

FOR OPTIMAL PERFORMANCE AND LONG SERVICE LIFE

Nozzle installation instructions

Grenades

Original version in English · US edition · October 2026

Models included

- GRENADE 80, GRENADE 60 and GRENADE 50.
- GRENADE 120, GRENADE 100 and GRENADE 70.
- BULLET GRENADE 60.



GRENADE 120



BULLET GRENADE 60



GRENADE 70

IMPORTANT These nozzles must only be used as part of a suitable high-pressure water cleaning system. Pressure, flow, hose and connection components must match the calibration and model used. Flow references in this edition are shown in gpm, with pipe sizes, dimensions and weight converted to U.S. units.

BRUNA · Roberto Bruña, S.L.

Scope and intended use

BRUNA designs and manufactures high-performance nozzles for cleaning sewer and drain lines. The Grenade family is intended for general cleaning and for dragging sand, gravel, stones and other debris from the bottom of pipelines, depending on the model used.

These instructions describe installation, operation, maintenance and storage. Keep this document available to all personnel who install or operate the nozzle.

Models covered

- GRENADE 50.
- GRENADE 60.
- BULLET GRENADE 60.
- GRENADE 70.
- GRENADE 80.
- GRENADE 100.
- GRENADE 120.

Manufacturing, sales and service

BRUNA

Roberto Bruña, S.L.

C/ Recta de Heras, 7

39619 San Salvador · Cantabria · España

www.robertobruna.com

IMPORTANT The exact technical characteristics of each unit depend on its calibration. Do not replace inserts, jets or internal components with parts not approved for the model.

Contents

1. Scope and intended use
2. Safety instructions
3. Product description
4. Transport, storage and cleaning
5. Installation and first use
6. Operation
7. Maintenance and troubleshooting
8. Technical data

Product description

Grenade nozzles connect to a high-pressure hose and use rear water jets to move through the pipe while cleaning. Jet angle, jet count and body design determine the cleaning behavior and pulling force of each model.

Within this family, some models are intended for general cleaning, while others are optimized to drag sediment and debris from the bottom of the line over short or long distances.

General cleaning models

GRENADE 60 and GRENADE 80 use rear jets at different angles to clean pipe walls and remove common buildup such as soap, grease and normal deposits. They can also be configured with an optional front jet.

Bottom-cleaning and dragging models

GRENADE 50, BULLET GRENADE 60, GRENADE 70, GRENADE 100 and GRENADE 120 are designed to move sand, gravel, stones and other sediment deposited at the bottom of the line. Their jet arrangement and body shape provide strong dragging action.

Safety instructions

DANGER High-pressure water can cause severe injury or death. Never test a nozzle at working pressure outside a pipe or a controlled test area.

Main warnings

- Completely depressurize the system before installing, removing or inspecting the nozzle.
- Never direct high-pressure jets toward people, animals, electrical equipment or unprotected objects.
- Check that all water outlets are free from obstruction before use.
- Do not twist the hose during installation. Turn the nozzle or use a suitable swivel fitting if required.
- Insert the nozzle into the pipe before applying pressure.
- Use only pressure and flow values compatible with the nozzle calibration and the cleaning system.
- Do not use the nozzle if threads, body or inserts are damaged.

Operator responsibility

The operator must assess jobsite-specific risks, establish a safe work area, control access and ensure that all personnel are trained in the use of high-pressure water equipment.

Personal protective equipment

- Suitable close-fitting work clothing.
- Eye and face protection against splash and particles.
- Protective gloves suited to the task.
- Slip-resistant safety footwear.
- Respiratory protection and any additional PPE required by the jobsite conditions.

Transport, storage and cleaning

- Transport the nozzle so it cannot move, fall or strike other objects.
- After use, remove dirt and contamination carefully.
- Dry the nozzle before storage.
- Store the nozzle in a case, tray or holder that protects the body and water outlets from impacts.
- Avoid long-term storage with water trapped inside the nozzle.

Installation and first use

Checks before installation

- Verify that the selected model matches the pipe size and available flow.
- Check thread compatibility between the nozzle, adapter and hose.
- Inspect the thread, body and jets visually.
- Make sure all jets are clean and unobstructed.
- Confirm that the system is fully depressurized before handling the connection.

