

# Bit Face Shape Selection

## Concave Face

The all-round application bit face specifically for medium hard and homogenous rock formations. Good hole deviation control and good flushing capacity.



## Convex Face

For high penetration rates in soft to medium-hard with low to medium air pressures. It is the most resistance to steel wash, and may reduce the load and wear on the gauge buttons, but poor hole deviation control.



## Flat Face

This kind of face shape is suitable for hard to very hard and abrasive rock formations in applications with high air pressures. Good penetration rates and resistance to steel wash.



## DTH Bit Code ( i.e. 150MQL50CC )

150	M	QL50	CC/CV/FF
Bit Diameter: 150mm	Our company: Maxdrill	Bit Shank: QL50-QL50 Bit Shank SD5-SD5 Bit Shank M50-Misson50 Bit Shank D-DHD Bit Shank N-NUMA Bit Shank	Front Design: CC-Concave CV-Convex FF-Flat Face

# Carbide Button Shape Selection



## Domed/ Round Button

Domed / Round buttons are usually used as gauge buttons of DTH Bits, suitable for very abrasive and very hard formations.



## Parabolic/Semi-Ballistic Button

Parabolic buttons are usually used as gauge buttons and front buttons of DTH Bits, suitable for medium abrasive and hard formations.



## Ballistic Button

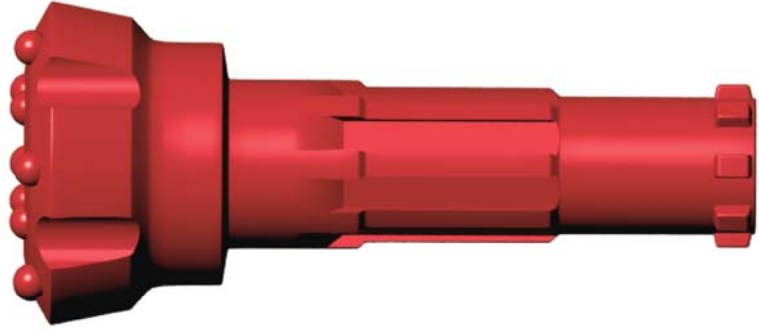
Ballistic buttons are usually used as front buttons of DTH Bits, suitable for medium abrasive and medium hard formations. They can also be used as gauge buttons if the rock is soft.



## Sharp Button

Sharp buttons are usually used as front buttons of DTH Bits for soft formations where fast penetration rates are possible and button breakage is minimal.

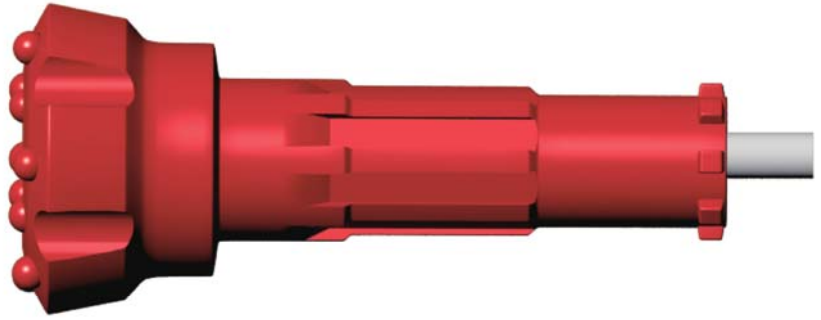
# BR1



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	60	2 3/8	60MBR1FF	6 x φ9		2 x φ8	2	1.6
	64	2 1/2	64MBR1FF	6 x φ10		3 x φ10	2	1.7
	70	2 3/4	70MBR1FF	6 x φ12		4 x φ10	2	1.9
	76	3	76MBR1FF	6 x φ12		4 x φ10	2	2.0

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	60	2 3/8	64MBR1CV	6 x φ9	2 x φ9	2 x φ9	2	1.6
	64	2 1/2	70MBR1CV	6 x φ10	2 x φ10	2 x φ10	2	1.7
	70	2 3/4	76MBR1CV	6 x φ12	2 x φ10	2 x φ10	2	1.9

# MD25

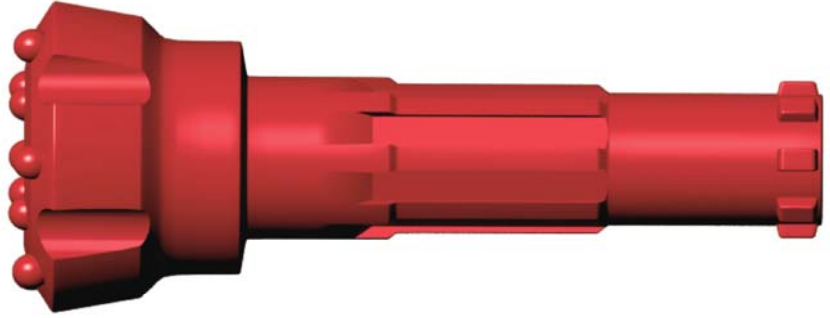


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	76	3	76MD25FF	6 x φ13		5 x φ10	2	3.3
	82	3 1/4	82MD25FF	6 x φ13		4 x φ11	2	3.5
	90	3 1/2	90MD25FF	8 x φ12		5 x φ12	2	3.7

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	70	2 3/4	70MD25CC	6 x φ12	2 x φ10	2 x φ10	2	2.0
	72	2 7/8	72MD25CC	6 x φ12	2 x φ10	2 x φ10	2	2.2
	76	3	76MD25CC	6 x φ12	2 x φ10	2 x φ10	2	3.0
	80	3 3/16	80MD25CC	6 x φ13	2 x φ10	2 x φ11	2	3.4

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	70	2 3/4	70MD25CV	6 x φ12	2 x φ10	2 x φ10	2	2.0
	72	2 7/8	72MD25CV	6 x φ12	2 x φ10	2 x φ10	2	2.2
	76	3	76MD25CV	6 x φ12	2 x φ10	2 x φ10	2	3.0
	80	3 3/16	80MD25CV	6 x φ13	2 x φ10	2 x φ11	2	3.4

# BR2



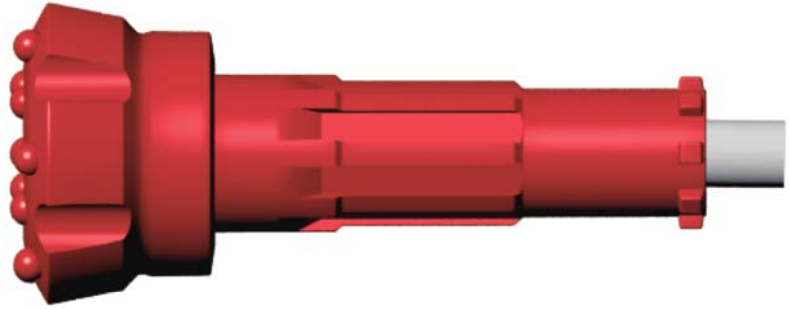
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	70	2 3/4	70MBR2FF	6 x φ12		4 x φ10	2	2.0
	72	2 7/8	72MBR2FF	6 x φ12		4 x φ10	2	2.2
	76	3	76MBR2FF	6 x φ12		5 x φ10	2	3.0
	80	3 3/16	80MBR2FF	6 x φ13		4 x φ11	2	3.4

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	70	2 3/4	70MBR2CC	6 x φ12	2 x φ10	2 x φ10	2	2.0
	72	2 7/8	72MBR2CC	6 x φ12	2 x φ10	2 x φ10	2	2.2
	76	3	76MBR2CC	6 x φ12	2 x φ10	2 x φ10	2	3.0
	80	3 3/16	80MBR2CC	6 x φ13	2 x φ10	2 x φ11	2	3.4

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	70	2 3/4	70MBR2CV	6 x φ12	2 x φ10	2 x φ10	2	2.0
	72	2 7/8	72MBR2CV	6 x φ12	2 x φ10	2 x φ10	2	2.2
	76	3	76MBR2CV	6 x φ12	2 x φ10	2 x φ10	2	3.0
	80	3 3/16	80MBR2CV	6 x φ13	2 x φ10	2 x φ11	2	3.4



