

NYSE AMEX Options will open a series only when legal width market maker quotes, a legal width away exchange BBO, or the aggregate of market maker quotes and away exchange quotes that comprise a legal width market are present in the matching engine for that series. This functionality is intended to assist our market makers in establishing a fair and orderly market for the opening auction.

The NYSE AMEX opening auction process consists of three sequential processes that allow for the maximum number of contracts to be executed: pre-open, opening auction, and open sweep. These are followed immediately by core trading as follows:

Part 1 - Pre - Opening

1. Orders may be entered at the start of pre-open state (3:30 AM ET).
2. All order types are accepted when OX is in the pre-open state, but only Market, Limit, MOA, LOA and reserve orders are considered eligible to participate in the opening auction.
 - o Reserve orders will be included in the Opening Auction.
 - o If other orders are present at the reserve order price, display size will be executed and reserve size will be re-ranked in price time.
 - o If no other orders are present at the reserve order price, full reserve size will be executed up to the size of the incoming order(s) and/or quote(s).
3. Market Maker Quoting (MMQ's) may begin when the pre-open begins (3:30 AM ET).
4. A market maker quote is allowed to lock or cross an existing market maker quote during the pre-opening.
5. During pre-open, ArcaBook imbalance messages are sent out via the Arca Book feed. Imbalances are disseminated during the pre-open period (i.e. from the point the system is up and orders exist until the auction occurs).
6. For options, "market order imbalance" means ONLY any remaining buy or sell volume left after buy market vs sell market orders have been paired off. Limit orders and quoted markets are not included in this calculation, and market order imbalances can be calculated in the absence of a quoted market "opening band."

7. Total Auction Imbalance includes both Limit and Market orders and include an indicative opening price. Market Maker quotes are required to calculate Total Auction Imbalance.
8. Unlike in equities, there is no freeze period between the pre-open and the actual auction.

***Underlying Consolidated Equity Market Locked/Crossed Scenarios:**

If the consolidated underlying equity market is not locked/crossed, NYSE AMEX Options will consider the underlying to be open when the first trade occurs in the underlying. If consolidated market is locked/crossed, NYSE AMEX Options will wait for a second print from the primary exchange. If the second trade occurs and the bid and ask are not locked/crossed, NYSE AMEX will consider the underlying open. If consolidated market is still locked/crossed, NYSE AMEX will wait for third print from the primary exchange. After third print from primary exchange, NYSE AMEX Options will consider the underlying open regardless of locked/crossed status.

***NYSE Late Opens**

If after a configurable time following 9:30 a.m eastern, NYSE has not opened an underlying issue, and at least 2 other exchanges have opened the underlying, then NYSE AMEX Options will consider the underlying to be open. This is a manual process handled by the Trade Desk.

Process Flow: Pre-open to Opening Auction

1. Underlying is Closed
 - a. market maker quotes are accepted (regardless of width)
 - b. no quotes are published to OPRA
2. NYSE AMEX Receives UFT notification (Underlying First Trade) for underlying security
 - a. OX Sends Underlying Open message via ArcaBook
 - b. Current best MM quote is published to OPRA
 - i. Quotes will be published with no regard to legal or non-legal width
 - c. Auction Imbalance messages will be disseminated via ArcaBook
 - d. ONLY series with legal width quotes round-tripped from OPRA will open a series.
3. If Underlying has opened BUT no legal MM quote/ no legal width away exchange market is present in series
 - a. Market Maker quotes will continue to be accepted

- b. Top of Book (market maker quote) will continue to be published to OPRA
 - c. Auction Imbalance messages will be disseminated via ArcaBook
 - d. As soon as a legal width quote is received from OPRA the series will open (see auction section below).
4. The auction pricing parameter will be calculated in the following order to open the series:
- a. If away BBO is present
 - i. Check for legal width market for auction band.
 - ii. Use current mm quote prices if series contains mm quotes that are superior to away BBO prices
 - iii. IF away BBO only is present or is better than NYSE Arca MM quotes, match any auction volume at best price and route any imbalance to best price destination
 - b. If no away BBO is present
 - i. Use NYSE AMEX BBO from OPRA if legal width quote(s) are present
 - ii. Else wait for conditions to change.

