

**“NEW HD  
2020 RANGE”**

**DIRECT  
HIT®**

2020 Nozzle assembly instruction booklet

Direct Hit® is about knowledge we have acquired, from unblocking over 35,000 blocked drains, expressed through design and quality of product.

We make carriages that fit accessories, so you can create your own assembly to make unblocking of drains faster, easier and more profitable.

All parts used are made from stainless steel. We use the highest quality reverse turbo nozzles that we can find around the world. These nozzles produce high quality laminar water (ceramic and steel jets produce turbulent water) and with our testing we found that they cut roots fast. They vibrate for better impact, they work with water temperatures up to 180° F or 82° C, last five times longer than any other rotating nozzle, they have tungsten carbide seats and stainless steel bodies.

### **These turbo nozzles cut roots fast.**

Our assemblies are designed to travel parallel to the bottom of the line (it is easier to penetrate roots on the bottom of the line), at a specific angle from 0° to whatever degree you specify to travel down or up a 50, 100, 150 or 225 mm line.

### **The less length the laminar jet cone of water has, the better it cuts.**

Direct Hit® carriages are designed to direct the water jet cone to the best possible angle of attack without the operator twisting and turning. The carriages are assembled with different nozzles and various accessories to create different points of attack.

### **The accessories are designed to interchange with all our assemblies.**

We have used and tested our assemblies at 5000psi for over three years without any breakdowns or maintenance required.

By understanding your nozzle assemblies and how they work, it will cut down your operating time on the job by half. It enables you to become more efficient, knowledgeable, relaxed, energetic and be more profitable.

### **Profitable you say?**

If you halve your operating time, how much money will you save?

If you halve your expenses on fuel, repairs on equipment (jetter, hoses and camera), injuries on you and your staff (less medical bills and days off), how much money will you save?

If you do not need to upgrade your jetter, but upgrade only to a new nozzle assembly, how much money will you save?

If you add all the above savings, how much money will you save and how will it change your life style?

Do you want to change your lifestyle so as to have more money in your pocket or work less hours and have more time to be with family and friends?

Now what if you add one or two extra jobs to the day, that previously you may have lost because jobs took more time to finish, how much more money can you add to your savings?

### **The choice is yours.**

Do the math, purchase one of our products and you will end up with a smile on your face.

**Patent Pending Numbers:** AU 2017268682 - EU 12762844.4 - PCT/AU2018/000021

# Actual Size of C38rs and C43rs *Penetrator* Assemblies

The C38rs and C43rs are used to penetrate and cut forward using a turbo nozzle through soft and hard materials. They flush out all debris from the line without changing nozzles up or downstream. A 50mm (2") access point can be used with both nozzles. Rings can be used to adjust the front. A 50mm (2") access point can be used with both nozzles. Rings can be used to adjust the front.

Unblock blockages caused by **WIPES**  
**YES**

## C38rs™

## C43rs™

100 mm P.V.C  
88° Junction  
**YES**

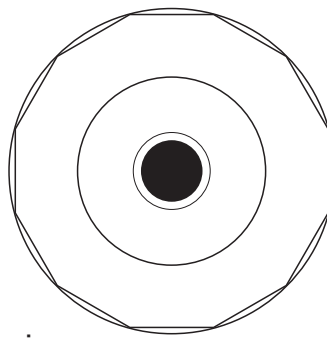
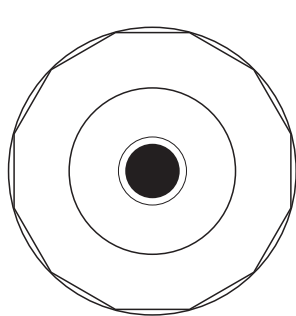
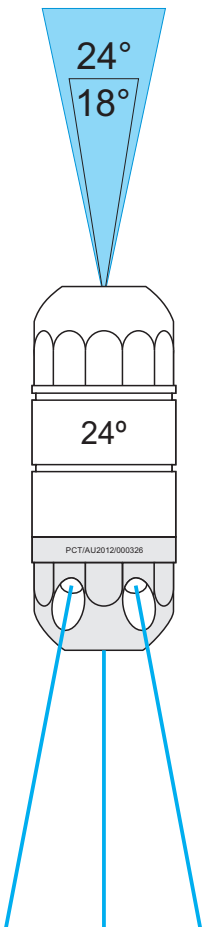
*The safest way entering an unknown blockage*

**EXTREME SHORT PENETRATOR**  
front 18° or 24° SS  
reverse turbo nozzle with tungsten carbide seats and back 3 or 6 ceramic jets at 15°

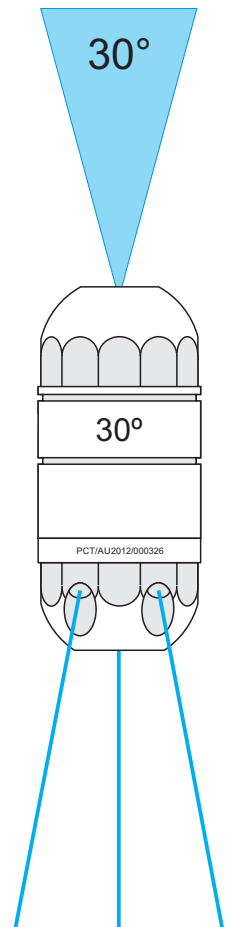
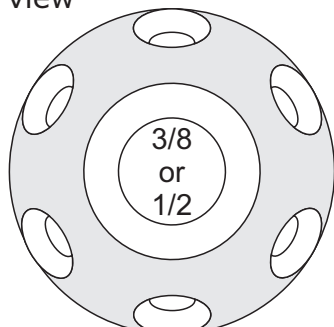
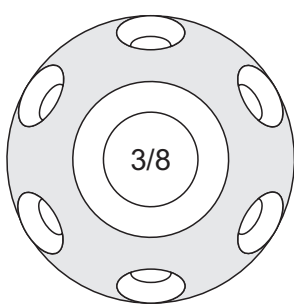


Under 31 l/min or 8 gpm

**ALL ROUNDER SHORT PENETRATOR**  
front 30° SS  
reverse turbo nozzle with tungsten carbide seats and back 3 or 6 ceramic jets at 15°



front and back view



Because we are continuously improving our products and services, Direct Hit reserves the right to change the specifications and prices without prior notice.

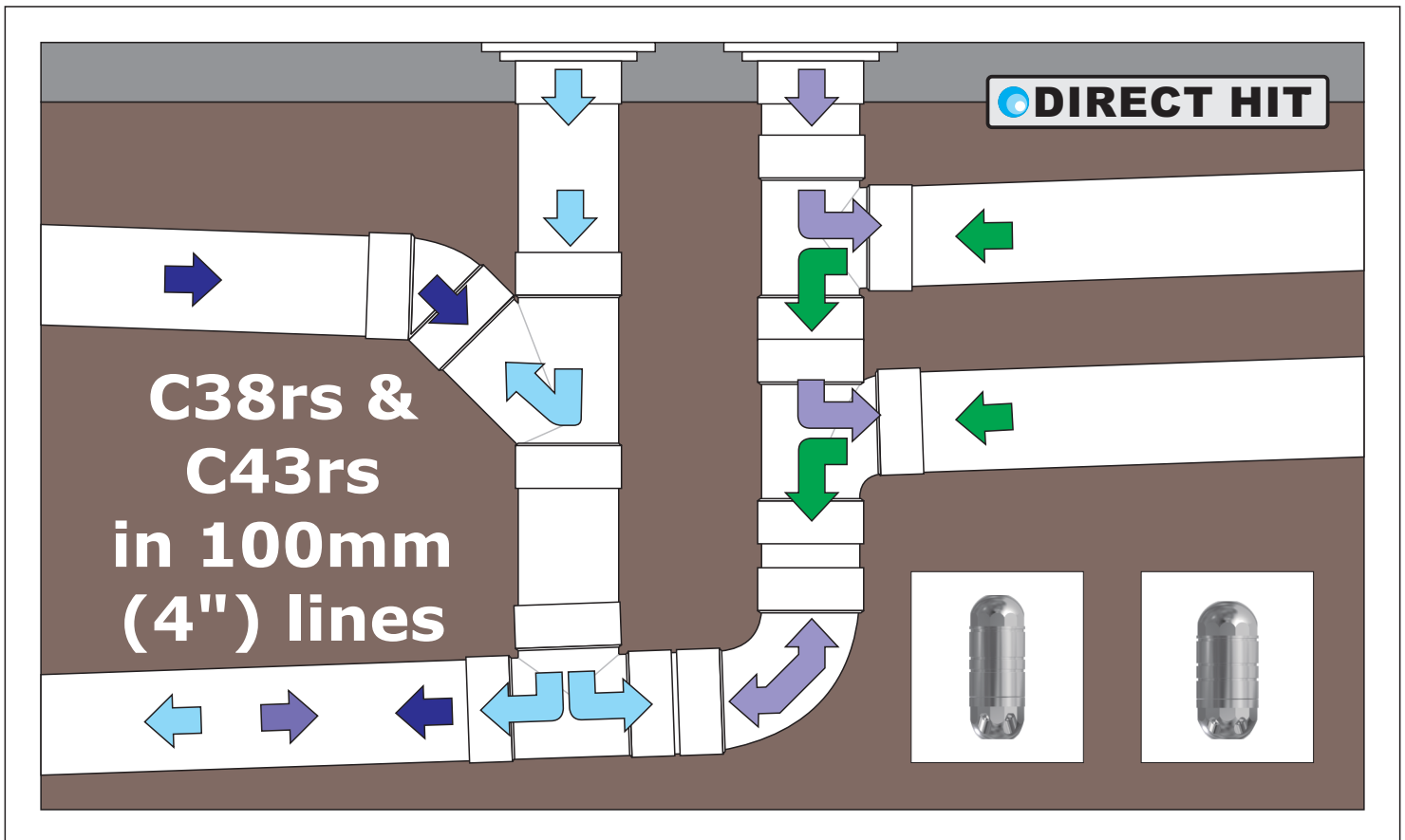
# Under 34 l/min (10 gpm) in 100mm (4") lines

## C38rs and C43rs in 100mm lines (cut with front turbo nozzle)

|                                        |                                          |                           |                                 |                                 |               |                   |                                               |                                         |
|----------------------------------------|------------------------------------------|---------------------------|---------------------------------|---------------------------------|---------------|-------------------|-----------------------------------------------|-----------------------------------------|
| Penetrate & cut tree roots <b>FAST</b> | Unblock blockages caused by <b>WIPES</b> | Unblock grease, soap etc. | Remove sand from lines & grates | Put a <b>SMILE</b> on your face | Ice in drains | Clean drain walls | Clean manholes, shafts, pits & hydro excavate | Adjust assembly to suit 100 & 150 lines |
| <b>YES</b>                             | <b>YES</b>                               | <b>YES</b>                | <b>YES</b>                      | <b>YES</b>                      | <b>YES</b>    | <b>YES</b>        | <b>NO</b>                                     | <b>YES</b>                              |

**YES** Penetrate, cut, clean and adjust assembly front turbo nozzle only

The **C38rs** & **C43rs** works in any of the **100mm (4") pipe** combinations shown below.



## C38rs and C43rs in 100 mm (4") lines (what it can go through)

|            |            |            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|            |            |            |            |            |            |            |            |            |
| <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> |

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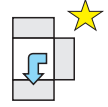
# Actual Size of a **Heavy Duty C38rs & C43rs Penetrators**

The C38rs and C43rs are used to penetrate and cut forward using a turbo nozzle through soft and hard materials. They flush out all debris from the line without changing nozzles up or downstream. A 50mm (2") access point can be used with both nozzles. **Heavy Duty Protection.**

Unblock blockages caused by **WIPES**  
**YES**

## C38rs™

## C43rs™

  
100 mm P.V.C  
88° Junction  
**YES**

*The safest way entering an unknown blockage*

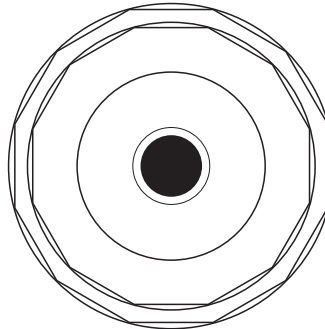
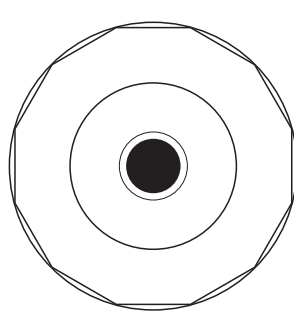
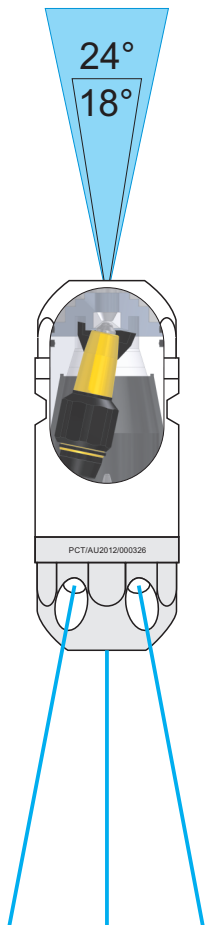
**EXTREME HD SHORT PENETRATOR**  
front 18° or 24° SS  
reverse turbo nozzle with tungsten carbide seats and back 3 or 6 ceramic jets at 15°



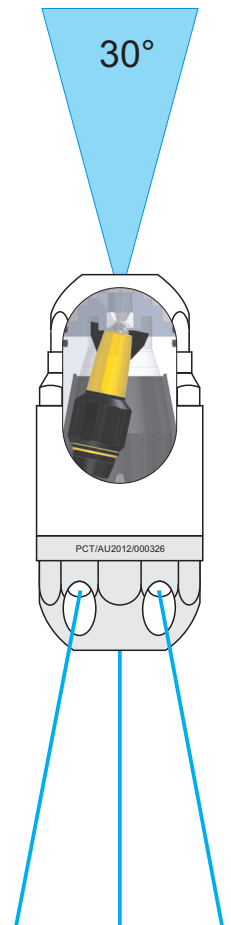
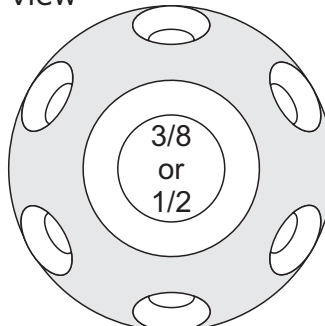
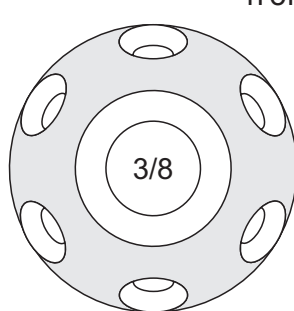
Over or Under  
31 l/min  
or 8 gpm



**ALL ROUNDER HD SHORT PENETRATOR**  
front 30° SS  
reverse turbo nozzle with tungsten carbide seats and back 3 or 6 ceramic jets at 15°



front and back view



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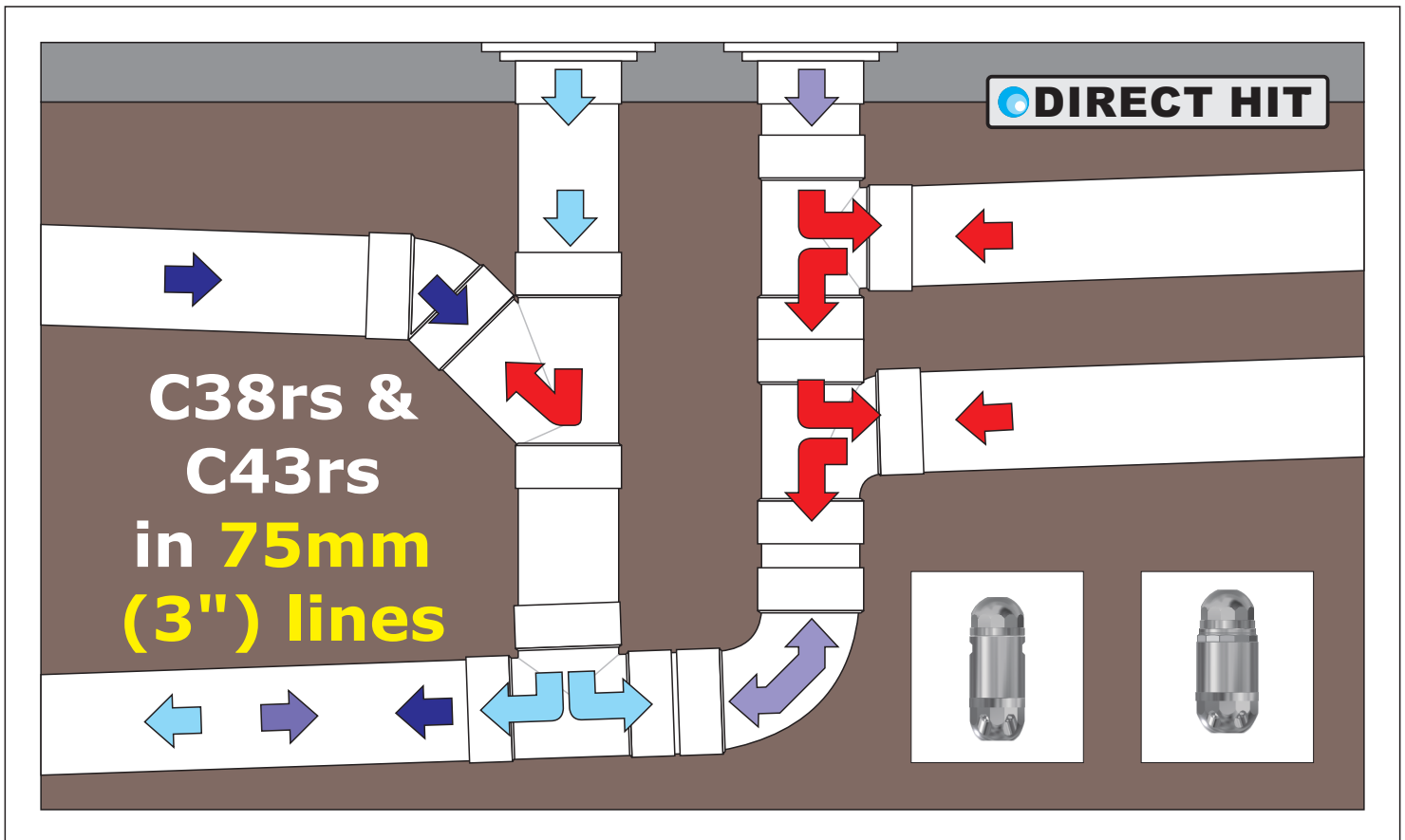
## Under 34 l/min (10 gpm) in 75mm (3") lines

**C38rs and C43rs** in 100mm lines (cut with front turbo nozzle)

|                                        |                                          |                           |                                 |                                 |               |                   |                                               |                                         |
|----------------------------------------|------------------------------------------|---------------------------|---------------------------------|---------------------------------|---------------|-------------------|-----------------------------------------------|-----------------------------------------|
| Penetrate & cut tree roots <b>FAST</b> | Unblock blockages caused by <b>WIPES</b> | Unblock grease, soap etc. | Remove sand from lines & grates | Put a <b>SMILE</b> on your face | Ice in drains | Clean drain walls | Clean manholes, shafts, pits & hydro excavate | Adjust assembly to suit 100 & 150 lines |
| <b>YES</b>                             | <b>YES</b>                               | <b>YES</b>                | <b>YES</b>                      | <b>YES</b>                      | <b>YES</b>    | <b>YES</b>        | <b>NO</b>                                     | <b>YES</b>                              |

**YES** Penetrate, cut, clean and adjust assembly front turbo nozzle only

The **C38rs** & **C43rs** works in any of the **75mm (3") pipe** combinations shown below.



