

# **ForexGridMaster Express Version 6.0 – User Manual**

ForexGridMaster MetaTrader4 Expert Advisor User-Guide -- updated May 2018 EA Design by James King; Programmed by Gendec Design

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# Introduction to ForexGridMaster Express

ForexGridMaster goes beyond the normal limits of MetaTrader 4 from <u>MetaQuotes</u>, and is built with Industrial Strength code to put it on the leading edge of automated Forex trading. It truly is the Rolls Royce of grid trading systems.

ForexGridMaster Express EA (Expert Advisor) was developed to enable traders to design and trade any number of their own automatic trading system strategies, as well as those created and shared by others. All ForexGM Express input settings are documented and easily configured by the trader. ForexGM was primarily designed as a tool to develop and fine-tune algorithmic grid trading strategies that profit from price movements, small or large, in either direction -- trend, counter-trend, range, scalping, news, or breakout trading. ForexGM is also very versatile for precision semi-automatic manual trading, especially scalping. We are open to your ideas and adding new features to ForexGM that promise higher and safer profits. Sample strategies and results are posted on the <u>Performance Page</u> of the ForexGM web-site. Optimization Reports with viewing and download links for some preset strategy files are provided for sharing at <u>FORO</u> (ForexGM Optimization Reports Online). Please note that these links refer to results from earlier versions of ForexGM.

Matching specific ForexGM strategies with the most appropriate brokers can make a big difference to your bottom-line, especially for scalping strategies. We have traded with more than twenty brokers since 2002, and the choices continue to improve in favour of traders. Brokers are becoming more competitive, traders more aware, and regulatory agencies more watchful. Now it is the norm to expect low spreads (1 pip or less for EURUSD), no or low commissions, no re-quotes, instant execution, no trade restrictions such as pending order distance from current price, 0-1 pip stop loss, 1 ms to 10 ms (or less) latency from VPS to broker server, etc. These are all important aspects of Forex to learn and use to your advantage.

ForexGridMaster Express is user-friendly, and is also a very sophisticated software program with many options that require time and practice for a user to fully appreciate all the possibilities. Be warned that the vast number of combined settings with endless scenarios that result, may trigger a lot of brain-storming and fun. Gamers, take note.

The contents of this document are purely for educational purposes and should never be considered as investment advice. ForexGridMaster.com, its owners, staff, affiliates and associates, are not liable for loss or damage of any kind which may arise directly or indirectly from the trading or use of any of the offerings from ForexGridMaster.com, including Expert Advisor robots and all related information and material.

# ForexGridMaster User Guidelines

# ForexGM Latest Build:

At the time of writing, the current version of ForexGM Express is v6.01 build 44. It will run on MetaTrader 4.00 build 1090 and above.

#### **ForexGM Licensing:**

ForexGM Express (full version) is licensed to a trader's Account-Name, allowing up to 3 real-money accounts and 5 demo-accounts. ForexGM Express trial-version only works on demo-accounts. If any License changes are required, these can be made by logging into your account at <u>EAfactory</u>.

#### **Account Currency and Normalization:**

ForexGM can trade any Account-Currency... USD, EUR, GBP, JPY, CHF, AUD, etc. ForexGM also integrates conversion-pair currency calculations (Normalization). This enables more accurate results when using different Account-Currencies trading the same strategy and same currency-pair on demo and real money accounts, or in Strategy Tester. MetaQuotes does not yet acknowledge this issue and consequently Strategy Tester results without Normalization can sometimes be inaccurate. For example, when trading AUDNZD using a USD Account-Currency, the NZDUSD is the conversion-pair (ratio of Account-Currency USD to the NZD Quote-Currency).

This means that in Strategy Tester the M1 historical data must be loaded for NZDUSD as well as AUDNZD so that ForexGM Express Normalization can provide the most accurate back-testing results. In Strategy Tester, the NZDUSD price action is displayed on the bottom right of the chart. Same example but on a real money account, the NZDUSD must also be listed in the Market Watch panel so that ForexGM will integrate the NZDUSD conversion-pair price action in real time as well. Trading AUDNZD with NZD as the account-currency does not require conversion, and when trading AUDNZD with AUD as the account-currency, the conversion-pair is AUDNZD itself.

#### **Decimal Places and Pips:**

ForexGM Express automatically detects whether the broker uses 2, 3, 4 or 5 decimal places for price quotes. As an example, Take-Profit Pips can be set to 17 pips regardless of whether the price quotes use 2, 3, 4 or 5 decimal places. In the case of the EURUSD as one example of 5th place decimal pricing, the 4th place decimal is the pip and the 5th a fraction of a pip (called a point). If the EURUSD moves from 1.37010 to 1.37020, then it has moved 1 pip or 10 points. If it moves from 1.37010 to 1.37011, then it has moved 1/10th of a pip or 1 point. For currency-pairs with 3 decimal places, such as the USDJPY, if the price moves from 95.700 to 95.710, then it has moved 1 pip or 10 points, and if from 95.700 to 95.701, then it has moved 1/10th of a pip or 1 point.

For trading instruments like Stocks, CFDs or crypto-currencies, the concept of a "pip" is less well defined. When dealing with anything other than Forex, ForexGM normally treats a pip as 1 unit of quote currency – e.g. BitCoin quoted in US dollars would use 1 pip = US1.

# **Settings Changes:**

When starting a new strategy or making major changes to an existing one beyond small variations to settings that can be changed on-the-fly, it is best to rely on the philosophy, "New Strategy >> New Chart". Removing ForexGM from an old chart is ULTRA important because it clears the Global Variables associated with that particular strategy on that particular chart. To close associated trades, use the MT4 "One-Click Trading Mode" for fast delete of trades or perhaps the CloseAllNow option if the ForexGM EA is still functional on the chart.

#### **Time-Frames:**

ForexGM Express strategies are not time-frame dependent, meaning that any ForexGM strategy can be traded on any time-frame and the only difference will be how well the trading action can be viewed. We recommend using ForexGridMaster on the M1 time-frame for maximum visibility, and switch time-frames as desired since this will not disrupt normal ForexGM function. Pending orders and open trades will also display on other charts using the same currency-pair.

#### Leverage:

Some brokers will allow as much as 1:500 leverage or more on their accounts. This means that ForexGM can trade a full standard lot of \$100,000 using only \$200 on margin, which is excellent for ForexGM, especially when trading for high profit. Most grid-trading strategies need a healthy margin for flexibility, especially for Portfolio trading. The leverage on the account that ForexGM is trading can be seen in the Experts log-file, usually a line or two after ForexGM has been initialized. High leverage can be dangerous if a trader is not experienced and well aware of potential negative consequences when setting strategies and managing money.

# **Closing Orders:**

Whenever many open or pending orders are triggered to close at the same time by Close-Run settings, it takes time for the open trades and pending orders to all close. Price is moving continuously, so the closing prices will not always be exactly those requested. In normal market conditions, the difference is usually relatively small.

#### Many Simultaneous Transactions:

The more open-trades and pending-orders there are on an active chart, the greater the chance of delayed execution, especially if the latency of trade execution is more than 50 milliseconds. Also, not all brokers are the same. There are many levels of technology involved -- the broker and their server, their MetaTrader environment, the computer that ForexGM Express trades from, Internet connection, VPS environment, bank-feeds to the broker, etc. MetaTrader4 executes only one line of code at a time per chart, and although infrequent, glitches can occur, and it is important to keep a watchful eye until reliability has been proven.

We strongly recommend that all ForexGM strategies be first traded on a demo-account, and also back and forward-tested using Strategy Tester with at least 2 year's tick-data. This will allow the trader to become familiar with the large number of ForexGM settings and how they combine to produce effective and profitable strategies. Best to start small when trading a real-money account. MetaTrader brokers are not all equal, and different brokers may produce different results because of certain parameters they have set for their environment. However, ForexGM Express is capable of trading reliably on most broker platforms for an indefinite period of time.

# ForexGM EA Smiley-Face: 😳 🖙 😕

While ForexGridMaster is active and able to successfully transact with the broker's server, a small smiley-face icon displays at the top right of the chart window. Click on that icon to open ForexGM's properties panel. Alternatively, right-click in any clear area of the chart and in the pop-up panel that shows, choose "Expert Advisors > Properties". If an emergency situation arises and ForexGM cannot be accessed through property settings, clicking the AutoTrading button on the top toolbar will disable ForexGM. Note that the AutoTrading button will disable all EAs currently attached to charts in the terminal, not just the EA on the active chart. A subtle change in the button-image indicates its status, and, because of its importance, ForexGM also displays additional information to alert the trader when trading is not permitted. If all else fails, simply close the chart window and any open trades and pending orders might need to be closed or deleted manually. When ForexGM is inactive, the smiley-face turns red to indicate some user intervention may be required.

#### **Preset Strategy Files:**

When creating strategies for ForexGM Express using the input settings described below, they can be saved as preset files in the "[MT4 Data Folder]\MQL4\Presets" default directory, or "[MT4 Data Folder]\tester" directory when using the Strategy Tester. To use a particular set-file for trading or testing, open ForexGridMaster on a chart and then "Load" the preset file from the "Inputs" tab. ForexGM preset files can also be saved and shared with others. It can be useful to name preset files to identify key elements of the strategies to which they relate.

