



INMOTION ENERGY (OPC) PRIVATE LIMITED

Marsh Funnel Viscometer

Field Viscometer, Polyethylene — Complete with Calibrated Measuring Cup

Model No: IM-MF-946P

INSTRUCTION MANUAL

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Introduction

Rig-site mud engineers cannot wait on a laboratory to know whether a drilling fluid is thickening, thinning, or gelling out of spec. Viscosity shifts of this kind are often the earliest warning of a hole-cleaning problem, a contamination event, or a treatment that has gone too far, so the property is checked constantly — frequently several times across a single shift.

The Marsh Funnel Viscometer answers that need with nothing more complicated than gravity and a stopwatch. It requires no batteries, no power source, and no laboratory bench — just a fresh sample, a timer, and a flat surface — yet it delivers a comparative viscosity reading in well under a minute.

Description

The Inmotion Marsh Funnel Viscometer works on a straightforward shear-rate/shear-stress principle. Slurry is poured into the wide end of a graduated cone and allowed to fall by gravity through a precision-bore outlet at the tip. The time it takes for a fixed volume to exit the funnel is a direct, repeatable indicator of the fluid's resistance to flow.

A half-moon 12-mesh screen is molded into the fill opening, so oversized cuttings and debris are caught before they can reach and obstruct the outlet. Once the funnel is charged to the underside of the screen, a finger is lifted from the outlet and the outflow is timed into the companion measuring cup, which is graduated in both fluid ounces and cubic centimetres up to the 1-quart (946 ml / 32 oz) mark.

One instrument, one measurement — built for repeatability:

- Fixed fill level, set by the underside of the integral screen
- Fixed outlet bore, precision-molded to the API-specified diameter
- Fixed outflow volume, read directly off the graduated companion cup



The Marsh Funnel Viscometer and its graduated measuring cup, molded in impact-resistant polyethylene

Components

IM-MF-946P-01	Funnel Body, Polyethylene (complete cone assembly)
IM-MF-946P-02	Fill Screen, 12-Mesh (integral half-moon screen)
IM-MF-946P-03	Outlet Spout, Calibrated brass orifice
IM-MF-946P-04	Graduated Measuring Cup, 1-Quart (946 ml) Capacity



Fig. 1 — Integral 12-mesh fill screen at the mouth of the funnel, which filters oversized solids before they can reach the outlet

Features

- **Material** — Molded from rugged, impact-resistant polyethylene for dependable service in the field without the weight or corrosion risk of metal construction.
- **Precision-Bore Outlet** — The outlet spout is molded to a consistent, calibrated bore so that readings stay comparable from unit to unit.
- **Integral Fill Screen** — A built-in 12-mesh screen keeps oversized cuttings and debris out of the outlet without a separate accessory to lose or misplace.
- **Clearly Graduated Cup** — The companion measuring cup is marked in both fluid ounces and cubic centimetres, with the 1-quart (946 ml) fill line clearly etched for fast, accurate timing.
- **Lightweight and Portable** — A molded carry handle on both the funnel and the cup makes the kit easy to move between mud pits, the doghouse, and the lab.

Specifications

Measured Volume	1 quart (946 ml)
Fill Capacity (to screen)	≈ 1,500 ml
Top (Fill) Diameter	6 in (152 mm)
Cone Height	13 in (330 mm)
Outlet Length	2 in (51 mm)
Outlet Bore Diameter	3/16 in (4.76 mm)
Fill Screen	12-mesh, integral half-moon screen
Measuring Cup Graduations	Fluid ounces and cubic centimetres, to 32 oz / 1,000 cc
Fresh-Water Calibration	26 ± 0.5 seconds at 70 ± 5°F (21 ± 3°C)
Material of Construction	Polyethylene funnel body and measuring cup
Applicable Standard	API RP 13B-1, Section 5.1
Overall Height (approx.)	15 in (381 mm)
Weight (approx.)	1.46 lbs (660 g), funnel and cup combined

*Marsh Funnel and Cup*

Operation

1. Collect a fresh slurry sample, taken as close to the test point as practical so the reading reflects current conditions.
2. Cover the outlet with a finger, hold the funnel upright, and pour the sample through the fill screen until the level reaches the underside of the screen.