**MD35  
IR3.5  
COP34**

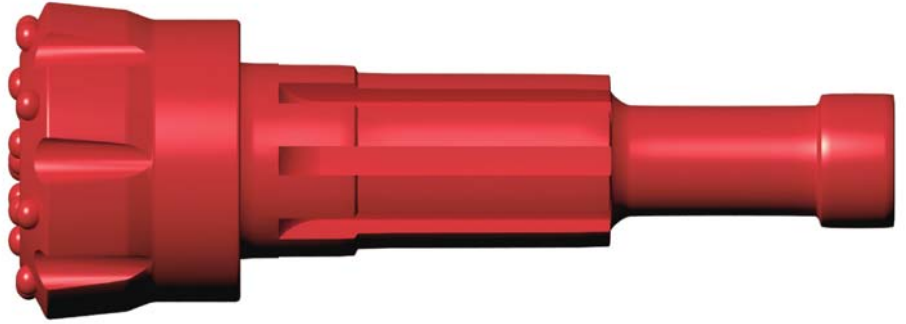


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	85	3 3/8	85MD35FF	7 x φ12		6 x φ11	2	4.9
	90	3 9/16	90MD35FF	7 x φ12		6 x φ11	2	5.0
	95	3 3/4	95MD35FF	7 x φ13		6 x φ12	2	5.1
	100	3 15/16	100MD35FF	7 x φ14		6 x φ13	2	5.3
	105	4 1/8	105MD35FF	7 x φ14		6 x φ13	2	5.5

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	85	3 3/8	85MD35CC	7 x φ12	4 x φ11	2 x φ11	2	4.9
	90	3 9/16	90MD35CC	7 x φ12	4 x φ11	2 x φ11	2	5.0
	95	3 3/4	95MD35CC	7 x φ13	4 x φ12	2 x φ12	2	5.1
	100	3 15/16	100MD35CC	7 x φ14	4 x φ13	2 x φ13	2	5.3
	105	4 1/8	105MD35CC	7 x φ14	4 x φ13	2 x φ13	2	5.5

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	85	3 3/8	85MD35CV	7 x φ12	4 x φ11	2 x φ11	2	4.9
	90	3 9/16	90MD35CV	7 x φ12	4 x φ11	2 x φ11	2	5.0
	95	3 3/4	95MD35CV	7 x φ13	4 x φ12	2 x φ12	2	5.1
	100	3 15/16	100MD35CV	7 x φ14	4 x φ13	2 x φ13	2	5.3
	105	4 1/8	105MD35CV	7 x φ14	4 x φ13	2 x φ13	2	5.5

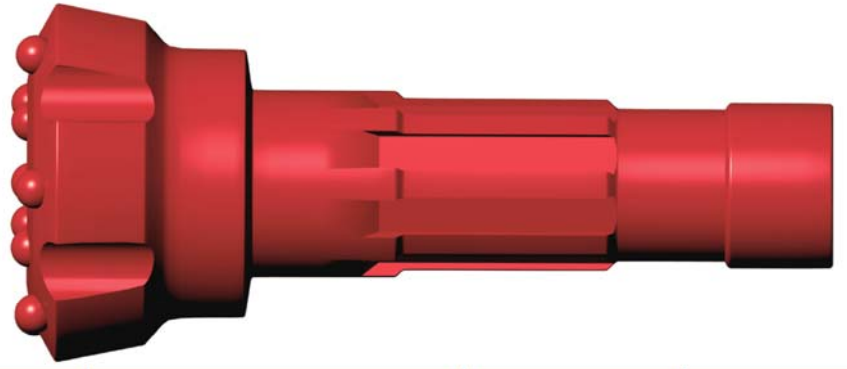
# M30A



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	90	3 1/2	90MM30FF	6 x φ14		4 x φ12	2	4.5
	105	4 1/8	105MM30FF	8 x φ13		6 x φ12	2	5.0

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	90	3 1/2	90MM30CV	6 x φ14	4 x φ12	2 x φ13	2	4.5
	95	3 3/4	95MM30CV	6 x φ14	4 x φ13	2 x φ13	2	4.6
	100	3 15/16	100MM30CV	6 x φ14	4 x φ13	3 x φ13	2	4.8
	105	4 1/8	105MM30CV	6 x φ14	4 x φ13	3 x φ13	2	5.0

# COP32



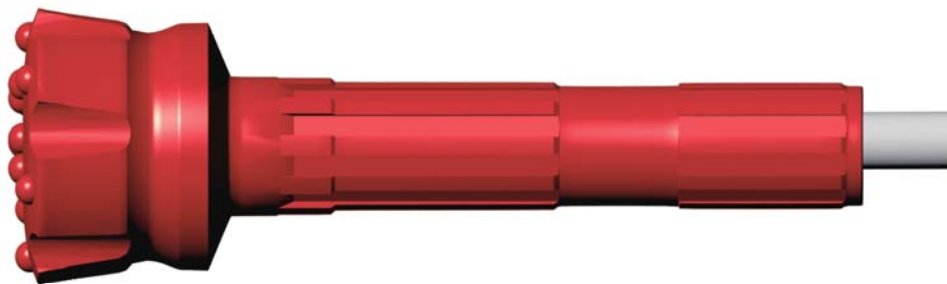
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	85	3 3/8	85MC32FF	7 x φ12		6 x φ11	2	4.2
	90	3 9/16	90MC32FF	7 x φ12		6 x φ11	2	4.3
	95	3 3/4	95MC32FF	7 x φ13		6 x φ12	2	4.4
	100	3 15/16	100MC32FF	7 x φ14		6 x φ13	2	4.6

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	85	3 3/8	85MC32CC	7 x φ12	4 x φ11	2 x φ11	2	4.2
	90	3 9/16	90MC32CC	7 x φ12	4 x φ11	2 x φ11	2	4.3
	95	3 3/4	95MC32CC	7 x φ13	4 x φ12	2 x φ12	2	4.4
	100	3 15/16	100MC32CC	7 x φ14	4 x φ13	2 x φ13	2	4.6

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	85	3 3/8	85MC32CV	7 x φ12	4 x φ11	2 x φ11	2	4.2
	90	3 9/16	90MC32CV	7 x φ12	4 x φ11	2 x φ11	2	4.3
	95	3 3/4	95MC32CV	7 x φ13	4 x φ12	2 x φ12	2	4.4
	100	3 15/16	100MC32CV	7 x φ14	4 x φ13	2 x φ13	2	4.6

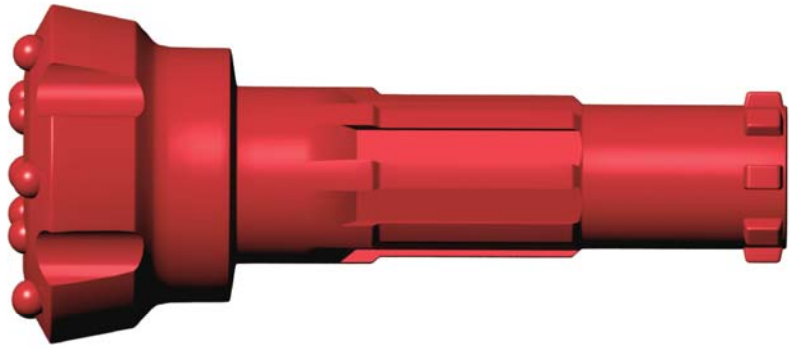


# QL30



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	85	3 3/8	85MQL30FF	6 x φ13		4 x φ12	2	4.5
	90	3 1/2	90MQL30FF	6 x φ14		4 x φ12	2	4.7
	95	3 3/4	95MQL30FF	6 x φ14		4 x φ13	2	4.9
	100	3 7/8	100MQL30FF	8 x φ12		6 x φ12	2	5.0
	105	4 1/8	105MQL30FF	8 x φ13		6 x φ12	2	5.5