As an example, a set-file could be named "audnzd\_bsct5-s0.05\_lsp0.015-ip16.2\_tp21\_m990-3\_crppbts0.3-ts0.0001\_ce25-us100k.set". This file would refer to a Buy-Sell Counter-Trend strategy for trading the AUDNZD pair with *Grid Spacing* = 5 pips, *Grid Spacing Step* = 0.05 pips, *Lot-Size(Proportional)* = 0.015, *Lot-Size Increase Percent* = 16.2, *Take-Profit Pips* = 21, *CR Profit Percent Before TS* = 0.3 with *CR Trail-Stop Percent* = 0.0001 and works best trading at least \$25,000 Chart-Equity of US \$100,000 Account-Currency. This might seem quite long-winded, but for a large number of strategies, it could be worth the effort.

# **Sharing Strategies:**

Preset ".set" files can be shared directly with other traders, or online using the <u>FORO</u> system. Our hope is to have many traders creating, back-testing and optimizing reliable winning strategies for all to share.

#### **Back-Testing:**

For back-testing ForexGM, use the M1 time-frame (Tick-data) to obtain the most accurate and reproducible results. In the Tools > History Center menu, select Currency-Pair > 1 Minute (M1) and click "Download" to load the data from MetaQuotes into the terminal. Trading a real-money account without having done any back-testing is certainly not recommended. However, be aware that the history-data downloads for some currency-pairs from MetaQuotes are not always accurate and complete.

The MetaTrader 4 Strategy Tester is known for its peculiarities, not the least of which is the way it interprets Spread values. Theoretically, Spread is specified in "Points", which should refer to the least-significant digit in the quoted price. Some brokers offer trading in crypto-currencies, and this can result in very high Point values for Spread causing the Tester to behave unpredictably. Best method to check if a chosen Spread is realistic is to set both Bid and Ask lines visible on the test chart, and compare those with the Bid-Ask lines shown on an active chart.

# ForexGridMaster Input Settings Summary

These trader input settings listed here are linked to their detailed descriptions below. The value shown for each setting corresponds to the default setting in ForexGM at the time of writing. The AUDNZD default strategy is for demonstration purposes only, but can be traded as is on the AUDNZD and also the NZDCAD and AUDCAD with minor adjustments. When correctly installed, ForexGM Express EA robot will show in the Experts folder on the Navigator panel, which is normally displayed on the left side of the MetaTrader4 terminal. Drag and drop the robot on the chart with the currency-pair you want to trade, and the Properties panel will open allowing modification of any of the settings listed below. When set as desired, click the OK button and the ForexGM strategy will start trading Run 1 on arrival of the next tick from the broker's server.

# **GENERAL CHART SETTINGS**

EA Number	62528
Strategy File	e6_audnzd_bsct5-s0.05_lsp0.015-ip16.2_tp21
Strategy Info	sp.0001-ip12_tp13-s0.2_crppbts0.6-ts0.1
Chart Equity Percent	50
Grid Type	(Fixed-Center-Grid; Moving-Center-Grid)

# **GRID GENERAL INPUTS**

(Buy-Sell; Buy-Full; Sell-Full; Buy-Half; Sell-Half)
(Trend; Counter-Trend)
5
1
1
60
60
0
true
(Not-Used; Buy-Order; Sell-Order)

# **GRID ORDER INPUTS**

Lot-Size Lot-Size Scaling Take-Profit Pips Stop-Loss Pips Break-Even Stop (BES) Profit Pips Before BES Break-Even Stop Plus Pips Trail-Stop Pips (TS) Profit Pips Before TS Max Order-Period	0.015 (LotSize-Constant; LotSize-Proportional) 21 0 false 0 0 0 0 0 990

# **GRID FIXED-CENTER INPUTS**

Grid-Spacing Step	0.05
Grid-Increment Percent	0.0
Lot-Size Increase Amount	0.0
Lot-Size Increase Percent	16.2
Lot-Size Increase Fibonacci	false
Take-Profit Pips Step	0.0

# **GRID MOVING-CENTER INPUTS**

Moving-Center Buy-Sell Overlap	false
Moving-Center Buy-Sell Offset Pips	0

# TIME AND DAY INPUTS

Grid Start Time Grid Stop Time Trade Monday Trade Tuesday Trade Wednesday Trade Thursday Trade Thursday Trade Friday Trade Friday Close For Sunday-Friday Time Friday Close Time Friday Close Time Friday Close Time Period	ignore ignore true true true true true true true tr
MISCELLANEOUS INPUTS	
Show Comments Log Activity Log Debug Info	true true false
<b>CLOSE-RUN OPTIONS</b>	
<u>CR Auto Restart</u> <u>CR Include Closed Trades Net</u> <u>CR Total Profit Percent</u> <u>CR Total Loss Percent</u> <u>CR Trail-Stop Percent (TSP)</u> <u>CR Profit Percent Before TSP</u> <u>CR Loss Money</u> <u>CR Trail-Stop Money (TSM)</u> <u>CR Profit Money Before TSM</u> <u>CR Profit Pips</u> <u>CR Loss Pips</u> <u>CR Loss Pips</u> <u>CR Trail-Stop Pips</u> <u>CR Price Maximum</u> <u>CR Price Minimum</u>	( Always; Profit-Only; Loss-Only; Never ) true 0.0 70.0 0.0001 0.3 0.0 0.0 0.0 0 0 0 0 0 0.0 0.0 0.0 0
IMMEDIATE-CLOSE OPTIONS Close Greater-Profit-Than Close Greater-Loss-Than Close Orders-Type Close Orders Now	0 0 ( Buys-and-Sells; Buys-Only; Sells-Only ) ( Close-None; Delete-Pending; Close-Trades; Close-At-Specified-Profit-Loss; Close-Run-Now )

**Important** - Some of the above settings can be changed on-the-fly. This means that if the EA properties-panel is opened while ForexGM is active, specific input settings can be modified without the need to remove the EA and reapply it to a chart. Settings that can be changed on-the-fly are generally those that will not change the basic trading strategy.

**Important** - There are more options in the <u>ForexGM\_Express.prf</u> file to control various aspects of ForexGM – the information displayed on the chart; setting of Alerts; Aesthetics and more. A separate instance of this file is located in the Tester/File folder that applies to Strategy Tester runs. Note that the settings in this file apply to all instances of ForexGM that are installed on the various charts in the MT4 terminal.

**Important** - Be sure to back-test and walk-forward-test your strategies extensively in Strategy Tester for a year or more to fully appreciate the functionality of the settings and their combined effects. Trade with a demo-account before you trade a real money account. Please do not underestimate how important these steps really are. Be the master of your destiny. "Risk comes from not knowing what you are doing." -- Warren Buffet.

# ForexGridMaster Input Settings Detail

The values of settings listed below are those built in as the default for ForexGM Express at the time of writing. This Buy-Sell Counter-Trend strategy was tuned at some stage to be suitable for trading the AUDNZD pair. With a slight adjustment to the settings, it may work for other currency-pairs that have similar price action. In any case, the default strategy is for demonstration purposes only. Back-test and walk-forward test all ForexGM strategies over at least a 3 year historical period to gain a thorough understanding of how the strategy works and what the risks are before trading real money.

A few videos have been uploaded to the <u>ForexGridMaster YouTube Channel</u> to illustrate ForexGM in action. There is a demonstration of a back-test for a previous strategy that ran live YTD until August 30, 2014, with an explanation of the methodology as it trades. Also included is a video which goes into detail about the Spike Protection mechanism. Some of these videos may refer to previous versions of ForexGM, but we plan to provide updates in the near future.

We strongly recommend following the processes illustrated in the videos – it should help when customizing the strategies for a particular trading style, risk-tolerance, and goals. Portfolio trading can be set up by trading a second instance (or more) of ForexGM on a second chart (or more) and dividing Account deposit into sub-accounts using the <u>Chart Equity Percent</u> setting.

# EA Number:

This input enables each instance of ForexGridMaster Express (ForexGM) to independently keep track of its own trades and calculations without influence from other instances of ForexGM, other EAs, or any manual trades. The *EA Number* should be unique for every EA instance running on the terminal, and because only one EA can be attached to a chart, the *EA Number* also uniquely identifies a chart. ForexGM's input settings affect only orders associated with the *EA Number* of the particular ForexGM instance. The *EA Number* can have any numeric value up to a maximum of 9 digits, as long as there is no conflict with other EAs.

ForexGM has several mechanisms to help prevent duplicate EA numbers – before accepting any modification to the settings, a check is made to see if there are other ForexGM instances already running with the chosen number. Any attempt to change an *EA Number* assigned to chart by a previous run of ForexGM will be rejected, thus helping to prevent unintentional loading of unrelated set-files. Global Variables are used to store persistent data related to each ForexGM instance, and it is recommended that ForexGM EAs and possibly their related charts are removed when no longer required. This setting cannot be changed on-the-fly.

# Strategy File [ STF ]:

This field can contain any text up to a maximum of 64 characters. Text entered here will be displayed in the top line of the comments at the top right of a chart. You can type anything here, but a meaningful description can help when screen-shots are archived for future study. Text might relate to the set-file name and also contain some reference to the parameters driving the strategy. This setting can be changed on-the-fly.

# Strategy Info [ STI ]:

As with the *Strategy File* setting above, any text can be entered, and it will be displayed on the second line of the chart comments. It might be useful to include additional details describing the particular strategy. This setting can be changed on-the-fly.

