

Fair Value Gap Expansion Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Price-Action Momentum Breakout

TIMEFRAME

M5 – H1

WEBSITE

www.algotbot.live

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Overview

Fair Value Gap Expansion Breakout is a pure price-action Expert Advisor that trades the continuation of a violent, one-sided move. It uses **no indicators of any kind** — no ATR, no moving average, no oscillator. Every threshold is measured by hand directly from raw candle geometry: highs, lows, candle bodies, and a plain mean candle range that is used only to scale buffers to the symbol's volatility.

A **Fair Value Gap (FVG)** is a three-candle imbalance — the footprint of a fast displacement. When a strong middle candle travels so quickly that the first candle's wick and the third candle's wick never overlap, it leaves an untraded void. The two textbook FVG plays both *wait* for price to retrace back into that void (a limit at the 50% line, or a rejection wick). This EA does the opposite: it refuses to predict a pullback and instead **joins the move only if it keeps expanding**.

When a fresh FVG forms *and* its displacement candle has just broken recent market structure (a swing high or low of the prior N bars), the EA arms a single **stop order** a small buffer beyond the trio's extreme. The order triggers only when price makes a *new* extreme in the displacement direction, filtering out gaps that immediately stall or reverse. The gap itself is the thesis: the protective stop sits just beyond the gap's far (origin) edge, so if price collapses back and fills the imbalance, the idea is dead for a small, structural loss.

The core idea: The best runaway moves leave their imbalance unmitigated and keep going. Rather than betting on a retrace that may never come, this EA waits for the market to *confirm* the expansion by printing a new extreme, then rides the continuation with a fixed reward-to-risk target.

How It Works

The strategy evaluates once per newly-closed bar on the chart timeframe. It maintains a strict, single-state lifecycle: it is either flat and scanning, holding one resting stop order, or managing one open position — never more than one at a time.

1. Measuring volatility (the scaling unit)

Before any logic runs, the EA computes a **mean candle range** — the simple average of `High - Low` over the most recent `RangeWindow` bars. This single number scales every threshold in the strategy (minimum gap size, entry buffer, stop buffer). Because everything is expressed as a fraction of this range, the EA adapts automatically to any liquid symbol or timeframe without needing point sizes or per-market tuning.

2. Detecting a structure-breaking Fair Value Gap

On each closed bar the EA inspects the freshly-closed three-candle trio (`c1` oldest, `c2` the displacement candle, `c3` newest) and tests four conditions.

BULLISH SETUP — ARM A BUY STOP

- **Fresh up-imbalance:** `c1.High < c3.Low` — the first and third candles do not overlap, leaving an unfilled gap.
- **Violent displacement:** the middle candle is bullish and its body is at least `MinDisplacementFactor ×` the mean range.
- **Structure broken:** `c3.Close` closes above the highest high of the prior `StructureLookback` bars.
- **Gap is meaningful:** the gap height is at least `MinGapFactor ×` the mean range.

When all four hold, a **BUY STOP** is placed at `trioHigh + EntryBufferFrac`, with the stop-loss below the gap origin at `c1.High - StopBufferFrac` and the take-profit a fixed `RiskReward` multiple of that stop distance away.

BEARISH SETUP — ARM A SELL STOP

The exact mirror image: `c1.Low > c3.High` (down-imbalance), a bearish displacement candle, `c3.Close` below the lowest low of the prior window, and a gap of sufficient height. The **SELL STOP** rests at `trioLow - EntryBufferFrac`, with the stop-loss above the gap origin at `c1.Low + StopBufferFrac`.

Worked example (bullish)

Mean range = 20 pips. A displacement candle prints a 26-pip body ($> 1.10 \times 20$) and its close breaks the 10-bar swing high. The gap between `c1.High` and `c3.Low` measures 9 pips ($> 0.25 \times 20$). A BUY STOP is armed 2 pips above the trio high. The protective stop sits 6 pips below the gap origin; with a 2.00 reward-to-risk, the take-profit is placed twice that structural distance above the entry.

3. Entry confirmation

The resting stop order is the confirmation filter. It triggers *only* when price trades through a new extreme in the displacement direction. Gaps that immediately stall or reverse never get filled — the order simply waits, then expires.

4. Managing the resting order

While a stop order is armed but un-triggered, the EA ages it bar by bar and cancels it on either of two conditions:

- **Expiry:** the order has rested for `ExpiryBars` bars without filling.
- **Invalidation:** price closes back *through* the gap against the setup (below `gapLow` for a long, above `gapHigh` for a short) — the imbalance is being filled, so the thesis is dead.