**C38rs and C43rs** in **75 mm (3") lines** (what it can go through)

|            |            |            |            |           |           |            |            |            |
|------------|------------|------------|------------|-----------|-----------|------------|------------|------------|
|            |            |            |            |           |           |            |            |            |
| <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>NO</b> | <b>NO</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> |

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# Actual Size of DC38 *Cutter* Assembly

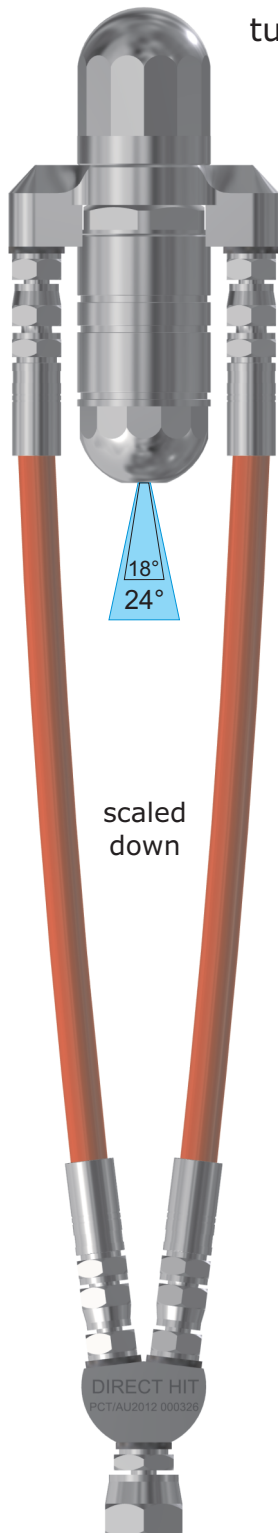
## DC38<sup>TM</sup>

front cap & back  
18° or 24° SS  
reverse turbo nozzle  
with  
tungsten carbide seat

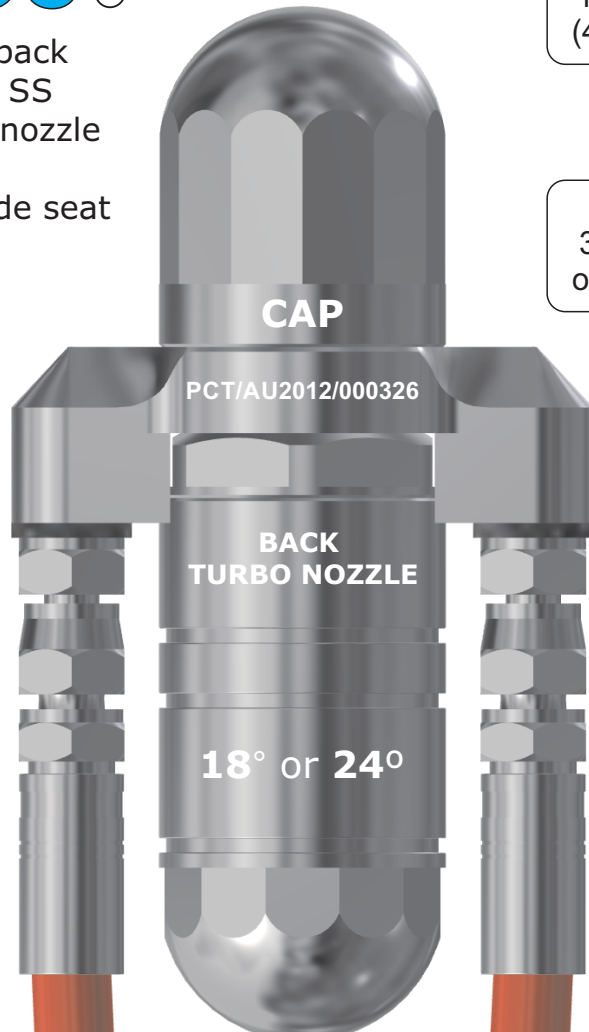
Used in  
100 mm  
(4") lines



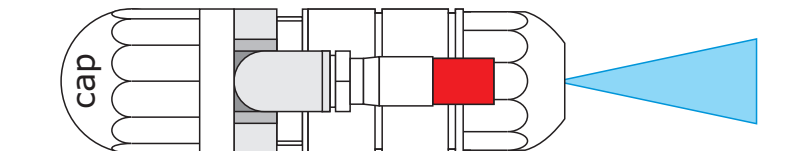
Under  
31 l/min  
or 8 gpm



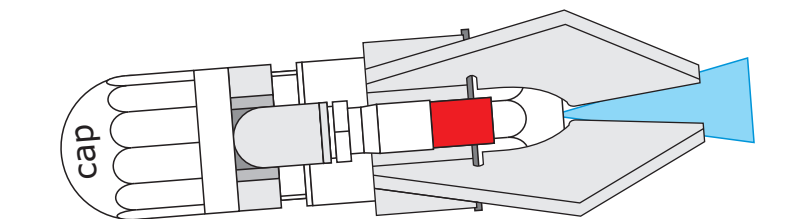
scaled  
down



cap with back turbo nozzle



You can add a 150-300mm ring.



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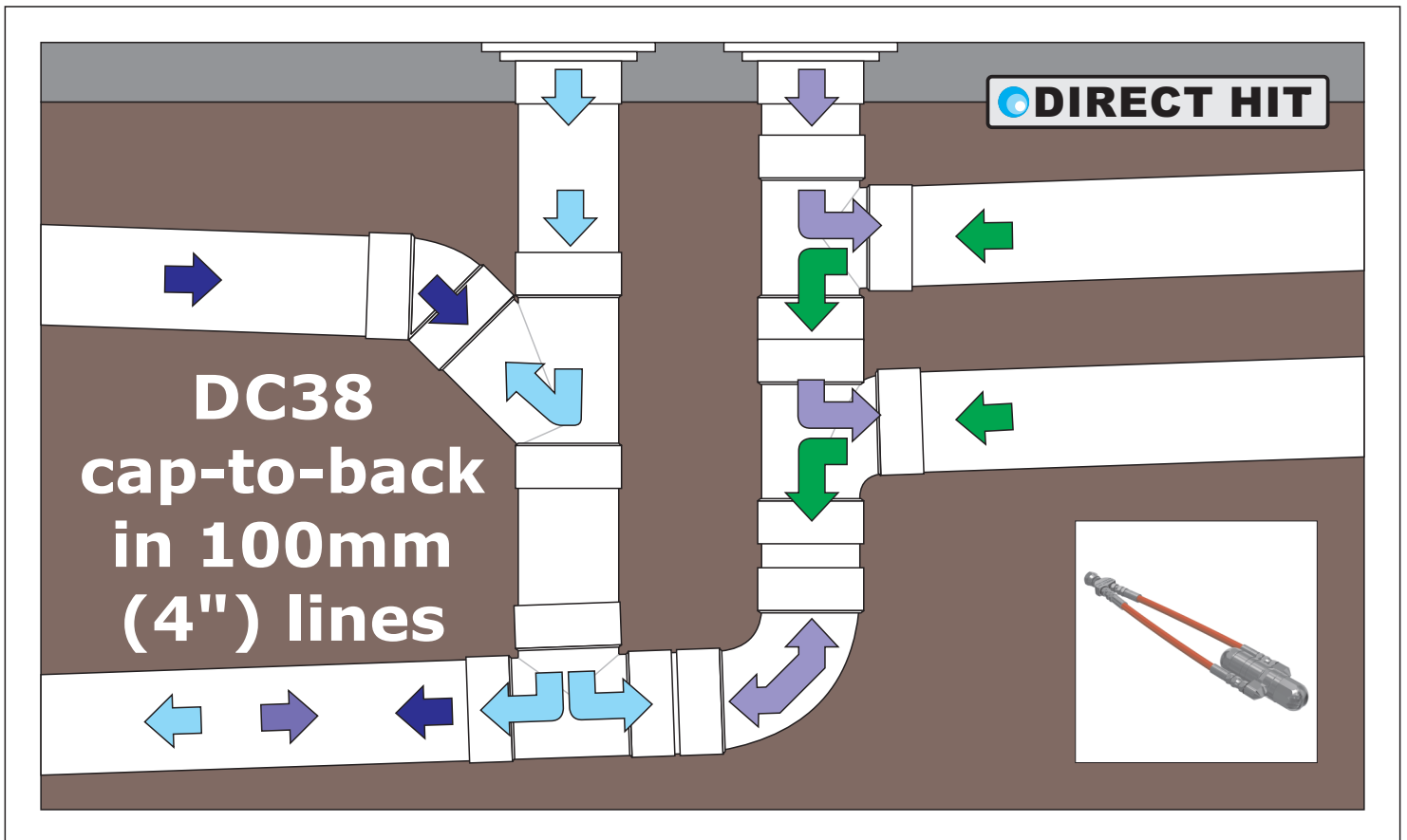
# Under 34 l/min (10 gpm) in 100mm (4") lines

## DC38 cap-to-back (capped front and back reverse turbo nozzle)

|                                     |                               |                           |                                 |                                 |               |                   |                                               |                                         |
|-------------------------------------|-------------------------------|---------------------------|---------------------------------|---------------------------------|---------------|-------------------|-----------------------------------------------|-----------------------------------------|
| Penetrate tree roots<br><b>FAST</b> | Cut tree roots<br><b>FAST</b> | Unblock grease, soap etc. | Remove sand from lines & grates | Put a <b>SMILE</b> on your face | Ice in drains | Clean drain walls | Clean manholes, shafts, pits & hydro excavate | Adjust assembly to suit 100 & 150 lines |
| <b>NO</b>                           | <b>YES</b>                    | <b>YES</b>                | <b>YES</b>                      | <b>YES</b>                      | <b>YES</b>    | <b>YES</b>        | <b>YES</b>                                    | <b>YES</b>                              |

**YES** cut, clean & adjust from back turbo nozzle

The **DC38** cap-to-back works in any of the **100mm (4") pipe** combinations shown below.



## DC38 cap-to-back in 100 mm (4") lines (what it can go through)

|           |           |           |            |            |            |            |            |            |
|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
|           |           |           |            |            |            |            |            |            |
| <b>NO</b> | <b>NO</b> | <b>NO</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> |

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# Actual Size of DC43 *Cutter* Assembly

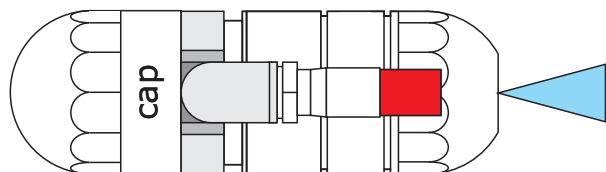
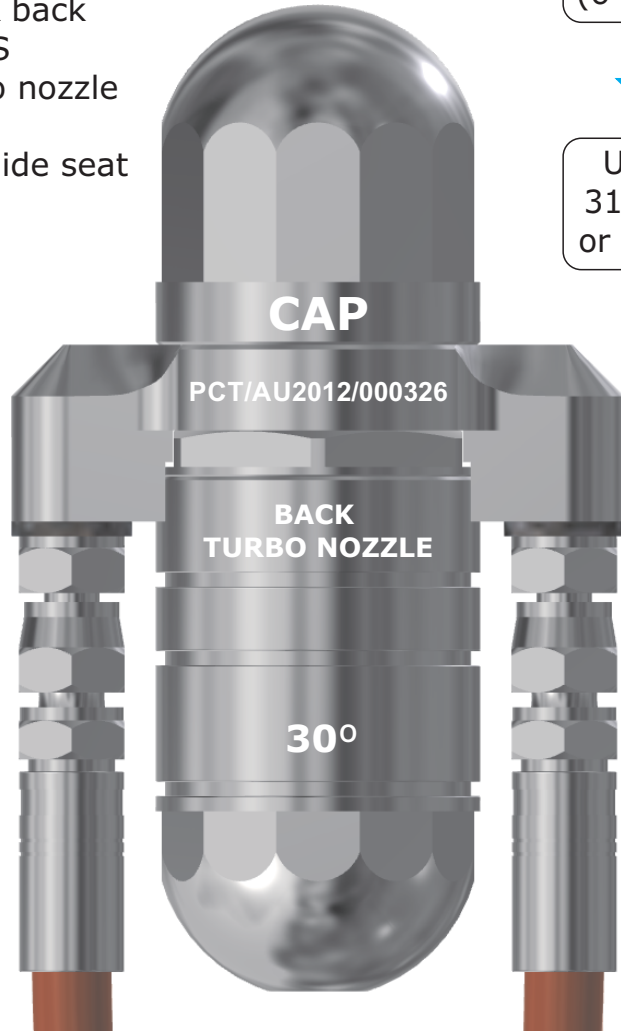
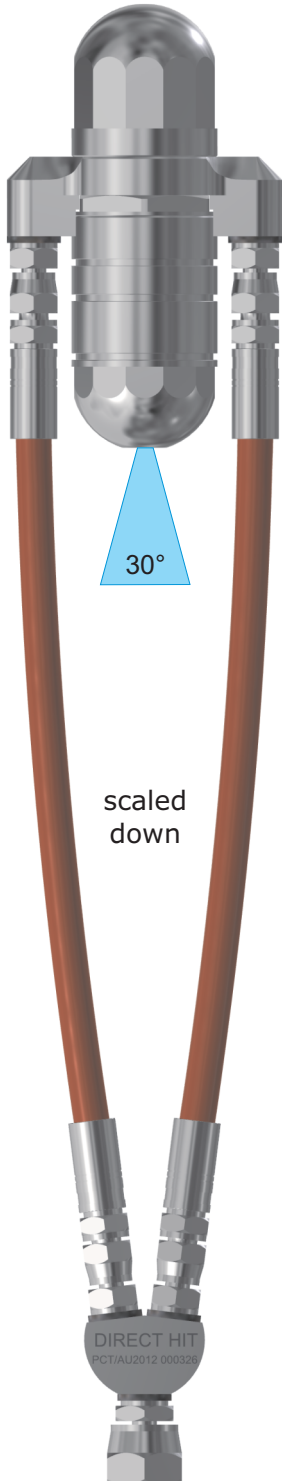
## DC43<sup>TM</sup>

front cap & back  
30° SS  
reverse turbo nozzle  
with  
tungsten carbide seat

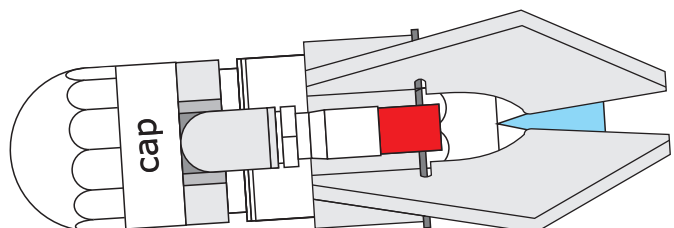
Used in  
150 mm  
(6") lines



Under  
31 l/min  
or 8 gpm



You can add a Ring cap with 100-150 mm ring.



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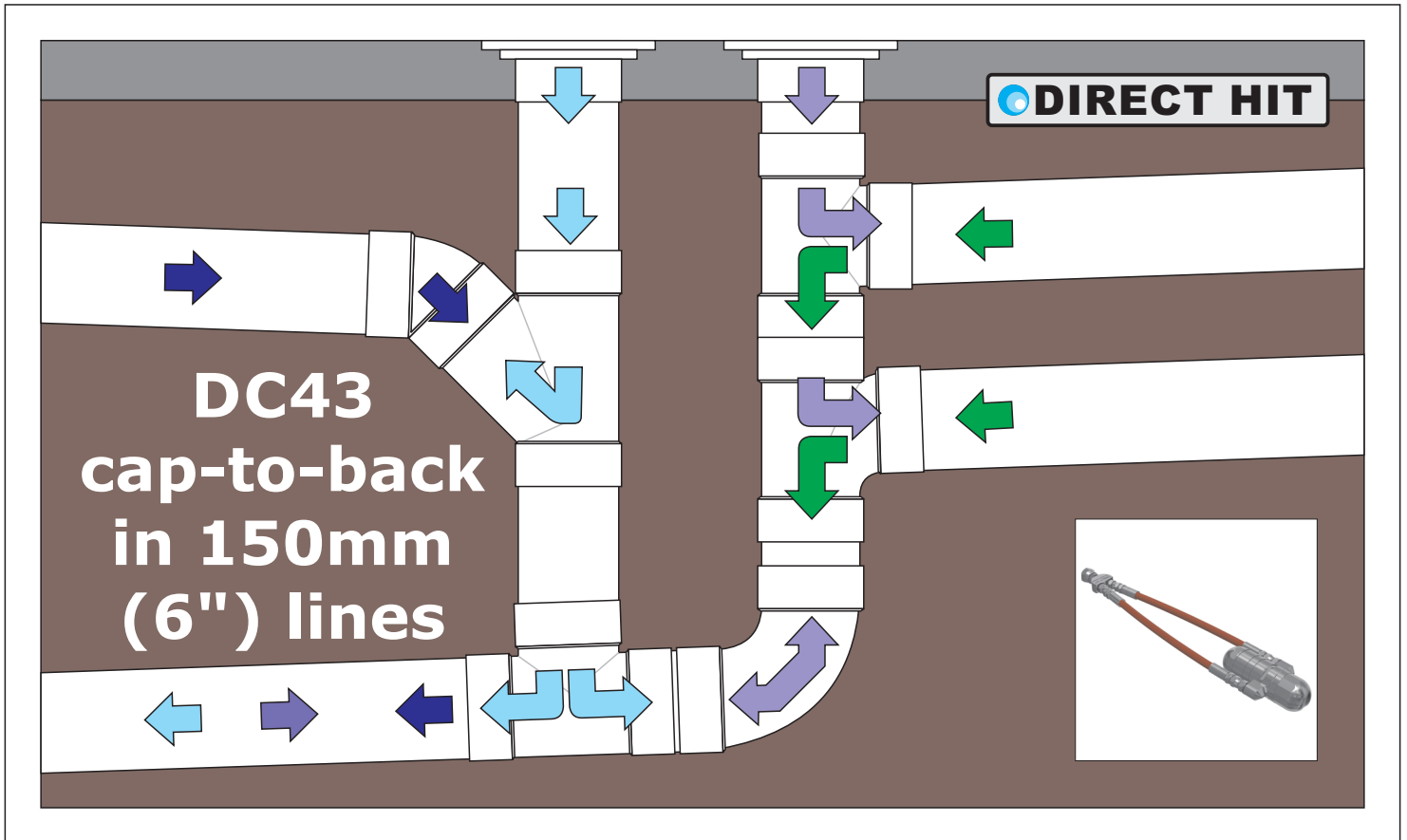
# Under 34 l/min (10 gpm) in 150mm (6") lines

## DC43 cap-to-back (capped front and back reverse turbo nozzle)

|                                     |                               |                           |                                 |                                 |               |                   |                                               |                                         |
|-------------------------------------|-------------------------------|---------------------------|---------------------------------|---------------------------------|---------------|-------------------|-----------------------------------------------|-----------------------------------------|
| Penetrate tree roots<br><b>FAST</b> | Cut tree roots<br><b>FAST</b> | Unblock grease, soap etc. | Remove sand from lines & grates | Put a <b>SMILE</b> on your face | Ice in drains | Clean drain walls | Clean manholes, shafts, pits & hydro excavate | Adjust assembly to suit 100 & 150 lines |
| <b>NO</b>                           | <b>YES</b>                    | <b>YES</b>                | <b>YES</b>                      | <b>YES</b>                      | <b>YES</b>    | <b>YES</b>        | <b>YES</b>                                    | <b>YES</b>                              |

**YES** cut, clean & adjust from back turbo nozzle

The **DC43** cap-to-back works in any of the **150mm (6") pipe** combinations shown below.



