

Tinyjet **Pump**

A New Approach to Waterjet Cutting



Lower Investment

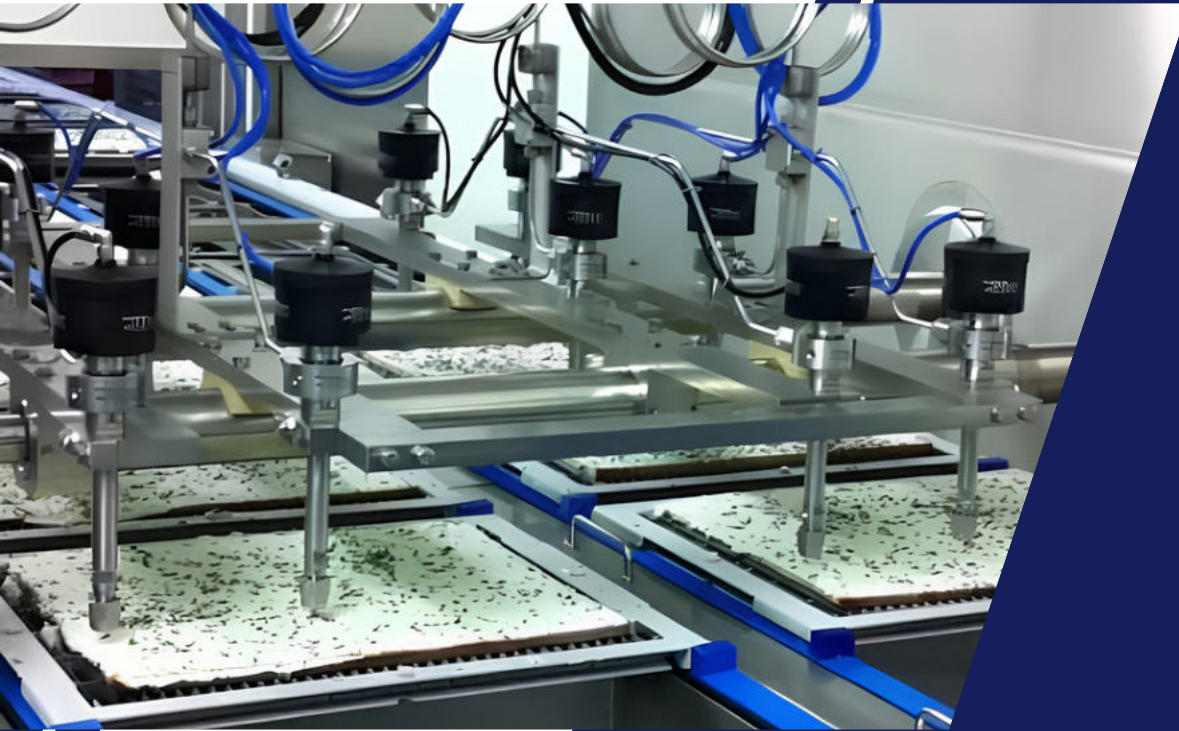


Lower Maintenance



Lower Operating Costs





WHY A NEW APPROACH?

For decades, waterjet cutting has relied primarily on **intensifier-based systems** capable of generating extremely **high operating pressures**.

These systems remain the preferred choice for applications where maximum cutting performance is the primary objective.

However, **not every application requires the highest possible pressure**.

For many manufacturers, the challenge is finding the right balance between **cutting performance, operating costs, energy consumption** and **system complexity**.

TinyJet was developed with this objective in mind.

TINYJET

TinyJet is a waterjet pump based on a **different pressure-generation concept**.

Instead of using hydraulic intensification, it employs a direct mechanical transmission system, simplifying the overall architecture while **reducing installed power, maintenance requirements and initial investment**.

The result is a reliable and efficient solution designed to deliver practical waterjet performance across a **wide range of industrial applications**.



THE TECHNOLOGY

Unlike conventional waterjet pumps based on hydraulic power units and pressure intensifiers, **TinyJet uses a direct mechanical crankshaft-driven transmission system.**

This design reduces the number of components involved in pressure generation, resulting in a simpler architecture and lower operating costs.

TinyJet is not intended to replace every ultra-high-pressure waterjet system.

It was developed for applications where efficiency, reliability and operating economics are as important as cutting performance.



Direct mechanical transmission instead of a hydraulic intensifier architecture.

KEY ADVANTAGES

This design approach simplifies the overall system architecture and delivers several important benefits:

01

More Accessible Investment

€39,500 lower initial investment.

02

Lower Maintenance Costs

€0.20/h compared to €2.00/h, significantly reducing maintenance-related operating expenses.

