

# **OPERATION & SAFETY MANUAL**





These instructions are for your personal safety. Always ensure that you have read and understood these instructions before using the equipment. *SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.* 

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To watch practical demonstration videos, take a course, or to download an electronic copy of these instructions, please visit www.picoteinstitute.com. Please note that videos and courses are not intended as a replacement or alternative to this operating and safety manual, but only as an additional learning tool.

## SAFETY INFORMATION

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This section contains important safety information. Failure to comply could result in serious injury or death.

## Safety Symbols

Safety symbols are used throughout this manual to draw attention to potential hazards.



Danger risk of serious injury from rotating parts, follow instructions.



Danger risk of serious injury from hot parts, follow instructions.

## **Personal Protective Equipment (PPE)**

Always use Personal Protective Equipment including suitable protective clothing, footwear, plus:



Suitable eye protection to protect against sewage, chemicals or dust from irritating eyes.

Suitable ear protection to protect against hearing loss.

Suitable heat and cut-resistant gloves to help prevent any hand injuries. Any open injuries or skin irritations should always be covered to avoid contact with sewage, chemicals or dust.

Suitable respirator to prevent any dust or fumes being inhaled or consumed, which could cause occupational asthma or dermatitis.

## **ENVIRONMENT, TRANSPORT, STORAGE & DISPOSAL**

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### ENVIRONMENT

Operational Ambient Temperature Range: 0°C to +50°C (32 to 122°F) Storage Ambient Temperature Range: -20°C to +50°C (-4 to 122°F) Condensation Free

#### TRANSPORT

Picote Smart Cutters<sup>™</sup> should be transported inside of a vehicle properly secured to prevent any sudden movements caused by hard braking or accident. Using lidded boxes which are fastened and stored on the bottom of the vehicle is recommended.

Never transport Picote Millers with a Picote Smart Cutter<sup>™</sup> or other tooling attached to the shaft.

#### STORAGE

It is recommended that Picote Smart Cutter<sup>™</sup> tooling be stored indoors protected from rain and sunlight and in constant ambient temperature.

#### DISPOSAL

Picote Smart Cutter<sup>™</sup> components can be separated. Recycle metallic components in metal waste collection point. Always follow local waste handling rules and regulations.

## **GENERAL INFORMATION**

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

The award winning Smart Cutter<sup>™</sup> is the most versatile tool produced by Picote for DN32-300 (1¼ -12") pipes. It is also a fantastic tool for removing roots, scale, CIPP fins, resin slugs, internal weld beads or preparing pipes for brush coating or lining even in fragile pipes.

It can be equipped with a front drill head and a metal or plastic front grinding panel to both re-open reinstatements and grinding away the remaining edges.

It can be used as fine tuning tool to grind remaining edges after a connection has been reinstated using the Twister or Special Drill Heads.

The Smart Cutter<sup>™</sup> can also be used to remove any remaining lining or inconsistencies, after the collapsed lining has been removed using a Twister liner remover.

Other uses are pipe cleaning in fragile or plastic pipes and metal grinding after Twister Metal Grinder has been used to cut through intruding metal bars / screws.

#### CHOOSING THE CORRECT PICOTE MILLER

- The Smart Cutter<sup>™</sup> products with the 8mm (⅓") shaft can be operated with the **Picote Mini Cleaner, Mini** Miller, Battery Super Mini Cleaner, & Battery Super Mini Miller.
- Products with the 10mm (%") shaft, can be operated with the **Picote Midi Cleaner**.
- Products with the 12mm (½") shaft, can be operated with the **Picote Super Midi & Maxi Miller**.
- Instructions Maxi Miller Power+, Smart Cutter, 18mm (¾") shaft are covered in a separate manual.

## SMART CUTTER™ HUBS, FRONT PANELS & DRILL HEADS

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### Smart Cutter<sup>™</sup> Hub (No Wedge)

The smallest Smart Cutters™ Hubs have been designed to operate in small pipe sizes from DN32 to 75 (1% to 3'') or when there are dimensional changes in the pipe. They can be operated using 6, 8, and 10mm Shafts ( $\frac{1}{3}$ ",  $\frac{1}{3}$ " or  $\frac{3}{3}$ ") and are compatible with standard non-wedge side grinding or polishing panels which are clamped into the Hub.

Benefits: Efficient, flexible and cost effective tool for general cleaning, descaling and grinding when other tools cannot be used because of access / space issues.

#### Smart Cutter<sup>™</sup> Hub (With Wedge)

Available with 2, 4 and 6 panel configurations. They have been designed to operate in DN70-300 (3-12") pipes on 8, 10, & 12mm Shafts (1/3, 3/8, & 1/2").

They can be fitted with different drill heads which allow for a multiude of operations including CIPP connection opening and failed liner removal. Additionally different kinds of steering accessories can be used to assist.

Benefits: Efficient, flexible and cost effective tool for general cleaning, descaling, root removal along with the possibility to combine a front panel and drill head for other jobs.



No Wedge Hub





2 Panel Wedge Hub



4 Panel Wedge Hub



6 Panel Wedge Hub

#### FRONT PANELS & DRILL HEADS

The Smart Cutter<sup>™</sup> can be used with or without a Front Panel and Drill Head.



**Plastic Panel** For use in fragile or plastic pipes.

Front Metal Panel 1mm thick combined with carbides on the rear of the panel.





**Tiger Front Metal Panel** 6mm thick combined with specially hardened Tiger carbides

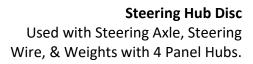
**Front Drill Head 3 Ridged** Case hardened Steel



**Tiger Front Drill Head Tiger Carbides** 



Small / Large / XL Hub Disc Hub Discs for 2, 4 & 6 panel Hubs.





