Let us choose some random numbers for an example:

Starting number of XRP: x1672

Starting USD: $727

Current price of XRP: $0.77

So total value of our XRP is:

$$\#XRP \bullet \$XRP = x1672 \bullet \$0.77 = \$1287.44$$

Let's say that our FixedPoint is $1285.25 (A slight discrepancy from our actual XRP value)

Let's say our current range percentage is 2.2% so the range is:

$$FP \bullet RP = \$1285.25 \bullet 0.022 = \$28.28$$

The bot 'assumes' the total value of the XRP is equal to the fixedPoint, and you will see that it will auto-correct the small price discrepancy and you will see why we do not care what the current price is.

The price of XRP is $0.77 but we assume the price is:

$$\frac{FP}{\#XRP} = \frac{\$1285.25}{x1672} = \$0.7686$$

So, we place two orders:

The Sell Order

A *sell order* at whatever price needed to make the total value of XRP equal:

$$FP + Range = \$1285.25 + \$28.28 = \$1313.53$$

How do we know what this price is? Well, we have 1672 XRP so when XRP hits:

$$\frac{\$1313.53}{x1672} = \$0.7856 \, per \, XRP$$

We want the value of our XRP to revert back to the FixedPoint so we sell exactly $28.28 (The range) worth of XRP. So the number of XRP we want to sell:

$$\frac{\$28.28}{\$0.7856} = x35.997 \, XRP$$

The Buy Order

A *buy order* at whatever price needed to make the total value of XRP equal:

$$FP - Range = \$1285.25 - \$28.28 = \$1256.97$$

How do we know what this price is? Well, we have 1672 XRP so when XRP hits:

$$\frac{\$1256.97}{x1672} = \$0.7517 \, per \, XRP$$

We want the value of our XRP to revert back to the FixedPoint so we buy exactly $28.28 (The range) worth of XRP. So the number of XRP we want to buy:

$$\frac{\$28.28}{\$0.7517} = x37.621 \, XRP$$

Let's say the sell order executes. This means that the price hit $0.7856 \, per \, XRP$ and we sold $x35.997 \, XRP$. The moment before this trade executes, the value of our XRP is $1313.53

So now, we sell $28.28 worth of XRP so the new value of our XRP is:

$$\$1313.53 - \$28.28 = \$1285.25$$

Which is exactly what our FixedPoint is.

And the total number of XRP we now own is:

$$x1672 - x35.997 = x1636.003$$

The outstanding buy order gets canceled and we place a new buy/sell pair.

But you can see two things here:

- Even though our FixedPoint didn't match the actual value of our XRP, it only took 1 trade to make the correction. The bot is now perfectly normalized.
- We never once checked out what the price was; it was all calculated.

Now that the trade executed, we can make a new assumption:

The price of XRP is:

$$\frac{FP}{\#XRP} = \frac{\$1285.25}{1636.003} = \$0.7856$$

And we can confirm that we are correct. Moving forward, every trade we make, the 'assumed' price will always equal the exact price.