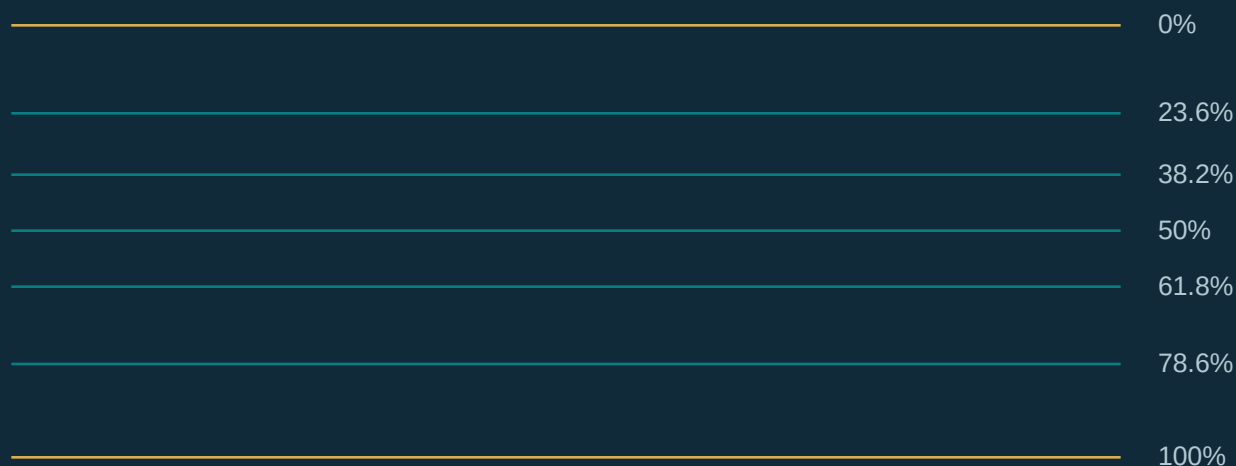


THE ALGO TRADER, LLC

# Auto Fibonacci

Adaptive Swing Fibonacci Levels

## USER GUIDE



The Algo Trader, LLC

NinjaTrader 8 | September 2026

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# Getting started

Add **Auto Fibonacci** to your NinjaTrader intraday chart. It uses that chart's instrument, timeframe, and Trading Hours template. Load at least three complete trading days so the indicator has volatility history and previous-session information.

The default settings are a starting configuration for review, not an optimized NQ preset. Changes occur on **completed bars**: on a two-minute chart the calculations update when a two-minute bar completes. Selecting another Calculate mode does not override this version's bar-close behavior.

# Installing

Go to **Tool > Import > NinjaScript Addon** and import the zip file.

# Reading the chart

| Item                                | Meaning                                                                              |
|-------------------------------------|--------------------------------------------------------------------------------------|
| <b>Auto Fibonacci   Up leg</b>      | The displayed retracement grid measures an upward swing.                             |
| <b>Auto Fibonacci   Down leg</b>    | The displayed retracement grid measures a downward swing.                            |
| Teal levels                         | Retracements of an upward swing.                                                     |
| Coral levels                        | Retracements of a downward swing.                                                    |
| <b>0%</b>                           | The end of the displayed swing. It can move when following a developing extreme.     |
| <b>100%</b>                         | The swing's origin: a complete retracement.                                          |
| 23.6%, 38.2%, 50%, 61.8%, 78.6%     | Intermediate retracement prices between the two anchors.                             |
| Faint shaded band                   | The area between the active 38.2% and 61.8% levels.                                  |
| <b>Gold Ref end</b>                 | The fixed endpoint of a separately confirmed, broader reference swing.               |
| <b>Gold Ext 127.2% / Ext 161.8%</b> | Fixed extension prices calculated from that reference swing.                         |
| <b>Gray Prior high / Prior low</b>  | The previous loaded trading day's extremes under the chart's Trading Hours template. |

The header intentionally shows only the name and leg direction once a grid exists. Whether it follows a developing move or shows a completed move is controlled by **Follow developing extreme**, described below. The direction describes the displayed swing, not a forecast or necessarily the latest candle's direction.

Prior-high and prior-low text sits above its line in a column left of the retracement-price labels, with a background for readability. When the prior range is highly compressed, the high label moves farther upward to separate the two labels.

