

# Pressure Buildup Breakout

Expert Advisor Documentation

## PLATFORM

MetaTrader 5 (MT5)

## TYPE

Price-Action Breakout

## TIMEFRAME

M15 – H1

## WEBSITE

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

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

## Overview

**Pressure Buildup Breakout** is a pure price-action Expert Advisor that trades the release of a tight consolidation. It uses **no indicators whatsoever** — every decision is derived directly from raw OHLC bars: the boundaries of a sideways range, where each bar closes inside its own range, the average bar range, and the height of the box used to size risk.

The core idea is that of *hidden order-flow pressure*. When price drifts sideways in a narrow horizontal band (a "ledge"), buyers and sellers are battling at a level. If the bars inside that band keep closing toward the ceiling, demand is quietly absorbing supply — pressure is coiling under the level. When a freshly-closed bar finally thrusts through that ceiling with an expanded range, the breakout is far more likely to be a genuine release than a random poke. The EA fires **long above the ceiling** and, by a perfectly symmetric rule, **short below the floor**.

It was designed with liquid FX pairs and indices in mind (for example GBPUSD or an index on M15–H1), but it is fully timeframe-agnostic: it operates on whichever chart symbol and timeframe it is attached to.

# How It Works

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The strategy evaluates exactly once per completed bar. On each new bar it inspects the most recently closed bar as the breakout candidate and the window of bars immediately before it as the consolidation ledge. Four conditions must all align before a trade is sent.

## 1. The Consolidation Ledge

Over a lookback window of `Lookback` bars (the bars immediately before the breakout candidate), the EA records the **highest high (the ceiling)** and the **lowest low (the floor)**. The distance between them is the box height. It also accumulates the average bar range across the window.

## 2. Tightness Gate

A valid ledge must be *tight relative to its own bars*. If the box height exceeds `MaxLedgeRange` × the average bar range, the band is rejected as a trending leg rather than a consolidation worth fading the breakout of.

```
boxHeight = ceiling - floor
reject if boxHeight > MaxLedgeRange × avgRange
```

## 3. Directional Pressure

For each bar in the ledge, the EA measures where the bar **closes within its own range**. A close in the upper half (close position ≥ 0.5) counts as long pressure (buyers won that session); a close in the lower half counts as short pressure. To trade a breakout, the fraction of bars closing on the breakout side must reach

`PressureFraction`.

```
closePos      = (Close - Low) / (High - Low)
longPressure += (closePos ≥ 0.5) ? 1 : 0
longRatio     = longPressure / Lookback // must be ≥ PressureFraction
```

## 4. Thrust (Range Expansion)

The breakout bar itself must be a genuine thrust, not a thin drift through the level. Its range must be at least `ExpansionMult` × the window's average range — confirming real participation behind the move.

## Entry Logic

- **Long:** the just-closed bar closes above `ceiling + BreakoutBuffer × boxHeight` and the long pressure ratio ≥ `PressureFraction` and the bar is a thrust. Entry is at the current **Ask**.
- **Short:** the just-closed bar closes below `floor - BreakoutBuffer × boxHeight` and the short pressure ratio ≥ `PressureFraction` and the bar is a thrust. Entry is at the current **Bid**.

**Note — one trade at a time.** The EA holds at most one open position per magic number. While a trade is live it is left entirely to its stop-loss and take-profit; no new signals are taken until the position closes.

## Exit Logic — Stop Loss & Take Profit

The stop is a **structure stop**: it sits back *inside* the broken ledge by  $\text{StopBuffer} \times \text{boxHeight}$ , so a failed breakout that falls back into the range closes the trade. The take-profit is a fixed reward:risk multiple of that stop distance, set by  $\text{RewardMultiple}$ .

```
// Long
stopLoss  = ceiling - StopBuffer × boxHeight
risk      = entry - stopLoss
takeProfit = entry + RewardMultiple × risk

// Short (mirror image)
stopLoss  = floor + StopBuffer × boxHeight
risk      = stopLoss - entry
takeProfit = entry - RewardMultiple × risk
```