Pour through the integral 12-mesh screen until fluid reaches the underside of the mesh

3. Position the measuring cup beneath the outlet, then release your finger and start timing in the same motion.
4. Let the sample flow freely until the cup reaches the 1-quart (946 ml) graduation line.



Time the outflow until the companion cup reaches its 1-quart (946 ml / 32 oz) mark

✓TIP

Hold the funnel steady and avoid tilting it during the timed pour — movement changes the effective head of fluid above the outlet and will skew the reading.

5. Record the elapsed seconds as the Marsh Funnel Viscosity, along with the sample temperature, on your mud report.

⚠IMPORTANT

Drilling fluids, cements, and completion brines can be caustic or irritating on contact. Gloves and eye protection should be worn any time samples are handled.

Reporting Results

Report the reading to the nearest whole second, together with the sample temperature, so that later readings can be compared on a like-for-like basis.

Calibration

Basic Calibration

Every funnel and cup pair leaves the factory matched and verified together. A quick fresh-water check like the one below is good practice before any critical test run and confirms the pair hasn't drifted out of tolerance.

1. Wipe the funnel and cup dry, and confirm the outlet is clear by holding the funnel up to the light.
2. Cover the outlet, fill the funnel with clean fresh water at roughly room temperature (about 70°F / 21°C) to the underside of the screen.
3. Release the outlet and time the flow into the cup until the 1-quart (946 ml) mark is reached.



Cup graduations in fluid ounces and cubic centimetres — read the fill line at eye level for an accurate stop point

4. A correctly calibrated pair delivers 26 ± 0.5 seconds for this fresh-water check.

✓TIP

If the reading is slightly outside tolerance, repeat the check once more before assuming a problem — pouring technique and water temperature are the most common causes of a one-off miss.

Out-of-Calibration Funnels

If the funnel consistently reads outside 26 ± 0.5 seconds on fresh water, clean the outlet spout with a soft pipe cleaner to make sure nothing is restricting the bore, then repeat the check. If the funnel still reads incorrectly after cleaning, the outlet has likely been distorted or worn and the unit should be replaced.

When to Recalibrate

- Before any test run where the reading will be used for a critical decision
- After a drop, impact, or any other physical damage to the funnel or cup
- If a fresh-water check no longer lands within 26 ± 0.5 seconds
- On whatever routine schedule your facility's QA/QC program calls for

⚠IMPORTANT

Never force, ream, or enlarge the outlet spout to “fix” a slow reading. Marsh Funnel Viscosity readings depend on the exact molded bore diameter, and any alteration will make every future reading inaccurate.

Maintenance

1. Give the fill screen and outlet spout a quick look-over before each test — the mesh should be clear and free of trapped solids.
2. Rinse the funnel and cup after every test; a mild solvent helps if cement or other stubborn residue is involved. Nothing should be left clinging to the screen or the outlet bore.
3. Dry both pieces completely before putting them away.
4. Store the funnel upright, away from direct heat, so the cone and outlet keep their molded shape.
5. Any time the outlet looks worn, chipped, or distorted, or readings start looking off, run through the Calibration check again (page 7).

NOTE

Never use a wire brush, metal pick, or sharp tool to clear the outlet — use a soft pipe cleaner only. Scoring or enlarging the bore, even slightly, will throw off every reading afterward.

