

Railway Testing Market by End Use, Superstructure Testing Equipment, Electrification Testing Equipment, Use case, Application, and Region - Global Forecast to 2032

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Report description:

The railway testing market is projected to grow from USD 3.91 billion in 2025 to USD 5.34 billion by 2032, at a CAGR of 4.6%. Railway testing equipment is becoming increasingly central to operational efficiency, safety assurance, and infrastructure longevity in the rail sector. Growing complexity in rolling stock, signaling systems, and track networks is driving demand for advanced measurement and diagnostic solutions. Additionally, data acquisition (DAQ) systems, on-board sensors, and portable testing devices are enabling precise monitoring of parameters, such as axle loads, track geometry, brake performance, and propulsion efficiency.

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Some of the other key drivers of this market include rising safety and reliability standards, the need for predictive maintenance, and pressure to minimize service disruptions. Integration of real-time analytics with testing platforms is allowing operators to identify deviations early, optimize maintenance schedules, and improve lifecycle management of assets.

The railway testing market is witnessing a shift toward automated, high-precision, and modular testing solutions that support post delivery inspection and ongoing operational monitoring, positioning railway testing equipment as a critical enabler of modern rail system performance.

"The railway power supply testing equipment is projected to be the fastest-growing market during the forecast period." By electrification testing equipment, the railway power supply testing equipment is projected to be the fastest-growing segment during the forecast period, as railway operators are upgrading traction substations and overhead electrification systems to handle

higher power demand from modern trains. These upgrades require tighter verification of power quality, load behaviour, and protection system responses. Networks that are adding high-speed, metro, and heavy haul freight capacity are facing greater pressure to maintain stable voltage and rapid fault isolation, which is driving the use of advanced testing tools that can assess harmonics, transient behaviour, and substation control logic with higher accuracy. This shift is strategic because power supply performance directly affects acceleration capability, punctuality, and system safety. Thus, operators seek equipment that reduces commissioning time and supports predictive maintenance planning.

Agencies in India and Japan are validating new traction substation configurations on upgraded corridors using high-precision power analysers and simulation-based load testing units, which confirm performance under peak operational demand and ensure that electrical systems can support the expected service intensity.

"The post-delivery & upkeep inspection segment is projected to be the fastest-growing segment during the forecast period." By application, the post-delivery & upkeep inspection segment is projected to be the fastest-growing application segment during the forecast period, because operators are tightening their performance assurance processes as networks expand, train frequencies increase, and system upgrades become more complex. This shift in operating conditions is creating the need for continuous validation of new and in-service assets, since any deviation in track geometry, overhead line parameters, braking performance, or on-board control systems can disrupt service reliability and raise lifecycle costs. As a result, operators are adopting structured inspection cycles supported by automated measurement cars, portable diagnostics, and digital monitoring platforms that provide consistent and repeatable data throughout the asset lifecycle. This is strengthening the role of upkeep inspections as a strategic function rather than a routine compliance activity.

Leading metro systems in Asia are applying dedicated post-delivery acceptance tests for new trainsets and conducting high-frequency upkeep inspections on recently upgraded traction, signalling, and electrification assets, using precise measurement tools that verify operational readiness before deployment and maintain performance standards across intensive daily schedules.

"Asia Pacific is projected to be the fastest-growing market during the forecast period."

Asia Pacific is projected to be the fastest-growing market during the forecast period as national rail programs are expanding their capital expenditure on new corridors, suburban upgrades, and modern rolling stock, which is increasing the requirement for advanced measurement technologies that can manage high volumes of construction and maintenance activity. Additionally, governments are accelerating timelines for high-speed and freight projects, and operators are introducing tighter reliability targets, which is pushing the shift toward automated track geometry systems, overhead line inspection platforms, and on-board diagnostic solutions. The region is also adopting digital condition monitoring tools that reduce manual inspection time and improve asset availability, especially on networks that are adding capacity at a rapid pace.

The Indian Railways has rolled out automated track geometry systems, overhead line monitoring units, and real-time measurement platforms across dedicated freight corridors and semi-high-speed routes. This development is creating consistent demand for suppliers that can support broad network scale testing and monitoring requirements.

In-depth interviews were conducted with CEOs, marketing directors, other innovation and technology directors, and executives from various key organizations operating in this market.

