

CRYSTAL AI SYSTEMS

# Crystal Heikin Ashi Pro EA

Official User Guide for MetaTrader 5 — every setting, every screen, every rule.

Version 5.38 · Complete Edition



0% Repaint HA Engine

Aggressive & Confirmed Entries

ATR / Fixed / Candle SL

Risk % Lot Sizing

Smart Trailing

Daily + Global Guards

News Filter MT5 / FF

CSV Auto-State

Live Dashboard



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22 chapters · every one of the 70+ inputs documented

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## IF YOU ONLY HAVE TEN MINUTES

Read **Chapter 2** to install and attach the EA, **Chapter 4** to understand when it enters, and **Chapter 17** to pick a preset. Then run it on a demo account for at least a week before you trade real money.

**13**

input groups

**2**

entry modes

**3**

lot-sizing modes

**4**

protection layers

**0%**

repaint

Thank you for choosing **Crystal Heikin Ashi Pro**. It is a fully standalone Expert Advisor for MetaTrader 5 that turns Heikin Ashi trend changes into disciplined, rule-based trades. There is no external indicator to install and no DLL — the EA calculates its own Heikin Ashi candles, filters every signal, sizes every position, protects your account at two levels, and reports everything on a live dashboard.

## What's new in version 5.38

| Feature                                             | What it gives you                                                                                                                                                                                           |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Risk % of Equity lot sizing</b> <span>NEW</span> | A third lot mode. You choose the % of equity to risk; the EA reads the real stop-loss distance and calculates the lot so a stop-out costs that amount. Wider stop = smaller lot, tighter stop = bigger lot. |
| <b>Signal-Candle stop loss</b> <span>NEW</span>     | A third stop-loss mode. The stop is placed on the opposite side of the Heikin Ashi candle that triggered the entry — below its low for a buy, above its high for a sell.                                    |
| <b>Market-session guard</b>                         | The EA checks the broker's real trading session before opening or modifying a trade, so it does not fire orders into a closed market at rollover or weekends.                                               |
| <b>Smarter history loading</b>                      | If the Logic Timeframe has too little history, the dashboard shows <i>Loading History...</i> , the EA asks the terminal to download it, and starts as soon as 30 bars are available.                        |

## Feature overview



### Standalone HA Engine

Heikin Ashi calculated internally from closed bars only. No repaint, no external files.



### Two Entry Modes

Aggressive enters on the colour flip (Circle). Confirmed waits for a breakout (Arrow).



### Trend + EMA Filters

Moving-average trend filter and an EMA directional gate with Single or Cross mode.



### Three Lot Modes

Fixed lot, auto lot per equity step, or exact Risk % of equity per trade.



### ATR Exits + Trailing

ATR, fixed or signal-candle stop; ATR or fixed target; ATR trailing after 30 % or 50 % of TP.



### Daily Guard

Daily max drawdown and daily profit target. Closes all and pauses until the next server day.



### Global Guard

Account-level target and drawdown from start balance or peak equity. Never resets on its own.



### News Protection

Pauses entries around news from the MT5 Calendar or Forex Factory, with lines and countdown.



### CSV Auto-State

Daily and global figures survive a terminal restart, PC reboot or VPS migration.



### Live Dashboard

One crisp panel: equity, P/L, signal status, filters and guards, colour-coded.

## Install from the MQL5 Market

- 1 Open MetaTrader 5 and log in to the terminal with the same MQL5 account you used to buy the EA (**Tools → Options → Community**).
- 2 Open the **Market** tab in the Toolbox (Ctrl+T), go to **Purchased**, and click **Install** next to Crystal Heikin Ashi Pro.
- 3 In the **Navigator** (Ctrl+N), expand **Expert Advisors → Market**. The EA appears there.
- 4 Open the chart of the symbol you want to trade. The chart timeframe does not matter — the EA uses its own *Logic Timeframe*.
- 5 Drag the EA onto the chart. On the **Common** tab tick **Allow Algo Trading**. Set your inputs on the **Inputs** tab and click OK.
- 6 Make sure the **Algo Trading** button in the terminal toolbar is green. A small hat icon at the top-right of the chart confirms the EA is active.

## Five-minute setup

| Decide this                 | Where                 | Starting suggestion                                 |
|-----------------------------|-----------------------|-----------------------------------------------------|
| Timeframe the logic runs on | 1 · Logic Timeframe   | M15 or H1 for most traders; M5 for active intraday. |
| Speed vs confirmation       | 2 · Entry Signal Mode | Confirmed (Arrow) — fewer, cleaner entries.         |
| How much to risk            | 5 · Lot Sizing Method | Risk % of Equity at 0.5 – 1 %.                      |
| Where the stop goes         | 6 · Stop Loss Mode    | ATR Based, multiplier 2.0.                          |
| A daily safety net          | 10 · Daily Risk       | Max Daily Drawdown ON at 3 – 5 %.                   |
| News protection             | 13 · News Protection  | ON, MT5 Calendar, High Impact Only.                 |
| Unique ID                   | 5 · Magic Number      | Different number on every chart the EA runs on.     |

## Terminal permissions

| Permission         | Where                             | Needed for                                           |
|--------------------|-----------------------------------|------------------------------------------------------|
| Algo Trading       | Toolbar button + EA Common tab    | Any trading at all.                                  |
| Push notifications | Tools → Options → Notifications   | Trade, news and global-lock alerts to your phone.    |
| Email              | Tools → Options → Email           | Email trade alerts.                                  |
| WebRequest URL     | Tools → Options → Expert Advisors | Only for the Forex Factory news source (Chapter 14). |

## What you see after attaching

A short welcome popup appears in the middle of the chart for about eight seconds (turn it off with *Show Startup Popup Message*). The dashboard appears at the top-left. For a few seconds the Status row may read *Initializing...* or *Loading History...* while the terminal downloads bars for the Logic Timeframe; then it changes to **Scanning (Bull)** or **Scanning (Bear)**. That means the EA is live and waiting for the next Heikin Ashi colour change.



#### NOTE — HEIKIN ASHI CANDLES ON THE CHART

The EA does all its Heikin Ashi maths internally and does not change how your chart looks. If you want to see the candles, add the separate **Crystal Heikin Ashi** indicator — it is optional and has no effect on trading.

## Removing or resetting

Right-click the chart → **Expert list** → Remove, or drag another EA onto the chart. On removal the EA saves its state, deletes its dashboard and news lines, and releases its indicator handles. Your saved daily and global figures stay on disk (Chapter 16) and are picked up again if you re-attach with the same symbol and Magic Number.

## Pre-flight checklist before going live

| ✓                        | Check                                                           | Why                                      |
|--------------------------|-----------------------------------------------------------------|------------------------------------------|
| <input type="checkbox"/> | Algo Trading is green and the EA hat icon is shown on the chart | Otherwise no orders can be sent          |
| <input type="checkbox"/> | Status shows Scanning, not Loading History                      | Engine has enough bars                   |
| <input type="checkbox"/> | Magic Number is unique for this chart                           | Keeps trades and state separate          |
| <input type="checkbox"/> | Lot mode and Risk % checked against the symbol's minimum lot    | Avoids unintended risk (Chapter 7)       |
| <input type="checkbox"/> | Fixed-pip values checked for this symbol (if Fixed mode)        | Pips differ per symbol (Chapter 8)       |
| <input type="checkbox"/> | Time filter hours converted to broker server time               | Chapter 10                               |
| <input type="checkbox"/> | Daily drawdown ON; Global guards set if needed                  | Two safety nets                          |
| <input type="checkbox"/> | News filter ON and the Experts tab lists today's events         | Confirms the calendar is loading         |
| <input type="checkbox"/> | Push test message received on your phone                        | You will know when trades open and close |
| <input type="checkbox"/> | Settings tested in the Strategy Tester and on demo              | No surprises with real money             |

**Heikin Ashi** ("average bar" in Japanese) is a way of redrawing candles so that trend is easier to see. Each Heikin Ashi candle is built from an average of the current bar and the previous Heikin Ashi candle. The result is fewer colour changes: trends show as long runs of one colour, and a colour change carries more meaning than on a normal chart.



Same price data, two views. The EA builds the right-hand series internally from closed bars.

**Figure 3.1** — The same 34 bars drawn as regular candles (left) and Heikin Ashi candles (right).

## The four formulas

| HA value | Formula                                                       | Meaning                                                         |
|----------|---------------------------------------------------------------|-----------------------------------------------------------------|
| HA Close | $(\text{Open} + \text{High} + \text{Low} + \text{Close}) / 4$ | Average price of the real bar.                                  |
| HA Open  | $(\text{previous HA Open} + \text{previous HA Close}) / 2$    | Midpoint of the last HA body — this is what smooths the series. |
| HA High  | $\max(\text{High}, \text{HA Open}, \text{HA Close})$          | Top of the upper wick.                                          |
| HA Low   | $\min(\text{Low}, \text{HA Open}, \text{HA Close})$           | Bottom of the lower wick.                                       |

A candle is **bullish** when  $\text{HA Close} \geq \text{HA Open}$  and **bearish** when  $\text{HA Close} < \text{HA Open}$ .

## Why 0% repaint

The EA only makes decisions from **closed** bars of the Logic Timeframe. The forming bar is never used for a signal. Once a bar has closed its Heikin Ashi values are final, so a signal that happened in the past stays exactly where it was — what you see in a backtest is what the EA would have seen live.



### KEY POINT

The EA checks for signals **once per new bar** on the Logic Timeframe, at the first tick of that bar. It does not react to intrabar colour changes.



### CALCULATION DEPTH

Each HA value depends on the one before it, so the EA rebuilds the series from *Calculation Depth* bars (default 500). After a few dozen bars the values settle, so 200–500 is plenty.

On every new bar of the Logic Timeframe the EA compares the last two closed Heikin Ashi candles. When their colours differ, a **Circle** is born. What happens next depends on the *Entry Signal Mode*.



