

# Rock Drilling Tools

**Brunner & Lay**

Mining & Construction Tools

Family owned and American made since 1882



**America West  
Drilling Supply**

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**Authorized Distributor**

# Brunner & Lay

## Mining & Construction Tools

Family owned and American made since 1882



In 2017, Brunner & Lay, Inc. celebrated one hundred and thirty-five years of continuous operations under the ownership and control of the founding family. The original products manufactured by this enterprise were those used in the sculpturing of stone, production of monuments, building stones, and "objects d'art".

From a very inauspicious beginning in a small blacksmith shop originally started in 1882 by Edward Brunner and Severin Lay, Brunner & Lay, Inc. and its affiliated companies have become recognized as the quality leaders, as well as the world's largest manufacturer of paving breaker tools. Today, using the latest state of the art equipment in its facilities throughout the world, Brunner & Lay, Inc.'s entire output is devoted to the manufacture of pneumatic and hydraulic tool accessories for the construction, mining, and demolition industries.

The worldwide operations encompass manufacturing plants and warehouses on three different continents. These include seven facilities in the United States, three in Canada, three in Great Britain, one in Germany, and two in Australia. The corporation is currently overseen by F. Michael Brunner, President, the fourth generation of the Brunner Family to oversee operations.

Brunner & Lay products are divided into three major categories: tools used for the demolition or cutting of concrete and stone, drill steels and carbide tipped bits which are used to drill blast holes in quarries, mines, and construction projects, and small chipping and electric hammer tools which are used by the general construction trade.

It is with great pride that the Brunner & Lay organization can point to the many wonderful highways, dams, airfields, mines & quarries, and national monuments it has shaped. These include, but are not limited to Mt. Rushmore, Hoover Dam, the Chunnel connecting England and France, the Eisenhower Tunnel in Colorado, and Olympic venues worldwide.

These accomplishments could not have been achieved without the extended efforts of long time dedicated employees and the many fine distributors who have provided loyal support over these years.

Brunner & Lay extends its very sincere thanks to these employees and distributors.

Brunner & Lay is confident that its products will contribute to worldwide health, growth, and prosperity far into the future.

# Rock Drilling Tools

## Catalog # 18RD

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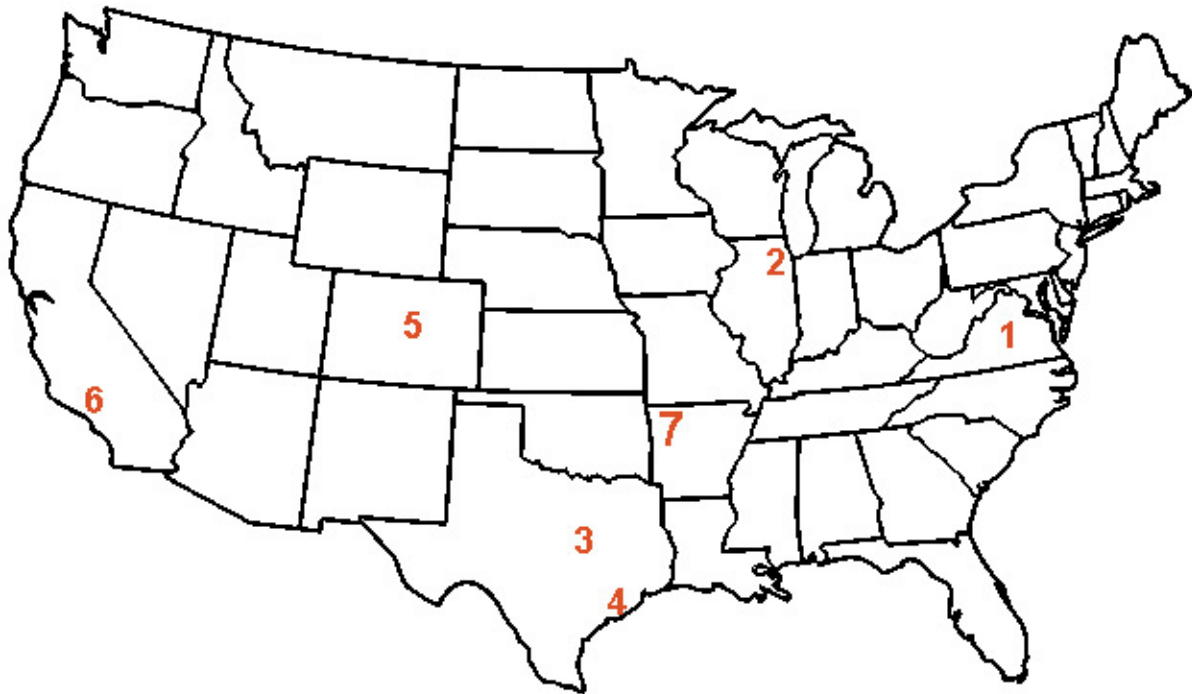
# Locations

## Warehouses

1. Flat Rock, NC
2. Bensenville, IL
3. Dallas, TX
4. Houston, TX
5. Denver, CO
6. Los Angeles, CA

## Factory

7. Springdale, AR



# Product Warranty

Brunner & Lay tools are guaranteed against defects in raw material and manufacture. No other warranty is implied or expressed.

The company's liability in respect to any warranty claim is limited to replacement, and does not extend to any other expenditure incurred or to any consequential damage. Warranty claims are subject to immediate notification of any problems and return of the product in question to Brunner & Lay under the Returned Goods Policy.

Operators must pay attention to select the correct tool and machine for the specific type of application required. When the correct B&L tool is used for its appropriate application and is used in the proper manner for which it is designed and operated within a correctly maintained machine, risks to the safety and health of operators will be avoided.

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This catalog features Brunner & Lay's wide range of Drilling Accessories that have been designed for today's hard hitting rock drills. Customer requirements, other than the products featured in this catalog, will be considered by special arrangement.

Material, drawings, and pictures in this catalog are the property of Brunner & Lay and are not to be reproduced without written permission.

Brunner & Lay reserves the right to amend product specifications without prior notification.

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Due to Manufacturing tolerances, the actual bit diameters could exceed the nominal diameters given in this catalog by .090". This along with certain rock conditions could affect hole size desired.

Bits required to drill a specific tolerance hole are available on request. Consult factory for price and availability.

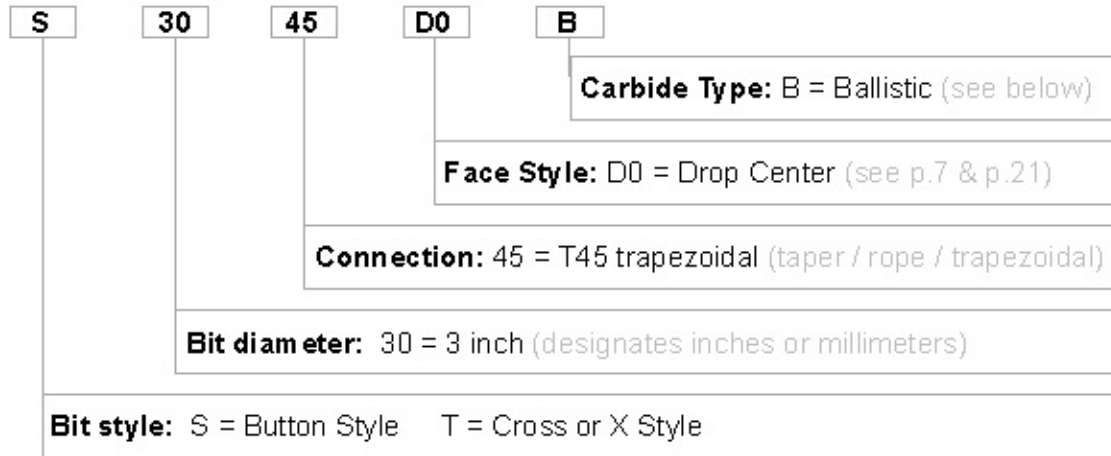
If a bit size or configuration does not appear in this catalog call customer service for assistance.

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This Rock Drilling Tool catalog was produced in November 2018.

# Drill Bit Information

## Drill Bit Nomenclature:



### Choosing the right carbide:

The larger the volume of carbide, the more aggressive the bit. The more aggressive carbides assist movement of the chips away from the face as there is more room for airflow on the face of the bit. These more aggressive bits help to break out larger chips, which increases the penetration rate. There is also a greater volume of carbide to wear away which can lead to longer bit life.

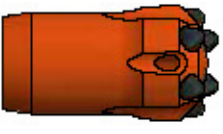
|                                                                                     | Carbide   | Applications                                                                                                                              | Designation |
|-------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|  | Standard  | Spherical carbides for use in medium to hard rock, with fractured or seamy applications.                                                  | None        |
|  | Conical   | For use in soft to medium rock hardness, more aggressive with faster penetration rates.                                                   | **C         |
|  | Parabolic | Semi-ballistic shaped sometimes called "baby-ballistic", more aggressive than the spherical carbides, for soft to medium consistent rock. | **P         |
|  | Ballistic | Bullet shaped, very aggressive fast penetration in soft to medium consistent rock.                                                        | **B         |

# Tunneling & Drifting Information

**Intraset** - used for shaft sinking, tunnel driving and mining where small holes are desired.

**Tapered Equipment** - used in shaft sinking, tunnel driving and mining where small holes are desired. The objective in using tapered drill steel and bits is to achieve the full utilization of the drill steel. With integral drill steel if the chisel wears or breaks the entire unit is discarded, whereas the tapered drill bits can be replaced or the steel retapered.

**Rope Thread** - used for underground mining in production drilling, longhole drilling, and roof bolting applications.

| Taper                                                                               | Face Style               | Applications                                                                                                                         | Designation                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Single Pass              | Eliminates resharpening, may be more economical for some applications, mainly broken rock formations and rough conditions.           | L0                                                                                                                                                                                      |
|    | Multi Pass               | Designed for multiple resharpenings until the full insert height is consumed, again for broken rock formations and rough conditions. | M0                                                                                                                                                                                      |
|  | Button                   | For faster penetration and improved flushing which increases overall production drilling.                                            | M                                                                                                                                                                                     |
| Rope                                                                                | Body Style               |                                                                                                                                      |                                                                                                                                                                                                                                                                            |
|  | Modified Chisel / Chisel | Designed for dimensional stone applications, as well as roof bolting, for hole size control.                                         | M  P0                                                                                            |
|  | Round                    | Designed for a smooth even hole size, promotes fast penetration in tunneling and production.                                         | F3  B0  CC  |
|  | Modified Round           | Designed for soft rock applications, aids in chip removal and increases flushing capacity.                                           | Q0                                                                                                                                                                                    |
|  | Dome                     | For reaming in a pre-drilled pilot hole.                                                                                             | G0                                                                                                                                                                                    |

# Integral Drill Steels

|                                                                                               | Bit Size |    | Length |      | Part Number | Weight |          |
|-----------------------------------------------------------------------------------------------|----------|----|--------|------|-------------|--------|----------|
|                                                                                               | Inches   | MM | Feet   | MM   |             | Pounds | Kilogram |
| 7/8" x 4-1/4"                                                                                 |          |    |        |      |             |        |          |
| <br>Series 11 | 1.34     | 34 | 2' 7"  | 800  | X40834      | 6.5    | 2.9      |
|                                                                                               | 1.30     | 33 | 5' 3"  | 1600 | X41633      | 11.9   | 5.4      |
|                                                                                               | 1.25     | 32 | 7' 10" | 2400 | X42432      | 17.6   | 7.9      |
|                                                                                               | 1.22     | 31 | 10' 6" | 3200 | X43231      | 22.5   | 10.2     |
|                                                                                               | 1.18     | 30 | 13' 1" | 4000 | X44030      | 28.0   | 12.7     |
|                                                                                               | 1.14     | 29 | 15' 9" | 4800 | X44829      | 33.5   | 15.1     |
| Series 12                                                                                     | 1.57     | 40 | 2' 7"  | 800  | X40840      | 6.5    | 2.9      |
|                                                                                               | 1.54     | 39 | 5' 3"  | 1600 | X41639      | 11.9   | 5.4      |
|                                                                                               | 1.50     | 38 | 7' 10" | 2400 | X42438      | 17.6   | 7.9      |
|                                                                                               | 1.46     | 37 | 10' 6" | 3200 | X43237      | 22.5   | 10.2     |
|                                                                                               | 1.42     | 36 | 13' 1" | 4000 | X44036      | 28.0   | 12.7     |
|                                                                                               | 1.38     | 35 | 15' 9" | 4800 | X44835      | 33.5   | 15.1     |
| Series 13                                                                                     | 1.34     | 34 | 1' 4"  | 400  | X40434      | 5.8    | 2.6      |
| Series 16                                                                                     | 1.38     | 35 | 2'     | 600  | X40635      | 5.3    | 2.4      |
|                                                                                               | 1.34     | 34 | 4'     | 1200 | X41234      | 9.3    | 4.2      |
|                                                                                               | 1.30     | 33 | 6'     | 1800 | X41833      | 13.2   | 5.9      |
|                                                                                               | 1.25     | 32 | 8'     | 2400 | X42432      | 17.6   | 7.9      |
| Series 17                                                                                     | 1.61     | 41 | 2'     | 600  | X40641      | 5.3    | 2.4      |
|                                                                                               | 1.57     | 40 | 4'     | 1200 | X41240      | 9.3    | 4.2      |
|                                                                                               | 1.54     | 39 | 6'     | 1800 | X41839      | 13.2   | 5.9      |
|                                                                                               | 1.50     | 38 | 8'     | 2400 | X42438      | 17.6   | 7.9      |
|                                                                                               | 1.46     | 37 | 10'    | 3048 | X43037      | 22.0   | 9.9      |
| 1" x 4-1/4"                                                                                   |          |    |        |      |             |        |          |
|             | 1.61     | 41 | 2'     | 600  | X50641      | 6.8    | 3.0      |
|                                                                                               | 1.57     | 40 | 4'     | 1200 | X51240      | 12.1   | 5.5      |
|                                                                                               | 1.54     | 39 | 6'     | 1800 | X51839      | 17.4   | 7.8      |
|                                                                                               | 1.50     | 38 | 8'     | 2400 | X52438      | 22.6   | 10.2     |
|                                                                                               | 1.75     | 45 | 2'     | 600  | X50645      | 6.8    | 3.0      |
|                                                                                               | 1.73     | 44 | 4'     | 1200 | X51244      | 12.1   | 5.5      |
|                                                                                               | 1.69     | 43 | 6'     | 1800 | X51843      | 17.4   | 7.8      |
|                                                                                               | 1.65     | 42 | 8'     | 2400 | X52442      | 22.6   | 10.2     |

Length is below collar.

# Reaming Equipment

## Pilot Adapters

### 6.5° taper angle



### 6° taper angle

### 12° taper angle

| Thread | Length |       | Part Number | Weight |          |
|--------|--------|-------|-------------|--------|----------|
|        | Inches | MM    |             | Pounds | Kilogram |
| 11 deg | 4"     | 101.6 | CP26T11     | 2.64   | 1.2      |
| 12 deg | 4"     | 101.6 | CP26T12     | 2.64   | 1.2      |
| 100R   | 10"    | 254   | CP26R25     | 3.1    | 1.4      |
| 112R   | 10"    | 254   | CP26R26     | 3.5    | 1.6      |
| 125R   | 10"    | 254   | CP26R32     | 3.5    | 1.6      |
| 125R   | 9.4"   | 238.8 | CP40R32     | 6.2    | 2.8      |
| T38    | 9.4"   | 238.8 | CP40T38     | 6.2    | 2.8      |

## Reaming Bits

### 6.5° taper angle \*



\* Fits both Reamer Rods and Taper Reamer Steels

### 6° taper angle

### 12° taper angle

| Diameter |      | Part Number | Weight |           | Interiors |     |         | Hole Size |      |
|----------|------|-------------|--------|-----------|-----------|-----|---------|-----------|------|
| Inches   | MM   |             | Pounds | Kilograms | Gauge     | Mid | Face    | Top       | Side |
| 2-1/2"   | 63.5 | S25 PDP0    | 2.6    | 1.2       | 8-3/8"    |     | 2-3/8"  |           |      |
| 3"       | 76   | S30 PDP0    | 2.8    | 1.3       | 8-7/16"   |     | 4-3/8"  |           |      |
| 3-1/2"   | 89   | S35 PDP0    | 3.0    | 1.4       | 8-7/16"   |     | 4-3/8"  |           |      |
| 2-1/2"   | 63.5 | S25 PAP0    | 2.6    | 1.2       | 8-7/16"   |     | 4-3/8"  |           |      |
| 3"       | 76   | S30 PAP0    | 3.7    | 1.7       | 8-7/16"   |     | 4-3/8"  |           |      |
| 3-1/2"   | 89   | S35 PAP0    | 4.3    | 2.0       | 8-7/16"   |     | 4-3/8"  |           |      |
| 3-1/2"   | 89   | S35 PBP0    | 3.0    | 1.4       | 8-7/16"   |     | 4-7/16" |           |      |
| 4"       | 102  | S40 PBP0    | 5.3    | 2.4       | 8-1/2"    |     | 4-1/2"  |           |      |
| 5"       | 127  | S50 PBP0    | 8.4    | 3.8       | 8-5/8"    |     | 5-9/16" |           |      |

## Threaded Reaming Bits - 125R

125 Rope / R32 Thread

### Mushroom



### Reaming



1-5/4"  
1-3/4"  
1-5/16"

| Diameter |     | Part Number | Weight |           | Interiors |         |         | Hole Size |         |
|----------|-----|-------------|--------|-----------|-----------|---------|---------|-----------|---------|
| Inches   | MM  |             | Pounds | Kilograms | Gauge     | Mid     | Face    | Top       | Side    |
| 3"       | 76  | S3012G0     | 4.5    | 2.0       | 8-7/16"   | 5-7/16" | 1-7/16" | 2-5/16"   | 2-5/16" |
| 3-1/2"   | 89  | S3512G0     | 5.7    | 2.6       | 8-1/2"    | 6-1/2"  | 1-1/2"  | 1-1/4"    | 2-1/4"  |
| 4"       | 102 | S4012G0     | 6.6    | 3.0       | 8-1/2"    | 6-1/2"  | 1-1/2"  | 1-1/4"    | 2-1/4"  |
| 3"       | 76  | S3012X0     | 7.0    | 3.2       | 8-7/16"   | 4-7/16" | 2-3/8"  | 4-1/4"    |         |
| 3-1/2"   | 89  | S3512X0     | 7.5    | 3.4       | 8-1/2"    | 4-1/2"  | 3-3/8"  | 4-5/16"   |         |
| 4"       | 102 | S4012X0     | 8.0    | 3.6       | 8-1/2"    | 3-1/2"  | 4-3/8"  | 4-1/4"    |         |
| 4"       | 102 | S4038X0     | 8.0    | 3.6       | 8-1/2"    | 3-1/2"  | 4-3/8"  | 4-1/4"    |         |
| 5"       | 127 | S5038X0     | 10.8   | 4.9       | 8-9/16"   | 4-9/16" | 4-3/8"  | 4-5/16"   | 2-5/16" |

## Threaded Reaming Bits - T38

T38

Pilot Diameter in Orange

# Taper Drive Equipment

## Rods

|                                                                                    | Length |         | Taper     |           | Weight |          |
|------------------------------------------------------------------------------------|--------|---------|-----------|-----------|--------|----------|
|                                                                                    | Feet   | MM      | 11" Taper | 12" Taper | Pounds | Kilogram |
| 7/8" x 4-1/4"                                                                      |        |         |           |           |        |          |
|    | 2'     | 610     | K102425   | K102426   | 5.0    | 2.3      |
|                                                                                    | 2-1/2' | 762     | K103025   | K103026   | 6.1    | 2.8      |
|                                                                                    | 3'     | 914     | K103625   | K103626   | 7.1    | 3.2      |
|                                                                                    | 3-1/2' | 1067    | K104225   | K104226   | 8.1    | 3.7      |
|                                                                                    | 4'     | 1219    | K104825   | K104826   | 9.2    | 4.2      |
|                                                                                    | 4-1/2' | 1372    | K105425   | K105426   | 10.2   | 4.6      |
|                                                                                    | 5'     | 1524    | K106025   | K106026   | 11.3   | 5.1      |
|                                                                                    | 5-1/2' | 1676    | K106625   | K106626   | 12.3   | 5.6      |
|                                                                                    | 6'     | 1829    | K107225   | K107226   | 13.3   | 6.0      |
|                                                                                    | 6-1/2' | 1981    | K107825   | K107826   | 14.4   | 6.5      |
|                                                                                    | 7'     | 2134    | K108425   | K108426   | 15.4   | 7.0      |
|                                                                                    | 7-1/2' | 2286    | K109025   | K109026   | 16.4   | 7.4      |
|                                                                                    | 8'     | 2439    | K109625   | K109626   | 17.5   | 7.9      |
|                                                                                    | 8-1/2' | 2591    | K110225   | K110226   | 18.5   | 8.4      |
|                                                                                    | 9'     | 2743    | K110825   | K110826   | 19.5   | 8.8      |
|                                                                                    | 9-1/2' | 2896    | K111425   | K111426   | 20.6   | 9.3      |
|                                                                                    | 10'    | 3048    | K112025   | K112026   | 21.6   | 9.8      |
| 10-1/2'                                                                            | 3100   | K112625 | K112626   | 22.6      | 10.3   |          |
| 12'                                                                                | 3658   | K114425 | K114426   | 25.7      | 11.7   |          |
| 13'                                                                                | 3962   | K115625 | K115626   | 27.8      | 12.6   |          |
| 14'                                                                                | 4267   | K116825 | K116826   | 29.9      | 13.6   |          |
| 1" x 4-1/4"                                                                        |        |         |           |           |        |          |
|  | 2'     | 610     | K202435   | K202436   | 6.6    | 3.0      |
|                                                                                    | 4'     | 1219    | K204835   | K204836   | 12.0   | 5.4      |
|                                                                                    | 6'     | 1829    | K207235   | K207236   | 17.4   | 7.9      |
|                                                                                    | 8'     | 2439    | K209635   | K209636   | 22.8   | 10.3     |
|                                                                                    | 10'    | 3048    | K212035   | K212036   | 28.2   | 12.8     |
|                                                                                    | 12'    | 3658    | K214435   | K214436   | 33.6   | 15.2     |

Length is below collar. Call your local warehouse for longer lengths.

