

# Pattern Recognition Software Guide

2010

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## Pattern Recognition

One of the most versatile skills that you can learn when it comes to trading is pattern recognition. This is the branch of technical analysis that focuses on finding price (and often volume) patterns that can be isolated using nothing more than a pencil and a ruler. The key thing is that you spend the time learning the basic rules so that you can most effectively use these methods with your trading.

Whilst the idea of pattern recognition may seem strange to many of you it is based on carefully tested methods that have seen many tests done which underlines their usefulness to traders. Importantly, patterns allow you to use set methods to work out where to enter, where to set stop loss orders and where to set your profit targets. These factors are of course some of the key things that any trader will wish to consider when managing their overall portfolio.

As part of the ongoing CMC Markets education offering to clients we have introduced a market leading component to our *Marketmaker* software which will enable you to have specific patterns scanned for across some of our most popular instruments. This guide will enable you to use this new feature and importantly allow you to develop a much deeper understanding of how it can assist you in short listing potential trading opportunities. Software of this type is not meant to tell you what to do in the market.

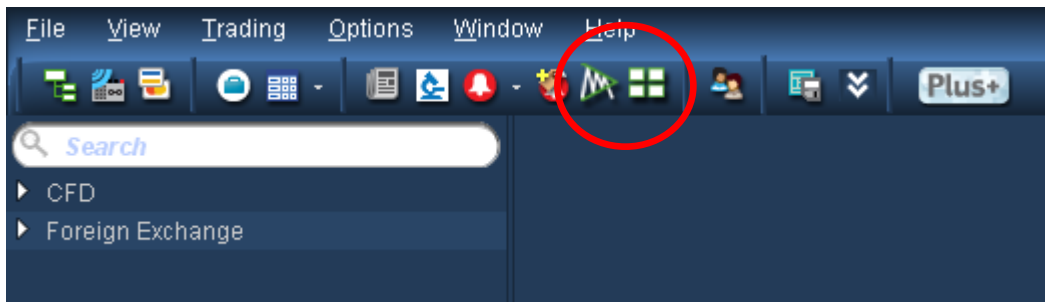
It is designed to help you trawl through the mass of chart-based data that exists in the market and identify potential trading opportunities. As the trader it's your responsibility to determine which of these potential trades you should execute and then be able to properly manage the risk associated with each trade. As traders with a good degree of experience will attest - successful trading is about isolating sound opportunities and then managing the risk attached to them.

This guide is divided into 2 parts – the first component will look at the actual use of the pattern recognition software. The second will look at the way in which the different patterns can be applied and some of the standard methodologies that accompany this type of trading. You should also feel free to search more widely online or in books written on the topic to deepen your understanding of pattern recognition so as to make yourself a better informed and more effective technical trader.

## PART 1 - The Marketmaker Pattern Recognition Software

Once the updated Marketmaker software has been installed on your computer you will notice some additional icons have been added in different spots as well as some more options for you to use within the charts that you have generated.

The first thing to look at is the new icons that are available on the platform itself which appear as shown:



The left icon is the 'Subscribe Pattern' (SP) icon and the right is the 'Pattern Alert' icon. Let's look at these in turn:


By clicking on the SP icon you bring up the following screen:



The first thing to note is the 'How to use' button – this will link you automatically through to a short beginner or an advanced webinar on some of the ways in which you can use the application. In this section you are simply deciding which patterns you would like to scan for and then the type of CFD, the time frame and whether the pattern should be emerging or completed. Like many types of software having a little practice by trial and error is one of the best ways of remembering the different features.

You can see that you can choose from either 'Emerging' or 'Completed' patterns. The difference is that an emerging pattern is one that is showing the hallmarks of pattern in the making but has not yet properly set up for an entry whilst the completed patterns are ones that have completed. Depending on your entry strategy these are potentially ready for a trade entry or be set ups that you would already have been triggered into. Keep in mind that a completed pattern doesn't mean that it fits the bill for what you are trying to achieve so you must be selective in the potential trades that you actually execute.

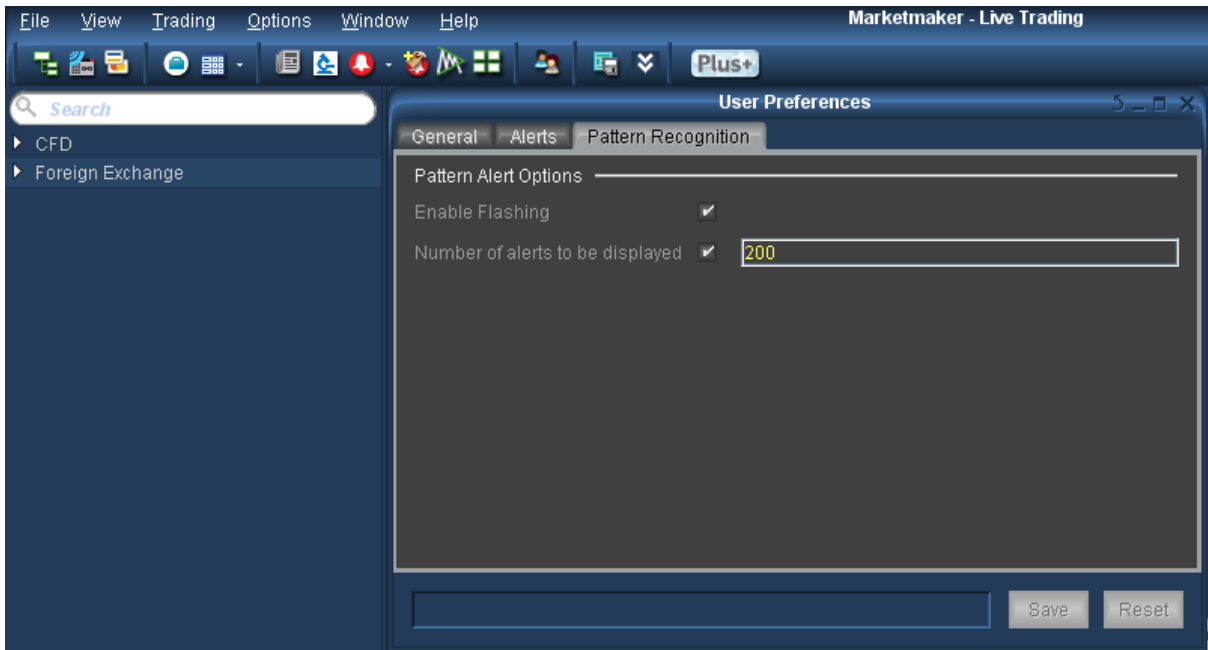
Once you select the factors that you wish to scan based upon you will see the following window:



