



TRADING
TECHNOLOGIES™

Autotrader™

Feature Guide

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Trading Technologies International, Inc.

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What's New in Autotrader™

Trading Technologies continues its effort to provide you with the quickest, most efficient and versatile trading software with the release of X_TRADER® 7.7.4.

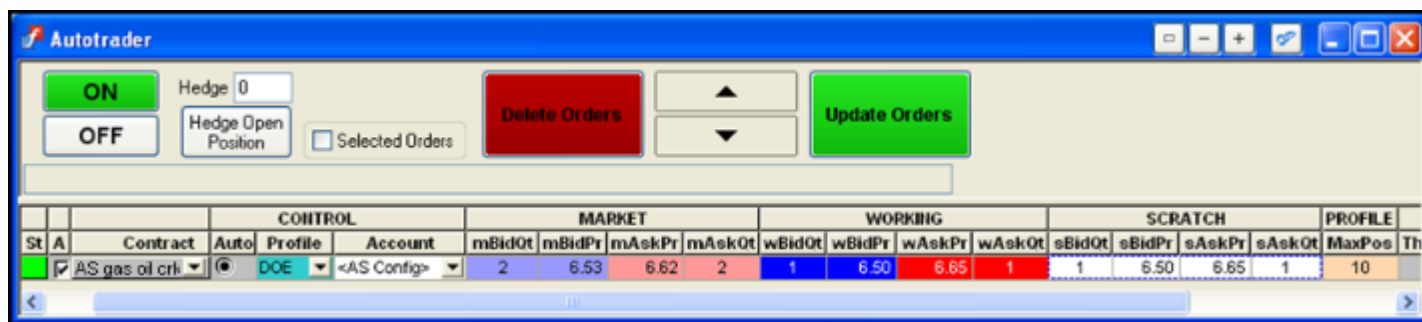
Autospreader and Autotrader Enhancements include:	
Autospreader orders in Autotrader	Autospreader synthetic orders can be managed and traded in Autotrader.

Autospreader Orders in Autotrader

Any spread from the **Autospreader Manager** window can be drag dropped or launched into an **Autotrader** window.



Once Autospreader synthetic contracts are in Autotrader, you can create profiles to manage Autospreader spread orders using all the Autotrader features.



Example: Assume you want to link spread bid/ask prices and quantities directly into Autotrader and generate a spread open position of long or short a total of 10 spreads.

From the **Profile Setup Page**:

Profile Base Price Direct Order Entry

- Set the **Profile Base Price** to Direct Order Entry.

Quoting Limits

Maximum Position 10

- Set a **Maximum Position** of 10.

Don't Cross Market

- Consider unchecking the **Don't Cross Market** setting. Refer to the **Don't Cross Market** section below.

Once the Direct Order Entry Profile is created you can select it from the **Autotrader** window and create links to the Scratch bid/ask price and quantity fields. Autotrader will submit Autospreader spread orders until the Open Position is long or short 10 spreads.

This change effects Autotrader in the following ways:

Don't Cross Market Setting

By default, the Autotrader profile setting **Don't Cross Market** is checked, meaning Autotrader will reject orders that cross the inside market. Since Autospreader synthetic orders working in Autotrader could cross the synthetic spread market as a part of a spread fill, you should uncheck the Autotrader profile setting **Don't Cross Market** for any Profile that is created for Autospreader orders.

Contract Field

In the Autotrader Grid, the **Contract** field displays the Autospreader spread name.

Account and Open Position Fields

Spreads default to <AS Config> in the **Account** field, indicating the customer accounts set up for each leg in the **Autospreader Configuration** window are in effect.

Note: If you choose an account other than <AS Config> you will override the customer accounts set for each leg in the Autospreader configuration. This is the same behavior for the Customer Account field in the Autospreader MD Trader.

The **Open Position** field tracks all Autospreader synthetic spread fills generated through Autotrader. This includes counting spread fills that are the result quoting in more than one leg (i.e. double or triple fills). If the customer is changed, the **Open Position** field displays the open position of the current customer.

Multiple Fills

Quoting in more than one leg can result in double and triple spread fills which could exceed your maximum position setting.

Example:

- Quoting both sides of a 1x1 spread, you enter a 3 lot spread order with maximum position of 6.
- The 3 lot spread order fills and your open position is 3.
- A new 3 lot spread order is submitted because a 3 lot spread fill will not exceed the maximum position of 6.
- The 3 lot spread is double filled which results in exceeding the maximum position of 6 with a total of 9 spreads.

Update Method

All spread order updates are sent as **Change** orders. If you switch the Update Method to Cancel/Replace or Cancel/Replace for partial fill, the spread order is still sent as a **Change**.

Partial and Legged Quantities

Autotrader accounts for the partial and legged quantities of synthetic orders. This means Autotrader will not send any new spread orders until all components from the previously submitted spread, including working, pending and legged spread orders, are completely gone (filled or deleted).

Legged State

Spreads that are in a partial Legged state can submit change orders when the Scratch price changes.

Example:

- A 3 lot 1x1 spread is working a price of 4.2.
- A 1 lot fill in the quoting order triggers a one lot hedge order that gets legged.
- The current state of the spread order is Working 2 and Legged 1 (W:2 L:1).
- The scratch price changes to 4.3 and the remaining balance of the working spread orders (2), is repriced to 4.3.
- The legged hedge order remains working at the previously submitted hedge price.

Pending State

Spreads that are in a Pending state can submit change orders when the Scratch price changes.

Example:

- A 2 lot 5x2 spread order is working at a price of 4.2.
- A 1 lot fill in the 5 lot quoting order does not trigger a hedge order and the current state of the spread order is Working 1 and Pending 1 (W:1 P:1).
- The scratch price changes to 4.3 and the spread balance of Working 1 and Pending 1 is repriced to 4.3.

Completely Legged State

Spreads that are in a completely Legged state (no Working or Pending quoting orders), do not submit a change order when the Scratch price has changed. Autotrader ignores the Scratch price change and does not attempt a change to the spread order.

Disabled Fields

The **Net Position** and **Net Change** fields are disabled for spreads. In addition, if the spread is not tradable for any reason, the entire row containing the spread order displays a maroon background.

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CHAPTER 1

Managing Autotrader™

Autotrader is a flexible, automated order management tool that lets you execute complex strategies, quote markets, and scalp using links from Excel or formulas directly from Autotrader. It automates your trading strategies and increases your speed to market.



1. Trade multiple products simultaneously.
2. Create profiles for different market conditions, quantities, and offset parameters.
3. Keep an eye on current market prices. Display implied outright and spread prices and quantities.
4. Enter orders directly from your Excel spreadsheets.

Note: Autotrader is an add-on tool available with X_TRADER Pro. It requires a separate license to function. Refer to [Activating an X_TRADER Pro License](#).

Autotrader is made up of the following components:

- The **Autotrader** window: Shown below, this window is where your automated trades are made. Refer to **Autotrader Window Overview** on page 14.
- The **Profile Setup Page**: Lets you define the trading parameters Autotrader uses to submit orders to the market. Refer to **Profile Setup Page Overview** on page 30.
- The **Position Management** window: Assists you in hedging your Autotrader positions outside of X_TRADER. Refer to the **Managing Your Position** on page 58.

► To open Autotrader:

From the **Control Panel**, click the **Window** menu and choose **Autotrader**.

- or -

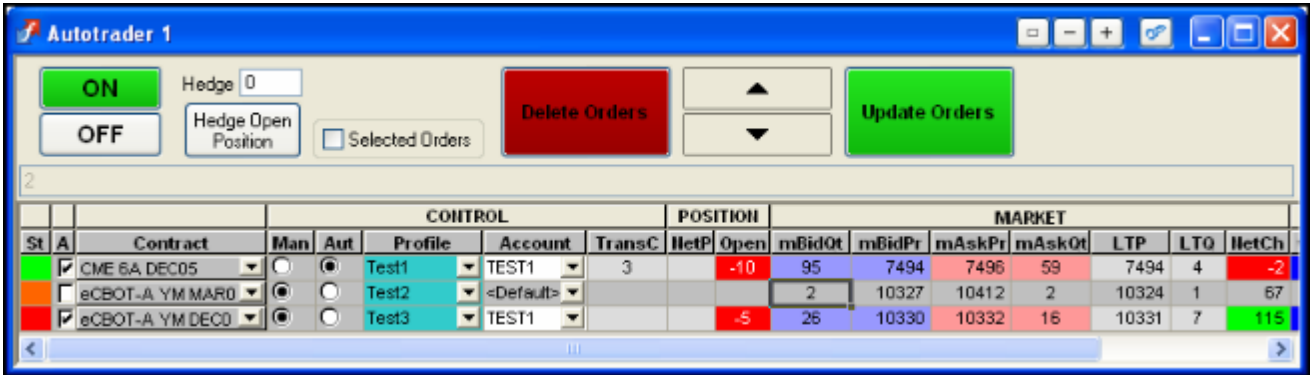
From the **Control Panel**, click the  icon.

You successfully opened Autotrader.

Warning! You may open only five (5) instances at one time. After opening five (5) **Autotrader** windows, the icon is no longer accessible.

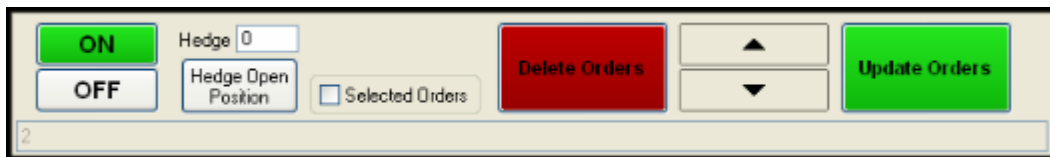
Autotrader Window Overview

The **Autotrader** window is where your automated trades are made. You can open five (5) **Autotrader** windows at a time.



The **Autotrader** window is made up of the following two panes:

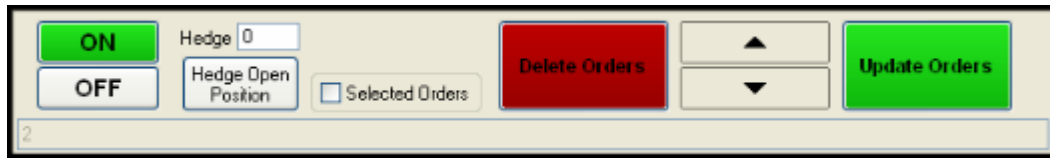
- **The Control Bar:** Use this pane to submit, delete, and update orders for all activated or specifically selected contracts. You can also enable and disable Autotrader and hedge your position.



- **The Grid:** Use this pane to display contracts, their associated trading parameters, theoretical pricing, and current market conditions. Additionally, it displays your working orders and lets you change the trading parameters you originally set on the **Profile Setup Page**.

Stat	Act	Contract	CONTROL				POSITION		MARKET						
			Man	Aut	Profile	Account	Tran	NetPos	OpenPos	mBidOt	mBidPr	mAskPr	mAskOt	LTP	LTO
		@CBOT-A YM DEC0	<input checked="" type="radio"/>	<input type="radio"/>	<-Default>	<-Default>			1	10248	10249	19	10249	13	33

Using the Control Bar



Use the **Control Bar** to perform these procedures:

- Enabling the Autotrader™ Grid
- Disabling the Autotrader™ Grid
- Hedging your position
- Deleting all of your orders
- Updating all of your orders
- Deleting or updating selected orders
- Editing parameters using the increase/decrease arrows
- Editing a row's parameters using the Formula Bar

▶ To enable the Autotrader grid:

Click **ON**.

You successfully enabled the Autotrader grid.

▶ To disable the Autotrader grid:

Click **OFF**.

Autotrader stops interacting with the market and deletes its working orders from the market.

You successfully disabled the Autotrader grid.

▶ To hedge your position:

1. Click a cell in the row that has the contract you want to hedge.
2. In the **Hedge** box, type the number of contracts that you want to hedge for that row.
3. Click **Hedge Open Position**.

You successfully hedged your position. Use the **Position Management** dialog box to remove a hedged position.

▶ To delete all of your orders:

Clear the **Selected Orders** option and then click **Delete Selected Orders**.

- or -

Click **OFF**.

You successfully deleted all of your orders.

▶ **To update all of your orders:**

1. Ensure the **Selected Orders** option is not selected.
2. Click **Update Orders**.

Autotrader submits orders for all active rows whose parameters determine an order be submitted.

You successfully updated all of your orders.

▶ **To delete or update selected orders:**



1. Click to select **Selected Orders**.
The **Delete** and **Update Orders** buttons change to only affect selected orders.
2. To select a row, click **Active** checkbox at the beginning of the row.
3. Click either **Update Selected Orders** or **Delete Selected Orders**.

You successfully deleted or updated selected orders.

▶ **To edit parameters using the Increase and Decrease arrows:**

1. Select the cell that contains an editable numeric value.

Note: To clone multiple rows, press and hold the **CTRL** key and continue clicking rows.

2. To increase the numeric value(s) by one, click .
3. To decrease the numeric value(s) by one, click .

You successfully edited parameters.

▶ **To edit a row's parameters using the Formula bar:**

1. Select the cell that contains an editable value (numeric or formula).

Note: You cannot select multiple cells.

2. At the bottom of the **Control Bar**, click in the **Formula Bar**:



3. Type the new value or formula that you want to assign to the cell.
4. Press the **ENTER** key.

You successfully edited a row's parameters.

Autotrader Grid

Use the Autotrader grid to:

- Select the contract, customer, and trade parameters you want Autotrader to use
- Dynamically interact with your previously set trade parameters
- Monitor market conditions and contract positions
- Control order submission
- Interact with your theoretical prices



Tip: For optimal performance, TT recommends you only use up to 15 rows in an Autotrader grid. When populating it with contracts, take into consideration the following:

- Market timing and conditions
- Your personal trading strategies
- Volatility
- Degree of product updates
- Your hardware specifications

Sections

The Autotrader grid is divided into the following sections:






- Row Identifier
- Control
- Position
- Market
- Working
- Scratch
- Profile Parameters
- Cover Order
- Updates
- Theo Prices
- Formula
- Open/Close

Row Identifier Section

1			
2	Status	Active	Contract

Use the **Row Identifier** section to:

- Identify the number of the row in Autotrader for purposes of creating formulas that reference that row.
- View the status of a contract as it trades.
- Enable a row. When enabled, you can interact with a row's fields and Autotrader can trade the displayed contract normally.
- Disable a row. When disabled, the row is grayed out, Autotrader does not trade it, and you cannot interact with its fields.

