

Global Friction Stir Welding Equipment Market Size Study & Forecast, by Type (Fixed FSW Equipment, Robotic FSW Equipment) by Application (Aerospace, Automotive, Railways) and Regional Forecasts 2025-2035

<https://marketpublishers.com/r/G6D869267566EN.html>

Date: June 2026

Pages: 285

Price: US\$ 3,750.00 (Single User License)

ID: G6D869267566EN

Abstracts

The Global Friction Stir Welding Equipment Market is valued at approximately USD 0.24 billion in 2024 and is projected to expand at a robust CAGR of 6.70% over the forecast period of 2025-2035, reaching nearly USD 0.49 billion by 2035. Friction stir welding (FSW) equipment represents a solid-state joining technology that forges high-integrity welds without melting the base materials, thereby unlocking superior mechanical properties, dimensional accuracy, and energy efficiency. As manufacturers across high-performance industries continue to phase out conventional fusion welding methods, FSW equipment is being increasingly rolled out to meet stringent quality, weight-reduction, and sustainability benchmarks.

The market momentum is being shaped by the growing adoption of lightweight materials such as aluminum and advanced alloys, particularly in aerospace, automotive, and railway manufacturing. As production lines are scaled up and precision expectations are dialed higher, friction stir welding equipment is being leaned on to deliver consistent weld quality while cutting down defects, rework rates, and material wastage. Moreover, the shift toward electric vehicles, high-speed rail networks, and next-generation aircraft programs has pushed OEMs to invest heavily in advanced joining technologies. However, high upfront capital costs and the need for skilled operators may temper adoption in cost-sensitive manufacturing environments during the forecast period of 2025-2035.

The detailed segments and sub-segments included in the report are:

By Type:

Fixed FSW Equipment

Robotic FSW Equipment

By Application:

Aerospace

Automotive

Railways

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

Rest of Europe

Asia Pacific

China

India

Japan

Australia

South Korea

Rest of Asia Pacific

Latin America

Brazil

Mexico

Middle East & Africa

UAE

Saudi Arabia

South Africa

Rest of Middle East & Africa

Fixed friction stir welding equipment is expected to dominate the market over the forecast horizon, accounting for the largest share due to its widespread deployment in high-volume, standardized manufacturing setups. These systems are extensively used in aerospace panels, railway components, and automotive structures where

repeatability, rigidity, and process stability are non-negotiable. Their relatively lower integration complexity and proven track record continue to make them the preferred choice for established production facilities, even as automation trends gather pace.

From a revenue standpoint, robotic friction stir welding equipment currently leads the market, as manufacturers increasingly dial up investments in flexible, automated production lines. Robotic systems enable multi-axis movement, complex weld paths, and seamless integration with smart factory ecosystems, making them particularly attractive for advanced automotive and aerospace applications. While fixed systems anchor volume adoption, robotic FSW equipment is carving out a premium revenue stream, fueled by customization, scalability, and long-term operational efficiency.

The key regions considered for the Global Friction Stir Welding Equipment Market include Asia Pacific, North America, Europe, Latin America, and the Middle East & Africa. Europe holds a significant share, underpinned by strong aerospace manufacturing hubs and early adoption of advanced joining technologies. North America follows closely, driven by defense programs, electric vehicle production, and railway modernization initiatives. Asia Pacific is anticipated to witness the fastest growth during the forecast period, as rapid industrialization, expanding automotive production, and increasing investments in high-speed rail infrastructure continue to ramp up demand for friction stir welding solutions.

Major market players included in this report are:

ESAB Corporation

KUKA AG

Fronius International GmbH

Hitachi, Ltd.

Panasonic Corporation

Grenzebach Maschinenbau GmbH

Concurrent Technologies Corporation

Norsk Hydro ASA

Beijing FSW Technology Co., Ltd.

Stirtec GmbH

MTI Welding

FOOKE GmbH

PaR Systems, LLC

MTS Systems Corporation

Dukane Corporation

Global Friction Stir Welding Equipment Market Report Scope:

Historical Data ? 2023, 2024

Base Year for Estimation ? 2024

Forecast period ? 2025?2035

Report Coverage ? Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope ? North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope ? Free report customization (equivalent to up to 8 analysts? working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments and countries in recent years and to forecast their performance over the coming decade. The report blends qualitative insights with quantitative analysis to outline key growth drivers, challenges, and emerging opportunities shaping the friction stir welding equipment

landscape. It further maps competitive positioning, technology evolution, and investment priorities, offering stakeholders a clear line of sight into future market trajectories.

