



# ROCK DRILLING TOOLS



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# Technical information button bits

we produce a wide range of button bits; here are a few pointers to help you choose the right product.

The button bits have either parabolic (P) or hemispherical (H) inserts.



P

H

Button bits have dropcenter(D) or they are flat faced(F), some have flushing holes (front and/or gauge) and some have retract function.

*Our part numbers explained:*

**Tapered button bits: 11D38-7 P**

**Threaded button bits: 32R48RD H**

11D = 11 Degrees

32R = R32 threads

38 /48= mm diameter

7 = 7 inserts

P/H = Parabolic or hemispherical inserts

R = Retrac

D = Dropcenter

N = Normal body

F = Flat faced



*Retrac*



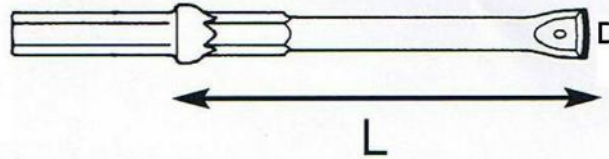
*Normal*



*D*

# Plug hole rods

## SHANK 19mm x 108mm



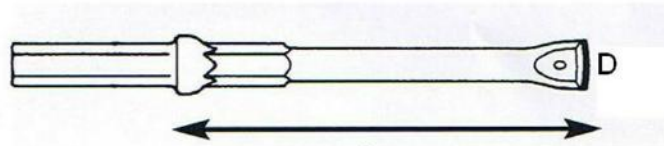
| Length | Diameter | Weight | Part number  |
|--------|----------|--------|--------------|
| 200mm  | 17mm     | 0,8kg  | 0721 2017-20 |
| 250mm  | 17mm     | 0,9kg  | 0721 2517-20 |
| 300mm  | 17mm     | 1,0kg  | 0721 3017-20 |
| 200mm  | 20mm     | 0,8kg  | 0721 2020-20 |
| 250mm  | 20mm     | 0,9kg  | 0721 2520-20 |
| 300mm  | 20mm     | 1,0kg  | 0721 3020-20 |
| 200mm  | 22mm     | 0,8kg  | 0721 2022-20 |
| 250mm  | 22mm     | 0,9kg  | 0721 2522-20 |
| 300mm  | 22mm     | 1,0kg  | 0721 3022-20 |
| 250mm  | 22mm     | 1,0kg  | 0721 2523-20 |
|        | 23mm     | 0,9kg  |              |

## SHANK 19mm x 82,5mm

| Length | Diameter | Weight | Part number  |
|--------|----------|--------|--------------|
| 200mm  | 17mm     | 0,8kg  | 0722 2017-20 |
| 250mm  | 17mm     | 0,9kg  | 0722 2517-20 |
| 300mm  | 17mm     | 1,0kg  | 0722 3017-20 |
| 200mm  | 20mm     | 0,8kg  | 0722 2020-20 |
| 250mm  | 20mm     | 0,9kg  | 0722 2520-20 |
| 300mm  | 20mm     | 1,0kg  | 0722 3020-20 |
| 200mm  | 22mm     | 0,8kg  | 0722 2022-20 |
| 250mm  | 22mm     | 0,9kg  | 0722 2522-20 |
| 300mm  | 22mm     | 1,0kg  | 0722 3022-20 |
| 250mm  | 23mm     | 0,9kg  | 0722 2523-20 |

# Plug hole rods

## SHANK 22mm x 108mm



| Length | Diameter | Weight | Part number  |
|--------|----------|--------|--------------|
| 200mm  | 17mm     | 0,8kg  | 0711 2017-20 |
| 250mm  | 17mm     | 0,9kg  | 0711 2517-20 |
| 300mm  | 17mm     | 1,0kg  | 0711 3017-20 |
| 400mm  | 17mm     | 1,2kg  | 0711 4017-20 |
| 200mm  | 20mm     | 0,8kg  | 0711 2020-20 |
| 250mm  | 20mm     | 0,9kg  | 0711 2520-20 |
| 300mm  | 20mm     | 1,0kg  | 0711 3020-20 |
| 400mm  | 20mm     | 1,2kg  | 0711 4020-20 |
| 200mm  | 22mm     | 0,8kg  | 0711 2022-20 |
| 250mm  | 22mm     | 0,9kg  | 0711 2522-20 |
| 300mm  | 22mm     | 1,0kg  | 0711 3022-20 |
| 400mm  | 22mm     | 1,2kg  | 0711 4022-20 |

## SHANK 22mm x 82.5mm

| Length | Diameter | Weight | Part number  |
|--------|----------|--------|--------------|
| 200mm  | 17mm     | 0,8kg  | 0712 2017-20 |
| 250mm  | 17mm     | 0,9kg  | 0712 2517-20 |
| 300mm  | 17mm     | 1,0kg  | 0712 3017-20 |
| 400mm  | 17mm     | 1,2kg  | 0712 4017-20 |
| 200mm  | 20mm     | 0,8kg  | 0712 2020-20 |
| 250mm  | 20mm     | 0,9kg  | 0712 2520-20 |
| 300mm  | 20mm     | 1,0kg  | 0712 3020-20 |
| 400mm  | 20mm     | 1,2kg  | 0712 4020-20 |
| 200mm  | 22mm     | 0,8kg  | 0712 2022-20 |
| 250mm  | 22mm     | 0,9kg  | 0712 2522-20 |
| 300mm  | 22mm     | 1,0kg  | 0712 3022-20 |
| 400mm  | 22mm     | 1,2kg  | 0712 4022-20 |



# Integral Drill Steel

## SHANK 19mm x 108mm



| Series | Length | Diameter | Weight | Part number  |
|--------|--------|----------|--------|--------------|
| 21     | 400mm  | 29mm     | 1,65kg | 0724 0429-20 |
| 21     | 800mm  | 28mm     | 2,85kg | 0724 0828-20 |
| 21     | 1200mm | 27mm     | 3,65kg | 0724 1227-20 |
| 21     | 1600mm | 27mm     | 4,05kg | 0724 1627-20 |
| 22     | 2400mm | 26mm     | 5,85kg | 0724 2426-20 |
| 22     | 3200mm | 25mm     | 7,65kg | 0724 3225-20 |
| 22     | 4000mm | 24mm     | 9,45kg | 0724 4024-20 |

## SHANK 22mm x 108mm

### HEX 19mm body

| Length | Diameter | Weight | Part number  |
|--------|----------|--------|--------------|
| 400mm  | 29mm     | 1,65kg | 0728 0429-20 |
| 800mm  | 28mm     | 2,85kg | 0728 0828-20 |
| 1200mm | 27mm     | 3,15kg | 0728 1227-20 |
| 1600mm | 27mm     | 4,05kg | 0728 1627-20 |
| 2400mm | 26mm     | 5,85kg | 0728 2426-20 |
| 3200mm | 25mm     | 7,65kg | 0728 3225-20 |
| 4000mm | 24mm     | 9,45kg | 0728 4024-20 |
| 400mm  | 26mm     | 1,35kg | 0728 0426-20 |
| 800mm  | 25mm     | 2,25kg | 0728 0825-20 |
| 1200mm | 24mm     | 3,15kg | 0728 1224-20 |

# Integral Drill Steel

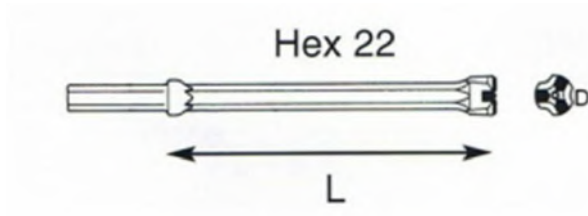
## Hex 22



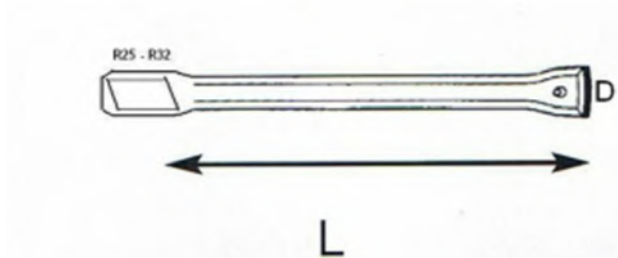
| Series | Length | Diameter | Weight | Part number  |
|--------|--------|----------|--------|--------------|
| 11     | 800mm  | 34mm     | 3,0kg  | 0714 0834-11 |
| 11     | 1600mm | 33mm     | 5,4kg  | 0714 1633-11 |
| 11     | 2400mm | 32mm     | 7,8kg  | 0714 2432-11 |
| 11     | 3200mm | 31mm     | 10,2kg | 0714 3231-11 |
| 11     | 4000mm | 30mm     | 12,6kg | 0714 4030-11 |
| 11     | 4800mm | 29mm     | 15,0kg | 0714 4829-11 |
| 11     | 5600mm | 28mm     | 17,4kg | 0714 5628-11 |
| 11     | 6400mm | 27mm     | 19,8kg | 0714 6427-11 |
| 11     | 7200mm | 26mm     | 22,2kg | 0714 7226-11 |
| 12     | 800mm  | 40mm     | 3,0kg  | 0714 0840-11 |
| 12     | 1600mm | 39mm     | 5,4kg  | 0714 1639-11 |
| 12     | 2400mm | 38mm     | 7,8kg  | 0714 2438-11 |
| 12     | 3200mm | 37mm     | 10,2kg | 0714 3237-11 |
| 12     | 4000mm | 36mm     | 12,6kg | 0714 4036-11 |
| 12     | 4800mm | 35mm     | 15,0kg | 0714 4835-11 |
| 12     | 5600mm | 34mm     | 17,4kg | 0714 5634-11 |
| 12     | 6400mm | 33mm     | 19,8kg | 0714 6433-11 |
| 12     | 7200mm | 32mm     | 22,2kg | 0714 7232-11 |
| 12     | 8000mm | 31mm     | 24,6kg | 0714 8031-11 |
| 12     | 8800mm | 30mm     | 27,0kg | 0714 8830-11 |
| 12     | 9600mm | 29mm     | 29,4kg | 0714 9629-11 |
| Series | Length | Diameter | Weight | Part number  |
| 13     | 400mm  | 34mm     | 1,8kg  | 0714 0434-11 |
| 13     | 800mm  | 33mm     | 3,0kg  | 0714 0833-11 |
| 13     | 1200mm | 32mm     | 4,2kg  | 0714 1232-11 |
| 13     | 1600mm | 31mm     | 5,4kg  | 0714 1631-11 |
| 13     | 2000mm | 30mm     | 6,6kg  | 0714 2030-11 |
| 16     | 600mm  | 35mm     | 2,4kg  | 0714 0635-11 |
| 16     | 1200mm | 34mm     | 4,2kg  | 0714 1234-11 |
| 16     | 1800mm | 33mm     | 6,0kg  | 0714 1833-11 |
| 16     | 2400mm | 32mm     | 7,8kg  | 0714 2432-11 |
| 17     | 600mm  | 41mm     | 2,4kg  | 0714 0641-11 |
| 17     | 1200mm | 40mm     | 4,2kg  | 0714 1240-11 |
| 17     | 1800mm | 39mm     | 6,0kg  | 0714 1839-11 |
| 17     | 2400mm | 38mm     | 7,8kg  | 0714 2438-11 |



# 3-wing and threaded integral drill steel



| Length | Diameter | Weight | Part number  |
|--------|----------|--------|--------------|
| 2400mm | 38mm     | 7,8kg  | 0761 2438-10 |
| 3200mm | 38mm     | 10,2kg | 0761 3238-10 |
| 4000mm | 38mm     | 12,6kg | 0761 4038-10 |
| 4800mm | 35mm     | 15,0kg | 0761 4035-10 |



| Length mm | Length ft | Diameter  | Thread | Hex | Part number    |
|-----------|-----------|-----------|--------|-----|----------------|
| 1950mm    | 6,39ft    | 23 - 34mm | R28    | H19 | H19R28 1950 23 |
| 1950mm    | 6,39ft    | 27 - 45mm | R28    | H22 | H22R28 1950 34 |
| 1950mm    | 6,39ft    | 27 - 45mm | R32    | H22 | H22R32 1950 34 |





# Grinding

Use Monark's grinding gauge when grinding chisel rods. The grinding gauge can be used for all rods made of H19, H22 and H25 and can be obtained by contacting your Monark representative.

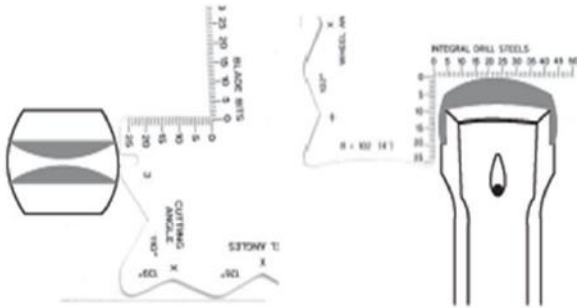
Use the correct grinding wheel. Silicon carbide wheels with a ceramic binding agent must be used when grinding chisel rods.

Make sure that the grinding wheel is constantly in motion and apply the correct grinding pressure so that overheating of the hard metal is avoided.

Make sure there is adequate water-cooling while grinding. Use a special grinding wheel when dry grinding if water is not available. Avoid rapid cooling of the cutting edge.

## GRIND AT THE RIGHT TIME

Check wear using the Monark grinding gauge. The rod should be ground when you observe the following:



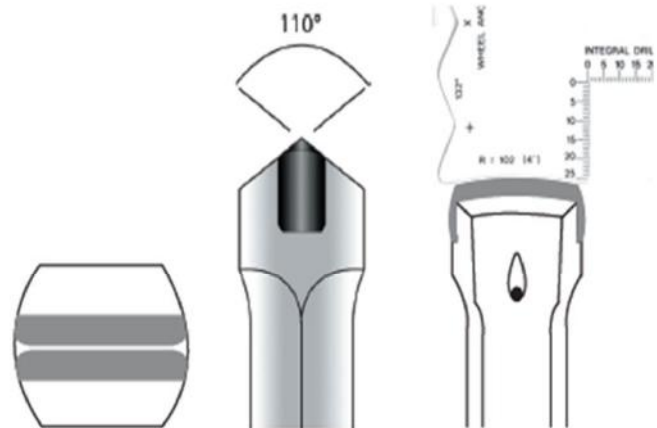
### Extensive wear

When the wear flat, measured at a distance of 5mm from the cutter's periphery, is 3mm wide.

### Diametric wear

When the anti taper height is 8 mm measured from the point where the taper begins.