-□By Company Type: Test Equipment Manufacturers - 40%, Railway Testing Service Providers - 40%, Track Measurement Equipment Providers & Others - 20%

-□By Designation: Directors - 40%, CXOs - 25%, Others - 35%

-□By Country: North America - 25%, Europe - 25%, Asia Pacific - 40%, and Rest of the World - 10%

The railway testing market is dominated by a few globally established players, such as Knorr-Bremse AG (Germany), ZF Friedrichshafen AG (Germany), Wabtec Corporation (US), HORIBA Group (Japan), and RENK Group AG (Germany). These companies manufacture and supply railway testing equipment to various countries globally. These companies have set up R&D infrastructure and offer best-in-class solutions to their customers.

Research Coverage:

The report covers the railway testing market, in terms of end use (Rolling stock test equipment, track/infrastructure test equipment, other test equipment), superstructure testing equipment (Rail mechanical testing equipment, electronics and DAQ testing equipment, switches/turnouts testing equipment, sleepers/crossties, fastenings testing equipment, track measurement equipment, other superstructure testing equipment), electrification testing equipment (On-board electronics test equipment, contact lines test equipment, traction power supply & substation testing equipment, railway power supply testing equipment), use case (control command, train control, operational telematics), application (Design & development, manufacturing & fabrication, pre-delivery testing, post-delivery & upkeep inspection), Region (Asia Pacific, Europe, North America, and Rest of the World). It covers the competitive landscape and company profiles of the major players in the railway testing market ecosystem.

The study includes an in-depth competitive analysis of the key players in the market, along with their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying the Report:

- This report will help market leaders/new entrants in this market with information on the closest approximations of revenue numbers for the overall railway testing ecosystem and its subsegments.
- This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies.
- This report will also help stakeholders understand the market's pulse and provide information on key market drivers, restraints, challenges, and opportunities.

The report provides insight into the following pointers:

- Analysis of key drivers (Global focus on rail modernization, improved rail safety and reliability standards, expansion of high speed urban metro projects and growing demand from heavy-haul and freight corridor development), restraints (Fragmented rail infrastructure and lack of standardization and high cost of testing equipment), challenges (Complex stakeholder ecosystem leads to shifting requirements for testing equipment), and opportunities (Emerging markets rail infrastructure push and Integration of digital technologies to increase demand for testing equipment)
- Product Development/Innovation: Detailed insights into upcoming technologies, research & development activities, and product launches in the railway testing market
- Market Development: Comprehensive information about lucrative markets - the report analyses the railway testing market across varied regions
- Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the railway testing market.
- Competitive Assessment: In-depth assessment of market ranking, growth strategies, and service offerings of leading players like Knorr-Bremse AG (Germany), ZF Friedrichshafen AG (Germany), Wabtec Corporation (US), HORIBA Group (Japan), and RENK Group AG (Germany), among others, in the railway testing market

Table of Contents:

1	INTRODUCTION	23
1.1	STUDY OBJECTIVES	23
1.2	MARKET DEFINITION	24
1.3	STUDY SCOPE	28
1.3.1	MARKET SEGMENTATION & REGIONAL SCOPE	28
1.3.2	INCLUSIONS & EXCLUSIONS	28
1.4	YEARS CONSIDERED	30
1.5	CURRENCY CONSIDERED	30
1.6	STAKEHOLDERS	31