All taper steel is carburized.

E, H, and D thread shanked steel and Rock-Bits are available in the Brunner & Lay Paving Breaker Tool Catalog.

# Taper Drive Equipment

## Bits

|                                                                                     |        | Diameter |                                | Taper      |            |          | Weight |          |
|-------------------------------------------------------------------------------------|--------|----------|--------------------------------|------------|------------|----------|--------|----------|
|                                                                                     |        | Inches   | MM                             | 7/8" - 11" | 7/8" - 12" | 1" - 11" | Pounds | Kilogram |
| Single Pass Taper Bits                                                              |        |          |                                |            |            |          |        |          |
|    | 1-1/8" | 28.5     | T0906L0                        |            |            |          | .35    | .16      |
|                                                                                     | 1-1/4" | 32       | T1001L0                        | T1004L0    |            |          | .38    | .17      |
|                                                                                     | 1-3/8" | 35       | T1201L0                        | T1204L0    | T1202L0    |          | .42    | .19      |
|                                                                                     | 1-1/2" | 38       | T1501L0                        | T1504L0    | T1502L0    |          | .53    | .24      |
|                                                                                     | 1-5/8" | 41       | T1601L0                        |            | T1602L0    |          | .55    | .25      |
|                                                                                     | 1-3/4" | 45       | T1701L0                        | T1704L0    | T1702L0    |          | .61    | .28      |
|                                                                                     | 2"     | 51       | T2001L0                        |            | T2002L0    |          | .75    | .34      |
| Multi Pass Taper Bits                                                               |        |          |                                |            |            |          |        |          |
|    | 1-1/4" | 32       |                                | T1004M0    |            |          | .38    | .17      |
|                                                                                     | 1-3/8" | 35       |                                | T1204M0    |            |          | .42    | .19      |
|                                                                                     | 1-1/2" | 38       |                                | T1504M0    |            |          | .53    | .24      |
|                                                                                     | 1-5/8" | 41       |                                | T1604M0    |            |          | .55    | .25      |
|                                                                                     | 1-3/4" | 45       |                                | T1704M0    |            |          | .61    | .28      |
|                                                                                     | 2"     | 51       |                                | T2004M0    |            |          | .75    | .34      |
| Button Bits                                                                         |        |          |                                |            |            |          |        |          |
|  | 1-1/4" |          | Parabolic Carbide Is Standard. |            |            |          |        |          |
|                                                                                     |        |          | S03201MP                       | S03204MP   |            | .39      | .18    |          |
|                                                                                     |        |          | S03301MP                       | S03304MP   |            | .40      | .18    |          |
|                                                                                     | 1-3/8" |          | S03401MP                       | S03404MP   |            | .42      | .19    |          |
|                                                                                     |        |          | S03501MP                       | S03504MP   |            | .43      | .20    |          |
|                                                                                     |        |          | S03601MP                       | S03604MP   |            | .49      | .22    |          |
|                                                                                     | 1-1/2" |          | S03801MP                       | S03804MP   |            | .54      | .24    |          |
|                                                                                     |        |          | S04101MP                       | S04104MP   |            | .56      | .25    |          |
|                                                                                     | 1-5/8" |          |                                |            |            |          |        |          |
|                                                                                     |        |          |                                |            |            |          |        |          |
| Controlled diameter available upon request.                                         |        |          |                                |            |            |          |        |          |

# Tunneling & Drifting

## 100R / R25

### Couplings

#### 100 Rope

#### Thin Wall

#### 100 Rope to 125 Rope



| Diameter |    | Part Number | Weight |          |
|----------|----|-------------|--------|----------|
| Inches   | MM |             | Pounds | Kilogram |
| 1-1/2"   | 38 | CC100R0     | 2.0    | .91      |
| 1-3/8"   | 35 | CC100R0T    | 1.35   | .6       |
| 1-3/4"   | 45 | CA10125     | 2.1    | .91      |

### Standard 4-Point Bits



| Diameter |    | Part Number | Weight |       |       | Inserts |      | Holes |      |
|----------|----|-------------|--------|-------|-------|---------|------|-------|------|
| Inches   | MM |             | Pounds | Kilos | Gauge | Mid     | Face | Top   | Side |
| 1-3/8"   | 35 | T1210M0     | .7     | .32   |       |         |      |       |      |
| 1-1/2"   | 38 | T1510M0     | .9     | .41   |       |         |      |       |      |
| 1-5/8"   | 41 | T1610M0     | 1.1    | .50   |       |         |      |       |      |
| 1-3/4"   | 45 | T1710M0     | 1.2    | .54   |       |         |      |       |      |
| 1-7/8"   | 48 | T1910M0     | 1.5    | .68   |       |         |      |       |      |
| 2"       | 51 | T2010M0     | 1.7    | .77   |       |         |      |       |      |
| 2-1/4"   | 57 | T2210M0     | 1.8    | .90   |       |         |      |       |      |

### Button Bits

#### Modified Chisel



|          |    |         |     |     |         |  |        |        |        |
|----------|----|---------|-----|-----|---------|--|--------|--------|--------|
| 1-3/10"  | 33 | S03310M | 1.0 | .45 | 5-9/32  |  | 2-1/4  | 1-5/32 | 2-3/16 |
| 1-3/8"   | 35 | S1210M  | 1.1 | .50 | 5-9mm   |  | 2-1/4  | 1-3/20 | 2-3/16 |
| 1-29/64" | 37 | S03710M | 1.1 | .50 | 5-9mm   |  | 2-7/25 | 1-3/20 | 2-3/16 |
| 1-1/2"   | 38 | S1510M  | 1.1 | .50 | 5-11/32 |  | 2-1/4  | 1-3/16 | 2-1/4  |
| 1-5/8"   | 41 | S1610M  | 1.3 | .59 | 5-9mm   |  | 2-5/16 | 1-1/4  | 1-1/4  |
| 1-3/4"   | 45 | S1710M  | 1.5 | .68 | 5-3/8   |  | 2-3/8  | 1-7/25 | 1-5/16 |
| 1-7/8"   | 48 | S1910M  | 1.7 | .77 | 5-7/16  |  | 2-3/8  | 1-1/4  | 2-7mm  |

#### Crown



|        |    |         |     |     |        |  |        |        |        |
|--------|----|---------|-----|-----|--------|--|--------|--------|--------|
| 1-1/2" | 38 | S1510C6 | 1.1 | .50 | 6-5/16 |  | 2-1/4  | 1-3/16 | 2-3/16 |
| 1-5/8" | 41 | S1610C6 | 1.3 | .59 | 6-5/16 |  | 2-1/4  | 1-1/4  | 2-1/4  |
| 1-3/4" | 45 | S1710C6 | 1.5 | .68 | 6-5/16 |  | 2-5/16 | 1-1/4  | 2-3/16 |
| 1-7/8" | 48 | S1910C6 | 1.7 | .77 | 6-3/8  |  | 2-5/16 | 1-5/16 | 2-1/4  |
| 2"     | 51 | S2010C6 | 2.0 | .91 | 6-3/8  |  | 3-5/16 | 1-5/16 | 3-1/4  |

Other and controlled diameters available upon request.

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Tunneling & Drifting

## 100R / R25

|                                                                                                                              |                                                                                                         | Length |            | Part Number | Weight |           |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------|------------|-------------|--------|-----------|
|                                                                                                                              |                                                                                                         | Feet   | MM         |             | Pounds | Kilograms |
| Shanked Rods                                                                                                                 |                                                                                                         |        |            |             |        |           |
| <b>7/8" x 4-1/4"</b><br>                    | 1'                                                                                                      | 305    | P02 B100   | 3.5         | 1.6    |           |
|                                                                                                                              | 2'                                                                                                      | 610    | K10242A    | 5.5         | 2.5    |           |
|                                                                                                                              | 3'                                                                                                      | 914    | K10362A    | 7.6         | 3.4    |           |
|                                                                                                                              | 4'                                                                                                      | 1219   | K10482A    | 9.7         | 4.4    |           |
|                                                                                                                              | 6'                                                                                                      | 1829   | K10722A    | 13.8        | 6.3    |           |
|                                                                                                                              | 8'                                                                                                      | 2438   | K10962A    | 17.9        | 8.1    |           |
|                                                                                                                              | 10'                                                                                                     | 3048   | K11202A    | 22.1        | 10.0   |           |
|                                                                                                                              | <b>1" X 4-1/4"</b><br> | 1'     | 305        | K20123A     | 3.9    | 1.8       |
| 2'                                                                                                                           |                                                                                                         | 610    | K20243A    | 6.6         | 3.0    |           |
| 3'                                                                                                                           |                                                                                                         | 914    | K20363A    | 9.3         | 4.2    |           |
| 4'                                                                                                                           |                                                                                                         | 1219   | K20483A    | 12.0        | 5.4    |           |
| 6'                                                                                                                           |                                                                                                         | 1829   | K20723A    | 17.4        | 7.9    |           |
| 8'                                                                                                                           |                                                                                                         | 2438   | K20963A    | 22.8        | 10.3   |           |
| 10'                                                                                                                          |                                                                                                         | 3048   | K21203A    | 28.2        | 12.8   |           |
| Carbex Rods                                                                                                                  |                                                                                                         |        |            |             |        |           |
| <b>7/8" Hex</b><br>                        | 2'                                                                                                      | 610    | K1024AA    | 5.1         | 2.3    |           |
|                                                                                                                              | 4'                                                                                                      | 1219   | K1048AA    | 9.2         | 4.2    |           |
|                                                                                                                              | 6'                                                                                                      | 1829   | K1072AA    | 13.4        | 6.1    |           |
|                                                                                                                              | 8'                                                                                                      | 2438   | K1096AA    | 17.5        | 8.0    |           |
|                                                                                                                              | 10'                                                                                                     | 3048   | K1120AA    | 21.6        | 9.8    |           |
| <b>1" Hex</b><br>                          | 4'                                                                                                      | 1219   | K2048AA    | 11.8        | 5.4    |           |
|                                                                                                                              | 6'                                                                                                      | 1829   | K2072AA    | 17.2        | 7.8    |           |
|                                                                                                                              | 8'                                                                                                      | 2438   | K2096AA    | 22.6        | 10.3   |           |
|                                                                                                                              | 10'                                                                                                     | 3048   | K2120AA    | 28.0        | 12.7   |           |
| Drifter Rods                                                                                                                 |                                                                                                         |        |            |             |        |           |
| <b>125R to 100R</b><br>                    | 6'4"                                                                                                    | 1930   | K2076AC    | 17.5        | 8.0    |           |
|                                                                                                                              | 8'2"                                                                                                    | 2489   | K2098AC    | 22.0        | 10.0   |           |
|                                                                                                                              | 9'2"                                                                                                    | 2794   | K2110AC    | 24.5        | 11.1   |           |
|                                                                                                                              | 10' 1-1/2"                                                                                              | 3073   | K2121AC    | 27.7        | 12.6   |           |
|                                                                                                                              | 12' 1-1/2"                                                                                              | 3683   | K2145AC    | 33.1        | 15.0   |           |
| Dual Drive Bolter Rods                                                                                                       |                                                                                                         |        |            |             |        |           |
| <b>1" Hex</b><br><b>112R to 100RDD</b><br> | 6'9"                                                                                                    | 2067   | K2081AO320 | 18.5        | 8.4    |           |
|                                                                                                                              | 7'2"                                                                                                    | 2184   | K2086AC330 | 20.3        | 9.2    |           |
|                                                                                                                              | 8'2"                                                                                                    | 2489   | K2098AC314 | 23          | 10.4   |           |

Other lengths available upon request.

# Tunneling & Drifting

## 112R / R28

| Length |    | Part Number | Weight |           |
|--------|----|-------------|--------|-----------|
| Feet   | MM |             | Pounds | Kilograms |

### Drifter Rods

#### 125R to 112R (1-1/8" Hex)



|            |      |         |      |      |
|------------|------|---------|------|------|
| 8' 1-1/2"  | 2476 | K30970C | 27.5 | 12.5 |
| 9' 1-1/2"  | 2794 | K31100C | 32.0 | 14.5 |
| 10' 1-1/2" | 3073 | K31210C | 34.6 | 15.7 |
| 12' 1-1/2" | 3683 | K31450C | 42.1 | 19.1 |
| 14' 1-1/2" | 4293 | K31690C | 48.0 | 21.8 |

### Dual Drive Bolter Rods

#### 112R to 112RDD (1-1/8" Hex)



|       |      |            |      |     |
|-------|------|------------|------|-----|
| 6' 9" | 2057 | K308100401 | 20.8 | 9.4 |
|-------|------|------------|------|-----|

### Extension Rods

#### 1-1/8" Hex



|       |      |         |      |      |
|-------|------|---------|------|------|
| 4'    | 1220 | K304800 | 13.0 | 5.9  |
| 6'    | 1830 | K307200 | 19.0 | 8.6  |
| 6' 9" | 2057 | K308100 | 20.7 | 9.4  |
| 8'    | 2440 | K309600 | 25.0 | 11.3 |

Other lengths available upon request.

# Tunneling & Drifting

## 112R / R28

|                                                                                   |        | Diameter |           | Part Number |        |        | Inserts | Holes  |        |        |      |
|-----------------------------------------------------------------------------------|--------|----------|-----------|-------------|--------|--------|---------|--------|--------|--------|------|
|                                                                                   |        | Inches   | MM        |             | Pounds | Kilos  | Gauge   | Mid    | Face   | Top    | Side |
| Standard 4-Point                                                                  |        |          |           |             |        |        |         |        |        |        |      |
|  | 1-5/8" | 41       | T16 11 M0 | 1.1         | .50    |        |         |        |        |        |      |
|                                                                                   | 1-3/4" | 45       | T17 11 M0 | 1.2         | .54    |        |         |        |        |        |      |
|                                                                                   | 1-7/8" | 48       | T19 11 M0 | 1.5         | .68    |        |         |        |        |        |      |
|                                                                                   | 2"     | 51       | T20 11 M0 | 1.7         | .77    |        |         |        |        |        |      |
|                                                                                   | 2-1/4" | 57       | T22 11 M0 | 1.8         | .90    |        |         |        |        |        |      |
| Button Bits                                                                       |        |          |           |             |        |        |         |        |        |        |      |
| Modified Chisel                                                                   |        | 37       | S037 11 M | 1.1         | .5     | 5-9mm  |         | 2-1/4  | 1-3/16 | 2-3/16 |      |
|                                                                                   | 1-1/2" | 38       | S15 11 M  | 1.1         | .50    | 5-9mm  |         | 2-1/4  | 1-3/16 | 2-1/4  |      |
|                                                                                   | 1-5/8" | 41       | S16 11 M  | 1.3         | .59    | 5-9mm  |         | 2-5/16 | 1-1/4  | 1-1/4  |      |
|                                                                                   | 1-3/4" | 45       | S17 11 M  | 1.5         | .68    | 5-3/8  |         | 2-3/8  | 1-7/32 | 1-6/16 |      |
|                                                                                   | 1-7/8" | 48       | S19 11 M  | 1.7         | .77    | 5-7/16 |         | 2-3/8  | 1-1/4  | 1-7mm  |      |
|                                                                                   | 2"     | 51       | S20 11 M  | 2.0         | .91    | 5-7/16 |         | 2-7/16 | 1-3/16 | 2-6/16 |      |
| Crown                                                                             |        |          |           |             |        |        |         |        |        |        |      |
|                                                                                   | 3"     | 76       | S30 11 CA | 2.7         | 1.2    | 6-1/2  | 3-7/16  | 3-3/8  | 3-5/16 | 1-1/4  |      |
|                                                                                   |        |          |           |             |        |        |         |        |        |        |      |

# Tunneling & Drifting

## 125R / R32

|                                                                                    |  | Length     |      | Part Number | Weight |          |
|------------------------------------------------------------------------------------|--|------------|------|-------------|--------|----------|
|                                                                                    |  | Feet       | MM   |             | Pounds | Kilogram |
| <b>Shanked Rods</b>                                                                |  |            |      |             |        |          |
| <b>1" X 4-1/4"</b>                                                                 |  | 2'         | 610  | K20243C     | 7.1    | 3.2      |
|    |  | 3'         | 914  | K20363C     | 9.8    | 4.4      |
|                                                                                    |  | 4'         | 1219 | K20483C     | 12.5   | 5.7      |
|                                                                                    |  | 6'         | 1829 | K20723C     | 17.9   | 8.1      |
|                                                                                    |  | 8'         | 2438 | K20963C     | 23.3   | 10.6     |
|                                                                                    |  | 10'        | 3048 | K21203C     | 28.7   | 13.0     |
| <b>Carbox Rods</b>                                                                 |  |            |      |             |        |          |
| <b>1" Hex</b>                                                                      |  | 4'         | 1219 | K2048CC     | 11.8   | 5.4      |
|    |  | 6'         | 1829 | K2072CC     | 17.2   | 7.8      |
|                                                                                    |  | 8'         | 2438 | K2096CC     | 22.6   | 10.3     |
|                                                                                    |  | 10'        | 3048 | K2120CC     | 28.0   | 12.7     |
| <b>Drifter Rods</b>                                                                |  |            |      |             |        |          |
| <b>150R to 125R (1-1/4" Hex)</b>                                                   |  | 10' 1-1/2" | 3073 | K4121CE     | 43.5   | 19.7     |
|   |  | 12' 1-1/2" | 3683 | K4145CE     | 51.8   | 23.5     |
|                                                                                    |  | 14' 1-1/2" | 4293 | K4169CE     | 63.6   | 28.8     |
|                                                                                    |  | 16' 1-1/2" | 4902 | K4193CE     | 72.4   | 32.8     |
|                                                                                    |  | 18' 1-1/2" | 5525 | K4217CE     | 81.3   | 36.9     |
| <b>T38 to 125R (1-1/4" Hex)</b>                                                    |  | 10' 1-1/2" | 3073 | K4121CQ     | 43.5   | 19.7     |
|  |  | 12' 1-1/2" | 3683 | K4145CQ     | 51.8   | 23.5     |
|                                                                                    |  | 14' 1-1/2" | 4293 | K4169CQ     | 63.6   | 28.8     |
|                                                                                    |  | 16' 1-1/2" | 4902 | K4193CQS    | 72.4   | 32.8     |
|                                                                                    |  | 18' 1-1/2" | 5525 | K4217CQS    | 81.3   | 36.9     |
| <b>150R to 125 (1-3/8" Hex)</b>                                                    |  | 12' 1-1/2" | 3683 | K8145CE     | 55.1   | 25.0     |
|  |  | 14' 1-1/2" | 4293 | K8169CE     | 74.9   | 34.0     |
|                                                                                    |  | 16' 1-1/2" | 4902 | K8193CE     | 85.6   | 38.8     |
|                                                                                    |  | 18' 1-1/2" | 5525 | K8217CE     | 96.0   | 43.5     |
| <b>T38 to 125R (1-3/8" Hex)</b>                                                    |  | 12' 1-1/2" | 3683 | K8145CQ     | 55.1   | 25.0     |
|  |  | 14' 1-1/2" | 4293 | K8169CQ     | 74.9   | 34.0     |
|                                                                                    |  | 16' 1-1/2" | 4902 | K8193CQS    | 85.6   | 38.8     |
|                                                                                    |  | 18' 1-1/2" | 5525 | K8217CQS    | 96.0   | 43.5     |

# Tunneling & Drifting

## 125R / R32

|                                                                                                                  |  | Length |      | Part Number | Weight |           |
|------------------------------------------------------------------------------------------------------------------|--|--------|------|-------------|--------|-----------|
|                                                                                                                  |  | Feet   | MM   |             | Pounds | Kilograms |
| Extension Rods                                                                                                   |  |        |      |             |        |           |
| Single Thread (1-1/4" Round)                                                                                     |  |        |      |             |        |           |
|                                 |  | 4'     | 1220 | J4048CC     | 15.0   | 6.8       |
|                                                                                                                  |  | 6'     | 1830 | J4072CC     | 22.5   | 10.2      |
|                                                                                                                  |  | 8'     | 2440 | J4096CC     | 30.0   | 13.6      |
|                                                                                                                  |  | 10'    | 3050 | J4120CC     | 37.5   | 17.0      |
|                                                                                                                  |  | 12'    | 3660 | J4144CC     | 45.0   | 20.4      |
|                                                                                                                  |  | 14'    | 4265 | J4168CC     | 52.5   | 23.8      |
| Multilife (1-1/4" Round)                                                                                         |  |        |      |             |        |           |
|                                 |  | 10'    | 3050 | J4120DD     | 37.5   | 17.0      |
|                                                                                                                  |  | 12'    | 3660 | J4144DD     | 45.0   | 20.4      |
|                                                                                                                  |  | 14'    | 4265 | J4168DD     | 52.5   | 23.8      |
| Male/Female (1-1/4" Round)                                                                                       |  |        |      |             |        |           |
| <br>Rods available upon request |  | 4' 3"  | 1295 | J4051C1     | 17.1   | 7.8       |
|                                                                                                                  |  | 5' 3"  | 1600 | J4063C1     | 20.9   | 9.5       |
|                                                                                                                  |  | 6' 3"  | 1905 | J4075C1     | 24.6   | 11.2      |
|                                                                                                                  |  | 8' 3"  | 2515 | J4099C1     | 32.1   | 14.6      |
|                                                                                                                  |  | 10' 3" | 3124 | J4123C1     | 39.6   | 18.0      |
|                                                                                                                  |  | 12' 3" | 3734 | J4147C1     | 47.1   | 21.4      |
| All Thread                                                                                                       |  |        |      |             |        |           |
| 1-1/4" Round                                                                                                     |  |        |      |             |        |           |
|                               |  | 10'    | 3050 | J4120LL     | 30.6   | 13.9      |
|                                                                                                                  |  | 12     | 3660 | J4144LL     | 37.0   | 16.8      |

Rats available upon request.

