



THE TOMKAT TOUR 2026

DEREK'S LIVE WORKSHOP

Optional companion notes

PRINT ONE SHEET. FOLLOW DEREK.

1. PRINT THE IGEM WORKSHEET

Use A4 paper. Print in LANDSCAPE (sideways).

This is the sheet you will write on.

2. GRAB A PEN AND CALCULATOR

3. FILL IN THE BOXES WITH DEREK

Write your answers as he goes.

Scan the QR code on your worksheet to open the TomKat IGEM calculator. Use it to check your answers when Derek tells you.

THIS BOOKLET IS OPTIONAL

Follow along with this booklet on your phone or computer.

You do not need to print the rest of the booklet.

Training aid only. Follow the full standard and work within your competence and qualifications.

WHAT EDITION 4 CHANGES

Booklet page 2 • Follow slide 2 • Reference notes

THE CHANGEOVER

March 2026: Edition 4 published; Edition 3 continues during the transition.
15 April 2026: ISU 133 Edition 2 replaces the March update.
1 October 2026: Edition 3 is withdrawn; use Edition 4.

INSTALLATION VOLUME (IV)

The permissible drop depends on the fuel and total volume of the section under test. Meter size alone does not set the allowance.

WHAT STAYS FAMILIAR

The broad test sequence remains familiar. The changes focus on interpreting readings and the actions that follow.

ASSESSING THE RESULT

With existing appliances, calculate IV and compare the observed drop with the correct fuel limit. A permitted drop still needs the pipework to be proved tight. Outside the limit: repair and retest, or make safe.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
ISU 133, Edition 2, page 1; use with the full IGEM/UP/1B Edition 4.

DOMESTIC ENGINEERS

Booklet page 3 • Follow slide 3 • Reference notes

INSTALLATION VOLUME

Maximum installation volume: 0.035 m³.

NATURAL GAS PURGING

Above 0.020 m³, ignite the gas/air mixture at a suitable safe point with an open burner, such as a suitable cooker burner. Follow Section 6 in full.

MAXIMUM PIPE SIZE

35 mm copper or 1¼-inch steel pipe.

METER CAPACITY

Maximum badged meter capacity: 16 m³ per hour.

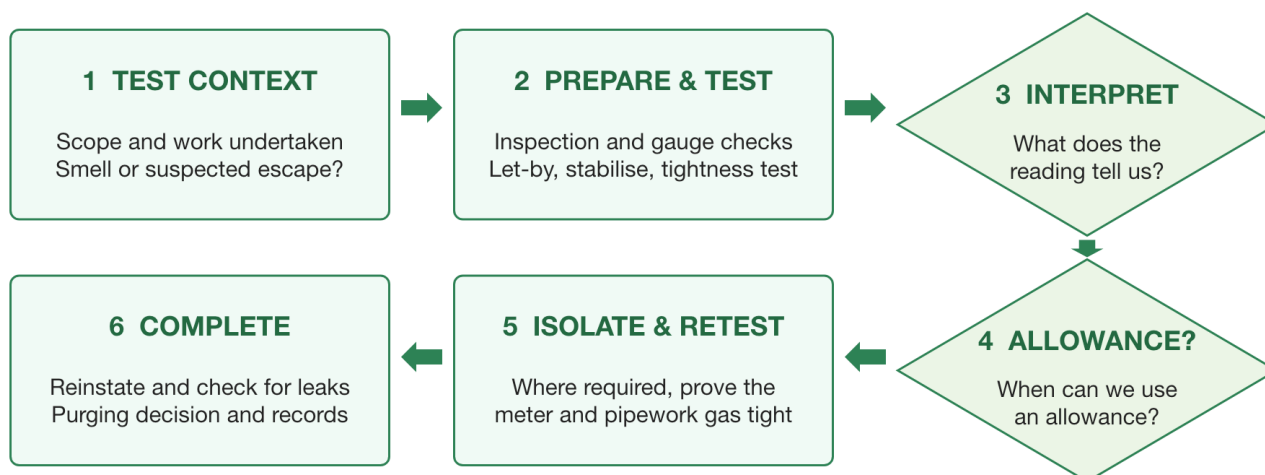
REGISTERED WORK CATEGORIES

Work within your registered work categories and the requirements of the installation.

NATURAL GAS: OUR TEACHING ROUTE



Follow the numbered discussion with Derek



Smell of gas or suspected escape? Investigate. An allowance cannot override it.