## **GENERAL INFORMATION**

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### SELECTING SIDE GRINDING PANELS

Smart Cutter<sup>™</sup> hubs can be equipped with Regular, XT Rough or Polishing Panels. Polishing panels have smoother surface texture compared to regular Side Grinding Panels which make them perfect tools to finalize any connection edges. XT Rough panels are best suited for removing stubborn scale and finalizing cleaning after liner or concrete removal.



Standard & XT Rough Side Grinding Panels



Polishing Side Grinding Panels

#### SELECTING FRONT PANELS

Smart Cutter<sup>™</sup> Hubs with Wedged Side Grinding Panels can be equipped with different kind of front panels and drill heads to create tooling combinations that can both open a connection and grind it at the same time in cast iron or clay pipes, without the need to change out tooling. This kind of combination is also very effective for removing tree roots from cast iron & clay pipes.

The front grinding panels are available in metal and plastic styles. Metal panels are more aggressive compared to plastic panels and are designed to work in metal and clay/concrete pipes. They come in Standard as well as a Tiger version featuring the extra-hard, long last Tiger carbides.



## SMART CUTTER<sup>™</sup> QUICK REFERENCE GUIDE: US

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



# Smart Cutter™ **Quick Reference Selection Guide** (1/4", 1/3", 3/8" Diameter Shaft Millers)

US-12.6.2023

Always use the optimal size Smart Cutter<sup>™</sup> for the diameter of the pipe and number of bends. With multiple bends it's always recommended to use the shortest hub available in order to go around the bends.

	1/4" Diameter Shaft (No Wedge)					
Pipe Diameter	Picote Part Number	Hub Description	# of Panels	Panel Size (WxL)	Hub Disc	Steering Hub Disc
11/4	1000612025	Hub 1" for 11/4-11/2" Pipe - No Wedge	2	1 x 1.6	Х	X
11/4	1000615025	Hub 1" for 1%-11/2" Pipe - No Wedge	2	1 x 1.6	Х	X
11/4	1000615030	Hub 1.2" for 1%-11/2" Pipe - No Wedge	2	1 x 1.6	Х	X
11/2	1000612025	Hub 1" for 1%-1½" Pipe - No Wedge	2	1.2 x 2	Х	X
11/2	1000615025	Hub 1" for 1%-11/2" Pipe - No Wedge	2	1.2 x 2	Х	X
11/2	1000615030	Hub 1.2" for 1%-11/2" Pipe - No Wedge	2	1.2 x 2	Х	X

	⅓" Diameter Shaft						
Pipe Diameter			With Wedge	# of Panels	Panel Size (WxL)	Hub Disc	Steering Hub Disc
11/4	1000818025	Hub 1" for 1%-1½" Pipe - No Wedge	X	2	1 x 1.6	x	X
11/2	1000818025	Hub 1" for 1%-1½" Pipe - No Wedge	х	2	1.2 x 2	х	X
2	1000820040	Hub 1.6" for 2" Pipe	X	2	1.5 x 2.3	x	X
2	1000820060	Hub 2.4" for 2-3" Pipe	X	2	1.5 x 2.3	х	X
3	1000820050	Hub 2" Narrow 2W for 3" Pipe	×	2	2 x 4	2W	X
3	1000820060	Hub 2.4" for 2-3" Pipe	X	2	2 x 4	х	X
3	1000835050A	Hub 3" Short for 3-4" Pipe	×	4	2 x 4	Small	Small
4	1000820075	Hub 3" Narrow 2W for 4" Pipe	<ul> <li>Image: A second s</li></ul>	2	3 x 5	2W	X
4	1000835050A	Hub 3" Short for 3-4" Pipe	1	4	2 x 4	Small	Small

	¾" Diameter Shaft						
Pipe Diameter	Picote Part Number			# of Panels	Panel Size (WxL)		Steering Hub Disc
2	1001020040	Hub 1.6" for 2" Pipe	X	2	1.5 x 2.3	X	X
2	1001020060	Hub 2.4" for 2-3" Pipe	X	2	2 x 4	Х	X
3	1001020060	Hub 2.4" for 2-3" Pipe	X	2	2 x 4	Х	X
3	1001020050	Hub 2" Narrow 2W for 3" Pipe	1	2	2 x 4	2W	X
3	1001035050A	Hub 3" Short for 3-4" Pipe	1	4	2 x 4	Small	Small
3	1001035075A	Hub 3" for 3-4" Pipe	1	4	3 x 5	Small	Small
4	1001020075	Hub 3" Narrow 2W for 4" Pipe	×	2	3 x 5	2W	X
4	1001035050A	Hub 3" Short for 3-4" Pipe	1	4	2 x 4	Small	Small
4	1001035075A	Hub 3" for 3-4" Pipe	×	4	3 x 5	Small	Small
4	1001040100A	Hub 4" for 4-6" Pipe	×	4	4 x 6	Large	Large
6	1001040100A	Hub 4" for 4-6" Pipe	1	4	4 x 6	Large	Large

## SMART CUTTER™ QUICK REFERENCE GUIDE: US

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



## Smart Cutter<sup>™</sup> Quick Reference Selection Guide (½", ¾" Diameter Shaft Millers)

US-12.6.2023

Always use the optimal size Smart Cutter<sup>™</sup> for the diameter of the pipe and number of bends. With multiple bends it's always recommended to use the shortest hub available in order to go around the bends.

