

Expansion Candle Equilibrium Retest

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend Continuation

TIMEFRAME

H1 / H4

WEBSITE

www.algobot.live

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Overview

The **Expansion Candle Equilibrium Retest** Expert Advisor is a trend-following continuation strategy built on a simple order-flow observation: a single candle whose range dwarfs recent volatility — an *expansion* or displacement candle — that also closes hard in its own direction is the footprint of one-sided flow. A fresh imbalance was created and price was repriced in a hurry.

Chasing the close of that candle is poor risk. The durable edge is to wait for price to retrace to the candle's own **equilibrium** — the 50% level, $(\text{High} + \text{Low}) / 2$, of the impulse candle — and re-enter in the impulse direction once buyers (or sellers) defend that midpoint. The 50% of a strong candle is a classic magnet and value area; a defended retest offers a tight structural stop just past the impulse extreme with room to run toward a multiple-R target.

Unlike a raw price-action pattern, this system is **indicator-gated** so a retest is taken only when it is genuinely *with* the prevailing trend. Three independent filters must agree before a setup is armed:

- **Expansion** is measured against ATR (range $\geq \text{RangeAtrMult} \times \text{ATR}$), so the “big candle” test adapts to the instrument and regime instead of a fixed pip count.
- **Direction / regime** is confirmed by an EMA: the impulse must close on the trend side of the EMA, and the EMA must be sloping that way.

- **Momentum quality** is confirmed by RSI: it must sit in trend territory ($\geq \text{RsiTrendMin}$ for longs) yet not already be exhausted ($\leq \text{RsiMax}$), so the EA joins healthy trends and skips blow-off tops and capitulation lows.

The EA is symbol- and timeframe-agnostic (it runs on whatever chart it is attached to) but was designed with EUR/USD, GBP/USD and XAU/USD in mind. All logic operates on a single, fully-closed candle each time a new bar opens — it never acts on the still-forming bar.

How It Works

The strategy runs as a two-stage state machine: it first **arms** on a qualifying impulse candle, then **waits** for a defended retest of that candle's midpoint within a limited window. The description below is for a long; shorts are the exact mirror.

Stage 1 — Arming on an expansion candle

On each newly-closed bar, the EA tests whether it qualifies as a bullish impulse. All of the following must be true:

- **Expansion:** candle range $\geq \text{RangeAtrMult} \times \text{ATR}$.
- **Decisive body:** $\text{body} / \text{range} \geq \text{BodyFrac}$ (the real body dominates the candle).
- **Strong close:** the close lands in the top CloseLoc fraction of the range, i.e. $(\text{Close} - \text{Low}) / \text{range} \geq \text{CloseLoc}$.
- **Trend side & slope:** $\text{Close} > \text{EMA}$ and the EMA is rising.
- **Momentum window:** $\text{RsiTrendMin} \leq \text{RSI} \leq \text{RsiMax}$.

When these align, the EA stores three things and starts a countdown:

- **Equilibrium** $\text{mid} = (\text{High} + \text{Low}) / 2$ — the retest target.
- **Stop reference** = the impulse *Low* (the invalidation / stop anchor).
- **Expiry window** = ArmBars bars in which the retest must occur.

Stage 2 — The defended equilibrium retest

While a setup is armed, each subsequent closed bar is evaluated:

- **Trigger (entry):** a bar that dips to or through the midpoint ($\text{Low} \leq \text{mid}$) yet closes back above it ($\text{Close} \geq \text{mid}$) with a bullish body ($\text{Close} > \text{Open}$) is the defended retest → **BUY**.
- **Early invalidation:** if a bar *closes below the impulse Low*, the displacement has failed and the setup is discarded.
- **Expiry:** if the ArmBars window elapses without a trigger, the setup is dropped and the EA resumes hunting for a fresh impulse.

Order placement, stop and target

When the retest triggers, the EA first checks the current spread against **MaxSpread** (in points); if the spread is too wide it leaves the setup armed and retries on a later bar inside the window. Otherwise it places a market order:

```
buffer = AtrBuffer × ATR
```

LONG:

```
entry = Ask
SL    = min(impulseLow, retestLow) - buffer
risk  = entry - SL          (must be > 0)
TP    = entry + RewardRisk × risk
```

SHORT (mirror):

```
entry = Bid
SL    = max(impulseHigh, retestHigh) + buffer
risk  = SL - entry
TP    = entry - RewardRisk × risk
```

The stop is anchored just past the structural extreme (impulse or retest, whichever is safer) plus an ATR buffer, and the target is a fixed reward-to-risk multiple of that stop distance. Once filled, the position is managed entirely by its attached SL/TP.