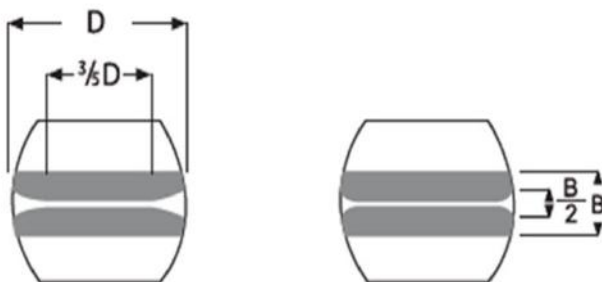
## THE EDGE SHOULD BE STRAIGHT AND IN THE MIDDLE OF THE INSERT



Grind an equal amount on both sides of the insert.

The insert should have a cutting angle of 110° and the insert radius should be 102 mm (4").

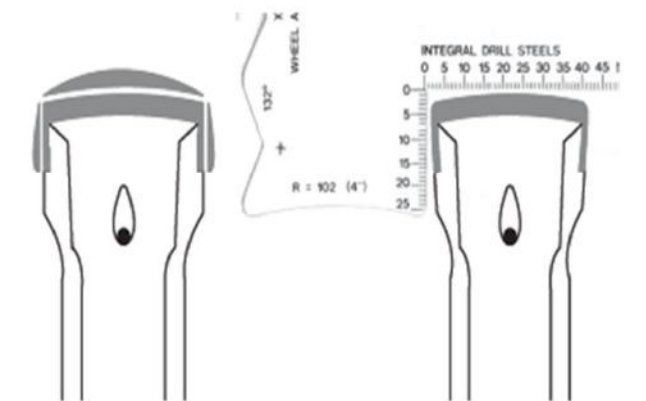
## AVOID SHARPENING THE ENTIRE LENGTH OF THE INSERT



The middle 3/5 of the old wear edge is ground so that it is sharp. 1/5 of the old wear edge is retained at each of the corners.

Some types of rock cause heavy wear at the corners. Grind the insert so that the size of the corner chamfer corresponds to half the cutter width.

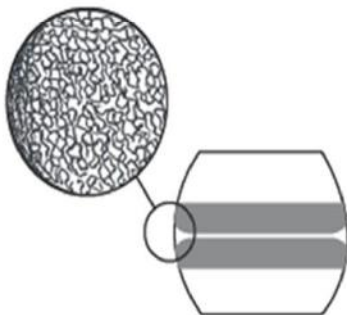
## THE INSERT MUST BE PROPERLY GROUND



Reduce any anti taper through combined height and diameter grinding or by grinding only the height.

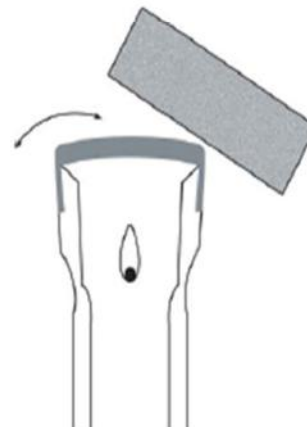
Grind the drill until the anti taper is a maximum of 6 mm.

## NON-ABRASIVE CONDITIONS



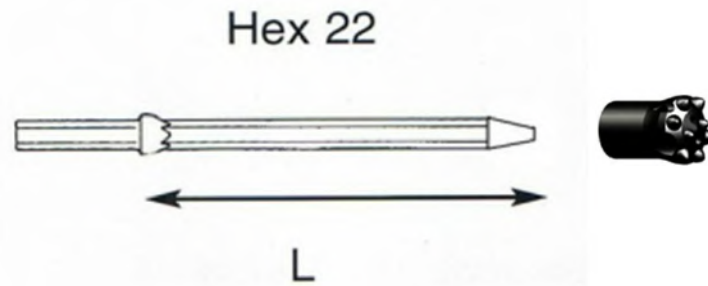
When used in very non-abrasive rock types, chisel rods can drill many holes and show little signs of wear. The rod must however be ground as soon as the surface roughness ("orange peel skin") or fatigue cracks are visible in the hard metal or solder joint. Even though this may not be visible the rod should still be lightly ground and honed after having drilled approximately 150 m.

## AFTER GRINDING



Clean up all sharp corners and edges.

# Tapered rods 22x108mm and bits 4° 46

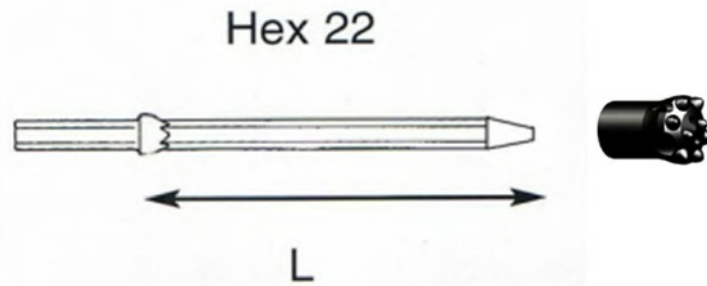


| Length mm | Length ft | Degrees | Weight | Part number     |
|-----------|-----------|---------|--------|-----------------|
| 400mm     | 1,31ft    | 4,46°   | 1,7kg  | 0714 0400-4,46° |
| 610mm     | 2,00ft    | 4,46°   | 2,3kg  | 0714 0610-4,46° |
| 800mm     | 2,62ft    | 4,46°   | 2,9kg  | 0714 0800-4,46° |
| 1220mm    | 4,00ft    | 4,46°   | 4,1kg  | 0714 1220-4,46° |
| 1600mm    | 5,24ft    | 4,46°   | 5,3kg  | 0714 1600-4,46° |
| 1830mm    | 6,00ft    | 4,46°   | 5,9kg  | 0714 1830-4,46° |
| 1980mm    | 6,49ft    | 4,46°   | 6,3kg  | 0714 1980-4,46° |
| 2440mm    | 8,00ft    | 4,46°   | 7,7kg  | 0714 2440-4,46° |
| 3050mm    | 10,00ft   | 4,46°   | 9,6kg  | 0714 3050-4,46° |
| 3200mm    | 10,49ft   | 4,46°   | 10,1kg | 0714 3200-4,46° |
| 3660mm    | 12,00ft   | 4,46°   | 11,5kg | 0714 3660-4,46° |
| 4000mm    | 13,12ft   | 4,46°   | 12,5kg | 0714 4000-4,46° |
| 4800mm    | 15,74ft   | 4,46°   | 14,9kg | 0714 4800-4,46° |
| 5485mm    | 18,00ft   | 4,46°   | 17,4kg | 0714 5485-4,46° |
| 5600mm    | 18,37ft   | 4,46°   | 17,8kg | 0714 5600-4,46° |
| 6400mm    | 21,00ft   | 4,46°   | 19,7kg | 0714 6400-4,46° |
| 7200mm    | 23,62ft   | 4,46°   | 22,1kg | 0714 7200-4,46° |
| 7315mm    | 24,00ft   | 4,46°   | 22,4kg | 0714 7315-4,46° |



| DIA MM | GAUGE CARBIDE | FACE CARBIDE | FACE FLUSHING | SIDE FLUSHING | PART     |
|--------|---------------|--------------|---------------|---------------|----------|
| 33     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 446D33-8 |
| 33     | 5 X 7MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 446D33-7 |
| 35     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 446D35-8 |
| 38     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 446D38-8 |
| 41     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 446D41-8 |
| 41     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 446D41-7 |

# Tapered rods 22x108mm and bits 7°

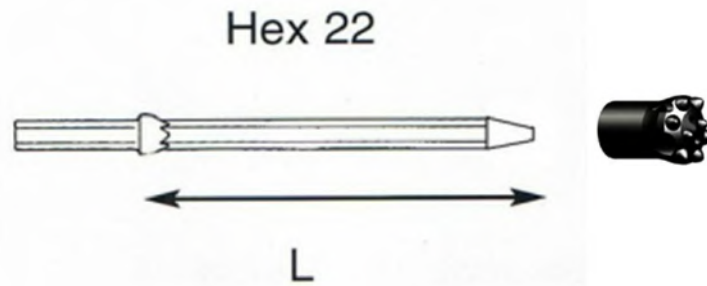


| Length mm | Length ft | Degrees | Weight | Part number  |
|-----------|-----------|---------|--------|--------------|
| 400mm     | 1,31ft    | 7°      | 1,7kg  | 0714 0400-7° |
| 610mm     | 2,00ft    | 7°      | 2,3kg  | 0714 0610-7° |
| 800mm     | 2,62ft    | 7°      | 2,9kg  | 0714 0800-7° |
| 1220mm    | 4,00ft    | 7°      | 4,1kg  | 0714 1220-7° |
| 1600mm    | 5,24ft    | 7°      | 5,3kg  | 0714 1600-7° |
| 1830mm    | 6,00ft    | 7°      | 5,9kg  | 0714 1830-7° |
| 1980mm    | 6,49ft    | 7°      | 6,3kg  | 0714 1980-7° |
| 2440mm    | 8,00ft    | 7°      | 7,7kg  | 0714 2440-7° |
| 3050mm    | 10,00ft   | 7°      | 9,6kg  | 0714 3050-7° |
| 3200mm    | 10,49ft   | 7°      | 10,1kg | 0714 3200-7° |
| 3660mm    | 12,00ft   | 7°      | 11,5kg | 0714 3660-7° |
| 4000mm    | 13,12ft   | 7°      | 12,5kg | 0714 4000-7° |
| 4800mm    | 15,74ft   | 7°      | 14,9kg | 0714 4800-7° |
| 5485mm    | 18,00ft   | 7°      | 17,4kg | 0714 5485-7° |
| 5600mm    | 18,37ft   | 7°      | 17,8kg | 0714 5600-7° |
| 6400mm    | 21,00ft   | 7°      | 19,7kg | 0714 6400-7° |
| 7200mm    | 23,62ft   | 7°      | 22,1kg | 0714 7200-7° |
| 7315mm    | 24,00ft   | 7°      | 22,4kg | 0714 7315-7° |



| DIA MM | GAUGE CARBIDE | FACE CARBIDE | FACE FLUSHING | SIDE FLUSHING | PART   |
|--------|---------------|--------------|---------------|---------------|--------|
| 33     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D33-8 |
| 33     | 5 X 7MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 7D33-7 |
| 35     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D35-8 |
| 38     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D38-8 |
| 41     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D41-8 |
| 41     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 7D41-7 |

# Tapered rods 22x108mm and bits 11°

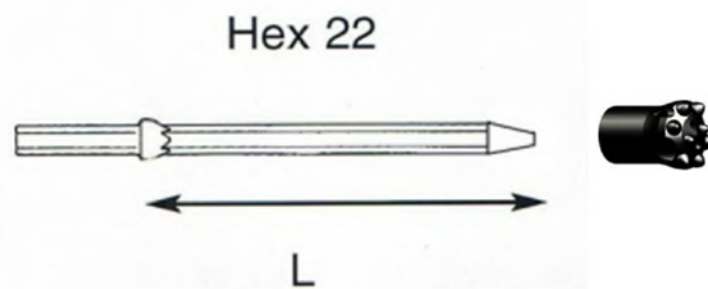


| Length mm | Length ft | Degrees | Weight | Part number   |
|-----------|-----------|---------|--------|---------------|
| 400mm     | 1,31ft    | 11°     | 1,7kg  | 0714 0400-11° |
| 610mm     | 2,00ft    | 11°     | 2,3kg  | 0714 0610-11° |
| 800mm     | 2,62ft    | 11°     | 2,9kg  | 0714 0800-11° |
| 915mm     | 3,00ft    | 11°     | 3.45kg | 0714 0915-11° |
| 1220mm    | 4,00ft    | 11°     | 4,1kg  | 0714 1220-11° |
| 1600mm    | 5,24ft    | 11°     | 5,3kg  | 0714 1600-11° |
| 1830mm    | 6,00ft    | 11°     | 5,9kg  | 0714 1830-11° |
| 1980mm    | 6,49ft    | 11°     | 6,3kg  | 0714 1980-11° |
| 2440mm    | 8,00ft    | 11°     | 7,7kg  | 0714 2440-11° |
| 3050mm    | 10,00ft   | 11°     | 9,6kg  | 0714 3050-11° |
| 3200mm    | 10,49ft   | 11°     | 10,1kg | 0714 3200-11° |
| 3660mm    | 12,00ft   | 11°     | 11,5kg | 0714 3660-11° |
| 4000mm    | 13,12ft   | 11°     | 12,5kg | 0714 4000-11° |
| 4800mm    | 15,74ft   | 11°     | 14,9kg | 0714 4800-11° |
| 5485mm    | 18,00ft   | 11°     | 17,4kg | 0714 5485-11° |
| 5600mm    | 18,37ft   | 11°     | 17,8kg | 0714 5600-11° |
| 6400mm    | 21,00ft   | 11°     | 19,7kg | 0714 6400-11° |
| 7200mm    | 23,62ft   | 11°     | 22,1kg | 0714 7200-11° |
| 7315mm    | 24,00ft   | 11°     | 22,4kg | 0714 7315-11° |



| DIA MM | GAUGE CARBIDE | FACE CARBIDE | FACE FLUSHING | SIDE FLUSHING | PART    |
|--------|---------------|--------------|---------------|---------------|---------|
| 33     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 11D33-8 |
| 33     | 5 X 7MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 11D33-7 |
| 35     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 11D35-8 |
| 38     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 11D38-8 |
| 38     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 11D38-7 |
| 41     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 11D41-8 |
| 41     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 11D41-7 |
|        |               |              |               |               |         |

# Tapered rods 22x108mm and bits 12°



| Length mm | Length ft | Degrees | Weight | Part number   |
|-----------|-----------|---------|--------|---------------|
| 400mm     | 1,31ft    | 12°     | 1,7kg  | 0714 0400-12° |
| 610mm     | 2,00ft    | 12°     | 2,3kg  | 0714 0610-12° |
| 800mm     | 2,62ft    | 12°     | 2,9kg  | 0714 0800-12° |
| 915mm     | 3,00ft    | 12°     | 3,45kg | 0714 0915-12° |
| 1220mm    | 4,00ft    | 12°     | 4,1kg  | 0714 1220-12° |
| 1600mm    | 5,24ft    | 12°     | 5,3kg  | 0714 1600-12° |
| 1830mm    | 6,00ft    | 12°     | 5,9kg  | 0714 1830-12° |
| 1980mm    | 6,49ft    | 12°     | 6,3kg  | 0714 1980-12° |
| 2440mm    | 8,00ft    | 12°     | 7,7kg  | 0714 2440-12° |
| 3050mm    | 10,00ft   | 12°     | 9,6kg  | 0714 3050-12° |
| 3200mm    | 10,49ft   | 12°     | 10,1kg | 0714 3200-12° |
| 3660mm    | 12,00ft   | 12°     | 11,5kg | 0714 3660-12° |
| 4000mm    | 13,12ft   | 12°     | 12,5kg | 0714 4000-12° |
| 4800mm    | 15,74ft   | 12°     | 14,9kg | 0714 4800-12° |
| 5485mm    | 18,00ft   | 12°     | 17,4kg | 0714 5485-12° |
| 5600mm    | 18,37ft   | 12°     | 17,8kg | 0714 5600-12° |
| 6400mm    | 21,00ft   | 12°     | 19,7kg | 0714 6400-12° |
| 7200mm    | 23,62ft   | 12°     | 22,1kg | 0714 7200-12° |
| 7315mm    | 24,00ft   | 12°     | 22,4kg | 0714 7315-12° |

