15



Gauge diameter(D)		Carbide size [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Front		
26	1"	8	-	-	1	1	1.4	WR28THI26B

Reaming bit / Pilot adapter 12° taper



Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	30	8×11	4×10	-	-	1.6	WTKP89R15
102	4"	35	8×14	6×12	-	-	2.3	WTKP102R16
127	5"	35	12×13	8×13	-	-	4.8	WTKP127R16



Gauge diameter(D)		Carbide size [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Front		
40	1 5/8"	8	-	-	3	1	2.1	WR28TKI40B

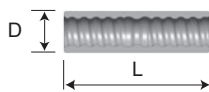
Hex drifting rod



Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
R28 - R32	28	1 1/8"	2800	9'2"	14.1	EH28R32R28-2800
			3100	10'2"	15.8	EH28R32R28-3100
			3700	12'2"	19.2	EH28R32R28-3700
			4310	14'2"	23.0	EH32R32R28-4310

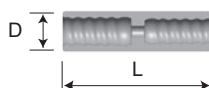
* Custom lengths may be available upon request

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R28 - R28	41	1 5/8"	160	6 1/4"	1.0	CR28D
R32 - R32	45	1 3/4"	150	6"	1.0	CR32D

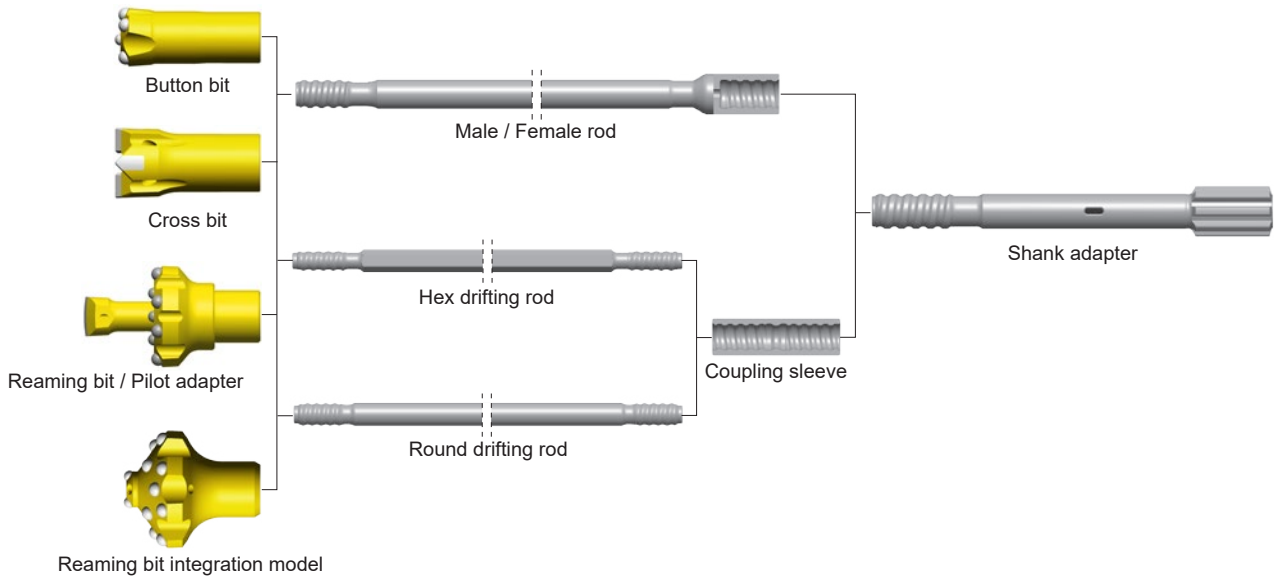
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R28 - R32	45	1 3/4"	171	6 3/4"	1.4	CR32R28

DRIFTING & TUNNELLING EQUIPMENT

R32 (1 1/4") SERIES (Recommended gauge diameter Ø41 - Ø64)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.14

Button bit Type 06



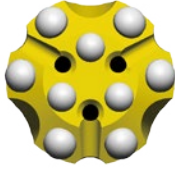
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
41	1 5/8"	40	5×9	2×8	2	1	0.6	32RTPWS41R06H
43	1 11/16"	40	5×9	2×9	2	1	0.7	32RTPWS43R06H
43	1 11/16"	30	5×10	2×8	2	1	0.7	32RTPWS43R06L
45	1 3/4"	35	5×10	2×9	2	1	0.8	32RTPWS45R06M
45	1 3/4"	30	5×11	2×9	2	1	0.8	32RTPWS45R06L
48	1 7/8"	30	5×11	2×9	2	1	0.9	32RTPWS48R06L
51	2"	30	5×12	2×10	2	1	1.0	32RTPWS51R06L

Button bit Type 03



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
43	1 11/16"	35	6×9	3×8	1	3	0.7	32RTPWS43R03M
43	1 11/16"	30	6×10	3×8	1	3	0.7	32RTPWS43R03L
45	1 3/4"	30	6×10	3×8	1	3	0.8	32RTPWS45R03L
48	1 7/8"	35	6×10	3×9	1	3	0.9	32RTPWS48R03M

Button bit Type 23



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
45	1 3/4"	30	6×9	3×8	1	3	0.8	32RTPWS45R23L
48	1 7/8"	30	6×10	3×9	1	3	0.9	32RTPWS48R23L
51	2"	30	6×10	3×9	1	3	1.0	32RTPWS51R23L
54	2 1/8"	40	6×10	3×10	1	3	1.1	32RTPWS54R23H
57	2 1/4"	40	6×11	3×10	1	3	1.2	32RTPWS57R23H
64	2 1/2"	35	6×12	3×11	1	3	1.4	32RTPWS64R23M

Button bit Type 08



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
43	1 11/16"	35	6×9	2×8	-	2	0.7	32RTPVS43BB08M
45	1 3/4"	35	6×9	2×9	-	2	0.8	32RTPVS45BB08M
48	1 7/8"	35	6×10	2×9	-	2	0.9	32RTPVS48BB08M

Button bit Type 09



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
43	1 11/16"	35	6×9	3×8	2	1	0.7	32RTPWS43BB09M
45	1 3/4"	35	6×9	3×9	2	1	0.8	32RTPWS45BB09M
48	1 7/8"	35	6×9	3×9	2	1	0.9	32RTPWS48BB09M

Cross bit

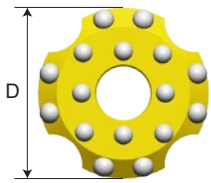


Gauge diameter		Carbide size W × H [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
41	1 5/8"	10×19	-	-	4	1	0.6	32RTC41V
45	1 3/4"	10×19	-	-	4	1	0.7	32RTC45V
48	1 7/8"	10×19	-	-	4	1	0.9	32RTC48V
51	2"	10×19	-	-	4	1	1.0	32RTC51V

DRIFTING & TUNNELLING EQUIPMENT

R32 (1 1/4") SERIES (Recommended gauge diameter Ø41 - Ø57)

Reaming bit / Pilot adapter 6° taper

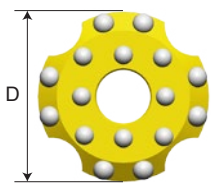


Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	30	6×9	3×8	-	-	1.0	WTHP64R11
76	3"	30	6×10	6×9	-	-	1.3	WTHP76R11
89	3 1/2"	30	8×11	8×10	-	-	1.7	WTHP89R15



Gauge diameter(D)		Carbide size [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Front		
26	1"	8	-	-	1	1	1.7	WR32THI26B

Reaming bit / Pilot adapter 12° taper

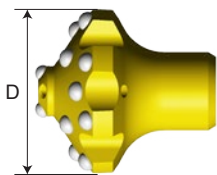


Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	30	8×11	4×10	-	-	1.6	WTKP89R15
102	4"	35	8×14	6×12	-	-	2.3	WTKP102R16
127	5"	35	12×13	8×13	-	-	4.8	WTKP127R16



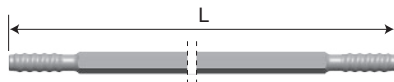
Gauge diameter(D)		Carbide size [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Front		
40	1 5/8"	8	-	-	3	1	2.1	WR32TKI40B

Reaming bit integration model



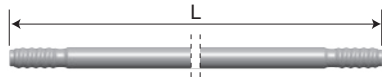
Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole			Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face	Reverse		
76	3"	35	8×12	6×10	2	1	2	2.2	WI32RTPJ76R-30R
89	3 1/2"	35	8×12	10×10	2	1	2	2.5	WI32RTPJ89R-30R
102	4"	35	8×12	9×12, 2×10	2	1	2	2.7	WI32RTPJ102R-30R

Hex Drifting rod



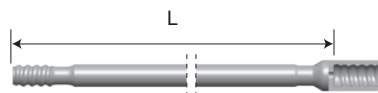
Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
R32 - R38	32	1 1/4"	3100	10' 2"	19.7	EH32R38R32-3100
			3700	12' 2"	23.3	EH32R38R32-3700
			4310	14' 2"	27.0	EH32R38R32-4310
			4920	16' 2"	30.9	EH32R38R32-4920
R32 - R38	35	1 3/8"	3100	10' 2"	23.9	EH35R38R32-3100
			3700	12' 2"	28.5	EH35R38R32-3700
			4310	14' 2"	33.2	EH35R38R32-4310
			4920	16' 2"	36.7	EH35R38R32-4920
R32 - T38	35	1 3/8"	5530	18' 2"	41.3	EH35R38R32-5530
			3100	10' 2"	19.7	EH32M38R32-3100
			3700	12' 2"	23.3	EH32M38R32-3700
			4310	14' 2"	27.0	EH32M38R32-4310
R32 - T38	32	1 1/4"	4920	16' 2"	30.9	EH32M38R32-4920
			3100	10' 2"	23.9	EH35M38R32-3100
			3700	12' 2"	28.5	EH35M38R32-3700
			4310	14' 2"	33.2	EH35M38R32-4310
R32 - T38	32	1 1/4"	4920	16' 2"	36.7	EH35M38R32-4920
			5530	18' 2"	41.3	EH35M38R32-5530

Round Drifting rod



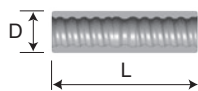
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
R32 - R32	32	1 1/4"	1830	6'	8.0	ER32R32-1830
			2440	8'	11.5	ER32R32-2440
			3050	10'	16.2	ER32R32-3050
			3660	12'	19.5	ER32R32-3660

Male / Female Drifting rod



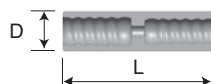
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
R32 - R32	32	1 1/4"	1830	6'	9.4	ER32R32MF-1830
			2440	8'	12.9	ER32R32MF-2440
			3050	10'	17.4	ER32R32MF-3050
			3660	12'	20.6	ER32R32MF-3660

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R32 - R32	45	1 3/4"	150	6"	1.0	CR32D
R38 - R38	54	2 1/8"	170	6 3/4"	1.7	CR38D

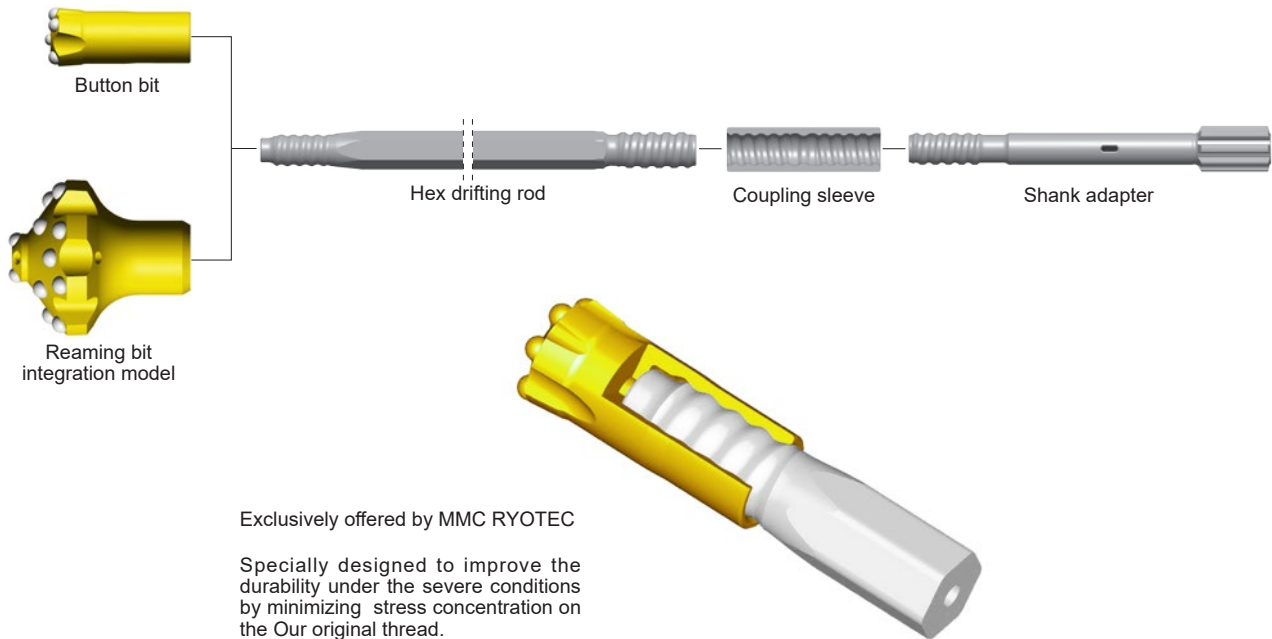
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R32 - R25	45	1 3/4"	175	6 7/8"	1.5	CR32R25
R32 - R28	45	1 3/4"	171	6 3/4"	1.4	CR32R28
R32 - R38	54	2 1/8"	181	7 1/8"	2.1	CR38R32
R32 - T38	54	2 1/8"	188	7 1/2"	2.2	CM38R32

DRIFTING & TUNNELLING EQUIPMENT

NR34 (1 1/3") SERIES (Recommended gauge diameter Ø45 - Ø54)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.14

Button bit Type 06



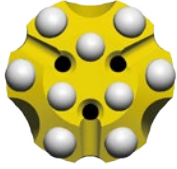
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
45	1 3/4"	30	5×11	2×9	2	1	0.8	34NRTPWS45R06L
48	1 7/8"	30	5×11	2×9	2	1	0.9	34NRTPWS48R06L
51	2"	30	5×12	2×10	2	1	1.0	34NRTPWS51R06L

Button bit Type 03



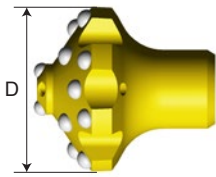
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
45	1 3/4"	30	6×10	3×8	1	3	0.8	34NRTPWS45R03L
48	1 7/8"	35	6×10	3×9	1	3	0.9	34NRTPWS48R03M

Button bit Type 23



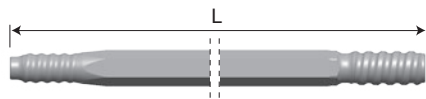
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
51	2"	30	6×10	3×9	1	3	1.0	34NRTPWS51R23L
54	2 1/8"	40	6×10	3×10	1	3	1.1	34NRTPWS54R23H

Reaming bit integration model



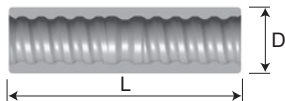
Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole			Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face	Reverse		
76	3"	35	8×12	6×10	2	1	2	2.3	WI34NRTPJ76R-30R
89	3 1/2"	35	8×12	10×10	2	1	2	2.6	WI34NRTPJ89R-30R
102	4"	35	8×12	9×12, 2×10	2	1	2	2.8	WI34NRTPJ102R-30R

Hex drifting rod



Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
NR34 - T38	35	1 3/8"	3100	10' 2"	24.8	EH35M38NR34-3100
			3700	12' 2"	29.5	EH35M38NR34-3700
			4310	14' 2"	34.1	EH35M38NR34-4310
			4920	16' 2"	37.6	EH35M38NR34-4920
			5530	18' 2"	42.3	EH35M38NR34-5530

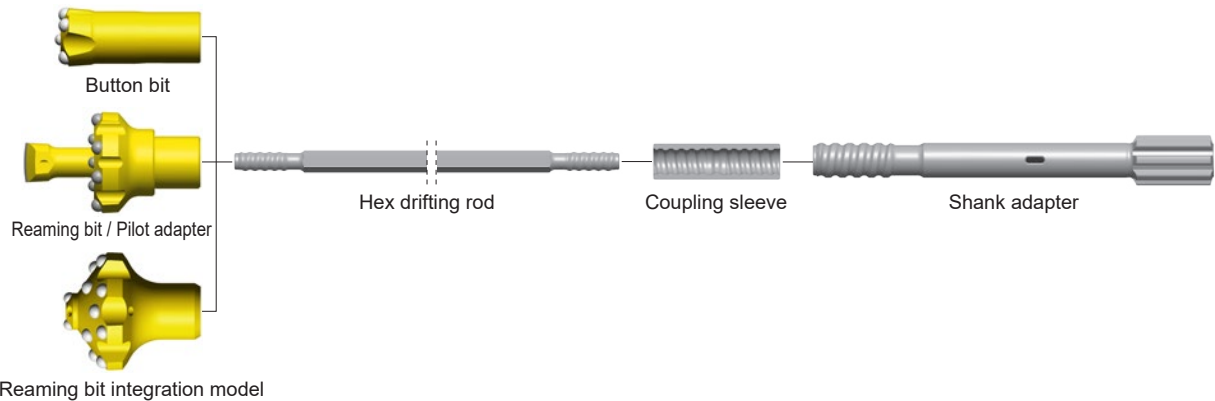
Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T38 - T38	54	2 1/8"	190	7 1/2"	2.0	CM38

DRIFTING & TUNNELLING EQUIPMENT

R35 (1 3/8") SERIES (Recommended gauge diameter Ø48 - Ø64)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.14

Button bit Type 06



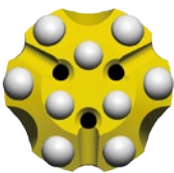
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
48	1 7/8"	30	5×11	2×9	2	1	0.8	35RTPWS48R06L
51	2"	30	5×12	2×10	2	1	0.9	35RTPWS51R06L

Button bit Type 03



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
48	1 7/8"	35	6×10	3×9	1	3	0.8	35RTPWS48R03M