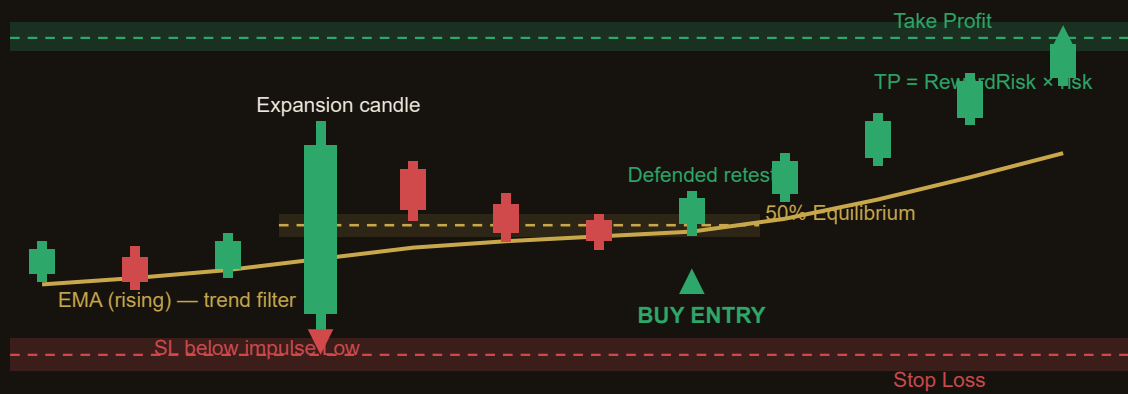
One position per magic. While a trade tagged with this EA's magic number is open, the strategy takes no new action and any armed setup is cleared — the live SL/TP manages the trade to completion before a new impulse can be hunted.

Worked example (long)

A bar prints a range of $1.6 \times \text{ATR}$ with a body filling 70% of that range and closing in the top 20% — well above a rising EMA, RSI at 58. The EA arms: **mid** is the candle's midpoint, the stop reference is its Low, and a 6-bar window opens. Three bars later price pulls back, wicks down to the midpoint, and closes bullishly back above it. The EA buys at Ask, sets the stop just below the impulse Low minus $0.25 \times \text{ATR}$, and targets $1.8 \times$ that risk distance.

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	Fixed trade volume in lots (range 0.01–1.00, step 0.01).
AtrPeriod	14	ATR lookback used to size the expansion test and stop buffer (5–40).
EmaPeriod	50	EMA period for the direction / slope trend filter (10–200, step 5).
RsiPeriod	14	RSI period for the momentum-quality gate (5–30).
RangeAtrMult	1.4	Expansion threshold: impulse range must be at least this many ATRs (0.8–3.0, step 0.1).
BodyFrac	0.55	Decisiveness: body must fill at least this fraction of the candle range (0.30–0.90, step 0.05).
CloseLoc	0.65	Close strength: close must land in this leading fraction of the range (0.50–0.95, step 0.05).
RsiTrendMin	50.0	RSI trend floor for longs (mirrored for shorts). Must be at or above this to arm (40–65, step 1).
RsiMax	78.0	RSI exhaustion ceiling for longs (mirrored for shorts). Skips over-extended moves (60–90, step 1).
ArmBars	6	Bars after arming within which the equilibrium retest must trigger (1–20).
RewardRisk	1.8	Take-profit as a reward:risk multiple of the structural stop distance (0.5–5.0, step 0.1).
AtrBuffer	0.25	Extra stop room beyond the impulse extreme, in ATRs (0.00–1.50, step 0.05).
MaxSpread	250	Maximum spread (points) allowed at entry; wider spreads defer the fill (10–900, step 10).
Magic	830517	Magic number identifying and isolating this EA's positions (one position per magic).

Recommended Settings

The EA runs on any symbol and timeframe, but it was designed and tuned with the following in mind:

- **Symbols:** EUR/USD, GBP/USD and XAU/USD (Gold). Volatile, trend-prone instruments give the cleanest expansion candles.
- **Timeframe:** H1 or H4. Higher timeframes produce more meaningful displacement candles and reduce noise-driven false arms.
- **Spread:** keep `MaxSpread` realistic for your broker — for XAU/USD in particular, spreads in points are much larger than on FX majors, so raise it accordingly.

TUNING GUIDANCE

- **Fewer, higher-quality signals:** raise `RangeAtrMult` (e.g. 1.8–2.2) and `BodyFrac` (e.g. 0.65) so only the most decisive impulses arm.
- **More signals:** lower `RangeAtrMult` toward 1.0–1.2 and widen the RSI band (lower `RsiTrendMin`, raise `RsiMax`).
- **Wider stops on noisy instruments:** increase `AtrBuffer` (e.g. 0.4–0.6) to keep the structural stop clear of retest wicks.
- **Retest patience:** a larger `ArmBars` gives price more time to pull back to equilibrium, at the cost of accepting slower, deeper retracements.

Tip. Always backtest and forward-test any parameter change on your own broker's data before going live. The defaults are a balanced starting point, not an optimized set for a specific symbol.

How to Install on MetaTrader 5

- 1 Copy `ExpansionCandleEquilibriumRetest.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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