

TENKA

PNEUMATIC MORTAR APPLICATION TOOL • TK-51 / TK-51N

TECHNICAL USER MANUAL

Setup • operation • nozzle configuration • wall and ceiling application • cleaning • maintenance



System	Pneumatic; supplied by an external compressor
Nozzles	5 individually blockable positions: 3 front + 2 upper
Wall nozzles	3 forward-facing nozzles
Ceiling nozzles	2 upward-facing nozzles at approx. 40°
Operating pressure	approx. 7–8 bar; do not exceed 9 bar
Recommended hose	8 mm internal diameter; recommended length min. 15 m

PURPOSE OF THIS DOCUMENT

This manual describes the safe use of the TENKA TK-51. The five-nozzle system allows the tool to be configured separately for vertical wall application and for projecting mortar towards ceilings.

2026 Edition • Technical user documentation

1. Intended use and operating principle

The TENKA TK-51 is a manually operated pneumatic tool designed to apply mortar using compressed air. The material is held in the hopper and is propelled directly by air jets generated at the nozzles; mortar does not flow through the hose. The hose carries compressed air only, from the compressor through the air gun, lance and pneumatic manifold.

The distribution assembly has five working nozzle positions. Three nozzles face forward and form the main projection area for walls and other vertical surfaces. Two additional nozzles point upwards at approximately 40°, allowing mortar to be projected towards ceilings without excessively twisting the tool.

CONFIGURATION PRINCIPLE

Activate only the nozzles needed for the job. Close unused positions with their dedicated blocking caps. Reducing the number of active nozzles lowers the instantaneous air demand and can help stabilize operation when the compressor has limited capacity.

2. Main components

	Compressed-air gun with trigger + metal lance	Controls the start and stop of compressed airflow. The lance carries air to the pneumatic body.
	Pneumatic body / manifold	Distributes air to the five nozzle passages.
	3 individually blockable front nozzles	Projects mortar onto walls and vertical surfaces.
	2 individually blockable upper nozzles, ~40°	Projects mortar towards ceilings.
	Mortar hopper, 2 mm wall thickness	Holds the prepared mortar.
	Support handle	Allows the operator to control the loaded tool.
	Nozzle blocking caps	Individually disable unused nozzle positions.

3. Safety instructions

WARNING – COMPRESSED AIR

Do not exceed a pressure of 10 bar. During normal operation, set the system to approximately 8 bar.

Always stop the compressor and fully depressurize the system before removing nozzles, blocking caps or connectors.

- Before each use, inspect the hose, clamps, quick couplings, air gun, lance, pneumatic body, nozzles and threads.
- Do not use hoses that are cracked, swollen or cut, or connectors showing looseness, deformation or air leaks.
- Never direct the nozzles towards people, animals, windows or fragile objects.
- When working overhead, always wear eye/face protection and suitable work clothing.
- Hold the tool by its dedicated support handle; do not allow the entire weight of the loaded tool to rest on the air gun and lance.
- Do not cap or uncapped any nozzle while the system is pressurized.
- Do not compensate for inadequate compressor air delivery by exceeding the permitted pressure.

4. Materials and mortar preparation

The tool may be used with compatible mortars based on cement, sand, lime, water and, where appropriate, gypsum, provided the material is sufficiently workable to slide freely inside the hopper and be picked up by the air jets. For site-mixed mortar, use washed sand with a grading suitable for the mix. As a practical guide, approximately 0–3 / 0–4 mm sand is suitable for many applications; always follow the mortar formulation and the requirements of the job.

Mix the mortar thoroughly, removing lumps and foreign objects. Mortar that is too dry will not feed consistently towards the nozzles, while an excessively fluid mix may cause uncontrolled splashing. Before adjusting the water content, check that the nozzles are clean and that the air supply is adequate.

5. Compressor and air-hose requirements

Item	Operating recommendation
Pressure	approx. 8 bar during operation; maximum 9 bar
Hose	recommended internal diameter 8 mm
Length	minimum approx. 15 m to keep the compressor away from the operator; maximum 39 m
Available airflow	must match the number of active nozzles; reduce the number of nozzles if pressure drops

6. Preparation before use

1. Check the overall condition of the tool and ensure that all components are clean and properly secured.
2. Connect the air hose and check the clamps and quick couplings.
3. Select the nozzle configuration according to the surface: wall or ceiling.
4. Fit blocking caps to any nozzle positions that will not be used.
5. Prepare the mortar and lightly dampen the inside of the hopper before the first filling.
6. Start the compressor, set the pressure and perform a trial application in a controlled area.