# Chart Equity Percent [ CEP ]:

ForexGM instances can trade with a specific Chart Equity, which can be any amount from 0 to 100% of Account Equity. At the start of each run, Chart Equity is calculated from the current Account Equity and the CEP value. When set to the default 100%, all funds in the trading account are available to ForexGM for trading. Please note that this differs from the way Chart Equity was handled in previous versions where Chart Equity was set to a specific monetary value. CEP provides a simple mechanism to control money-management. Because Chart Equity is only determined at the start of a run, it can be changed on-the-fly to take effect when the next run commences.

# Grid Type: (Fixed-Center-Grid; Moving-Center-Grid)

When trading a *Fixed-Center-Grid* strategy, the center-line for the grid will be the current market Bid price when ForexGM starts each Run. However if <u>Open At Current Price</u> is enabled for either a Buy or a Sell, then the center-line will be half the <u>Grid Spacing</u> pips value away from the price that the Buy or Sell trade opened, and exactly between the first Buy or Sell slots of the Grid. For *Fixed-Center-Grid*, the grid center-line will remain at the same price for the duration of the Run and the rest of the grid will be based on that price. There are six settings specifically related to Fixed grids – <u>Fixed-Center Inputs</u> The Grid Type cannot be changed on-the-fly.

Trading a *Fixed-Center-Grid* strategy, the Buy and Sell pending orders are kept separated from each other, Buys on one side of center-line price and Sells on the other, with no overlap allowed. As an example, when ForexGM Express trades a Buy-Sell Trend strategy, only pending Buy Stop orders can be placed above the centerline price and only pending Sell Stop orders can be placed below. If ForexGM was trading a Buy Trend Half-Grid, then only pending Buy Stop orders would be placed above the grid center-line. For a Buy Counter-Trend Half-Grid strategy, only pending Buy Limit orders are placed below the center-line.

A *Moving-Center-Grid* will change to always be the current moving market Bid price when you trade either a Buy or a Sell grid, or a Buy-Sell grid combined with *Buy-Sell Overlap* = true and *Buy-Sell Offset* = true. However, when trading a Buy-Sell grid with *Buy-Sell Overlap* = false, the *Moving-Center* option will place the center-line between the Buy and Sell orders, and will continue moving to maintain that relative position. Buy and Sell pending orders will be placed as close as possible to the moving center-line price according to the *Grid-Spacing* and the *Center-Zone Pips* settings. See the section illustrating how this works -- <u>FixedCenter and MovingCenter</u> <u>Scenarios</u>.

Some brokers do not allow pending orders to be placed within 5 - 20 pips (more or less) of market price, and so, depending on the *Grid-Spacing*, the initial grid position slots adjacent to grid center may not be filled with pending orders until the current price has moved away far enough to allow it. In the meantime, grid slots further away from the grid center-line are filled where possible according to the already established initial center-line price and other input parameters.

# Order Type [ OT ]: ( Buy-Sell; Buy-Full; Sell-Full; Buy-Half; Sell-Half )

This input determines whether the trade orders placed by ForexGM Express are either All Buy orders, All Sell orders, or Both Buy and Sell orders, and also whether they are Half-Grid or Full-Grid. As an example, if the default **Buy-Sell** is selected to trade a Trend grid to capture profit in the direction of the price trend, then Buy Stop orders will be placed above grid center and Sell Stop orders below. If **Buy-Sell** is chosen with the Counter-Trend option, then Buy Limit orders will be placed below grid center and Sell Limit orders above. This setting cannot be changed on-the-fly.

Orders will be placed symmetrically on both sides of grid center when set to **Buy-Full** or **Sell-Full**, or one side only when set to **Buy-Half** or **Sell-Half**. **Buy-Sell** grids automatically trade two half-grids, with one half Buy orders and the other half Sell orders. This setting cannot be changed on-the-fly.

Here are some basic examples ...

- You might wish to trade a Buy Trend grid to profit on price that is trending upwards. Choosing full-grid will place pending Buy Stop orders above the center-line price and pending Buy Limit orders below for either a *Moving-Center-Grid* or *Fixed-Center-Grid* strategy. For a half-grid, pending Buy Stop orders will be placed above the center-line price, but no Buy Limits below. Using half-grids when trend-trading in only one direction will reduce the number of open negative trades that accumulate over long price runs or spikes in the opposite direction of the trend. Depending on the *Grid-Spacing* and the strength of the market trend, you might be able to reduce the number of losing trades caused by retracements which open Buy Stops that follow the price downwards.
- If the price is expected to initially drop and then turn up shortly afterwards, an appropriate strategy would use a Buy, Counter-Trend, Half-Grid. This would place a half-grid of pending Buy Limit orders below the center-line, but no Buy Stops above.
- For a price that stays within a relatively well defined range, a strategy set for *Buy-Sell* and *Counter-Trend* should work well. The *Buy-Sell* strategy trades two half-grids, placing pending Sell Limit orders above the center-line, and pending Buy Limit orders below.

# Trend Direction [TD]: (Trend; Counter-Trend)

This input determines whether the grid is for a *Trend* or a *Counter-Trend* strategy. If *Order Type* is set to either Buy-Full or Sell-Full, the option is ignored. A *Trend* grid places Buy Stops above grid center (Buy Trend), or Sell Stops below grid center (Sell Trend) or both (Buy-Sell Trend). A *Counter-Trend* strategy places Buy Limits below grid center (Buy Counter-Trend), or Sell Limits above grid center (Sell Counter-Trend) or both (Buy-Sell Counter-Trend). If *Center-Zone Pips* is set non-zero, the top and bottom levels of the center-zone will be used instead of the grid center. This setting cannot be changed on-the-fly.

# Grid Spacing [GS]:

This input sets the distance in pips between each pending order grid-slot and the next grid-slot for orders of the same type (Buys or Sells). If the <u>Center-Zone Pips</u> setting is used, the first pending orders are placed at the edge of the zone, and *Grid-Spacing* applies from there. This setting cannot be changed on-the-fly.

# Max Pending Buy Orders [ MPBO ]:

This input determines both the number of pending Buy Limit or Buy Stop orders that the strategy will place at grid start, and the maximum number of pending Buy orders permitted at any one time. If either or both *Max Open Buy Trades* and *Max Open Sell Trades* are set to be greater than the default 1, then their values are used to determine the limit of open trade slots allowed, and the number of pending orders will be controlled accordingly. This means you cannot set MMPBO to a higher value than set for *Max Open Buy Trades*. If the number of open Buy or Sell trades reaches the limit but then decreases (one or more open trades are closed), then ForexGM will resume opening pending orders as dictated by the other strategy settings. ForexGM also limits the total number of open pending orders to a maximum of 100. However, be aware that some brokers may not allow that many open trades. This setting can be changed on-the-fly to a higher value but not lower.

# Max Pending Sell Orders [ MPSO ]:

This operates exactly like *Max Pending Buy Orders* above, but applies to pending Sell orders.

# Max Open Buy Trades [ MOBT ]:

When set to the default 0, then no Buy trades can be opened. Any other numeric value sets a limit on the maximum number of open Buy trades that ForexGM allows at any one time. Manual trades or other EAs with their own unique *EA Number* can operate on the same account without influence from this setting. Many brokers limit the total number of open orders in an account, but some do not -- check with your broker if you plan on heavy trading. This setting can only be changed on-the-fly when Main-Grid is set for *Moving-Center-Grid*. In this situation, for example with *Max Open Buy Trades* = 20, the total number of grid Buy slots (positions) that can be occupied by Buy orders on the Buy side of the grid is fixed at 20. Trade orders occupying any of those 20 positions can be opened, closed and replaced within a Run according to values set for other ForexGM inputs.

# Max Open Sell Trades [ MOST ]:

This operates exactly the same as *Max Open Buy Trades* above, but applies to Sell orders.

# Center-Zone Pips [ CZP ]:

When set to the default 0, this input is ignored. For a *Moving-Center-Grid* or *Fixed-Center-Grid* with *Center-Cone Pips* set to a number greater than 0, the Buy and Sell orders will be separated by at least the specified number of pips. For example, if *Center-Zone Pips* = 30, then no grid orders (pending or open) can occupy a slot inside that 30 pip zone. If a *Moving-Center-Grid* strategy is deployed, then the center-zone can move as the position of the Buys and Sells move. However, no grid orders (open or pending) can occupy a position within the CZP. When trading a Half-Grid, say a Buy Trend strategy, then the exclusion zone extends to half the CZP value from the grid center-line. This setting cannot be changed on-the-fly.

When trading a *Moving-Center-Grid* strategy, CZP moves in the direction of price and closing orders -- if orders are closed within the current Run, the center-zone will be adjusted to maintain the separation between the Buy and Sell orders. For a *Moving-Center-Grid* on a Buy-Sell strategy with <u>Buy-Sell Overlap</u> set to true, CZP must be disabled to allow overlaps to occur. However, when trading a *Fixed-Center* strategy, the center-zone will remain fixed in place for the duration of the Run, keeping Buys and Sells separated by the value set. There are a few examples of *Center-Zone Pips* for both *Fixed-Center-Grid* and *Moving-Center-Grid* in a later section – FixedCenter and MovingCenter Scenarios.

# Grid Order Replacement [ GOR ]:

If set to true, when a Grid order has closed it will be replaced if the price returns to that same grid slot within the same Run. If false, then each order within a Run will only be activated once for any given grid position. This setting can be changed on-the-fly.