Button bit Type 23



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
48	1 7/8"	30	6×10	3×9	1	3	0.8	35RTPWS48R23L
51	2"	30	6×10	3×9	1	3	0.9	35RTPWS51R23L
54	2 1/8"	40	6×10	3×9	1	3	1.0	35RTPWS54R23H
57	2 1/4"	40	6×11	3×10	1	3	1.1	35RTPWS57R23H
64	2 1/2"	35	6×12	3×11	1	3	1.3	35RTPWS64R23M

Button bit Type 08



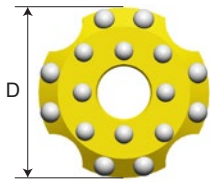
Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
48	1 7/8"	35	6×10	2×9	-	2	0.8	35RTPVS48BB08M

Button bit Type 09



Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
48	1 7/8"	35	6×9	3×9	2	1	0.8	35RTPWS48BB09M

Reaming bit / Pilot adapter 12° taper

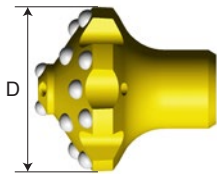


Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	30	8×11	4×10	-	-	1.6	WTKP89R15
102	4"	35	8×14	6×12	-	-	2.3	WTKP102R16
127	5"	35	12×13	8×13	-	-	4.8	WTKP127R16



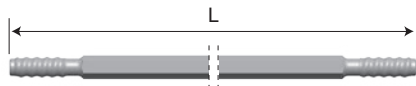
Gauge diameter(D)		Carbide size [mm]	Button × Button dia. [mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Front		
40	1 9/16"	8	-	-	3	1	1.5	WR35TKI40B

Reaming bit integration model



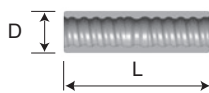
Gauge diameter(D)		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole			Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face	Reverse		
76	3"	35	8×12	6×10	2	1	2	2.3	WI35RTPJ76R-30R
89	3 1/2"	35	8×12	10×10	2	1	2	2.7	WI35RTPJ89R-30R
102	4"	35	8×12	9×12, 2×10	2	1	2	2.9	WI35RTPJ102R-30R

Hex drifting rod



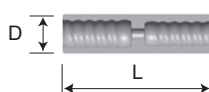
Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
R35 - T38	35	1 3/8"	4310	14' 2"	33.3	EH35M38R35-4310
			4920	16' 2"	36.8	EH35M38R35-4920
			5530	18' 2"	41.4	EH35M38R35-5530

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R35 - R35	48	1 7/8"	160	6 1/4"	1.2	CR35D

Crossover coupling



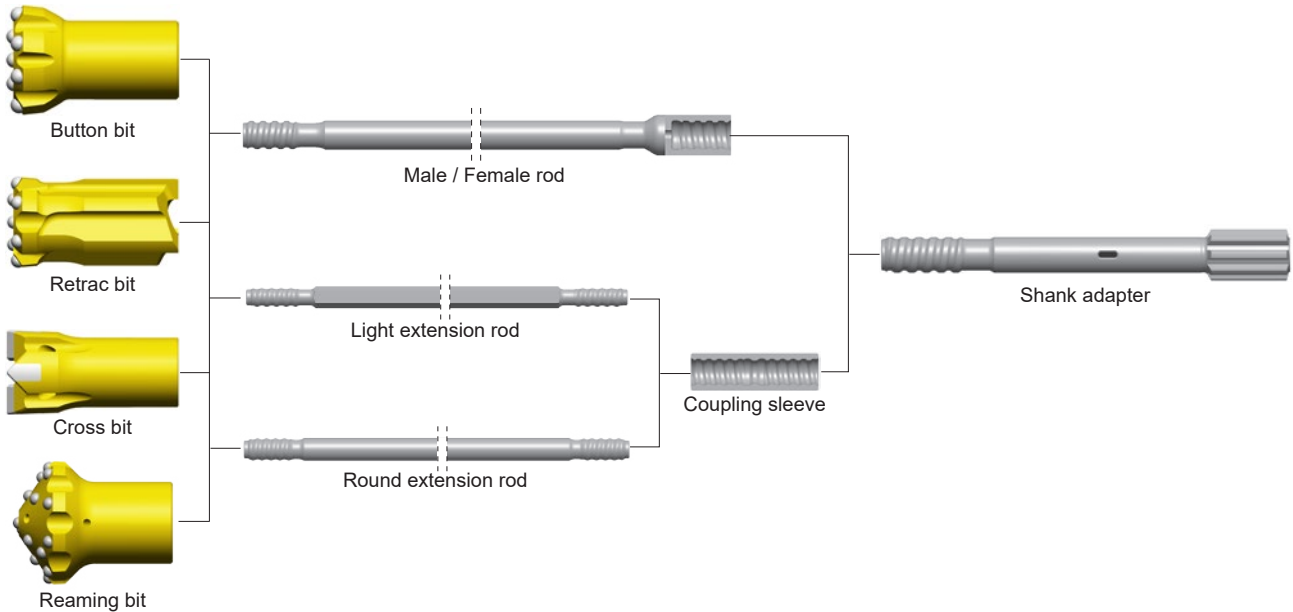
Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
R35 - R32	48	1 7/8"	171	6 3/4"	1.5	CR35R32

BENCH & LONG HOLE DRILLING EQUIPMENT



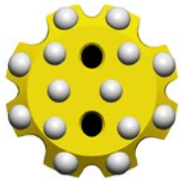
BENCH & LONG HOLE DRILLING EQUIPMENT

T38 (1 1/2") SERIES (Recommended gauge diameter Ø64 - Ø102)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



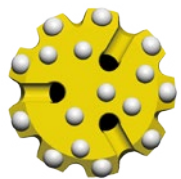
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	8×11	4×10	-	2	1.6	38MPVS64R15M
64	2 1/2"	40	8×10	5×10	-	2	1.6	38MPVS64R15H
70	2 3/4"	35	8×11	4×11	-	2	1.9	38MPVS70R15M
70	2 3/4"	40	8×11	5×10	-	2	1.9	38MPVS70R15H
76	3"	35	8×12	4×11	-	2	2.2	38MPVS76R15M
76	3"	40	8×11	5×11	-	2	2.2	38MPVS76R15H
89	3 1/2"	35	8×13	6×12	-	2	3.4	38MPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	3.4	38MPVS89R15H
102	4"	35	8×14	6×13	-	2	4.5	38MPVS102R15M
102	4"	40	8×13	6×13	-	2	4.5	38MPVS102R15H

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	3.3	38MPVS89R25M
102	4"	35	8×14	6×13	-	2	4.4	38MPVS102R25M

Button bit Type 23



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	3.4	38MPVS89R23M
102	4"	35	9×13	6×13	-	3	4.5	38MPVS102R23M

Button bit Type 53 & 55



Type 53 (Ø64-Ø89)



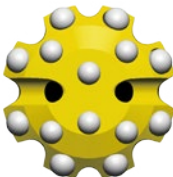
Type 55 (Ø76-Ø102)

Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	6×10	4×10	-	3	1.6	38MPVS64R53M
70	2 3/4"	35	6×11	4×11	-	3	1.8	38MPVS70R53M
76	3"	35	6×12	4×11	-	3	2.1	38MPVS76R53M
76	3"	35	8×11	5×11	-	4	2.2	38MPVS76R55M
89	3 1/2"	35	6×13	5×12	-	3	3.3	38MPVS89R53M
89	3 1/2"	35	8×12	6×12	-	4	3.4	38MPVS89R55M
102	4"	35	8×14	6×14	-	4	4.4	38MPVS102R55M

Button bit Type 83 & 85



Type 83 (Ø64-Ø76)



Type 85 (Ø76-Ø102)

Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	20-40	6×10	3×10, 2×9	1	1	1.6	38MPWS64BB83H
70	2 3/4"	20-40	6×11	5×10	1	1	1.8	38MPWS70BB83H
76	3"	20-40	6×11	3×11, 2×10	1	1	2.1	38MPWS76BB83H
76	3"	20-40	8×11	6×10	2	2	2.2	38MPWS76BB85H
89	3 1/2"	20-40	8×12	6×12	2	2	3.4	38MPWS89BB85H
102	4"	20-40	8×12	7×12	-	2	4.4	38MPVS102BB85H

* Face angle 20°, Gauge angle 40°

Button bit Type 14



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	7×11	4×10	-	3	1.6	38MPVS64R14M
70	2 3/4"	35	7×11	4×11	-	3	1.8	38MPVS70R14M
76	3"	35	7×12	4×11	-	3	2.2	38MPVS76R14M
89	3 1/2"	35	7×14	5×12	-	3	3.4	38MPVS89R14M
102	4"	35	7×14	5×13	-	3	4.4	38MPVS102R14M

Cross bit

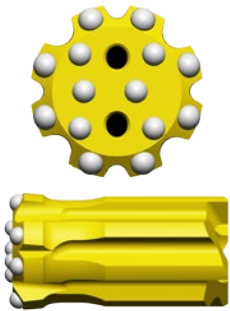


Gauge diameter		Carbide size W × H [mm]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	13×22	-	-	4	1	1.8	38MX64S
76	3"	13×22	-	-	4	1	2.4	38MX76S2

BENCH & LONG HOLE DRILLING EQUIPMENT

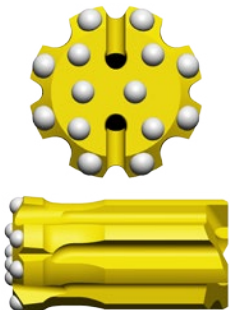
T38 (1 1/2") SERIES (Recommended gauge diameter Ø64 - Ø102)

Retrac Button bit Type 15



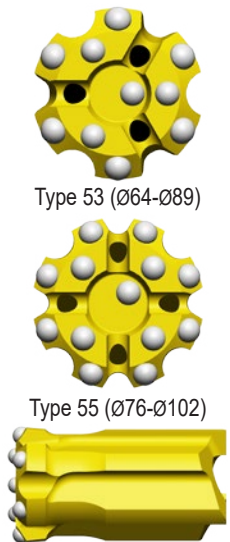
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	8×11	4×10	-	2	2.1	38MPVR64R15M
70	2 3/4"	35	8×11	4×11	-	2	2.6	38MPVR70R15M
76	3"	35	8×12	4×11	-	2	3.1	38MPVR76R15M
89	3 1/2"	35	8×13	6×12	-	2	4.4	38MPVR89R15M
102	4"	35	8×14	6×13	-	2	6.6	38MPVR102R15M

Retrac Button bit Type 25



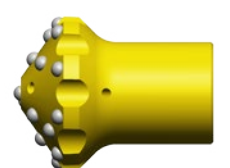
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.4	38MPVR89R25M
102	4"	35	8×14	6×13	-	2	6.5	38MPVR102R25M

Retrac Button bit Type 53 & 55



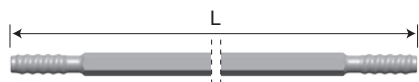
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	6×10	4×10	-	3	2.0	38MPVR64R53M
70	2 3/4"	35	6×11	4×11	-	3	2.5	38MPVR70R53M
76	3"	35	6×12	4×11	-	3	2.9	38MPVR76R53M
76	3"	35	8×11	5×11	-	4	3.0	38MPVR76R55M
89	3 1/2"	35	6×13	5×12	-	3	4.3	38MPVR89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.4	38MPVR89R55M
102	4"	35	8×14	6×14	-	4	6.5	38MPVR102R55M

Reaming bit integration model



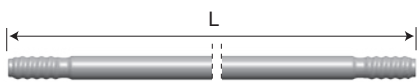
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
127	5"	35	9×13	10×13	3	1	7.5	WI38MPJ127R-D
152	6"	35	9×14	11×14	3	1	10.5	WI38MPJ152R-D

Light extension rod



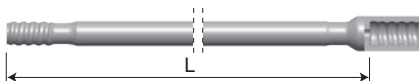
Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	32	1 1/4"	3050	10'	18.4	EH32M38-3050
			3660	12'	22.1	EH32M38-3660

Round extension rod



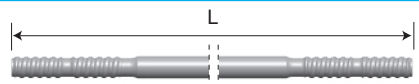
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	38	1 1/2"	3050	10'	24.7	ER38M38-3050
			3660	12'	29.4	ER38M38-3660
			4270	14'	34.7	ER38M38-4270
			4880	16'	39.7	ER38M38-4880
			5490	18'	44.6	ER38M38-5490

Male / Female rod



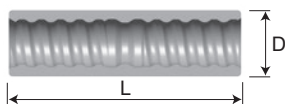
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	38	1 1/2"	900	3'	8.0	ER38M38MF-900
			1220	4'	9.7	ER38M38MF-1220
			1525	5'	13.3	ER38M38MF-1525
			1830	6'	16.0	ER38M38MF-1830
			2440	8'	21.3	ER38M38MF-2440
			3050	10'	25.9	ER38M38MF-3050
			3660	12'	30.7	ER38M38MF-3660

Tandem rod



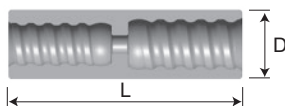
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	38	1 1/2"	3050	10'	24.4	ER38M38T-3050
			3660	12'	29.3	ER38M38T-3660

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T38 - T38	54	2 1/8"	190	7 1/2"	2.0	CM38

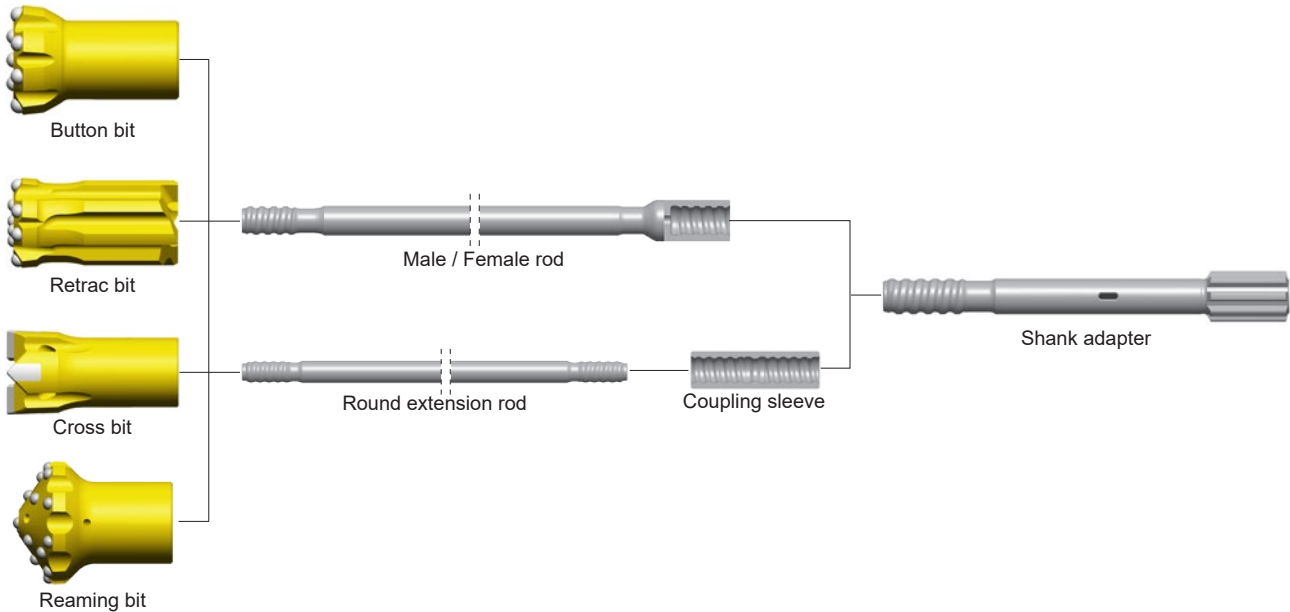
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T38 - R32	54	2 1/8"	188	7 1/2"	2.2	CM38R32
T38 - T45	63	2 1/2"	215	8 1/2"	3.4	CM45M38

BENCH & LONG HOLE DRILLING EQUIPMENT

T45 (1 3/4") SERIES (Recommended gauge diameter Ø70 - Ø115)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



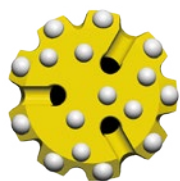
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	35	8×11	4×11	-	2	1.9	45MPVS70R15M
70	2 3/4"	40	8×11	5×10	-	2	1.9	45MPVS70R15H
76	3"	35	8×12	4×11	-	2	2.3	45MPVS76R15M
76	3"	40	8×11	5×11	-	2	2.3	45MPVS76R15H
89	3 1/2"	35	8×13	6×12	-	2	3.8	45MPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	3.8	45MPVS89R15H
102	4"	35	8×14	6×13	-	2	4.4	45MPVS102R15M
102	4"	40	8×13	6×13	-	2	4.4	45MPVS102R15H

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	3.7	45MPVS89R25M
102	4"	35	8×14	6×13	-	2	4.3	45MPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	6.3	45MPVS115R25M

Button bit Type 23



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	3.8	45MPVS89R23M
102	4"	35	9×13	6×13	-	3	4.4	45MPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	6.4	45MPVS115R23MS

Button bit Type 53 & 55



Type 53 (Ø70-Ø89)



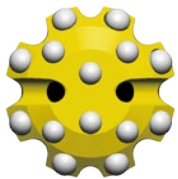
Type 55 (Ø76-Ø115)

Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	35	6×11	4×11	-	3	1.8	45MPVS70R53M
76	3"	35	6×12	4×11	-	3	2.2	45MPVS76R53M
76	3"	35	8×11	5×11	-	4	2.3	45MPVS76R55M
89	3 1/2"	35	6×13	5×12	-	3	3.6	45MPVS89R53M
89	3 1/2"	35	8×12	6×12	-	4	3.7	45MPVS89R55M
102	4"	35	8×14	6×14	-	4	4.3	45MPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	6.3	45MPVS115R55M

Button bit Type 83 & 85



Type 83 (Ø70-Ø76)



Type 85 (Ø76-Ø115)

Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	20-40	6×11	5×10	1	1	1.8	45MPWS70BB83H
76	3"	20-40	6×11	3×11, 2×10	1	1	2.2	45MPWS76BB83H
76	3"	20-40	8×11	6×10	2	2	2.3	45MPWS76BB85H
89	3 1/2"	20-40	8×12	6×12	2	2	3.6	45MPWS89BB85H
102	4"	20-40	8×12	7×12	-	2	4.3	45MPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	6.3	45MPVS115BB85H