# Tunneling & Drifting

## 125R / R32

### Couplings

125 Rope

Thin Wall

100 Rope to 125 Rope

125 Rope to 150 Rope

125 Rope to T38



| Diameter |    | Part Number | Weight |           |
|----------|----|-------------|--------|-----------|
| Inches   | MM |             | Pounds | Kilograms |
| 1-3/4"   | 45 | CC125 R0    | 2.0    | .91       |
| 1-5/8"   | 41 | CC125 R0 T  | 1.7    | .77       |
| 1-3/4"   | 45 | CA 10 125   | 2.1    | .91       |
| 2-3/16"  | 56 | CA 125 15   | 4.2    | 2.1       |
| 2-1/8"   | 54 | CA 125 38   | 4.2    | 2.1       |

### 4-Point Bits



| Diameter |    | Part Number | Weight |           | Inserts |     |      | Hole # |      |
|----------|----|-------------|--------|-----------|---------|-----|------|--------|------|
| Inches   | MM |             | Pounds | Kilograms | Gauge   | Mid | Face | Top    | Side |
| 1-5/8"   | 41 | T 16 12 M0  | 1.1    | .50       |         |     |      |        |      |
| 1-3/4"   | 45 | T 17 12 M0  | 1.2    | .54       |         |     |      |        |      |
| 1-7/8"   | 48 | T 19 12 M0  | 1.5    | .68       |         |     |      |        |      |
| 2"       | 51 | T 20 12 M0  | 1.7    | .77       |         |     |      |        |      |
| 2-1/4"   | 57 | T 22 12 M0  | 1.8    | 1.0       |         |     |      |        |      |
| 2-1/2"   | 64 | T 25 12 M0  | 2.5    | 1.1       |         |     |      |        |      |
| 3"       | 76 | T 30 12 M0  | 3.5    | 1.6       |         |     |      |        |      |
|          |    |             |        |           |         |     |      |        |      |

# Tunneling & Drifting

## 125R / R32

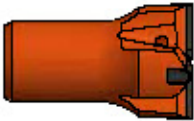
|                 |                                                                                     | Diameter |    | Part Number  | Weight |           | Inserts |        |         | Holes   |        |
|-----------------|-------------------------------------------------------------------------------------|----------|----|--------------|--------|-----------|---------|--------|---------|---------|--------|
|                 |                                                                                     | Inches   | MM |              | Pounds | Kilograms | Gauge   | Mid    | Face    | Top     | Side   |
| Button Bits     |                                                                                     |          |    |              |        |           |         |        |         |         |        |
| Modified Chisel |    | 1-5/8"   | 41 | S 16 12 M    | 1.3    | .59       | 5-23/64 |        | 2-5/16  | 1-1/4   | 1-1/4  |
|                 |                                                                                     | 1-3/4"   | 45 | S 17 12 M    | 1.5    | .68       | 5-3/8   |        | 2-3/8   | 1-7/32  | 1-5/16 |
|                 |                                                                                     | 1-7/8"   | 48 | S 19 12 M    | 1.7    | .77       | 5-7/16  |        | 2-3/8   | 1-1/4   | 2-9/32 |
|                 |                                                                                     | 2"       | 51 | S 20 12 M    | 2.0    | .91       | 5-7/16  |        | 2-7/16  | 1-3/16  | 1-5/16 |
| Crown           |    | 1-3/4"   | 45 | S 17 12 P0   | 1.5    | .68       | 6-23/64 |        | 2-32/64 | 2-15/64 |        |
|                 |                                                                                     | 1-7/8"   | 48 | S 19 12 P0   | 1.7    | .77       | 6-23/64 |        | 2-23/64 | 2-15/64 |        |
|                 |                                                                                     | 2"       | 51 | S 20 12 P0   | 2.0    | .91       | 6-3/8   |        | 2-3/8   | 1-5/16  |        |
|                 |                                                                                     | 2-1/2"   | 64 | S 25 12 C6   | 4.0    | 1.8       | 6-3/8   |        | 3-3/8   | 2-5/16  |        |
|                 |                                                                                     | 3"       | 76 | S 30 12 CA   | 5.0    | 2.3       | 6-1/2"  | 3-7/16 | 3-3/8   | 1-1/4   | 3-5/16 |
| Round           |    | 1-3/4"   | 45 | S 17 12 B0   | 1.5    | .68       | 6-3/8   |        | 3-5/16  | 3-3/16  | 2-1/4  |
|                 |                                                                                     | 1-3/4"   | 45 | S 17 12 F3   | 1.5    | .68       | 6-3/8   |        | 3-5/16  | 3-3/16  | 3-7/32 |
|                 |                                                                                     | 1-7/8"   | 48 | S 19 12 F3   | 1.7    | .77       | 6-3/8   |        | 3-5/16  | 1-3/16  | 3-7/32 |
|                 |                                                                                     | 2"       | 51 | S 20 12 F3   | 2.0    | .91       | 6-3/8   |        | 6-23/64 | 3-3/16  | 3-7/32 |
|                 |                                                                                     | 2-1/4"   | 57 | S 22 12 F3   | 2.5    | 1.0       | 4-7/16  |        | 3-3/8   | 3-3/16  | 3-7/32 |
| Modified Round  |   | 2"       | 51 | S 20 12 CC   | 2.0    | .91       | 6-3/8   |        | 3-23/64 | 2-9/32  | 1-5/16 |
|                 |                                                                                     | 2-1/4"   | 57 | S 22 12 CC   | 2.2    | 1.0       | 6-10mm  |        | 3-3/8   | 3-5/16  | 1-5/16 |
|                 |                                                                                     | 2-1/2"   | 64 | S 25 12 CC   | 2.5    | 1.1       | 6-10mm  |        | 3-3/8   | 3-5/16  | 1-5/16 |
|                 |                                                                                     |          |    |              |        |           |         |        |         |         |        |
| Soft Rock       |  | 1-3/4"   | 45 | S 17 12 Q0   | 1.5    | .68       | 6-9mm   |        | 3-5/16  | 3-7/32  |        |
|                 |                                                                                     | 1-7/8"   | 48 | S 19 12 Q0   | 1.75   | .77       | 6-3/8   |        | 3-5/16  | 3-15/64 |        |
|                 |                                                                                     | 2-1/4"   | 57 | S 22 12 Q0   | 2.0    | .91       | 6-3/8   |        | 3-3/8   | 3-15/64 |        |
| Retrac          |  | 2"       | 51 | S 20 12 F/A^ | 2.0    | .91       | 6-3/8   |        | 4-5/16  | 3-7mm   |        |
|                 |                                                                                     | 2-1/4"   | 57 | S 22 12 F/A^ | 2.2    | 1.0       | 6-7/16  |        | 4-3/8   | 1-5/16  | 2-1/4  |
|                 |                                                                                     |          |    |              |        |           |         |        |         |         |        |



# Extension Drilling Information

## Choosing the right bit

Many factors go into choosing the correct bit for your ground conditions and drilling practices. Production demands have changed the drilling industry over the past twenty years, most of the pneumatic hammers have been replaced by the harder hitting, faster drilling hydraulic hammers. We are constantly improving our manufacturing practices to produce bits that withstand the new machines. With our experience in the rock drilling industry we can suggest products, in various styles and configurations, for your particular rock drilling application.

|                                                                                     | Face Style  | Applications                                                                                                                         | Designation                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Standard X  | For use in moderately abrasive or seamy broken rock conditions.                                                                      | X0                                                                                                              |
|    | HI-Duty X   | For use in extremely abrasive rock and a longer carbide life is desired, as above.                                                   | Z0                                                                                                              |
|  | Crown       | For use in general applications.                                                                                                     | C0  H0                   |
|  | Drop Center | For use in medium to hard rock applications, where a straight hole is ideal.                                                         | D0 <br>4-wing <br>3-wing |
|  | Flat Face   | For use in hard to very hard rock applications.                                                                                      | FA  F4                   |
|                                                                                     | Body Style  |                                                                                                                                      |                                                                                                                                                                                                    |
|  | Retrac      | Drop Center & Flat face styles are available in a retrac body for straighter holes and to facilitate the bits removal from the hole. | DW*  FW*                 |

# Extension Drilling

## 100R / R25

### Carbex Rods

#### 7/8" Hex



#### 1" Hex



| Length |      | Part Number | Weight |           |
|--------|------|-------------|--------|-----------|
| Feet   | MM   |             | Pounds | Kilograms |
| 2'     | 610  | K1024.AA    | 5.1    | 2.3       |
| 4'     | 1219 | K1048.AA    | 9.2    | 4.2       |
| 6'     | 1829 | K1072.AA    | 13.4   | 6.1       |
| 8'     | 2438 | K1096.AA    | 17.5   | 8.0       |
| 10'    | 3048 | K1120.AA    | 21.6   | 9.8       |
| 4'     | 1219 | K2048.AA    | 11.8   | 5.4       |
| 6'     | 1829 | K2072.AA    | 17.2   | 7.8       |
| 8'     | 2438 | K2096.AA    | 22.6   | 10.3      |
| 10'    | 3048 | K2120.AA    | 28.0   | 12.7      |

Other lengths available upon request.

# Extension Drilling

## 100R / R25

| Diameter |    | Part Number | Weight |           |
|----------|----|-------------|--------|-----------|
| Inches   | MM |             | Pounds | Kilograms |
| 1-1/2"   | 38 | CC100 R0    | 2.0    | .91       |
| 1-3/8"   | 35 | CC100 R0 T  | 1.35   | .6        |
| 1-3/4"   | 45 | CA10125     | 2.1    | .91       |

### Couplings

#### 100 Rope

#### Thin Wall



#### 100 Rope to 125 Rope

### Standard 4-Point Bits



| Diameter |    | Part Number | Weight |       | Gauge | Interb |      | Hole |      |
|----------|----|-------------|--------|-------|-------|--------|------|------|------|
| Inches   | MM |             | Pounds | Kilos |       | Mid    | Face | Top  | Side |
| 1-3/8"   | 35 | T12 10 M0   | .7     | .32   |       |        |      |      |      |
| 1-1/2"   | 38 | T15 10 M0   | .9     | .41   |       |        |      |      |      |
| 1-5/8"   | 41 | T16 10 M0   | 1.1    | .50   |       |        |      |      |      |
| 1-3/4"   | 45 | T17 10 M0   | 1.2    | .54   |       |        |      |      |      |
| 1-7/8"   | 48 | T19 10 M0   | 1.5    | .68   |       |        |      |      |      |
| 2"       | 51 | T20 10 M0   | 1.7    | .77   |       |        |      |      |      |
| 2-1/4"   | 57 | T22 10 M0   | 1.8    | .90   |       |        |      |      |      |

### Button Bits

#### Modified Chisel



|          |    |          |     |     |         |  |        |        |        |
|----------|----|----------|-----|-----|---------|--|--------|--------|--------|
| 1-3/16"  | 33 | S03310 M | 1.0 | .45 | 5-9/32  |  | 2-1/4  | 1-5/32 | 2-3/16 |
| 1-3/8"   | 35 | S1210 M  | 1.1 | .50 | 5-9mm   |  | 2-1/4  | 1-3/32 | 2-3/16 |
| 1-29/64" | 37 | S03710 M | 1.1 | .50 | 5-9mm   |  | 2-1/25 | 1-3/32 | 2-3/16 |
| 1-1/2"   | 38 | S1510 M  | 1.1 | .50 | 5-11/32 |  | 2-1/4  | 1-3/16 | 2-1/4  |
| 1-5/8"   | 41 | S1610 M  | 1.3 | .59 | 5-9mm   |  | 2-5/16 | 1-1/4  | 1-1/4  |
| 1-3/4"   | 45 | S1710 M  | 1.5 | .68 | 5-3/8   |  | 2-3/8  | 1-7/25 | 1-5/16 |
| 1-7/8"   | 48 | S1910 M  | 1.7 | .77 | 5-7/16  |  | 2-3/8  | 1-1/4  | 2-7mm  |
| 1-1/2"   | 38 | S1510 C6 | 1.1 | .50 | 6-5/16  |  | 2-1/4  | 1-3/16 | 2-3/16 |
| 1-5/8"   | 41 | S1610 C6 | 1.3 | .59 | 6-5/16  |  | 2-1/4  | 1-1/4  | 2-1/4  |
| 1-3/4"   | 45 | S1710 C6 | 1.5 | .68 | 6-5/16  |  | 2-5/16 | 1-1/4  | 2-3/16 |
| 1-7/8"   | 48 | S1910 C6 | 1.7 | .77 | 6-3/8   |  | 2-5/16 | 1-5/16 | 2-1/4  |
| 2"       | 51 | S2010 C6 | 2.0 | .91 | 6-3/8   |  | 3-5/16 | 1-5/16 | 3-1/4  |

#### Crown



Other and controlled diameters available upon request.

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Extension Drilling

## 125R / R32

|                                                                                                                  |  | Length |      | Part Number | Weight |           |
|------------------------------------------------------------------------------------------------------------------|--|--------|------|-------------|--------|-----------|
|                                                                                                                  |  | Feet   | MM   |             | Pounds | Kilograms |
| Extension Rods                                                                                                   |  |        |      |             |        |           |
|                                 |  | 4'     | 1220 | J4048 CC    | 15.0   | 6.8       |
|                                                                                                                  |  | 6'     | 1830 | J4072 CC    | 22.5   | 10.2      |
|                                                                                                                  |  | 8'     | 2440 | J4096 CC    | 30.0   | 13.6      |
|                                                                                                                  |  | 10'    | 3050 | J4120 CC    | 37.5   | 17.0      |
|                                                                                                                  |  | 12'    | 3660 | J4144 CC    | 45.0   | 20.4      |
|                                                                                                                  |  | 14'    | 4265 | J4168 CC    | 52.5   | 23.8      |
|                                 |  | 10'    | 3050 | J4120 DD    | 37.5   | 17.0      |
|                                                                                                                  |  | 12'    | 3660 | J4144 DD    | 45.0   | 20.4      |
|                                                                                                                  |  | 14'    | 4265 | J4168 DD    | 52.5   | 23.8      |
| <br>Rats available upon request |  | 4' 3"  | 1295 | J4051C1     | 17.1   | 7.8       |
|                                                                                                                  |  | 5' 3"  | 1600 | J4063C1     | 20.9   | 9.5       |
|                                                                                                                  |  | 6' 3"  | 1905 | J4075C1     | 24.6   | 11.2      |
|                                                                                                                  |  | 8' 3"  | 2515 | J4099C1     | 32.1   | 14.6      |
|                                                                                                                  |  | 10' 3" | 3124 | J4123C1     | 39.6   | 18.0      |
|                                                                                                                  |  | 12' 3" | 3734 | J4147C1     | 47.1   | 21.4      |
| All Thread                                                                                                       |  |        |      |             |        |           |
|                               |  | 10'    | 3050 | J4120 LL    | 30.6   | 13.9      |
|                                                                                                                  |  | 12'    | 3660 | J4144 LL    | 37.0   | 16.8      |

## 125R / R32

|                      |                                                                                     | Diameter |    | Part Number | Weight |           |
|----------------------|-------------------------------------------------------------------------------------|----------|----|-------------|--------|-----------|
|                      |                                                                                     | Inches   | MM |             | Pounds | Kilograms |
| Couplings            |                                                                                     |          |    |             |        |           |
| 125 Rope             |  | 1-3/4"   | 45 | CC125R0     | 2.0    | .91       |
| Thin Wall            |                                                                                     | 1-5/8"   | 41 | CC125R0T    | 1.7    | .77       |
| 100 Rope to 125 Rope |                                                                                     | 1-3/4"   | 45 | CA10125     | 2.1    | .91       |
| 125 Rope to 150 Rope |                                                                                     | 2-3/16"  | 56 | CA12515     | 4.2    | 2.1       |
| 125 Rope to T38      |                                                                                     | 2-1/8"   | 54 | CA12538     | 4.2    | 2.1       |



# Extension Drilling

## 125R / R32

### 4-Point Bits



| Diameter |    | Part Number | Weight |       | Inserts |     |      | Hole |      |
|----------|----|-------------|--------|-------|---------|-----|------|------|------|
| Inches   | MM |             | Pounds | Kilos | Gauge   | Mid | Face | Top  | Side |
| 1-5/8"   | 41 | T1612 M0    | 1.1    | .50   |         |     |      |      |      |
| 1-3/4"   | 45 | T1712 M0    | 1.2    | .54   |         |     |      |      |      |
| 1-7/8"   | 48 | T1912 M0    | 1.5    | .68   |         |     |      |      |      |
| 2"       | 51 | T2012 M0    | 1.7    | .77   |         |     |      |      |      |
| 2-1/4"   | 57 | T2212 M0    | 1.8    | 1.0   |         |     |      |      |      |
| 2-1/2"   | 64 | T2512 M0    | 2.5    | 1.1   |         |     |      |      |      |
| 3"       | 76 | T3012 M0    | 3.5    | 1.6   |         |     |      |      |      |
|          |    |             |        |       |         |     |      |      |      |