Field	Description
#	Assigns sequential numbers to your rows.
Status	<p>Uses the following color schema to display the status of each contract as it trades:</p> <ul style="list-style-type: none"> • : Your status is normal. Used in Auto Mode. • : Your status is normal. Used in Manual Mode. • : Your order needs to be updated. Used in Manual Mode. • : There is a problem (e.g., you reached your maximum position, or no market exists). Used in both Manual and Auto modes. • : The throttling settings prevented Autotrader from updating an order that otherwise would have been updated. Possible problems or errors exist. Used in both Manual and Auto modes. <p>For more information, double-click the Status cell for a description.</p>
Active	<p>Sets whether you can use Autotrader to trade the row's contract.</p> <ul style="list-style-type: none"> • To make the contract tradable, click to select Active. • To disable the row, click the Active cell. Once disabled, Autotrader cannot trade the contract and deletes all of its orders in the market. You can continue to interact with the contract's trading parameters.
Contract	Displays the contract assigned to the row.

Control Section

CONTROL					
RowName	Manual	Auto	Profile	Account	TransCount

Use the **Control** section to:

- Select automatic or manual trading.
- Select the Profile that contains the trading parameters you want Autotrader to use.
- Select the Account Name under which you want to trade.
- Monitor the number of transactions that Autotrader has performed.

Field	Description
RowName	Shows the row names to clarify their use. By default, this field is hidden. Note: You can assign the same name to multiple rows.
Manual	Limits the row's contract to manual trading. When you select this option, Autotrader does not automatically quote the contract.
Auto	Sets the row's contract for automatic trading. Autotrader quotes the contract according to the trading parameters you set up on the Profile Setup Page . You select the particular profile in the Profile field.
Profile	Sets the name of the profile you use while trading the contract.
Account	Sets the Account Name associated with the trading of this particular contract. The value of this field defaults to the Account Name you set up in the General Information section.
TransCount (not editable)	Displays the number of transactions (deletes, adds, and changes) accumulated while trading the contract for that particular row. You can monitor the total transactions for your row to help avoid exchange fees attributed when exceeding your maximum. You can set Autotrader to update orders with a change request (one transaction) versus a Cancel and Replace (two transactions). (See Updates Section) Note: If you trade the same contract in another X_TRADER module (e.g. MD Trader), its transactions are not included in this field.

Position Section

POSITION			
NetPos	OpenPos	HedgedPos	AvgPrice

Use the **Position** section to monitor your:

- Net position
- Open position
- Hedged position
- Average price

Note: Because the values of these fields depend on your trading activity, you cannot edit these fields.

Field	Description
NetPos	Displays your current net position. Net position is the sum of all positions for a particular Group ID Number across all contracts.
OpenPos	Displays the position for each contract by account. If multiple rows contain the same contract and Group ID Number , Autotrader displays the same OpenPos for each row. Note: This column displays all quantities traded since you launched X_TRADER.
HedgedPos	Displays the number of contracts you designate as being hedged in any of the following manners: <ul style="list-style-type: none"> • In the Control Bar. You cannot hedge your position using the Control Bar in the Order Block window. • In the Position Management window accessed through the context menu of Autotrader. Hedging a contract reduces the value in that particular row's OpenPos . By default, HedgedPos is hidden. (See Restoring Hidden Rows or Columns)
AvgPrice	Displays the average buy or sell price for the current position.

Market Section

MARKET						
mBidQty	mBidPrc	mAskPr	mAskQty	LTP	LTQ	NetChange

Use the **Market** section to:

- Monitor current market conditions.
- Open a **Floating Order Entry** window for a contract.
- Calculate Implieds.
- Highlight **Market Bid** and **Market Ask** columns when your orders are at the top of the book:
 - **Market Ask** columns: Background default color is yellow; text default color is red.
 - **Market Bid** columns: Background default color is yellow; text default color is blue.

MARKET						
mBidQt	mBidPr	mAskPr	mAskQt	LTP	LTQ	NetCh
668	108.75	108.76	387	108.78	156	-0.17

Note: Because the values of these fields depend upon current market conditions, you cannot edit them.

Field	Description
mBidQty	Displays the quantity of the current market's best bid.
mBidPrc	Displays the price of the current market's best bid.
mAskPrc	Displays the price of the current market's best ask.
mAskQty	Displays the quantity of the current market's best ask.
LTP	Displays the last traded price of the contract.
LTQ	Displays the last traded quantity of the contract.
Net Change	Displays the difference between the last traded price and the previous trading day's settlement price.

Working Section

WORKING			
wBidQty	wBidPrc	wAskPrc	wAskQty

Use the **Working** section to:

- Monitor your current bids and offers for that particular row.
- Highlight **Working Bid** and **Working Ask** columns when your orders are at the top of the book:
 - **Working Ask** columns: Background default color is white; text default color is red.
 - **Working Bid** columns: Background default color is white; text default color is blue.

WORKING			
wBid	wBidPrc	wAskPr	wAs
2	108.75	108.76	2

Note: Because these fields only display your working orders, you cannot edit them.

Field	Description
WBidQty	Displays the quantity of your working bid.
WBidPrc	Displays the price on your working bid.
WAskPrc	Displays the price of your working offer.
WAskQty	Displays the quantity of your working offer.

Scratch Section

SCRATCH			
sBidQty	sBidPrc	sAskPrc	sAskQty

Also referred to as the **Scratch Pad**, the **Scratch** section displays current bids and asks calculated by Autotrader according to your assigned profile. If you selected Direct Order Entry as your **Profile Base Price**, the Scratch section displays bid and ask prices and quantities from Excel links or formulas entered directly into it.

Depending on the value of your throttle quoting, the **Scratch** section values might not be submitted to the market.

If you select Market, Single Theo, or Bid/Ask Theo as your **Profile Base Price**, the **Scratch** section is read only. You cannot interact with it and it only displays the current bids and asks.

When your contract is assigned to a profile with Direct Order Entry as its **Profile Base Price**, you can use the **Scratch Pad** to:

- Create, adjust, and submit orders during the trading session.
- Link Autotrader to an Excel spreadsheet. The values in Excel seed the **Scratch** section.
- Enter formulas to calculate bid and ask prices and quantities

Note: Each of the three types of trading listed above (Manual, Excel links, and Program) requires a different procedure for configuring the fields listed in the table below.

Field	Description
SBidQty	Sets the quantity of your scratch bid.
SBidPrc	Sets the price on your scratch bid.
SAskPrc	Sets the price of your scratch offer.
SAskQty	Sets the quantity of your scratch offer.

Profile Parameters Section

PROFILE PARAMETERS						
BidOffset	BidQty	BidAllow	AskOffset	AskQty	AskAllow	MaxPos

Use the **Profile Parameters** section to display your current profile settings. Autotrader uses the settings in this section to determine how it trades.

In regards to these settings:

- See the **Profile Setup Page Overview** on page 30 to set them.

Note: Your changes are lost if you delete the row or switch the row's assigned profile.

- Click **Reset Default Profile Values** from the context menu to revert to your originally configured Profile Parameters.

Field	Matching Parameter in Profile Setup Page
BidOffset	Bid Offset
BidQty	Bid Quantity
BidAllow	Bid Change Allowance
AskOffset	Ask Offset
AskQty	Ask Quantity
AskAllow	Ask Change Allowance
MaxPos	Maximum Position

Cover Orders Section

COVER ORDERS	
CoverOffset	Enable

Use the **Cover Order** section to:

- Set and edit your cover order offset.
- Enable or disable the cover order offset.

Field	Description
CoverOffset	Offset of the cover order. Sets the number of price units away from the fill price at which Autotrader submits its covering orders: <ul style="list-style-type: none"> • For a filled bid, Autotrader submits the covering order above the fill price with the appropriate offset. • For a filled offer, Autotrader submits the covering order below the fill price with the appropriate offset.
Enable	When selected, Autotrader automatically places offset covering orders for that row's contract when you receive a fill on a quote submitted by Autotrader.

Updates Section

UPDATES
Update Method

Use the **Updates** section to enable the **Update Method** feature.

Field	Description
Update Method	<p>From this section you can change the Update Method set on the Profile Setup Page.</p> <ul style="list-style-type: none"> • Use Cancel/Replace: deletes your quote order and sends a new order to the market. • Use Cancel/Replace partial fill quantity: Autotrader deletes your quote order and sends a new order to the market with the remaining quantity of your order instead of the original quantity. <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p>Example: You have an order for a Qty of 20. You get filled on a Qty of 15. Instead of replacing the original Qty 20, a new order is sent with a working Qty of 5.</p> </div> <ul style="list-style-type: none"> • Use Change: Autotrader sends a change request to the exchanges that accept them. Changes are counted as one transaction instead of two.

Theo Prices Section

THEO PRICES							
TheoSIn	TheoBid	TheoAsk	Delta	Gam	ImpVol	Vega	Theta

Use the **Theo Prices** section to generate:

- A single theoretical price to use as a base when placing bids and offers.
- A theoretical bid and ask to use as bases when placing bids and offers.
- Theoreticals to help you make better informed trades.

Generate your theoretical values in one of two ways:

- Use formulas in the Theoretical cells.
- Create links to a theoretical generator that uses the OLE standard (e.g., Excel).

Note: You cannot use formulas in Order Block to generate Theoretical prices (although you can create a link to a theoretical generator).

After you set up the theoretical fields, you can create a profile that uses theoretical prices as the **Profile Base Price** for determining your bids and offers. Refer to the **General Information Section** on page 33.

Field	Description
TheoSingle	Links to your theoretical price generator.
TheoBid	Links to your theoretical Bid generator.
TheoAsk	Links to your theoretical Ask generator.
Delta	Links to your Delta generator. Autotrader uses this field for option trading.
Gamma	Links to your Gamma generator. Autotrader uses this field for option trading.
ImpVol	Links to your ImpVol generator. Autotrader uses this field for option trading.
Vega	Links to your Vega generator. Autotrader uses this field for option trading.
Theta	Links to your Theta generator. Autotrader uses this field for option trading.

Note: Delta, Gamma, ImpVol, Vega, and Theta are values used in options trading. Autotrader provides columns to display these theoreticals, but does not provide pricing models for their automatic generation. Instead, you must import these values from your theoretical price generator or Excel spreadsheet.

Formula Section

FORMULA				
fA	fB	fC	fD	fE

Note: You cannot use formulas in Order Block.

This section houses formulas you want Autotrader to use to generate values for specific trading parameters. Use the **Formula** section to perform these procedures:

- Entering a formula into the **Formula** section
- Renaming a formula column
- Referencing an entered formula from any parameter field. Refer to **Formula Use Examples** on page 88

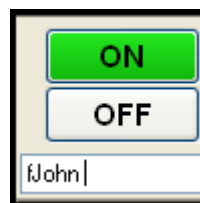
► To enter a formula into the Formula section:

1. Scroll to the far right of the window.
2. Click the cell in a **Formula** column for the row in which you want to use a formula.
For the first formula, use the **Formula A** column; for the second formula, use the **Formula B** column; etc. If you use more than two formulas, you must show the columns using the **Show/Hide** dialog box.
3. Type the formula you want to store.
4. When entering your formula, you can reference specific cells in this row or other rows.
 - If you want to reference a cell from this row, in the appropriate section of the formula, type the name of the formula column that contains the formula(s) you want to reference. (e.g., =fA references the cell in fA for that row)
 - If you want to reference a cell in another row, either use the row number or the RowName in the appropriate section of the formula. Both of these columns are hidden by default, and you must use the **Show/Hide** dialog box to show them.
5. If you want to use this formula in the future, save your workspace.

You successfully entered a formula into the formula section.

► To rename a formula column:

1. Click the letter in the **Formula** section that you want to rename.
2. In the space between the **Control Bar** and the grid, type the name you want to give to the column.
3. Press **Enter**.



You successfully renamed a formula column.

Open/Close Section

Open/Close	
BidOC	AskOC

Use the **Open/Close** section to identify whether or not you are initiating a position or closing an existing position. The **Open/Close** column is initially disabled.

CONTROL				Open/Close	POSI		
Man	Aut	Profile	Account	BidOC	NetP	mBidQt	mBidPr
<input type="radio"/>	<input checked="" type="radio"/>	theo	<Default>	C		81	89225
<input checked="" type="radio"/>	<input type="radio"/>		<Default>			66	99200
<input checked="" type="radio"/>	<input type="radio"/>		<Default>			291	11004
<input checked="" type="radio"/>	<input type="radio"/>		<Default>			4	3140.5
<input checked="" type="radio"/>	<input type="radio"/>		<Default>			25	2484.0

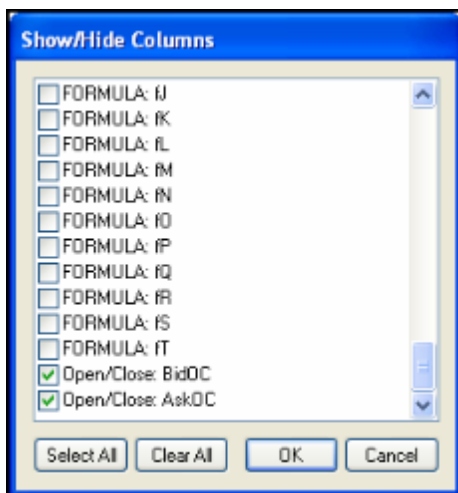
Options orders can include an identifier in the Open/Close column.

Options orders require the open/close designation.

- If you send in a sell order with an O designation, short sale rules apply and you cannot sell on a downtick.
- If you send in a sell order with a C designation, you are closing out a long position and your sell order can be filled on a downtick.

► To view this column in Autotrader:

1. Right-click in the grid to display the context menu.
2. Click **Hide/Show Cols** to display the **Show/Hide** dialog box.
3. Scroll down to the end of the list.
4. Click **Open/Close** to display a checkmark in the box.