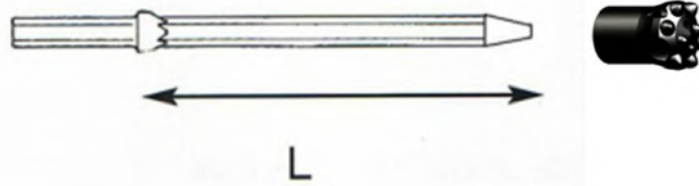
# Tapered bits 12°



| DIA MM | GAUGE CARBIDE | FACE CARBIDE | FACE FLUSHING | SIDE FLUSHING | PART    |
|--------|---------------|--------------|---------------|---------------|---------|
| 32     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 12D32-8 |
| 32     | 5 X 7MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 12D32-7 |
| 33     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 12D33-8 |
| 33     | 5 X 7MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 12D33-7 |
| 35     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 12D35-8 |
| 38     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 12D38-8 |
| 38     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 12D38-7 |
| 41     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 12D41-8 |
| 41     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 12D41-7 |
| 45     | 6 X 9MM       | 2 X 8MM      | 2 X 5MM       | 1 X 5MM       | 12D45-8 |
| 45     | 5 X 9MM       | 2 X 8MM      | 1 X 5MM       | 2 X 5MM       | 12D45-7 |
|        |               |              |               |               |         |
|        |               |              |               |               |         |



# Tapered rods 25x108mm and bits 7°



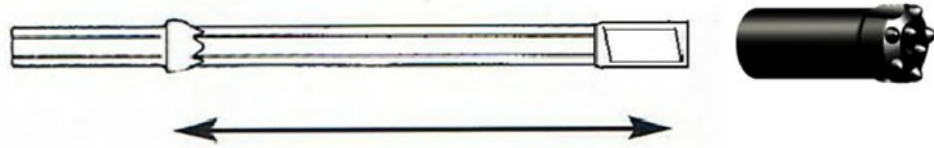
| Length mm | Length ft | Degrees | Kg     | Part number  |
|-----------|-----------|---------|--------|--------------|
| 1600mm    | 5,24ft    | 7°      | 6,8kg  | 0734 1600-7* |
| 1800mm    | 5,90ft    | 7°      | 7,7kg  | 0734 1800-7* |
| 2000mm    | 6,56ft    | 7°      | 8,5kg  | 0734 2000-7* |
| 2200mm    | 7,21ft    | 7°      | 9,4kg  | 0734 2200-7* |
| 2400mm    | 7,87ft    | 7°      | 10,3kg | 0734 2400-7* |
| 2500mm    | 8,20ft    | 7°      | 10,7kg | 0734 2400-7* |
| 3200mm    | 10,49ft   | 7°      | 13,7kg | 0734 3200-7* |



| DIA MM | GAUGE CARBIDE | FACE CARBIDE | FACE FLUSHING | SIDE FLUSHING | PART   |
|--------|---------------|--------------|---------------|---------------|--------|
| 33     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D33-8 |
| 33     | 5 X 7MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 7D33-7 |
| 35     | 6 X 7MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D35-8 |
| 38     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D38-8 |
| 41     | 6 X 9MM       | 2 X 7MM      | 2 X 5MM       | 1 X 5MM       | 7D41-8 |
| 41     | 5 X 9MM       | 2 X 7MM      | 1 X 5MM       | 2 X 5MM       | 7D41-7 |
|        |               |              |               |               |        |

# Shank rods R23 and R25

Hex 22

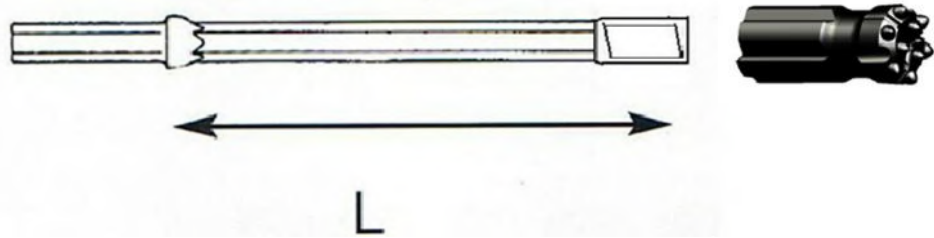


| Length mm | Length ft | Thread | Weight | Part number   |
|-----------|-----------|--------|--------|---------------|
| 250mm     | 0,80ft    | R23    | 1,4kg  | 0714 0250 R23 |
| 400mm     | 1,31ft    | R23    | 1,8kg  | 0714 0400 R23 |
| 800mm     | 2,62ft    | R23    | 3,0kg  | 0714 0800 R23 |
| 1600mm    | 5,24ft    | R23    | 5,4kg  | 0714 1600 R23 |
| 1830mm    | 6,00ft    | R23    | 6,3kg  | 0714 1830 R23 |
| 1980mm    | 6,49ft    | R23    | 6,7kg  | 0714 1980 R23 |
| 2400mm    | 7,87ft    | R23    | 7,8kg  | 0714 2400 R23 |
| 2440mm    | 8,00ft    | R23    | 8,1kg  | 0714 2440 R23 |
| 3050mm    | 10,00ft   | R23    | 9,9kg  | 0714 3050 R23 |
| 3200mm    | 10,49ft   | R23    | 10,5kg | 0714 3200 R23 |
| 3600mm    | 11,81ft   | R23    | 11,6kg | 0714 3600 R23 |
| 4000mm    | 13,12ft   | R23    | 12,6kg | 0714 4000 R23 |

| Length mm | Length ft | Thread | Kg     | Part number   |
|-----------|-----------|--------|--------|---------------|
| 250mm     | 0,80ft    | R25    | 1,4kg  | 0714 0250 R25 |
| 400mm     | 1,31ft    | R25    | 1,8kg  | 0714 0400 R25 |
| 800mm     | 2,62ft    | R25    | 3,0kg  | 0714 0800 R25 |
| 1220mm    | 4,00ft    | R25    | 4,2kg  | 0714 1220 R25 |
| 1600mm    | 5,24ft    | R25    | 5,4kg  | 0714 1600 R25 |
| 1830mm    | 6,00ft    | R25    | 6,3kg  | 0714 1830 R25 |
| 1980mm    | 6,49ft    | R25    | 6,7kg  | 0714 1980 R25 |
| 2400mm    | 7,87ft    | R25    | 7,8kg  | 0714 2400 R25 |
| 2440mm    | 8,00ft    | R25    | 8,1kg  | 0714 2440 R25 |
| 3050mm    | 10,00ft   | R25    | 9,9kg  | 0714 3050 R25 |
| 3200mm    | 10,49ft   | R25    | 10,5kg | 0714 3200 R25 |
| 3600mm    | 11,81ft   | R25    | 11,6kg | 0714 3600 R25 |
| 4000mm    | 13,12ft   | R25    | 12,6kg | 0714 4000 R25 |

# Shank rods R28 and R32

Hex 22



| Length mm | Length ft | Thread | Kg     | Part number   |
|-----------|-----------|--------|--------|---------------|
| 250mm     | 0,80ft    | R28    | 1,4kg  | 0714 0250 R28 |
| 400mm     | 1,31ft    | R28    | 1,8kg  | 0714 0400 R28 |
| 800mm     | 2,62ft    | R28    | 3,0kg  | 0714 0800 R28 |
| 1600mm    | 5,24ft    | R28    | 5,4kg  | 0714 1600 R28 |
| 1830mm    | 6,00ft    | R28    | 6,3kg  | 0714 1830 R28 |
| 1980mm    | 6,49ft    | R28    | 6,7kg  | 0714 1980 R28 |
| 2400mm    | 7,87ft    | R28    | 7,8kg  | 0714 2400 R28 |
| 2440mm    | 8,00ft    | R28    | 8,1kg  | 0714 2440 R28 |
| 3050mm    | 10,00ft   | R28    | 9,9kg  | 0714 3050 R28 |
| 3200mm    | 10,49ft   | R28    | 10,5kg | 0714 3200 R28 |
| 3600mm    | 11,81ft   | R28    | 11,6kg | 0714 3600 R28 |
| 4000mm    | 13,12ft   | R28    | 12,6kg | 0714 4000 R28 |

| Length mm | Length ft | Thread | Kg     | Part number   |
|-----------|-----------|--------|--------|---------------|
| 250mm     | 0,80ft    | R32    | 1,4kg  | 0714 0250 R32 |
| 400mm     | 1,31ft    | R32    | 1,8kg  | 0714 0400 R32 |
| 800mm     | 2,62ft    | R32    | 3,0kg  | 0714 0800 R32 |
| 1600mm    | 5,24ft    | R32    | 5,4kg  | 0714 1600 R32 |
| 1830mm    | 6,00ft    | R32    | 6,3kg  | 0714 1830 R32 |
| 1980mm    | 6,49ft    | R32    | 6,7kg  | 0714 1980 R32 |
| 2400mm    | 7,87ft    | R32    | 7,8kg  | 0714 2400 R32 |
| 2440mm    | 8,00ft    | R32    | 8,1kg  | 0714 2440 R32 |
| 3050mm    | 10,00ft   | R32    | 9,9kg  | 0714 3050 R32 |
| 3200mm    | 10,49ft   | R32    | 10,5kg | 0714 3200 R32 |
| 3600mm    | 11,81ft   | R32    | 11,6kg | 0714 3600 R32 |
| 4000mm    | 13,12ft   | R32    | 12,6kg | 0714 4000 R32 |

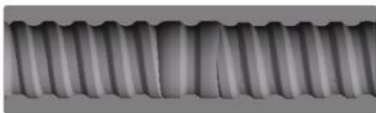
# TUNNELLING AND DRIFTING

## Rods R32/R25 HEX 25 BODY



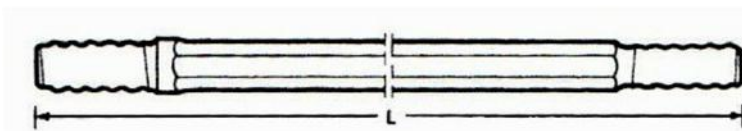
| EFF. LENGTH | PART            |
|-------------|-----------------|
| 2020mm      | DR3225-2020-H25 |
| 2480mm      | DR3225-2480-H25 |
| 2900mm      | DR3225-2900-H25 |
| 3090mm      | DR3225-3090-H25 |
| 3700mm      | DR3225-3700-H25 |
| 4300mm      | DR3225-4300-H25 |
| 5525mm      | DR3225-5525-H25 |

## COUPLINGS



| DIA (mm) | LENGTH | DESCR      | PART      |
|----------|--------|------------|-----------|
| 45       | 159    | R32 SB CPL | CPLR32-45 |
| 55       | 175    | R32 SB CPL | CPLR32-55 |

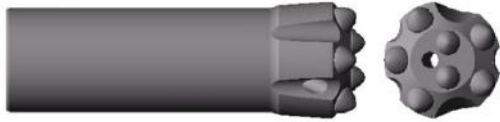
## Rods R32/R28 HEX 28 BODY



| EFF. LENGTH | PART            |
|-------------|-----------------|
| 2480mm      | DR3228-2480-H28 |
| 2785mm      | DR3228-2785-H28 |
| 3090mm      | DR3228-3090-H28 |
| 3700mm      | DR3228-3700-H28 |
| 4300mm      | DR3228-4300-H28 |
| 5525mm      | DR3228-5525-H28 |

# TUNNELLING AND DRIFTING

## BUTTON BITS R25



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 33    | 5 x 7mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R33NF     |
| 35    | 5 x 8mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R35NF     |
| 37    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R37NF     |
| 38    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R38NF     |
| 41    | 5 x 9mm       | 2 x 8mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R41NF     |
| 45    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 25R45NF     |
| 48    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 5mm       | 35          | 25R48NF     |



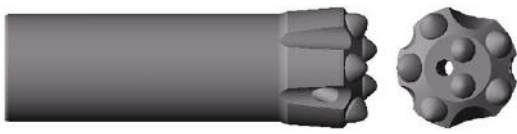
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 33    | 6 x 7mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R33NF8    |
| 35    | 6 x 7mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R35NF8    |
| 37    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R37NF8    |
| 38    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R38NF8    |
| 41    | 6 x 8mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R41NF8    |
| 45    | 6 x 9mm       | 2 x 8mm       | 1 x 6mm       | 2 x 6mm       | 35          | 25R45NF8    |
| 48    | 6 x 10mm      | 2 x 9mm       | 1 x 6mm       | 2 x 6mm       | 35          | 25R48NF8    |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 38    | 6 x 8mm       | 3 x 7mm       | 1 x 5mm       | 3 x 5mm       | 35          | 25R38NG     |
| 45    | 6 x 9mm       | 3 x 7mm       | 1 x 5mm       | 3 x 5mm       | 35          | 25R45NG     |
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 25R48NG     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 25R51NG     |

# TUNNELLING AND DRIFTING

## BUTTON BITS R28



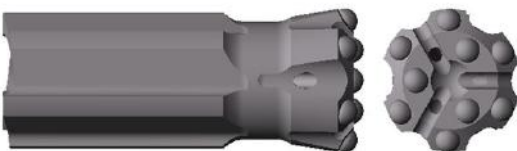
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 37    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 28R37NF     |
| 38    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 28R38NF     |
| 41    | 5 x 9mm       | 2 x 8mm       | 2 x 5mm       | 1 x 5mm       | 35          | 28R41NF     |
| 45    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 28R45NF     |
| 48    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 28R48NF     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 37    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 28R37NF8    |
| 38    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 28R38NF8    |
| 41    | 6 x 8mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 28R41NF8    |
| 45    | 6 x 9mm       | 2 x 8mm       | 1 x 6mm       | 2 x 6mm       | 35          | 28R45NF8    |
| 48    | 6 x 10mm      | 2 x 9mm       | 1 x 6mm       | 2 x 6mm       | 35          | 28R48NF8    |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 38    | 6 x 8mm       | 3 x 7mm       | 1 x 5mm       | 3 x 5mm       | 35          | 28R38NG     |
| 45    | 6 x 9mm       | 3 x 8mm       | 1 x 5mm       | 3 x 5mm       | 35          | 28R45NG     |
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 28R48NG     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 28R51NG     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 45    | 6 x 9mm       | 3 x 8mm       | -             | 3 x 5mm       | 35          | 28R45RD     |



