

Cumulative Delta Reversal

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Order-Flow Divergence Reversal

TIMEFRAME

M5 – M30

WEBSITE

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

Cumulative Delta Reversal is an order-flow reversal Expert Advisor built around **Cumulative Volume Delta (CVD)** — a running tally of net buying versus selling pressure. Price alone only tells you *where* the market went; CVD reveals the *force* behind each move. When price grinds to a fresh extreme but that push is no longer backed by matching order-flow, the trend is running on fumes: the late crowd is buying the high (or selling the low) while the flow that actually drove the move has already dried up.

That mismatch — a **price/CVD divergence** — is the classic exhaustion tell this EA fades. Rather than requiring a live bid/ask tape, the strategy estimates signed volume from a single OHLCV series using the **Close-Location Value (CLV)** split, so it works on any standard chart. It then compares where *price* peaked or troughed against where *CVD* peaked or troughed over a rolling window, and takes a counter-trend position when the two disagree and the signal bar shows its first crack in the opposite direction.

Every exit is fully volatility-scaled: the stop is a multiple of ATR beyond entry, and the take-profit is a fixed reward:risk multiple of that stop distance. The EA holds one position per magic number, so the ATR stop and RR target manage all exits — there is no discretionary trade management.

Core idea: A fresh price extreme that is *not* confirmed by a matching extreme in cumulative order-flow signals exhaustion. When flow tops out (or bottoms out) well before price does, and price then starts to reverse, the EA fades the move back toward fair value.

How It Works

1. Estimating signed volume (per closed bar)

On each newly-closed primary-timeframe bar, the EA computes a Close-Location Value to decide whether buyers or sellers dominated the bar, then weights it by tick volume:

```
clv      = ((Close - Low) - (High - Close)) / (High - Low)    // range in [-1, +1]
barDelta = clv * TickVolume                                   // + = closed near the high
CVD      = running sum of barDelta                            // cumulative volume delta
```

A CLV near **+1** means the bar closed near its high (buyers in control); near **-1** means it closed near its low (sellers in control). Multiplying by tick volume turns each bar into a signed flow contribution, and the running sum of those contributions is the **Cumulative Volume Delta**. If a bar has zero range or non-positive volume, it is treated neutrally (CLV of 0, or a volume floor of 1).

2. Locating the divergence

Over the last **DivLookback** closed bars, the EA finds four extreme locations: the highest close, the lowest close, the CVD peak, and the CVD trough. A genuine divergence requires that the flow extreme lead the price extreme in time and that flow has meaningfully retraced since:

- **Time lead:** the CVD peak/trough must sit at least **MinSeparation** bars *before* the price extreme.
- **Retracement:** CVD must have pulled back from its peak (or recovered from its trough) by at least **DivRatio** of the window's total CVD range.
- **First crack:** the just-closed signal bar must itself be turning — closing down for a short, closing up for a long (measured close-vs-prior-close).

3. Entry logic

SHORT — BEARISH DIVERGENCE

- The signal bar is the window's **highest close** (a fresh price high), *and*
- CVD topped out at least **MinSeparation** bars earlier and has since faded by $\geq$ **DivRatio** of its range, *and*
- The signal bar closes **down** versus the prior close.
- → Buyers can no longer lift price despite the new high — **fade the top with a Sell** at the Bid.

LONG — BULLISH DIVERGENCE

- The signal bar is the window's **lowest close** (a fresh price low), *and*
- CVD bottomed at least `MinSeparation` bars earlier and has since recovered by $\geq$ `DivRatio` of its range, *and*
- The signal bar closes **up** versus the prior close.
- → Sellers are spent despite the new low — **fade the bottom with a Buy** at the Ask.

4. Exit logic — stop loss & take profit

Risk is anchored to volatility via the Average True Range (ATR) of the just-closed bar:

```
stopDist = AtrStopMult * ATR

// Short:  SL = entry + stopDist      TP = entry - RewardRisk * stopDist
// Long:   SL = entry - stopDist      TP = entry + RewardRisk * stopDist
```

Both the stop and the target are attached to the order at entry. Because the EA allows only **one open position per magic number**, there is no averaging, scaling, or re-entry while a trade is live — the ATR stop and the reward:risk target manage every exit.

