

AI-04707 Fault Tree Analysis Breville Barista Impress

#FTA

Build a FTA for a Breville Barista Impress Low Espresso Output

Fault Tree Analysis (FTA) ⇄

Breville Barista Express Impress — Low Espresso Output

Applicable machine: Breville **Barista Express Impress**, model BES876 or regional equivalent.

Top Event:

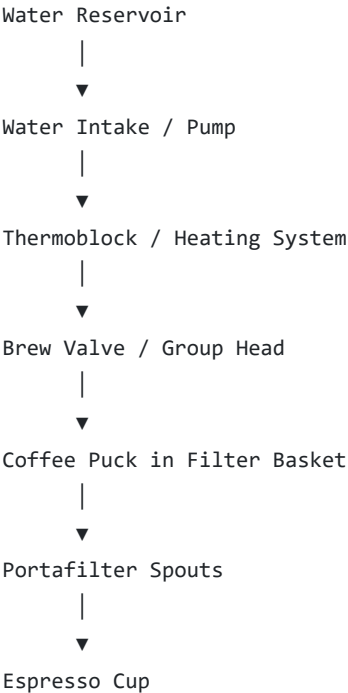
Espresso output is lower than expected

This may mean:

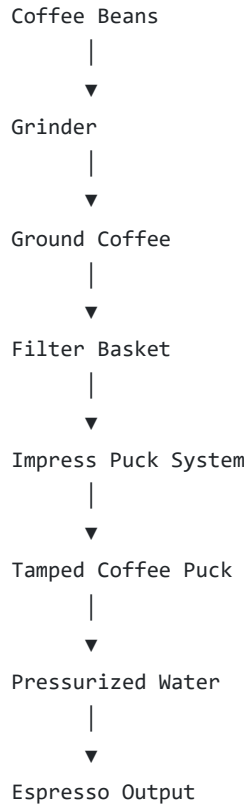
- Little espresso comes from the portafilter.
- Espresso flows very slowly or only drips.
- The programmed shot stops before the desired volume.
- The shot produces low liquid yield despite apparently normal extraction.
- The pump runs, but the cup receives little or no espresso.

The analysis below treats the espresso machine as a small hydraulic, thermal, electrical, and process-control system.

1. System Functional Flow



The coffee path is:



The Barista Express Impress combines an integrated grinder, dose-control system, assisted tamping mechanism, pressure gauge, pump, group head, and programmable shot buttons. Its extraction result is therefore affected by both **coffee preparation** and **machine hydraulics**.

2. Top-Level Fault Tree

TOP EVENT:

LOW ESPRESSO OUTPUT

- |
- |— OR — A. Shot volume is incorrectly programmed
- |
- |— OR — B. Coffee puck restricts water flow excessively
- |
- |— OR — C. Coffee puck provides insufficient resistance
- |
- |— OR — D. Coffee dose is incorrect
- |
- |— OR — E. Grinder or coffee delivery problem
- |
- |— OR — F. Filter basket or portafilter blockage
- |
- |— OR — G. Water supply or hydraulic system problem
- |
- |— OR — H. Brew temperature or heating problem
- |
- |— OR — I. Coffee bean condition problem

- |
- ├─ OR ─ J. User process or operating error
- |
- └─ OR ─ K. Internal machine fault

3. Branch A — Incorrectly Programmed Shot Volume

Fault Event

The machine stops extraction before the desired espresso volume is delivered.

A. LOW ESPRESSO OUTPUT DUE TO SHOT PROGRAMMING

- |
- ├─ OR ─ 1. 1-Cup button programmed for a small volume
- |
- ├─ OR ─ 2. 2-Cup button programmed for a small volume
- |
- ├─ OR ─ 3. User selected 1-Cup instead of 2-Cup
- |
- ├─ OR ─ 4. Extraction manually stopped too early
- |
- ├─ OR ─ 5. Volumetric programming was changed unintentionally
- |
- └─ OR ─ 6. User expects a larger beverage volume than the machine's
programmed espresso yield

Checks

1. Observe whether the pump stops automatically.
2. Compare the output from the **1-Cup** and **2-Cup** buttons.
3. Run the shot using a scale under the cup.
4. Determine whether the low output is:
 - Low programmed volume, or
 - Restricted extraction.
5. Reprogram the desired shot volume if necessary.

Breville provides a procedure for changing the programmed shot volume: enter programming mode, select the desired cup button, stop extraction at the desired volume, and allow the machine to save the setting. ([YouTube](#))

Important distinction

If the machine consistently stops at the same low volume with:

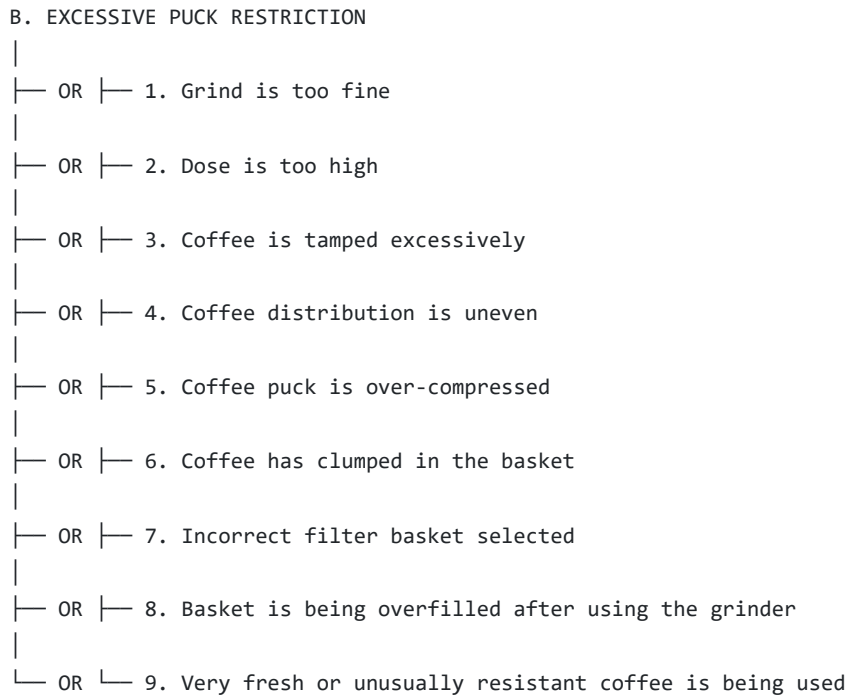
- Normal pump sound,
- Normal flow,
- No excessive pressure,

then the problem may be **programming**, not a blocked puck or defective pump.

