

BLASTING BOTTLENECK CHECKLIST

Find what is limiting throughput in 20 to 30 minutes

Purpose: Identify the single constraint slowing blasting output, then take the next best action.

Most bottlenecks fall into one of four categories: Time loss, Compressed air, Abrasive media, Rework.

Before you start (2 minutes)

Choose a representative window: not the easiest parts, not the worst.

Tools: phone timer, notepad, system gauges.

Measure three full cycles for one common part type.

STEP 1: Time the cycle (8 minutes)

Time three cycles and write your totals.

Equipment	Cycle 1	Cycle 2	Cycle 3
Hands-on blast time	—	—	—
Handling time (load, unload, reposition, masking)	—	—	—
Waiting time (air recovery, media recovery, inspection delays)	—	—	—
Rework signals (reblast, rejects, extra passes)	—	—	—

Quick read of your results

- If blast time dominates, go to Step 2: Air and Media checks
- If handling or waiting dominates, go to Step 3: Time loss checks
- If rework shows up, go to Step 4: Rework checks

Your current bottleneck category (tick one):

- Time loss
 Compressed air
 Abrasive media
 Rework
 Unsure

STEP 2: Compressed air checks (5 minutes)

A) Pressure drop under load

Record pressure **at idle**, then **during blasting**.

Reading	Value
Pressure at idle	—
Pressure during blasting	—
Drop under load (idle minus blasting)	—

STEP 2: Compressed air checks (5 minutes) continued

Interpretation

- Stable pressure under load means air is probably not your primary constraint.
- Noticeable drop under load means throughput is air-limited, even if idle pressure looks fine.

Next actions (tick all that apply)

- Leak sweep (listen and inspect couplings, deadman, hose joins)
- Check restrictions (filters, water traps, damaged hoses, kink points)
- Review hose length and diameter for the run
- Validate compressor delivery at working pressure against nozzle demand

B) Nozzle condition and size

Record nozzle orifice size: ____ mm or ____ inches

Nozzle wear visible or suspected? Yes No Unsure

Signs the nozzle is limiting throughput

- Cutting is slow, operators add extra passes
- Finish varies across the part
- Air demand feels high, pressure stability is poor

Action: Replace or confirm nozzle orifice size and match it to available air at working pressure.

STEP 3: Time loss checks (5 minutes)

A) Handling and touch time

Is handling time higher than blast time? Yes No

If Yes, tick the most likely causes:

- Frequent repositioning
- Masking and unmasking delay
- Fixture and jig inefficiency
- Travel distance between load, blast, unload, inspection
- Parts not staged, searching and waiting

Fast fixes

- Improve fixturing to reduce repositioning
- Batch similar parts to cut changeovers
- Stage parts, consumables, and PPE before the run
- Move inspection closer to blast, simplify sign-off flow

STEP 3: Time loss checks (5 minutes) continued

B) Waiting time

Does the operator wait for any of these?

- | | |
|----------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Media recovery | <input type="checkbox"/> Inspection availability |
| <input type="checkbox"/> Extraction clearing | <input type="checkbox"/> Forklift or crane |
| <input type="checkbox"/> Air recovery | <input type="checkbox"/> Supervisor sign-off |

Fast fix: Remove the repeat delay that happens every cycle, then re-time three cycles.

STEP 4: Abrasive media checks (5 minutes)

A) Cutting rate and consistency

Abrasive type and grade used: _____

Symptoms, tick all that apply:

- Slow stripping or slow profile build
- Excess passes needed to hit spec
- Inconsistent finish
- Dust rising quickly
- Poor visibility

Interpretation

- If cutting is slow + dust is high, media may be breaking down, contaminated, or wrong for the job.
- If finish is inconsistent, media condition or delivery consistency may be the issue.

Next actions:

- Check media condition and contamination
- Confirm grade and type suits the coating and finish spec
- Review maintenance frequency, cleaning, and replenishment
- Review extraction performance relative to dust load

B) Recovery keeping pace

Do operators ever wait for media? Yes No

If yes, identify where recovery is throttled:

- | | | |
|------------------------------------------|--------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Hopper | <input type="checkbox"/> Conveyor | <input type="checkbox"/> Sieve or separator |
| <input type="checkbox"/> Blockage points | <input type="checkbox"/> Collection points | |

Next action: Clear choke points, then set a maintenance rhythm to prevent repeat constraints.

STEP 5: Rework checks (5 minutes)

Reblast rate

Count reblasts per hour (or per batch): _____

Main reasons, tick all that apply:

- Missed areas
- Spec unclear
- Failed inspection
- Inconsistent finish
- Operator technique varies

Interpretation

Rework is usually caused by instability:

- Variable pressure under load
- Nozzle wear
- Media breakdown or contamination
- Technique inconsistency
- Unclear acceptance criteria

Next actions:

- Stabilise air delivery and verify pressure under load
- Replace or verify nozzle condition and size
- Standardise distance, angle, and method
- Agree measurable acceptance criteria, use reference panels where possible

DECISION: What to do next

What single change will you make first? _____

Then re-time the three cycles after the change

Measure	Before	After
Hands-on blast time		
Handling time		
Waiting time		
Rework signals		

Outcome

- Throughput improved, lock in the new baseline and add this check to shift routine
- No meaningful change, move to the next most likely constraint category

