



# PRODUCT CATALOG

REV 6-21

SOUTH POINT, OH USA

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## **XCAL TOOLS...**

### **The Complete Drilling System**

*XCAL TOOLS is the leading manufacturer of forged drill steel used in the underground mining industry. Products that are manufactured in modern facilities by dedicated employees who emphasize high quality control standards and timely deliveries have been the keys to making us the industry leader. These factors coupled with continual improvements to product safety and productivity are the goals of XCAL TOOLS.*

*XCAL TOOLS offers the most complete product line of drilling systems in the mining industry including vacuumatic, wet, augers, face augers, wrenches, chucks, accessories and other related products.*

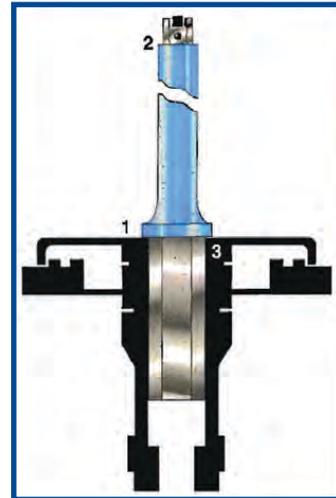
## **WORK SAFE. DRILL SAFE.**

- Never use bolt wrenches as drivers.
- Never go beyond supported roof.
- Position all safety devices (ATRS System).
- Visually inspect steel for cracks, bends, or excessive wear.
- Never touch or hold a rotating drill steel, wrench, or bolts. Always use Hands Off drilling methods.
- Keep all body parts clear of drilling mechanism.
- Pinch points can cause injury. Do not operate without guard in place.
- When lowering the drillhead, always stop rotation before the end of the steel, or couplings if using extension steels, clears the hold.
- The coupling of extension steel must be completely connected before starting rotation.
- Regulate rotation to a safe speed.
- When using extension steels, avoid pinch point created by the drill steel coupling.
- Avoid pinch points between the top of the drillhead and the end of the drill steel. Remember, a stuck steel may fall from the hole at any time.
- If the drill steel starts to bend during drilling, the machine is not adjusted correctly. Stop operation and contact your foreman immediately.

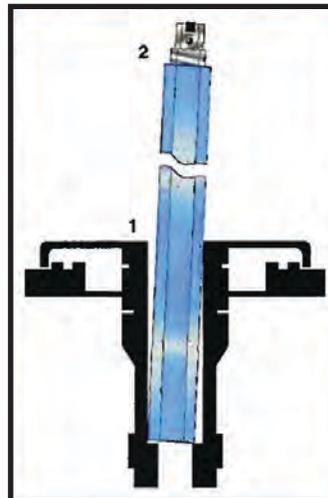
## **THE COMPLETE FORGED SYSTEM**

**COMPLETELY FORGED - ONE UNIT**

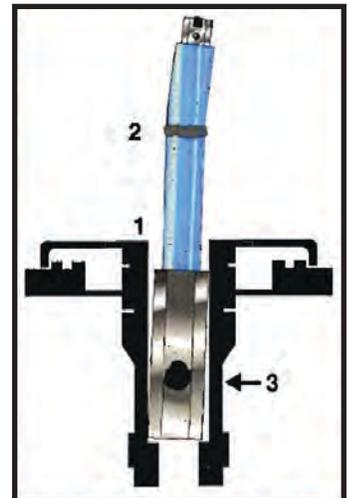
### **FORGED SYSTEM**



### **HEX SYSTEM**



### **WELDED SYSTEM**



1. Collar absorbs load and keeps cuttings out. Allows no thrust on the bottom of steel, eliminating peening and sticking. Also helps in proper steel alignment.
2. Bit Seat/Drive Shanks (and couplings) mean no costly adaptors to assemble and inventory. And no welds that can create metalurgical notches that weaken steel and increase the risk of failure.



**DRILLING PRODUCTS**

**PINNING RODS**

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**AUGER**

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**ORDER PROCEDURES**

- 1. Determine 1 1/8" OD or 7/8" OD steel.**
- 2. Identify drive end to match.**
- 3. Identify bit seat required.**
- 4. Identify coupling for Finisher/ Middle Extension and Driver steels.**
- 5. Turn to proper page for complete identification/ nomenclature.**

# ANCHOR BOLTING

## ANCHOR BOLTING

1 1/8" O.D. Tubing  
For 1 3/8" Drilling

Hog Type  
7/8" Hex.

### STARTER



1 1/8" Hex.  
HOTL

## STARTER - ANCHOR

### BIT SEATS

1/2" Square



1/2" Square WG



Hog Type 7/8" Hex.



CATALOG #	TUBE	BIT SEAT	DRIVE END
326 181 x (L)	1 1/8" O.D.	1/2" Sq.	1 1/8" Sq.
326 181W x (L)	1 1/8" O.D.	1/2" Sq. (Water)	1 1/8" Sq.
326 18SL x (L)	1 1/8" O.D.	.875 Hex	1 1/8" Sq.
326HO 181 x (L)	1 1/8" O.D.	1/2" Sq.	1 1/8" Hex.
326HO 181W x (L)	1 1/8" O.D.	1/2" Sq. (Water)	1 1/8" Hex.
326HO 18SL x (L)	1 1/8" O.D.	.875 Hex	1 1/8" Hex.
* 326TL-181 x (L)	1 1/8" O.D.	1/2" Sq.	Twist Lok
* 326TL-181W x (L)	1 1/8" O.D.	1/2" Sq. (Water)	Twist Lok
* 326TL-18SL x (L)	1 1/8" O.D.	.875 Hex	Twist Lok

### DRIVE-ENDS

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



1 1/8" Hex.  
HOTL



- \* To order Twist Lok 2 specify TL2 in place of TL (Ex. 326 TL2-18SLX 42") Patented System - Patent # 4,226,290
- \* To order 1 1/8" Hex. male Twist Lok specify HOTL (Ex. 326 HOTL-18SL x 42") Patented System - Patent # 4773490

## DRIVER - ANCHOR

### COUPLINGS

7/8" Hex. Male



7/8" Hex. Female



CATALOG #	TUBE	** COUPLING	DRIVE END
329-18SL x (L)	1 1/8" O.D.	7/8" Hex. (Male)	1 1/8" Sq.
329HO-18SLx (L)	1 1/8" O.D.	7/8" Hex. (Male)	1 1/8" Hex.
* 329TL 18SL x (L)	1 1/8" O.D.	7/8" Hex. (Male)	Twist Lok
330-18SL x (L)	1 1/8" O.D.	7/8" Hex. (Female)	1 1/8" Sq.
330HO-18SL x (L)	1 1/8" O.D.	7/8" Hex. (Female)	1 1/8" Hex.
* 330TL-18SL x (L)	1 1/8" O.D.	7/8" Hex. (Female)	Twist Lok

### DRIVE-ENDS

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



1 1/8" Hex.  
HOTL



NOTE: Other systems/sizes available...ask your sales representative

### D & E fit not available in any Twist Lok System.

- \* To order Twist Lok 2 specify TL2 in place of TL (Ex. 326 TL2-18SLX 42") Patented System - Patent # 4,226,290
- \*\*To order 1 1/8" Hex. male Twist Lok specify HOTL (Ex. 326 HOTL-18SL x 42") Patented System - Patent # 4773490
- To order D & E Coupling fit specify D after Length (Ex. 330HO-18SL x 42"D)



# FINISH EXTENSIONS ANCHOR - CONVENTIONAL



## FINISH EXTENSIONS/ANCHOR - CONVENTIONAL 1 3/8" Bolting

### FINISH EXTENSIONS/ANCHOR-CONVENTIONAL

#### BIT SEATS

1/2" Square



1/2" Square WG



Hog Type 7/8" Hex.



