

Heikin Ashi Body Expansion Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend-Momentum Breakout

TIMEFRAME

M15 / H1

WEBSITE

www.algotbot.live

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Overview

Heikin Ashi Body Expansion Breakout is a trend-momentum ignition strategy. It smooths raw price into Heikin-Ashi (HA) candles and waits for the exact moment momentum *ignites* — a single HA candle that prints a body far larger than its recent average while keeping a "flat" trend side (little or no wick against the direction of travel). When that ignition candle fires in the direction of an EMA-filtered HA trend, the EA enters, continuing the trend rather than fading it.

This is deliberately the **opposite intent** of the flat-base, wick-rejection, and colour-shift *reversal* systems that Heikin-Ashi is usually associated with. Here the goal is to join an established trend at the point its momentum accelerates. Every trade carries a defined risk: an ATR-based stop is placed just beyond the ignition candle's HA extreme, and the take-profit is a fixed reward-to-risk multiple. An optional trend-exit closes the position early the instant the HA colour flips against it.

Single-timeframe compliant. All Heikin-Ashi candles are derived from the chart's primary timeframe only — the EA never references a second timeframe. It runs on whatever timeframe the chart (or backtest) selects.

How It Works

All logic is evaluated on **closed bars only**. Heikin-Ashi candles repaint while a bar is still forming, so the EA acts exactly once per newly-closed primary bar and never on an in-progress candle.

Heikin-Ashi construction

Each closed primary bar is converted into a smoothed HA candle:

```
haClose = (Open + High + Low + Close) / 4
haOpen  = (prevHaOpen + prevHaClose) / 2
haHigh  = max(High, haOpen, haClose)
haLow   = min(Low,  haOpen, haClose)
```

1. Trend filter (EMA of HA closes, with slope)

An exponential moving average is calculated over the stream of HA closes using the `TrendEma` period. Both the position of price relative to the EMA *and* the EMA's slope must agree:

- **Up-trend** — the latest HA close is above the EMA *and* the EMA is rising.
- **Down-trend** — the latest HA close is below the EMA *and* the EMA is falling.

The EMA is computed manually on HA closes (not raw price), so the trend read reflects the smoothed series the rest of the logic uses.

2. Ignition (body expansion)

The absolute body of the just-closed HA candle is compared against the average HA body of the prior `BodyLookback` candles. Ignition is confirmed when:

```
|haClose - haOpen| ≥ ExpandMult × avgBody(BodyLookback)
```

A higher `ExpandMult` demands a bigger burst, so only genuine momentum expansions qualify.

3. Flat trend side

A true ignition candle should thrust cleanly, leaving little wick *against* the move:

- **LONG** requires a *bullish* HA candle with a flat bottom — its lower wick must be ≤ `FlatFrac` of the candle's total range.
- **SHORT** requires a *bearish* HA candle with a flat top — its upper wick must be ≤ `FlatFrac` of the range.

Entry rules

- **LONG** = up-trend *and* bullish flat-bottom ignition candle → buy at Ask.
- **SHORT** = down-trend *and* bearish flat-top ignition candle → sell at Bid.

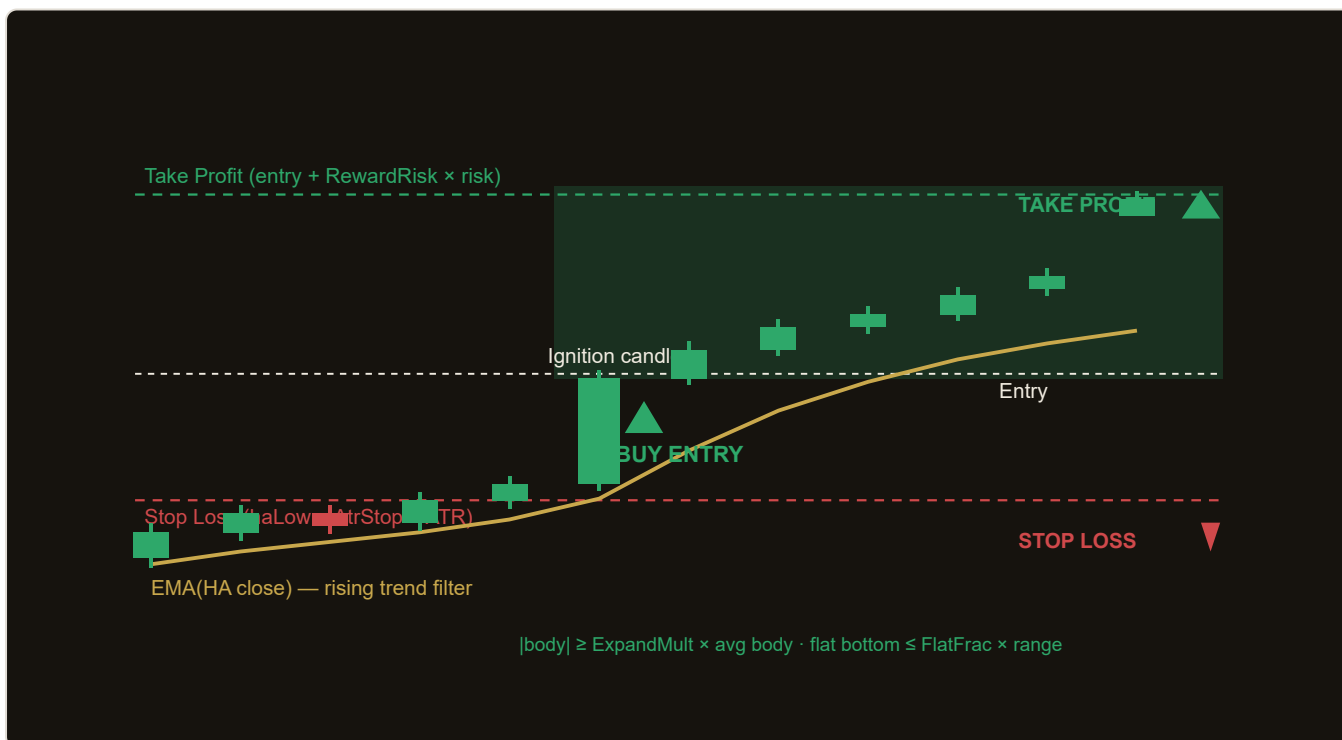
A spread filter blocks any entry while the current spread exceeds `MaxSpreadPts`, and only **one position per magic number** may be open at a time.