### Button Bits

#### Modified

#### Chisel



#### Crown



#### Round

80 see p.7

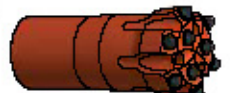


#### Modified

#### Round



#### Soft Rock



#### Retrac



| Diameter |    | Part Number | Weight |       | Inserts |        |         | Hole    |        |
|----------|----|-------------|--------|-------|---------|--------|---------|---------|--------|
| Inches   | MM |             | Pounds | Kilos | Gauge   | Mid    | Face    | Top     | Side   |
| 1-5/8"   | 41 | S1612M      | 1.3    | .59   | 5-23/64 |        | 2-5/16  | 1-1/4   | 1-1/4  |
| 1-3/4"   | 45 | S1712M      | 1.5    | .68   | 5-3/8   |        | 2-3/8   | 1-7/32  | 1-6/16 |
| 1-7/8"   | 48 | S1912M      | 1.7    | .77   | 5-7/16  |        | 2-3/8   | 1-1/4   | 2-9/32 |
| 2"       | 51 | S2012M      | 2.0    | .91   | 5-7/16  |        | 2-7/16  | 1-3/16  | 1-6/16 |
| 1-3/4"   | 45 | S1712 P0    | 1.5    | .68   | 6-23/64 |        | 2-32/64 | 2-15/64 |        |
| 1-7/8"   | 48 | S1912 P0    | 1.7    | .77   | 6-23/64 |        | 2-23/64 | 2-15/64 |        |
| 2"       | 51 | S2012 P0    | 2.0    | .91   | 6-3/8   |        | 2-3/8   | 1-5/16  |        |
| 2-1/2"   | 64 | S2512 C6    | 4.0    | 1.8   | 6-3/8   |        | 3-3/8   | 2-5/16  |        |
| 3"       | 76 | S3012 CA    | 5.0    | 2.3   | 6-1/2"  | 3-7/16 | 3-3/8   | 1-1/4   | 3-6/16 |
| 1-3/4"   | 45 | S1712 B0    | 1.5    | .68   | 6-3/8   |        | 3-5/16  | 3-3/16  | 2-1/4  |
| 1-3/4"   | 45 | S1712 F3    | 1.5    | .68   | 6-3/8   |        | 3-5/16  | 3-3/16  | 3-7/32 |
| 1-7/8"   | 48 | S1912 F3    | 1.7    | .77   | 6-3/8   |        | 3-5/16  | 1-3/16  | 3-7/32 |
| 2"       | 51 | S2012 F3    | 2.0    | .91   | 6-3/8   |        | 6-23/64 | 3-3/16  | 3-7/32 |
| 2-1/4"   | 57 | S2212 F3    | 2.5    | 1.0   | 4-7/16  |        | 3-3/8   | 3-3/16  | 3-7/32 |
| 2"       | 51 | S2012 CC    | 2.0    | .91   | 6-3/8   |        | 3-23/64 | 2-9/32  | 1-6/16 |
| 2-1/4"   | 57 | S2212 CC    | 2.2    | 1.0   | 6-10mm  |        | 3-39    | 3-5/16  | 1-6/16 |
| 2-1/2"   | 64 | S2512 CC    | 2.5    | 1.1   | 6-10mm  |        | 3-39    | 3-5/16  | 1-6/16 |
|          |    |             |        |       |         |        |         |         |        |
| 1-3/4"   | 45 | S1712 Q0    | 1.5    | .68   | 6-9mm   |        | 3-5/16  | 3-7/32  |        |
| 1-7/8"   | 48 | S1912 Q0    | 1.75   | .77   | 6-3/8   |        | 3-5/16  | 3-15/64 |        |
| 2-1/4"   | 57 | S2212 Q0    | 2.0    | .91   | 6-3/8   |        | 3-3/8   | 3-15/64 |        |
|          |    |             |        |       |         |        |         |         |        |
| 2"       | 51 | S2012 FA*   | 2.0    | .91   | 6-3/8   |        | 4-5/16  | 3-7mm   |        |
| 2-1/4"   | 57 | S2212 FA*   | 2.2    | 1.0   | 6-7/16  |        | 4-3/8   | 1-5/16  | 2-1/4  |
|          |    |             |        |       |         |        |         |         |        |

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Extension Drilling

## 150R / R38

|                                                                                                                         |  | Length |      | Part Number | Weight |          |
|-------------------------------------------------------------------------------------------------------------------------|--|--------|------|-------------|--------|----------|
|                                                                                                                         |  | Feet   | MM   |             | Pounds | Kilogram |
| Extension Rods                                                                                                          |  |        |      |             |        |          |
| <b>Single Thread (1-1/2" Round)</b><br> |  | 10'    | 3050 | J5 120 EE   | 52.4   | 23.9     |
|                                                                                                                         |  | 12'    | 3660 | J5 144 EE   | 62.8   | 28.7     |
|                                                                                                                         |  | 14'    | 4266 | J5 168 EE   | 73.3   | 33.5     |
| <b>Multilife (1-1/2" Round)</b><br>     |  | 10'    | 3050 | J5 120 FF   | 52.4   | 23.9     |
|                                                                                                                         |  | 12'    | 3660 | J5 144 FF   | 62.8   | 28.7     |
|                                                                                                                         |  | 14'    | 4266 | J5 168 FF   | 73.3   | 33.5     |
| <b>All Thread (1-1/2" Round)</b><br>    |  | 10'    | 3050 | J5 120 HH   | 52.4   | 23.9     |
|                                                                                                                         |  | 12'    | 3660 | J5 144 HH   | 62.8   | 28.7     |
|                                                                                                                         |  | 14'    | 4266 | J5 168 HH   | 73.3   | 33.5     |

|                      | Diameter |    | Part Number | Weight |          |
|----------------------|----------|----|-------------|--------|----------|
|                      | Inches   | MM |             | Pounds | Kilogram |
| Couplings            |          |    |             |        |          |
| 150 Rope             | 2-1/8"   | 54 | CC150 R0    | 3.5    | 1.6      |
| Thin Wall            | 1-15/16" | 49 | CC150 R0 T  | 2.5    | 1.1      |
|                      |          |    |             |        |          |
| 125 Rope to 150 Rope | 2-3/16"  | 56 | CA125 15    | 4.2    | 2.1      |
| 150 Rope to T38      | 2-1/8"   | 54 | CA150 38    | 3.7    | 1.7      |

# Extension Drilling

## 150R / R38

|                                                                                   |                                                                                     | Diameter |          | Part Number | Weight |      | Inserts |        |        | Hole    |       |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|----------|-------------|--------|------|---------|--------|--------|---------|-------|
|                                                                                   |                                                                                     | Inches   | MM       |             | Pounds | Kilo | Gauge   | Mid    | Face   | Top     | Side  |
| X-Design Bits                                                                     |                                                                                     |          |          |             |        |      |         |        |        |         |       |
|  | 2-1/2"                                                                              | 64       | T2515 X0 | 3.6         | 1.6    |      |         |        |        |         |       |
|                                                                                   | 2-3/4"                                                                              | 70       | T2715 X0 | 4.2         | 1.9    |      |         |        |        |         |       |
|                                                                                   | 3"                                                                                  | 76       | T3015 X0 | 4.8         | 2.2    |      |         |        |        |         |       |
|                                                                                   | 3-1/2"                                                                              | 89       | T3515 X0 | 6.5         | 2.9    |      |         |        |        |         |       |
|                                                                                   | 4"                                                                                  | 102      | T4015 X0 | 8.7         | 3.9    |      |         |        |        |         |       |
| Button Bits                                                                       |                                                                                     |          |          |             |        |      |         |        |        |         |       |
| Crown                                                                             |    | 2-1/2"   | 64       | S2515 C0    | 3.7    | 1.7  | 6-7/16  | 3-3/8  | 3-5/16 | 1-3/8   | 3-3/8 |
|                                                                                   |                                                                                     | 2-3/4"   | 70       | S2715 C0    | 4.3    | 1.9  | 6-7/16  | 3-3/8  | 3-5/16 | 1-3/8   | 3-3/8 |
|                                                                                   |                                                                                     | 3"       | 76       | S3015 H0    | 4.7    | 2.1  | 6-1/2   | 3-1/2  | 2-1/2  | 1-7/16  | 2-3/8 |
|                                                                                   |                                                                                     | 3-1/2"   | 89       | S3515 H0    | 5.2    | 2.4  | 6-1/2   | 3-1/2  | 2-1/2  | 1-1/2   | 1-1/2 |
|                                                                                   |                                                                                     | 4"       | 102      | S4015 H0    | 8.4    | 3.8  | 7-9/16  | 4-1/2  | 3-1/2  | 1-1/2   | 1-1/2 |
| Drop Center                                                                       |   | 2-1/2"   | 64       | S2515 D0    | 3.7    | 1.7  | 6-7/16  | 3-3/8  | 1-5/16 | 3-6/16  |       |
|                                                                                   |                                                                                     | 2-3/4"   | 70       | S2715 D0    | 4.3    | 1.9  | 6-7/16  | 3-3/8  | 2-5/16 | 3-3/8   |       |
|                                                                                   |                                                                                     | 3"       | 76       | S3015 D0    | 4.7    | 2.1  | 6-7/16  | 3-7/16 | 1-7/16 | 1-23/64 |       |
|                                                                                   |                                                                                     | 3-1/2"   | 89       | S3515 D0    | 5.2    | 2.4  | 6-1/2   | 3-1/2  | 2-7/16 | 3-3/8   |       |
|                                                                                   |                                                                                     | 4"       | 102      | S4015 D0    | 8.4    | 3.8  | 8-9/16  | 4-1/2  | 2-3/8  | 4-3/8   |       |
| Flat Face                                                                         |  | 2-1/2"   | 64       | S2515 F0    | 3.7    | 1.7  | 6-7/16  | 4-3/8  |        | 2-3/8   |       |
|                                                                                   |                                                                                     | 2-3/4"   | 70       | S2715 F0    | 4.3    | 1.9  | 6-7/16  | 5-3/8  |        | 2-7/16  |       |
|                                                                                   |                                                                                     | 3"       | 76       | S3015 FA    | 4.7    | 2.1  | 8-7/16  | 5-7/16 |        | 2-3/8   | 2-3/8 |
|                                                                                   |                                                                                     | 3-1/2"   | 89       | S3515 FA    | 5.2    | 2.4  | 8-1/2   | 5-1/2  |        | 2-7/16  |       |
|                                                                                   |                                                                                     | 4"       | 102      | S4015 FA    | 8.4    | 3.8  | 8-9/16  | 6-1/2  |        | 2-7/16  |       |

**Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide**

Parabolic = P as the last digit    Ballistic = B as the last digit    Conical = C as the last digit

# Extension Drilling

## T38

|                                                                                    |  | Length |      | Part Number | Weight |           |
|------------------------------------------------------------------------------------|--|--------|------|-------------|--------|-----------|
|                                                                                    |  | Feet   | MM   |             | Pounds | Kilograms |
| <b>Carbox Rods</b>                                                                 |  |        |      |             |        |           |
| <b>1-1/4" Hex</b>                                                                  |  | 10'    | 3050 | K4120QQ     | 45.6   | 20.7      |
|    |  | 12'    | 3660 | K4144QQ     | 54.4   | 24.7      |
|                                                                                    |  | 14'    | 4265 | K4168QQ     | 59.8   | 27.1      |
| <b>Extension Rods</b>                                                              |  |        |      |             |        |           |
| <b>Single Thread (1-1/2" Round)</b>                                                |  | 6'     | 1830 | H5072RR     | 31.4   | 17.8      |
|                                                                                    |  | 8'     | 2440 | H5096RR     | 41.9   | 19.0      |
|                                                                                    |  | 10'    | 3050 | H5120RR     | 52.4   | 23.7      |
|    |  | 12'    | 3660 | H5144RR     | 62.8   | 28.4      |
|                                                                                    |  | 14'    | 4265 | H5168RR     | 73.3   | 33.2      |
|                                                                                    |  | 16'    | 4875 | H5192RR     | 83.8   | 38.0      |
|                                                                                    |  | 18'    | 5485 | H5216RR     | 94.3   | 42.8      |
| <b>Tandem (1-1/2" Round)</b>                                                       |  | 10'    | 3050 | H5120SS     | 52.4   | 23.7      |
|    |  | 12'    | 3660 | H5144SS     | 62.8   | 28.4      |
|                                                                                    |  | 14'    | 4265 | H5168SS     | 73.3   | 33.2      |
|                                                                                    |  | 16'    | 4875 | H5192SS     | 83.8   | 38.0      |
| <b>All Thread (1-1/2" Round)</b>                                                   |  | 10'    | 3050 | J5120GG     | 45.6   | 21.4      |
|  |  | 12'    | 3660 | J5144GG     | 56.6   | 25.6      |
|                                                                                    |  | 14'    | 4270 | J5168GG     | 66.0   | 29.9      |
| <b>Male/Female (1-1/2" Round)</b>                                                  |  | 4' 4"  | 1320 | J5052RQ     | 24.9   | 11.2      |
|  |  | 5' 4"  | 1626 | J5064RQ     | 30.2   | 13.6      |
|                                                                                    |  | 6' 4"  | 1930 | J5076RQ     | 35.4   | 16.0      |
|                                                                                    |  | 10' 4" | 3150 | J5124RQ     | 58.4   | 25.5      |
|                                                                                    |  | 12' 4" | 3760 | J5148RQ     | 66.9   | 30.3      |
| <b>Guide Tube</b>                                                                  |  | 4'     | 1220 | J55052RQ    | 35.3   | 16.0      |
|  |  | 5'     | 1525 | J55064RQ    | 44.1   | 20.0      |
|                                                                                    |  | 6'     | 1830 | J55076RQ    | 52.9   | 24.0      |
|                                                                                    |  | 8'     | 2440 | J55100RQ    | 70.5   | 32.0      |
|                                                                                    |  | 10'    | 3050 | J55124RQ    | 88.2   | 40.0      |
|                                                                                    |  | 12'    | 3660 | J55148RQ    | 105.8  | 48.0      |

Rats available upon request

|                 |                                                                                     |        | Diameter |         | Part Number | Weight |           |
|-----------------|-------------------------------------------------------------------------------------|--------|----------|---------|-------------|--------|-----------|
|                 |                                                                                     |        | Inches   | MM      |             | Pounds | Kilograms |
| Couplings       |                                                                                     |        |          |         |             |        |           |
| T38             |  | 2-1/8" | 54       | CCT3800 | 39          | 1.8    |           |
| 125 Rope to T38 |                                                                                     | 2-1/8" | 54       | CA12538 | 5.1         | 2.4    |           |
| 150 Rope to T38 |                                                                                     | 2-1/8" | 54       | CA15038 | 3.7         | 1.7    |           |
| T38 to T45      |                                                                                     | 2-1/2" | 64       | CA38045 | 7.0         | 3.1    |           |
|                 |                                                                                     |        |          |         |             |        |           |



# Extension Drilling

## T38

|                                                                                     |        | Diameter |          | Part Number | Weight |        | Inserts |        |         | Hole  |      |
|-------------------------------------------------------------------------------------|--------|----------|----------|-------------|--------|--------|---------|--------|---------|-------|------|
|                                                                                     |        | Inches   | MM       |             | Pounds | Kilos  | Gauge   | Mid    | Face    | Top   | Side |
| X-Design Bits                                                                       |        |          |          |             |        |        |         |        |         |       |      |
|    | 2-1/2" | 64       | T25SSX0  | 3.6         | 1.6    |        |         |        |         |       |      |
|                                                                                     | 2-3/4" | 70       | T27SSX0  | 4.2         | 1.9    |        |         |        |         |       |      |
|                                                                                     | 3"     | 76       | T30SSX0  | 4.8         | 2.2    |        |         |        |         |       |      |
|                                                                                     | 3-1/2" | 89       | T35SSX0  | 6.5         | 2.9    |        |         |        |         |       |      |
|                                                                                     | 4"     | 102      | T40SSX0  | 8.7         | 3.9    |        |         |        |         |       |      |
| Button Bits                                                                         |        |          |          |             |        |        |         |        |         |       |      |
| Crown                                                                               |        |          |          |             |        |        |         |        |         |       |      |
|    | 2-1/2" | 64       | S25SSC0  | 3.7         | 1.7    | 6-7/16 | 3-3/8   | 3-5/16 | 1-3/8   | 3-3/8 |      |
|                                                                                     | 2-3/4" | 70       | S27SSC0  | 4.3         | 1.9    | 6-7/16 | 3-3/8   | 3-5/16 | 1-3/8   | 3-3/8 |      |
|                                                                                     | 3"     | 76       | S30SSH0  | 4.7         | 2.1    | 6-1/2  | 3-1/2   | 2-1/2  | 1-7/16  | 2-3/8 |      |
|                                                                                     | 3-1/2" | 89       | S35SSH0  | 5.2         | 2.4    | 6-1/2  | 3-1/2   | 2-1/2  | 1-1/2   | 1-1/2 |      |
|                                                                                     | 4"     | 102      | S40SSH0  | 8.4         | 3.8    | 7-5/8  | 4-1/2   | 3-1/2  | 1-1/2   | 1-1/2 |      |
| Drop Center                                                                         |        |          |          |             |        |        |         |        |         |       |      |
|    | 2-1/2" | 64       | S25SSD0  | 3.7         | 1.7    | 6-7/16 | 3-3/8   | 1-5/16 | 3-5/16  |       |      |
|                                                                                     | 2-3/4" | 70       | S27SSD0  | 4.3         | 1.9    | 6-7/16 | 3-3/8   | 2-5/16 | 3-3/8   |       |      |
|                                                                                     | 3"     | 76       | S30SSD0  | 4.7         | 2.1    | 6-7/16 | 3-7/16  | 1-7/16 | 3-23/64 |       |      |
|                                                                                     | 3-1/2" | 89       | S35SSD0  | 5.2         | 2.4    | 6-1/2  | 3-1/2   | 2-7/16 | 3-3/8   |       |      |
|                                                                                     | 4"     | 102      | S40SSD0  | 8.4         | 3.8    | 8-9/16 | 4-1/2   | 2-3/8  | 4-3/8   |       |      |
| Flat Face (HI-Duty)                                                                 |        |          |          |             |        |        |         |        |         |       |      |
|  | 2-1/2" | 64       | S25SSF0  | 3.7         | 1.7    | 6-7/16 | 4-3/8   |        | 2-3/8   |       |      |
|                                                                                     | 2-3/4" | 70       | S27SSF0  | 4.3         | 1.9    | 6-7/16 | 5-3/8   |        | 2-7/16  |       |      |
|                                                                                     | 3"     | 76       | S30SSF0  | 4.7         | 2.1    | 8-7/16 | 5-7/16  |        | 1-3/8   | 2-3/8 |      |
|                                                                                     | 3-1/2" | 89       | S35SSF0  | 5.2         | 2.4    | 8-1/2  | 5-1/2   |        | 2-7/16  |       |      |
|                                                                                     | 4"     | 102      | S40SSF0  | 8.4         | 3.8    | 8-9/16 | 6-1/2   |        | 2-7/16  |       |      |
| Flat Face                                                                           |        |          |          |             |        |        |         |        |         |       |      |
|  | 3"     | 76       | S30SSF4  | 4.7         | 2.1    | 8-7/16 | 6-3/8   |        | 2-3/8   |       |      |
|                                                                                     | 3-1/2" | 89       | S35SSF4  | 5.2         | 2.4    | 8-1/2  | 6-7/16  |        | 2-1/2   | 2-3/8 |      |
|                                                                                     |        |          |          |             |        |        |         |        |         |       |      |
| Soft Rock                                                                           |        |          |          |             |        |        |         |        |         |       |      |
|  | 2-1/4" | 57       | S22SSQOC | 2.2         | 1.0    | 6-3/8  | 3-3/8   |        | 3-5/16  |       |      |
|                                                                                     | 2-1/2" | 64       | S25SSQOC | 3.7         | 1.7    | 6-7/16 | 3-7/16  |        | 3-11/32 |       |      |
|                                                                                     |        |          |          |             |        |        |         |        |         |       |      |
| Retrac                                                                              |        |          |          |             |        |        |         |        |         |       |      |
|  | 2-1/2" | 64       | S25SSDVA | 5.0         | 2.3    | 6-7/16 | 4-7/16  |        | 2-1/4   | 1-3/8 |      |
|                                                                                     | 2-3/4" | 70       | S27SSDVA | 5.8         | 2.6    | 6-7/16 | 3-3/8   | 2-5/16 | 3-3/8   |       |      |
|                                                                                     | 3"     | 76       | S30SSDVA | 6.6         | 3.0    | 6-7/16 | 3-7/16  | 2-9mm  | 3-3/8   |       |      |
|                                                                                     | 3-1/2" | 89       | S35SSDVA | 11.0        | 5.0    | 8-1/2  | 4-7/16  | 3-3/8  | 4-3/8   |       |      |
|                                                                                     | 4"     | 102      | S40SSDVA | 14.6        | 6.6    | 8-9/16 | 4-1/2   | 1-7/16 | 4-3/8   |       |      |
| Drop Center                                                                         |        |          |          |             |        |        |         |        |         |       |      |
|  | 2-1/2" | 64       | S25SSFVA | 5.0         | 2.3    | 6-7/16 | 4-7/16  |        | 2-1/4   | 1-3/8 |      |
|                                                                                     | 3"     | 76       | S30SSFVA | 6.6         | 3.0    | 8-7/16 | 4-7/16  |        | 2-1/2   | 2-1/4 |      |
|                                                                                     | 3-1/2" | 89       | S35SSFVA | 11.0        | 5.0    | 8-1/2  | 6-7/16  |        | 2-1/2   | 2-3/8 |      |
|                                                                                     | 4"     | 102      | S40SSFVA | 14.6        | 6.6    | 8-1/2  | 7-1/2   |        | 2-7/16  | 2-3/8 |      |
|                                                                                     |        |          |          |             |        |        |         |        |         |       |      |
| Flat Face                                                                           |        |          |          |             |        |        |         |        |         |       |      |

