

Kenclaw™ and MilClaw™

***Kenclaw and MilClaw drills
blast holes and water wells
with twice the speed of
standard cutting tools!***



Kenclaw™

The cutting tools in the Kenclaw are ideally suited for soft to medium formations. They are the best choice for unconsolidated formations in which the drill will encounter alternating layers of soft clay and sand rock, or hard shale that might cause a drag cutting tool to over torque and possibly stall. The cutting tools are available in a wide range of sizes from 3 1/2" to 24" diameter. They feature numerous options, including multistage reamers, hole openers, circulating pilot tools, and special jet circulation configurations.



MilClaw™

The MilClaw features triangular, multistage bodies that provide better support for the tools in harder formations. MilClaw cutting tools are available in sizes ranging from 6 1/2" to 24" and are best suited for medium-soft to medium-hard formations.

Custom Designs

The Kenclaw and the MilClaw can be furnished with your choice of pin or box threads. Other modifications include different pilot cutting tools, breakout flats and larger sizes, and different conical cutting tools and holders.

Kenclaw Features

- no bearings
- cuts a variety of formations from clay to medium shale rock (up to 6,000 psi rock)
- rapid penetration rates — the speed of a typical drag cutting tool and the toughness of a soft-formation rock cutting tool
- suitable for air or fluid drilling
- average tool cutting life ranges from 500 ft. (152 meters) to 2,000 ft. (610 meters), depending on formations being drilled

Kenclaw Drilling System

code	description	size		a.p.i. pin size	pilot tool	C23 cutters	weight	
		inch	mm				lbs.	kg.
1825003	K3 7/8 2 3/8 API	3 7/8	98,4	2 3/8" regular pin	CP15	*3 CM42	8	3.6
1825004	K4 2 3/8 API	4	101,6	2 3/8" regular pin	CP15	*3 CM42	8	3.6
1825005	K4 1/8 2 3/8 API	4 1/8	104,5	2 3/8" regular pin	CP15	*3 CM42	8	3.6
1825006	K4 1/4 2 3/8 API	4 1/4	104,8	2 3/8" regular pin	CP15	*3 CM42	9	4.1
1012268	K4 1/2 20 2 3/8 API	4 1/2	108	2 3/8" regular pin	CP15	3	9	4.1
1825007	K4 5/8 2 3/8 API	4 5/8	117,5	2 3/8" regular pin	CP15	3	9	4.1
1777124	K4 3/4 20 2 7/8 API	4 3/4	120,7	2 7/8" regular pin	CP15	3	12	5.4
1825008	K4 7/8 2 7/8 API	4 7/8	123,8	2 7/8" regular pin	CP15	3	12	5.4
1825009	K5 2 7/8 API	5	127	2 7/8" regular pin	CP15	3	18	8.2
1825010	K5 1/8 2 7/8 API	5 1/8	130,2	2 7/8" regular pin	CP15	3	18	8.2
1825011	K5 1/4 2 7/8 API	5 1/4	133,4	2 7/8" regular pin	CP15	4	18	8.2
1825012	K5 1/2 2 7/8 API	5 1/2	139,7	2 7/8" regular pin	CP15	4	18	8.2
1012260	K5 5/8 20 3 1/2 C	5 5/8	142,9	3 1/2" regular pin	CP18	4	18	8.2
1825033	K5 3/4 3 1/2 API	5 3/4	146,1	3 1/2" regular pin	CP18	4	18	8.2
1012261	K6 20 3 1/2 C	6	152,4	3 1/2" regular pin	CP18	5	21	9.5
1825034	K6 1/4 3 1/2 API	6 1/4	158,8	3 1/2" regular pin	CP18	5	21	9.5
1012263	K6 1/2 20 3 1/2 C	6 1/2	165,1	3 1/2" regular pin	CP18	5	21	9.5
1012264	K6 3/4 20 3 1/2 C	6 3/4	171,5	3 1/2" regular pin	CP18	5	22	10.0
1825035	K7 3 1/2 API	7	177,8	3 1/2" regular pin	CP18	6	28	12.7
1012267	K7 1/2 20 3 1/2 C	7 1/2	190,5	3 1/2" regular pin	CP18	6	28	12.7
1777126	K7 7/8 20 4 1/2 API	7 7/8	200	4 1/2" regular pin	CP18	7	34	15.4
1825036	K8 1/2 4 1/2 API	8 1/2	215,9	4 1/2" regular pin	CP18	8	40	18.1
1012265	K8 3/4 20 4 1/2 C	8 3/4	222,3	4 1/2" regular pin	CP18	8	40	18.1
1012266	K9 20 4 1/2 C	9	228,6	4 1/2" regular pin	CP18	8	40	18.1
1825037	K9 1/2 6 5/8 API	9 1/2	241,3	6 5/8" regular pin	CP18	9	51	23.1
1608784	K9 7/8 20 6 5/8 API	9 7/8	250,8	6 5/8" regular pin	CP18	9	57	25.9
1777125	K10 5/8 87 6 5/8 API	10 5/8	269,9	6 5/8" regular pin	CP18	9	70	31.8
1825038	K11 1/2 6 5/8 API	11 1/2	292,1	6 5/8" regular pin	CP18	11	90	40.8
1117344	K12 1/4 87 6 5/8 API	12 1/4	311,2	6 5/8" regular pin	CP18	12	110	49.9
1825039	K14 3/4 6 5/8 API	14 3/4	374,7	6 5/8" regular pin	APEX DB	16	150	68.0
1825040	K17 1/2 6 5/8 API	17 1/2	444,5	6 5/8" regular pin	APEX DB	24	210	95.2
1825041	K19 6 5/8 API	19	482,6	6 5/8" regular pin	APEX DB	34	300	136.1