# Open At Current Price [ OCP ]: (Not-Used; Buy-Order; Sell-Order )

When set to *Not-Used*, this setting is ignored. Set to either *Buy-Order* or *Sell-Order*, an order is opened immediately at current price at the start of each Run. All other pending grid orders placed during the Run are adjusted to that price position. In other words, the immediately opened trade is part of the grid being traded, and therefore determines where the *Grid-Spacing* is anchored. For example, if *Center-Zone Pips* = 20 and a Buy is opened at 1.3000 for a *Buy-Sell Trend* strategy, then the center-zone is from 1.3000 to 1.2980 and the grid is structured around that price, the first pending Sell order slot being set at 1.2980.

# **GRID ORDER INPUTS**

These settings apply to all individual orders for both *Fixed-Center-Grid* and *Moving-Center-Grid* scenarios in the main grid. Some extra settings which apply specifically to *Fixed-Center-Grid* or *Moving-Center-Grid* are covered in following sections.

# Lot-Size [LS]:

This input sets the base lot-size for individual Buy and Sell orders placed within a particular Run. Most brokers allow a minimum lot-size of 0.01 which is 1/100th of the standard \$100,000 lot-size, or \$1,000 (using USD as example) and for ForexGM, 0.01, a micro lot, is the minimum lot-size that can be set. Some brokers require minimum lot-sizes 10 times higher to 0.10 (\$10,000, a mini lot) in which case ForexGM will display a message that the value needs to be within broker limits before trading can continue. Brokers sometimes provide Mini Accounts with minimum lot-size of 0.01 which is 1/100th of the Mini Account lot-size of \$10,000, or \$100 in trade, a Nano lot. Brokers sometimes offer the option to trade Micro-Accounts with a minimum lot-size of 0.01 which is 1/100th of the Miro Account lot size of \$1,000, or \$10 in trade, a pico lot.

For *Fixed-Center-Grid*, the actual lot-size for individual orders within a Run can be controlled by *Lot-Size Increase Amount*, *Lot-Size Increase Percent*, or *Lot-Size Increase Fibonacci*. This setting cannot be changed on-the-fly for *Fixed-Center* grids. However, it can be changed for *Moving-Center-Grid*, but it will only affect new pending orders and not pending orders already placed.

# Lot-Size Scaling [LSS]: (LotSize-Constant; LotSize-Proportional)

The base lot-size for trade orders can remain constant for all Runs, or can change from Run to Run depending on the *Lot-Size Scaling* setting, either *LotSize-Constant* or *LotSize-Proportional*. *Lot-Size Scaling* cannot be changed on-the-fly.

If LotSize-Constant is selected, the base lot-size at the beginning of each Run is reset to Lot-Size [MLS]. When set to the default LotSize-Proportional, lot-size is set to MLS for the very first Run. On all subsequent Runs, the base lot-size is set at the start of each Run to be MLS increased or decreased by the ratio of Current-Chart-Equity to Original-Chart-Equity. However, if the calculated value is less than the MLS value set above, the lot-size will be set to MLS for each new pending order placed until the new calculations result in a lot-size larger than MLS. An exception to this rule could occur for Main\_Grid *Fixed\_Center* where lot-sizes are predefined for the slots and there might be a dip in equity causing a new lot-size calculation lower than MLS. The absolute minimum value for lot-size for any order is set by the broker, and ForexGM will apply this restriction if necessary.

**LotSize Proportional** can allow profits to compound when the equity curve is following an upward trend. On the other hand, it can also reduce losses for a less-positive equity trend. As an example, suppose account-equity starts Run 1 at \$10,000 with Lot-Size = 0.10; *LotSize-Proportional*; *CR\_ProfitPercent* = 10; and *CR\_LossPercent* = 30. If the Close-Run is positive and reaches its equity increase profit target of 10% net of all open and closed trades within the Run (*CR Include Closed Trades Net* = true), then start equity for Run 2 will be \$11,000, and Lot-Size will automatically be increased to 0.11. If the Close-Run was negative and the equity reduced 30% to \$7,000, the Lot-Size for Run 2 would be decreased to 0.07.

# Take-Profit Pips [ TPP ]:

This input determines how many pips profit each of the individual trade orders will target. For example, you might be trading the EURUSD, and a pending Buy order is open at 1.3700 with *Take-Profit Pips* = 35. If the price reaches 1.3735, the trade will be closed by the broker capturing 35 pips profit (ignoring slippage). When set to 0, this input is ignored. For *Moving-Center-Grid* only, this setting can be changed on-the-fly, although it will only affect new pending orders and not pending orders already in place.

# Stop-Loss Pips [ SLP ]:

This determines the Stop Loss for each individual trade order. If set to the default 0, this input will be ignored. If for example you are trading the EURUSD and a trade order opens at 1.3700 with Stop-Loss Pips = 50, and if the price then drops to 1.3650, the trade will be triggered to close at a loss of 50 pips. This setting can be changed on-the-fly when trading a *Moving-Center-Grid*, and will affect new pending orders only, not pending orders already in place.

# Break-Even Stop [ BES ]:

When set to true, a break-even Stop-Loss will be set for each order according to the rules dictated by the additional settings *Profit Pips Before Break-Even Stop* and *Break-Even Stop Plus Pips*. Set to false, BES is disabled and the associated settings are ignored. These settings can work in conjunction with *Profit Pips Before Trail-Stop Pips* described below. These settings cannot be changed on-the-fly.

# Profit Pips Before Break-Even Stop [ PPBBE ]:

When BES = true, this setting is enabled. If set to 10 as an example for an open pending order, and the price moves 10 pips into profit, a break-even stop is placed on the order so that a price retrace will close the order at break-even plus the value of the following BESPP parameter. This value can only be set to whole pips, not fractional pips.

#### Break-Even Stop Plus Pips [ BESPP ]:

The value in pips set here adds to the break-even stop. For example, if BESPP is set to 3 pips and PPBBE = 10 pips, it means that when an open order reaches its 10 pip profit target and BES is triggered, a price retrace of 7 pips (10 - 3) will cause the order to close 3 pips in profit. This setting is useful to offset commission, swap fees or slippage.

#### Trail-Stop Pips [ TSP ]:

This input determines the number of pips the trail-stop should be placed away from the open price. As an example, if TSP = 50 and PPBTS = 0, then a stop-loss is immediately set at 50 pips away from the pending order open price. That stop-loss will then trail pip by pip as the price moves in a profitable direction. If price moves in a losing direction then the trailing stop-loss will remain stationary and close the order when the stop-loss price is reached. Another example -- if TSP = 9 and PPBTS = 36, when each individual order is 36 pips into profit, the trail-stop of 9 is triggered and 27 pips of profit will be locked in. If the price keeps moving in a profitable direction, the trail-stop will follow pip by pip. Let's say that an individual order moves 50 pips into profit and then retraces 9 pips. The trade would then close out with 41 pips profit.

#### Profit Pips Before Trail-Stop Pips [ PPBTS ]:

If set to the default 0 pips, this setting is ignored. Set to a value such as 36 as an example, each of the individual orders that are opened will need to move 36 pips into profit before *Trail-Stop Pips* is activated. If PPBTS = 0 then TSP will determine the initial trailing stop-loss. This functions differently to Stop-Loss Pips which fixes the Stop-Loss on the broker's server. This setting cannot be changed on-the-fly.

#### Max Order-Period [ MOP ]:

The value of this setting specifies a period of time in seconds that works in conjunction with the next setting, *Max Order-Frequency*. If set to the default 0, then this setting and the next setting are ignored. If set to 900 seconds (15 minutes) for example, then *Max Order-Frequency* specifies the maximum number of trade orders that can be placed within *Max Order-Period*.

#### Max Order-Frequency [ MOF ]:

If *Max Order-Period* is greater than 0 seconds, then this setting is activated. If set to a value such as 2 for example, it means that no more than 2 trade orders can be opened within the time period specified by the previous *Max Order-Period* setting. These settings are used to counteract large price spikes and swings by reducing the number of negative accumulating trades. Please note however that those 2 trades will probably be in loss, and any other open trades that are in profit during the *Max Order-Period* will be ignored because price is moving against the 2 trades set by *Max Order-Frequency*. The open trades in profit are moving towards their Take-Profit target and will be closed at the appropriate time. This setting and the related *Max Order-Period* can be changed on-the-fly.

# **GRID FIXED-CENTER INPUTS**

The following parameters modify grid orders for *Fixed-Center-Grid*, and are ignored for a *Moving-Center-Grid*. All these settings depend upon the slot position where an order is initially placed. If <u>Grid Order Replacement</u> is true, then any order replacing one that was closed earlier in the Run will have exactly the same characteristics as the order it replaces.

# Grid-Spacing Step [GSS]:

When set to the default 0, this input is ignored. Set to a non-zero value, the space between grid-slots is increased incrementally by that amount as the grid moves out from its center-line. The value can be either a whole number or a decimal representing fractional pips. For example, if trading a Buy-Sell grid with *Grid-Spacing* = 10 and *Grid-Spacing Step* = 0.2, the separation between the first Buy and first Sell slot positions will be 10 pips. The interval between the first and second Buy slots will be 10.2 pips, then 10.4 pips for the next, and so on. Same formula applies to the Sell orders in the other half of the grid. Whenever a new Run commences, *Grid-Spacing Step* starts to increment the spacing again from scratch. This setting cannot be changed on-the-fly.

#### Grid-Increment Percent [ GIP ]:

MGIP works in a similar way to the MGSS setting above. The default of 0 means this setting is ignored. As an example, suppose *Grid-Spacing* is set to 10 with GIP = 10% for a Buy-Sell grid. Separation between center-most slots will be 10 pips. Next slots will be spaced 11 pips apart, then 12.1, and so on. This setting should not be changed on-the-fly.