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2 EXECUTIVE SUMMARY	32
2.1 MARKET HIGHLIGHTS AND KEY INSIGHTS	32
2.2 KEY MARKET PARTICIPANTS: MAPPING OF STRATEGIC DEVELOPMENTS	33
2.3 DISRUPTIVE TRENDS IN RAILWAY TESTING MARKET	34
2.4 HIGH-GROWTH SEGMENTS IN RAILWAY TESTING MARKET	34
2.5 REGIONAL SNAPSHOT: MARKET SIZE, GROWTH RATE, AND FORECAST	35
3 PREMIUM INSIGHTS	37
3.1 ATTRACTIVE OPPORTUNITIES FOR PLAYERS IN RAILWAY TESTING MARKET	37
3.2 RAILWAY TESTING MARKET, BY END USE	38
3.3 RAILWAY TESTING MARKET, BY SUPERSTRUCTURE TESTING EQUIPMENT	38
3.4 RAILWAY TESTING MARKET, BY ELECTRIFICATION TESTING EQUIPMENT	39
3.5 RAILWAY TESTING MARKET, BY USE CASE	39
3.6 RAILWAY TESTING MARKET, BY APPLICATION	40
3.7 RAILWAY TESTING MARKET, BY REGION	40
4 MARKET OVERVIEW	41
4.1 INTRODUCTION	41
4.2 MARKET DYNAMICS	42
4.2.1 DRIVERS	42
4.2.1.1 Global focus on rail modernization	42
4.2.1.2 Need for improved rail safety and reliability standards	44
4.2.1.3 Expansion of high-speed urban metro projects	45
4.2.1.4 Growing demand from heavy-haul and freight corridor development	47
4.2.2 RESTRAINTS	47
4.2.2.1 Fragmented rail infrastructure and lack of standardization	47
4.2.2.2 High cost of railway testing equipment	48
4.2.3 OPPORTUNITIES	48
4.2.3.1 Emerging markets in railway infrastructure	48
4.2.3.2 Integration of digital technologies	49
4.2.4 CHALLENGES	51
4.2.4.1 Complex stakeholder ecosystem	51
4.3 UNMET NEEDS AND WHITE SPACES	52
4.3.1 LIMITED INTEGRATION ACROSS MULTI-MODAL AND CROSS-PLATFORM DATA SYSTEMS	52
4.3.2 INADEQUATE LOW-COST AND MODULAR TESTING SOLUTIONS FOR SECONDARY RAIL LINES	53
4.3.3 LIMITED TESTING INFRASTRUCTURE FOR NEW MATERIALS AND HYBRID TRACK SYSTEMS	53
4.4 INTERCONNECTED MARKETS AND CROSS-SECTOR OPPORTUNITIES	54
4.5 STRATEGIC MOVES BY KEY PLAYERS IN RAILWAY TESTING MARKET	54
5 INDUSTRY TRENDS	56
5.1 PORTER'S FIVE FORCES ANALYSIS	56
5.1.1 INTRODUCTION	56
5.1.2 THREAT FROM NEW ENTRANTS	56
5.1.3 BARGAINING POWER OF SUPPLIERS	56
5.1.4 BARGAINING POWER OF BUYERS	56
5.1.5 THREAT FROM SUBSTITUTES	56
5.1.6 INTENSITY OF COMPETITIVE RIVALRY	57

5.2 MACROECONOMIC INDICATORS	57
5.2.1 INTRODUCTION	57
5.2.2 GDP TRENDS AND FORECAST	57
5.2.3 TRENDS IN GLOBAL ROLLING STOCK INDUSTRY	58
5.2.4 TRENDS IN GLOBAL AUTOMOTIVE & TRANSPORTATION INDUSTRY	58
5.3 ECOSYSTEM ANALYSIS	59
5.3.1 RAW MATERIAL & COMPONENT SUPPLIERS	60
5.3.2 RAILWAY EQUIPMENT MANUFACTURERS	60
5.3.3 TECHNOLOGY PROVIDERS	60
5.3.4 INFRASTRUCTURE PROVIDERS	60
5.3.5 MAINTENANCE & SERVICE PROVIDERS	60
5.3.6 REGULATORY & POLICY MAKERS	60
5.3.7 RAILWAY OPERATORS	60
5.4 SUPPLY CHAIN ANALYSIS	62
5.5 VALUE CHAIN ANALYSIS	63
5.5.1 RAW MATERIAL PROVIDERS AND COMPONENT SUPPLIERS	64
5.5.2 ORIGINAL EQUIPMENT MANUFACTURERS	64
5.5.3 OPERATORS AND END USERS	65
5.6 PRICING ANALYSIS	65
5.6.1 AVERAGE SELLING PRICE OF RAILWAY SYSTEMS, BY KEY PLAYER	65
5.6.2 AVERAGE SELLING PRICE TREND OF RAILWAY SYSTEMS, BY TYPE	66
5.6.3 AVERAGE SELLING PRICE TREND, BY REGION	67
5.7 TRENDS & DISRUPTIONS IMPACTING CUSTOMER BUSINESS	68
5.8 INVESTMENT & FUNDING SCENARIO	69
5.9 HS CODE	71
5.9.1 IMPORT SCENARIO	71
5.9.2 EXPORT SCENARIO	72
5.10 KEY CONFERENCES & EVENTS, 2025-2026	74
5.11 CASE STUDY ANALYSIS	75
5.11.1 NETWORK RAIL DEPLOYED NEW MEASUREMENT TRAIN EQUIPPED WITH LASER GEOMETRY SYSTEMS, INERTIAL SENSORS, AND HIGH-SPEED IMAGING	75
5.11.2 SBB INTRODUCED ULTRASONIC TESTING VEHICLES THAT SCANNED RAILS FOR INTERNAL FATIGUE CRACKS	75
5.11.3 MTR DEPLOYED GROUND-PENETRATING RADAR ON INSPECTION VEHICLES TO MAP BALLAST AND SUBGRADE CONDITION	76
5.12 IMPACT OF 2025 US TARIFF	76
5.12.1 INTRODUCTION	76
5.12.2 KEY TARIFF RATES	76
5.12.3 PRICE IMPACT ANALYSIS	77
5.12.4 IMPACT ON COUNTRY/REGION	77
5.12.4.1 US	77
5.12.4.2 Europe	77
5.12.4.3 Asia Pacific	77
5.12.5 IMPACT ON END-USE INDUSTRIES	77
5.13 MNM INSIGHTS INTO RAILWAY TESTING SERVICE PROVIDERS	77
5.14 MNM INSIGHTS INTO PRIVATE-PUBLIC PARTNERSHIPS FOR RAILWAY TESTING MARKET	80