4. Branch B — Coffee Puck Restricts Flow Excessively

Fault Event

Water cannot pass through the coffee puck at the expected rate.



Typical symptoms

- Espresso only drips.
- Pump sound becomes strained or changes pitch.
- Pressure gauge rises toward the high end.
- Very little liquid enters the cup.
- The puck may be muddy or difficult to remove.
- Extraction takes much longer than expected.

Breville’s troubleshooting guidance identifies excessively fine grind, excessive coffee quantity, excessive tamping, and blocked filter baskets as causes of restricted flow. (Breville)

Corrective actions

Suspected cause	Corrective action
Grind too fine	Adjust one or two steps coarser
Excessive dose	Reduce grind amount or use the dose-trimming process
Excessive tamping	Use the Impress tamping mechanism correctly; avoid adding extra manual force
Uneven distribution	Distribute grounds evenly before tamping
Incorrect basket	Confirm 1-Cup/2-Cup basket matches the selected dose mode
Coffee clumping	Break up clumps and inspect grinder chute

Overfilled basket	Trim excess coffee after tamping
Highly resistant beans	Use a slightly coarser grind or adjust dose

Primary diagnostic test

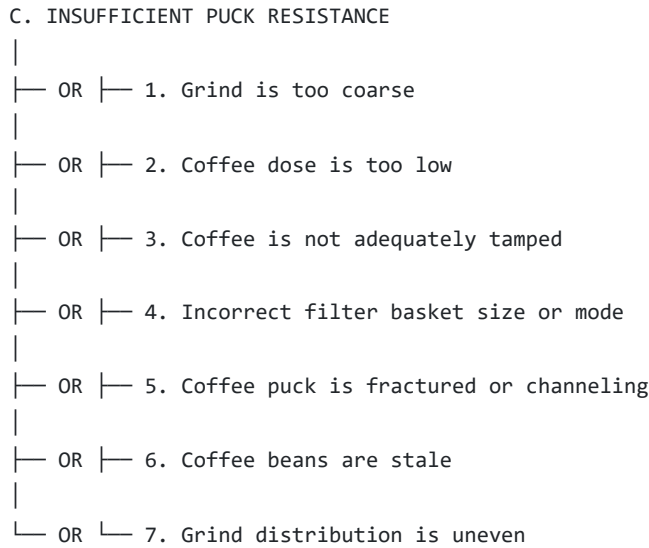
Change only one variable at a time:

1. Keep the same beans.
2. Keep the same basket.
3. Reduce the dose slightly or adjust the grind one step coarser.
4. Pull another shot.
5. Observe whether flow improves.

5. Branch C — Insufficient Puck Resistance

Fault Event

Water passes through the coffee puck too easily, producing low extraction resistance and potentially low espresso yield quality.



Typical symptoms

- Espresso runs too quickly.
- Pressure gauge does not reach the expected extraction range.
- Espresso may look thin or pale.
- Crema is weak or disappears quickly.
- Output volume may be reached quickly but taste and body are poor.
- The cup may contain more water but less concentrated espresso.

Breville's extraction guidance associates fast flow or low pressure with a grind that is too coarse, insufficient coffee, or insufficient tamping. (Breville)

Corrective actions

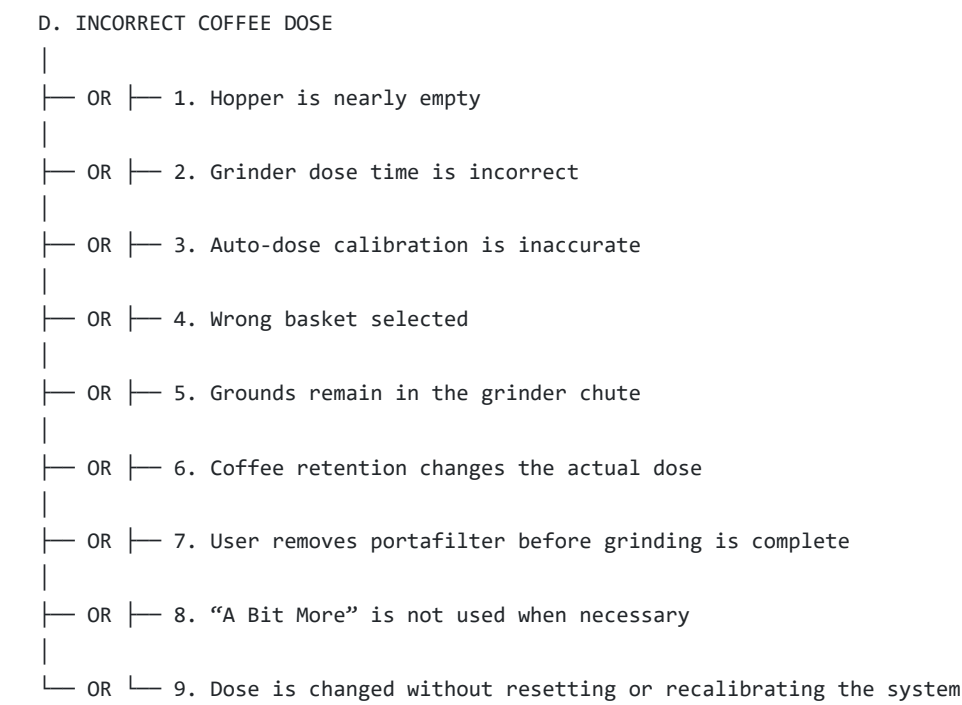
Suspected cause	Corrective action
Grind too coarse	Adjust finer
Dose too low	Increase dose or use the Impress “A Bit More” function
Insufficient tamp	Ensure the portafilter is properly positioned and the tamp cycle completes
Wrong basket	Match the basket to the selected 1-Cup or 2-Cup mode
Channeling	Improve distribution before tamping
Stale beans	Use fresher beans
Uneven grounds	Clean grinder chute and distribute grounds consistently

The Barista Express Impress manual identifies incorrect basket selection, underdosing, and grind adjustments as causes of extraction problems. ([ManualsLib](#))

6. Branch D — Incorrect Coffee Dose

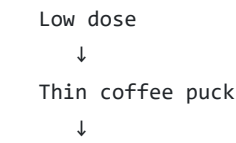
Fault Event

The amount of ground coffee entering the basket is outside the usable range.