#### Lot-Size Increase Amount [ LIA ]:

Default for this setting is 0, which means the input is ignored. When non-zero and Main-Grid = *Fixed-Center*, the base lot-size as determined by either *LotSize-Constant* or *LotSize-Proportional*, is increased incrementally from one pending order slot to the next by that amount. For example, if the base lot-size for a grid is 0.15 and LIA = 0.01, then lot-size for the next pending order placed at slot #2 will be 0.16, the next one 0.17, next 0.18, and so on. When a Run is closed (all open trades closed and pending orders deleted) and a new Run begins, the lot-sizes are allocated as previously either by Lot-Size or Lot-Size Percent. This setting cannot be changed on-the-fly.

#### Lot-Size Increase Percent [ LIP ]:

When set to the default 0, this input is ignored. When set to a percent for a *Fixed-Center-Grid*, the lot-size as determined by either *LotSize-Constant* or *LotSize-Proportional*, is increased incrementally by that percentage from one pending order slot to the next. This setting may be useful for Martingale strategies made famous by professional gamblers. For example, if the starting pending order lot-size is say 1.20 and LIP = 100%, then the next pending order lot-size would be increased by 100% to 2.40, the next to 4.80, then 9.60, and so on. For a starting lot-size of 1.20 and MLIP = 50%, the next pending order lot-size would be increased by 50% to 1.80, followed by 2.70, 4.05, etc. As a new Run begins for a *Fixed-Center-Grid*, lot-sizes are again calculated using the formula described above. This setting cannot be changed on-the-fly.

#### Lot-Size Increase Fibonacci [ LIF ]:

Default is false and this input is ignored. When set to a true for a *Fixed-Center-Grid*, the lot-size set by either *LotSize-Constant* or *LotSize-Proportional*, is increased incrementally from one pending order slot to the next in accordance with the Fibonacci series... 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, etc. The series is based on the formula "next number = current number + previous number". For example, if the base lot-size is 1.2, then the next lot-size will be 1.2 (1.2 + 0, the previous lot-size); next lot-size will be 2.4 (1.2 + 1.2), next 3.6 (2.4 + 1.2), then 6.0 (3.6 + 2.4), 9.6, and so on. When a fresh Run starts, these lot-sizes are again calculated using the formula with whatever base lot-size applies at the time. This setting cannot be changed on-the-fly.

#### Take-Profit Pips Step [ TPPS ]:

When set to the default 0, this input is ignored. For a non-zero value, *Take-Profit Pips* is incremented by TPPS from one pending order slot to the next. For example, if TPP = 20, TPPS = 0.5 and there are 6 *Fixed-Center-Grid* slot Buy positions (created with *Max Open Buy Trades* = 6), then the order at Buy slot 1 (closest to grid center) has Take-Profit Stop = 20; the Buy order at slot 2 position has Take-Profit Stop = 20.5; Buy 3 to Take-Profit Stop = 21; Buy 4 Take-Profit Stop = 21.5; Buy 5 Take-Profit Stop = 22; and Buy 6 (furthest from grid center) has Take-Profit Stop = 22.5. Not only can the lot-size be increased for grid orders moving out from grid center, but their Take-Profit pips can increase as well – this might prove useful for Counter-Trend strategies stretched over a large range where larger retracements are required. This setting cannot be changed on-the-fly.

# **GRID MOVING-CENTER INPUTS**

The following two settings apply to Moving-Center strategies. They are ignored for *Fixed-Center* grids.

# Moving-Center Buy-Sell Overlap [MCBSOV]:

When set to true, grid Buy orders and Sell orders can overlap. *Moving-Center Buy-Sell Overlap* = false ensures all pending or open Buy orders on one side of the grid will remain separated from all Sell orders on the other side (see examples below). This setting cannot be changed on-the-fly.

# Moving-Center Buy-Sell Offset Pips [ MCSOP ]:

This option prevents Buy and Sell orders from occupying the same price slot positions when trading a *Buy-Sell* strategy involving *Moving-Center Buy-Sell Overlap* set to true. If Buy and Sell orders are placed at the same price, it can be difficult to identify them by their graphical representation on a chart. A slight offset can make them more distinguishable without greatly affecting trading outcomes. MCSOP specifies how many pips Sell orders will be placed below Buy orders in a Buy-Sell grid where Buys and Sells overlap. This does not affect Grid-Spacing or Center-Zone Pips for either type of grid. This setting cannot be changed on-the-fly.

Here are a few examples using EURUSD prices...

Grid-Spacing = 6	Grid-Spacing = 6	Grid-Spacing = 3
Center-Zone Pips = 0	Center-Zone Pips = 0	Center-Zone Pips = 6
Buy-Sell Overlap = true	Buy-Sell Overlap = true	Buy-Sell Overlap = false
Buy-Sell Offset Pips = 3	Buy-Sell Offset Pips = 1	Buy-Sell Offset Pips = 0

# Grid Start Time: ( default = "ignore" )

When set to the default "ignore", this setting has no effect. This input determines the time of day when ForexGM will open a grid of pending orders. It is the 24-hour time relative to Market Watch time which is displayed on the title-bar of the Market Watch panel of the terminal when connected with a broker and the market is open. If *Grid Start Time* = 00:01 as one example, then ForexGM is activated at 00:01 (midnight) Market Watch time. If set to 08:30, then ForexGM will start placing orders automatically at 8:30 am. If set to 20:30, then orders will be placed from 8:30 pm onwards. *Grid Start Time* can work independently, or in conjunction with *Grid Stop Time*. If *Grid Start Time* is set to any value and *Grid Stop Time* = "ignore", all orders will be closed at midnight on the day they opened, ready to start again the next day if required. This setting can be changed on-the-fly anytime before it has been triggered.

# Grid Stop Time: (default = "ignore")

When set to the default of "ignore", this setting is ignored as one might expect. This input determines what time ForexGM will stop the present Run and close out all open trades and delete all pending orders. The format is the same as for *Grid Start Time*, and these two settings work in tandem to control the daily period for trading. For example, if *Grid Start Time* is set to 23:00 and *Grid Stop Time* is set to 07:25, then ForexGridMaster will trade through the night and shut down at 07:25 (7:25 am) in the morning to start a new Run at 23:00 (11:00 pm). This cycle is repeated for all trading days that are enabled (all days are enabled by default). Another scenario might have the time period set by *Grid Start Time / Grid Stop Time* as 08:05 to 19:35, which would result in active trading from 8:05 am through the day until 7:35 pm. This setting can be changed on-the-fly anytime before it has been triggered.

# Trade Monday: (default = true) Trade Tuesday: (default = true) Trade Wednesday: (default = true) Trade Thursday: (default = true) Trade Friday: (default = true)

When one or more of the *Trade Day* input settings are set to their default values of true, trading is enabled for those particular days, week after week, continuously until these settings are changed. *Trade Day* settings are based on Market Watch time which is displayed on the title-bar of the Market Watch window on the MetaTrader 4 terminal. The time period for each *Trade Day* starts at 00:00:00 Midnight and ends 24 hours later at 23:59:59. Whenever one or more of the *Trade Day* settings are set to false, then trading is disabled for those days, and a complete Close-Run is triggered at 00:00:00 on the specified days to close all open trades and delete all pending orders. If *CR Auto-Restart* = true, a new Run will start automatically, but not until the next enabled *Trade Day*. If *CR Auto-Restart* = false, the EA must be manually restarted. These Trade Day settings can be changed on-the-fly anytime before their trigger time.

As an example, if *Trade Monday* is set to false, trading will be disabled for Mondays from 00:00:00 to 23:59:59 Market Watch time. If a Run is open and trading on the preceding Sunday, then that Run will close at 00:00:00 midnight Market Watch time between Sunday and Monday, and a new Run will not start up automatically until the next enabled Trade Day. When Close-Run is triggered, all open trades and pending orders are closed.

# Trade Sunday: (default = true)

Sundays are handled differently from the other days because the market can sometimes be closed to reopen on a Sunday. This is the case for most Forex instruments that cease trading over a weekend. So, if *Trade Sunday* = false and *Trade Friday* = true, then any Run in progress on Friday actually needs the Close-Run function triggered at least 15 minutes before market closing-time on Friday (see *Close For Sunday-Friday Time*). This will ensure all open trades and pending orders are closed before the Friday market close. The *Trade Sunday* setting can be changed on-the-fly anytime before its trigger time.

# Close For Sunday-Friday Time: (default = "ignore")

This setting is activated when *Trade Sunday* = false. It is important to check the Market-Watch times that the market is open for your particular broker. Forex trading is normally closed on Fridays by the broker, and any time set here should be at least 15 minutes before the Friday market close to allow sufficient time for all trade orders to close. For example, one account we have with GoMarkets in Australia closes on Friday afternoons at the Market-Watch time of 22:59:59, so in this case we use the setting *Close For Sunday Friday Time* = 22:30. This setting is useful to close out orders on Friday afternoon to avoid the weekend gap that shows up at the Sunday evening market-open. This setting can be changed on-the-fly anytime prior to its trigger time.

# Friday Close Time: (default = "ignore")

When set to "ignore", this setting and the next two, *Friday Close Profit Only* and *Friday Close Time Period,* will be ignored, no matter what values they are set to. When set to a close time according to the MetaTrader 4 Market-Watch time, 08:25, 11:45, or 14:00 as examples, and in the same 24-hour clock 'hh:mm' format, the current Run will be closed at the specified *Friday Close Time* unless cancelled or modified by the following two settings.