Key Takeaways:

Market Estimates & Forecast for 10 years from 2025 to 2035.

Annualized revenues and regional-level analysis for each market segment.

Detailed analysis of the geographical landscape with country-level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of the competitive structure of the market.

Demand side and supply side analysis of the market.

Contents

CHAPTER 1. GLOBAL FRICTION STIR WELDING EQUIPMENT MARKET REPORT SCOPE & METHODOLOGY

- 1.1. Research Objective
- 1.2. Research Methodology
 - 1.2.1. Forecast Model
 - 1.2.2. Desk Research
 - 1.2.3. Top Down and Bottom-Up Approach
- 1.3. Research Attributes
- 1.4. Scope of the Study
 - 1.4.1. Market Definition
 - 1.4.2. Market Segmentation
- 1.5. Research Assumption
 - 1.5.1. Inclusion & Exclusion
 - 1.5.2. Limitations
 - 1.5.3. Years Considered for the Study

CHAPTER 2. EXECUTIVE SUMMARY

- 2.1. CEO/CXO Standpoint
- 2.2. Strategic Insights
- 2.3. ESG Analysis
- 2.4. key Findings

CHAPTER 3. GLOBAL FRICTION STIR WELDING EQUIPMENT MARKET FORCES ANALYSIS

- 3.1. Market Forces Shaping The Global Friction Stir Welding Equipment Market (2024-2035)
- 3.2. Drivers
 - 3.2.1. growing adoption of lightweight materials
 - 3.2.2. production lines are scaled up and precision expectations are dialed higher
- 3.3. Restraints
 - 3.3.1. high upfront capital costs and the need for skilled operators
- 3.4. Opportunities
 - 3.4.1. Growing shift toward electric vehicles

CHAPTER 4. GLOBAL FRICTION STIR WELDING EQUIPMENT INDUSTRY ANALYSIS

- 4.1. Porter's 5 Forces Model
 - 4.1.1. Bargaining Power of Buyer
 - 4.1.2. Bargaining Power of Supplier
 - 4.1.3. Threat of New Entrants
 - 4.1.4. Threat of Substitutes
 - 4.1.5. Competitive Rivalry
- 4.2. Porter's 5 Force Forecast Model (2024-2035)
- 4.3. PESTEL Analysis
 - 4.3.1. Political
 - 4.3.2. Economical
 - 4.3.3. Social
 - 4.3.4. Technological
 - 4.3.5. Environmental
 - 4.3.6. Legal
- 4.4. Top Investment Opportunities
- 4.5. Top Winning Strategies (2025)
- 4.6. Market Share Analysis (2024-2025)
- 4.7. Global Pricing Analysis And Trends 2025
- 4.8. Analyst Recommendation & Conclusion

CHAPTER 5. GLOBAL FRICTION STIR WELDING EQUIPMENT MARKET SIZE & FORECASTS BY TYPE 2025-2035

- 5.1. Market Overview
- 5.2. Global Friction Stir Welding Equipment Market Performance - Potential Analysis (2025)
- 5.3. Fixed FSW Equipment
 - 5.3.1. Top Countries Breakdown Estimates & Forecasts, 2024-2035
 - 5.3.2. Market size analysis, by region, 2025-2035
- 5.4. Robotic FSW Equipment
 - 5.4.1. Top Countries Breakdown Estimates & Forecasts, 2024-2035
 - 5.4.2. Market size analysis, by region, 2025-2035

CHAPTER 6. GLOBAL FRICTION STIR WELDING EQUIPMENT MARKET SIZE & FORECASTS BY APPLICATION 2025-2035

- 6.1. Market Overview
- 6.2. Global Friction Stir Welding Equipment Market Performance - Potential Analysis (2025)
- 6.3. Aerospace
 - 6.3.1. Top Countries Breakdown Estimates & Forecasts, 2024-2035
 - 6.3.2. Market size analysis, by region, 2025-2035
- 6.4. Automotive
 - 6.4.1. Top Countries Breakdown Estimates & Forecasts, 2024-2035
 - 6.4.2. Market size analysis, by region, 2025-2035
- 6.5. Railways
 - 6.5.1. Top Countries Breakdown Estimates & Forecasts, 2024-2035
 - 6.5.2. Market size analysis, by region, 2025-2035