Arrows show the lesson order, not pass/fail decisions. Use the full IGEN/UP/1B Edition 4 procedure.

FOLLOW THE MAP WITH DEREK

Read along as Derek explains the six stages.

1 Test context

2 Prepare & test

3 Interpret

4 Allowance?

5 Isolate & retest

6 Complete

Teaching map only. Arrows show lesson order, not pass/fail decisions.
Follow the complete IGEN/UP/1B Edition 4 procedure and scope.

NATURAL GAS: PREPARE & TEST

Booklet page 5 • Follow slide 5 • Reference notes

1 BEFORE THE TEST

Confirm scope; ask about gas smells. Inspect and seal open ends. Appliance valves open, burner/pilot controls off and permanent pilots extinguished. Open applicable cooker safety shut-offs. Check and zero the gauge. Close ECV/AECV BEFORE connecting it.

2 LET-BY: 7–10 mbar / 1 MINUTE

Close ECV/AECV and watch for a rise. No perceptible movement: continue. Rise or unsure: investigate and rectify, then repeat. If unresolved, make safe. Supply/meter valve repairs need the authorised party.

3 TEST PRESSURE

20–21 mbar. Raise pressure, then close the valve.

4 STABILISE

At least one minute AND a stable reading. Readjust if needed, then close the valve again. Only time the test once stable.

5 TIGHTNESS TEST: 2 MINUTES

Observe pressure fall and record it. Apply the correct fuel result criteria on the next page.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
Above 21 to 23 mbar: readjust. Above 23: reduce to 7–10, then raise to 20–21. Cannot reach 20: follow §5.3.2. Live gas, low-pressure supply (MOPu ≤75 mbar). Full UP/1B procedure applies.

NATURAL GAS: READ THE RESULT

Booklet page 6 • Follow slide 6 • Reference notes

GAS SMELL OR SUSPECTED ESCAPE

Investigate first. An allowance cannot override it.

TABLE 3: IV / MAXIMUM DROP

Up to 0.005 m³: 8 mbar
Over 0.005 to 0.010 m³: 4 mbar
Over 0.010 to 0.015 m³: 2.5 mbar
Over 0.015 to 0.035 m³: 1 mbar
For individual dwellings with existing appliances connected.

ISOLATE & RETEST

For a drop within the applicable limit: isolate appliances and retest meter/pipework. Require no perceptible movement and no gas smell. If isolation is not reasonably practicable, require the same with appliances included.

NO PERCEPTIBLE MOVEMENT

Water gauge or digital manometer reading to two decimal places: maximum 0.25 mbar.
Digital manometer reading to one decimal place: maximum 0.2 mbar. No movement and no gas smell meets the test criterion; completion steps still apply.

COMPLETE OR INVESTIGATE

Above the limit, wrong context or failed retest: trace/repair and retest; if unresolved, make safe. After a satisfactory test, reinstate, reseal, restore supply and leak-check. Purge where Section 6 requires and record results.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
UP/1B §§4.2, 5.3, 5.5, 6 and Table 3. New work / pipework-only: no perceptible movement; see fuel-specific existing-appliance exceptions.

LPG/AIR: PREPARE & TEST

Booklet page 7 • Follow slide 7 • Reference notes

1 BEFORE THE TEST

Confirm scope; ask about gas smells. Inspect and seal open ends. Appliance valves open, burner/pilot controls off and permanent pilots extinguished. Open applicable cooker safety shut-offs. Check and zero the gauge. Close ECV/AECV BEFORE connecting it.

2 LET-BY: 7–10 mbar / 1 MINUTE

Close ECV/AECV and watch for a rise. No perceptible movement: continue. Rise or unsure: investigate and rectify, then repeat. If unresolved, make safe. Supply/meter valve repairs need the authorised party.

3 TEST PRESSURE

OP 14 mbar: test at 13–14 mbar.
OP 21 mbar: test at 20–21 mbar.

4 STABILISE

At least one minute AND a stable reading. Readjust if needed, then close the valve again. Only time the test once stable.

5 TIGHTNESS TEST: 2 MINUTES

Observe pressure fall and record it. Apply the correct fuel result criteria on the next page.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
Follow Table 1 notes to avoid regulator lock-up. Cannot reach minimum test pressure: isolate and investigate. Live gas, low-pressure supply (MOPu ≤75 mbar). Full UP/1B procedure applies.

LPG/AIR: READ THE RESULT

Booklet page 8 • Follow slide 8 • Reference notes

GAS SMELL OR SUSPECTED ESCAPE

Investigate first. An allowance cannot override it.