Figure 4.1 — A bullish sequence. Bar 6 flips green (Circle). Bar 7 closes above Bar 6's HA high (Arrow).

#### AGGRESSIVE Enter on the Circle

As soon as a candle closes with the opposite colour, the EA tries to open a trade at the start of the next bar. Earliest possible entry, but more false starts in a sideways market.

#### CONFIRMED Enter on the Arrow

The EA stores the Circle candle's HA **high** (for a buy) or HA **low** (for a sell) as the trigger. The trade opens only when a later HA candle of the same colour **closes beyond** that trigger.

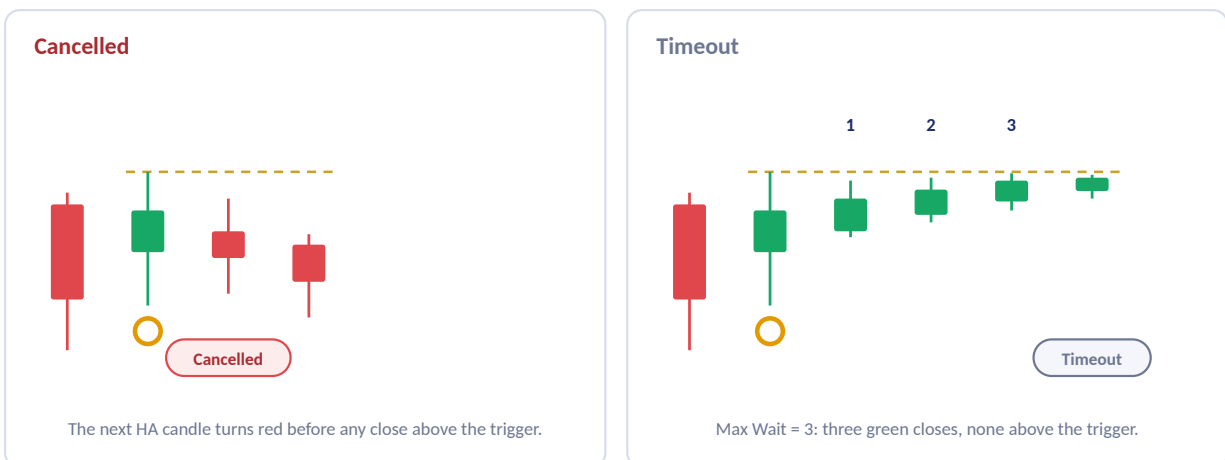
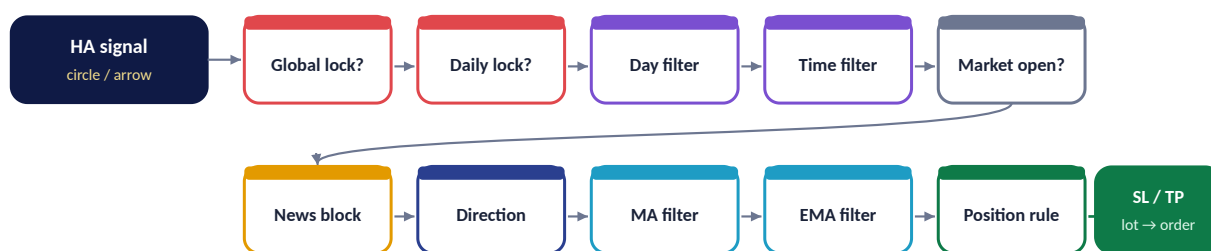


Figure 4.2 — Two ways a Confirmed signal can die before it becomes a trade.

**Cancelled:** the colour turns back first. **Timeout:** the EA gives the breakout up to *Max Wait for Arrow* closed candles after the Circle (default 3). If none closes beyond the trigger, tracking stops. A new Circle always starts a fresh tracking cycle.

## Every signal passes through the gates

A Circle or Arrow is only a *request* to trade. Before an order is sent it must pass every protection and filter, in this order:



Any gate that says no stops this signal. The first failing gate is what the dashboard Status shows.

Figure 4.3 — The decision pipeline inside the EA.

| Gate          | Status shown if it blocks | Why it blocks                                                                           |
|---------------|---------------------------|-----------------------------------------------------------------------------------------|
| Global lock   | GLOBAL LOCK               | Global target or drawdown was reached (Chapter 12).                                     |
| Daily lock    | RISK STOP                 | Daily drawdown or daily target was reached (Chapter 11).                                |
| Day filter    | Day Filter                | Today's weekday is switched OFF.                                                        |
| Time filter   | Time Filter               | Server time is outside the trading window.                                              |
| Market open   | Market Closed             | The broker session for this symbol is closed right now.                                 |
| News          | ! NEWS BLOCK              | Inside a news window (Chapter 14).                                                      |
| Direction     | (no change)               | Long Only / Short Only setting.                                                         |
| MA filter     | (no change)               | Signal candle closed on the wrong side of the MA.                                       |
| EMA filter    | EMA Filter                | EMA reading disagrees, or price is in the neutral zone.                                 |
| Position rule | (no change)               | A trade in the same direction is already open, or the Position Management rule says no. |



### KEY POINT — READ THE STATUS ROW FIRST

When a signal did not become a trade, the dashboard **Status** row usually tells you which gate stopped it. If it still shows *Arrow Confirmed!* or a Circle, look at the silent gates: direction, MA filter, an already-open trade, or the Experts tab for a margin or volume message.

## Status messages of the signal engine

| Status                   | Colour | Meaning                                                                                                            |
|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------|
| Scanning (Bull) / (Bear) | cyan   | Waiting. The last closed HA candle is bullish / bearish and nothing is being tracked.                              |
| Bullish / Bearish Circle | amber  | A colour flip was just detected. Aggressive mode tries to trade now; Confirmed mode starts watching for the arrow. |
| Waiting Breakout...      | grey   | Confirmed mode: the flip is being tracked but no close beyond the trigger level yet.                               |
| Arrow Confirmed!         | green  | Confirmed mode: breakout close happened, the EA is trying to open the trade.                                       |
| Cancelled                | grey   | The HA colour flipped back before confirmation. Tracking stopped.                                                  |
| Timeout                  | grey   | No confirmation within <i>Max Wait for Arrow</i> bars. Tracking stopped.                                           |

## Group 1 — Strategy & Timeframe

| Setting                   | Default | What it does                                                                                        |
|---------------------------|---------|-----------------------------------------------------------------------------------------------------|
| Logic Timeframe           | M5      | The timeframe the Heikin Ashi engine, ATR and MA filter run on. Independent of the chart timeframe. |
| Calculation Depth (Bars)  | 500     | How many bars are used to build the HA series. Minimum usable history is 30 bars.                   |
| Max Wait for Arrow (Bars) | 3       | Confirmed mode only. How many closed candles after the Circle may confirm the breakout.             |

### Logic Timeframe — choosing

| Value     | Character                             | Suits                                        |
|-----------|---------------------------------------|----------------------------------------------|
| M1 – M5   | Many signals, small stops, most noise | Scalpers watching spreads closely            |
| M15 – M30 | Balanced number of signals and noise  | Intraday traders — the best starting point   |
| H1 – H4   | Few, larger swings, wider stops       | Swing traders, smaller accounts using Risk % |
| D1        | Very few signals, very wide stops     | Position traders; keep lot sizes small       |

### Max Wait for Arrow

| Value       | Effect                                       | When to use it                            |
|-------------|----------------------------------------------|-------------------------------------------|
| 1 – 2       | Only fast breakouts are taken; many Timeouts | Strong-momentum symbols, lower timeframes |
| 3 (default) | Balanced                                     | Most symbols                              |
| 4 – 6       | Slow breakouts accepted; later entries       | Higher timeframes, slow-trending pairs    |



#### NOTE

Max Wait for Arrow has no effect in Aggressive mode, which never waits.

## Group 2 — Trade Execution

| Setting             | Default               | What it does                                                                          |
|---------------------|-----------------------|---------------------------------------------------------------------------------------|
| Trading Direction   | Both Directions       | Long Only, Short Only or Both Directions. Signals in a blocked direction are ignored. |
| Entry Signal Mode   | Confirmed (Arrow)     | Aggressive (Enter on Circle) or Confirmed (Enter on Arrow) — see Chapter 4.           |
| Position Management | Single Trade (Strict) | What happens when an opposite signal arrives while a trade is open.                   |

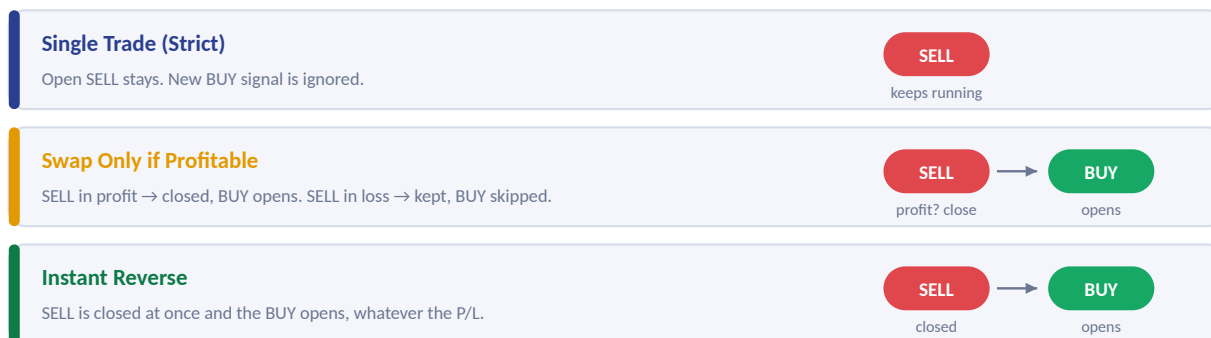


**Figure 5.1** — The three Position Management rules when an opposite signal arrives.

The EA never opens a second trade in the **same** direction for the same symbol and Magic Number — there is no stacking or grid. The rule above only decides what happens to an **opposite** trade.