Emerging Pattern						Completed Pattern					
Symbol	Interval	Pattern	Length	Alert Date	Quality	Symbol	Interval	Pattern	Length	Alert Date	Quality
UK100 Index CFD	15 Minutes	Triangle	81	Jul 20, 201...	☆☆	UK100 Index CFD	15 Minutes	Wedge	43	Jul 20, 2010...	☆☆
Spot US Dollar v...	15 Minutes	Wedge	19	Jul 20, 201...	☆☆	Spot Australian ...	15 Minutes	Channel	19	Jul 20, 2010...	☆☆
EUSTOX50 Inde...	15 Minutes	Triangle	57	Jul 20, 201...	☆☆☆	Spot Euro vs Jap...	15 Minutes	Wedge	54	Jul 20, 2010...	☆☆
Royal Bank Of S...	15 Minutes	Wedge	48	Jul 20, 201...	☆☆	Lloyds TSB Grou...	15 Minutes	Triangle	28	Jul 20, 2010...	☆☆☆☆
Royal Bank Of S...	15 Minutes	Channel	41	Jul 20, 201...	☆☆	Spot Euro vs Swi...	15 Minutes	Triangle	81	Jul 20, 2010...	☆☆☆☆
Royal Bank Of S...	15 Minutes	Triangle	11	Jul 20, 201...	☆☆	AUSSIE200 Inde...	15 Minutes	Triangle	16	Jul 20, 2010...	☆☆☆☆
Aviva Plc	15 Minutes	Triangle	58	Jul 20, 201...	☆☆	Spot US Dollar v...	15 Minutes	Triangle	27	Jul 20, 2010...	☆☆
FRENCH40 Inde...	15 Minutes	Triangle	42	Jul 20, 201...	☆☆	JAPAN 225 Inde...	15 Minutes	Wedge	68	Jul 20, 2010...	☆☆
Standard Chart...	15 Minutes	Wedge	54	Jul 20, 201...	☆☆	GlaxoSmithKline	15 Minutes	Triangle	46	Jul 20, 2010...	☆☆
Wolsley PLC	15 Minutes	Wedge	37	Jul 20, 201...	☆☆☆☆☆	Tesco Plc	15 Minutes	Wedge	43	Jul 20, 2010...	☆☆
Standard Chart...	15 Minutes	Triangle	58	Jul 20, 201...	☆☆	Tesco Plc	15 Minutes	Triangle	46	Jul 20, 2010...	☆☆
NDAQ100 Index...	15 Minutes	Triangle	81	Jul 20, 201...	☆☆	BHP Billiton Plc	15 Minutes	Wedge	43	Jul 20, 2010...	☆☆
Wolsley PLC	15 Minutes	Triangle	57	Jul 20, 201...	☆☆☆☆	BHP Billiton Plc	15 Minutes	Triangle	50	Jul 20, 2010...	☆☆
						Xstrata Plc	15 Minutes	Triangle	62	Jul 20, 2010...	☆☆

You can then assess the different emerging and completed patterns that exist and sort them based on things like time frame, pattern and star rating.

By clicking on Options – User Preferences – Pattern Recognition you are able to modify the number of pattern setups that are displayed as can be seen below:



By double clicking on the instrument it will automatically bring up a chart showing the pattern in question:



From here you have all the normal Marketmaker chart features that enable you to open and order ticket and place a trade should you wish. When you are looking through the emerging patterns you can right click on the instruments and select 'tag alert' – by doing this once the pattern is completed it will be highlighted within the completed patterns to make it more visible for you.

When looking at the available criteria you can also manage the type of patterns for which you are subscribed:



By clicking on the Manage button you can see all of your subscribed patterns and then choose to unsubscribe from any that are no longer of interest to you.

The star rating system is a means of assisting you to sort the quality of the signals that has been devised by CMC Markets to speed the potential shortlisting process. The star rating uses proprietary formulas to assess the quality of the chart signals based on other technical indicators including moving averages, MACD, +/-DMI and stochastic oscillators. Another very useful feature of this platform is the ability that you now have to open charts and then add patterns in real time as well as look at how these same type of patterns have performed in the past. This can be done across many different time frames and can give

you an idea of the success that a certain type of pattern may have had when looking at specific instrument.