*CM cutting tools

We strongly recommend the use of a ribbed stabilizer on top of the Kenclaw.

MilClaw Features

- large chippings for blast-hole stemming
- no bearings
- cuts various formations from clay to soft limestone (up to 10,000 psi rock)
- rapid penetration rates - the speed of a typical drag cutting tool and the toughness of a medium-formation rock cutting tool
- carbide cutters rotate in their blocks (toolholders) to promote a self-sharpening action and to reduce torque on the drillstring
- economical/replaceable carbide tools are easy to change on site
- average cutting tool life is from 2,000 ft. (610 meters) to 10,000 ft. (3048 meters), depending on the formation being drilled
- best suited for unconsolidated formations where layers of soft and hard formations are encountered
- suitable for air or fluid circulation
- manufactured from 4142 HR heat-treated alloy steel

MilClaw Drilling System

code	description	size		a.p.i. pin size	pilot tool	C23 cutters	weight	
		inch	mm				lbs.	kg.
1825047	MC6 1/2 3 1/2 API	6 1/2	161,5	3 1/2" regular pin	CP18	6	35	15.9
1777022	MC6 3/4 3 1/2 API	6 3/4	171,5	3 1/2" regular pin	CP18	6	35	15.9
1825048	MC7 3 1/2 API	7	177,8	3 1/2" regular pin	CP18	6	45	20.4
1825049	MC7 1/2 4 1/2 API	7 1/2	190,5	4 1/2" regular pin	CP18	7	51	23.1
1777021	MC7 7/8 4 1/2 API	7 7/8	200	4 1/2" regular pin	CP18	7	51	23.1
1825050	MC8 1/2 4 1/2 API	8 1/2	215,9	4 1/2" regular pin	CP18	8	60	27.2
1825051	MC8 3/4 4 1/2 API	8 3/4	222,3	4 1/2" regular pin	CP18	8	60	27.2
1825073	MC9 4 1/2 API	9	228,8	4 1/2" regular pin	CP18	9	65	29.5
1825074	MC9 1/2 6 5/8 API	9 1/2	241,3	6 5/8" regular pin	CP18	9	69	31.3
1825075	MC9 3/4 6 5/8 API	9 3/4	247,9	6 5/8" regular pin	CP18	9	80	36.3
1777020	MC9 7/8 6 5/8 API	9 7/8	250,8	6 5/8" regular pin	CP18	9	88	29.9
1825079	MC10 6 5/8 API	10	254	6 5/8" regular pin	CP18	11	100	45.4
1777018	MC10 5/8 6 5/8 API	10 5/8	271,1	6 5/8" regular pin	CP18	13	109	49.4
1825080	MC10 3/4 6 5/8 API	10 3/4	273,5	6 5/8" regular pin	CP18	13	109	49.4
1777016	MC12 1/4 6 5/8 API	10 7/8	276,2	6 5/8" regular pin	CP18	14	115	52.2
1825082	MC10 7/8 6 5/8 API	11 5/8	295,3	6 5/8" regular pin	CP18	14	128	48.1
1825094	MC11 5/8 6 5/8 API	12 1/4	311,1	6 5/8" regular pin	CP18	14	132	59.9
1825095	MC14 6 5/8 API	14	255,6	6 5/8" regular pin	APEX DB	17	150	68.0
1825096	MC14 3/4 6 5/8 API	14 3/4	274,7	6 5/8" regular pin	APEX DB	20	165	74.8
1825097	MC17 1/2 6 5/8 API	17 1/2	444,5	6 5/8" regular pin	APEX DB	24	225	192.0

Kennametal strongly recommends the use of a ribbed stabilizer on top of the MilClaw.

Operating Instructions for Kenclaw and MilClaw

Recommended operating feeds and speeds depend on the type of formation being drilled. When drilling into soft formations, you may have to hold back on the drill rod because the MilClaw will penetrate faster than you can clean the hole.