5.15 MNM INSIGHTS INTO TESTING EQUIPMENT FOR AUTONOMOUS RAILWAYS	80
6 CUSTOMER LANDSCAPE & BUYER BEHAVIOR	81
6.1 DECISION-MAKING PROCESS	81
6.2 BUYER STAKEHOLDERS AND BUYING EVALUATION CRITERIA	81
6.2.1 KEY STAKEHOLDERS IN BUYING PROCESS	82
6.2.2 BUYING CRITERIA	82
7 REGULATORY LANDSCAPE	85
7.1 REGULATORY LANDSCAPE	85
7.1.1 REGULATORY ANALYSIS, BY KEY COUNTRY/REGION	85
7.1.1.1 US	85
7.1.1.2 Europe	86
7.1.1.3 India	87
7.1.1.4 South Korea	88
7.1.1.5 China	88
7.1.2 REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS	88
8 STRATEGIC DISRUPTION THROUGH TECHNOLOGY, PATENTS, DIGITAL, AND AI ADOPTION	97
8.1 KEY EMERGING TECHNOLOGIES	97
8.1.1 INTRODUCTION	97
8.1.2 AI-BASED DIAGNOSTICS	97
8.1.3 FIBER OPTIC-BASED TRACK HEALTH MONITORING	98
8.1.4 DIGITAL TWIN-BASED SIMULATION FOR TRACK AND ROLLING STOCK	99
8.2 COMPLEMENTARY TECHNOLOGIES	100
8.2.1 REGENERATIVE BRAKING IN TRAINS	100
8.2.2 AUTONOMOUS TRAINS	100
8.2.3 TRI-MODE TRAINS	102
8.2.4 TILTING TRAINS	103
8.3 TECHNOLOGY/PRODUCT ROADMAP	104
8.4 PATENT ANALYSIS	104
8.4.1 INTRODUCTION	104
8.4.1.1 Methodology	104
8.4.1.2 Document type	105
8.4.1.3 Insights	106
8.4.1.4 Legal status of patents	106
8.4.1.5 Jurisdiction analysis	107
8.4.1.6 Top applicants	107
8.5 FUTURE APPLICATIONS	111
8.5.1 ADVANCED AUTOMATED MEASUREMENT TO ENABLE PREDICTIVE AND HIGH AVAILABILITY RAILWAY OPERATIONS	111
8.6 IMPACT OF AI/GEN AI ON RAILWAY TESTING MARKET	111
8.6.1 ENHANCEMENT OF DEFECT DETECTION AND PREDICTIVE INSIGHTS	112
8.6.2 ACCELERATION OF FIELD MEASUREMENTS AND REPORTING	112
8.6.3 IMPROVED INTEGRATION WITH DIGITAL ASSET MANAGEMENT PLATFORMS	112
8.6.4 ENHANCEMENT OF AUTONOMOUS AND REMOTE INSPECTION CAPABILITIES	112
8.6.5 REDUCTION OF LIFECYCLE COSTS FOR EQUIPMENT USERS	112
8.6.6 STRENGTHENING OF COMPLIANCE AND QUALITY MANAGEMENT	112

