ESTUN
ROBOTICS


**ESTUN Robotics Engineering Co., Ltd.**

NO.1888, Jiyin Avenue, Jiangning Development Zone, Nanjing

+86-25-58328532

+86-25-52785966

www.estun.com

**Service Hotline: 400 025 3336**


**Contact Us** **WeChat** **Home**

# ALL MADE BY ESTUN


ESTUN INDUSTRIAL ROBOTS

ESTUN ROBOTICS

# ESTUN
# INDUSTRIAL ROBOTS

**Nanjing ESTUN Automation Co., Ltd., established in 1993, went public on the Shenzhen Stock Exchange in 2015 (stock code: 002747). ESTUN Automation has always adhered to its mission of "Automation for Everyone" and strives to achieve social value by making life better. The Company operates three core businesses: automation core components and motion control systems, industrial robots and intelligent manufacturing systems, and digital products and services.**

**With independent core technologies and excellent products and services, ESTUN Automation has become a leading enterprise in the domestic automation industry and a leading player in the domestic robot industry. Guided by the business philosophy of "Openness, Innovation and Co-growth", the Company works hand in hand with partners to promote the rapid development of China's intelligent and digital industries.**

**ESTUN Automation has established multiple subsidiaries and manufacturing bases nationwide and owns several wholly-owned or controlling companies overseas, including Trio in the United Kingdom, Cloos and M.A.i. in Germany. The Company has international competitive advantages in automation core components and motion control solutions, industrial robots and intelligent manufacturing solutions, welding robots and intelligent welding solutions.**

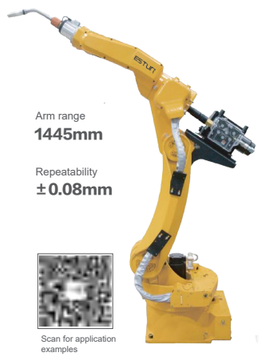
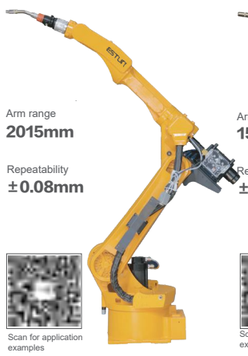
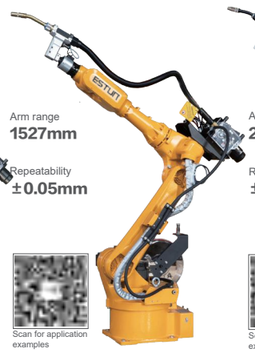
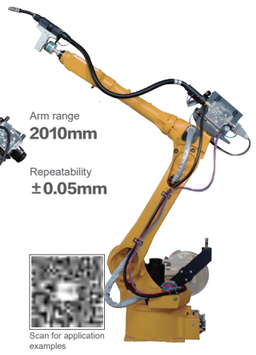
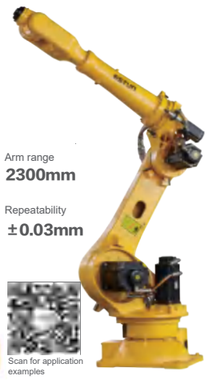
**In the future, ESTUN Automation will join forces with its partners to build a grand blueprint for the intelligent manufacturing industry. With the goal of becoming the leading brand in motion control systems domestically and creating a world-renowned brand for Chinese robots, ESTUN aims to become an internationally respected and globalized enterprise.**

