

READY FOR THE CHALLENGE



THE WARRIOR DTH SERIES
FOR MINING & CONSTRUCTION APPLICATIONS



VAREL
MINING AND INDUSTRIAL

Varel Mining and Industrial is bringing new power to the Down the Hole drilling tools market with the Warrior DTH product line. The initial offering features a 6” hammer built to be a reliable workhorse – combining high performance and efficiency with a rugged construction. Its easy-to-service design allows for minimal service time and higher productivity. A range of QL60 shank bits complement the hammer for reliable and high performance drilling.

WARRIOR DTH HAMMER

ROBUST PISTON

- Designed to withstand the most difficult of drilling conditions
- High level of reliability achieved by a robust solid piston and thorough field testing
- Premium material and heat treatment process to achieve maximum resistance to fatigue and failure
- **Value Add: A reliable workhorse hammer that delivers productivity over an extended life**

OPTIMIZED AIR CYCLE

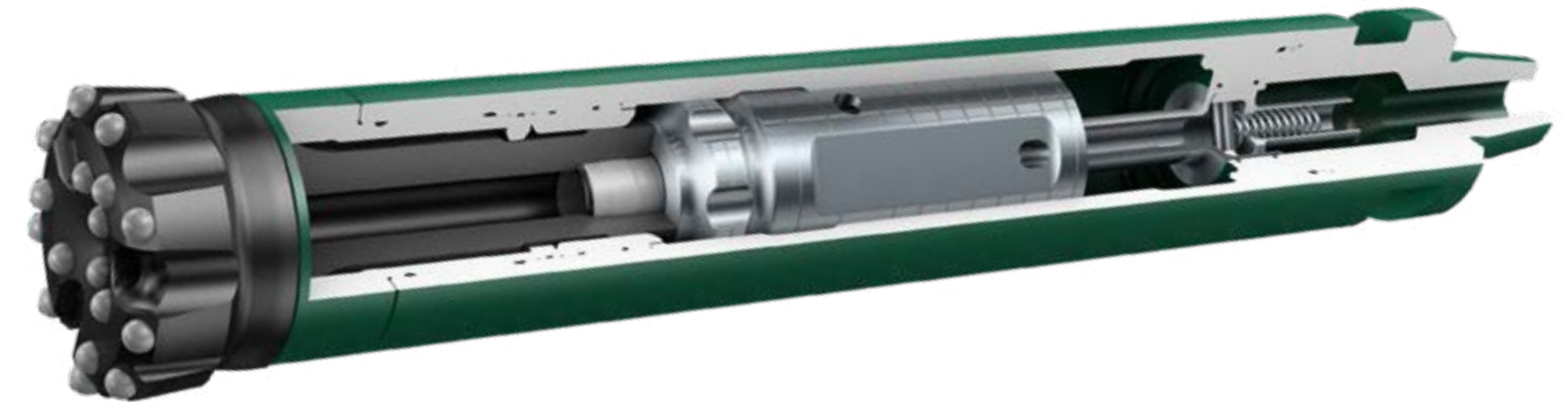
- Achieved through a comprehensive design simulation analysis
- Designed to deliver maximum power output
- **Value Add: A powerful hammer with low air consumption; resulting in lower cost operation**

SIMPLE DESIGN

- Very easy to assemble and disassemble, with very few tools needed
- **Value Add: Easy to service and return to production with minimal service time**

PREMIUM QUALITY

- Premium materials and state of the art processes assure the highest manufacturing standards and exacting tolerances
- **Value Add: A rugged hammer consistently delivering elevated power levels over an extended tool life**



DTH BITS

OPTIMIZED DESIGN

- Air holes and channels designed for efficient cuttings evacuation and fast drilling
- Cutting structure are load balanced for maximum power transmission and even drilling
- Comprehensive bit selection for commonly encountered rock conditions
- **Value Add: A fast and efficient bit designed for your drilling conditions**

PREMIUM TUNGSTEN CARBIDE

- Proven carbide technology and grade selection developed through years of experience in mining industry
- Wear resistant carbide allows extended runs between re-grinding gives improved utilization
- **Value Add: Longer bit life and better utilization**



WEAR RESISTANT STEEL BODY

- Premium steel and proprietary heat treatment provides high surface hardness and tough core optimal material properties
- Wear resistant bit face provides extended service life and button retention
- **Value Add: Extended life and lower cost per meter**