8.6.7 EXPANSION OF REAL-TIME MONITORING AND ALERTS	112
8.7 SUCCESS STORIES AND REAL-WORLD APPLICATIONS	113
8.7.1 NEW SOUTH WALES, AUSTRALIA: AUTOMATED TRACK GEOMETRY MONITORING FOR HIGH-DENSITY CORRIDORS	113
8.7.2 NORTH RHINE-WESTPHALIA, GERMANY: WAYSIDE CONDITION MONITORING FOR WHEEL AND BRAKE HEALTH	113
?	
9 RAILWAY TESTING MARKET, BY SUPERSTRUCTURE TESTING EQUIPMENT	114
9.1 INTRODUCTION	115
9.2 RAIL MECHANICAL TESTING EQUIPMENT	117
9.2.1 NEED FOR DATA-DRIVEN RAIL TESTING SYSTEMS TO BOOST MARKET	117
9.2.2 RAIL PROFILE MEASUREMENT SYSTEMS	118
9.3 ELECTRONICS & DAQ TESTING EQUIPMENT	119
9.3.1 FOCUS ON CONTINUOUS COMMAND EXCHANGE AND PREDICTABLE EXECUTION OF DRIVING FUNCTIONS TO BOOST MARKET	119
9.3.2 ULTRASONIC FLAW DETECTORS	120
9.3.3 EDDY CURRENT TESTERS	120
9.4 SWITCHES/TURNOUTS TESTING EQUIPMENT MARKET	121
9.4.1 FOCUS ON EVALUATING PERFORMANCE OF TURNOUTS, FROGS, POINT BLADES, AND CROSSING COMPONENTS TO DRIVE GROWTH	121
9.4.2 GEOMETRY MEASUREMENT TOOLS	122
9.4.3 LASER ALIGNMENT TOOLS	123
9.4.4 SWITCH DIAGNOSTIC SYSTEMS	123
9.5 SLEEPERS/CROSSTIES, FASTENING TESTING EQUIPMENT	124
9.5.1 EMPHASIS ON STRUCTURAL INTEGRITY, LOAD-BEARING CAPACITY, AND FASTENING PERFORMANCE OF SLEEPERS AND THEIR ASSOCIATED RAIL CLIPS TO BOOST MARKET	124
9.5.2 VIBRATION SENSORS	125
9.5.3 TORQUE MEASUREMENT TOOLS	126
9.6 TRACK MEASUREMENT EQUIPMENT	126
9.6.1 NEED FOR ASSESSING GEOMETRY, STIFFNESS, LOAD DISTRIBUTION, AND LONG-TERM STRUCTURAL INTEGRITY OF SLAB TRACK SYSTEMS TO BOOST GROWTH	126
9.6.2 GROUND-PENETRATING RADARS	127
9.6.3 SLAB GEOMETRY MEASUREMENT DEVICES	128
9.7 OTHER SUPERSTRUCTURE TESTING EQUIPMENT	128
9.7.1 LOAD STRAIN GAUGES	130
9.7.2 WEAR MONITORING SYSTEMS	130
9.8 KEY PRIMARY INSIGHTS	131
10 RAILWAY TESTING MARKET, BY APPLICATION	132
10.1 INTRODUCTION	133
10.2 DESIGN & DEVELOPMENT	134
10.2.1 NEED FOR DEPENDABLE RAILWAY SYSTEM TO BOOST GROWTH	134
10.3 MANUFACTURING & FABRICATION	135
10.3.1 FOCUS ON IMPROVING QUALITY AND CONSISTENCY IN RAILWAY MANUFACTURING TO DRIVE MARKET	135
10.4 PRE-DELIVERY TESTING	137
10.4.1 FOCUS ON COMMISSIONING READINESS AND DELIVERY RELIABILITY IN RAILWAY TESTING TO BOOST GROWTH	137
?	
10.5 POST-DELIVERY & UPKEEP INSPECTION	138
10.5.1 NEED FOR ROBUST MAINTENANCE DIAGNOSTICS TO REDUCE SERVICE DISRUPTIONS TO DRIVE MARKET	138