**A better world deserves our utmost dedication.**

CE ISO ISO9001 EtherCAT

ALL MADE BY ESTUN

CONTENTS

| 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis |
|---|---|---|---|---|---|---|---|---|---|
| **ER8-1450-HW** | **ER8-2000-HW** | **ER8-1500-CW** | **ER8-2000-CW** | **ER12B-1510** | **ER20B-1760** | **ER20B/10-2010-HI** | **ER35B-1810** | **ER30B-1810-F** | **ER20-2300-HI** |
| Max. 8 kg load capacity | Max. 8 kg load capacity | Max. 8 kg load capacity | Max. 8 kg load capacity | Max. 12 kg load capacity | Max. 20 kg load capacity | Max. 10 kg load capacity | Max. 35 kg load capacity | Max. 30 kg load capacity | Max. 20 kg load capacity |
|  |  |  |  |  |  |  |  |  |  |
| Arm range 1445mm | Arm range 2015mm | Arm range 1527mm | Arm range 2010mm | Arm range 1527mm | Arm range 1756mm | Arm range 2010mm | Arm range 1813mm | Arm range 1813mm | Arm range 2300mm |
| Repeatability ±0.08mm | Repeatability ±0.08mm | Repeatability ±0.05mm | Repeatability ±0.05mm | Repeatability ±0.03mm | Repeatability ±0.03mm | Repeatability ±0.03mm | Repeatability ±0.04mm | Repeatability ±0.04mm | Repeatability ±0.03mm |
| Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples |
| Weight 170 kg | Weight 286 kg | Weight 165 kg | Weight 281 kg | Weight 164 kg | Weight 273 kg | Weight 275 kg | Weight 277 kg | Weight 284 kg | Weight 530 kg |
| Installation Floor/Ceiling | Installation Floor | Installation Floor | Installation Floor | Installation Floor/Ceiling | Installation Floor/Ceiling | Installation Floor/Ceiling | Installation Floor | Installation Floor | Installation Floor |
| IP54 | IP54 | IP54 | IP54 | for small arm IP67 / for robot body IP54 | for small arm IP67 / for robot body IP54 | for small arm IP67 / for robot body IP54 | for small arm IP67 / for robot body IP54 | for small arm IP67 / for robot body IP54 | IP54 |

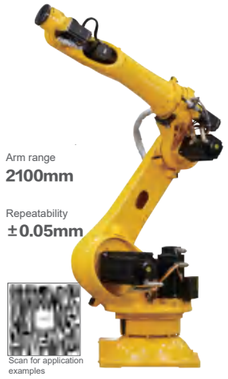
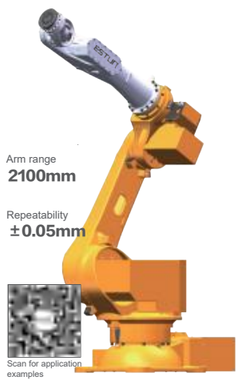
## Working range

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 ±170° | 1 ±170° | 1 ±170° | 1 ±170° | 1 ±170° | 1 ±170° | 1 ±170° | 1 ±170° | 1 ±170° | 1 ±180° |
| 2 −85° ~+160° | 2 −100° ~155° | 2 −90° ~155° | 2 −100° ~155° | 2 −90° ~+155° | 2 −100° ~+155° | 2 −100° ~+155° | 2 −100° ~+155° | 2 −100° ~+155° | 2 −90° ~+135° |
| 3 −150° ~+85° | 3 −160° ~86° | 3 −145° ~85° | 3 −160° ~86° | 3 −145° ~+85° | 3 −160° ~+86° | 3 −160° ~+86° | 3 −160° ~+86° | 3 −160° ~+86° | 3 −185° ~+80° |
| 4 ±150° | 4 ±150° | 4 ±170° | 4 ±170° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±170° |
| 5 ±135° | 5 ±135° | 5 ±135° | 5 ±135° | 5 ±135° | 5 ±135° | 5 ±135° | 5 ±130° | 5 ±130° | 5 ±135° |
| 6 ±210° | 6 ±210° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° |

## Max. speed

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 240° /s | 1 180° /s | 1 242° /s | 1 180° /s | 1 242° /s | 1 206° /s | 1 206° /s | 1 206° /s | 1 206° /s | 1 172° /s |
| 2 240° /s | 2 180° /s | 2 242° /s | 2 180° /s | 2 242° /s | 2 206° /s | 2 206° /s | 2 206° /s | 2 206° /s | 2 119° /s |
| 3 260° /s | 3 241° /s | 3 283° /s | 3 242° /s | 3 283° /s | 3 238° /s | 3 238° /s | 3 238° /s | 3 238° /s | 3 186° /s |
| 4 440° /s | 4 430° /s | 4 476° /s | 4 480° /s | 4 480° /s | 4 480° /s | 4 480° /s | 4 480° /s | 4 480° /s | 4 255° /s |
| 5 400° /s | 5 400° /s | 5 412° /s | 5 412° /s | 5 412° /s | 5 412° /s | 5 412° /s | 5 330° /s | 5 320° /s | 5 335° /s |
| 6 700° /s | 6 640° /s | 6 685° /s | 6 705° /s | 6 705° /s | 6 705° /s | 6 356° /s | 6 407° /s | 6 407° /s | 6 405° /s |