#### KEY POINT — PICKING A RULE

**Single Trade** lets every trade finish at its own SL, TP or trailing stop. **Swap Only if Profitable** banks a winning trade when the trend flips but leaves a losing one to its stop. **Instant Reverse** is always in the market in the direction of the latest signal — the most active style.

## Aggressive vs Confirmed — at a glance

|                         | AGGRESSIVE Circle                                 | CONFIRMED Arrow                                   |
|-------------------------|---------------------------------------------------|---------------------------------------------------|
| Entry timing            | Open of the bar after the colour flip             | Open of the bar after the breakout close          |
| Number of trades        | Higher                                            | Lower — Cancelled and Timeout signals are skipped |
| Sideways markets        | More false starts                                 | Many flips never confirm                          |
| Strong trends           | Catches more of the move                          | Enters a little later, with confirmation          |
| Pairs well with         | MA or EMA filter, Signal-Candle SL, 30 % trailing | ATR SL, 50 % trailing, Swap Only if Profitable    |
| Uses Max Wait for Arrow | No                                                | Yes                                               |

## Combining direction and management

| Trading Direction | Position Management | Result                                                                   |
|-------------------|---------------------|--------------------------------------------------------------------------|
| Both Directions   | Instant Reverse     | Always aligned with the latest HA signal                                 |
| Both Directions   | Single Trade        | Each trade runs to SL, TP or trailing stop                               |
| Long Only         | any                 | Sells are never opened, so management never reverses — a pure buy system |
| Short Only        | any                 | A pure sell system, e.g. for a clear downtrend on a higher timeframe     |

Both filters are optional and independent. When both are ON, a trade must satisfy both.

### Group 3 — Trend Filter (MA)

| Setting           | Default  | What it does                                                                           |
|-------------------|----------|----------------------------------------------------------------------------------------|
| Trend Filter (MA) | OFF      | When ON, a buy needs the signal candle's HA close above the MA; a sell needs it below. |
| MA Period         | 21       | Length of the moving average. Calculated on the Logic Timeframe, from closing prices.  |
| MA Method         | Smoothed | Simple, Exponential, Smoothed or Linear Weighted.                                      |

| MA Period | Effect                                                      | When to use it                |
|-----------|-------------------------------------------------------------|-------------------------------|
| 10 – 21   | Follows price closely; blocks only against short-term trend | Intraday, Aggressive mode     |
| 50        | Medium trend; a common middle ground                        | Most traders                  |
| 100 – 200 | Long-term bias; blocks many counter-trend signals           | Swing trading, trending pairs |

### Group 4 — EMA Directional Filter

| Setting                                | Default    | What it does                                                                                                                   |
|----------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------|
| Enable EMA Directional Filter          | OFF        | Master switch. OFF = this group is ignored.                                                                                    |
| EMA Filter Mode                        | Single EMA | <b>Single:</b> price above EMA = buys only, below = sells only. <b>Cross:</b> fast above slow = buys only, below = sells only. |
| EMA Period (Single) / Fast EMA (Cross) | 21         | EMA length in Single mode, or the fast EMA in Cross mode.                                                                      |
| Slow EMA Period (Cross Mode Only)      | 50         | Slow EMA. Ignored in Single mode.                                                                                              |
| EMA Applied Price                      | Close      | Price the EMA is calculated from (Close, Open, High, Low, Median, Typical, Weighted).                                          |
| EMA Timeframe (Current = Logic TF)     | Current    | Current = follows the Logic Timeframe. Choose a higher one for a higher-timeframe bias.                                        |
| EMA Shift (bars)                       | 0          | Moves the EMA forward in time. Leave at 0 unless you use a displaced EMA.                                                      |
| Neutral Zone Around EMA (points)       | 0          | A band on each side of the EMA (or around the slow EMA in Cross mode) where <b>no</b> trade is allowed. 0 = off.               |

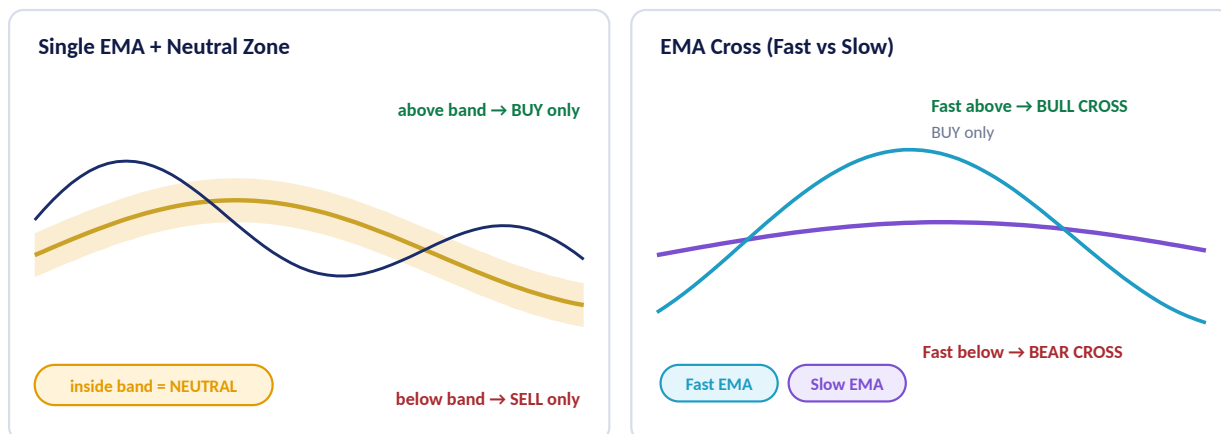


Figure 6.1 — Single mode with a neutral zone (left) and Cross mode (right).



#### PRO TIP — HIGHER-TIMEFRAME BIAS

A popular combination: Logic Timeframe **M15**, EMA Timeframe **H1**, Single EMA **50**. You only take M15 Heikin Ashi signals in the direction of the H1 trend.



#### WARNING — NEUTRAL ZONE IS IN POINTS

On a 5-digit forex pair, 50 points = 5 pips. On gold or indices one point is a much bigger or smaller move — check the symbol before setting the band. Too wide a band means the filter reads NEUTRAL most of the time and blocks everything.

The filter reads the last **closed** bar of the EMA timeframe. If the EMA data is not ready it shows **NO DATA** and blocks trading rather than trading blind.

### How the filters combine — examples

| HA signal  | MA filter         | EMA filter            | Result                         |
|------------|-------------------|-----------------------|--------------------------------|
| BUY        | HA close above MA | BULLISH               | Trade opens                    |
| BUY        | HA close above MA | NEUTRAL (inside band) | Blocked — Status: EMA Filter   |
| BUY        | HA close below MA | BULLISH               | Blocked — silently by MA       |
| SELL       | OFF               | BEAR CROSS            | Trade opens                    |
| SELL       | OFF               | BULL CROSS            | Blocked — Status: EMA Filter   |
| BUY / SELL | OFF               | OFF                   | Trade opens — pure Heikin Ashi |



#### KEY POINT — FEWER BUT BETTER

Each filter removes signals. One trend filter is usually enough; using a slow MA **and** a higher-timeframe EMA together can leave very few trades. Test the combination on a year of data before going live.

| Setting                           | Default        | What it does                                                                          |
|-----------------------------------|----------------|---------------------------------------------------------------------------------------|
| Lot Sizing Method                 | Fixed Lot Size | Fixed Lot Size, Auto (Equity per Lot) or Risk % of Equity <b>NEW</b>                  |
| Fixed Lot Size                    | 0.01           | Lot used in Fixed mode. Also the safe fallback if Risk % sizing cannot be calculated. |
| Equity per 0.01 Lot (if Auto)     | 1000           | Auto mode: 0.01 lot for every this-much equity.                                       |
| Risk % of Equity (if Risk % Mode) | 1.0            | Risk % mode: the share of current equity lost if the stop loss is hit.                |
| Magic Number ID                   | 789456         | Unique ID on every trade. All counting, risk and state files use it.                  |

## The three modes compared

| Mode          | Formula                                              | Worked example                                                              |
|---------------|------------------------------------------------------|-----------------------------------------------------------------------------|
| Fixed         | lot = Fixed Lot Size                                 | Always 0.01 lot, whatever the equity or stop.                               |
| Auto (Equity) | lot = Equity ÷ Equity per 0.01 × 0.01                | Equity 5,000, setting 1,000 → <b>0.05 lot</b> . Grows as the account grows. |
| Risk %        | lot = (Equity × Risk %) ÷ loss per 1 lot at the stop | See the full example below.                                                 |

## Risk % mode — full worked example

| EURUSD, Risk % = 1.0 |                                 |
|----------------------|---------------------------------|
| Equity               | 10,000 USD                      |
| Money at risk        | 10,000 × 1 % = <b>100 USD</b>   |
| ATR × 2.0            | 0.00120 × 2 = 0.00240 (24 pips) |
| Loss per 1.00 lot    | 240 points × 1 USD = 240 USD    |
| Lot                  | 100 ÷ 240 = 0.416 → <b>0.41</b> |

The EA sizes the lot **after** the final stop loss is known, including any broker minimum-distance adjustment. So the money at risk stays steady: when volatility widens the ATR stop, the lot shrinks; when the stop is tight, the lot grows.

The result is rounded **down** to the broker's lot step and kept between the symbol's minimum and maximum lot.



### WARNING — MINIMUM LOT CAN RAISE YOUR RISK

If the calculated lot is below the symbol's minimum (often 0.01), the EA uses the minimum lot. On a small account with a wide stop the real risk can then be higher than your Risk % — lower the Logic Timeframe, reduce the SL multiplier, or accept the larger risk knowingly.

Before every order the EA also checks the lot against the broker's volume rules and checks free margin. If margin is not enough the trade is skipped and the reason is written to the Experts tab.