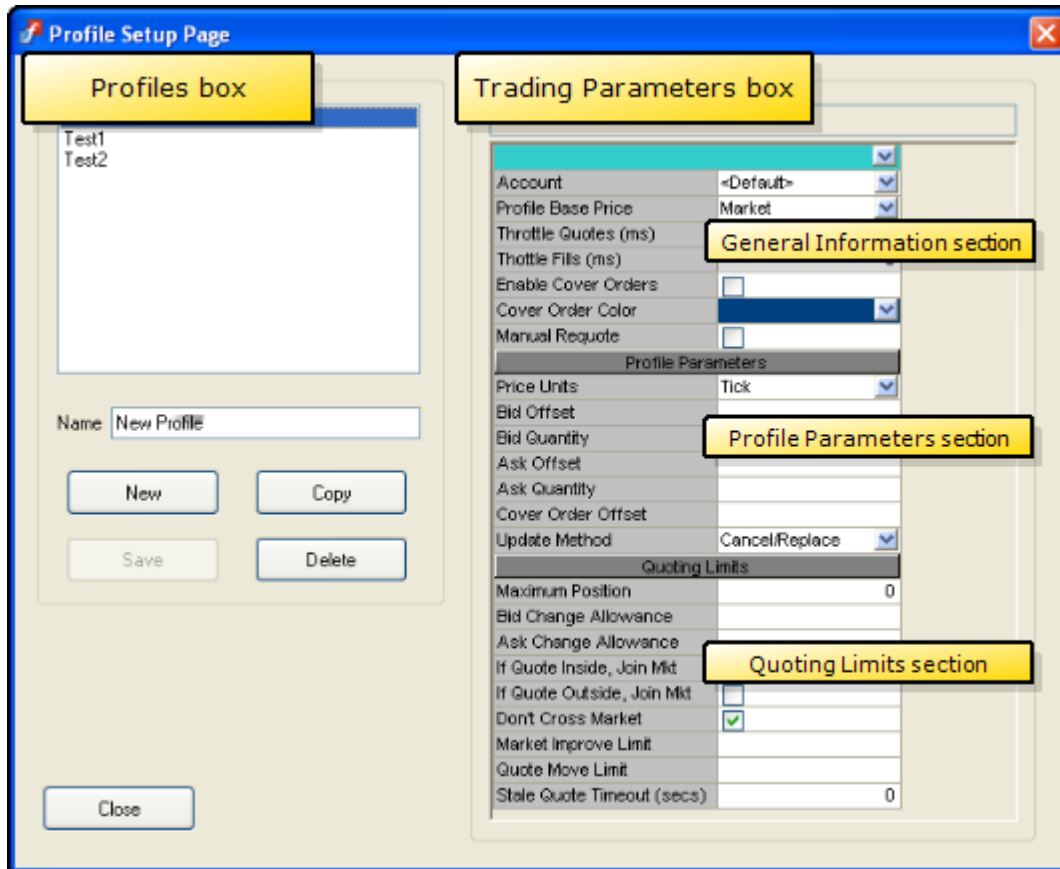
5. Click **OK**.

The grid displays the **Open/Close** column.

You successfully viewed this column in Autotrader.

Profile Setup Page Overview

Use the **Profile Setup Page** to define the trading parameters Autotrader uses to submit orders to the market. Parameters include trading specifications (Bid/Ask prices, quantities, and offsets), quoting limits, and account information.



The **Profile Setup Page** has two main components:

- **The Profiles box:** This box lists the profiles you create. These profiles contain the trading parameters you configure in the **Trading Parameters box**.
- **The Trading Parameters box:** This box contains the trading parameters that make up a profile. The trading parameters tell Autotrader how and when to submit orders and interact with the market.

► To open the Profile Setup Page:

1. Open Autotrader.
2. Right-click anywhere in the Autotrader™ grid to access the context menu.
3. Click **Profile Setup Page**.

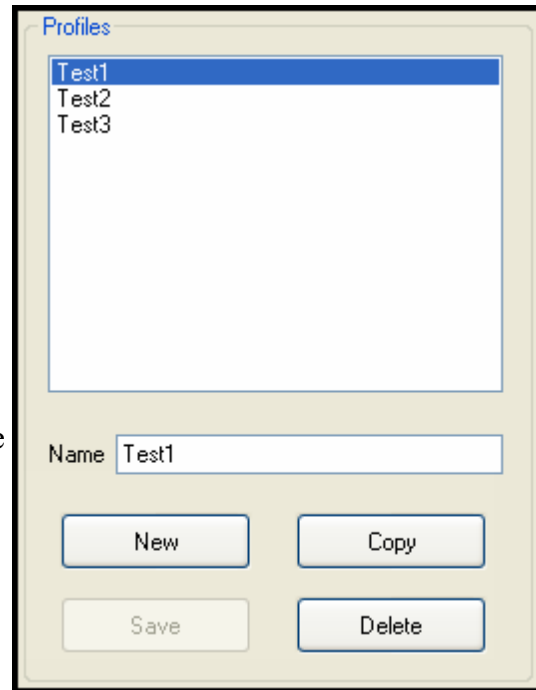
You successfully opened the **Profile Setup Page**.

Profiles Box

The **Profiles** box displays all profiles by name that you have configured in the **Trading Parameters** box and saved. It also contains:

- **Name** field
- **New** button
- **Save** button
- **Copy** button
- **Delete** button

Refer to **Creating Trading Profiles** on page 37 for procedures on creating, editing, and deleting trading profiles.



Trading Parameters Box

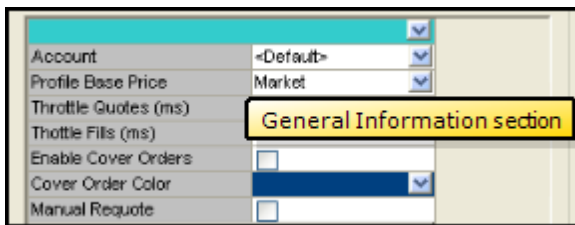
The **Trading Parameters** box has three sections:

- **General Information:** This section contains general information used by all contract expirations in the particular profile.
- **Profile Parameters:** This section contains specific trading parameters for the profile. Parameters include prices, quantities, market offsets, and cover order information for the Bid and Ask.
- **Quoting Limits:** This section configures the behavior of Autotrader in response to market conditions. In addition, it sets your position and market improve limits.

The screenshot displays the Trading Parameters box with three sections highlighted by yellow callouts:

- General Information section:** Includes fields for Account (set to -Default-), Profile Base Price (set to Market), Throttle Quotes (ms) (0), Throttle Fills (ms), Enable Cover Orders (checkbox), Cover Order Color (dropdown), and Manual Regote (checkbox).
- Profile Parameters section:** Includes fields for Price Units (set to Tick), Bid Offset, Bid Quantity, Ask Offset, Ask Quantity, Cover Order Offset, and Update Method (set to Cancel/Replace).
- Quoting Limits section:** Includes fields for Maximum Position (0), Bid Change Allowance, Ask Change Allowance, If Quote Inside, Join Mkt, If Quote Outside, Join Mkt, Dont Cross Market (checkbox checked), Market Improve Limit, Quote Move Limit, and Stale Quote Timeout (secs) (0).

General Information Section



Use the **General Information** section to configure the parameters listed below.

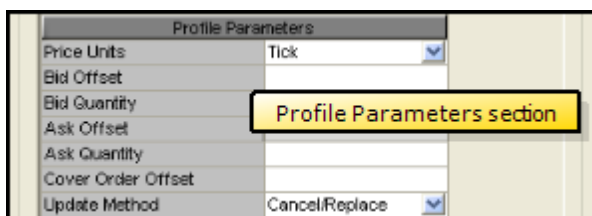
Parameter Name	Description
Account	Displays all customer accounts you set up in X_TRADER. Note: changes made to displayed account profiles automatically update the grid.
Profile Base Price	Displays the following options: <ul style="list-style-type: none"> • Market Price: Sets the base price of the profile according to the current market price. • Single Theo: Sets the base price of the profile according to a single theoretical price you define. Import this price into the TheoSingle column. • Bid/Ask Theo: Sets the base price of the profile according to theoretical bid and theoretical ask prices you define. Import these prices into the TheoBid and TheoAsk columns. • Direct Order Entry: Sets the base price of the profile according to prices set in an external application that you must link to Autotrader. You must paste prices directly into the scratch pad.
Throttle Quotes	Regulates the frequency (in milliseconds) at which Autotrader sends quotes to the market. Regulating this frequency helps you avoid exchange fees for quoting excessively. If this field is zero (0), Autotrader updates its quotes whenever Profile Base Price changes. Refer to Throttle Quoting Example on page 83. Note: If you are the market, Autotrader does not change your order.
Throttle Fills	Regulates the frequency (in milliseconds) at which you throttle between fills to give your spreadsheet time to update the position. Regulating this frequency, helps prevent you from regularly getting double filled on the second leg of a spread if you use both Autotrader and Excel to spread. This feature is better than throttling between orders because you can continue to work the second leg of a spread.
Enable Cover Orders	Configures Autotrader to cover your orders. When an order is completely or partially filled on one side of the market, Autotrader submits a covering order on the opposite side of the market. Example: If a bid gets filled, Autotrader submits an offer. Use the Cover Order Offset box in the Profile Parameters Section to offset your cover orders from the fill price.
Cover Order Color	Sets the color Autotrader uses to designate cover orders it submits to the market.

Parameter Name	Description
Manual Requote	Allows you to control the number of fills Autotrader completes. This feature stops fills after an initial fill. Therefore, Autotrader does not continue to fill orders that you either do not want or do not even know about. You must click Update Orders to requote.

Profile Parameters Section

You use the **Profile Parameters** section to define your trading parameters. Autotrader uses these parameters to determine how it behaves when submitting and removing quotes to and from the market.

Note: You can use formulas in any numeric cell (i.e., **Offsets** and **Quantities**) to create dynamic values.



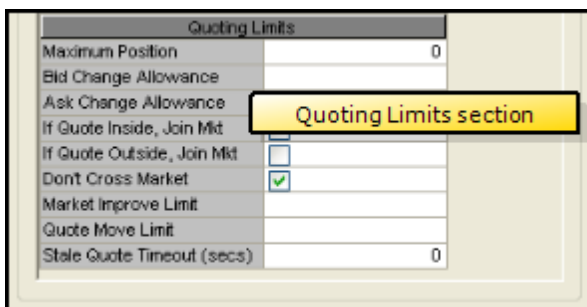
Parameter Name	Description
Price Units	Sets the units Autotrader uses when calculating and displaying parameter values. Your options are: <ul style="list-style-type: none"> • Ticks • Currency Price Units defaults to Ticks .
Bid Offset	Sets the number of price units away from the selected Profile Base Price at which Autotrader bids. When the market moves, Autotrader adjusts your order by the offset. You set how frequently orders are sent using the Throttle Quoting feature in the General Information section. Note: For all offsets, a positive number sets Autotrader to submit the order away from the Profile Base Price . A negative number sets Autotrader to submit the order inside the Profile Base Price .
Bid Quantity	Sets the default bid quantity Autotrader uses when bidding.
Ask Offset	The same as Bid Offset above except it affects the Ask not the Bid.
Ask Quantity	The same as Bid Quantity above except it affects the Ask not the Bid.
Cover Order Offset	Sets the number of price units away from the fill price Autotrader submits its covering orders: <ul style="list-style-type: none"> • For a filled bid, Autotrader submits the covering order above the fill price with the appropriate offset. • For a filled offer, Autotrader submits the covering order below the fill price with the appropriate offset.
Update Method	Addresses how price changes affect your quote orders: <ul style="list-style-type: none"> • Use Cancel/Replace: Autotrader deletes your quote order and sends a new

Parameter Name	Description
	<p>order to the market.</p> <ul style="list-style-type: none"> • Use Cancel/Replace partial fill quantity: Autotrader deletes your quote order and sends a new order to the market with the remaining quantity of your order instead of the original quantity. <p>Example: You have an order for a Qty of 20. You get filled on a Qty of 15. Instead of replacing the original Qty 20, a new order is sent with a working Qty of 5.</p> <ul style="list-style-type: none"> • Use Change: Autotrader sends a change request to the exchanges that accept them. Changes are counted as one transaction instead of two.

Quoting Limits Section

This section configures how Autotrader responds to market conditions. In addition, it sets the threshold for your maximum position warning.

Note: You can use formulas in any numeric cell (i.e., **Maximum Position**, **Change Allowances**, and **Market Improve Limit**) to create dynamic values.



Parameter Name	Description
Maximum Position	<p>Sets the maximum open position (used for both long and short) you can reach before Autotrader stops quoting the position-increasing side of the market.</p> <p>When you reach this maximum position, Autotrader notifies you via the Quote Exceeds Maximum Position window but continues to quote the position-reducing side of the market.</p> <p>When your position dips below the Maximum Position setting, Autotrader resumes quoting.</p> <p>Note: Your Max. Position Limit does not supersede risk parameters set up by your risk administrator.</p>
Bid Change Allowance	Sets the minimum amount of change from the Base Profile Price the best market bid must move before Autotrader adjusts its quotes.
Ask Change Allowance	Sets the minimum amount of change from the Base Profile Price the best market offer must move before Autotrader adjusts its quotes.
If Quote Inside, Join Mkt	<p>Adjusts any order inside the current market to match the current market price.</p> <p>Use this check box in tandem with a theoretical pricing or direct order entry model.</p>

Parameter Name	Description
If Quote Outside, Join Mkt	Adjusts any order outside the current market to match the current market price. Use this check box in tandem with a theoretical pricing or direct order entry model.
Don't Cross Market	Rejects any order if it crosses the market. Default is off. Use this check box in tandem with a theoretical pricing or direct order entry model. Note: Cross order checks occur when Autotrader quotes automatically. Refer to the Control Section on page 19.
Market Improve Limit	Sets the limit of price units by which a quote can improve the market. If an order attempts to improve the market more than the set limit, Autotrader adjusts the order so it remains within the set limit. Use this parameter in tandem with a theoretical pricing or direct order entry model.
Quote Move Limit	Sets how far the quote moves and changes. If the new quote exceeds the Quote Move Limit , Autotrader does not send it to market and a warning message appears. Enabling this field is recommended if you use your own theoretical formulas and spreadsheet. Note: Quote Limit checks only occur when Autotrader quotes automatically. Refer to the Control Section on page 19.
Stale Quote Timeout (secs)	Checks the effectiveness of your theoretical pricing spreadsheet. If your quote does not move in the seconds you set, Autotrader notifies you to check your spreadsheet. Enabling this field is recommended if you use your own theoretical formulas and spreadsheet. Note: Autotrader deletes the outdated quotes.

Creating Trading Profiles

Create trading profiles to define the parameters you want Autotrader to use when submitting orders and interacting with the market. Trading parameters can reference theoretical prices, actual market prices, or be setup for direct order entry.

Before performing these procedures, you should be familiar with the functional descriptions of the available trading parameters. Refer to the **Profile Setup Page Overview** on page 30.

Note: You can use formulas in any numeric cell (i.e., offsets, quantities, position limits, change allowances, etc.) to determine dynamic values.