* Face angle 20°, Gauge angle 40°

Button bit Type 14



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	35	7×11	4×11	-	3	1.8	45MPVS70R14M
76	3"	35	7×12	4×11	-	3	2.3	45MPVS76R14M
89	3 1/2"	35	7×14	5×12	-	3	3.6	45MPVS89R14M
102	4"	35	7×14	5×13	-	3	4.3	45MPVS102R14M

Cross bit

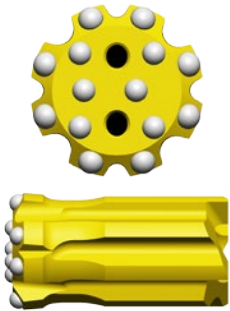


Gauge diameter		Carbide size W × H [mm]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
76	3"	13×22	-	-	4	1	2.5	45MX76S2
89	3 1/2"	13×22	-	-	4	1	4.0	45MX89S

BENCH & LONG HOLE DRILLING EQUIPMENT

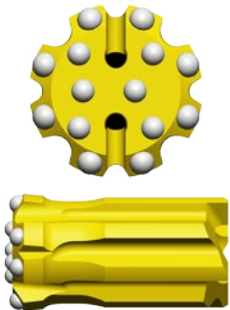
T45 (1 3/4") SERIES (Recommended gauge diameter Ø76 - Ø115)

Retrac Button bit Type 15



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
76	3"	35	8×12	4×11	-	2	3.0	45MPVR76R15M
89	3 1/2"	35	8×13	6×12	-	2	4.5	45MPVR89R15M
102	4"	35	8×14	6×13	-	2	6.6	45MPVR102R15M

Retrac Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.4	45MPVR89R25M
102	4"	35	8×14	6×13	-	2	6.5	45MPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	8.4	45MPVR115R25M

Retrac Button bit Type 53 & 55



Type 53 (Ø76-Ø89)

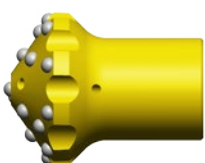


Type 55 (Ø76-Ø102)



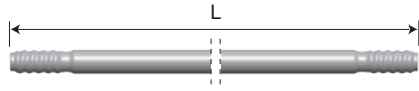
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
76	3"	35	6×12	4×11	-	3	2.9	45MPVR76R53M
76	3"	35	8×11	5×11	-	4	3.0	45MPVR76R55M
89	3 1/2"	35	6×13	5×12	-	3	4.2	45MPVR89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.5	45MPVR89R55M
102	4"	35	8×14	6×14	-	4	6.5	45MPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	8.4	45MPVR115R55M

Reaming bit integration model



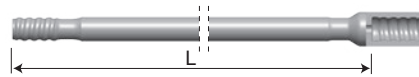
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
127	5"	35	9×13	10×13	3	1	7.5	WI45MPJ127R-D
152	6"	35	9×14	11×14	3	1	10.5	WI45MPJ152R-D

Round extension rod



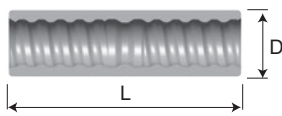
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T45 - T45	45	1 3/4"	3050	10'	34.1	ER45M45-3050
			3660	12'	41.0	ER45M45-3660
			4270	14'	48.1	ER45M45-4270
			4880	16'	54.9	ER45M45-4880
			6100	20'	68.9	ER45M45-6100

Male / Female rod



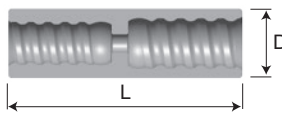
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T45 - T45	45	1 3/4"	1525	5'	18.4	ER45M45MF-1525
			1830	6'	22.1	ER45M45MF-1830
			3050	10'	36.1	ER45M45MF-3050
			3660	12'	43.3	ER45M45MF-3660
			4270	14'	50.2	ER45M45MF-4270

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T45 - T45	63	2 1/2"	210	8 1/4"	3.0	CM45
T45 - T45	66	2 5/8"	210	8 1/4"	3.5	CM45-2

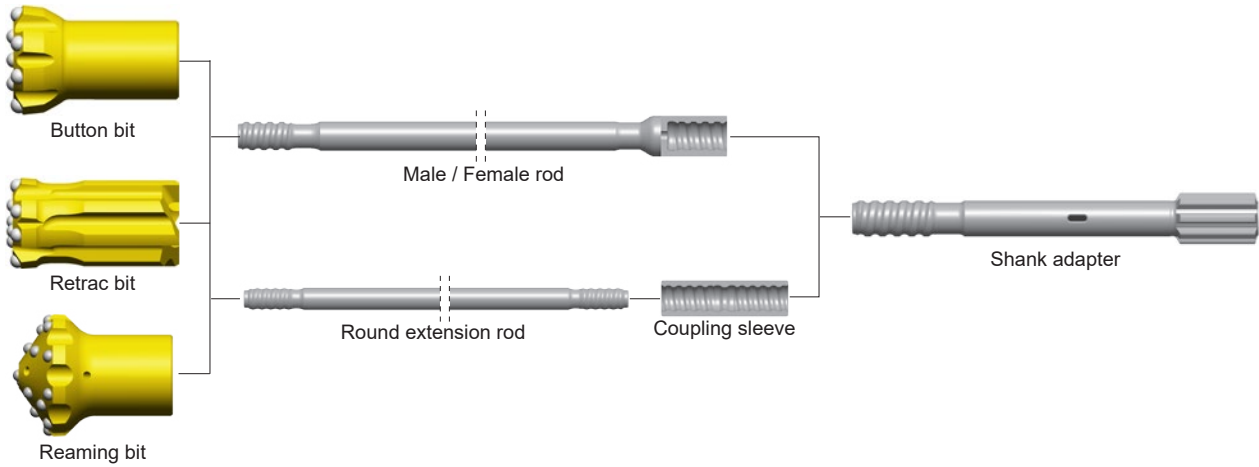
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T45 - T38	63	2 1/2"	215	8 1/2"	3.4	CM45M38
T45 - T51	72	2 7/8"	240	9 1/2"	5.0	CM51M45

BENCH & LONG HOLE DRILLING EQUIPMENT

T51 (2") SERIES (Recommended gauge diameter Ø89 - Ø127)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



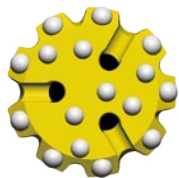
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.1	51MPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	4.1	51MPVS89R15H
102	4"	35	8×14	6×13	-	2	5.2	51MPVS102R15M
102	4"	40	8×13	6×13	-	2	5.2	51MPVS102R15H

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.0	51MPVS89R25M
102	4"	35	8×14	6×13	-	2	5.1	51MPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	6.6	51MPVS115R25M
127	5"	35	8×16	8×14	-	2	8.7	51MPVS127R25M

Button bit Type 23



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	4.1	51MPVS89R23M
102	4"	35	9×13	6×13	-	3	5.2	51MPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	6.7	51MPVS115R23MS
115	4 1/2"	35	9×14	7×14	-	3	6.8	51MPVS115R23M
127	5"	35	9×14	7×14	-	3	8.8	51MPVS127R23MS
127	5"	35	9×16	7×16	-	3	8.9	51MPVS127R23M

Button bit Type 53 & 55



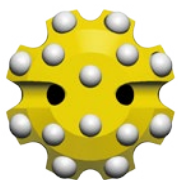
Type 53 (Ø89)



Type 55 (Ø89-Ø127)

Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	6×13	5×12	-	3	3.9	51MPVS89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.0	51MPVS89R55M
102	4"	35	8×14	6×14	-	4	5.1	51MPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	6.6	51MPVS115R55M
127	5"	35	8×16	4×16,4×14	-	4	8.7	51MPVS127R55M

Button bit Type 85



Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	20-40	8×12	6×12	2	2	3.9	51MPWS89BB85H
102	4"	20-40	8×12	7×12	-	2	5.0	51MPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	6.5	51MPVS115BB85H
127	5"	20-40	8×14	4×14, 4×12	-	2	8.6	51MPVS127BB85H

* Face angle 20°, Gauge angle 40°

Button bit Type 14

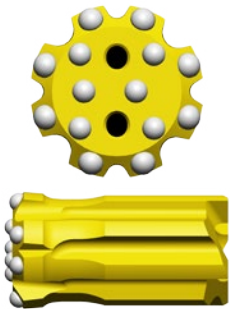


Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	7×14	5×12	-	3	4.0	51MPVS89R14M
102	4"	35	7×14	5×13	-	3	5.1	51MPVS102R14M

BENCH & LONG HOLE DRILLING EQUIPMENT

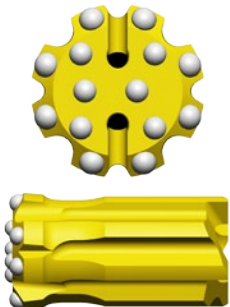
T51 (2") SERIES (Recommended gauge diameter Ø89 - Ø127)

Retrac Button bit Type 15



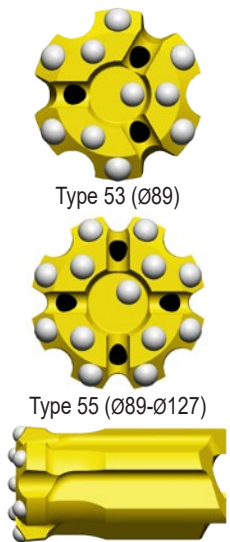
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.4	51MPVR89R15M
102	4"	35	8×14	6×13	-	2	6.5	51MPVR102R15M

Retrac Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.3	51MPVR89R25M
102	4"	35	8×14	6×13	-	2	6.4	51MPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	8.3	51MPVR115R25M
127	5"	35	8×16	8×14	-	2	10.7	51MPVR127R25M

Retrac Button bit Type 53 & 55

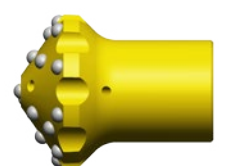


Type 53 (Ø89)

Type 55 (Ø89-Ø127)

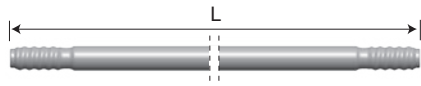
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	6×13	5×12	-	3	4.2	51MPVR89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.3	51MPVR89R55M
102	4"	35	8×14	6×14	-	4	6.4	51MPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	8.3	51MPVR115R55M
127	5"	35	8×16	4×16, 4×14	-	4	10.7	51MPVR127R55M

Reaming bit integration model



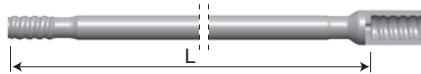
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
152	6"	35	9×14	11×14	3	1	10.6	WI51MPJ152R-D

Round extension rod



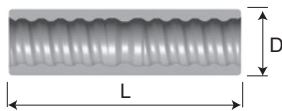
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T51 - T51	51	2"	3660	12'	49.6	ER51M51-3660
			4270	14'	58.1	ER51M51-4270
			6100	20'	82.9	ER51M51-6100

Male / Female rod



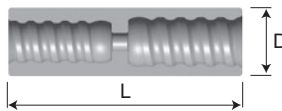
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T51 - T51	51	2"	1525	5'	22.0	ER51M51MF-1525
			1830	6'	26.4	ER51M51MF-1830
			3660	12'	52.8	ER51M51MF-3660
			4270	14'	61.6	ER51M51MF-4270

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T51 - T51	72	2 7/8"	235	9 1/4"	4.4	CM51
T51 - T51	77	3"	235	9 1/4"	5.5	CM51-2

Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T51 - T45	72	2 7/8"	240	9 1/2"	5.0	CM51M45

BENCH & LONG HOLE DRILLING EQUIPMENT

GM60 SERIES (Recommended gauge diameter Ø96 - Ø153)



GM60 SERIES

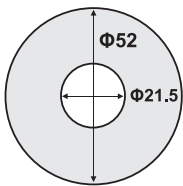
Compared with T51 rods, GM60 rods have

- 38% larger rod cross-section, providing higher penetration rate.
- 10% bigger flushing area, providing more efficient flushing.
- 55% higher bending stiffness, providing straighter holes.

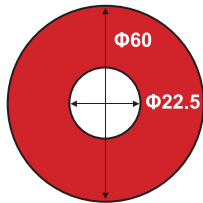
	T51	GM60
Rod Cross Section	100%	138%
Flushing Area	100%	110%
Bending Stiffness	100%	155%

- The GM60 system provides double the penetration rate at half the energy consumed compared with DTH drilling.
- Our top-quality Carbide buttons, formulated and sintered in house.
- Compared with other drilling tool systems, the GM60 system permits a wider hole range using the same rock drill.

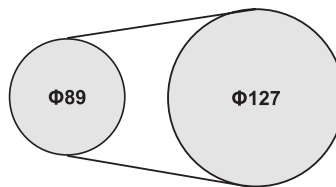
T51 Cross Section



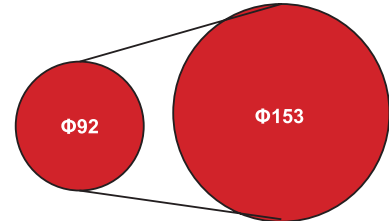
GM60 Cross Section



T51 Hole Range



GM60 Hole Range



Button bit

NORMAL SKIRT

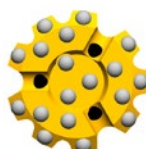
Gauge diameter		Gauge angle[°]	Button x Button dia.[mm]		Flushing hole [mm]	Face design	Weight [Kg]	Part number
[mm]	[in]		Gauge	Face				
92	3 5/8"	35	8X12	6X12	4X11	55	5.6	60GMPVS92BB55M
102	4"	35	8X14	6X14	4X11	55	6.9	60GMPVS102R55M
102	4"	35	8X14	6X14	4X11	55	6.9	60GMPVS102BB55M
115	4 1/2"	35	8X14	8X14	4X11	55	8.4	60GMPVS115R55M
127	5"	35	8X16	4X14 4X16	4X12	55	9.5	60GMPVS127R55M
140	5 1/2"	35	8X16	8X16	4X12	55	11.9	60GMPVS140R55M
140	5 1/2"	35	9X16	9X16	3X14	53	11.9	60GMPVS140R53M
153	6"	35	10X16	3X14 6X16	4X13	5X	15.4	60GMPVS153BB5XM

RETRAC SKIRT

92	3 5/8"	35	8X12	6X12	4X11	55	6.2	60GMPVR92BB55M
102	4"	35	8X14	6X14	4X11	55	7.6	60GMPVR102R55M
112	4 3/8"	35	8X14	8X14	4X11	55	9.1	60GMPVR112R55M
115	4 1/2"	35	8X14	6X14	4X11	55	9.6	60GMPVR115R55M
115	4 1/2"	35	8X14	6X14	4X11	55	9.6	60GMPVR115BB55M
115	4 1/2"	35	9X16	7X14	3X15	23	10.1	60GMPVR115R23MB
121	4 3/4"	35	8X16	8X14	4X12	55	12.1	60GMPVR121BB55M
127	5"	35	8X16	4X14 4X16	4X12	55	13.1	60GMPVR127R55M
127	5"	35	8X16	4X14 4X16	4X12	55	13.1	60GMPVR127BB55M
127	5"	35	9X16	9X14	3X15	23	13.8	60GMPVR127R23M1
140	5 1/2"	35	9X16	9X16	3X14	53	15.2	60GMPVR140R53M
153	6"	35	10X16	3X14 6X16	4X13	5X	18.8	60GMPVR153R5XM



Type 23



Type 53



Type 55

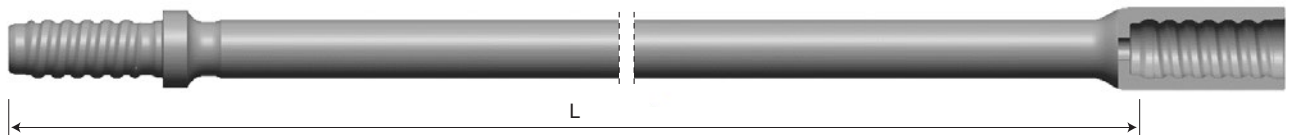


Type 5X

Male / Female rod

Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
GM60 – GM60	60	2 1/4"	3660	12'	74.4	ER60GM60MF-3660
	60	2 1/4"	4270	14'	86.0	ER60GM60MF-4270
	60	2 1/4"	5490	18'	109.3	ER60GM60MF-5490
	60	2 1/4"	6100	20'	121.0	ER60GM60MF-6100

Female end ø85mm, Flushing hole ø22.5mm.

