

Chapter 9 - Stochastic

[Stochastic Help](#) | [Help Guide](#)

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The Stochastic Oscillator was developed by George Lane in the early 1960's. The Stochastic Oscillator is based on the observation that as the close price of a stock increases, the daily closes tend to be closer to the upper end of the recent price range. Conversely, as the stock price decreases, the daily closes tend to be closer to the lower end of the recent price range.

The Stochastic Oscillator values simply represent the position of the stock on a percentile basis versus its range over the previous n-trading days. The percentile scale goes from 0 at the bottom to 100 at the top.

There are three primary stochastic values: %K Fast, %K Slow, and %D. %K Fast is the basic percentage value over the n-day time period. %K Slow represents a slowing of the %K Fast value using a moving average. %D represents a slowing of the %K Slow value also using a moving average. There are three parameters for the Stochastic Oscillator, the n-day range over which the %K Fast percentile is calculated, the days used in the moving average for %K Slow and the days used in the moving average for %D.

"Fast Stochastics" refers to comparing %K Fast and %K Slow, while "Slow Stochastics" refers to comparing the slower %K Slow and %D values.

To generate Fast Stochastic comparisons, set the days for %K Fast, put the days for %K Slow as desired and put the days for %D at 1. This causes %D to equal %K Slow.

To generate Slow Stochastic comparisons, set the n-days for %K Fast, put the days for %K Slow as desired and the days for %D as desired.

The formula for %K Fast is:

$$\%K \text{ Fast} = 100 * (\text{Latest Stock Close} - \text{Lowest Low in } n \text{ Days}) / (\text{Highest High in } n \text{ Days} - \text{Lowest Low in } n \text{ Days})$$

where the high and low in each day's "Open-High-Low-Close" are used to find the highest high and lowest low. The n-day selection is a variable parameter and can be changed using the text box for "Number of days for %K Fast".

%K Fast is volatile and tends to have little trading value on its own. The two moving averages of this value make more reasonable trading signals. The days used in these two moving averages can be changed using the text boxes next to "Number of days for %K Slow" and "Number of days for %D", respectively.

The input parameters are shown next:

Stochastic Oscillator

[Help ??](#)

A stock ranker using the Stochastic Oscillator. [Click Help ? to learn how to use this ranker. ↑](#)

Step 1: Specify Ranking Criteria

Ranking Criteria:

%K Slow Crosses Above

%K Slow Crosses Below

%D Crosses Above

%D Crosses Below

%K Slow Crosses Above %D

%K Slow Crosses Below %D

Number of days for:

%K Fast

%K Slow

%D

Choose Moving Average Type:

Simple Moving Avg. Exponential Moving Avg.

Step 2: Choose Stocks to Rank

Use Stocks in the list:

Or use Stocks matching these criteria:

Minimum Average Day Stock Volume:

Minimum Stock Price:

Maximum Stock Price:

Number of stocks displayed in Output Table:

50 100 200 500

Choose display option:

Show Only Stocks That Meet Criteria

Show All Stocks

Step 3: Perform a new [RANKING](#) Ranking Elapsed Time: ~15s max

Below Step 1 are the selectable rankings.

The rankings that can be created on the Platinum web site for the Stochastic Oscillator are as follows:

- **%K Slow Crosses Above 20**
Stocks where %K Slow values were below 20, then cross above 20 on the next trading day are collected for display and shown ranked by trading volume. You can enter any number between 0 and 100 in the text box that is defaulting to 20. These stocks are considered potentially bullish.
- **%K Slow Crosses Below 80**
Stocks where %K Slow values were above 80, then cross below 80 on the next trading day are collected for display and shown ranked by trading volume. You can enter any number between 0 and 100 in the text box that is defaulting to 80. These stocks are considered potentially bearish.
- **%D Crosses Above 20**
Stocks where %D values were below 20, then cross above 20 on the next trading, day are collected for display and shown ranked by trading volume. You can enter any number between 0 and 100 in the text box that is defaulting to 20. These stocks are considered potentially bullish.
- **%D Crosses Below 80**
Stocks where %D values were above 80, then cross below 80 on the next trading day are collected for display and shown ranked by trading volume. You can enter any number between 0 and 100 in the text box that is defaulting to 80. These stocks are considered potentially bearish.
- **%K Slow Crosses Above %D**
Stocks where %K Slow values were below %D, then cross above %D on the next trading day are collected for display and shown ranked by trading volume. These stocks are considered potentially bullish.
- **%K Slow Crosses Below %D**
Stocks where %K Slow values were above %D, then cross below %D on the next trading day are collected for display and shown ranked by trading volume. These stocks are considered potentially bearish.