When you bring up a chart as normal you may notice that there are some new options available for you here too:



You can see on the right hand side there is an option allowing you to select 'Chart Patterns' and then by clicking on your selected pattern type it will automatically be shown across all occurrences on your chosen chart. By hovering over the completed pattern you will see a projection area highlighted which points toward typical areas where price may reach based on technical studies.

Above the chart pattern option you can see that there is a section for candlestick patterns. In this area you can find a wide selection of candle patterns and scan your charts for those as well.

We have tried to make this platform as easy to use as possible. We hope that with this guide, in conjunction with the built in webinars and a little practice you should find this a very useful addition to your trading toolkit. In part 2 of this guide we will address a number of the pattern types that are found in the platform and detail some of the more effective ways of approaching these patterns.

## PART 2 – Pattern Recognition Fundamentals

In this section of the guide we look at some of the core rationales behind pattern recognition and the way in which traders generally approach the different types of setup that you commonly see. Whilst automated pattern recognition software is an extremely useful tool for traders it doesn't replace the need to be able to determine whether a pattern is genuine as well as proper means to project targets and place risk management orders. This skill requires effort on the part of the trader but is well worthwhile. Pattern recognition is a long standing and highly effective means of looking for breakouts and momentum shifts across markets and timeframes.

### Types of Patterns

Despite sounding a little basic on some ways the foundation of pattern recognition comes from looking for shapes that appear in the prices of traded instruments. This means that you are looking for things such as **head and shoulders**, **triangles**, **rectangles** and **diamonds**. Whilst this may not inspire confidence at the outset these are formations that arise and track the changes in support and resistance in these instruments. What's really interesting is that you are able to use these skills that you will learn in any financial market that you choose ranges from shares to indices and even foreign exchange. Just for your own reference, pattern recognition is an area of trading that is most likely to be used by swing or position traders using chart time frames ranging from 15 minute up to daily and where positions may typically have a duration of days or weeks.. However it can also be used for very short term trades using a 5 minute chart as an example.

The ones that we will be focussing most of our time on are the rectangles and in particular the triangles which have a wide number of varieties that can be used. In essence, all price patterns are looking at the interaction of supply and demand over time and establish sensible ways in which to react to these patterns forming. When we say sensible it simply means that you know how you will react in terms of risk management and taking of profits.

### Triangles

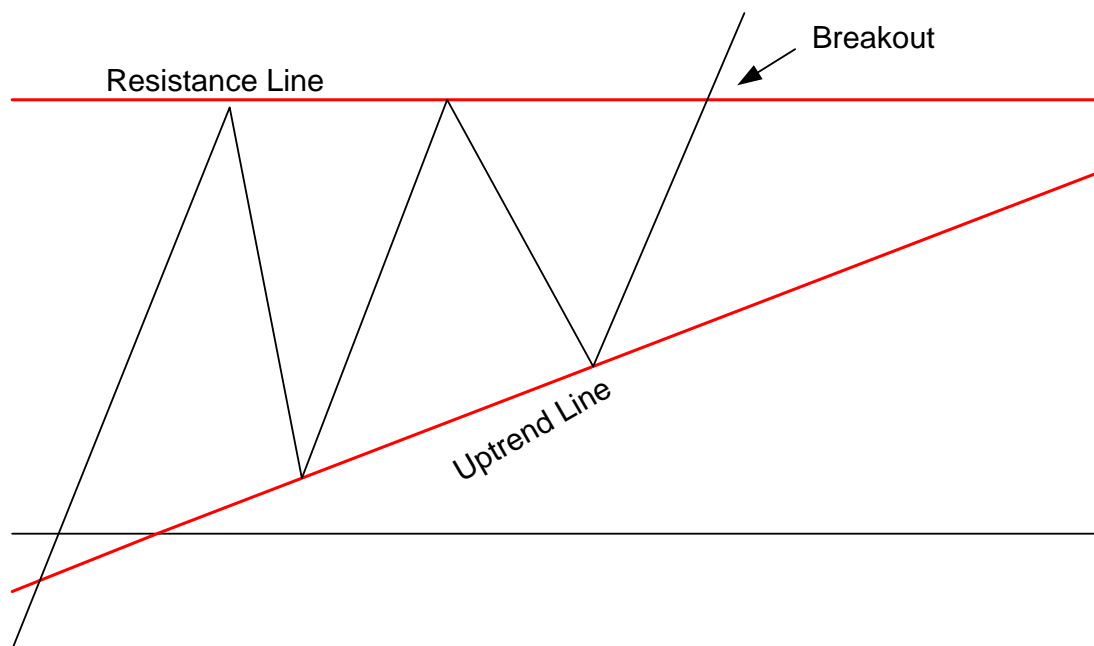
The reason that triangles are the focus here is not because they are the best pattern but because they will be the most common ones that you see. This is because there are several different varieties which can all be very effective for your trading. The great thing that you have in the majority of cases with triangles is the fact that there is no bias to either

the long side or the short side which makes them very useful from the perspective of a CFD trader. Keep in mind that if you are always biasing yourself to the long side of the market then you are missing out on some of the biggest features made available by this product.