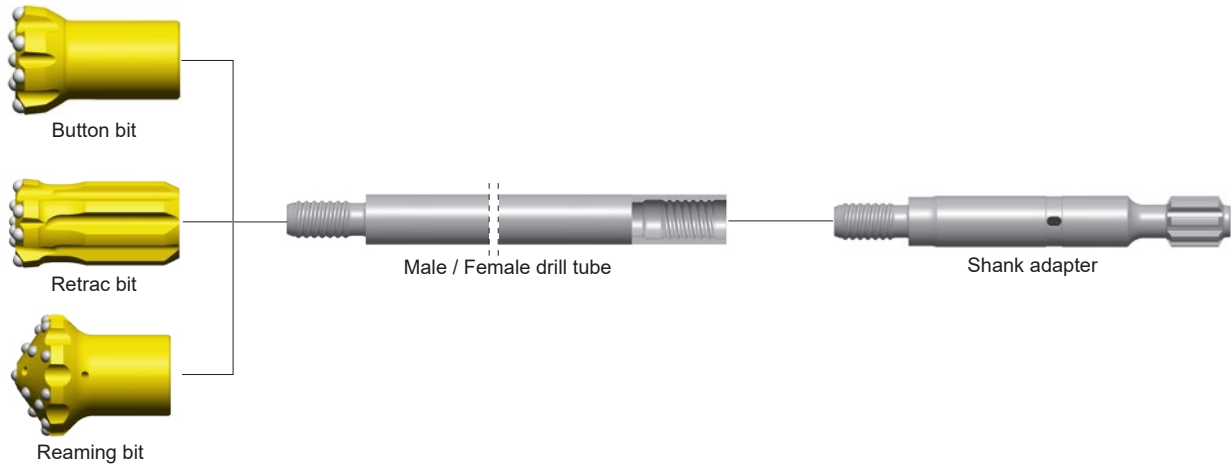


Shank adapter

Manufacturer	Drifter	Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
Sandvik/Tamrock	HL1000/ HL1500	GM60	670	SF	13.2	S357GM60SFBG
Sandvik/Tamrock	HL1500	GM60	760	SF	21.3	S283GM60SFCG
Atlas copco	COP2560	GM60	770	SF	14.3	S312GM60SFA
Atlas copco	COP3060MEX	GM60	840	SF	17.3	S399GM60SFB

TUBE DRILLING EQUIPMENT

ST58 (2 1/4") SERIES (Recommended gauge diameter Ø89 - Ø127)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



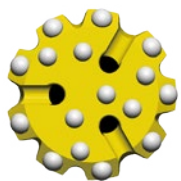
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.0	58WDPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	4.0	58WDPVS89R15H
102	4"	35	8×14	6×13	-	2	5.0	58WDPVS102R15M
102	4"	40	8×13	6×13	-	2	4.9	58WDPVS102R15H

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	3.9	58WDPVS89R25M
102	4"	35	8×14	6×13	-	2	4.9	58WDPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	6.9	58WDPVS115R25M
127	5"	35	8×16	8×14	-	2	8.9	58WDPVS127R25M

Button bit Type 23



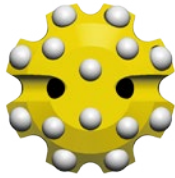
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	3.9	58WDPVS89R23M
102	4"	35	9×13	6×13	-	3	5.0	58WDPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	6.9	58WDPVS115R23MS
115	4 1/2"	35	9×14	7×14	-	3	7.0	58WDPVS115R23M
127	5"	35	9×14	7×14	-	3	8.9	58WDPVS127R23MS
127	5"	35	9×16	7×16	-	3	9.0	58WDPVS127R23M

Button bit Type 55



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×12	6×12	-	4	3.8	58WDPVS89R55M
102	4"	35	8×14	6×14	-	4	4.9	58WDPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	6.9	58WDPVS115R55M
127	5"	35	8×16	4×16,4×14	-	4	8.9	58WDPVS127R55M

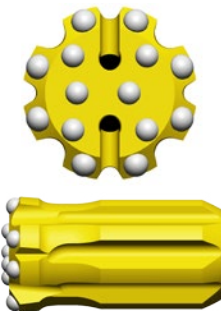
Button bit Type 85



Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	20-40	8×12	6×12	2	2	3.7	58WDPWS89BB85H
102	4"	20-40	8×13	7×12	-	2	4.8	58WDPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	6.8	58WDPVS115BB85H
127	5"	20-40	8×14	4×14, 4×12	-	2	8.8	58WDPVS127BB85H

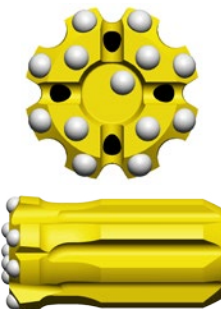
* Face angle 20°, Gauge angle 40°

Retrac Button bit Type 25



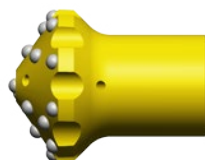
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	5.6	58WDPVR89R25M
102	4"	35	8×14	6×13	-	2	7.8	58WDPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	10.6	58WDPVR115R25M
127	5"	35	8×16	8×14	-	2	12.8	58WDPVR127R25M

Retrac Button bit Type 55



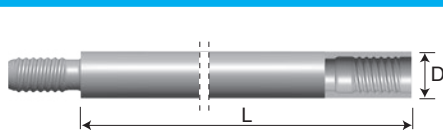
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×12	6×12	-	4	5.4	58WDPVR89R55M
102	4"	35	8×14	6×14	-	4	7.6	58WDPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	10.4	58WDPVR115R55M
127	5"	35	8×16	4×16, 4×14	-	4	12.6	58WDPVR127R55M

Reaming bit integration model



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
152	6"	35	9×14	11×14	3	1	11.0	WI58WDP152R-D

Male / Female drill tube



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
ST58 - ST58	77	3"	1525	5'	34.0	GR77WD58MF-1525
			1830	6'	40.3	GR77WD58MF-1830

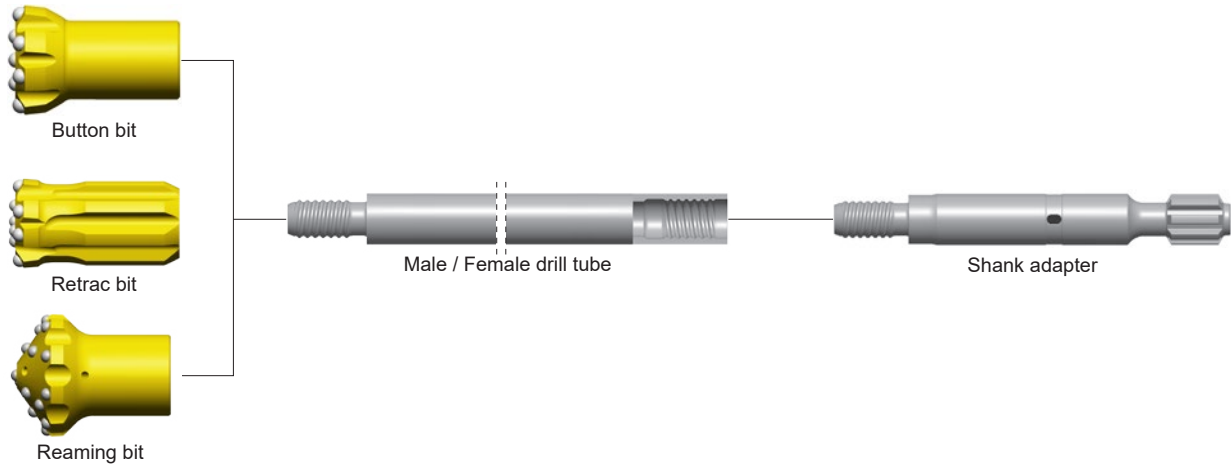
Recovery pike



Outside diameter(D)		Length(L)		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]		
78	3"	260	10 1/4"	3.4	FTM-58WD-GR78

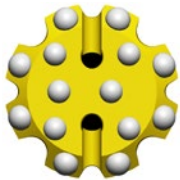
TUBE DRILLING EQUIPMENT

ST68 (2 3/4") SERIES (Recommended gauge diameter Ø102 - Ø127)



Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×13	-	2	5.8	68WDPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	7.8	68WDPVS115R25M
127	5"	35	8×16	8×14	-	2	10.2	68WDPVS127R25M

Button bit Type 23



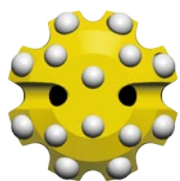
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	9×13	6×13	-	3	5.8	68WDPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	7.8	68WDPVS115R23MS
115	4 1/2"	35	9×14	7×14	-	3	7.9	68WDPVS115R23M
127	5"	35	9×14	7×14	-	3	10.2	68WDPVS127R23MS
127	5"	35	9×16	7×16	-	3	10.3	68WDPVS127R23M

Button bit Type 55



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×14	-	4	5.7	68WDPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	7.7	68WDPVS115R55M
127	5"	35	8×16	4×16, 4×14	-	4	10.1	68WDPVS127R55M

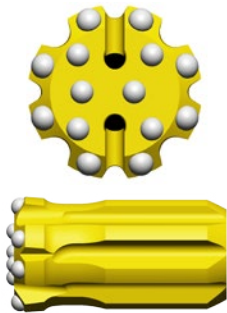
Button bit Type 85



Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	20-40	8×12	7×12	-	2	5.6	68WDPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	7.6	68WDPVS115BB85H
127	5"	20-40	8×14	4×14, 4×12	-	2	10.0	68WDPVS127BB85H

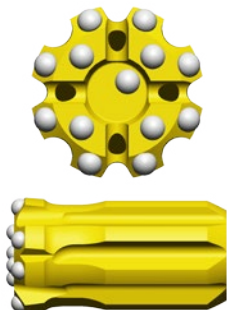
* Face angle 20°, Gauge angle 40°

Retrac Button bit Type 25



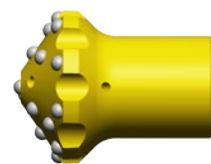
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×13	-	2	6.6	68WDPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	9.4	68WDPVR115R25M
127	5"	35	8×16	8×14	-	2	12.1	68WDPVR127R25M

Retrac Button bit Type 55



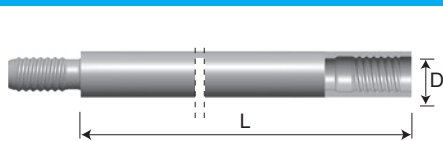
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×14	-	4	6.4	68WDPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	9.2	68WDPVR115R55M
127	5"	35	8×16	4×16,4×14	-	4	11.8	68WDPVR127R55M

Reaming bit integration model



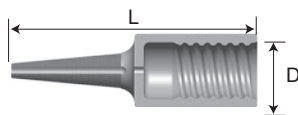
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
152	6"	35	9×14	11×14	3	1	11.2	WI68WDP152R-D

Male / Female drill tube



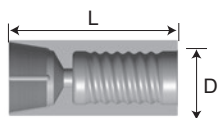
Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
ST68 - ST68	87	3 1/2"	1525	5'	39.8	GR87WD68MF-1525
	87	3 1/2"	1830	6'	47.3	GR87WD68MF-1830

Recovery pike



Outside diameter(D)		Length(L)		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]		
88	3 1/2"	260	10 1/4"	6.2	FTM-68WD-GR88

Recovery sleeve



Outside diameter(D)		Length(L)		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]		
100	4"	225	8 7/8"	7.5	FTF-68WD-GR88

SHANK ADAPTER

SHANK ADAPTER

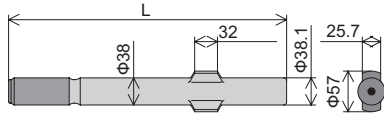
ATLAS COPCO	60
FURUKAWA	64
GARDNER DENVER	67
INGERSOLL RAND	68
MONTABERT	70
SANDVIK / TAMROCK	71
SECOMA	75
TOYO	76



SHANK ADAPTER

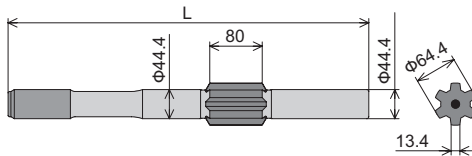
ATLAS COPCO

BBC 54, BBC 120



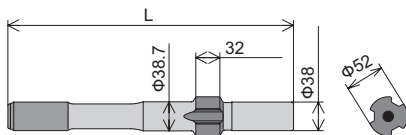
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
R32	380	10	3.1	S32R32CBC
T38	390	10	3.3	S32M38BD
R38	390	10	3.3	S32R38DBD

BBE 57



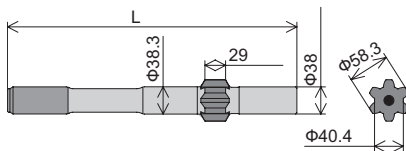
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
R38	447	14	5.0	S58R38AB
T38	537	14	5.8	S58M38AD
T45	550	14	7.0	S58M45AE

COP 125, COP 130, COP 131



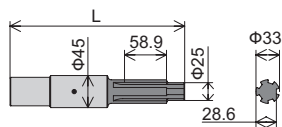
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
R32	380	14	2.7	S64R32CAA
T38	380	14	2.9	S64M38AA
T45	380	14	3.9	S64M45AA

COP 131EB



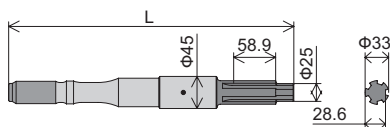
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	405	14	3.3	S190M38AA

COP 1028 Female thread



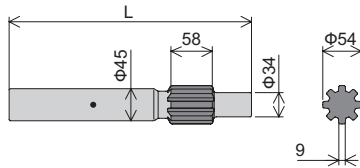
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R25F	245	SF	1.8	S100R25FSFB
R28F	245	SF	1.7	S100R28FSFB

COP 1028



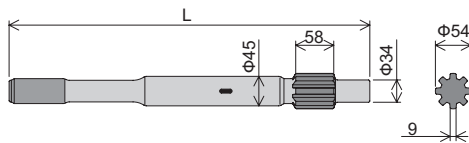
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R28	400	SF	2.8	S100R28SFA
R32	400	SF	3.0	S100R32CSFA

COP 1032 Female thread



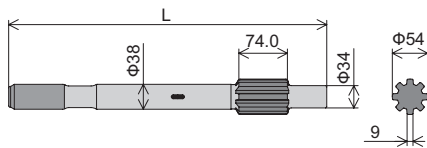
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R28F	340	SF	3.4	S87R28FSFA
R32F	340	SF	3.6	S87R32FSFA

COP 1032



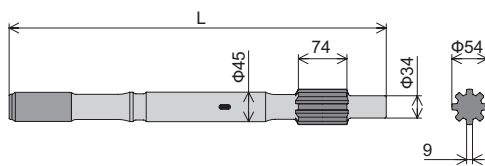
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R28	550	SF	4.8	S87R28SFD
R32	550	SF	5.0	S87R32SFD
T38	550	SF	5.3	S87M38SFD

COP 1036, COP 1038, COP 1238



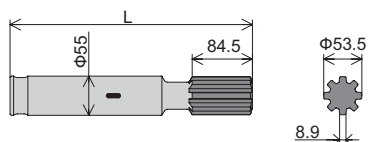
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	485	SF	4.0	S80R32SFB
R38	485	SF	4.3	S80R38SFB
T38	485	SF	4.3	S80M38SFB
R32	500	SF	4.1	S80R32CSFCG
T38	500	SF	4.4	S80M38SFC
R32	575	SF	4.7	S80R32SFEGZ
R38	575	SF	5.0	S80R38SFEGZ
T38	575	SF	5.0	S80M38SFEGZ

COP 1036, COP 1038, COP 1238



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	575	SF	5.2	S80R32ZSFEGZ
R38	575	SF	5.5	S80R38ZSFEGZ
T38	575	SF	5.5	S80M38ZSFEGZ
T45	575	SF	6.5	S80M45SFEGZ

COP 1432, COP 1532 Female thread

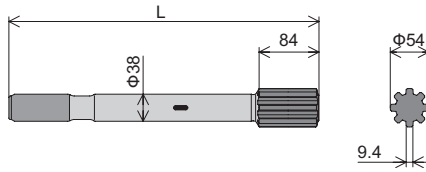


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32F	340	SF	4.3	S285R32FSFA
R38F	340	SF	4.5	S285R38FSFA

SHANK ADAPTER

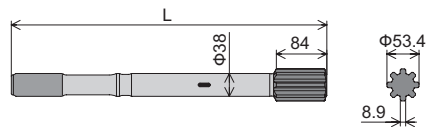
ATLAS COPCO

COP 1440, COP 1550, COP 1638, COP 1838, COP 2238



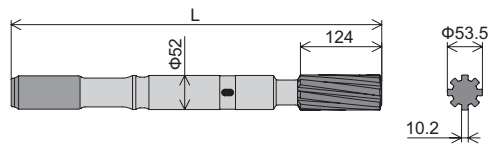
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	435	SF	3.8	S48R32SFAG
R38	435	SF	4.0	S48R38SFAG
T38	435	SF	4.0	S48M38SFAG
R32	525	SF	4.3	S48R32SFBG
R38	525	SF	4.5	S48R38SFBG
T38	525	SF	4.5	S48M38SFBG

COP 1638, COP 1838AW



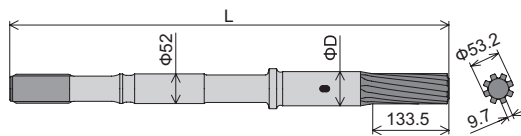
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	525	SF	4.3	S316R32SFA
T38	525	SF	4.5	S316M38SFA

COP 1840



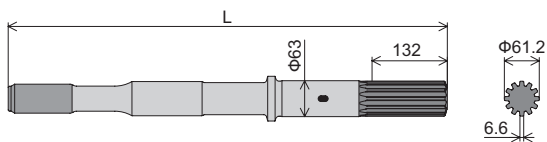
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	565	SF	5.8	S293M45SFA
T51	565	SF	7.3	S293M51SFA

COP 1840 Extractor, 2150 Extractor, 2550 Extractor



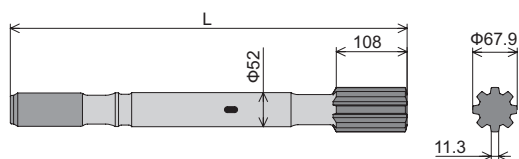
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	770	SF	11.2	S301M45SFAG
T51	770	SF	12.7	S301M51SFAG

COP 2160 Extractor, COP 2560 Extractor



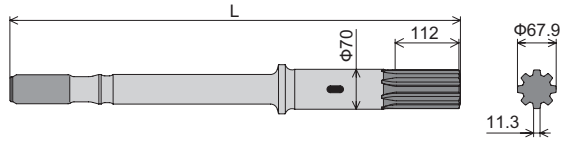
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	770	SF	13.1	S312M45SFA
T51	770	SF	14.6	S312M51SFA

COP 4050 (L)



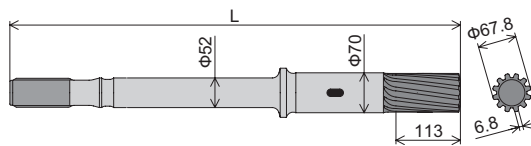
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	605	SF	9.3	S334M51SFA

COP 4050 Extractor



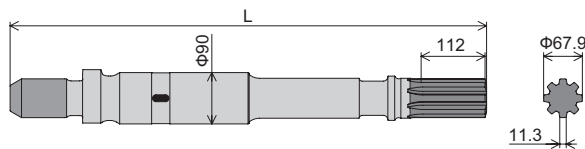
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	790	SF	16.0	S343M51SFAG

