

Pendulum Grid Hedge

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion / Grid Hedge	M15	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

Pendulum Grid Hedge is a pure grid-hedging Expert Advisor that uses **no indicators of any kind** — no moving averages, RSI, ATR, pivots, or chart patterns. Every decision is driven solely by where price sits relative to a fixed horizontal grid, exactly like a classic recovery-grid system.

The EA establishes an **anchor** price — the centre of the grid — whenever the account is flat for its Magic number. It then lays out a symmetric ladder of price levels above and below that anchor, spaced `GridStepPoints` apart. The strategy *fades* the move, treating price as a pendulum that swings away from the anchor and then reverts back toward it:

- **Buys the dip** — when price crosses down through a level *below* the anchor, expecting a bounce back up.
- **Sells the rally** — when price crosses up through a level *above* the anchor, expecting a drop back down.

Because buy legs accumulate below the anchor while sell legs accumulate above it **at the same time**, the basket simultaneously holds opposing long and short exposure — a genuine hedge that nets out much of the directional risk and lets the individual legs harvest the oscillation between grid lines. Its natural habitat is a liquid, range-prone FX major such as **EURUSD on the M15 timeframe**.

Note: A grid-hedging system thrives in ranging, mean-reverting conditions and struggles in strong, sustained one-way trends. The basket-level money management (described below) is what caps the damage when a trend refuses to revert.

How It Works

The Anchor and the Grid

When no positions are open for the EA's Magic number, the current mid-price (the average of bid and ask) becomes the **anchor**. A ladder of levels is then defined around it:

```
anchor - k × step   (k = 1 ... MaxLevels) → BUY zone (below the anchor)
anchor + k × step   (k = 1 ... MaxLevels) → SELL zone (above the anchor)

where step = GridStepPoints × Point
```

Each level can hold exactly one open leg at a time. Once a leg's level is occupied it is considered "armed-and-filled"; the level only re-arms after that leg closes.

Entry Logic — Fading the Move

Entries are **tick-driven crossings**. On each tick the EA compares the previous mid-price to the current mid-price and scans the ladder for a fresh crossing:

- **Long (buy the dip):** if the mid-price crosses *down* through a level below the anchor (`prevMid > level` and `mid ≤ level`) and that level has no leg, open a **BUY** at the ask.
- **Short (sell the rally):** if the mid-price crosses *up* through a level above the anchor (`prevMid < level` and `mid ≥ level`) and that level has no leg, open a **SELL** at the bid.

The number of open legs per side is capped by `MaxLevels`, which bounds the total grid exposure. A spread filter (`MaxSpreadPoints`) blocks *new* entries when the spread is too wide — existing legs are never affected.

Per-Leg Exit — Take-Profit & Stop-Loss

Every individual leg is opened with a fixed, point-based take-profit and stop-loss, so each leg manages itself:

- **Take-profit:** `TpSteps` grid-steps toward the anchor. A buy targets one step up; a sell targets one step down. This lets each leg cash out as price pendulums back and forth.
- **Stop-loss:** `StopGridSteps` grid-steps the *wrong* way — a catastrophic, far-away stop so a single runaway leg can never live forever.

Both distances are clamped to the broker's minimum stop distance (derived from the symbol's stops level) to keep the order valid. When a leg closes on its own TP or SL, the EA reconciles its internal book and that grid level re-arms for the next crossing.

Basket Money Management — the Recovery / Safety Layer

On top of the per-leg stops, the whole basket is monitored as a single unit using floating profit plus swap:

- **Basket take-profit:** if total floating P/L reaches `BasketTpMoney`, the EA closes *everything* and re-anchors. This banks the net profit after a deep excursion reverts toward the anchor.
- **Basket stop-loss:** if floating loss hits `BasketSlMoney`, the EA flattens the entire basket. This is the hard ceiling on grid risk — the protection against a strong, one-way trend that never reverts.

After either event the grid is cleared and re-centred on the next tick.

Position Sizing

Each leg uses a base volume of `Lots`, optionally scaled by `LotMultiplier^(depth - 1)` so deeper levels can be sized up. Setting `LotMultiplier = 1.00` produces a flat, non-martingale grid where every leg is the same size. All volumes are normalised to the symbol's volume step and clamped to its minimum/maximum limits.