## DC43 cap-to-back in 100 mm (4") lines (what it can go through)

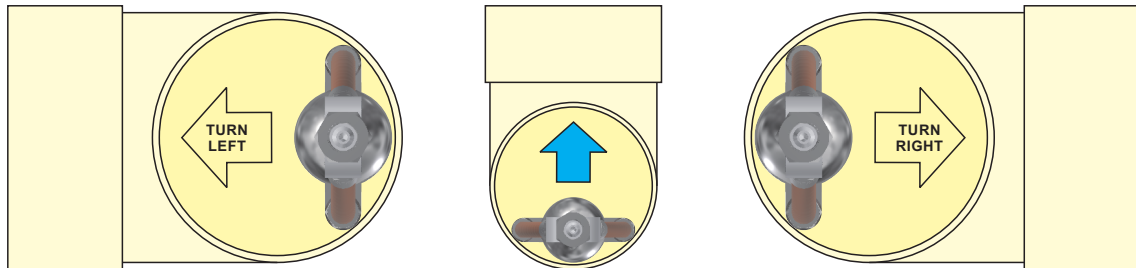
|           |           |           |            |            |            |            |            |            |
|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
|           |           |           |            |            |            |            |            |            |
| <b>NO</b> | <b>NO</b> | <b>NO</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> | <b>YES</b> |

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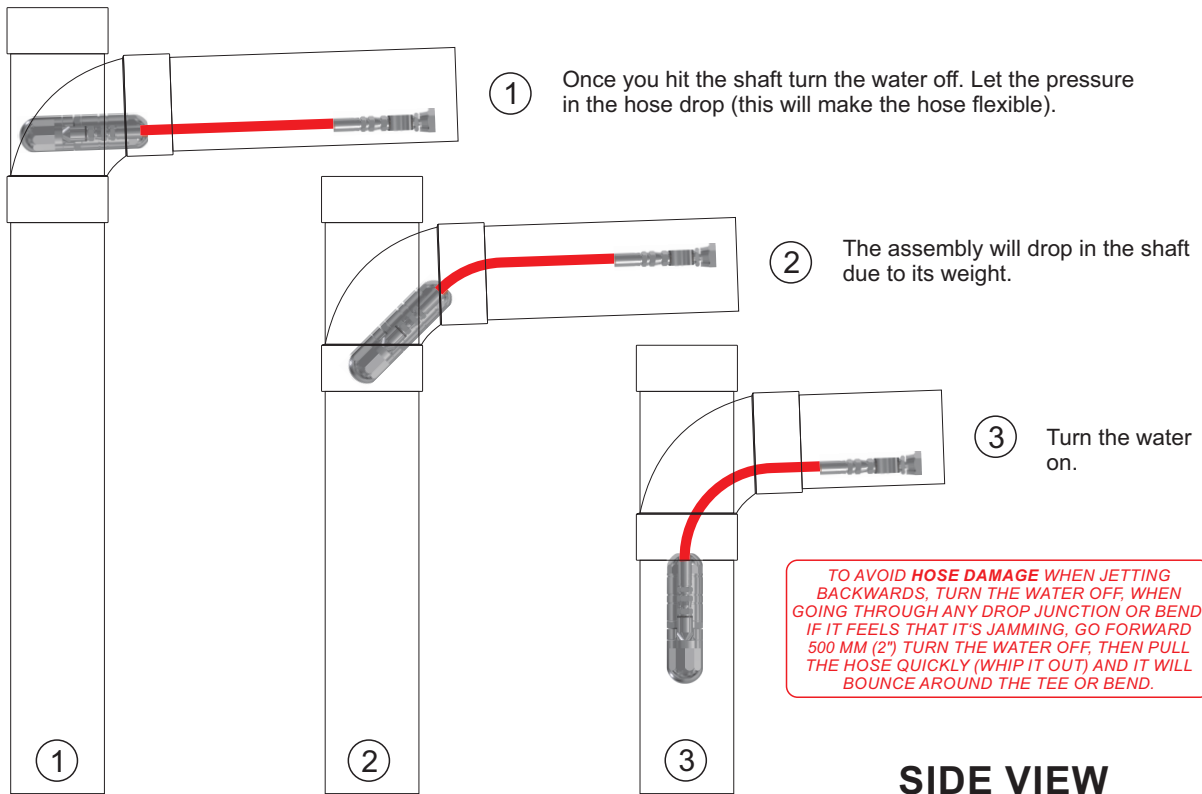
**1. When using your DC38 or DC43 either up or down stream when you hit a bend it may stop, pull back 100 mm approximately...**



**2. Twist left or right your hose for the DC38 or DC43 to go around a bend as if you are going up a bend**

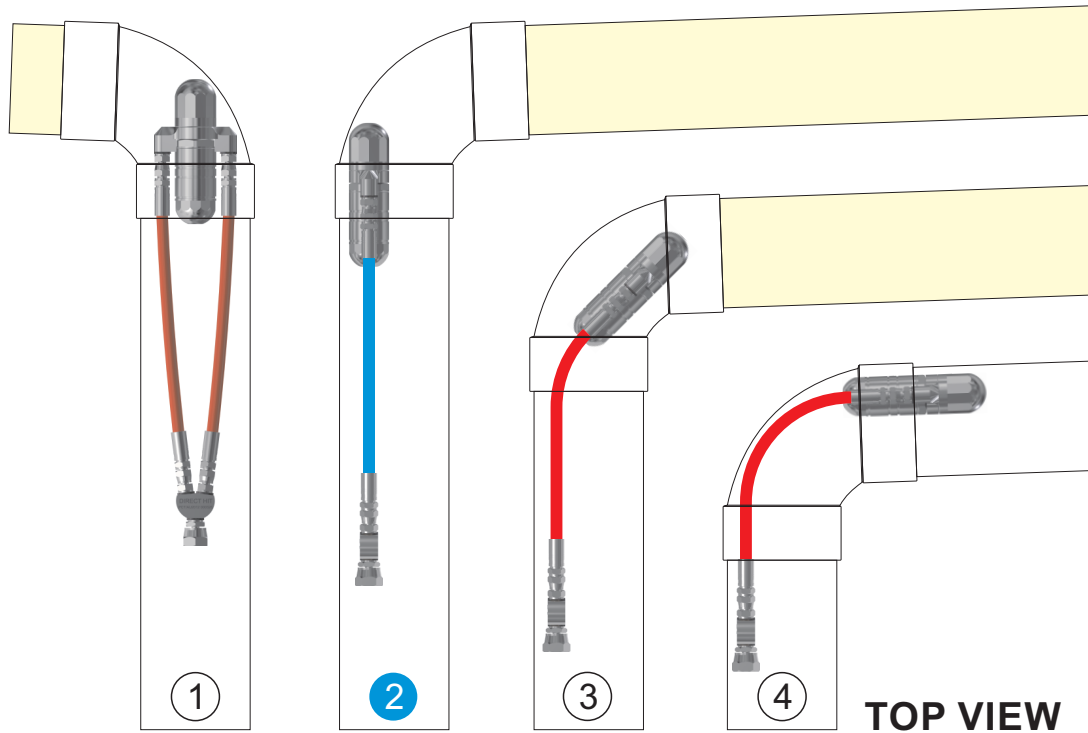


**DC38 (C X B) front cap to back turbo nozzle down a 100 mm (4") PVC pipe shaft.**

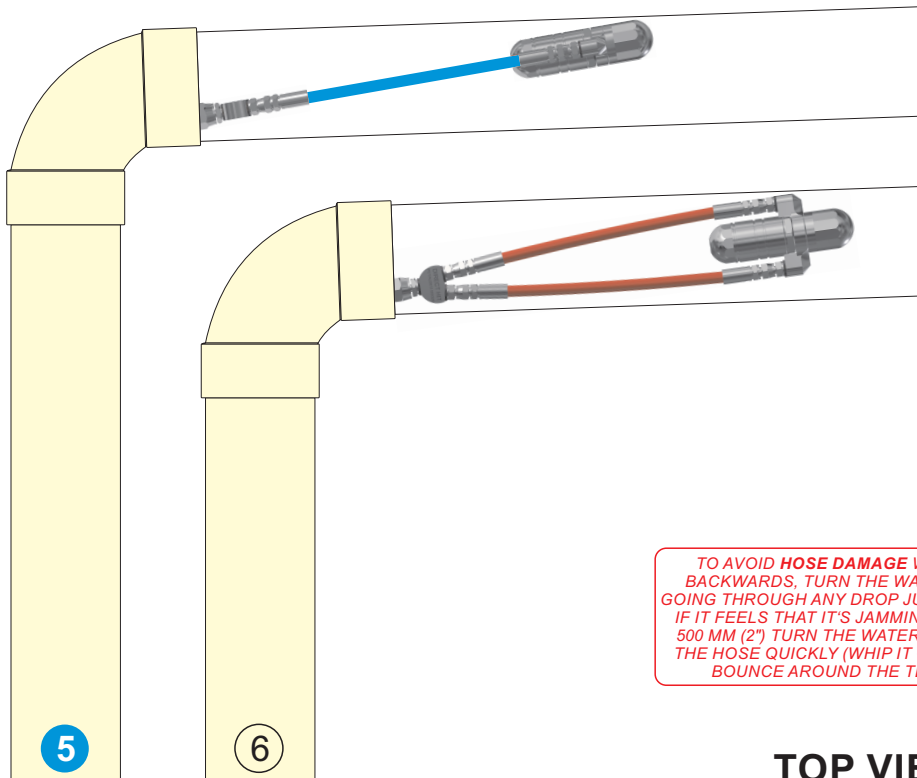


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Either up or down stream when you hit a 100 - 150 mm (4 - 6") bend, it may stop. Pull back the hose 100 mm (4") approximately, **then twist the hose left or right (2)** to go around. Repeat this action when you bring the assembly back around the bend.



Once around the bend the assembly will return to its position on the bottom (5).

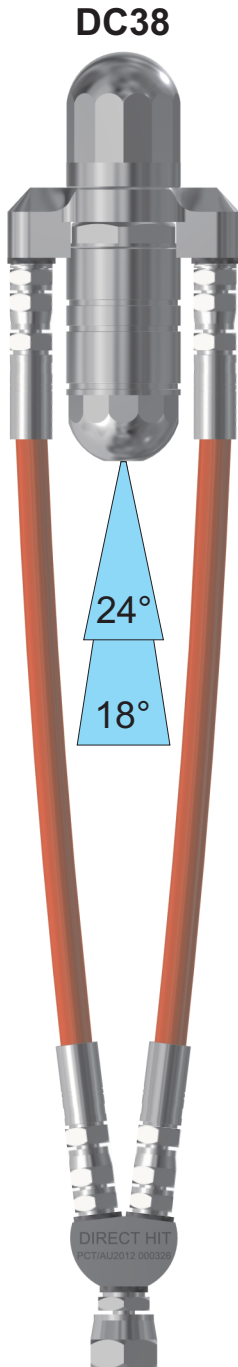


TO AVOID HOSE DAMAGE WHEN JETTING BACKWARDS, TURN THE WATER OFF, WHEN GOING THROUGH ANY DROP JUNCTION OR BEND. IF IT FEELS THAT IT'S JAMMING, GO FORWARD 500 MM (2") TURN THE WATER OFF, THEN PULL THE HOSE QUICKLY (WHIP IT OUT) AND IT WILL BOUNCE AROUND THE TEE OR BEND.

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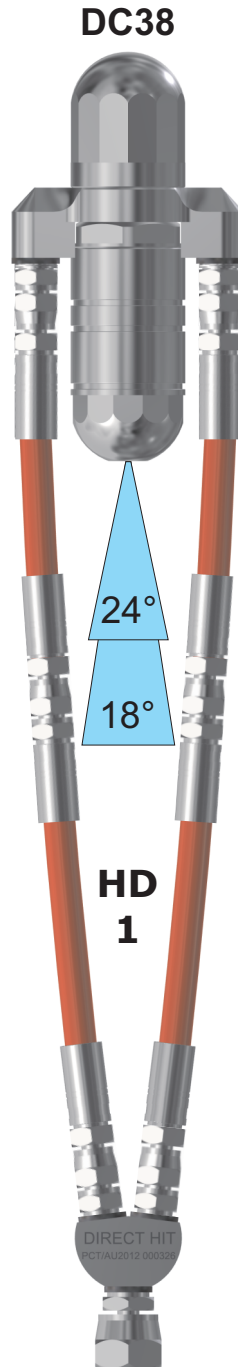
# DC38 and DC43 Heavy Duty Hose Assemblies

Two x One piece  
PTFE Braided Hose



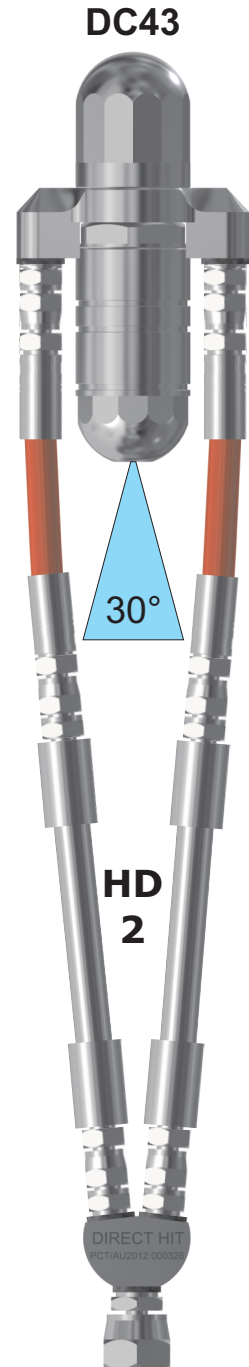
Very flexible works in  
90° 4" bends  
PTFE or Thermoplastic hose  
only for Dc38\*  
5K Psi

Two x Two piece  
Thermoplastic Hose

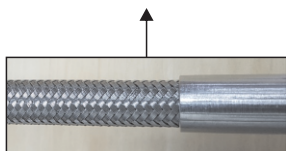


HD 1 flexible works in  
90° 4" bends  
Thermoplastic hose  
Dc38 + Dc43  
5K Psi

Two x Two piece  
Thermoplastic Hose and SS pipe



HD 2 not flexible  
manhole to manhole  
Thermoplastic hose with ss pipes  
Dc38 + Dc43  
5K Psi

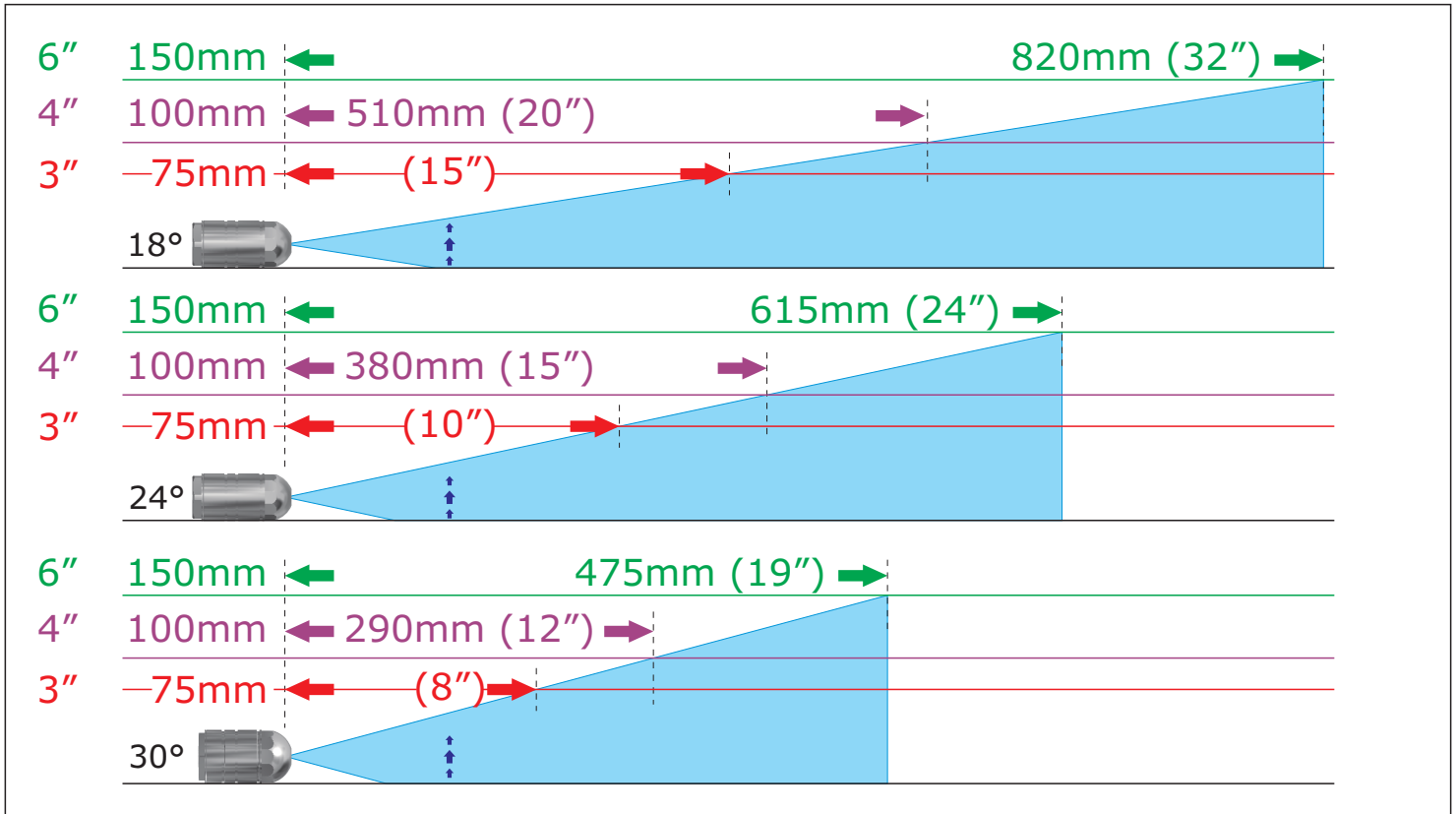


\*Note: Hoses can be  
Thermoplastic (red hose)  
or  
PTFE SS Braided

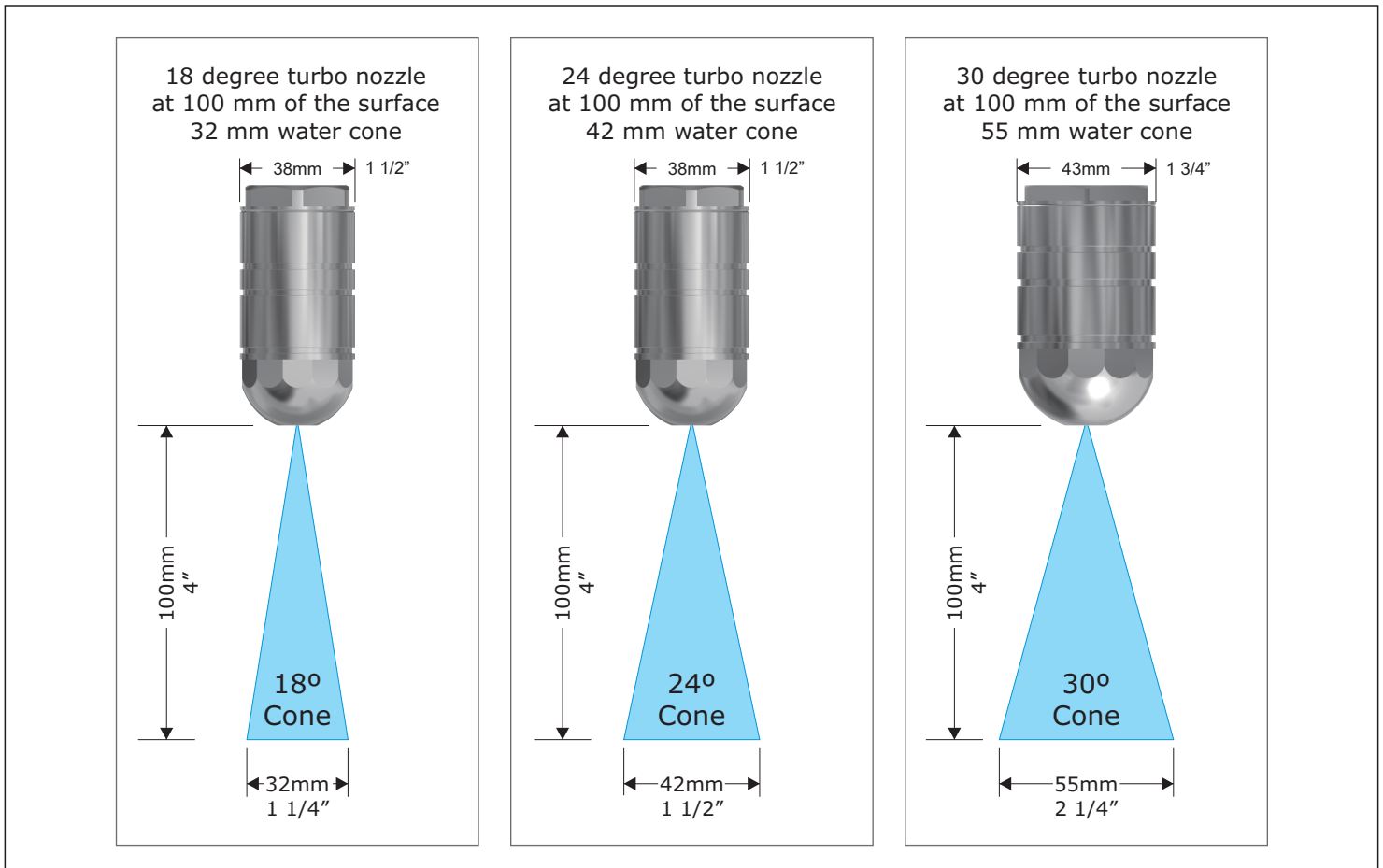


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# 18°, 24°, 30° turbo nozzles, in 100mm (4") & 150mm (6")