COP 4050 Extractor



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	790	SF	15.0	S299M51SFAG

COP 4050MUX

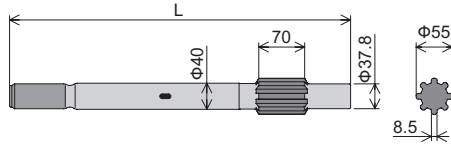


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
ST58	835	SF	26.0	S284WD58SFAG
ST68	835	SF	27.0	S284WD68SFAG

SHANK ADAPTER

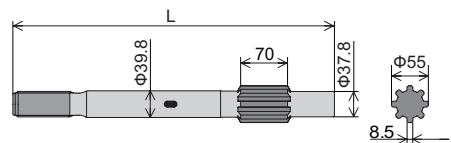
FURUKAWA

HD 150



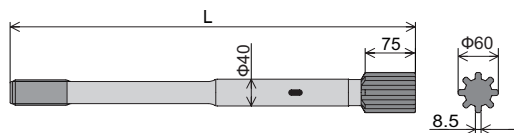
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R38	520	SF	5.0	S110R38SFAG
T38	520	SF	5.0	S110M38SFAG

HD 190



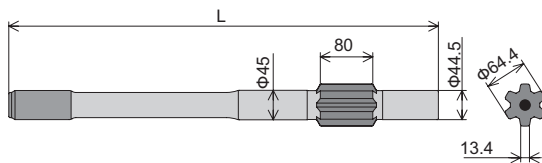
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R38	480	SF	4.6	S166R38SFAG
T38	480	SF	4.6	S166M38SFAG

HD 210



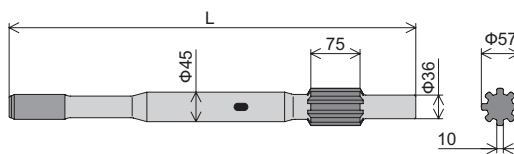
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R38	605	SF	5.9	S244R38SFAG
T38	605	SF	5.9	S244M38SFAG

HD 300



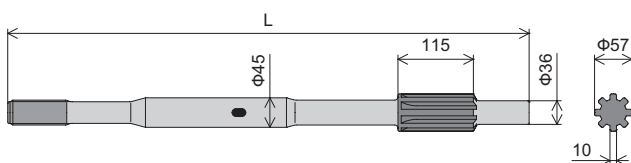
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	655	16	6.1	S62M38AA
T45	655	16	6.8	S62M45AA

HD 609



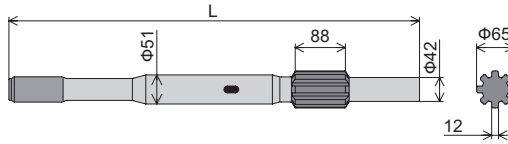
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	620	SF	5.7	S142M38SFAG
T45	620	SF	6.4	S142M45SFA
T38	690	SF	6.4	S142M38SFBG

HD 609RP



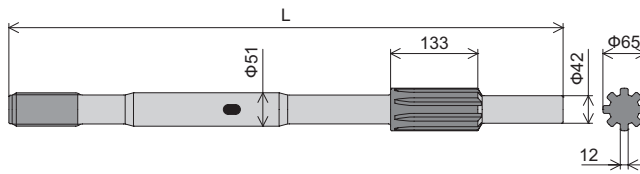
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	795	SF	7.7	S116R32SFAG
T38	795	SF	7.9	S116M38SFAG
T45	795	SF	8.3	S116M45SFAG
T38	865	SF	8.4	S116M38SFBG
T45	865	SF	8.8	S116M45SFBG

HD 612



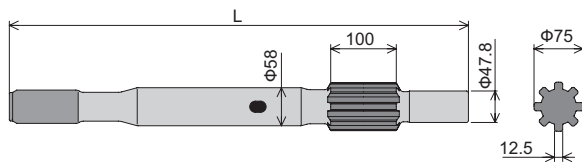
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	720	SF	9.2	S173M45SFA

HD 612RP



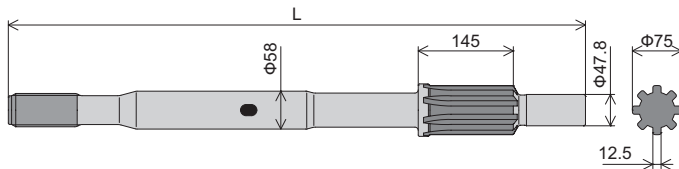
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	845	SF	10.6	S117M38SFAG
T45	845	SF	11.0	S117M45SFAG
T51	845	SF	11.4	S117M51SFAG
T45	880	SF	11.4	S117M45SFCG
T45	885	SF	11.5	S117M45SFBG

HD 615



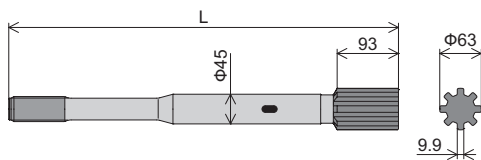
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	700	SF	10.7	S123M45SFA
T51	700	SF	11.7	S123M51SFAG

HD 615RP



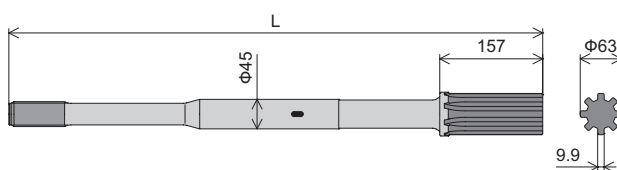
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	880	SF	14.7	S126M51SFAG

HD 709



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	591	SF	6.2	S237M38SFAG
T45	591	SF	6.8	S237M45SFAG
T38	620	SF	6.5	S237M38SFBG
T45	620	SF	7.0	S237M45SFBG

HD 709RP

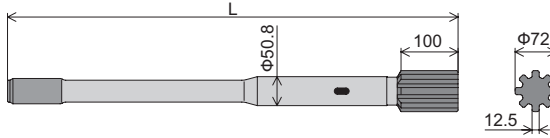


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	785	SF	9.2	S245M45SFBG
T38	814	SF	9.1	S245M38SFAG
T45	814	SF	9.5	S245M45SFAG

SHANK ADAPTER

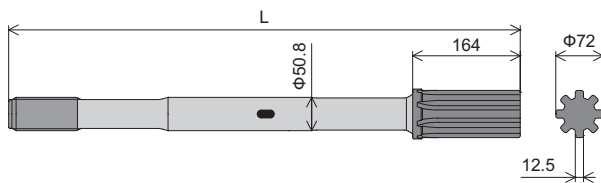
FURUKAWA

HD 712



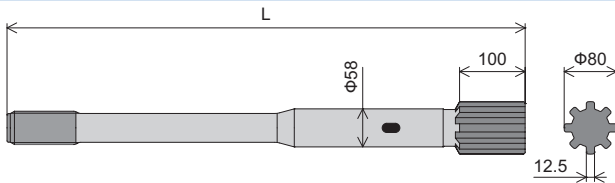
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	790	SF	9.9	S222M45SFBG

HD 712RP



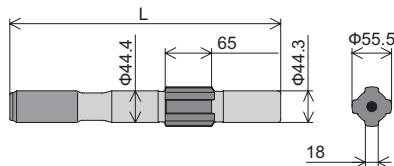
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	787	SF	11.6	S221M38SFAG
T45	787	SF	11.9	S221M45SFAG
T51	787	SF	12.5	S221M51SFAG
T45	885	SF	12.7	S221M45SFBG
T51	885	SF	13.4	S221M51SFBG

HD 715



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	790	SF	12.7	S238M51SFAG

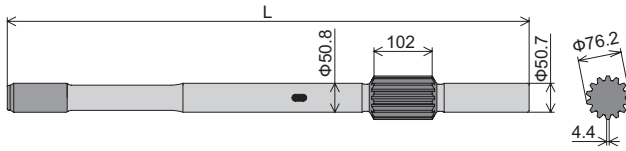
M 120 and PD 200



Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	380	14	3.6	S51M38AB
T38	446	14	3.9	S51M38AG

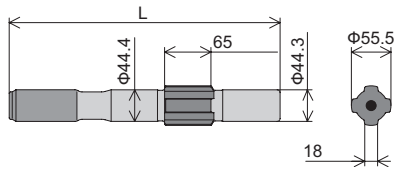
GARDNER DENVER

HPR 2



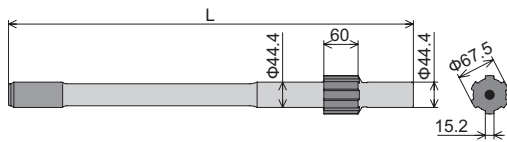
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	915	SF	14.3	S267M51SFA

PR 123



Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
R32	380	14	3.8	S51R32AB
R38	380	14	3.6	S51R38AB
T38	380	14	3.6	S51M38AB
T45	380	14	4.6	S51M45AB

PR 66

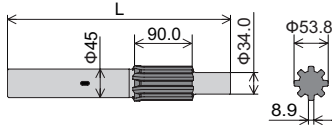


Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	710	16	4.8	S75M38AA
T45	710	16	5.8	S75M45AA

SHANK ADAPTER

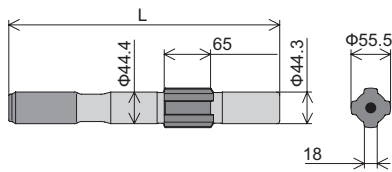
INGERSOLL RAND

Hydrastar 200 Female thread



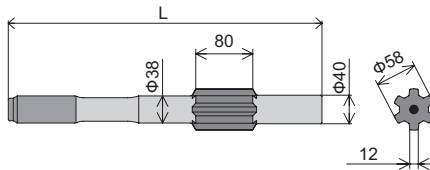
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32F	351	SF	3.2	S109R32FSFA

URD 475, URD 550, VL120, VL140, F16



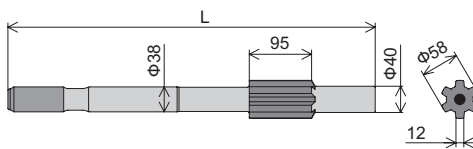
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
R32	380	14	3.8	S51R32AB
R38	380	14	3.6	S51R38AB
T38	380	14	3.6	S51M38AB
T45	380	14	4.4	S51M45AB
T38	446	14	3.9	S51M38AG

YH 50, YH 55



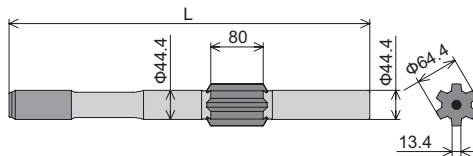
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	440	16	3.8	S84M38AA

YH 50 RP, YH55RP



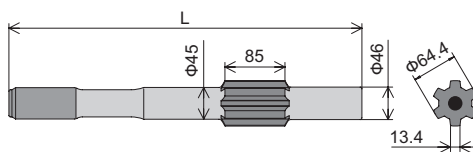
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	560	16	5.1	S06M38AB

YH 60A



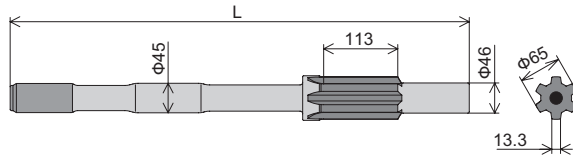
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	537	14	5.8	S58M38AD

YH 65, YH 70, YH 80



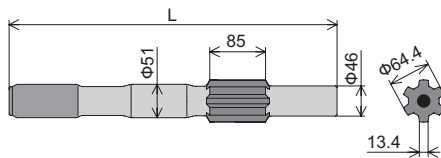
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	480	19	4.7	S63M38AB
T45	480	19	5.5	S63M45AB
T38	500	19	4.9	S63M38AC
T45	500	19	5.7	S63M45AC

YH 65 RP, YH 70 RP, YH 80 RP



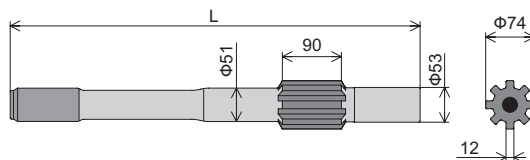
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	700	19	8.0	S25M38AA
T45	700	19	9.0	S25M45AA

YH 80A



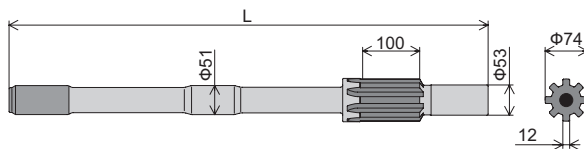
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T45	495	19	6.0	S198M45AA
T51	500	19	6.4	S198M51AB

YH 95, YH 100



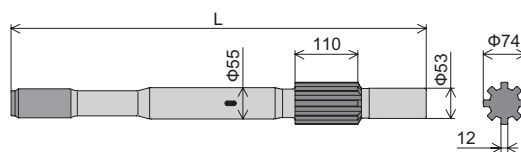
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T51	625	23	8.8	S09M51AA

YH 95 RP, YH 100 RP



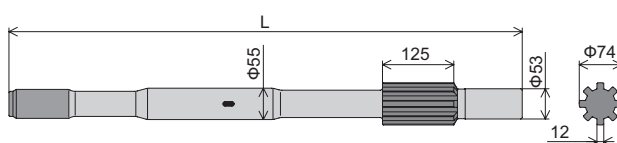
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T51	840	23	11.8	S03M51AA

YH 110 V, YH 135



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	728	SF	11.6	S127M45SFAG
T51	728	SF	12.0	S127M51SFAG

YH 110 VRP, Y 135 RP

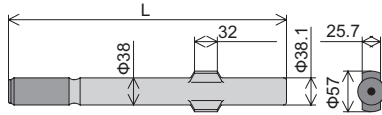


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	900	SF	14.8	S128M51SFAG

SHANK ADAPTER

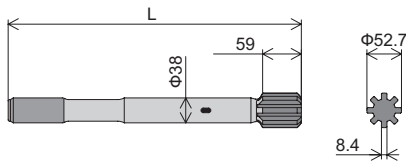
MONTABERT

H 50, H 60, H 70



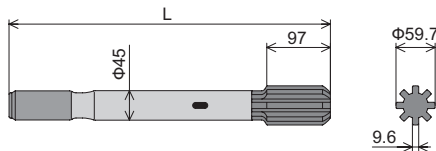
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
R32	380	10	3.1	S32R32CBC
R38	390	10	3.3	S32R38DBD
T38	390	10	3.3	S32M38BD

HC 40, HC 50



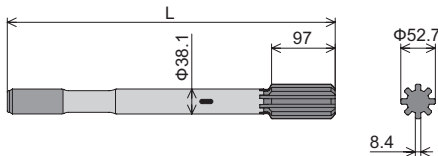
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	372	SF	3.0	S77R32SFDG
R38	372	SF	3.2	S77R38CSFDG
T38	372	SF	3.2	S77M38SFDG
T38	447	SF	3.6	S77M38SFCG

HC 80, HC 120



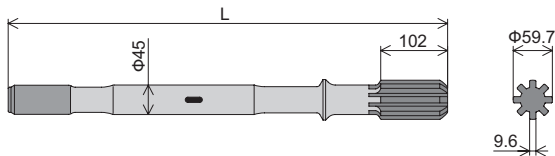
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	490	SF	6.2	S209M45SFAG

HC 80, HC 90, HC 105, HC 120



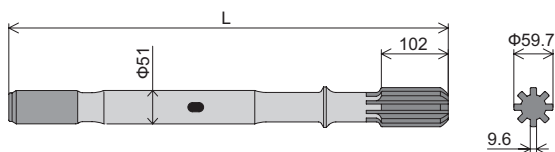
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	440	SF	3.6	S73R32SFBG
R38	440	SF	4.0	S73R38DSFBG
T38	440	SF	4.0	S73M38SFBG
T38	500	SF	4.3	S73M38SFAG

HC 80 RP, HC 105 RP, HC 107 RP, HC 108 RP, HC 109 RP



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	670	SF	7.4	S70M38SFAG
T45	670	SF	8.2	S70M45SFAG

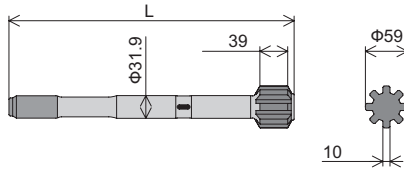
HC 120 RP, HC 150 RP, HC 155 RP, HC 158 RP



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	670	SF	9.9	S206M51SFAG

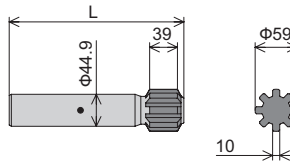
SANDVIK / TAMROCK

HL 300



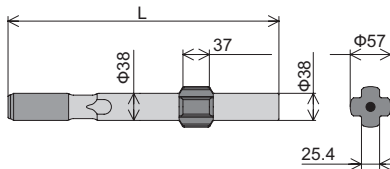
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	400	SF	2.7	S292R32SFAG

HL 300S Female thread



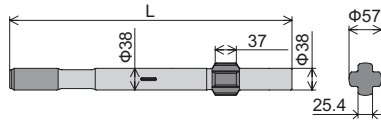
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32F	245	SF	2.6	S150R32FSFAG

HL 438, HL 538, HL 438L, HL 438T



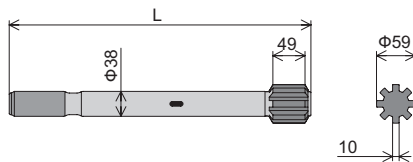
Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	380	12.7	3.3	S39M38AA
T38	400	12.7	3.4	S39M38AJG

HL 438LS, 438TS, HL538, HL538L, L550S



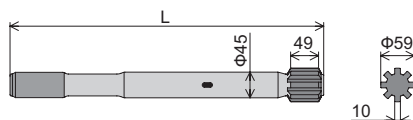
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	450	SF	3.9	S39R32SFDG
R38	450	SF	4.1	S39R38SFDG
T38	455	SF	4.2	S39M38SFDG
T38	495	SF	4.4	S39M38SFGG

HL 500-38, HL 510-38, HL 500S-38, HL 510S-38, HL 510B, HL 510LH



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	460	SF	3.8	S12R32SFAG
R38	460	SF	4.1	S12R38SFAG
T38	460	SF	4.1	S12M38SFAG
R38	500	SF	4.4	S12R38DSFDZ
R32	550	SF	4.4	S12R32SFBG
R38	550	SF	4.8	S12R38DSFBG
T38	550	SF	4.8	S12M38SFBG