# BR3

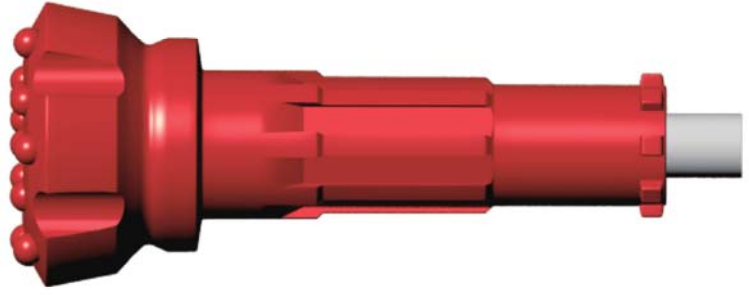


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	85	3 3/8	85MBR3FF	7 x $\varnothing$ 12		6 x $\varnothing$ 11	2	3.7
	90	3 9/16	90MBR3FF	7 x $\varnothing$ 12		6 x $\varnothing$ 11	2	3.8
	95	3 3/4	95MBR3FF	7 x $\varnothing$ 13		6 x $\varnothing$ 12	2	3.9
	100	3 15/16	100MBR3FF	7 x $\varnothing$ 14		6 x $\varnothing$ 13	2	4.1
	105	4 1/8	105MBR3FF	7 x $\varnothing$ 14		6 x $\varnothing$ 13	2	4.3

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	85	3 3/8	85MBR3CC	7 x $\varnothing$ 12	4 x $\varnothing$ 11	2 x $\varnothing$ 11	2	3.7
	90	3 9/16	90MBR3CC	7 x $\varnothing$ 12	4 x $\varnothing$ 11	2 x $\varnothing$ 11	2	3.8
	95	3 3/4	95MBR3CC	7 x $\varnothing$ 13	4 x $\varnothing$ 12	2 x $\varnothing$ 12	2	3.9
	100	3 15/16	100MBR3CC	7 x $\varnothing$ 14	4 x $\varnothing$ 13	2 x $\varnothing$ 13	2	4.1
	105	4 1/8	105MBR3CC	7 x $\varnothing$ 14	4 x $\varnothing$ 13	2 x $\varnothing$ 13	2	4.3

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	85	3 3/8	85MBR3CV	7 x $\varnothing$ 12	4 x $\varnothing$ 11	2 x $\varnothing$ 11	2	3.7
	90	3 9/16	90MBR3CV	7 x $\varnothing$ 12	4 x $\varnothing$ 11	2 x $\varnothing$ 11	2	3.8
	95	3 3/4	95MBR3CV	7 x $\varnothing$ 13	4 x $\varnothing$ 12	2 x $\varnothing$ 12	2	3.9
	100	3 15/16	100MBR3CV	7 x $\varnothing$ 14	4 x $\varnothing$ 13	2 x $\varnothing$ 13	2	4.1
	105	4 1/8	105MBR3CV	7 x $\varnothing$ 14	4 x $\varnothing$ 13	2 x $\varnothing$ 13	2	4.3

**MD45  
DHD340A  
COP44**



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	105	4 1/8	105MD45FF	7 x φ14		6 x φ13	2	7.7
	110	4 5/16	110MD45FF	8 x φ14		6 x φ13	2	7.8
	115	4 1/2	115MD45FF	8 x φ14		7 x φ13	2	8.3
	120	4 3/4	120MD45FF	8 x φ14		7 x φ13	2	8.7
	125	4 15/16	125MD45FF	8 x φ14		7 x φ13	2	8.9
	130	5 1/8	130MD45FF	8 x φ14		7 x φ13	2	9.0

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	105	4 1/8	105MD45CC	7 x φ14		6 x φ13	2	7.7
	110	4 5/16	110MD45CC	8 x φ14		6 x φ13	2	7.8
	115	4 1/2	115MD45CC	8 x φ14		7 x φ13	2	8.3
	120	4 3/4	120MD45CC	8 x φ14		7 x φ13	2	8.7
	125	4 15/16	125MD45CC	8 x φ14		7 x φ13	2	8.9
	130	5 1/8	130MD45CC	8 x φ14		7 x φ13	2	9.0

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	105	4 1/8	105MD45CV	7 x φ14		6 x φ13	2	7.7
	110	4 5/16	110MD45CV	8 x φ14		6 x φ13	2	7.8
	115	4 1/2	115MD45CV	8 x φ14		7 x φ13	2	8.3
	120	4 3/4	120MD45CV	8 x φ14		7 x φ13	2	8.7
	125	4 15/16	125MD45CV	8 x φ14		7 x φ13	2	8.9
	130	5 1/8	130MD45CV	8 x φ14		7 x φ13	2	9.0

# M40A



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	105	4 1/8	105MM40FF	7 x φ14		6 x φ13	2	7.7
	110	4 5/16	110MM40FF	8 x φ14		6 x φ13	2	7.8
	115	4 1/2	115MM40FF	8 x φ14		7 x φ13	2	8.3
	120	4 3/4	120MM40FF	8 x φ14		7 x φ13	2	8.7
	125	4 15/16	125MM40FF	8 x φ14		7 x φ13	2	8.9
	130	5 1/8	130MM40FF	8 x φ14		7 x φ13	2	9.0

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	105	4 1/8	105MM40CC	7 x φ14		6 x φ13	2	7.7
	110	4 5/16	110MM40CC	8 x φ14		6 x φ13	2	7.8
	115	4 1/2	115MM40CC	8 x φ14		7 x φ13	2	8.3
	120	4 3/4	120MM40CC	8 x φ14		7 x φ13	2	8.7
	125	4 15/16	125MM40CC	8 x φ14		7 x φ13	2	8.9
	130	5 1/8	130MM40CC	8 x φ14		7 x φ13	2	9.0

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	105	4 1/8	105MM40CV	7 x φ14		6 x φ13	2	7.7
	110	4 5/16	110MM40CV	8 x φ14		6 x φ13	2	7.8
	115	4 1/2	115MM40CV	8 x φ14		7 x φ13	2	8.3
	120	4 3/4	120MM40CV	8 x φ14		7 x φ13	2	8.7
	125	4 15/16	125MM40CV	8 x φ14		7 x φ13	2	8.9
	130	5 1/8	130MM40CV	8 x φ14		7 x φ13	2	9.0



# SD4

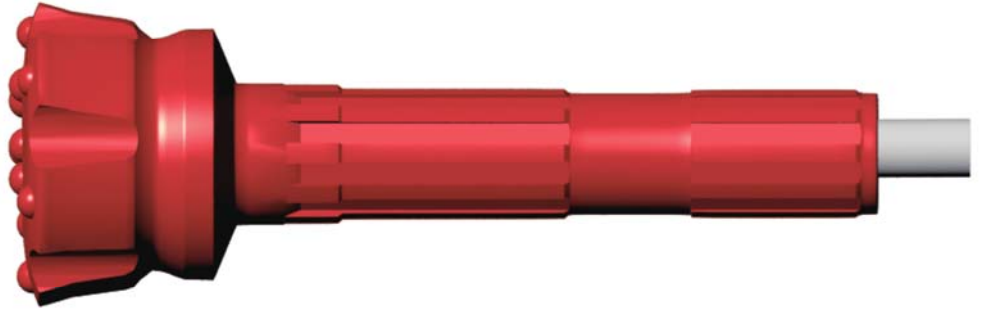


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	105	4 1/8	105MSD4FF	7 x φ14		6 x φ13	2	8.9
	110	4 5/16	110MSD4FF	8 x φ14		6 x φ13	2	9.0
	115	4 1/2	115MSD4FF	8 x φ14		7 x φ13	2	9.4
	120	4 3/4	120MSD4FF	8 x φ14		7 x φ13	2	9.9
	125	4 15/16	125MSD4FF	8 x φ14		7 x φ13	2	10.1
	130	5 1/8	130MSD4FF	8 x φ14		7 x φ13	2	10.2