CATALOG #	TUBE	BIT SEAT	* COUPLING
325-181W x (L) .....	1 1/8" O.D. ....	1/2" Sq. (Water) .....	7/8" Hex (Female)
327-181H x (L) .....	1 1/8" O.D. ....	1/2" Sq. ....	7/8" Hex (Male)
327-18SL x (L) .....	1 1/8" O.D. ....	.875 Hex. ....	7/8" Hex (Male)

#### COUPLINGS

7/8" Hex. Male



7/8" Hex. Female



NOTE: Other size couplings available...contact your sales representative  
\* To order D & E Coupling fit specify D after Length (Ex. 327-18SL x 42" D)

### MIDDLE EXTENSIONS-ANCHORS

#### COUPLINGS (MALE)

7/8" Hex. Male



7/8" Hex. Female



CATALOG #	TUBE	COUPLING	COUPLING
328-18 SL x (L) .....	1 1/8" O.D. ....	7/8" Hex. (Male) .....	7/8" Hex. (Female)

NOTE: Other size couplings available...contact your sales representative  
\* To order D & E Coupling fit specify D after Length (Ex. 327-18SL x 42" D)

FINISHER



MIDDLE EXTENSION



# ANCHOR BOLTING

## ANCHOR BOLTING-2 PC. SYSTEM 1 1/8" O.D. Tubing For 1 3/8" Drilling

### STARTER/FINISHER EXTENSIONS ANCHOR

#### **BIT SEATS**

7/8" Hex.



#### **COUPLING (FEMALE)**

13/16" Hex. Female



CATALOG #	TUBE	BIT SEAT	COUPLING	DRIVE-END
SD-2H7 x (L) .....	1 1/8" O.D. ....	.875" Hex. ....	13/16" Hex. (Female) .....	1 1/8" Hex. (Male-No collar)

#### **DRIVE-ENDS**

1 1/8" Hex. Male (No Collar)



STARTER/FINISHER



### DRIVER/MIDDLE EXTENSIONS ANCHOR

#### **COUPLINGS**

13/16" Hex. Male



13/16" Hex. Female



CATALOG #	TUBE	COUPLING	DRIVE END
DM-2H7x (L) .....	1 1/8" O.D. ....	13/16" Hex. (Male) .....	1 1/8" Hex (Male-No collar)

#### **DRIVE-ENDS**

1 1/8" Hex. Male (No Collar)



DRIVER/MIDDLE EXTENSION



Unique 2 piece anchor drilling system - SD Rod starts the drilling and when drilling limit is reached the rod is left in the hole and becomes the finish extension, The DM Rod is now inserted into the chuck-joined at the coupling and drilling resumes. Additional DM Rods can be added to reach the desired drilling length.

**ANCHOR BOLTING - 1 PC SYSTEM**  
 7/8" O.D. Tubing  
 For 1" Drilling

## STARTER/FINISHER EXTENSION plus DRIVER/MIDDLE EXTENSION from 1 piece of steel



**BIT SEATS**  
 5/8" Hex.



CATALOG #  
 HT7S x (L) .....

**COUPLING (FEMALE)**  
 5/8" Hex Female



TUBE

7/8" O.D. ....

BIT SEAT

.625" Hex .....

**STABILIZER**  
 5/8" Hex.



COUPLING

5/8" Hex. (Female) .....

DRIVE-END

7/8" Hex. (Male-No collar)

**DRIVE-ENDS**  
 7/8" Hex.



**COUPLINGS**  
 5/8" Hex. Male



Unique 1 piece anchor drilling system- Use an HT7S rod with stabilizer and 337 clip installed to start your drilling. When your drilling limit is reached leave the rod in the hole and it now becomes your finish extension. Insert another HT7S rod into the chuck, without the stabilizer or clip, join with the finish extension at the coupling and drilling resumes. Add other HT7S rods as needed to reach your desired drilling depth.

Each HT7S rod comes complete with stabilizer and 337 clip so you may configure it to your needs. Eliminates the need to remember extra part numbers. Offers a noise reduction of 8 to 10 decibels over Hex Tubing. HT7S is your all-in-one drill steel.

# RESIN DRILLING

**RESIN DRILLING**  
7/8" O.D. Tubing  
For 1" Drilling



## STARTERS-RESIN

### BIT ENDS



CATALOG #	TUBE	BIT SEAT	DRIVE END
326-783 x (Length)	7/8" O.D.	3/8" Sq	1 1/8" Sq.
326-788 x (L)	" "	Sml. Fig. 8	" "
326-788W x (L)	7/8" O.D.	Sml. Fig. 8 (Water)	1 1/8" Sq.
326-781W x (L)	" "	1/2" Sq. (Water)	" "
326-7813W x (L)	7/8" O.D.	1/2" x 3/8" (Water)	1 1/8" Sq.
326-78SL x (L)	" "	0.625" Hex.	" "
326HO-783 x (L)	7/8" O.D.	3/8" Sq	1 1/8" Hex.
326HO-788 x (L)	" "	Sml. Fig. 8	" "
326HO-788W x (L)	7/8" O.D.	Sml. Fig. 8 (Water)	1 1/8" Hex.
326HO-781W x (L)	" "	1/2" Sq. (Water)	" "
326HO-7813W x (L)	7/8" O.D.	1/2" x 3/8" (Water)	1 1/8" Hex.
326HO-78SL x (L)	" "	0.625" Hex.	" "
* 326TL-783 x (L)	7/8" O.D.	3/8" Sq	Twist Lok
* 326TL-788 x (L)	" "	Sml. Fig. 8	" "
* 326TL-788W x (L)	7/8" O.D.	Sml. Fig. 8 (Water)	Twist Lok
* 326TL-781W x (L)	" "	1/2" Sq. (Water)	" "
* 326TL-7813W x (L)	7/8" O.D.	1/2" x 3/8" (Water)	Twist Lok
* 326TL-78 SL x (L)	" "	0.625" Hex.	" "

### DRIVE-ENDS



\* To order Twist Lok 2 specify TL2 in place of TL (Ex. 326 TL-78SLX 42") Patented System - Patent # 4,226,290  
 \* To order 1 1/8" Hex. male Twist Lok specify HOTL (Ex. 326 HOTL-18SL x 42") Patented System - Patent # 4,773,490  
 NOTE: Other size Drive-ends available...contact your sales representative

