

*If it needs to be cut, cut Exact.*

**exact**  
PIPE CUTTING SYSTEM

*User Guide and Compatibility Results Table –*

# ***INOX 220 and 360 Machines***

These are the original instructions.  
All instructions are available on website: [exacttools.com/manuals](http://exacttools.com/manuals)

## 1. Introduction

- **Guide's goal:** This guide is designed to help you achieve the best possible cut with INOX machines. To accomplish this, machines, blades, speeds, and other parameters have been tested to determine the optimal set of settings you should use.
- **Target audience:** End customers, specifically technical operators.
- **Quick description of INOX machines:** Our INOX pipe saws are engineered for cutting stainless steel and acid-resistant pipes. To prevent contamination, all parts that encounter the pipe are made of stainless steel, ensuring you can work with the most demanding materials without risking corrosion on the pipe wall.

When paired with the INOX blade, these saws deliver an unbeatable combination for jobs where speed and cut quality are critical. They are easy to handle and designed for efficiency:

- **INOX 220:** Pipe OD range 20 mm – 220 mm
- **INOX 360:** Pipe OD range 75 mm – 360 mm

## 2. Blade descriptions and recommendations

### Premium Blades for the Hardest Stainless Steels.

Designed specifically for cutting stainless steel and acid-proof steel, these blades deliver excellent performance and durability, even with the toughest materials.

<b>Blade names</b>	<b>Diameter (mm)</b>	<b>Bore (mm)</b>	<b>Kerf (mm)</b>	<b>Body (mm)</b>	<b>Teeth</b>
Inox 140	140	62	1.65	1.3	46
Inox 140 Thin	140	62	1.40	1.2	56

- **Recommended use:**
  - **Inox 140:** For thicknesses from 3 mm up to 12.5 mm (INOX 220 machine) and up to 15 mm (INOX 360 machine).
    - (Benefits: Robustness and longer lifespan)
  - **Inox 140 Thin:** For thicknesses from 1 mm up to 3 mm.
    - (Benefits: High precision and fine cutting quality).

## 3. Parameters to consider

- **Pipe wall thickness:**

<b>Machine name</b>	<b>Min OD (mm)</b>	<b>Max OD (mm)</b>	<b>Max pipe wall (mm) (INOX)</b>
INOX 220	20	220	<b>12.5</b>
INOX 360	75	360	<b>15</b>

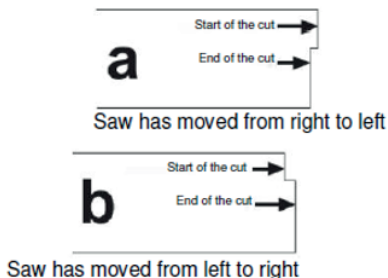
- **Recommended blade speeds (2 speeds):**
  - Speed I: For precise cuts or very thin pipes.
  - Speed II: For thick pipes or fast cuts.
- **Tips for a regular feeding speed:**
  - Maintain a constant speed: *Avoid jerking or sudden accelerations, as uneven rotation can create marks or burr.*
  - Use a visual cue: *For example, mark the pipe to track progress and maintain a consistent rhythm.*

- Ergonomic position: *Ensure the pipe is securely attached. Position yourself comfortably so you can rotate without forcing.*
- Select the feeding speed as per the material and the thickness of the wall:
  - Too high speed can damage the blade, overload the pipe saw and give a poor cutting result.
  - Too low speed can lead to blade tip overheating and cause the blade to wear out quickly.
- **Impact on cutting quality:**
  - Feeding speed too slow:
    - Risk of localized heating → metal may become hardened.
    - Risk of overheating the blade.
  - Feeding speed too fast:
    - Incomplete or uneven cut (disc does not penetrate evenly at the start
    - Increased vibration → burr.
  - Regular and appropriate feeding speed:
    - Clean and even cut.
    - Reduced burr.
    - Minimized risk of overheating.
    - Optimized disc life.

