

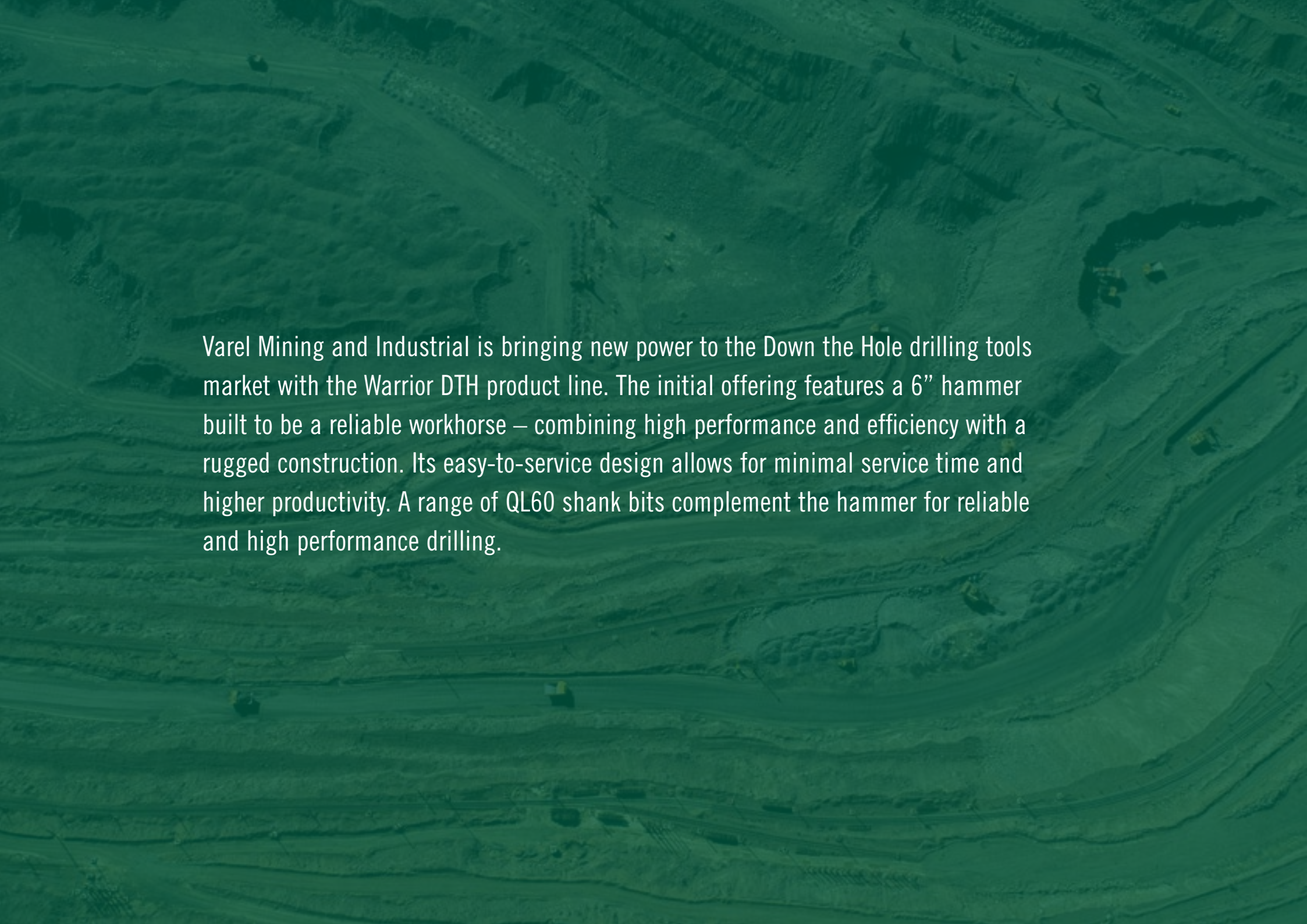
READY FOR THE CHALLENGE



THE WARRIOR DTH SERIES
FOR MINING & CONSTRUCTION APPLICATIONS



VAREL
MINING AND INDUSTRIAL

An aerial photograph of a large-scale mining operation, showing extensive earthmoving, roads, and various pieces of heavy machinery. The image is overlaid with a semi-transparent green filter. The text is centered in the middle of the image.

