

# Ema Ribbon Expansion Breakout

Expert Advisor Documentation

## PLATFORM

MetaTrader 5 (MT5)

## TYPE

Trend-Ignition Breakout

## TIMEFRAME

H1 (recommended)

## WEBSITE

[www.algotbot.live](http://www.algotbot.live)

**⚠ Important Disclaimer** This document is for educational and informational purposes only. It does not constitute financial or investment advice. Trading forex, CFDs, and other leveraged instruments involves substantial risk of loss and is not suitable for all investors. Past backtest performance does not guarantee future results. Never trade with capital you cannot afford to lose.

## Overview

The **Ema Ribbon Expansion Breakout** is a trend-ignition Expert Advisor built on a three-EMA “ribbon” — a fast, a mid, and a slow exponential moving average plotted together. Its central idea is that the strongest, most tradeable trends are born at the exact moment a *compressed* ribbon begins to *expand*.

When the three EMAs coil tightly together, the market is balanced or ranging — a low-edge, high-whipsaw environment. When that coil releases and the EMAs fan out **in order**, momentum is being committed decisively in one direction. The EA waits for that release and then joins the move.

To keep false signals to a minimum, every trade must satisfy **three independent conditions** at once: correct ribbon alignment, evidence of recent compression, and a fresh, thrust-confirmed expansion. Risk is sized dynamically from the Average True Range (ATR), stops and targets are symmetric in logic, and only one position per magic number is ever held at a time. All evaluation happens on **closed bars** of the primary chart timeframe.

## How It Works

On each newly closed bar the EA recomputes the fast, mid, and slow EMAs plus the ATR, then measures the signed *ribbon width* (fast EMA minus slow EMA). From these it derives the three entry gates described below.

## Entry Logic

A trade is only opened when all three conditions align on the last closed bar:

1. **Ribbon alignment** — the EMAs are stacked in order. For a long,  $\text{fast} > \text{mid} > \text{slow}$ ; for a short, the mirror  $\text{fast} < \text{mid} < \text{slow}$  arrangement ( $\text{fast} < \text{mid} < \text{slow}$ ).
2. **Prior compression** — at some point within the last  $\text{CompressLookback}$  bars (excluding the current one), the absolute ribbon width was narrower than  $\text{CompressFactor} \times \text{ATR}$ . This confirms the market recently coiled.
3. **Fresh expansion + thrust** — the current absolute ribbon width is *wider than the previous bar's* (actively fanning out) *and* exceeds  $\text{ExpandFactor} \times \text{ATR}$ , while price closes beyond the fast EMA (above it for longs, below it for shorts).

**Why three gates?** Alignment tells you *which way* the trend is stacked, compression tells you a *coil* preceded the move, and expansion-plus-thrust confirms the coil is *releasing now*. Requiring all three filters out the aimless drift and re-tests that trap single-condition breakout systems.

## Exit Logic

Each position carries a hard stop-loss and take-profit set at entry (see below). In addition, the EA applies an **early ribbon-flip exit**: while a trade is open, if the ribbon re-stacks against the position — a bearish stack appearing under an open long, or a bullish stack under an open short — the position is closed immediately, before the stop is reached. This lets the strategy abandon a failed breakout as soon as the trend structure turns.

## Stop-Loss & Take-Profit

Risk is anchored to volatility through the ATR measured on the signal bar:

Long:  $\text{SL} = \text{entry} - \text{ATR} \times \text{SlAtrMult}$        $\text{TP} = \text{entry} + \text{ATR} \times \text{TpAtrMult}$   
Short:  $\text{SL} = \text{entry} + \text{ATR} \times \text{SlAtrMult}$        $\text{TP} = \text{entry} - \text{ATR} \times \text{TpAtrMult}$

With the defaults ( $\text{SlAtrMult} = 2.0$ ,  $\text{TpAtrMult} = 3.0$ ) this yields a baseline reward-to-risk ratio of **1.5 : 1**. Because both legs scale with ATR, the EA automatically widens its stops in volatile conditions and tightens them when the market is calm.