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	105	4 1/8	105MSD4CC	7 x φ14		6 x φ13	2	8.9
	110	4 5/16	110MSD4CC	8 x φ14		6 x φ13	2	9.0
	115	4 1/2	115MSD4CC	8 x φ14		7 x φ13	2	9.4
	120	4 3/4	120MSD4CC	8 x φ14		7 x φ13	2	9.9
	125	4 15/16	125MSD4CC	8 x φ14		7 x φ13	2	10.1
	130	5 1/8	130MSD4CC	8 x φ14		7 x φ13	2	10.2

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	105	4 1/8	105MSD4CV	7 x φ14		6 x φ13	2	8.9
	110	4 5/16	110MSD4CV	8 x φ14		6 x φ13	2	9.0
	115	4 1/2	115MSD4CV	8 x φ14		7 x φ13	2	9.4
	120	4 3/4	120MSD4CV	8 x φ14		7 x φ13	2	9.9
	125	4 15/16	125MSD4CV	8 x φ14		7 x φ13	2	10.1
	130	5 1/8	130MSD4CV	8 x φ14		7 x φ13	2	10.2

# QL40

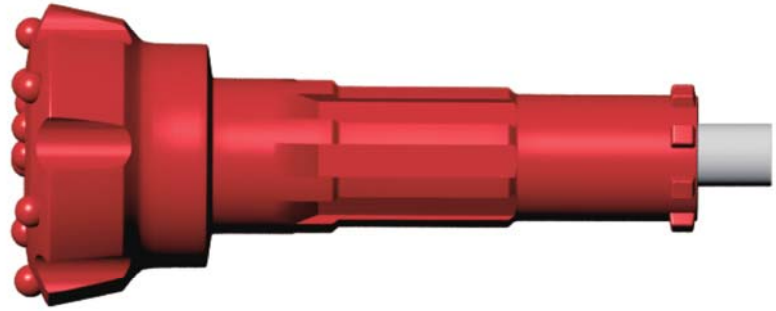


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	105	4 1/8	105MQL40FF	7 x φ14		6 x φ13	2	9.0
	110	4 5/16	110MQL40FF	8 x φ14		6 x φ13	2	9.1
	115	4 1/2	115MQL40FF	8 x φ14		7 x φ13	2	9.5
	120	4 3/4	120MQL40FF	8 x φ14		7 x φ13	2	10.0
	125	4 15/16	125MQL40FF	8 x φ14		7 x φ13	2	10.2
	130	5 1/8	130MQL40FF	8 x φ14		7 x φ13	2	10.3

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	105	4 1/8	105MQL40CC	7 x φ14		6 x φ13	2	9.0
	110	4 5/16	110MQL40CC	8 x φ14		6 x φ13	2	9.1
	115	4 1/2	115MQL40CC	8 x φ14		7 x φ13	2	9.5
	120	4 3/4	120MQL40CC	8 x φ14		7 x φ13	2	10.0
	125	4 15/16	125MQL40CC	8 x φ14		7 x φ13	2	10.2
	130	5 1/8	130MQL40CC	8 x φ14		7 x φ13	2	10.3

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	105	4 1/8	105MQL40CV	7 x φ14		6 x φ13	2	9.0
	110	4 5/16	110MQL40CV	8 x φ14		6 x φ13	2	9.1
	115	4 1/2	115MQL40CV	8 x φ14		7 x φ13	2	9.5
	120	4 3/4	120MQL40CV	8 x φ14		7 x φ13	2	10.0
	125	4 15/16	125MQL40CV	8 x φ14		7 x φ13	2	10.2
	130	5 1/8	130MQL40CV	8 x φ14		7 x φ13	2	10.3

**MD55  
DHD350R  
COP54**

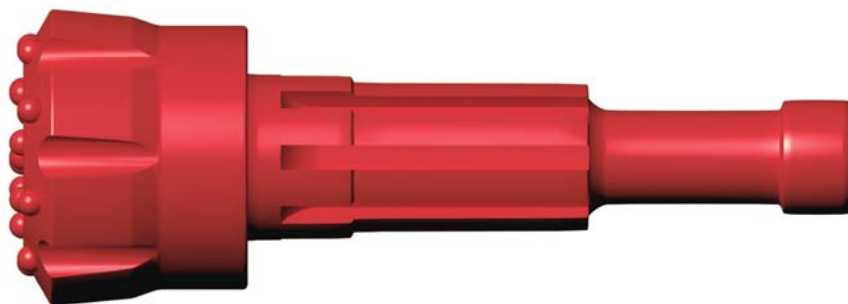


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	140	5 1/2	140MD55FF	7 x φ18		7 x φ14	2	17
	146	5 3/4	146MD55FF	7 x φ18		7 x φ14	2	18
	150	5 7/8	150MD55FF	8 x φ18		8 x φ14	2	19
	152	6	152MD55FF	8 x φ18		8 x φ14	2	20

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	140	5 1/2	140MD55CC	7 x φ18	4 x φ14	3 x φ14	2	17
	146	5 3/4	146MD55CC	7 x φ18	4 x φ14	3 x φ14	2	18
	150	5 7/8	150MD55CC	8 x φ18	4 x φ14	4 x φ14	2	19
	152	6	152MD55CC	8 x φ18	4 x φ14	4 x φ14	2	20

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	140	5 1/2	140MD55CV	7 x φ18	4 x φ14	3 x φ14	2	17
	146	5 3/4	146MD55CV	7 x φ18	4 x φ14	3 x φ14	2	18
	150	5 7/8	150MD55CV	8 x φ18	4 x φ14	4 x φ14	2	19
	152	6	152MD55CV	8 x φ18	4 x φ14	4 x φ14	2	20

# M50A



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	140	5 1/2	140MM50FF	7 x φ18		7 x φ14	2	15.7
	146	5 3/4	146MM50FF	7 x φ18		7 x φ14	2	16.7
	150	5 7/8	150MM50FF	8 x φ18		8 x φ14	2	17.7
	152	6	152MM50FF	8 x φ18		8 x φ14	2	18.7

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	140	5 1/2	140MM50CC	7 x φ18	4 x φ14	3 x φ14	2	15.7
	146	5 3/4	146MM50CC	7 x φ18	4 x φ14	3 x φ14	2	16.7
	150	5 7/8	150MM50CC	8 x φ18	4 x φ14	4 x φ14	2	17.7
	152	6	152MM50CC	8 x φ18	4 x φ14	4 x φ14	2	18.7

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	140	5 1/2	140MM50CV	7 x φ18	4 x φ14	3 x φ14	2	15.7
	146	5 3/4	146MM50CV	7 x φ18	4 x φ14	3 x φ14	2	16.7
	150	5 7/8	150MM50CV	8 x φ18	4 x φ14	4 x φ14	2	17.7
	152	6	152MM50CV	8 x φ18	4 x φ14	4 x φ14	2	18.7



# SD5

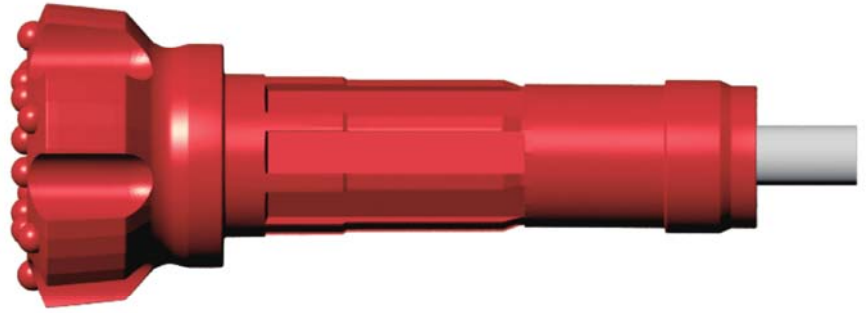


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	140	5 1/2	140MSD5FF	7 x $\phi$ 18		7 x $\phi$ 14	2	16.5
	146	5 3/4	146MSD5FF	7 x $\phi$ 18		7 x $\phi$ 14	2	17.5
	150	5 7/8	150MSD5FF	8 x $\phi$ 18		8 x $\phi$ 14	2	18.5
	152	6	152MSD5FF	8 x $\phi$ 18		8 x $\phi$ 14	2	19.5

