MCP SERVER | NO CODE | CLOUD HOSTED

Bolt Pattern Finder MCP for AI Agents

Checking Vehicle Wheel Specifications and Fitment Data

The Bolt Pattern Finder handles precise automotive wheel specification lookups and cross-compatibility checks. This MCP gives your AI client immediate access to factory hub data—including bolt pattern, center bore size, lug nut thread, and offset range—for virtually any vehicle sold in the US, EU, or Asia over the last 30 years.

A+ Quality Score 100/100

wheels | bolt-pattern | car-parts | vehicle-specs | compatibility

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vinkius.com/mcp/bolt-pattern-finder

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Bolt Pattern Finder MCP

3 tools available
Cloud-hosted on Vinkius

Figuring out if a wheel fits is always complicated. You need more than just a year and make; you need specific dimensions like bolt patterns and center bores to ensure everything bolts up safely. This MCP solves that by providing exact factory specs for nearly every car on the road. Instead of cross-referencing massive, outdated manuals or calling a dealer, your agent pulls reliable data directly. You can ask it to pull precise hub details for any vehicle, or check if wheels from one model will actually fit another. Since Vinkius hosts this MCP in its catalog, you connect once and get instant access to detailed mechanical specifications that used to take hours of manual research.

Core Capabilities

01 — Determine wheel safety compatibility

Your agent compares the dimensions of two different wheels against each other to confirm safe fitment onto a specific vehicle.

02 — Retrieve detailed factory specifications

The MCP fetches comprehensive data for a single car, providing its exact bolt pattern, center bore size, lug nut thread, and offset range.

03 — List all supported car manufacturers

You can request an exhaustive list of every automotive manufacturer supported by the database.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/bolt-pattern-finder** — connect your AI agent in three steps.

01 Tell your agent what kind of vehicle you're working with, or if you need to compare two different wheels.

02 Your agent uses the MCP tools to query the vast database for all necessary dimensions and compatibility checks.

03 The system returns a clear, definitive answer: either a detailed spec sheet or a simple 'Incompatible' warning.

The bottom line is that you get instant access to critical mechanical data without manually searching through multiple parts catalogs.

Built For

This MCP serves mechanics, classic car restorers, and wheel retailers. If your job involves fitment checks or matching parts based on specific dimensions, this tool saves you time and prevents costly mistakes.

Automotive Mechanic

Uses the MCP to quickly verify if an incoming used wheel set will match a customer's existing vehicle specs before starting work.

Wheel Retailer/Fitment Specialist

Employs the tool to compare multiple brands and models, ensuring their suggested aftermarket wheels are guaranteed safe and functional for the client's car.

Classic Car Restorer

Retrieves original factory specifications for hard-to-find vintage parts, guaranteeing accurate replacement hub data for period-correct restoration.

What Changes When You Connect

01 Stop guessing if wheels will fit. The tool automatically checks compatibility, telling you right away if two wheel sets are safe to use together.

02 Get precise hub data instantly. Instead of digging through old manuals, your agent pulls the exact bolt pattern, center bore, and offset range for any vehicle in seconds.

03 Save time on inventory management. Use list_makes to verify that every manufacturer you deal with is covered by our database before committing to a client project.

04 Reduce costly mistakes. By confirming fitment upfront, you eliminate the risk of ordering or installing parts that won't actually bolt up correctly.

05 Accuracy across decades. The data covers 99% of vehicles sold in major markets over the last 30 years, giving you deep historical reliability.

Real-World Applications

Restoring a Classic Car's Wheel Setup

A restorer needs to source replacement wheels for a 1985 sedan. Instead of guessing the original dimensions, they ask their agent to retrieve the factory specs for that exact year and model. The tool provides the precise bolt pattern and lug nut thread size needed to buy period-correct parts.

Comparing Aftermarket Wheel Options

A client wants to upgrade their 2018 SUV but isn't sure which wheel brands will match. They ask the agent to run a compatibility check, comparing several potential wheels against the vehicle's known specifications to guarantee fitment.

Verifying Hub Data for Used Parts

A mechanic gets a set of used hub assemblies and needs to know if they match the car VIN. They use the agent to check the precise center bore size, ensuring the parts are interchangeable before installation.

Inventory Audit for Wheel Dealers

A wheel dealer needs to update their inventory database with every supported vehicle make and model they handle. They ask the agent to list all supported automotive manufacturers to ensure complete coverage of their stock.

Patterns to Avoid

Assuming universal bolt patterns

✗ AVOID

The mechanic assumes that because two cars are both sedans, they must use the same wheel dimensions. This can lead to dangerous failures when the center bore or offset is wrong.

✓ INSTEAD

Always ask your agent to run a compatibility check using `check_compatibility` and compare specific vehicle data before making any assumption about fitment.

Relying on visual inspection only

✗ AVOID

A wheel retailer can't visually confirm the lug nut thread size, so they guess based on appearance. This is a high-risk mistake that prevents safe installation.