	½" Diameter Shaft							
Pipe Diameter	Picote Part Number	Hub Description	With Wedge	# of Panels	Panel Size (WxL)	Hub Disc	Steering Hub Disc	Smart Steering Guide
3	1001235050A	Hub 3" Short for 3-4" Pipe	*	4	2 x 4	Small	Small	x
3	1001235075A	Hub 3" for 3-4" Pipe	*	4	3 x 5	Small	Small	x
4	1001235050A	Hub 3" Short for 3-4" Pipe	>	4	2 x 4	Small	Small	X
4	1001235075A	Hub 3" for 3-4" Pipe	>	4	3 x 5	Small	Small	x
4	1001240100A	Hub 4" for 4-6" Pipe	1	4	4 x 6	Large	Large	<ul> <li>Image: A set of the set of the</li></ul>
4	1001250100A	Hub 4" (6-Panel) for 4-6" Pipe	>	6	4 x 4	XL	X	x
5	1001240100A	Hub 4" for 4-6" Pipe	>	4	4 x 6	Large	Large	×
5	1001250100A	Hub 4" (6-Panel) for 4-6" Pipe	*	6	4 x 4	XL	X	x
6	1001240100A	Hub 4" for 4-6" Pipe	~	4	4 x 6	Large	Large	×
6	1001240150A	Hub 6" for 6-9" Pipe	1	4	6 x 8	Large	Large	<ul> <li>Image: A set of the set of the</li></ul>
6	1001250100A	Hub 4" (6 Panel) for 4-6" Pipe	*	6	4 x 6	XL	X	x
6	1001250150A	Hub 6" (6 Panel) for 6-8" Pipe	>	6	6 x 6	XL	X	x
8	1001240150A	Hub 6" for 6-9" Pipe	*	4	6 x 8	Large	Large	×
8	1001240150A	Hub 6" for 6-9" Pipe	<ul> <li>Image: A second s</li></ul>	4	6 x 10	Large	Large	×
8	1001240200A	Hub 8" for 8-9" Pipe	1	4	8 x 12	Large	Large	×
8	1001250150A	Hub 6" (6 Panel) for 6-8" Pipe	1	6	6 x 8	XL	X	x
9	1001240150A	Hub 6" for 6-9" Pipe	1	4	6 x 10	Large	Large	×
9	1001240200A	Hub 8" for 8-9" Pipe	*	4	8 x 12	Large	Large	×

	¾" Diameter Shaft					
Pipe Diameter	Picote Part Number	Hub Description	With Wedge	# of Panels	Panel Size (WxL)	Hub Disc
4*	1001250100A	Hub 4" (6-Panel) for 4-6" Pipe	*	6	4 x 4	2" XL (6-Panel)
6	1001250100A	Hub 4" (6-Panel) for 4-6" Pipe	×	6	4 x 4	2" XL (6-Panel)
6	1001870150A	Hub 6" (6-panel) for 6-8" Pipe	*	6	6x6	2.75" XXL (6-Panel)
8	1001870150A	Hub 6" (6-panel) for 6-8" Pipe	*	6	6x8	2.75" XXL (6-Panel)
8	1021800200	Hub 8" (8-panel) for 8-12" Pipe	*	8	6×8	4" XXXL (8-Panel)
9	1021800200	Hub 8" (8-panel) for 8-12" Pipe	1	8	6 x 8	4" XXXL (8-Panel)
10	1021800200	Hub 8" (8-panel) for 8-12" Pipe	1	8	6 x 10	4" XXXL (8-Panel)
12	1021800200	Hub 8" (8-panel) for 8-12" Pipe	*	8	6 x 10	4" XXXL (8-Panel)
*4" Diame	eter - Designed fo	or Straight Pipes Only				

## SMART CUTTER™: US

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#### Hub & Hub Disc Packages

Pre-packaged Picote Smart Cutter™ Hubs and corresponding Hub Discs included.

Product #	Hub Size	Hub Disc	Pipe Size	Shaft Size
1000820050-PKG	2"	2W	3"	1/3"
1000820075-PKG	3"	2W	4"	1/3"
1000835050A-PKG	3"	S	3-4"	1/3"
1001020050-PKG	2"	2W	3"	3/8"
1001020075-PKG	3"	2W	4"	3/8"
1001035050A-PKG	3"	S	3-4"	3/8"
1001035075A-PKG	3"	S	3-4"	3/8"
1001040100A-PKG	4"	S	4-6"	3/8"
1001235050A-PKG	3"	S	3-4"	1/2"
1001235075A-PKG	3"	S	3-4"	1/2"
1001240100A-PKG	4"	L	4-6"	1/2"
1001240150A-PKG	6"	L	6-9"	1/2"
1001240200A-PKG	8"	L	8-9"	1/2"
1001250100A	4"	XL	4-6"	1/2"
1001250150A	6"	XL	6-8"	1/2"



#### Hubs - No Wedge

2 Panel Hubs with No Wedge. Use with Side Grinding Panels with no wedge.

Product #	Hub Size DxL	Pipe Size	Shaft Size
1000612025	.47X1"	1 <sup>1</sup> /4-1 <sup>1</sup> /2"	1/4"
1000615025	.6x1"	1 <sup>1</sup> /4-1 <sup>1</sup> /2"	1/4"
1000615030	.6x1.18"	1 <sup>1</sup> /4-1 <sup>1</sup> /2"	1/4"
1000818025	.7x.98"	1 <sup>1</sup> /4-2"	1/3"
1000820040	.8x1.57"	2"	1/3"
1000820060	.8x2.36"	2-3"	1/3"
1001020040	.8x1.57"	2"	3/8"
1001020060	.8x2.36"	2-3"	3/8"



### **Smart Steering Guide**

A precision fine-tuning tool that attaches to the Smart Cutter<sup>™</sup> Hub allowing the user to steer the Hub without damaging the lined pipe during the reinstatement process.

Product #	Model/Part	
1312024125	4-6"	
1312025125	6-8"	

#### **Steering Guide Spare Parts**



Hub Discs used with the Steering Axle for 4 Panel Hubs. Use the Steering Wire with Weight for fine-tuning or with Twister Concrete Remover where there is access at both ends. Use with Steering Axle.