7. Nozzle configuration for walls

For walls, primarily use the three forward-facing nozzles. The two upper nozzles, angled at approximately 40°, should be blocked when they are not required. Depending on the mortar and compressor capacity, one, two or three forward-facing nozzles may be used.

Configuration	Use	Note
1 front nozzle	spatter coat, confined areas or low-capacity compressor	concentrated jet with lower air demand
2 front nozzles	general application	balance between working width and air demand
3 front nozzles	main mortar coat and higher productivity	requires a stable compressed-air supply



8. Nozzle configuration for ceilings

For ceilings, use the two upward-facing nozzles set at approximately 40°. This geometry allows the tool to remain in a more natural operating position while projecting mortar upwards. As a rule, block the three front nozzles if they are not needed.

- Start with one upper nozzle to test mortar consistency and adhesion.
- Enable the second upper nozzle only if the compressor maintains stable air pressure.
- Maintain control of the tool with both hands and avoid standing directly underneath the area where mortar is being projected.
- Work in uniform passes and avoid applying excessive material to a single area.

9. Mortar application

9.1 Bonding / spatter coat

For the initial spatter coat, a single active nozzle is recommended, selected according to the application direction. The material should be fluid enough to break up in the air jet, but should not form an excessively watery film. Move the tool steadily to achieve an even distribution over the substrate.

9.2 Main mortar coat

For the main coat, increase the number of active nozzles only as far as the compressor can support without a significant pressure drop. A typical wall setup uses 2–3 forward-facing nozzles; for ceilings, 1–2 upper nozzles are normally used. If projection becomes weak, check the nozzles and air supply first; do not raise the pressure above 10 bar.

PRACTICAL RULE

If the tool works well with fewer nozzles but performs poorly with all selected nozzles, the likely cause is insufficient compressor airflow or a leak in the air circuit—not a need for higher pressure.

10. Cleaning and storage

- Empty all remaining mortar from the hopper immediately after completing the work.
- Stop the compressor and fully release the pressure from the system.
- Thoroughly rinse the hopper, nozzle area and discharge openings under running water.
- Remove and clean nozzles only when the system is fully depressurized.
- If one air passage delivers reduced airflow, purge it individually after removing its nozzle, with the outlet pointing in a safe direction.
- Allow all water to drain and store the tool in a dry place, away from prolonged sunlight exposure.

DURING OPERATION

Rinse the hopper periodically to limit mortar buildup. Hardened mortar around the nozzles and openings can reduce airflow and make later removal difficult. DO NOT LEAVE THE TOOL SUBMERGED IN THE WATER USED FOR WASHING. Always store it out of the water with its front end facing downwards.

11. Troubleshooting

Symptom	Likely cause	Corrective action
Mortar does not feed consistently	mortar too dry, sticky or poorly mixed	check the mix design, water and mixing
One nozzle projects weakly	nozzle or air passage partly blocked	stop, depressurize, clean and purge the passage
All nozzles project weakly	insufficient airflow or leaks in hose/couplings	check the circuit and reduce active nozzles
Uneven application on ceilings	dirty upper nozzles or too many active nozzles	clean the nozzles; start with one upper nozzle
Hose slips off the connector	loose or unsuitable clamp	stop and depressurize; fit a strong metal hose clamp
Mortar falls instead of being projected	weak air jet or unsuitable material	check airflow, nozzles and mortar consistency

12. Inspection and preventive maintenance

Component	Inspection	Action
Hopper	buildup, deformation	wash after each use
5 nozzles	openings, threads, wear	clean and refit without overtightening
Blocking caps	sealing and secure fit	clean; replace if damaged
Pneumatic body	cracks, looseness, uneven airflow	do not use if structural damage is found
Air gun / trigger	free movement	check before use

Component	Inspection	Action
Lance	deformation and joints	inspect periodically
Hose / couplings	cracks, swelling, leaks	replace if damaged

13. Connecting the hose to the pneumatic air gun

The pneumatic air gun is equipped with a universal MALE quick-connect fitting. Therefore, the air hose must have a matching universal FEMALE quick connector at the tool end. At the compressor end, the hose requires a universal MALE quick connector. In short, the hose must have a FEMALE connector at one end and a MALE connector at the other.



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14. Essential technical specifications

Specification	TK-51
Operating principle	Pneumatic
Total nozzle positions	5
Front nozzles	3, individually blockable
Upper ceiling nozzles	2, individually blockable, angled at approx. 40°
Recommended pressure	8 bar
Maximum pressure	10 bar
Recommended hose internal diameter	8 mm
Recommended hose length	minimum approx. 15 m

TENKA TK-51 • Proper nozzle configuration, clean air passages and a stable compressed-air supply are essential for consistent and safe operation.