Belt Hold Reversal

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion	M15 / M30	www.algobot.live

Overview

The **Belt Hold Reversal** Expert Advisor is a counter-trend, candlestick-based mean-reversion strategy built around the **belt-hold line** — also known as the opening marubozu, or *yorikiri* in Japanese candlestick tradition. A belt-hold is a bar that opens at one extreme of its range with essentially **no wick on the opening side**, then travels decisively to the far end and closes there. It is a wickless seizure of control: one side dominates from the very first tick and never surrenders it.

On its own, a belt-hold prints constantly inside chop and carries little edge. The advantage in this strategy comes from **context**. The EA only acts on the pattern when price is **over-extended** away from a baseline — measured in ATR units of stretch from an EMA fair value. A sudden, wickless reversal candle that appears precisely when the crowd is stretched far from equilibrium marks the point where an exhausted move snaps back, trapping late chasers against fresh initiative.

- **The trigger** is the belt-hold candle geometry — a decisive body with no shadow on the opening side.
- **The gate** is the ATR-measured stretch of the candle's extreme away from the EMA baseline.
- **The thesis** is the two together: initiative reversing exactly where price is most over-extended.

The EA reads every completed bar on the chart's own timeframe (via the primary symbol and period) and manages a single position at a time. It was designed with GBP/USD or XAU/USD on M15 / M30 in mind, but runs on any liquid symbol and timeframe chosen at backtest time.

How It Works

The Baseline and the Stretch

Two indicators define the market context, both computed on the just-closed signal bar:

- **EMA (default 34)** — an exponential moving average of closing prices that represents fair value. It is the anchor the strategy measures over-extension from.
- **ATR (default 14)** — the Average True Range, used both as the ruler for measuring stretch and as the basis for the stop-loss buffer.

Price is considered **over-extended down** when the signal bar's low sits at least `StretchAtr` ATRs *below* the EMA, and **over-extended up** when the signal bar's high sits at least `StretchAtr` ATRs *above* the EMA. This ATR-normalised distance is the gate — no trade is considered until it is satisfied.

The Trigger: Belt-Hold Geometry

For a candle to qualify as a belt-hold, its geometry (relative to the bar's total range) must meet two conditions:

- **Decisive body** — the body (open-to-close distance) must be at least `MinBodyFrac` of the full range, confirming the bar travelled decisively to the far end.
- **Wickless opening side** — the shadow on the opening side must be no more than `MaxWickFrac` of the range, confirming the bar opened at (or extremely near) its extreme.

Long Setup — Bullish Belt-Hold Ending a Down-Stretch

A long is taken when a **bullish belt-hold** prints while price is stretched below fair value:

- **Stretch (gate):** `EMA − Low ≥ StretchAtr × ATR`
- **Bullish body:** `Close > Open`
- **Tiny lower shadow:** `(min(Open, Close) − Low) ≤ MaxWickFrac × range` (opened at/near the low)
- **Decisive body:** `|Close − Open| ≥ MinBodyFrac × range`

The entry is placed at the current Ask. The stop-loss sits just below the belt-hold low, offset by a buffer of `StopBufferAtr × ATR`. The take-profit is set at `RiskReward` times the stop distance above the entry.

Short Setup — Bearish Belt-Hold Ending an Up-Stretch

The short is the exact mirror. A **bearish belt-hold** that prints while price is stretched above fair value triggers a snap-back-down entry:

- **Stretch (gate):** `High − EMA ≥ StretchAtr × ATR`
- **Bearish body:** `Close < Open`

- **Tiny upper shadow:** `(High − max(Open, Close)) ≤ MaxWickFrac × range` (opened at/near the high)
- **Decisive body:** `|Close − Open| ≥ MinBodyFrac × range`

The entry is placed at the current Bid. The stop-loss sits just above the belt-hold high (offset by `StopBufferAtr × ATR`), and the take-profit is `RiskReward` times the stop distance below the entry.