Dose-related failure modes

D1. Underdose



Low hydraulic resistance
↓
Fast flow / low pressure
↓
Weak espresso

D2. Overdose

High dose
↓
Thick or compressed coffee puck
↓
Restricted water flow
↓
Slow drip / low cup output

D3. Dose inconsistency

Inconsistent grinder delivery
↓
Variable puck resistance
↓
Shot-to-shot variation
↓
Unpredictable output

Checks

- Confirm the correct basket is installed.
- Verify the hopper contains enough beans.
- Confirm the portafilter is fully inserted into the grinding cradle.
- Ensure the hopper is locked.
- Check for coffee buildup around the grinding cradle.
- Check whether the machine is in automatic or manual dosing mode.
- Weigh the dose using a digital coffee scale if available.
- Inspect whether the dose is visibly below or above the basket's intended fill level.

The Impress system's troubleshooting information specifically notes that incorrect basket selection, insufficient beans, grinder settings, and portafilter positioning can affect dosing. ([ManualsLib](#))

7. Branch E — Grinder or Coffee Delivery Problem

Fault Event

The grinder does not deliver a consistent or sufficient amount of coffee to the filter basket.

E. GRINDER / COFFEE DELIVERY FAILURE
|
├─ OR ─ 1. Hopper not locked
|

- └─ OR └─ 2. Insufficient beans
- |
- └─ OR └─ 3. Grinder chute partially blocked
- |
- └─ OR └─ 4. Upper burr incorrectly installed
- |
- └─ OR └─ 5. Burrs contaminated with oily coffee residue
- |
- └─ OR └─ 6. Ground coffee retained in chute
- |
- └─ OR └─ 7. Portafilter not fully inserted
- |
- └─ OR └─ 8. Grinder times out because grind is too fine
- |
- └─ OR └─ 9. Grinder dose calibration is inaccurate
- |
- └─ OR └─ 10. Grinder motor or burr mechanism is malfunctioning

Symptoms

- Little coffee is deposited into the basket.
- Grinder runs for an unusually long time.
- Grinder stops or times out.
- Dose indicator repeatedly asks for more coffee.
- Grounds emerge intermittently.
- The machine appears to underdose even though the programmed grind time is unchanged.

Breville identifies a blocked chute, insufficient beans, an unlocked hopper, incomplete portafilter insertion, and excessively fine grind as possible causes of grinder problems. ([Breville](#))

Corrective sequence

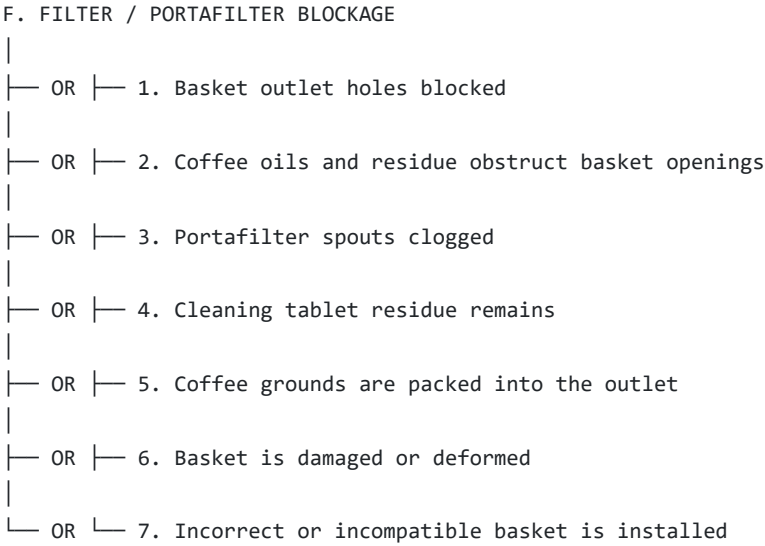
1. Turn the machine off.
2. Remove and secure the portafilter.
3. Empty or reduce the hopper if necessary.
4. Remove the upper burr according to the manual.
5. Brush out the grinder and chute.
6. Inspect for compacted coffee or oily buildup.
7. Reinstall the burr correctly.
8. Refill with suitable beans.
9. Run a manual grinding test.
10. Verify the actual dose by weight.

Do not force tools into the burrs while the grinder is energized.

8. Branch F — Filter Basket or Portafilter Restriction

Fault Event

The filter basket or portafilter prevents extracted espresso from exiting normally.



Typical symptoms

- Pump runs normally.
- Pressure may rise significantly.
- Very little espresso exits.
- Flow is uneven between the two portafilter spouts.
- Water may appear to collect above the puck.
- The problem persists even after changing grind settings.

Breville recommends clearing blocked basket outlet holes with the fine pin on the supplied cleaning tool. If blockage persists, the basket and portafilter may be soaked in a cleaning solution according to the manual's cleaning instructions. ([Breville](#))

Diagnostic test

Remove the coffee from the equation:

1. Install a clean, empty filter basket.
2. Lock the portafilter into the group head.
3. Run a short manual extraction.
4. Observe whether water exits freely from both spouts.

Interpretation

Test result	Likely conclusion
Strong water flow with empty basket	Coffee preparation or puck problem
Weak water flow with empty basket	Basket, portafilter, group head, or hydraulic problem
One spout flows, one does not	Portafilter spout or basket outlet restriction
No flow from group head	Water supply, valve, pump, or group-head issue

9. Branch G — Water Supply or Hydraulic System Problem

Fault Event

The machine cannot deliver adequate brewing water to the coffee puck.

