INDUSTRIAL PATTERNS

Reference Editions

Operating Benchmarks

An annual reference series

Module 1 · Edition 2024

HVAC & Plumbing

Services and Distribution

United States · Peer set of 3 NAICS codes · 238220 + 423720 + 423730

2024 Edition

Edition lock date: 10 June 2026

Current conditions through December 2024

SOURCES

IRS Statistics of Income · Bureau of Economic Analysis · Bureau of Labor Statistics
U.S. Census Bureau · Federal Reserve · AHRI statistical release

Structural anchors: SOI 2022 · Economic Census 2022 (vintage lags disclosed in §8)

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SAMPLE · FREE PREVIEW

About this sample

This document is a free preview of HVAC & Plumbing Operating Benchmarks — 2024 Edition, the inaugural Operating Benchmarks edition for the US plumbing, heating, and air-conditioning services-and-distribution complex. It contains the front matter, the methodology summary, one headline page (Family 2 — Labor Elasticity, the binding constraint in this industry), and the limitations section from the full edition. The full edition runs approximately 32 pages and contains four metric families across three six-digit NAICS codes — contractors (238220), hydronics wholesale (423720), and warm-air wholesale (423730) — with a current-conditions appendix through December 2024 that includes an AHRI equipment-shipments overlay.

The edition's structural data is anchored to the 2022 vintages of IRS Statistics of Income and the U.S. Census Economic Census, with annual BLS QCEW employment and wage data extending through 2024 and a current-conditions overlay also through December 2024. The edition lock date is 10 June 2026 and figures are not revised within an edition.

Edition

HVAC & Plumbing Operating Benchmarks · 2024 Edition

Industrial Patterns Module 1

Edition lock date

10 June 2026

Current-conditions data through December 2024.

Peer set

3 six-digit NAICS codes · 238220 + 423720 + 423730

Contractor + hydronics wholesale + warm-air wholesale.

Publisher

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OPERATING BENCHMARKS · 2024 EDITION

Operating Benchmarks is an annual reference that examines how operating performance behaves under scale, volatility, and capital intensity in US industries. It is designed for private-equity diligence teams evaluating mid-tier operator targets, and for executive teams at those operators — readers who need a stable, neutral point of comparison, not advice, not forecasts, and not prescriptions. Each edition applies a consistent framework to observed operating data so performance patterns can be assessed over time and across peers. Operating Benchmarks exists to support decision-making by describing what tends to occur, not by recommending what should be done.

Contents

● Section included in this sample. ○ Section in the full edition only.

How to Read This Reference

This document is organized as a reference, not as a report. It is built to be used the way a practitioner uses it: find the side of the industry your target sits on — contractor or distribution — and read its operating characteristics against the right peer set. The HVAC & Plumbing peer set comprises three six-digit NAICS codes: the contractor industry (NAICS 238220) and the two wholesale industries that supply it (423720 hydronics, 423730 warm-air). The two sides report different dollar concepts (value of construction work versus sales) and are shown side by side throughout, never summed.

Sections are ordered by decision relevance rather than family number: labor (Family 2) leads this edition because it is the industry's binding constraint and the most consequential operating cost; margins, capital efficiency, and overhead (Families 1, 3, 4) follow. Each section is presented three ways — a chart, a data table, and written narration — and the three carry the same figures. Readers who think in pictures, readers who work from tables, and readers who annotate prose are all served by the same exhibit.

Source vintages and structural anchors

Each source enters at its own vintage, disclosed at every exhibit and summarized in the methodology appendix. Structural anchors are SOI 2022 (margins, balance sheet, overhead) and Economic Census 2022 (universe, output, scale curve); these slow-moving sources release every five and every seven years respectively and carry forward across editions until their next release. Annual sources — BLS QCEW (employment and wages), SUSB (firm structure), Nonemployer Statistics (sole-proprietor tail) — extend through 2024 where available. The current-conditions appendix (§7) overlays present-day movement through December 2024 using BLS PPI, BLS JOLTS, U.S. Census new residential construction, and the AHRI equipment-shipments statistical release.

A note on the three-industry peer set

The peer set is small — three NAICS codes — and the edition treats this as the named industry complex rather than a benchmark sample. Where federal sources publish data coarser than the three core industries, the exhibit names what is included and what is not. Where a source withholds a cell at the six-digit level, the gap is shown rather than imputed. Suppressed values are never shown as zero; coarse brackets are never allocated across the three codes by judgment.

Scope and intended use

What this is

An annual, descriptive reference on the operating structure of the US plumbing, heating, and air-conditioning services-and-distribution complex, computed from primary federal statistical sources at the most granular level each source permits. The audience is professional: private-equity diligence teams underwriting buy-and-build theses, operators calibrating budgets and board narratives, and advisors who need defensible industry context.

What this is not

It is not investment advice, not a forecast, and not a valuation. It describes structural operating characteristics; it does not recommend actions or predict outcomes. The edition does not characterize the industry as attractive or unattractive, and a single firm's figures should be read against its industry's distribution rather than treated as a target to be hit.