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Extension Drilling

## T45

|                              | Length |      | Part Number | Weight |           |
|------------------------------|--------|------|-------------|--------|-----------|
|                              | Feet   | MM   |             | Pounds | Kilograms |
| Carbex Rods                  |        |      |             |        |           |
| 1-1/2" Hex                   | 10'    | 3050 | K5 120 TT   | 59.3   | 26.9      |
|                              | 12'    | 3660 | K5 144 TT   | 70.8   | 32.1      |
|                              | 14'    | 4265 | K5 168 TT   | 82.2   | 37.3      |
| Extension Rods               |        |      |             |        |           |
| Single Thread (1-3/4" Round) | 10'    | 3050 | H6 120 TT   | 71.1   | 32.3      |
|                              | 12'    | 3660 | H6 144 TT   | 85.3   | 38.7      |
|                              | 14'    | 4265 | H6 168 TT   | 99.5   | 45.1      |
|                              | 20'    | 6095 | H6 240 TT   | 142.2  | 64.5      |
| Tandem (1-3/4" Round)        | 10'    | 3050 | H6 120 YY   | 71.1   | 32.3      |
|                              | 12'    | 3660 | H6 144 YY   | 85.3   | 38.7      |
|                              | 14'    | 4265 | H6 168 YY   | 99.5   | 45.1      |
|                              | 20'    | 6095 | H6 240 YY   | 142.2  | 64.5      |
| All Thread (1-3/4" Round)    | 10'    | 3050 | J6 120 XX   | 64.5   | 29.3      |
|                              | 12'    | 3660 | J6 144 XX   | 77.4   | 35.1      |
|                              | 14'    | 4270 | J6 168 XX   | 90.3   | 41.0      |
| Male/Female (1-3/4" Round)   | 6' 4"  | 1930 | J6 076 T2   | 51.0   | 23.1      |
|                              | 8' 4"  | 2540 | J6 100 T2   | 65.2   | 29.6      |
|                              | 10' 4" | 3150 | J6 124 T2   | 79.4   | 36.0      |
|                              | 12' 4" | 3760 | J6 148 T2   | 93.6   | 42.5      |
|                              | 14' 4" | 4370 | J6 172 T2   | 108.8  | 49.4      |
|                              | 20' 4" | 6198 | J6 244 T2   | 150.5  | 68.3      |
| Flats available upon request |        |      |             |        |           |
| Guide Tube                   | 4'     | 1220 | J64052 T2   | 43.2   | 19.6      |
|                              | 5'     | 1525 | J64066 T2   | 51.4   | 23.3      |
|                              | 6'     | 1830 | J64076 T2   | 61.7   | 28.0      |
|                              | 12'    | 3660 | J64 148 T2  | 123.5  | 56.0      |

Rods available upon request

|            |                                                                                     | Diameter |    | Part Number | Weight |           |
|------------|-------------------------------------------------------------------------------------|----------|----|-------------|--------|-----------|
|            |                                                                                     | Inches   | MM |             | Pounds | Kilograms |
| Couplings  |                                                                                     |          |    |             |        |           |
| T45        |  | 2-1/2"   | 64 | CCT45 00    | 6.0    | 2.7       |
| T38 to T45 |                                                                                     |          |    |             |        |           |
| T45 to T51 |                                                                                     | 2-1/2"   | 64 | CA380 45    | 7.0    | 3.1       |
|            |                                                                                     | 3"       | 76 | CA450 51    | 6.4    | 2.9       |

# Extension Drilling

## T45

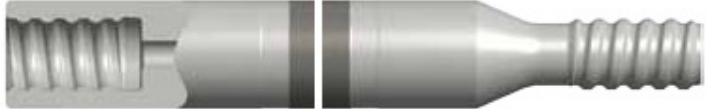
|                                                                                     |        | Diameter |          | Part Number | Weight |        | Inserts |        |        | Holes  |      |
|-------------------------------------------------------------------------------------|--------|----------|----------|-------------|--------|--------|---------|--------|--------|--------|------|
|                                                                                     |        | Inches   | MM       |             | Pounds | Kilos  | Gauge   | Mid    | Center | Top    | Side |
| X-Design Bits                                                                       |        |          |          |             |        |        |         |        |        |        |      |
|    | 3"     | 76       | T3045X0  | 5.2         | 2.3    |        |         |        |        |        |      |
|                                                                                     | 3-1/2" | 89       | T3545X0  | 6.8         | 3.1    |        |         |        |        |        |      |
|                                                                                     | 4"     | 102      | T4045X0  | 11.7        | 5.4    |        |         |        |        |        |      |
|                                                                                     | 4-1/2" | 115      |          |             |        |        |         |        |        |        |      |
| Button Bits                                                                         |        |          |          |             |        |        |         |        |        |        |      |
| Crown                                                                               |        |          |          |             |        |        |         |        |        |        |      |
|    | 3"     | 76       | S3045H0  | 5.1         | 2.3    | 6-1/2  | 3-1/2   | 2-1/2  | 1-7/16 | 2-3/8  |      |
|                                                                                     | 3-1/2" | 89       | S3545H0  | 6.7         | 3.0    | 6-1/2  | 3-1/2   | 2-1/2  | 2-1/2  |        |      |
|                                                                                     | 4"     | 102      | S4045H0  | 12.3        | 5.6    | 7-5/8  | 6-1/2   | 3-1/2  | 2-1/2  |        |      |
|                                                                                     | 4-1/2" | 115      | S4545H0  | 14.4        | 6.5    | 7-5/8  | 4-9/16  | 3-9/16 | 2-9/16 |        |      |
| Drop Center                                                                         |        |          |          |             |        |        |         |        |        |        |      |
|    | 3"     | 76       | S3045D0  | 5.1         | 2.3    | 6-7/16 | 3-7/16  | 1-7/16 | 3-3/8  |        |      |
|                                                                                     | 3-1/2" | 89       | S3545D0  | 6.7         | 3.0    | 6-1/2  | 3-1/2   | 2-7/16 | 3-3/8  |        |      |
|                                                                                     | 4"     | 102      | S4045D0  | 12.3        | 5.6    | 8-9/16 | 4-1/2   | 1-7/16 | 3-3/16 |        |      |
|                                                                                     | 4-1/2" | 115      | S4545D0  | 14.4        | 6.5    | 9-9/16 | 3-9/16  | 2-1/2  | 3-1/2  |        |      |
| Flat Face (HI-Duty)                                                                 |        |          |          |             |        |        |         |        |        |        |      |
|   | 3"     | 76       | S3045FA  | 5.1         | 2.3    | 8-7/16 | 6-3/8   |        | 2-7/16 | 2-7/16 |      |
|                                                                                     | 3-1/2" | 89       | S3545FA  | 6.7         | 3.0    | 8-1/2  | 5-1/2   |        | 2-1/2  |        |      |
|                                                                                     | 4"     | 102      | S4045FA  | 12.3        | 5.6    | 8-9/16 | 6-1/2   |        | 2-9/16 |        |      |
|                                                                                     | 4-1/2" | 115      | S4545FA  | 14.4        | 6.5    | 8-9/16 | 6-9/16  |        | 2-5/8  |        |      |
| Flat Face                                                                           |        |          |          |             |        |        |         |        |        |        |      |
|  | 3"     | 76       | S3045F4  | 5.1         | 2.3    | 8-7/16 | 6-3/8   |        | 2-7/16 |        |      |
|                                                                                     | 3-1/2" | 89       | S3545F4  | 6.7         | 3.0    | 8-7/16 | 6-3/8   |        | 2-7/16 | 2-3/8  |      |
|                                                                                     | 4"     | 102      |          |             |        |        |         |        |        |        |      |
|                                                                                     | 4-1/2" | 115      |          |             |        |        |         |        |        |        |      |
| Retrac                                                                              |        |          |          |             |        |        |         |        |        |        |      |
|  | 3"     | 76       | S3045DRA | 6.6         | 3.0    | 6-7/16 | 3-7/16  | 2-5/16 | 3-3/8  |        |      |
|                                                                                     | 3-1/2" | 89       | S3545DRA | 11.0        | 5.0    | 8-1/2  | 4-7/16  | 1-3/8  | 4-7/16 |        |      |
|                                                                                     | 4"     | 102      | S4045DRA | 14.6        | 6.6    | 8-9/16 | 1-7/16  | 4-1/2  | 4-7/16 |        |      |
|                                                                                     | 4-1/2" | 115      | S4545DRA | 16.4        | 7.4    | 8-9/16 | 4-9/16  | 3-1/2  | 4-7/16 |        |      |
| Drop Center                                                                         |        |          |          |             |        |        |         |        |        |        |      |
|  | 3"     | 76       | S3045FRA | 6.6         | 3.0    | 8-7/16 | 4-7/16  |        | 2-1/2  | 2-1/4  |      |
|                                                                                     | 3-1/2" | 89       | S3545FRA | 11.0        | 5.0    | 8-1/2  | 6-7/16  |        | 2-1/2  | 2-3/8  |      |
|                                                                                     | 4"     | 102      | S4045FRA | 14.6        | 6.6    | 8-1/2  | 7-1/2   |        | 2-7/16 | 2-3/8  |      |
|                                                                                     | 4-1/2" | 115      | S4545FRA | 16.4        | 7.4    | 8-9/16 | 7-9/16  |        | 2-9/16 |        |      |
| Flat Face                                                                           |        |          |          |             |        |        |         |        |        |        |      |

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Extension Drilling

## T51

|                                                                                  |  | Length                         |      | Part Number | Weight |           |
|----------------------------------------------------------------------------------|--|--------------------------------|------|-------------|--------|-----------|
|                                                                                  |  | Feet                           | MM   |             | Pounds | Kilograms |
| Extension Rods                                                                   |  |                                |      |             |        |           |
| Single Thread (2" Round)                                                         |  | 12'                            | 3660 | H7144ZZ     | 112.8  | 51.2      |
|  |  | 14'                            | 4265 | H7168ZZ     | 131.8  | 59.7      |
|                                                                                  |  | 20'                            | 6095 | H7240ZZ     | 188.0  | 85.3      |
|                                                                                  |  | 24'                            | 7315 | H7288ZZ     | 225.8  | 102.3     |
|                                                                                  |  | Male/Female (2" Round)         |      |             |        |           |
|  |  | 12' 4"                         | 3760 | J7148Z3     | 125.3  | 56.8      |
|                                                                                  |  | 14' 4"                         | 4370 | J7172Z3     | 145.0  | 65.8      |
|                                                                                  |  | 20' 4"                         | 6198 | J7244Z3     | 200.5  | 90.9      |
|                                                                                  |  | Flat is available upon request |      |             |        |           |
| Guide Tube                                                                       |  | 3'                             | 915  | J76040Z3    | 35.3   | 16.0      |
|  |  | 6'                             | 1830 | J76076Z3    | 68.3   | 31.0      |
|                                                                                  |  | 12'                            | 3660 | J76148Z3    | 127.9  | 58.0      |
|                                                                                  |  | 6'                             | 1830 | J87078Z3    | 101.4  | 46.0      |
|                                                                                  |  | 12'                            | 3660 | J87148Z3    | 196.2  | 89.0      |

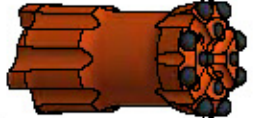
Flats available upon request

|                |                                                                                     | Diameter |      | Part Number | Weight |           |
|----------------|-------------------------------------------------------------------------------------|----------|------|-------------|--------|-----------|
|                |                                                                                     | Inches   | MM   |             | Pounds | Kilograms |
| Couplings      |                                                                                     |          |      |             |        |           |
| T51            |  | 3"       | 76   | CCT5100     | 10.5   | 4.7       |
| Thin Wall      |                                                                                     | 2-13/16" | 71.4 | CCT5100T    | 8.5    | 3.9       |
| T51 with flats |                                                                                     | 3"       | 76   | CCT5100F    | 10.5   | 4.7       |
| T45 to T51     |                                                                                     | 3"       | 76   | CA45051     | 6.4    | 2.9       |
|                |                                                                                     |          |      |             |        |           |



# Extension Drilling

**T51**

|                        |                                                                                     | Diameter |     | Part Number | Weight |       | Inserts |        |        | Holes  |        |
|------------------------|-------------------------------------------------------------------------------------|----------|-----|-------------|--------|-------|---------|--------|--------|--------|--------|
|                        |                                                                                     | Inches   | MM  |             | Pounds | Kilos | Gauge   | Mid    | Center | Top    | Side   |
| Button Bits            |                                                                                     |          |     |             |        |       |         |        |        |        |        |
| Crown                  |    | 3-1/2"   | 89  | S355 1H0    | 8.4    | 3.8   | 2-1/2   | 3-1/2  | 6-9/16 | 2-1/2  | 2-3/8  |
|                        |                                                                                     | 4"       | 102 | S405 1H0    | 10.5   | 4.8   | 7-9/16  | 4-1/2  | 3-1/2  | 2-9/16 | 2-3/8  |
|                        |                                                                                     | 4-1/2"   | 115 | S455 1H0    | 13.6   | 6.2   | 7-5/8   | 4-9/16 | 3-9/16 | 2-5/8  |        |
|                        |                                                                                     | 5"       | 127 | S505 1H0    | 15.4   | 7.0   | 8-5/8   | 5-9/16 | 4-9/16 | 2-5/8  |        |
| Drop Center            |    | 3-1/2"   | 89  | S355 1D0    | 8.4    | 3.8   | 6-9/16  | 3-1/2  | 2-3/8  | 3-1/2  |        |
|                        |                                                                                     | 4"       | 102 | S405 1D0    | 10.5   | 4.8   | 8-9/16  | 4-1/2  | 1-7/16 | 4-7/16 |        |
|                        |                                                                                     | 4-1/2"   | 115 | S455 1D0    | 13.6   | 6.2   | 8-9/16  | 4-9/16 | 2-1/2  | 3-1/2  |        |
|                        |                                                                                     | 5"       | 127 | S505 1D0    | 15.4   | 7.0   | 8-5/8   | 4-9/16 | 2-7/16 | 4-7/16 |        |
|                        |                                                                                     | 5-1/2"   | 140 | S555 1D0    | 17.2   | 7.8   | 8-5/8   | 4-9/16 | 2-1/2  | 2-9/16 |        |
| Flat Face<br>(HI-Duty) |    | 3-1/2"   | 89  | S355 1FA    | 8.4    | 3.8   | 6-9/16  | 6-1/2  |        | 2-1/2  | 2-3/8  |
|                        |                                                                                     | 4"       | 102 | S405 1FA    | 10.5   | 4.8   | 8-9/16  | 6-1/2  |        | 2-9/16 |        |
|                        |                                                                                     | 4-1/2"   | 115 | S455 1FA    | 13.6   | 6.2   | 8-9/16  | 6-9/16 |        | 2-5/8  |        |
|                        |                                                                                     | 5"       | 127 | S505 1FA    | 15.4   | 7.0   | 8-5/8   | 7-9/16 |        | 2-5/8  |        |
| Flat Face              |   |          |     |             |        |       |         |        |        |        |        |
|                        |                                                                                     | 3-1/2"   | 89  | S355 1F4    | 10.5   | 4.8   | 8-1/2   | 6-7/16 |        | 2-1/2  | 2-3/8  |
|                        |                                                                                     |          |     |             |        |       |         |        |        |        |        |
| Retrac                 |  | 3-1/2"   | 89  | S355 1D/A^  | 10.5   | 4.8   | 8-1/2   | 4-7/16 | 1-3/8  | 4-7/16 |        |
|                        |                                                                                     | 4"       | 102 | S405 1D/A^  | 14.6   | 6.6   | 8-9/16  | 4-1/2  | 1-7/16 | 4-7/16 |        |
|                        |                                                                                     | 4-1/2"   | 115 | S455 1D/A^  | 16.4   | 7.4   | 8-9/16  | 4-9/16 | 2-7/16 | 4-7/16 |        |
|                        |                                                                                     | 5"       | 127 | S505 1D/A^  | 18.2   | 8.2   | 8-9/16  | 4-9/16 | 2-1/2  | 4-1/2  |        |
| Drop Center            |  | 5-1/2"   | 140 | S555 1D/A^  | 20.0   | 9.0   | 8-9/16  | 4-9/16 | 2-1/2  | 4-1/2  |        |
|                        |                                                                                     |          |     |             |        |       |         |        |        |        |        |
| Flat Face              |  | 3-1/2"   | 89  | S355 1F/A^  | 10.5   | 4.8   | 8-1/2   | 6-7/16 |        | 2-1/2  | 2-3/8  |
|                        |                                                                                     | 4"       | 102 | S405 1F/A^  | 14.6   | 6.6   | 8-1/2   | 7-1/2  |        | 2-7/16 | 2-3/8  |
|                        |                                                                                     | 4-1/2"   | 115 | S455 1F/A^  | 16.4   | 7.4   | 8-9/16  | 7-9/16 |        | 2-9/16 | 2-3/8  |
|                        |                                                                                     | 5"       | 127 | S505 1F/A^  | 18.2   | 8.2   | 8-9/16  | 7-9/16 |        | 2-9/16 | 3-5/16 |

**Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide**

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Extension Drilling

## B60

|                                                                                  |        | Length | Part Number | Weight |          |
|----------------------------------------------------------------------------------|--------|--------|-------------|--------|----------|
|                                                                                  |        | Feet   | MM          | Pounds | Kilogram |
| Extension Rods                                                                   |        |        |             |        |          |
| Pilot Tube (3-7/16" / 87MM Round)                                                |        |        |             |        |          |
|  | 12'    | 3660   | J87150PT4   | 112.8  | 51.2     |
|                                                                                  | 14'    | 4265   | J87174PT4   | 131.6  | 59.7     |
|                                                                                  | 20'    | 6095   | J87246PT4   | 187    | 86       |
|                                                                                  |        |        |             |        |          |
| Drill Tube (3-7/16" / 87MM Round)                                                |        |        |             |        |          |
|  | 12'    | 3660   | J87150P4    | 112.8  | 51.2     |
|                                                                                  | 14'    | 4265   | J87174P4    | 131.6  | 59.7     |
|                                                                                  | 20'    | 6095   | J87246P4    | 187    | 86       |
|                                                                                  |        |        |             |        |          |
| Male/Female (2-3/8" Round)                                                       |        |        |             |        |          |
|  | 12' 6" | 3810   | J9150P4F    | 229    | 104      |
|                                                                                  | 14' 6" | 4420   | J9174P4F    | 246    | 112      |
|                                                                                  | 20' 6" | 6248   | J9246P4F    | 268    | 121.5    |
|                                                                                  |        |        |             |        |          |

Minimum order quantities may apply.

# Extension Drilling

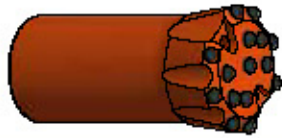
## B60

### Button Bits

#### Drop Center



#### Flat Face



#### Retrac



#### Drop Center



#### Flat Face

| Diameter |     | Part Number | Weight |       | Inserts |        |        | Hole   |      |
|----------|-----|-------------|--------|-------|---------|--------|--------|--------|------|
| Inches   | MM  |             | Pounds | Kilos | Gauge   | Mid    | Center | Top    | Side |
| 4"       | 102 | S4060 D0    | 10.5   | 4.8   | 8-7/16  | 4-1/2  | 2-7/16 | 4-7/16 |      |
| 4-1/2"   | 115 | S4560 D0    | 13.6   | 6.2   | 8-7/16  | 4-1/2  | 2-7/16 | 4-7/16 |      |
| 5"       | 127 | S5060 D0    | 15.4   | 7.0   | 8-7/16  | 4-1/2  | 2-7/16 | 4-7/16 |      |
| 5-1/2"   | 140 | S5560 D0    | 26.6   | 12.1  | 8-5/8   | 4-5/8  | 3-1/2  | 4-9/16 |      |
| 6"       | 152 | S6060 D0    | 30.4   | 13.8  | 8-5/8   | 4-5/8  | 3-1/2  | 4-9/16 |      |
| 4"       | 102 | S4060 FA    | 10.5   | 4.8   | 8-1/2   | 6-1/2  | 1-1/2  | 2-7/16 |      |
| 4-1/2"   | 115 | S4560 FA    | 13.6   | 6.2   | 8-7/16  | 6-9/16 | 1-9/16 | 2-1/2  |      |
| 5"       | 127 | S5060 FA    | 15.4   | 7.0   | 8-5/8   | 6-5/8  | 1-6/8  | 2-1/2  |      |
| 5-1/2"   | 140 | S5560 FA    | 26.6   | 12.1  | 8-5/8   | 6-5/8  | 1-6/8  | 2-9/16 |      |
| 6"       | 152 | S6060 FA    | 30.4   | 13.8  | 8-5/8   | 8-5/8  | 1-6/8  | 2-9/16 |      |
| 4"       | 102 | S4060 D/A   | 14.6   | 6.6   | 8-9/16  | 4-9/16 | 3-1/2  | 4-7/16 |      |
| 4-1/2"   | 115 | S4560 D/A   | 16.4   | 7.4   | 8-9/16  | 4-9/16 | 3-1/2  | 4-7/16 |      |
| 5"       | 127 | S5060 D/A   | 18.2   | 8.2   | 8-9/16  | 4-9/16 | 3-1/2  | 4-7/16 |      |
| 5-1/2"   | 140 | S5560 D/A   | 35.4   | 16.1  | 8-5/8   | 4-5/8  | 3-1/2  | 4-1/2  |      |
| 6"       | 152 | S6060 D/A   | 41.6   | 18.9  | 8-5/8   | 4-5/8  | 3-1/2  | 4-9/16 |      |
| 4"       | 102 | S4060 F/A   | 14.6   | 6.6   | 8-1/2   | 6-1/2  | 1-1/2  | 2-7/16 |      |
| 4-1/2"   | 115 | S4560 F/A   | 16.4   | 7.4   | 8-9/16  | 6-9/16 | 1-9/16 | 2-1/2  |      |
| 5"       | 127 | S5060 F/A   | 18.2   | 8.2   | 8-5/8   | 6-5/8  | 1-6/8  | 2-1/2  |      |
| 5-1/2"   | 140 | S5560 F/A   | 35.4   | 16.1  | 8-5/8   | 8-5/8  | 1-6/8  | 2-9/16 |      |
| 6"       | 152 | S6060 F/A   | 41.6   | 18.9  | 8-5/8   | 8-5/8  | 1-6/8  | 2-9/16 |      |

