Position Sizing Strategy Guide

Master the mathematics of risk: Calculate exactly how much to risk on every trade

What You'll Learn

✓ The fundamental position sizing formula every trader must know

✓ How to calculate position size based on your risk tolerance

✓ Fixed dollar vs. percentage risk methods (and when to use each)

✓ The Kelly Criterion for optimal position sizing

✓ Portfolio heat management for multiple positions

✓ Common position sizing mistakes that destroy accounts

Reading time: 10 minutes

Skill level: Intermediate

Prerequisites: Understanding of stop-losses and basic risk management

Why Position Sizing Matters More Than Your Strategy

You can have the best trading strategy in the world, but if your position sizing is wrong, you'll still lose money. Position sizing determines how much capital you risk on each trade—and it's the difference between steady growth and account destruction.

⚠ **The Harsh Truth**

Most traders focus 90% of their energy on finding perfect entry points and only 10% on position sizing. Professional traders do the opposite. They know that **how much** you trade matters more than **what** you trade.

♠ **The Bankroll Management Parallel**

In poker, your bet size relative to your stack determines your tournament survival. Bet too much on one hand, and you're out regardless of how good your cards were. In trading, position sizing is your bet size—and just like poker, sizing incorrectly on a single trade can eliminate you from the game entirely.

What Position Sizing Controls

✓ **Maximum loss per trade** - How much you can lose if your stop-loss hits

✓ **Account drawdown risk** - How quickly you can recover from losing streaks

✓ **Emotional stability** - Properly sized positions keep emotions in check

✓ **Long-term survival** - The only stat that matters is staying in the game

The Core Position Sizing Formula

Every position sizing method starts with this fundamental formula:

Universal Position Sizing Formula

```
Position Size = Total Risk ÷ Risk Per Unit
```

Where:

- **Total Risk** = Amount you're willing to lose on this trade
- **Risk Per Unit** = Distance from entry to stop-loss

Breaking Down the Formula

How Position Size is Calculated

Account Size
$10,000

×

Risk %
1% (0.01)

=

Total Risk

$100

÷

Entry Price
$50,000

−

Stop-Loss
$48,000

=

Risk Per Unit
$2,000

=

Position Size
$100 ÷ $2,000 = **0.05 BTC**

Step-by-Step Calculation Example

Trading Scenario:

- Account balance: $10,000
- Risk tolerance: 1% per trade
- Asset: Bitcoin (BTC)
- Entry price: $50,000
- Stop-loss price: $48,000

Step 1 culate total risk amount: $10,000 × 1% = **$100**

Step 2 culate risk per unit: $50,000 - $48,000 = **$2,000 per BTC**

Step 3 culate position size: $100 ÷ $2,000 = **0.05 BTC**

Verify stop-loss hits: 0.05 BTC × $2,000 loss per BTC = $100 loss ✓

Method 1: Fixed Percentage Risk

The most popular and professional approach—risk the same percentage of your account on every trade.

How It Works

Fixed Percentage Risk Formula

```
Risk Amount = Account Balance × Risk %
```

```
Position Size = Risk Amount ÷ Risk Per Unit
```

Recommended Risk Percentages

- **Conservative:** 0.5-1% per trade
- **Moderate:** 1-2% per trade
- **Aggressive:** 2-3% per trade
- **Dangerous:** 5%+ per trade (not recommended)

Fixed Percentage Examples

Account Size	Risk %	Risk Per Trade	Consecutive Losses to Lose 50%
$10,000	0.5%	$50	138 trades
$10,000	1%	$100	69 trades
$10,000	2%	$200	34 trades
$10,000	5%	$500	13 trades
$10,000	10%	$1,000	6 trades

💡 Key Insight

Advantages of Fixed Percentage Risk

✓ Automatically scales with account size (win: risk more, lose: risk less)

✓ Prevents catastrophic losses during drawdowns

✓ Emotionally easier to follow (no arbitrary decisions)

✓ Professional standard across hedge funds and prop firms

♠ The Tournament Buy-In Parallel

Fixed percentage risk is like never buying into a poker tournament for more than 2% of your bankroll. As your bankroll grows, you can afford bigger buy-ins. When it shrinks, you drop down in stakes. This ensures you never risk your entire poker career on a single tournament—same principle applies to trading.

Method 2: Fixed Dollar Risk

Risk the same dollar amount on every trade, regardless of account size.