### KEY POINT — MAGIC NUMBER

Use a **different Magic Number on every chart**. The EA only manages, counts and protects positions with its own Magic Number on its own symbol. Two charts with the same symbol and Magic Number would fight over the same trades and share one state file.

Input group 6 — every trade opens with a stop and a target

| Setting                           | Default   | What it does                                                                  |
|-----------------------------------|-----------|-------------------------------------------------------------------------------|
| Stop Loss Mode                    | ATR Based | ATR Based, Fixed Pips, or Opposite Side of Signal Candle <b>NEW</b>           |
| Fixed SL - if Fixed Mode          | 300       | Stop distance in pips, Fixed mode only.                                       |
| SL (ATR Multiplier) - if ATR Mode | 2.0       | Stop = ATR × this value, ATR mode only.                                       |
| ATR Period                        | 14        | ATR length on the Logic Timeframe. Used by ATR stop, ATR target and trailing. |
| Take Profit Mode                  | ATR Based | ATR Based or Fixed Pips.                                                      |
| Fixed TP - if Fixed Mode          | 600       | Target distance in pips, Fixed mode only.                                     |
| TP (ATR Multiplier) - if ATR Mode | 4.0       | Target = ATR × this value, ATR mode only.                                     |

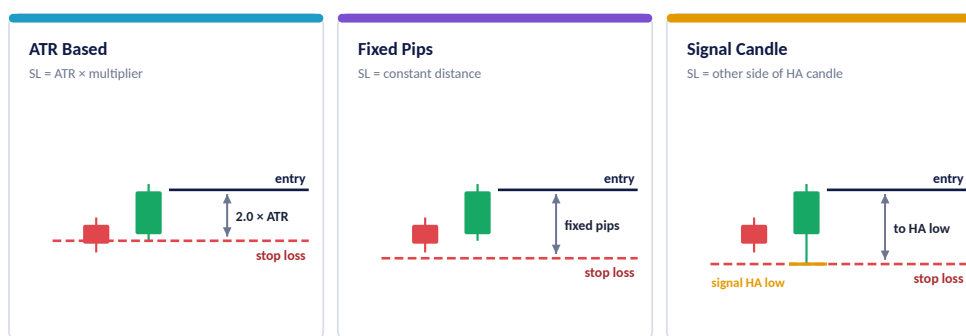


Figure 8.1 — The three stop-loss modes for a buy trade.

| SL mode       | Strength                                                  | Watch out for                                                        |
|---------------|-----------------------------------------------------------|----------------------------------------------------------------------|
| ATR Based     | Adapts to volatility automatically; works on every symbol | Very wide stops on high-volatility days — pair it with Risk % sizing |
| Fixed Pips    | Same distance every trade; easy to plan                   | Does not adapt; a 'good' value differs per symbol                    |
| Signal Candle | Stop sits at a logical chart level                        | Big signal candles give big stops; tiny ones hit the safety minimum  |

## How "pips" are converted

Fixed SL and TP are entered in **pips**. On 3- and 5-digit symbols the EA counts 1 pip = 10 points; on all other symbols 1 pip = 1 point.

| Symbol (digits) | Fixed SL 300 means    | Fixed TP 600 means    |
|-----------------|-----------------------|-----------------------|
| EURUSD (5)      | 300 pips = 0.03000    | 600 pips = 0.06000    |
| USDJPY (3)      | 300 pips = 3.000      | 600 pips = 6.000      |
| XAUUSD (2)      | 300 points = 3.00 USD | 600 points = 6.00 USD |



### WARNING — CHECK FIXED VALUES AND BROKER LIMITS

The defaults 300 / 600 are large on forex majors and small on gold — check the distance on a demo trade first. Every stop is also kept at least **30 points** or **2 × the broker's Stops Level**. If the broker still rejects the distance at entry, the EA uses Stops Level + 20 points for the stop and opens the trade **without a take profit**; trailing and the risk guards still manage it.

| Setting              | Default                    | What it does                                                                                   |
|----------------------|----------------------------|------------------------------------------------------------------------------------------------|
| Trailing Stop        | ON                         | Master switch for the trailing engine.                                                         |
| Trail Activation %   | Start after 50% TP reached | 30 % or 50 % of the distance from entry to take profit must be reached before trailing starts. |
| Trail Distance (ATR) | 1.5                        | How far behind price the stop follows, as a multiple of the current ATR.                       |

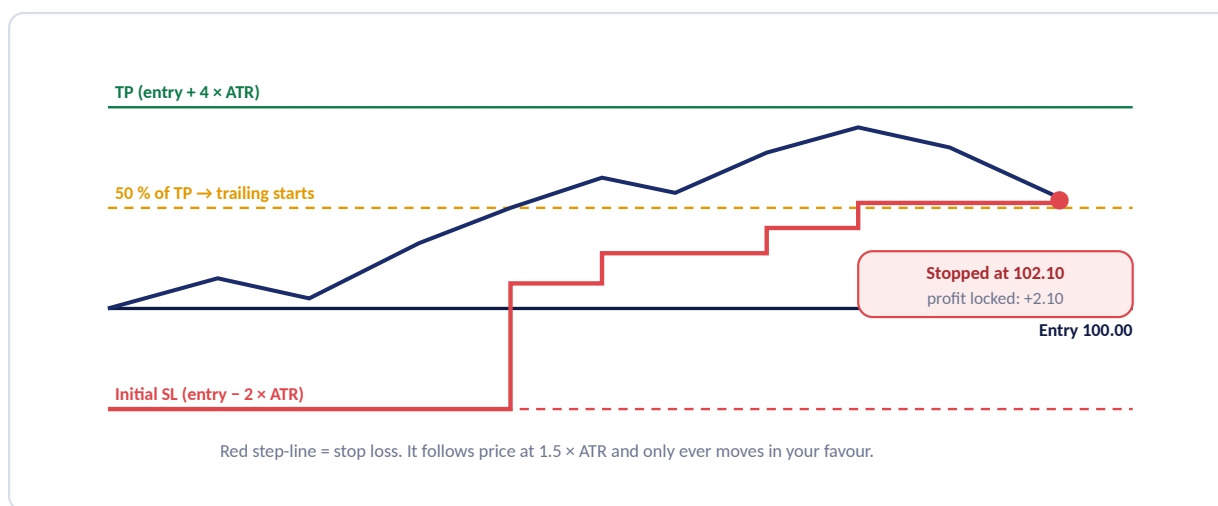


Figure 9.1 — A buy at 100.00 with ATR = 1.00. Trailing starts at 102.00 (50 % of TP) and follows 1.50 behind price.

## The rules the trailing engine follows

- It only starts after the chosen share of the TP distance is reached, measured on every tick.
- New stop = current price - (ATR × Trail Distance) for a buy, + for a sell.
- The stop only moves **in your favour**. It never widens.
- It respects the broker's Stops Level and Freeze Level, and skips modifications while the market is closed.
- The take profit is kept. A trade can still close at its TP.

| Trail Distance      | Effect                                              | Suits                        |
|---------------------|-----------------------------------------------------|------------------------------|
| 0.8 - 1.0 × ATR     | Tight: locks profit early, exits on small pullbacks | Scalping, Aggressive mode    |
| 1.5 × ATR (default) | Balanced                                            | Most traders                 |
| 2.0 - 3.0 × ATR     | Loose: survives pullbacks, gives back more          | Swing trading, strong trends |



### KEY POINT — 30 % OR 50 %?

30 % protects profit sooner but may stop out a trade that would have reached TP. 50 % gives the trade more room first. If your TP multiplier is large (5–6 × ATR), 30 % often works better.



### NOTE

Every stop move is printed to the Experts tab, for example [TRAIL] BUY #123456 SL: 1.08210 -> 1.08355 (Profit: 57.3%) .

## Group 8 — Time Filter

| Setting                   | Default | What it does                                                               |
|---------------------------|---------|----------------------------------------------------------------------------|
| Enable Time Filter        | OFF     | When ON, new trades are only opened inside the window below.               |
| Start Hour / Start Minute | 13 : 30 | Window opens (server time, 0–23 h, 0–59 min).                              |
| Stop Hour / Stop Minute   | 22 : 15 | Window closes. If Stop is earlier than Start, the window crosses midnight. |



Figure 10.1 — A normal window and a window that crosses midnight.

## Converting sessions to server time

Compare the server time in **Market Watch** with GMT and add the difference:

| Session (GMT, summer)           | Server GMT+3 example | Server GMT+2 example |
|---------------------------------|----------------------|----------------------|
| London 07:00 – 16:00            | 10:00 – 19:00        | 09:00 – 18:00        |
| New York 12:30 – 21:00          | 15:30 – 00:00        | 14:30 – 23:00        |
| London–NY overlap 12:30 – 16:00 | 15:30 – 19:00        | 14:30 – 18:00        |



### NOTE

The filter only controls **new entries**. Open trades keep their SL, TP and trailing outside the window. The dashboard *Time* row shows **OPEN** or **PAUSED**.

## Group 9 — Trading Days Filter

| Setting                    | Default | What it does                                                                           |
|----------------------------|---------|----------------------------------------------------------------------------------------|
| Trade on Monday ... Friday | ON      | Turn any weekday OFF to skip it — for example Monday gaps or thin Friday afternoons.   |
| Trade on Saturday / Sunday | ON      | For symbols that trade at weekends, such as crypto. No effect on closed forex markets. |

The weekday is taken from **server time**. The dashboard *Day* row shows **ALLOWED** or **BLOCKED**.