If the current Run is closed by *Friday Close Time* and the setting *CR Auto-Restart* = true, the restart will be ignored and ForexGM will be stopped and can only be started again manually. This setting is useful to avoid possible large unexpected price gaps that can occur over the weekend, or simply just to close ForexGM at the end of the trading week. Depending on activation of the next two settings, *Friday Close Profit Only* and *Friday Close Time Period*, this setting can continue to operate from week to week until it triggers a Close-Run. This setting can be changed on-the-fly any time before its trigger time.

#### Friday Close Profit Only:

If set to true, the Run will close at the *Friday Close Time* set, but ONLY if the current Run net profit of all trades, both open and closed, is positive either at that exact time, or within the period specified by *Friday Close Time Period*. If set to false, then this setting is ignored and the current Run will be closed immediately at the set *Friday Close Time*. This setting can continue to operate from week to week until it triggers a Close-Run. It can be changed on-the-fly any time before its trigger time.

#### Friday Close Time Period:

This setting works in combination with *Friday Close Time* and *Friday Close Profit Only*. If set to zero then this setting is ignored. If set to 120 minutes for example, it means that during the 120 minute *Friday Close Time Period* commencing from the *Friday Close Time*, ForexGM will monitor the current Run net profit, and will close the Run if and when it reaches profit within that 120 minute window. Otherwise, the Run will not be closed. Using *Friday Close Time* = 14:00 as an example, at 14:00 ForexGM examines the current situation and will immediately activate a Close-Run if the Run is in profit. If the Run does not go into profit during the set *Friday Close Time Period* of minutes, then the Run will continue trading when the market next opens. This setting can continue to operate from week to week until it triggers a Close-Run. It can be changed on-the-fly any time before its trigger time.

# **MISCELLANEOUS INPUTS**

The settings in this section apply to the overall strategy.

# Show Comments: (default = true)

ForexGridMaster displays very useful information in comments at the top right corner of a chart, including Strategy File-Name and Info, Current Run Statistics, Max Equity Drawdown, etc. If *Show Comments* is set "false", then no comments are displayed. The display of comments is also controlled by a parameter in the <u>ForexGM\_Express.prf</u> file. If *Show Comments* is set to "true" or "false", it will take precedence over any option set in the Profile.

#### Log Activity: (default = true)

The default is set "true" to allow extra information to be saved to the system log-file in the [MT4 Data Folder]\MQL4\Logs directory. These details can help troubleshoot problems when ForexGridMaster does not appear to be functioning correctly. When there is a problem, log-file entries can be viewed in the "Experts" tab at the bottom of the Terminal window. Right click on an entry and choose "Open" to view the whole log-file for that day or any previous days.

#### Log Debug Info: ( default = false )

Like the setting above, this input can be set to "true" to record even more detail in the system log-file saved at the [MT4 Data Folder]\MQL4\Logs. See <u>Testing and Problem Solving</u> below for more information.

# **CLOSE-RUN OPTIONS**

The net Profit/Loss for orders within a Run will trigger a Close-Run when conditions meeting any of the following criteria are met. The Net Profit is displayed in the ForexGM comments on a chart. A grid Run will be stopped on the next tick after a Close-Run is triggered, and all orders controlled by the specific ForexGM instance will close. The following parameters specify conditions for Close-Runs that are not visible to the broker, and hence are referred to as Stealth-Mode settings.

# CR Auto Restart: (Always; Profit-Only; Loss-Only; Never)

If set to the default *Always*, then ForexGM will automatically restart a new grid Run immediately after a close of the current Run is triggered by any of the settings in this section. If set to either *Profit-Only* or *Loss-Only*, then a new Run will be started accordingly, after a CloseRun has completed. When a Run is closed without Auto Restart, ForexGM must be manually reset to start trading again for a new Run. This setting can be changed on-the-fly.

# **CR Include Closed Trades Net:**

Most of the following options depend on a Profit/Loss calculation involving trades made during a particular Run. This parameter dictates whether or not to include trades that have been closed within the Run. When set to the default true, the net Profit/Loss calculation includes all related grid-trades that have been closed within a Run. In other words, when *CR Include Closed Trades Net* is set false, the calculation of net Profit/Loss involves only open trades, and not any trades that have been closed within the Run.

# **CR Total Profit Percent:**

If set to the default 0, this input is ignored. Otherwise, it specifies the percentage of equity-profit that will trigger a Close-Run which closes all open trades and deletes all pending orders. ForexGM Express will then automatically initiate the next Run provided *Auto Restart After Profit* is enabled. For example, if *CR Total Profit Percent* = 3, it means that 3% of the Start Equity for the particular Run is the Close-Run profit target. ForexGM will close the Run when that target is reached. If *CR Include Closed Trades Net* is set true, the profit calculation includes all trades closed within that specific grid Run. During trading, the continuously updated Net Profit/Loss figure is displayed in the chart comments. This figure is calculated independently from all other trades that might have been placed during the period in question, whether they were placed by ForexGM, other robots, or manually. Unique EA Numbers are used to identify trades that relate to a specific ForexGM instance. This setting can be changed on-the-fly, although it can trigger an immediate Close-Run if a profit target has been reached at the time the change is made.

# **CR Total Loss Percent:**

If set to 0, this input is ignored. If non-zero, it will trigger a Close-Run when the net loss of all open and closed trades within a Run equals the specified percentage of run-start Chart-Equity. When *CR Loss Percent* is triggered, it closes all Grid open trades and deletes all pending orders, and then ForexGM will automatically initiate the next Run if *Auto Restart After Loss* is set true. This setting can be changed on-the-fly, but be aware that it can trigger an immediate Close-Run if a loss target has been reached at the time the change is made.

# CR Trail-Stop Percent [ CR-TSP ]:

When the value is set to the default zero, both this input and the following CR-PPBTSP input are ignored. A non-zero value specifies a trail-stop in terms of run-profit as a percentage of the start-run Chart-Equity. As an example, suppose *CR Trail-Stop Percent* = 1.0% and the start-run Chart-Equity is \$4,000. The trail-stop would be \$40, and the Run would close if the profit fell \$40 below the peak profit for the Run. This setting can be changed on-the-fly, but it is important to note that it is only applied at the start of a Run and has no effect during a Run.

# CR Profit Percent Before TSP [ CR-PPBTSP ]

This parameter works in conjunction with *CR Trail-Stop Percent*. If it is zero, a percent trail-stop is activated when the Run begins. If non-zero, the percent trail-stop will kick in when Run profit reaches the CR-PPBTSP percentage of the start-run Chart-Equity, and applies until the Run closes. If CR-PPBTSP = 0.5% as an example, then equity must increase by 0.5% before the *CR Trail-Stop Percent* input is triggered. The profit used in the calculation is the net profit of all open trades, plus the net profit of trades closed during that specific grid Run (if *CR Include Closed Trades Net* is set true). This setting can be changed on-the-fly, but as with *CR Trail-Stop Percent*, it is only applied at the start of a Run..

# **CR Loss Money:**

This setting is very similar to *CR Loss Percent* except that the trigger-level for a Close-Run is specified as a monetary amount rather than a percentage of Chart-Equity. It is useful if a trader wishes to limit the loss on a particular Run to a certain amount. It can be changed on-the-fly.

# CR Trail-Stop Money: [CR-TSM]

This setting is very similar to *CR Trail-Stop Percent* except that when *CR Profit Money Before TSM* (below) is set to the default zero, this input is ignored. It is also ignored if *CR Trail-Stop Percent* is set because both these options cannot be active at the same time. When CR-PMBTSM is set to a monetary value, \$3,000 as an example, this input is enabled. If CR-TSM = \$500, then when profit reaches \$3,000, the \$500 trail-stop is activated and a \$2,500 profit is locked in. As profit increases further, the trail-stop will trail dollar-by-dollar (or whatever base currency the account uses) – at \$3001 a profit of \$2,501 profit is locked in. Profit is calculated for all orders associated with the particular grid Run. This setting can be changed on-the-fly.

# CR Profit Money Before TSM: [CR-PMBTSM]

When set to the default zero, this parameter and *CR Trail-Stop Money* are ignored. It should not be enabled if *CR Trail-Stop Percent* is set. As illustrated in the previous paragraph, this setting specifies the trigger-level (monetary Run-profit value) to be reached before the trail-stop money is activated. This setting can be changed on-the-fly.

# **CR Profit Pips:**

If set to the default zero then this input is ignored. When set to a pips number value (whole pips only, no fractions), this input specifies the number of pips profit that will cause a Close-Run. For example, if a strategy has CR Profit Pips = 150, this means that 150 pips is the Run target. ForexGM will close the Run when it reaches 150 pips in profit target, and a new Run will start immediately (unless *Auto Restart After Profit* is disabled). The 150 pips target is calculated from the net value of all open trades, plus the net profit of trades closed within that specific Run (except if *CR Include Closed Trades Net* is set false, and only the open trades are taken into account). If *Show Comments* is set true, the Net Profit Pips figure is displayed on the chart. This setting can be changed on-the-fly.

#### **CR Loss Pips:**

If set to the default zero, this input is ignored. For any positive value, this input results in a Close-Run when the net pips loss of all open and closed trades within the Run reaches this level. However, if *CR Include Closed Trades Net* is set false, and only the open trades are taken into account. The pip calculation does not include any trades unrelated to the specific ForexGM instance. A unique *EA Number* is assigned to each ForexGM instance to identify related transactions and trades. This setting can be changed on-the-fly.