To define your profiles and their associated trading parameters, perform the following procedures:

- Creating Trading Profiles
- Editing Trading Profiles
- Deleting Profiles

► To create trading profiles:

1. Open Autotrader.
2. Open the **Profile Setup Page**.
3. In the **Name** field, type the name of the profile you want to create.
4. If you want to assign a custom color to your profile, do so now.
5. Configure the **General Information** section by performing the following tasks:
 - In the **Account** box, click the **Customer Account** you want to use as the default account with this profile.
 - In the **Profile Base Price** box, click to select the base price Autotrader uses to place its orders in the market. If you select Direct Order Entry, the Bid and Ask Offsets and Quantities (for original and reserve) disappear. Direct Order Entry uses the Scratch Pad to send orders to the market.
 - By default, **Throttle Quoting** is set at 500 milliseconds. If you do not want to use throttle quoting, set this value to 0.
 - If you want Autotrader to submit covering orders whenever you get filled, click the **Enable Cover Orders** check box.
 - If you want to assign a different color to your cover orders, do so now.

6. Configure the **Profile Parameters** section by performing the following tasks:
 - In **Price Units**, click the type of price unit you want to use with this profile.
 - In **Bid Offset**, set the offset at which you want Autotrader to start placing bids in the market.
 - In **Bid Quantity**, set the quantity of the initial bid that Autotrader sends to the market.
 - In **Ask Offset**, set the offset at which you want Autotrader to start placing offers in the market.
 - In **Ask Quantity**, set the quantity of the initial offer that Autotrader sends to the market.
 - If you are using **Cover Orders**, set the offset (away from the filled price) at which you want Autotrader to submit the covering order.
 - In **Update Method**, set how you want to price changes to affect your quote orders.
7. Configure the **Quoting Limits** section by performing the following tasks:
 - In **Maximum Position**, type your maximum allowable position.
 - In **Bid Change Allowance**, type the amount of market movement that must occur (in Price Units) before Autotrader cancels and replaces its bids.
 - In **Ask Change Allowance**, type the amount of market movement that must occur (in Price Units) before Autotrader cancels and replaces its offers.
 - If you use theoreticals (Single or Ask and Bid) as your **Profile Base Price**, refer to **Additional Theoretical Configurations** on page 39.
8. Click **Save**.
9. To go back to the **Autotrader** window, click **Close**.

You successfully created trading profiles.

► **To edit trading profiles:**

1. Open the **Profile Setup Page**.
2. In the **Profiles** box, click the name of the profile that contains the parameters you want to view.
3. Edit the parameters as described in the **Creating Trading Profiles** procedure.
4. Click **Save** to retain your changes.

You successfully edited trading profiles.

► **To delete a saved profile:**

1. Open the **Profile Setup Page**.
2. In the **Profiles** box, click the name of the profile you want to delete.
3. Click **Delete**.

You successfully deleted a saved profile

Additional Theoretical Configurations

If Quote Inside, Join Mkt	<input type="checkbox"/>
If Outside, Join Mkt	<input type="checkbox"/>
Don't Cross Market	<input type="checkbox"/>
Market Improve Limit	

Perform the following tasks in the **Profile Setup Page** when you set the **Profile Base Price** to Single Theo or Bid/Ask Theo.

► **To define trading parameters for theoreticals:**

1. If you want Autotrader to adjust orders that would fall inside the market to the actual market price, click to select the **If Quote Inside, Join Mkt** checkbox.
2. If you want Autotrader to adjust orders that would fall outside the market to the actual market price, click to select the **If Outside, Join Mkt** checkbox.
3. If you want Autotrader to reject orders that would cross the market, click to select the **Don't Cross Market** checkbox.
4. If you want to set a limit on how much an order can improve the market, in the **Market Improve Limit** box, type the number of price units beyond which Autotrader cannot better the market.
5. Click **Save**.
6. After you close out of the **Profile Setup Page**, you must link theoretical generators in Autotrader to import the theoretical values you are going to use.

You successfully defined trading parameters for theoreticals.

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CHAPTER 2

Autotrader Procedures

Follow these procedures to use Autotrader:

- Defining Trading Parameters
- Populating Autotrader
- Starting to Trade Using Autotrader
- Using the Control Bar
- Generating a Manual Order with the Scratch Pad
- Trading Autospreader Orders
- Dragging and Dropping Autotrader Orders in MD Trader
- Sending Orders with No Existing Market
- Assigning New Colors
- Cloning an Autotrader Row
- Replacing A Contract

Populating Autotrader

Before placing automatic trades with Autotrader, you must create at least one Trading Profile and define the trading parameters. You can create multiple profiles and assign different trading parameters to different contracts and expirations.



Tip: For optimal performance, TT recommends you use no more than 15 rows in an Autotrader grid. When populating it with contracts, take into consideration the following:

- Market timing and conditions
- Your personal trading strategies
- Volatility
- Degree of product updates
- Your hardware specifications

Follow these procedures to populate Autotrader with contracts:

- Populating Autotrader from Market Explorer
- Populate Autotrader using drag-and-drop from Market Explorer
- Populating Autotrader using drag-and-drop from the Market Grid
- Populating Autotrader using the Market Grid context menu

► To populate Autotrader from Market Explorer:

1. From the **Control Panel**, click the **Window** menu and choose **Market Explorer**.

- or -

From the **Control Panel**, click the  icon.

2. If you are logged into more than one exchange, in the **Exchanges** box, click the exchange whose product you want to find.
3. In the **Products** section, click the **down arrow** and choose your search filter.
4. Type your search criteria in the available space.
The **Instruments** field updates as you type.
5. From the **Instrument Type** box, click to toggle between the displayed types.
6. Press and hold the **CTRL** key and click the products you want to open.

- or -

To open all products in the **Instruments** field, click the **>>** button and skip to step 8.

7. Click the **>** button to transfer the products from the **Instruments** box to the **Selected Instruments** box.
8. Click the **Function** box in the upper right corner of the Market Explorer and choose **Autotrader**.
9. Click **Start**.

You successfully populated Autotrader from Market Explorer.

► **To populate Autotrader using drag-and-drop from Market Explorer:**

1. If Autotrader is not open, use the **Control Panel** to open it.
 2. From the **Control Panel**, click the **Window** menu and choose **Market Explorer**.
- or -

From the **Control Panel**, click the  icon.

3. If you are logged into more than one exchange, in the **Exchanges** box, click the exchange whose product you want to find.
4. In the **Products** section, click the **down arrow** and choose your search filter.
5. Type your search criteria in the available space.
The **Instruments** field updates as you type.
6. From the **Instrument Type** box, click to toggle between the displayed types.
7. From the **Instruments** box, press and hold the **CTRL** key and click the products you want to open.
8. With the cursor over one of the selected products in the **Instruments** box, click and hold the mouse button.
9. Continue holding the mouse button and drag the cursor to the open Autotrader.
When the cursor leaves the window, it changes to a circle with a diagonal line through it. When the cursor enters a window, it changes to include a plus [+] sign.
10. Release the mouse button.

You successfully populated Autotrader using drag-and-drop from Market Explorer.

► **To populate Autotrader using drag-and-drop from the Market Grid:**

1. If Autotrader is not open, use the **Control Panel** to open it.
2. From an open Market Grid, click the product and hold the mouse button.
3. Continue holding the mouse button and drag the cursor to the open Autotrader.
When the cursor leaves the window, it changes to a circle with a diagonal line through it. When the cursor enters a window, it changes to include a plus [+] sign.
4. Release the mouse button.

You successfully populated Autotrader using drag-and-drop from the Market Grid.

► **To populate Autotrader using the Market Grid context menu:**

1. In the Market Grid, right-click in the row of the product for which you want to populate Autotrader.
2. Click **Autotrader**.
An **Autotrader** window appears populated with the product you selected.

You successfully populated Autotrader using the Market Grid context menu.

Starting to Trade Using Autotrader

Note: Included in each procedure is a step to mark the row active. The **Active** column is next to the **Status** column, and you cannot trade in Autotrader until your row is marked active.

Follow these procedures to start trading using Autotrader:

- Profile Trading
- Trading Theoreticals
- Direct Order Entry

► To trade using profiles:

1. Open Autotrader.
2. Populate Autotrader with the contracts you want to trade.
3. If you have not yet set up your trading profiles, do so now.
4. In the **Control** section of the grid, in the **Profile** column for the contract row you want to trade, click the profile you want Autotrader to use.



This example, has the Test1 profile selected. If this profile has multiple expirations, the expiration of the row's contract determines which set of trading parameters Autotrader uses from the profile.

5. If you want to assign a different customer account, in the **Account** column, click the down arrow and select one from the list.

The example in the previous step has the TEST1 account selected.

6. In the **Control Bar**, click **ON** to enable the grid.
7. In the **Row Identifier** section, in the **Active** column for the contract row you want to trade, click to select the **Active** check box.

You can now submit orders.

8. In the **Control** section, click **Auto** to start Autotrader trading using the parameters you set in the selected profile.
9. If you want to use this setup in the future, save your workspace.

You successfully traded using profiles.

► **To trade using theoreticals:**

1. Open Autotrader.
2. Populate Autotrader with the contracts you want to trade.
3. If you have not yet set up your trading profiles, do so now.

Note: In the **Profile Base Price** field, you must select either Single Theo or Bid/Ask Theo.

4. In the **Control** section of the grid, in the **Profile** column for the contract row you want to trade, click the profile with the type of theoretical profile you want Autotrader to use.

CONTROL				
Man	Aut	Profile	Account	TransC
<input type="radio"/>	<input checked="" type="radio"/>	Test1	TEST1	4

This example, has the Test1 profile selected. This profile is set to Bid/Ask Theo.

5. If you want to assign a different customer account, in the **Account** column, click the down arrow and select one from the list.

The example in the previous step has the TEST1 account selected.

6. In the **Theo Price** section, link your theoretical generator into either:
 - The **TheoSingle** column if you are using a Profile Base Price set to Single Theo.
 - or -
 - The **TheoBid** and **TheoAsk** columns if you are using a Profile Base Price set to Bid/Ask Theo. Link your theoretical Bid generator to the **TheoBid** column and your theoretical Ask generator to the **TheoAsk** column.

Contract	CONTROL		THEO PRICES		
	Man	Aut	TheoSIn	TheoBid	TheoAsk
TTSIM-D: 6E DEC05	<input checked="" type="radio"/>	<input type="radio"/>			
TTSIM-D: ES DEC05	<input checked="" type="radio"/>	<input type="radio"/>			
TTSIM-D: FESX DEC	<input checked="" type="radio"/>	<input type="radio"/>	2905.5		

7. In the **Control Bar**, click **ON** to enable the grid.
8. In the Row Identifier section, in the **Active** column for the contract row you want to trade, click to select the **Active** check box.

You can now submit orders based on your theoretical prices.

9. In the **Control** section, click **Auto** to start Autotrader trading using the parameters you set in the selected profile.
10. If you want to use this setup in the future, save your workspace.

You successfully traded using theoreticals.

► **To trade using direct order entry:**

1. Open Autotrader.
2. Populate Autotrader with the contracts you want to trade.
3. If you are going to submit orders to the market automatically, you must set up a trading profile.
4. In the Control section of the grid, in the **Profile** column for the contract row you want to trade, click the appropriate profile you want Autotrader to use.

CONTROL				
Man	Aut	Profile	Account	TransC
<input type="radio"/>	<input checked="" type="radio"/>	Test1	TEST1	4

This example, has the Test1 profile selected.

5. If you want to assign a different customer account, in the **Account** column, click the down arrow and select one from the list.

The example in the previous step has the TEST1 account selected.

6. Populate your **Scratch** section by either:
 - Using Formulas
 - or -
 - Linking your order generator (i.e., your Excel spreadsheets)

Contract	CONTROL		SCRATCH			
	Man	Aut	sBid	sBidPrc	sAskPr	sAsk
TTSIM-D: 6E DEC05	<input checked="" type="radio"/>	<input type="radio"/>				
TTSIM-D: ES DEC05	<input checked="" type="radio"/>	<input type="radio"/>				
TTSIM-D: FESX DEC	<input checked="" type="radio"/>	<input type="radio"/>	1	2912	2921	1

7. In the **Control Bar**, click **ON** to enable the grid.
8. In the **Row Identifier** section, in the **Active** column for the contract row you want to trade, click to select the **Active** check box.

You can now submit orders.

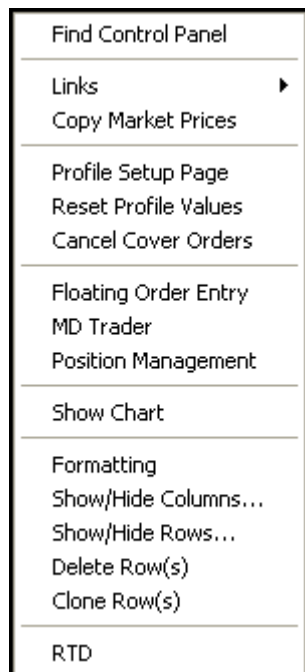
9. Do one of the following:
 - In the **Control** section, click **Auto** to start Autotrader trading using the parameters you set in the selected profile.
 - or -
 - In the **Control Bar**, click **Update Orders** to submit orders from the **Scratch** section.
10. If you want to use this setup in the future, save your workspace.

You successfully traded using direct order entry.

Using the Autotrader Context Menu

Right-click the **Autotrader** window to access the context menu.

The available menu options include:



- **Find Control Panel:** Displays the Control Panel.
- **Links:** Lets you copy, paste or delete Excel links in grid cells. Refer to **Linking Excel Spreadsheets (OLE Links)** on page 78.
- **Copy Market Prices:** For the selected row, seeds the market bid price and market ask price into the appropriate cells (**sBidPrc** and **sAskPrc**) in the **Scratch** section.
- **Profile Setup Page:** Displays the **Profile Setup Page**.
- **Reset Profile Values:** Resets all values in the **Profile Parameters** section of the grid to the original parameters you set.
- **Cancel Cover Orders:** Deletes all cover orders in the market.
- **Floating Order Entry:** Brings up a Floating Order Entry loaded with the selected contract. Alternatively, you can left-click a cell in the **Market** section.
- **MD Trader:** Displays MD Trader loaded with the contract of the row you right-clicked.
- **Position Management:** Displays the **Position Management** dialog box.
- **Show Chart:** Opens an X_STUDY chart for the selected contract.
- **Formatting:** Lets you customize fonts and borders.
- **Show/Hide Columns:** Lets you select which columns to show.
- **Show/Hide Rows:** Lets you select which rows to show.
- **Delete Rows:** Deletes selected rows.
- **Clone Rows:** Reproduces the selected rows.
- **RTD:** Opens the **RTD** dialog box, letting you copy formulas from Autotrader and paste them for use in Excel.