### PRO TIP

Independently of these filters, the EA also checks the broker's **real session hours** for the symbol before every order. That is why the status can read *Market Closed* on a day you allowed — the broker simply is not quoting.

| Setting                    | Default | What it does                                                                              |
|----------------------------|---------|-------------------------------------------------------------------------------------------|
| Enable Max Daily Drawdown  | OFF     | When ON, the EA closes its trades and stops for the day once the daily loss limit is hit. |
| Max Drawdown % (Close All) | 20%     | Daily loss limit as a % of today's starting balance.                                      |
| Enable Daily Profit Target | OFF     | When ON, the EA closes its trades and stops for the day once the daily target is hit.     |
| Daily Target % (Close All) | 20%     | Daily profit target as a % of today's starting balance.                                   |

Both percentages are chosen from a list: 1, 3, 4, 5, 6, 8, 10, 15, 20, 25, 30, 40, 50, 60 %.

## How the daily figure is measured

| Part              | Detail                                                                                                          |
|-------------------|-----------------------------------------------------------------------------------------------------------------|
| Starting balance  | Account balance at the first tick of the server day (or when the EA first starts that day).                     |
| Daily P/L         | Closed profit today + swap + commission, <b>plus</b> the change in floating P/L of open trades.                 |
| Whose trades      | <b>Only this EA's trades</b> — this symbol and this Magic Number. Manual trades and other EAs are not counted.  |
| Carry-over trades | Floating profit a trade already had at midnight is subtracted, so yesterday's gains are not counted as today's. |
| Reset             | Automatically at the next server midnight. A locked EA unlocks by itself — no action needed.                    |

## Worked example

10,000

starting balance

5 %

Max Drawdown

-500

limit in USD

-512

daily P/L → LOCK

When the daily P/L reaches -500 the EA closes every one of its trades on this chart, the Daily Guard turns red with **MAX DD HIT**, and no new trades are opened until the server day changes. The target works the same way and shows **TARGET HIT**.



### KEY POINT

Think of the daily guard as protection against a bad day, not as a strategy. Typical values are **3-6 %** for drawdown. A daily target is optional; many traders leave it OFF and let the trailing stop do its job.



### RESTARTS

If you restart the terminal on the same day, today's starting balance, P/L and lock are read back from the state file (Chapter 16). A locked day stays locked and shows **DAY LOCKED**.



### WARNING — PROP-FIRM DAILY RULES

Many prop firms measure daily loss on **whole-account equity**, including other trades. This guard only counts this EA's own trades on this chart. Set it lower than the firm's limit and use the Global guard too.

| Setting                              | Default | What it does                                                                                                                 |
|--------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------|
| Enable Global Profit Target          | OFF     | Locks the EA once total profit from the baseline reaches the target.                                                         |
| Global Target % (from Start Balance) | 20.0    | Target as a % of the saved Start Balance. Any decimal value.                                                                 |
| Enable Global (Total) Drawdown       | OFF     | Locks the EA once total drawdown reaches the limit below.                                                                    |
| Global Drawdown Method               | Both    | <b>Method 1:</b> from Start Balance. <b>Method 2:</b> from Peak Equity (high-water mark). <b>Both:</b> whichever hits first. |
| Max DD % (from Start Balance)        | 20.0    | Method 1 limit.                                                                                                              |
| Max DD % (from Peak Equity)          | 20.0    | Method 2 limit.                                                                                                              |
| RESET Global Baseline (set ON once)  | OFF     | One-time action: wipes the saved baseline and unlocks the EA. Set back to OFF straight after.                                |

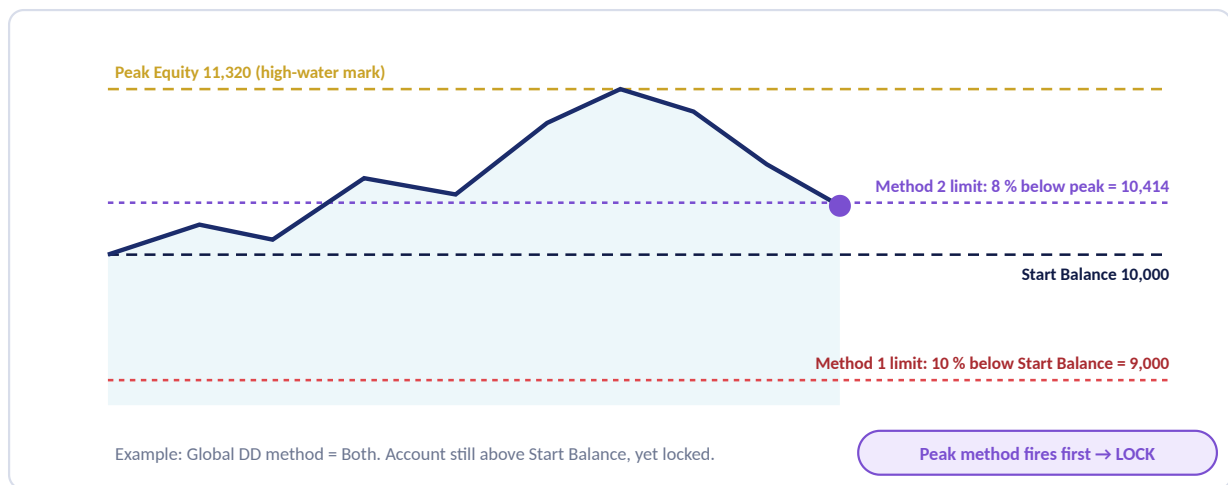


Figure 12.1 — Method 1 measures from the fixed Start Balance. Method 2 follows the highest equity ever reached.

### What the Global guard measures

- **Start Balance** — account balance when the EA first ran on this symbol + Magic Number (or at the last reset).
- **Global P/L** — current account **equity** minus Start Balance.
- **Peak Equity** — highest account equity seen. It only moves up.

### What happens at a lock

- All of this EA's trades are closed (retried every 5 s if a close fails).
- Status shows **GLOBAL LOCK**; Global Guard shows the reason.
- A push notification is sent if push is set up in the terminal.
- The lock survives restarts until you reset it.



#### WARNING — IT USES WHOLE-ACCOUNT EQUITY

Global P/L is based on account equity, so manual trades and other EAs on the same account **also move it**. That makes it a true account-level safety net, but a losing trade from another system can lock this EA.

## How to reset after a lock

- 1 Open the EA inputs (right-click chart → Expert list → Properties).
- 2 Set **RESET Global Baseline** = **ON**, click OK. The current balance becomes the new Start Balance.
- 3 Open the inputs again, set it back to **OFF**, click OK.



### WARNING — DO NOT LEAVE RESET ON

While RESET is ON, the baseline is wiped **every time the EA reloads** — including a timeframe change or terminal restart. The lifetime trade counter is also reset. Always switch it back to OFF.

## Daily vs Global — side by side

|               | Daily guard (group 10)                  | Global guard (group 11)                            |
|---------------|-----------------------------------------|----------------------------------------------------|
| Measured from | Balance at start of today               | Saved Start Balance, or Peak Equity                |
| Counts        | This EA's trades only                   | Whole account equity                               |
| Resets        | Automatically every server day          | Only when you set RESET = ON                       |
| Percent input | Pick-list (1 – 60 %)                    | Any decimal value                                  |
| Dashboard row | Daily Guard                             | Global Guard                                       |
| Best used for | Stopping a bad day, locking a great day | An account ceiling — like a prop-firm maximum loss |

The two layers are independent. A daily lock does not change the global baseline; a global lock overrides everything until you reset it.

## Guard status values

| Row          | Value            | Meaning                                                          |
|--------------|------------------|------------------------------------------------------------------|
| Daily Guard  | Running          | No daily limit reached.                                          |
| Daily Guard  | MAX DD HIT       | Daily loss limit reached — trades closed, paused until tomorrow. |
| Daily Guard  | TARGET HIT       | Daily target reached — trades closed, paused until tomorrow.     |
| Daily Guard  | DAY LOCKED       | A same-day lock restored after a restart.                        |
| Global Guard | Disabled         | Neither global target nor global drawdown is ON.                 |
| Global Guard | Running          | Enabled and within limits.                                       |
| Global Guard | GLOBAL TARGET    | Global profit target reached — locked.                           |
| Global Guard | GLOBAL DD (BAL)  | Method 1 limit reached — locked.                                 |
| Global Guard | GLOBAL DD (PEAK) | Method 2 limit reached — locked.                                 |
| Global Guard | GLOBAL LOCKED    | A previous lock restored after a restart.                        |

## Choosing the drawdown method

| Method            | Behaviour                                                   | Choose it when                                |
|-------------------|-------------------------------------------------------------|-----------------------------------------------|
| 1 • Start Balance | Fixed floor. Profits made later give you more room.         | You want a hard 'never below X' account floor |
| 2 • Peak Equity   | Floor rises with every new equity high (trailing drawdown). | You want to protect profits already made      |
| Both              | Whichever limit is reached first.                           | Prop-firm style rules                         |

Input group 12 — know what the EA does without watching the chart

| Setting                       | Default  | What it does                                                               |
|-------------------------------|----------|----------------------------------------------------------------------------|
| Alert: Trade Opened/Closed    | Disabled | Disabled, Push Notification Only, Email Only, or Push & Email.             |
| Show Startup Popup Message    | ON       | Welcome message in the middle of the chart for about 8 seconds on attach.  |
| Dashboard X Position (pixels) | 20       | Distance of the dashboard from the left edge of the chart.                 |
| Dashboard Y Position (pixels) | 28       | Distance from the top edge. Raise it if the panel covers the symbol label. |

## Message formats

| Event         | Push / email text                                                                         |
|---------------|-------------------------------------------------------------------------------------------|
| Trade opened  | OPENED: EURUSD BUY 0.02 lot @ 1.08453                                                     |
| Trade closed  | CLOSED: EURUSD BUY 0.02 lot @ 1.08600   P/L: +45.20 (profit includes swap and commission) |
| Email subject | Crystal HA: EURUSD BUY Opened / ... Closed                                                |
| Global lock   | [EURUSD] GLOBAL DD (PEAK)   EA LOCKED — always sent as push                               |
| News block    | NEWS BLOCK [EURUSD]: CPI m/m   Trading paused 10 min before / 15 min after (Chapter 14)   |

Close alerts fire for every way a trade can close — take profit, stop loss, trailing stop, reverse, risk guard or news close.