G. WATER / HYDRAULIC FAILURE

- |
- |— OR |— 1. Water tank is empty
- |
- |— OR |— 2. Water tank is not fully seated
- |
- |— OR |— 3. Water tank intake valve is obstructed
- |
- |— OR |— 4. Air is trapped in the water circuit
- |
- |— OR |— 5. Pump is losing prime
- |
- |— OR |— 6. Pump is weak or damaged
- |
- |— OR |— 7. Flow meter is malfunctioning
- |
- |— OR |— 8. Brew valve is restricted
- |
- |— OR |— 9. Internal water line is obstructed
- |
- |— OR |— 10. Scale buildup restricts water passage
- |
- |— OR |— 11. Internal leak diverts water away from the group head

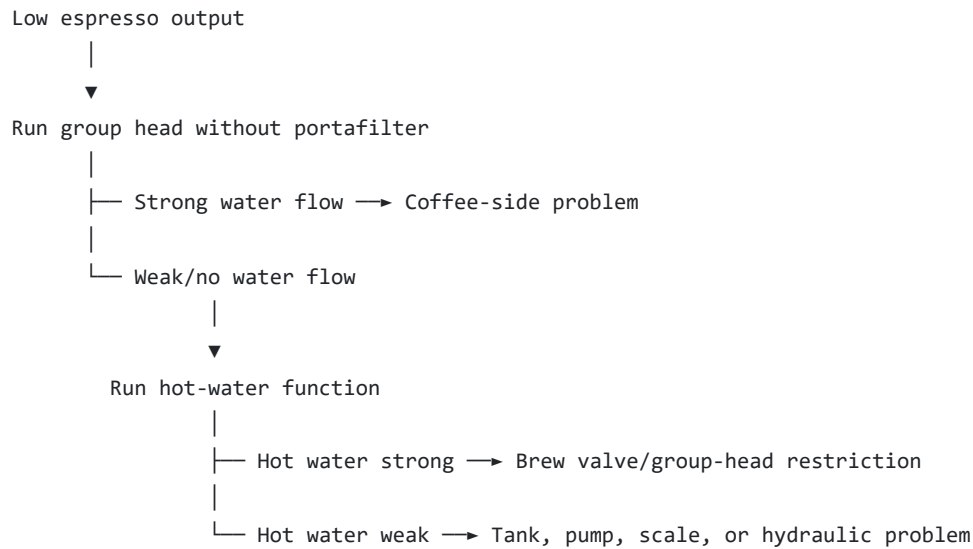
Symptoms

- Little or no water comes from the group head.
- Pump noise is present, but flow is weak.
- Water may return to the reservoir or drip tray.
- Steam or hot-water operation may also be abnormal.
- The machine may require repeated priming.
- Flow is low even with no coffee in the basket.

Checks

1. Fill the water tank.
2. Remove and reinstall the tank firmly.
3. Confirm the tank is properly seated and its intake valve is not obstructed.
4. Run the hot-water function.
5. Run a group-head flush without the portafilter.
6. Compare hot-water flow with brew-head flow.
7. Listen for unusual pump noise.
8. Inspect for water in unexpected locations.
9. Determine whether the problem affects:
 - Brew water only,
 - Hot water only,
 - Steam only,
 - Or all water functions.

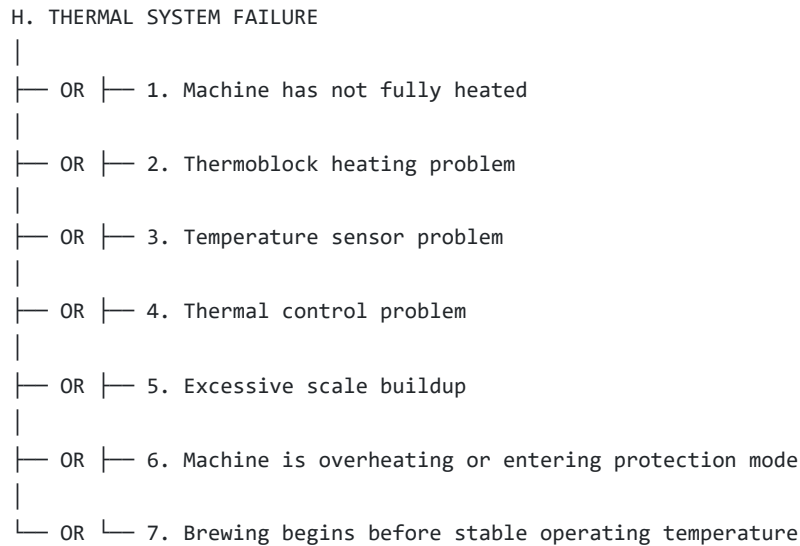
Diagnostic logic



10. Branch H — Brew Temperature or Heating Problem

Fault Event

Water does not reach the appropriate brewing temperature or the thermal system is unstable.



Relationship to low output

Temperature problems more commonly affect:

- Extraction quality,
- Shot consistency,
- Crema,
- Taste,
- And thermal recovery.

However, a severe thermal or control problem can also cause abnormal extraction behavior or premature interruption.

Checks

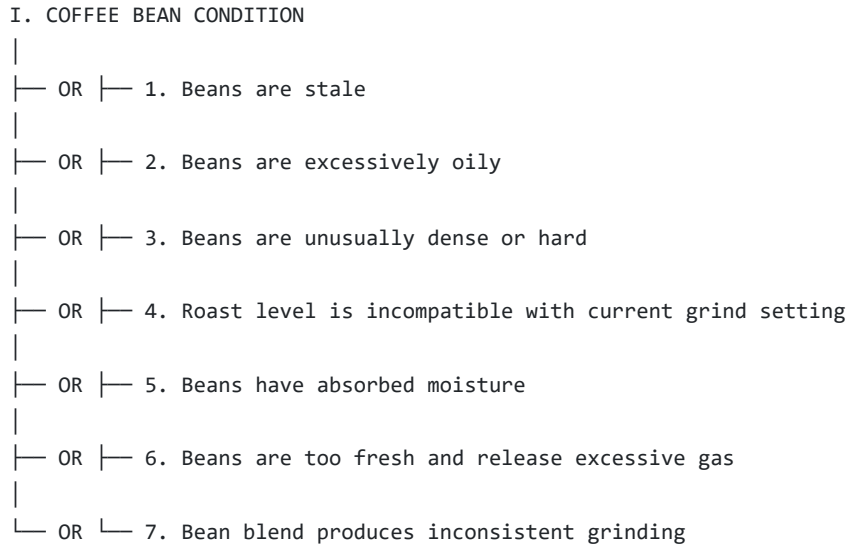
- Allow the machine to complete its heat-up cycle.
- Preheat the group head and portafilter.
- Run a blank flush.
- Confirm whether the machine's normal heating indicators behave correctly.
- Check whether steam or hot water functions are also abnormal.
- Look for descaling or cleaning requirements.
- Do not open the machine while energized or hot.