Submitting a Manual Order with the Scratch Pad

SCRATCH			
sBidQty	sBidPrc	sAskPrc	sAskQty

To submit manual orders via the Scratch Pad, you must either:

- Assign the row to a profile with a Profile Base Price set to Direct Order Entry.
- or -
- Set the row to Manual in the **Control** section.

► To submit orders manually:

Notes:

- In Steps 1 - 4 below, you can use formulas or Excel links to generate your prices and quantities.
- In Steps 2 - 3, you can copy current market prices to your **sBidPrc** and **sAskPrc** cells using the option called **Copy Market Prices** in the Autotrader context menu. Open the context menu in the row containing your Scratch Pad setup and market prices.

1. In the **sBidQty** column, type the quantity you want to bid.
2. In the **sBidPrc** column, type the price at which you want to bid.
3. In the **sAskPrc** column, type the quantity you want to offer.
4. In the **sAskQty** column, type the price at which you want to offer.
5. In the **Control Bar**, click **Update Orders**.
6. If at any time you want to resubmit your working orders, click **Update Orders**.
7. If you want to adjust your orders (price or quantity) repeat this procedure.

You successfully submitted orders manually.

⚠ Warning! If the row is assigned to a profile with Direct Order Entry as its Profile Base Price and is set to Auto, Autotrader automatically updates your working orders.

Dragging and Dropping Autotrader Orders in MD Trader

When Autotrader submits orders to the market, you can use MD Trader to view your working orders and adjust your cover orders.

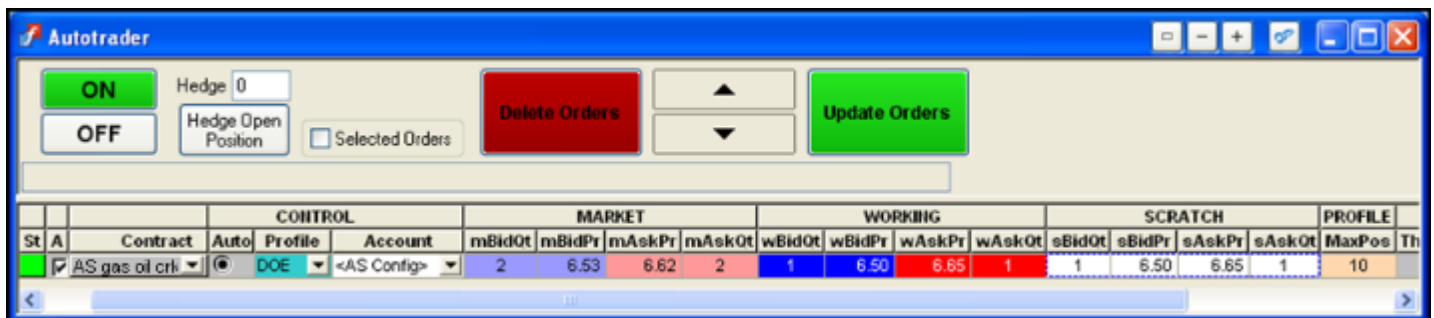
You can adjust the price to use when placing your cover orders. However, you cannot drag and drop normal profile orders submitted by Autotrader. Autotrader recognizes that these orders do not conform to its profile parameter setup, deletes them, and resubmits them according to its profile setup.

Trading Autospreader Orders in Autotrader

Any spread from the **Autospreader Manager** window can be drag dropped or launched into an **Autotrader** window.



Once Autospreader synthetic contracts are in Autotrader, you can create profiles to manage Autospreader spread orders using all the Autotrader features.



Example: Assume you want to link spread bid/ask prices and quantities directly into Autotrader and generate a spread open position of long or short a total of 10 spreads.

From the **Profile Setup Page**:

Profile Base Price

- Set the **Profile Base Price** to Direct Order Entry.

Quoting Limits
Maximum Position

- Set a **Maximum Position** of 10.

Don't Cross Market

- Consider unchecking the **Don't Cross Market** setting. Refer to the **Don't Cross Market** section below.

Once the Direct Order Entry Profile is created you can select it from the **Autotrader** window and create links to the Scratch bid/ask price and quantity fields. Autotrader will submit Autospreader spread orders until the Open Position is long or short 10 spreads.

Autospreader orders affect Autotrader in the following ways:

Don't Cross Market Setting

By default, the Autotrader profile setting **Don't Cross Market** is checked, meaning Autotrader will reject orders that cross the inside market. Since Autospreader synthetic orders working in Autotrader could cross the synthetic spread market as a part of a spread fill, you should uncheck the Autotrader profile setting **Don't Cross Market** for any Profile that is created for Autospreader orders.

Contract Field

In the Autotrader Grid, the **Contract** field displays the Autospreader spread name.

Account and Open Position Fields

Spreads default to <AS Config> in the **Account** field, indicating the customer accounts set up for each leg in the **Autospreader Configuration** window are in effect.

Note: If you choose an account other than <AS Config> you will override the customer accounts set for each leg in the Autospreader configuration. This is the same behavior for the Customer Account field in the Autospreader MD Trader.

The **Open Position** field tracks all Autospreader synthetic spread fills generated through Autotrader. This includes counting spread fills that are the result of quoting in more than one leg (i.e. double or triple fills). If the customer is changed, the **Open Position** field displays the open position of the current customer.

Multiple Fills

Quoting in more than one leg can result in double and triple spread fills which could exceed your maximum position setting.

Example:

- Quoting both sides of a 1x1 spread, you enter a 3 lot spread order with maximum position of 6.
- The 3 lot spread order fills and your open position is 3.
- A new 3 lot spread order is submitted because a 3 lot spread fill will not exceed the maximum position of 6.
- The 3 lot spread is double filled which results in exceeding the maximum position of 6 with a total of 9 spreads.

Update Method

All spread order updates are sent as **Change** orders. If you switch the Update Method to Cancel/Replace or Cancel/Replace for partial fill, the spread order is still sent as a **Change**.

Partial and Legged Quantities

Autotrader accounts for the partial and legged quantities of synthetic orders. This means Autotrader will not send any new spread orders until all components from the previously submitted spread, including working, pending and legged spread orders, are completely gone (filled or deleted).

Legged State

Spreads that are in a partial Legged state can submit change orders when the Scratch price changes.

Example:

- A 3 lot 1x1 spread is working a price of 4.2.
- A 1 lot fill in the quoting order triggers a one lot hedge order that gets legged.
- The current state of the spread order is Working 2 and Legged 1 (W:2 L:1).
- The scratch price changes to 4.3 and the remaining balance of the working spread orders (2), is repriced to 4.3.
- The legged hedge order remains working at the previously submitted hedge price.

Pending State

Spreads in a Pending state can submit change orders when the Scratch price changes.

Example:

- A 2 lot 5x2 spread order is working at a price of 4.2.
- A 1 lot fill in the 5 lot quoting order does not trigger a hedge order and the current state of the spread order is Working 1 and Pending 1 (W:1 P:1).
- The scratch price changes to 4.3 and the spread balance of Working 1 and Pending 1 is repriced to 4.3.

Completely Legged State

Spreads that are in a completely Legged state (no Working or Pending quoting orders), do not submit a change order when the Scratch price has changed. Autotrader ignores the Scratch price change and does not attempt a change to the spread order.

Disabled Fields

The **Net Position** and **Net Change** fields are disabled for spreads. In addition, if the spread is not tradable for any reason, the entire row containing the spread order displays a maroon background.

Sending Orders with No Existing Market

You receive the following dialog box when you attempt to submit orders on a contract without a market. This happens when you are using Direct Order Entry or a Theo (Single or Bid/Ask) as your Profile Base Price.



If you receive this dialog box, you can either:

- Submit the order anyway. Click **Yes**.
- Cancel your order. Click **No**.

If you always want to send orders to the market without receiving a prompt even if a market does not exist, select the **Don't prompt** box before clicking **Yes** or **No**.

Assigning Colors

You can change the following Autotrader colors:

Color	Description
Profile Color	Changes the entire profile color. The profile color appears in the Autotrader grid. MD Trader also displays it as a vertical stripe in working orders. The profile color is controlled by the long horizontal bar in the Profile Setup Page .
Cover Order Color	Changes the color associated with your cover orders. The cover order color is a field in the Profile Setup Page .
Contract Color	Changes the background and text color in the Autotrader grid. To customize this color, see Changing Grid Text and Background Colors.

► To assign a profile or cover order color:

1. Right-click the Autotrader grid to access the context menu.
2. Click **Profile Setup Page**.
3. Click the profile or cover order color bar:

The **Color** dialog box appears.



4. Click a color from the **Basic Colors** section.

- or -

Click **Define Custom Colors**. A color palette appears. Use the palette to select the custom you want to use. Click **Add to Custom Colors**. The color appears in the **Custom Colors** section.

5. Click **OK**.

You successfully assigned a profile or cover order color.

Cloning an Autotrader Row

You can clone an entire row from the Autotrader context menu. Then, you can use the Replace Contract feature to make the formulas work for a different contract.

► **To clone an Autotrader row:**

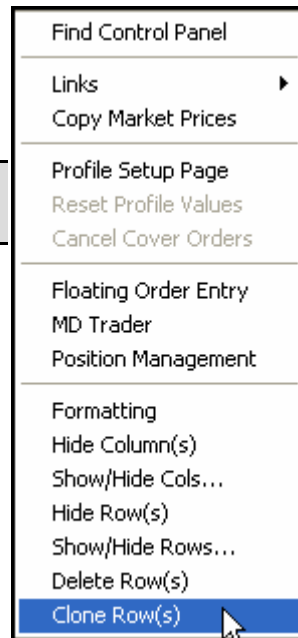
1. Click the Autotrader row you want to clone.

Note: To clone multiple rows, press and hold the `CTRL` key and continue clicking rows.

2. Right-click to access the context menu.
3. Click **Clone Row(s)**.

The new row appears directly beneath the row you selected.

You successfully cloned an Autotrader row.



Replacing A Contract

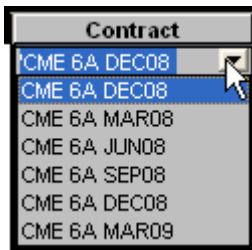
You can change the contract associated with the a selected row's formulas and settings.

Follow these procedures to replace a contract:

- Replacing a contract using the drop-down list
- Replacing a contract using drag-n-drop

► To replace a contract using the drop-down list:

1. From the **Contract** column, click the drop-down list.



2. Click the contract you want to use from the list.

You successfully replaced a contract using the drop-down list.

► To replace a contract using drag and drop:

1. From an open Market Grid, click the selected product and hold the mouse button.
2. Continue holding the mouse button and drag the cursor to the open **Autotrader** window.

When the cursor leaves the window, it changes to a circle with a diagonal line through it. When the cursor enters a window, it changes to include a plus [+] sign.

		CONTROL					MARKET							
St	A	Contract	Man	Aut	Profile	Account	TransC	mBidOt	mBidPr	mAskPr	mAskOt	LTP	LTO	NetCh
	<input checked="" type="checkbox"/>	HOTSPOT-B AUDJP	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<Default>		238	86.700	86.730	153	86.540		
	<input checked="" type="checkbox"/>	HOTSPOT-B AUDJU	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<Default>		248	0.73375	0.73400	170	0.73440		

3. Move the cursor over the contract you want to replace and release the mouse button.

You successfully replaced a contract using drag and drop.

Generating an RTD Formula

The **RTD** dialog box lets you copy formulas from the Market Grid or Autotrader and paste them for use in Microsoft Excel where they update dynamically. There are several hundred available formulas ranging from the Best Ask Price (ASK) of a contract to accumulated traded contracts at the current last traded price (ACCLTQ). The formulas also exist in Native (\$) Decimal (#) and Tick (&) formats.

Notes:

- You must have Microsoft Excel 2002 or later to use formulas generated from the RTD interface.
- The RTD Generator includes the correct contract names for contracts with expiry days.

Example: BAX Mar09 now appears as BAX 16Mar09.

► To establish an RTD link:

1. In the Market Grid or Autotrader, right-click a cell in the row of a contract for which you want to generate a formula.

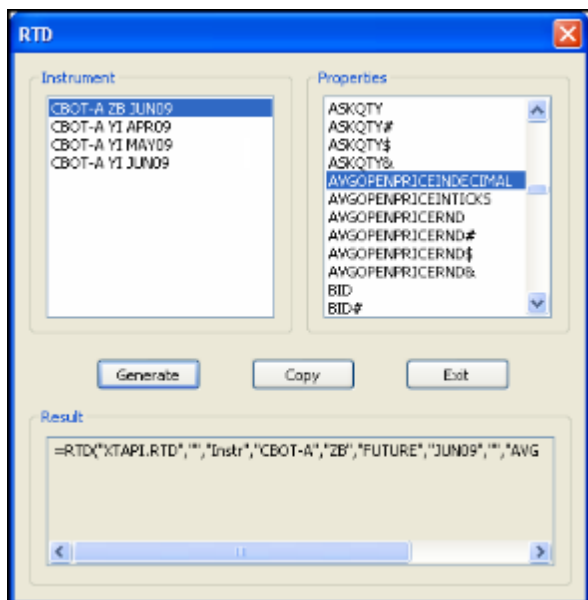
Note: If Click Trading is enabled, do not click in the **Bid/Ask** price columns.

2. From the Market Grid context menu, highlight **Links** and click **RTD**.

- or -

From the Autotrader context menu, click **RTD**.

The **RTD** dialog box appears.



3. In the **Instrument** section, click to select the contract you want to use.

Note: You can drag or drop other contracts from the Market Grid or Autotrader into the upper left **Instrument** section.

4. In the **Properties** section, click to select a property whose formula you want to paste in Excel.

Note: Press and hold the `Ctrl` key to select multiple properties

5. Click **Generate**.

In the **Results** box, the formula(s) appears. If multiple properties were selected, the formulas are in the same order as the properties.

6. Click **Copy**.

7. Navigate to Excel and paste the formula(s).

8. In the **RTD** dialog box, click **Exit**.

You successfully used the RTD interface.

Managing Your Position

The **Position Management** window assists you in hedging your Autotrader positions outside of X_TRADER. By including a **HedgedPos** (hedged position) column in addition to the **OpenPos** (open position) column, you can separate positions that are at risk from positions that have been hedged. Additionally, Autotrader uses the **Max. Position Limit** field to monitor your position for a given instrument.

Note: Whenever you hedge a quantity, it reduces your open position by the specified amount.

► To open the Position Management window:

1. In the Autotrader grid, right-click in the row that contains the contract (and associated strategy) that you want to hedge.
The context menu appears.
2. From the context menu, click **Position Management**.
The **Position Management** window appears.

You successfully opened the **Position Management** window.