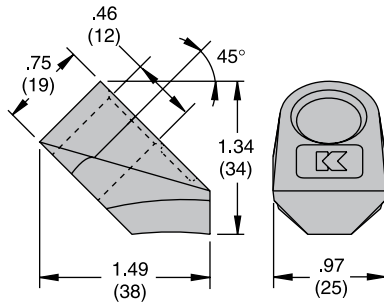
When drilling into harder formations, it is recommended you use about 1500 lbs. of down pressure and rotate at approximately 60 rpm to 100 rpm. These figures are estimates and may have to be adjusted, based on your actual drilling operations.

To ensure maximum footage from the MilClaw cutting tool, it is very important that the tools are rotating freely in their blocks before starting each hole.

Light Drilling

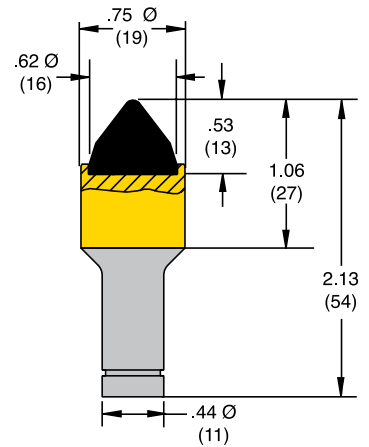
CMB4 block 1012281

- accepts Kennametal CM42 cutting tool
- also accepts our CM64 tool if a 3/8" spacer is added under the block to provide clearance for the retention nut
- easily welded with a 7018 or 8018 low-hydrogen rod or equivalent wire



CM42 1010778

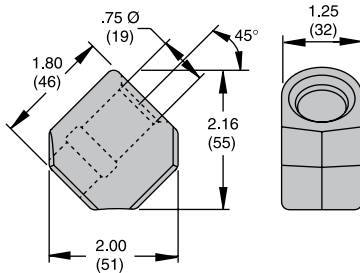
- basic system cutting tool
- double-angle carbide tip prolongs tool life
- requires a CM4 snap ring retainer (included with cutting tool)



Medium Drilling

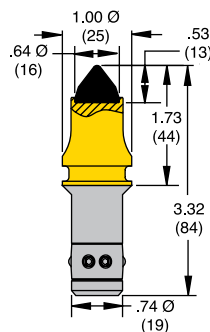
C20 block 1012273

- accepts our C23 cutting tools
- easily welded with a 7018 or 8018 low-hydrogen rod
- no preheating required



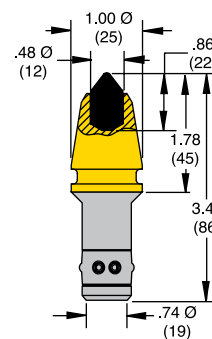
C23 1010758

For asphalt or abrasive applications.



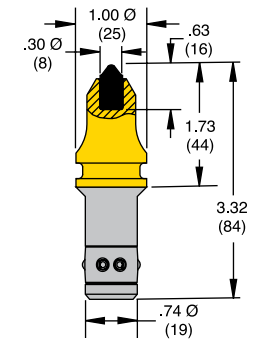
C21HD 1010789

For drilling hard rock or concrete.



C21 1010748

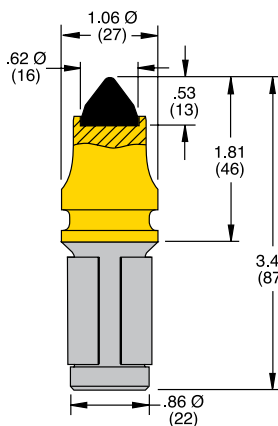
For most cutting applications. Especially good in soft to medium-hard material.



Heavy Drilling (See page 22 for four additional C87 tools and blocks.)

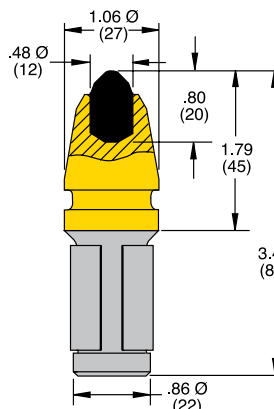
SL02 1010797

For asphalt or abrasive applications.



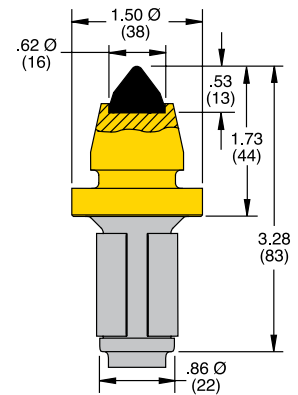
SL04 1010795

For drilling hard rock or concrete.



SM02 1010817

For asphalt or abrasive applications.