How It Works

Fixed Dollar Risk Formula

```
Risk Amount = Fixed Dollar Amount (e.g., $100)
```

```
Position Size = Risk Amount ÷ Risk Per Unit
```

Example:

You always risk $100 per trade, whether your account is $10,000 or $15,000.

- Trade 1: Account = $10,000, Risk = $100 (1%)

- Trade 2: Account = $11,000, Risk = $100 (0.91%)

- Trade 3: Account = $9,000, Risk = $100 (1.11%)

When to Use Fixed Dollar Risk

✓ Starting with a very small account ($500-$2,000)

✓ Testing a new strategy with minimal capital

✓ Learning to trade without percentage calculations

✓ When psychological comfort with dollar amounts matters more

> ⚠ **The Problem with Fixed Dollar Risk**
>
> This method doesn't scale. If your account grows to $50,000 but you're still risking $100, you're only risking 0.2%—too conservative. If your account drops to $5,000 and you're still risking $100, you're now risking 2%—too aggressive.

Method 3: The Kelly Criterion (Advanced)

A mathematical formula that calculates the optimal position size to maximize long-term growth based on your win rate and win/loss ratio.

The Kelly Formula

Kelly Criterion Formula

```
Kelly % = (Win Rate × Avg Win ÷ Avg Loss) - (1 - Win Rate) ÷ (Avg Win ÷
Avg Loss)
```

Simplified version:

```
Kelly % = W - [(1 - W) ÷ R]
```

Where:

- **W** = Win rate (e.g., 0.60 for 60% win rate)
- **R** = Avg Win ÷ Avg Loss (e.g., 2 if you make $200 on wins and lose $100 on losses)

Kelly Criterion Example

Kelly Calculator Example

Win Rate: 60% (0.60)

Average Win: $300

Average Loss: $150

Win/Loss Ratio (R): 2.0

`Step 1` ly % = 0.60 - [(1 - 0.60) ÷ 2.0]

`Step 2` ly % = 0.60 - [0.40 ÷ 2.0]

`Step 3` ly % = 0.60 - 0.20

`Result` ly % = **0.40 or 40%**

Kelly says risk 40% of your account on this trade

⚠ **Why You Should NEVER Use Full Kelly**

Full Kelly sizing is mathematically optimal for long-term growth but psychologically impossible to execute. A 40% position means if your stop-loss hits, you lose 40% of your account. One bad losing streak and you're down 80%. Nobody can handle that emotionally.

Half Kelly: The Practical Solution

Professional traders use **half Kelly** or **quarter Kelly** to balance growth with risk management.

Half Kelly Formula

```
Position Size = Kelly % ÷ 2
```

From previous example:

```
Half Kelly = 40% ÷ 2 = 20%
```

```
Quarter Kelly = 40% ÷ 4 = 10%
```

Kelly Variant	Position Size	Max Drawdown Risk	Emotional Tolerance
Full Kelly	40%	Very High	Impossible
Half Kelly	20%	High	Difficult
Quarter Kelly	10%	Moderate	Manageable

| 1/10 Kelly | 4% | **Low** | **Comfortable** |

Method 4: Volatility-Based Position Sizing

Adjust your position size based on market volatility—smaller positions in volatile markets, larger positions in stable markets.

The ATR Method (Average True Range)

ATR-Based Position Sizing

```
Position Size = Risk Amount ÷ (ATR × ATR Multiplier)
```

Where:

- **ATR** = Average True Range (14-period standard)
- **ATR Multiplier** = How many ATRs for your stop (typically 2-3x)

Example with Bitcoin:

- Account: $10,000
- Risk: 1% ($100)
- BTC price: $50,000
- ATR (14): $1,200
- ATR multiplier: 2x

Step 1 Stop distance = ATR × Multiplier = $1,200 × 2 = $2,400

Step 2 Position size = $100 ÷ $2,400 = 0.0417 BTC

Result Your position automatically adjusts to current volatility

Why Volatility-Based Sizing Works

✓ Automatically reduces exposure during volatile periods (when risk is highest)

✓ Increases exposure during stable periods (when stops are less likely to hit)

✓ Prevents getting stopped out by normal market noise

✓ Particularly useful for swing trading and position trading

> **When to Use Volatility-Based Sizing**
>
> - Swing trading (holding 2-7 days)
> - Position trading (holding weeks to months)
> - Trading highly volatile assets (crypto, small-cap stocks)
> - During earnings seasons or major news events

Portfolio Heat: Managing Multiple Positions

Portfolio heat measures your total risk across all open positions—critical for avoiding correlated losses.