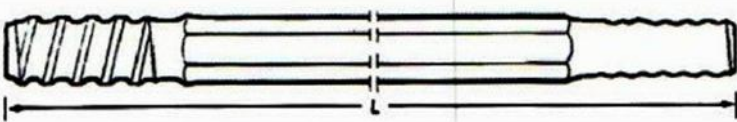
# TUNNELLING AND DRIFTING

## Rods R38/R32 HEX 32mm



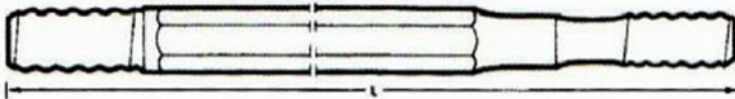
| EFF. LENGTH | PART            |
|-------------|-----------------|
| 3090mm      | DR3832-3090-H32 |
| 3700mm      | DR3832-3700-H32 |
| 4300mm      | DR3832-4300-H32 |
| 4915mm      | DR3832-4915-H32 |
| 5525mm      | DR3832-5525-H32 |
|             |                 |

## Rods T38/R32 HEX 32mm



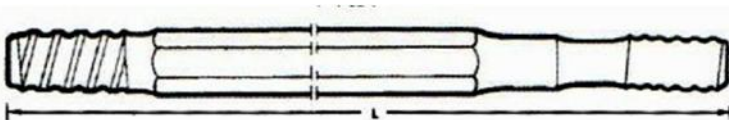
| EFF. LENGTH | PART             |
|-------------|------------------|
| 3090mm      | DRT3832-3090-H32 |
| 3700mm      | DRT3832-3700-H32 |
| 4300mm      | DRT3832-4300-H32 |
| 4915mm      | DRT3832-4915-H32 |
| 5525mm      | DRT3832-5525-H32 |
|             |                  |

## Rods R38/R32 HEX 35mm



| EFF. LENGTH | PART            |
|-------------|-----------------|
| 3090mm      | DR3832-3090-H35 |
| 3700mm      | DR3832-3700-H35 |
| 4300mm      | DR3832-4300-H35 |
| 4915mm      | DR3832-4915-H35 |
| 5525mm      | DR3832-5525-H35 |
|             |                 |

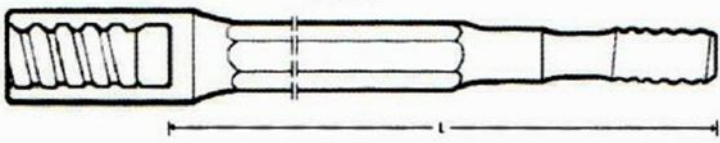
## Rods T38/R32 HEX 35mm



| EFF. LENGTH | PART             |
|-------------|------------------|
| 3090mm      | DRT3832-3090-H35 |
| 3700mm      | DRT3832-3700-H35 |
| 4300mm      | DRT3832-4300-H35 |
| 4915mm      | DRT3832-4915-H35 |
| 5525mm      | DRT3832-5525-H35 |
|             |                  |

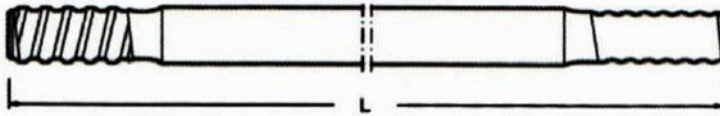
# TUNNELLING AND DRIFTING

## Rods T38F/R32M HEX 35mm



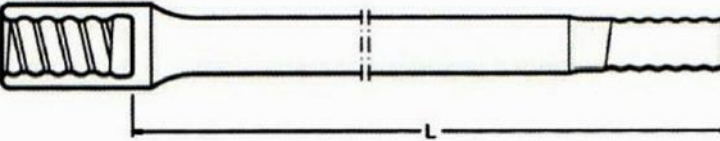
| EFF. LENGTH | PART            |
|-------------|-----------------|
| 3100mm      | MF3832-3100-H35 |
| 3700mm      | MF3832-3700-H35 |
| 4305mm      | MF3832-4305-H35 |
| 4915mm      | MF3832-4915-H35 |
| 5525mm      | MF3832-5525-H35 |
|             |                 |

## Rods T38/R32 ROUND 39mm



| EFF. LENGTH | PART            |
|-------------|-----------------|
| 3100mm      | DRT3832-3100-39 |
| 3700mm      | DRT3832-3700-39 |
| 4305mm      | DRT3832-4305-39 |
| 4915mm      | DRT3832-4915-39 |
| 5525mm      | DRT3832-5525-39 |
| 6440mm      | DRT3832-6440-39 |
|             |                 |

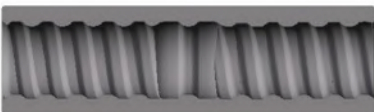
## Rods T38F/R32M ROUND 39mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 3100mm      | MF3832-3100-39 |
| 3700mm      | MF3832-3700-39 |
| 4305mm      | MF3832-4305-39 |
| 4915mm      | MF3832-4915-39 |
| 5525mm      | MF3832-5525-39 |
| 6440mm      | MF3832-6440-39 |
|             |                |

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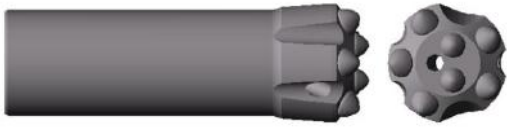
## COUPLINGS



| DIA (mm) | LENGTH | DESCR      | PART      |
|----------|--------|------------|-----------|
| 55       | 175    | R38 SB CPL | CPLR38-55 |
| 55       | 190    | R38 SB CPL | CPLT38-55 |

# TUNNELLING AND DRIFTING

## BUTTON BITS R32



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 45    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 32R45NF     |
| 48    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 32R48NF     |
| 51    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 32R51NF     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 41    | 6 x 8mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 32R41NF8    |
| 43    | 6 x 9mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 32R43NF8    |



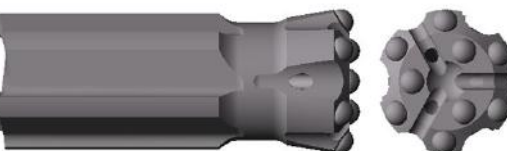
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 45    | 6 x 9mm       | 3 x 8mm       | 1 x 5mm       | 3 x 5mm       | 35          | 32R45NG     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 32R48ND     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 32R51ND     |
| 64    | 6 x 11mm      | 3 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 32R64ND     |



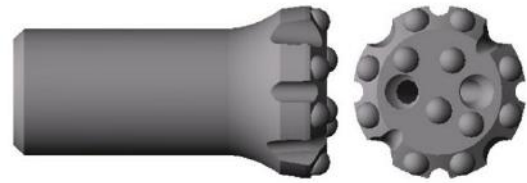
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 57    | 6 x 10mm      | 3 x 9mm       | 1 x 8mm       | 1 x 8mm       | 35          | 32R57NF     |



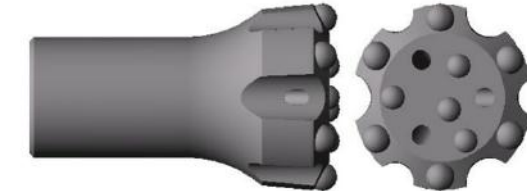
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 48    | 6 x 10mm      | 3 x 9mm       | -             | 3 x 5mm       | 35          | 32R48RD     |
| 51    | 6 x 10mm      | 3 x 9mm       | -             | 3 x 5mm       | 35          | 32R51RD     |
| 64    | 6 x 11mm      | 3 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 32R64RD     |

# TUNNELLING AND DRIFTING

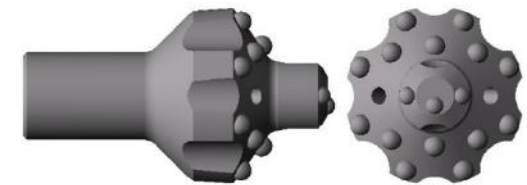
## BUTTON BITS R32



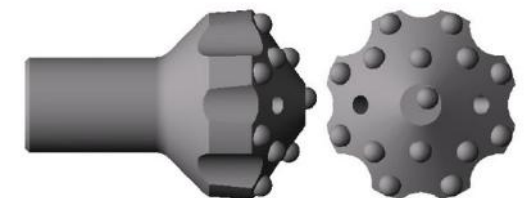
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 64  | 8 x 10mm      | 4 x 10mm      | 1 x 7mm       | 2 x 9mm       | 35          | 32R64NF     |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 76  | 6 x 12mm      | 4 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 32R76NF     |



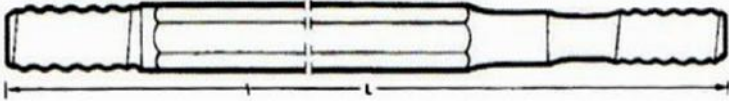
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|------------|---------------|-------------|-------------|
| 89  | 8 x 12mm      | 3 x 10mm      | -          | 2 x 10mm      | 35          | 32R89REA    |
| 102 | 14 x 12mm     | 3 x 10mm      | -          | 2 x 10mm      | 35          | 32R102REA   |
| 115 | 14 x 12mm     | 3 x 10mm      | -          | 2 x 10mm      | 35          | 32R115REA   |
| 127 | 14 x 14mm     | 3 x 10mm      | -          | 2 x 10mm      | 35          | 32R127REA   |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|------------|---------------|-------------|-------------|
| 89  | 8 x 12mm      | 6 x 12mm      | -          | 2 x 10mm      | 35          | 32R89DOM    |
| 102 | 8 x 12mm      | 8 x 12mm      | -          | 2 x 10mm      | 35          | 32R102DOM   |

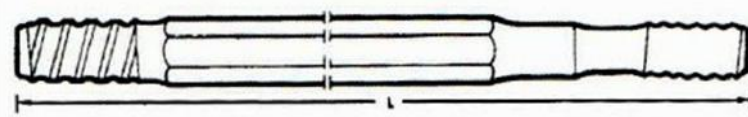
# TUNNELLING AND DRIFTING

## Rods R38/R35 HEX 35mm



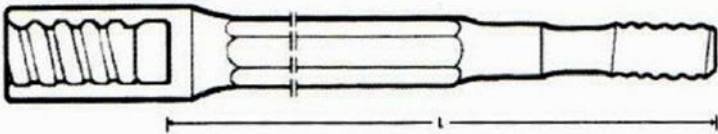
| EFF. LENGTH | PART            |
|-------------|-----------------|
| 3700mm      | DR3832-3700-H35 |
| 4305mm      | DR3832-4305-H35 |
| 4915mm      | DR3832-4915-H35 |
| 5525mm      | DR3832-5525-H35 |
| 6440mm      | DR3832-6440-H35 |

## Rods T38/R35 HEX 35mm



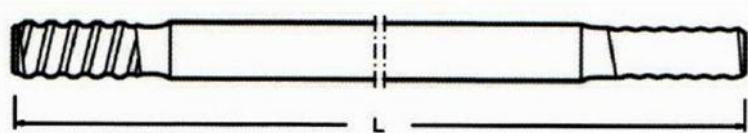
| EFF. LENGTH | PART             |
|-------------|------------------|
| 3700mm      | DRT3832-3700-H35 |
| 4305mm      | DRT3832-4305-H35 |
| 4915mm      | DRT3832-4915-H35 |
| 5525mm      | DRT3832-5525-H35 |
| 6440mm      | DRT3832-6440-H35 |

## Rods T38F/R35M HEX 35mm



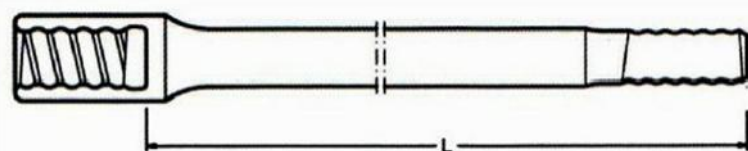
| EFF. LENGTH | PART            |
|-------------|-----------------|
| 3700mm      | MF3832-3700-H35 |
| 4305mm      | MF3832-4305-H35 |
| 4915mm      | MF3832-4915-H35 |
| 5525mm      | MF3832-5525-H35 |
| 6440mm      | MF3832-6440-H35 |

## Rods T38/R35 ROUND 39mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 4305mm      | DR3832-4305-39 |
| 4915mm      | DR3832-4915-39 |
| 5525mm      | DR3832-5525-39 |
| 6440mm      | DR3832-6440-39 |

## Rods T38F/R35M ROUND 39mm



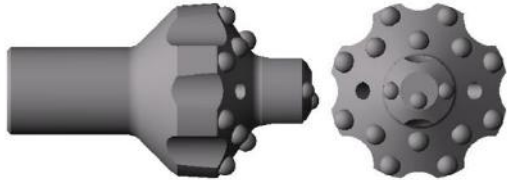
| EFF. LENGTH | PART           |
|-------------|----------------|
| 3700mm      | MF3832-3700-39 |
| 4305mm      | MF3832-4305-39 |
| 4915mm      | MF3832-4915-39 |
| 5525mm      | MF3832-5525-39 |
| 6440mm      | MF3832-6440-39 |

# TUNNELLING AND DRIFTING

## BUTTON BITS R35

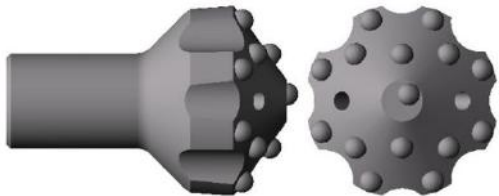


| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 35R48ND     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 35R51ND     |
| 64    | 6 x 11mm      | 3 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 35R64ND     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUS-HING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|------------|----------------|-------------|-------------|
| 89    | 8 x 12mm      | 3 x 10mm      | -          | 2 x 10mm       | 35          | 35R89REA    |
| 102   | 14 x 12mm     | 3 x 10mm      | -          | 2 x 10mm       | 35          | 35R102REA   |
| 115   | 14 x 12mm     | 3 x 10mm      | -          | 2 x 10mm       | 35          | 35R115REA   |
| 127   | 14 x 14mm     | 3 x 10mm      | -          | 2 x 10mm       | 35          | 35R127REA   |

**Drill Tech**  
INTERNATIONAL

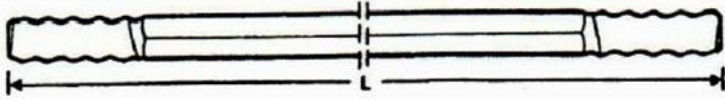


| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|------------|---------------|-------------|-------------|
| 89    | 8 x 12mm      | 6 x 12mm      | -          | 2 x 10mm      | 35          | 35R89DOM    |
| 102   | 8 x 12mm      | 8 x 12mm      | -          | 2 x 10mm      | 35          | 35R102DOM   |