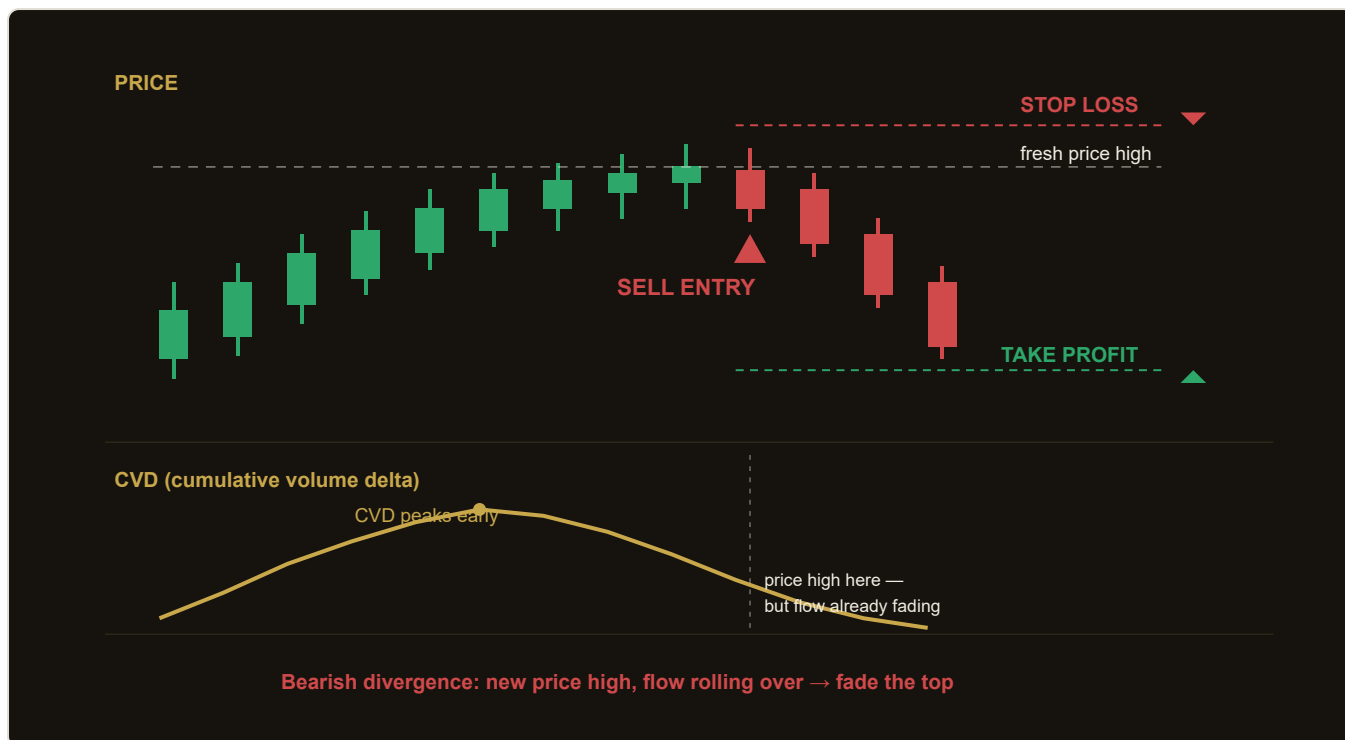
5. Trade filters

- **One position per magic:** no new entry while a position for this magic is already open on the symbol.
- **Spread filter:** new entries are skipped whenever the current spread exceeds `MaxSpreadPoints` (points), protecting against poor fills in thin conditions.
- **Warm-up:** the EA waits until enough closed bars exist to fill both the divergence window and the ATR period before it evaluates any signal.
- **Flat-flow guard:** if the window's CVD range is zero (no directional flow), no divergence can be read and the bar is skipped.