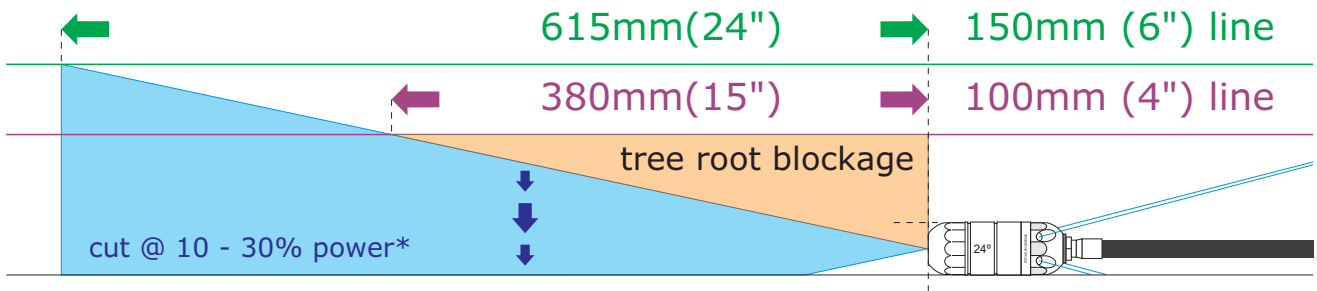
## 18°, 24° and 30° SS Turbo Nozzles



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# Penetrate and cut forward with a C38rs

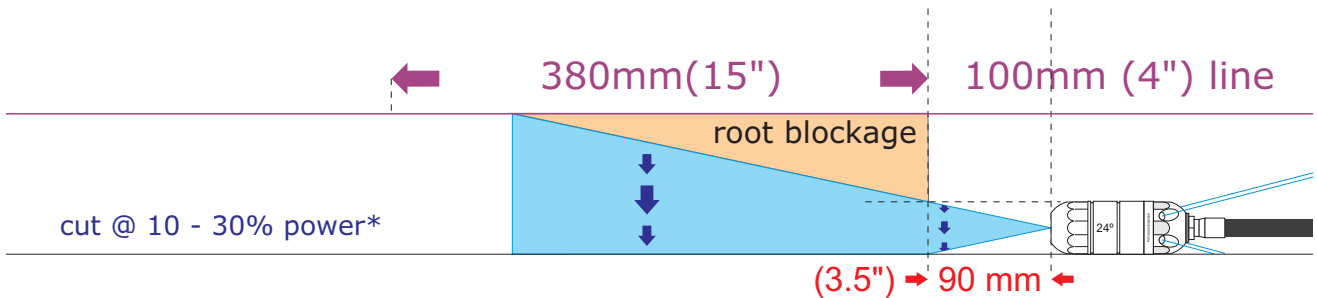
The **C38rs** hits the blockage with its 24° front turbo nozzle.



← C38rs traveling this way hits the blockage

1

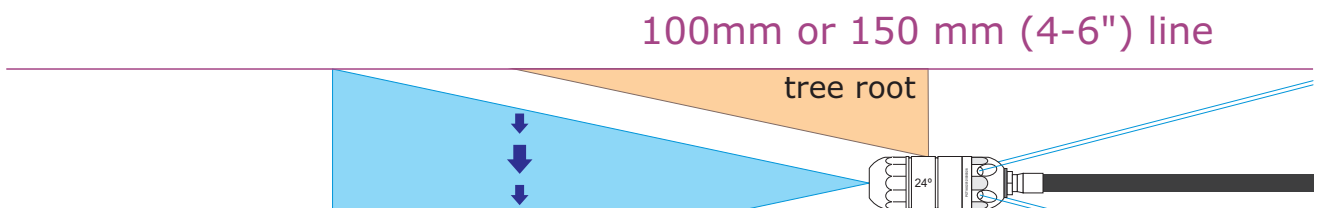
Pull back and forward 90 mm the **C38rs** from the hit position & cut through



← turn the water on and move forward and back 90 mm →

2

The **C38rs** cuts through the blockage.



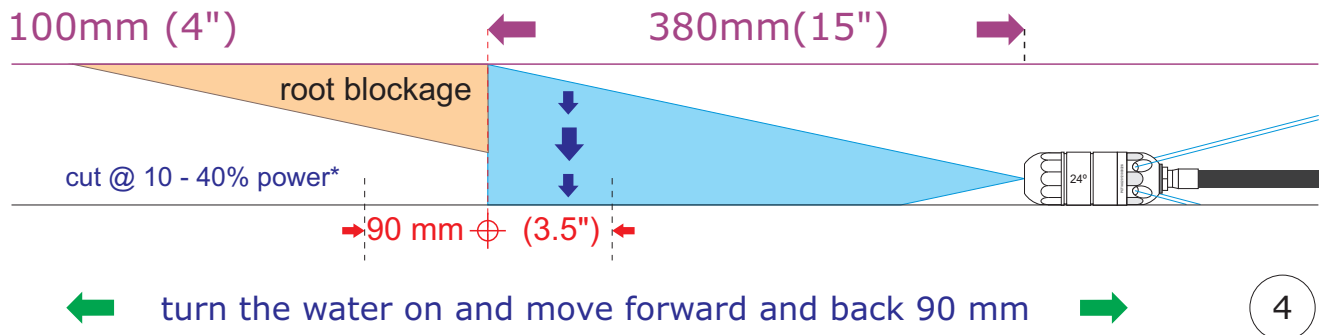
← C38rs is through the blockage

3

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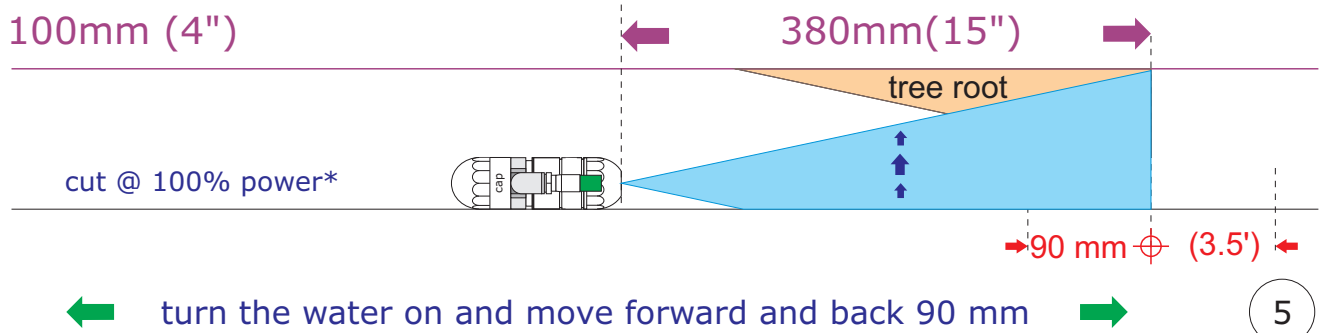
# Forward or back cutting with a C38rs and DC38

Move your **C38rs** 380 mm from the hit position, move forward and back 90 mm to cut the remaining roots.

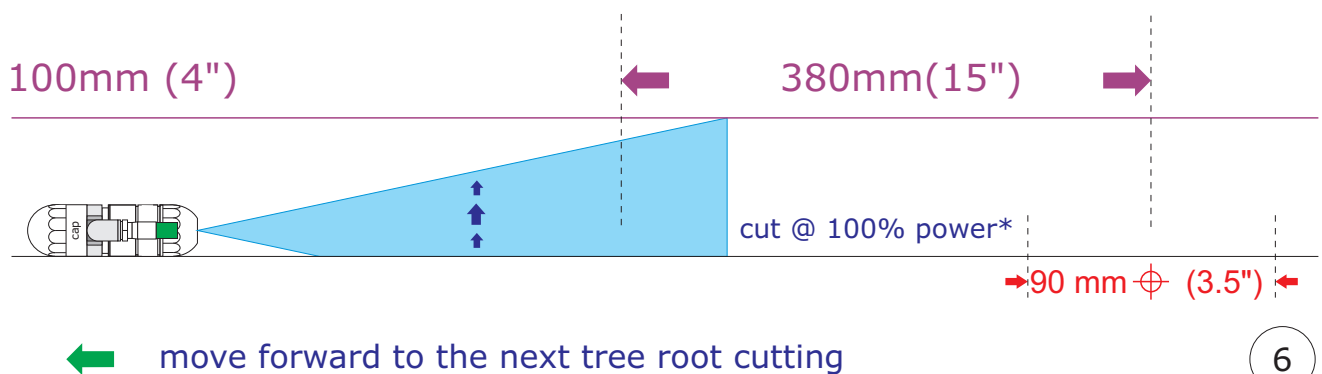


## Using a DC38

You CCTV the line and find big roots still not cut. Use the DC38 to cut the remaining roots. Move your **DC38** forward from the hit position 380 mm.



The **DC38** cuts through the blockage.

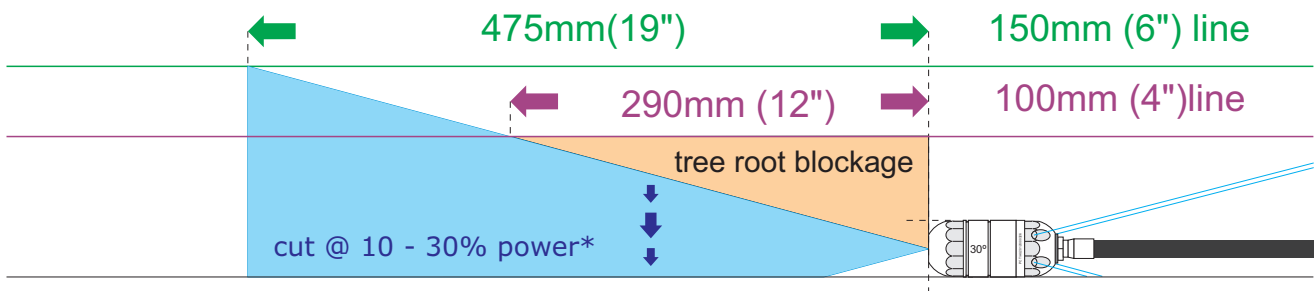


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# Penetrate and cut forward with a C43rs

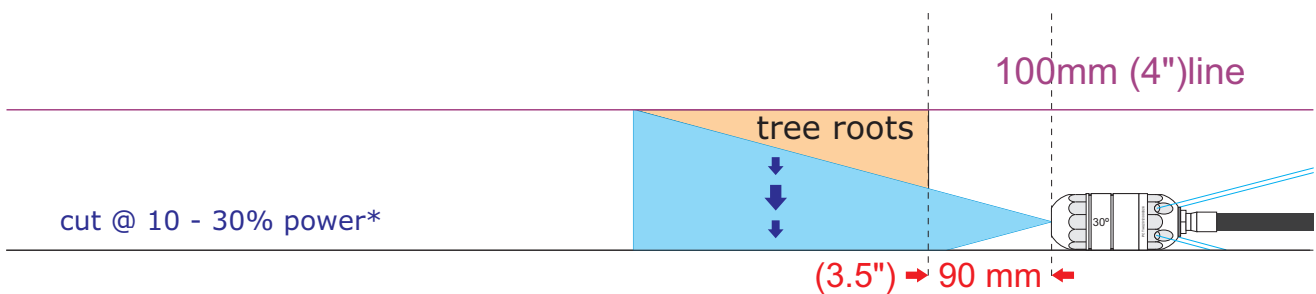
**C43rs** hits the blockage with its 30°turbo nozzle.



← **C43rs** traveling this way hits the blockage

1

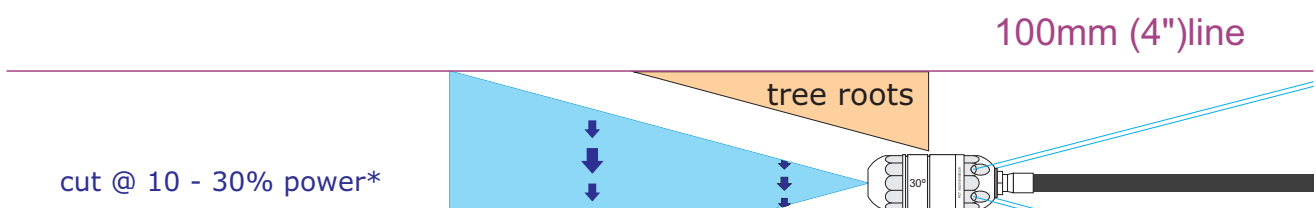
Pull the **C43rs** back and forward 90 mm from the position until it cuts through the blockage



← turn the water on and move forward and back 90 mm →

2

The **C43rs** cuts through the blockage.



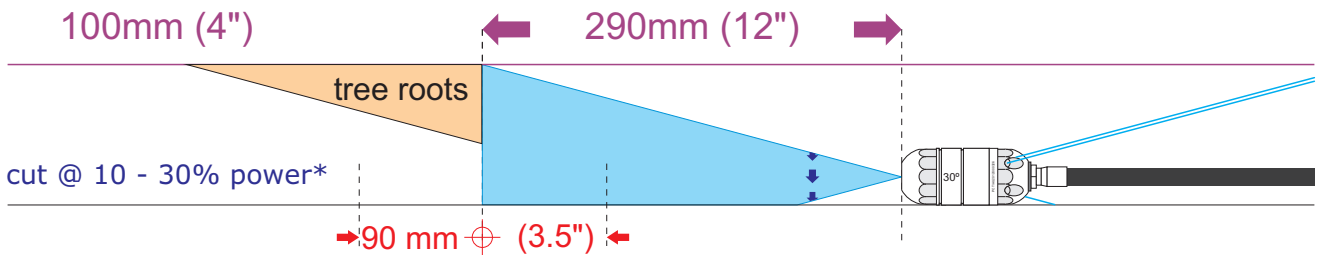
← **C43rs** is through the blockage

3

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# Forward or back cutting with a C43rs and DC43

Move your **C43rs** 230 mm from the hit position, move forward and back 90 mm to cut the remaining roots.

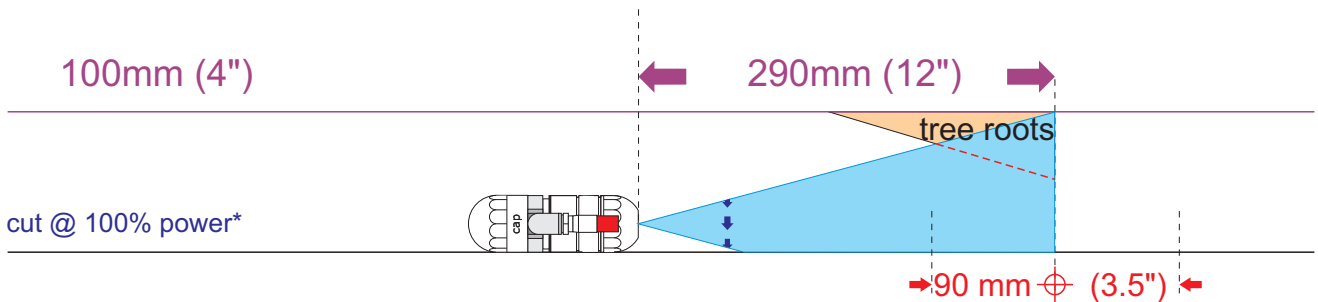


← turn the water on and move forward and back 90 mm

4

## Using a DC43

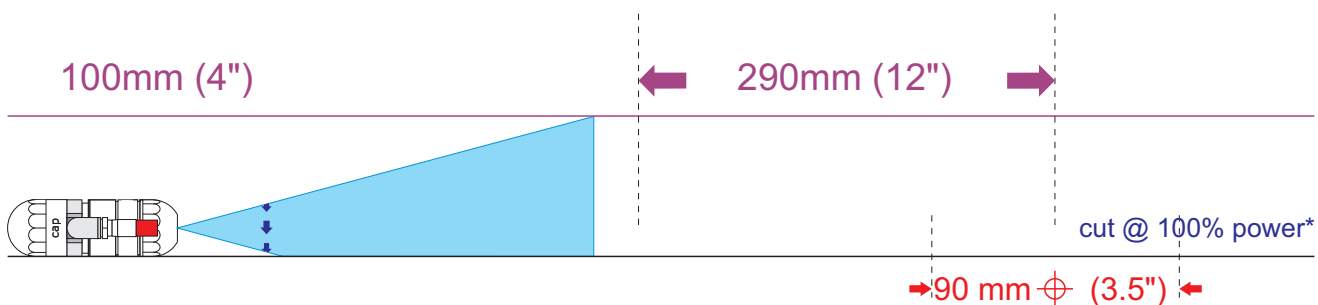
You CCTV the line and find big roots still not cut. Use the DC43 to cut the remaining roots. Move your **DC43** forward from the hit position 230 mm.



← turn the water on and move forward and back 90 mm

5

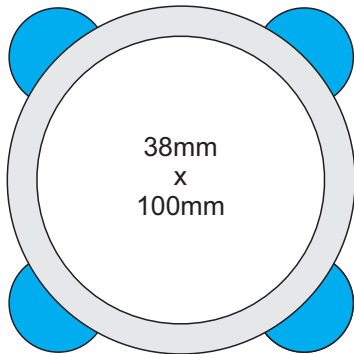
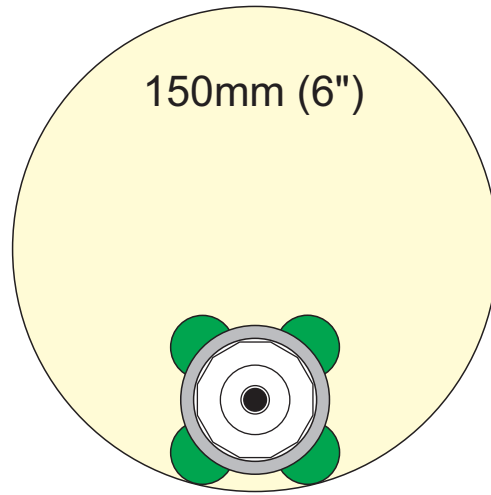
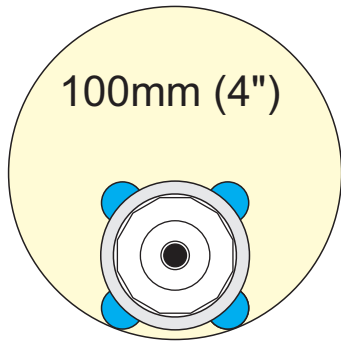
The **DC43** cuts through the blockage.