HL 500-45, HL 510-45

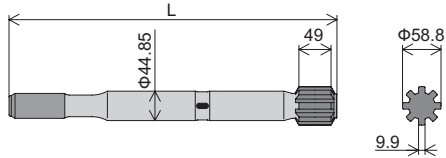


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	550	SF	5.8	S12M38ZSFBG
T45	550	SF	6.1	S12M45ZSFBG

SHANK ADAPTER

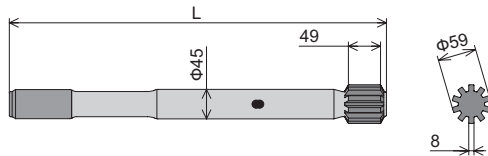
SANDVIK / TAMROCK

HL 550 SUPER, 560 SUPER, 510S-45



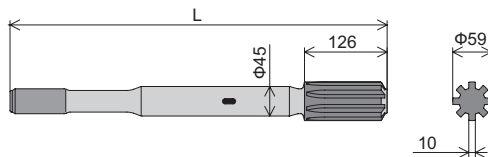
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R38	500	SF	5.4	S155R38SFAG
T38	500	SF	5.4	S155M38SFAG

HLX5, HLX5T



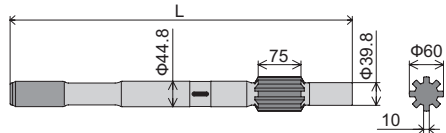
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R38	500	SF	5.4	S268R38SFAG
T38	500	SF	5.4	S268M38SFAG
T38	575	SF	5.9	S268M38SFBG

HLX5 PE-45



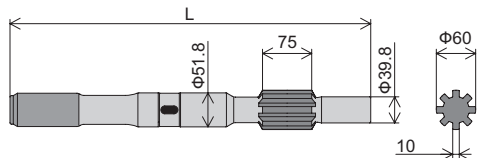
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32	575	SF	6.1	S330R32SFAG
T38	575	SF	6.3	S330M38SFAG

HL 600-45, HL 600S-45



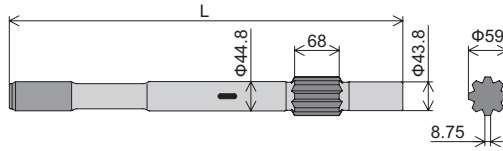
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	525	SF	5.5	S17M38SFAG
T45	525	SF	6.0	S17M45SFAG
R32	600	SF	6.1	S17R32CSFAG
T38	600	SF	6.3	S17M38SFAG
T45	600	SF	7.1	S17M45SFAG

HL 600-52



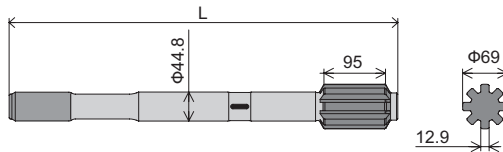
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	650	SF	8.5	S215M51SFA

HL 645



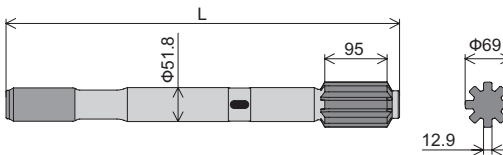
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	600	SF	8.1	S69M45SFAG

HL 650-45, 700-45, 700T-45, 710-45, 800T-45



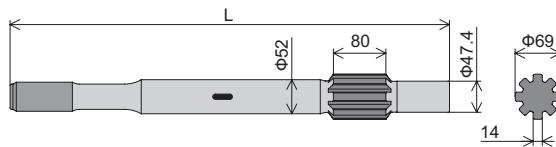
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	600	SF	7.5	S240M45SFAG

HL 650-52, 700-52, PE-52, S-52, 710-52, SPE-52, 800T-52



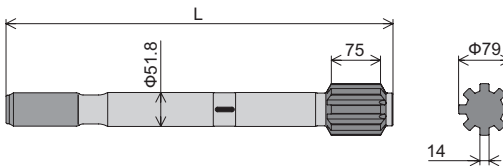
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	600	SF	8.4	S196M38SFAG
T45	600	SF	8.8	S196M45SFAG
T51	600	SF	9.1	S196M51SFAG

HL 850S



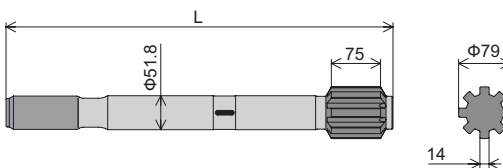
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	670	SF	9.8	S60M45SFB

HL 1000-52, 1000 S-52



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	590	SF	8.6	S13M45SFAG
T51	590	SF	9.4	S13M51SFAG

HL 1000-52, 1000 S-52

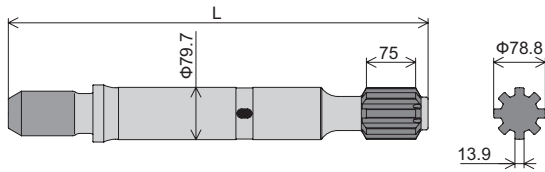


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T45	670	SF	10.3	S13M45SFBG
T51	670	SF	11.1	S13M51SFBG

SHANK ADAPTER

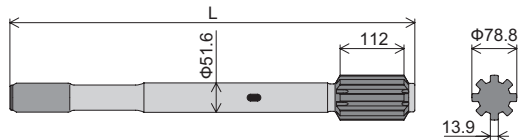
SANDVIK / TAMROCK

HL 1000 S-80 Tube drilling



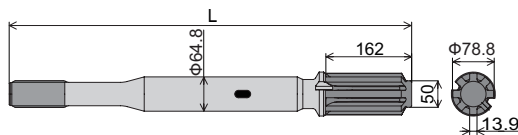
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
ST58	623	SF	18.2	S258WD58SFAG
ST68	640	SF	19.0	S258WD68SFAG

HL 1500-52 ,1500 T-52



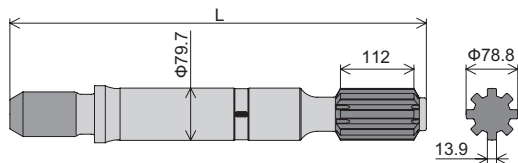
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	710	SF	11.5	S283M51SFBG

HL1500-PE



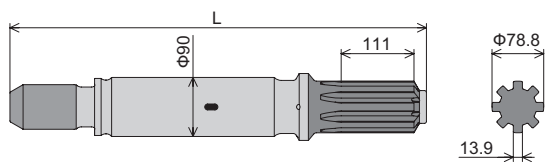
Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T51	760	SF	18.2	S298M51SFAG

HL 1500 S-80 Tube drilling



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
ST58	635	SF	17.6	S283WD58SFAG
ST68	635	SF	18.6	S283WD68SFAG

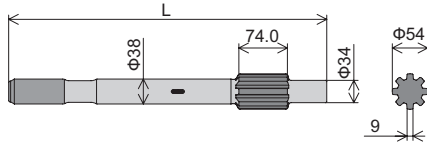
HL 1500 SPE-90 Tube drilling



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
ST58	635	SF	21.6	S332WD58SFAG
ST68	635	SF	22.6	S332WD68SFAG

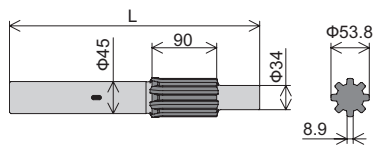
SECOMA

Hydrastar 200, Hydrastar 350, Hydrastar 300, Hydrastar X2



Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
T38	485	SF	4.0	S80M38SFB
R32	485	SF	4.3	S80R32SFB
R38	485	SF	4.3	S80R38SFB
T38	500	SF	4.1	S80M38SFC
R32	500	SF	4.4	S80R32CSFCG

Hydrastar 350 Female thread

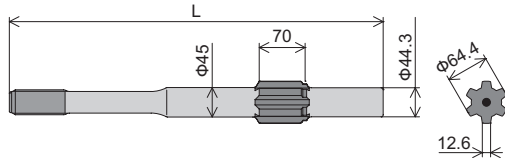


Thread	Length(L) [mm]	Flushing tube dia	Weight [Kg]	Part number
R32F	351	SF	3.2	S109R32FSFA

SHANK ADAPTER

TOYO

TH500, TH550

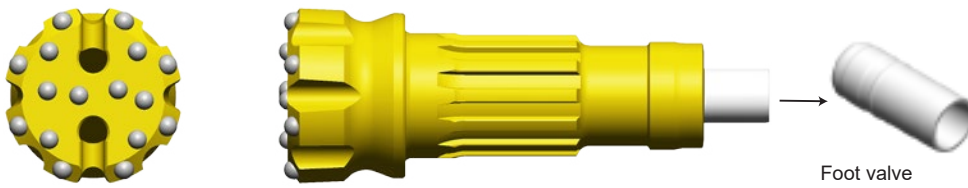


Thread	Length(L) [mm]	Flushing tube dia [mm]	Weight [Kg]	Part number
T38	570	12	5.9	S57M38AB

DOWN THE HOLE BIT



DOWN THE HOLE BIT



Flat face design R25	Concave design R65	Convex design BB81
For drilling in a medium-hard to hard and abrasive rock.	The all-round application bit specifically designed for medium hard and homogeneous rock formations. Excellent hole deviation control and flushing volume.	Bit design with excellent flushing volume. For drilling at high penetration rates in non-abrasive rock.

Ingersoll-Rand

Hammer model	Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole	Weight [Kg]	Part number	
	[mm]	[in]		Gauge	Face				
DHD3.5	90	3 1/2"	30	8×12	5×12	2	4.7	DH3.5P90R25	
	95	3 3/4"	30	8×12	6×12	2	4.8	DH3.5P95R25	
	100	3 15/16"	35	8×14	7×12	2	4.9	DH3.5P100R25	
	102	4"	35	8×14	7×12	2	4.9	DH3.5P102R25	
	90	3 1/2"	※ 20 - 40	6×12	6×12	2	4.7	DH3.5P90BB81	
	95	3 3/4"	20 - 40	6×12	6×12	2	4.8	DH3.5P95BB81	
	100	3 15/16"	20 - 40	6×12	6×12	2	4.9	DH3.5P100BB81	
	102	4"	20 - 40	6×12	6×12	2	4.9	DH3.5P102BB81	
Foot valve								FV-DH3.5	
DHD340	105	4 1/8"	35	8×14	7×12	2	8.6	DH340P105R25	
	110	4 5/16"	35	8×14	7×12	2	8.7	DH340P110R25	
	115	4 1/2"	35	8×14	8×12	2	9.0	DH340P115R25	
	120	4 3/4"	35	8×14	8×12	2	9.7	DH340P120R25	
	127	5"	35	8×16	7×14	2	10.6	DH340P127R25	
	105	4 1/8"	※ 20 - 40	8×12	8×12	2	8.6	DH340P105BB81	
	110	4 5/16"	20 - 40	8×12	8×12	2	8.7	DH340P110BB81	
	115	4 1/2"	20 - 40	8×12	8×12	2	9.0	DH340P115BB81	
	120	4 3/4"	20 - 40	8×14	8×14	2	9.7	DH340P120BB81	
	127	5"	20 - 40	8×14	8×14	2	10.6	DH340P127BB81	
	Foot valve								FV-DHD340
	DHD350	133	5 1/4"	35	8×16	8×14	2	16.0	DH350P133R25
		140	5 1/2"	35	8×16	9×14	2	16.4	DH350P140R25
146		5 3/4"	35	8×19	8×16	2	16.8	DH350P146R25	
152		6"	35	8×19	10×16	2	18.1	DH350P152R25	
133		5 1/4"	20 - 40	8×14	8×14	2	16.0	DH350P133BB81	
140		5 1/2"	20 - 40	8×14	10×14	2	16.4	DH350P140BB81	
146		5 3/4"	20 - 40	8×14	10×14	2	16.8	DH350P146BB81	
152		6"	20 - 40	8×14	10×16	2	18.1	DH350P152BB81	
Foot valve								FV-DHD350	

※ Face angle 20°, Gauge angle 40°

Hammer model	Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole	Weight [Kg]	Part number	
	[mm]	[in]		Gauge	Face				
DHD360	152	6"	35	8×19	10×16	2	24.0	DH360P152R65	
	156	6 1/8"	35	8×19	10×16	2	24.4	DH360P156R65	
	159	6 1/4"	35	8×19	10×16	2	24.6	DH360P159R65	
	165	6 1/2"	35	8×19	10×16	2	24.8	DH360P165R65	
	171	6 3/4"	35	10×19	12×16	2	25.4	DH360P171R65	
	178	7"	35	10×19	12×16	2	26.1	DH360P178R65	
	191	7 1/2"	35	10×19	16×16	2	26.6	DH360P191R65	
	* 200	7 7/8"	35	10×19	16×16	2	29.5	DH360P200R65	
	* 203	8"	35	10×19	16×16	2	29.9	DH360P203R65	
	* 216	8 1/2"	35	12×19	18×16	2	35.0	DH360P216R65	
	Foot valve	-							FV-DHD360
DHD380	203	8"	35	10×19	16×16	2	49.5	DH380P203R65	
	216	8 1/2"	35	12×19	18×16	2	52.7	DH380P216R65	
	230	9"	35	12×19	19×16	2	53.3	DH380P230R65	
	* 254	10"	35	12×19	24×16	2	54.0	DH380P254R65	
	Foot valve	-							FV-DHD380
QL40	105	4 1/8"	35	8×14	7×12	2	8.6	QL40P105R25	
	110	4 5/16"	35	8×14	7×12	2	8.7	QL40P110R25	
	115	4 1/2"	35	8×14	8×12	2	9.0	QL40P115R25	
	120	4 3/4"	35	8×14	8×12	2	9.7	QL40P120R25	
	127	5"	35	8×16	7×14	2	10.6	QL40P127R25	
	105	4 1/8"	※ 20 - 40	8×12	8×12	2	8.6	QL40P105BB81	
	110	4 5/16"	20 - 40	8×12	8×12	2	8.7	QL40P110BB81	
	115	4 1/2"	20 - 40	8×12	8×12	2	9.0	QL40P115BB81	
	120	4 3/4"	20 - 40	8×14	8×14	2	9.7	QL40P120BB81	
	127	5"	20 - 40	8×14	8×14	2	10.6	QL40P127BB81	
	Foot valve	-							FV-QL40
	QL50	133	5 1/4"	35	8×16	8×14	2	16.0	QL50P133R25
		140	5 1/2"	35	8×16	9×14	2	16.4	QL50P140R25
146		5 3/4"	35	8×19	8×16	2	16.8	QL50P146R25	
152		6"	35	8×19	10×16	2	18.1	QL50P152R25	
133		5 1/4"	※ 20 - 40	8×14	8×14	2	16.0	QL50P133BB81	
140		5 1/2"	20 - 40	8×14	10×14	2	16.4	QL50P140BB81	
146		5 3/4"	20 - 40	8×14	10×14	2	16.8	QL50P146BB81	
152		6"	20 - 40	8×16	10×16	2	18.1	QL50P152BB81	
Foot valve		-							FV-QL50
QL60	152	6"	35	8×19	10×16	2	24.0	QL60P152R65	
	156	6 1/8"	35	8×19	10×16	2	24.4	QL60P156R65	
	159	6 1/4"	35	8×19	10×16	2	24.6	QL60P159R65	
	165	6 1/2"	35	8×19	10×16	2	24.8	QL60P165R65	
	171	6 3/4"	35	10×19	12×16	2	25.4	QL60P171R65	
	178	7"	35	10×19	12×16	2	26.1	QL60P178R65	
	191	7 1/2"	35	10×19	16×16	2	26.6	QL60P191R65	
	* 200	7 7/8"	35	10×19	16×16	2	29.5	QL60P200R65	
	* 203	8"	35	10×19	16×16	2	29.9	QL60P203R65	
	* 216	8 1/2"	35	12×19	18×16	2	35.0	QL60P216R65	
	Foot valve	-							FV-QL60
QL80	203	8"	35	10×19	16×16	2	49.5	QL80P203R65	
	216	8 1/2"	35	12×19	18×16	2	52.7	QL80P216R65	
	230	9"	35	12×19	19×16	2	53.3	QL80P230R65	
	* 254	10"	35	12×19	24×16	2	54.0	QL80P254R65	
	Foot valve	-							FV-QL80

※ Face angle 20°, Gauge angle 40°

* No shank breakage warranty

DOWN THE HOLE BIT

Sandvik

Hammer model	Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole	Weight [Kg]	Part number	
	[mm]	[in]		Gauge	Face				
SD4	105	4 1/8"	35	8×14	7×12	2	8.6	SD4P105R25	
	110	4 5/16"	35	8×14	7×12	2	8.7	SD4P110R25	
	115	4 1/2"	35	8×14	8×12	2	9.0	SD4P115R25	
	120	4 3/4"	35	8×14	8×12	2	9.7	SD4P120R25	
	127	5"	35	8×16	7×14	2	10.6	SD4P127R25	
	105	4 1/8"	※ 20 - 40	8×12	8×12	2	8.6	SD4P105BB81	
	110	4 5/16"	20 - 40	8×12	8×12	2	8.7	SD4P110BB81	
	115	4 1/2"	20 - 40	8×12	8×12	2	9.0	SD4P115BB81	
	120	4 3/4"	20 - 40	8×14	8×14	2	9.7	SD4P120BB81	
	127	5"	20 - 40	8×14	8×14	2	10.6	SD4P127BB81	
	Foot valve								FV-SD4
	SD5	133	5 1/4"	35	8×16	8×14	2	16.0	SD5P133R25
140		5 1/2"	35	8×16	9×14	2	16.4	SD5P140R25	
146		5 3/4"	35	8×19	8×16	2	16.8	SD5P146R25	
152		6"	35	8×19	10×16	2	18.1	SD5P152R25	
133		5 1/4"	※ 20 - 40	8×14	8×14	2	16.0	SD5P133BB81	
140		5 1/2"	20 - 40	8×14	10×14	2	16.4	SD5P140BB81	
146		5 3/4"	20 - 40	8×14	10×14	2	16.8	SD5P146BB81	
152		6"	20 - 40	8×16	10×16	2	18.1	SD5P152BB81	
Foot valve								FV-SD5	
SD6		152	6"	35	8×19	10×16	2	24.0	SD6P152R65
		156	6 1/8"	35	8×19	10×16	2	24.4	SD6P156R65
		159	6 1/4"	35	8×19	10×16	2	24.6	SD6P159R65
	165	6 1/2"	35	8×19	10×16	2	24.8	SD6P165R65	
	171	6 3/4"	35	10×19	12×16	2	25.4	SD6P171R65	
	178	7"	35	10×19	12×16	2	26.1	SD6P178R65	
	191	7 1/2"	35	10×19	16×16	2	26.6	SD6P191R65	
	* 200	* 7 7/8"	35	10×19	16×16	2	29.5	SD6P200R65	
	* 203	* 8"	35	10×19	16×16	2	29.9	SD6P203R65	
	* 216	* 8 1/2"	35	12×19	18×16	2	35.0	SD6P216R65	
	Foot valve								FV-SD6
	SD8	203	8"	35	10×19	16×16	2	49.5	SD8P203R65
216		8 1/2"	35	12×19	18×16	2	52.7	SD8P216R65	
230		9"	35	12×19	19×16	2	53.3	SD8P230R65	
* 254		* 10"	35	12×19	24×16	2	54.0	SD8P254R65	
Foot valve								FV-SD8	