Bar-close driven: all logic runs once per newly-closed bar (the EA tracks the primary-timeframe bar time). Signals are evaluated on the bar that has just closed — shift 1 — so entries are never based on an unfinished, still-forming candle.

Strategy in Action

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



Illustrative example only. Actual market behaviour varies.

Parameters

Parameter	Default	Description
DivLookback	24	Rolling window (bars) over which price and CVD extremes are compared. Range 8–80, step 2.
MinSeparation	3	The CVD peak/trough must sit at least this many bars <i>before</i> the price extreme to count as a lead. Range 1–20, step 1.
DivRatio	0.30	Minimum CVD pullback (from peak) or recovery (from trough) as a fraction of the window's CVD range, required to confirm a genuine divergence. Range 0.05–0.90, step 0.05.
AtrPeriod	14	ATR lookback used to size the stop distance. Range 5–40, step 1.
AtrStopMult	1.5	Stop distance beyond entry, expressed as a multiple of ATR. Range 0.5–4.0, step 0.1.
RewardRisk	1.8	Take-profit distance as a reward:risk multiple of the ATR stop distance. Range 0.5–5.0, step 0.1.
MaxSpreadPoints	80	Skip new entries when the current spread (in points) is wider than this. Range 5–300, step 5.
Lots	0.10	Fixed lot size for each position. Range 0.01–1.0, step 0.05.
Magic	8842	Magic number identifying this EA's positions. Range 0–9,999,999, step 1.

Tuning tip: `DivRatio` and `MinSeparation` together control how strict a divergence must be. Raising either produces fewer but higher-conviction signals; lowering them makes the EA more reactive but noisier. Keep `DivLookback` comfortably larger than `MinSeparation` so the flow lead has room to develop.

Recommended Settings

The strategy is best suited to instruments where tick volume is a reasonable proxy for real order-flow — a liquid FX major or a major index — traded on an intraday timeframe.

- **Symbols:** Liquid FX majors (e.g. EUR/USD, GBP/USD, USD/JPY) or major indices.
- **Timeframe:** M5 to M30, where tick volume tracks flow reasonably well. The EA operates on whatever timeframe the chart is set to (it uses the chart's primary timeframe).

- **Divergence sensitivity:** the defaults (`DivLookback 24` , `MinSeparation 3` , `DivRatio 0.30`) are a balanced starting point. Tighten `DivRatio` toward 0.40–0.50 on choppy symbols to demand stronger exhaustion.
- **Risk:** `AtrStopMult 1.5` with `RewardRisk 1.8` gives a positive-expectancy target profile; widen the stop on more volatile instruments.
- **Spread:** set `MaxSpreadPoints` to your broker's typical spread plus headroom so signals during news-driven spread spikes are skipped.

Example — EUR/USD M15

With defaults, suppose price prints a fresh 24-bar high but CVD peaked 6 bars earlier and has since faded 35% of its window range ($>$ the 0.30 `DivRatio`). The signal bar closes down. The EA sells at the Bid, places the stop $1.5 \times$ ATR above entry, and targets $1.8 \times$ that distance below — a clean bearish-divergence fade with a 1:1.8 risk-to-reward profile.

Tick-volume caveat: CVD here is built from *tick* volume, not true traded volume, because MT5 does not expose a real order-flow tape for most symbols. On illiquid instruments or during quiet sessions, tick volume can misrepresent flow and weaken the signal. Favour liquid instruments and active sessions.

How to Install on MetaTrader 5

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

Risk Warning

Trading foreign exchange, CFDs, and other leveraged financial instruments involves substantial risk of loss and is not suitable for all investors. The strategies and tools described in this document are provided for **educational purposes only** and do not constitute financial advice, investment recommendations, or solicitation to trade. Always consult a qualified financial adviser before making trading decisions. Past backtest performance is not indicative of future results.