Triangles are patterns inside which the price consolidates but because there is no long or short side bias you must keep an eye on them for when an eventual breakout occurs. There are 2 broad categories of triangle that form which are the ascending and descending triangle (which are just the opposite of one another) and the symmetrical triangle. First we will look at the ascending triangle:

### Ascending Triangle

The ascending triangle is possibly the best recognised pattern in this category because it incorporates the use of a resistance line (which traders are frequently on the lookout for) and a rising support line. The pattern itself takes the following form:



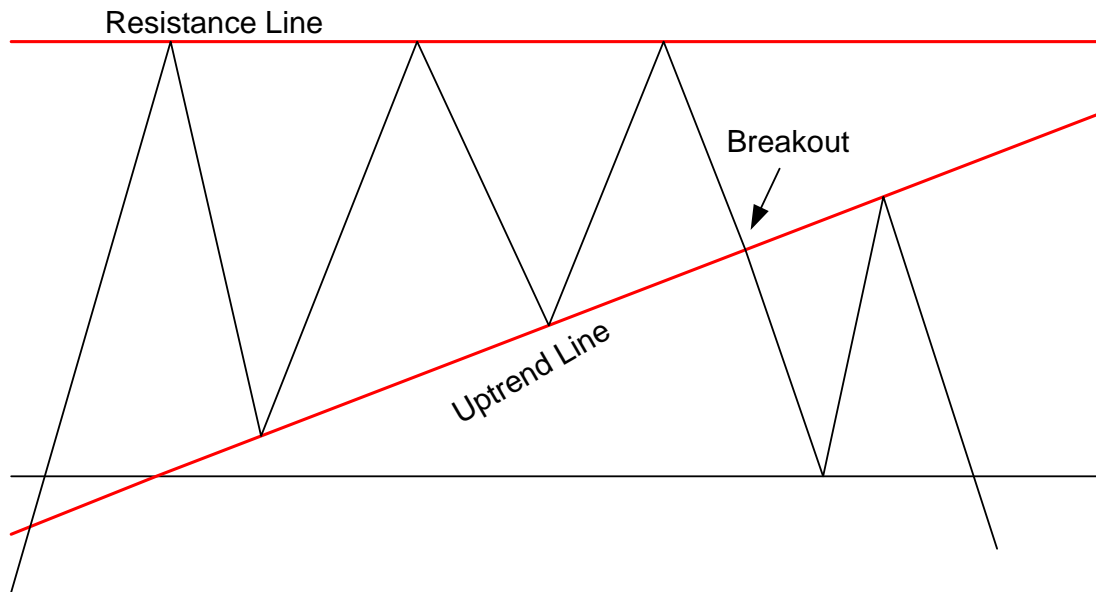
The important parts of this formation are the lines marked in red which are the resistance line and the uptrend line. A breakout has been marked here but we will look at how these should be treated in a later section. As a trader you should be mindful of what the volume is doing during the formation of the pattern and then what it does upon the breakout occurring.

Typically you would look for volume levels in general to decline over the time that the pattern itself forms. One way to think about this decline is because buyers and sellers are gradually getting pushed into a narrower and narrower balance of support and resistance which effectively drives out the interest until price can break out and begin to trend once more. If there isn't declining volume this doesn't necessarily mean that there is a problem with the pattern but something that you should be on the lookout for is a volume spike upon the breakout occurring. This tends to have a beneficial effect on the overall strength of the pattern from then on.

Another thing that can be greatly beneficial to look out for when breakouts occur is a 'gap' in the price. This shows a surge in demand for the instrument (surge in supply if it's a short trade) which adds a great deal of price confirmation for the trader. Traders may sometimes be put off by this because they feel that the trade may have gotten away from them but in reality this should be likely to reinforce that you have correctly determined that a breakout is occurring.

Something that traders all fear when it comes to breakout pattern trades is what's known as the 'false breakout'. This occurs when the price breaches the pattern which may lead the more aggressive traders to move straight into the trade. Unfortunately what happens in the case of the false breakout (or whipsaw) is that you seem to get a genuine signal only to find out later that the price retreats back within the confines of the pattern and you are left holding a trade that's not doing what you hoped it would have. Really the only way that you can try to combat this is by applying a filter of some sort and the most obvious choice is to wait until there have been x closes outside of the pattern. If you are looking at daily charts then you may decide to wait until the price has closed outside of the pattern for 2 days before entry. There are other means of avoiding this type of false breakout with some traders choosing to wait until the price has moved twice the average true range (2ATR) outside of the pattern. None of these methods will guarantee you that you won't suffer from false breakouts but it will at least reduce the chances.

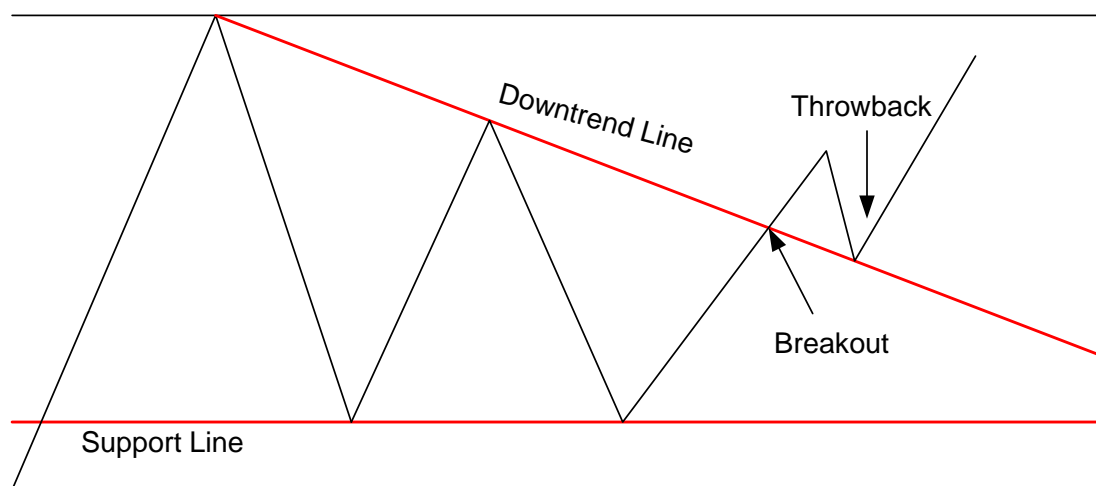
In the previous diagram, you saw an example of an ascending triangle with a upward breakout. As we have mentioned a few times now there is no directional bias as to which way patterns are going to break out so we need to also look at an example of what a downward break on an ascending triangle looks like.



