

Imbalance Inversion Retest

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Price-Action Continuation (FVG Inversion)

TIMEFRAME

M15–H1

WEBSITE

www.algotbot.live

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Overview

Imbalance Inversion Retest is a pure price-action, trend-continuation Expert Advisor built around the *inversion* of a fair-value gap (FVG, also called an imbalance). It uses **no technical indicators** — every level, filter, stop, and target is measured directly from raw candle highs and lows. The only average involved is a plain mean candle range computed inline to scale the thresholds to current volatility, which is candle geometry rather than an indicator.

A fair-value gap is a three-candle imbalance: a fast middle candle leaves an untraded void, so that for a bullish gap the high of the oldest candle sits below the low of the newest candle. Conventional approaches treat this void as support or resistance that *holds*. This strategy does the opposite — it trades the moment the void **fails**. When price drives back through a fresh gap with a genuine displacement candle, the imbalance is invalidated and “inverts”: a broken bullish gap becomes fresh supply, and a broken bearish gap becomes fresh demand. The EA then trades **with** the breaking move (continuation), entering on the retrace back into the inverted void’s equilibrium (its 50% line).

Three design choices set it apart from a plain inversion-reversal:

- **Multi-zone tracking:** many candidate gaps and many inverted zones are held in rolling lists at once, not a single bull/bear slot — whichever level price retests first is the one that trades.

- **Displacement gate:** a gap only inverts on a strong-bodied break candle that closes through and in the break direction, filtering out drifting closes and keeping only intentful order-flow shifts.
- **Equilibrium retest:** the entry trigger is a tag of the inverted zone's 50% line (a measured retrace into the void), not a close-back-inside candle — a mechanically different, earlier fill.

How It Works

The EA acts once per freshly-closed bar. On each new bar it processes the last closed candle through a four-stage pipeline of pure candle geometry.

1. Volatility Scale

A plain mean candle range is computed over the most recent `RangeLookback` bars (high minus low, averaged). This single value scales the two distance thresholds to the instrument's current volatility:

- **Minimum gap size** = `MinGapFactor` × average range — a gap narrower than this is ignored.
- **Stop buffer** = `StopBufferFactor` × average range — the padding added beyond a zone for the stop.

2. Gap Detection

From the last three closed bars (oldest, middle, newest) the EA looks for a fresh imbalance:

- **Bullish FVG:** an up-vacuum where `oldest.High < newest.Low`, the middle candle is bullish, and the gap is at least the minimum size.
- **Bearish FVG:** a down-vacuum where `oldest.Low > newest.High`, the middle candle is bearish, and the gap is at least the minimum size.

Each detected gap is stored in a rolling list and given an expiry counter (`FvgExpiry` bars) within which it must invert, or it is dropped.

3. Inversion (the Displacement Gate)

A stored gap inverts only when a **displacement candle** — one whose body is at least `DisplacementBodyPct` of its full range — closes through it in the breaking direction:

- A **bullish gap** fails when a bearish displacement bar **closes below** it → it becomes an inverted **supply** zone (sell bias).
- A **bearish gap** fails when a bullish displacement bar **closes above** it → it becomes an inverted **demand** zone (buy bias).

Each inverted zone is tracked with its own retest expiry (`RetestExpiry` bars). A supply zone is invalidated if price later *closes back above* it (the gap is reclaimed); a demand zone dies if price closes back below it.

4. Entry — the Equilibrium Retest

With at most one position open per magic number, the EA scans live zones for the first to be retested at its **50% equilibrium line** (the midpoint of the void):

- **Inverted supply:** when price retraces up and the bar's high tags the 50% line → **SELL** (continuation lower).
- **Inverted demand:** when price retraces down and the bar's low tags the 50% line → **BUY** (continuation higher).

Stops, Targets & Position Management

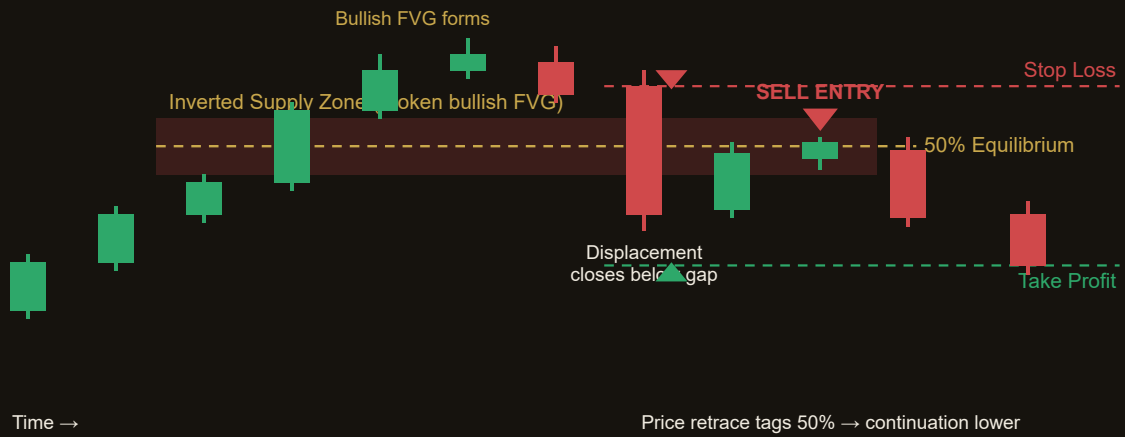
- **Stop loss:** placed just beyond the zone — above the top for a sell, below the bottom for a buy — plus the volatility-scaled stop buffer.
- **Take profit:** a fixed reward-to-risk multiple of the measured stop distance, set by `RiskReward`.
- **Single exposure:** only one position at a time is held for the EA's magic number; the triggered zone is removed once it fires.
- **No indicators:** all exits are pre-set SL/TP brackets on the order — there is no trailing logic or indicator-based exit.