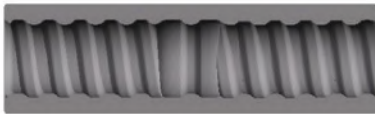
# EXTENSION DRILLING

## Rods R25 HEX 25mm



| EFF. LENGTH | PART         |
|-------------|--------------|
| 610mm       | H25 R25 610  |
| 915mm       | H25 R25 915  |
| 1220mm      | H25 R25 1220 |
| 1525mm      | H25 R25 1525 |
| 1830mm      | H25 R25 1830 |
| 2430mm      | H25 R25 2430 |
| 3050mm      | H25 R25 3050 |
| 3660mm      | H25 R25 3660 |
|             |              |
|             |              |

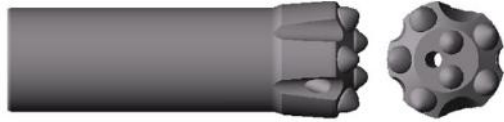
## COUPLINGS



| DIA (mm) | LENGTH | DESCR      | PART      |
|----------|--------|------------|-----------|
| 35       | 149    | R25 SB CPL | CPLR25-35 |

# EXTENSION DRILLING

## BUTTON BITS R25



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 33    | 5 x 7mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R33NF     |
| 35    | 5 x 8mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R35NF     |
| 37    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R37NF     |
| 38    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R38NF     |
| 41    | 5 x 9mm       | 2 x 8mm       | 2 x 5mm       | 1 x 5mm       | 35          | 25R41NF     |
| 45    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 25R45NF     |
| 48    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 5mm       | 35          | 25R48NF     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 33    | 6 x 7mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R33NF8    |
| 35    | 6 x 7mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R35NF8    |
| 37    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R37NF8    |
| 38    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R38NF8    |
| 41    | 6 x 8mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 25R41NF8    |
| 45    | 6 x 9mm       | 2 x 8mm       | 1 x 6mm       | 2 x 6mm       | 35          | 25R45NF8    |
| 48    | 6 x 10mm      | 2 x 9mm       | 1 x 6mm       | 2 x 6mm       | 35          | 25R48NF8    |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 38    | 6 x 8mm       | 3 x 7mm       | 1 x 5mm       | 3 x 5mm       | 35          | 25R38NG     |
| 45    | 6 x 9mm       | 3 x 7mm       | 1 x 5mm       | 3 x 5mm       | 35          | 25R45NG     |
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 25R48NG     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 25R51NG     |

# EXTENSION DRILLING

## BUTTON BITS R28



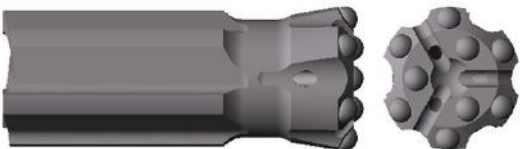
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 37    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 28R37NF     |
| 38    | 5 x 9mm       | 2 x 7mm       | 2 x 5mm       | 1 x 5mm       | 35          | 28R38NF     |
| 41    | 5 x 9mm       | 2 x 8mm       | 2 x 5mm       | 1 x 5mm       | 35          | 28R41NF     |
| 45    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 28R45NF     |
| 48    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 28R48NF     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 37    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 28R37NF8    |
| 38    | 6 x 8mm       | 2 x 7mm       | 1 x 5mm       | 2 x 5mm       | 35          | 28R38NF8    |
| 41    | 6 x 8mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 28R41NF8    |
| 45    | 6 x 9mm       | 2 x 8mm       | 1 x 6mm       | 2 x 6mm       | 35          | 28R45NF8    |
| 48    | 6 x 10mm      | 2 x 9mm       | 1 x 6mm       | 2 x 6mm       | 35          | 28R48NF8    |



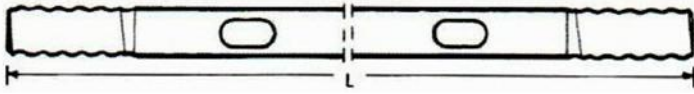
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 38    | 6 x 8mm       | 3 x 7mm       | 1 x 5mm       | 3 x 5mm       | 35          | 28R38NG     |
| 45    | 6 x 9mm       | 3 x 8mm       | 1 x 5mm       | 3 x 5mm       | 35          | 28R45NG     |
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 28R48NG     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 28R51NG     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 45    | 6 x 9mm       | 3 x 8mm       | -             | 3 x 5mm       | 35          | 28R45RD     |

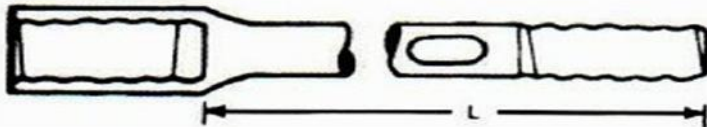
# EXTENSION DRILLING

## Rods R32 ROUND 32mm



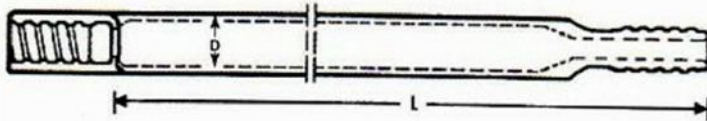
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | EX3232-1220-32 |
| 1525mm      | EX3232-1525-32 |
| 1830mm      | EX3232-1830-32 |
| 2430mm      | EX3232-2430-32 |
| 3050mm      | EX3232-3050-32 |
| 3660mm      | EX3232-3660-32 |
|             |                |
|             |                |

## MF rods R32 ROUND 32mm



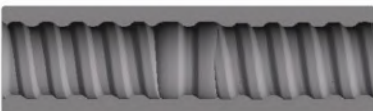
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF3232-1220-32 |
| 1525mm      | MF3232-1525-32 |
| 1830mm      | MF3232-1830-32 |
| 2430mm      | MF3232-2430-32 |
| 3050mm      | MF3232-3050-32 |
| 3660mm      | MF3232-3660-32 |
| 4270mm      | MF3232-4270-32 |
|             |                |
|             |                |

## MF GUIDE RODS R32 ROUND 44mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 3050mm      | MF3232-3050-44 |
| 3660mm      | MF3232-3660-44 |
| 4270mm      | MF3232-4270-44 |
|             |                |
|             |                |

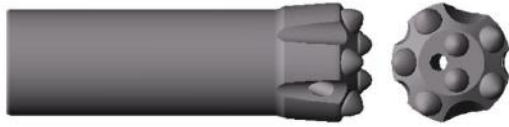
## COUPLINGS



| DIA (mm) | LENGTH | DESCR      | PART      |
|----------|--------|------------|-----------|
| 45       | 159    | R32 SB CPL | CPLR32-45 |

# EXTENSION DRILLING

## BUTTON BITS R32



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 45    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 32R45NF     |
| 48    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 32R48NF     |
| 51    | 5 x 10mm      | 2 x 9mm       | 2 x 6mm       | 1 x 6mm       | 35          | 32R51NF     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 41    | 6 x 8mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 32R41NF8    |
| 43    | 6 x 9mm       | 2 x 8mm       | 1 x 5mm       | 2 x 5mm       | 35          | 32R43NF8    |



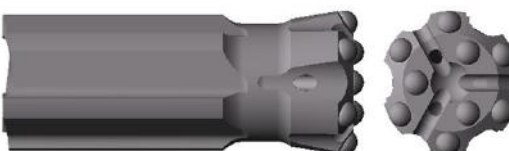
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 45    | 6 x 9mm       | 3 x 8mm       | 1 x 5mm       | 3 x 5mm       | 35          | 32R45NG     |



| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 48    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 32R48ND     |
| 51    | 6 x 10mm      | 3 x 9mm       | 1 x 6mm       | 3 x 5mm       | 35          | 32R51ND     |
| 64    | 6 x 11mm      | 3 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 32R64ND     |



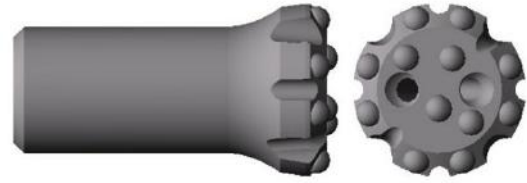
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 57    | 6 x 10mm      | 3 x 9mm       | 1 x 8mm       | 1 x 8mm       | 35          | 32R57NF     |



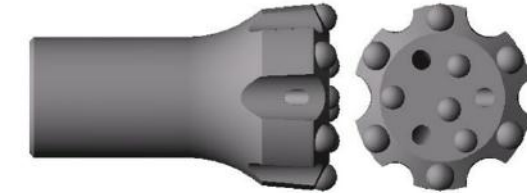
| DIA . | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-------|---------------|---------------|---------------|---------------|-------------|-------------|
| 48    | 6 x 10mm      | 3 x 9mm       | -             | 3 x 5mm       | 35          | 32R48RD     |
| 51    | 6 x 10mm      | 3 x 9mm       | -             | 3 x 5mm       | 35          | 32R51RD     |
| 64    | 6 x 11mm      | 3 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 32R64RD     |

# EXTENSION DRILLING

## BUTTON BITS R32



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 64  | 8 x 10mm      | 4 x 10mm      | 1 x 7mm       | 2 x 9mm       | 35          | 32R64NF     |

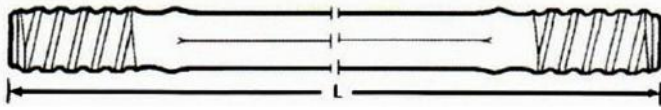


| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 76  | 6 x 12mm      | 4 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 32R76NF     |



# EXTENSION DRILLING

## RODS T38 HEX 32mm



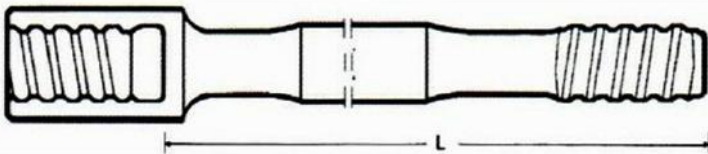
| EFF. LENGTH | PART           |
|-------------|----------------|
| 3050mm      | EX3838-3050-32 |
| 3660mm      | EX3838-3660-32 |
| 4270mm      | EX3838-4270-32 |
|             |                |

## RODS T38 ROUND 39mm



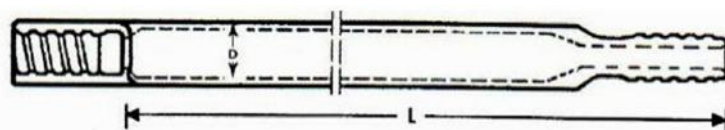
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | EX3838-1220-39 |
| 1525mm      | EX3838-1525-39 |
| 1830mm      | EX3838-1830-39 |
| 2430mm      | EX3838-2430-39 |
| 3050mm      | EX3838-3050-39 |
| 3660mm      | EX3838-3660-39 |
| 4270mm      | EX3838-4270-39 |
| 4905mm      | EX3838-4905-39 |
|             |                |
|             |                |

## MF RODS T38 ROUND 39mm



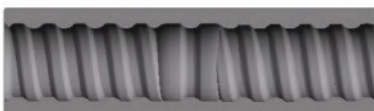
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF3838-1220-39 |
| 1525mm      | MF3838-1525-39 |
| 1830mm      | MF3838-1830-39 |
| 2430mm      | MF3838-2430-39 |
| 3050mm      | MF3838-3050-39 |
| 3660mm      | MF3838-3660-39 |
| 4270mm      | MF3838-4270-39 |
| 4905mm      | MF3838-4905-39 |
|             |                |
|             |                |

## MF GUIDE RODS T38 ROUND 55mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF3838-1220-55 |
| 1525mm      | MF3838-1525-55 |
| 1830mm      | MF3838-1830-55 |
| 2430mm      | MF3838-2430-55 |
| 3050mm      | MF3838-3050-55 |
|             |                |
|             |                |

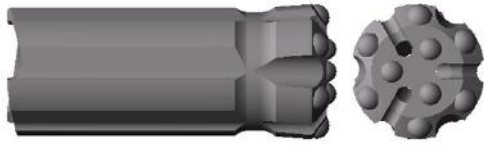
## COUPLINGS



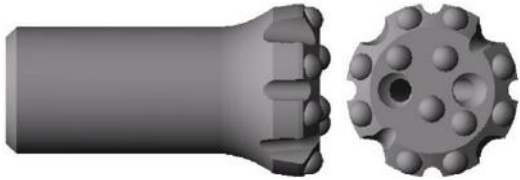
| DIA (mm) | LENGTH | DESCR      | PART      |
|----------|--------|------------|-----------|
| 55       | 190    | T38 SB CPL | CPLT38-55 |

# EXTENSION DRILLING

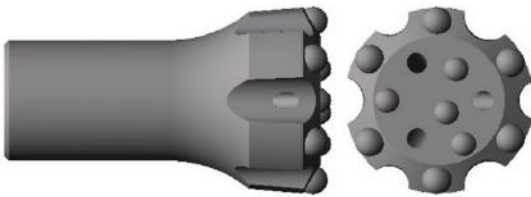
## BUTTON BITS T38



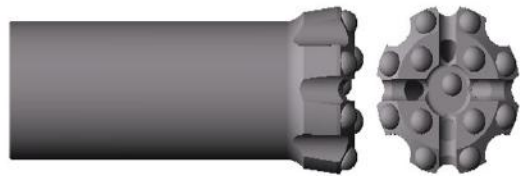
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 54  | 6 x 10mm      | 3 x 9mm       | -             | 3 x 6mm       | 35          | 38T54RG     |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 64  | 8 x 10mm      | 4 x 10mm      | 1 x 7mm       | 2 x 9mm       | 35          | 38T64NF     |



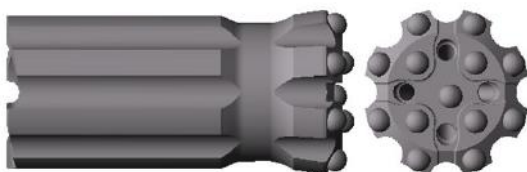
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 76  | 6 x 12mm      | 4 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 38T76NF     |



| DIA | GAUGE CARBIDE      | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|--------------------|---------------|---------------|---------------|-------------|-------------|
| 64  | 8 x 10mm 4 x 10mm, | 1 x 8mm       | -             | 4 x 8mm       | 35          | 38T64ND     |
| 70  | 8 x 11mm           | 5 x 10mm      | -             | 4 x 7mm       | 35          | 38T70ND     |
| 76  | 8 x 12mm           | 5 x 11mm      | -             | 4 x 8mm       | 35          | 38T76ND     |



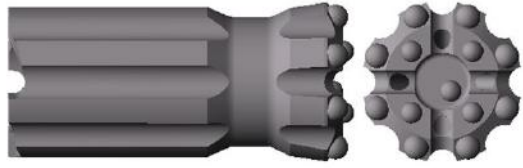
| DIA | GAUGE CARBIDE      | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|--------------------|---------------|---------------|---------------|-------------|-------------|
| 64  | 8 x 10mm 4 x 10mm, | 1 x 8mm       | -             | 4 x 8mm       | 35          | 38T64RD     |
| 70  | 8 x 11mm           | 5 x 10mm      | -             | 4 x 7mm       | 35          | 38T70RD     |