The days for the %K slow come from the Slow Stochastic settings in Charts > Stock Charts. Change the days for the %K slow here or in Stock Charts and the web site remembers the most recent change. The next selection is the type of moving average desired: the simple moving average or the exponential moving average.

The next selection under Step 2 is the input stock list. The user can select one of the online stock lists or create a list of stocks using three selections. If the input stock list is chosen, the stocks in the list are ranked without regard to volume or price.

If the second option is chosen, all online stocks are filtered using the selections shown. Then they are ranked. The first of the three selections is the minimum average stock volume. The default is 300,000.

The second and third selections under Step 2 are "Minimum Stock Price" and "Maximum Stock Price". Only stocks with current stock close prices within this range of prices are ranked. The stock prices in the past are NOT required to meet the price range. The web page uses the minimum and maximum stock price values set in General Settings for "Access Stock List Ranker" as the initial default values.

The next selection is the number of ranked stocks displayed in the web page stock ranking table. There are five selectable options of 10, 20, 50 and 100 stocks. After you create a stock ranking table, you are allowed to save the ranked stocks in your online stock lists. The number of stocks displayed is the most number of stocks that can be saved in a list. The default value is 50.

The last selection allows you to display only the stocks found that meet the ranking criteria or to display all the stocks. Stocks not meeting the Stochastic Oscillator ranking criteria but are eligible to be displayed are sorted by average volume below the ranked stocks meeting the Stochastic Oscillator ranking criteria.

Once you have made your selections, click the RANKING button next to Step 3. To the right of the RANKING button is a clock timer. The timer starts when you click the button. The server ranking time is limited to 30 seconds. Network time to transfer the data back to your web page can take awhile, depending on your connection, so the timer can exceed 30 secs.

Two different web page results can occur depending on how much time your search takes, how many stocks are being searched and the number of users online. If all the stocks are ranked successfully, a web page similar to the one below appears:

Step 3: 973 stocks were found satisfying your filter and the top 20 are shown below.

Save top Stocks into the List named: **SAVE**

Or select a different List:

Step 4: Perform a new **RANKING** Ranking Elapsed Time: ~30s max

20 stocks had a bullish crossover
Stocks ranked using %D Moving Average crosses above 20
 Number of days for %K Fast = 14 Number of days for %K Slow = 3 Number of days for %D = 3
 Click a stock symbol to get the chart

Rk	Stock	Stock Close	%K Fast	%K Slow	%D	Stock Volume
1	NVLS chart:SP	50.40	46.22	27.89	21.39	13278800
2	MRK chart:SP	54.53	50.43	34.88	20.25	6937100
3	MERO chart:SP	36.74	72.07	49.14	28.42	5465700
4	MWD chart:SP	52.66	65.02	33.04	20.14	4720800
5	ISSX chart:SP	23.15	82.47	43.45	25.61	3704300
6	BGEN chart:SP	46.38	37.79	26.65	20.70	2882300
7	SV chart:SP	22.95	34.96	31.35	23.49	2879400
8	PLCM chart:SP	24.32	59.02	31.64	22.06	2405400
9	BHI chart:SP	34.78	30.04	22.75	21.65	2386100

Next to Step 3 the web page shows how many stocks were found satisfying your ranking and how many appear in the stock ranking table. Next to "Save" you can input in the text box the number of ranked stocks you wish to keep. The maximum number is the number of stocks shown in the stock ranking table. To the right of "Save" you can select any of the 20 online stock lists as the list that will accept the ranked stock list. Above the stock list selection you can backspace out and type in a new name for the stock list with which you are working. The list and the name are saved online when you click the Save button to the right of the stock lists. The stocks previously saved in the list selected are deleted when the new ranked stock list is saved.