**RESIN DRILLING**  
7/8" O.D. Tubing  
For 1" Drilling

## DRIVERS-RESIN

### COUPLINGS

5/8" Hex. Male



5/8" Hex. Female



CATALOG #	TUBE	** COUPLING	DRIVE END
329-78SL x (L) .....	7/8" O.D. ....	5/8" Hex. (Male) .....	1 1/8" Sq.
329HO-78SL x (L) .....	" " .....	" " " .....	1 1/8" Hex.
* 329TL-78SL x (L) .....	7/8" O.D. ....	5/8" Hex. (Male) .....	Twist Lok
330-78SL x (L) .....	" " .....	5/8" Hex. (Female) .....	1 1/8" Sq.
330HO-78SL x (L) .....	7/8" O.D. ....	" " " .....	1 1/8" Hex.
* 330TL-78SL x (L) .....	" " .....	5/8" Hex. (Female) .....	Twist Lok

### DRIVE-ENDS

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



1 1/8" Male Twist Lok



DRIVER



\* To order Twist Lok 2 specify TL2 in place of TL Ex. 326 TL-78SLX 42" (Length) Patented System - Patent # 4,226,290

To order 1 1/8" Hex. Male Twist Lok specify HOTL (Ex. 326HOTL 78SL x 42") Patented System - Patent # 4773490

\*\* NOTE: Other size couplings available...contact your sales representative

To order D & E Coupling fit specify D after Length (Ex. 330HO-18SL x 42"D)

**D & E fit not available in any Twist Lok System.**

# ROOF DRILL AUGERS

## RESIN DRILLING 7/8" O.D. Tubing For 1" Drilling

### FINISH EXTENSIONS-RESIN

#### BIT ENDS



CATALOG #	TUBE	BIT SEAT	* COUPLINGS
325-783W x (L)	7/8" O.D.	3/8" Sq. (Water)	* 5/8" Hex. (Female)
325-788W x (L)	" "	Sml. Fig. 8 (Water)	* " "
325-781W x (L)	7/8" O.D.	1/2" sq. (Water)	* 5/8" Hex. (Female)
325-7813W x (L)	" "	1/2" x 3/8" (Water)	* " "
325-78 SL x (L)	7/8" O.D.	0.625" Hex	* 5/8" Hex. (Female)
327-783 x (L)	" "	3/8" Sq.	* 5/8" Hex. (Male)
327-788 x (L)	7/8" O.D.	Sml. Fig. 8	* " "
327-78 SL x (L)	" "	0.625" Hex.	* 5/8" Hex. (Male)

#### COUPLINGS



\* To order D & E Coupling Fit. Specify D after Length (Ex. 327-78SL x 42" D)

### MIDDLE EXTENSION-RESIN

#### COUPLINGS



CATALOG #	TUBE	* COUPLING	* COUPLING
328-78SL x (L)	7/8" O.D.	* 5/8" Hex. (Female)	* 5/8" Hex. (Male)

\* To order D & E Coupling Fit. Specify D after Length (Ex. 328-78SL x 42" D)

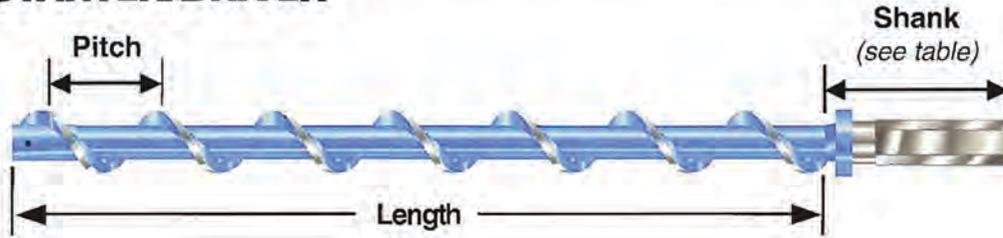
NOTE: Other coupling sizes available—ask your sales representative



# ROOF DRILL AUGERS

**ROOF DRILL AUGERS**  
 1 1/4" O.D.  
 For Drilling 1 3/8" Holes

## STARTER/DRIVER



## BIT ENDS



CATALOG #	O.D.	CORE	BIT END	PITCH	SHANK ENDS
326S x (L)	1 1/4"	7/8"	1/2" Sq.	2 1/2"	1 1/8" Sq.
326S HO x (L)	"	"	"	"	1 1/8" Hex.
* 326S TL x (L)	1 1/4"	7/8"	1/2" Sq.	2 1/2"	Twist Lok

## SHANK END

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



HOTL



\* To order "TWIST LOK 2" specify "TL2" in place of "TL" Patented System - Patent # 4226290

\* To order 1 1/8" Hex. Male Twist Lok specify HOTL (Ex. 3265 HOTL x 42") Patented System - Patent # 4773490

## FINISHER/MIDDLE EXTENSION



## BIT ENDS



## COUPLING

1/2" Square Male



CATALOG #	O.D.	CORE	BIT END	PITCH	COUPLINGS
327S x (L)	1 1/4"	7/8"	1/2" Sq.	2 1/2"	1/2" w/Roll Pin Hole

# ROOF DRILL AUGERS

## ROOF DRILL AUGERS

.990 O.D. Tubing  
For 1" Drilling

### STARTERS (401 RS)



### BIT SEATS



CATALOG #	O.D.	CORE	BIT END	PITCH	SHANK ENDS
401 RS x (L)	0.990"	3/4"	Sml. Fig. 8	3"	1 1/8" Sq.
401 RS HO x (L)	"	"	" "	"	1 1/8" Hex.
* 401 RS TL x (L)	0.990"	3/4"	Sml. Fig. 8	3"	Twist Lok
401 RS HOTL x (L)	"	"	" "	"	1 1/8" Hex. Twist Lok
401 RS 38 x (L)	0.990"	3/4"	3/8" Sq.	3"	1 1/8" Sq.
401 RS 38 HO x (L)	"	"	" "	"	1 1/8" Hex.
* 401 RS 38 TL x (L)	0.990"	3/4"	3/8" Sq.	3"	Twist Lok
401 RS 13 x (L)	"	"	1/2" x 3/8"	"	1 1/8" Sq.
401 RS 13 HO x (L)	0.990"	3/4"	" "	3"	1 1/8" Hex.
* 401 RS 13 TL x (L)	"	"	1/2" x 3/8"	"	Twist Lok

### SHANK ENDS



\* To order "TWIST LOK 2" specify "TL2" in place of "TL" Patented System - Patent # 4226290

\* To Order 1 1/8" Hex. male Twist Lok specify HOTL (Ex. 401 RS HOTL x 42") Patented System - Patent # 4773490