You can see that the basic setup is exactly the same but the breakout occurs in the opposite direction which then necessitates a short trade. You should not also in these examples that in both case we have shown them with a retracement back to the line from which they broke out of. This is something that can happen without the signal being considered a failure – however you should not assume that this will always happen. In fact you would suggest that the instances where this doesn't occur are when you are receiving the strongest signals.

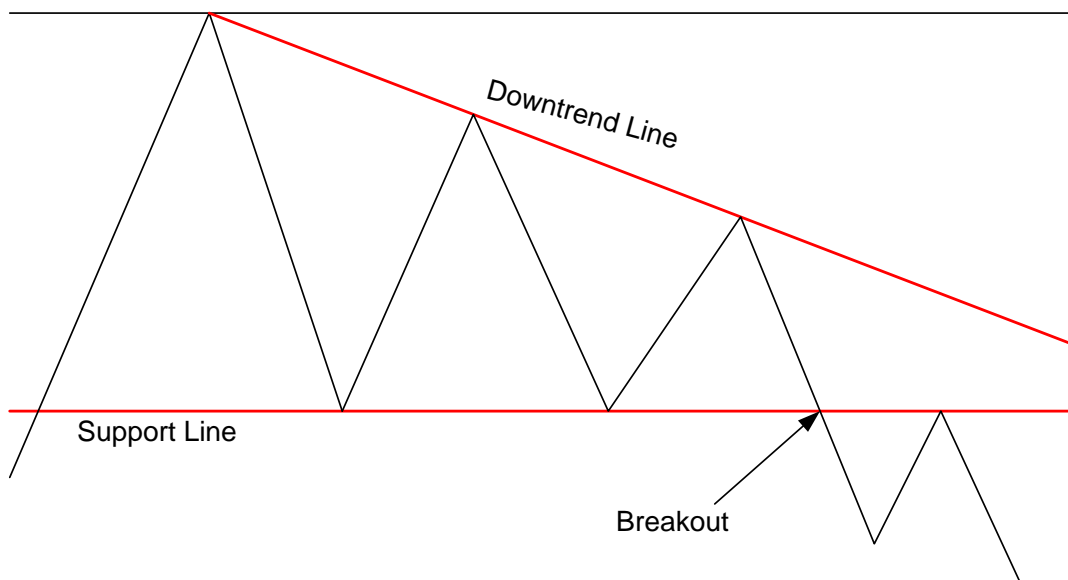
### Descending Triangle

The flipside of the previously described ascending triangle is the descending triangle which has very similar characteristics but sets itself up in the opposite direction. Like its ascending counterpart the breakout can occur in either direction so you need to watch for which direction the breakout occurs in.



As with all patterns that you examine you will find that they seldom look exactly like they do in diagrams such as these. These illustration give you something of a best case scenario but most of the time you will want to see the price movements resemble the diagram as closely as possible. Some traders would suggest that you want to see the price drive quite clearly from the support and resistance points and not spend too much time drifting sideways. In addition, when it comes to triangle patterns you would preferably see the price break out of the pattern before it reaches 75% of the way to the apex of the pattern. The reason for this is that if the pattern continues sideways it is starting to lose its momentum and may continue to drift sideways which is far from what the breakout trader wants.

In the diagram below you can see an example of a descending triangle which applies the same set of rules that you would see in any of the other cases that we have examined.



### Symmetrical Triangle

The symmetrical triangle has some common characteristics with the ascending/descending triangle in that price is being driven into a narrower band of price movement and the trader is looking to see a break out of the price. In addition to this you will likely see the level of volume occurring in the instrument decline as it moves throughout the formation and then subsequently rise significantly above the average when the breakout occurs.

The same thing as applies with other triangles is the possibility of false breakouts occurring so you need to be mindful enough of this to place some sort of filter on the breakout to reduce your chances of being exposed to a whipsaw entry into the trade. Again this may be a set number of closes above the breakout level or alternatively using a filter like the average true range which has already been mentioned.