## 4. Step-by-step procedure

- 1) Preparation:
  - Check the condition of the blade (change it if you notice any teeth missing).
  - Secure the pipe firmly.
- 2) Set the parameters:
  - Select the appropriate blade speed.
  - Position the blade correctly.
- 3) Cutting:
  - Start the machine and wait for the blade to reach the set speed.
  - Push the machine down until the yellow marking on the unlocking switch disappears.
  - Feed the machine around the pipe at a constant, steady speed.
- 4) Quality control:
  - Inspect the cut to ensure it is smooth and free of burr.
- 5) Calibrating the machine (Optional: Only if the result doesn't meet expectations):
  - You must remember that the quality of the cut can be influenced by multiple factors, such as pipe size, material, wall thickness, surface quality, roundness, welded seams, blade condition, feed rate, and operator experience. These variables may cause the saw to drift left or right, resulting in an imperfect cut.

Figure 1:  
Misalignments  
of the cut



- If the cutting line goes from right to left (Figure 1 / a), turn the body plate clockwise (Figure 2 / a).
- If the cutting line goes from left to right (Figure 1 / b), turn the body plate counterclockwise (Figure 2 / b).

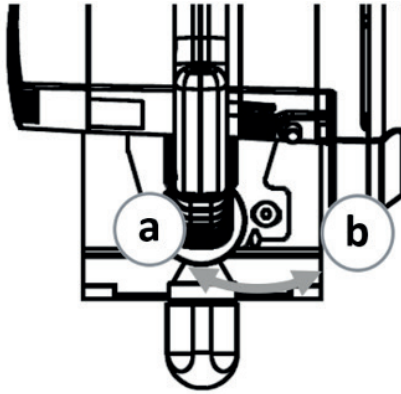


Figure 2:  
Body plate  
positions

- **CAUTION!** Blade alignment adjustment is highly effective but can cause damage to the blade and/or saw if over-adjusted.
- For detailed instructions on adjusting the saw, refer to the INOX Series Operating Instructions.

## 5. Illustrations and photos



INOX 220



INOX 360



INOX 140 blade

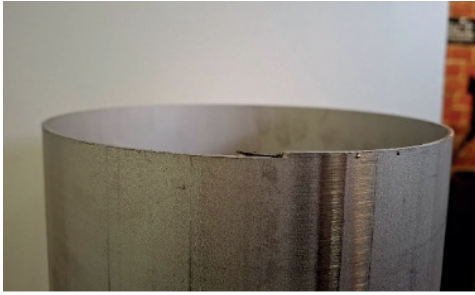


INOX 140 Thin blade



Figure 3: INOX 220 machine positioned on a stainless-steel pipe

**Note:** For more detailed information on positioning the pipe saw on the pipe, please refer to the machine manual.



Incorrect cut (The gap is 2mm)



Incorrect cut (zoom in)



Correct cut (no gap)

## 6. Summary table

<i>Pipe wall thickness</i>	<i>Blade</i>	<i>Blade speed</i>	<i>Feeding speed</i>
1mm - 3mm	INOX 140 Thin	Speed I	Slow and steady
3mm - 12.5mm	INOX 140	Speed II	Average speed

## 7. Testing and validation

### Important to know:

- **Blade Condition:** Tests were conducted with new blades. Results shown in the charts cannot be guaranteed if the blade is damaged or excessively worn.
- **Cutting Time:** Even if the cutting time appears slow, it represents the minimum time required without compromising quality.
- **Gripper Pressure:** Do not tighten grippers too strongly around the pipe to avoid circular deformation.
- **Feeding Consistency:** Maintain a constant feeding speed as much as possible to prevent irregularities on the pipe edge.
- **Operator Effort:** Larger pipes and bigger machines (such as INOX 360) require more force to rotate the saw, which can lead to alignment issues.
- **Operator Variability:** Results may vary significantly between operators due to differences in applied force and cutting technique.