*Pictures in this manual are for reference only. The actual appearance may vary. The details of this manual are subject to change without notice. The data provided in this manual is sourced from ESTUN laboratory data and may differ from actual usage data. The maximum speed of each axis may not be reached during short-distance movements.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis |
| **ER30B-2700-LI** | **ER50B-2100** | **ER50B-2100-F** | **ER70B-2100-LI** | **ER100B-3000** | **ER100B-3500-DW** | **ER130B-3200** | **ER160B-3200** | **ER170B-2650** | **ER170B-2650-F** | |
| Max. 30 kg load capacity | Max. 50 kg load capacity | Max. 50 kg load capacity | Max. 70 kg load capacity | Max. 100 kg load capacity | Max. 100 kg load capacity | Max. 130 kg load capacity | Max. 160 kg load capacity | Max. 170 kg load capacity | Max. 170 kg load capacity | |
|  |  |  |  |  |  |  |  |  |  | |
| Arm range 2700mm<br>Repeatability ±0.05mm<br>Scan for application examples | Arm range 2100mm<br>Repeatability ±0.05mm<br>Scan for application examples | Arm range 2100mm<br>Repeatability ±0.05mm<br>Scan for application examples | Arm range 2100mm<br>Repeatability ±0.05mm<br>Scan for application examples | Arm range 3000mm<br>Repeatability ±0.06mm<br>Scan for application examples | Arm range 3500mm<br>Repeatability ±0.06mm<br>Scan for application examples | Arm range 3200mm<br>Repeatability ±0.06mm<br>Scan for application examples | Arm range 3200mm<br>Repeatability ±0.06mm<br>Scan for application examples | Arm range 2650mm<br>Repeatability ±0.06mm<br>Scan for application examples | Arm range 2650mm<br>Repeatability ±0.06mm<br>Scan for application examples | |
| Weight 525 kg<br>Installation Floor<br>for small arm IP67<br>for robot body IP54 | Weight 530 kg<br>Installation Floor<br>IP54 | Weight 550 kg<br>Installation Floor<br>for small arm IP67<br>for robot body IP54 | Weight 530 kg<br>Installation Floor<br>IP54 | Weight 1053 kg<br>Installation Floor<br>for small arm IP65<br>for robot body IP54 | Weight 1050 kg<br>Installation Rack<br>for small arm IP65<br>for robot body IP54 | Weight 1120 kg<br>Installation Floor<br>for small arm IP65<br>for robot body IP54 | Weight 1150 kg<br>Installation Floor<br>for small arm IP65<br>for robot body IP54 | Weight 1092 kg<br>Installation Floor<br>for small arm IP65<br>for robot body IP54 | Weight 1050 kg<br>Installation Floor<br>for small arm IP67<br>for robot body IP67 | |
| **Working range** | | | | | | | | | | |
| 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | |
| 2 −90° ~+135° | 2 −90° ~+135° | 2 −90° ~+135° | 2 −90° ~+135° | 2 −60° ~+80° | 2 −40° ~ +170° | 2 −60° ~+80° | 2 −60° ~+80° | 2 −60° ~+80° | 2 −60° ~+80° | |
| 3 −185° ~+80° | 3 −185° ~+80° | 3 −185° ~+80° | 3 −185° ~+80° | 3 −95° ~+80° | 3 −95° ~ +80° | 3 −95° ~+80° | 3 −95° ~+80° | 3 −95° ~+80° | 3 −95° ~+80° | |
| 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±250° | 4 ±250° | 4 ±200° | 4 ±200° | |
| 5 ±130° | 5 ±130° | 5 ±130° | 5 ±130° | 5 ±130° | 5 ±130° | 5 ±125° | 5 ±125° | 5 ±125° | 5 ±125° | |
| 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | |
| **Max. speed** | | | | | | | | | | |
| 1 172°/s | 1 172°/s | 1 172°/s | 1 172°/s | 1 120°/s | 1 120°/s | 1 128°/s | 1 128°/s | 1 120°/s | 1 120°/s | |
| 2 134°/s | 2 119°/s | 2 119°/s | 2 134°/s | 2 110°/s | 2 110°/s | 2 110°/s | 2 100°/s | 2 110°/s | 2 110°/s | |
| 3 186°/s | 3 186°/s | 3 186°/s | 3 186°/s | 3 120°/s | 3 120°/s | 3 120°/s | 3 110°/s | 3 120°/s | 3 120°/s | |
| 4 255°/s | 4 255°/s | 4 252°/s | 4 245°/s | 4 140°/s | 4 120°/s | 4 165°/s | 4 165°/s | 4 205°/s | 4 205°/s | |
| 5 330°/s | 5 254°/s | 5 247°/s | 5 245°/s | 5 200°/s | 5 200°/s | 5 200°/s | 5 150°/s | 5 215°/s | 5 180°/s | |
| 6 407°/s | 6 366°/s | 6 359°/s | 6 355°/s | 6 285°/s | 6 285°/s | 6 220°/s | 6 200°/s | 6 305°/s | 6 215°/s | |