## Position & Order Management

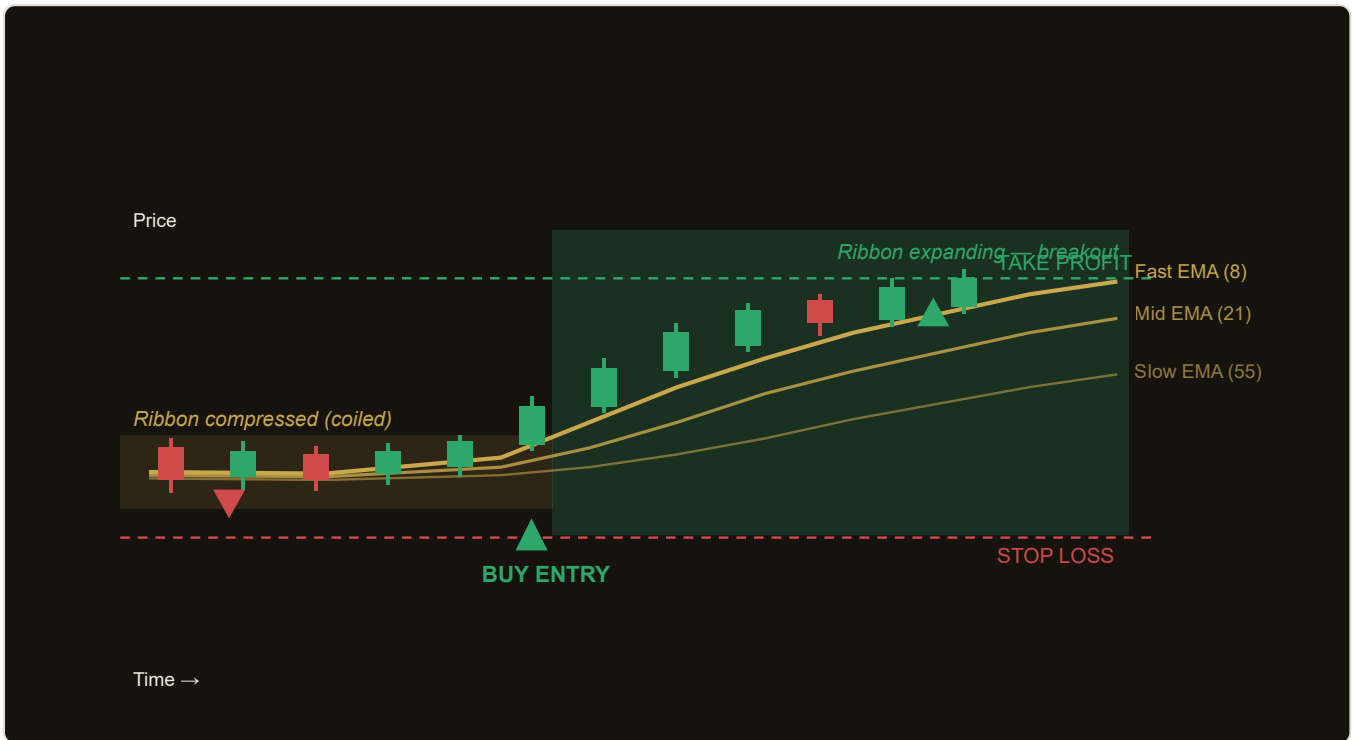
- **One position per magic** — the EA never pyramids; a new signal is ignored while a trade tagged with its **Magic** is already open.
- **Closed-bar evaluation** — signals are read from the last closed bar (shift 1 in MQL5), avoiding intrabar repainting.

- **Trade comments** — entries are tagged `RibbonExpand-L` (long) or `RibbonExpand-S` (short) for easy identification in the terminal.

## Strategy in Action

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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

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Every input below maps directly to the strategy's parameter definition. Defaults are the recommended starting point; the optimisation ranges shown in the strategy source are noted in the descriptions where relevant.

Parameter	Default	Description
FastEma	8	Period of the fast EMA — the most responsive line in the ribbon. Range 3–20 (step 1).
MidEma	21	Period of the middle EMA that separates the fast and slow lines. Range 10–45 (step 1).
SlowEma	55	Period of the slow EMA — the trend anchor and lower edge of ribbon width. Range 30–120 (step 5).
AtrPeriod	14	Averaging period for the ATR used to scale compression, expansion, stops, and targets. Range 5–30 (step 1).
CompressFactor	0.80	Ribbon is considered “coiled” when its absolute width falls below this multiple of ATR. Lower = stricter compression. Range 0.30–2.0 (step 0.10).
ExpandFactor	1.20	Ribbon is considered “fanned out” when its absolute width exceeds this multiple of ATR. Higher = demands a bigger thrust. Range 0.50–3.0 (step 0.10).
CompressLookback	6	Number of prior closed bars scanned for the compression condition. Range 3–20 (step 1).
SlAtrMult	2.0	Stop-loss distance as a multiple of ATR from the entry price. Range 0.50–5.0 (step 0.50).
TpAtrMult	3.0	Take-profit distance as a multiple of ATR from the entry price. Range 1.0–8.0 (step 0.50).
Lots	0.10	Fixed trade volume in lots. Range 0.01–1.0 (step 0.05).
Magic	7021	Magic number identifying this EA's trades. Use a unique value per chart to isolate position management.

**Tip:** keep the three EMA periods well separated (e.g. 8 / 21 / 55). Overlapping periods produce a ribbon that never truly compresses or expands, starving the strategy of signals.

## Recommended Settings

The defaults are tuned as a balanced starting point for liquid instruments on the **H1** timeframe. Adjust to your market and risk tolerance:

- **Instruments:** trending-prone majors such as EUR/USD, GBP/USD, and USD/JPY, or index CFDs. Ribbon breakout logic favours markets that produce sustained directional runs.
- **Timeframe:** H1 for the default periods. On faster charts (M15) consider shortening the EMAs; on H4/D1 keep or lengthen them.
- **Compression / expansion:** raise `ExpandFactor` or lower `CompressFactor` to demand cleaner coils and stronger releases (fewer, higher-quality trades).
- **Risk:** size `Lots` so that the `SlAtrMult`-based stop risks only a small, fixed fraction of account equity per trade.

#### Example — conservative H1 configuration

Set `ExpandFactor = 1.5` and `CompressFactor = 0.6` to trade only the tightest coils and most decisive breakouts, keep `SlAtrMult = 2.0` / `TpAtrMult = 3.0` for a 1.5:1 reward-to-risk, and use a small fixed `Lots` value. Expect fewer signals but stronger trend follow-through.

## How to Install on MetaTrader 5

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- 1 Copy `EmaRibbonExpansionBreakout.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:** because the EA acts only on closed bars, no trade will appear until the first bar closes after attachment. Verify that *Algo Trading* is enabled (green) and that the chart symbol matches your intended market before leaving it to run.

## Risk Warning

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