<b>Machine</b>	<b>Diameter (mm)</b>	<b>Pipe wall (mm)</b>	<b>Blade</b>	<b>Blade speed</b>	<b>Time (s)</b>	<b>Cut quality</b>	<b>Ease</b>	<b>Observation</b>
220	114	1,6	Inox 140	I	20	Clean cut, no burr	Easy and smooth	A few flying chips. Manual rotation feed.
220	114	1,6	Inox 140	II	20	Clean cut, no burr	Easy and smooth	Few sparks at the start, some flying chips. Manual rotation feed.
220	168	3	Inox 140	I	30	Clean cut, no burr	Easy and smooth	A few flying chips.
220	168	3	Inox 140	II	30	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
220	219	2	Inox 140	I	40	Clean cut, no burr	Easy and smooth	A few sparks at the start and big flying chips.
220	219	2	Inox 140	II	40	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
220	219	4	Inox 140	I	60	Rough cut, lot of burr	Hard	A lot of sparks at the start and some flying chips.
220	219	4	Inox 140	II	50	Acceptable cut, lot of burr	Medium	A few sparks at the start and a few flying chips.
220	114	1,6	Inox 140 Thin	I	20	Clean cut, no burr	Easy and smooth	A few flying chips. Manual rotation feed.
220	114	1,6	Inox 140 Thin	II	20	Clean cut, some burr	Easy and smooth	Few sparks at the start, some flying chips. Manual rotation feed.
220	168	3	Inox 140 Thin	I	30	Clean cut, no burr	Easy and smooth	A few flying chips.
220	168	3	Inox 140 Thin	II	30	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
220	219	2	Inox 140 Thin	I	40	Clean cut, no burr	Easy and smooth	A few flying chips.
220	219	2	Inox 140 Thin	II	30	Clean cut, no burr	Easy and smooth	A few sparks at the start and a few flying chips.
220	219	4	Inox 140 Thin	I	50	Clean cut, some burr	Medium	A few sparks at the start and a few flying chips.
220	219	4	Inox 140 Thin	II	50	Acceptable cut, lot of burr	Medium	A few sparks at the start and a few flying chips.
360	114	1,6	Inox 140	I	25	Clean cut, some burr	Easy	A few flying chips.
360	114	1,6	Inox 140	II	25	Clean cut, some burr	Easy	A few flying chips.
360	168	3	Inox 140	I	35	Clean cut, no burr	Easy but slower	A few sparks at the start and a few flying chips.
360	168	3	Inox 140	II	35	Acceptable cut, some burr	Easy but slower	A few sparks at the start and a few flying chips.
360	219	2	Inox 140	I	40	Clean cut, some burr	Easy but slower	A few sparks at the start and a few flying chips.

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Machine	Diameter (mm)	Pipe wall (mm)	Blade	Blade speed	Time (s)	Cut quality	Ease	Observation
360	219	2	Inox 140	II	35	Acceptable cut, some burr	Easy but slower	A few sparks at the start and a few flying chips.
360	219	4	Inox 140	I	55	Acceptable cut, some burr	Medium	A few sparks at the start and a few flying chips.
360	219	4	Inox 140	II	55	Acceptable cut, lot of burr	Hard	A few sparks at the start and a few flying chips.
360	273	2	Inox 140	I	60	Acceptable cut, some burr	Medium	A few sparks at the start and a few flying chips.
360	273	2	Inox 140	II	60	Clean cut, some burr	Medium	A few sparks at the start and a few flying chips.
360	114	1,6	Inox 140 Thin	I	30	Clean cut, some burr	Easy and smooth	A few flying chips.
360	114	1,6	Inox 140 Thin	II	30	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
360	168	3	Inox 140 Thin	I	40	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
360	168	3	Inox 140 Thin	II	40	Clean cut, no burr	Easy and smooth	A few sparks at the start and a few flying chips.
360	219	2	Inox 140 Thin	I	45	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
360	219	2	Inox 140 Thin	II	45	Clean cut, some burr	Easy and smooth	A few sparks at the start and a few flying chips.
360	219	4	Inox 140 Thin	I	55	Clean cut, some burr	Medium	A few sparks at the start and a few flying chips.
360	219	4	Inox 140 Thin	II	55	Acceptable cut, some burr	Medium	A few sparks at the start and a few flying chips.
360	273	2	Inox 140 Thin	I	60	Clean cut, some burr	Medium	A few sparks at the start and a few flying chips.
360	273	2	Inox 140 Thin	II	60	Clean cut, some burr	Medium	Some sparks at the start and chips.

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