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

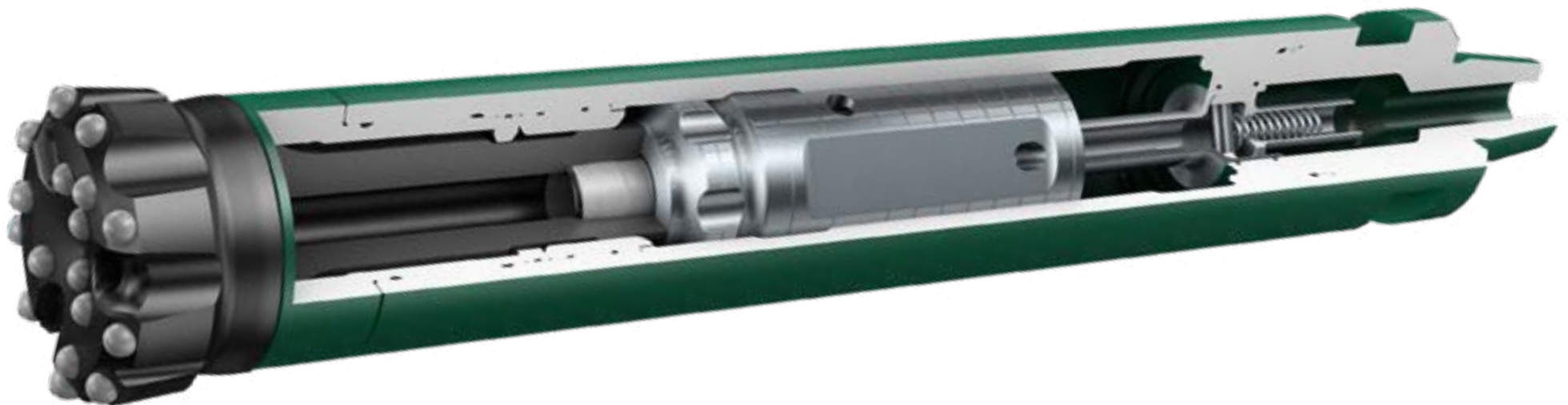
- Achieved through a comprehensive design simulation analysis
- Designed to deliver maximum power output
- **Value Add: A powerful hammer with low air consumption; resulting in lower cost operation**

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	QL6-064VS09A3S			
	172	6 3/4	3	9	18	18	29	64	H09923	QL6-066VS09A3S			
	178	7	3	9	18	18	29	64	H09924	QL6-070VS09A3S			
	190	7 1/2	3	9	18	18	31	68	H09925	QL6-074VS09A3S			
	203	8	3	9	18	18	33	73	H09926	QL6-080VS09A3S			
FLAT FACE / SPHERICAL BUTTON													
	165	6 1/2	3	9	18	18	28	61	H09927	QL6-064FS09A3S			
	172	6 3/4	3	9	18	18	29	64	H09928	QL6-066FS09A3S			
CONVEX FACE / BALLISTIC BUTTON													
	165	6 1/2	3	9	18	18	28	61	H09929	QL6-064XB09A3S			
	172	6 3/4	3	9	18	18	29	64	H09930	QL6-066XB09A3S			
FOOT VALVE													
							0.1	0.2	DH60140				

