



# Cutting Ball CB

Operating Manual  
English  
June 20 fkr

## ***Preface***

### ***Dear valued customer,***

Thank you for the confidence and trust you've placed in us by purchasing one of our products.

We appreciate all suggestions and new design ideas. Your feedback will help us improve the design of our cutting ball and the associated documentation.

If you have any questions or suggestions, please contact our Customer Service Department.

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## ***Purpose of the document***

The purpose of this manual is to instruct you on how to use the CB cutting ball properly, effectively and safely and for its intended purpose.



Please read the instructions carefully before starting to work with the CB cutting ball. Make sure that all employees who work with the cutting ball know how to operate it correctly.

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# Introduction

## Validity

This operating manual contains instructions for the cutting ball.

## Target group

This operating manual is intended for anyone planning to operate the cutting ball.

## Copyright

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## Operating personnel requirements

Personnel intending to assemble, start up and operate the cutting ball must

- undergo training beforehand.
- All personnel must have read and understood the operating manual, in particular, the Chapter "General safety instructions."

Only qualified technicians are permitted to perform maintenance and repair work.



Please refer to the "MAINTENANCE" section.

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## Availability of the operating manual

The operating manual must be available to all operating personnel at all times. The manual must be kept in an easy-to-access location.

If the manual is misplaced or destroyed, please request a new copy from your dealer or the manufacturer directly.

## Address

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Fabian Krasniqi (Tech. Support / Quality Manager)

## General Safety Instructions

### Intended Use

The cutting ball is designed to clean the insides of pipes (sewer pipes).

- The cutting ball is intended for use on the insides of pipes only. Never use them outside the pipe. Never use the cutting ball in pipes that are laid above ground or are suspended in the air.
- The cutting ball may be used on the following types of pipes: Plastic, steel and concrete piping
- The cutting ball may only be used in enclosed pipes.

- During the cleaning operation, no personnel are allowed inside the pipes or at either end of the pipes.
- The cutting ball must not be used in an explosion-hazardous environment.

### Use common sense to prevent foreseeable accidents:

- Do not start up or pressurize outside the pipes.
- Do not work on pipes that are laid above ground and are not covered by insulation material.
- Do not operate the system if electrical connections are faulty.
- Ensure all cleaning areas are properly secured (e.g., shafts, pipe branches, etc.)
- Do not exceed the specified max. working pressure of the nozzle.
- Do not discharge wastewater into creeks and rivers or other bodies of water.

## Explanation of general safety instructions

The general safety instructions in this chapter provide information on potential residual risks which are inherent in the product and may occur unexpectedly, despite proper use of the product.

In order to prevent personal injuries, damage to property and the environment, all personnel working with this product must comply with these safety instructions. It is mandatory for said personnel to read and to understand the information provided in this chapter.

## Explanation of specific safety instructions

Safety information pertaining to particular situations are highlighted in the appropriate section of the operating manual.

## Noncompliance with the safety information and its consequences.

Disregarding these safety instructions may lead to accidents and severe personal injuries as well as damage to property and the environment.

The manufacturer cannot be held responsible for any damages resulting from noncompliance with these instructions.

## Important warning information in this operating manual



### DANGER

Noncompliance may lead to severe injury or even fatal accidents.



### WARNING

Noncompliance may lead to severe injury and/or cause a long-term disability.



### CAUTION

Noncompliance may lead to injury and considerable property damage, financial loss or damage to the environment.



Proper use and efficient application of the product

## Warning signs according to DIN EN ISO 7010

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### High-pressure water jets

Refers to risks caused by the high-pressure water jets. Highly concentrated water jets may lead to severe injury and could sever limbs. Noncompliance with these safety instructions may be fatal or could lead to severe injury.

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### Corrosive materials

Noncompliance can lead to severe injury if skin comes in contact with chemicals or bacteria.

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### Risk of falling

The workplace (e.g., manholes, flushing support, sewer opening, etc.) must be secured to prevent falling! Use suitable equipment to secure the area. Keep pedestrians clear of danger area. Noncompliance with these safety instructions may be fatal or could lead to severe injury.

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### Toxic substances, do not inhale

Warns of the danger of inhaling toxic vapors or air contaminated by particles (aerosol particles). Noncompliance with these safety instructions may be fatal or may lead to lung disease if inhaled.

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### Trip hazard

Hoses and similar objects left on the ground present a trip hazard for personnel and pedestrians. Use warning triangles or ropes to block off the working area.

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### Hot surface hazard

Noncompliance can lead to severe injury if skin comes in contact with hot surface(s).