If all the stocks filtered were not ranked successfully because the search ran out of the allocated time, a web page similar to the one below appears:

Step 3: 973 stocks were found satisfying your filter and 759 have been ranked so far.

Continue the last **RANKING** (Dont understand this button, click [Help ?](#))

Step 4: Save top Stocks into the List named: **SAVE**

Or select a different List:

Step 5: Perform a new **RANKING** Ranking Elapsed Time: ~30s max

19 stocks had a bullish crossover
Stocks ranked using %D Moving Average crosses above 20
 Number of days for %K Fast = 14 Number of days for %K Slow = 3 Number of days for %D = 3
 Click a stock symbol to get the chart

Rk	Stock	Stock Close	%K Fast	%K Slow	%D	Stock Volume
1	NVLS chart:SP	50.40	46.22	27.89	21.39	13278800
2	MRK chart:SP	54.53	50.43	34.88	20.25	6937100
3	MERO chart:SP	36.74	72.07	49.14	28.42	5465700
4	MWD chart:SP	52.66	65.02	33.04	20.14	4720800
5	ISSX chart:SP	23.15	82.47	43.45	25.61	3704300
6	BGEN chart:SP	46.38	37.79	26.65	20.70	2882300
7	SV chart:SP	22.95	34.96	31.35	23.49	2879400
8	PLCM chart:SP	24.32	59.02	31.64	22.06	2405400
9	BHI chart:SP	34.78	30.04	22.75	21.65	2386100

Next to Step 3 the web page shows how many stocks were found satisfying your ranking and how many stocks have been ranked thus far. The web page ranking has a time limit of ~30 secs. If you reach this time limit, the ranking results thus far are returned to the web page. You have the option of continuing the ranking, which resumes where it left off, by clicking the RANKING button in Step 3. You can repeat this until all the stocks are searched and the extra RANKING button no longer appears on the web page. The table will reflect the ranking from all stocks searched. If you decide to repeat the ranking until all stocks are ranked, do not change any of the search filter settings until the ranking is complete.

The reason for the time limit is to prevent the browser from timing out and to distribute the server load between the users. A browser time out can occur if the ranking takes too long to complete.

In both of the cases discussed above, a new search can be started at any time by clicking the RANKING button in the last Step shown.

The above ranked stock table is for a bullish %D crossing above 20. The columns are:

- **RK** - Rank. This is the initial ranking of the stock symbols.
- **Stock** - The stock symbol. Clicking the stock symbol takes you to the Chart web page.
- **Stock Close** - The latest stock closing price.
- **%K Fast** - The raw %K value.
- **%K Slow** - The averaged of the %K Fast values.
- **%D** - The average of the %K Slow values.
- **Average Volume** - The latest stock (not option) average trading volume.

Past studies have yielded these popular values and trading approaches for the Stochastic Oscillator:

- Popular values for the "days" options are 14 days for %K Fast, and 3 days for %K Slow and 3 days for %D.
- Sources for free Stochastic Oscillator charts are bigcharts.com and yahoo.com. The user cannot specify the days, however, and the help files do not clearly indicate how the algorithms are functioning. Apparently bigcharts.com is using 5 days for %K Fast, 3 days for %K Slow and 5 days for %D.
- Most past studies have used 80 and 20 for above/below thresholds but some have tried 70 and 30.
- Stochastics indicate overbought and oversold conditions. According to Lane himself, the best use of the Stochastic Oscillator is to buy into an established uptrend and to sell into an established down trend.