Note: A low espresso volume with normal flow and normal pump behavior is less likely to be caused solely by brew temperature than by dose, grind, basket restriction, or shot programming.

11. Branch I — Coffee Bean Condition

Fault Event

The coffee beans produce abnormal puck resistance or extraction behavior.



Typical effects

Bean condition	Possible effect
Stale beans	Fast flow, low resistance, weak crema
Very oily beans	Grinder buildup, chute blockage, inconsistent dosing
Very fresh beans	Variable flow and excessive gas
Dark roast	May require different grind and dose behavior
Light roast	Often requires finer grind and careful extraction
Moist beans	Poor grinding and inconsistent puck formation

Breville recommends freshly roasted beans and indicates a preferred consumption period of approximately **5–20 days after the roast date** in its troubleshooting guidance. ([Breville](#))

Diagnostic method

Repeat the shot using a known-good, fresh coffee bean:

- Same basket,
- Same dose,
- Same grind adjustment starting point,
- Same cup volume target.

If output returns to normal, the original bean condition may have contributed.

12. Branch J — User Process or Operating Error

Fault Event

The machine is functional, but the operating sequence creates low output.

```
J. OPERATING ERROR
|
├─ OR ─ 1. Wrong cup button selected
|
├─ OR ─ 2. Portafilter not fully locked into group head
|
├─ OR ─ 3. Incorrect basket installed
|
├─ OR ─ 4. Coffee dose not trimmed correctly
|
├─ OR ─ 5. Portafilter removed before grinding/dosing completes
|
├─ OR ─ 6. Machine used before warm-up completes
|
├─ OR ─ 7. Shot stopped manually too early
|
├─ OR ─ 8. Grind setting changed while grinder is not operating
|
├─ OR ─ 9. Group head or basket not cleaned
|
├─ OR ─ 10. User changes several variables simultaneously
```

Common user-process mistakes

- Using the single basket while expecting a double shot.
- Using the double basket while the machine is set for a single dose.
- Removing the portafilter during automated grinding.
- Failing to allow the Impress tamp cycle to complete.
- Changing grind size, dose, and tamp behavior at the same time.
- Assuming a larger cup volume equals a larger espresso extraction.
- Running a shot without weighing the output.

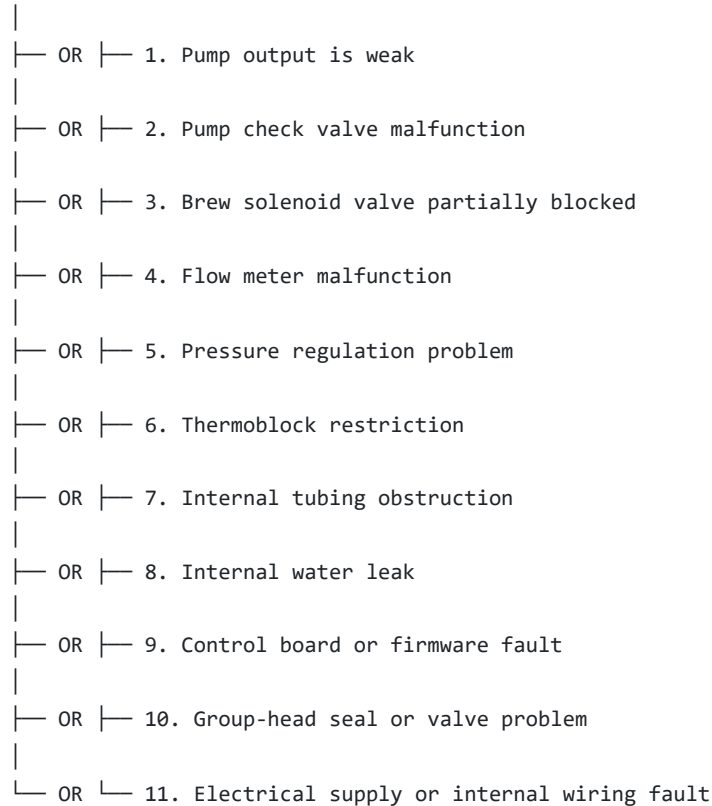
- Interpreting a fast, watery shot as “high output” when the actual espresso yield is uncontrolled.

13. Branch K — Internal Machine Fault

Fault Event

A machine component has failed or is operating outside specification.

K. INTERNAL MACHINE FAILURE



Indicators of a likely internal fault

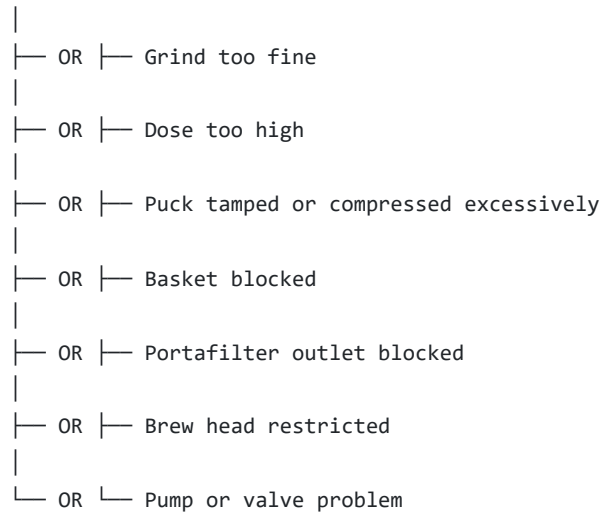
An internal machine fault becomes more likely when:

- A clean, empty basket still produces weak water flow.
- The water tank is full and properly installed.
- The grinder and coffee puck are known to be correct.
- The same low-output condition occurs with different beans.
- The problem affects both brew and hot-water functions.
- Pump sound is abnormal.
- Water appears inside the machine or in an unexpected location.
- The machine repeatedly loses prime.
- Cleaning and descaling do not improve performance.
- Pressure behavior is inconsistent without changes in coffee preparation.