CHAPTER 7. GLOBAL FRICTION STIR WELDING EQUIPMENT MARKET SIZE & FORECASTS BY REGION 2025-2035

- 7.1. Growth Friction Stir Welding Equipment Market, Regional Market Snapshot
- 7.2. Top Leading & Emerging Countries
- 7.3. North America Friction Stir Welding Equipment Market
 - 7.3.1. U.S. Friction Stir Welding Equipment Market
 - 7.3.1.1. Type breakdown size & forecasts, 2025-2035
 - 7.3.1.2. Application breakdown size & forecasts, 2025-2035
 - 7.3.2. Canada Friction Stir Welding Equipment Market
 - 7.3.2.1. Type breakdown size & forecasts, 2025-2035
 - 7.3.2.2. Application breakdown size & forecasts, 2025-2035
- 7.4. Europe Friction Stir Welding Equipment Market
 - 7.4.1. UK Friction Stir Welding Equipment Market
 - 7.4.1.1. Type breakdown size & forecasts, 2025-2035
 - 7.4.1.2. Application breakdown size & forecasts, 2025-2035
 - 7.4.2. Germany Friction Stir Welding Equipment Market
 - 7.4.2.1. Type breakdown size & forecasts, 2025-2035
 - 7.4.2.2. Application breakdown size & forecasts, 2025-2035
 - 7.4.3. France Friction Stir Welding Equipment Market
 - 7.4.3.1. Type breakdown size & forecasts, 2025-2035
 - 7.4.3.2. Application breakdown size & forecasts, 2025-2035
 - 7.4.4. Spain Friction Stir Welding Equipment Market
 - 7.4.4.1. Type breakdown size & forecasts, 2025-2035
 - 7.4.4.2. Application breakdown size & forecasts, 2025-2035
 - 7.4.5. Italy Friction Stir Welding Equipment Market

- 7.4.5.1. Type breakdown size & forecasts, 2025-2035
- 7.4.5.2. Application breakdown size & forecasts, 2025-2035
- 7.4.6. Rest of Europe Friction Stir Welding Equipment Market
 - 7.4.6.1. Type breakdown size & forecasts, 2025-2035
 - 7.4.6.2. Application breakdown size & forecasts, 2025-2035
- 7.5. Asia Pacific Friction Stir Welding Equipment Market
 - 7.5.1. China Friction Stir Welding Equipment Market
 - 7.5.1.1. Type breakdown size & forecasts, 2025-2035
 - 7.5.1.2. Application breakdown size & forecasts, 2025-2035
 - 7.5.2. India Friction Stir Welding Equipment Market
 - 7.5.2.1. Type breakdown size & forecasts, 2025-2035
 - 7.5.2.2. Application breakdown size & forecasts, 2025-2035
 - 7.5.3. Japan Friction Stir Welding Equipment Market
 - 7.5.3.1. Type breakdown size & forecasts, 2025-2035
 - 7.5.3.2. Application breakdown size & forecasts, 2025-2035
 - 7.5.4. Australia Friction Stir Welding Equipment Market
 - 7.5.4.1. Type breakdown size & forecasts, 2025-2035
 - 7.5.4.2. Application breakdown size & forecasts, 2025-2035
 - 7.5.5. South Korea Friction Stir Welding Equipment Market
 - 7.5.5.1. Type breakdown size & forecasts, 2025-2035
 - 7.5.5.2. Application breakdown size & forecasts, 2025-2035
 - 7.5.6. Rest of APAC Friction Stir Welding Equipment Market
 - 7.5.6.1. Type breakdown size & forecasts, 2025-2035
 - 7.5.6.2. Application breakdown size & forecasts, 2025-2035
- 7.6. Latin America Friction Stir Welding Equipment Market
 - 7.6.1. Brazil Friction Stir Welding Equipment Market
 - 7.6.1.1. Type breakdown size & forecasts, 2025-2035
 - 7.6.1.2. Application breakdown size & forecasts, 2025-2035
 - 7.6.2. Mexico Friction Stir Welding Equipment Market
 - 7.6.2.1. Type breakdown size & forecasts, 2025-2035
 - 7.6.2.2. Application breakdown size & forecasts, 2025-2035
- 7.7. Middle East and Africa Friction Stir Welding Equipment Market
 - 7.7.1. UAE Friction Stir Welding Equipment Market
 - 7.7.1.1. Type breakdown size & forecasts, 2025-2035
 - 7.7.1.2. Application breakdown size & forecasts, 2025-2035
 - 7.7.2. Saudi Arabia (KSA) Friction Stir Welding Equipment Market
 - 7.7.2.1. Type breakdown size & forecasts, 2025-2035
 - 7.7.2.2. Application breakdown size & forecasts, 2025-2035
 - 7.7.3. South Africa Friction Stir Welding Equipment Market

