

Ease Of Movement Trend Rider

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Trend Continuation / Breakout	H1 – H4	www.algotbot.live

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Overview

Ease Of Movement Trend Rider is a volume-aware, trend-continuation Expert Advisor built around Richard Arms' classic *Ease of Movement* (EMV) indicator. EMV fuses three pieces of information — **price, range** and **volume** — into a single momentum reading. The edge the EA hunts for is an *efficient* advance: price that travels a meaningful distance *without* needing heavy volume to get there, i.e. a market moving "with ease".

Rather than trade a raw EMV zero-cross (which fires far too often), the strategy demands that **three independent conditions agree** before it commits: a directional trend filter, a volume-confirmed ease-of-movement reading, and a genuine break of market structure. This triple-confirmation approach is designed to keep the EA out of choppy, low-conviction regimes and only ride clean, established trends.

Every decision is made on **closed bars only** and every calculation runs on a single (primary) timeframe, so the signals are **non-repainting** — what you see on the historical chart is exactly what the EA acted on in real time.

The core idea in one line. For each completed bar the EA measures how far the mid-price moved and divides it by how much volume that move cost: $emv1 = midMove \times (High - Low) \div Volume$. A positive, rising smoothed EMV means price is climbing *easily* (bullish); negative and falling means it is dropping easily (bearish).

How It Works

The Ease of Movement calculation

On every completed bar the EA computes Arms' one-bar Ease of Movement:

```
midMove = (High + Low) / 2 - (PrevHigh + PrevLow) / 2 // directional push
boxRatio = Volume / (High - Low) // volume per unit of range
emv1 = midMove / boxRatio = midMove * (High - Low) / Volume
```

The raw per-bar EMV values are then smoothed with a simple moving average (`EmvPeriod`) to produce the momentum reading used in the entry logic. The constant scale factor is intentionally omitted — only the **sign** and **relative magnitude** of the smoothed series matter. Volume prefers real volume, falls back to tick volume, and finally to a value of 1 when neither is available.

Entry logic — three conditions must agree

A trade is only considered when there is no open position for the EA's magic number and the spread filter passes. A **long** setup requires all three of the following (a **short** is the exact mirror):

1. **Trend** — the trigger bar closes on the correct side of the EMA *and* the EMA is sloping that way: `Close > EMA` and `EMA > PrevEMA`.
2. **Ease / Flow** — the smoothed EMV is positive *and* rising: `EMV > 0` and `EMV > PrevEMV`. This is the volume-confirmed momentum leg.
3. **Structure** — the trigger bar *closes* beyond the highest high of the prior `BreakoutLookback` bars (a real break of market structure), and the candle body confirms the direction: `Close > Open` and `Close > priorHigh`.

Only when trend, flow and structure line up does the EA send an order. Requiring the break of structure to be a *close* beyond the prior range — not just an intrabar spike — filters out the false breakouts that a naive high/low touch would generate.

Exit logic, stops & targets

Risk is defined entirely in terms of the Average True Range (`AtrPeriod`):

- **Initial stop-loss** — placed `AtrStopMult * ATR` away from the entry price.
- **Take-profit** — set at a reward:risk multiple of the stop distance: `TP distance = stop distance * RewardRiskRatio`.
- **Chandelier trailing stop** — once in profit, an ATR-based trailing stop (`TrailAtrMult * ATR` behind price) follows the trade and *only ever ratchets in the trade's favour*; it never loosens. Setting `TrailAtrMult = 0` disables trailing and leaves the fixed SL/TP in place.

The EA manages at most **one position per magic number** at a time. While a position is open it only maintains the trailing stop; it will not stack additional entries.

Position sizing (money management)

Sizing is fixed-fractional. When `RiskPercent > 0`, the EA risks that percentage of account equity across the stop distance, converting the loss-per-lot via the symbol's tick size and tick value:

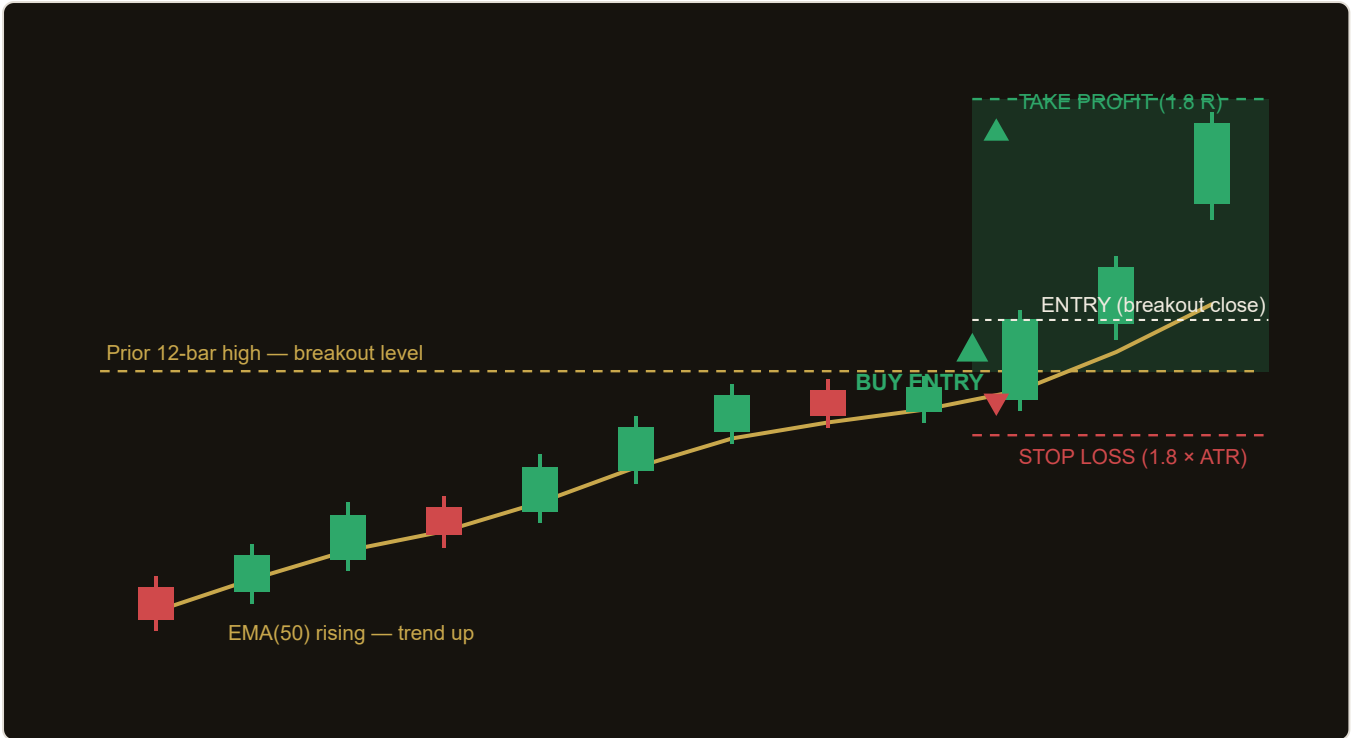
```
lossPerLot = (stopDist / tickSize) × tickValue
riskCash   = equity × (RiskPercent / 100)
lots       = riskCash / lossPerLot
```