Troubleshooting

Symptom	Possible Cause	Recommended Action
Flow is slower than expected on fresh water	Outlet partially blocked by dried residue or debris	Clean the outlet with a soft pipe cleaner and repeat the fresh-water check under Calibration (page 7)
Flow is faster than expected, or outlet appears enlarged	Outlet bore worn, chipped, or distorted	Inspect the outlet closely; if it is visibly damaged, retire the unit and contact Inmotion Energy about a replacement
Readings bounce around between otherwise identical tests	Funnel not filled to a consistent level, or timing started late	Fill to the underside of the screen every time, and start timing the instant the outlet is uncovered
Debris reaching the outlet despite the screen	Screen mesh torn, clogged, or coated with residue	Clean the screen thoroughly; if the mesh is torn, contact Inmotion Energy about a replacement funnel body
Cup graduations hard to read	Residue film or wear on the graduated markings	Clean the cup with a mild solvent; replace the cup if markings remain illegible

Still stuck after trying the above? Set the instrument aside and get in touch with Inmotion Energy (see Company & Contact Information, page 11).

**Warranty and
Return Policy****Warranty**

Inmotion Energy (OPC) Private Limited stands behind the materials and workmanship of every instrument it ships. For eighteen (18) months from the invoice date, if a product turns out not to meet its stated specifications through no fault of the buyer, and we're notified in writing once the issue is found, we'll repair or replace it at our discretion, subject to the exclusions below.

This coverage assumes normal use, in line with the operating conditions described in this manual. It does not stretch to cover use outside those conditions, nor to flaws that were plainly visible on arrival but went unreported.

Beyond what's stated here, Inmotion Energy doesn't offer any other express or implied warranty — including, to the extent the law allows, implied warranties of merchantability or fitness for a particular purpose.

Coverage does not extend to damage or loss caused by:

- Installation, operation, or upkeep that doesn't follow this manual
- Misuse, carelessness, or accidental damage
- Adjustment or repair carried out by anyone other than Inmotion Energy or an authorized service provider
- Storage conditions or exposure beyond what normal field use implies
- Parts or components sourced from outside Inmotion Energy
- Ordinary wear items — the fill screen and measuring cup, for example

Returns and Repairs

Pack anything you're sending back carefully — Inmotion Energy can't take responsibility for damage caused by inadequate packaging in transit.

If you're returning a unit that isn't defective, do so within thirty (30) days of your invoice; a restocking charge may apply, and the item needs to arrive in its original condition to qualify for a refund.

Before shipping anything back, reach out to us with your invoice number, a description of the issue, and your contact details so we can set expectations. Send equipment to:

Inmotion Energy (OPC) Private Limited

Attn: Service & Repair

186, 1st Main Road, Vijaya Bank Layout, Bilekahalli

Bangalore, Karnataka – 560076, India

Questions before then? Reach our support team at info@inmotionenergy.in.

Ordering & Replacement Parts	Send the Inmotion Energy sales team a note about what you're working on, and we'll get back with a recommendation and a quote. Spares, including replacement cups and funnel bodies, are kept in stock and shipped on request. Have this ready when you reach out: • Model / catalog number (IM-MF-946P) • The part number and description you need (see Components, page 4) • How many you need • Your company name, shipping address, and a contact point
Company & Contact Information	Inmotion Energy has spent years supplying precision testing instruments and drilling tools to operators working with drilling fluids, cements, and completion fluids. Working out of our Bangalore facility, we serve customers across India and the Middle East. Being an independent manufacturer means our customers come first, not a parent company's agenda. Industries We Serve • Onshore & offshore drilling contractors • National & independent oil companies • Mud engineering & testing laboratories • Well completion & workover operations Why Choose Us • Every unit goes through rigorous checks before it ships • Spares and replacements move fast, so downtime doesn't stack up • Designs proven in the field, built to keep working Contact Details Inmotion Energy (OPC) Private Limited 186, 1st Main Road, Vijaya Bank Layout, Bilekahalli, Bangalore, Karnataka – 560076 Phone: +91 96637 44619 Email: info@inmotionenergy.in Website: inmotionenergy.in