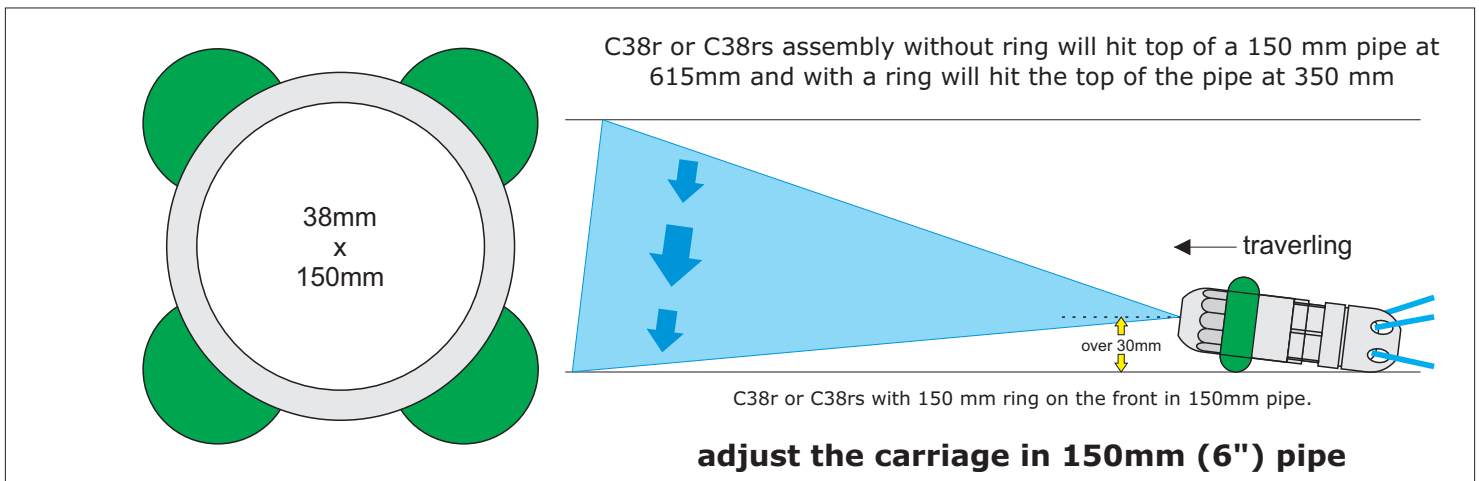
← move forward to the next tree root cutting

6

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## 38mm Aluminum rings for front turbo nozzle

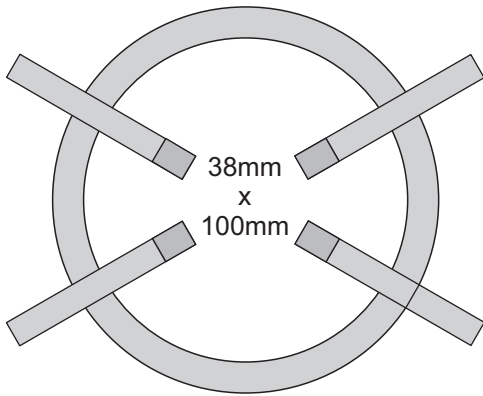
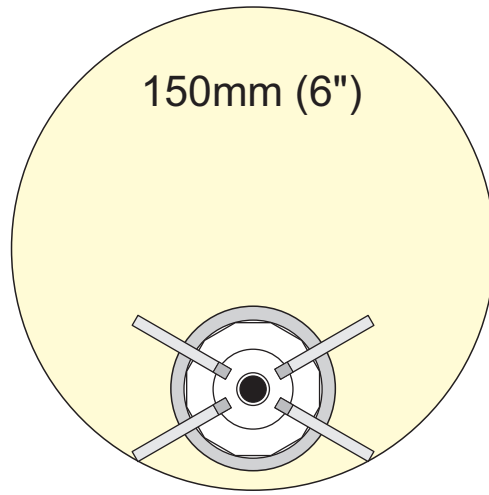
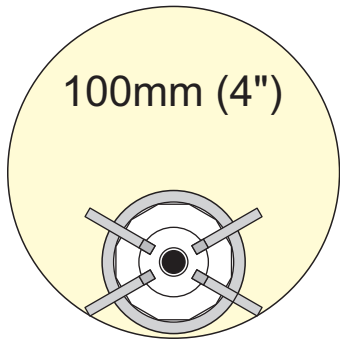


### Benefits:

1. Finishing tool for cutting difficult roots, cleaning fat or mineral deposits on the wall of the pipe
2. It can cut roots around a bend or drop into the bottom bend of a shaft and cut through
3. Can unblock a partially collapsed:
  - a. pipes or pipe at the shaft
  - b. main bend on main junction
4. 150mm (6") ring can go through a 100mm (4") pipe.

Note:  
Due to the angle of the turbo jet as shown on the drawing above, using the 150mm (6") ring the assembly will be 30 mm (1 1/4) higher from the bottom and the top angle of the water jet.

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## 43mm Stainless Steel Rings for front or back turbo nozzles

Dc43 assembly without ring will hit top of a 150 mm pipe at 475mm and with a ring will hit the top of the pipe at 240 mm

Dc43 with SS 150mm ring in a 150mm line with a 30° Back turbo nozzle.

**adjust the carriage in 150mm (6") pipe**

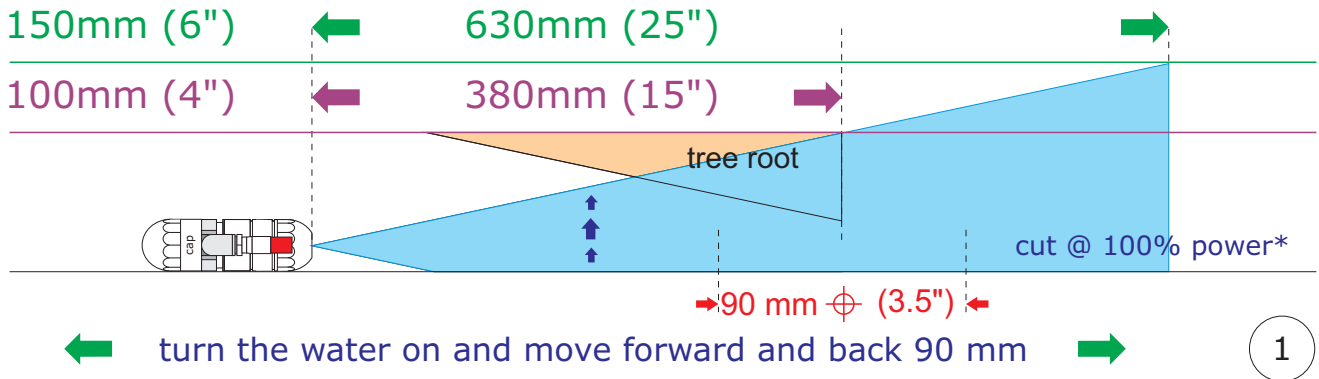
### Benefits:

1. Finishing tool for cutting difficult roots, cleaning fat or mineral deposits on the wall of the pipe
2. It can cut roots around a bend or drop into the bottom bend of a shaft and cut through
3. a 150mm (6") ring can **NOT** go through a 100mm (4") pipe.

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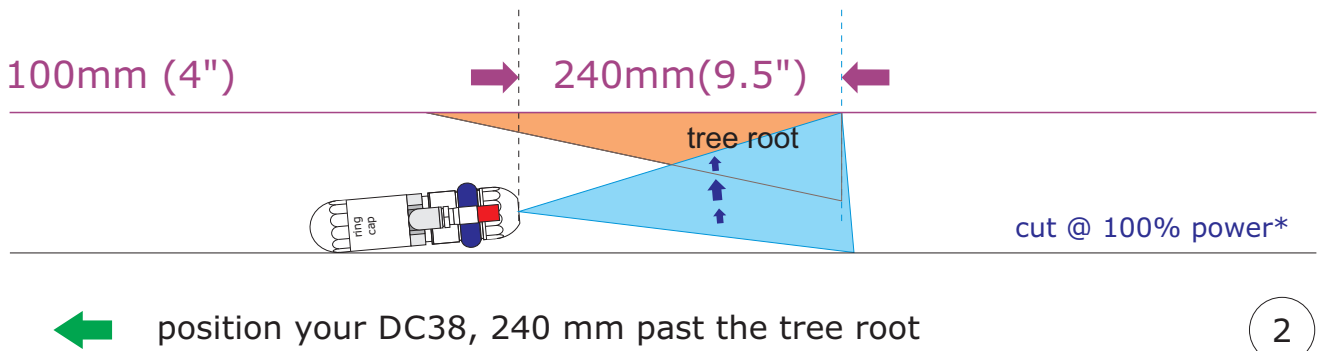
## Forward or back cutting with the DC38

You CCTV the line and find big roots still not cut. Use the DC38 to cut the remaining roots. Move your **DC38** forward from the hit position 380 mm.

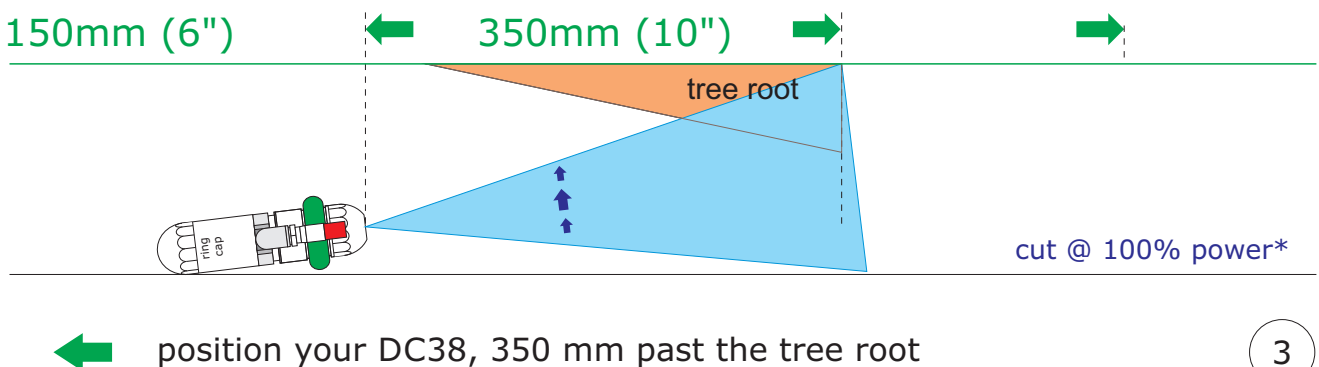


## Forward or back cutting with rings on the DC38

How does a the **DC38** work with a **100 mm (4")** ring



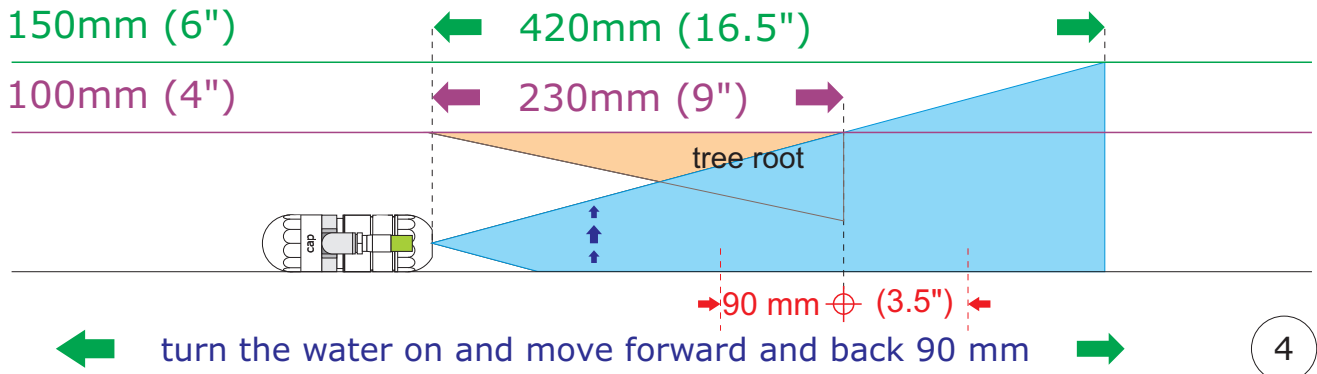
How does a the **DC38** work with a **150 mm (6")** ring



Because we are continuously improving our products and services, Direct Hit reserves the right to change the specifications and prices without prior notice.

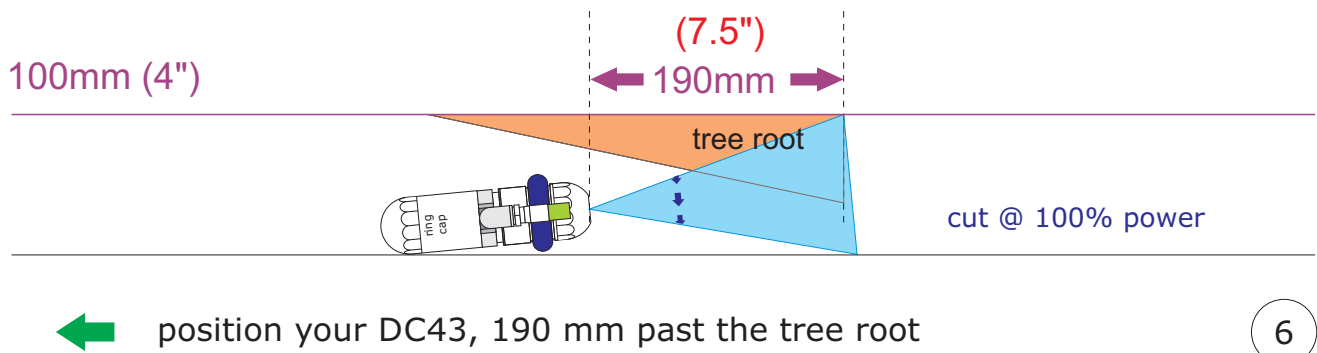
## Forward or back cutting with the DC43

You CCTV the line and find big roots still not cut. Use the DC38 to cut the remaining roots. Move your **DC43** forward from the hit position 380 mm.

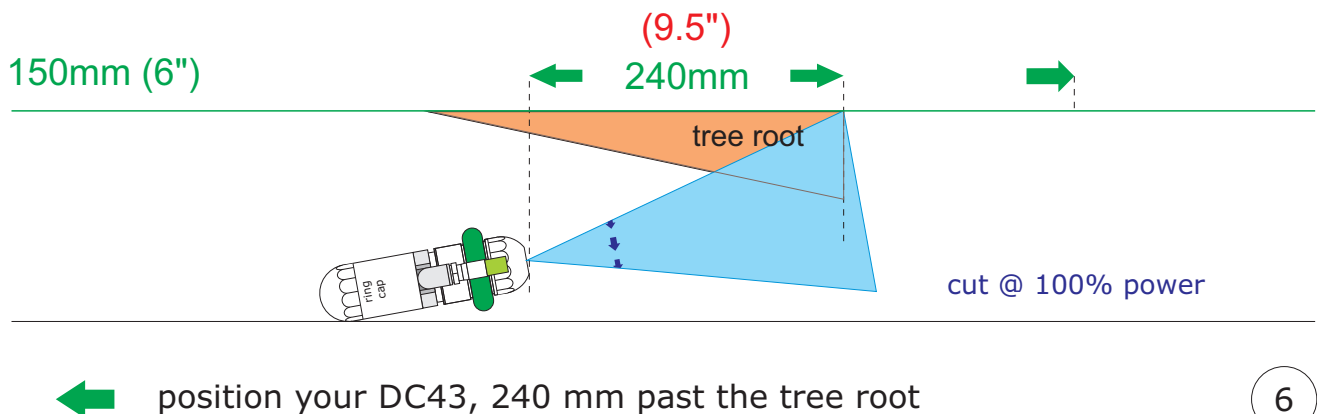


## Forward or back cutting with rings on the DC43

How does a the **DC43** work with a **100 mm (4")** ring



How does a the **DC43** work with a **150 mm (6")** ring



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## **How to:**

Hydro Excavate

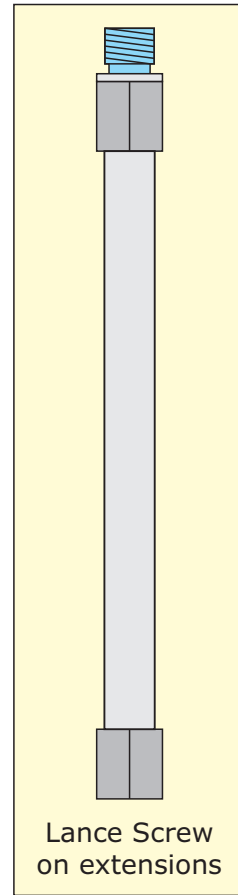
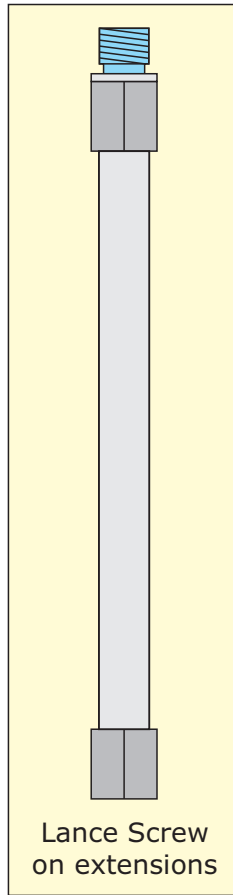
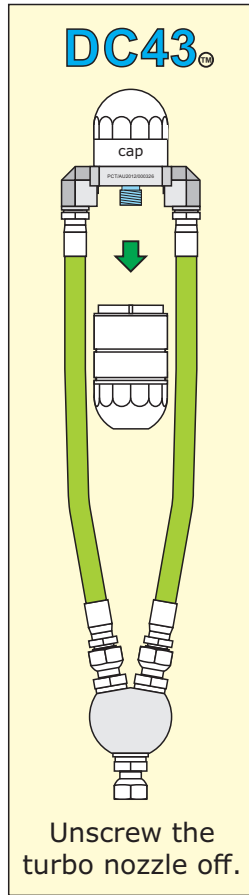
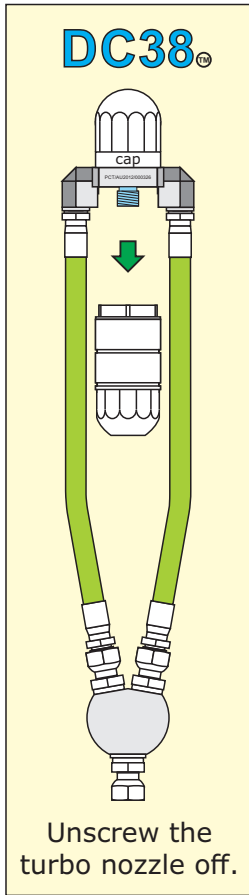
Surface Clean