10.6 KEY PRIMARY INSIGHTS	139
11 RAILWAY TESTING MARKET, BY ELECTRIFICATION TESTING EQUIPMENT	140
11.1 INTRODUCTION	141
11.2 ON-BOARD ELECTRONICS TEST EQUIPMENT	142
11.2.1 NEED FOR ATP SYSTEM COMPLIANCE TO DRIVE GROWTH	142
11.3 CONTACT LINE TEST EQUIPMENT	144
11.3.1 DEMAND FOR HIGH-SPEED, NON-CONTACT LINES TO BOOST MARKET	144
11.3.2 CONTACT WIRE HEIGHT AND STAGGER MEASURING INSTRUMENTS	145
11.3.3 PANTOGRAPH MONITORING SYSTEMS	145
11.4 TRACTION POWER SUPPLY & SUBSTATION TESTING EQUIPMENT	146
11.4.1 EMPHASIS ON SUBSTATION MODERNIZATION TO PROPEL DEMAND	146
11.4.2 POWER ANALYZERS	147
11.4.3 INSULATION RESISTANCE TESTERS	148
11.4.4 SCADA DIAGNOSTICS	148
11.5 RAILWAY POWER SUPPLY TESTING EQUIPMENT	149
11.5.1 GROWING ELECTRIFICATION OF RAILWAY INFRASTRUCTURE TO BOOST DEMAND	149
11.5.2 VOLTAGE MEASUREMENT TOOLS	150
11.5.3 THERMAL CAMERAS	151
11.5.4 CIRCUIT TESTERS	151
11.6 KEY PRIMARY INSIGHTS	152
12 RAILWAY TESTING MARKET, BY END USE	153
12.1 INTRODUCTION	154
12.2 ROLLING STOCK TEST EQUIPMENT	155
12.2.1 DEMAND FOR ADVANCED DIAGNOSTICS TO DRIVE MARKET	155
12.3 TRACK/INFRASTRUCTURE TEST EQUIPMENT	156
12.3.1 NEED FOR ENABLING STABLE AND PREDICTABLE NETWORK PERFORMANCE TO DRIVE MARKET	156
12.4 OTHER TEST EQUIPMENT	157
12.5 KEY PRIMARY INSIGHTS	159
13 RAILWAY TESTING MARKET, BY USE CASE	160
13.1 INTRODUCTION	161
13.2 CONTROL COMMAND	162
13.2.1 NEED FOR STRONG COMMAND VALIDATION FOR SAFE AND PREDICTABLE TRAIN OPERATIONS TO DRIVE MARKET	162
13.3 TRAIN CONTROL	162
13.3.1 TRAIN CONTROL SERVES AS OPERATIONAL BACKBONE OF MODERN RAILWAY SYSTEMS	162
13.3.2 AUTOMATIC TRAIN PROTECTION	163
13.3.3 AUTOMATIC TRAIN CONTROL	163
13.3.4 AUTOMATIC TRAIN OPERATION	164
13.3.5 CENTRALIZED TRAFFIC CONTROL	164
13.4 OPERATIONAL TELEMATICS	165
13.4.1 FOCUS ON STRENGTHENING REAL-TIME DECISION SUPPORT IN RAIL OPERATIONS TO BOOST MARKET	165
13.4.2 COMMUNICATION-BASED TRAIN CONTROL	165
13.4.3 TRAIN CONTROL & MONITORING SYSTEM	165
13.5 KEY PRIMARY INSIGHTS	166