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

# Striking Bar Index

| Drill              | Thread     | Part Number | Length<br>Inches | Length<br>MM | Figure<br>Number |
|--------------------|------------|-------------|------------------|--------------|------------------|
| <b>Hex Shank</b>   |            |             |                  |              |                  |
|                    | 100R (R25) | P02 B100    | 16.0             | 405.0        | 1                |
|                    | 100R (R25) | P04 B100    | 14.5             | 368.0        | 2                |
|                    | 125R (R32) | P04 B120    | 14.5             | 368.0        |                  |
| <b>Atlas Copco</b> |            |             |                  |              |                  |
| 1132               | 125 (R32)  | P133 X120   | 16.1             | 410          | 3                |
| 1038/1238          | T38        | P107 X380   | 22.6             | 575          | 4                |
| 1238               | T38        | P108 X380   | 22.6             | 575          |                  |
| 1036H8             | 125R (R32) | P28X 120    | 19.68            | 500.0        | 5                |
| 1038H8             | 150R (R38) | P28X 150    | 19.68            | 500.0        |                  |
| 1238H8             | T38        | P28X 380    | 19.68            | 500.0        |                  |
|                    | T45        | P28X 450    | 19.68            | 500.0        |                  |
| 1038HD             | 125R (R32) | P29X 120    | 19.68            | 500.0        | 6                |
| 1238HD             | 150R (R38) | P29X 150    | 19.09            | 485.0        |                  |
|                    | T38        | P29X 380    | 19.09            | 485.0        |                  |
|                    | 150R (R38) | P32X 150    | 23.23            | 590.0        | 7                |
| 1038HL             | T38        | P32X 380    | 23.23            | 590.0        |                  |
| 1238HL             | T45        | P32X 450    | 23.23            | 590.0        |                  |
|                    | T45        | P32 X45 S   | 22.64            | 575          |                  |
| 88 E56 /57         | T38        | P42 J380    | 21.1             | 536.0        | 8                |
| 88 E56US           | T45        | P42 J450    | 21.1             | 536.0        |                  |
| COP 125, 130, 131  | 150R (R38) | P27 J150    | 15.0             | 381.0        | 9                |
|                    | T38        | P27 J380    | 15.0             | 381.0        |                  |
| 88 BC54            | 125 (R32)  | P33 D120    | 15               | 380          | 10               |
| 88 BC120           | T38        | P33 D80     | 15               | 380          |                  |
| COP 2150EX/2850EX  | T45        | P144 X45 B  | 30.3             | 770          | 11               |
| COP 2160/2860 RP   | T45        | P155 X45 B  | 30.3             | 770          | 12               |
|                    | T51        | P155 X51 B  | 30.3             | 770          |                  |
| COP 2160 - 60      | T51        | P147 X510   | 30.3             | 770          | 13               |
| 88 E56US, 88 E57   | T38        | P42 J380    | 21.1             | 536.0        | 14               |
|                    | T45        | P42 J450    | 21.1             | 536.0        |                  |
| COP 125, 130, 131  | 150R (R38) | P27 J150    | 15.0             | 381.0        | 15               |
|                    | T38        | P27 J380    | 15.0             | 381.0        |                  |
| COP 1028 HD        | 125R (R32) | P100 X120   | 15.8             | 400          | 16               |
| COP 1032HD         | 125R (R32) | P22 X120 F  | 13.81            | 351.0        | 17               |
|                    | 150R (R38) | P22 X150 F  | 13.81            | 351.0        |                  |
| COP 1140, 1435     | 125R (R32) | P170 X120   | 16.1             | 410          | 18               |
| COP 1140, 1435     |            | P170 X12L   | 19.7             | 500          |                  |
| COP 1440           | 150R (R38) | P46X 150    | 17.1             | 435.0        | 19               |
|                    | T38        | P46X 380    | 17.1             | 435.0        |                  |
| COP1550            | 125R (R32) | P47X 120    | 20.6             | 525.0        | 20               |
|                    | 150R (R38) | P47X 150    | 20.6             | 525.0        |                  |
|                    | T38        | P47X 380    | 20.6             | 525.0        |                  |
| COP1550 (2.05)     | T38        | P47X 380 S  | 20.6             | 525          |                  |

|                          |            |             |       |       |    |
|--------------------------|------------|-------------|-------|-------|----|
| Atlas Copco              | 125R (R32) | P36J 120    | 14.0  | 356.0 | 21 |
| HM750, HM751-RD500       | 150R (R38) | P36J 150    | 14.0  | 356.0 |    |
|                          | T38        | P36J 380    | 15.0  | 381.0 |    |
|                          | T45        | P36J 450    | 15.0  | 381.0 |    |
| 1850                     | T45        | P57 X450    | 22.2  | 565   | 22 |
|                          | T51        | P57 X510    | 22.2  | 565   |    |
| <b>Boart</b>             |            |             |       |       |    |
| 131PW                    | T38        | P101 X380   | 17.5  | 445   | 23 |
| <b>Chicago Pneumatic</b> |            |             |       |       |    |
| HD155                    | T38        | P143 X380   | 22.6  | 575   | 24 |
| 450N, 450DR              | 125R (R32) | P24J 120    | 13.12 | 333.0 | 25 |
|                          | 150R (R38) | P24J 150    | 13.12 | 333.0 |    |
|                          | T38        | P24J 380    | 13.12 | 333.0 |    |
| CP 451                   | 125R (R32) | P36J 120    | 14.0  | 356.0 | 26 |
|                          | 150R (R38) | P36J 150    | 14.0  | 356.0 |    |
|                          | T38        | P36J 380    | 15.0  | 381.0 |    |
|                          | T45        | P36J 450    | 15.0  | 381.0 |    |
| <b>Furukawa</b>          |            |             |       |       |    |
| HD120, M120, P D200      | 125R (R32) | P36J 120    | 14.0  | 356.0 | 27 |
|                          | 150R (R38) | P36J 150    | 14.0  | 356.0 |    |
|                          | T38        | P36J 380    | 15.0  | 381.0 |    |
|                          | T45        | P36J 450    | 15.0  | 381.0 |    |
| HD200, HD300             | T38        | P72 L380    | 25.5  | 648.0 | 28 |
|                          | T45        | P72 L450    | 25.5  | 648.0 |    |
| HD609                    | T38        | P71 X380    | 24.4  | 620.0 | 29 |
|                          | T45        | P71 X450    | 24.4  | 620.0 |    |
| HD612                    | T38        | P68 X380    | 28.0  | 710.0 | 30 |
|                          | T45        | P68 X450    | 28.0  | 710.0 |    |
| HD612RP                  | T45        | P68X 45LB   | 35.4  | 900   |    |
|                          | T51        | P68X 51LB   | 35.4  | 900   |    |
| HD615                    | T51        | P76 X510    | 27.5  | 700.0 | 31 |
| HD709                    | T45        | P121 X450   | 24.4  | 620   | 32 |
| HD709RD                  | T38        | P121 X380 B | 31.5  | 800   | 33 |
| HD712                    | T45        | P106 X450   | 31.0  | 788   | 34 |
| HD712 RP                 | T45        | P106 X45 LB | 34.8  | 885   | 35 |
|                          | T51        | P106 X51 LB | 34.8  | 885   |    |
| HD715                    | T51        | P122 X510   | 31.1  | 790   | 36 |
| <b>Gardner Denver</b>    |            |             |       |       |    |
| 99, 123                  | 125R (R32) | P24J 120    | 13.12 | 333.0 | 37 |
|                          | 150R (R38) | P24J 150    | 13.12 | 333.0 |    |
|                          | T38        | P24J 380    | 13.12 | 333.0 |    |
| PR55, PR123              | 125R (R32) | P36J 120    | 14.0  | 356.0 | 38 |
| PR55, PR123              | 150R (R38) | P36J 150    | 14.0  | 356.0 |    |
|                          | T38        | P36J 380    | 15.0  | 381.0 |    |
|                          | T45        | P36J 450    | 15.0  | 381.0 |    |

# Striking Bar Index

| Drill                                    | Thread     | Part Number | Length<br>Inches | Length<br>MM | Figure<br>Number |
|------------------------------------------|------------|-------------|------------------|--------------|------------------|
| PR66                                     | T38        | P70LS8T     | 28.0             | 711.0        | 39               |
|                                          | T45        | P70L45T     | 28.0             | 711.0        |                  |
| HPR1                                     | 150R (R38) | P25X150     | 23.3             | 632.0        | 40               |
|                                          | T38        | P25X380     | 23.3             | 632.0        |                  |
|                                          | T45        | P25X450     | 23.3             | 632.0        |                  |
| HPR1H                                    | T38        | P35X38S     | 28.5             | 724          | 41               |
|                                          | T38        | P35X380     | 29.0             | 737.0        |                  |
|                                          | T45        | P35X450     | 29.0             | 737.0        |                  |
| HPR2                                     | T45        | P17X450     | 36.0             | 914.4        | 42               |
| HPR51                                    | TS1        | P17X510     | 36.0             | 914.4        |                  |
|                                          | TS1        | P17X510S    |                  |              |                  |
| HPR45, 4519                              | T45        | P35X45LB    | 30.3             | 770          | 43               |
| HPR51, 5123                              | TS1        | P157X510    | 30.3             | 770          | 44               |
| HPR3818                                  | T45        | P129X450    | 21.8             | 554          | 45               |
| HPR3832                                  | B60        | P168X600    | 41.0             | 1041         | 46               |
| HPRHC                                    | T38        | P126X380    | 27.6             | 700          | 47               |
| VL170                                    | TS1        | P62R510     | 19.0             | 483          | 48               |
| VL671                                    | TS1        | P65N510     | 19.52            | 496.0        | 49               |
| VL671                                    | T38        | P66N380     | 21.0             | 533.0        | 50               |
|                                          | T45        | P66N450     | 21.0             | 533.0        |                  |
| VL672                                    | T45        | P78X45B     | 26.4             | 670.0        | 51               |
|                                          | T45        | P78X45LB    | 30.3             | 770.0        |                  |
|                                          | TS1        | P78X51B     | 26.4             | 670.0        |                  |
| Ingersoll Rand                           |            |             |                  |              |                  |
| 45, 475                                  | 125R (R32) | P24J120     | 13.12            | 333.0        | 52               |
|                                          | 150R (R38) | P24J150     | 13.12            | 333.0        |                  |
|                                          | T38        | P24J380     | 13.12            | 333.0        |                  |
| YD90 M                                   | 125R (R32) | P85D120     | 13.0             | 333.0        | 53               |
| VL120, VL140,<br>EVL 130, F16,<br>URD50A | 125R (R32) | P36J120     | 14.0             | 356.0        | 54               |
|                                          | 150R (R38) | P36J150     | 14.0             | 356.0        |                  |
|                                          | T38        | P36J380     | 15.0             | 381.0        |                  |
|                                          | T45        | P36J450     | 15.0             | 381.0        |                  |
| VL130/140                                | T38        | P67J380     | 13.75            | 349.0        | 55               |
|                                          | T45        | P67J450     | 13.75            | 349.0        |                  |
| YH60                                     | T38        | P42J380     | 21.1             | 537.0        | 56               |
|                                          | T45        | P42J450     | 21.1             | 537.0        |                  |
| YH65                                     | T38        | P84N380     | 19.25            | 489.0        | 57               |
|                                          | T45        | P84N450     | 19.25            | 489.0        |                  |
| YH65RP                                   | T45        | P84N45B     | 27.5             | 700.0        | 58               |
| YH80A                                    | T38        | P49N380     | 19.5             | 495.0        | 59               |
|                                          | T45        | P49N450     | 19.5             | 495.0        |                  |
|                                          | TS1        | P49N510     | 19.5             | 495.0        |                  |

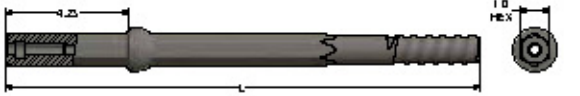
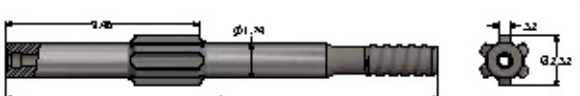
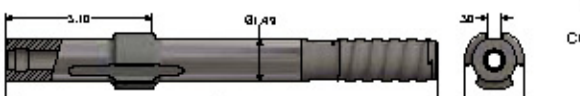
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|--------------------|-------------|-----------|-------|-------|----|
| YH95               | T45         | P83Q450   | 24.75 | 625.0 | 60 |
|                    | T51         | P83Q510   | 24.75 | 625.0 |    |
| YH110VRP           | T45         | P60 X45 B | 35.4  | 900.0 | 61 |
| YH135RP            | T51         | P60 X51 B | 35.4  | 900.0 |    |
| F17V               | T38         | P64 X380  | 19.94 | 506.0 | 62 |
| Joy / Cannon       |             |           |       |       |    |
| VCR150             | 125 R (R32) | P30 F120  | 15.23 | 387.0 | 63 |
|                    | 150 R (R38) | P30 F150  | 15.23 | 387.0 |    |
|                    | T38         | P30 F380  | 15.23 | 387.0 |    |
| JH2, CH38          | 125 R (R32) | P26 X120  | 17.5  | 439.0 | 64 |
|                    | 150 R (R38) | P26 X150  | 17.5  | 445.0 |    |
|                    | T38         | P26 X380  | 18.0  | 457.0 |    |
| JH2, CH38          | 125 R (R32) | P26 X12F  | 15.38 | 388.0 | 65 |
|                    | T38         | P26 X38F  | 15.38 | 388.0 |    |
| CH32               | 125 R (R32) | P19 X12F  | 13.0  | 330.0 | 66 |
| VCR 260/360/460    | 125 R (R32) | P48 L120  | 17.75 | 451.0 | 67 |
| CVR460             | 150 R (R38) | P48 L150  | 17.75 | 451.0 |    |
|                    | T38         | P48 L380  | 17.75 | 451.0 |    |
|                    | T45         | P48 L450  | 15.25 | 387.0 |    |
| VCR261             | 150 R (R38) | P51 N150  | 15.25 | 387.0 | 68 |
|                    | T38         | P51 N380  | 15.25 | 387.0 |    |
|                    | T45         | P51 N450  | 15.25 | 387.0 |    |
| VCR361             | T38         | P52 N380  | 17.0  | 432.0 | 69 |
|                    | T45         | P52 N450  | 17.0  | 432.0 |    |
| VCR280             | T51         | P69 T510  | 19.25 | 489.0 | 70 |
| Krupp / John Henry |             |           |       |       |    |
| H8101              | 150 R (R38) | P54 X150  | 27.18 | 690.0 | 71 |
| JHRD1              | T38         | P54 X380  | 27.18 | 690.0 |    |
|                    | T45         | P54 X450  | 27.18 | 690.0 |    |
|                    | T51         | P54 X510  | 27.18 | 690.0 |    |
| H8101              | T38         | P54X380 F | 23.25 | 590.0 | 72 |
|                    | T45         | P54X450 F | 23.25 | 590.0 |    |
| Mitsubishi         |             |           |       |       |    |
| TR300, TR400       | 125 R (R32) | P36J120   | 14.0  | 356.0 | 73 |
|                    | 150 R (R38) | P36J150   | 14.0  | 356.0 |    |
|                    | T38         | P36J380   | 15.0  | 381.0 |    |
|                    | T45         | P36J450   | 15.0  | 381.0 |    |
| Montabert          |             |           |       |       |    |
| HC40               | 125 R (R32) | P41 X120  | 17.25 | 447.0 | 74 |
|                    | T38         | P41 X380  | 17.25 | 447.0 |    |
| HC80, HC90         | T38         | P12X38S   | 17.1  | 435.0 | 75 |
| HC105, HC155       | T45         | P12X45S   | 17.1  | 435.0 |    |
| HC120              | T38         | P12X380 L | 19.7  | 500.0 |    |

# Striking Bar Index

| Drill                  | Thread     | Part Number | Length<br>Inches | Length<br>MM | Figure<br>Number |
|------------------------|------------|-------------|------------------|--------------|------------------|
| H100                   | T38        | P42J380     | 21.1             | 536.0        | 76               |
| H100                   | T45        | P42J450     | 21.1             | 536.0        |                  |
| HC80R, HC120R          | T45        | P78X45B     | 26.4             | 670.0        | 77               |
| HC150RP, HC155RP       | T45        | P78X45LB    | 30.3             | 770.0        |                  |
| HC158RP                | T51        | P78X51B     | 26.4             | 670.0        |                  |
| HC80R, HC120R          | T45        | P78X45BS    | 26.4             | 670.0        | 78               |
| HC150RP, HC155RP       | T51        | P78X51BS    | 26.4             | 670.0        |                  |
| HC4050                 | 125R (R32) | P128X12F    | 10.6             | 274          | 79               |
| HC109                  | T45        | P127X45B    | 20.0             | 508          | 80               |
| HC110/120              | T38        | P116X380R   | 26.4             | 670          | 81               |
| HC20                   | 125R (R32) | P20X120     | 11.3             | 287          | 82               |
| HC20 FEMALE            | 125R (R32) | P20X12F     | 7.4              | 188          | 83               |
| HC20 FEMALE            |            |             |                  |              |                  |
| HC200A                 | T51        | P104X510    | 33.1             | 840          | 84               |
|                        | B60        | P104X60LB   | 33.5             | 850          |                  |
| HC95LM                 | 150R (R38) | P179X15B    | 19.7             | 500          | 85               |
|                        | T38        | P179X38B    | 19.7             | 500          |                  |
|                        | T45        | P179X45B    | 20.3             | 515          |                  |
| HC160R                 | T45        | P130X45B    | 31.8             | 808          | 86               |
| HC170R                 | T51        | P130X51B    | 31.8             | 808          |                  |
| Secoma                 |            |             |                  |              |                  |
| Hydrastar 200/300      | 125R (R32) | P29X120     | 19.68            | 500.0        | 87               |
|                        | 150R (R38) | P29X150     | 19.09            | 485.0        |                  |
|                        | T38        | P29X380     | 19.09            | 485.0        |                  |
| Hydrastar 200 (female) | 125R (R32) | P62X12F     | 13.81            | 341.0        | 88               |
| Tamrock                |            |             |                  |              |                  |
| L400, 500, 550, HL432  | 125R (R32) | P67D120     | 15.0             | 381.0        | 89               |
| HL300                  | 125R (R32) | P77X120F    | 9.6              | 245          | 90               |
| HL438TS, HL538TS       | 125R (R32) | P68X120     | 17.7             | 450.0        | 91               |
|                        | 150R (R38) | P68X150     | 17.7             | 450.0        |                  |
|                        | T38        | P68X380     | 17.7             | 450.0        |                  |
| HL500                  | 150R (R38) | P97X150     | 17.75            | 451.0        | 92               |
|                        | T38        | P97X380     | 17.75            | 451.0        |                  |
|                        | T45        | P97X450     |                  |              |                  |
| HL600                  | T38        | P79X380     | 23.62            | 600.0        | 93               |
|                        | T45        | P79X450     | 23.63            | 600.0        |                  |

|                       |            |           |       |       |     |
|-----------------------|------------|-----------|-------|-------|-----|
| HL645                 | 150R (R38) | P91X150   | 23.65 | 600.0 | 94  |
|                       | T38        | P91X380   | 23.65 | 600.0 |     |
|                       | T45        | P91X450   | 23.65 | 600.0 |     |
| L750, L600            | 125R (R32) | P66J120   | 14.0  | 356.0 | 95  |
|                       | 150R (R38) | P66J150   | 14.0  | 356.0 |     |
|                       | T38        | P66J380   | 15.0  | 381.0 |     |
|                       | T45        | P66J450   | 15.0  | 381.0 |     |
| HL700/750             | T38        | P99X380   | 23.65 | 600.0 | 96  |
|                       | T45        | P99X450   | 23.65 | 600.0 |     |
|                       | T51        | P99X510   |       |       |     |
| HL850                 | T45        | P92N450   | 19.75 | 502.0 | 97  |
|                       | T51        | P92N510   | 19.75 | 502.0 |     |
| HL850S                | T45        | P92X450   | 26.4  | 671.0 | 98  |
|                       | T51        | P92X510   | 26.4  | 671.0 |     |
| HL1000                | T45        | P95X450   | 26.3  | 668.0 | 99  |
|                       | T51        | P95X510   | 26.3  | 668.0 |     |
| HL1500T-60            | T51        | P125X510  | 29.9  | 760   | 100 |
|                       | B60        | P125X600  | 29.9  | 760   |     |
| HL1500T-80            | B60        | P125X60SL | 29.9  | 760   | 101 |
| HL1000 FE-65/1500/550 | B60        | P139X60B  | 29.9  | 760   | 102 |
| HLX5                  | 150R (R38) | P03X150   | 19.7  | 500   | 103 |
|                       | T38        | P03X380   | 19.7  | 500   |     |
| RD314 (Female)        | 125R (R32) | P158X12F  | 8.07  | 205   | 104 |
| RD520/525             | T38        | P145X380  | 20.7  | 525   | 105 |
| Toyo                  |            |           |       |       |     |
| TYPR 120, 220         | 125R (R32) | P66J120   | 14.0  | 356.0 | 106 |
|                       | 150R (R38) | P66J150   | 14.0  | 356.0 |     |
|                       | T38        | P66J380   | 15.0  | 381.0 |     |
|                       | T45        | P66J450   | 15.0  | 381.0 |     |