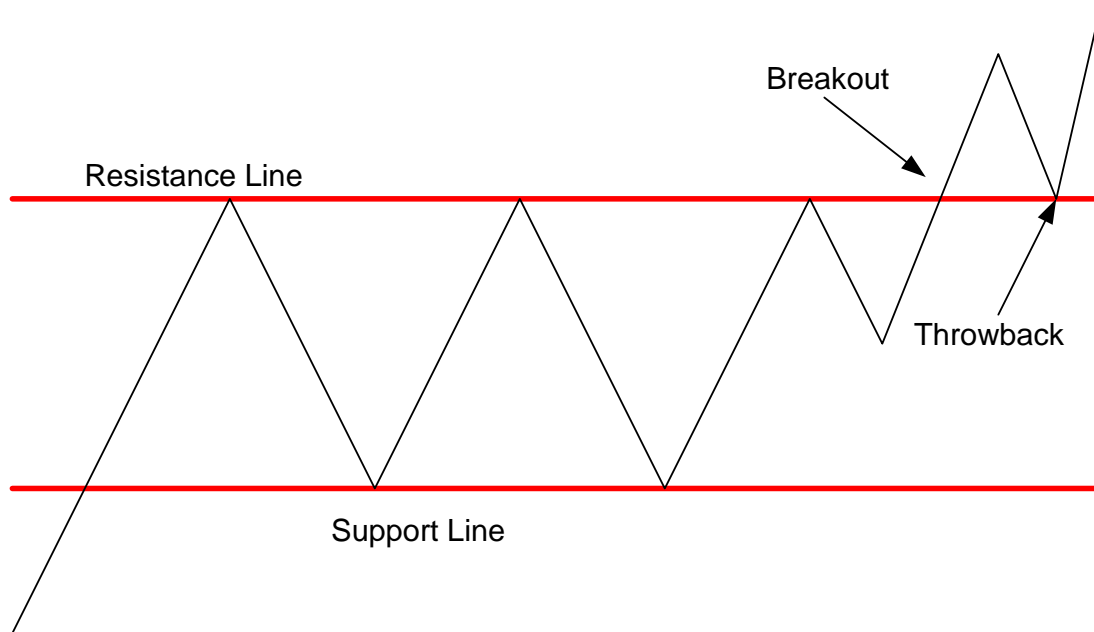
In these trades as with any of the triangles the trader has 2 main choices as to where they place their stop loss orders and which method you choose will likely be dependent on how aggressive they are. In the case of the more aggressive trader they would place a stop just on the other side of the breakout line where you believe that you have been whipsawed. This is as close as a stop loss can realistically be placed because otherwise you aren't really giving the trade a decent chance of success. The alternative and more conservative method is to put the stop on the far side of the pattern completely which would show a total failure of the setup if that level is reached.

## Wedges

A wedge is in many ways a variation of the triangle because it also has converging support and resistance levels – the key difference generally is that both the support and resistance levels move in the same direction which is why wedges are classified as either rising or falling wedges. A wedge typically moves counter to a trending movement so will usually see traders looking for a breakout in the direction of the prevailing trend.

## Rectangles

So far we have looked at setups where the support and resistance levels are moving closer together but now we will look at a setup where the two levels run parallel to one another. You will find though that although the pattern looks very different to any of the triangle family the behaviours in terms of the setups are quite similar in what you are looking for one the breakout and how you handle your risk management.



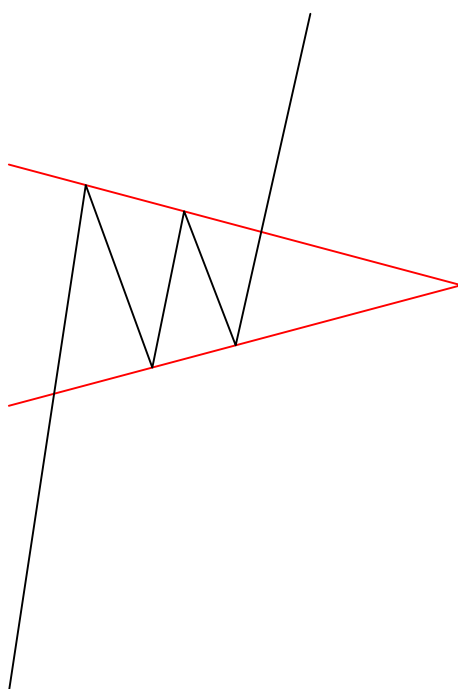
In this case again we are illustrating the breakout having a subsequent throwback to what was the resistance line but this won't always be the case. In the same way as occurs with the triangle the best outcome is a strong continuation from this level on high volume from the point of the breakout.

In *Technical Analysis* by Kirkpatrick and Dahlquist they suggest that if you see a price movement that doesn't reach the other side of the formation that it may in fact be giving an indication as to the likely direction in which the breakout may occur.

Keep in mind that the chart formation referred to as a **channel** operates under the same basic premise as the rectangle. The key difference is the support and resistance lines are not horizontal but instead are sloping. The trader manages the breakout and target measurement in the same fashion as the rectangle.

### Pennants

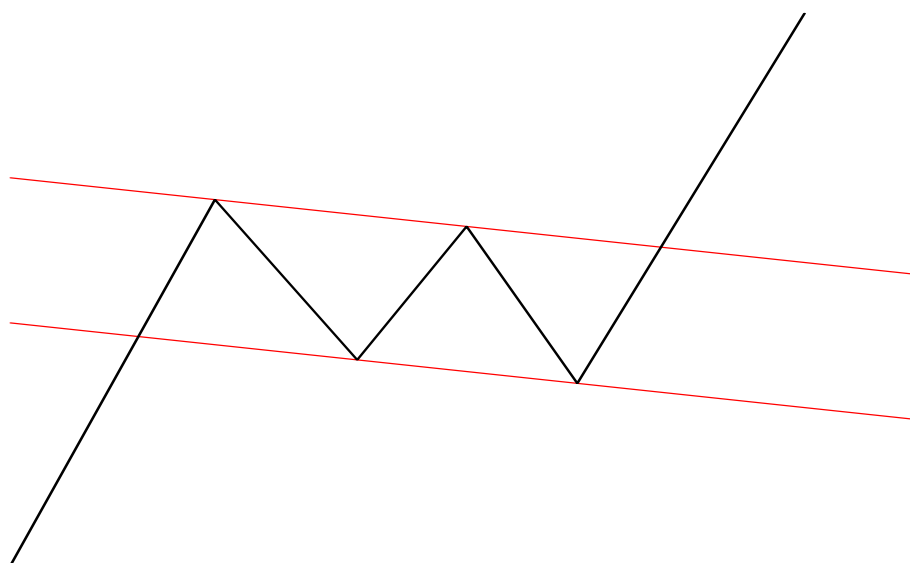
In the previous examples we have looked at patterns where the direction of the breakout didn't matter – in the final 2 examples we are looking at two patterns that are specifically continuation formations and will only be confirmed if the breakout occurs in the same direction as price was moving leading into the formation.