Position Management Field Descriptions

Field	Description
Contract Bar	Displays the selected row's contract.
Open	Displays your current open position (in number of contracts).
Hedged	Displays your number of hedged contracts.
Apply to Hedged	Sets the number of contracts you want to hedge. This setting defaults to your current number of open contracts for the selected row. After setting the number of contracts you want to hedge, click OK .
Max. Position Limit	Displays your current maximum position setting. You can temporarily change this value here, but the Profile Setup Page controls your maximum position. Any value you enter seeds the MaxPos column in the Profile Parameters section on the Autotrader grid.
Account	Displays the current position of the account you are using.
Working Cover Orders - Bid	Displays the number of working cover Bids you have in the market for this contract.
Working Cover Orders - Ask	Displays the number of working cover Offers you have in the market for this contract.
Net	Displays your current net position.
Don't prompt, always trade below position limit	When selected, Autotrader always trades within the maximum allowable position. You are never prompted with a Quote Exceeds Maximum Position window. Autotrader continues to quote the position-reducing side of the market.

Hedging Your Position

Use the **Position Management** window to perform these procedures:

- Hedging your Position
- Adding to your Hedged Position
- Editing your Hedged Position
- Changing your Max Position

► To hedge your position:

1. Open the **Position Management** window.
2. In the **Hedged** field, type the total number of contracts you want to hedge.
3. Click **OK**.

You successfully hedged your position.

► **To add to your hedged position:**

1. Open the **Position Management** window.
2. In the **Apply to Hedged** field, type the number of contracts you want to hedge in addition to the current number of hedged contracts.
By default, the contents of the **Apply to Hedged** field equal your current open position.
3. Click **Apply to Hedged**.
4. Click **OK**.

You successfully hedged your position.

► **To edit your hedged position:**

1. Open the **Position Management** window.
2. In the **Open** field, type your desired open position.

Note: The value cannot exceed the sum of your total open position and hedged position.

- or -

In the **Hedged** field, type the total number of contracts you want hedged.

Note: The value cannot exceed the sum of your total open position and hedged position.

3. Click **OK**.

You successfully edited your hedged position.

► **To change your maximum position:**

1. Open the **Position Management** dialog box.
2. In the **Max. Position Limit** field, type your new maximum allowable position for the selected strategy.
3. Click **OK**.

You successfully changed your maximum position.

CHAPTER 3

Using Formulas

You can type a formula into any cell in Autotrader that uses numeric values. These cells include:

- The **Scratch** section. Use when your Profile Base Price is set to Direct Order Entry.
- The **Profile Parameters** section in the grid.
- Any numeric cell in the **Profile Setup Page**. (e.g., offsets, quantities, allowances, maximum position, and market improve limit)
- Any cell in the **Theo Prices** or **Formula** sections.

Warning! Do not use formulas with ticks. If you need to offset your values by ticks (i.e., =mbidprc-3), use the offset functionality on the Profile Setup Page.

▶ To enter formulas in Autotrader:

Note: If entering a formula in the **Formula** section in Autotrader, see the **Formula Section** on page 28 for the proper procedure.

1. Click the cell for which you want to generate a dynamic value.
2. Type the formula using the standard program syntax and information.
 - Begin the formula with an equal sign: =
 - Use the formula operators to generate mathematically derived values.
3. If you need to reference a cell:

Reference cells in the same row by their column name (e.g., **wBidPrc**, **sBidPrc**, etc.)

- or -

Reference cells in other rows by the column letter followed with no space by the row number or row name. (see the Row Identifier or Control Sections respectively)

Note: Enable **Column Headers** using the **Select Rows** option in the Autotrader™ context menu.

4. Exit the cell.
Once you type the formula and exit the cell, Autotrader begins to generate values for that cell.

You have successfully entered formulas in Autotrader.

Types of Formulas

Formulas must begin with an equal (=) sign and conform to the syntax:

= *expression* ; *constraint expression* // *comment*

where:

- *expression* defines the calculations needed to generate the value of a cell
- *constraint expression* places limits on acceptable values or the circumstances under which the calculation should take place. Constraint expressions establish conditions under which a formula operates or boundaries for valid results of the formula. A constraint expression can reference the cell in which it resides, using the symbol #
- *comment* is any text you want to attach to the cell. This text is not used in the formula.

Example:

```
=A1 + A2 ; #>2 && #<=B5 || #==C7
```

In this example, the value of the current cell is the sum of cells A1 and A2. That value must be either greater than 2 and less than or equal to the value of cell B5, or equal to the value of cell C7.

Use the following formulas with Autotrader to help define its trading behavior:

- Mathematical
- Statistical
- Conditional Statistical
- String Functions
- Financial Functions
- Logic Functions
- Date and Time Functions
- Miscellaneous Functions
- Embedded Tools

Mathematical Formulas

Formula	Description
@ABS(X)	Absolute value of X
@ACOS(X)	Arc cosine of X
@ASIN(X)	Arc sine of X
@ATAN(X)	2-quadrant arc tangent of X
@ATAN2(X, Y)	4-quadrant arc tangent of Y/X
@CEIL(X)	Smallest integer greater than or equal to X
@COS(X)	Cosine of X
@COSH(X)	Hyperbolic cosine of X
@DEGREES(X)	Converts the angle expressed in radians to degrees ()
@DET(M)	Determinant of the matrix range M, which must be a square matrix
@DOT(R1, R2)	Dot product of the vectors R1 and R2
@EXP(X)	-e raised to the X power
@FACT(N)	Value of N!
@FLOOR(X)	Largest integer less than or equal to X
@FRAC(X)	Fractional portion of X
@GAMMA(X)	Value of the gamma function evaluated at X
@GRAND	12th-degree binomial approximation to a Gaussian random number with zero mean and unit variance
@INT(X)	Integer portion of X
@LN(X)	Natural log (base e) of X
@LNGAMMA(X)	Log base e of the gamma function evaluated at X
@LOG(X)	Log base of X
@LOG10(X)	Log base 10 of X
@LOG2(X)	Log base 2 of X
@MOD(X, Y)	Remainder of X/Y
@MODULUS(X, Y)	Modulus of X/Y
@PI	Value of p
@POLY(X, ...)	Value of an Nth-degree polynomial in X
@PRODUCT(X, ...)	Product of all the numeric values in the argument list
@RADIANS(X)	Converts the angle expressed in degrees to radians ()
@RAND	Uniform random number on the interval [0,1)
@ROUND(X, n)	X rounded to n number of decimal places (0 to 15)
@SIGMOID(X)	Value of the sigmoid function
@SIN(X)	Sine of X
@SINH(X)	Hyperbolic sine of X
@SQRT(X)	Positive square root of X
@SUMPRODUCT(R1, R2)	Dot product of the vectors R1 and R2, where R1 and R2 are of equal dimension
@TAN(X)	Tangent of X
@TANH(X)	Hyperbolic tangent of X
@TRANSPOSE(M)	Transpose of matrix M
@VECLN(...)	Square root of the sum of squares of its arguments

Statistical Formulas

Formula	Description
@AVG(...)	Average (arithmetic mean) of its arguments
@CORR(R1, R2)	Pearson's product-moment correlation coefficient for the paired data in ranges R1 and R2
@COUNT(...)	Count of its non-blank arguments
@F(M, N, F)	Integral of Snedecor's F-distribution with M and N degrees of freedom from minus infinity to F
@ERF(L[, U])	Error function integrated between 0 and L; if U specified, between L and U
@ERFC(L)	Complementary error function integrated between L and infinity
@FORECAST(...)	Predicted Y values for given X
@FTEST(R1, R2)	Significance level () of the two-sided F-test on the variances of the data specified by ranges R1 and R2
@GMEAN(...)	Geometric mean of its arguments
@HMEAN(...)	Harmonic mean of its arguments
@LARGE(R, N)	Nth largest value in range R
@MAX(...)	Maximum of its arguments
@MEDIAN(...)	Median (middle value) of the range R1
@MIN(...)	Minimum of its arguments
@MODE(...)	Mode, or most frequently occurring value
@MSQ(...)	Mean of the squares of its arguments
@PERCENTILE(R, N)	Value from the range R which is at the Nth percentile in R
@PERCENTRANK(R, N)	Percentile rank of the number N among the values in range R
@PERMUT(S, T)	Number of T objects that can be chosen from the set S, where order is significant
@PTTEST(R1, R2)	Significance level () of the two-sided T-test for the paired samples contained in ranges R1 and R2
@QUARTILE(R, Q)	Quartile Q of the data in range R
@RANK(E, R[, O])	Rank of a numeric argument E in the range R
@RMS(...)	Root of the mean of squares of its arguments
@SMALL(R, N)	Nth smallest number in range R
@SSE(...)	Sum squared error of its arguments. It is equivalent to @VAR(...)*@COUNT(...)
@SSQ(...)	Sum of squares of its arguments
@STD(...)	Population standard deviation (N weighting) of its arguments
@STDS(...)	Sample standard deviation (N-1 weighting) of its arguments
@SUM(...)	Sum of its arguments
@T(N, T)	Integral of T-distribution with N degrees of freedom from minus infinity to T
@TTEST(R, X)	Significance level (a) of the two-sided single population T-test for the population samples contained in range R
@TTEST2EV(R1, R2)	Significance level (a) of the two-sided dual population T-test for ranges R1 and R2, where the population variances are equal

Formula	Description
@TTEST2UV(R1, R2)	Significance level (a) of the two-sided dual population T-test for ranges R1 and R2, where the population variances are not equal
@VAR(...)	Sample variance (N weighting) of its arguments
@VARS(...)	Sample variance (N-1 weighting) of its arguments
@VSUM(...)	Visual sum of its arguments, using precision and rounding of formatted cell values

Conditional Statistical Formulas

Formula	Description
@CAVG(..., C)	Conditional average
@CCOUNT(..., C)	Conditional count
@CMAX(..., C)	Conditional maximum
@CMIN(..., C)	Conditional minimum
@CSTD(..., C)	Conditional sample standard deviation (N weighting)
@CSTDS(..., C)	Conditional sample standard deviation (N-1 weighting)
@CSUM(..., C)	Conditional sum
@CVAR(..., C)	Conditional population variance (N weighting)
@CVARS(..., C)	Conditional population variance (N-1 weighting)

String Functions

Formula	Description
@CHAR(N)	Character represented by the code N
@CLEAN(S)	String formed by removing all non-printing characters from the string S
@CODE(S)	ASCII code for the first character in string S
@EXACT(S1, S2)	Returns true (1) if string S1 exactly matches string S2, otherwise returns 0
@FIND(S1, S2, N)	Index of the first occurrence of S1 in S2
@HEXTONUM(S)	Numeric value for the hexadecimal interpretation of S
@LEFT(S, N)	String composed of the leftmost N characters of S
@LENGTH(S)	Number of characters in S
@LOWER(S)	S converted to lower case
@MID(S, N1, N2)	String of length N2 that starts at position N1 in S
@NUMTOHEX(X)	Hexadecimal representation of the integer portion of X
@PROPER(S)	String S with the first letter of each word capitalized
@REGEX(S1, S2)	Returns true (1) if string S1 exactly matches string S2; otherwise returns false (0). Allows "wildcard" comparisons by interpreting S1 as a regular expression
@REPEAT(S, N)	String S repeated N times
@REPLACE(S1, N1, N2, S2)	String formed by replacing the N2 characters starting at position N1 in S1 with string S2
@RIGHT(S, N)	String composed of the rightmost N characters of S
@STRCAT(...)	Concatenation of all its arguments
@STRING(X, N)	String representing the numeric value of X, to N decimal places
@STRLEN(...)	Total length of all strings in its arguments
@TRIM(S)	String formed by removing spaces from the string S
@UPPER(S)	String S converted to upper case
@VALUE(S)	Numeric value represented by the string S; otherwise 0 if S does not represent a number

Logic Functions

Formula	Description
@AND(...)	0 if any arguments are 0; 1 if all arguments are 1; otherwise -1
@FALSE	Logical value 0
@FILEEXISTS(S)	1 if file S can be opened for reading; otherwise 0
@IF(X, T, F)	Value of T if X evaluates to non-zero, or F if X evaluates to zero
@ISERROR(X)	Returns 1 if X "contains" an error, otherwise 0
@ISNUMBER(X)	1 if X is a numeric value; otherwise 0
@ISSTRING(X)	1 if X is a string value; otherwise 0
@NAND(...)	0 if all arguments are 1; 1 if any arguments are 0; otherwise -1
@NOR(...)	0 if any arguments are 1; 1 if all arguments are 0; otherwise -1
@NOT(X)	0 if X=1; 1 if X=0; otherwise -1
@OR(...)	0 if all arguments are 0; 1 if any arguments are 1; otherwise -1
@TRUE	Logical value 1
@XOR(...)	-1 if any of the arguments are not 0 or 1; otherwise 0 if the total number of arguments with the value 1 is even; 1 if the total number of arguments with the value 1 is odd

Financial Functions

Formula	Description
@ACCRINT(I, Ft, S, R, P, F[, B])	Accrued interest for a security that pays periodic interest
@ACCRINTM(I, S, R, P[, B])	Accrued interest for a security that pays interest at maturity
@COUPDAYBS(S, M, F[, B])	Number of days between the beginning of the coupon period to the settlement date
@COUPDAYS(S, M, F[, B])	Number of days in the coupon period that the settlement date is in
@COUPDAYSNC(S, M, F[, B])	Number of days between the settlement date and the next coupon date
@COUPNCD(S, M, F[, B])	Next coupon date after the settlement date
@COUPNUM(S, M, F[, B])	Number of coupon payments between the settlement date and maturity date
@COUPPCD(S, M, F[, B])	Previous (most recent) coupon date before the settlement date
@CTERM(R, FV, PV)	Number of compounding periods for an investment
@CUMIPMT(R, NP, PV, S, E, T)	Cumulative interest on a loan between start period S and end period E
@CUMPRINC(R, NP, PV, S, E, T)	Cumulative principal paid on a loan between start period S and end period E