# Swing properties

| Property                  | Default | What it does and how it helps                                                                                                                                                                                                                                                                                                                             |
|---------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATR period                | 14      | Number of chart bars used to smooth true range, including gaps. Lower values react faster to changes in volatility; higher values change more slowly. It does not select a fixed swing length.                                                                                                                                                            |
| Reversal ATR multiple     | 1.5     | Sets the volatility-based distance needed to confirm a reversal. A higher multiple generally selects broader swings and changes direction less readily. A lower multiple reacts to smaller pullbacks and can switch more often.                                                                                                                           |
| Minimum reversal (ticks)  | 12      | Establishes a minimum price-distance requirement even when volatility is low. Raising it filters out smaller moves; lowering it only matters when this floor, rather than the ATR requirement, controls the threshold. On a 0.25-tick instrument, 12 ticks equals 3 points.                                                                               |
| Minimum swing age (bars)  | 3       | Minimum elapsed bars from the swing origin before a reversal can be confirmed. Increasing it prevents some very short-lived swings from switching immediately; reducing it permits earlier changes. It is not a guaranteed confirmation delay or a number of bars after the extreme.                                                                      |
| Carry previous session    | On      | Allows anchors from the immediately previous loaded trading day to continue into the current day. Older anchors expire. Off starts fresh swing discovery at each trading-day boundary and clears prior reference swings, while retaining ATR history.                                                                                                     |
| Follow developing extreme | On      | On: the active 0% and retracement grid follow new highs/lows, then switch when a reversal qualifies. Off: show the most recently completed active swing and keep its grid fixed until another swing completes. Off can initially show nothing while waiting for the first completed swing. This setting does not make the gold reference extensions move. |

The reversal distance is the **larger** of the ATR-based distance and the minimum tick distance. For example, if ATR is 8 points, a multiple of 1.5 requires 12 points; a 3-point minimum does not reduce that requirement.

The requirement is locked whenever a new swing extreme is established. Declining ATR alone cannot lower that locked requirement and trigger a reversal. A subsequent bar must close sufficiently away from the extreme. A bar that makes a new extreme cannot also confirm a reversal of that same extreme, because historical OHLC bars do not reveal which extreme occurred first.

# Extension properties

| Property                 | Default | What it does and how it helps                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Show fixed extensions    | On      | Displays the gold reference endpoint and two extension prices. Off removes those drawings without changing active swing detection.                                                                                                                                                                                                                                                                                   |
| Reference swing strength | 2.0     | Multiplies both the active ATR reversal multiple and minimum tick distance for a separate reference detector. At default settings it uses 3.0 ATR or 24 ticks, whichever is greater. Higher values require broader reversals before replacing the reference; lower values allow more frequent replacement. A value of 1 uses the same sensitivity as the active detector, but still publishes completed swings only. |
| Fit extensions to chart  | On      | Includes the gold reference levels in automatic price scaling. This keeps distant levels visible but may compress the candles and active grid. Off avoids that contribution to scaling; use manual zooming if extension levels lie offscreen. It has no effect when Show fixed extensions is Off, and a manually fixed chart scale can override automatic fitting.                                                   |

Extension percentages measure the full reference move from its origin. **100% of that move is Ref end**, not the active grid's 100% retracement line. An extension of 127.2% lies another 27.2% of the reference length beyond Ref end; 161.8% lies another 61.8% beyond it. Upward reference swings project upward; downward references project downward.

The gold levels stay fixed while the next move develops. Merely touching or crossing them does not move them. A newly completed reference swing replaces them, and session eligibility can expire them. Because the reference is separate, its direction can differ from the active leg. These are measured reference prices, not guaranteed destinations.

# Display properties

| Property                 | Default | What it does and how it helps                                                                                                                                                                                                      |
|--------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Show labels              | On      | Shows level percentages/prices, gold reference text, and prior-high/low text. Off keeps the lines and compact header while removing level labels. Closely spaced active/reference labels may be suppressed so they do not overlap. |
| Show previous high / low | Off     | Adds two gray dashed lines for the previous loaded trading day's high and low. These are separate from the active swing and gold reference anchors. Enabling them does not change swing calculations.                              |
| Shade 38.2-61.8% zone    | On      | Adds a faint band between those two active retracements. Off gives a lines-only appearance. It is a visual aid, not a separate signal.                                                                                             |

# Alert properties

| Property                  | Default | What it does and how it helps                                                                                                                                                                                               |
|---------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable crossing alerts    | Off     | Enables a sound and Alerts Log message when completed-bar closing prices cross the selected active retracement. It does not submit orders or monitor the gold extensions.                                                   |
| Alert retracement percent | 61.8    | Selects the active-grid percentage to monitor, from 0 to 100. It can be a custom percentage even if no line is drawn for that exact value.                                                                                  |
| Alert cooldown (bars)     | 3       | Suppresses further alerts for three complete bars after an alert. Another eligible cross may alert afterward. Zero removes this extra waiting period; it does not create continuous repeated alerts without a new crossing. |

Alerts compare consecutive closes against an unchanged grid. When anchors change, the grid first appears, or a new trading day starts, the comparison resets. Moving a level across price therefore cannot create an alert. An intrabar touch alone is not enough; a close must cross beyond the level. Historical processing does not emit alerts.