03

Longer Consumable Life

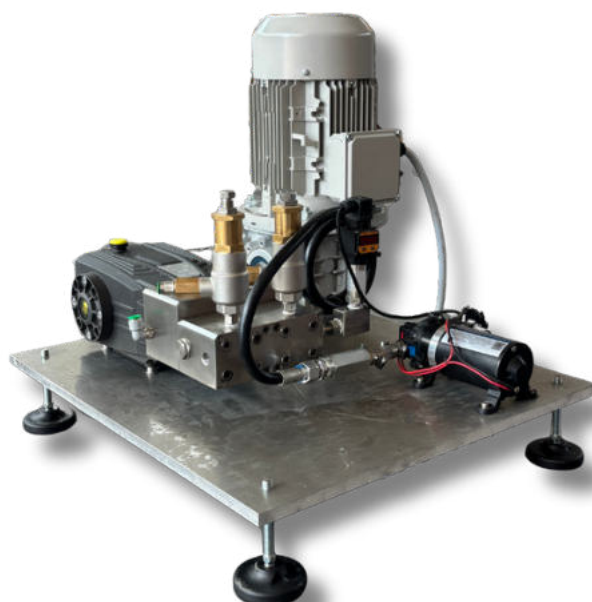
Orifice and focusing tube service life of up to **twice** that of conventional systems.

PRODUCT RANGE

Designed for Different Application Requirements

TinyJet is available in **4 models**, ranging from **3 kW** to **11 kW**, providing a flexible platform for different applications and integration requirements.

Model	Power		Flow Rate		Max. Orifice	Pressure		Speed
	kW	hp	L/mm	gpm	mm	Bar	psi	rpm
TinyJet 3	3,00	4,02	0,66	0,17	0,20	1.500	21.750	1.450
TinyJet 5,5	5,50	7,38	1,75	0,46	0,32	1.500	21.750	1.450
TinyJet 11	11,00	14,75	3,80	1,00	0,45	1.500	21.750	1.450
TinyJet 11 with Inverter	11,00	14,75	Variable	Variable	0,45	1.500	21.750	1.450



TECHNICAL COMPARISON

Intensifier-Based System vs TinyJet 11 kW

	Intensifier-Based Pump	<i>Tinyjet</i> Pump
Pump Cost	55.000€	15.000€
Electric Motor Power	37 kW	11 kW
Technology	Hydraulic Pump + Intensifier	Direct Mechanical Crankshaft Drive
Operating Pressure	3800 bar	1500 bar
Water Flow Rate	3,8 l/min	3,8 l/min
Maximum Orifice Size	0,33 mm	0,45 mm
Focusing Tube Length	76 mm	76 mm
Focusing Tube Internal Diameter	1,02 mm	1,02 mm
Maintenance Cost	2,00 €/h	0,20 €/h
Cutting Speed on 12 mm Ceramic	1500 mm/min	1000 mm/min
Orifice Life	50 h	> 100 h
Focusing Tube Life	60 h	> 120 h
Cooling System	Required	Not required

When maximum cutting speed is the primary objective, intensifier-based systems remain the industry benchmark.

TinyJet focuses on a different balance between performance, investment, maintenance requirements and operating costs, making waterjet technology accessible to a broader range of applications.

-72%

Pump Cost

-90%

**Maintenance
Costs**

2x

**Consumable
Life**



OPERATING COSTS

TinyJet reduces direct operating costs by **60%**

	Intensifier-Based Pump	<i>Tinyjet</i> Pump
Energy	7,40 €/h	2,20 €/h
Maintenance	2,00 €/h	0,20 €/h
Consumables	2,80 €/h	1,40 €/h
Abrasive	14,85 €/h	7,59 €/h
Water	2,10 €/h	0,57 €/h
Total	29,15 €/h	11,96 €/h

*Abrasive cost: €550/ton = €0.55/kg

Water cost: €2.50/m³

COST PER METER

The new pump reduces the direct cutting cost per meter by approximately **36%**

Intensifier-Based Pump	<i>Tinyjet</i> Pump
1550 mm/min = 93 m/h	1000 mm/min = 60 m/h
direct cost: 0,313 €/m	direct cost: 0,199 €/m

*Test performed on 12mm ceramic.

Intensifier-Based Pump	<i>Tinyjet</i> Pump
6,20 €/h	1,50 €/h
35,35 €/h	13,46 €/h

*Based on 10,000 operating hours.

LIFETIME MACHINE COST

Up to **62%** lower total hourly cost.



DESIGNED FOR

The pump we developed is particularly suited to companies looking to adopt abrasive waterjet technology with a more sustainable investment, or to optimize their production process with a more compact and efficient solution.

TinyJet is also available in a food-grade configuration for food processing applications.

TARGET APPLICATIONS

- Manufacturing SMEs
- Food cutting applications
- Technical workshops and fabrication shops
- Ceramic processing
- Prototyping and product development
- Automotive applications

OUR EXPERIENCE

For years, Eurowaterjet has supported waterjet users with spare parts, high-pressure components, abrasives, technical service, specialized consulting, pump overhauls and custom-engineered solutions.

With TinyJet, this experience has been translated into a new solution designed to deliver efficiency, accessibility and practical value in everyday production environments.

Request a Technical Evaluation

Contact Eurowaterjet to discuss the solution best suited to your production requirements.



Advanced Waterjet Solutions

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