EXACTING MANUFACTURING

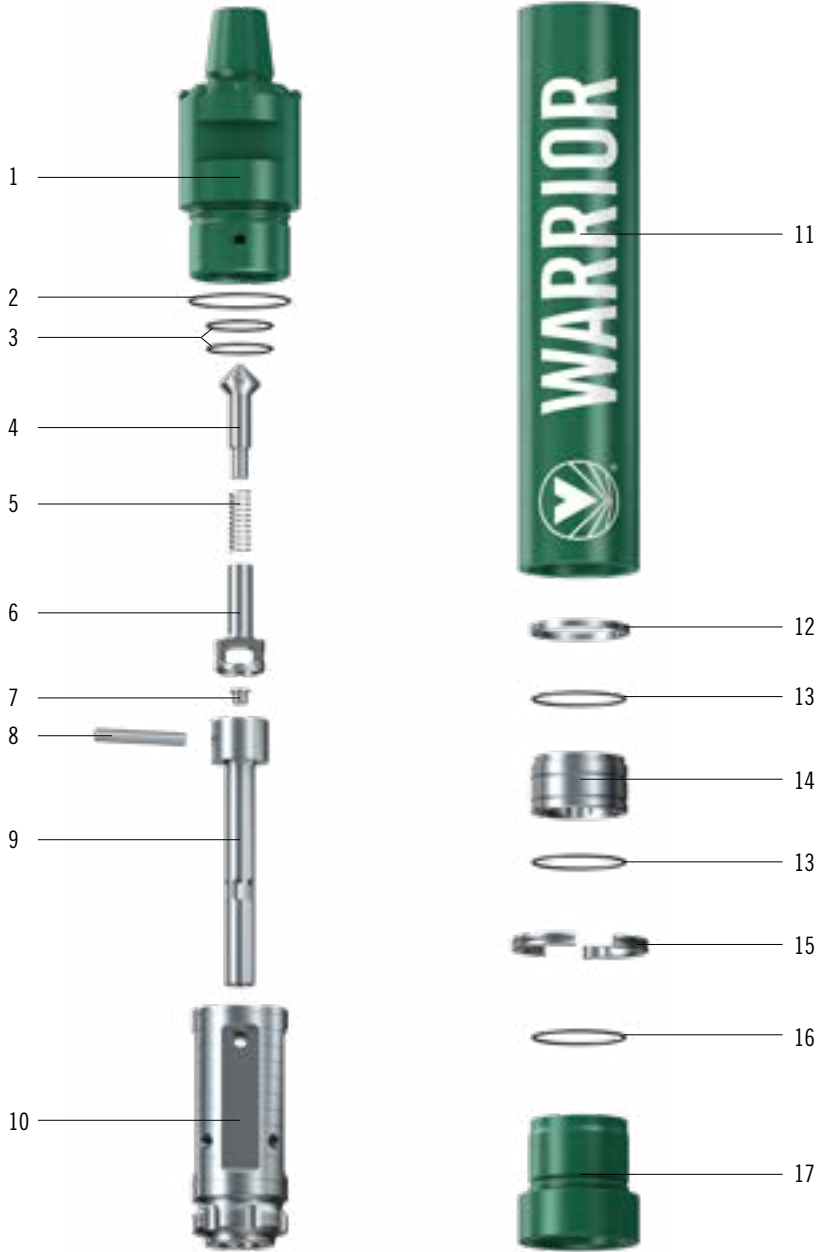
- Highly automated manufacturing processes deliver precision machining and reliable process control
- Critical button hole drilling and button installation processes are tightly controlled to assure consistent field performance
- **Value Add: Long, reliable performance while transmitting high power to rock**



	DIAMETER		AIR HOLES	GAGE BUTTONS	BUTTON DIA. MM		WEIGHT		PART NO.	PART TYPE	SHANK	
	MM	INCH			GAGE	FACE	KG	LB			QL60	
CONCAVE FACE / SPHERICAL BUTTON												
	165	6 1/2	3	9	18	18	28	61	H09922	QL6-064VS9A3S		
	172	6 3/4	3	9	18	18	29	64	H09923	QL6-066VS9A3S		
	178	7	3	9	18	18	29	64	H09924	QL6-070VS9A3S		
	190	7 1/2	3	9	18	18	31	68	H09925	QL6-074VS9A3S		
	203	8	3	9	18	18	33	73	H09926	QL6-080VS9A3S		
FLAT FACE / SPHERICAL BUTTON												
	165	6 1/2	3	9	18	18	28	61	H09927	QL6-064FS9A3S		
	172	6 3/4	3	9	18	18	29	64	H09928	QL6-066FS9A3S		
CONVEX FACE / BALLISTIC BUTTON												
	165	6 1/2	3	9	18	18	28	61	H09929	QL6-064XB9A3S		
	172	6 3/4	3	9	18	18	29	64	H09930	QL6-064XB9A3S		
FOOT VALVE												
							0.1	0.2	DH60140			