If tick metadata is unavailable, it falls back to scaling `BaseLots` with equity against a 10,000 baseline. Setting `RiskPercent = 0` uses a flat `BaseLots` size. In all cases the result is normalised to the broker's volume step and clamped between the `BaseLots` floor and the `MaxLots` cap (and the broker's own volume min/max).

Non-repainting by design. Bar 0 is the still-forming bar; the EA only acts when that bar's time advances, meaning the bar at shift 1 has just *closed*. Every indicator, extreme and slope check reads closed data (`shift ≥ 1`), so historical signals cannot shift after the fact.

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. Price rides a rising EMA (trend), the smoothed EMV turns positive and rising (ease), and the trigger bar *closes* above the prior 12-bar high (structure), firing a long entry with an ATR stop and a reward:risk target.



Illustrative example only. Actual market behaviour varies.

Parameters

All inputs below are exposed on the EA's properties dialog. Defaults are shown as configured in the strategy definition.

Parameter	Default	Description
TrendPeriod	50	EMA trend-filter period. Price must sit on the correct side of this EMA and the EMA must slope in-trade. Range 20–200, step 10.
EmvPeriod	14	Smoothing window (SMA) applied to the raw Ease-of-Movement series. Range 5–40, step 1.
BreakoutLookback	12	Structure-break lookback: the trigger bar must close beyond the high/low of this many prior bars. Range 3–40, step 1.
AtrPeriod	14	ATR window used for stop, target and trailing distances. Range 7–30, step 1.
AtrStopMult	1.8	Initial stop distance = this many ATRs from entry. Range 0.5–4.0, step 0.1.
RewardRiskRatio	1.8	Take-profit distance = this reward:risk multiple of the stop distance. Range 0.8–5.0, step 0.1.
TrailAtrMult	1.2	Chandelier trailing-stop distance = this many ATRs behind price. Set 0 to disable trailing. Range 0.0–3.0, step 0.1.
RiskPercent	1.0	Fixed-fractional risk: % of equity risked per trade. Set 0 to use a flat BaseLots size. Range 0.0–5.0, step 0.25.
BaseLots	0.10	Base / flat lot size, also used as the lower clamp (floor) on any position. Range 0.01–1.0, step 0.01.
MaxLots	2.0	Hard cap on the volume of any single position. Range 0.01–10.0, step 0.01.
MaxSpreadPoints	40	Skip new entries when the current spread (in points) is wider than this. Set 0 to disable the filter. Range 0–200, step 5.
Magic	5140	EA magic number used to identify and manage this strategy's own positions.

Recommended Settings

Ease Of Movement Trend Rider is designed for liquid instruments where volume readings are meaningful and trends develop cleanly — major FX pairs, index CFDs and liquid commodities. Because the entry logic waits for a confirmed break of structure, it favours **higher timeframes** where noise is lower.

Suggested starting point (balanced)

Symbol: EUR/USD or a major FX pair • Timeframe: H1–H4 • TrendPeriod 50 • EmvPeriod 14 • BreakoutLookback 12 • AtrPeriod 14 • AtrStopMult 1.8 • RewardRiskRatio 1.8 • TrailAtrMult 1.2 • RiskPercent 1.0.

TUNING NOTES

- **Fewer, higher-quality trades** — increase `BreakoutLookback` (e.g. 18–25) and/or `TrendPeriod` to demand deeper structure and a stronger trend.
- **Let winners run** — raise `RewardRiskRatio` (2.0–3.0) and lower `TrailAtrMult` slightly, or set it toward 1.5+ to give the trade more room before the trail engages.
- **Tighter risk control** — reduce `AtrStopMult` and keep `RiskPercent` at or below 1.0. Beginners should start with `RiskPercent = 0` and a small flat `BaseLots`.
- **Spread-sensitive symbols** — lower `MaxSpreadPoints` to avoid entering during illiquid sessions.

Always validate first. Backtest on quality tick data and run on a demo account before going live. Optimise conservatively — the widest ranges in the parameter table exist for research, not for daily trading.

How to Install on MetaTrader 5

- 1 Copy `EaseOfMovementTrendRider.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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