Formula	Description
@DB(C, S, L, P[, M])	Fixed-declining depreciation allowance
@DDB(C, S, L, N)	Double-declining depreciation allowance
@DISC(S, M, P, R[, B])	Discount rate for a security
@DOLLARDE(FD, F)	Converts a dollar amount expressed as a fraction form into a decimal form
@DOLLARFR(DD, F)	Converts a dollar amount expressed as a decimal form into a fraction form
@DURATION(S, M, R, Y, F[, B])	Macauley duration of a security assuming \$100 face value
@EFFECT(NR, NP)	Returns the effective annual interest rate
@FV(P, R, N)	Future value of an annuity
@FVSCHEDULE(P, S)	Future value of an initial investment after compounding a series of interest rates
@INTRATE(S, M, I, R[, B])	Interest rate for a fully invested security
@IPMT(R, P, NP, PV, FV[, T])	Interest payment for a specific period for an investment based on periodic, constant payments and a constant interest rate
@IRR(G, F)	Internal rate of return on an investment. See also @XIRR and @MIRR
@MDURATION(S, M, R, Y, F[, B])	Modified Macauley duration of a security assuming \$100 face value
@MIRR(CF, FR, RR)	Modified internal rate of return for a series of periodic cash flows
@NOMINAL(ER, NP)	Nominal annual interest rate
@ODDFPRICE(S, M, I, FC, R, Y, RD, F[, B])	Price per \$100 face value of a security with an odd (short or long) first period
@ODDFYIELD(S, M, I, FC, R, PR, RD, F[, B])	Yield per of a security with an odd (short or long) first period
@PMT(PV, R, N)	Periodic payment for a loan
@PPMT(R, P, NP, PV, FV, T)	Payment on the principal for a specific period for an investment based on periodic, constant payments and a constant interest rate
@PRICE(S, M, R, Y, RD, F[, B])	Price per \$100 face value of a security that pays periodic interest
@PRICEDISC(S, M, D, RD[, B])	Price per \$100 face value of a discounted security
@PRICEMAT(S, M, I, R, Y[, B])	Price per \$100 face value of a security that pays interest at maturity
@PV(P, R, N)	Present value of an annuity
@RATE(FV, PV, N)	Interest rate required to reach future value FV
@RECEIVED(S, M, I, D, [, B])	Amount received at maturity for a fully vested security
@SLN(C, S, L)	Straight-line depreciation allowance
@SYD(C, S, L, N)	"Sum-of-years-digits" depreciation allowance
@TBILLEQ(S, M, D)	Bond-equivalent yield (BEY) for a Treasury Bill
@TBILLYIELD(S, M,	Yield on a Treasury bill

Formula	Description
D)	
@TERM(P, R, FV)	Number of payment periods for an investment
@VDB(C, S, L, S, E)	Fixed-declining depreciation allowance between two periods
@XIRR(G, V, D)	Internal rate of return for a series of cash flows with variable intervals
@XNPV(R, V, D)	Returns the net present value for a series of cash flows with variable intervals
@YIELD(S, M, R, PR, RD, F[, B])	Yield of a security that pays periodic interest
@YIELDMAT(S, M, I, R, PR[, B])	Annual yield of a security which pays interest at maturity

Date and Time Functions

Formula	Description
@DATE(Y, M, D)	Date value for year Y, month M, and day D
@DATEVALUE(S)	Corresponding date value for a given string S
@DAYS360(S, E)	Number of days between two dates, based on a 30/360 day count system
@DAY(DT)	Day number in the date/time value DT
@EDATE(S, M)	Date/time value representing number of months (M) before or after start date (S)
@EOMONTH(S, M)	Date/time value representing the last day of the month M months after S, if M is positive, or M months before if M is negative
@HOUR(DT)	Hour value (0-23) of date/time value DT
@MINUTE(DT)	Minute value (0-59) of date/time value DT
@MONTH(DT)	Number of the month in date/time value DT
@NETWORKDAYS(S, E[, H])	Number of whole working days, starting at S and going to E, excluding weekends and holidays
@NOW	Date/time value of the current system date and time
@SECOND(DT)	Seconds value (0-59) of the date/time value DT
@TIME(H, M, S)	Time value for hour H, minute M, and second S
@TIMEVALUE(S)	Corresponding time value for a given string value S
@TODAY	Date value of the current system date
@WEEKDAY(D)	Integer representing the day of the week on which the day D falls starting at 1 (Sunday) and ending with 7 (Saturday)
@WORKDAY(S, D[, H])	Day that is D working days after S, if D is positive, or before S, if D is negative, excluding weekends and all holidays specified as dates in range H
@YEAR(DT)	Year value of date/time value DT
@YEARFRAC(S, E[, B])	Portion of the year represented by the number of days between start date (S) and end date (E)

Miscellaneous Functions

Note: Some functions may return a result that is a range or cell reference. These indirect references are not used in determining the pattern of recalculation. Plan carefully before using these functions.

Formula	Description
@CELLREF(N1, N2)	Reference to the cell in column N1 and row N2
@CHOOSE(N, ...)	Nth argument from the list
@COL(C)	Column address of the cell referenced by C
@COLS(R)	Number of columns in the specified range R
@HLOOKUP(X, S, R)	Value of the cell in range S that is R number of rows beneath X
@INIT(X1, X2)	First argument on the first recalculation pass and the second argument on all subsequent recalculation passes when is set to perform iterative calculations
@INTERP2D(R1, R2, N)	Interpolation value for a 2-dimensional vector
@INTERP3D(R, X, Y)	Interpolation value for a 3-dimensional vector
@MATCH(V, R[, T])	Relative position in range R of value V based on positioning criteria T
@N(R)	Numeric value of the top left cell in range R
@RANGEREf(N1, N2, N3, N4)	Reference to the range defined by coordinates N1 through N4
@ROW(C)	Row address of the cell referenced by C
@ROWS(R)	Number of rows in the specified range R
@S(R)	String value of the top left cell in range R
@VLOOKUP(X, S, C)	Value of the cell in range S that is C number of columns to the right of X

Embedded Tools

Note: You should not include embedded tools within other functions or arithmetic operations in a single formula. However, you can copy, move, and format embedded tools just like any other function.

Formula	Description
@DFT(R)	Discrete Fourier Transform of the range R
@EIGEN(M)	Eigen values of the matrix M
@FFT(R)	Discrete Fourier Transform of the range R using a fast Fourier Transform algorithm
@FREQUENCY(R, B)	Returns a frequency distribution for values R with a set of intervals B
@INVDFT(R)	Inverse of the Discrete Fourier Transform of the range R
@INVERT(M)	Inverse of matrix M
@INVFFT(R)	Inverse of the Discrete Fourier Transform of the range R using a fast Fourier Transform algorithm.
@LINFIT(X, Y)	Straight line least squares fit. This function is equivalent to @POLYFIT(X, Y, 1)
@LLS(A, Y)	Linear least squares solution X to the over-determined system of equations $AX=Y$
@MMUL(M1, M2)	Product of multiplying matrix M2 by matrix M1
@PLS(X, Y, d)	Analyzes the least squares polynomial model $Y=P(X)$, where P is a polynomial of degree d
@POLYCOEF(X, Y, d)	Least squares coefficients for the polynomial fit $Y=P(X)$, where P is a polynomial of degree d
@TRANSPOSE(M)	Transpose of matrix M
@TREND(NX, KX, KY)	Y values for new x values given existing x and y values

Using Conversion Formulas

If you want to see the actual values in Excel before they are sent to Autotrader, you can use the following equations:

- Assume **A1** has the original price (in 32nds) and **B1** has the number of offset ticks:

$$=INT(A1/100)*100+INT((B1+MOD(A1, 100))/32)*100+MOD(B1+MOD(A1,100), 32)$$

A1	B1	Result
110310	3	111010
111020	-3	110310

- Assume **A2** has the original price (in 1/2 32nds) and **B2** has the number of offset ticks:

$$=INT(A2/1000)*1000+INT((B2/0.2+MOD(A2, 1000))/320)*1000+MOD(B2/0.2+MOD(A2,1000), 320)$$

A2	B2	Result
110310	3	111005
110310	-3	110295

- Assume **A3** has the original price in 1/4 32nds and **B3** has the number of offset ticks:

$$=(INT(A3/1000)+INT((INT(MOD(A3,1000)/10)+INT((ROUNDUP(MOD(A3,10)*0.4,0)+B3)/4))/32))*1000+MOD(INT(MOD(A3,1000)/10)+INT((ROUNDUP(MOD(A3,10)*0.4,0)+B3)/4),32)*10+INT(MOD(ROUNDUP(MOD(A3,10)*0.4,0)+B3,4)/0.4)$$

A3	B3	Result
110312	3	111000
110312	-2	110307

- Assume that **C32** and **D32** contain prices in 32nds, 1/2 32nds, or 1/4 32nds (can be positive or negative), then the result of adding the two can be expressed as:

$$=(\text{INT}(\text{ABS}(\text{K34})/128)*1000+\text{INT}((\text{ABS}(\text{K34})-(\text{INT}(\text{ABS}(\text{K34})/128)*128))/4)*10+\text{INT}((\text{ABS}(\text{K34})-\text{INT}(\text{ABS}(\text{K34})/128)*128-\text{INT}((\text{ABS}(\text{K34})-(\text{INT}(\text{ABS}(\text{K34})/128)*128))/4)*4)/0.4))*\text{INT}(\text{ABS}(\text{K34}+0.1)/(\text{K34}+0.1))$$

Where **K34** equals:

$$\begin{aligned} &\text{INT}(\text{ABS}(\text{C32})/1000)*\text{INT}(\text{ABS}(\text{C32})/\text{C32})*128+\text{INT}(\text{MOD}(\text{ABS}(\text{C32}),1000)/10) \\ &* \text{INT}(\text{ABS}(\text{C32})/\text{C32})*4+\text{ROUNDUP}(\text{ABS}(\text{MOD}(\text{ABS}(\text{C32}),10) \\ &* \text{INT}(\text{ABS}(\text{C32})/\text{C32}))*0.4,0)*\text{INT}(\text{ABS}(\text{C32})/\text{C32})+\text{INT}(\text{ABS}(\text{D32})/1000) \\ &* \text{INT}(\text{ABS}(\text{D32})/\text{D32})*128+\text{MOD}(\text{ABS}(\text{TRUNC}(\text{D32}/10)),100) \\ &* \text{INT}(\text{ABS}(\text{D32})/\text{D32})*4+\text{ROUNDUP}(\text{ABS}(\text{MOD}(\text{ABS}(\text{D32}),10) \\ &* \text{INT}(\text{ABS}(\text{D32})/\text{D32}))*0.4,0)*\text{INT}(\text{ABS}(\text{D32})/\text{D32}) \end{aligned}$$

You cannot substitute **K34** into the first formula because the resulting expression is too long for Excel to handle.

C32	D34	Result
99152	-205	98267
99152	99155	-2

Converting Floating Point to a Price

Another set of equations converts a floating point number to a price. If you are using a decimal price feed or a decimal theoretical, use one of these equations to convert it.

Assume **A1** has the original price in decimal format for a product that ticks in 32nds. Multiply the result by 10 if you want a zero on the end.

- Round down for the bid.
=FLOOR((A6-INT(A6))*32+INT(A6)*100,1)
- Round up for the ask.
=CEILING((A6-INT(A6))*32+INT(A6)*100,1)

The formula would be modified for products that trade in 1/2 or 1/4 32nds.

Autotrader Formula Operators

Note: You cannot use formulas in Order Block.

In formulas with more than one operator, Autotrader evaluates operators in the order of precedence included in the table below. Operators with a higher precedence number are evaluated first. Operators with the same precedence number are evaluated from left to right in the formula.

Precedence can be overridden by using parentheses to explicitly specify the order of evaluation. In formulas with conditional operators, the second and third operands can be any type, including ranges.

Example:

The formula...

```
=@SUM(A1 ? B1..C20 : C10..D15)
```

...returns the sum of **B1..C20** if **A1** evaluates to non-zero; otherwise it returns the sum of **C10..D15**.

Formulas can contain the following operators to define relationship between values:

Operator	Precedence	Definition
%	14	Unary percent
**	13	Exponentiation
+	12	Unary plus
-	12	Unary minus
~	12	Bitwise complement (integer)
!	12	Logical not
*	11	Multiplication
/	11	Division
%	11	Remainder (integer)
+	10	Addition
-	10	Subtraction
<<	9	Shift left (integer)
>>	9	Shift right (integer)
<	8	Less Than
>	8	Greater Than
<=	8	Less Than or Equal
=	8	Greater Than or Equal
==	7	Equal
!=	7	Not Equal
&	6	Bitwise And, or String Concatenation
^	5	Bitwise Exclusive-Or (integer)
	4	Bitwise Or
&&	3	Logical And
	2	Logical Or
?:	1	Conditional

Linking Theoreticals to Autotrader

Autotrader allows you to link in any program that generates theoreticals as long as it conforms to the OLE standard (e.g., Excel spreadsheets). In this manner, you can create profiles that base their bid and ask offsets on theoretical prices that you import to the **Theo Prices** section in the grid.

At times, theoretical pricing models can generate results that do not line up accurately with the ticking of a product. In this case, Autotrader rounds its values when submitting to the market.



Tip: To automatically open Excel with a saved workspace, create links from Autotrader to Excel. If you only have links from Market Grid to Excel, the links save but do not automatically open Excel with a workspace.

► To link theoreticals to Autotrader:

1. Open the theoretical generator that generates the values you want to link to Autotrader.
2. Locate the cells in the theoretical generator that contain the theoretical values that you want to link to Autotrader.
3. Open Autotrader.
4. Populate Autotrader with the contracts you want to trade.
5. To use imported Theoreticals in determining your bids and offers, assign a profile that has a Profile Base Price of Single Theo or Bid/Ask Theo.
6. In the theoretical generator, right-click the cell that you want to copy into Autotrader.
7. Click **Copy**.
8. In Autotrader, right-click on the cell in which you want to create the Excel link, point to **Links** and click **Paste**.
The cell now hosts the OLE link to Excel.
9. To use these theoretical values in the future, save your workspace.

You have successfully linked theoreticals to Autotrader.

Rounding Results

When using formulas and theoreticals, Autotrader rounds according to the following rules:

- Bids and Asks round away from the market (i.e., Bids down and Asks up)
- If a product ticks in fractions and a resulting value pushes the Bid or Ask into the next whole tick value, Autotrader rounds the value based on the whole tick.

When using negative numbers for spread prices, use offsets in the **Profile Setup Page** or Excel. Do not use the **Formula Bar**.

Example 1:

The market ticks in halves. Autotrader receives a value of 3.75:

- When submitting Asks, Autotrader rounds to 4.
- When submitting Bids, Autotrader rounds to 3.5.

Example 2:

The market ticks in 32nds and is currently at 3 and 30 (330). Autotrader receives an Ask offset of +3.3 from a theoretical pricing engine.

The offset generates an invalid tick price of 333.3. But, Autotrader converts the number into the valid tick number of 401.

Reusing Existing Formulas and Settings

To reuse existing formulas and settings already created in Autotrader, you can:

- **Clone rows:** Clone an entire row using the Autotrader context menu. The new row appears directly beneath the row you clone. Then, replace the contract in the cloned row to make the formulas work for a different contract. Refer to **Cloning an Autotrader Row** on page 54.
- **Replace a Contract:** Replace the contract in any row to make the formulas work for a different contract. Refer to **Replacing A Contract** on page 55.