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### **Read the operating manual**

Make sure you read and understand the operating manual prior to working with the cutting ball for the first time.

If the operating manual is missing or there are sections that you do not understand, please inform your supervisor.

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### **Wear personal protective equipment**

Pay attention to the signage regarding the necessary personal protective equipment that must be worn. Personal protective equipment includes safety goggles, hard hats, safety gloves, hard-toed boots, safety vests as well as tight-fitting overalls. Compliance with in-house regulations is mandatory to prevent accidents in the workplace.

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### **Wear respirator**

Manholes and shafts may contain contaminated air, toxic vapors, dust or atomized sprays. A face mask or respirator must be worn.

Prior to entering a shaft or inspection pit, a gas warning device, an explosive gas meter, etc. must be used or the shafts first ventilated.

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# Cutting Ball CB

(42X.0X0A / 42X.0X0AS)



425.090A Crushed Carbide with front jet

420.090AS (with thrust)

If needed, you can switch on the vibration function which expands the area of application. A carbide tip is in the middle. The tips on the side of the cutting ball are self-sharpening. The cutting ball is leak-tight and can be operated with recycled water.

- Very reliable and economical
- Can be recycled
- Leak-tight
- Able to bend

## Area of application

Removal of:

- Limescale
- Roots

For use in:

- Plastic, steel and concrete pipes and drainage lines



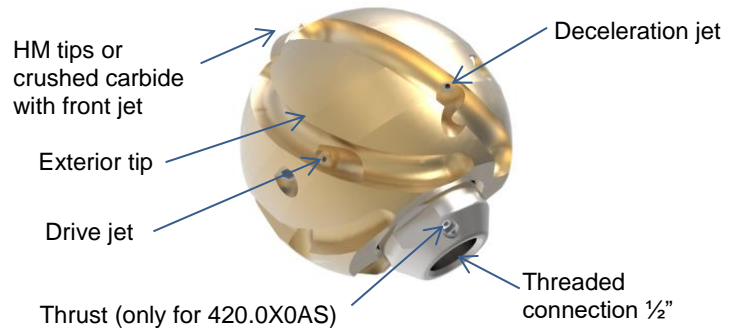
### WARNING

Working pressure max. 100 bar at the nozzle (1450 psi)

Higher wear of the cutting ball in concrete pipes

## Part Names

### CB



## Technical Data

Item no.	Øx length (mm)	Thrust jet inserts	Front jet	Rotationsnozzle inserts	Weight (kg)	Connection thread	Application range Ø (mm)	Min. use at 100 bar (l/min)	Max. work pressure (bar)	Max. work pressure (psi)
420.070A	68 x 92	-	-	6	1.06	½"	80 - 150	50	200	2900
420.070AS	68 x 92	3	-	6	1.06	½"	80 - 150	80	200	2900
420.090A	89 x 96	-	-	6	2.26	½"	100 - 200	50	200	2900
420.090AS	89 x 96	3	-	6	2.26	½"	100 - 200	80	200	2900
425.090A	89 x 96	-	1	6	2.26	½"	100 - 200	50	200	2900
425.090AS	89 x 96	3	1	6	2.26	½"	100 - 200	80	200	2900

## Installation

### Safety instructions



**DANGER**

High-pressure water jets!



**WARNING**

Risk of cutting injury!

## Assembling the cutting ball

The cutting ball is screwed onto the high-pressure hose on the vehicle. The thread size depends on the size of the cutting ball and can be found in the section "Technical Data" on page 10.

Normally, the nozzle has a counterclockwise thread, while the connecting thread rotates clockwise. This prevents the nozzle from detaching itself from the connecting thread during operation.

## Setting up the work area

Prior to working with the cutting ball, the following actions must be taken:

- Set up barriers and safety equipment (warning triangle, block off the area, etc.)
  - The necessary information on the wastewater flowing through the shaft must be obtained (chemicals, gas, vapors, etc.)
  - Measuring instruments such as explosive gas meters, oxygen meters, gas warning devices, etc. must be readily available.
- The work area must be blocked off and secured so that there is no risk of falling or other traffic-related dangers.
  - Make sure that the appropriate nozzle sizes are available for cleaning the pipes. The application range of each nozzle is listed in the "Technical Data" section on page 10.
  - The layout of the pipes must be known and the respective blueprints must be available before starting the work. Support personal must be on hand to monitor potential discharge openings in the pipe.
  - Have the liability waiver signed to protect against any possible damages.