## Set up push notifications

- 1 Install MetaTrader 5 on your phone and open **Settings** → **Messages** to find your **MetaQuotes ID**.
- 2 On the PC terminal open **Tools** → **Options** → **Notifications**.
- 3 Tick **Enable Push Notifications**, paste the ID, and click **Test**.
- 4 Set **Alert: Trade Opened/Closed** to Push or Push & Email.

## Set up email

- 1 Open **Tools** → **Options** → **Email** and tick **Enable**.
- 2 Enter your SMTP server, login, password, From and To addresses (your mail provider lists these).
- 3 Click **Test** and check your inbox.
- 4 Set **Alert: Trade Opened/Closed** to Email or Push & Email.



### NOTE — NO ALERTS IN THE STRATEGY TESTER

MetaTrader does not send push or email from the Strategy Tester, so the EA skips all alerts there. Test them on a demo account.



### PRO TIP — MANY CHARTS

Running the EA on 10+ charts? Set **Show Startup Popup Message** OFF, and use **Dashboard X/Y** to move the panel if it covers price on small screens. You can also collapse it with the **-** button (Chapter 15).

| Setting                                  | Default                     | What it does                                                                                                                      |
|------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Enable News Filter                       | OFF                         | Master switch for the news system — filter, lines, countdown and alerts.                                                          |
| News Data Source                         | MT5 Calendar (Built-in)     | <b>MT5 Calendar:</b> MetaTrader's own economic calendar, no setup.<br><b>Forex Factory (XML Feed):</b> needs the URL whitelisted. |
| Forex Factory XML URL                    | ...ff_calendar_thisweek.xml | Feed address. Used only with the Forex Factory source.                                                                            |
| News Impact Level                        | High Impact Only            | High Only, High + Medium, or All News Events.                                                                                     |
| Stop Trading Before News (mins)          | 10                          | New entries are blocked this many minutes before the event.                                                                       |
| Resume Trading After News (mins)         | 15                          | ...and until this many minutes after it.                                                                                          |
| Alert: AutoTrading Paused/Resumed (News) | OFF                         | Sends a message when a news block starts and when it ends.                                                                        |
| Alert Type                               | Popup + Push                | Popup + Push or Push Only.                                                                                                        |
| Close Open Trades When News Block Starts | OFF                         | OFF: only new entries are blocked. ON: this EA's open trades are also closed when a block starts.                                 |
| Show News Vertical Lines on Chart        | ON                          | A vertical line with the event name for each event.                                                                               |
| Show Countdown Timer on News Lines       | ON                          | A live countdown next to each upcoming event's line.                                                                              |
| News Label Text Size                     | 8                           | Font size of the labels, 6 to 14.                                                                                                 |

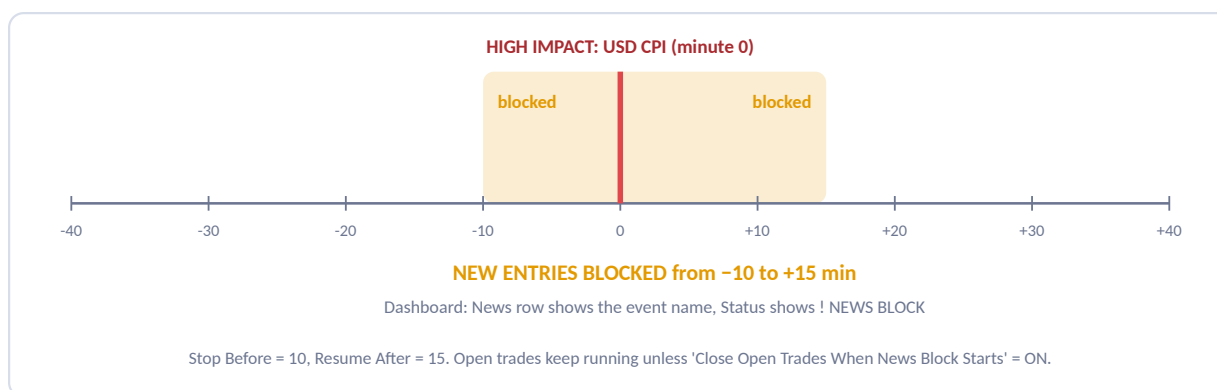


Figure 14.1 — A news window with the default 10 / 15 minutes.

## Which events count

- Only events for the symbol's two currencies — for example EUR and USD on EURUSD, USD on XAUUSD.
- Only the impact levels you chose.
- The event list is refreshed every 5 minutes; a new schedule is printed to the Experts tab whenever it changes.

## Reading the news lines

Line colours: **red** = high impact to come, **gold** = medium, **silver** = low, **dim grey** = already passed. The event name is written vertically along its line so labels never overlap. Common names are shortened (NFP, CPI, PPI, GDP, PMI...). The countdown changes colour as the release approaches: **blue** above 30 min, **yellow** under 30 min, **orange** under 5 min, **red** in the last minute.

## Setting up the Forex Factory feed

The MT5 Calendar source works with no setup and is the **recommended** choice for most users. Forex Factory is optional and needs a one-time permission, because MetaTrader blocks internet requests by default.

- 1 In MetaTrader 5 open **Tools → Options → Expert Advisors**.
- 2 Tick **Allow WebRequest for listed URL**.
- 3 Add this address exactly: `https://nfs.faireconomy.media/ff_calendar_thisweek.xml` — or whatever you entered in *Forex Factory XML URL*.
- 4 Click OK. Re-attach the EA (or change its inputs) so the permission is picked up.
- 5 In the EA inputs set **News Data Source** to **Forex Factory (XML Feed)** and keep **Enable News Filter** ON.
- 6 Open the **Experts** tab. You should see the *[NEWS FILTER] Today's Upcoming Events* list. If you see `[NEWS] FF WebRequest failed`, the URL is not whitelisted exactly.

## Built-in fallbacks

| Situation                         | What the EA does                                                                            |
|-----------------------------------|---------------------------------------------------------------------------------------------|
| Feed downloaded in the last 5 min | Re-uses it — the feed is never hammered.                                                    |
| Download fails, older copy exists | Keeps using the last good copy.                                                             |
| Download fails, no copy yet       | Falls back to the MT5 Calendar so protection is never switched off.                         |
| Strategy Tester                   | News filter is inactive (no live calendar or internet); dashboard shows <i>N/A TESTER</i> . |



### KEY POINT — CLOSE ON NEWS?

With **OFF**, a trade already open rides through the release with its stop loss in place. With **ON**, the EA closes it when the block starts and keeps retrying every 5 seconds if the broker rejects the close. Scalpers usually choose ON; swing traders often keep OFF.



### INDICES, METALS AND CFDS

The MT5 Calendar source reads the symbol's real base and profit currencies from the broker, so it works for gold, indices and CFDs. The Forex Factory source matches the first six letters of the symbol name (e.g. **XAU + USD**) — for names like *US30* or *GER40* use the MT5 Calendar.



### WARNING

News times come from the data provider. Always compare the lines on your chart with the event time you expect for the first few days, and keep a sensible stop loss on every trade.

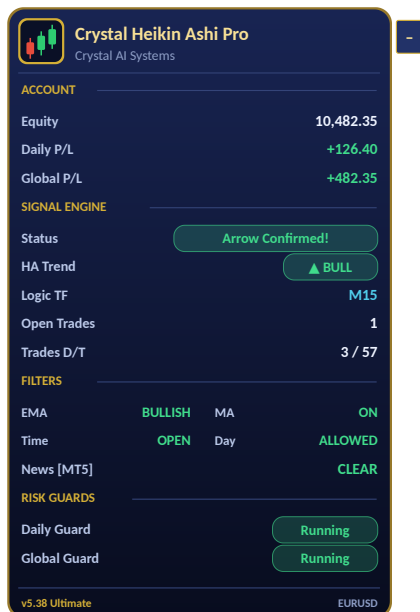


Figure 15.1 — The dashboard, drawn in its real colours.

The dashboard is one image drawn directly on the chart — navy body, gold frame, Heikin Ashi logo and colour-coded pills. Because it is a single bitmap and its fonts are set in pixels, it looks the same at 100 %, 125 % or 150 % Windows display scaling.

It refreshes about every 2 seconds, and immediately after a trade opens or a guard fires. It only repaints when a value has really changed, so it costs almost nothing in CPU. In a non-visual Strategy Tester run it is skipped completely.

### Collapse and restore

A small **-** button sits just outside the panel's right edge. Click it to hide the panel; it becomes **+** — click again to bring the panel back. Your choice is saved, so it survives timeframe changes and restarts.