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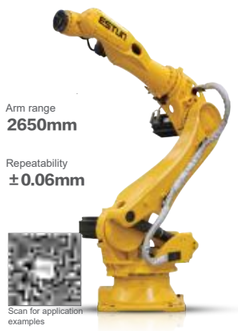
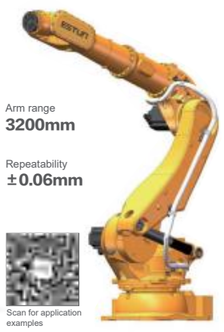
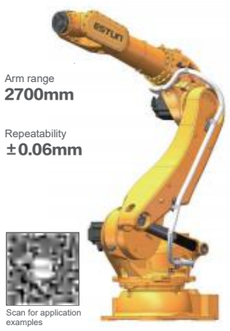
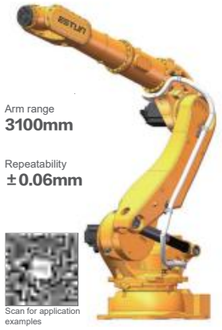
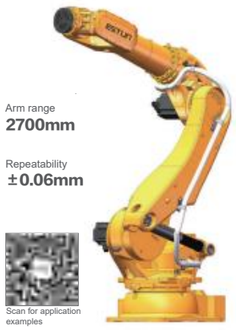
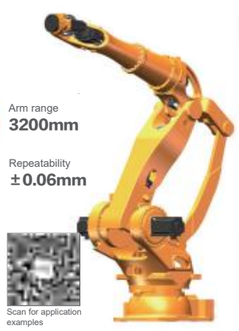
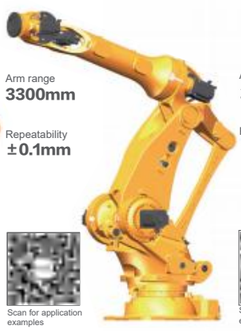
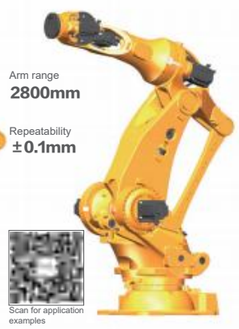
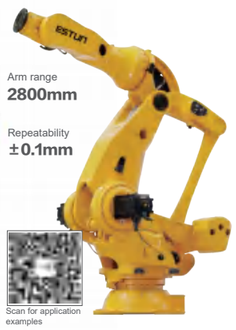
| 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis | 6-Axis |
|---|---|---|---|---|---|---|---|---|---|
| **ER220B-2650** | **ER150-3200-PR** | **ER220-2700** | **ER220-3100** | **ER270-2700** | **ER220-3200** | **ER280-3200** | **ER350-3300** | **ER500-2800** | **ER600-2800** |
| Max. 220 kg load capacity | Max. 150 kg load capacity | Max. 220 kg load capacity | Max. 220 kg load capacity | Max. 270 kg load capacity | Max. 220 kg load capacity | Max. 280 kg load capacity | Max. 350 kg load capacity | Max. 500 kg load capacity | Max. 600 kg load capacity |
|  |  |  |  |  |  |  |  |  |  |
| Arm range 2650mm | Arm range 3200mm | Arm range 2700mm | Arm range 3100mm | Arm range 2700mm | Arm range 3200mm | Arm range 3200mm | Arm range 3300mm | Arm range 2800mm | Arm range 2800mm |
| Repeatability ±0.06mm | Repeatability ±0.06mm | Repeatability ±0.06mm | Repeatability ±0.06mm | Repeatability ±0.06mm | Repeatability ±0.06mm | Repeatability ±0.06mm | Repeatability ±0.1mm | Repeatability ±0.1mm | Repeatability ±0.1mm |
| Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples |
| Weight 1120 kg | Weight 1350 kg | Weight 1340 kg | Weight 1345 kg | Weight 1350 kg | Weight 1550 kg | Weight 1550 kg | Weight 2650 kg | Weight 2555 kg | Weight 2930 kg |
| Installation Floor | Installation Floor | Installation Floor | Installation Floor | Installation Floor | Installation Floor | Installation Floor | Installation Floor | Installation Floor | Installation Floor |
| for small arm IP65 | for small arm IP67 | for small arm IP67 | for small arm IP67 | for small arm IP67 | for small arm IP65 | for small arm IP65 | IP54 | IP54 | IP54 |
| for robot body IP54 | for robot body IP54 | for robot body IP54 | for robot body IP54 | for robot body IP54 | for robot body IP54 | for robot body IP54 | | | |