14. Symptom-Based Fault Tree

Scenario 1 — Espresso Only Drips

ESPRESSO ONLY DRIPS

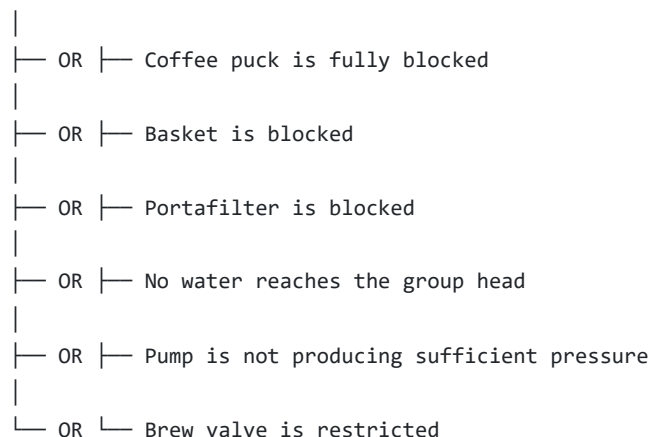


First actions

1. Stop the shot.
 2. Remove the portafilter after pressure has safely dissipated.
 3. Check the puck for overfilling.
 4. Adjust the grind slightly coarser.
 5. Reduce the dose if necessary.
 6. Clean the basket and portafilter.
 7. Run a water-only group-head test.
-

Scenario 2 — Pump Runs but Almost No Espresso Comes Out

PUMP RUNS / VERY LOW OUTPUT



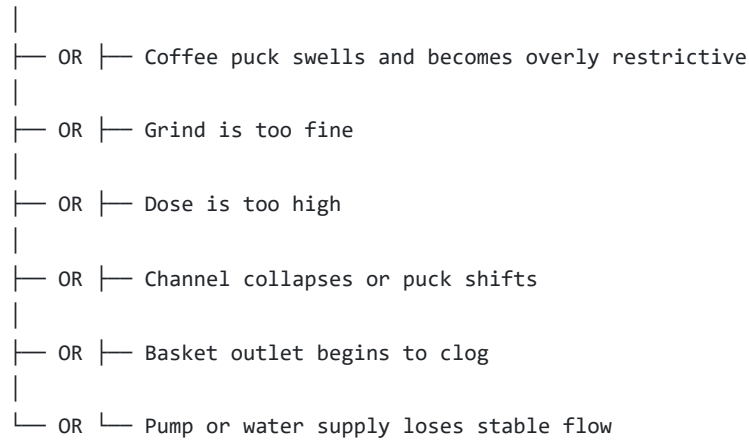
Discriminating test

Run the machine without coffee:

- If water flows normally: coffee-side restriction.
- If water does not flow: machine-side hydraulic issue.

Scenario 3 — Shot Starts Normally Then Slows to a Drip

SHOT STARTS NORMALLY → FLOW DECLINES

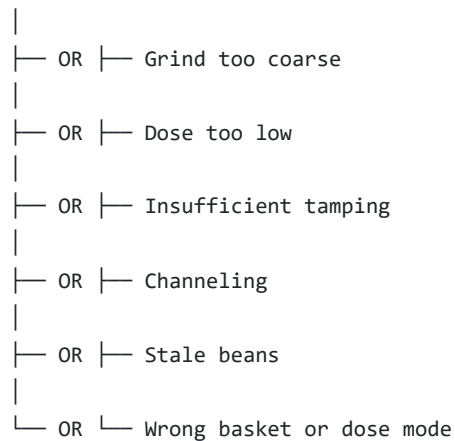


Likely causes

- Excessive dose,
 - Fine grind,
 - Uneven puck preparation,
 - Coffee oils or fines migrating into basket holes,
 - Grinder producing excessive fines.
-

Scenario 4 — Espresso Runs Quickly but the Cup Is Weak

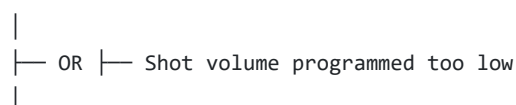
FAST FLOW / WEAK ESPRESSO



This is technically a **low-quality extraction** rather than necessarily a low liquid volume. The cup may contain a large amount of water but insufficiently extracted coffee solids.

Scenario 5 — Output Is Always the Same Small Volume

CONSISTENTLY LOW VOLUME



- └─ OR ─┬─ Wrong cup button selected
- |
- └─ OR ─┬─ Manual stop occurs too early
- |
- └─ OR ─┬─ Flow meter or volumetric control issue
- |
- └─ OR ─┬─ Water supply is consistently restricted

The key discriminator is whether the shot stops at a repeatable point.

15. Pressure and Flow Diagnostic Matrix

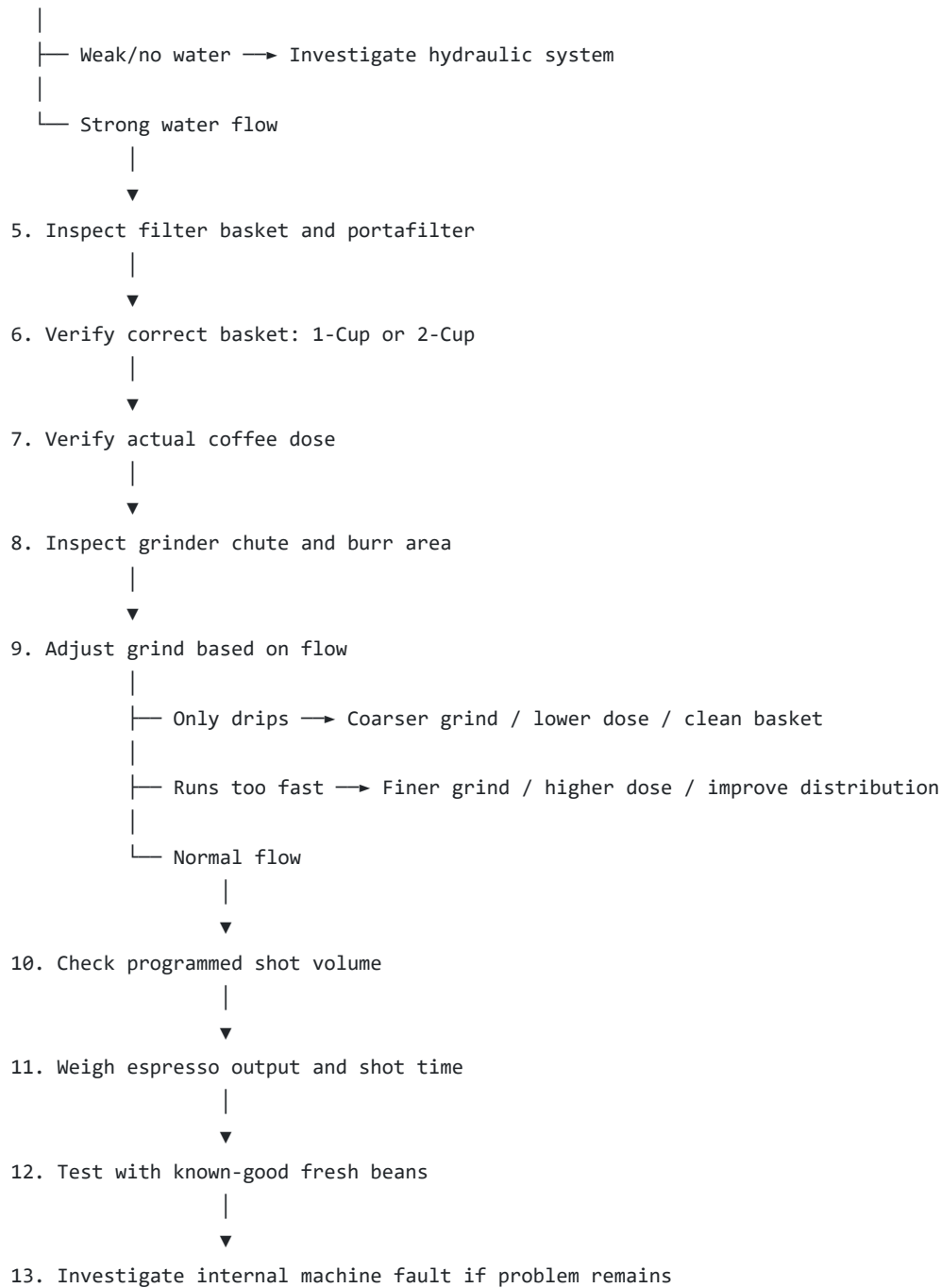
The pressure gauge is useful, but it should not be interpreted alone. Pressure, flow rate, shot time, dose, and beverage mass must be considered together.