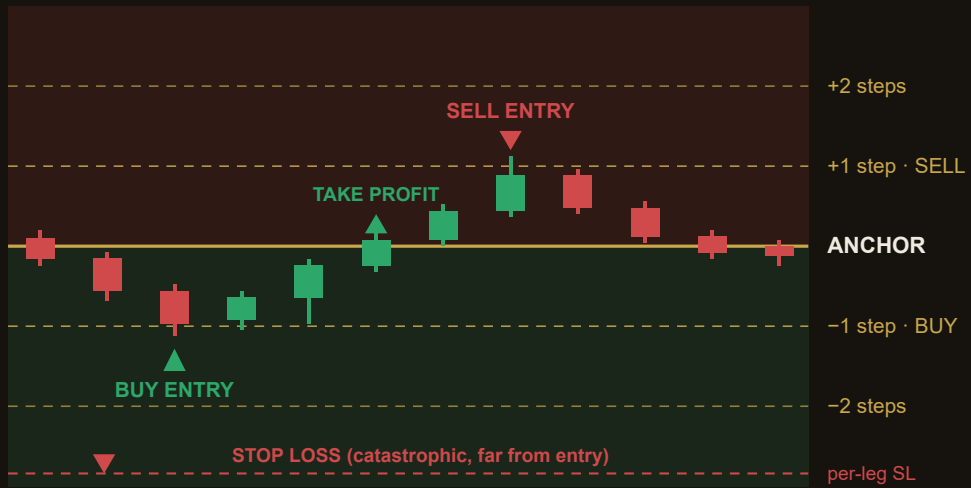
Worked example (EURUSD, default settings)

With `GridStepPoints = 200` on a 5-digit symbol, one step \approx 20 pips. If the anchor is set at 1.10000, the first buy level sits at 1.09800 and the first sell level at 1.10200. A dip that crosses down through 1.09800 opens a 0.01-lot buy with a take-profit one step up (\approx 1.10000, the anchor) and a far stop 12 steps below. If the basket's combined floating profit reaches \$30, the whole grid is closed and re-anchored.

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



Illustrative example only. Actual market behaviour varies.

Parameters

Parameter	Default	Description
GridStepPoints	200	Spacing between adjacent grid lines, in points (price = points × Point). Range 20–3000, step 10.
MaxLevels	6	Maximum number of open legs per side, capping total grid exposure. Range 1–20, step 1.
TpSteps	1	Per-leg take-profit distance toward the anchor, in grid steps. Range 1–5, step 1.
StopGridSteps	12	Per-leg catastrophic stop-loss distance the wrong way, in grid steps. Range 2–50, step 1.
LotMultiplier	1.00	Volume multiplier applied per extra level of depth (1.0 = flat, non-martingale grid). Range 1.00–2.00, step 0.05.
BasketTpMoney	30.0	Close the whole basket once floating profit reaches this amount (account currency). Range 5.0–2000.0, step 5.0.
BasketSIMoney	500.0	Flatten the whole basket once floating loss reaches this amount (account currency). Range 50.0–100000.0, step 50.0.
MaxSpreadPoints	50	Skip new legs while the spread (points) is wider than this (0 = off). Range 0–500, step 5.
Lots	0.01	Base trade volume per leg. Range 0.01–1.00, step 0.01.
Magic	5201	Magic number used to identify and isolate this EA's positions. Range 0–9,999,999, step 1.

Recommended Settings

The strategy is designed for liquid, range-prone instruments where price oscillates around a value rather than trending persistently.

- **Symbol:** a liquid FX major such as EURUSD — the natural habitat of a mean-reversion hedged grid.
- **Timeframe:** M15. Note that entries are tick-driven, so the chart timeframe is primarily for monitoring.
- **Grid spacing:** keep `GridStepPoints` wide enough that normal noise does not over-fill the grid, but tight enough to capture the instrument's typical oscillation range.
- **Lot multiplier:** start with `LotMultiplier = 1.00` (flat grid). Increase only with a clear understanding of the compounding risk that martingale-style scaling adds at deeper levels.

- **Basket limits:** size `BasketTpMoney` and `BasketSlMoney` to your account balance. The basket stop-loss is your primary defence against a trending market — do not disable it.

Grid risk: Grid and hedging strategies can accumulate significant floating drawdown during strong directional moves. Always validate any configuration on a demo account first, and ensure your account can comfortably absorb the worst-case loss defined by `BasketSlMoney` across all open legs.

How to Install on MetaTrader 5

- 1 Copy `PendulumGridHedge.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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