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	140	5 1/2	140MSD5CC	7 x $\phi$ 18	4 x $\phi$ 14	3 x $\phi$ 14	2	16.5
	146	5 3/4	146MSD5CC	7 x $\phi$ 18	4 x $\phi$ 14	3 x $\phi$ 14	2	17.5
	150	5 7/8	150MSD5CC	8 x $\phi$ 18	4 x $\phi$ 14	4 x $\phi$ 14	2	18.5
	152	6	152MSD5CC	8 x $\phi$ 18	4 x $\phi$ 14	4 x $\phi$ 14	2	19.5

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	140	5 1/2	140MSD5CV	7 x $\phi$ 18	4 x $\phi$ 14	3 x $\phi$ 14	2	16.5
	146	5 3/4	146MSD5CV	7 x $\phi$ 18	4 x $\phi$ 14	3 x $\phi$ 14	2	17.5
	150	5 7/8	150MSD5CV	8 x $\phi$ 18	4 x $\phi$ 14	4 x $\phi$ 14	2	18.5
	152	6	152MSD5CV	8 x $\phi$ 18	4 x $\phi$ 14	4 x $\phi$ 14	2	19.5

# QL50

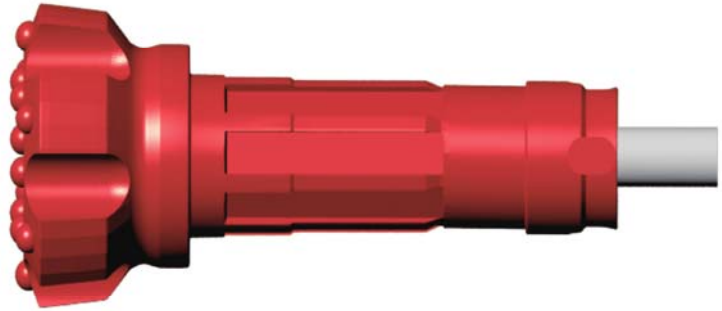


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	140	5 1/2	140MQL50FF	7 x φ18		7 x φ14	2	16.5
	146	5 3/4	146MQL50FF	7 x φ18		7 x φ14	2	17.5
	150	5 7/8	150MQL50FF	8 x φ18		8 x φ14	2	18.5
	152	6	152MQL50FF	8 x φ18		8 x φ14	2	19.5

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	140	5 1/2	140MQL50CC	7 x φ18	4 x φ14	3 x φ14	2	16.5
	146	5 3/4	146MQL50CC	7 x φ18	4 x φ14	3 x φ14	2	17.5
	150	5 7/8	150MQL50CC	8 x φ18	4 x φ14	4 x φ14	2	18.5
	152	6	152MQL50CC	8 x φ18	4 x φ14	4 x φ14	2	19.5

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	140	5 1/2	140MQL50CV	7 x φ18	4 x φ14	3 x φ14	2	16.5
	146	5 3/4	146MQL50CV	7 x φ18	4 x φ14	3 x φ14	2	17.5
	150	5 7/8	150MQL50CV	8 x φ18	4 x φ14	4 x φ14	2	18.5
	152	6	152MQL50CV	8 x φ18	4 x φ14	4 x φ14	2	19.5

**MD65  
DHD360  
COP64**

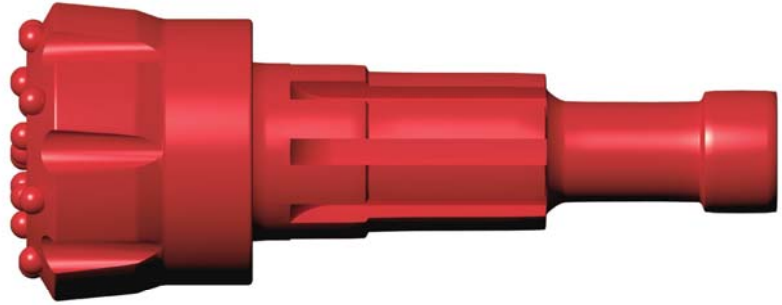


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	152	6	152MD66FF	8 x φ16		8 x φ16	2	20
	156	6 1/4	156MD65FF	8 x φ16		8 x φ16	2	23
	160	6 5/16	160MD65FF	8 x φ18		9 x φ16	2	24
	165	6 1/2	165MD65FF	8 x φ18		8 x φ16	2	25
	171	6 3/4	171MD65FF	10 x φ18		10 x φ16	2	26
	178	7	178MD65FF	10 x φ18		10 x φ16	2	27

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	152	6	152MD65CC	8 x φ16	4 x φ16	4 x φ16	2	20
	156	6 1/4	156MD65CC	8 x φ16	4 x φ16	4 x φ16	2	23
	159	6 1/8	159MD65CC	8 x φ16	4 x φ16	4 x φ16	2	24
	165	6 1/2	165MD65CC	8 x φ18	4 x φ18	4 x φ16	2	25
	171	6 3/4	171MD65CC	8 x φ18	4 x φ18	4 x φ16	2	26
	178	7	178MD65CC	8 x φ19	4 x φ18	5 x φ16	2	27
	190	7 1/2	190MD65CC	10 x φ19	5 x φ18	5 x φ16	2	28
	203	8	203MD65CC	10 x φ19	6 x φ18	7 x φ16	2	29

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	165	6 1/2	165MD65CV	9 x φ19	6X x 19	5 x φ19	3	25
	171	6 3/4	171MD65CV	9 x φ19	6X x 19	5 x φ19	3	26

# M60A



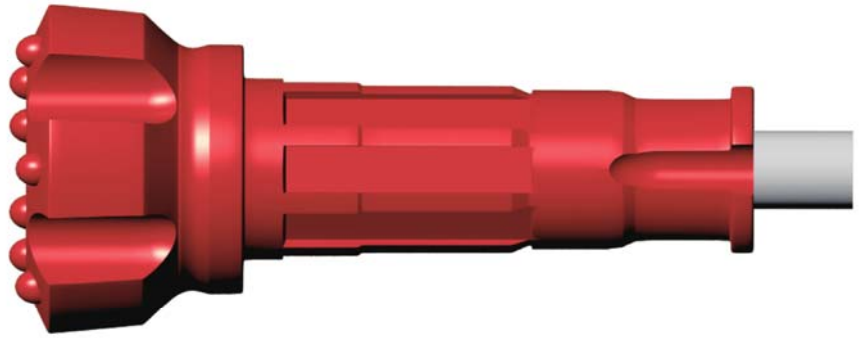
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	152	6	152MM60FF	8 x φ16		8 x φ16	2	18
	156	6 1/4	156MM60FF	8 x φ16		8 x φ16	2	21
	160	6 5/16	160MM60FF	8 x φ18		9 x φ16	2	22
	165	6 1/2	165MM60FF	8 x φ18		8 x φ16	2	23
	171	6 3/4	171MM60FF	10 x φ18		10 x φ16	2	24
	178	7	178MM60FF	10 x φ18		10 x φ16	2	25

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	152	6	152MM60CC	8 x φ16	4 x φ16	4 x φ16	2	18
	156	6 1/4	156MM60CC	8 x φ16	4 x φ16	4 x φ16	2	21
	160	6 1/8	160MM60CC	8 x φ16	4 x φ16	4 x φ16	2	22
	165	6 1/2	165MM60CC	8 x φ18	4 x φ18	4 x φ16	2	23
	171	6 3/4	171MM60CC	8 x φ18	4 x φ18	4 x φ16	2	24
	178	7	178MM60CC	8 x φ19	4 x φ18	5 x φ16	2	25
	190	7 1/2	190MM60CC	10 x φ19	5 x φ18	5 x φ16	2	26
	203	8	203MM60CC	10 x φ19	6 x φ18	7 x φ16	2	27

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	165	6 1/2	165MM60CV	9 x φ19	6 x φ19	5 x φ19	3	23
	171	6 3/4	171MM60CV	9 x φ19	6 x φ19	5 x φ19	3	24