# Sessions, history, and chart controls

- The Trading Hours template defines the exchange trading day. Calendar midnight is not used as the reset rule. Multiple template segments belonging to one trading day are grouped together.
- A previous-session fallback can use that day's high and low in their actual chronological order if a carried swing is unavailable. Same-bar extremes are not assigned an invented order.
- Missing or truncated historical data limits what the indicator can reconstruct. Previous means the previous **loaded** trading day.
- The chart shows the latest active/reference grids, not an archive of every past grid. Developing levels redraw as their endpoint changes. Use playback to inspect what was visible as bars arrived.
- Standard NinjaTrader chart controls such as panel placement, visibility, price-scale settings, and the chart's Trading Hours remain platform controls. Keep the indicator on the price panel. The custom properties above control its calculations and drawings.

# Adjusting behavior without changing everything at once

| What you notice                                  | Relevant setting                                                                                                                          |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| The active grid changes direction too frequently | Review Reversal ATR multiple and Minimum reversal first; Minimum swing age also limits rapid changes.                                     |
| The active grid responds too slowly              | Review the same reversal settings in the opposite direction, accepting that smaller moves will qualify.                                   |
| Gold levels change more often than desired       | Increase Reference swing strength; it does not change active-grid colors.                                                                 |
| Candles look compressed                          | Turn off Fit extensions to chart or manually adjust the scale.                                                                            |
| You want stationary active retracements          | Turn off Follow developing extreme.                                                                                                       |
| No gold levels yet                               | A qualifying broader swing must finish, and Show fixed extensions must be enabled. They may also be outside a manually fixed price scale. |
| No alert at a touch                              | Check bar-close crossing, whether the grid moved, and the cooldown.                                                                       |

Change one setting at a time and compare the same playback segment. One- and two-minute charts can produce different swings from the same market period because their bars and ATR differ.

# Common questions: lookback and moving levels

**How many bars back does the grid look?** There is no fixed bar count for the active Fibonacci range. Its anchors are the selected swing origin and endpoint. A swing can span 10, 50, or more bars, depending on price movement and reversal settings. ATR period is a volatility lookback, not the grid's anchor lookback.

**Does it start over at the session open?** With Carry previous session On, eligible anchors can come from the current or immediately previous loaded trading day. They do not automatically reset at the open. If a carried swing is unavailable or too old, a qualifying previous-session high/low pair may initialize the leg in chronological order. With carry Off, swing discovery starts fresh at the trading-day boundary.

**What does session mean?** It means the exchange trading day assigned by the chart's Trading Hours template, not necessarily midnight or the regular stock-market open. Gold reference anchors have the same current/previous-day eligibility. Missing historical days cannot be reconstructed.

**Why does 0% move when price reaches it?** With Follow developing extreme On, 0% represents the latest developing high of an up leg or low of a down leg. A new extreme moves it; a touch at the same price does not. The other retracements recalculate between the origin and that updated endpoint. Updates occur at bar close, so price can temporarily trade beyond the displayed 0% during the open candle.

**Why do the colors alternate?** Teal identifies an upward leg and coral a downward leg. They change when the active swing reversal rules qualify. In sideways conditions, smaller opposing moves can qualify repeatedly. A color change is not, by itself, a reversal of the broader market trend.

**Why are gold extensions different from the moving 0%?** They use a separate completed reference swing. They stay fixed while the next move develops and do not move merely because price reaches them. They are replaced when another qualifying reference swing completes or their anchors expire. Their direction can differ from the active grid. They are reference prices, not levels price must visit.

## Common questions: reversal controls

Three properties directly control the active reversal: **Reversal ATR multiple**, **Minimum reversal (ticks)**, and **Minimum swing age (bars)**. ATR period indirectly affects the volatility estimate. Reference swing strength controls the separate gold reference detector, not active-grid color changes.