Risk, stops & exits

- **Stop-loss** — placed beyond the ignition candle's HA extreme by an ATR buffer: for longs, `haLow - AtrStop × ATR`; for shorts, `haHigh + AtrStop × ATR`. ATR is a Wilder ATR over `AtrPeriod` on raw OHLC.
- **Take-profit** — a fixed reward-to-risk multiple of the measured stop distance: `entry ± RewardRisk × risk`. Every trade therefore has a defined R from the outset.
- **Trend-exit** — when `UseTrendExit = 1`, an open trade is closed early the moment the HA colour flips against it (a bearish HA candle against a long, or a bullish HA candle against a short), locking trend gains before the stop is reached.

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
TrendEma	20	EMA period applied to Heikin-Ashi closes for the trend filter. Range 5–100.
BodyLookback	10	Number of prior HA candles used to compute the average body size for the ignition test. Range 3–40.
ExpandMult	1.80	Ignition threshold: the closed HA body must be at least this multiple of the average body. Higher = stricter. Range 1.10–4.00.
FlatFrac	0.20	Maximum wick on the trend side, as a fraction of the candle's range (flat bottom for longs, flat top for shorts). Range 0.02–0.60.
AtrPeriod	14	Period of the Wilder ATR (on raw OHLC) used to size the stop buffer. Range 5–50.
AtrStop	0.70	ATR multiple placed beyond the ignition candle's HA extreme to set the stop-loss. Range 0.10–3.00.
RewardRisk	1.80	Fixed reward-to-risk multiple that sets the take-profit distance from the measured risk. Range 0.50–5.00.
UseTrendExit	1	1 = close an open trade early when the HA colour flips against it; 0 = disable. Range 0–1.
MaxSpreadPts	100	Maximum allowable spread (in points) for a new entry to be taken. Range 5–400.
Lots	0.10	Fixed lot size per trade. Range 0.01–1.00.
Magic	42017	Magic number identifying this EA's positions. One position per magic at a time. Range 0–9,999,999.

Recommended Settings

The strategy is designed for **trending markets** — FX majors, gold, or indices — on the **M15 or H1** timeframe, where Heikin-Ashi smoothing and body-expansion ignition are most reliable.

Starting point — FX majors / gold on M15–H1

Trade with the defaults: `TrendEma = 20` , `BodyLookback = 10` , `ExpandMult = 1.80` , `FlatFrac = 0.20` , `AtrStop = 0.70` , `RewardRisk = 1.80` , `UseTrendExit = 1` . This favours joining momentum bursts within an established trend and locking gains on a colour flip.

Tip — quiet regimes. In low-volatility conditions, raise `ExpandMult` (e.g. 2.2–2.8) so that only genuine bursts qualify as ignition. Tightening `FlatFrac` demands a cleaner thrust; loosening it admits more setups. Adjust `MaxSpreadPts` to match the instrument's typical spread so valid signals are not filtered out.

Common mistake. Never act on a Heikin-Ashi candle before it closes — HA candles repaint intrabar and an "ignition" body can vanish. This EA evaluates signals on closed bars only; do not attempt to anticipate the candle mid-formation.

How to Install on MetaTrader 5

- 1 Copy `HeikinAshiBodyExpansionBreakout.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

Trading foreign exchange, CFDs, and other leveraged financial instruments involves substantial risk of loss and is not suitable for all investors. The strategies and tools described in this document are provided for **educational purposes only** and do not constitute financial advice, investment recommendations, or solicitation to trade. Always consult a qualified financial adviser before making trading decisions. Past backtest performance is not indicative of future results.