# Striking Bars

|                                |                                                                                    | Drill                            | Thread     | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilos |
|--------------------------------|------------------------------------------------------------------------------------|----------------------------------|------------|-------------|------------------|--------------|------------------|-----------------|
| <b>Hex Shank / Atlas Copco</b> |                                                                                    |                                  |            |             |                  |              |                  |                 |
| 1                              |    | 100R (R25)                       |            | P02 B100    | 16.0             | 405.0        | 2.5              | 1.13            |
| 2                              |    | 100R (R25)                       |            | P04 B100    | 14.5             | 368.0        | 3.0              | 1.36            |
|                                |                                                                                    | 125R (R32)                       |            | P04 B120    | 14.5             | 368.0        | 3.0              | 1.36            |
| 3                              |    | Atlas Copco<br>1132              | 125 (R32)  | P133 X 120  | 16.1             | 410          | 5.3              | 2.4             |
| 4                              |    | Atlas Copco<br>1038/1238         | T38        | P107 X380   | 22.6             | 575          | 10.3             | 4.7             |
| 5                              |  | Atlas Copco<br>1238              | T38        | P108 X380   | 22.6             | 575          | 10.3             | 4.7             |
| 6                              |  | Atlas Copco<br>1036H8            | 125R (R32) | P28 X120    | 19.68            | 500.0        | 11.0             | 4.98            |
|                                |                                                                                    | 1036H8                           | 150R (R38) | P28 X150    | 19.68            | 500.0        | 11.0             | 4.98            |
|                                |                                                                                    | 1036H8                           | T38        | P28 X380    | 19.68            | 500.0        | 11.0             | 4.98            |
|                                |                                                                                    | 1238H8                           | T45        | P28 X450    | 19.68            | 500.0        | 12.0             | 5.44            |
| 7                              |  | Atlas Copco<br>1038HD            | 125R (R32) | P29 X120    | 19.68            | 500.0        | 11.0             | 4.98            |
|                                |                                                                                    | 1038HD                           | 150R (R38) | P29 X150    | 19.09            | 485.0        | 11.0             | 4.98            |
|                                |                                                                                    | 1238HD                           | T38        | P29 X380    | 19.09            | 485.0        | 11.0             | 4.98            |
| 8                              |  | Atlas Copco<br>1038HL            | 150R (R38) | P32 X150    | 23.23            | 590.0        | 11.0             | 4.98            |
|                                |                                                                                    | 1238HL                           | T38        | P32 X380    | 23.23            | 590.0        | 11.0             | 4.98            |
|                                |                                                                                    |                                  | T45        | P32 X450    | 23.23            | 590.0        | 11.0             | 4.98            |
|                                |                                                                                    |                                  | T45        | P32 X450    | 22.64            | 575          | 12.8             | 5.80            |
| 9                              |  | Atlas Copco<br>88E56US           | T38        | P42J380     | 21.1             | 536.0        | 11.4             | 5.17            |
|                                |                                                                                    | 88E57                            | T45        | P42J450     | 21.1             | 536.0        | 11.4             | 5.17            |
| 10                             |  | Atlas Copco<br>COP 125, 130, 131 | 150R (R38) | P27J 150    | 15.0             | 381.0        | 6.0              | 2.72            |
|                                |                                                                                    |                                  | T38        | P27J380     | 15.0             | 381.0        | 6.0              | 2.72            |

\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

# Striking Bars

|                    |  | Drill              | Thread     | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilograms |
|--------------------|--|--------------------|------------|-------------|------------------|--------------|------------------|---------------------|
| <b>Atlas Copco</b> |  |                    |            |             |                  |              |                  |                     |
| 11                 |  | Atlas Copco        | 125 (R32)  | P33D120     | 15               | 380          | 5.0              | 2.27                |
|                    |  | B8C54              | T38        | P33D380     | 15               | 380          | 5.0              | 2.27                |
|                    |  | B8C120             |            |             |                  |              |                  |                     |
| 12                 |  | Atlas Copco        | T45        | P144 X45 B  | 30.3             | 770          | 22.2             | 10.1                |
|                    |  | COP 2160EX /       |            |             |                  |              |                  |                     |
|                    |  | 2550EX             |            |             |                  |              |                  |                     |
| 13                 |  | Atlas Copco        | T45        | P155 X45 B  | 30.3             | 770          | 19.8             | 8.9                 |
|                    |  | COP 2160/2560 RP   | T51        | P155 X51 B  | 30.3             | 770          | 20.0             | 9.01                |
| 14                 |  | Atlas Copco        | T51        | P147 X51 10 | 30.3             | 770          | 22.0             | 10.0                |
|                    |  | COP 2160 -60       |            |             |                  |              |                  |                     |
| 15                 |  | Atlas Copco        | 125R (R32) | P100 X120   | 15.8             | 400          | 6.0              | 2.72                |
|                    |  | COP 1028 HD        |            |             |                  |              |                  |                     |
| 16                 |  | Atlas Copco        | 125R (R32) | P22 X120 F  | 13.81            | 351.0        | 7.7              | 3.49                |
|                    |  | COP 1032HD         | 150R (R38) | P22 X150 F  | 13.81            | 351.0        | 7.7              | 3.49                |
|                    |  |                    | FEMALE     |             |                  |              |                  |                     |
| 17                 |  | Atlas Copco        | 125R (R32) | P170 X120   | 16.1             | 410          | 6.2              | 2.8                 |
|                    |  | COP 1140, 1435     |            | P170 X12L   | 19.7             | 500          | 6.4              | 2.9                 |
| 18                 |  | Atlas Copco        | 150R (R38) | P46 X150    | 17.1             | 435.0        | 8.5              | 3.85                |
|                    |  | COP 1440           | T38        | P46 X380    | 17.1             | 435.0        | 8.5              | 3.85                |
| 19                 |  | Atlas Copco        | 125R (R32) | P47 X120    | 20.6             | 525.0        | 9.2              | 4.17                |
|                    |  | COP 1550           | 150R (R38) | P47 X150    | 20.6             | 525.0        | 9.2              | 4.17                |
|                    |  |                    | T38        | P47 X380    | 20.6             | 525.0        | 9.2              | 4.17                |
|                    |  | COP 1550 (2.05)    | T38        | P47 X380 S  | 20.6             | 525          | 13.0             | 5.90                |
| 20                 |  | Atlas Copco        | 125R (R32) | P36 J120    | 14.0             | 356.0        | 7.1              | 3.22                |
|                    |  | HM750, HM751-RD500 | 150R (R38) | P36 J150    | 14.0             | 356.0        | 7.6              | 3.44                |
|                    |  |                    | T38        | P36 J380    | 15.0             | 381.0        | 7.6              | 3.44                |
|                    |  |                    | T45        | P36 J450    | 15.0             | 381.0        | 8.5              | 3.85                |

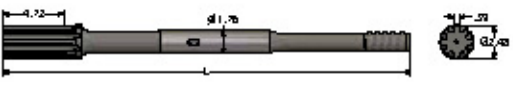
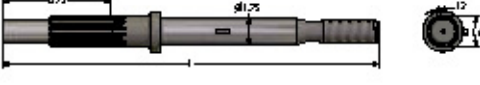
\*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

# Striking Bars

|                                                    |  | Drill                            | Thread     | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilos |
|----------------------------------------------------|--|----------------------------------|------------|-------------|------------------|--------------|------------------|-----------------|
| Atlas Copco / Boart / Chicago Pneumatic / Furukawa |  |                                  |            |             |                  |              |                  |                 |
| 21                                                 |  | Atlas Copco<br>185D              | T45        | P57 X450    | 22.2             | 565          | 15.8             | 7.2             |
|                                                    |  |                                  | T51        | P57 X510    | 22.2             | 565          | 15.8             | 7.2             |
| 22                                                 |  | Atlas Copco<br>131P100           | T38        | P101 X380   | 17.5             | 445          | 8                | 3.63            |
| 23                                                 |  | Boart<br>HD155                   | T38        | P145 X380   | 22.6             | 575          | 19.2             | 8.7             |
| 24                                                 |  | Chicago Pneumatic<br>450N, 450DR | 125R (R32) | P24J 120    | 13.12            | 333.0        | 5.6              | 2.54            |
|                                                    |  |                                  | 150R (R38) | P24J 150    | 13.12            | 333.0        | 5.6              | 2.54            |
|                                                    |  |                                  | T38        | P24J 380    | 13.12            | 333.0        | 5.6              | 2.54            |
| 25                                                 |  | Chicago Pneumatic<br>CP451       | 125R (R32) | P36J 120    | 14.0             | 356.0        | 7.1              | 3.22            |
|                                                    |  |                                  | 150R (R38) | P36J 150    | 14.0             | 356.0        | 7.6              | 3.44            |
|                                                    |  |                                  | T38        | P36J 380    | 15.0             | 381.0        | 7.6              | 3.44            |
|                                                    |  |                                  | T45        | P36J 450    | 15.0             | 381.0        | 8.5              | 3.85            |
| 26                                                 |  | Furukawa<br>HD120, M120, PD200   | 125R (R32) | P36J 120    | 14.0             | 356.0        | 7.1              | 3.22            |
|                                                    |  |                                  | 150R (R38) | P36J 150    | 14.0             | 356.0        | 7.6              | 3.44            |
|                                                    |  |                                  | T38        | P36J 380    | 15.0             | 381.0        | 7.6              | 3.44            |
|                                                    |  |                                  | T45        | P36J 450    | 15.0             | 381.0        | 8.5              | 3.85            |
| 27                                                 |  | Furukawa<br>HD200, HD300         | T38        | P72 L380    | 25.5             | 648.0        | 14.5             | 6.57            |
|                                                    |  |                                  | T45        | P72 L450    | 25.5             | 648.0        | 14.5             | 6.57            |
| 28                                                 |  | Furukawa<br>HD609                | T38        | P71 X380    | 24.4             | 620.0        | 13.5             | 6.12            |
|                                                    |  |                                  | T45        | P71 X450    | 24.4             | 620.0        | 14.1             | 6.40            |
| 29                                                 |  | Furukawa<br>HD612                | T38        | P68 X380    | 28.0             | 710.0        | 20.0             | 9.07            |
|                                                    |  |                                  | T45        | P68 X450    | 28.0             | 710.0        | 20.0             | 9.07            |
| 30                                                 |  | Furukawa<br>HD612RP              | T45        | P68 X45LB   | 35.4             | 900          | 25.3             | 11.4            |
|                                                    |  |                                  | T51        | P68 X51LB   | 35.4             | 900          | 25.4             | 11.5            |

\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=3/16" L=5/8" N=3/4" X=External Flush

# Striking Bars

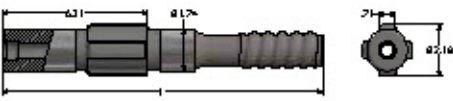
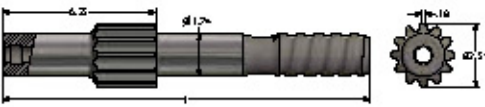
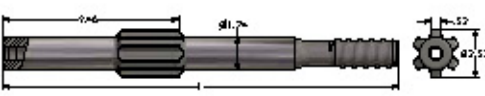
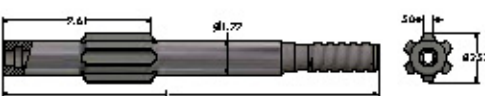
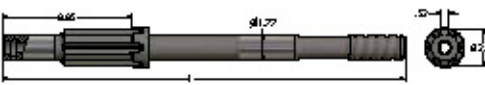
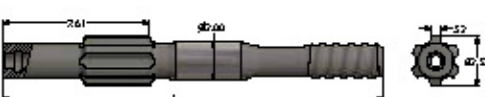
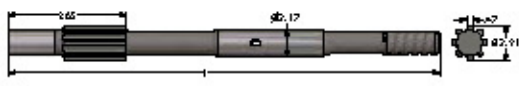
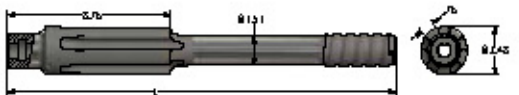
|                                                                                     |                                                                                    | Drill                         | Thread                                 | Part Number                              | Length<br>Inches             | Length<br>MM                     | Weight<br>Pounds         | Weight<br>Kilos              |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------|----------------------------------------|------------------------------------------|------------------------------|----------------------------------|--------------------------|------------------------------|
| <b>Furukawa / Gardner Denver</b>                                                    |                                                                                    |                               |                                        |                                          |                              |                                  |                          |                              |
| 31                                                                                  |    | Furukawa<br>HD615             | T51                                    | P76 X510                                 | 27.5                         | 700.0                            | 32.0                     | 14.51                        |
| 32                                                                                  |    | Furukawa<br>HD709             | T45                                    | P121 X450                                | 24.4                         | 620                              | 16.8                     | 7.61                         |
| 33                                                                                  |    | Furukawa<br>HD709RP           | T38                                    | P121 X38B                                | 31.5                         | 800                              | 21.6                     | 9.8                          |
| 34                                                                                  |    | Furukawa<br>HD712             | T45                                    | P106 X450                                | 31.0                         | 788                              | 25.0                     | 11.36                        |
| 35                                                                                  |  | Furukawa<br>HD712RP           | T45<br>T51                             | P106 X45LB<br>P106 X51LB                 | 34.8<br>34.8                 | 885<br>885                       | 25.0<br>25.3             | 11.3<br>11.5                 |
| 36                                                                                  |  | Furukawa<br>HD715             | T51                                    | P122 X510                                | 31.1                         | 790                              | 29.0                     | 13.2                         |
| 37                                                                                  |  | Gardner Denver<br>99, 123     | 125R (R32)<br>150R (R38)<br>T38        | P24J120<br>P24J150<br>P24J380            | 13.12<br>13.12<br>13.12      | 333.0<br>333.0<br>333.0          | 5.6<br>5.6<br>5.6        | 2.54<br>2.54<br>2.54         |
| 38                                                                                  |  | Gardner Denver<br>PR55, PR123 | 125R (R32)<br>150R (R38)<br>T38<br>T45 | P36J120<br>P36J150<br>P36J380<br>P36J450 | 14.0<br>14.0<br>15.0<br>15.0 | 356.0<br>356.0<br>381.0<br>381.0 | 7.1<br>7.6<br>7.6<br>8.5 | 3.22<br>3.44<br>3.44<br>3.85 |
| 39                                                                                  |  | Gardner Denver<br>PR56        | T38<br>T45                             | P70L38T<br>P70L45T                       | 28.0<br>28.0                 | 711.0<br>711.0                   | 13.0<br>14.0             | 5.89<br>6.35                 |
| 40                                                                                  |  | Gardner Denver<br>HPR1        | 150R (R38)<br>T38<br>T45               | P25 X150<br>P25 X380<br>P25 X450         | 23.3<br>23.3<br>23.3         | 632.0<br>632.0<br>632.0          | 11.0<br>11.0<br>13.0     | 4.98<br>4.98<br>5.89         |
| *BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Rush |                                                                                    |                               |                                        |                                          |                              |                                  |                          |                              |

# Striking Bars

|                       |  | Drill          | Thread     | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilograms |
|-----------------------|--|----------------|------------|-------------|------------------|--------------|------------------|---------------------|
| <b>Gardner Denver</b> |  |                |            |             |                  |              |                  |                     |
| 41                    |  | Gardner Denver | T38        | P35 X38S    | 28.5             | 724          | 17.5             | 7.95                |
|                       |  | HPR1H          | T38        | P35 X380    | 29.0             | 737.0        | 17.8             | 8.07                |
|                       |  |                | T45        | P35 X450    | 29.0             | 737.0        | 17.8             | 8.07                |
| 42                    |  | Gardner Denver | T45        | P17 X450    | 36.0             | 914.4        | 28.6             | 12.97               |
|                       |  | HPR2           | T51        | P17 X510    | 36.0             | 914.4        | 28.6             | 12.97               |
|                       |  | HPR51          | T51        | P17 X510S   |                  |              |                  |                     |
| 43                    |  | Gardner Denver | T45        | P55 X45LB   | 30.3             | 770          | 21.6             | 9.8                 |
|                       |  | HPR45, 4519    |            |             |                  |              |                  |                     |
| 44                    |  | Gardner Denver | T51        | P157 X510   | 30.3             | 770          | 24.0             | 10.9                |
|                       |  | HPR51, 5123    |            |             |                  |              |                  |                     |
| 45                    |  | Gardner Denver | T45        | P129 X450   | 21.8             | 554          | 15.0             | 6.82                |
|                       |  | HPR3818        |            |             |                  |              |                  |                     |
| 46                    |  | Gardner Denver | B60        | P168 X600   | 41.0             | 1041         | 32.0             | 14.5                |
|                       |  | HPR3832        |            |             |                  |              |                  |                     |
| 47                    |  | Gardner Denver | T38        | P126 X380   | 27.6             | 700          | 15.2             | 6.90                |
|                       |  | HPRHC          |            |             |                  |              |                  |                     |
| 48                    |  | Gardner Denver | T51        | P62 R510    | 19.0             | 483          | 12.8             | 5.82                |
|                       |  | VL170          |            |             |                  |              |                  |                     |
| 49                    |  | Ingersoll Rand | 125R (R32) | P24J 120    | 13.12            | 333.0        | 5.6              | 2.54                |
|                       |  | 45, 475        | 150R (R38) | P24J 150    | 13.12            | 333.0        | 5.6              | 2.54                |
|                       |  |                | T38        | P24J380     | 13.12            | 333.0        | 5.6              | 2.54                |
| 50                    |  | Ingersoll Rand | 125R (R32) | P65 D120    | 13.0             | 333.0        | 5.4              | 2.44                |
|                       |  | YD90 M         |            |             |                  |              |                  |                     |

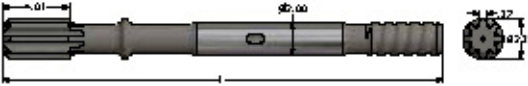
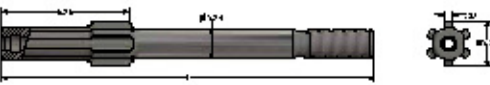
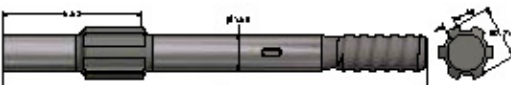
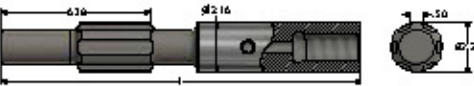
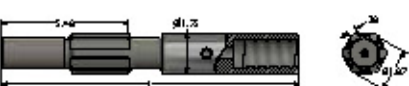
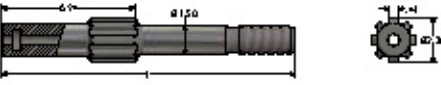
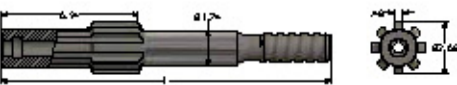
\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

# Striking Bars

|                       |                                                                                    | Drill               | Thread     | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilos |
|-----------------------|------------------------------------------------------------------------------------|---------------------|------------|-------------|------------------|--------------|------------------|-----------------|
| <b>Ingersoll Rand</b> |                                                                                    |                     |            |             |                  |              |                  |                 |
| 51                    |    | Ingersoll Rand      | 125R (R32) | P36J120     | 14.0             | 356.0        | 7.1              | 3.22            |
|                       |                                                                                    | VL120, VL140,       | 150R (R36) | P36J150     | 14.0             | 356.0        | 7.6              | 3.44            |
|                       |                                                                                    | EVL130, F16,        | T38        | P36J380     | 15.0             | 381.0        | 7.6              | 3.44            |
|                       |                                                                                    | URD550A             | T45        | P36J450     | 15.0             | 381.0        | 8.5              | 3.85            |
| 52                    |    | Ingersoll Rand      | T38        | P67J380     | 13.75            | 349.0        | 7.0              | 3.17            |
|                       |                                                                                    | VL130/140           | T45        | P67J450     | 13.75            | 349.0        | 7.2              | 3.27            |
| 53                    |    | Ingersoll Rand      | T38        | P42J380     | 21.1             | 537.0        | 11.4             | 5.17            |
|                       |                                                                                    | YH60                | T45        | P42J450     | 21.1             | 537.0        | 11.4             | 5.17            |
| 54                    |    | Ingersoll Rand      | T38        | P64N380     | 19.25            | 489.0        | 10.6             | 4.80            |
|                       |                                                                                    | YH65                | T45        | P64N450     | 19.25            | 489.0        | 10.7             | 4.85            |
| 55                    |  | Ingersoll Rand      | T45        | P84N450B    | 27.5             | 700.0        | 16.0             | 7.25            |
| 56                    |  | Ingersoll Rand      | T38        | P49N380     | 19.5             | 495.0        | 13.0             | 5.89            |
|                       |                                                                                    | YH80A               | T45        | P49N450     | 19.5             | 495.0        | 13.0             | 5.89            |
|                       |                                                                                    |                     | T51        | P49N510     | 19.5             | 495.0        | 13.0             | 5.89            |
| 57                    |  | Ingersoll Rand      | T45        | P83Q450     | 24.75            | 625.0        | 17.0             | 7.11            |
|                       |                                                                                    | YH95                | T51        | P83Q510     | 24.75            | 625.0        | 17.0             | 7.11            |
| 58                    |  | Ingersoll Rand      | T45        | P60X450B    | 35.4             | 900.0        | 32.0             | 14.51           |
|                       |                                                                                    | YH110VRP<br>YH135RP | T51        | P60X510B    | 35.4             | 900.0        | 32.0             | 14.51           |
| 59                    |  | Ingersoll Rand      | T51        | P65N510     | 19.52            | 496.0        | 14.5             | 6.57            |
| 60                    |  | Ingersoll Rand      | T38        | P66N380     | 21.0             | 533.0        | 12.8             | 5.80            |
|                       |                                                                                    | VL671<br>5-FLUTE    | T45        | P66N450     | 21.0             | 533.0        | 12.8             | 5.8             |