5. Exit logic

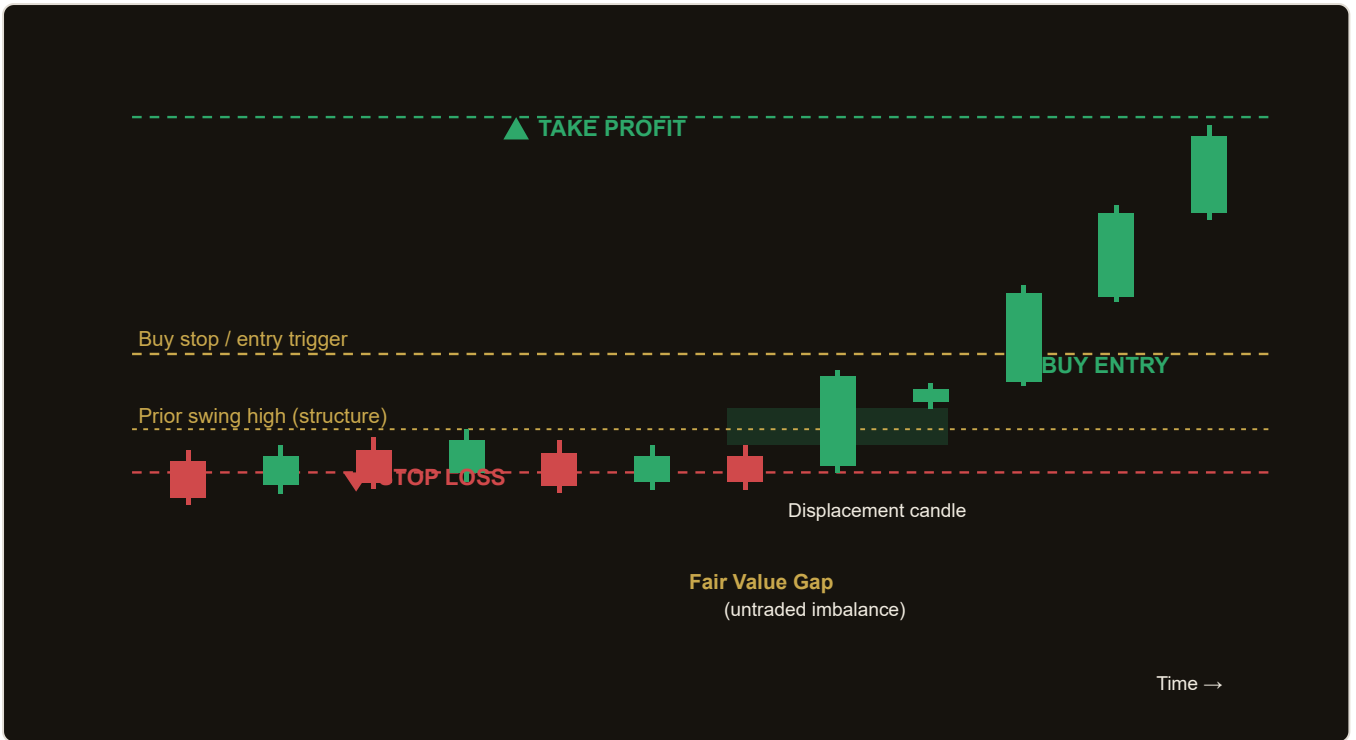
Once a stop order fills and becomes an open position, the EA cancels any stray pending orders and stands aside. The trade is managed entirely by its attached **stop-loss** and **take-profit**:

- **Stop-loss** — just beyond the gap's far (origin) edge. If price collapses back and fills the imbalance, the loss is small and structural.
- **Take-profit** — a fixed `RiskReward` multiple of the structural stop distance, locking the reward-to-risk profile of every trade.

One setup at a time. The EA never stacks orders. A single magic number isolates its trades, and at any moment it holds at most one resting stop *or* one open position — keeping behaviour predictable and risk bounded.

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.



Illustrative example only. Actual market behaviour varies.

Parameters

Parameter	Default	Description
Lots	0.10	Order volume in lots. Range 0.01–1.00, step 0.01.
MinGapFactor	0.25	Minimum gap height as a fraction of the mean candle range — ensures the imbalance is meaningful. Range 0.05–1.50, step 0.05.
MinDisplacementFactor	1.10	Displacement candle body divided by the mean range — how violent the thrust that made the gap must be. Range 0.50–3.00, step 0.10.
EntryBufferFrac	0.10	Stop-entry buffer beyond the trio extreme, in mean-range units. Avoids triggering on the exact tick. Range 0.00–1.00, step 0.05.
StopBufferFrac	0.30	Protective-stop buffer beyond the gap's far (origin) edge, in mean-range units. Range 0.00–1.50, step 0.05.
RiskReward	2.00	Take-profit distance as a multiple of the structural stop distance. Range 1.00–6.00, step 0.25.
StructureLookback	10	Lookback (bars before the trio) whose swing high/low the displacement must break. Range 3–50, step 1.
ExpiryBars	6	Cancel an un-triggered stop order after this many bars. Range 1–30, step 1.
RangeWindow	20	Window for the mean candle range that scales every threshold. Range 8–60, step 1.
Magic	9207	Magic number that isolates this EA's orders and positions. Range 0–9,999,999, step 1.

Recommended Settings

The defaults are a balanced starting point for liquid instruments on intraday timeframes. Because every threshold scales to the mean candle range, the same settings transfer well across symbols, but the following guidance helps you fine-tune.

Symbols & timeframes

- **Symbols:** liquid majors and metals (EUR/USD, GBP/USD, XAU/USD) and major indices.
- **Timeframes:** M5 to H1. Lower timeframes generate more setups but more noise; higher timeframes give cleaner displacements.

Tuning notes

- **Fewer, higher-quality trades:** raise `MinDisplacementFactor` (e.g. 1.50) and `MinGapFactor` (e.g. 0.40) to demand more violent imbalances.
- **More setups:** lower those two factors and/or reduce `StructureLookback` so smaller swings qualify as a structure break.
- **Trend persistence:** increase `RiskReward` in strongly trending conditions; reduce it in choppy markets to bank wins faster.
- **Patience vs. freshness:** a larger `ExpiryBars` gives the breakout more time to trigger; a smaller value keeps only the freshest gaps.

Tip: Always run a backtest and forward-test on a demo account with your chosen symbol and timeframe before committing real capital. Optimise `MinDisplacementFactor`, `MinGapFactor` and `RiskReward` first — they have the largest effect on trade frequency and quality.

How to Install on MetaTrader 5

- 1 Copy `FairValueGapExpansionBreakout.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

Note: The EA acts once per newly-closed bar, so it does not require every tick to behave correctly. To compile from source, place `FairValueGapExpansionBreakout.mq5` in the same `Experts` folder and compile it in MetaEditor to produce the `.ex5`.

Risk Warning

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