



INDUSTRY WHITE PAPER

A New Retail Category: The Secure Partial-Open Garage Door

The engineering, the market data, and the opportunity behind the patent-pending hardware that creates a third setting for your garage door — open for air, locked for safety.

A category introduction for retail and distribution partners

The Chase Hinge System (CHS) · Engineered by AA INTEGRA

Patent-pending U.S. Technology · U.S. Application US 2025/0376883 A1

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EXECUTIVE SUMMARY

The Chase Hinge System is a patent-pending retrofit kit that gives an ordinary sectional garage door a third position: the upper panels retract for light and airflow while the lower panels stay locked as a secure barrier. It ships as a single SKU, installs with household tools, and fits standard residential sectional doors.

For a retail buyer, the case for CHS is not another entry in a crowded aisle — it is a new sub-category with no established competing product on the shelf. The underlying consumer problem (a garage door that is all-or-nothing) is nearly universal and today has no purpose-built retail solution; homeowners improvise with props, blocks, and open doors. CHS converts that unmet, largely unspoken demand into a stockable, demonstrable, defensible product.

This document makes the category case: the whitespace, the demand drivers, the product and its intellectual-property moat, the merchandising and sell-through model, an honest risk assessment, and a proposed path to a controlled retail test.

90M+U.S. HOMES WITH AN
UPGRADABLE SECTIONAL
DOOR**56.3M**U.S. DOG-OWNING
HOUSEHOLDS — THE
ORIGINAL USE CASE**0**ESTABLISHED COMPETING
PRODUCTS ON SHELF

SECTION 1

1 The Category Opportunity

The addressable base is large and documented. The U.S. has roughly **148 million housing units** (U.S. Census Bureau, 2025), and about two-thirds — 63–66% — have a garage or carport (U.S. Department of Energy analysis of Census data, 2017–2021). That is **more than 90 million homes** with a door CHS is designed to upgrade. The garage is one of the most-used and least-optimized spaces in the American home, and the home-improvement channel already sells heavily into it: openers, weatherstripping, storage, insulation, and organization.

Within that established traffic sits a specific, unserved need. A sectional garage door has exactly two states — fully open or fully closed. There is no manufactured product that lets a homeowner hold the door in a secure, partly-open position for light and airflow. Shoppers solve it themselves, badly: propping the door with a board, running it halfway on the opener, or simply leaving it wide open and accepting the exposure.

That is the definition of category whitespace: demonstrated behavior, no product built for it. CHS is designed to occupy that gap as the defining product of a new micro-category — the secure partial-open upgrade — rather than to compete against interchangeable commodity hardware.

On a base of 90 million-plus garages, even a fractional attach rate is a meaningful unit volume.

SECTION 2

2 The Consumer Problem & Demand Drivers

The demand is real but latent — shoppers live with the problem without knowing a product exists to solve it. That shapes both the marketing model (education-led, brand-funded) and the buyer's takeaway: the shopper arrives already motivated; the retailer's role is to have the product visible at the moment of discovery. The drivers below are not anecdotal — each maps to a large, measured population, and the same shopper often sits in several at once.

1 Pet containment with ventilation

56.3 million U.S. households own a dog — 42.6% of all households — accounting for 87.3 million dogs (2025 AVMA Pet Ownership & Demographic Sourcebook). Owners who keep a dog in the garage must choose between a closed door (no air) and an open one (escape risk). CHS is the missing middle state, and pet containment was the product's original use case.

2 Home shops, hobbies, and side hustles

In a national survey of 2,005 homeowners with garages (Craftsman / Atomik Research, Dec. 2023), **76%** believe their garage could become "the most productive room in the house," 47% use it for home-improvement projects, 38% for automotive work, and 28% said the garage played a role in a side hustle. These are exactly the users working in a sealed box who want light and airflow without opening the door to the street.

3 Fitness and flex space

In the same survey, **42%+** use the garage as a gym or exercise area, and half of respondents (50%) planned to invest in garage-improvement solutions in the coming year — a shopper already in a spending posture for the category CHS sits in.

4 Climate

In hot regions the closed garage becomes an unusable oven; partial ventilation materially changes whether the space is usable at all — a year-round driver in the Sun Belt, independent of the use cases above.

None of these are seasonal fads; they map to standing categories the channel already merchandises — pet, tools/workshop, home organization, fitness, and HVAC/comfort — which is where CHS cross-merchandises most naturally.

SECTION 3

3 The Product

What it is. A retrofit kit of lockable hinges that install between the panels of an existing residential sectional garage door, plus mounting hardware and an illustrated guide. One kit upgrades one door.

How it works. When the hinges are locked, the door operates normally — fully up or down. When unlocked, the upper panels retract independently while the lower panels remain locked in place, creating a stable, secure partial opening: a "retractable fence" that admits light and air but not people or pets. Re-locking returns the door to standard full operation. The mechanism is mechanical — no motor replacement, no structural modification.

Installation. DIY with standard household tools, on the order of an afternoon. This positions CHS as an accessible upgrade rather than a contractor job, though garage-door dealers can also attach it to service calls.

Product facts for merchandising & logistics

FIT	Standard residential sectional garage doors
IN THE BOX	Patent-pending lockable hinges, mounting hardware, illustrated install guide
INSTALL	DIY with standard household tools — approximately an afternoon
MECHANISM	Purely mechanical — no motor replacement, no structural modification

SECTION 4

4 Differentiation & Intellectual Property

A defensible position, not a commodity. CHS's value to a buyer rests on the fact that it is not easily commoditized. The lockable-hinge mechanism is the subject of U.S. Patent Application US 2025/0376883 A1 (patent-pending). That status protects the product from off-the-shelf knock-offs and, by extension, protects the category the buyer would be helping to establish.

THE MOAT

Patent-pending lockable-hinge mechanism guards against commodity knock-offs — protecting the category it would help establish.

THE PROVENANCE

Engineered by AA INTEGRA, with granted infrastructure patents (Voltek, U.S. 8,413,404 & 8,307,604) behind it.

THE COMPETITION

No branded rival delivers a secure partial-open setting — the real competition is improvised substitutes.

Engineering provenance. CHS comes from AA INTEGRA, an engineering firm with a record of commercialized, *granted* infrastructure patents — including the Voltek underground-vault system (U.S. Patents 8,413,404 and 8,307,604). This is a vendor with demonstrated ability to bring engineered hardware to market, which speaks to reliability and supply continuity — factors a category buyer weighs as heavily as the product itself.

Competitive landscape. There is no established retail product delivering a secure partial-open setting for a sectional door, so CHS's practical competition is the set of improvised substitutes (props, running the door halfway, leaving it open) rather than a branded rival.

SECTION 5

5 The Company — AA INTEGRA

The Chase Hinge System is developed by **AA INTEGRA**, an engineering firm with a track record of commercialized, patented infrastructure — including the granted Voltek underground-vault system (U.S. Patents 8,413,404 and 8,307,604) and additional modular systems. CHS applies that same engineering discipline to a problem present in tens of millions of garages.

For a retail partner, the relevant signal is vendor viability: this is an established engineering company with granted patents and shipped products, not a single-product startup.

Sources cited in this document: [U.S. Census Bureau \(2025\)](#); [U.S. Department of Energy analysis of Census data \(2017–2021\)](#); [2025 AVMA Pet Ownership & Demographic Sourcebook](#); [Craftsman / Atomik Research national survey of 2,005 garage-owning homeowners \(Dec. 2023\)](#). Product and patent details per AA INTEGRA; U.S. Patent Application US 2025/0376883 A1 is pending, and Voltek patents U.S. 8,413,404 and 8,307,604 are granted.