CHAPTER 4

Using Excel Links

Use Excel links in Autotrader to perform the following procedures:

- Linking Excel Spreadsheets (OLE Links)
- Saving Excel Spreadsheets in a Workspace
- Deleting Excel Links

Linking Excel Spreadsheets (OLE Links)

The **Autotrader** window allows you to link any program that conforms to the OLE standard (e.g., Excel spreadsheets) into any editable, numeric cell such as the **Scratch** section for Direct Order Entry and the **Profile Parameters** section. In this manner, you can seed Autotrader with numbers or values from your own Excel spreadsheets.

You can perform these procedures:

- Linking Excel spreadsheets to Autotrader
- Using Excel Spreadsheets with Direct Order Entry



Tip

- To quickly identify cells with OLE Links, assign a specific color to the cell using the **Formatting** option in the Autotrader context menu.
- To automatically open Excel with a saved workspace, create links from Autotrader to Excel. If you only have links from Market Grid to Excel, the links save but do not automatically open Excel with a workspace.

► To link Excel spreadsheets to Autotrader:

1. Open the Excel spreadsheet from which you want to link cells to Autotrader.



Tip: If you opened a new Excel worksheet, save and rename the worksheet before you begin linking cells. X_TRADER uses the worksheet name to associate the link.

2. Locate your cells in the spreadsheet.
3. Open Autotrader.
4. Populate the window with the contracts you want to trade.
5. In the Excel spreadsheet, right-click the cell that you want to copy into Autotrader.
6. Click **Copy**.
7. In the X_TRADER window, right-click on the cell in which you want to create the Excel link, point to **Links**, and then click **Paste**.
The cell now hosts the OLE link to Excel.
8. To use these links in the future, on the X_TRADER **Control Panel**, click **File** and select **Save**.
...do you want X_Trader to save the external files?
9. Click **Yes**.

You successfully linked Excel spreadsheets to Autotrader.

► **To use Excel spreadsheets to enter direct orders:**

1. Create a profile.
2. Assign it a Profile Base Price of Direct Order Entry, and set any other needed trading parameters.
3. Populate Autotrader with the contract(s) you want to trade.
4. Assign the Direct Order Entry profile to the contract(s).
5. Link your program that uses the OLE standard (i.e., Excel spreadsheet) into the cells of the **Scratch** section.



Tip: If you opened a new Excel worksheet, save and rename the worksheet before you begin linking cells. X_TRADER uses the worksheet name to associate the link.

6. Make sure that you have a link or formula to generate values for each **Scratch** section cell (i.e., **sBidQty**, **sBidPrc**, **sAskPrc**, **sAskQty**).
7. To use these links in the future, save your workspace..
8. You can start trading.

You successfully used Excel spreadsheets to enter direct orders.

Switching Between Flow and Contracts on the ICE Exchange

You can use Autotrader to trade energy products on the ICE exchange. If you use Autotrader or Excel links, switching between Flow and Contracts can create incorrect equations. If you try to switch between Flow and Contracts while Autotrader is active, a dialog box appears and states:


Warning! Changing this property may impact Excel & Autotrader formulas!

If you click **Yes**, X_TRADER deactivates Autotrader and removes Autotrader orders from the market.


Saving Excel Spreadsheets in a Workspace

When linking Excel spreadsheets to Autotrader, you can save the Excel spreadsheet and all of its stored information within your workspace. When saved in the proper order, opening a workspace also opens the Excel spreadsheet.

You must have the X_TRADER module that hosts the link (i.e. Autotrader) and the Excel spreadsheet (or appropriate OLE compatible program) open to perform this action.

 **Tip:** To automatically open Excel with a saved workspace, create links from Autotrader to Excel. If you only have links from Market Grid to Excel, the links save but do not automatically open Excel with a workspace.

▶ To save Excel spreadsheets into your workspace:

 **Tip:** If you opened a new Excel worksheet, save and rename the worksheet before you begin linking cells. X_TRADER uses the worksheet name to associate the link.

1. After Linking Excel Spreadsheets, save your workspace.
2. When you shutdown for the day, close X_TRADER first and click **Yes** if you are prompted to save changes.
3. Close the Excel application and click **No** if you are prompted to save changes.
4. When you next open X_TRADER, log onto the same exchange, and then open a workspace.
The Excel spreadsheet with all the associated links and working formulas automatically opens on your desktop.
5. If you are prompted to update links, click **Yes**.

You successfully saved Excel spreadsheets into your workspace.

Deleting Excel Links (OLE Links)

▶ To delete OLE links from Autotrader:

1. In Autotrader, right-click the cell that contains the link you want to delete.
2. Point to **Links** and click **Delete**.

You successfully deleted OLE Links from the Autotrader.

CHAPTER 5

Examples

These examples provide more information on key features in Autotrader:

- Quote Exceeds Maximum Position Limit Example
- Throttle Quoting Example
- Throttle Quoting Scratch Pad Example
- Bid Offset Example
- Cover Order Example
- Market Improve Limit Example
- Maximum Position Example
- Formula Use Example

Quote Exceeds Maximum Limit

Autotrader uses the **Max. Position Limit** field on the **Position Management** window to monitor your position for a given instrument. If Autotrader submits a quote (i.e., normal Bids and Asks, as well as cover orders) that, if filled, would exceed your allowable maximum position, the **Position Management** window appears with the title: **Quote exceeds Maximum Position**.

The screenshot shows a dialog box titled "Quote exceeds Maximum Position" for the instrument "CME 6A DEC08". It contains several input fields and buttons. On the left side, there are fields for "Open" (100), "Hedged" (0), "Apply To Hedged" (100), and "Max. Position Limit" (100). On the right side, there are fields for "Account" (100), "Working Cover Orders - Bid" (0), "Working Cover Orders - Ask" (0), and "Net" (90). At the bottom, there are three buttons: "OK", "Cancel", and "Apply To Hedged". A checkbox at the very bottom is labeled "Don't prompt, always trade below position limit." and is currently unchecked.

Autotrader suspends trading on the side that exceeds the position limit but continues to trade the position-reducing side of the market.

Example: If you are short enough contracts to exceed your limit, Autotrader stops submitting offers to the market but continues submitting bids. When your open position dips below the set **Max. Position Limit**, Autotrader starts submitting offers again.

If you want Autotrader to ignore that you exceeded your maximum position:

- Hedge enough contracts so your **Open** is less than your **Max. Position Limit**. Refer to **Managing Your Position** on page 58.
- or -
- Increase your **Max. Position Limit** so it is greater than your **Open**. Refer to **Maximum Position Example** on page 87.

Note: Your **Max. Position Limit** does not supersede risk parameters set up by your risk administrator. Additionally, the **Apply to Hedged** option functions only in regards to your **Open** position in Autotrader, thus allowing you to continue trading.

Throttle Quoting Example

This example assumes Autotrader is configured with 500 milliseconds between quotes.

Throttle Quotes (ms)	500
----------------------	-----

Example: Autotrader submits a quote to market. After 200 milliseconds, the market moves enough to trigger the need for a new quote. However, Autotrader does not submit this new quote until 300 more milliseconds pass (for a total of 500 milliseconds).

Note: This new quote is based off of the current market position. If the market moves back to its original position during the 300-millisecond time frame, Autotrader submits a quote at the same price as the original.

Throttle Quoting and Scratch Pad Example

This example assumes:

- The profile's **Throttle Quoting** is set at 500 milliseconds.

Throttle Quotes (ms)	500
----------------------	-----

- The row's profile is set with **Bid** and **Ask Offsets** of 1.
- The **Market Bid Price** is 100.
- The **Market Ask Price** is 105.

This example illustrates how the current bids and asks displayed in the **Scratch Pad** can differ from your working bids and asks.

Autotrader sends its quotes into the market: a **Working Bid** at 99 and a **Working Ask** at 106.

The **Scratch Pad** displays 99 in the **sBidPrc** column and 106 in the **sAskPrc** column:

SCRATCH				WORKING			
sBidQty	sBidPrc	sAskPrc	sAskQty	wBidQty	wBidPrc	wAskPrc	wAskQty
10	99	106	10	10	99	106	10

After 100 milliseconds, the market moves to 101 as the best Bid and 103 as the best Ask. The **Scratch Pad** updates its values to display 100 in the **sBidPrc** column and 104 in the **sAskPrc** column.

However, because **Throttle Quoting** is set at 500, Autotrader does not update the working Bid and Ask, so they remain at 99 and 106:

SCRATCH				WORKING			
sBidQty	sBidPrc	sAskPrc	sAskQty	wBidQty	wBidPrc	wAskPrc	wAskQty
10	100	104	10	10	99	106	10

After 300 milliseconds (for a total of 400), the market bounces back to 100 and 106. The **Scratch Pad** reverts to displaying 99 in the **sBidPrc** column and 106 in the **sAskPrc** column. The working Bid and Ask remain the same (99 and 106).

SCRATCH				WORKING			
sBidQty	sBidPrc	sAskPrc	sAskQty	wBidQty	wBidPrc	wAskPrc	wAskQty
10	99	106	10	10	99	106	10

After 100 more milliseconds, the throttle quoting expires. Because the **Scratch Pad** and **Working** order sections match, Autotrader makes no changes to the working Bid and Ask.

Offset Examples

The following two examples illustrate the difference between setting positive and negative offsets.

Positive Bid Offset Example

In this example, Autotrader is set up with the following parameters:

Profile Base Price	Market	
Throttle Quotes (ms)		1000
Throttle Fills (ms)		0
Enable Cover Orders	<input type="checkbox"/>	
Cover Order Color		
Manual Requote	<input type="checkbox"/>	
Profile Parameters		
Bid Offset		1
Bid Quantity		10

Using these parameters, Autotrader submits a bid for a 10 lot (the **Bid Quantity**) one tick lower (the **Bid Offset**) than the best bid price.

Negative Bid Offset Example

In this example, Autotrader is set up with the following parameters:

Profile Base Price	Market	
Throttle Quotes (ms)		1000
Throttle Fills (ms)		0
Enable Cover Orders	<input type="checkbox"/>	
Cover Order Color		
Manual Requote	<input type="checkbox"/>	
Profile Parameters		
Bid Offset		-1
Bid Quantity		10

Using these parameters, Autotrader submits a bid for a 10 lot (the **Bid Quantity**) one tick inside the market (the **Bid Offset**).

Cover Order Example

The examples assume the **Cover Order Offset** is set to 2.

Cover Order Example 1 - Order Filled:

After a bid for 20 is filled at 50, Autotrader submits an offer to sell 20 at 52.

Cover Order Example 2 - Order Partially Filled:

After a bid for 20 at 50 is partially filled with a quantity of 10, Autotrader submits an offer to sell 10 at 52.

Market Improve Limit Example

This example assumes the **Market Improve Limit** is set to 2.

The current market has a best bid at 40 and a sell at 45.

Autotrader receives a theoretical price input that generates a bid for 43. This bid is three higher than the market and exceeds the setting in **Market Improve Limit**. Autotrader adjusts the order to 42.

This bid betters the market by two points, which is within the **Market Improve Limit**.

Maximum Position Example

This example assumes you set the following:

- Maximum Position: 100
- Bid Quantity: 10
- Ask Quantity: 10

After you start Autotrader, the market begins sliding downward and starts taking out your bids. After nine of your bids have been taken out ($9 \times 10 = 90$), none of your offers or cover orders have been taken.

Because your next Bid of 10 could exceed your maximum allowable position, the **Position Management** window appears, prompting that your quote exceeds your maximum position.

The screenshot shows a dialog box titled "Quote exceeds Maximum Position" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Symbol: CME 6A DEC08
- Open: 100
- Hedged: 0
- Apply To Hedged: 100
- Max. Position Limit: 100
- Account: 100
- Working Cover Orders - Bid: 0
- Working Cover Orders - Ask: 0
- Net: 90
- Buttons: OK, Cancel, Apply To Hedged
- Checkbox: Don't prompt, always trade below position limit.

You can now only continue trading your Bids if you either hedge your **Open Position** or increase your **Max. Position Limit**.

Because the value of the **Apply To Hedged** field defaults to your current **Open Position**, you can click the **Apply To Hedged** button. Your entire **Open Position** becomes hedged, and Autotrader begins to submit Bids to market according to your profile setup.

Formula Use Examples

The following examples show how to use formulas in Autotrader:

- Theoretical Offset Example
- Referencing Example

Theoretical Offset Example

You link a Theoretical Generator into the **fA** cell in the **Formula** section and rename the formula column to **TheoOffset**. This generator creates theoretical offsets. Currently, the theoretical offset is 2.

In the **fB** column of the **Formula** section, you enter the following formula:

```
=mAskPrc + TheoOffset
```

Your grid displays the following:

TheoOffset	fB
2	=mAskPrc + TheoOffset

The **TheoOffset** cell displays a theoretically generated offset of 2, and the **fB** cell displays the formula you entered. As soon as you click another cell or press **ENTER**, the value of the **fB** cell changes and displays only the dynamic value of the sum of the theoretical bid offset (**TheoOffset** cell) and the market ask price (**mAskPrc** cell).

To use the value of the **fB** cell, simply type `=fB` into the cell in which you want the value to appear. You can further use this value (**fB**) in other more complex formulas.

Referencing Example

To trade the E-mini S&P, you create a formula to generate a price one tick off of the market bid price from another row: =mBidPrc4-25

This formula takes the numeric market bid price of the contract in row four and subtracts 25 from it (equal to one tick in the E-mini S&P). If the bid price in row four is expressed as 10025, your value appears as 10000 (one tick lower).

- In the diagram below, the **Contract** column has the column letter C.

A	B	C	E	F	G	H	I
		CONTROL					
St	A	Contract	Man	Aut	Profile	Account	TransC

To view column letters click **Column Headers** under the **Show/Hide Rows** option in the Autotrader context menu.

- Reference cells in other rows by their column name or column letter followed by the row number or **RowName**. Do not include a space between the column name or letter and the row number.

A	B	C	E	F	G	H	P	Q	
		CONTROL						MARKET	
St	A	Contract	Man	Aut	Profile	Account	mAskPr	mAskQt	
	<input checked="" type="checkbox"/>	eCBOT-A YM DEC08	<input checked="" type="radio"/>	<input type="radio"/>	Test3	TEST1	10326	8	

In this example, you reference the market ask price for the eCBOT-A YM Dec08 contract in another row. To do so, you enter either =P3 or =mBidPrc3.

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