Other Bitseats and Shankends available—ask your sales representative

400 Series Augers available for water—add "W" to specify water. Example: 401 RSW x (L), 402 RSW x (L)

# ROOF DRILL AUGERS

## ROOF DRILL AUGERS .990 O.D. Tubing For 1" Drilling

### FINISH EXTENSION (402 RS)

#### BIT SEATS



CATALOG #	O.D.	CORE	BIT END	PITCH	COUPLINGS
402 RS x (L)	0.990"	3/4"	Sml. Fig. 8	3"	1/2" Hex. (Male)
402 RS 38 x (L)	"	"	3/8" Sq.	"	1/2" Hex. (Male)
402 RS 383 x (L)	0.990"	3/4"	3/8" Sq.	3"	3/8" Sq. (Male)
402 RS 13 x (L)	"	"	1/2" x 3/8" Sq.	"	1/2" Hex. (Male)
402 RS 133 x (L)	0.990"	3/4"	1/2" x 3/8" Sq.	3"	3/8" Sq. (Male)

#### COUPLING

1/2" Hex Male



3/8" Square Male



### DRIVERS (403RS)

#### COUPLINGS

1/2" Hex Female



CATALOG #	O.D.	CORE	BIT END	PITCH	SHANK ENDS
403 RS x (L)	0.990"	3/4"	Sml. Fig. 8	3"	1 1/8" Sq.
403 RS HO x (L)	"	"	"	"	1 1/8" Hex.
* 403 RS TL x (L)	0.990"	3/4"	Sml. Fig. 8	3"	Twist Lok
403 RS HOTL x (L)	"	"	"	"	1 1/8" Hex. Twist Lok

#### SHANK ENDS

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



HOTL



\* To order "TWISTLOK 2" specify "TL2" in place of "TL" Patented System - Patent # 4226290  
Other Bitseats and Shankends available—ask your sales representative

# ROOF DRILL AUGERS

**ROOF DRILL AUGERS**  
 .990 O.D. Tubing  
 For 1" Drilling (500 Series)

## **MIDDLE EXTENSION (404RS) COUPLING**

1/2" Hex Female



CATALOG #	O.D.	CORE	COUPLING FEMALE	PITCH	COUPLING MALE
404 RS x (L) .....	0.990" .....	3/4" .....	1/2" Hex. (Female) .....	3" .....	1/2" Hex. (Male)

## **COUPLING**

1/2" Hex Male



***WORK SAFE - DRILL SAFE***  
***Never Work Under***  
***Unsupported Roof***

# ROOF DRILL AUGERS

## ROOF DRILL AUGER .990 O.D. Tubing For 1" Drilling

### STARTER/DRIVER

#### BIT SEATS



CATALOG #	O.D.	CORE	BIT END	PITCH	SHANK ENDS
501 RS x (L)	0.990"	5/8"	3/8" Sq.	3"	1 1/8" Sq.
501 RS HO x (L)	"	"	"	"	1 1/8" Hex.
* 501 RS TL x (L)	0.990"	5/8"	3/8" Sq.	3"	Twist Lok
501 RS HOTL X (L)	"	"	"	"	1 1/8" Hex. Twist Lok

#### SHANK ENDS

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



HOTL



\* To order "TWIST LOK 2" specify "TL2" in place of "TL" Patented System - Patent # 4226290

### FINISH/MIDDLE EXTENSIONS

#### BIT SEATS



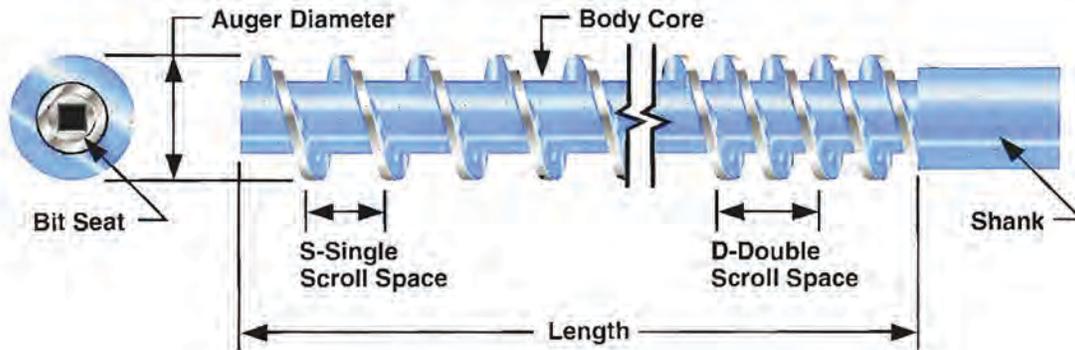
CATALOG #	O.D.	CORE	BIT END	PITCH	COUPLINGS
502 RS x (L)	0.990"	5/8"	3/8" Sq.	3"	3/8" Sq. (Male)

#### COUPLING

1/2" Square Male



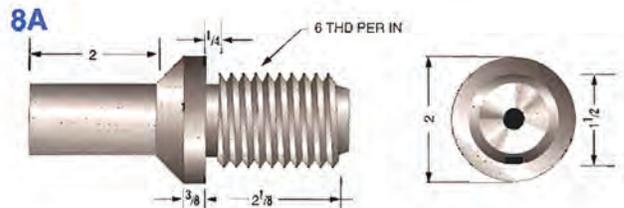
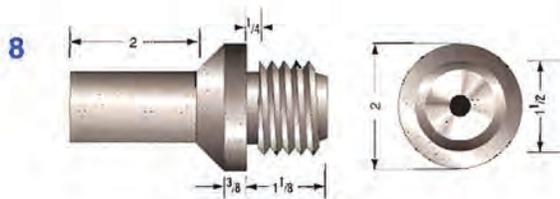
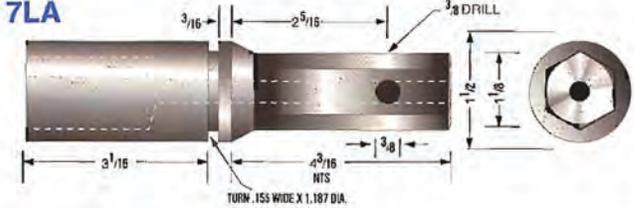
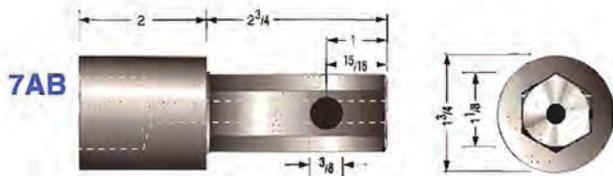
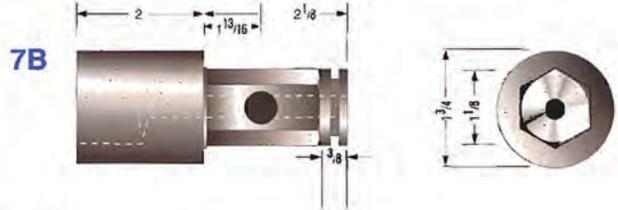
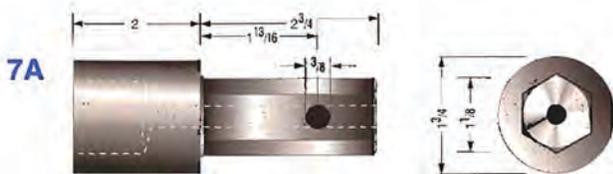
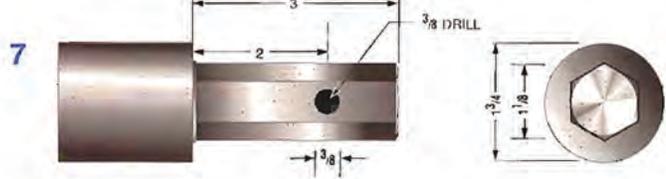
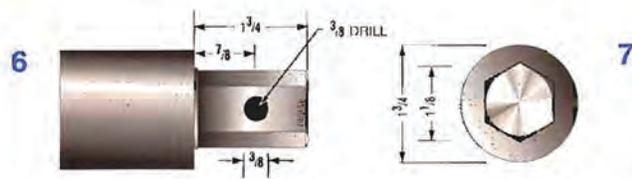
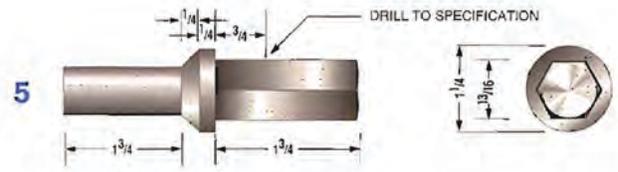
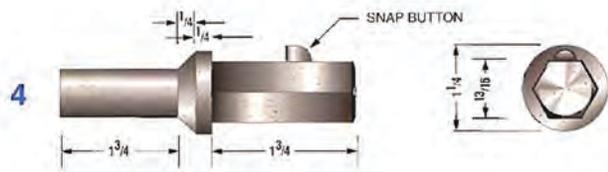
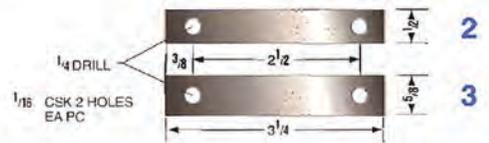
# FACE AUGERS