Observation	Most likely fault area
High pressure + little/no flow	Too-fine grind, overdose, blockage, excessive puck resistance
Low pressure + fast flow	Coarse grind, underdose, stale beans, insufficient resistance
Normal pressure + low cup volume	Programmed volume, premature stop, flow-meter/control issue, measurement error
No pressure + no water	Tank, pump, airlock, valve, hydraulic restriction
High pressure with empty basket	Basket, portafilter, group head, or machine hydraulic restriction
Normal empty-basket flow + low coffee output	Grind, dose, puck, beans, or basket restriction
Flow begins then stops	Puck swelling, fines migration, blockage, unstable water supply
One spout weaker than the other	Portafilter spout or basket outlet obstruction

16. Recommended Troubleshooting Sequence

Use this sequence to avoid replacing parts unnecessarily.

- START
- |
- ▼
- 1. Confirm the symptom
 - Is output low by volume, flow rate, or both?
- |
- ▼
- 2. Confirm water tank is full and seated
- |
- ▼
- 3. Allow machine to fully heat
- |
- ▼
- 4. Run water through group head without portafilter



17. High-Value Diagnostic Tests

Test 1 — Group Head Water-Flow Test

Purpose: Separate machine-side faults from coffee-side faults.

Procedure

1. Remove the portafilter.
2. Ensure the water tank is full.
3. Allow the machine to heat.
4. Activate a brew cycle.
5. Observe the group-head water flow.

Result interpretation

- **Strong, consistent water flow:** Machine water delivery is probably functional.
 - **Weak or intermittent flow:** Investigate tank seating, pump, valve, scale, air, or internal restriction.
-

Test 2 — Empty-Basket Test

Purpose: Check whether the basket or portafilter is restricting flow.

Procedure

1. Install a clean empty basket.
2. Insert and lock the portafilter.
3. Run a short manual extraction.

Result interpretation

- **Water flows strongly:** Coffee puck, grind, dose, or beans are the likely problem.
 - **Water barely flows:** Basket, portafilter, group head, or internal hydraulic system may be restricted.
-

Test 3 — Dose Verification

Purpose: Confirm whether the grinder is delivering the expected amount of coffee.

Procedure

1. Grind into the correct basket.
2. Weigh the grounds.
3. Compare the result across several cycles.
4. Inspect the basket fill level.
5. Use the Impress dose adjustment as needed.

Failure indicators

- Large shot-to-shot dose variation.
 - Dose is visibly low.
 - Dose is visibly excessive.
 - Coffee remains in the chute.
 - Grinder stops before sufficient grounds are delivered.
-

Test 4 — Known-Good Bean Test

Purpose: Eliminate bean condition as a variable.

Procedure

Use fresh beans with a known roast date and repeat the same preparation.

Keep constant:

- Basket,
- Dose,
- Grind starting point,
- Tamp process,
- Shot button,

- Cup scale.

Interpretation

- If output returns to normal, the original beans may have been stale, oily, too fresh, or otherwise unsuitable.
- If the problem remains, continue with machine and preparation diagnostics.

Test 5 — Shot Volume Programming Test

Purpose: Determine whether low output is caused by programmed volumetric control.

Procedure

1. Place a scale under the cup.
2. Select the intended 1-Cup or 2-Cup button.
3. Observe the programmed stop point.
4. Compare the actual liquid mass with the desired target.
5. Reprogram if necessary.

Important

Do not confuse:

- **Shot volume:** The amount of water programmed to be delivered.
- **Espresso yield:** The liquid mass collected in the cup.
- **Beverage volume:** Espresso plus milk, water, crema, or foam.