# Operation

## Safety instructions



**DANGER**

High-pressure water jets!



**DANGER**

Risk of falling!



**WARNING**

Trip hazard!



**WARNING**

Toxic substances, do not inhale!



**CAUTION**

Risk of property damage!  
Never let the cutting ball skip (e.g., pulling the hose back and suddenly letting go)! This may damage the ball and the pipe.



Pay attention to the warning signs that inform you of the necessary personal protective equipment to be worn!

## **Operating the cutting ball**

- Push the entire length of the tool into the pipe to be cleaned.
- Slowly increase the pressure to 100 bar at the end of the nozzle. This pressure is enough to clean a pipe effectively.
- Measure the length of the pipe to be cleaned (mark it on the hose) and check the mark constantly during the cleaning process.
- In difficult terrain or when working over large distances, support personnel must monitor the exit shaft.
- Pull the tool back at regular intervals to avoid blockages

## **Cleaning pipes with minor damages**

Slightly damaged pipes will usually exhibit cracks in the pipe's wall. If detected, please contact the respective department or authorities.

When working inside a slightly damaged pipe, extreme caution must be used. When flushing the cracks, pipe fragments can break off and the surrounding area may be flushed out.

Use extreme caution when cleaning and, if in doubt, stop using the tool.

## **Completing the work process**

If possible, use a special sewer pipe video camera to inspect the cleaned pipes. Pay special attention to ensure that exiting fluids do not drain into environmentally-sensitive areas.

After completing the pipe cleaning process, reseal all shafts.

## Adding Vibration

### CB

In case of hard deposits, you can add more vibration.

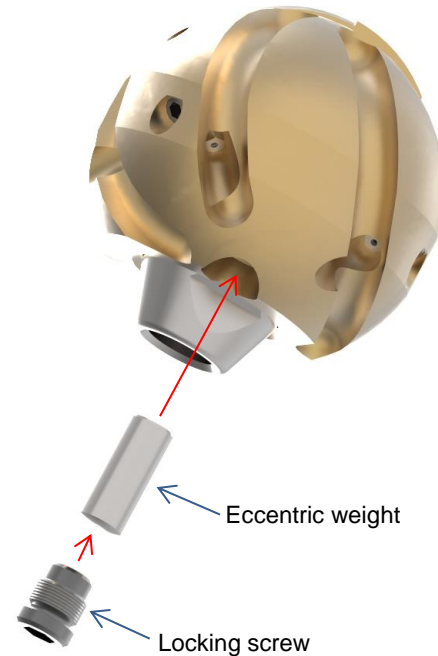
#### Stage 1

Loosen the locking screw and remove the eccentric weight.  
Screw the locking screw back into the cutting ball.

#### Stage 2 (CB90)

Remove the locking screw and the eccentric weight. You  
should now be able to cut away hard deposits.

After use, put the eccentric weight and the lock screw  
back in place. This will prevent parts from getting lost.



# Maintenance

## Replacing nozzle inserts

The nozzle inserts must be inspected during regular intervals (once a month). The wear and tear of the nozzle depends on the degree of contamination of the used water. If recycled water is being used, the nozzle inserts must be inspected **daily**.

### CAUTION



Worn nozzle inserts impair the efficiency of the cleaning process.

Damaged nozzle inserts may only be replaced by identical nozzle inserts with the same diameter. If you do not know the nozzle diameter, JetCalc must be used to determine it. If the tool is not correctly assembled, it may become damaged..

- Coat the nozzle insert threads and the inner threads of the nozzle with Loctite No. 243 adhesive. Both threads must be cleaned before applying the adhesive!
- Immediately screw the nozzle inserts into the tool body up to the mechanical stop, then use a socket wrench to slightly tighten each insert.

## Care

After long periods of non-use, spray the nozzle holes and the connecting threads with OIL SPRAY BIO (item no. C191).



## Disposal, environmental protection

The tools do not require any special disposal procedure. Simply dispose of them with other scrap metal.

Please note that pipes are only cleaned if the composition of the wastewater is known (in particular industrial wastewater). Under no circumstances may chemicals or other toxic substances flow through defective pipes and enter environmentally-sensitive watersheds or other areas. Defective pipes or leaking substances must be reported to the supervisor.

Do not use excessive amounts of water. This will help preserve our natural resources.

# Appendix

## Accessories



Open-end wrench

Item no.  
420.0906

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Cleaning set

Item no. C202

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Socket wrench 5mm

Item no. C101

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Storage case

Item no. 09.006

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Bio oil spray

Item no. C191

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