As you can see from the diagram here a successful pennant will see price leaving the pattern in the same direction that it arrived. Although this pattern has visual similarities to a symmetrical triangle it is much shorter term in nature with 10 – 15 periods being the general rule between formation and completion.

### Flags

Flags require many of the same characteristics of the pennant in order to be confirmed as genuine.



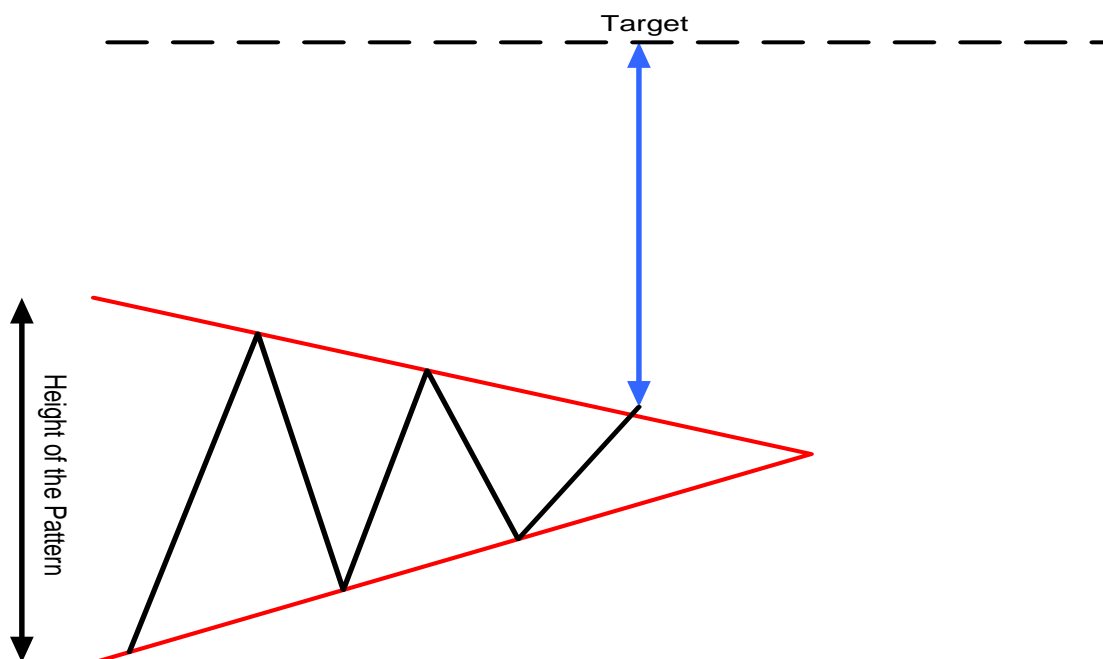
Like the pennant the flag is a shorter term version of a similar pattern – in this case a channel. This pattern is also only genuine if the breakout occurs in the same direction in which price entered it. In addition you will tend to see the direction of the flag move in the opposite direction of the prevailing price movement.

Both the flag and the pennant occur after a sharp movement in price – this near vertical price move forms the ‘flag pole’ on which the pennant or the flag occurs. Its important to have this in the lead up because the pattern is not genuine without it. Lastly you will likely see a spike in volume in both cases on the breakout which will add to the confirmation of the pattern.

The placement of stops obeys the same basic rules that we have looked at all along with the aggressive trader closing trades at the first sign of failure whilst the more conservative trader will look for price to cross the pattern entirely before calling it a failure.

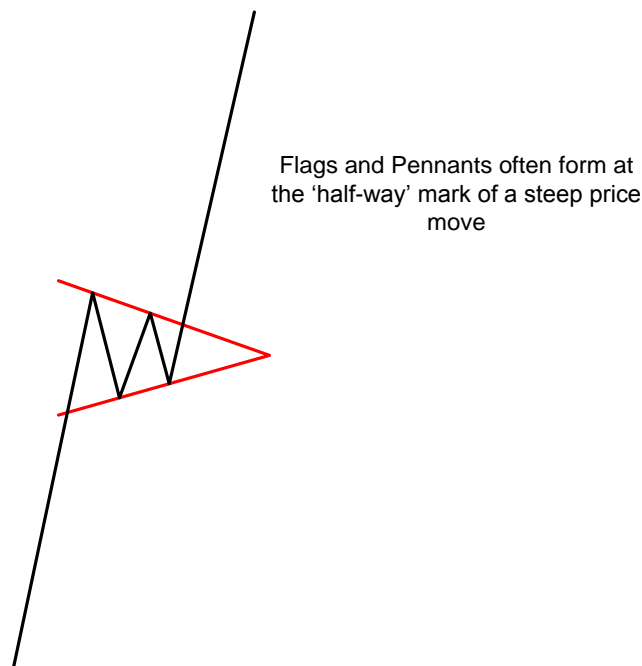
### Price Targets

In the case of these patterns they all have some ability to be used to target an eventual profit taking point. In the case of the triangles and the rectangle this is done easily by measuring the height of the pattern and then extrapolating the target out from the breakout point. If that sounds a little confusing then this diagram should help.