Claw Drilling System

Drills blast holes and water wells nearly twice as fast as standard cutting tools, particularly in unconsolidated ground and soft to medium-hard rock. Produces larger chips and less dust, with less gage down pressure. Strategically located air holes evacuate the cuttings. All of this means more production, less downtime, and a greatly reduced total cost.

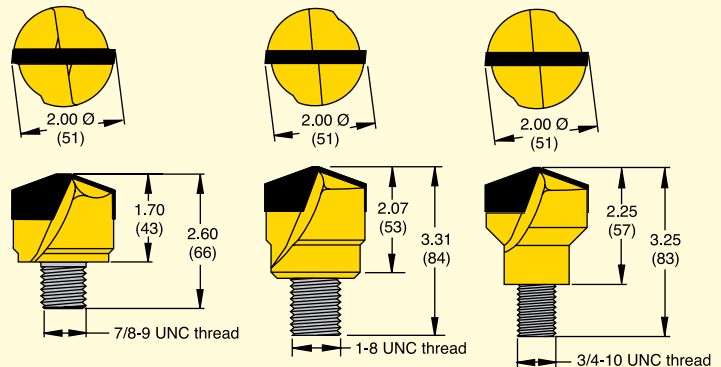
Our claw system is actually several Kennametal cutting tools in one! One of four pilot tools: a CP15 for 4 1/2"- and 4 3/4"-diameter systems; a CP17 for 4 1/2"- and 4 3/4"-diameter systems; a CP16 for 5"- to 5 1/2"-diameter systems; or a CP18 for 6"-diameter and larger systems, with a CP18 pilot chuck... plus a number (depending upon the diameter of the hole you want to drill) of our self-sharpening, carbide-tipped C23 conicals. All cutting tools are easy to install and, when necessary, a snap to change.

Recommended Rotation Speeds and Down Pressures*

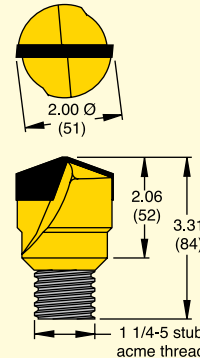
system sizes ** (inches in dia.)	API pin †	maximum rpm	pull down pressure
4-1/2	2-3/8	160	300
4-3/4	2-7/8	155	300
5	2-7/8	153	300
5-1/8	2-7/8	153	300
5-1/4	2-7/8	153	300
5-1/2	2-7/8	138	400
5-5/8	3-1/2	138	400
5-3/4	3-1/2	138	400
5-7/8	3-1/2	138	400
6	3-1/2	128	500
6-1/8	3-1/2	128	500
6-1/4	3-1/2	122	500
6-3/8	3-1/2	122	500
6-1/2	3-1/2	116	500
6-5/8	3-1/2	116	500
6-3/4	3-1/2	113	500
6-7/8	3-1/2	113	500
7	3-1/2	109	600
7-1/8	3-1/2	109	600
7-1/4	3-1/2	105	600
7-3/8	3-1/2	105	600
7-1/2	3-1/2	101	600
7-5/8	4-1/2	101	600
7-3/4	4-1/2	98	700
7-7/8	4-1/2	98	700
8	4-1/2	95	700
8-1/8	4-1/2	95	700
8-1/4	4-1/2	95	700
8-3/8	4-1/2	95	700
8-1/2	4-1/2	90	800
8-5/8	4-1/2	90	800
8-3/4	4-1/2	90	800
8-7/8	4-1/2	90	800
9	4-1/2	85	800
9-1/8	6-5/8	85	800
9-1/4	6-5/8	85	800
9-3/8	6-5/8	85	800
9-1/2	6-5/8	80	900
9-5/8	6-5/8	80	900
9-3/4	6-5/8	80	900
9-7/8	6-5/8	80	900
10	6-5/8	76	900
12	6-5/8	64	1400
15	6-5/8	50	1400

pilot cutting tools

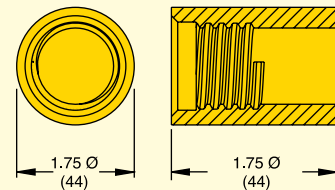
CP15 1324059 CP16 1012300 CP17 1012301



CP18 1012304



CP18 1012287 pilot chuck



shown: C6 1/2-10NS assembly

pilot assemblies ...for vertical and horizontal boring

- **C6 1/2 10NS 1012251**
comes equipped with C3 conicals and a CP18 pilot tool.
- **C6 1/2 20NS 1012334**
comes equipped with C23 conicals and a CP18 pilot tool.
- **C6 1/2 87NS 1012254**
comes equipped with C387LR conicals and a CP18 pilot tool.

*Whenever possible, drill rotation speeds should be kept at maximum rpm or below. This will result in maximum tool life. Also, do not apply excessive down pressure when operating the Kenclaw system. Tool damage could occur.

**Other sizes available upon request.

† Other API pin sizes can be ordered as required.