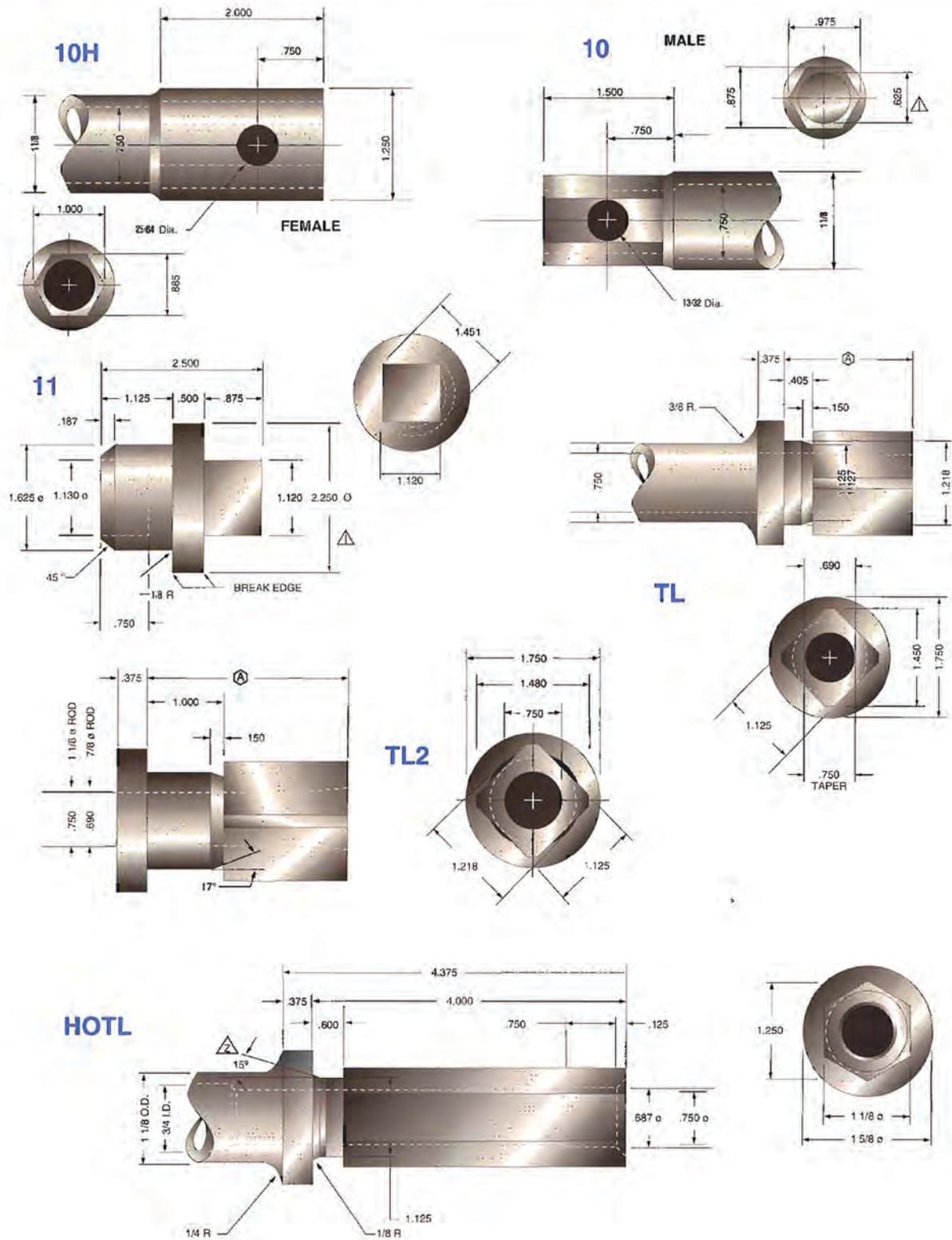
Designation Symbols • D3P178S7-120

D	3	P	178S	7	120
Bit Seat	Auger diam.	Body core	Scroll Space	Shank	Auger length (in inches)
D 1/2" Sq.	2 1 1/2"	S 7/8" Tube	178S 1 7/8" Single	1 Twisted Shank	
C 5/8" Sq.	3 1 5/8"	P 1" Tube	200S 2" Single	2 1/2" Sq. roll pin	
F 13/16" Hex	4 1 3/4"	E 1 1/8" Tube	212S 2 1/2" Single	3 5/8" Sq. roll pin	
H 7/8" Hex	5 1 7/8"	SS 7/8" Solid	300S 3" Single	4 13/16" Hex. snap button	
I 1 1/8" Hex	6 2"	SP 1" Solid	312S 3 1/2" Single	5 13/16" Hex. roll pin	
	7 2 1/8"	SE 1 1/8" Solid	400D 4" Double	6 1 1/8" Hex. x 1 3/4" long solid	
	8 2 1/4"	HE 1 1/8" Heavy Wall Tube		7 1 1/8" Hex. x 3" long solid	
	9 2 3/8"	C 1 1/2" Tube		7A 1 1/8" Hex. x 2 3/4" long solid	
	10 2 1/2"	D 1 3/4" Tube		7AB 1 1/8" Hex. water with side groove and dimples	
	11 2 5/8"			7B 1 1/8" Hex. water with "o" ring and dimples	
	12 2 3/4"			7LA Long Airdox water shank	
	13 2 7/8"			8 Joy Threaded Shank 1 1/2" Diam. x 1" Long	
	14 3"			8A Joy Threaded Shank 1 1/2" Diam. x 2" Long	
				10 7/8" Hex. Male	
				10H 7/8" Hex. Female	
				11 1 1/8" Square Shank	
				TL 1 1/8" Twist Lok	
				TL2 1 1/8" Twist Lok 2	
				HOTL 1 1/8" Hands-off Twist Lok	