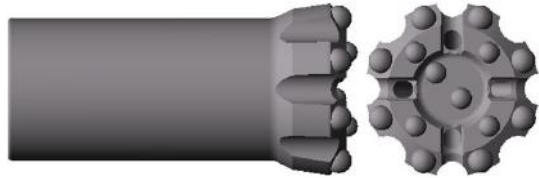
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 76  | 8 x 12mm      | 5 x 11mm      | -             | 4 x 8mm       | 35          | 38T76RD     |

# EXTENSION DRILLING

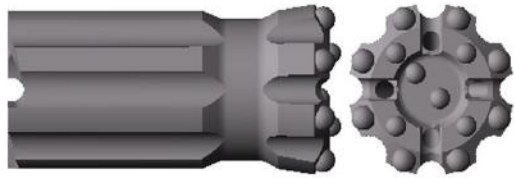
## BUTTON BITS T38



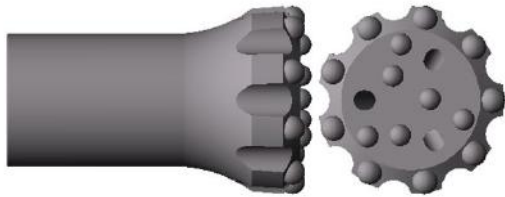
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 83  | 8 x 13mm      | 5 x 11mm      | -             | 4 x 8mm       | 35          | 38T83RD     |



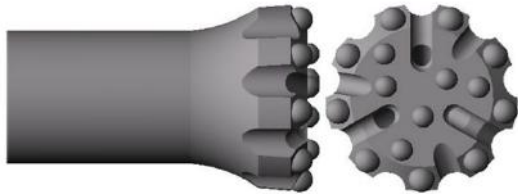
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 89  | 8 x 13mm      | 6 x 11mm      | -             | 4 x 8mm       | 35          | 38T89ND     |
| 102 | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 38T102ND    |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 89  | 8 x 13mm      | 6 x 11mm      | -             | 4 x 8mm       | 35          | 38T89RD     |
| 102 | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 38T102RD    |



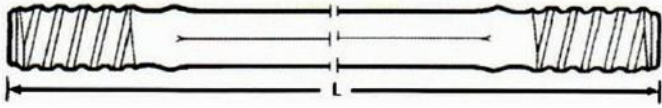
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 102 | 9 x 14mm      | 6 x 12mm      | -             | 3 x 12mm      | 40          | 38T102NF    |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 102 | 9 x 14mm      | 6 x 12mm      | -             | 3 x 12mm      | 40          | 38T102NG    |

# EXTENSION DRILLING

## RODS T45 HEX 38mm



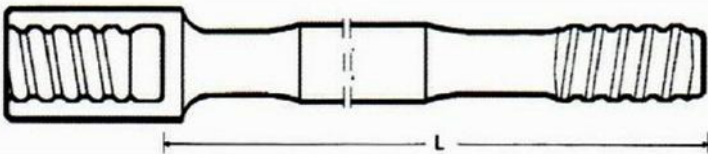
| EFF. LENGTH | PART           |
|-------------|----------------|
| 3050mm      | EX4545-3050-38 |
| 3660mm      | EX4545-3660-38 |
| 4270mm      | EX4545-4270-38 |
|             |                |

## RODS T45ROUND 45mm



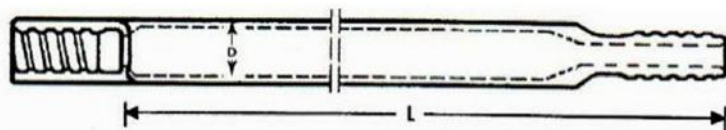
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | EX4545-1220-45 |
| 1525mm      | EX4545-1525-45 |
| 1830mm      | EX4545-1830-45 |
| 2430mm      | EX4545-2430-45 |
| 3050mm      | EX4545-3050-45 |
| 3660mm      | EX4545-3660-45 |
| 4270mm      | EX4545-4270-45 |
| 4905mm      | EX4545-4905-45 |
|             |                |
|             |                |

## MF RODS T45 ROUND 45mm



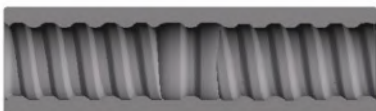
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF4545-1220-45 |
| 1525mm      | MF4545-1525-45 |
| 1830mm      | MF4545-1830-45 |
| 2430mm      | MF4545-2430-45 |
| 3050mm      | MF4545-3050-45 |
| 3660mm      | MF4545-3660-45 |
| 4270mm      | MF4545-4270-45 |
| 4905mm      | MF4545-4905-45 |
|             |                |
|             |                |

## MF GUIDE RODS T38 ROUND 64mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF4545-1220-64 |
| 1525mm      | MF4545-1525-64 |
| 1830mm      | MF4545-1830-64 |
| 2430mm      | MF4545-2430-64 |
| 3050mm      | MF4545-3050-64 |
|             |                |

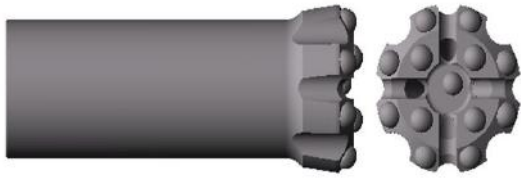
## COUPLINGS



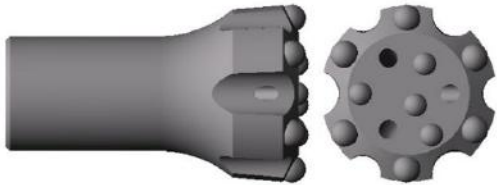
| DIA (mm) | LENGTH | DESCR  | PART      |
|----------|--------|--------|-----------|
| 63       | 207    | T45 SB | CPLT45-63 |

# EXTENSION DRILLING

## BUTTON BITS T45



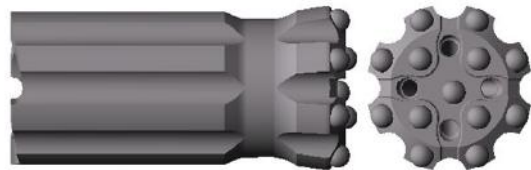
| DIA | GAUGE CARBIDE      | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|--------------------|---------------|---------------|---------------|-------------|-------------|
| 66  | 8 x 10mm 4 x 10mm. | 1 x 8mm       | -             | 4 x 8mm       | 35          | 45T66ND     |
| 70  | 8 x 11mm           | 5 x 10mm      | -             | 4 x 7mm       | 35          | 45T70ND     |
| 76  | 8 x 12mm           | 5 x 11mm      | -             | 4 x 8mm       | 35          | 45T76ND     |



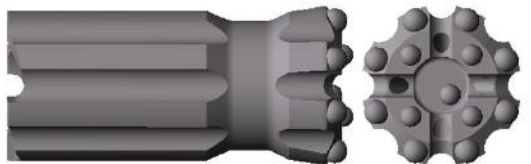
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 76  | 6 x 12mm      | 4 x 10mm      | 1 x 7mm       | 3 x 8mm       | 35          | 45T76NF     |



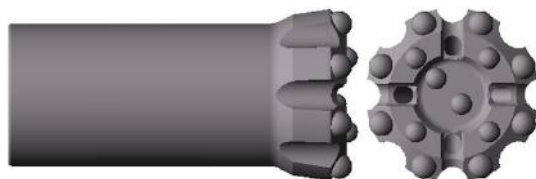
| DIA | GAUGE CARBIDE      | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|--------------------|---------------|---------------|---------------|-------------|-------------|
| 66  | 8 x 10mm 4 x 10mm. | 1 x 8mm       | -             | 4 x 8mm       | 35          | 45T66RD     |
| 70  | 8 x 11mm           | 5 x 10mm      | -             | 4 x 7mm       | 35          | 45T70RD     |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 76  | 8 x 12mm      | 5 x 11mm      | -             | 4 x 8mm       | 35          | 45T76RD     |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 83  | 8 x 13mm      | 5 x 11mm      | -             | 4 x 8mm       | 35          | 45T83RD     |

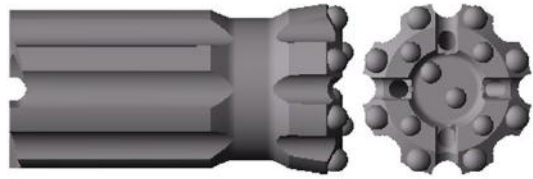


| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 89  | 8 x 13mm      | 6 x 11mm      | -             | 4 x 8mm       | 35          | 45T89ND     |
| 102 | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 45T102ND    |

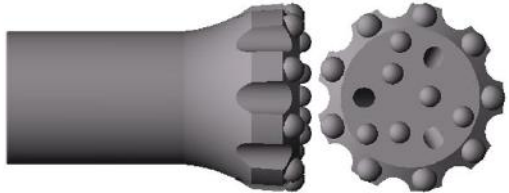


# EXTENSION DRILLING

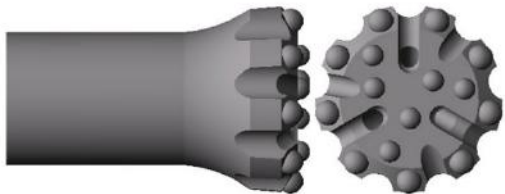
## BUTTON BITS T45



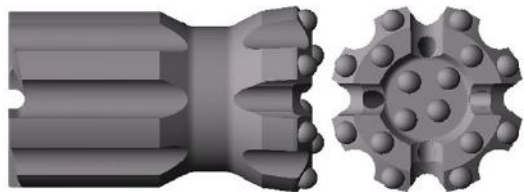
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 89  | 8 x 13mm      | 6 x 11mm      | -             | 4 x 8mm       | 35          | 45T89RD     |
| 102 | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 45T102RD    |



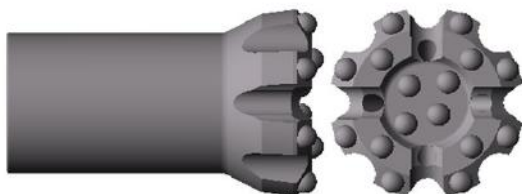
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 102 | 9 x 14mm      | 6 x 12mm      | -             | 3 x 12mm      | 40          | 45T102NF    |



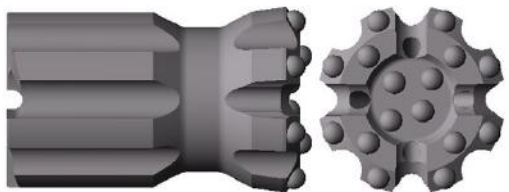
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|------------|---------------|-------------|-------------|
| 102 | 9 x 14mm      | 6 x 12mm      | -          | 3 x 12mm      | 40          | 45T102NG    |



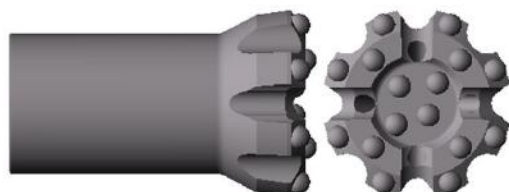
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|------------|---------------|-------------|-------------|
| 115 | 8 x 14mm      | 4 x 14mm      | -          | 4 x 11mm      | 35          | 45T115RD    |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 115 | 8 x 14mm      | 4 x 14mm      | -             | 4 x 11mm      | 35          | 45T115ND    |



| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|---------------|---------------|-------------|-------------|
| 127  | 10 x 14mm     | 9 x 14mm      | -             | 5 x 11mm      | 35          | 45T127RD    |

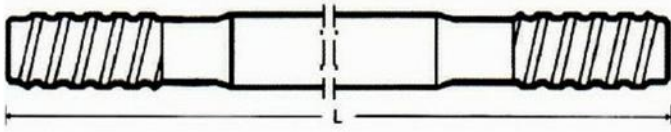


| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 127 | 10 x 14mm     | 9 x 14mm      | -             | 5 x 11mm      | 35          | 45T127ND    |



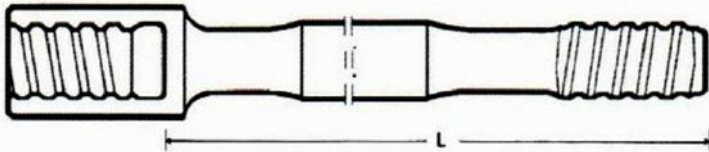
# EXTENSION DRILLING

## RODS T51ROUND 51mm



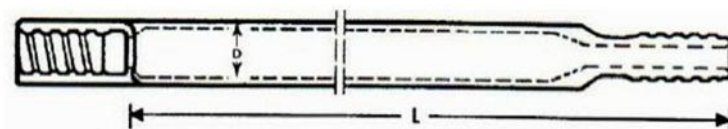
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | EX5151-1220-51 |
| 1525mm      | EX5151-1525-51 |
| 1830mm      | EX5151-1830-51 |
| 2430mm      | EX5151-2430-51 |
| 3050mm      | EX5151-3050-51 |
| 3660mm      | EX5151-3660-51 |
| 4270mm      | EX5151-4270-51 |
| 4905mm      | EX5151-4905-51 |
|             |                |
|             |                |

## MF RODS T51 ROUND 51mm



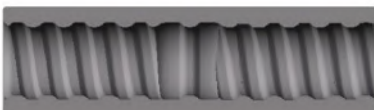
| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF5151-1220-51 |
| 1525mm      | MF5151-1525-51 |
| 1830mm      | MF5151-1830-51 |
| 2430mm      | MF5151-2430-51 |
| 3050mm      | MF5151-3050-51 |
| 3660mm      | MF5151-3660-51 |
| 4270mm      | MF5151-4270-51 |
| 4905mm      | MF5151-4905-51 |
|             |                |
|             |                |

## MF GUIDE RODS T51 ROUND 76mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 1220mm      | MF5151-1220-76 |
| 1525mm      | MF5151-1525-76 |
| 1830mm      | MF5151-1830-76 |
| 2430mm      | MF5151-2430-76 |
| 3050mm      | MF5151-3050-76 |
|             |                |
|             |                |

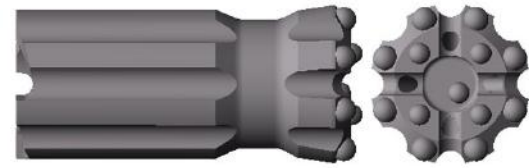
## COUPLINGS



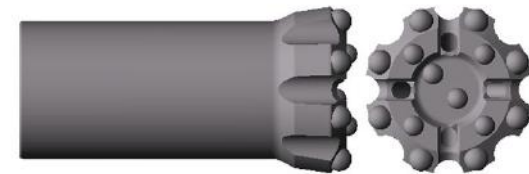
| DIA (mm) | LENGTH | DESCR      | PART      |
|----------|--------|------------|-----------|
| 72       | 234    | T51 SB CPL | CPLT51-72 |