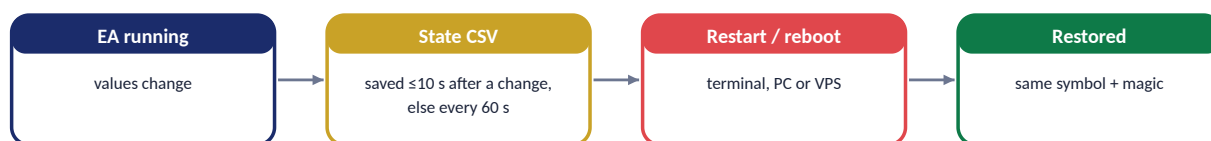
### Colour language

|              |                                   |
|--------------|-----------------------------------|
| <b>GREEN</b> | OK, allowed, bullish, profit      |
| <b>RED</b>   | Blocked, bearish, loss, locked    |
| <b>AMBER</b> | Attention — Circle, news, neutral |
| <b>CYAN</b>  | Scanning, information             |
| <b>GREY</b>  | Off, idle, not applicable         |

## Row by row

| Section              | Row               | What it shows                                                                           |
|----------------------|-------------------|-----------------------------------------------------------------------------------------|
| <b>Account</b>       | Equity            | Live account equity.                                                                    |
|                      | Daily P/L         | This EA's P/L today (Chapter 11). Green above zero, red below.                          |
|                      | Global P/L        | Equity minus the global Start Balance. Shows OFF when both global guards are off.       |
| <b>Signal Engine</b> | Status            | What the engine is doing or why it is blocked (Chapter 4).                              |
|                      | HA Trend          | ▲ BULL or ▼ BEAR — colour of the last closed HA candle. LOADING until history is ready. |
|                      | Logic TF          | The timeframe the engine runs on.                                                       |
|                      | Open Trades       | Positions open with this symbol and Magic Number.                                       |
|                      | Trades D/T        | Trades opened today / lifetime total since the baseline.                                |
|                      |                   |                                                                                         |
| <b>Filters</b>       | EMA / EMA X       | BULLISH, BEARISH, BULL CROSS, BEAR CROSS, NEUTRAL, NO DATA, or OFF.                     |
|                      | MA                | ON or OFF — whether the trend filter is enabled.                                        |
|                      | Time              | OPEN, PAUSED, or OFF.                                                                   |
|                      | Day               | ALLOWED or BLOCKED for today.                                                           |
|                      | News [MT5] / [FF] | CLEAR, the blocking event's name, N/A TESTER, or OFF. The tag shows the source.         |
| <b>Risk Guards</b>   | Daily / Global    | Guard states (Chapter 12).                                                              |
| <b>Footer</b>        | —                 | Version (v5.38 Ultimate) and the chart symbol.                                          |

A risk guard is only useful if it remembers. If the EA forgot today's loss every time the terminal restarted, a daily limit could be bypassed by accident. So the EA saves its state to a small CSV file and reads it back when it starts. There are no inputs — it works automatically.



Written as a temporary file first, then swapped in, so a crash mid-save never corrupts the last good state.

Figure 16.1 — The save and restore cycle.

## Where the files live

In MetaTrader: **File → Open Data Folder → MQL5 → Files → CrystalHA**. One pair of files per symbol and Magic Number:

| File                      | Contents                                                                                                                    |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| State_EURUSD_789456.csv   | Current state: today's figures and lock, global baseline, peak equity, global lock, trade counters, dashboard shown/hidden. |
| History_EURUSD_789456.csv | Journal — one line per finished day: Date, Symbol, StartBalance, EndBalance, DailyPnL, WorstDayPnL, Trades, Status.         |

## What is restored

### Same day restart

- Today's starting balance and P/L
- Daily lock (shows DAY LOCKED)
- Trades today

### Any restart

- Global Start Balance and Peak Equity
- Global lock
- Lifetime trades, worst drawdown statistics, panel state



#### KEY POINT — KEEP SYMBOL AND MAGIC THE SAME

State is matched by **symbol + Magic Number**. Change either one and the EA starts fresh with a new file. Moving to a new VPS? Copy the **CrystalHA** folder across and the EA continues where it left off.

## Safety built in

- Every save writes a temporary file first and swaps it in, so a crash during a save never leaves a half-written file.
- On load the file is checked for its header, end marker, symbol and Magic Number. A damaged or foreign file is ignored and logged.
- Writes are throttled to at most one per 10 seconds on change, plus a heartbeat every 60 seconds — easy on VPS disks.
- The Strategy Tester never reads or writes these files, so backtests and optimisation passes stay independent.



#### PRO TIP — THE HISTORY JOURNAL

Open `History_...csv` in Excel to review every day's P/L, worst intraday dip and trade count — a quick way to see how your settings behave over weeks without exporting the account history.

These are **starting points**, not promises. Settings not listed stay at their defaults. Every broker, symbol and market phase is different, so always test on a demo account or in the Strategy Tester first.

### Conservative Swing

fewer trades · wider stops

| Setting             | Value                    | Reason                                      |
|---------------------|--------------------------|---------------------------------------------|
| Logic Timeframe     | H1                       | Filters intraday noise                      |
| Entry Signal Mode   | Confirmed                | Waits for a breakout                        |
| EMA Filter          | ON · Single · 50 · H4    | Trades only with the higher-timeframe trend |
| Lot Sizing / Risk % | Risk % · 0.5             | Small, steady risk per trade                |
| SL / TP             | ATR 2.0 / ATR 4.0        | Room for swings, 1 : 2 reward-to-risk       |
| Trailing            | ON · 50 % · 2.0 ATR      | Lets trends run                             |
| Daily Max Drawdown  | ON · 3 %                 | Stops a bad day early                       |
| News                | ON · High only · 30 / 30 | Stands aside around big releases            |

### Balanced Intraday

the recommended first setup

| Setting             | Value                               | Reason                                     |
|---------------------|-------------------------------------|--------------------------------------------|
| Logic Timeframe     | M15                                 | Good balance of signals and noise          |
| Entry / Position    | Confirmed · Swap Only if Profitable | Banks winners when trend flips             |
| EMA Filter          | ON · Single · 50 · H1               | M15 signals in the H1 direction            |
| Lot Sizing / Risk % | Risk % · 1.0                        | Money at risk stays constant               |
| SL / TP             | ATR 2.0 / ATR 3.0                   | Realistic intraday targets                 |
| Trailing            | ON · 50 % · 1.5 ATR                 | Default behaviour                          |
| Time Filter         | ON · London + New York              | Converted to your server time (Chapter 10) |
| Daily DD / News     | ON · 5 % / ON · High only           | Two safety nets                            |

## Active Scalper

many trades · tight management

| Setting          | Value                                | Reason                               |
|------------------|--------------------------------------|--------------------------------------|
| Logic Timeframe  | M5                                   | Fast signals                         |
| Entry / Position | Aggressive · Instant Reverse         | Always with the latest HA colour     |
| MA Filter        | ON · 50 · Exponential                | Avoids the worst counter-trend flips |
| Stop Loss Mode   | Signal Candle                        | Stop at a real chart level           |
| Take Profit      | ATR 2.5                              | Quick targets                        |
| Trailing         | ON · 30 % · 1.0 ATR                  | Locks profit early                   |
| News             | ON · High + Medium · Close trades ON | Flat before volatile releases        |
| Trading Days     | Monday OFF, Friday OFF (optional)    | Skips gap and thin days              |

## Prop-Firm Challenge

rules first, profit second

| Setting             | Value                                | Reason                                     |
|---------------------|--------------------------------------|--------------------------------------------|
| Lot Sizing / Risk % | Risk % · 0.5                         | Keeps each loss small                      |
| Daily Max Drawdown  | ON · 3 % or 4 %                      | Below a typical 5 % daily rule             |
| Global DD           | ON · Both · 8 % / 8 %                | Below a typical 10 % maximum loss          |
| Global Target       | ON · your target %                   | Stops trading once the challenge is passed |
| News                | ON · High + Medium · Close trades ON | Many firms restrict news trading           |
| Saturday / Sunday   | OFF                                  | No weekend exposure                        |
| Entry Signal Mode   | Confirmed                            | Fewer, cleaner entries                     |



### WARNING — READ YOUR FIRM'S RULES

Prop firms calculate limits in different ways (balance or equity, server or local midnight, including or excluding floating P/L). Set the EA's limits **below** the firm's, with a clear safety margin.



### KEY POINT — CHANGE ONE THING AT A TIME

When you tune a preset, change one setting, test it, and compare. Changing five inputs at once makes it impossible to know which one helped.

## What behaves differently in the Strategy Tester

| Feature                    | In the tester    | Why                                                               |
|----------------------------|------------------|-------------------------------------------------------------------|
| Signals, SL/TP, trailing   | Works            | Same code as live.                                                |
| Daily & Global guards      | Works            | Calculated in memory for the test.                                |
| Time, day, EMA, MA filters | Works            | Uses the tester's server time.                                    |
| News filter                | Inactive         | No live calendar or internet in the tester.                       |
| Push / email alerts        | Skipped          | MetaTrader does not send them from the tester.                    |
| CSV state files            | Not used         | Keeps optimisation passes independent.                            |
| Dashboard                  | Visual mode only | Skipped in fast runs to save time.                                |
| Chart                      | Plain candles    | A banner explains that Heikin Ashi cannot be drawn in the tester. |

## Recommended tester setup

- 1 Model: **Every tick based on real ticks** for final checks; **1 minute OHLC** is fine for quick scans.
- 2 Use a realistic deposit and your broker's real symbol, spread and commission.
- 3 Test at least 12 months, including trending and ranging periods.
- 4 Run a **forward** period you did not optimise on, then a demo account, before real money.

## Optimisation tips

| Optimise               | Sensible range        | Tip                                 |
|------------------------|-----------------------|-------------------------------------|
| Logic Timeframe        | M5 · M15 · M30 · H1   | Biggest single influence on results |
| SL / TP ATR multiplier | 1.0 – 3.0 / 2.0 – 6.0 | Keep TP ≥ SL for a healthy ratio    |
| Trail Distance         | 1.0 – 3.0             | Step 0.5                            |
| EMA Period             | 20 – 200              | Step 10 or 20                       |
| Max Wait for Arrow     | 1 – 6                 | Confirmed mode only                 |



### WARNING — OVER-FITTING

The 'best' pass of an optimisation is usually the luckiest. Prefer a **stable region** where neighbouring values also perform reasonably, and never trust results without a forward test.

## Performance

- Signals are evaluated once per new Logic-Timeframe bar; the HA series is rebuilt from *Calculation Depth* bars. Lowering it to 200–300 speeds up long optimisations with no loss of accuracy.
- Dashboard, news lines and file saves run on a 1-second timer and are throttled, so ticks stay fast even on busy symbols.
- One chart per symbol + Magic Number is enough; you can run many charts on one terminal or VPS.