Product #	Part	
1000210035	Steering Hub Disc S	
1000210040	Steering Hub Disc L	
1100100055	Steering Axle	
1100200001	Bearing	
1350150405	Steering Wire 328 ft	

#### **Hub Discs**



Hub Discs for 2, 4 & 6 panel Hubs. See the Smart Cutter™ Hub Selection Guide on the Picote Institute.

Product #	Disc	Size
1000200020	2W	0x20x6
1000200035	S	0x35x6
1000200040	L	0x40x6
1000200050	XL	0x50x3
1350000100	Scr	ews for Hub Disc (12pcs)

## SMART CUTTER™: US

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## Wire Hook



The Wire Hook is attached at the end of the Shaft which will be then used for pulling and guiding.

Product #	Wire Hook
1350000125	For 1/2" Shaft
135000085	For 1/3" Shaft

## **Counter Weight**

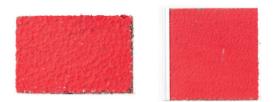


Fine-tuning tool used to pull Hub downward to remove bottom lip of the liner.

Product #	Weight Model
1100500040	Small
1100500060	Large

## SIDE GRINDING PANELS: US

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## **Side Grinding Panels**

Sold in packages of 12. See the Smart Cutter™ Hub Selection Guide on the Picote Institute.

Product #	Panel Size
1202025040*	1×1.6"
1202030050*	1.2X2"
1202040060*	1.5×2.33"
1202050100*	2X4"
1203050100	2X4"
1202075125	3×5"
1202100100	4×4"
1202100150	4x6"
1202150150	6x6"
1202150200	6x8"
1202150250	6x10"
1202200300	8x12"



## Side Grinding Panels XT Rough

XT panels have larger grit for more aggression and faster results. Sold in packages of 12 panels.

Product #	Panel Size
1204050100*	2×4"
1205050100	2x4"
1203075125	3×5"
1203100100	4×4"
1203100150	4×6"
1203150150	6x6"
1203150200	6x8"
1203150250	6x10"
1203200300	8x12"

\*No Wedge - use with non-wedged Hubs.

\*No Wedge - use with non-wedged Hubs.





### **Polishing Panels**

For removing slight liner inconsistencies & polishing. Gentle cleaning in PVC pipe in fragile situations. Sold in packages of 12 panels.

Product #	Panel Size
1241035045*	1.4×1.8"
1241040050*	1.6x2.0"
1241050100	2×4"
1241075100	3×4"
1241100125	4×5"
1241100150	4x6"
1241150200	6x8"

\*No Wedge - use with non-wedged Hubs.

## **FRONT PANELS & DRILL HEADS: US**

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#### Front Metal Panel

1mm Front Metal Panel. Flex bility combined with carbides at the rear of the panel provide an advantage in reinstatement situations where the panel gets stuck. Grit 10.

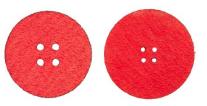
Product #	Panel Size	
1210310055	2.2"	
1210310075	3"	
1210310085	3.3"	
1210310115	4.5"	
1210310125	5"	
1210310175	7"	



## **Tiger Front Metal Panel**

Panel thickness: 6mm. Precision manufactured milling plate equipped with the specially hardened Tiger carbides. High quality sand-blasted aluminium.

Product #	Panel Size	Pipe Size
1260000058	2.3	3"
1260000075	3	4"
1260000085	3.3	4"
1260000090	3.5	5"
1260000100	4	5"
1260000115	4.5	6"
1260000125	4.9	6"
1260000175	6.9	8"
1260000065	2.6"	
1260000080	3.1	
1260000140	5.5	



## Front Plastic Panel Package

Gentle option for special situations in fragile pipes. Gentle option for PVC or special situations in fragile pipes. Sold in packages of 10 panels.

Panel Size
2.2"
3"
3.3"
5"

## Front Drill Head 1.38" 3 Ridged Hardened



Use with Twister with Front Metal Panels. Also use with Smart Cutter™ with Front Metal or Front Plastic Panels.

Tiger Front Drill Head 1.5" 1260010038



Use with any Twister or Smart Cutter™

## SMART CUTTER™ QUICK REFERENCE GUIDE: EU/ROW

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



## Smart Cutter™ Quick Reference Selection Guide (6, 8, 10mm Diameter Shaft Millers)

Always use the optimal size Smart Cutter<sup>™</sup> for the diameter of the pipe and number of bends. With multiple bends it's always recommended to use the shortest hub available in order to go around the bends.

	6mm Diameter Shaft (No Wedge)								
Pipe         Picote Part         Hub         # of         Panel Size         Hub         Ster           DN         Number         Description         Panels         (WxL)         Disc         Hub									
32	1000612025	Hub 12x25 for DN32-40 - No Wedge	2	25x40	X	X			
32	1000615025	Hub 15x25 for DN32-40 - No Wedge	2	25x40	X	X			
32	1000615030	Hub 15x30 for DN32-40 - No Wedge	2	25x40	х	X			
40	1000612025	Hub 12x25 for DN32-40 - No Wedge	2	30x50	X	X			
40	1000615025	Hub 15x25 for DN32-40 - No Wedge	2	30x50	X	X			
40	1000615030	Hub 15x30 for DN32-40 - No Wedge	2	30x50	х	x			