Peer set and exclusions

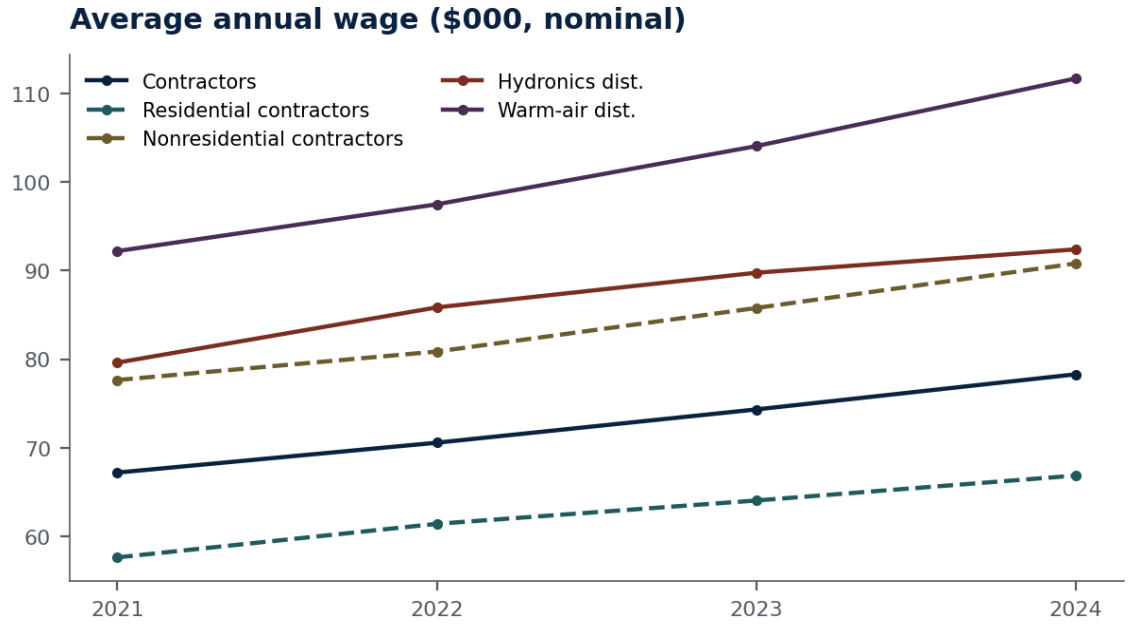
The peer set is the three NAICS codes named above. Adjacent industries are excluded by design: HVAC equipment manufacturing (a supplier industry, not a buy-and-build target in this complex); household appliance repair (household skew and scope contamination); refrigeration equipment wholesale, building-cleaning services, and general residential remodeling (operationally distinct from the contractor-and-supply complex). The edition describes the trade and its immediate supply channel — nothing else.

Family 2 — Labor Elasticity

Labor is the binding constraint, and it is repricing

This family answers: how does labor cost behave under output volume, and how is it distributed across the contractor and distribution sides of the industry? The primary visual is the wage level by side over the editions window (2021–2024). Source: BLS Quarterly Census of Employment and Wages, private national employers, with residential and nonresidential contractor detail dashed.

Average annual wage by side — nominal, $000 — across the three core industries and the two contractor-side splits. Distribution wages sit distinctly above contractor wages throughout the window; warm-air distribution sits highest; residential contractors lowest.



Source: BLS QCEW (private, national). Editions window 2021–2024.

Observations

- Warm-air distribution pays the highest wages in the complex — $111,712 average annual in 2024, $19,500 above contractors on the same year. The gap reflects different work content: distribution adds branch and quotation labor priced above field installation rates.

- Within contracting, the nonresidential side pays approximately $24,000 more than residential in 2024 ($90,817 vs $66,852), the largest within-industry wage gap in the complex. The two sides are distinct operating populations.
- Nominal wages compounded between roughly 16% and 21% across all five series over the three-year window (2021→2024). The contractor side's increase is concentrated in the 2022→2023 step; the distribution side's is steadier.
- The hydronics distribution wage ($92,406) sits between the two contractor sides, closer to nonresidential. The two wholesale industries pay differently and should not be averaged into a single distribution wage.

Interpretation boundary

Wage level is structural to the work content of each side, not a quality signal. Operators on the contractor side should not benchmark to distribution wages; operators on the distribution side should not benchmark to contractor wages. Wage trajectory over the editions window (§2.2 in the full edition) and the employment-to-wagebill elasticity (§2.3) are more decision-relevant than level alone, because they describe how rapidly the cost base resets — the binding constraint behavior — rather than where the level sits today.

Methodology appendix (excerpt)

§8.1 Source vintages and edition lock date

Edition lock date: 10 June 2026. Structural data vintage: SOI 2022 and Economic Census 2022 as the governed structural anchors (see the disclosure table in the front matter); BLS QCEW employment and wages cover calendar years 2021–2024; BLS OEWS occupational detail at May 2024 vintage. Current-conditions window: through December 2024. Figures are fixed at the lock date and are not revised within an edition.