# EXTENSION DRILLING

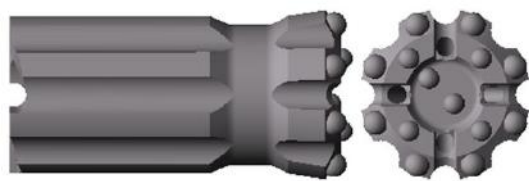
## BUTTON BITS T51



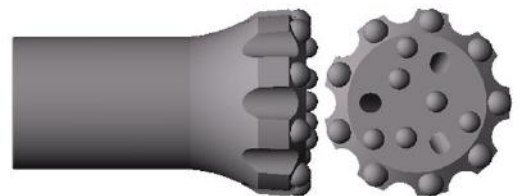
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 83  | 8 x 13mm      | 5 x 11mm      | -             | 4 x 8mm       | 35          | 51T83RD     |



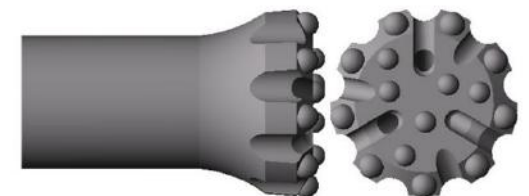
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 89  | 8 x 13mm      | 6 x 11mm      | -             | 4 x 8mm       | 35          | 51T89ND     |
| 102 | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 51T102ND    |



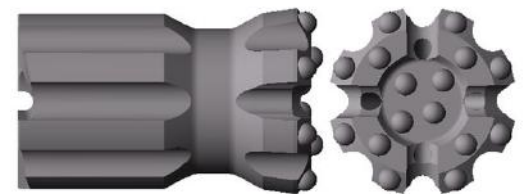
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 89  | 8 x 13mm      | 6 x 11mm      | -             | 4 x 8mm       | 35          | 51T89RD     |
| 102 | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 51T102RD    |



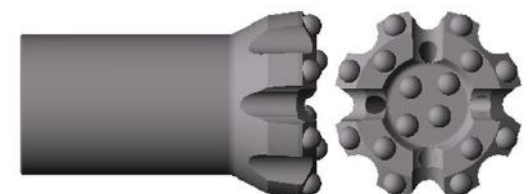
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 102 | 9 x 14mm      | 6 x 12mm      | -             | 3 x 12mm      | 40          | 51T102NF    |



| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 102 | 9 x 14mm      | 6 x 12mm      | -             | 3 x 12mm      | 40          | 51T102NG    |



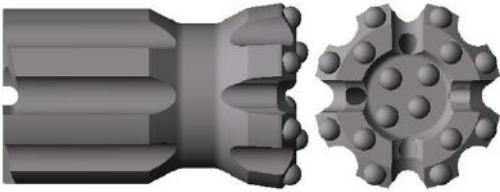
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 115 | 8 x 14mm      | 4 x 14mm      | -             | 4 x 11mm      | 35          | 51T115RD    |



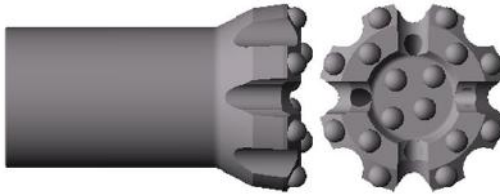
| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 115 | 8 x 14mm      | 4 x 14mm      | -             | 4 x 11mm      | 35          | 51T115ND    |

# EXTENSION DRILLING

## BUTTON BITS T51



| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|---------------|---------------|-------------|-------------|
| 127  | 10 x 14nn     | 9 x 14mm      | -             | 5 x 11mm      | 35          | 51T127RD    |

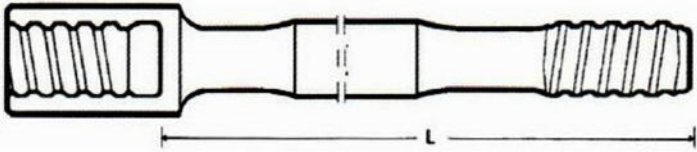


| DIA | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|-----|---------------|---------------|---------------|---------------|-------------|-------------|
| 127 | 10 x 14nn     | 9 x 14mm      | -             | 5 x 11mm      | 35          | 51T127ND    |



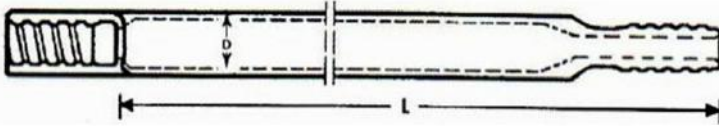
# EXTENSION DRILLING

## MF RODS T60 ROUND 60mm



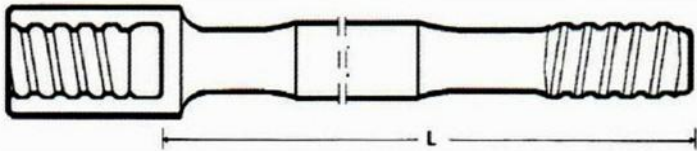
| EFF. LENGTH | PART           |
|-------------|----------------|
| 3050mm      | MF6060-3050-60 |
| 3660mm      | MF6060-3660-60 |
| 4270mm      | MF6060-4270-60 |
| 4905mm      | MF6060-4905-60 |

## MF GUIDE RODS T60 ROUND



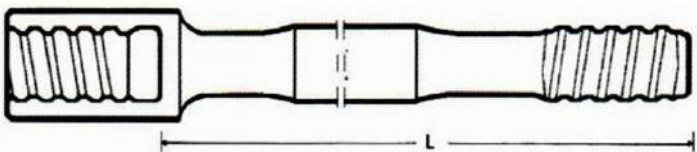
| EFF. LENGTH | PART          |
|-------------|---------------|
| 3660mm      | MF6060-3660-G |
| 4270mm      | MF6060-4270-G |

## MF RODS MT60 ROUND 82mm



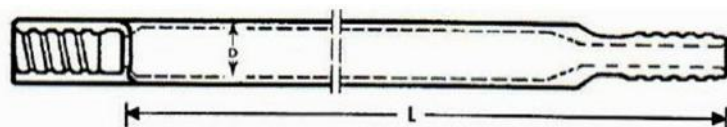
| EFF. LENGTH | PART           |
|-------------|----------------|
| 3050mm      | MT6060-3050-82 |
| 3660mm      | MT6060-3660-82 |
| 4270mm      | MT6060-4270-82 |
| 4905mm      | MT6060-4905-82 |

## MF RODS MT60 ROUND 85mm



| EFF. LENGTH | PART           |
|-------------|----------------|
| 3050mm      | MT6060-3050-85 |
| 3660mm      | MT6060-3660-85 |
| 4270mm      | MT6060-4270-85 |
| 4905mm      | MT6060-4905-85 |

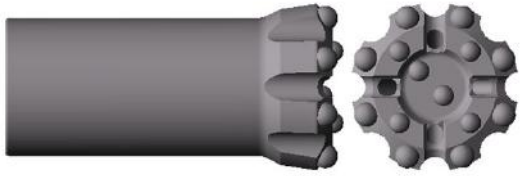
## MF GUIDE RODS MT60 ROUND 87mm



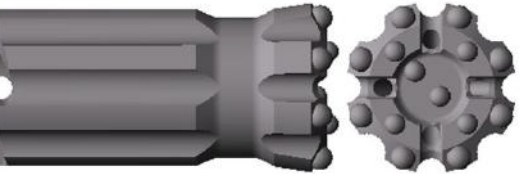
|        |               |
|--------|---------------|
| 4265mm | MT6060-4270-G |
|--------|---------------|

# EXTENSION DRILLING

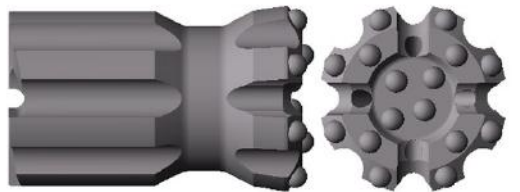
## BUTTON BITS MT60



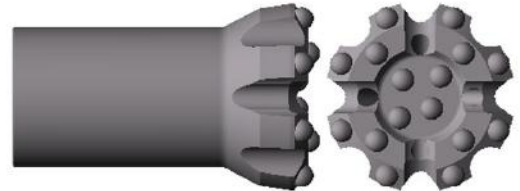
| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|---------------|---------------|-------------|-------------|
| 102  | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 60MT102ND   |



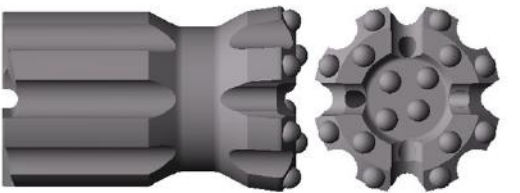
| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|---------------|---------------|-------------|-------------|
| 102  | 8 x 14mm      | 6 x 12mm      | -             | 4 x 9mm       | 35          | 60MT102RD   |



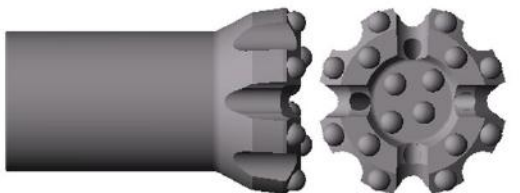
| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|---------------|---------------|-------------|-------------|
| 115  | 8 x 14mm      | 4 x 14mm      | -             | 4 x 11mm      | 35          | 60MT115RD   |



| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|------------|---------------|-------------|-------------|
| 115  | 8 x 14mm      | 4 x 14mm      | -          | 4 x 11mm      | 35          | 60MT115ND   |



| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUS. | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|------------|---------------|-------------|-------------|
| 127  | 10 x 14mm     | 9 x 14mm      | -          | 5 x 11mm      | 35          | 60MT127RD   |



| DIA. | GAUGE CARBIDE | FRONT CARBIDE | SIDE FLUSHING | FACE FLUSHING | GAUGE ANGLE | PART NUMBER |
|------|---------------|---------------|---------------|---------------|-------------|-------------|
| 127  | 10 x 14mm     | 9 x 14mm      | -             | 5 x 11mm      | 35          | 60MT127ND   |

# SHANK ADAPTORS

## ATLAS COPCO

| THREAD | DESCRIPTION                        | LENGTH |
|--------|------------------------------------|--------|
| T38    | A/C BBE57,MONT H100                | 537    |
| T45    | A/C BBE57,MONT H100                | 537    |
| R32    | A/COPCO COP125,130,131             | 405    |
| T38    | A/COPCO COP125,130,131             | 381    |
| T38    | A/COPCO COP131EB                   | 381    |
| R28    | A/COPCO 1028HB                     | 400    |
| R32    | A/COPCO 1028HB                     | 400    |
| R38    | A/C COP1038 HD,1038 HL             | 485    |
| T38    | A/C COP1038 HD,COP1238             | 485    |
| T38    | A/COPCO COP1038HL,1238             | 500    |
| T45    | A/COPCO COP1038HL,1238             | 500    |
| R32    | A/COPCO COP1038HL,1238             | 575    |
| T38    | A/COPCO COP1038HL,1238             | 575    |
| T45    | A/COPCO COP1038HL,1238             | 575    |
| T45    | A/COPCO COP1038HL,1238             | 590    |
| R32    | A/COPCO COP1038(COLLAR)            | 575    |
| T38    | A/COPCO COP1038(COLLAR)            | 575    |
| R32    | A/C COP1036HB,1038HB,1238 (COLLAR) | 575    |
| R38    | A/C COP1036HB,1038HB,1238 (COLLAR) | 575    |
| T38    | A/C COP1036HB,1038HB,1238 (COLLAR) | 575    |
| T45    | A/C COP1036HB,1038HB,1238 (COLLAR) | 575    |
| R28    | A/C COP1132                        | 410    |
| R32    | A/C COP1132                        | 410    |
| T35    | A/C COP1132                        | 410    |
| R32    | A/C COP1132                        | 500    |
| T35    | A/C COP1132                        | 500    |
| R32F   | A/C COP1132 (Female)               | 280    |
| R32F   | A/C COP1432, COP1532 FEMALE        | 341    |
| R38F   | A/C COP1432, COP1532 FEMALE        | 341    |
| T38F   | A/C COP1432, COP1532 FEMALE        | 341    |
| R32    | COP1338 EXTRACTOR                  | 780    |
| T38    | COP1338 EXTRACTOR                  | 780    |
| T45    | COP1338 EXTRACTOR                  | 780    |
| R32    | ATLAS COPCO COP1435                | 500    |
|        |                                    |        |
|        |                                    |        |
|        |                                    |        |





# SHANK ADAPTORS

## ATLAS COPCO

| THREAD | DESCRIPTION   | LENGTH |
|--------|---|--------|
| T35    | ATLAS COPCO COP1435                                 | 500    |
| R32    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 435    |
| T35    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 435    |
| R38    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 435    |
| T38    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 435    |
| R32    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 525    |
| T35    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 525    |
| R38    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 525    |
| T38    | A/COPCO COP1440, COP1550, COP1638, COP1838, COP2238 | 525    |
| R32    | A/COPCO COP1440, COP1550, 1838HD (D=52mm)           | 525    |
| T35    | A/COPCO COP1440, COP1550, 1838HD (D=52mm)           | 525    |
| T38    | A/COPCO COP1440, COP1550, 1838HD (D=52mm)           | 525    |
| T45    | A/COPCO COP1440, COP1550, 1838HD (D=52mm)           | 525    |
| T51    | A/COPCO COP1440, COP1550, 1838HD (D=52mm)           | 525    |
| T38    | A/COPCO COP1838MUX                                  | 730    |
| T45    | A/COPCO COP1838MUX                                  | 730    |
| T38    | A/COPCO COP 1838EX                                  | 730    |
| T45    | A/COPCO COP 1838EX                                  | 730    |
| T51    | A/COPCO COP 1838EX                                  | 730    |
| T45    | A/COPCO COP 1850, 1840HE, 2150HE                    | 565    |
| T51    | A/COPCO COP 1850, 1840HE, 2150HE                    | 565    |
| T51    | A/COPCO COP 1850, 1840HE, 2150HE                    | 770    |
| T51    | A/COPCO COP 2150/2550 (STRAIGHT SPLINE)             | 770    |
| T38    | COP 1240/1640/1840/1850/2150/2550HEX                | 770    |
| T45    | COP 1240/1640/1840/1850/2150/2550HEX                | 770    |
| T51    | COP 1240/1640/1840/1850/2150/2550HEX                | 770    |
| T51    | A/COPCO COP 2160/2560 EXTRACTOR                     | 770    |
| MT60   | A/COPCO COP 2160/2560 EXTRACTOR                     | 770    |
| T38    | A/COPCO COP 3038                                    | 435    |
| T45    | A/COPCO COP 3038                                    | 435    |
| T38    | A/COPCO COP 3038HE (Helical)                        | 435    |
| T45    | A/COPCO COP 3038HE (Helical)                        | 435    |
| T38    | A/COPCO COP 3038HE (Helical)                        | 525    |
| T58    | ATLAS COPCO COP4050 MUX                             | 835    |
| T68    | ATLAS COPCO COP4050 MUX                             | 835    |
|        |   |        |
|        |   |        |
|        |   |        |