8mm Diameter Shaft							
Pipe DN	Picote Part Number	Hub Description	With Wedge	# of Panels	Panel Size (WxL)	Hub Disc	Steering Hub Disc
32	1000818025	Hub 18x25 for DN32-40	X	2	35x45 <sup>(1)</sup>	X	X
32	1000818025	Hub 18x25 for DN32-40	X	2	25x40 <sup>(2)</sup>	X	X
40	1000818025	Hub 18x25 for DN32-40	X	2	40x50 <sup>(1)</sup>	X	X
40	1000818025	Hub 18x25 for DN32-40	х	2	30x50 <sup>(2)</sup>	X	х
50	1000820040	Hub 20x40 for DN50	X	2	40x60	X	X
50	1000820060	Hub 20x60 for DN50-70	X	2	40x60	X	X
70	1000820050	Hub 20x50 2W for DN70	1	2	50x100	2W	Х
70	1000820060	Hub 20x60 for DN50-70	X	2	50x100	X	X
70	1000835050A	Hub 35x50 for DN70-100	×	4	50x100	Small	Small
100	1000820075	Hub 20x75 2W for DN100	×	2	75x125	2W	Х
100	1000835050A	Hub 35x50 for DN70-100	<	4	50x100	Small	Small
Note <sup>(1)</sup> : Re	fers to Cleaning P	anels / Note <sup>(2)</sup> : Refers to Grin	ding Pan	els			

10mm Diameter Shaft								
Pipe DN	Picote Part Number	Hub Description	With Wedge	# of Panels	Panel Size (WxL)	Hub Disc	Steering Hub Disc	
50	1001020040	Hub 20x40 for DN50	X	2	40x60	X	X	
50	1001020060	Hub 20x60 for DN50-70	х	2	50x100	х	X	
70	1001020060	Hub 20x60 for DN50-70	Х	2	50x100	Х	X	
70	1001020050	Hub 20x50 2W for DN70	×	2	50x100	2W	X	
70	1001035050A	Hub 35x50 for DN70-100	1	4	50x100	Small	Small	
70	1001035075A	Hub 35x75 for DN70-100	<ul> <li>Image: A second s</li></ul>	4	75x125	Small	Small	
100	1001020075	Hub 20x75 2W for DN100	<ul> <li>Image: A second s</li></ul>	2	75x125	2W	X	
100	1001035050A	Hub 35x50 for DN70-100	×	4	50x100	Small	Small	
100	1001035075A	Hub 35x75 for DN70-100	×	4	75x125	Small	Small	
100	1001040100A	Hub 35x100 for DN100-150	<ul> <li>Image: A second s</li></ul>	4	100x150	Small	Small	
150	1001040100A	Hub 35x100 for DN100-150	<ul> <li>Image: A second s</li></ul>	4	100x150	Small	Small	

Metric-12.6.2023

## SMART CUTTER™ QUICK REFERENCE GUIDE: EU/ROW

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



### Smart Cutter<sup>™</sup> Quick Reference Selection Guide (12, 18mm Diameter Shaft Millers)

Always use the optimal size Smart Cutter™ for the diameter of the pipe and number of bends. With multiple bends it's always recommended to use the shortest hub available in order to go around the bends.

	12mm Diameter Shaft								
Pipe DN	Picote Part Number	Hub Description	With Wedge	# of Panels	Panel Size (WxL)	Hub Disc	Steering Hub Disc	Smart Steering Guide	
70	1001235050A	Hub 35x50 for DN70-100	×	4	50 x 100	Small	Small	x	
70	1001235075A	Hub 35x75 for DN70-100	×	4	75 x 125	Small	Small	x	
100	1001235050A	Hub 35x50 for DN70-100	1	4	50 x 100	Small	Small	x	
100	1001235075A	Hub 35x75 for DN70-100	*	4	75 x 125	Small	Small	x	
100	1001240100A	Hub 40x100 for DN100-150	×	4	100 x 150	Large	Large	×	
100	1001250100A	Hub 50x100 for DN100-150	1	6	100 x 100	XL	X	x	
125	1001240100A	Hub 40x100 for DN100-150	1	4	100 x 150	Large	Large	×	
125	1001250100A	Hub 50x100 for DN100-150 (6 Panel)	×	6	100 x 100	XL	X	x	
150	1001240100A	Hub 40x100 for DN100-150	1	4	100 x 150	Large	Large	×	
150	1001240150A	Hub 40x150 for DN150-225	1	4	150 x 200	Large	Large	×	
150	1001250100A	Hub 50x100 for DN100-150 (6 Panel)	×	6	100 x 150	XL	X	x	
150	1001250150A	Hub 50x150 for DN150-200 (6 Panel)	1	6	150 x 150	XL	X	x	
200	1001240150A	Hub 40x150 for DN150-225	1	4	150 x 200	Large	Large	×	
200	1001240150A	Hub 40x150 for DN150-225	×	4	150 x 250	Large	Large	×	
200	1001240200A	Hub 40x200 for DN200-225	×	4	200 x 300	Large	Large	×	
200	1001250150A	Hub 50x150 for DN150-200 (6 Panel)	-	6	150 x 200	XL	X	x	
225	1001240150A	Hub 40x150 for DN150-225	1	4	150 x 250	Large	Large	×	
225	1001240200A	Hub 40x200 for DN200-225	1	4	200 x 300	Large	Large	×	

18mm Diameter Shaft								
Pipe DN	Picote Part Hub With # of Panel Size Hub Number Description Wedge Panels (WxL) Disc							
100*	1001250100A	Hub 12.5x50x100 for 100-150 (6 Panel)	<ul> <li>Image: A second s</li></ul>	6	100 x 100	XL		
150	1001250100A	Hub 12.5x50x100 for 100-150 (6 Panel)	<ul> <li>Image: A second s</li></ul>	6	100 x 100	XL		
150	1001870150A	Hub 18.5x70x150 for 150-200 (6 Panel)	<	6	150 x 150	XXL		
200	1001870150A	Hub 18.5x70x150 for 150-200 (6 Panel)	~	6	150 x 200	XXL		
200	1021800200	Hub 18.5x100x150 for 200-300 (8 Panel)	<ul> <li>Image: A second s</li></ul>	8	150 x 200	XXXL		
225	1021800200	Hub 18.5x100x150 for 200-300 (8 Panel)	×	8	150 x 200	XXXL		
250	1021800200	Hub 18.5x100x150 for 200-300 (8 Panel)	<	8	150 x 250	XXXL		
300	1021800200	Hub 18.5x100x150 for 200-300 (8 Panel)	<ul> <li>Image: A second s</li></ul>	8	150 x 250	XXXL		
*DN100 D	iameter - Designed	l for Straight Pipes Only						

## SMART CUTTER™: EU/ROW

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE





#### Hub & Hub Disc Packages

Pre-packaged Picote Smart Cutter™ Hubs and corresponding Hub Discs included.