TABLE 2: IV / MAXIMUM DROP

Up to 0.025 m³: 1.5 mbar
Over 0.025 to 0.035 m³: 0.5 mbar
For individual dwellings with existing appliances connected.

ISOLATE & RETEST

For a drop within the applicable limit: isolate appliances and retest meter/pipework. Require no perceptible movement and no gas smell. If isolation is not reasonably practicable, require the same with appliances included.

NO PERCEPTIBLE MOVEMENT

Maximum 0.25 mbar; maximum 0.2 mbar on a one-decimal electronic gauge. No movement and no gas smell meets the test criterion; completion steps still apply.

COMPLETE OR INVESTIGATE

Above the limit, wrong context or failed retest: trace/repair and retest; if unresolved, make safe. After a satisfactory test, reinstate, reseal, restore supply and leak-check. Purge where Section 6 requires and record results.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
UP/1B §§4.2, 5.3, 5.5, 6 and Table 2. New work / pipework-only: no perceptible movement; see fuel-specific existing-appliance exceptions.

LPG: PREPARE & TEST

Follow slide 9. Live LPG supply. Use the full procedure in Section 5.3.3.

1 BEFORE THE TEST

Inspect and seal open ends. Appliance valves open; burner/pilot controls off. Applicable safety shut-offs open. Check and zero the gauge. Close the supply control valve BEFORE connecting downstream of the final-stage regulator.

2 LET-BY: 7-10 mbar FOR 1 MINUTE

Close the supply control valve. No perceptible rise? Continue.
Rise or unsure? Stop, investigate and rectify, then repeat. If unresolved, make safe.
Cylinder-valve repairs are for the gas supplier.

3 CHOOSE THE TEST PRESSURE - TABLE 4

Operating pressure:	28 (butane)	30 (both)	37 (propane)
Regulator in test:	20-21	28-29	30-31
Without regulator:	27-28	29-30	36-37

All figures in mbar. "In test" means in the section being tested.
Avoid regulator lock-up; follow Table 4 notes and reset instructions.

4 STABILISE: AT LEAST 1 MINUTE

Wait for a stable reading. Readjust if needed, then close the supply control valve again.

5 TIGHTNESS TEST: 2 MINUTES

Observe the pressure fall and record it.
Next: apply the LPG limits in Table 5, on the following page.

Teaching summary: follow §5.3.3 for UPSO/reset, safe venting and valve-fault actions. Below minimum test pressure? Isolate and investigate. No live gas: Appendix 3.

LPG LIMITS & PURGE VOLUME

Booklet page 10 • Follow slide 10 • Reference notes

LPG: TABLE 5

Individual dwellings with existing appliances connected:

IV up to 0.0025 m³: 2 mbar

Over 0.0025 to 0.005 m³: 1 mbar

Over 0.005 to 0.010 m³: 0.5 mbar

Over 0.010 to 0.035 m³: no perceptible movement.

APPLY THE FULL PROCEDURE

No gas smell. Where an appliance allowance applies, follow the isolation and retest requirements.

NO PERCEPTIBLE MOVEMENT

Maximum 0.25 mbar; maximum 0.2 mbar on a one-decimal electronic gauge.

PURGE VOLUME (PV)

$PV = 1.5 \times IV$. IV means installation volume; PV means purge volume. Use matching units. Follow the full fuel-specific purge procedure.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
ISU 133 Edition 2, page 3; UP/1B §4.2, Table 5 and Section 6.

AFTER A PERMITTED DROP

Booklet page 11 • Follow slide 12 • Reference notes

1 ISOLATE APPLIANCES

For existing appliances, a drop within the correct fuel limit and no gas smell: separate appliances from the meter and pipework for the retest.

2 REPEAT THE TEST

The meter/pipework must show no perceptible movement and no gas smell. If isolation is not reasonably practicable, include the appliance in the retest and require no perceptible movement.

3 CHECK THE OUTCOME

Satisfactory retest: complete the reinstatement checks. Failed retest: investigate, repair and retest or make safe.