7.7.3.1. Type breakdown size & forecasts, 2025-2035

7.7.3.2. Application breakdown size & forecasts, 2025-2035

CHAPTER 8. COMPETITIVE INTELLIGENCE

8.1. Top Market Strategies

8.2. ESAB Corporation

8.2.1. Company Overview

8.2.2. Key Executives

8.2.3. Company Snapshot

8.2.4. Financial Performance (Subject to Data Availability)

8.2.5. Product/Services Port

8.2.6. Recent Development

8.2.7. Market Strategies

8.2.8. SWOT Analysis

8.3. KUKA AG

8.4. Fronius International GmbH

8.5. Hitachi, Ltd.

8.6. Panasonic Corporation

8.7. Grenzebach Maschinenbau GmbH

8.8. Concurrent Technologies Corporation

8.9. Norsk Hydro ASA

8.10. Beijing FSW Technology Co., Ltd.

8.11. Stirtec GmbH

8.12. MTI Welding

8.13. FOOKE GmbH

8.14. PaR Systems, LLC

8.15. MTS Systems Corporation

8.16. Dukane Corporation

List Of Tables

LIST OF TABLES

- Table 1. Global Friction Stir Welding Equipment Market, Report Scope
- Table 2. Global Friction Stir Welding Equipment Market Estimates & Forecasts By Region 2024-2035
- Table 3. Global Friction Stir Welding Equipment Market Estimates & Forecasts By Segment 2024-2035
- Table 4. Global Friction Stir Welding Equipment Market Estimates & Forecasts By Segment 2024-2035
- Table 5. Global Friction Stir Welding Equipment Market Estimates & Forecasts By Segment 2024-2035
- Table 6. Global Friction Stir Welding Equipment Market Estimates & Forecasts By Segment 2024-2035
- Table 7. Global Friction Stir Welding Equipment Market Estimates & Forecasts By Segment 2024-2035
- Table 8. U.S. Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 9. Canada Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 10. UK Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 11. Germany Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 12. France Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 13. Spain Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 14. Italy Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 15. Rest Of Europe Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 16. China Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 17. India Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035
- Table 18. Japan Friction Stir Welding Equipment Market Estimates & Forecasts, 2024-2035

Table 19. Australia Friction Stir Welding Equipment Market Estimates & Forecasts,
2024?2035

Table 20. South Korea Friction Stir Welding Equipment Market Estimates & Forecasts,
2024?2035

...

List Of Figures

LIST OF FIGURES

- Fig 1. Global Friction Stir Welding Equipment Market, Research Methodology
- Fig 2. Global Friction Stir Welding Equipment Market, Market Estimation Techniques
- Fig 3. Global Market Size Estimates & Forecast Methods
- Fig 4. Global Friction Stir Welding Equipment Market, Key Trends 2025
- Fig 5. Global Friction Stir Welding Equipment Market, Growth Prospects 2024?2035
- Fig 6. Global Friction Stir Welding Equipment Market, Porter?s Five Forces Model
- Fig 7. Global Friction Stir Welding Equipment Market, Pestel Analysis
- Fig 8. Global Friction Stir Welding Equipment Market, Value Chain Analysis
- Fig 9. Friction Stir Welding Equipment Market By Application, 2025 & 2035
- Fig 10. Friction Stir Welding Equipment Market By Segment, 2025 & 2035
- Fig 11. Friction Stir Welding Equipment Market By Segment, 2025 & 2035
- Fig 12. Friction Stir Welding Equipment Market By Segment, 2025 & 2035
- Fig 13. Friction Stir Welding Equipment Market By Segment, 2025 & 2035
- Fig 14. North America Friction Stir Welding Equipment Market, 2025 & 2035
- Fig 15. Europe Friction Stir Welding Equipment Market, 2025 & 2035
- Fig 16. Asia Pacific Friction Stir Welding Equipment Market, 2025 & 2035
- Fig 17. Latin America Friction Stir Welding Equipment Market, 2025 & 2035
- Fig 18. Middle East & Africa Friction Stir Welding Equipment Market, 2025 & 2035
- Fig 19. Global Friction Stir Welding Equipment Market, Company Market Share Analysis (2025)
- ...

I would like to order

Product name: Global Friction Stir Welding Equipment Market Size Study & Forecast, by Type (Fixed FSW Equipment, Robotic FSW Equipment) by Application (Aerospace, Automotive, Railways) and Regional Forecasts 2025-2035

Product link: <https://marketpublishers.com/r/G6D869267566EN.html>

Price: US\$ 3,750.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/G6D869267566EN.html>