18. Measurement and Data-Collection Table

For reliable troubleshooting, record the following:

Parameter	Measurement
Machine model	BES876 / regional equivalent
Basket	1-Cup or 2-Cup
Coffee bean	Brand, roast, roast date
Grind setting	Current number
Dose	Ground coffee mass in grams
Output	Espresso mass in grams
Shot time	Seconds from pump activation
Pressure behavior	Low, normal, high, unstable
Flow behavior	Fast, steady, slow, dripping
Water tank	Full and properly seated?
Group-head water flow	Strong, weak, intermittent
Basket condition	Clean, blocked, damaged
Portafilter condition	Clean, restricted, leaking
Grinder condition	Clean, oily, clogged, inconsistent

Shot programming	1-Cup/2-Cup setting
Bean age	Days after roast
Taste	Sour, bitter, weak, watery, harsh
Crema	Normal, thin, absent
Puck condition	Dry, wet, muddy, cracked, overfilled

19. Most Probable Causes Ranked by Practical Likelihood

For a Barista Express Impress producing low espresso output, investigate in this order:

1. **Incorrect grind size**
2. **Incorrect dose**
3. **Blocked or dirty filter basket**
4. **Wrong basket selected**
5. **Grinder chute restriction**
6. **Improper puck distribution or tamping**
7. **Shot volume programmed too low**
8. **Stale or unsuitable coffee beans**
9. **Water tank not properly seated**
10. **Group-head or portafilter restriction**
11. **Scale buildup or hydraulic restriction**
12. **Weak pump, flow meter, valve, or control fault**

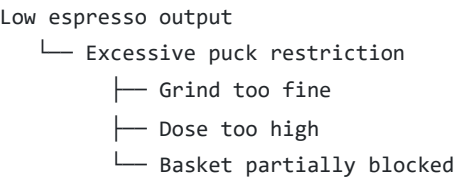
20. Example Root-Cause Scenarios

Scenario A — Low output, high pressure, espresso only drips

Evidence

- Pump operates.
- Pressure rises high.
- Espresso drips slowly.
- Empty group-head flush is strong.
- Basket is difficult to drain.

FTA conclusion



Corrective action

- Clean basket.

- Reduce dose slightly.
 - Adjust grind one step coarser.
 - Re-test with a scale.
-

Scenario B — Low output, fast flow, low pressure

Evidence

- Espresso runs quickly.
- Pressure remains low.
- Shot tastes weak.
- Dose is visibly low.

FTA conclusion

```
Low-quality / insufficient espresso extraction
├─ Insufficient puck resistance
│   └─ Underdose
└─ Grind too coarse
```

Corrective action

- Increase dose.
 - Adjust grind finer.
 - Verify correct basket selection.
 - Recheck output mass and extraction time.
-

Scenario C — Normal flow but shot stops at a low volume

Evidence

- Water flows normally.
- Coffee extraction looks normal.
- Pump stops at the same small volume every time.
- No abnormal pressure.
- Different beans produce the same result.

FTA conclusion

```
Low espresso output
├─ Shot control issue
│   └─ Programmed shot volume too low
```

Corrective action

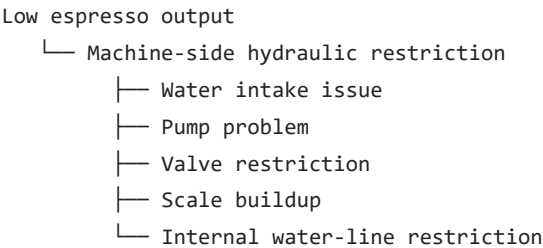
- Reprogram the selected 1-Cup or 2-Cup button.
 - Verify that the intended button is being used.
-

Scenario D — Low flow even with an empty basket

Evidence

- Portafilter and basket are empty.
- Group-head flow is weak.
- Hot-water flow may also be weak.
- Water tank is full.

FTA conclusion



Corrective action

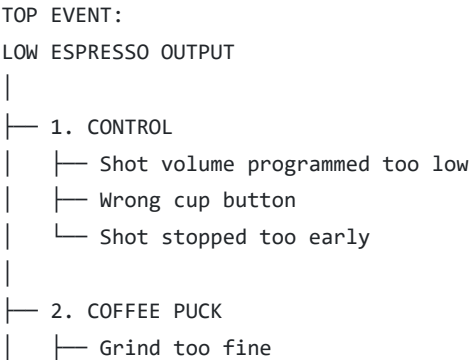
- Confirm tank seating.
- Run the appropriate cleaning/descaling procedures.
- If flow remains weak, seek Breville service rather than opening the machine without the required technical expertise.

21. Safety and Service Boundaries

Before cleaning or inspecting components:

- Turn the machine off.
- Unplug it when performing non-operational cleaning or inspection.
- Allow hot components to cool.
- Release brewing pressure before removing the portafilter.
- Do not place fingers near moving grinder burrs.
- Do not operate the grinder while brushing or clearing the chute.
- Do not open the machine while connected to power.
- Treat internal water and steam circuits as burn hazards.
- Do not bypass thermal, electrical, or pressure protections.

22. Compact FTA Summary



- | | — Dose too high
- | | — Excessive tamping
- | | — Uneven distribution
- | | — Puck channeling or collapse
- |
- | — 3. COFFEE DOSE
- | | — Underdose
- | | — Overdose
- | | — Auto-dose calibration error
- | | — Wrong basket
- | | — Grinder retention
- |
- | — 4. GRINDER
- | | — Low beans
- | | — Chute blocked
- | | — Burr contamination
- | | — Hopper not locked
- | | — Portafilter not fully inserted
- |
- | — 5. FILTER / PORTAFILTER
- | | — Basket holes blocked
- | | — Spouts blocked
- | | — Coffee-oil buildup
- | | — Damaged basket
- |
- | — 6. WATER / HYDRAULICS
- | | — Empty or mis-seated tank
- | | — Air in water circuit
- | | — Weak pump
- | | — Restricted valve
- | | — Scale buildup
- | | — Internal leak
- |
- | — 7. THERMAL
- | | — Incomplete heat-up
- | | — Thermoblock problem
- | | — Sensor/control problem
- | | — Scale-related thermal restriction
- |
- | — 8. BEANS
- | | — Stale
- | | — Excessively oily
- | | — Too fresh
- | | — Unsuitable roast/grind relationship
- |
- | — 9. INTERNAL FAILURE
- | | — Pump
- | | — Brew valve
- | | — Flow meter
- | | — Pressure regulation
- | | — Internal tubing
- | | — Control electronics

Bottom Line

For the Breville Barista Express Impress, troubleshoot low espresso output in this order:

Verify programmed shot volume → check water flow without coffee → inspect basket and portafilter → verify basket selection → verify dose → adjust grind → clean grinder chute → test fresh beans → investigate hydraulic or internal machine faults.

The most important dividing test is:

Does water flow normally through the group head with no coffee installed?

- **Yes:** Focus first on grind, dose, puck preparation, beans, basket, and shot programming.
- **No:** Focus on the water tank, pump, valves, scale, flow path, or internal machine fault.