Product #	Hub Size DxL	Hub Disc	Pipe Size	Shaft Size
1000820050-PKG	20x50	2W	DN70	8mm
1000820075-PKG	20x75	2W	DN100	8mm
1000835050A-PKG	35×50	S	DN70-100	8mm
1001020050-PKG	20x50	2W	DN70	10mm
1001020075-PKG	20x75	2W	DN100	10mm
1001035050A-PKG	35×50	S	DN70-100	10mm
1001035075A-PKG	35×75	S	DN70-100	10mm
1001040100A-PKG	40x100	S	DN100-150	10mm
1001235050A-PKG	35×50	S	DN70-100	12mm
1001235075A-PKG	35×75	S	DN100	12mm
1001240100A-PKG	40x100	L	DN100-150	12mm
1001240150A-PKG	40x150	L	DN150-225	12mm
1001240200A-PKG	40x200	L	DN200-225	12mm
1001250100A	50x100	XL	DN100-150	12mm
1001250150A	40x200	XL	DN150-200	12mm



#### Hubs - No Wedge

2 Panel Hubs with No Wedge. Use with Side Grinding Panels with no wedge.

Product #	Hub Size DxL	Pipe Size	Shaft Size
1000612025	12x25	DN32	6mm
1000615025	15×25	DN32	6mm
1000615030	15X30	DN32	6mm
1000818025	18x25	DN32-40	8mm
1000820040	20X40	DN50	8mm
1000820060	20x60	DN50-70	8mm
1001020040	20X40	DN50	10mm
1001020060	20x60	DN50-70	10mm



### **Smart Steering Guide**

A precision fine-tuning tool that attaches to the Smart Cutter™ Hub allowing the user to steer the Hub without damaging the lined pipe during the reinstatement process.

Product #	Model/Part
1312024125	DN100-150
1312025125	DN150-200

#### **Steering Guide Spare Parts**



Hub Discs used with the Steering Axle for 4 Panel Hubs. Use the Steering Wire with Weight for fine-tuning or with Twister Concrete Remover where there is access at both ends. Use with Steering Axle.

Product #	Part	
1000210035	Steering Hub Disc S	
1000210040	Steering Hub Disc L	
1100100055	Steering Axle	
1100200001	Bearing	
1350150405	Steering Wire 328 ft	

#### **Hub Discs**



Hub Discs for 2, 4 & 6 panel Hubs. See the Smart Cutter<sup>™</sup> Hub Selection Guide on the Picote Institute.

Product #	Disc	Size
1000200020	2W	0x20x6
1000200035	S	0x35x6
1000200040	L	0x40x6
1000200050	XL	0x50x3
1350000100	Scr	ews for Hub Disc (12pcs)

## SMART CUTTER™: EU/ROW

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## Wire Hook



The Wire Hook is attached at the end of the Shaft which will be then used for pulling and guiding.

Product #	Wire Hook
1350000125	12.5mm
1350000085	8.5mm

## Weight

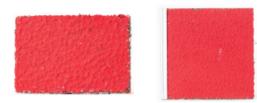


Fine-tuning tool used to pull Hub downward to remove bottom lip of the liner.

Product #	Weight Model
1100500040	40 - Small
1100500060	60 - Large

## SIDE GRINDING PANELS: EU/ROW

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



## Side Grinding Panels

Sold in packages of 12. See the Smart Cutter<sup>™</sup> Hub Selection Guide on the Picote Institute.

Product #	Panel Size
1202025040*	25x40
1202030050*	30x50
1202040060*	40x60
1202050100*	50x100
1203050100	50x100
1202075125	75×125
1202100100	100X100
1202100150	100X150
1202150150	150X150
1202150200	150x200
1202150250	150x250
1202200300	200x300



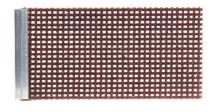
### Side Grinding Panels XT Rough

XT panels have larger grit for more aggression and faster results. Sold in packages of 12 panels.

Product #	Panel Size
1204050100*	50x100
1205050100	50x100
1203075125	75×125
1203100100	100X100
1203100150	100X150
1203150150	150X150
1203150200	150x200
1203150250	150x250
1203200300	200x300

"No Wedge - use with non-wedged Hubs.

\*No Wedge - use with non-wedged Hubs.





## **Polishing Panels**

For removing slight liner inconsistencies & polishing. Gentle cleaning in PVC pipe in fragile situations. Sold in packages of 12 panels.

Product #	Panel Size
1241035045*	35×45
1241040050*	40×50
1241050100	50X100
1241075100	75X100
1241100125	100X125
1241100150	100X150
1241150200	150x200

'No Wedge - use with non-wedged Hubs.

## **FRONT DRILL HEADS: EU/ROW**

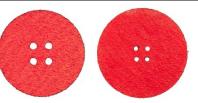
### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



### Front Metal Panel

1mm Front Metal Panel. Flexibility combined with carbides at the rear of the panel provide an advantage in reinstatement situations where the panel gets stuck. Grit 10.

Product #	Panel Size
1210310055	55mm
1210310075	75mm
1210310085	85mm
1210310115	115mm
1210310125	125mm
1210310175	175mm



### Front Plastic Panel Package

Gentle option for special situations in fragile pipes. Gentle option for PVC or special situations in fragile pipes. Sold in packages of 10 panels.