※ Face angle 20°, Gauge angle 40°

* No shank breakage warranty

Atlas Copco

Hammer model	Gauge diameter		Gauge angle [°]	Button × Button dia. [mm]		Flushing hole	Weight [Kg]	Part number
	[mm]	[in]		Gauge	Face			
COP32	90	3 1/2"	30	8×12	5×12	2	4.7	COP32P90R25
	95	3 3/4"	30	8×12	6×12	2	4.8	COP32P95R25
	100	3 15/16"	35	8×14	7×12	2	4.9	COP32P100R25
	102	4"	35	8×14	7×12	2	4.9	COP32P102R25
	90	3 1/2"	※ 20 - 40	6×12	6×12	2	4.7	COP32P90BB81
	95	3 3/4"	20 - 40	6×12	6×12	2	4.8	COP32P95BB81
	100	3 15/16"	20 - 40	6×12	6×12	2	4.9	COP32P100BB81
	102	4"	20 - 40	6×12	6×12	2	4.9	COP32P102BB81
COP42	105	4 1/8"	35	8×14	7×12	2	8.6	COP42P105R25
	110	4 5/16"	35	8×14	7×12	2	8.7	COP42P110R25
	115	4 1/2"	35	8×14	8×12	2	9.0	COP42P115R25
	120	4 3/4"	35	8×14	8×12	2	9.7	COP42P120R25
	127	5"	35	8×16	7×14	2	10.6	COP42P127R25
	105	4 1/8"	※ 20 - 40	8×12	8×12	2	8.6	COP42P105BB81
	110	4 5/16"	20 - 40	8×12	8×12	2	8.7	COP42P110BB81
	115	4 1/2"	20 - 40	8×12	8×12	2	9.0	COP42P115BB81
	120	4 3/4"	20 - 40	8×14	8×14	2	9.7	COP42P120BB81
	127	5"	20 - 40	8×14	8×14	2	10.6	COP42P127BB81

※ Face angle 20°, Gauge angle 40°

* No shank breakage warranty

Corporate Social Responsibility For People, Society and the Earth

If you condensed the history of the Earth into the space of one year, human history would last roughly four hours.

Global economic development since the industrial revolution in the 18th century would last just a single second.

That single second is all it has taken for the human race to drastically deplete the natural resources that the planet had built up through the ages.

As a result, the environment is now facing a whole range of issues.

Climate change

Finite natural resources

The fundamental aim of our CSR activities here at the Mitsubishi Materials Group is to help resolve universal issues such as these through our core operations and to put our Corporate Philosophy, "For People, Society and the Earth," into practice.

Our Commitment

These days, we hear reports of abnormal weather conditions from all over the world, including rising sea levels due to the melting of the polar ice caps and disasters caused by phenomena such as hurricanes, cyclones, heavy rains, droughts and heat waves. With more and more international environmental rules coming into effect, we need to take wide-ranging action in order to deal with the problem of climate change, factoring in considerations such as new regulations and frameworks.

As Japan is a resource-poor nation that relies on overseas mining for the majority of its mineral resources, it is crucial that we recycle resources and make effective use of renewable resources in order to minimize consumption of natural resources and reduce environmental impact. With Japan's limited size virtually ruling out the possibility of constructing new landfill sites, recycling is also becoming increasingly important in the interests of reducing waste.

We are committed to tackling issues such as these through our core operations.

- 1) We will comprehensively reduce greenhouse gas emissions and other forms of environmental impact and expand operations aimed at creating a low carbon society, including environmentally friendly products and renewable energy.
- 2) We will collect and recycle more waste and used products and make an even greater contribution to the creation of a recycling-oriented society.
- 3) Through advanced technology and increased efficiency, we will improve resource productivity and manufacture materials and components so as to make the best possible use of natural resources and maintain stable supplies.

Here at the Mitsubishi Materials Group, we are determined to do our bit to help create a sustainable society, based on our Corporate Philosophy "For People, Society and the Earth,"

PART NUMBER INDEX

2			
25RTC35V	26	34NRTGPS43R06L	34
25RTC38V	26	34NRTGPS45R03L	34
25RTC41V	26	34NRTGPS45R06L	34
25RTC45V	26	34NRTGPS48R03M	34
25RTPWS33R06L	26	34NRTGPS48R06L	34
25RTPWS33R06M	26	34NRTGPS51R06L	34
25RTPWS35R06H	26	34NRTGPS51R23L	35
25RTPWS35R23M	26	34NRTGPS54R23H	35
25RTPWS37R06M	26	35RTPVS48BB08M	36
25RTPWS37R23M	26	35RTPWS48BB09M	37
25RTPWS38R06M	26	35RTPWS48R03M	36
25RTPWS38R23M	26	35RTPWS48R06L	36
25RTPWS41R06H	26	35RTPWS48R23L	36
25RTPWS41R23H	26	35RTPWS51R06L	36
25RTPWS43R06H	26	35RTPWS51R23L	36
25RTPWS43R23M	26	35RTPWS54R23H	36
25RTPWS45R06M	26	35RTPWS57R23H	36
25RTPWS45R23L	26	35RTPWS64R23M	36
28RTC38V	28	38MPVR102R15M	42
28RTC41V	28	38MPVR102R25M	42
28RTC43V	28	38MPVR102R55M	42
28RTC45V	28	38MPVR64R15M	42
28RTPWS37R06M	28	38MPVR64R53M	42
28RTPWS37R23M	28	38MPVR70R15M	42
28RTPWS38R06M	28	38MPVR70R53M	42
28RTPWS38R23M	28	38MPVR76R15M	42
28RTPWS38R23M	28	38MPVR76R53M	42
28RTPWS41R06H	28	38MPVR76R55M	42
28RTPWS41R23H	28	38MPVR89R15M	42
28RTPWS43R06H	28	38MPVR89R25M	42
28RTPWS43R23M	28	38MPVR89R53M	42
28RTPWS45R06M	28	38MPVR89R55M	42
28RTPWS45R23L	28	38MPVS102BB85H	41
3		38MPVS102R14M	41
32RTC41V	31	38MPVS102R15H	40
32RTC45V	31	38MPVS102R15M	40
32RTC48V	31	38MPVS102R23M	40
32RTC51V	31	38MPVS102R25M	40
32RTPVS43BB08M	31	38MPVS102R55M	41
32RTPVS45BB08M	31	38MPVS64R14M	41
32RTPVS48BB08M	31	38MPVS64R15H	40
32RTPWS41R06H	30	38MPVS64R15M	40
32RTPWS43BB09M	31	38MPVS64R53M	41
32RTPWS43R03L	30	38MPVS70R14M	41
32RTPWS43R03M	30	38MPVS70R15H	40
32RTPWS43R06H	30	38MPVS70R15M	40
32RTPWS43R06L	30	38MPVS70R53M	41
32RTPWS45BB09M	31	38MPVS76R14M	41
32RTPWS45R03L	30	38MPVS76R15H	40
32RTPWS45R06L	30	38MPVS76R15M	40
32RTPWS45R06M	30	38MPVS76R53M	41
32RTPWS45R23L	31	38MPVS76R55M	41
32RTPWS48BB09M	31	38MPVS89R14M	41
32RTPWS48R03M	30	38MPVS89R15H	40
32RTPWS48R06L	30	38MPVS89R15M	40
32RTPWS48R23L	31	38MPVS89R23M	40
32RTPWS51R06L	30	38MPVS89R25M	40
32RTPWS51R23L	31	38MPVS89R53M	41
32RTPWS54R23H	31	38MPVS89R55M	41
32RTPWS57R23H	31	38MPWS64BB83H	41
32RTPWS64R23M	31	38MPWS70BB83H	41
34NRTGPS43R03M	34	38MPWS76BB83H	41
		38MPWS76BB85H	41
		38MPWS89BB85H	41
		38MX64S	41
		38MX76S2	41
		4	
		45MPVR102R15M	46
		45MPVR102R25M	46
		45MPVR102R55M	46
		45MPVR115R25M	46
		45MPVR115R55M	46
		45MPVR76R15M	46
		45MPVR76R53M	46
		45MPVR76R55M	46
		45MPVR89R15M	46
		45MPVR89R25M	46
		45MPVR89R53M	46
		45MPVR89R55M	46
		45MPVS102BB85H	45
		45MPVS102R14M	45
		45MPVS102R15H	44
		45MPVS102R15M	44
		45MPVS102R23M	44
		45MPVS102R25M	44
		45MPVS102R55M	45
		45MPVS115BB85H	45
		45MPVS115R23MS	44
		45MPVS115R25M	44
		45MPVS115R55M	45
		45MPVS70R14M	45
		45MPVS70R15H	44
		45MPVS70R15M	44
		45MPVS70R53M	45
		45MPVS76R14M	45
		45MPVS76R15H	44
		45MPVS76R15M	44
		45MPVS76R53M	45
		45MPVS76R55M	45
		45MPVS89R14M	45
		45MPVS89R15H	44
		45MPVS89R15M	44
		45MPVS89R23M	44
		45MPVS89R25M	44
		45MPVS89R53M	45
		45MPVS89R55M	45
		45MPWS70BB83H	45
		45MPWS76BB83H	45
		45MPWS76BB85H	45
		45MPWS89BB85H	45
		45MX76S2	45
		45MX89S	45
		5	
		51MPVR102R15M	50
		51MPVR102R25M	50
		51MPVR102R55M	50
		51MPVR115R25M	50
		51MPVR115R55M	50
		51MPVR127R25M	50
		51MPVR127R55M	50
		51MPVR89R15M	50
		51MPVR89R25M	50
		51MPVR89R53M	50
		51MPVR89R55M	50

PART NUMBER INDEX

51MPVS102BB85H	49	60GMPVS140R53M	52	CR28D	29
51MPVS102R14M	49	60GMPVS153BB5XM	52	CR32D	27, 29, 33
51MPVS102R15H	48	60GMPVVR92BB55M	52	CR32R25	27, 33
51MPVS102R15M	48	60GMPVVR102R55M	52	CR32R28	29, 33
51MPVS102R23M	48	60GMPVVR112R55M	52	CR35D	37
51MPVS102R25M	48	60GMPVVR115R55M	52	CR35R32	37
51MPVS102R55M	49	60GMPVVR115BB55M	52	CR38D	33
51MPVS115BB85H	49	60GMPVVR115R23MB	52	CR38R32	33
51MPVS115R23M	48	60GMPVVR121BB55M	52	D	
51MPVS115R23MS	48	60GMPVVR127R55M	52	DH3.5P100BB81	78
51MPVS115R25M	48	60GMPVVR127BB55M	52	DH3.5P100R25	78
51MPVS115R55M	49	60GMPVVR127R23M1	52	DH3.5P102BB81	78
51MPVS127BB85H	49	60GMPVVR140R53M	52	DH3.5P102R25	78
51MPVS127R23M	48	60GMPVVR153R5XM	52	DH3.5P90BB81	78
51MPVS127R23MS	48	68WDPVVR102R25M	57	DH3.5P90R25	78
51MPVS127R25M	48	68WDPVVR102R55M	57	DH3.5P95BB81	78
51MPVS127R55M	49	68WDPVVR115R25M	57	DH3.5P95R25	78
51MPVS89R14M	49	68WDPVVR115R55M	57	DH340P105BB81	78
51MPVS89R15H	48	68WDPVVR127R25M	57	DH340P105R25	78
51MPVS89R15M	48	68WDPVVR127R55M	57	DH340P110BB81	78
51MPVS89R23M	48	68WDPVVS102BB85H	56	DH340P110R25	78
51MPVS89R25M	48	68WDPVVS102R23M	56	DH340P115BB81	78
51MPVS89R53M	49	68WDPVVS102R25M	56	DH340P115R25	78
51MPVS89R55M	49	68WDPVVS102R55M	56	DH340P120BB81	78
51MPVSR9BB85H	49	68WDPVVS115BB85H	56	DH340P120R25	78
58WDPVVR102R25M	55	68WDPVVS115R23M	56	DH340P127BB81	78
58WDPVVR102R55M	55	68WDPVVS115R23MS	56	DH340P127R25	78
58WDPVVR115R25M	55	68WDPVVS115R25M	56	DH350P133BB81	78
58WDPVVR115R55M	55	68WDPVVS115R55M	56	DH350P133R25	78
58WDPVVR127R25M	55	68WDPVVS127BB85H	56	DH350P140BB81	78
58WDPVVR127R55M	55	68WDPVVS127R23M	56	DH350P140R25	78
58WDPVVR89R25M	55	68WDPVVS127R23MS	56	DH350P146BB81	78
58WDPVVR89R55M	55	68WDPVVS127R25M	56	DH350P146R25	78
58WDPVVS102BB85H	55	68WDPVVS127R55M	56	DH350P152BB81	78
58WDPVVS102R15H	54	C		DH350P152R25	78
58WDPVVS102R15M	54	CM38	35, 43	DH360P152R65	79
58WDPVVS102R23M	54	CM38R32	33, 43	DH360P156R65	79
58WDPVVS102R25M	54	CM45	47	DH360P159R65	79
58WDPVVS102R55M	54	CM45-2	47	DH360P165R65	79
58WDPVVS115BB85H	55	CM45M38	43, 47	DH360P171R65	79
58WDPVVS115R23M	54	CM51	51	DH360P178R65	79
58WDPVVS115R23MS	54	CM51-2	51	DH360P191R65	79
58WDPVVS115R25M	54	CM51M45	47, 51	DH360P200R65	79
58WDPVVS115R55M	54	COP32P100BB81	81	DH360P203R65	79
58WDPVVS127BB85H	55	COP32P100R25	81	DH360P216R65	79
58WDPVVS127R23M	54	COP32P102BB81	81	DH380P203R65	79
58WDPVVS127R23MS	54	COP32P102R25	81	DH380P216R65	79
58WDPVVS127R25M	54	COP32P90BB81	81	DH380P230R65	79
58WDPVVS127R55M	54	COP32P90R25	81	DH380P254R65	79
58WDPVVS89R15H	54	COP32P95BB81	81	E	
58WDPVVS89R15M	54	COP32P95R25	81	EH25R32R25-2200	27
58WDPVVS89R23M	54	COP42P105BB81	81	EH25R32R25-2475	27
58WDPVVS89R25M	54	COP42P105R25	81	EH25R32R25-2600	27
58WDPVVS89R55M	54	COP42P110BB81	81	EH25R32R25-2800	27
58WDPVVS89BB85H	55	COP42P110R25	81	EH25R32R25-3100	27
6		COP42P115BB81	81	EH28R32R28-2800	29
60GMPVS92BB55M	52	COP42P115R25	81	EH28R32R28-3100	29
60GMPVS102R55M	52	COP42P120BB81	81	EH28R32R28-3700	29
60GMPVS102BB55M	52	COP42P120R25	81	EH32M38-3050	43
60GMPVS115R55M	52	COP42P127BB81	81	EH32M38-3660	43
60GMPVS127R55M	52	COP42P127R25	81	EH32M38R32-3100	33
60GMPVS140R55M	52	CR25	27	EH32M38R32-3700	33