Change the Laminar Flow

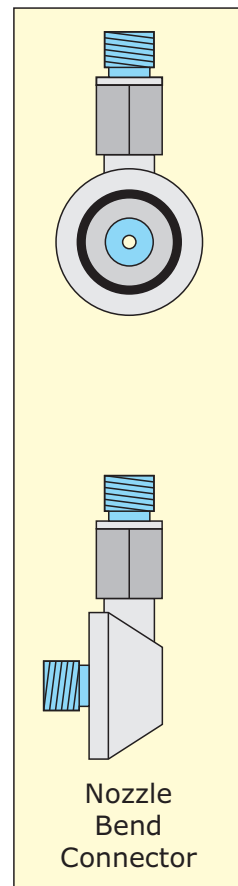
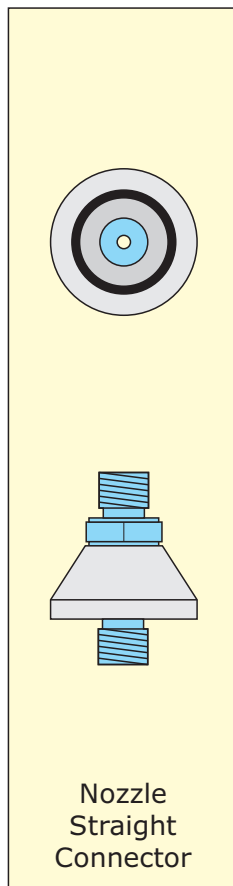
Replace a repair kit

## **Tips and Accessories.**

# Use the turbo nozzle from your DC38 or DC43, surface clean, cut roots or hydro excavate.

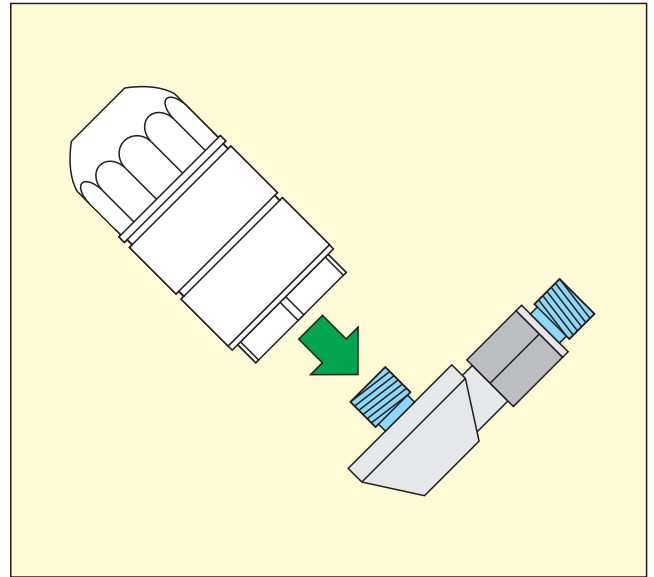
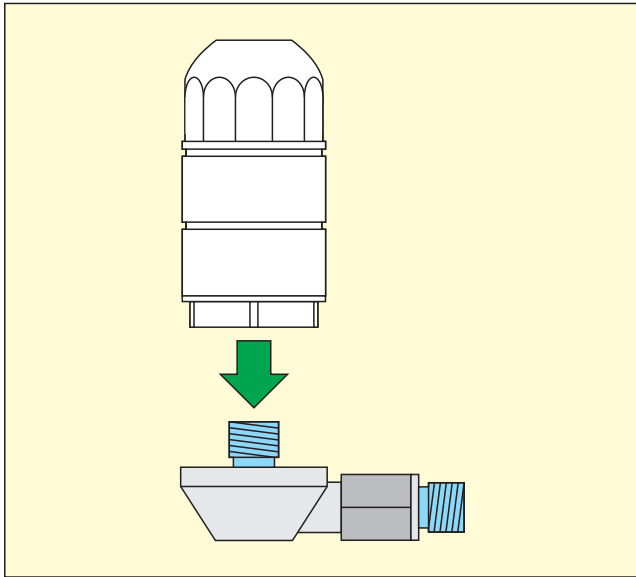


1. Unscrew the turbo nozzle from your Dc38 or Dc43
2. Get your gun, add the amount of lance extensions you need
3. Screw on the nozzle to your lance
4. Surface clean
5. Hydro excavate
6. Cut roots and clean pits.



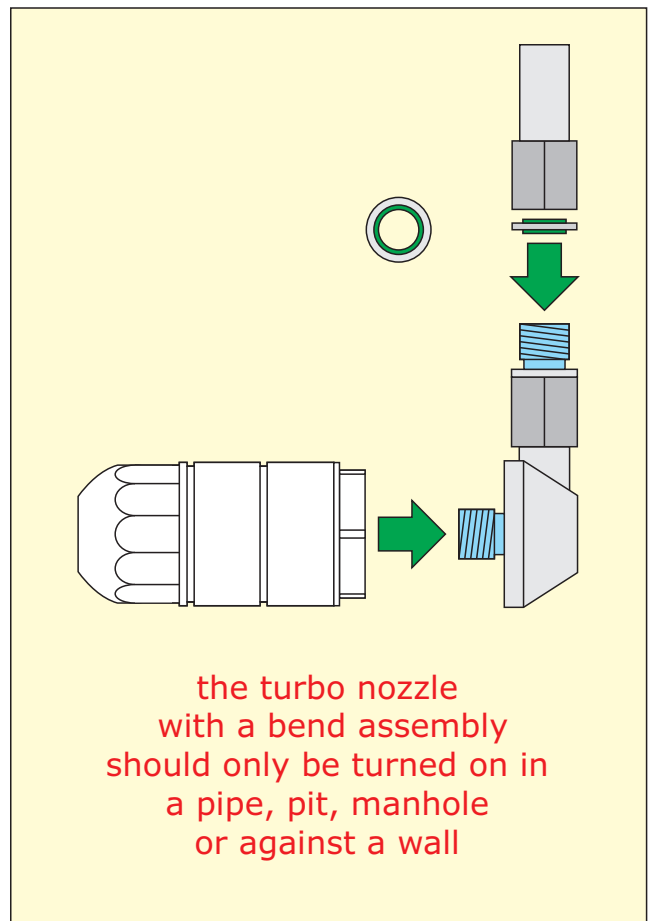
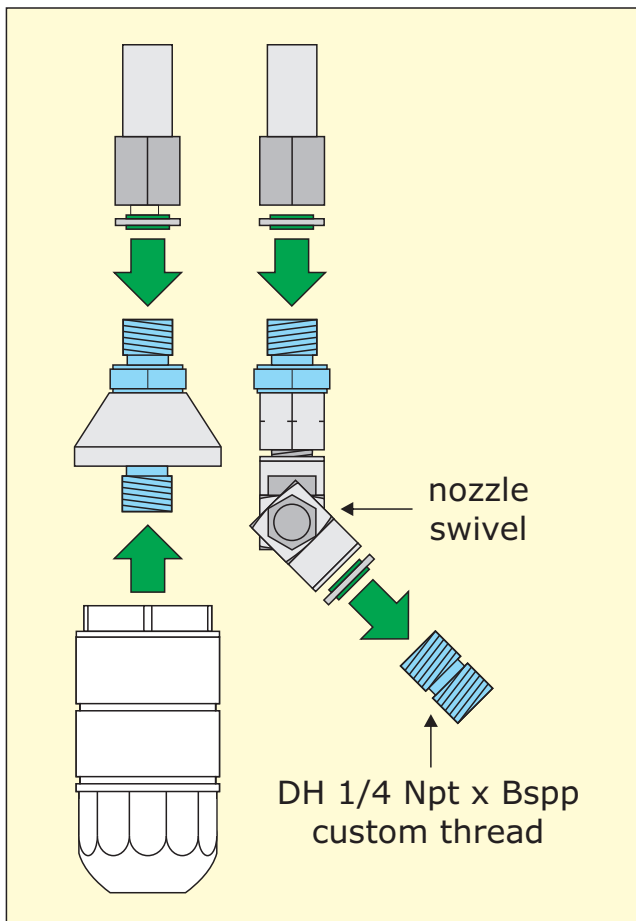


## Connect a 38mm or 43 mm turbo nozzle to your lance.



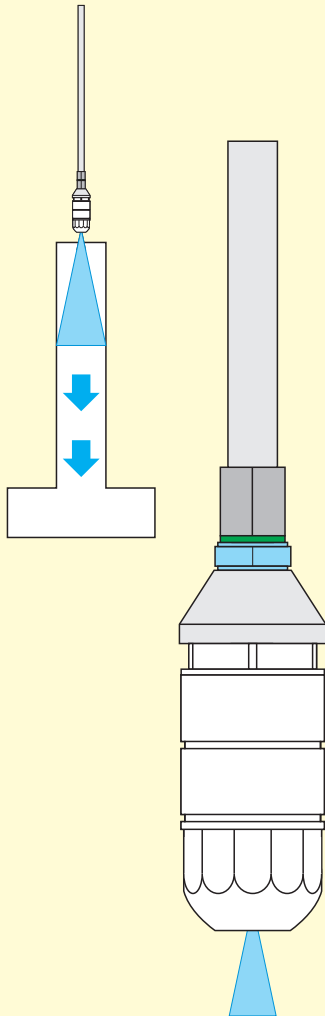
**Screw on a 38 or 43 mm turbo nozzle to the 90° nozzle connector or to a nozzle swivel, screw it on to the lance & cut roots inside the pipe, pit and manhole only.**

**Screw on a 38 or 43 mm nozzle to the straight nozzle connector, screw it on to the lance cut roots in shafts, hydro excavate or clean surfaces.**

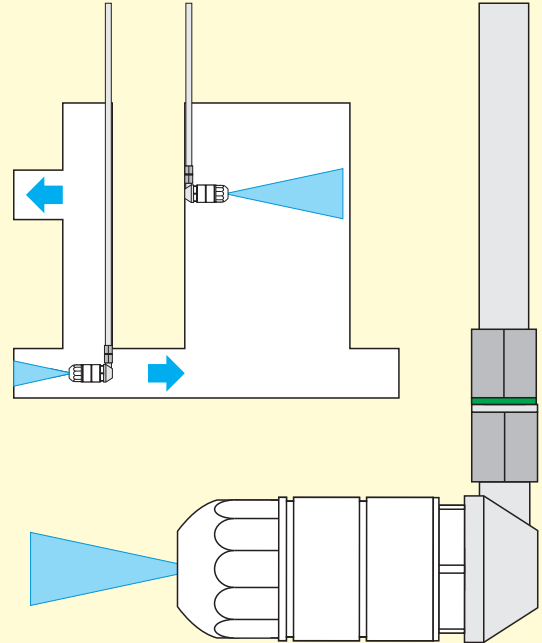


## Cut roots in - up - down a shafts, pits and manholes

**Stage one: Enter the 100 mm (4") shaft and cut roots vertically**

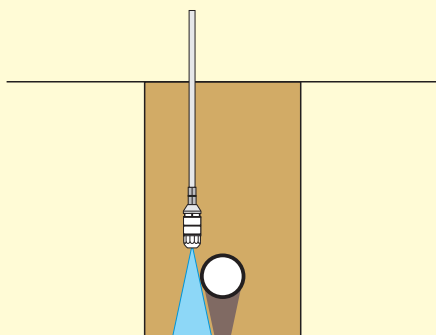


**Stage two: Enter the shaft cut roots horizontally in the square, bottom tee up or down stream, bottom bend, boundary trap, pits etc**

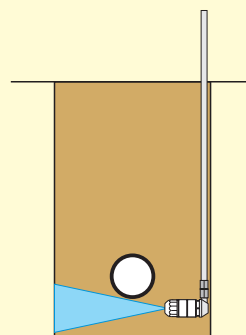


**the turbo nozzle with a bend assembly should only be turn on in a pipe, pit, manhole or against a wall**

## Hydro excavate to locate a pipe or clean a pit



**Hydro excavate the trench**

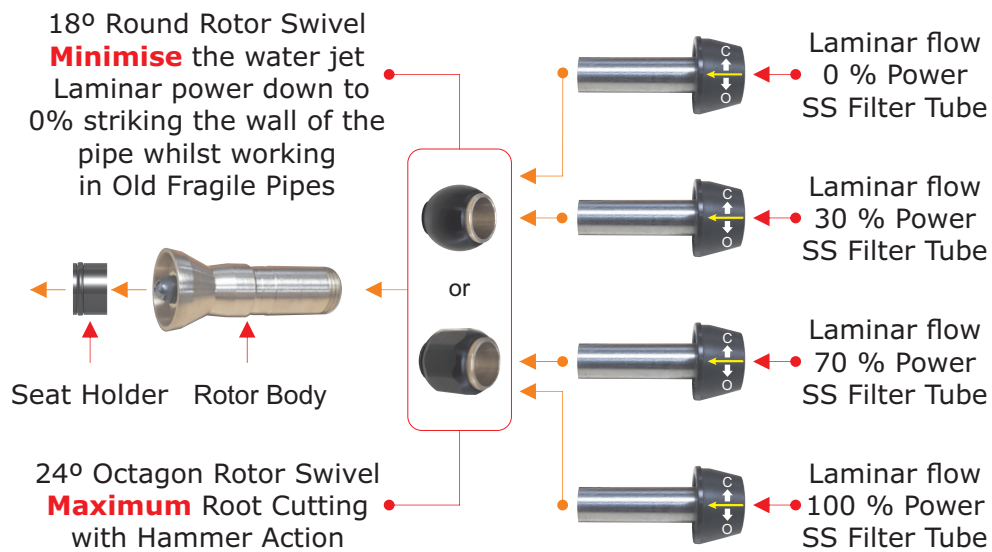


**the turbo nozzle with a bend assembly should only be turned on in a pipe, pit, manhole or against a wall**

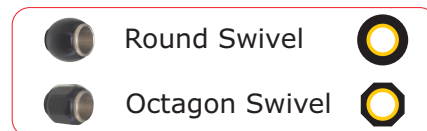
**Hydro excavate under the pipe**

# Direct Hit Dismantlable Rotor for 38mm Modules.

By changing the swivels and Laminar flow SS filter tubes, you can increase or decrease the cutting power of the nozzle, whilst working in old fragile pipes (see page 11).



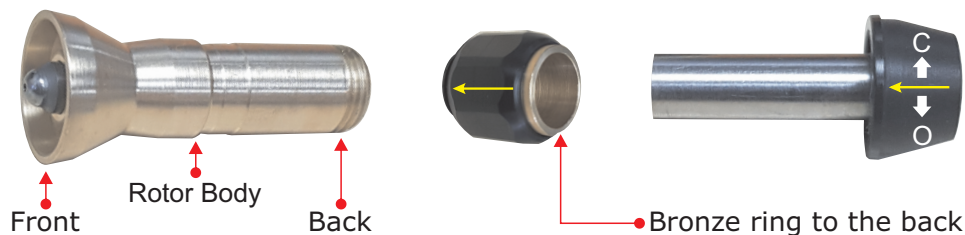
1. **Blocked Rotor.** Un-screw the SS filter tube by hand and dismantle the rotor. Clean the debris blocking the front jet inside the rotor body or a blockage inside the Laminar tubes.
2. Change over the swivel on the rotor and **make it a 18° turbo nozzle** with a round swivel **or a 24° turbo nozzle** with a octagon swivel.
3. **Change the Laminar power** to your nozzle with a choice of 4 screw on inserts from 0%, 30%, 70% and 100% power. All rotors come with a 100% Laminar cutting power SS Filter Tube standard.
4. Individual parts can be purchased.
5. Direct Hit Retrofit Kits available for:  
Reaper 3/8



**Note: Will fit in all previous Direct Hit Products.**

## Warning: How to install the rotor swivel.

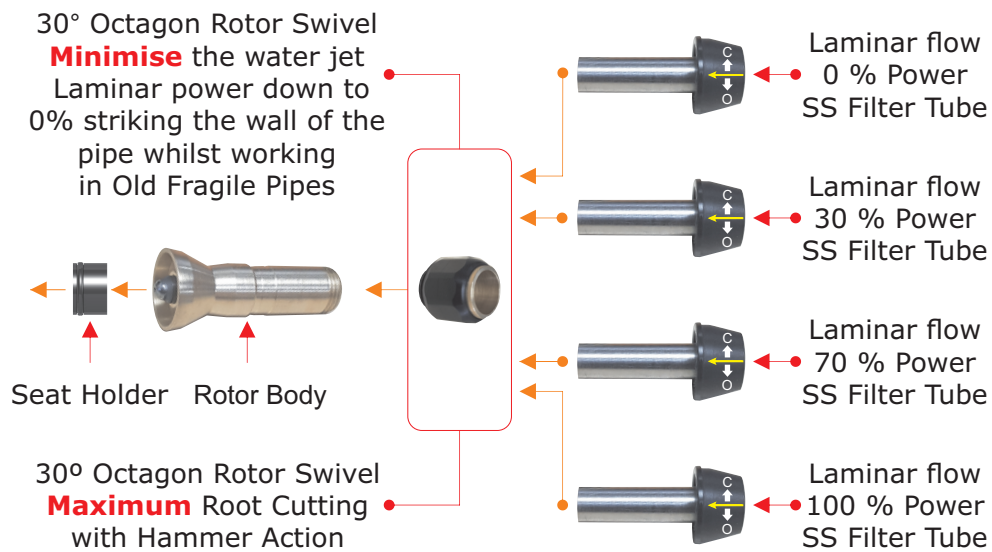
When the rotor body is inserted through the swivel, the bronze ring extruding the swivel, must face towards the back of the rotor body.



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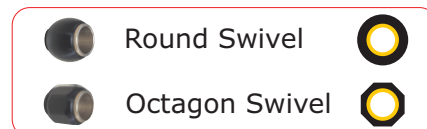
# Direct Hit Dismantlable Rotor for 43mm Modules.

By changing the Laminar flow SS filter tubes, you can increase or decrease the cutting power of the nozzle, whilst working in old fragile pipes (see page 11).



1. **Blocked Rotor.** Un-screw the SS filter tube by hand and dismantle the rotor. Clean the debris blocking the front jet inside the rotor body or a blockage inside the Laminar tubes.
2. **Change the Laminar power** to your nozzle with a choice of 4 screw on inserts from 0%, 30%, 70% and 100% power. All rotors come with a 100% Laminar cutting power SS Filter Tube standard.
3. Individual parts can be purchased.
4. Direct Hit Retrofit Kits available for:

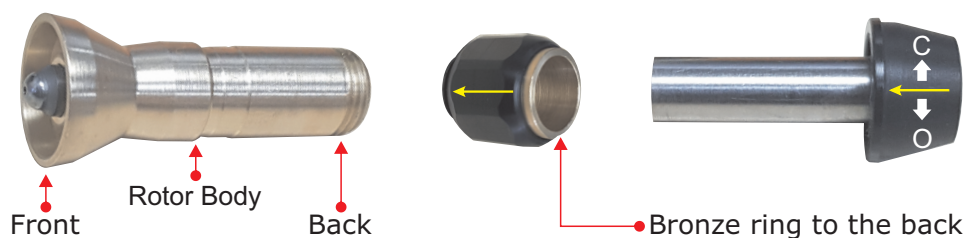
Reaper 1/2



**Note: Will fit in all previous Direct Hit Products.**

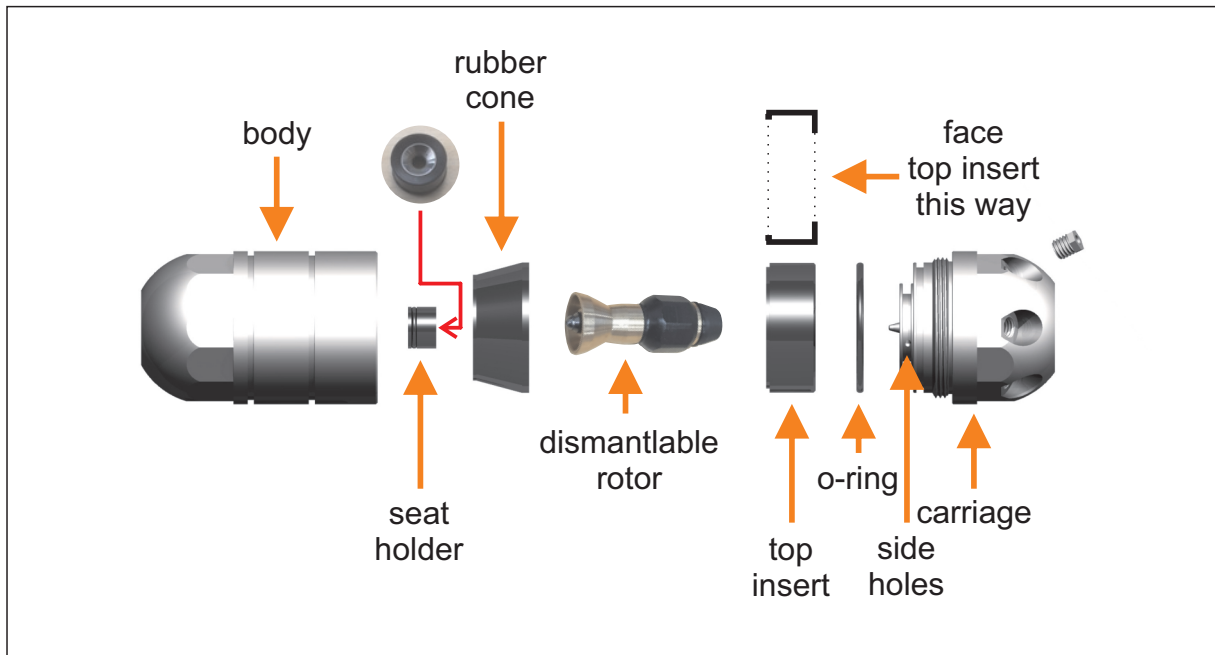
## Warning: How to install the rotor swivel.