REINSTATE & CHECK

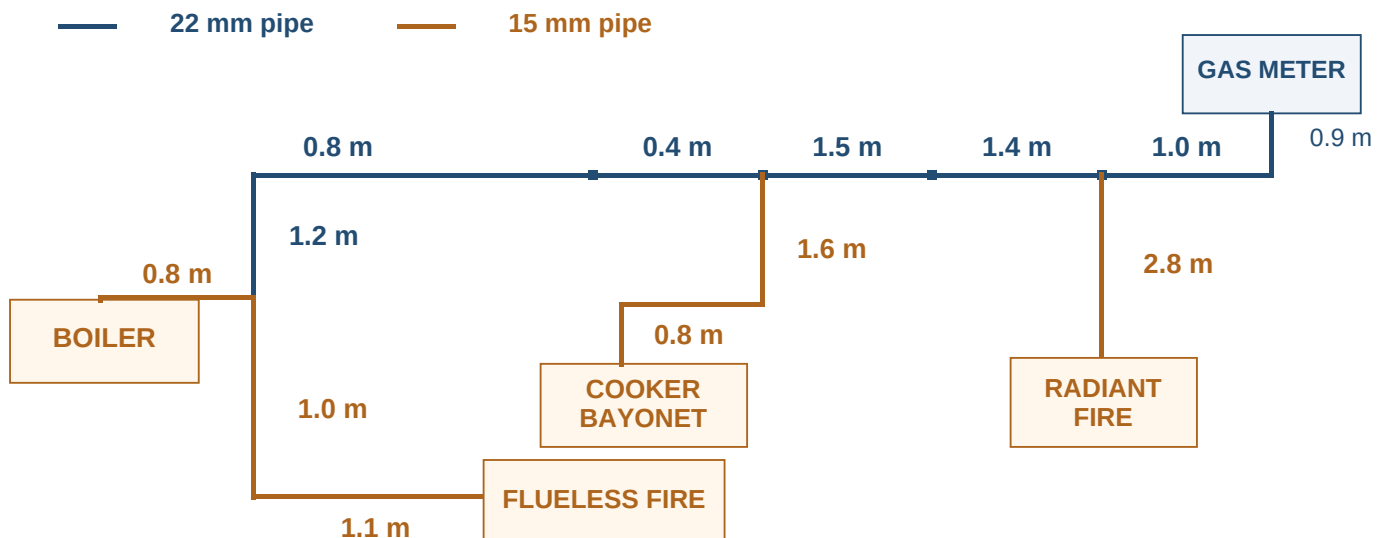
Reinstate isolated appliances. Remove the gauge and reseal the test point. Restore gas and leak-check disturbed joints, relevant connections and pipework between each isolation valve and its appliance. Confirm there is no gas smell.

COMPLETE THE PROCEDURE

Finish the full fuel-specific procedure, including purging where required and recording the result.

PIPE LAYOUT: FOLLOW EACH RUN

Follow slide 13 Derek's layout, redrawn as a schematic. Not to scale.
n metres. Count each labelled section once.



FOLLOW THE PIPE RUNS

Count each labelled section once. Only labelled lengths count; schematic bends add no extra length.

Enter the pipe lengths on your separate IGEM worksheet as Derek works through the calculation.

This booklet is for reference; you do not need to write answers here.

NOW USE YOUR IGEM WORKSHEET

Booklet page 13 • Start at slide 14

1 GET YOUR SEPARATE SHEET

Use the IGEM worksheet download.
Print it on A4 paper in LANDSCAPE (sideways).

2 FOLLOW DEREK

Write the figures in the same boxes as Derek.
He will show you where each figure comes from.

3 CHECK WHEN DEREK TELLS YOU

The QR code on the worksheet opens the
TomKat IGEM calculator.

Keep this booklet open for reference.
The slide footer tells you which booklet page to use.

You do not need to print this booklet.

WHY APPLIANCE DROP LIMITS DIFFER

Booklet page 14 • Follow slide 26 • Reference notes

THE NATURAL GAS EXPLANATION

IGEM explains the limits using a leakage-rate basis of 19 mL per minute. The pressure-drop limit depends on installation volume.

SMALLER INSTALLATION

IV up to and including 0.005 m³: maximum drop 8 mbar.

LARGER INSTALLATION

IV above 0.015, up to and including 0.035 m³: maximum drop 1 mbar.

USE THE CORRECT TABLE

Different pressure drops can represent comparable leakage rates. Use the correct volume band and fuel-gas table.

EXISTING-APPLIANCE CONDITIONS

These allowances apply only under the existing-appliance conditions. No smell of gas. Prove the meter/pipework has no perceptible loss using the full isolation and retest procedure.

Reference notes only. Fill in the separate IGEM worksheet with Derek.
IGEM UP/1B Edition 4 FAQ; Section 5.3 and Table 3. Other gases have different limits.