What is Portfolio Heat?

Portfolio Heat Formula

```
Portfolio Heat = Sum of All Position Risks ÷ Total Account Value
```

> **Example with Multiple Positions:**
>
> **Account: $10,000**
>
> - Position 1 (BTC): Risk = $100 (1%)
> - Position 2 (ETH): Risk = $100 (1%)
> - Position 3 (SOL): Risk = $100 (1%)
>
> `Calculate` Risk = $100 + $100 + $100 = $300
>
> `Portfolio Heat` 10,000 = 3%
>
> `Meaning` 3 stop-losses hit simultaneously, you lose 3% of your account

Safe Portfolio Heat Levels

0-5% (Safe)	5-10% (Moderate)	10-15% (High)	15%+ (Dangerous)

Portfolio Heat	Risk Level	Max Open Positions	Recommendation
0-5%	Conservative	3-5 positions	Ideal for most traders
5-10%	Moderate	5-10 positions	Acceptable with experience
10-15%	Aggressive	10+ positions	Only for professionals
15%+	Dangerous	Too many	Likely to blow up account

> ⚠ **The Correlation Problem**
>
> If you're trading BTC, ETH, and SOL simultaneously with 1% risk each, your portfolio heat is 3%. But these assets are highly correlated—when BTC crashes, they often all crash together. Your actual risk might be closer to 3% on a single correlated bet, not three independent 1% bets.

Portfolio Heat Management Rules

- ✓ **Never exceed 10% portfolio heat** unless you're a professional trader
- ✓ **Reduce position sizes when adding correlated positions** (e.g., multiple crypto positions)
- ✓ **Count sector exposure** (5 tech stock positions = higher real risk than 5 positions across different sectors)
- ✓ **Reserve capital for new opportunities** (don't max out portfolio heat early)

Position Sizing Methods Compared

Fixed Percentage

Best for: Most traders, all experience levels

Pros:

- Scales with account
- Professional standard
- Simple to calculate

Cons:

- Doesn't optimize for edge

- Same risk regardless of conviction

Fixed Dollar

Best for: Small accounts, beginners

Pros:

- Psychologically simple
- No math required
- Easy to understand losses

Cons:

- Doesn't scale
- Risk % changes with account size

Kelly Criterion

Best for: Experienced traders with proven edge

Pros:

- Mathematically optimal
- Maximizes long-term growth
- Adjusts to your edge

Cons:

- High volatility
- Requires extensive data
- Psychologically difficult

Volatility-Based

Best for: Swing traders, volatile markets

Pros:

- Adapts to market conditions
- Reduces risk in volatility
- Better stop placement

Cons:

- More complex calculation
- Requires ATR data

Common Position Sizing Mistakes

Mistake 1: "I'll Risk 10% to Make It Back Faster"

The trap: After losing money, increasing position size to recover quickly.

The reality: This is revenge trading and almost always leads to bigger losses.

The math: If you lose 50% of your account, you need a 100% return just to break even. Risking more when you're down makes this harder, not easier.

Fix: Stick to your risk percentage no matter what. If anything, reduce risk when you're losing.

Mistake 2: Position Sizing Based on Leverage, Not Risk

The trap: "I have 10x leverage, so I'll use my full margin to control a huge position."

The reality: Leverage determines your buying power, not your position size. Your stop-loss distance determines position size.

Fix: Calculate position size based on: Account × Risk % ÷ Stop Distance. Use leverage only to meet margin requirements, not to determine position size.

Mistake 3: Not Adjusting for Correlation

The trap: Opening 5 crypto positions with 1% risk each, thinking total risk is 5%.

The reality: Crypto assets are highly correlated. When BTC drops 10%, altcoins often drop 15-20%. Your 5 positions might all hit stops simultaneously.

Fix: Reduce individual position sizes when trading correlated assets. If trading 5 correlated assets, consider 0.5% risk each instead of 1%.

Mistake 4: Ignoring Account Drawdown

The trap: Continuing to risk 2% per trade even after losing 30% of your account.

The reality: 2% of $10,000 is $200. But 2% of $7,000 is only $140. Your dollar risk decreases naturally, but your percentage risk stays the same.

Fix: Some traders reduce risk percentage during drawdowns (e.g., drop from 2% to 1% after a

20% drawdown). This preserves capital during losing streaks.