§8.2 Two-deflator construction

Dollar concepts differ by side of the industry: contractors report value of construction work; distributors report sales. The two are never summed and are reported side by side throughout. Where a single deflator is required for comparability across a multi-year exhibit, the BLS Producer Price Index for the relevant commodity bundle is applied within each side; the contractor side is deflated with the construction PPI, and each distribution side with its own equipment PPI bundle (HVAC and plumbing).

§8.3 Overhead reconstruction (Family 4)

SOI Total Deductions is published at the contractor industry exactly and at a wholesale grouping that covers the two distribution industries. Refined overhead is built bottom-up from published component deduction lines, omitting cost of goods sold, depreciation, interest, and income tax. One overhead component is withheld for one wholesale grouping and is treated as zero in the build; the treatment is disclosed at the point of use and in §8.3 of the full edition.

§8.4 Suppression and grain registry

Where a federal source withholds a cell at the six-digit level (typically due to establishment confidentiality), or publishes only a coarser grouping that covers more than the three core industries, the figure is flagged at the point of use and enumerated in the suppression and grain registry in the methodology appendix. Suppressed values are never shown as zero; coarse brackets are never allocated across industries by judgment.

Methodology appendix (continued)

§8.5 Distributional benchmarking in a three-industry peer set

Every quantitative pattern is presented as a distribution across the three-industry peer set rather than as a single industry average. Because the peer set is small, the edition reports p10, p50, and p90 where it is informative to do so and reports the three points individually where the peer set is too small to support a meaningful distribution. The edition treats the three industries as the named complex rather than as a sample drawn from a larger population; the inference target is the complex itself, not a population beyond it.

§8.6 Inference limits and honest naming

All figures aggregate across firms within a NAICS code or operational segment. Firm-level inference from these aggregates is not supported: a single firm's operating characteristics may differ materially from its industry's central tendency. Where the methodology computes a quantity whose conventional name does not match what the computation actually measures, the edition uses the technically accurate name — for example, Family 2's primary metric is labeled an employment-to-wagebill elasticity, not a revenue elasticity, because the source carries employment and wages but not output.

§8.7 Reproducibility

Each edition is produced from a single parameterized pipeline and frozen at ship as a tagged code state, so the published figures can be regenerated from the corresponding code and source vintages. The slow-moving structural anchors — IRS SOI and the Economic Census — carry forward across editions until their next release, and the vintage used in each edition is recorded in the front-matter disclosure table and at the head of each affected section. A machine-readable Data Companion (workbook and CSV bundle) ships with the edition, generated from the same frozen build with a recorded checksum.

Limitations and closing

This reference is an industry-level document. It describes the operating structure of the HVAC & Plumbing services-and-distribution complex, not the performance of individual firms, and a single firm's figures should be read against the relevant side of the industry rather than treated as a target. It is descriptive: it does not forecast, value, or recommend.

Source granularity bounds what can be shown. Several sources publish at coarser industry groupings than the three core codes — the IRS SOI wholesale grouping covers the two distribution codes plus refrigeration and one other; the Census Nonemployer tables publish only at 4-digit brackets that include adjacent trades; BLS OEWS publishes at a building-equipment contractor group rather than at NAICS 238220 alone. Each of these is disclosed at the point of use and enumerated in the methodology appendix's grain registry.

The peer set is small. Where the three-industry distribution is too narrow to support p10/p50/p90, the edition shows the three points individually rather than computing a distribution that the data does not support. The honest naming of what each figure measures — and of what it does not — is the edition's commitment to reproducibility.

On the value of restraint

Industrial Patterns operates under a doctrine of restraint. Where the data supports observation, the observation is reported. Where it supports interpretation, the interpretation is reported with its boundaries. Where it does not support causal inference, no causal claim is made. The doctrine is the product's commitment to its readers: every figure can be audited, every observation can be questioned, and every interpretation has a stated limit.

THE FULL EDITION

HVAC & Plumbing Operating Benchmarks

2024 Edition · Approximately 32 pages · 3 six-digit NAICS codes

The full edition contains all four metric families (Labor Elasticity, Margin Behavior, Capital Efficiency, Overhead) with their headline pages and subsection detail; the structure context section with the complete universe table, scale curve, nonemployer tail, geography, and concentration analysis; cross-family observations; the current-conditions appendix with PPI, JOLTS, residential demand, and the AHRI equipment-shipments overlay through December 2024; and the complete methodology appendix and terms of sale and licensing.

Edition	Lock date	Price
2024 (inaugural)	10 June 2026	$2,950

Visit industrialpatterns.com/editions to purchase.

Each edition is delivered as a PDF together with a machine-readable Data Companion (workbook and CSV bundle). Same edition is provided to every reader; no customization is offered.