✓ INSTEAD

Use `get_vehicle_specs` to pull the exact manufacturer data for the vehicle model, guaranteeing you have the correct center bore and thread measurements.

Searching parts sites manually

✗ AVOID

Wasting hours clicking through multiple external automotive databases, only to find conflicting or outdated information.

✓ INSTEAD

Let your agent use this MCP. It consolidates data from thousands of vehicles and manufacturers into one single, verifiable source.

The Right Fit

Use the Bolt Pattern Finder when your decision hinges on dimensional accuracy: Do you need to know if a component physically fits another? If you're simply looking for general car model information or basic part numbers, this MCP won't help. You need precise dimensions—the bolt pattern, center bore, offset range, etc.—to make an informed choice. For instance, if you just want a list of brands, use the `list_makes` tool first. But if you are comparing two potential wheels, always start with running `check_compatibility`. Never rely on assumptions; trust the data provided by `get_vehicle_specs`.

Bolt Pattern Finder MCP: Solving Automotive Wheel Fitment Problems

Today, checking wheel compatibility is a manual nightmare. Mechanics spend time cross-referencing multiple printed guides; retailers click through dozens of manufacturer websites, trying to find the exact combination of bolt pattern and offset range for two different cars. It's slow, tedious, and often leads to errors because one small number—like center bore diameter—is wrong.

With this MCP, that process disappears. You just ask your agent, 'Will these wheels fit that car?' The tool performs the complex cross-check instantly, comparing critical dimensions like lug nut thread size and clearance. You get a definitive, actionable answer immediately.

Bolt Pattern Finder MCP: Pinpointing Exact Vehicle Hub Specifications

Manual lookups force you to check every single vehicle model separately, one after the other. You have to find the right year, then the right make, and then manually pull out all four critical specs:

Now, it's a simple query. Ask for the full specifications using `get_vehicle_specs` and receive everything in one go. You stop wasting time on multiple tabs and start getting reliable data right away.

bolt pattern, center bore, lug nut thread, and offset range.

Bolt Pattern Finder: 3 Tools for Automotive Wheel Compatibility

These tools let you verify if wheels fit different cars, get factory dimensions for a specific vehicle, and list all supported car brands.

#	TOOL	DESCRIPTION
01	`check_compatibility`	Checks if a wheel designed for one vehicle will safely and functionally fit onto another.
02	`get_vehicle_specs`	Retrieves the precise factory specifications, including bolt pattern, center bore, lug nut thread size, and offset range, for any given car model.
03	`list_makes`	Provides a complete list of every automotive manufacturer supported by the database.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U What are the correct specs for a 2015 Honda Accord?

Vehicle Specs: 2015 Honda Accord

- **Bolt Pattern:** 5×114.3mm
- **Center Bore:** 64.1mm
- **Lug Nut Thread Size:** M12×1.5
- **Offset Range:** +12mm to +52mm

These specs are crucial for ordering replacement wheels or hubs.

U Will my 2018 Camry wheels fit on a 2015 Accord?

Fitment Check: INCOMPATIBLE

The wheel set from the '2018 Toyota Camry' cannot safely mount to the '2015 Honda Accord'. While both cars are similar, the bolt pattern and center bore requirements do not match for a reliable installation. You need to find wheels designed specifically for the Accord's dimensions.

U List all supported car makes in your database.

We cover a huge range of manufacturers! The database supports major brands, including:

- ✅ Acura, Audi, BMW, Chevrolet, Ford, Honda, Toyota,
- ✅ Nissan, Jeep, Subaru, Kia, and many more.

Need to check specs for one? Just let me know the year and model.

Frequently Asked Questions

01 **How accurate is the Bolt Pattern Finder when checking vehicle wheel fitment?**

The compatibility checks are highly reliable. The MCP draws from data covering 99% of vehicles sold in the US, EU, and Asia over the last 30 years. It provides a definitive yes or no answer based on matching critical dimensions.

02 **Does this help me find original factory wheel specs?**

Yes, it does. You can use the tool to pull precise hub data for any specific car model, including its exact bolt pattern, center bore size, and offset range, replicating what a dealer would tell you.

03 **What if my vehicle is older than 30 years?**

While the database covers over the last three decades for most major markets, always confirm with local experts for extremely rare or bespoke vintage vehicles. However, it handles a vast amount of historical data.

04 **Do I need to use this MCP if I just want a list of car brands?**

No, that specific task is simpler. You can ask the tool for a full list of supported manufacturers directly, which gives you a quick overview of what makes are covered.

05 **Is this better than using a physical parts catalog?**

It's much faster and more comprehensive. A physical book can't compare two different cars instantly or pull dozens of dimensional metrics; your agent does that in seconds, providing the data you need to make safe decisions.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"bolt-pattern-finder": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Bolt Pattern Finder is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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