Connection to the hose

1. Place the nozzle and hose on a stable surface away from the manhole edge or line entrance.
2. Screw the nozzle or the suitable adapter on by hand without forcing the thread.
3. Avoid twisting the hose to tighten the connection.
4. Tighten with the appropriate tool without overloading the thread or nozzle body.
5. Install skids, guides or other accessories when required by the pipe size or application.
6. Insert the nozzle into the line in a controlled manner before pressurizing the system.

Operation

- Keep unauthorized persons away from the work area.
- Apply pressure only when the nozzle is inside the pipe and in a safe position.
- Increase pressure gradually to the required working level.
- Control forward and backward movement to avoid impacts on bends, fittings or section changes.
- Do not try to free a stuck nozzle by sudden pressure spikes.
- Before fully removing the nozzle, stop the water and release residual pressure.

Model guidance during operation

Model / group	Primary use	Operational guidance
GRENADE 60 / 80	General cleaning, soap, grease and common buildup.	Maintain controlled travel speed and evaluate whether a front jet is required.
GRENADE 50 / BULLET 60 / 70	Dragging sand, small stones and debris in small to medium pipe sizes.	Control the path carefully and avoid repeated impacts in bends or fragile fittings.
GRENADE 100 / 120	Heavy sediment, sand and stones in larger pipe sizes.	Work with sufficient flow and control nozzle return to avoid impacts when exiting the line.

Maintenance and troubleshooting

IMPORTANT Carry out maintenance work only with the system completely stopped, isolated and depressurized.

- Inspect the nozzle after every use.
- Replace damaged or obstructed inserts or jets that cannot be cleaned properly.
- Check the overall condition of the body and threads.
- Use only BRUNA spare parts or parts expressly approved for the model.

After maintenance

- Verify that all dismantled parts have been reassembled correctly.
- Check the tightness of threaded parts.
- Remove tools and materials from the work area.
- Restart the system in a controlled manner.

Common issues and corrective actions

Symptom	Possible cause	Action
Irregular thrust or unstable path	One or more jets partially obstructed.	Depressurize, disassemble and clean the jets; inspect for damage.
Reduced cleaning performance	Insufficient flow or incorrect setup.	Check available flow, calibration and insert condition.
Poor bottom-cleaning performance	Incorrect nozzle model or excessive travel speed.	Select the correct model and operate with controlled movement.
Leak at the connection	Incorrect or damaged thread, seal or adapter.	Depressurize and replace the defective component.

Technical data

Values taken from the BRUNA 2026 U.S. catalog. Flow values are shown in gpm and dimensions are shown in inches. Final calibration must be adapted to the customer equipment.

Model	Thread	Pipe	Jets	Flow	Dimensions	Weight	Notes
GRENADE 80	1" or 3/4"	8" - 24"	(R) 10 x M8 (30° - 10°) · (F) 1 x M8	from 42 gpm	3.1" x 7"	7.9 lbs	Optional front jet
GRENADE 60	1" or 3/4"	6" - 16"	(R) 6 x M8 (30° - 10°) · (F) 1 x M8	from 16 gpm	2.3" x 4.3"	2.6 lbs	General cleaning
GRENADE 120	(1" - 1/4") or 1"	10" - 48"	(R) 15 x M13 (7° - 15° - 20°)	from 60 gpm	4.7" x 7.8"	22 lbs	Laminar flow
GRENADE 100	1" or 3/4"	8" - 24"	(R) 10 x M8 (7° - 15°)	from 53 gpm	3.9" x 6.8"	10.1 lbs	Sediment dragging

R = rear jets · F = front jet(s).

Technical data · continued

Model	Thread	Pipe	Jets	Flow	Dimensions	Weight	Notes
BULLET GRENADE 60	1" or 3/4"	6" - 18"	(R) 6 x M8 (10°)	from 16 gpm	2.3" x 5.2"	2.6 lbs	Long distances
GRENADE 70	1" or 3/4"	6" - 24"	(R) 12 x M8 (7° - 14° - 21°)	from 32 gpm	3" x 5"	4.4 lbs	12 rear jets
GRENADE 50	1/2" or 3/8"	6" - 16"	(R) 8 x M8 (7° - 15°)	from 10 gpm	2" x 3.7"	1.6 lbs	Sand, stones and debris

IMPORTANT If the available pressure or flow does not match the nozzle calibration, contact BRUNA before use. An unsuitable setup may reduce performance and increase the risk of damage.



Installation instructions · Grenades · US edition · October 2026