WARRIOR 6” HAMMER

HAMMER WEIGHT		HAMMER DIAMETER		HAMMER LENGTH		BIT SIZE		BIT SHANK
KG	LB	MM	INCH	MM	INCH	MM	INCH	
92	180	150	5.9	1,158	45.6	152 – 203	6 – 8	QL60
AIR CONSUMPTION								
150 PSI		250 PSI	350 PSI	10 BAR		18 BAR	24 BAR	
349 CFM		636 CFM	883 CFM	9.9 M³/MIN		19.3 M³/MIN	25.0 M³/MIN	
HAMMER ASSEMBLY								
TYPE		PART#	DESCRIPTION				LB	KG
WA060QL-H34AXC		H09904	3 1/2" API PIN HAMMER				180	92
SPARES LIST								
ITEM		PART#	DESCRIPTION				LB	KG
1		DH48351	TOP SUB 3 ½ API PIN				51.9	23.6
2			O-RING 110				IN SEAL KIT	
3			O-RING 72				IN SEAL KIT	
4		DH48356	CHECK VALVE DART				0.7	0.3
5		DH48358	CHECK VALVE SPRING				0.04	0.02
6		DH48361	CHECK VALVE GUIDE				0.7	0.3
7			BLANK CHOKE				IN CHOKE SET	
8		DH48347	RETAINER PIN				0.4	0.2
9		DH48357	FEED TUBE				2.6	1.2
10		DH48348	PISTON				40.3	18.3
11		DH48349	PISTON CASE				74.1	33.7
12		DH48350	PISTON RET. RING				0.2	0.1
13			O-RING 110				IN SEAL KIT	
14		DH48352	GUIDE SLEEVE				5.1	2.3
15		DH48359	BIT RETAINER RING				1.3	0.6
16			O-RING 110				IN SEAL KIT	
17		DH48362	DRIVER SUB				15.8	7.2
IN CHOKE SET								
		DH48898	BLANK, 1/8", 3/16" & 1/4"				0.02	0.01
IN SEAL KIT								
		DH48897	1 PIECE OF #2, #16 & 2 PIECES OF #3, #13				0.02	0.01
REBUILD KIT								
		DH48947	1 PIECE OF #1, #11, #12, #17 & SEAL KIT				149.9	64.5



WARRIOR DTH BIT – PART TYPE KEY

1 2 3 4 5 6 7 8
QL6-064VS09A3S

1. SHANK TYPE

QL6	6” QL Shank
QX4	4” Q LX Shank
QL8	8” QL Shank
QL5	5” QL Shank

2. HEAD DIAMETER

064	6 1/2”
066	6 3/4”
070	7”
074	7 1/2”
080	8”

3. FACE DESIGN - CONVE(X), CONCA(V)E, (F)LAT

4. CARBIDE SHAPE - (S)PHERICAL, (B)ALLISTIC, (K) S/B

5. GAGE CARBIDE COUNT

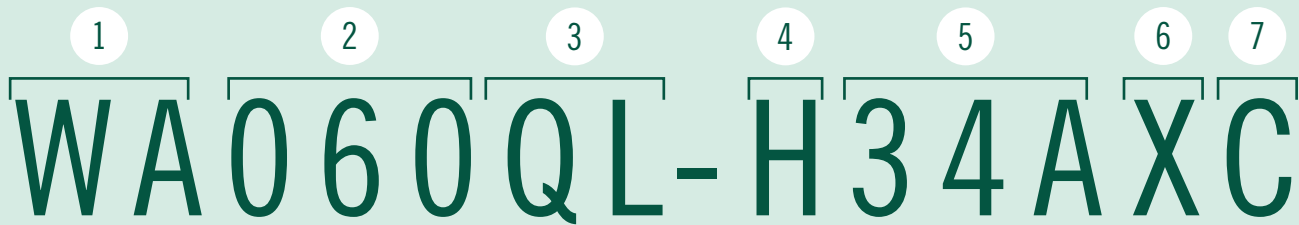
6. GAGE/FACE CARBIDE SIZE

(A) = 18/18	(B) = 18/16	(C) = 16/16
(D) = 16/14	(E) = 14/14	(F) = 14/13
(G) = 13/13	(H) = 13/12	(I) = 12/12

7. NUMBER OF FLUSHING HOLES

8. CARBIDE GRADE - (S)TANDARD, (P)REMIUM, (U)LTRA PREMIUM

WARRIOR DTH HAMMER — PART TYPE KEY



1. HAMMER RANGE - (WA)RRIOR

2. HAMMER SIZE

040	4”
050	5”
060	6”
070	7”
080	8”

3. SHANK TYPE

QL	QL SHANK
QX	QLX SHANK

4. WEAR RESISTANCE - (H)EAVY DUTY, (S)TANDARD

5. BACK HEAD THREAD TYPE

23A	2 3/8" API
27A	2 7/8" API
34A	3 1/2" API
34B	3 1/2" BECO
44A	4 1/2" API

6. BACKHEAD / DRIVESUB THREAD OPTION

X	TRIPLE / TRIPLE
Y	SINGLE / TRIPLE
Z	DOUBLE / TRIPLE

7. CUSTOM OPTION

C BACK HEAD CARBIDE

Varel Mining and Industrial manufactures and services application specific drilling tools for the Mining and Construction industries. Our proprietary design capabilities, efficient manufacturing, and global sales force uniquely positions us to provide reliable drilling solutions faster than anyone else. We are a customer focused company with an innovative team conducting business in a responsible manner and a passion to win.

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