# SD6

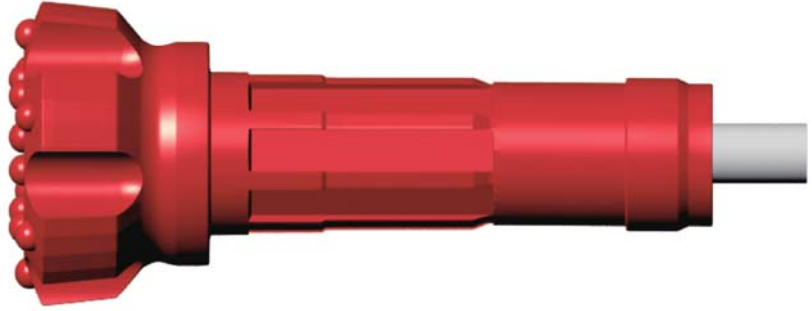


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	152	6	152MSD6FF	8 x φ16		8 x φ16	2	22
	156	6 1/4	156MSD6FF	8 x φ16		8 x φ16	2	23
	160	6 5/16	160MSD6FF	8 x φ18		9 x φ16	2	24
	165	6 1/2	165MSD6FF	8 x φ18		8 x φ16	2	25
	171	6 3/4	171MSD6FF	10 x φ18		10 x φ16	2	26
	178	7	178MSD6FF	10 x φ18		10 x φ16	2	27

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	152	6	152MSD6CC	8 x φ16	4 x φ16	4 x φ16	2	22
	156	6 1/4	156MSD6CC	8 x φ16	4 x φ16	4 x φ16	2	23
	159	6 1/8	160MSD6CC	8 x φ16	4 x φ16	4 x φ16	2	24
	165	6 1/2	165MSD6CC	8 x φ18	4 x φ18	4 x φ16	2	25
	171	6 3/4	171MSD6CC	8 x φ18	4 x φ18	4 x φ16	2	26
	178	7	178MSD6CC	8 x φ19	4 x φ18	5 x φ16	2	27
	190	7 1/2	190MSD6CC	10 x φ19	5 x φ18	5 x φ16	2	28
	203	8	203MSD6CC	10xφ19	6 x φ18	7 x φ16	2	29

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	165	6 1/2	165MSD6CV	9 x φ19	6 x φ19	5 x φ19	3	25
	171	6 3/4	171MSD6CV	9 x φ19	6 x φ19	5 x φ19	3	26

# QL60

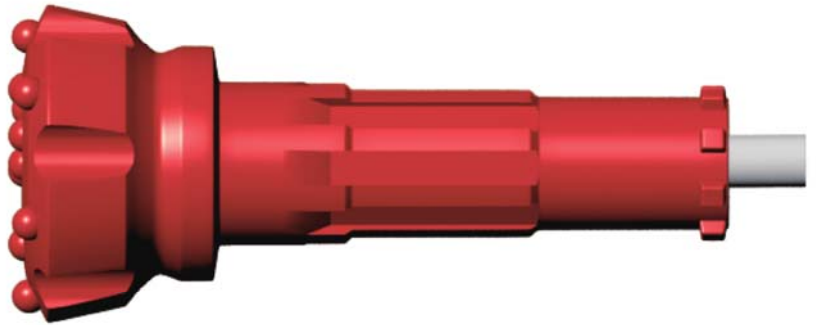


Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Flat	152	6	152MQL60FF	8 x φ16		8 x φ16	2	20
	156	6 1/4	156MQL60FF	8 x φ16		8 x φ16	2	23
	160	6 5/16	160MQL60FF	8 x φ18		9 x φ16	2	24
	165	6 1/2	165MQL60FF	8 x φ18		8 x φ16	2	25
	171	6 3/4	171MQL60FF	10 x φ18		10 x φ16	2	26
	178	7	178MQL60FF	10 x φ18		10 x φ16	2	27

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	152	6	152MQL60CC	8 x φ16	4 x φ16	4 x φ16	2	20
	156	6 1/4	156MQL60CC	8 x φ16	4 x φ16	4 x φ16	2	23
	159	6 1/8	160MQL60CC	8 x φ16	4 x φ16	4 x φ16	2	24
	165	6 1/2	165MQL60CC	8 x φ18	4 x φ18	4 x φ16	2	25
	171	6 3/4	171MQL60CC	8 x φ18	4 x φ18	4 x φ16	2	26
	178	7	178MQL60CC	8 x φ19	4 x φ18	5 x φ16	2	27
	190	7 1/2	190MQL60CC	10 x φ19	5 x φ18	5 x φ16	2	28
	203	8	203MQL60CC	10 x φ19	6 x φ18	7 x φ16	2	29

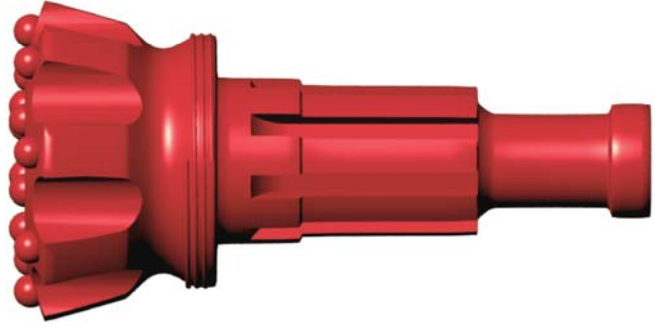
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Convex	165	6 1/2	165MQL60CV	9 x φ19	6 x φ19	5 x φ19	3	25
	171	6 3/4	171MQL60CV	9 x φ19	6 x φ19	5 x φ19	3	26

**MD85  
DHD380  
COP84**



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	200	7 7/8	200MD85CC	10 x φ19	8 x φ18	6 x φ16	2	48
	203	8	203MD85CC	10 x φ19	8 x φ18	6 x φ16	2	49
	222	8 3/4	222MD85CC	12 x φ19	9 x φ18	8 x φ16	3	55
	225	8 7/8	225MD85CC	12 x φ19	9 x φ18	8 x φ16	3	56
	240	9 1/2	240MD85CC	12 x φ19	9 x φ18	9 x φ16	3	57
	245	9 2/3	245MD85CC	12 x φ19	9 x φ18	9 x φ16	3	58
	251	9 7/8	251MD85CC	12 x φ19	12 x φ18	10 x φ16	3	60
	254	10	254MD85CC	12 x φ19	12 x φ18	10 x φ16	3	61

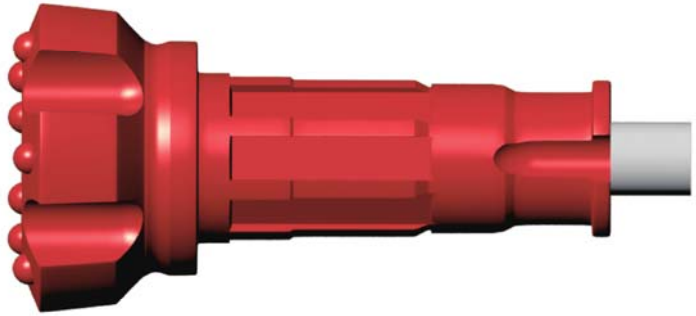
# M80A



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	200	7 7/8	200MM80CC	10 x φ19	8 x φ18	6 x φ16	2	41
	203	8	203MM80CC	10x φ19	8 x φ18	6 x φ16	2	42
	222	8 3/4	222MM80CC	12 x φ19	9 x φ18	8 x φ16	3	48
	225	8 7/8	225MM80CC	12 x φ19	9 x φ18	8 x φ16	3	49
	240	9 1/2	240MM80CC	12 x φ19	9 x φ18	9 x φ16	3	50
	245	9 2/3	245MM80CC	12 x φ19	9 x φ18	9 x φ16	3	51
	251	9 7/8	251MM80CC	12 x φ19	12 x φ18	10 x φ16	3	53
	254	10	254MM80CC	12 x φ19	12 x φ18	10 x φ16	3	54