Mistake 5: Position Sizing Based on Gut Feel

The trap: "This trade looks really good, so I'll risk more."

The reality: Every trade "looks good" before you enter it—that's why you entered. Your conviction is not predictive of outcome.

Fix: Use the same position sizing formula for every trade. No exceptions. Ever. Your strategy's edge works over hundreds of trades, not individual ones.

♠The Bad Beat Story Parallel

In poker, every player has a "bad beat" story where they lost with a great hand. In trading, every trader has "high conviction" trades that failed spectacularly. The cards don't care about your conviction, and neither does the market. Stick to your system.

Position Sizing for Automated Strategies

When running automated trading strategies, position sizing becomes even more critical because you're not manually managing each trade.

Key Considerations for Automated Position Sizing

✓ **Set maximum portfolio heat** - Hard limit on total capital at risk across all automated strategies

✓ **Per-strategy risk allocation** - Each strategy gets a percentage of total capital (e.g., 20% each for 5 strategies)

✓ **Dynamic position sizing** - Positions automatically adjust based on account balance and volatility

✓ **Correlation monitoring** - Reduce position sizes if multiple strategies are entering correlated trades

Automated Strategy Example:

Account: $50,000 | Max Portfolio Heat: 6%

Strategy	Capital Allocation	Risk Per Trade	Max Positions
Trend Following	$15,000 (30%)	1% of allocation	3
Mean Reversion	$15,000 (30%)	1% of allocation	3
Breakout Trading	$10,000 (20%)	1% of allocation	2

| Reserve Capital | $10,000 (20%) | - | - |

Maximum Exposure: If all positions hit stops: 3% + 3% + 2% = 8% total drawdown (within 10% limit)

Putting It All Together: Your Position Sizing Checklist

Before Every Trade, Calculate:

1. **Account balance** - Know exactly how much capital you're working with
2. **Risk percentage** - Decide how much you'll risk (typically 0.5-2%)
3. **Risk amount in dollars** - Account × Risk % = Dollar risk
4. **Entry price** - Where you're buying/selling
5. **Stop-loss price** - Where you'll exit if wrong
6. **Risk per unit** - Entry price - Stop-loss price
7. **Position size** - Dollar risk ÷ Risk per unit
8. **Current portfolio heat** - Total risk across all open positions

The One-Minute Position Size Check

Quick Position Sizing Formula

1. Account Balance: $_____

2. Risk % (0.5-2%): _____% = $_____ risk

3. Entry Price: $_____

4. Stop-Loss Price: $_____

5. Risk Per Unit: $_____ - $_____ = $_____

Position Size = Step 2 ÷ Step 5 = _____ units

Conclusion: Position Sizing is Your Real Edge

You can have a mediocre entry strategy with excellent position sizing and make money. You cannot have an excellent entry strategy with poor position sizing and survive.

The Ultimate Truth About Position Sizing

Professional traders spend 10% of their time finding trades and 90% managing risk. Amateurs do the opposite. Position sizing is risk management—and risk management is what keeps you in the game long enough for your edge to materialize.

Essential Takeaways

- **Position size based on risk, not leverage** - Leverage determines margin requirements; your stop-loss determines position size
- **Risk 0.5-2% per trade maximum** - Anything higher and you can't survive normal losing streaks
- **Fixed percentage risk scales with your account** - As you grow, you risk more dollars but same percentage
- **Monitor portfolio heat constantly** - Total risk across all positions should stay under 10%
- **Reduce position size for correlated trades** - Multiple crypto positions = higher real risk than you think
- **Use the formula every single time** - No gut feel, no exceptions, no revenge sizing

Your Next Steps

1. Calculate your risk percentage (start with 1% if unsure)
2. Create a position sizing spreadsheet or use a calculator
3. Practice calculating position sizes on past trades
4. Never enter a trade without calculating position size first
5. Track your actual vs. intended position sizes in your trading journal

♠ Final Poker Wisdom

In poker, the best players know that preserving chips is more important than winning pots. They fold premium hands when the pot odds aren't there. They don't go all-in just because they have pocket aces. In trading, the best traders know that preserving capital is more important than catching big moves. They size positions for survival first, growth second. That's why they're still trading 10 years later.

Related Guides

Understanding Margin Trading: Complete Guide

Stop-Loss Strategy: Where to Place Your Exits

Risk Management for Automated Trading

Building a Trading Journal: What to Track

Portfolio Heat Calculator Tool