Exits and Position Management

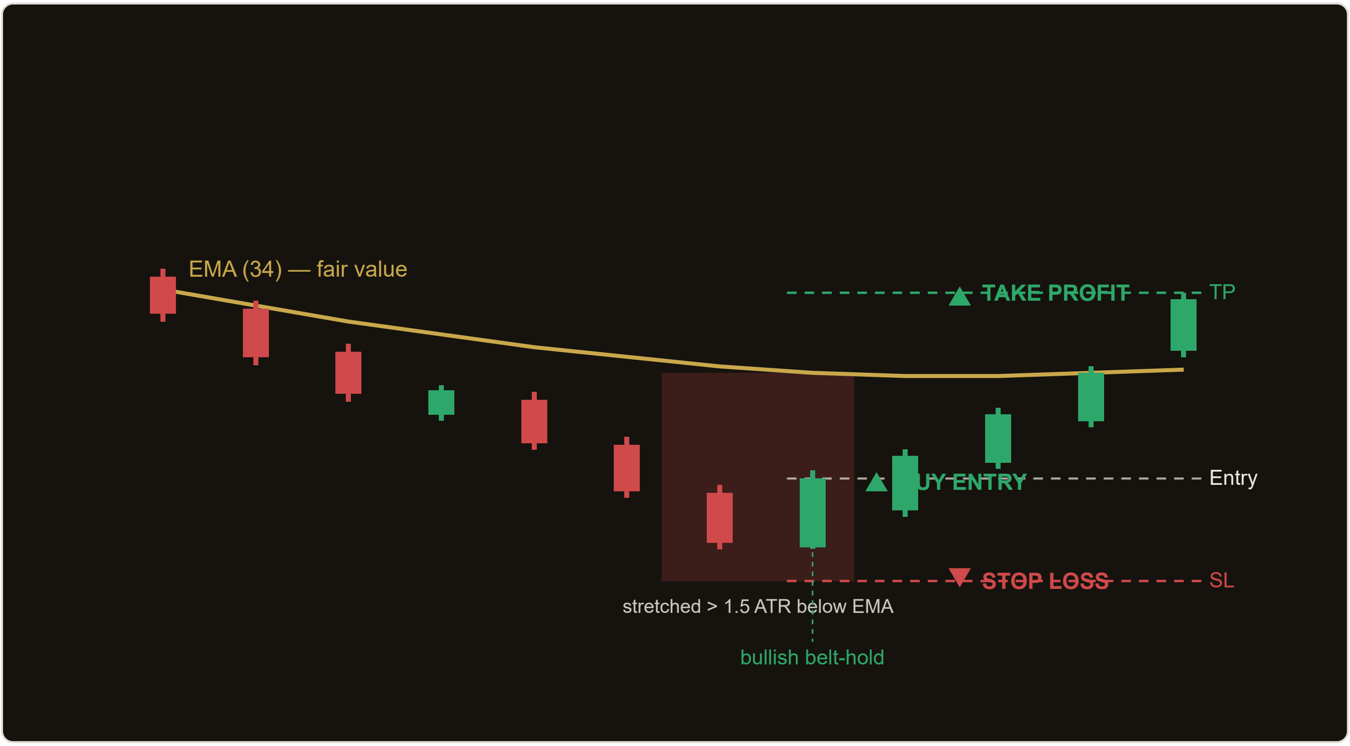
Every trade carries a fixed **stop-loss** and **take-profit** attached at entry — there is no trailing stop or discretionary exit logic. The trade resolves when one of the two brackets is hit.

- **One position at a time** — a new signal is ignored while a position under this EA's magic number is already open.
- **Acts once per bar** — the EA evaluates only on a freshly-closed bar; the still-forming bar (shift 0) is never traded on.
- **Signal bar is shift 1** — indicators and candle geometry are read from the bar that just completed, not the forming one.

> **Note on the gate.** Because the belt-hold candle fires frequently on its own, the ATR stretch requirement is what gives the strategy its selectivity. A larger `StretchAtr` demands a more extreme over-extension before any trade is considered, producing fewer but higher-conviction setups.

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.

Worked long example

Price sells off decisively, dropping until the latest bar's low sits more than 1.5 ATRs below the EMA (the shaded over-extension zone). The very next bar opens right on its low with no lower shadow and closes strongly near its high — a bullish belt-hold. Both the stretch gate and the geometry trigger are satisfied, so the EA buys at the Ask, places the stop a fraction of an ATR below the belt-hold low, and sets the take-profit at 1.8× the risk distance above entry. Price snaps back toward fair value and reaches the target.

Parameters

Parameter	Default	Description
EmaPeriod	`34`	Period of the EMA baseline that defines fair value. The stretch is measured from this line. Range 10–120, step 2.
AtrPeriod	`14`	ATR period used both as the stretch gauge and for sizing the stop buffer. Range 5–40, step 1.
StretchAtr	`1.5`	How many ATRs past the EMA the belt-hold's extreme must sit — the over-extension gate. Higher = fewer, more extreme setups. Range 0.5–4.0, step 0.25.
MaxWickFrac	`0.10`	Maximum shadow on the opening side, as a fraction of the bar's range. A true belt-hold is near zero. Range 0.0–0.30, step 0.02.
MinBodyFrac	`0.55`	Minimum body size as a fraction of range, confirming decisive travel to the far end. Range 0.30–0.90, step 0.05.
StopBufferAtr	`0.25`	Extra buffer beyond the belt-hold extreme for the stop-loss, in ATRs. Range 0.0–1.0, step 0.05.
RiskReward	`1.8`	Take-profit as a reward:risk multiple of the stop distance. Range 1.0–5.0, step 0.2.
Lots	`0.10`	Fixed trade volume in lots. Range 0.01–1.0, step 0.05.
Magic	`611034`	Magic number identifying this EA's positions so it manages only its own trades (one at a time).

Recommended Settings

The strategy was designed and tuned with the following context in mind:

- **Symbols:** GBP/USD or XAU/USD (Gold), or other liquid instruments with clean candle structure.
- **Timeframes:** M15 or M30 — fast enough for frequent belt-hold setups, slow enough for meaningful stretch.
- **Defaults:** the shipped parameters (EMA 34, ATR 14, StretchAtr 1.5, RiskReward 1.8) are a balanced starting point.

> **Tuning tip.** To trade more selectively, raise `StretchAtr` toward 2.0–2.5 so only deeply over-extended moves qualify. To demand cleaner belt-hold candles, lower `MaxWickFrac` toward 0.05 and raise `MinBodyFrac` toward 0.65. Always re-validate on out-of-sample data after changing parameters.

Backtest first. Belt-hold geometry and ATR stretch behave very differently across symbols, sessions, and volatility regimes. Always run the MT5 Strategy Tester on high-quality historical data for your chosen symbol and timeframe before considering live use.

How to Install on MetaTrader 5

1. Copy `BeltHoldReversal.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.