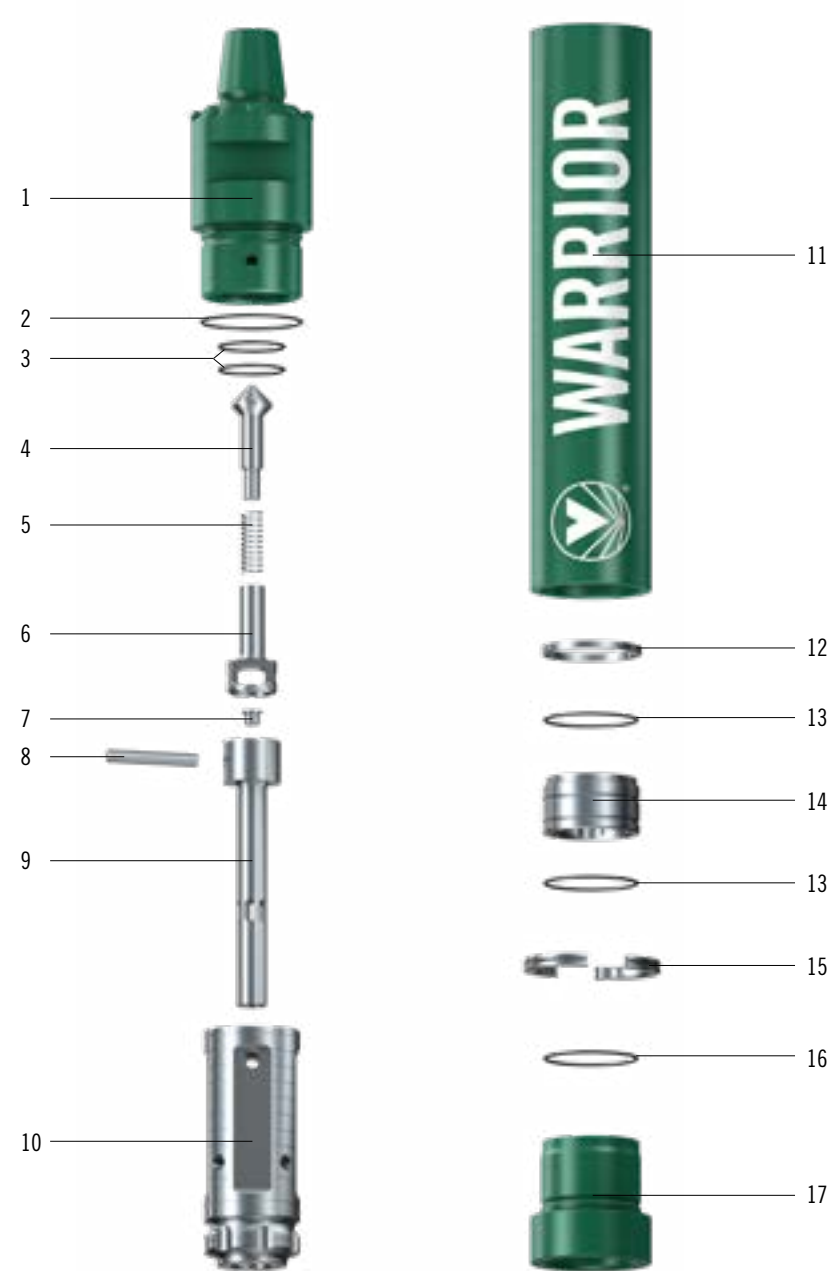
WARRIOR 6" HAMMER

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 M ³ /MIN	19.3 M ³ /MIN	25.0 M ³ /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 1/2 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. SHANK TYPE

QL6	6" QL Shank
QX4	4" QLX 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

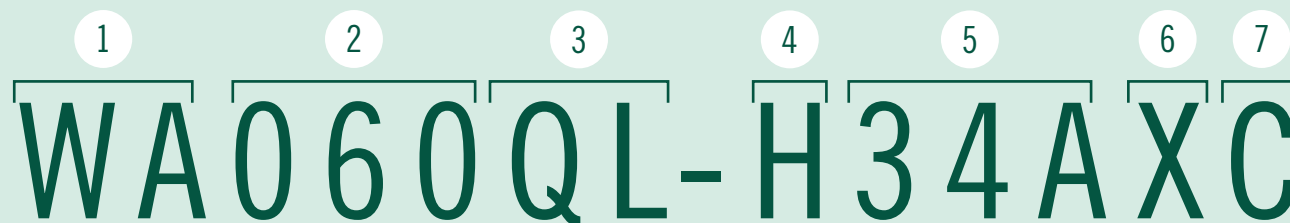
6. GAGE/FACE CARBIDE SIZE

(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
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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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