14 RAILWAY TESTING MARKET, BY REGION	167
14.1 INTRODUCTION	168
14.2 ASIA PACIFIC	169
14.2.1 INDIA	171
14.2.1.1 Need for improving safety standards to drive market	171
14.2.2 JAPAN	172
14.2.2.1 Rising focus on high-speed rail reliability to drive growth	172
14.2.3 CHINA	172
14.2.3.1 Increasing passenger volume to boost market	172
14.2.4 SOUTH KOREA	173
14.2.4.1 Need for upgrading ageing rail infrastructure to drive market	173
14.3 EUROPE	173
14.3.1 GERMANY	176
14.3.1.1 Focus on prioritizing digital rail operations across national and regional systems to drive market	176
14.3.2 UK	177
14.3.2.1 Emphasis on improving reliability, safety, and capacity across heavily utilized rail network to drive market	177
14.3.3 FRANCE	177
14.3.3.1 Large-scale public investments to boost growth of railways	177
14.3.4 ITALY	178
14.3.4.1 Need for modernization of railway lines to drive investments in railway testing market	178
14.3.5 SPAIN	179
14.3.5.1 Need for enhanced regional rail connectivity to boost growth	179
14.4 NORTH AMERICA	179
14.4.1 US	181
14.4.1.1 Rapid increase in railway enhancement projects to boost growth	181
14.4.2 CANADA	182
14.4.2.1 Federal programs to support sustained capital allocation for track renewal and signal upgrades	182
?	
14.5 REST OF THE WORLD	182
14.5.1 SAUDI ARABIA	184
14.5.1.1 Demand for accelerated rail network expansion to boost market	184
14.5.2 UAE	185
14.5.2.1 Need for increasing scale and technical complexity of rail assets to drive market	185
14.5.3 SOUTH AFRICA	185
14.5.3.1 Focus on renewing metropolitan rail network to drive market	185
15 COMPETITIVE LANDSCAPE	187
15.1 OVERVIEW	187
15.2 KEY PLAYER STRATEGIES/RIGHT TO WIN	187
15.3 MARKET SHARE ANALYSIS, 2025	188
15.4 REVENUE ANALYSIS OF TOP FIVE PLAYERS	190
15.5 COMPANY VALUATION AND FINANCIAL METRICS	191
15.5.1 COMPANY VALUATION	191
15.5.2 FINANCIAL METRICS	191
15.6 BRAND/PRODUCT COMPARISON	192
15.7 COMPANY EVALUATION MATRIX: KEY PLAYERS, 2025	193
15.7.1 STARS	194
15.7.2 EMERGING LEADERS	194

15.7.3 PERVASIVE PLAYERS	194
15.7.4 PARTICIPANTS	194
15.7.5 COMPANY FOOTPRINT: KEY PLAYERS, 2025	196
15.7.5.1 Company footprint	196
15.7.5.2 Region footprint	197
15.7.5.3 End use footprint	197
15.7.5.4 Application footprint	198
15.8 COMPANY EVALUATION MATRIX: STARTUPS/SMES, 2025	198
15.8.1 PROGRESSIVE COMPANIES	199
15.8.2 RESPONSIVE COMPANIES	199
15.8.3 DYNAMIC COMPANIES	199
15.8.4 STARTING BLOCKS	199
15.8.5 COMPETITIVE BENCHMARKING OF STARTUPS/SMES	201
15.9 COMPETITIVE SCENARIO	201
15.9.1 PRODUCT LAUNCHES	201
15.9.2 DEALS	202
15.9.3 EXPANSIONS	205
15.9.4 OTHER DEVELOPMENTS	206
?	
16 COMPANY PROFILES	207
16.1 INTRODUCTION	207
16.1.1 KNORR-BREMSE AG	207
16.1.1.1 Business overview	207
16.1.1.2 Products offered	208
16.1.1.3 Recent developments	209
16.1.1.3.1 Product launches	209
16.1.1.3.2 Deals	209
16.1.1.3.3 Other developments	210
16.1.1.4 MnM view	210
16.1.1.4.1 Key strengths	210
16.1.1.4.2 Strategic choices	210
16.1.1.4.3 Weaknesses and competitive threats	210
16.1.2 ZF FRIEDRICHSHAFEN AG	211
16.1.2.1 Business overview	211
16.1.2.2 Products offered	212
16.1.2.3 Recent developments	214
16.1.2.3.1 Product launches	214
16.1.2.3.2 Deals	215
16.1.2.4 MnM view	215
16.1.2.4.1 Key strengths	215
16.1.2.4.2 Strategic choices	215
16.1.2.4.3 Weaknesses and competitive threats	215
16.1.3 WABTEC CORPORATION	216
16.1.3.1 Business overview	216
16.1.3.2 Products offered	217
16.1.3.3 Recent developments	218
16.1.3.3.1 Deals	218