NOTE: The Trade Support Desk will have the ability to override this “legal width” functionality, for cases where the underlying stock opens wide and stays wide, on a “by-underlying” basis.

Legal Width Quotes

Even if the market maker quote used to calculate the opening auction band is only 1 up, the opening price will be established based on a legal width quote, and at that point will have NBBO / sweep collar protection. The following chart identifies the applicable parameters for legal width quotes:

\$0.00 - \$1.99	25 cents
\$2.00 - \$5.00	40 cents
\$5.01 - \$10.00	50 cents
\$10.01-\$20.00	80 cents
> \$20.00	\$1

**For equity option series with expiration dates > 9 months away and for index option series with expiration dates > 12 months away, the legal width spread is 3x the values in the table above.

Part 2 – Opening Auction

1. At 9:30 a.m. Eastern, NYSE AMEX checks the above parameters necessary to run the opening auction.
2. NYSE AMEX must have at least one legal width internal market maker quote that includes an offer or a logical NBBO* in a series in order to run the auction and open that series.
 - a. The auction will occur immediately when these conditions are met.
 - b. *Logical NBBO
 - i. Includes an offer
 - ii. Is not crossed.
3. If there is neither a legal width OPRA NBBO nor an internal BBO, then that option series cannot open.
4. If no orders or quotes lock or cross, no auction will occur.
 - a. The series will open and disseminate top and depth of book.
5. One price opening is used for all opening auctions.
 - a. Auctions include all quotes and orders that are locked or crossed within the auction pricing band.
 - b. Price priority will be granted on "original limit price" basis--applies to quotes and orders.
 - i. Orders and quotes are matched giving priority to higher bids and lower offers.
 - ii. Orders and quotes at the same price will be matched in time priority.
 - c. There may be an auction imbalance left at the end of the opening auction (see section on Sweep).
6. The opening auction functions in the following manner:
 - a. Bound by the initial legal width NBBO (better of away exchange or NYSE AMEX market maker quotes)
 - b. The opening price is determined as the price at which the most volume can be traded, within the auction parameter.
 - c. The opening prices must be within:
 - i. NYSE AMEX Market Maker quoted bid or NBB
 - ii. NYSE AMEX Market Maker quoted offer or NBO
 - d. Any orders with Market on Auction (MOA) /Limit on Auction (LOA) time in force that were not filled as part of the opening auction will be cancelled.
 - i. MOA/LOA orders should neither route in the case of multiply listed issues, nor post to the book at a reference price in the case of singly listed issues.

Note: In the absence of an auction imbalance, i.e., when buy vs. sell volumes for market orders are evenly matched and no limit orders or

quotes are locked/crossed, the midpoint of the Auction Pricing Band will be used for pricing these matched orders.

Part 3 - Opening Sweep

1. Immediately after the opening auction is complete for each option series, the market transitions into the core continuous trading session for that option series.
2. Oversized imbalances for multiply listed issues will be routed to the NBBO exchange if NYSE AMEX is not the best price.
3. If there are market orders remaining after the open with no MM quotes or away market quotes against which they can trade, Sweep Price Protection will be applied.
4. If there are limit orders remaining after the open with no MM quotes or away market quotes against which they can trade, and no market orders being held at a collar price, then limit orders will post at the auction price and trade against any refreshed quote, down to their limit price.

Sweep Processing

Any remaining imbalance from auction will wait for a legal width NBBO, or in the absence of an NBBO with away exchange, one of the following:

- Contra side interest that is within the price protection collar (determined by legal width for a particular option premium), or
- same side interest that is more aggressively priced.

Conditions to start Sweep Price Protection:

1. coming out of auction
2. processing new order and market is wide
3. by trading, market becomes wide

Conditions to end sweep price protection

1. Market is legal
2. Imbalance is exhausted
3. Trade Desk turns off sweep price protection