When the rotor body is inserted through the swivel, the bronze ring extruding the swivel, must face towards the back of the rotor body.

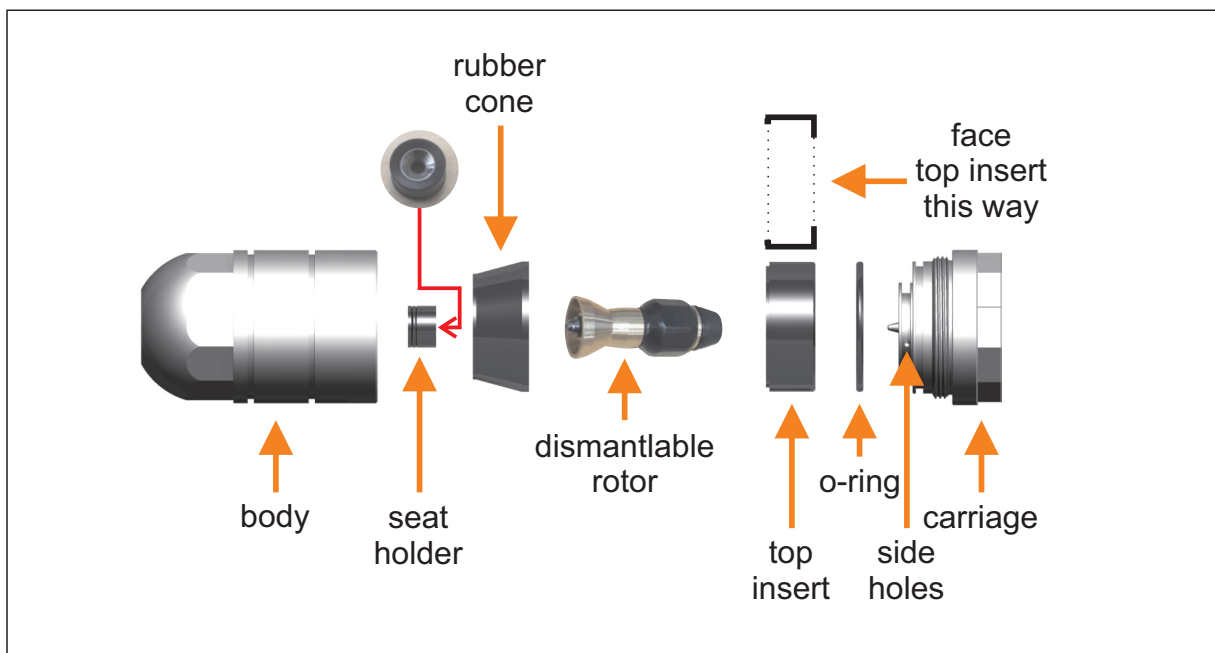


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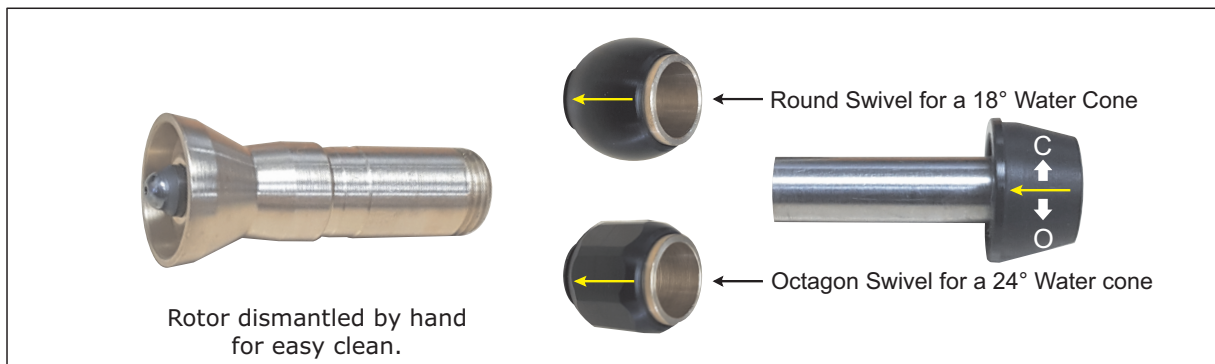
## C38RS (turbo nozzle) assembly



## 38mm (turbo nozzle) assembly

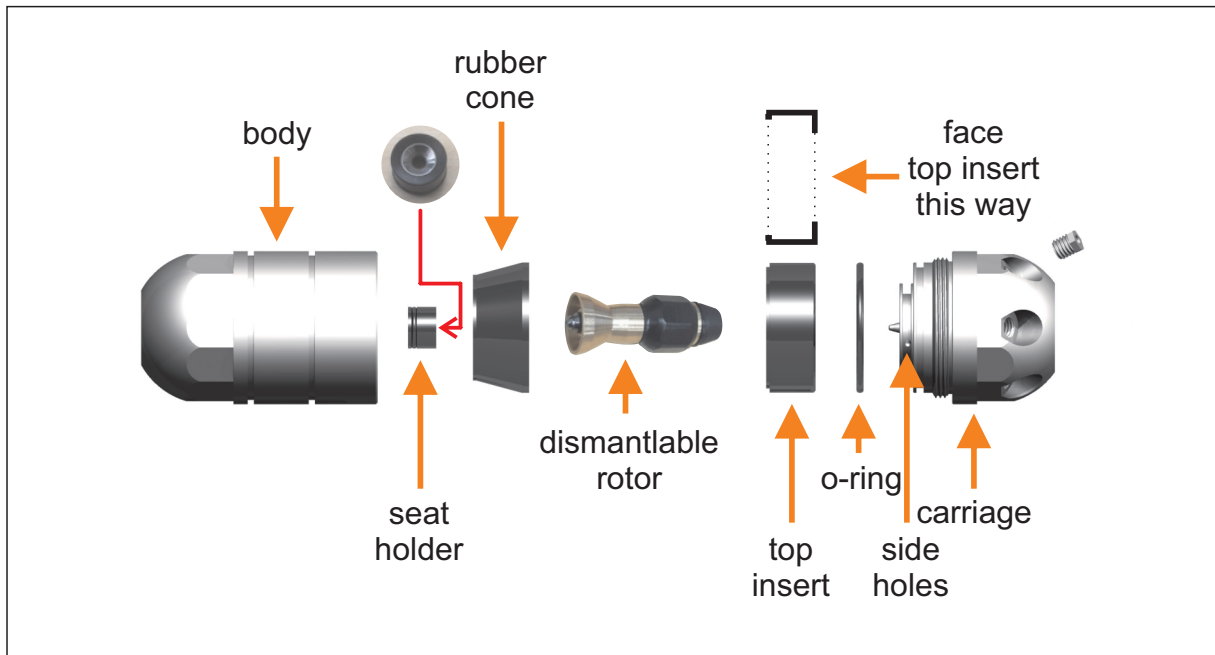


## Change the rotor swivel to have a 18° or 24° 38mm Nozzle

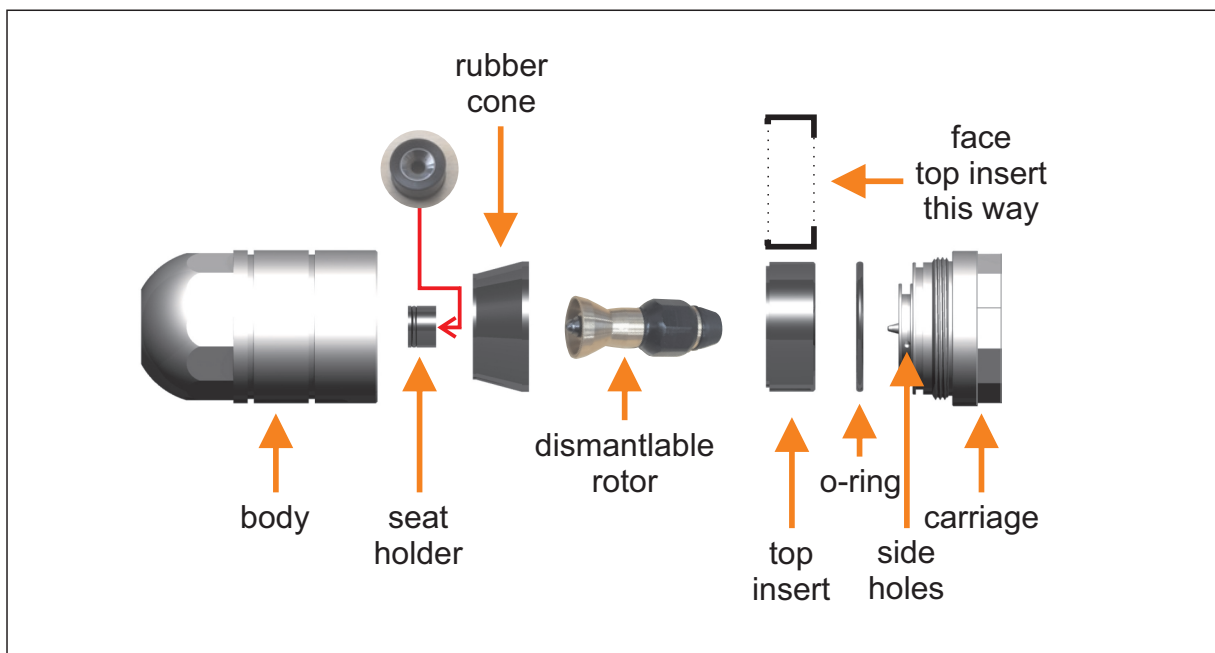


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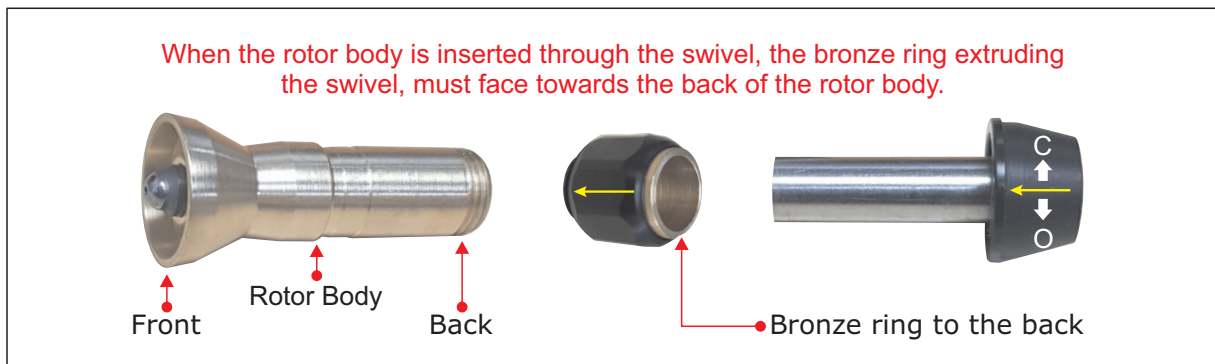
## C43RS (turbo nozzle) assembly



## 43mm (turbo nozzle) assembly

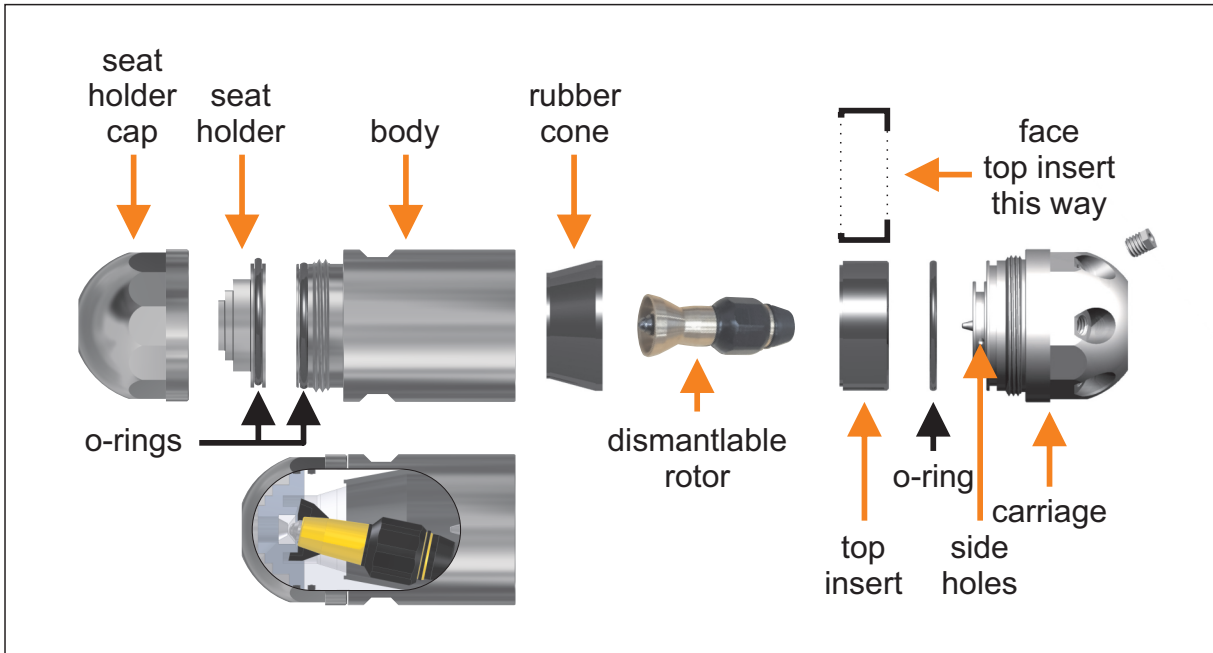


### Warning: How to install the rotor swivel.

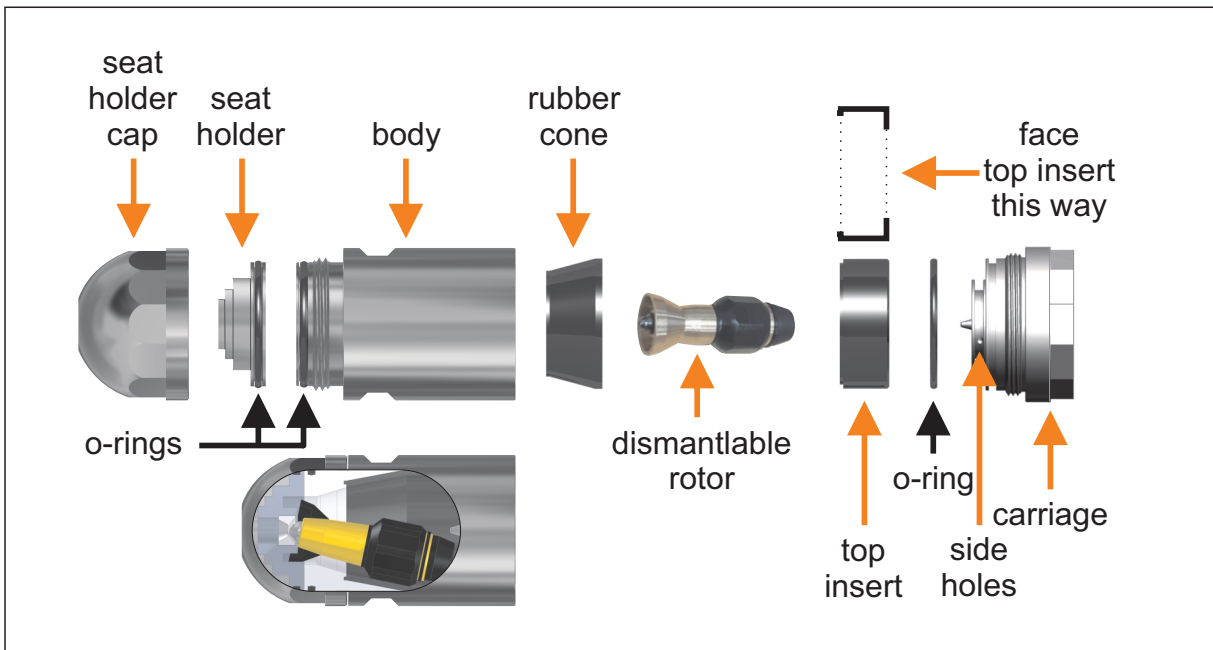


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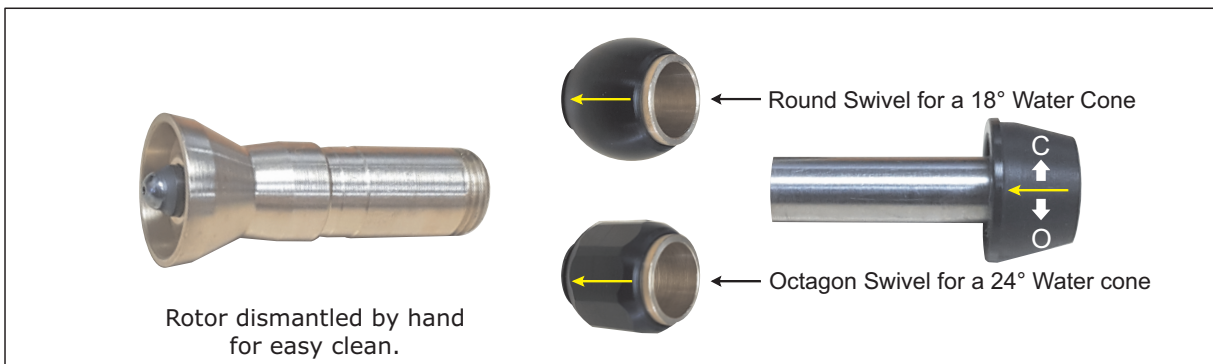
## Heavy Duty C38RS (turbo nozzle) assembly