# AUGER SHANKS



# AUGER SHANKS



# ROOF BOLT WRENCHES

## ROOF BOLT WRENCHES

**CAUTION: Not for use as a Driver.**

### DRIVE-ENDS

1 1/8" Square Male



1 1/8" Hex. Male



Twist Lok



Twist Lok 2



CATALOG #	DRIVE-END	SOCKET-END
B4S x (L) .....	1 1/8" Sq. ....	1 1/8" Sq. 4 Pt.
B8S x (L) .....	" " .....	1 1/8" Sq. 8 Pt.
* B4S TL x (L) .....	Twist Lok .....	1 1/8" Sq. 4 Pt.
* B8S TL x (L) .....	" " .....	1 1/8" Sq. 8 Pt.
* B4S TLB x (L) .....	Twist Lok .....	1 1/8" Sq. Twist Lok
B4S HOTL X (L) .....	1 1/8" Hex Twist Lok .....	1 1/8" Sq. 4 Pt.
B8S HOTL x (L) .....	1 1/8" Hex Twist Lok .....	1 1/8" Sq. 8 Pt.
B4S HO x (L) .....	1 1/8" Hex. ....	1 1/8" Sq. 4 Pt.
B8S HO x (L) .....	" " .....	1 1/8" Sq. 8 Pt.
** DO6 x (L) .....	1 1/8" Hex. ....	1 1/8" Hex. Sq.

\* To order Twist Lok 2 specify "TL2" in place of "TL" Patented System - Patent # 4226290

\*\* To order welded on D06 Socket specify "W" after the Length (Ex: D06 X 24" W)

Add "S" to front of catalog # for Safety Sleeve

Example: SB4S x (L) - standard 6" sleeve; for other Lengths please specify

Special order wrenches made upon request.

### ROOF BOLT SOCKETS



1 1/8" Sq. 8 Pt.



1 1/8" Sq. 4 Pt.



1 1/8" Sq. TL



1 1/8" Hex. 1 1/8 Sq.



15/16" Sq. 4 Pt.



15/16" Sq. 8 Pt.

# ROOF BOLT SOCKETS ACCESSORIES

## Roof Bolt Sockets 4 Point

CATALOG #	SHAFT-END	SOCKET
DO2	1 1/8" Rd.	1 1/8" Sq.
DO4	1 1/8" Rd.	15/16" Sq.



1 1/8" Rd. Socket



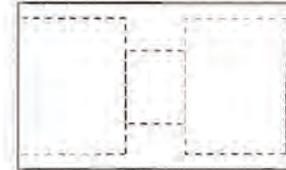
1 1/8" Sq. 4 Pt.

## Roof Bolt Sockets 8 Point

CATALOG #	SHAFT-END	SOCKET
DO2-8	1 1/8" Rd.	1 1/8" Sq.
DO4-8	1 1/8" Rd.	15/16" Sq.



1 1/8" Rd. Socket



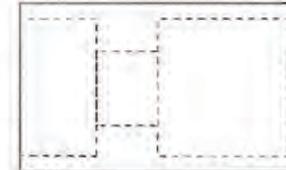
1 1/8" Sq. 8 Pt.

## Roof Bolt Sockets Twist Lok

CATALOG #	SHAFT-END	SOCKET
DO2-TL	1 1/8" Rd.	1 1/8" Sq. TL
DO2-TL2	1 1/8" Rd.	1 1/8" Sq. TL2



1 1/8" Rd. Socket



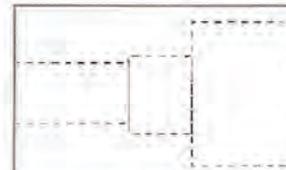
1 1/8" Sq. TL

## Replacement Socket for Torque Wrench

CATALOG #	SHAFT-END	SOCKET
DO2-3	3/4" Sq.	1 1/8" Sq.



3/4" Sq. Socket



1 1/8" Sq. 4 Pt.

# CHUCKS

**LN183TL**



**SXL-133TL**



**SXL-308-D1A7TL**



**94300TL**



**MAT-TL**



**308-D15-C1-1-TL**



<b>MACHINE TYPE</b>	<b>TYPE DRILL STEEL</b>	<b>PART NO.</b>
Lee-Norse/Fletcher	Square Drive	LN183 or (8144)
Lee-Norse/Fletcher	Twistlok	LN183TL
Lee-Norse/Fletcher	Hex 3"	LN183H3
Lee-Norse/Fletcher	Hex 4"	LN183H4
Fletcher	Square or Hex 4"	94300
Fletcher	Twistlok	94300TL
Galis	Square	308-D1A7
Galis	Twistlok	308-D1A7TL
Galis	Hex 3"	308-D1A7H3
Galis	Hex 4"	308-D1A7H4
FMC	Square or Hex 4"	308-D15-C-1
FMC	Twistlok	308-D15-C-ITL
Wilcox	Twistlok	04869TL
Acme	Twistlok	D1-10-13TL
Long-Airdox	Twistlok	8127TL
SXL Replacement Head	Twistlok	SXL-133TL
SXL Replacement Head	Twistlok	SXL-124TL
MAT Replacement Head	Twistlok	MATTL

- Special order chucks available upon request.
- All chucks can be made for water upon request.
- Available in Twist Lok 2 or HOTL where Twist Lok is specified.