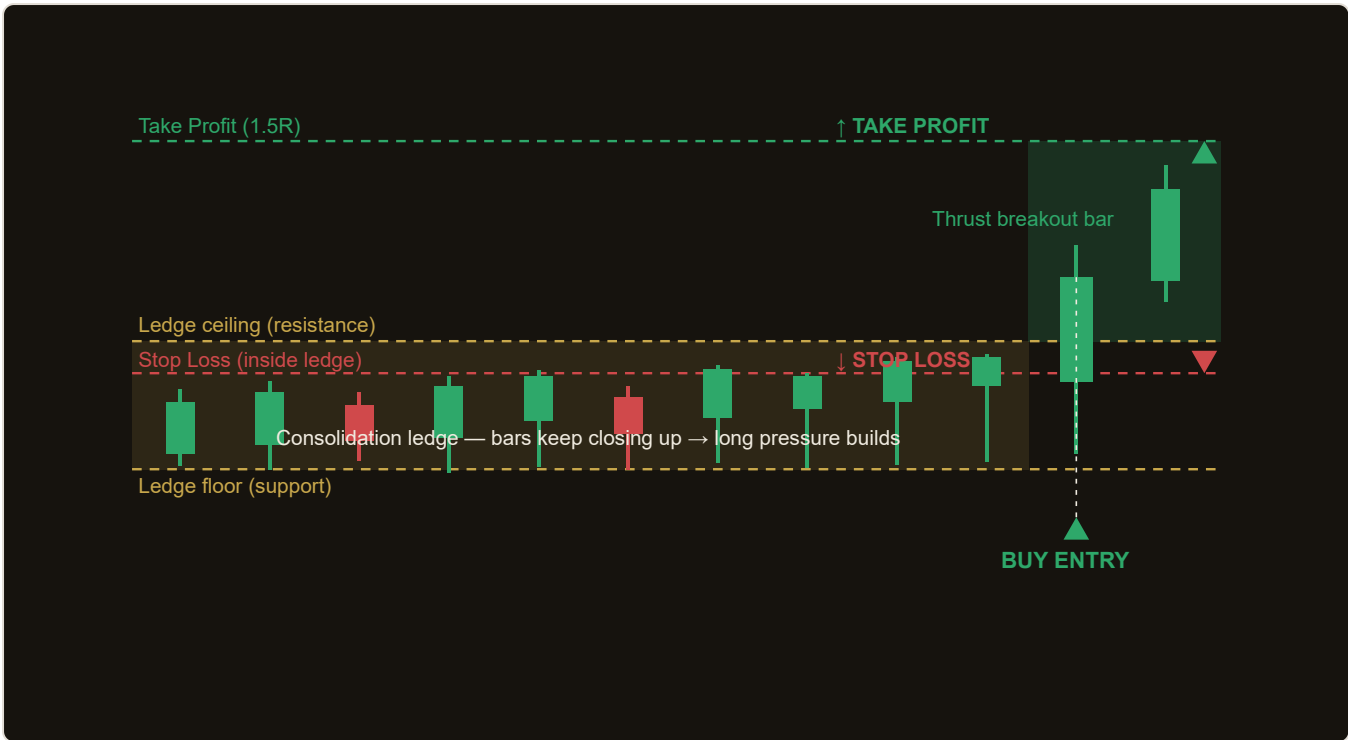
### Worked example (long)

A 20-bar ledge forms with ceiling 1.2740 and floor 1.2700 (box height = 40 pips). 13 of the 20 bars closed in the upper half ( $65\% \geq 55\%$  pressure). A bar closes at 1.2745, clearing  $1.2740 + 0.05 \times 40 \text{ pips} = 1.2742$ , and its range is 1.5× the average — a thrust. The EA buys at the Ask. Stop =  $1.2740 - 0.15 \times 40 \text{ pips} = 1.2734$  (risk  $\approx 11$  pips from a 1.2745 entry); take-profit =  $\text{entry} + 1.5 \times \text{risk} \approx 1.2762$ .

## Strategy in Action

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The illustration below shows an example of how the strategy identifies a setup and triggers its entry and exit. This is a simplified, illustrative example for educational purposes — not real market data.



*Illustrative example only. Actual market behaviour varies.*

## Parameters

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Parameter	Default	Description
Lookback	20	Number of bars forming the consolidation ledge that precedes the breakout bar. Range 8–40, step 2.
PressureFraction	0.55	Minimum fraction of ledge bars that must close on the breakout side for the move to be traded. Range 0.40–0.80, step 0.05.
MaxLedgeRange	3.0	Tightness gate: the ledge height must be no more than this many average bar ranges, otherwise the band is rejected as a trend leg. Range 1.0–8.0, step 0.5.
ExpansionMult	1.30	Thrust gate: the breakout bar's range must be at least this multiple of the average bar range. Range 1.00–2.50, step 0.10.
BreakoutBuffer	0.05	The close must clear the ledge edge by this fraction of the ledge height before a breakout is valid. Range 0.00–0.30, step 0.05.
StopBuffer	0.15	The stop sits back inside the broken edge by this fraction of the ledge height (structure stop). Range 0.00–0.50, step 0.05.
RewardMultiple	1.50	Take-profit distance as a reward:risk multiple of the stop distance. Range 0.80–4.00, step 0.10.
Lots	0.10	Fixed trade volume in lots. Range 0.01–1.00, step 0.05.
Magic	730145	Magic number identifying this EA's positions, so it manages only its own trades.

## Recommended Settings

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The defaults are a balanced starting point tuned for liquid breakouts. Adjust them to the instrument and timeframe you trade rather than treating them as fixed.

- **Instruments:** liquid FX majors (e.g. GBPUSD, EURUSD) or major indices, where clean horizontal ledges and genuine range expansions are common.
- **Timeframe:** M15 to H1 works well; the logic is timeframe-agnostic and simply uses the chart it is attached to.
- **Selectivity:** raise `PressureFraction` (e.g. 0.65) and `ExpansionMult` (e.g. 1.6) for fewer, higher-conviction breakouts; lower them for more frequent signals.
- **Range character:** lower `MaxLedgeRange` to demand tighter, cleaner ledges; raise it to allow wider consolidations.

- **Risk shape:** tune `StopBuffer` and `RewardMultiple` together — a tighter stop with a higher reward multiple raises payoff but lowers hit rate.

**Tip.** Always run a backtest and forward (demo) test on your specific symbol, timeframe and broker before risking real capital. Because the stop is structure-based, the box height — and therefore your risk per trade — varies from setup to setup; confirm the resulting position risk fits your account.

## How to Install on MetaTrader 5

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- 1 Copy `PressureBuildupBreakout.ex5` to your MT5 `MQL5\Experts\` folder
- 2 Restart MetaTrader 5 and refresh the Navigator panel
- 3 Drag the EA onto a chart matching the recommended symbol and timeframe
- 4 Configure the input parameters and click **OK**
- 5 Enable **Algo Trading** in the MT5 toolbar

## Risk Warning

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