**FIRST, ALWAYS**

Look at the dashboard **Status** row, then the **Experts** tab at the bottom of the terminal. Between them they explain almost every 'why didn't it trade?' question.

| Symptom                                    | Likely cause                                                                  | Fix                                                                                                             |
|--------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Status stays <i>Loading History...</i>     | Not enough bars (min 30) on the Logic Timeframe.                              | Open that symbol on the Logic Timeframe once to force the download, or check your broker offers history for it. |
| No trades at all, status <i>Scanning</i>   | No HA colour flip yet on the Logic Timeframe.                                 | Normal. On H1+ the first signal can take hours. Check the Logic TF row.                                         |
| Circles appear but no trade (Confirmed)    | Breakout did not happen: Cancelled or Timeout.                                | Expected behaviour. Raise Max Wait for Arrow or use Aggressive mode.                                            |
| Status 'Arrow Confirmed!' but no trade     | A silent gate: direction, MA filter, trade already open, margin or lot rules. | Check Trading Direction, MA filter and Open Trades; read the Experts tab.                                       |
| Status shows EMA Filter                    | EMA disagrees or price is inside the neutral zone.                            | Expected. Reduce the Neutral Zone or check the EMA timeframe.                                                   |
| Status shows Market Closed                 | Broker session closed for the symbol.                                         | Wait for the session to open.                                                                                   |
| Status shows Time Filter / Day Filter      | Outside your window or a disabled weekday.                                    | Check server time vs your Start/Stop hours (Chapter 10).                                                        |
| GLOBAL LOCK, no trading                    | Global target or drawdown reached.                                            | Reset as in Chapter 12, then set RESET back to OFF.                                                             |
| RISK STOP, no trading                      | Daily limit or target reached.                                                | Wait for the next server day — unlocks automatically.                                                           |
| EA fails to start: parameters incorrect    | Fixed SL is smaller than the broker's Stops Level.                            | Increase Fixed SL, or use ATR mode.                                                                             |
| Trade opened without TP                    | Broker rejected the stop distance; safety fallback used.                      | Increase the SL/TP multipliers or fixed values.                                                                 |
| 'Unsupported filling mode' in the journal  | Broker does not accept the EA's order filling type.                           | Contact support via MQL5 with your broker name.                                                                 |
| 'Not enough money' in Experts tab          | Free margin too low for the lot.                                              | Lower lot / Risk %, or add funds.                                                                               |
| News row shows OFF / no lines              | News filter disabled, or Show Lines OFF.                                      | Enable both; lines are not drawn in the tester.                                                                 |
| [NEWS] FF WebRequest failed                | URL not whitelisted exactly.                                                  | Follow the Forex Factory steps in Chapter 14.                                                                   |
| Dashboard gone, only a + button            | Panel collapsed.                                                              | Click the + button.                                                                                             |
| No push / email                            | Terminal not set up, or you are in the tester.                                | Follow Chapter 13 setup and use the Test button.                                                                |
| Daily / global figures reset after restart | Symbol or Magic Number changed, or RESET left ON.                             | Keep them identical; set RESET to OFF.                                                                          |

**Q Does the EA repaint?**

No. Every decision uses closed Heikin Ashi candles of the Logic Timeframe, so past signals never move.

**Q Do I need the Crystal Heikin Ashi indicator?**

No. It is optional and only for seeing HA candles on the chart. The EA calculates everything internally.

**Q Which timeframe should the chart be on?**

Any. The EA uses the Logic Timeframe input, not the chart timeframe.

**Q Which symbols can it trade?**

Any symbol MetaTrader 5 supports — forex, metals, indices, crypto. Check Fixed-pip values per symbol (Chapter 8).

**Q Can I run it on several symbols?**

Yes. Attach it to one chart per symbol and give each chart a different Magic Number.

**Q Can it run two copies on the same symbol?**

Yes, with different Magic Numbers and different settings — for example M15 and H1 logic.

**Q Does it use grid, martingale or hedging?**

No. At most one trade per direction, every trade has a stop loss, and the lot is never multiplied after a loss.

**Q Will it touch my manual trades?**

No. It only manages positions with its own symbol and Magic Number. Note that the Global guard reads whole-account equity.

**Q Aggressive or Confirmed — which is better?**

Neither in all markets. Aggressive is earlier and busier; Confirmed is later and cleaner. Test both on your symbol.

**Q Why did Confirmed mode skip a signal that worked?**

It was Cancelled or timed out before a close beyond the Circle's HA high/low. Raise Max Wait for Arrow if this happens often.

**Q What is the minimum deposit?**

It depends on the symbol's minimum lot and your stop size. With Risk % mode, check that the minimum lot does not exceed your chosen risk.

**Q Is a VPS needed?**

The EA must run 24/5 to manage trades, so a VPS or an always-on PC is strongly recommended.

**Q What happens if my PC restarts?**

Daily and global state are saved to CSV and restored automatically (Chapter 16). Open trades keep their SL/TP on the broker's server.

**Q When does the daily guard reset?**

At midnight broker server time, automatically.

**Q How do I unlock a Global lock?**

Set RESET Global Baseline = ON, click OK, then set it back to OFF (Chapter 12).

**Q Does the news filter work in backtests?**

No — MetaTrader provides no live calendar or internet access in the tester, so the filter is inactive there.

**Q MT5 Calendar or Forex Factory?**

MT5 Calendar for most users: no setup and correct for metals and indices. Forex Factory is an optional alternative.

**Q Why does Status say Market Closed on a weekday?**

The broker's trading session for that symbol is closed at that moment, e.g. daily rollover or a holiday.

**Q Why is my lot bigger or smaller every trade?**

You are using Risk % or Auto mode. The lot follows your equity and the stop distance by design.

**Q Can I move the dashboard?**

Yes — Dashboard X / Y Position, or collapse it with the – button.

**Q Are the alerts sent for every trade?**

Yes, for every open and every close of this EA's trades, when alerts are enabled and the terminal is set up.

**Q Can I use it for a prop-firm challenge?**

Many traders do. Use the Prop-Firm preset (Chapter 17) and set every limit below your firm's rules.

## Glossary

| Term             | Meaning                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------|
| ATR              | Average True Range — average bar size over ATR Period bars. Used for stops, targets and trailing. |
| Arrow            | Confirmed-mode entry signal: a same-colour HA candle closes beyond the Circle's HA high/low.      |
| Circle           | The first HA candle of the opposite colour — a trend-change candidate.                            |
| Confirmed mode   | Entry waits for the Arrow.                                                                        |
| Aggressive mode  | Entry on the Circle.                                                                              |
| Freeze Level     | Broker distance inside which orders cannot be modified.                                           |
| Global guard     | Account-level target/drawdown with no automatic reset.                                            |
| Heikin Ashi (HA) | Averaged candle type that smooths price and shows trend as colour runs.                           |
| High-water mark  | The highest equity reached — Peak Equity.                                                         |
| Logic Timeframe  | Timeframe the EA's signal engine runs on.                                                         |
| Magic Number     | ID the EA stamps on its trades to recognise them.                                                 |
| Neutral zone     | Band around the EMA where no trade is allowed.                                                    |
| Pip / point      | Point = smallest price step. Pip = 10 points on 3/5-digit symbols, 1 point otherwise.             |
| Repaint          | When an indicator changes past signals. This EA does not.                                         |
| Server time      | Your broker's clock, shown in Market Watch. All time rules use it.                                |
| Stops Level      | Minimum broker distance between price and SL/TP.                                                  |

## Experts-tab messages

| Message                                  | Meaning                                          |
|------------------------------------------|--------------------------------------------------|
| [STATE] Loaded OK (saved ...)            | Previous state restored.                         |
| [STATE] No previous state file           | First run for this symbol + Magic — fresh start. |
| [DAILY] New day detected                 | Server day changed; daily figures reset.         |
| [DAILY] MAX DRAWDOWN HIT!                | Daily loss limit reached; trades closed.         |
| [GLOBAL] Baseline Balance ...            | Global Start Balance and Peak Equity in use.     |
| [GLOBAL] EA LOCKED                       | A global limit was hit; reset needed.            |
| [HA] Waiting for ... history             | Logic Timeframe history still downloading.       |
| [TRAIL] BUY #... SL: a -> b              | Trailing stop moved.                             |
| [NEWS BLOCK] ... / [NEWS RESUME]         | News window started / ended.                     |
| [NEWS] FF WebRequest failed              | Forex Factory URL not whitelisted.               |
| [LOT] Broker tick size/value unavailable | Risk % fell back to Fixed Lot for this trade.    |
| Not enough money for ...                 | Free margin too low; trade skipped.              |

## Version history

| Version | Highlights                                                                                                                                                                                                             |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.38    | Risk % of Equity lot sizing · Signal-Candle stop loss · lot sized from the final stop distance · market-session guard · improved history loading.                                                                      |
| 5.37    | Canvas dashboard with collapse button · EMA Directional Filter (Single / Cross) · vertical news lines with countdown · optional close on news · Global target and drawdown · CSV state engine · one-line trade alerts. |

## Support

- Post questions in the **Comments** section of the product page on the MQL5 Market, or send a private message to **jawadtrader22** on MQL5.
- Please include: symbol, broker, Logic Timeframe, a screenshot of the dashboard, and the relevant lines from the **Experts** tab.
- Seller page: [mql5.com/en/users/jawadtrader22/seller](https://mql5.com/en/users/jawadtrader22/seller)

## Risk disclosure

Trading foreign exchange, CFDs and other leveraged instruments carries a high level of risk and may not be suitable for all investors. Past performance, whether from live trading or Strategy Tester backtests, is not a reliable indicator of future results.

Crystal Heikin Ashi Pro is an automation and decision-support tool. It does not guarantee profits and does not remove the risk of loss. Only trade with money you can afford to lose, and test every configuration on a demo account before using real funds. Crystal AI Systems and Crystal Forex provide this software as-is and are not liable for trading losses incurred through its use.

**Thank you for trusting Crystal Heikin Ashi Pro**

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