**ACCESSORIES**



**M112A Resin Internal Retainer**



**337S Retainer for Resin/Conventional**



**M115 Conventional Internal Retainer**

**AW-4 Water Seal**



**S-78 Water Seal**



**WS-1 Water Seal**



**Scale Bar x (L)**



**Bit Puller**  
 M-1 (Large)  
 M-2 (Small)



**Rawhide Bit Puller**  
 C-1 (Large)  
 C-2 (Small)



**PBW Bit Puller**



**Head & Tail Pin**  
 Available in 18, 24, 30 and 36 Inch Lengths



**Miners Hammer**  
 11493MIS

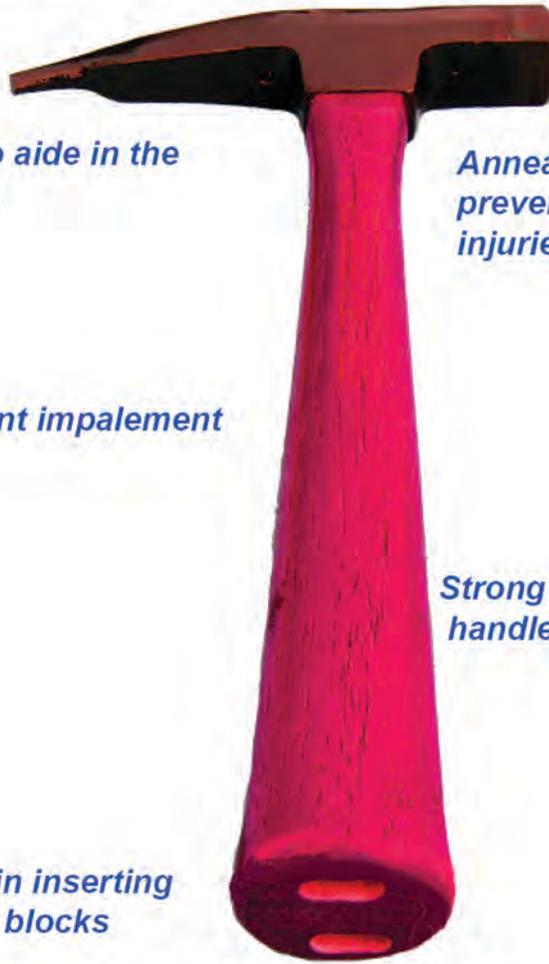


**Brick Hammer**  
 11491MIS



**One Piece Forged Anchor Pin**  
 Available in 18, 24, 30, 36 and 42 Inch Lengths

## MINER'S HAMMER



*Special designed pick end to aide in the removal of hair pin retainers*

*Annealed hammer face to prevent shatter and fragment injuries*

*Pick end blunted to prevent impalement injuries*

*Strong non-conducting Hickory handle*

*Special slots to assist in inserting hair pin retainers in bit blocks*

***XCAL TOOLS now offers the first Miner's Hammer built with function and safety in mind. Nowhere on the market will you find a hand tool designed specifically for the mining industry.***



## HAND-OFF TWIST LOK HOTL

This patented Drive-End design is a simple and efficient way to put safety into your roof drilling. Hands-off Twist Lok eliminates complex hydraulic mechanical mechanisms and gives the operator the safest drilling system available. Drilling holes is efficient and, once the hole is drilled, the steel remains locked in the bolting machine chuck as long as clockwise rotation continues. Retrieval is positive, safe and does not require hands to pull the steel out of the hole. Hands-off Twist Lok adds efficiency to truss and rib bolting. Hands-off Twist Lok is patented and manufactured by XCAL TOOLS. PATENT #4773490



## CONTINUOUS MINER PRODUCTS

### TORQUE AND CONVEYOR SHAFTS

XCAL TOOLS shafts are made from the same material as OEM but are manufactured in such a way to provide:

- Uniform material hardness end to end
- Proven consistent yield
- Outstanding rotational deflection prior to yield
- Reduction in vibration resulting in increased bearing life

In fact, independent testing by MetCut Research Inc. determined XCAL TOOLS outperformed OEM! XCAL TOOLS goes the extra mile in assuring the quality of its shafts by:

- Conducting independent, third party testing on all raw material lots
- Using lot control to provide a traceable quality history

Every XCAL TOOLS shaft must pass our rigorous QA inspection to be placed in our inventory. This assurance provides you with the best torque and conveyor shafts on the market today.

Currently XCAL TOOLS provides shafts to replace those on the Joy Continuous Miners. Cross reference your OEM part number to see if we manufacture a replacement. If the shaft you need is not in our catalog, give our customer service representatives a call and we will work to provide you a solution to your need.



#### Part Numbers

XCAL TOOLS	OEM
0490MI	1069528-0490
0513MI	1069528-0513
0528MI	1069528-0528
2013MI	1069528-2013
2052MI	1069528-2052
2053MI	1069528-2053
2084MI	1069528-2084
2116MI	1069528-2116
2174MI	1069528-2174
2193MI	1069528-2193
2217MI	1069528-2217

Give our customer service representatives a call if your OEM part is not listed.

### CUTTER BOOM PIN AND BUSHING

#### Cutter Boom Rebuild Kit (Rebuilds 2 Arms)

XCAL TOOLS understands the cost associated with downtime and maintenance. We have developed a pin and bushing assembly that addresses both these issues. Our product:

- Provides 7-10x greater wear life.
- Requires no lubrication.
- Does not destroy the bore of the nonmoving parts.

Designed specifically for Joy Continuous Miners to replace OEM part numbers:

- 1069127-0350
- 1069127-0349
- 1069127-0195
- 1069434-1521



#### Cutter Boom Rebuild Kit Includes:

	OEM Part	Qty
Bearing	1069127-0350MI	2
Bearing Cap	EB-JCM	4
Shaft/Pin	SJCM	2
Bolt	3416 Shoulder Bolt	4
Nut	3416 Flange Nut	4



### ADD-A-CAR PINS

Made for Addington highwall miner Ad-a-cars. XCAL TOOLS offers one of the strongest, most durable pins on the market. Made from a special high strength material to give you that added security when retrieving cars. Put our years of making underground mining safer and more efficient to work for you.

- AACPMI215PH

# SNOW PLOW AND GRADER BLADES



## THE "PURE" SNOWPLOW BLADE

Made of **100% Virgin Tungsten Carbide**, no hard or soft materials. It's the best wearing carbide available, lasting up to 30 times longer than conventional blades. Sectional blades means you can replace only the worn sections, not the entire blade.

The Pure Blade is available in all of the standard sizes and can also be custom-made to your request.

### Technical Data

#### High Shock WC Grade

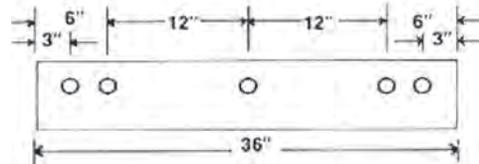
Cobalt %	11 - 12.5
Density	14.1 - 14.6
Hardness "A"	87.5 - 89.0
Transverse Rupture Strength (PSI)	350,000 - 40,000

All standard sized blade holes are punched 11/16" square and countersunk 11/16" diameter at 40 °

### STANDARD BLADE SECTION ON 12" HOLE CENTERS

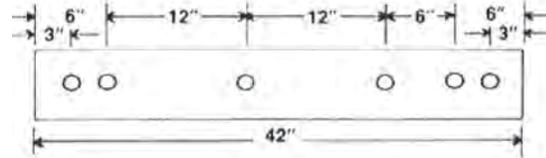
#### 36" Blade Section

<b>MI-136</b> 3/4" x 6" x 36"	<b>MI-136H</b> 7/8" x 5" x 36"	<b>MI-436</b> 3/4" x 5" x 36"
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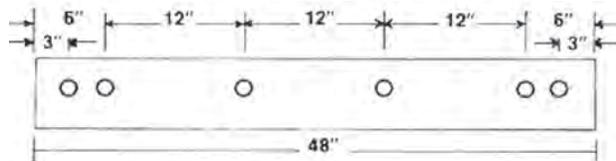
#### 42" Blade Section