# SD8



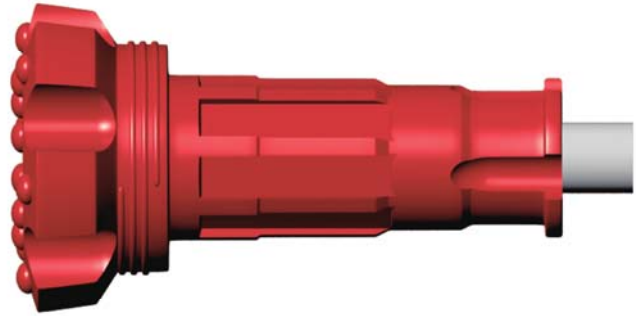
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	200	7 7/8	200MSD8CC	10 x φ19	8 x φ18	6 x φ16	2	41
	203	8	203MSD8CC	10 x φ19	8 x φ18	6 x φ16	2	42
	222	8 3/4	222MSD8CC	12 x φ19	9 x φ18	8 x φ16	3	48
	225	8 7/8	225MSD8CC	12 x φ19	9 x φ18	8 x φ16	3	49
	240	9 1/2	240MSD8CC	12 x φ19	9 x φ18	9 x φ16	3	50
	245	9 2/3	245MSD8CC	12 x φ19	9 x φ18	9 x φ16	3	51
	251	9 7/8	251MSD8CC	12 x φ19	12 x φ18	10 x φ16	3	53
	254	10	254MSD8CC	12 x φ19	12 x φ18	10 x φ16	3	54

# QL80



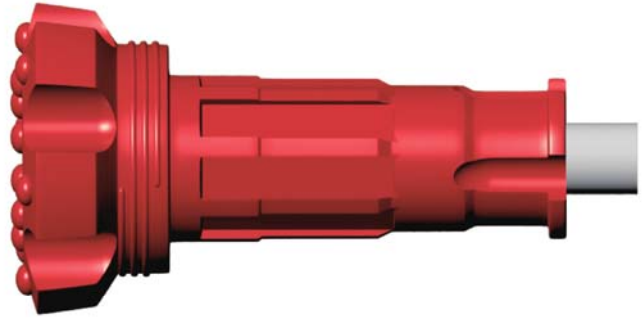
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	200	7 7/8	200MQL80CC	10 x φ19	8 x φ18	6 x φ16	2	49
	203	8	203MQL80CC	10 x φ19	8 x φ18	6 x φ16	2	50
	222	8 3/4	222MQL80CC	12 x φ19	9 x φ18	8 x φ16	3	56
	225	8 7/8	225MQL80CC	12 x φ19	9 x φ18	8 x φ16	3	57
	240	9 1/2	240MQL80CC	12 x φ19	9 x φ18	9 x φ16	3	58
	245	9 2/3	245MQL80CC	12 x φ19	9 x φ18	9 x φ16	3	59
	251	9 7/8	251MQL80CC	12 x φ19	12 x φ18	10 x φ16	3	61
	254	10	254MQL80CC	12 x φ19	12 x φ18	10 x φ16	3	62

# SD10



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	254	10	254MSD10CC	12 x $\varnothing$ 19	6x $\varnothing$ 19+6x $\varnothing$ 18	10 x $\varnothing$ 16	3	84
	270	10 5/8	270MSD10CC	12 x $\varnothing$ 19	9x $\varnothing$ 19+6x $\varnothing$ 18	8 x $\varnothing$ 16	3	89
	279	11	279MSD10CC	12 x $\varnothing$ 19	9x $\varnothing$ 19+6x $\varnothing$ 18	9 x $\varnothing$ 16	3	91
	305	12	305MSD10CC	12 x $\varnothing$ 19	15 x $\varnothing$ 19	12 x $\varnothing$ 16	3	112

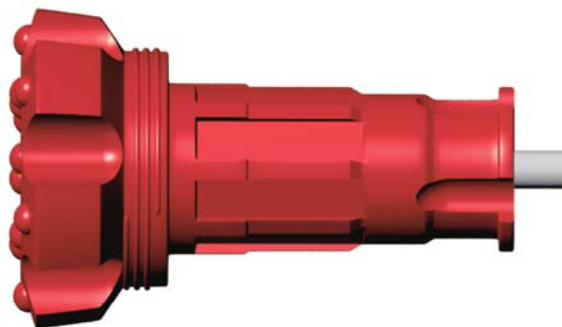
# NUMA100



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	254	10	254MN100CC	12 x $\varnothing$ 19	6x $\varnothing$ 19+6x $\varnothing$ 18	10 x $\varnothing$ 16	3	89
	270	10 5/8	270MN100CC	12 x $\varnothing$ 19	9x $\varnothing$ 19+6x $\varnothing$ 18	8 x $\varnothing$ 16	3	94
	279	11	279MN100CC	12 x $\varnothing$ 19	9x $\varnothing$ 19+6x $\varnothing$ 18	9 x $\varnothing$ 16	3	96
	305	12	305MN100CC	12 x $\varnothing$ 19	15 x $\varnothing$ 19	12 x $\varnothing$ 16	3	107

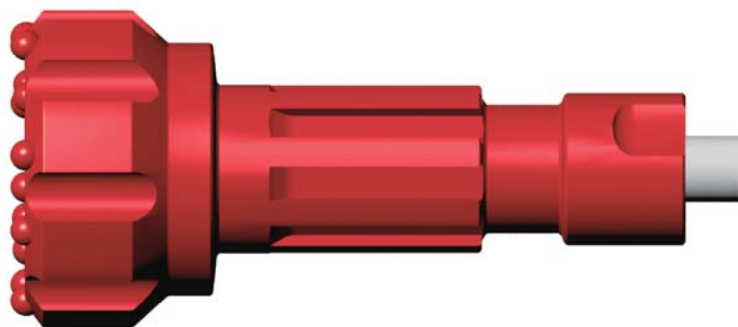


# SD12



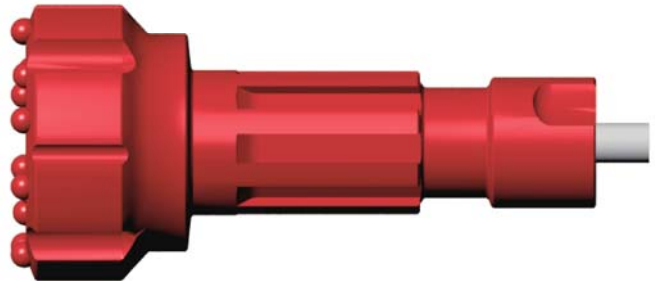
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	305	12	305MSD12CC	15 x $\varphi$ 19	15 x $\varphi$ 19	12 x $\varphi$ 16	3	119
	311	12 1/4	311MSD12CC	15 x $\varphi$ 19	15 x $\varphi$ 19	13 x $\varphi$ 16	3	121
	350	13 3/4	350MSD12CC	15 x $\varphi$ 19	9x $\varphi$ 19+15x $\varphi$ 18	15 x $\varphi$ 16	3	169
	380	15	380MSD12CC	18 x $\varphi$ 19	12x $\varphi$ 19+15x $\varphi$ 18	21 x $\varphi$ 16	3	190
	400	15 3/4	400MSD12CC	18 x $\varphi$ 19	30 x $\varphi$ 19	22 x $\varphi$ 16	3	200