Tip: Because the entry is a tag of the void's 50% line rather than a full retrace to the far edge, fills tend to occur earlier and closer to the displacement. This generally produces a tighter stop and a cleaner reward-to-risk profile, at the cost of a higher chance the level is only grazed before continuation.

Strategy in Action

The illustration below shows an example of how the strategy identifies a setup and triggers its entry and exit. This is a simplified, illustrative example for educational purposes — not real market data. It depicts the **sell** case: a bullish fair-value gap that fails on a displacement candle, inverts into a supply zone, and is then sold on the retrace into its 50% equilibrium.

Imbalance Inversion Retest — SELL setup



Illustrative example only. Actual market behaviour varies.

Worked example (sell)

Price rallies and prints a bullish fair-value gap. A strong bearish displacement candle then closes *below* the gap, inverting it into a supply zone. Price drifts back up and the bar's high tags the zone's 50% equilibrium line — the EA sells at the bid, places the stop just above the zone top plus the volatility buffer, and sets the take profit at a fixed reward-to-risk multiple below the entry. The mirror image (a broken bearish gap inverting into demand) produces a buy.

Parameters

Parameter	Default	Description
MinGapFactor	0.25	Minimum gap size as a fraction of the average candle range. Higher values demand wider, more significant imbalances. Range 0.05–1.50, step 0.05.
RangeLookback	20	Number of bars used to compute the mean candle range that scales the gap and stop thresholds to current volatility. Range 10–60, step 1.
DisplacementBodyPct	0.55	Minimum body-to-range ratio for a candle to qualify as a displacement break that can invert a gap. Higher values require more decisive candles. Range 0.30–0.90, step 0.05.
FvgExpiry	18	Maximum number of bars a fresh gap may wait to invert before it is discarded. Range 3–60, step 1.
RetestExpiry	14	Maximum number of bars an inverted zone waits for its equilibrium retest before it expires. Range 2–50, step 1.
StopBufferFactor	0.25	Stop-loss padding beyond the zone, as a fraction of the average candle range. Range 0.00–1.50, step 0.05.
RiskReward	2.0	Fixed reward-to-risk multiple used to set the take profit from the measured stop distance. Range 1.0–6.0, step 0.5.
Lots	0.10	Trade volume in lots per position. Range 0.01–1.00, step 0.01.
Magic	7720	Magic number identifying this EA's positions, so it manages only its own trades on the chart.

Recommended Settings

The strategy was tuned with FX majors and XAU (gold) on the M15–H1 range in mind, but it is locked to **no fixed timeframe** — it runs on whatever primary timeframe the chart or backtest selects.

- **Instruments:** FX majors (EUR/USD, GBP/USD, USD/JPY) and XAU/USD, which produce clean, repeatable imbalances.
- **Timeframe:** M15 to H1 as a starting point; lower timeframes generate more (noisier) gaps, higher timeframes fewer (but cleaner) ones.
- **Risk per trade:** keep `Lots` consistent with your account size; with a fixed stop and a 2.0 reward-to-risk default, position sizing is the primary risk control.

- **Selectivity:** raise `MinGapFactor` and `DisplacementBodyPct` for fewer but higher-conviction setups; lower them for more frequent entries.

Note: Always validate any parameter set on the specific symbol and timeframe you intend to trade using the MT5 Strategy Tester before risking live capital. Defaults are a starting point, not an optimized configuration for your broker's spreads and data.

How to Install on MetaTrader 5

- 1 Copy `ImbalanceInversionRetest.ex5` to your MT5 `MQL5\Experts\` folder
- 2 Restart MetaTrader 5 and refresh the Navigator panel
- 3 Drag the EA onto a chart matching the recommended symbol and timeframe
- 4 Configure the input parameters and click **OK**
- 5 Enable **Algo Trading** in the MT5 toolbar

Risk Warning

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