# SHANK ADAPTORS

## BOART LONGYEAR, CANNON, DOOFOR

| THREAD | DESCRIPTION                             | LENGTH |
|--------|---|--------|
| R32F   | BOART HD65 (female)                     | 324    |
| R32    | BOART HD65                              | 445    |
| R32    | BOART HD125,HD150                       | 495    |
| R38    | BOART HD125,HD150                       | 495    |
| T38    | BOART HD125,HD150                       | 495    |
| T38F   | CANNON CH38 (JOYJH-2)(55mm Body,female) | 390    |
| T45    | CANNON CH38 (JOYJH-2)(55mm Body,)       | 525    |
| T38    | CANNON CH38 (JOYJH-2) (38mm Body)       | 444    |
| T38    | JOY VCR260 /360                         | 432    |
| R25    | DOOFOR DF425/430S                       | 400    |
| R28    | DOOFOR DF425/430S                       | 400    |
| R32    | DOOFOR DF528                            | 424    |
| R32    | DOOFOR DF528HD                          | 470    |
| R38    | DOOFOR DF528HD                          | 470    |
| P38    | DOOFOR DF528HD                          | 470    |
| R32    | DOOFOR DF545                            | 515    |
| R38    | DOOFOR DF545                            | 515    |
| T38    | DOOFOR DF545                            | 515    |
| R32    | DOOFOR DF545HD                          | 515    |
| R38    | DOOFOR DF545HD                          | 515    |
| T38    | DOOFOR DF545HD                          | 515    |
| T45    | DOOFOR DF545HD                          | 515    |
| R32    | DOOFOR DF545EXT                         | 582    |
| R38    | DOOFOR DF545EXT                         | 582    |
| T38    | DOOFOR DF545EXT                         | 582    |
| R32    | DOOFOR DF545EXT HD                      | 582    |
| R38    | DOOFOR DF545EXT HD                      | 582    |
| T38    | DOOFOR DF545EXT HD                      | 582    |
| T45    | DOOFOR DF545EXT HD                      | 582    |
|        |   |        |
|        |   |        |
|        |   |        |



# SHANK ADAPTORS

## FURUKAWA

| THREAD | DESCRIPTION               | LENGTH |
|--------|---------------------------|--------|
| R38    | FURUKAWA PD200(H/D CHUCK) | 381    |
| T38    | FURUKAWA PD200(H/D CHUCK) | 381    |
| T45    | FURUKAWA PD200(H/D CHUCK) | 381    |
| T38    | FURUKAWA HD90             | 512    |
| R38    | FURUKAWA HD150            | 520    |
| T38    | FURUKAWA HD150            | 520    |
| T38    | FURUKAWA HD180            | 455    |
| R38    | FURUKAWA HD190            | 480    |
| T38    | FURUKAWA HD190            | 480    |
| T38    | FURUKAWA HD210            | 430    |
| T38    | FURUKAWA HD260,HD300      | 655    |
| T45    | FURUKAWA HD260,HD300      | 655    |
| T38    | FURUKAWA HD500 (6 SPLINE) | 625    |
| T45    | FURUKAWA HD500 (6 SPLINE) | 625    |
| T38    | FURUKAWA HD609            | 615    |
| T45    | FURUKAWA HD609            | 615    |
| T38    | FURUKAWA HD609            | 690    |
| T45    | FURUKAWA HD609            | 690    |
| T38    | FURUKAWA HD609QED         | 860    |
| T45    | FURUKAWA HD609QED         | 860    |
| T45    | FURUKAWA HD612            | 710    |
| T51    | FURUKAWA HD612            | 710    |
| T45    | FURUKAWA HD612QED         | 900    |
| T51    | FURUKAWA HD612QED         | 900    |
| T51    | FURUKAWA HD615            | 880    |
| T51    | FURUKAWA HD615QED         | 880    |
| T45    | FURUKAWA HD709            | 620    |
| T45    | FURUKAWA HD709QED         | 800    |
| T45    | FURUKAWA HD712            | 590    |
| T51    | FURUKAWA HD712            | 590    |
| T45    | FURUKAWA HD712            | 790    |
| T51    | FURUKAWA HD712            | 790    |
| T45    | FURUKAWA HD712QED         | 880    |
| T51    | FURUKAWA HD712QED         | 880    |
| T51    | FURUKAWA HD715            | 790    |
| T51    | FURUKAWA HD715QED         | 885    |
|        |                           |        |
|        |                           |        |
|        |                           |        |



# SHANK ADAPTORS

## I.RAND

| THREAD | DESCRIPTION          | LENGTH |
|--------|----------------------|--------|
| R32    | I/RAND YD90M         | 330    |
| T38    | I/RAND YH65.70,75,80 | 496    |
| T45    | I/RAND YH65.70,75,80 | 496    |
| T38    | I/RAND YH65.70,75,80 | 700    |
| T45    | I/RAND YH65.70,75,80 | 700    |
| T38    | I/RAND YH65RP,80RP   | 700    |
| T45    | I/RAND YH65RP,80RP   | 700    |
| T45    | I/RAND YH80A         | 500    |
| T45    | I/RAND YH 95,100     | 622    |
| T51    | I/RAND YH 95,100     | 622    |
| T45    | I/RAND YH110VRP      | 900    |
| T51    | I/RAND YH110VRP      | 900    |
|        |                      |        |



# SHANK ADAPTORS

## MONTABERT

| THREAD | DESCRIPTION                                       | LENGTH |
|--------|---|--------|
| R32F   | MONTABERT HC20 (D=45mm) FEMALE                    | 187    |
| R32    | MONTABERT HC20 (D=45mm)                           | 287    |
| R32    | MONTABERT HC25 (D=45mm)                           | 287    |
| T35    | MONTABERT HC25 (D=45mm)                           | 287    |
| R38    | MONTABERT HC25 (D=45mm)                           | 287    |
| T38    | MONTABERT HC25 (D=45mm)                           | 287    |
| R32    | MONTABERT HC25 (D=45mm) FEMALE                    | 202    |
| R32    | MONTABERT HC40/HC50 (D=38mm)                      | 438    |
| T35    | MONTABERT HC40/HC50 (D=38mm)                      | 438    |
| R38    | MONTABERT HC40/HC50 (D=38mm)                      | 438    |
| T38    | MONTABERT HC40/HC50 (D=38mm)                      | 438    |
| R32    | MONTABERT HC40 FEMALE (D=45mm)                    | 270    |
| R38    | MONTABERT HC80, HC90, HC105 (D=38mm)              | 440    |
| T38    | MONTABERT HC80, HC90, HC105 (D=38mm)              | 440    |
| R38    | MONTABERT HC80, HC90, HC105 (D=38mm)              | 508    |
| T38    | MONTABERT HC80, HC90, HC105 (D=38mm)              | 508    |
| R38    | MONTABERT HC80, HC109, HC110, HC120 , (D=45mm)    | 490    |
| T38    | MONTABERT HC80, HC109, HC110, HC120 , (D=45mm)    | 490    |
| T45    | MONTABERT HC80, HC109, HC110, HC120 , (D=45mm)    | 490    |
| R38    | MONTABERT HC80, HC109, HC110, HC120 , (D=45mm)    | 530    |
| T38    | MONTABERT HC80, HC109, HC110, HC120 , (D=45mm)    | 530    |
| T45    | MONTABERT HC80, HC109, HC110, HC120 , (D=45mm)    | 530    |
| T35    | MONTABERT HC80R, HC105R, HC107R, HC108R           | 670    |
| T38    | HC109R, HC110R, HC120R (D=45mm)                   | 670    |
| T45    | HC109R, HC110R, HC120R (D=45mm)                   | 670    |
| T45    | HC109R, HC110R, HC120R (D=45mm)                   | 770    |
| T45    | MONTABERT HC120R, HC150R, HC155R, HC158R (D=51mm) | 670    |
| T51    | MONTABERT HC120R, HC150R, HC155R, HC158R (D=51mm) | 670    |
| T45    | MONTABERT HC120R, HC150R, HC155R, HC158R (D=51mm) | 770    |
| T51    | MONTABERT HC120R, HC150R, HC155R, HC158R (D=51mm) | 770    |
| T45    | MONTABERT HC160,170                               | 807    |
| T51    | MONTABERT HC160,170                               | 807    |
| MT60   | MONTABERT HC160,170                               | 807    |
| T51    | MONTABERT HC200A                                  | 840    |
| T60    | MONTABERT HC200A                                  | 840    |
| MT60   | MONTABERT HC200A                                  | 840    |
|        |   |        |
|        |   |        |
|        |   |        |
|        |   |        |



# SHANK ADAPTORS

## SANDVIK TAMROCK

| THREAD | DESCRIPTION                       | LENGTH |
|--------|-----------------------------------|--------|
| R32    | TAMROCK HL300S FEMALE             | 245    |
| R32    | TAMROCK HL300                     | 400    |
| R32    | TAMROCK L400,L410,L500,L510       | 381    |
| R38    | TAMROCK HLR438,L550               | 381    |
| T38    | TAMROCK HLR438,L550               | 381    |
| R38    | TAMROCK HL438TS,HL538             | 450    |
| T38    | TAMROCK HL438TS,HL538             | 450    |
| R32    | TAMROCK HL438TS,HL538             | 495    |
| R38    | TAMROCK HL438TS,HL538             | 495    |
| T38    | TAMROCK HL438TS,HL538             | 495    |
| R32    | TAMROCK HL500 S, HL510 S (D=38mm) | 450    |
| R38    | TAMROCK HL500 S, HL510 S (D=38mm) | 450    |
| T38    | TAMROCK HL500 S, HL510 S (D=38mm) | 450    |
| T38    | TAMROCK HL500 S, HL510 S (D=38mm) | 550    |
| R32    | TAMROCK HL500, HL510 (D=45mm)     | 550    |
| T35    | TAMROCK HL500, HL510 (D=45mm)     | 550    |
| T38    | TAMROCK HL500, HL510 (D=45mm)     | 550    |
| T45    | TAMROCK HL500, HL510 (D=45mm)     | 550    |
| R32    | TAMROCK HL500 (FEMALE)            | 350    |
| T35    | TAMROCK HL550 SUPER,560 SUPER     | 500    |
| R38    | TAMROCK HL550 SUPER,560 SUPER     | 500    |
| T38    | TAMROCK HL550 SUPER,560 SUPER     | 500    |
| T45    | TAMROCK HL550 SUPER,560 SUPER     | 500    |
| R25    | TAMROCK HLX1                      | 255    |
| R28    | TAMROCK HLX1                      | 255    |
| R32    | TAMROCK RD314 (FEMALE)            | 205    |
| T38    | TAMROCK RD520/RD525               | 525    |
| T35    | TAMROCK RD520/RD525               | 600    |
| T38    | TAMROCK RD520/RD525               | 600    |
| T35    | TAMROCK RD520/RD525               | 745    |
| T38    | TAMROCK RD520/RD525               | 745    |
| R32    | TAMROCK HLX5/HFX5T                | 500    |
| T35    | TAMROCK HLX5/HFX5T                | 500    |
| R38    | TAMROCK HLX5/HFX5T                | 500    |
| T38    | TAMROCK HLX5/HFX5T                | 500    |
| T45    | TAMROCK HLX5/HFX5T                | 500    |
| R32    | TAMROCK HLX5/HFX5T                | 575    |
| T35    | TAMROCK HLX5/HFX5T                | 575    |
| T38    | TAMROCK HLX5/HFX5T                | 575    |
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# SHANK ADAPTORS

## SANDVIK TAMROCK

| THREAD | DESCRIPTION  | LENGTH |
|--------|--|--------|
| T45    | TAMROCK HLX5/HFX5T                                   | 575    |
| T38    | TAMROCK HL600 (D=45mm)                               | 525    |
| T45    | TAMROCK HL600 (D=45mm)                               | 525    |
| T38    | TAMROCK HL600 (D=45mm)                               | 600    |
| T45    | TAMROCK HL600 (D=45mm)                               | 600    |
| T45    | TAMROCK HL600 (D=52mm)                               | 650    |
| T51    | TAMROCK HL600 (D=52mm)                               | 650    |
| T38    | TAMROCK HL700/HL710/HL800T/HF810T/HL650 (D=45mm)     | 600    |
| T45    | TAMROCK HL700/HL710/HL800T/HF810T/HL650 (D=45mm)     | 600    |
| T51    | TAMROCK HL700/HL710/HL800T/HF810T/HL650 (D=45mm)     | 600    |
| T38    | TAMROCK HL700,HL710,HL800,HF810,HL650,HL810 (D=52mm) | 600    |
| T45    | TAMROCK HL700,HL710,HL800,HF810,HL650,HL810 (D=52mm) | 600    |
| T51    | TAMROCK HL700,HL710,HL800,HF810,HL650,HL810 (D=52mm) | 600    |
| T45    | TAMROCK HL1000, HL1010, HL1010S (D=52mm)             | 590    |
| T51    | TAMROCK HL1000, HL1010, HL1010S (D=52mm)             | 590    |
| T45    | TAMROCK HL1000, HL1010, HL1010S (D=52mm)             | 670    |
| T51    | TAMROCK HL1000, HL1010, HL1010S (D=52mm)             | 670    |
| T51    | TAMROCK HL1000, HL1010 (D=60mm)                      | 670    |
| T60    | TAMROCK HL1000, HL1010 (D=60mm)                      | 670    |
| MT60   | TAMROCK HL1000, HL1010 (D=60mm)                      | 670    |
| T58    | TAMROCK HL1000 (80mm), HL1010, (SHOULDER DRIVE)      | 635    |
| T68    | TAMROCK HL1000 (80mm), HL1010, (SHOULDER DRIVE)      | 635    |
| T51    | TAMROCK HL1000 EXTRACTOR (D=52mm)                    | 840    |
| T51    | TAMROCK HL1500 (D=60mm)                              | 760    |
| T60    | TAMROCK HL1500 (D=60mm)                              | 760    |
| MT60   | TAMROCK HL1500 (D=60mm)                              | 760    |
| T58    | TAMROCK HL1500 (D=80mm) (SHOULDER DRIVE)             | 635    |
| T68    | TAMROCK HL1500 (D=80mm) (SHOULDER DRIVE)             | 635    |
| T51    | TAMROCK HL1500PE,1000PE,1560T(D=65mm)                | 760    |
| T60    | TAMROCK HL1500PE,1000PE,1560T(D=65mm)                | 760    |
| MT60   | TAMROCK HL1500PE,1000PE,1560T(D=65mm)                | 760    |
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