# DHD1120



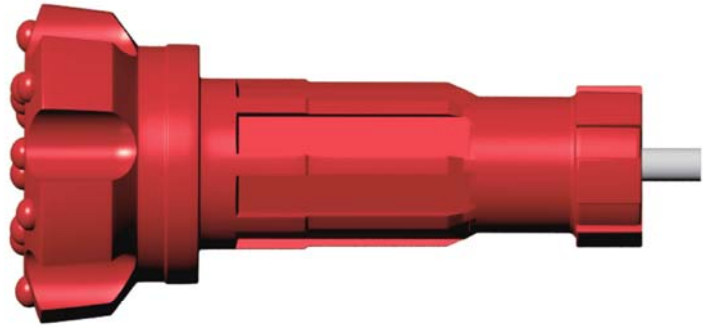
Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	305	12	305MD1120CC	15 x $\varnothing$ 19	15 x $\varnothing$ 19	12 x $\varnothing$ 16	3	147
	311	12 1/4	305MD1120CC	15 x $\varnothing$ 19	15 x $\varnothing$ 19	13 x $\varnothing$ 16	3	148
	350	13 3/4	305MD1120CC	15 x $\varnothing$ 19	9x $\varnothing$ 19+15x $\varnothing$ 18	15 x $\varnothing$ 16	3	167
	380	15	305MD1120CC	18 x $\varnothing$ 19	12x $\varnothing$ 19+15x $\varnothing$ 18	21 x $\varnothing$ 16	3	188
	400	15 3/4	305MD1120CC	18 x $\varnothing$ 19	30 x $\varnothing$ 19	22 x $\varnothing$ 16	3	198

# NUMA120



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	305	12	305MN120CC	15 x φ19	15 x φ19	12 x φ16	3	154
	311	12 1/4	311MN120CC	15 x φ19	15 x φ19	13 x φ16	3	156
	350	13 3/4	350MN120CC	15 x φ19	9xφ19+15xφ18	15 x φ16	3	174
	380	15	380MN120CC	18 x φ19	12xφ19+15xφ18	21 x φ16	3	195
	400	15 3/4	400MN120CC	18 x φ19	30 x φ19	22 x φ16	3	205

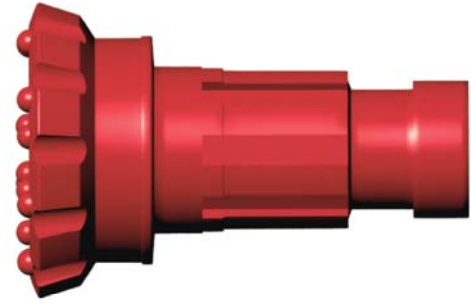
# NUMA125



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Outer	Inner	Front		kg
Concave	305	12	305MN125CC	15 x φ19	15 x φ19	12 x φ16	3	177
	311	12 1/4	305MN125CC	15 x φ19	15 x φ19	13 x φ16	3	179
	350	13 3/4	305MN125CC	15 x φ19	9xφ19+15xφ18	15 x φ16	3	197
	380	15	305MN125CC	18 x φ19	12xφ19+15xφ18	21 x φ16	3	218
	400	15 3/4	305MN125CC	18 x φ19	30 x φ19	22 x φ16	3	228

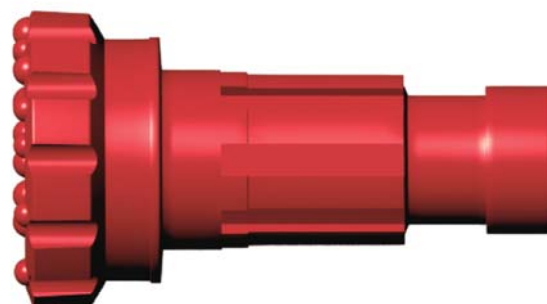


# MD330



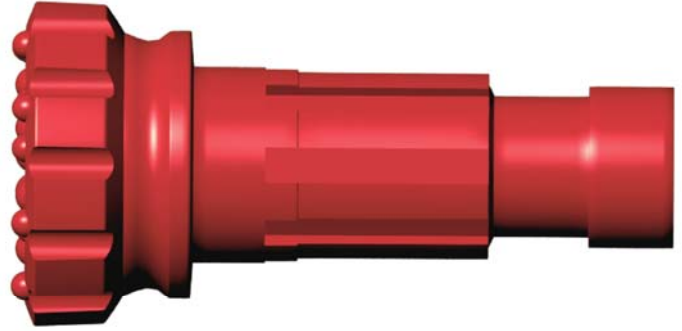
Face	Diameter		Part No.	No. x Button (mm)		Flushing holes	Weight
	Dia.	Inch		Gauge Buttons	Front Buttons		kg
Concave	381	15	381MD330CC	15 x φ19	40 x φ19	3	237
	391	15 3/8	391MD330CC	15 x φ19	40 x φ19	3	244
	413	16 1/4	413MD330CC	15 x φ19	44 x φ19	3	232
	438	17 1/4	438MD330CC	18 x φ19	43 x φ19	3	282
	445	17 1/2	445MD330CC	18 x φ19	44 x φ19	3	282
	451	17 3/4	451MD330CC	18 x φ19	45 x φ19	3	289
	457	18	457MD330CC	18 x φ25.4	46 x φ19	3	295
	464	18 1/4	464MD330CC	18 x φ25.4	47 x φ19	3	299
	483	19	483MD330CC	20 x φ25.4	48 x φ19	3	330
	508	20	508MD330CC	20 x φ25.4	49 x φ19	3	342

# MD450



Face	Diameter		Part No.	No. x Button (mm)		Flushing holes	Weight
	Dia.	Inch		Gauge Buttons	Front Buttons		kg
Concave	483	19	483MD450CC	20 x $\varnothing$ 25.4	57 x $\varnothing$ 19	3	330
	508	20	508MD450CC	20 x $\varnothing$ 25.4	61 x $\varnothing$ 19	3	342
	560	22	560MD450CC	16 x $\varnothing$ 25.4	50 x $\varnothing$ 25.4	4	505
	578	22 3/4	578MD450CC	16 x $\varnothing$ 25.4	50 x $\varnothing$ 25.4	4	523
	610	24	610MD450CC	16 x $\varnothing$ 25.4	59 x $\varnothing$ 25.4	4	545
	660	26	660MD450CC	24 x $\varnothing$ 25.4	69 x $\varnothing$ 25.4	6	610

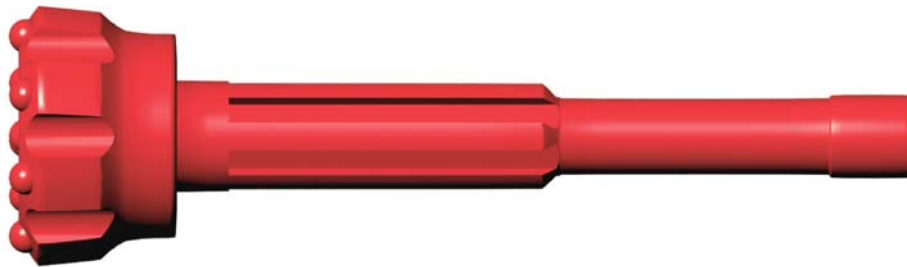
# MD525



Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Gauge Buttons	Front Buttons			kg
					Outer	Inner		
Concave	660	26	660MD525CC	44 x $\phi$ 20	64 x $\phi$ 19	24 x $\phi$ 20	4	863
	720	28 1/3	660MD525CC	44 x $\phi$ 20	84 x $\phi$ 19	24 x $\phi$ 20	4	988

Face	Diameter		Part No.	No. x Button (mm)			Flushing holes	Weight
	Dia.	Inch		Gauge Buttons	Front Buttons			kg
					Outer	Inner		
Convex	775	30 1/2	775MD525CV	56 x $\phi$ 20	116 x $\phi$ 19	44 x $\phi$ 19	4	1330

# Long Shank Bit



Diameter	Gauge	Front	Flushing holes	Weight(kg)	Part-No
90	9×11	7×11	3×8	5.8	MROD76-90
95	9×12	7×11	3×8	6.0	MROD76-95
105	9×12	7×12	3×10	6.4	MROD76-105
105	9×13	7×12	3×13	9.1	MROD89-105
115	9×14	6×14	3×13	9.7	MROD89-115
127	9×14	7×14	3×13	10.6	MROD89-127
115	9×14	6×14	3×13	12.6	MROD102-115
127	9×14	7×14	3×13	13.2	MROD102-127
140	9×16	9×16	3×13	14.5	MROD102-140
140	9×16	9×16	3×15	21.3	MROD127-140
152	9×16	9×16	3×15	23.1	MROD127-152
165	10×16	10×16	3×15	23.9	MROD127-165