#### **CR Trail-Stop Pips:**

If set to default 0 pips, then this setting is ignored. For any other value, either positive or negative, this setting specifies the Close-Run price threshold in pips. When a Run starts, the threshold is set above or below current Bid price at that time – above the Bid price if a positive number, below if a negative number. As an example, consider a current EURUSD price of 1.3095 and *CR Trail-Stop Pips* = 20. When the price moves down, the stop-loss will follow it down and remain 20 pips above the Bid price. As the price retraces and moves upwards, the threshold remains fixed and a Close-Run is triggered when the price reaches that threshold price level. If *CR Trail-Stop Pips* was negative, the effect would be in the opposite direction, with the threshold adjusted to be 20 pips below the Buy price for an upward price movement. Extra care should be taken when combining *CR Trail-Stop Pips* with any of the *Auto-Restart* options. This setting can be changed on-the-fly.

# CR Price Maximum:

# CR Price Minimum:

These two inputs can be set independently, and are ignored if set to the default zero. Set to a specific price above or below the prevailing Bid price as appropriate, a Close-Run is actioned when the Bid price hits either threshold level. It is important to note that these settings should only be used in a short-term monitoring situation, and manual intervention is required before the following Run can commence. They should NEVER be used in conjunction with any Auto-Restart options as the results could be unpredictable, and potentially disastrous. This setting can be changed on-the-fly.

# **IMMEDIATE-CLOSE OPTIONS**

These settings are used to immediately close some of or all trade orders controlled by this instance of ForexGM and its *EA Number*. A close procedure is actioned as soon as one of these options is selected in the Settings Panel and the OK button is clicked. To resume trading after the trades have closed, it is necessary to return to the Settings Panel and deselect the previous close-option. A Red text-box displays a message on the top-right of the chart as a constant reminder that ForexGM requires a reset before normal trading resumes. Settings in this section specify which particular grid-orders should be closed, resulting in either a full or partial Close-Run.

A full Close-Run occurs when the chosen options result in the closure of all trades and pending orders. A colored rectangle (the Close-Run marker) is drawn on the chart to identify a full Close-Run, and the upper and lower boundaries will usually correspond to the highest and lowest prices of trades placed within the Run. Hovering over this marker will show the equity and profit/loss associated with the Run. Full Close-Runs are numbered 1, 2, 3 etc. For partial Close-Runs, letters are appended to the run-numbers... 1-A, 1-B, 1-C, etc.

It is important to exercise caution for partial Run-Closes when *Grid Order Replacement* is set true. The situation might arise where an order is deleted, and is immediately replaced when the grid becomes active again. These settings apply only at the time ForexGM is restarted via the Settings Panel, and hence can be changed on-the-fly.

Trades can be closed using various techniques available in the MetaTrader terminal, but note that if trades are closed outside the control of ForexGM, the accounting data will no longer be reliable.

# **Close Greater-Profit-Than:**

# **Close Greater-Loss-Than:**

These settings are only enabled when set to a positive, non-zero value, and *Close Orders Now = Close-At-Specified-Profit-Loss*. As an example, if *Close Greater-Loss-Than* is set to 100 and the base account currency is USD, only trades showing a loss of US\$100 or more will be closed.

# Close Orders-Type: (Buys-and-Sells, Buys-Only, Sells-Only)

As with the previous parameter, this works in conjunction with the *Close Orders Now* option. If set to the default *Buys-and-Sells*, all order types will be included when assessing the criteria to determine which trades to close. Somewhat expectedly, if *Sells-Only* is selected it means only Sell trades would be included.

# Close Orders Now: ( default = Close\_None )

- Close-None Continue trading as normal
- Delete-Pending Only delete Pending Orders
- Close-Trades Close Open Trades
- Close-At-Specified-Profit-Loss Close trades that have profit/loss outside the limits (above)
- Close-Run-Now Close all trades matching the Close Grid-Type and Close Orders-Type criteria

If Delete-Pending is set, be aware that no new pending orders will be placed until after the next full Close-Run.

# Fixed-Center and Moving-Center Scenarios

# **Fixed-Center Grid**



**Figure #1:** This image illustrates a Fixed-Center grid run in Strategy Tester with the settings below. The equity graph is also included to demonstrate a useful technique for comparing the profitability of various strategies.

Grid Type	Fixed-Center-Grid
Order Type	Buy-Sell
Trend Direction	Counter-Trend
Grid Spacing	5
Max Pending Buy Orders	1
Max Pending Sell Orders	1
Center-Zone Pips	0
Take-Profit Pips	0
Stop-Loss Pips	0
Trail-Stop Pips	3
Profit Pips Before TS	16
CR Trail-Stop Percent	0.15
CR Profit Percent Before TSP	0.80

As the price moves out from the fixed center-line, Sell-Limit and Buy-Limit orders are placed and opened when the prices reach the appropriate levels. With these settings, only one pending order is placed in each direction. Individual trades are closed by the Trail-Stops. The Run will close once the profit has reached the target 0.80% of Chart-Equity (or more) followed by a drop of 0.15% from that threshold.

# **Moving-Center Grid**



Figure #2: This image shows snapshots at three different positions along the time-line to illustrate how the moving center is adjusted as price moves, and keeps orders outside the excluded center-zone.

The following settings were used to produce the result shown. The best way to understand how the Moving-Center works is to use settings similar to these and run a test or two in the Strategy Tester.

Grid Type	Moving-Center-Grid
Order Type	Buy-Sell
Trend Direction	Counter-Trend
Grid Spacing	10
Max Pending Buy Orders	2
Max Pending Sell Orders	2
Center-Zone Pips	30
Take-Profit Pips	30
Stop-Loss Pips	10

In section 1 of Figure #2, the Buy and Sell pending orders are placed symmetrically around the center-line price set when the Run started. The dull-red band is an indication that the Center-Zone extends 15 pips either side of the center-line where orders cannot be placed. As the price moves down in section #2, a Buy is opened at the Buy-Limit. This does not change the center-line or trigger adjustment of other grid orders. However, the price turns back up and closes this Buy trade on a Take-Profit target. This leaves a gap between the lowest Sell-Limit and the highest Buy-Limit of 40 pips, i.e. greater than the 30 pips set for Center-Zone. To correct the situation, the top Sell-Limit is relocated as close as possible to the current Bid price resulting in a shift downwards of the center-line.

In section #3, the price continues its upwards movement, opening Sells and adding Sell-Limits along the way. In the lower portion of the grid, Buy trades are being closed at Take-Profit targets and new Buy-Limits added as appropriate. The end result is that the center-line moves roughly in sync with the currency-pair price.

# Grid Runs... The Magic at the Heart of ForexGridMaster

When ForexGridMaster is initiated on a chart, no matter what the preset-file strategy settings are, grid Run #1 starts and pending orders are placed on the broker's MetaTrader4 server according to those settings chosen by trader.

The philosophy that drives ForexGM is to break trading into blocks of trades, or Runs. A Run will close all trades and delete all pending orders when certain criteria have been met. These Run-Closes are controlled by carefully configured parameters that should produce the various desired outcomes – profit-targets, loss-limits, hedging, restart-delays, spike-response, and others as detailed in earlier sections.

Successful Forex trading relies heavily on visual aspects of the trading-terminal to help identify endless patterns in price movements that could lead to profitability. ForexGM extends the graphics built into MetaTrader4, with the aim of placing graphics in a meaningful context to convey the maximum amount of useful information. Spike-detection is one area where we have pushed the graphic 'envelope' to its limit. We also recognize the importance of back-testing various strategies before committing funds. The following screen-shot from a Strategy Tester Run illustrates how the Runs are marked on a chart, plus a few visual cues as the what might have caused the particular Run to close.



**Figure #3:** In this particularly busy screen-shot, we have attempted to capture several of the graphical features that are unique to ForexGM. The Green rectangles mark the end of a Run. Those shown here are colored Green because the three Runs were all closed in profit. If a Run is closed in loss, the rectangle would be Red. If desired, these default colors can be changed by setting values in the Profile. Hovering over the bars above and below the rectangles will display tooltips giving details about the associated Run.

A small icon is added to indicate where pending-orders are actually opened. In Strategy Tester, this feature is not of much benefit because the point pending-orders are opened is already marked with a small arrow. However, in Demo or Live mode, no arrow is drawn to indicate the opening of an order, so the additional icons can be extremely useful. Blue icons indicate Buy orders, and red for Sells. The strategy illustrated has a Main-Grid with Fixed-Center, which produces the horizontal blue lines marking grid center-price and the outer grid-slots that would be occupied if the maximum number of grid positions were filled. There are several other situations that result in horizontal lines to indicate various significant price levels. Hover over any line and the tooltip should identify its function.

# Profile ForexGM\_Express.prf – Alerts, Objects, Chart Display

The ForexGM\_Express.prf file is optional, and to take effect it should be placed in both these folders -- "[MT4 Data Folder]\MQL4\Files" and "[MT4 Data Folder]\tester\files". ForexGM can run with the ForexGM\_Express.prf file using its default values, but there are many settings that might be customized to suit personal preferences. Changes made to these prf files affect all instances of ForexGM running in a terminal. Note that the Strategy Tester profile is separate from the profile in the normal run environment. Any new ForexGM instance will automatically adopt the appropriate profile once it is set up.