The required reversal distance is the larger of ATR multiplied by the reversal multiple and the minimum tick distance. These distances are not added together. A later completed bar must close sufficiently away from the extreme, and the minimum age from the swing origin must be satisfied.

The distance is refreshed when a new extreme forms, then held fixed until another extreme or reversal occurs. ATR drifting lower between extremes does not make the existing reversal requirement easier to satisfy.

**Does five-bar minimum age mean waiting five bars after a top or bottom?** No. It counts from the swing's origin. On a two-minute chart, five ordinary consecutive bars represent ten minutes of bar time, but this is not a guaranteed ten-minute wait after the latest extreme. Session gaps further separate bar counts from elapsed clock time.

**Can price touching a Fibonacci line reverse the grid?** A level touch alone does not trigger a swing reversal. Reversal qualification comes from the close's distance from the swing extreme and the swing-age rule. Crossing alerts are separate and also require a closing-price cross of an unchanged grid.

**What if I want fixed active levels?** Turn Follow developing extreme Off. The display then uses completed swings and can take longer to produce its first grid. The shorter header remains Up leg or Down leg in either mode; check this property to know which mode you selected.

# Two-minute NQ playback baseline

For users who prefer broader swings over frequent micro swings, the following is an experimental starting configuration. It is not an optimized preset, a verified improvement in trading performance, or a universal setting for all sessions. It does not change the indicator's shipped defaults automatically.

| Property                        | Baseline | Purpose                                                                           |
|---------------------------------|----------|-----------------------------------------------------------------------------------|
| <b>ATR period</b>               | 14       | Keep volatility measurement unchanged while comparing reversal sensitivity.       |
| <b>Reversal ATR multiple</b>    | 2.0      | Require a larger reversal than the shipped 1.5 setting.                           |
| <b>Minimum reversal (ticks)</b> | 40       | Establish a 10-point floor on NQ, whose minimum tick is 0.25 points.              |
| <b>Minimum swing age (bars)</b> | 5        | Require more age from the origin before a reversal can qualify.                   |
| <b>Reference swing strength</b> | 2.0      | Use a stronger, separate confirmation requirement for gold reference replacement. |

**Worked example:** If ATR is 8 points when a new extreme forms, the active threshold is the larger of  $8 \times 2.0 = 16$  points and  $40 \times 0.25 = 10$  points. The requirement is therefore 16 points. From a qualifying high at 20,000, a later close at or below 19,984 can satisfy the distance condition, provided the age and other swing rules also qualify. A wick to 19,984 with a close above it is insufficient.

With Reference swing strength at 2.0, that separate detector uses a 4.0 ATR multiple and an 80-tick floor. At the same illustrative ATR of 8, its distance would be 32 points rather than 20. The reference detector locks its own threshold at its own extreme; its actual live threshold need not equal this example or the active detector's current threshold.

During higher volatility, ATR may dominate and raising the tick floor may have no effect. During lower volatility, the floor can become the controlling requirement. Larger thresholds filter more small moves but confirm later; they do not guarantee better swings.

Contract-size reference: CME Group's E-mini Nasdaq-100 contract specifications identify a minimum tick of 0.25 index points. This reference supports the tick conversion, not the proposed baseline settings.

# Playback checklist and fine-tuning

- Use the same instrument, chart timeframe, Trading Hours template, and loaded history for each comparison. Load at least three complete trading days.
- Start with the baseline on the preceding page and replay examples of the opening period, midday trading, a sustained trend, and a sideways range. These conditions can expose different weaknesses.
- Record unwanted color switches, meaningful reversals recognized late, the delay in bars from a visible extreme to confirmation, and how often the reference extensions are replaced. Do not judge only the final repositioned grid.
- If too many small moves still switch the active grid, test Reversal ATR multiple at **2.25** while leaving the other baseline settings unchanged.
- If swings you consider meaningful are recognized too late, test **1.75** with the other settings unchanged. Expect smaller opposing moves to qualify more often.
- Compare the same segments, then check additional days that you did not use to choose settings. Assess fewer unwanted switches against later recognition; do not select only the best-looking example.
- Change Reference swing strength separately if the gold levels replace too often. It does not control active color changes. If candles are compressed by distant targets, use Fit extensions to chart rather than changing swing sensitivity to solve a display issue.
- Keep a record of the final settings and test separately on a one-minute chart. A one-minute chart does not inherit equivalent swing behavior just because the property values are the same.

There is no single setting that can remove micro swings without sometimes delaying a meaningful reversal. The purpose of playback is to choose a response speed that matches the swings you intend to study, with that tradeoff visible.