<b>MI-142</b> 3/4" x 6" x 42"	<b>MI-142H</b> 7/8" x 5" x 42"	<b>MI-442</b> 3/4" x 5" x 42"
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#### 48" Blade Section

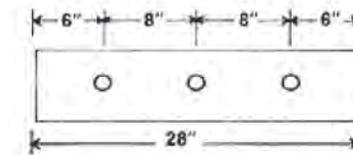
<b>MI-148</b> 3/4" x 6" x 48"	<b>MI-148H</b> 7/8" x 5" x 48"	<b>MI-448</b> 3/4" x 5" x 48"
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### STANDARD BLADE SECTION ON 8" HOLE CENTERS

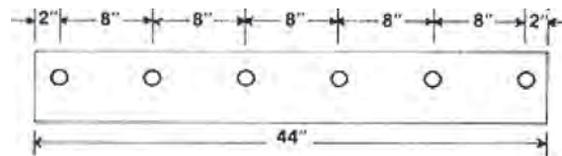
#### 28" Blade Section

<b>MI-128C</b> 3/4" x 6" x 28"	<b>MI-128CH</b> 7/8" x 5" x 28"	<b>MI-428C</b> 3/4" x 5" x 28"
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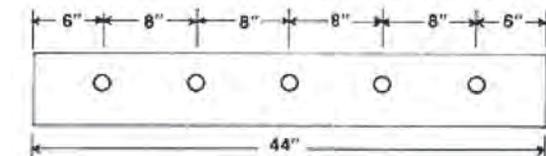
#### 44" Blade Section

<b>MI-144E</b> 3/4" x 6" x 44"	<b>MI-144EH</b> 7/8" x 5" x 44"	<b>MI-444E</b> 3/4" x 5" x 44"
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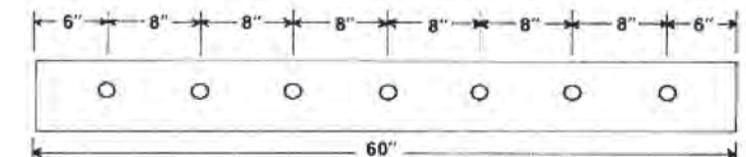
#### 44" Blade Section

<b>MI-144C</b> 3/4" x 6" x 44"	<b>MI-144CD</b> 7/8" x 5" x 44"	<b>MI-444C</b> 3/4" x 5" x 44"
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#### 60" Blade Section

<b>MI-160C</b> 3/4" x 6" x 60"	<b>MI-160CD</b> 7/8" x 5" x 60"	<b>MI-460C</b> 3/4" x 5" x 60"
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## S2000 ROAD GRADER BLADES

XCAL TOOLS S2000 is an innovative road grading system that uses rotating, replaceable tungsten carbide tools as a cutting edge. The S2000 Grader Blade can be mounted on a motor grader in place of a conventional blade. It can also be mounted to an under body blade on a truck or a rear blade on a tractor. These blades can be used on a variety of non-hard surfaced roads including public road districts, private construction contractors, federal land management, logging and mining roads.

### Features and Benefits

- **Lower Grading Costs:** Reduced equipment costs with a blade life equal to 5 to 15 sets of conventional blades.
- **Negligible Downtime:** Easy handling and installation in the field with no heavy lift required.
- **Improves Road Surface:** Cuts road surface instead of scraping providing improved mix of materials.
- **Increases Productivity:** Reduces dust and brings larger gravel particles to top of road surface.
- **Cost Effective Asphalt Removal:** Easily removes asphalt to desired profile and granulates material to a uniform size to be re-used for fill.
- **Excellent Ice Removal System:** Cutting action produces a grooved surface providing improved road traction.

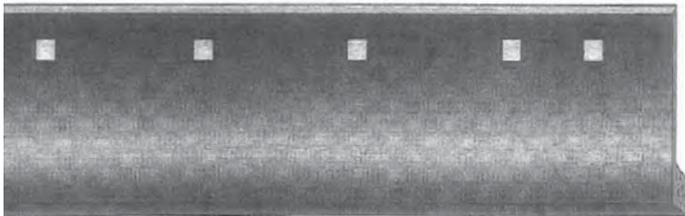
### Applications

- Gravel reclamation and maintenance
- Oil road reclamation
- Asphalt planing or following a milling machine to remove final layer of asphalt
- Removal of potholes and washboards on dirt or gravel roads
- Removal of temporary pavement marking
- Ice and snow removal.



### Components

#### Adapter Blades/Boards



Adapter blades/boards available in the following sizes:

Blade Length, ft (m)	3 (0.9)	4 (1.2)
Bolt Hole Size, in. (mm)	5/8 (16)	3/4 (19)

**A heavy duty mining system is also available for mine haulage roads.**

Tools	Part Number	Description	
<b>Heavy System</b>	2244-28FS	Long life multipurpose carbide used in rocky highly abrasive conditions	
<b>Penetration Tool</b>	2244-01FS	Recommended for asphalt	
<b>Profiled Tip Design</b>	2244-27FS	Large based carbide tip increases penetration while reducing steel wash on body of tool	
<b>Heavy Duty Mining Tool</b>	2564-62F	Longer gage for extreme conditions where large rock in roadway is a problem	
<b>Profile Tipped Mining Tool</b>	2564-23F	Carbide tip design for highly abrasive conditions to increase penetration while reducing steel wash on body of tool	

# LEVER BLOCK & CHAIN BLOCK HOISTS

XCAL TOOLS is a leading manufacturer of forged drill steel for the underground mining industry and provides a full line of Lever Block and Chain Block Hoists.

### Features

- Compact yet durable, made from the finest materials available
- Freewheeling offers one handed operation
- 360 degree handle rotation and pivot & swivel top
- Conform to ANSI/ASME safety and performance standards
- Load sheave is set in bearings vs bushings
- Heavier hooks help eliminate point loading, a main cause of hook failure
- Nylon inserted nuts help prevent hoist from loosening due to vibration
- Chain guide/guard helps protect chain and load sheave.

**Other hoists are available on request including electric powered hoists.**



Lever Block



Chain Block

Hoist Type	Part No.	Capacity, ton (MT)	Weight, lb (kg)
<b>Lever Block</b>	HCL075T	3/4 (0.68)	23 (10)
	HCL100T	1.0 (0.91)	32 (15)
	HCL150T	1.5 (1.36)	37 (17)
	HCL200T	2.0 (1.81)	50 (23)
	HCL300T	3.0 (2.72)	64 (29)
<b>Chain Block</b>	HCC050T	1/2 (0.45)	20 (9)
	HCC100T	1.0 (0.91)	32 (15)
	HCC150T	1.5 (1.36)	37 (17)
	HCC200T	2.0 (1.81)	50 (23)
	HCC300T	3.0 (2.72)	64 (29)





235 COMMERCE DRIVE  
SOUTH POINT, OH 45680  
740-377-3354