16.1.3.3.2	Expansions	220
16.1.3.4	MnM view	220
16.1.3.4.1	Key strengths	220
16.1.3.4.2	Strategic choices	220
16.1.3.4.3	Weaknesses and competitive threats	220
16.1.4	HORIBA GROUP	221
16.1.4.1	Business overview	221
16.1.4.2	Products offered	222
16.1.4.3	MnM view	223
16.1.4.3.1	Key strengths	223
16.1.4.3.2	Strategic choices	223
16.1.4.3.3	Weaknesses and competitive threats	223
?		
16.1.5	RENK GROUP AG.	224
16.1.5.1	Business overview	224
16.1.5.2	Products offered	225
16.1.5.3	Recent developments	225
16.1.5.3.1	Deals	225
16.1.5.3.2	Expansions	226
16.1.5.4	MnM view	226
16.1.5.4.1	Key strengths	226
16.1.5.4.2	Strategic choices	226
16.1.5.4.3	Weaknesses and competitive threats	226
16.1.6	SPECTRIS	227
16.1.6.1	Business overview	227
16.1.6.2	Products offered	228
16.1.6.3	Recent developments	229
16.1.6.3.1	Deals	229
16.1.6.3.2	Other developments	230
16.1.7	WAGO	231
16.1.7.1	Business overview	231
16.1.7.2	Products offered	231
16.1.7.3	Recent developments	232
16.1.7.3.1	Product launches	232
16.1.8	ADOR TECH INC.	234
16.1.8.1	Business overview	234
16.1.8.2	Products offered	235
16.1.9	AMETEK INC.	236
16.1.9.1	Business overview	236
16.1.9.2	Products offered	237
16.1.9.3	Recent developments	237
16.1.9.3.1	Deals	237
16.1.10	KEYSIGHT TECHNOLOGIES	239
16.1.10.1	Business overview	239
16.1.10.2	Products offered	240
16.1.10.3	Recent developments	241
16.1.10.3.1	Product launches	241

16.1.10.3.2 Deals	242
16.1.11 NATIONAL INSTRUMENTS CORP.	243
16.1.11.1 Business overview	243
16.1.11.2 Products offered	243
16.1.11.3 Recent developments	244
16.1.11.3.1 Product launches	244
?	
16.1.12 AKEBONO BRAKE INDUSTRY CO., LTD.	245
16.1.12.1 Business overview	245
16.1.12.2 Products offered	246
16.2 OTHER PLAYERS	247
16.2.1 MTS SYSTEMS	247
16.2.2 HEXAGON AB	248
16.2.3 TRIMBLE INC.	249
16.2.4 INTERTEK PLC	250
16.2.5 TUV SUD	251
16.2.6 AVL	252
16.2.7 DSPACE	253
16.2.8 RICARDO	254
16.2.9 ROHDE & SCHWARZ	255
16.2.10 ILLINOIS TOOL WORKS INC.	256
16.2.11 ROBERT BOSCH GMBH	257
16.2.12 MB DYNAMICS, INC.	258
16.2.13 PANDROL	259
16.2.14 KINGSINE ELECTRIC AUTOMATION CO., LTD.	260
17 RESEARCH METHODOLOGY	261
17.1 RESEARCH DATA	261
17.1.1 SECONDARY DATA	262
17.1.1.1 List of secondary sources	263
17.1.1.2 Key data from secondary sources	264
17.1.2 PRIMARY DATA	264
17.1.2.1 Primary interviews: Demand and supply sides	265
17.1.2.2 Key industry insights and breakdown of primary interviews	265
17.1.2.3 List of primary participants	266
17.2 MARKET SIZE ESTIMATION	266
17.2.1 TOP-DOWN APPROACH	268
17.3 DATA TRIANGULATION	269
17.4 FACTOR ANALYSIS	271
17.5 RESEARCH ASSUMPTIONS	271
17.6 RESEARCH LIMITATIONS	272
17.7 RISK ASSESSMENT	272
18 APPENDIX	274
18.1 KEY INSIGHTS FROM INDUSTRY EXPERTS	274
18.2 DISCUSSION GUIDE	274
18.3 KNOWLEDGESTORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL	277
18.4 CUSTOMIZATION OPTIONS	279
18.4.1 RAILWAY TESTING MARKET, BY TRACK GEOMETRY EQUIPMENT TYPE, AT REGIONAL LEVEL (FOR REGIONS COVERED IN	

REPORT) 279

18.4.2 RAILWAY TESTING MARKET, BY RAILWAY HARDWARE TEST EQUIPMENT, AT REGIONAL LEVEL (FOR REGIONS COVERED IN REPORT) 279

18.4.3 COMPANY INFORMATION 279

18.5 RELATED REPORTS 279

18.6 AUTHOR DETAILS 280

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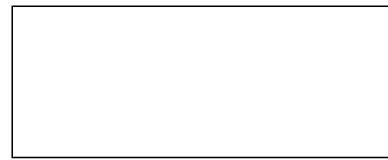
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