Product #	Panel Size
1229990055	55mm
1229990075	75mm
1229990085	85mm
1229990125	125mm

## Front Drill Head 35mm 3 Ridged Hardened



Use with Twister with Front Metal Panels. Also use with Smart Cutter™ with Front Metal or Front Plastic Panels.

## Tiger Front Drill Head 38mm

1260010038



Use with any Twister or Smart Cutter™

**Tiger Front Metal Panel** Panel thickness: 6mm. Precision

manufactured milling plate equipped with the specially hardened Tiger carbides. High quality sand-blasted aluminium.

Product #	Panel Size	Pipe Size
1260000058	58mm	DN70
1260000075	75mm	DN100
1260000085	85mm	DN100
1260000090	90mm	DN125
1260000100	100mm	DN125
1260000115	115mm	DN150
1260000125	125mm	DN150
1260000175	175mm	DN200
1260000065	65mm	
1260000080	80mm	
1260000140	140mm	

## **USER GUIDE: CIPP REINSTATEMENTS**

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### Step 1:

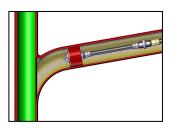
- Select the Smart Cutter<sup>™</sup> equipped with metal or plastic panels and drill head according to the size of the host pipe.
- Place a CCTV camera into lined pipe so that you will see how the work is progressing. Never work blind!

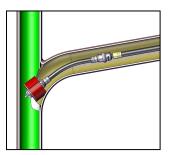
#### Step 2:

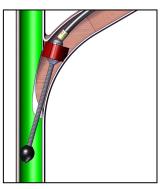
- Carefully drill the initial opening.
- Continue to push through so that you remove as much the liner from the connection as possible.
- Be careful that you do not damage the already lined pipe during the process.
- Use Smart Cutter<sup>™</sup> Side Grinding panels to grind the hole edges before removing the tool from the pipe.
- **Tip!** You can use the Smart Cutter<sup>™</sup> with a Smart Steering Guide to focus the grinding force in locations where the connection is hardest to grind open.

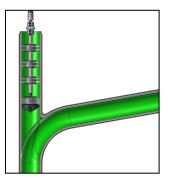
#### Step 3:

- It is recommended to use a lined Twister version when opening connections in already lined pipes. If a Smart Cutter<sup>™</sup> with a front drill head is used, you will likely damage the lined pipe during the reinstatement process.
- Select the Twister according to the size of host pipe, for the job.
- Drill the connection open carefully.
- Push the Twister through the opening to remove all the remaining lining.
- You can carefully run the Smart Cutter and Side Grinding Panels to smooth out the remaining edges but be careful not to damage the liner.
- We recommend installation of a Picote Connection Collar at all branch connections of 2 CIPP lined pipes to ensure a full 360° seal in both the main and lateral connections!









## **REPLACEMENT OF PANELS & DRILL HEADS**

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

# **A**WARNING

This section contains important safety information. Failure to comply could result in serious injury or death.

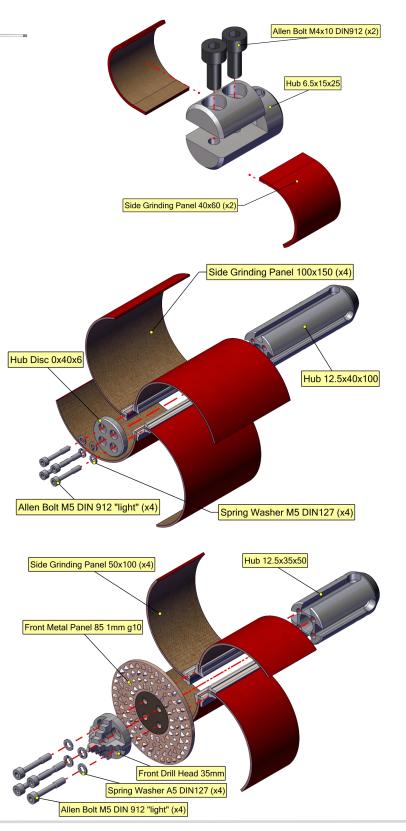


#### Non-Wedge Hubs:

- Remove Allen Bolts and change the worn out Side Grinding Panels.
- The red grinding side of the new standard or XT Rough panels needs to be positioned to match the rotation direction (clockwise).
- Repeat assembly steps in reverse order to mount the panels. Tighten Allen Bolts evenly.
- We recommended using Loctite 542.

#### Wedge Hubs:

- Remove Allen Bolts and Spring Washers and change the worn out Side Grinding Panels, Front Plastic Panels and Drill Head (if needed).
- The red grinding side of the new standard or XT Rough panels needs to be positioned to match the rotation direction (clockwise).
- If using Plastic Panels, 2 Panels are needed.
   Place the smooth backsides against each other.
- Repeat assembly steps in reverse order to mount the panels. Tighten Allen Bolts evenly.
- We recommended using Loctite 542.

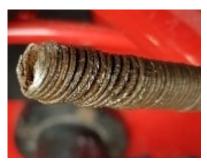


## ATTACHING THE SMART CUTTER™ TO THE SHAFT

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### ATTACHING SMART CUTTER<sup>™</sup> HUB TO SHAFT:

- Always inspect the Picote Miller shaft before each use.
- If the shaft is damaged or there are potential weak points, cut off the damaged length or replace the entire shaft as needed.
- Round off any sharp edges to avoid cuts and to make it easier to insert the shaft into the Smart Cutter™ Hub. Please see the corresponding Miller Operation & Safety Manuals for instructions.
- Run the Miller without tooling for 30 seconds to allow the shaft to position itself. Check that there is sufficient length of exposed flexible shaft, without its outer casing, to adequately attach tooling and allow for shaft movement/tooling rotation without causing binding/friction.