The same basic premise is applied to the rectangle.

In the case of flags and pennants the target is determined by measuring the height of the flagpole leading into the formation and then added on the way out. These formations are sometimes referred to as measuring formations because they often occur half way through the price swing.



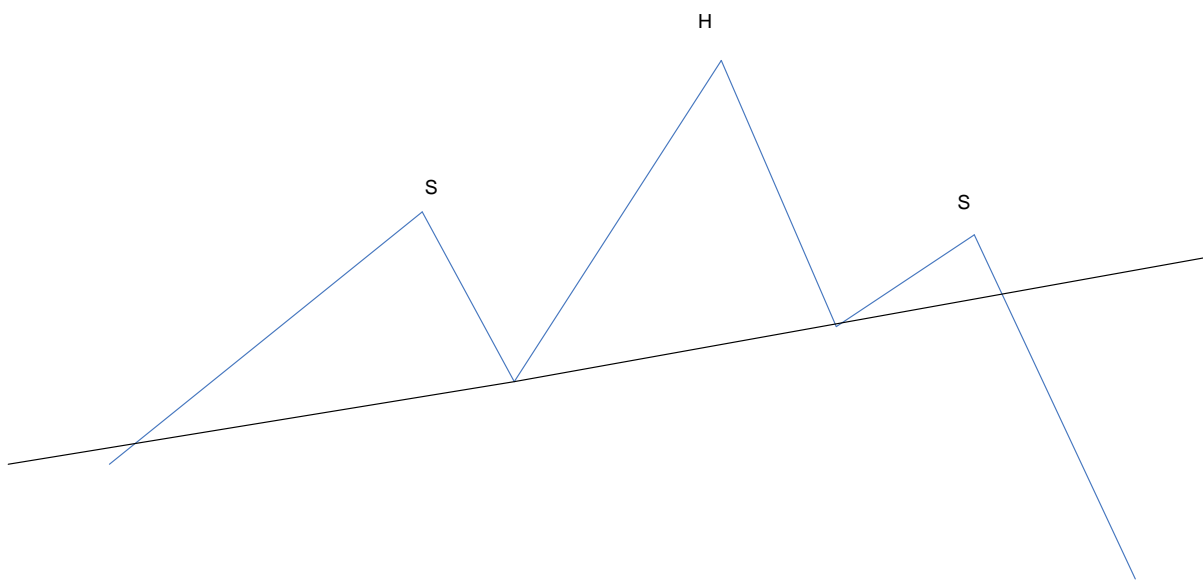
### Head and Shoulders

The head and shoulders pattern is one of the best known of all technical setups and is described in *Technical Analysis* by Martin Pring as 'probably the most reliable of all chart patterns'.

This pattern is a reversal pattern that can occur at the end of an up or a downtrend. The important thing to note initially is that it is only a confirmed pattern at the end of a trend. The basic setup can appear anywhere within the chart but is only effective as a reversal pattern.

The idea of this pattern is to isolate three peaks (or troughs in the case of a downtrend) – the 1<sup>st</sup> and 3<sup>rd</sup> peaks are the shoulders and the head is the 2<sup>nd</sup> or middle peak. The line that can be drawn across the two troughs of the shoulders is called the *neckline* and is key to determining the entry point for this type of trade.

Like most technical patterns of this type there is a projection that can be made in terms of price target from the breakout. In this case it is taken by measuring the distance between the head and the neckline – this is projected down from the point of the breakout. It is generally considered prudent to wait for at least 1 candle to close outside of the breakout line before entering the trade.



The black line in this case represents the neckline which connects the two troughs of the shoulders. A movement below this line is considered to be the breakout point though as usual the trader will typically look for at least a 1 period close below this level before considering it to be confirmed.

### Stop loss placement

As with all trading, the use of pattern recognition is best done when incorporating the use of sensible stop loss placement which allows you to limit your losses on trades that don't work out in your favour.

The most basic rationale that you can apply is to place your stops at the first failure point. This means that if the price moves back inside the pattern after a breakout then you consider it a failed pattern and close the trade. Like the breakout you may allow a certain amount of movement inside the pattern before failure – a volatility measure like the average true range (ATR) may be useful for this.

This is not the only approach though. An alternative is a much wider stop placement that sees you placing your stop on the far side of the pattern altogether. Whilst this is a much larger stop it reduces the instance of whipsawing dramatically. The negative impact is that you need to reduce your position sizes substantially to keep your overall risk levels acceptable.

You can see that if you choose the first method you will be able to place closer stops but have a much greater chance of getting stopped out on a pattern that may come good. Some patterns will frequently retrace back inside the pattern and then resume the breakout. The second method has a likely lower failure rate but requires significantly larger stops.

As you familiarise yourself with this platform, take a look at how different patterns behave over time and this way you can get an idea of the preferable way to place stops that suits your trading personality.