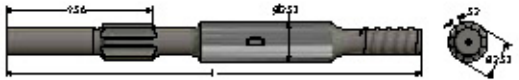
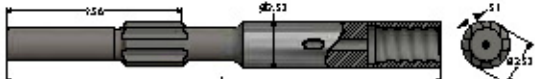
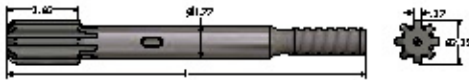
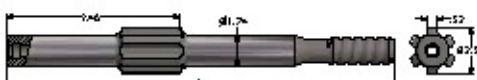
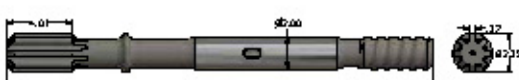
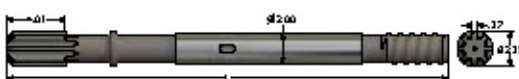
\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=3/16" L=5/8" N=3/4" X=External Rush

# Striking Bars

|                             |                                                                                    | Drill                   | Thread      | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilograms |
|-----------------------------|------------------------------------------------------------------------------------|-------------------------|-------------|-------------|------------------|--------------|------------------|---------------------|
| <b>Ingersoll Rand / Joy</b> |                                                                                    |                         |             |             |                  |              |                  |                     |
| 61                          |    | Ingersoll Rand          | T45         | P78 X45B    | 26.4             | 670.0        | 11.6             | 7.98                |
|                             |                                                                                    | VL672                   | T45         | P78 X45 LB  | 30.3             | 770.0        | 18.4             | 8.40                |
|                             |                                                                                    |                         | TS1         | P78 X51B    | 26.4             | 670.0        | 17.6             | 7.98                |
| 62                          |    | Ingersoll Rand          | T38         | P64X380     | 19.94            | 506.0        | 12.7             | 5.76                |
| 63                          |    | Joy / Cannon / Stillman | 125 R (R32) | P30 F120    | 15.23            | 387.0        | 5.6              | 2.54                |
|                             |                                                                                    | VCR150                  | 150 R (R38) | P30 F150    | 15.23            | 387.0        | 6.0              | 2.72                |
|                             |                                                                                    |                         | T38         | P30 P380    | 15.23            | 387.0        | 6.0              | 2.72                |
| 64                          |    | Joy / Cannon / Stillman | 125 R (R32) | P26X120     | 17.5             | 439.0        | 8.0              | 3.62                |
|                             |                                                                                    | JH2, CH38               | 150 R (R38) | P26X150     | 17.5             | 445.0        | 8.0              | 3.62                |
|                             |                                                                                    |                         | T38         | P26X380     | 18.0             | 457.0        | 8.0              | 3.62                |
| 65                          |  | Joy / Cannon / Stillman | 125 R (R32) | P26 X12 F   | 15.38            | 388.0        | 17.5             | 7.93                |
|                             |                                                                                    | JH2, CH38               | T38         | P26 X38 F   | 15.38            | 388.0        | 17.5             | 7.93                |
|                             |                                                                                    | FEMALE                  |             |             |                  |              |                  |                     |
| 66                          |  | Joy / Cannon / Stillman | 125 R (R32) | P18 X12 F   | 13.0             | 330.0        | 6.25             | 2.83                |
|                             |                                                                                    | CH32                    |             |             |                  |              |                  |                     |
|                             |                                                                                    | FEMALE                  |             |             |                  |              |                  |                     |
| 67                          |  | Joy / Cannon / Stillman | 125 R (R32) | P48L120     | 17.75            | 451.0        | 7.8              | 3.53                |
|                             |                                                                                    | VCR 260/360/460         | 150 R (R38) | P48L150     | 17.75            | 451.0        | 7.8              | 3.53                |
|                             |                                                                                    | CVR460                  | T38         | P48L380     | 17.75            | 451.0        | 7.8              | 3.53                |
|                             |                                                                                    |                         | T45         | P48L450     | 15.25            | 387.0        | 9.6              | 4.36                |
| 68                          |  | Joy / Cannon / Stillman | 150 R (R38) | P51N150     | 15.25            | 387.0        | 7.8              | 3.53                |
|                             |                                                                                    | VCR261                  | T38         | P51N380     | 15.25            | 387.0        | 7.8              | 3.53                |
|                             |                                                                                    |                         | T45         | P51N450     | 15.25            | 387.0        | 9.6              | 4.36                |
| 69                          |  | Joy / Cannon / Stillman | T38         | P52 N380    | 17.0             | 432.0        | 11.0             | 4.99                |
|                             |                                                                                    | VCR361                  | T45         | P52 N450    | 17.0             | 432.0        | 11.0             | 4.99                |
| 70                          |  | Joy / Cannon / Stillman | TS1         | P69T510     | 19.25            | 489.0        | 20.0             | 9.07                |

\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=3/16" L=5/8" N=3/4" X=External Rush

# Striking Bars

|                                |                                                                                    | Drill                      | Thread     | Part Number | Length<br>Inches | Length<br>MM | Weight<br>Pounds | Weight<br>Kilograms |
|--------------------------------|------------------------------------------------------------------------------------|----------------------------|------------|-------------|------------------|--------------|------------------|---------------------|
| <b>Joy / Krupp / Montabert</b> |                                                                                    |                            |            |             |                  |              |                  |                     |
| 71                             |    | Knapp / John Henry         | 150R (R38) | P54X150     | 27.18            | 690.0        | 26.0             | 11.79               |
|                                |                                                                                    | HB 101                     | T38        | P54X380     | 27.18            | 690.0        | 26.0             | 11.79               |
|                                |                                                                                    | John Henry JHRD1           | T45        | P54X450     | 27.18            | 690.0        | 26.0             | 11.79               |
|                                |                                                                                    |                            | T51        | P54X510     | 27.18            | 690.0        | 26.0             | 11.79               |
| 72                             |    | Knapp / John Henry         | T38        | P54X380 F   | 23.25            | 590.0        | 23.0             | 10.43               |
|                                |                                                                                    | John Henry JHRD1<br>FEMALE | T45        | P54X450 F   | 23.25            | 590.0        | 22.0             | 9.98                |
| 73                             |    | Montabert                  | 125R (R32) | P36J120     | 14.0             | 356.0        | 7.1              | 3.22                |
|                                |                                                                                    | TR300, TR400               | 150R (R38) | P36J150     | 14.0             | 356.0        | 7.6              | 3.44                |
|                                |                                                                                    |                            | T38        | P36J380     | 15.0             | 381.0        | 7.6              | 3.44                |
|                                |                                                                                    |                            | T45        | P36J450     | 15.0             | 381.0        | 8.5              | 3.85                |
| 74                             |    | Montabert                  | 125R (R32) | P41X120     | 17.25            | 447.0        | 7.7              | 3.50                |
|                                |                                                                                    | HC40                       | T38        | P41X380     | 17.25            | 447.0        | 8.0              | 3.62                |
| 75                             |  | Montabert                  | T38        | P12X38S     | 17.1             | 435.0        | 12.0             | 5.4                 |
|                                |                                                                                    | HC80, HC90                 | T45        | P12X45S     | 17.1             | 435.0        | 11.1             | 5.0                 |
|                                |                                                                                    | HC10S, HC15S               | T38        | P12X80 L    | 19.7             | 500.0        | 11.4             | 5.2                 |
|                                |                                                                                    | HC120                      |            |             |                  |              |                  |                     |
| 76                             |  | Montabert                  | T38        | P42J380     | 21.1             | 536.0        | 11.4             | 5.17                |
|                                |                                                                                    | H100                       | T45        | P42J450     | 21.1             | 536.0        | 11.4             | 5.17                |
| 77                             |  | Montabert                  | T45        | P78X45 B    | 26.4             | 670.0        | 11.6             | 7.98                |
|                                |                                                                                    | HC80R, HC120R              | T45        | P78X45 LB   | 30.3             | 770.0        | 18.5             | 8.40                |
|                                |                                                                                    | HC150RP, HC155RP           | T51        | P78X51 B    | 26.4             | 670.0        | 11.6             | 7.98                |
|                                |                                                                                    | HC158RP                    |            |             |                  |              |                  |                     |
| 78                             |  | Montabert                  | T45        | P78X45 BS   | 26.4             | 670.0        | 21.38            | 9.7                 |
|                                |                                                                                    | HC80R, HC120R              | T51        | P78X51 BS   | 26.4             | 670.0        | 21.83            | 9.9                 |
| 79                             |  | Montabert                  | 125R (R32) | P128X12 F   | 10.6             | 274          | 9.0              | 4.10                |
|                                |                                                                                    | HC 40/50                   |            |             |                  |              |                  |                     |
| 80                             |  | Montabert                  | T45        | P127X45 B   | 20.0             | 508          | 19.9             | 9.02                |
|                                |                                                                                    | HC109                      |            |             |                  |              |                  |                     |

\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Rush

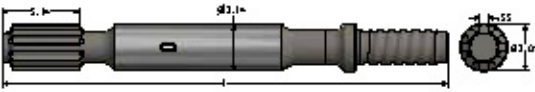
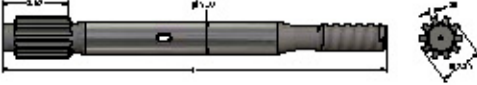
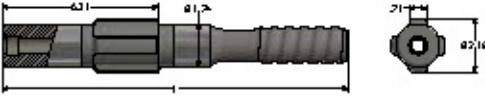
# Striking Bars

|                           |  | Drill                              | Thread                          | Part Number                         | Length<br>Inches        | Length<br>MM            | Weight<br>Pounds     | Weight<br>Kilograms  |
|---------------------------|--|------------------------------------|---------------------------------|-------------------------------------|-------------------------|-------------------------|----------------------|----------------------|
| <b>Montabert / Secoma</b> |  |                                    |                                 |                                     |                         |                         |                      |                      |
| 81                        |  | Montabert<br>HC110/120             | T38                             | P116 X380R                          | 26.4                    | 670                     | 15.8                 | 7.16                 |
| 82                        |  | Montabert<br>HC20                  | 125R (R32)                      | P20 X120                            | 11.3                    | 287                     | 4.0                  | 1.82                 |
| 83                        |  | Montabert<br>HC20 FEMALE           | 125R (R32)                      | P20 X12F                            | 7.4                     | 188                     | 6.3                  | 2.84                 |
| 84                        |  | Montabert<br>HC200A                | T51<br>B60                      | P104 X510<br>P104 X60 LB            | 33.1<br>33.5            | 840<br>860              | 29.1<br>37.1         | 13.18<br>16.82       |
| 85                        |  | Montabert<br>HC95LM                | 150R (R38)<br>T38<br>T45        | P179 X15B<br>P179 X38B<br>P179 X45B | 19.7<br>19.7<br>20.3    | 500<br>500<br>515       | 12.9<br>12.9<br>13.9 | 5.9<br>5.9<br>6.3    |
| 86                        |  | Montabert<br>HC160R<br>HC170R      | T45<br>T51                      | P150 X45B<br>P150 X51B              | 31.8<br>31.8            | 808<br>808              | 31.6<br>31.6         | 14.3<br>14.3         |
| 87                        |  | Secoma<br>Hydrastar 200/300        | 125R (R32)<br>150R (R38)<br>T38 | P29 X120<br>P29 X150<br>P29 X380    | 19.68<br>19.09<br>19.09 | 500.0<br>485.0<br>485.0 | 11.0<br>11.0<br>11.0 | 4.98<br>4.98<br>4.98 |
| 88                        |  | Secoma<br>Hydrastar 200<br>FEMALE  | 125R (R32)                      | P62 X12F                            | 13.81                   | 341.0                   | 7.7                  | 3.49                 |
| 89                        |  | Tamrock<br>L400, 500, 650<br>HL432 | 125R (R32)                      | P67 D120                            | 15.0                    | 381.0                   | 4.6                  | 2.08                 |
| 90                        |  | Tamrock<br>HL300                   | 125R (R32)                      | P77 X120 F                          | 9.6                     | 245                     | 7.7                  | 3.5                  |

\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=3/16" L=5/8" N=3/4" X=External Flush



# Striking Bars

|                                  |                                                                                    | Drill                                                       | Thread                                 | Part Number                              | Length<br>Inches             | Length<br>MM                     | Weight<br>Pounds         | Weight<br>Kilograms          |
|----------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------|------------------------------------------|------------------------------|----------------------------------|--------------------------|------------------------------|
| <b>Tam rock - Sandvik / Toyo</b> |                                                                                    |                                                             |                                        |                                          |                              |                                  |                          |                              |
| 101                              |    | Tam rock<br>HL1500T-80                                      | B60                                    | P125X60SL                                | 29.9                         | 760                              | 45.0                     | 20.4                         |
| 102                              |    | Tam rock<br>HL1000 P E-65<br>HL1500 P E-65<br>HL1560 P E-65 | B60                                    | P139X60B                                 | 29.9                         | 760                              | 36.9                     | 16.7                         |
| 103                              |    | Tam rock<br>HL X5                                           | 150R (R38)<br>T38                      | P03X150<br>P03X380                       | 19.7<br>19.7                 | 500<br>500                       | 14.0<br>14.0             | 6.4<br>6.4                   |
| 104                              |    | Tam rock<br>RD314                                           | 125R (R32)                             | P158X12F                                 | 8.07                         | 205                              | 7.0                      | 3.2                          |
| 105                              |  | Tam rock<br>RD520/525                                       | T38                                    | P145X380                                 | 20.7                         | 525                              | 14.7                     | 6.7                          |
| 106                              |  | Toyo<br>TYPR 120, 220                                       | 125R (R32)<br>150R (R38)<br>T38<br>T45 | P36J120<br>P36J150<br>P36J380<br>P36J450 | 14.0<br>14.0<br>15.0<br>15.0 | 356.0<br>356.0<br>381.0<br>381.0 | 7.1<br>7.6<br>7.6<br>8.5 | 3.22<br>3.44<br>3.44<br>3.85 |

\*BlowTube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

# Supplemental Equipment

| Thread |        | Part Number | Weight |          |
|--------|--------|-------------|--------|----------|
| Male   | Female |             | Pounds | Kilogram |

## Bit Adapters

### Female / Male



|      |     |         |      |     |
|------|-----|---------|------|-----|
| 125R | T38 | CB12538 | .68  | 1.5 |
| T38  | T45 | CB38450 | 1.14 | 2.5 |
| T45  | TS1 | CB45510 | 1.36 | 3.0 |
|      |     |         |      |     |
|      |     |         |      |     |
|      |     |         |      |     |
|      |     |         |      |     |

| Thread |        | Part Number | Weight |          |
|--------|--------|-------------|--------|----------|
|        | Female |             | Pounds | Kilogram |

## Hole Savers - Bell Type



|  |      |         |      |     |
|--|------|---------|------|-----|
|  | 125R | CHT1250 | 1.36 | 3.0 |
|  | T38  | CHT3800 | 1.82 | 4.0 |
|  | T45  | CHT4500 | 2.04 | 4.5 |
|  | TS1  | CHT5100 | 2.50 | 5.5 |
|  | B60  | CHT6000 | 2.95 | 6.5 |
|  |      |         |      |     |

| Thread |  | Part Number | Weight |          |
|--------|--|-------------|--------|----------|
| Male   |  |             | Pounds | Kilogram |

## Hole Savers - Spear Type



|      |  |         |      |     |
|------|--|---------|------|-----|
| 125R |  | CVT1250 | .91  | 2.0 |
| T38  |  | CVT3800 | 1.36 | 3.0 |
| T45  |  | CVT4500 | 1.59 | 3.5 |
| TS1  |  | CVT5100 | 1.82 | 4.0 |
|      |  |         |      |     |
|      |  |         |      |     |

# Rock Bit Care

The total life or distance that a rock bit will drill depends on many factors. Of these, rock bit reconditioning can be the major factor both in the cost and performance of any rock bit, button or rooftop insert.

| Button                                                                                                                                                                                                                                               | Illustration                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <p>Button bits should be reconditioned when the body wears away faster than the button wears, causing it to protrude excessively. This will prevent the button from pinching or shearing off. This frequently happens in softer abrasive ground.</p> |  <p><b>BODY WEAR - EXCESSIVE PROTRUSION</b></p> |
| <p>When the button wears at a more rapid rate than the body, especially in harder, more abrasive rock, the buttons should be reconditioned frequently.</p>                                                                                           |  <p><b>WORN FLUSH WITH BODY</b></p>             |
| <p>Button bits should be reconditioned if the buttons polish or show signs of surface fracturing in non-abrasive rock. This will prevent the surface fractures from propagating which could result in fracturing the buttons.</p>                    |  <p><b>SURFACE FRACTURING</b></p>               |
| Rooftop                                                                                                                                                                                                                                              | Illustration                                                                                                                       |
| <p>Rooftop bits should be reconditioned when the dullness of the cutting edge is 3/32" (2.5mm) flat, measured on the gable halfway between the centerhole and the outside diameter of the bit.</p>                                                   |  <p><b>DULLNESS OF CUTTING EDGE</b></p>       |
| <p>A bit should be sharpened when the outside corner of the insert has worn in excess of 3/16" (5.0mm) radius.</p>                                                                                                                                   |  <p><b>WORN OUTSIDE CORNER</b></p>            |
| <p>Rock bits should be gauge ground when the bit begins to reverse gauge.</p>                                                                                                                                                                        |  <p><b>REVERSE GAUGE</b></p>                  |
| <p>In non-abrasive ground, a bit should be sharpened periodically to remove any high polished area of the insert or surface fracturing to prevent the surface fractures from propagating which could result in a fractured insert.</p>               |  <p><b>SURFACE FRACTURING</b></p>             |

# Tips on Drilling

## 1. Be Prepared

- Experienced, skilled drill operator
- Avoid improper bit handling, i.e. carbide against carbide damage
- Drill rig properly lubricated
- Sufficient drilling accessories on hand
- Keep accessories clean and free from damage
- Striking face is square and true

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## 2. Starting the drill

- Firm footing for the drill
- Align and collar the hole properly
- Begin slowly and adjust the feed and throttle as the bit buries

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## 3. Drilling

- Maintain enough rotation for good penetration
- Excessive rotation will wear the gauge
- Maintain correct feed pressure;
  - Insufficient air pressure leads to a loose drill string and premature wear
  - Sufficient air pressure is ideal to keep the bit from bouncing on the bottom
  - Too much pressure will buckle and bind the steel in the hole
  - Over feeding in hard rock will reduce penetration
  - Over feeding in soft rock can lead to burying the bit and hanging the steel

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## 4. Clean hole

- Blow the hole frequently when drilling deep
- Soft or muddy ground can seep causing the steel to hang up
- Blow with every drill rod added below the hole, preventing a plugged steel

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## 5. Drill dieseling

- Occurs with insufficient feed pressure
- Also happens with full throttle when withdrawing the bit
- Dieseling heats up the drill and burns off the lubricant
- Results could include a destroyed hammer
- Stop dieseling by reducing the drill throttle and increasing feed pressure

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## 6. Changing bits

- Try to follow a larger bit with a smaller bit
- Try to use new bits with new steel
- Use lubricant on bits, as well as couplings and steel threads
- Remove bits with a bit wrench or "rattle" loose, no beating with a hammer

## This image shows a full page of blank, lined paper. It features approximately 20 horizontal ruling lines spaced evenly across the page. The lines are thin and light gray or blue. There are no margins, text, or other markings on the page.

## Notes

This image shows a full page of blank, lined paper. It features approximately 20 horizontal grey lines spaced evenly apart, typical of notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines or other markings present.



# Back Cover