Damaged Shaft. Needs to be trimmed.





Leave a gap between the sleeve and the Smart Cutter™ Hub of approximately 6mm (1/4").

#### TIGHTENING SET SCREWS / ALLEN BOLTS:

- Check that all bolts have been loosened so that the shaft can be easily inserted.
- Position the shaft inside the Smart Cutter<sup>™</sup> Hub as far as it will go.
- Always tighten the set screws starting from the one furthest away from the end of the flexible shaft (where applicable).

## **OPERATION**

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

# **A**WARNING

This section contains important safety information. Failure to comply could result in serious injury or death.



#### **BEFORE USE:**

- Select the correct size of Smart Cutter<sup>™</sup> and Side Grinding Panels.
- Ventilate worksite / pipes properly and ensure pipes are grounded / earthed.
- Ensure water will be flowing in the pipe or the vacuum extraction is ready (dry cleaning). We recommend using water whenever possible to speed flushing out of debris which could lead to future blockages.
- Twist the Side Grinding Panels so that you create a tight roll and then place the tooling into the pipe.
- Never turn on the Miller or operate the Smart Cutter<sup>™</sup> outside of the pipe.

#### DURING USE:

- Always use CCTV camera to observe progress.
- Hold shaft tightly and move tooling back and forth constantly during use.
- Do not force the tooling, let the tool do the work. If excessive force or high speeds are used the Smart Cutter<sup>™</sup> might get stuck, or damage itself, the Miller shaft or the pipe itself.
- When working in plastic pipes or in cleaning tight bends the Smart Cutter<sup>™</sup> can quickly generate enough friction heat that the plastic pipe could melt if the tooling is not moved back and forth constantly.
- If cleaning, work in roughly 1m (3 ft) sections starting from the far end of the pipe. After each section is cleaned, move back along the pipe and continue the cleaning process in next section.
- When grinding the edges in re-opened CIPP connections, use a CCTV camera to locate the correct position and grind as long as needed. Steering wires, hooks and weights can help to control and assist the process.
- When the Smart Cutter<sup>™</sup> is used after the Twister Metal Grinder for metal removal, begin the process with the lowest possible Miller rotation speed. After you have rounded the sharp edges of any metal remnants, you can then turn the Miller up to its maximum rotational speed.
- If water cooling is not used, take a break every 30 minutes to allow the Smart Cutter<sup>™</sup> to cool. **Touch only** with heat resisted gloves. Tooling can be cooled down with water or left to cool in the open air.

#### AFTER USE:

- Always turn the power off before you remove the tool out from the pipe! There is a risk of serious injury or even death!
- Check out the condition of the tooling and shaft. Replace worn-out parts. If part of the shaft is damaged, it can be removed using a disc cutter and the outer casing shortened accordingly.

## WARRANTY POLICY & PROCEDURE

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### Limited Warranty:

Picote warrants to the original End User that the Product purchased by such End User will operate in accordance with, and substantially conform to their published specifications when shipped or otherwise delivered to the End User and for a period of one (1) year, except electric motors and batteries for which the warranty period shall be six (6) months, provided, however, that Picote does not warrant any claim or damage under this Warranty if such claim or damage results from:

- 1. Consumable parts or normal wear and tear resulting from use of the Products,
- 2. Regular periodic maintenance of Products,
- 3. Misuse, neglect, or improper installation or maintenance of the Products, or use of Products not for their intended purpose,
- 4. Products that have been altered, modified, repaired, opened or tampered with by anyone other than Picote or an authorized Picote Service Centre, or unsuitable or unauthorized spare parts, accessories or third party products when using the Products or;
- 5. the use of the Products not in compliance with their respective Documentation, user manuals, safety and maintenance instructions, and any usage restrictions contained therein, or
- 7. accident, fire, power failure, power surge, or other hazard.

Otherwise, the Products are sold AS IS. End User is responsible for using the Products within their specifications and instructions as contained in the Documentation.

EXCEPT AS SPECIFIED IN THIS WARRANTY, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON INFRINGEMENT, SATISFACTORY QUALITY OR ARISING FROM A COURSE OF DEALING, LAW, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW. TO THE EXTENT AN IMPLIED WARRANTY CANNOT BE EXCLUDED, SUCH WARRANTY IS LIMITED IN DURATION TO THE WARRANTY PERIOD. BECAUSE SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, THE ABOVE LIMITATION MAY NOT APPLY. This disclaimer and exclusion shall apply even if the express warranty set forth above fails of its essential purpose.

## TRAINING

### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

#### **TRAINING CENTRES:**

- Phoenix, Arizona, **USA**
- Porvoo, Finland
- Sandhurst, England, UK

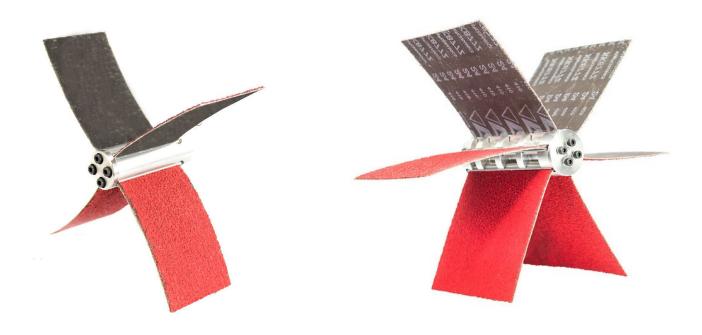
Picote training is highly recommended to get the most out of your investment.

Visit our website at www.picotegroup.com or contact us at: training@picotesolutions.com to find out about course offerings, pricing, and scheduling. Certificates are provided for all trainings.



Rev 5: Ryan Boldan Date: Jun 25, 2024





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