Some options allow an email to be sent when an Alert is triggered. This requires additional MetaTrader4 terminal configuration. In the menu, Select Tools > Options > Email, and enter the required details. Only one email address can be used and this applies for all Alerts sent from ForexGM. If you wish to customize the sounds for various Alerts, load the required sound-files into the [MT4 Data Folder]\Sounds folder and modify the relevant references in the Profile.

The following fields are typical entries in ForexGM\_Express.prf. Please take care to include the semi-colon (";") at the end of each line and before any comment delimiter ("//"). If the value of any field is set "default", ForexGM will use the relevant default value built into the software. Some fields appear in the Settings as well as in the Profile. In this case, any non-default value in Settings will take precedence over the value in the Profile.

Fields referring to colors can use any of the following formats...

Web-color Names:	clrMediumBlue
Hex Format:	0x665544(0xBBGGR)
RGB Format:	20,30,40 (rr,gg,bb)

- ShowComments = default;
  TextSize = 9;
- TextColor = clrYellow;
- ChartBackgroundDark = true; There are two default styles built into ForexGM – one with a light-coloured theme, the other dark. Experiment with this field set to 'false' if you prefer a light background.
- CenterLineColor
  = clrSteelBlue;
- CenterZoneColor = default;
- TrailPriceColor = default;
- CloseBarInitialColor = default;
- CloseBarPartialColor = 85,85,143;
- CloseBarProfitColor = default;
- CloseBarLossColor = default;
- LogActivity = true;
- LogDebugInfo = default;
- AfterMarginLimitResume = true;

When there is a Margin-Call on an Account, ForexGM pauses. With this field set true, ForexGM will continue trading if the Account Equity increases so that the Margin is again within limits. If set false, ForexGM will need manual intervention for trading to continue after a Margin-Call has been triggered.

TestCommission = 0.00;

This parameter simulates Commission when using the Strategy Tester. A value of 7.00 would represent a return-trip Commission of 7.00 units of Account Currency per lot.

AccountNameTester = Joe Trader;
 If the MetaTrader4 Terminal is disconnected from the broker, it is often difficult to obtain the Account-Name.
 This name is required for ForexGM licensing. In order to use the Strategy Tester in off-line mode, enter the full name of the account in this field.

Alerts related to parameters in the following group will fire every time the particular trigger-event occurs.

= true:

- AlertRunClosedSound
- AlertRunClosedPopup = false;
- AlertRunClosedEmail = false;
- AlertSpikeSound = true;
- AlertSpikePopup = false;
- AlertSpikeEmail = false;

The following three fields will produce an Alert only once when the trigger event first occurs, and will be reset to fire again after the MetaTrader terminal is restarted or ForexGM is reloaded.

- AlertMarginWarningSound = true;
- AlertMarginWarningPopup = false;
- AlertMarginWarningEmail = false;

A zero value for any of the following parameters will disable the particular Alert. Each of the Alerts in this group will only fire once per Run. Additionally, these Alerts will be reset whenever the EA or terminal is restarted. Note that any change of chart-period will also cause a reset of these Alerts.

AlertTotalBuysOpenSound = 0; // (set the total number of Buys that will trigger Alert )

= 0:

= 0;

= alert.wav;

= alert.wav;

- AlertTotalBuysOpenPopup
- in ( set the total number of buys that will trigger Ale
- AlertTotalBuysOpenEmail = 0;
  - = 0; // ( set the total number of Sells that will trigger Alert )
- AlertTotalSellsOpenSound
  AlertTotalSellsOpenPopup
- AlertTotalSellsOpenEmail
  = 0;

For each Alert involving Sound, the following fields can be used to customise the sounds related to each event.

- SoundInputError = expert.wav;
- SoundRunClosed = alert2.wav;
- SoundSpike
- SoundBuysOpen
- SoundSellsOpen = alert.wav;
- SoundMarginWarning = alert.wav;

# ForexGM Chart Comments

An example in Strategy Tester ...



**Figure #4:** Chart Comments are completely dynamic and refreshed every tick. Some lines display only when certain parameters are set, for example the Profit-Percent/Trail-Stop comment-line shown above. In certain situations, a line might be highlighted or displayed in bold-font. Taking Profit-Percent/Trail-Stop again as an example, when the threshold ProfitPercent BTS is reached, the related comment-line is drawn in bold-font and the new threshold value is updated if pushed higher.

- Strategy: A free-form entry copied from the Settings-field that identifies set-file name and function
- Details: Another free-form field that could be used to display extra information about a strategy
- Account Equity/Chart Equity: Displays the split between Account-Equity and Chart-Equity
- Account Details at Run 1 Start: Original starting Chart-Equity plus date and time
- Net Profit Preceding Runs: Total Profit/Loss for previous Runs (money and percent) useful for analysis
- Current Run Start Equity: Chart-Equity plus Date and Time at the start of the current Run
- Current Run Net Profit: Profit/Loss (money and percent) of current Run updated tick-by-tick
- Drawdown: Maximum drawdown (money and percent) over all Runs, plus Date and Time of drawdown
- Minimum Chart Equity / Margin Level: Displays in Strategy Tester to facilitate risk assessment
- Profit Percent BTS: Details displayed if CR Trail-Stop Percent and CR Profit Percent Before TSP set
- Loss Limit: Displays the Loss Limit (money and percent) if CR Loss Percent is set
- Grid Buys/Sells: When the grid is active, this line displays the number of open Buy and Sell trades associated with the grid, and the total lot-size for each order-type

# **Testing and Problem Solving**

When ForexGridMaster fails to function as you expect, it's time to investigate if your expectations are correctly aligned with the product, or whether a bug exists in the system that should be brought to the attention of our developers. First step is to carefully check the settings in the Properties Panel to ensure all inputs are properly configured and compatible with each other. No effort has been spared in preparing this manual to explain the subtleties and finer points of ForexGM, so please make good use of it.

By default, ForexGM specific error-messages are written to the log-file accessible through the "Experts" tab. Errors related to broker communication or transaction processing usually appear in the "Journal" tab. In the MetaTrader4 terminal, both these tabs are displayed below the chart window when the control-panel is visible. A new log file is created each day, and there are various techniques for retrieving information from earlier logs – please check the MT4 help files for details.

Some problems occurring in software (and hardware) might never be resolved because the problems cannot be reliably reproduced. When reporting a problem with ForexGM, please make every effort to provide sufficient information for us to recreate the problem. The level of debug information collected by ForexGM is controlled by the *Log-Activity* and *Log-DebugInfo* entries in both the Profile (prf file) and the Settings. The Settings related to a particular ForexGM instance take priority over any parameters in the Profile, so set both these parameters to 'true' in the Properties Panel to output all information that might provide clues in tracking down possible bugs.

Here is a broad checklist of steps to follow when you wish to report an ForexGM problem to Support...

- Close all open and pending trade orders -- either close manually or use the Close-All-Now option
- Remove ForexGM Express -- right-click on the chart Popup > Expert Advisors > Remove
- Delete all Global Variables -- Go to menu Tools > Global Variables > Select all > Delete.
- Delete all Objects from the chart -- right-click on chart Popup > Objects List > Select all > Delete
- Close the MetaTrader4 terminal
- Restart the MetaTrader4 terminal
- Load ForexGM on the chart -- drag-n-drop ForexGM from the Navigator Panel, or select chart and doubleclick ForexGM
- Configure the settings you want in ForexGM Properties Panel > Inputs tab, consult the manual for settings info
- In Properties Panel click Save and name/save the preset-file, usually to [MT4 Data Folder]\MQL4\Presets\
- Click OK to activate ForexGM Express

If ForexGM Express still does not operate the way you expect, please do this ...

- Send us the related preset-file previously saved to the [MT4 Data Folder]\MQL4\Presets\ folder
- Send us the relevant Experts log-file from [MT4 Data Folder]\MQL4\Logs
- If the problem is visible on the chart, go to main menu File > Save as Picture... > Active Chart (as is)
- Describe what happened as best you can, and also provide the appropriate information listed below

The above procedure solves 95% of all reported ForexGM problems. Some of the remaining 5% could be due a corrupted MT4 program (not because of ForexGM), and this is usually fixed by a re-install of the MT4 software.

Please provide some or all (if appropriate) of the following information when reporting a problem to us ...

- Name of Broker
- Account Type -- Micro, Mini or Standard account
- Account Leverage -- 100:1, 200:1, 500:1, etc.
- Run Environment -- Back-testing in Strategy Tester; Live or Demo account
- Account Balance, Account Equity and Margin level
- MetaTrader4 Release and Build Number (see main menu Help > About...)
- Does ForexGM show a smiley-face, and is it red?
- Is the problem related to a specific time-frame? If so, which one?
- Are there other instances of ForexGM or other EAs trading on the same terminal? If so, details please
- Attach the relevant preset ".set" file/s -- these are most important as they allow us to recreate the problem
- Attach Experts and Journal log-files, or copy/paste relevant sections into the email.

- Edit the Settings and set Log-Activity = true and Log-DebugInfo = true, and run the strategy again to see if more details can be obtained about the problem. If the log-files show additional information related to the problem, please include this latest log with the problem-report you submit to us.
- If appropriate, include a copy of the Account Statement accessed from the "History" tab on the control-panel at the bottom of the terminal. Right click in the History entries, select the reporting-period, and then choose "Save as Detailed Report".
- It might also help in diagnosing the problem to send us an image of the chart running ForexGM at the time the problem occurred. From the main menu... File > Save As Picture...
- Please be thorough and include any additional information that might be helpful

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