## Heavy duty 38mm (turbo nozzle) assembly

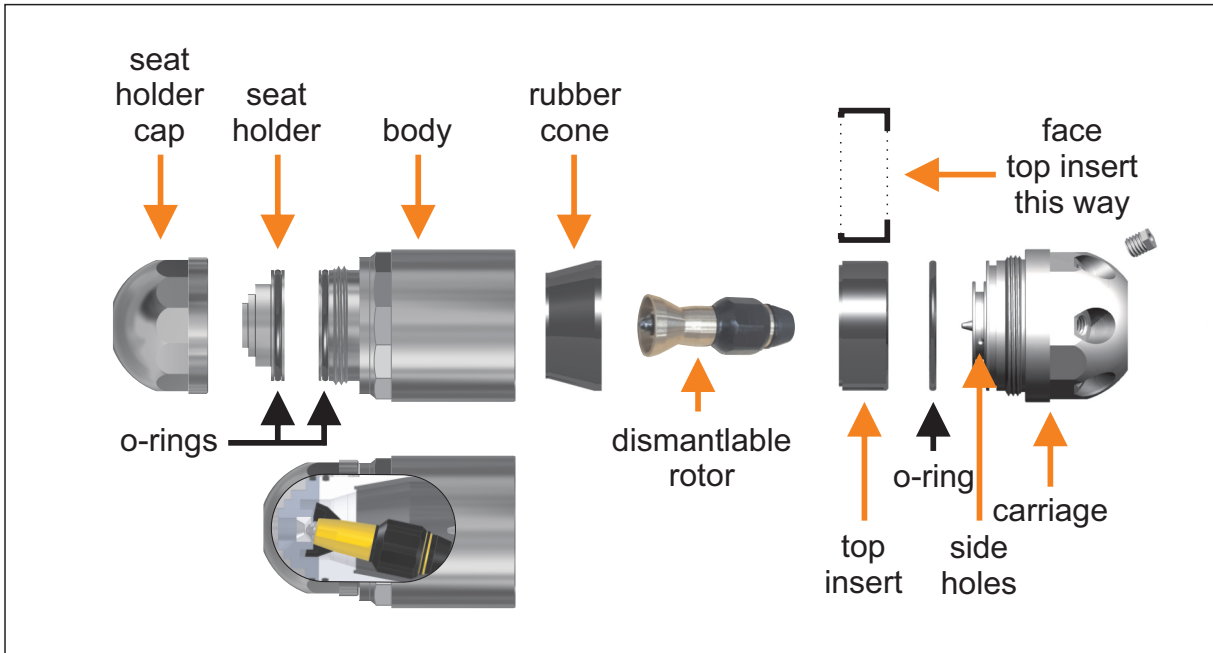


## Change the rotor swivel to have a 18° or 24° 38mm Nozzle

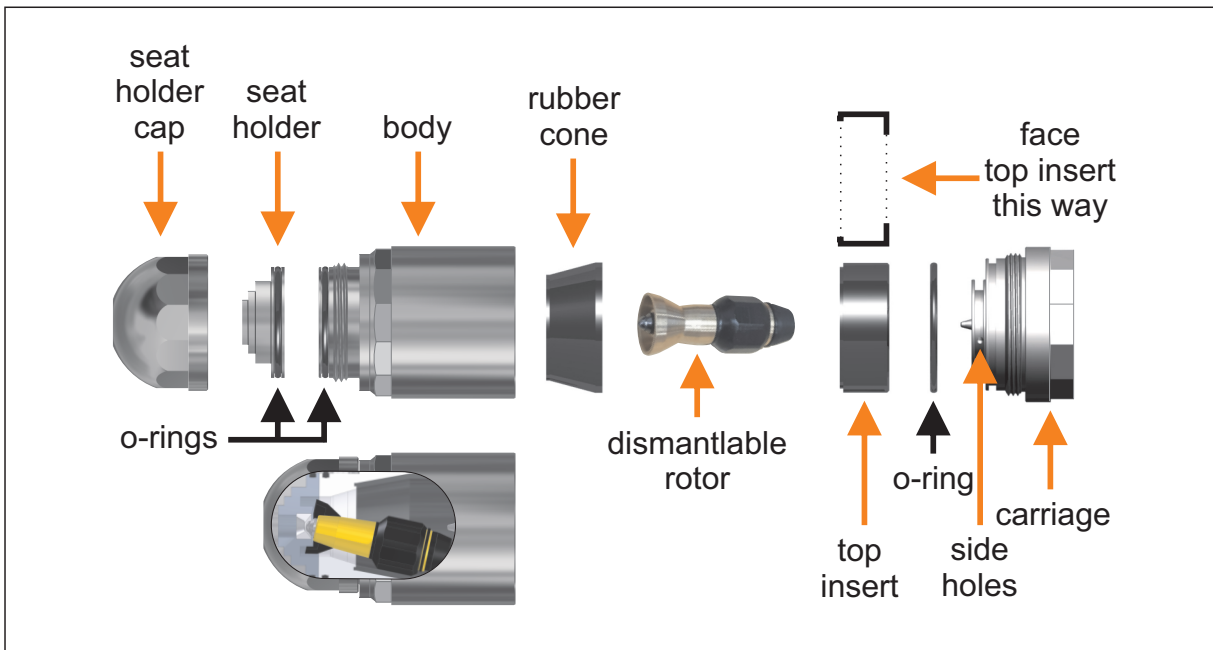


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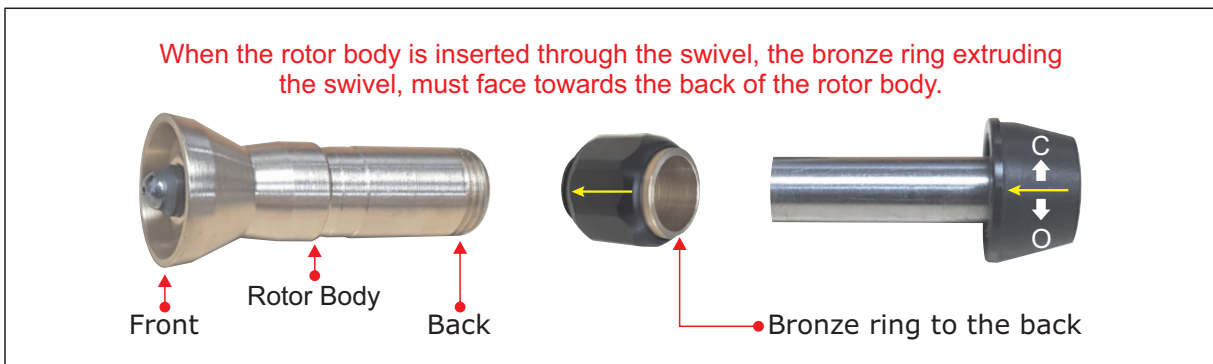
## Heavy Duty C43RS (turbo nozzle) assembly



## Heavy Duty 43mm (turbo nozzle) assembly



### Warning: How to install the rotor swivel.



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# Build your own Direct Hit Assembly Kit!

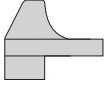
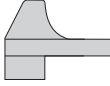





| Item #      | Description                                 |
|-------------|---------------------------------------------|
| C38CARR-C   | C38 Carriage                                |
| C43CARR-C   | C43 Carriage                                |
| RS38CARR-3J | C38rs Carriage includes 3 x M6 Ceramic Jets |
| RSC38CAP    | C38RS Cap                                   |
| RS43CARR-3J | C43rs Carriage includes 3 x M6 Ceramic Jets |
| R38CARR-3J  | C38r Carriage includes 3 x M6 Ceramic Jets  |
| R43CARR-3J  | C43r Carriage includes 3 x M6 Ceramic Jets  |



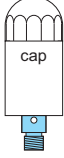



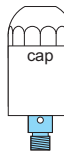
| Item #      | Description                                          |
|-------------|------------------------------------------------------|
| FN38DH      | 38 mm Front 18° or 24° Nozzle includes the connector |
| C38CAP-S    | 38 mm Short Cap includes the connector               |
| C38CAP-RING | 38 mm Ring Cap includes the connector                |
| RST38CAP    | C38RST Cap                                           |
| FN43DH      | 43 mm Front 30° Nozzle includes the connector        |
| C43CAP-S    | 43 mm Short Cap includes the connector               |
| C43CAP-RING | 43 mm Ring Cap includes the connector                |


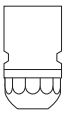



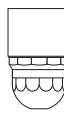

| Item #       | Description                                            |
|--------------|--------------------------------------------------------|
| BN38DH       | 38 mm Back 18° or 24° Turbo Nozzle                     |
| BN38HD-B     | 38 mm Body Heavy Duty Kit Adaptor                      |
| BN38HD       | 38 mm Back 18° or 24° Heavy Duty Turbo Nozzle          |
| RST38-IN-KIT | 38 mm C38RST Thruster Includes 3 x M6 15° Ceramic Jets |
| BN43DH       | 43 mm Front 30° Turbo Nozzle                           |
| BN43HD-B     | 43 mm Body Heavy Duty Kit Adaptor                      |
| BN43HD       | 38 mm Back 30° Heavy Duty Turbo Nozzle                 |

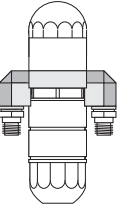
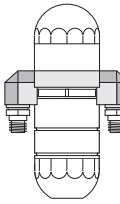

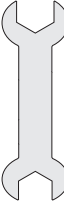


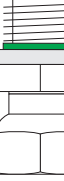
| Item #        | Description                                                                           |
|---------------|---------------------------------------------------------------------------------------|
| DC38-TOP      | Dc38 Top Carriage with Cap and 18° or 24° Nozzle minus the Y Connector and two hoses. |
| DC43-TOP      | Dc43 Top Carriage with Cap and 30° Nozzle minus the Y Connector and two hoses.        |
| DHSRAN-R      | Direct Hit Ring SS Spanner                                                            |
| DHSRAN-0      | Direct Hit Open SS Spanner                                                            |
| ADAPTOR-06x04 | 3/8 Male x 1/4 Female Adaptor Includes Dowty Washer                                   |
| SWIVEL-06     | 3/8 Male x Swivel Connector Includes Dowty Washer                                     |
| SWIVEL-08     | 1/2 male x Swivel Connector Includes Dowty Washer                                     |

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|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>C38</b>                                                                        | <b>C43</b>                                                                        | <b>C38RS</b>                                                                      | <b>C38RS</b>                                                                      | <b>C43RS</b>                                                                       | <b>C38R</b>                                                                         | <b>C43R</b>                                                                         |
|  |  |  |  |  |  |  |
| C38<br>CARRIAGE                                                                   | C43<br>CARRIAGE                                                                   | C38RS EXTRA<br>CARRIAGE<br>INCLUDES 3 x M6<br>CERAMIC JETS                        | C38RS CAP                                                                         | C43RS<br>CARRIAGE<br>WITH 3 x M6<br>CERAMIC JETS                                   | C38R<br>CARRIAGE<br>WITH 3 x M6<br>CERAMIC JETS                                     | C43R<br>CARRIAGE<br>WITH 3 x M6<br>CERAMIC JETS                                     |

|                                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                           |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>38</b>                                                                                       | <b>38</b>                                                                         | <b>38</b>                                                                         | <b>C38RST</b>                                                                     | <b>43</b>                                                                                 | <b>43</b>                                                                           | <b>43</b>                                                                           |
| 18° or 24°<br> |  |  |  | 30°<br> |  |  |
| DH FRONT 19°<br>OR 24° NOZZLE                                                                   | 38 SHORT CAP                                                                      | 38 RING CAP                                                                       | C38RST CAP                                                                        | DH FRONT<br>30° NOZZLE                                                                    | 43 SHORT CAP                                                                        | 43 RING CAP                                                                         |

|                                                                                                   |                                                                                     |                                                                                                   |                                                                                     |                                                                                             |                                                                                       |                                                                                              |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>38</b>                                                                                         | <b>38HD</b>                                                                         | <b>38HD</b>                                                                                       | <b>C38RST</b>                                                                       | <b>43</b>                                                                                   | <b>43HD</b>                                                                           | <b>43HD</b>                                                                                  |
| 18° or 24°<br> |  | 18° or 24°<br> |  | 30°<br> |  | 30°<br> |
| DH BACK 19°<br>OR 24° NOZZLE                                                                      | HEAVY DUTY<br>38MM NOZZLE<br>KIT ADAPTOR                                            | HEAVY DUTY<br>DH BACK 19°<br>OR 24° NOZZLE                                                        | 38 MM<br>THRUSTER<br>INCLUDES 3<br>CERAMIC JETS                                     | DH BACK<br>30° NOZZLE                                                                       | HEAVY DUTY<br>43MM NOZZLE<br>KIT ADAPTOR                                              | HEAVY DUTY<br>DH BACK<br>30° NOZZLE                                                          |

|                                                                                                   |                                                                                            |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>DC38</b>                                                                                       | <b>DC43</b>                                                                                | <b>38 - 43</b>                                                                      | <b>38 - 43</b>                                                                      | <b>06 x 04</b>                                                                       | <b>06</b>                                                                             | <b>08</b>                                                                             |
| 18° or 24°<br> | 30°<br> |  |  |  |  |  |
| DC38 C x B TOP<br>CARRIAGE                                                                        | DC43 C x B TOP<br>CARRIAGE                                                                 | DHSPANR                                                                             | DHSPANO                                                                             | 06 M X 04 F SS<br>ADAPTOR                                                            | 06 SS<br>CONNECTOR                                                                    | 08 SS<br>CONNECTOR                                                                    |

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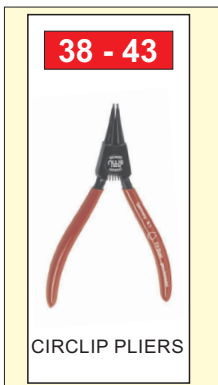
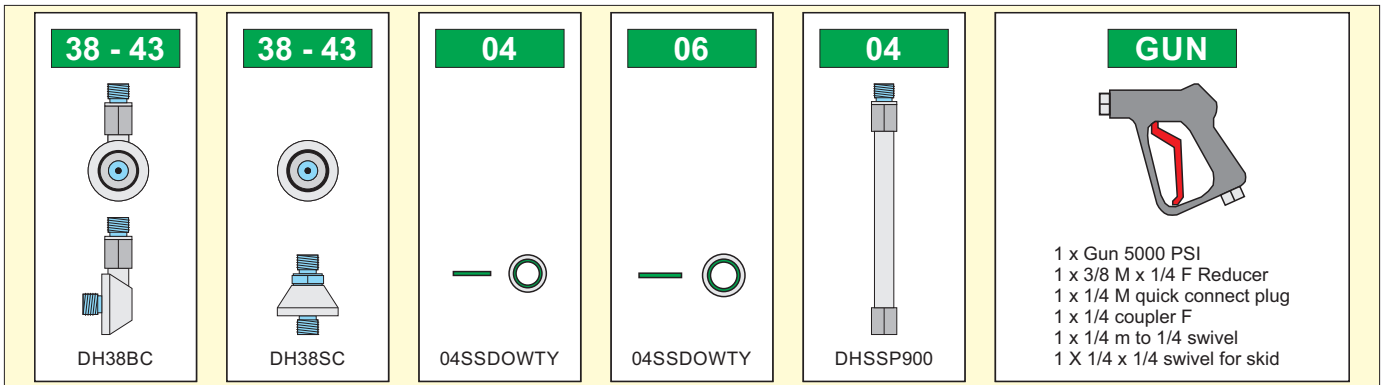
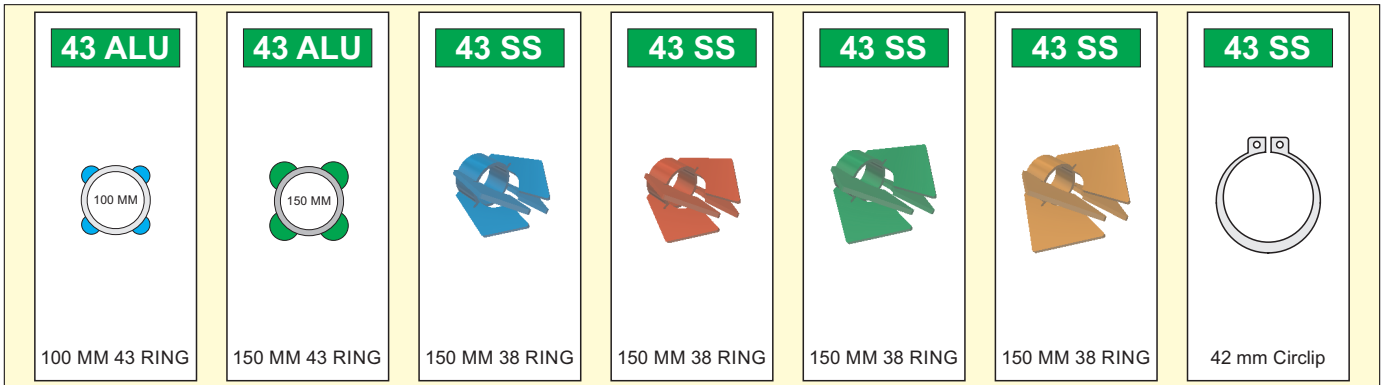
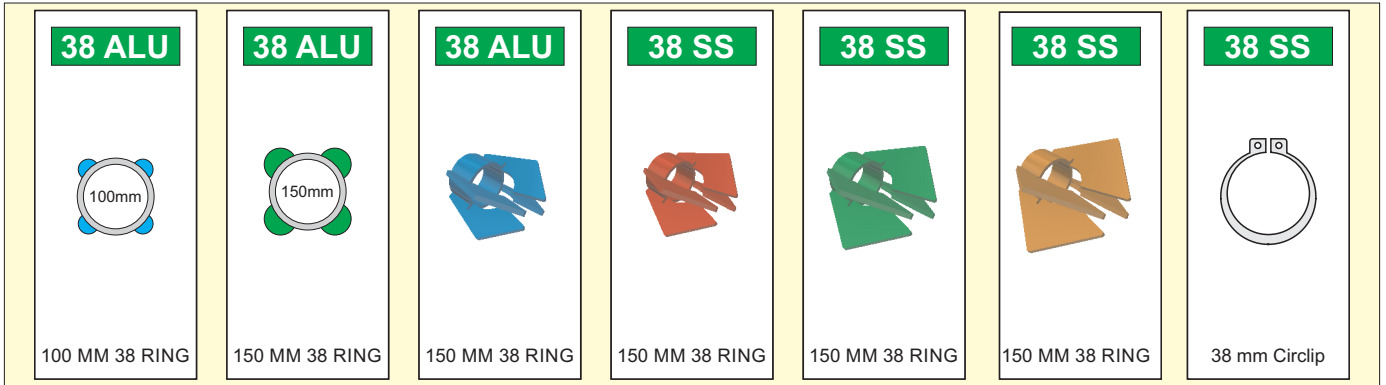
| Item #          | Description         |
|-----------------|---------------------|
| DH38RING-100    | 38 mm x 100 mm Ring |
| DH38RING-150    | 38 mm x 150 mm Ring |
| DH38RING-100-SS | 38 mm x 100 mm Ring |
| DH38RING-150-SS | 38 mm x 150 mm Ring |
| DH38RING-225-SS | 38 mm x 100 mm Ring |
| DH38RING-300-SS | 38 mm x 150 mm Ring |
| DH38CIRCLIP-SS  | 38 mm SS Circlip    |

| Item #          | Description         |
|-----------------|---------------------|
| DH43RING-100    | 43 mm x 100 mm Ring |
| DH43RING-150    | 43 mm x 150 mm Ring |
| DH43RING-100-SS | 38 mm x 100 mm Ring |
| DH43RING-150-SS | 38 mm x 150 mm Ring |
| DH43RING-225-SS | 38 mm x 100 mm Ring |
| DH43RING-300-SS | 38 mm x 150 mm Ring |
| DH43CIRCLIP-SS  | 42 mm SS Circlip    |

| Item #    | Description                                              |
|-----------|----------------------------------------------------------|
| DH38BC    | 38 mm 90° SS Bend turbo nozzle connector                 |
| DH38SC    | 38 mm 90° SS Straight turbo nozzle connector             |
| 04SSDOWTY | 04 SS Dowty Washer                                       |
| 06SSDOWTY | 06 SS Dowty Washer                                       |
| DHSSP900  | 04 SS M X F Pipe Extension for the Gun with Dowty washer |
| 5KPSIGUN  | 5000 Psi Gun Kit                                         |

| Item #    | Description           |
|-----------|-----------------------|
| CIPCLIP-P | Circlip Plier 19-60mm |

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