PART NUMBER INDEX

EH32M38R32-4310	33	ER51M51MF-3660	51	QL50P152BB81	79
EH32M38R32-4920	33	ER51M51MF-4270	51	QL50P152R25	79
EH32R32R28-4310	29	ER60GM60MF-3660	53	QL60P152R65	79
EH32R38R32-3100	33	ER60GM60MF-4270	53	QL60P156R65	79
EH32R38R32-3700	33	ER60GM60MF-5490	53	QL60P159R65	79
EH32R38R32-4310	33	ER60GM60MF-6100	53	QL60P165R65	79
EH32R38R32-4920	33	F		QL60P171R65	79
EH35M38NR34-3100	35	FTF-68WD-GR88	57	QL60P178R65	79
EH35M38NR34-3700	35	FTM-58WD-GR78	55	QL60P191R65	79
EH35M38NR34-4310	35	FTM-68WD-GR88	57	QL60P200R65	79
EH35M38NR34-4920	35	FV-DH3.5	78	QL60P203R65	79
EH35M38NR34-5530	35	FV-DHD340	78	QL60P216R65	79
EH35M38R32-3100	33	FV-DHD350	78	QL80P203R65	79
EH35M38R32-3700	33	FV-DHD360	79	QL80P216R65	79
EH35M38R32-4310	33	FV-DHD380	79	QL80P230R65	79
EH35M38R32-4920	33	FV-QL40	79	QL80P254R65	79
EH35M38R32-5530	33	FV-QL50	79	S	
EH35M38R35-4310	37	FV-QL60	79	S03M51AA	69
EH35M38R35-4920	37	FV-QL80	79	S06M38AB	68
EH35M38R35-5530	37	FV-SD4	80	S09M51AA	69
EH35R38R32-3100	33	FV-SD5	80	S100R25FSFB	60
EH35R38R32-3700	33	FV-SD6	80	S100R28FSFB	60
EH35R38R32-4310	33	FV-SD8	80	S100R28SFA	60
EH35R38R32-4920	33	G		S100R32CSFA	60
EH35R38R32-5530	33	GR77WD58MF-1525	55	S109R32FSFA	68, 75
ER32R32-1830	33	GR77WD58MF-1830	55	S110M38SFAG	64
ER32R32-2440	33	GR87WD68MF-1525	57	S110R38SFAG	64
ER32R32-3050	33	GR87WD68MF-1830	57	S116M38SFAG	64
ER32R32-3660	33	I		S116M38SFBG	64
ER32R32MF-1830	33	IH22L3132	20	S116M45SFAG	64
ER32R32MF-2440	33	IH22L3224	20	S116M45SFBG	64
ER32R32MF-3050	33	IH22L3318	20	S116R32SFAG	64
ER32R32MF-3660	33	IH22L3408	20	S117M38SFAG	65
ER38M38-3050	43	IH22L3412	20	S117M45SFAG	65
ER38M38-3660	43	IH22L3456	20	S117M45SFBG	65
ER38M38-4270	43	IH22L3506	20	S117M45SFCG	65
ER38M38-4880	43	IH22L3548	20	S117M51SFAG	65
ER38M38-5490	43	IH22L3640	20	S123M45SFA	65
ER38M38MF-1220	43	IH22L3732	20	S123M51SFAG	65
ER38M38MF-1525	43	IH22L3824	20	S126M51SFAG	65
ER38M38MF-1830	43	IH22L3916	20	S127M45SFAG	69
ER38M38MF-2440	43	IH22L3918	20	S127M51SFAG	69
ER38M38MF-3050	43	IH22L4008	20	S128M51SFAG	69
ER38M38MF-3660	43	IH22L4012	20	S12M38SFAG	71
ER38M38MF-900	43	IH22L4106	20	S12M38SFBG	71
ER38M38T-3050	43	Q		S12M38ZSFBG	71
ER38M38T-3660	43	QL40P105BB81	79	S12M45ZSFBG	71
ER45M45-3050	47	QL40P105R25	79	S12R32SFAG	71
ER45M45-3660	47	QL40P110BB81	79	S12R32SFBG	71
ER45M45-4270	47	QL40P110R25	79	S12R38DSFBG	71
ER45M45-4880	47	QL40P115BB81	79	S12R38DSFDZ	71
ER45M45-6100	47	QL40P115R25	79	S12R38SFAG	71
ER45M45MF-1525	47	QL40P120BB81	79	S13M45SFAG	73
ER45M45MF-1830	47	QL40P120R25	79	S13M45SFBG	73
ER45M45MF-3050	47	QL40P127BB81	79	S13M51SFAG	73
ER45M45MF-3660	47	QL40P127R25	79	S13M51SFBG	73
ER45M45MF-4270	47	QL50P133BB81	79	S142M38SFAG	64
ER51M51-3660	51	QL50P133R25	79	S142M38SFBG	64
ER51M51-4270	51	QL50P140BB81	79	S142M45SFA	64
ER51M51-6100	51	QL50P140R25	79	S150R32FSFAG	71
ER51M51MF-1525	51	QL50P146BB81	79	S155M38SFAG	72
ER51M51MF-1830	51	QL50P146R25	79	S155R38SFAG	72

PART NUMBER INDEX

S166M38SFAG	64	S32M38BD	60, 70	S80R32SFEGZ	61
S166R38SFAG	64	S32R32CBC	60, 70	S80R32ZSFEGZ	61
S173M45SFA	65	S32R38DBD	60, 70	S80R38SFB	61, 75
S17M38SFAG	72	S330M38SFAG	72	S80R38SFEGZ	61
S17M38SFCG	72	S330R32SFAG	72	S80R38ZSFEGZ	61
S17M45SFAG	72	S332WD58SFAG	74	S84M38AA	68
S17M45SFCG	72	S332WD68SFAG	74	S87M38SFD	61
S17R32CSFAG	72	S334M51SFA	62	S87R28SFA	61
S190M38AA	60	S343M51SFAG	63	S87R28SFD	61
S196M38SFAG	73	S357GM60SFBG	53	S87R32FSFA	61
S196M45SFAG	73	S399GM60SFB	53	S87R32SFD	61
S196M51SFAG	73	S39M38AA	71	SD4P105BB81	80
S198M45AA	69	S39M38AJG	71	SD4P105R25	80
S198M51AB	69	S39M38SFDG	71	SD4P110BB81	80
S206M51SFAG	70	S39M38SFGG	71	SD4P110R25	80
S209M45SFAG	70	S39R32SFDG	71	SD4P115BB81	80
S215M51SFA	72	S39R38SFDG	71	SD4P115R25	80
S221M38SFAG	66	S48M38SFAG	62	SD4P120BB81	80
S221M45SFAG	66	S48M38SFBG	62	SD4P120R25	80
S221M45SFBG	66	S48R32SFAG	62	SD4P127BB81	80
S221M51SFAG	66	S48R32SFBG	62	SD4P127R25	80
S221M51SFBG	66	S48R38SFAG	62	SD5P133BB81	80
S222M45SFBG	66	S48R38SFBG	62	SD5P133R25	80
S237M38SFAG	65	S51M38AB	66, 67, 68	SD5P140BB81	80
S237M38SFBG	65	S51M38AG	66, 68	SD5P140R25	80
S237M45SFAG	65	S51M45AB	67, 68	SD5P146BB81	80
S237M45SFBG	65	S51R32AB	67, 68	SD5P146R25	80
S238M51SFAG	66	S51R38AB	67, 68	SD5P152BB81	80
S240M45SFAG	73	S57M38AB	76	SD5P152R25	80
S244M38SFAG	64	S58M38AD	60, 68	SD6P152R65	80
S244R38SFAG	64	S58M45AE	60	SD6P156R65	80
S245M38SFAG	65	S58R38AB	60	SD6P159R65	80
S245M45SFAG	65	S60M45SFB	73	SD6P165R65	80
S245M45SFBG	65	S62M38AA	64	SD6P171R65	80
S258WD58SFAG	74	S62M45AA	64	SD6P178R65	80
S258WD68SFAG	74	S63M38AB	68	SD6P191R65	80
S25M38AA	69	S63M38AC	68	SD6P200R65	80
S25M45AA	69	S63M45AB	68	SD6P203R65	80
S267M51SFA	67	S63M45AC	68	SD6P216R65	80
S268M38SFAG	72	S64M38AA	60	SD8P203R65	80
S268M38SFBG	72	S64M45AA	60	SD8P216R65	80
S268R38SFAG	72	S64R32CAA	60	SD8P230R65	80
S283GM60SFCG	53	S69M45SFAG	73	SD8P254R65	80
S283M51SFBG	74	S70M38SFAG	70	T	
S283WD58SFAG	74	S70M45SFAG	70	T22P30FBB06	21
S283WD68SFAG	74	S73M38SFAG	70	T22P31FBB06	21
S284WD58SFAG	63	S73M38SFBG	70	T22P32CBB065	22
S284WD68SFAG	63	S73R32SFBG	70	T22P32CBB084	22
S285R32FSFA	61	S73R38DSFAG	70	T22P32FBB065	21
S285R38FSFA	61	S75M38AA	67	T22P32GBB065	22
S292R32SFAG	71	S75M45AA	67	T22P33CBB065	22
S293M45SFA	62	S77M38SFCG	70	T22P33CBB084	22
S293M51SFA	62	S77M38SFDG	70	T22P33FBB065	21
S298M51SFAG	74	S77R32SFDG	70	T22P33GBB065Z	22
S299M51SFAG	63	S77R38CSFDG	70	T22P34FBB065	21
S301M45SFAG	62	S80M38SFB	61, 75	T22P35CBB065	22
S301M51SFAG	62	S80M38SFC	61, 75	T22P35CBB084	22
S312GM60SFA	53	S80M38SFEGZ	61	T22P35FBB065	21
S312M45SFA	62	S80M38ZSFEGZ	61	T22P35GBB065Z1	22
S312M51SFA	62	S80M45SFEGZ	61	T22P36GBB065Z2	22
S316M38SFA	62	S80R32CSFCG	61, 75	T22P38CBB065	22
S316R32SFA	62	S80R32SFB	61, 75	T22P38CBB08Z	22

PART NUMBER INDEX

T22P38FBB065Z	21	WR35TKI40B	37
T22P38GBB065Z2	22	WTHP64R11	27, 29, 32
T22P40FBB065Z	21	WTHP76R11	27, 29, 32
T22P40GBB065Z1	22	WTHP89R15	27, 29, 32
T22P41FBB065Z	21	WTKP102R16	29, 32, 37
T22P41GBB065Z3	22	WTKP127R16	29, 32, 37
T25P41BBB065Z	23	WTKP89R15	29, 32, 37
T25P41FBB065Z	23		
T25P43BBB06Z	23		
T25P43FBB06Z	23		
TH22L05C	22		
TH22L06G	22		
TH22L09F	21		
TH22L10G	22		
TH22L12G	22		
TH22L15G	22		
TH22L16G	22		
TH22L18C	22		
TH22L18F	21		
TH22L18G	22		
TH22L20G	22		
TH22L22C	22		
TH22L24C	22		
TH22L24G	22		
TH22L26C	22		
TH22L29C	22		
TH22L30F	21		
TH22L30G	22		
TH22L39C	22		
TH22L45C	22		
TH22L54C	22		
TH22L63C	22		
TH25L18B	23		
TH25L18F	23		
TH25L22B	23		
TH25L22F	23		
TH25L24B	23		
TH25L24F	23		
TH25L26B	23		
TH25L26F	23		
W			
WI32RTPJ76R-30R	32		
WI32RTPJ89R-30R	32		
WI32RTPJ102R-30R	32		
WI34NRTPJ76R-30R	35		
WI34NRTPJ89R-30R	35		
WI34NRTPJ102R-30R	35		
WI35RTPJ76R-30R	37		
WI35RTPJ89R-30R	37		
WI35RTPJ102R-30R	37		
WI38MPJ127R-D	42		
WI38MPJ152R-D	42		
WI45MPJ127R-D	46		
WI45MPJ152R-D	46		
WI51MPJ152R-D	50		
WI58WDP152R-D	55		
WI68WDP152R-D	57		
WR25THI26B	27		
WR28THI26B	29		
WR28TKI40B	29		
WR32THI26B	32		
WR32TKI40B	32		

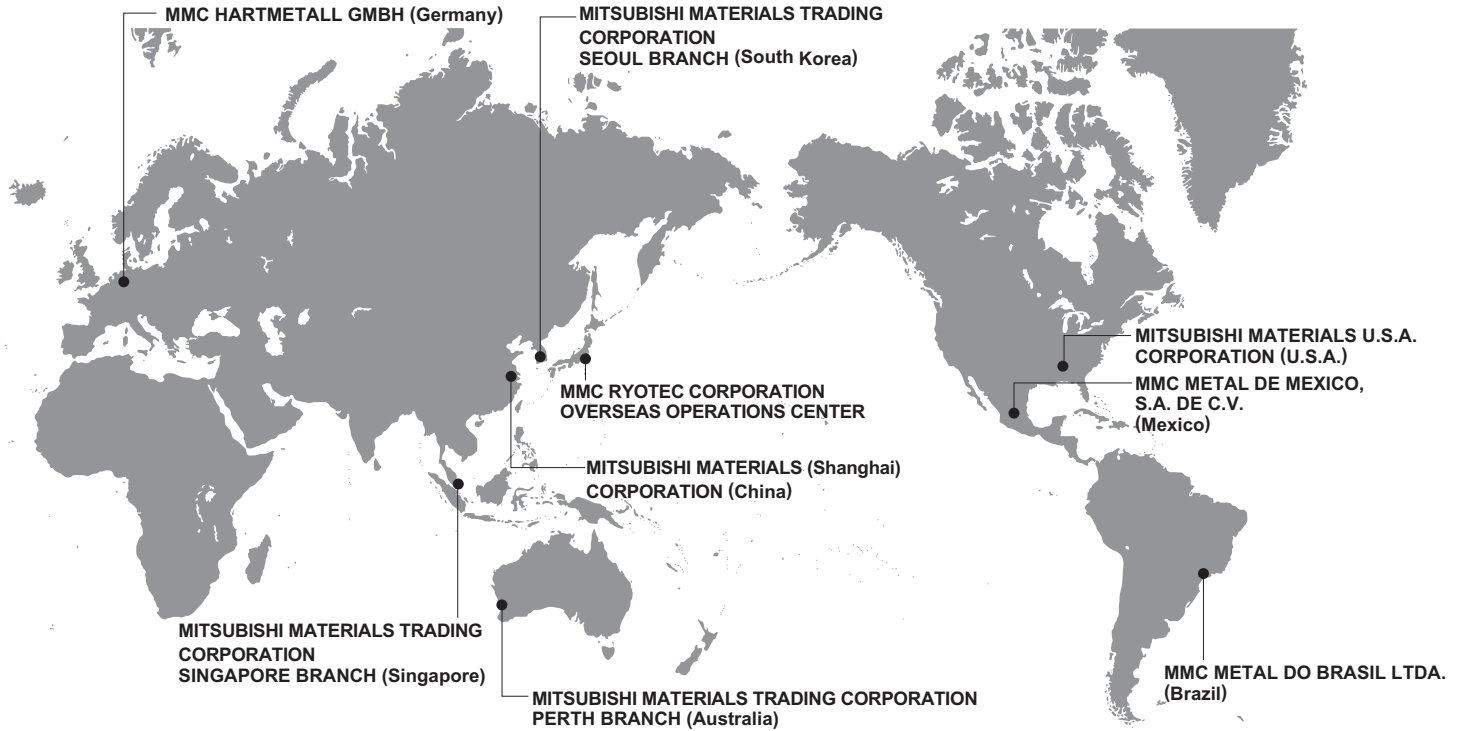


IDENTIFY SAFETY HAZARDS

SAFETY FIRST, SAFETY NOW, SAFETY ALWAYS

Carefully read and follow the below safety warnings and instructions prior to engaging in work with equipment.

- Always follow equipment manufacturer's recommendations for safety and maintenance.
- Always wear personal protection equipment, including: steel toed boots, work gloves, safety glasses and hard hat. Be familiar with the safety requirements of your work site.
- Always wear hearing protection when the work environment includes noise levels at or above 85 dBA. Dual hearing may be required when percussion drills are operating.
- Never operate equipment while under the influence of drugs, alcohol, medication or extreme exhaustion.
- Stand clear of all moving and rotating equipment parts. Never wear loose articles of clothing around moving equipment parts.
- Be cautious of other equipment operating around you.
- Always maintain a clean working area.
- Avoid extremely hazardous working conditions.
- Refrain from having unnecessary visitors to your work area. Ensure any visitors are dressed properly for the working conditions they are entering.
- Always use and keep machine safety guards intact and in working order.
- Employ trained and experienced service mechanics to maintain and repair equipment.
- Always follow all local and federal health and safety regulations.
- Prior to moving equipment or operating equipment controls, always be sure of what function they perform. Always know where other persons are prior to moving equipment.
- Never customize or alter the drill or drill string components. Failure to follow this will void any warranties and could cause premature failure to the tool or physical hazards to persons.
- Prior to lifting tools with hoists, make sure that all rope and/or slings are free to move without getting tangled.



MMC RYOTEC Corporation

A Group Company of  MITSUBISHI MATERIALS

JAPAN / ROCK TOOLS

MMC RYOTEC CORPORATION
TOKYO OFFICE [Overseas Operations Center]
 KFC Bldg. 7F, 1-6-1 Yokoami, Sumida-ku, Tokyo 130-0015
 TEL +81-3-5819-8723
 E-Mail: rocktool@mmc.co.jp

<http://www.ryotec.co.jp/en/>



Subsidiaries of MITSUBISHI MATERIALS CORPORATION

U.S.A.	MITSUBISHI MATERIALS U.S.A. CORPORATION 105 Corporate Center Dr. Suite A, Mooresville, NC 28117, U.S.A TEL +1-980-312-3150 FAX +1-704-746-9595 E-Mail: mmusclt@mmus.com	Australia	MITSUBISHI MATERIALS TRADING CORPORATION PERTH BRANCH Suite 10, 137 Kewdale Road, Kewdale, WA 6105, Australia TEL +61-8-6258-7200 FAX +61-8-6258-5614 E-Mail: ml-sales@mmtc.co.jp Website: http://www.mmtc.co.jp/au/
Germany	MMC HARTMETALL GMBH Comeniusstr. 2,40670 Meerbusch, Germany TEL +49-2159-9189-32 FAX +49-2159-9189-30079 E-Mail: rocktools@mmchg.de	South Korea	MITSUBISHI MATERIALS TRADING CORPORATION SEOUL BRANCH #1812 Samsung Cheil Bldg., 309, Teheran-ro, Gangnam-gu, Seoul 06151, South Korea TEL +82-2-3474-2331 FAX +82-2-527-2834 Email: mb-rocktool@mmtc.co.jp Website: https://www.mmtc.co.jp/en/
Brazil	MMC METAL DO BRASIL LTDA. Rua Cincinato Braga, 340 13º andar, Bela Vista- CEP 01333-010 São Paulo-SP., BRASIL TEL +55-11-3262-5095 FAX +55-11-3285-4906 E-Mail: mmbr@mmbr.com.br	Singapore	MITSUBISHI MATERIALS TRADING CORPORATION SINGAPORE BRANCH 10 Anson Road, #32-09 International Plaza, Singapore 079903 TEL +65-6221-7233 FAX +65-6325-4220 Email: mb-rocktool@mmtc.co.jp Website: https://www.mmtc.co.jp/en/
Mexico	MMC METAL DE MEXICO S.A. DE C.V. Av. La Canada No.16 Parque Industrial Bernardo Quintana El marques, Queretaro. TEL +52-442-221-6136 +52-442-221-6137 FAX +52-442-221-6134 E-Mail: gonzalez@mmcsmex.com	China	MITSUBISHI MATERIALS (SHANGHAI) CORPORATION 2101 Tower 1, Raffles City, 1133 Changning Road Changning District, Shanghai, 200051, China TEL :+86-(0)21-6235-0745 FAX :+86-(0)21-6235-0741 Inquiry form : http://www.mmc.sh.cn/contact-us/