## Working range

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° | 1 ±180° |
| 2 −60° ~ +80° | 2 −60° ~+80° | 2 −60° ~ +80° | 2 −60° ~ +80° | 2 −60° ~ +80° | 2 −60° ~ +90° | 2 −60° ~ +90° | 2 −60° ~ +105° | 2 −60° ~ +105° | 2 −60° ~ +105° |
| 3 −95° ~ +80° | 3 −180° ~ +80° | 3 −180° ~ +80° | 3 −180° ~ +80° | 3 −180° ~ +80° | 3 −30° ~ +125° | 3 −30° ~ +125° | 3 −30° ~ +125° | 3 −30° ~ +140° | 3 −30° ~ +140° |
| 4 ±200° | 4 ±300° | 4 ±250° | 4 ±300° | 4 ±300° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° | 4 ±200° |
| 5 ±125° | 5 ±125° | 5 ±125° | 5 ±125° | 5 ±125° | 5 ±125° | 5 ±125° | 5 ±115° | 5 ±115° | 5 ±115° |
| 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° | 6 ±360° |

## Max. speed

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 120° /s | 1 120° /s | 1 120° /s | 1 120° /s | 1 120° /s | 1 110° /s | 1 110° /s | 1 80° /s | 1 80° /s | 1 80° /s |
| 2 95° /s | 2 100° /s | 2 100° /s | 2 100° /s | 2 100° /s | 2 100° /s | 2 100° /s | 2 100° /s | 2 100° /s | 2 100° /s |
| 3 95° /s | 3 100° /s | 3 100° /s | 3 100° /s | 3 100° /s | 3 100° /s | 3 100° /s | 3 100° /s | 3 100° /s | 3 100° /s |
| 4 165° /s | 4 170° /s | 4 170° /s | 4 166° /s | 4 166° /s | 4 170° /s | 4 170° /s | 4 110° /s | 4 110° /s | 4 110° /s |
| 5 150° /s | 5 160° /s | 5 160° /s | 5 158° /s | 5 140° /s | 5 145° /s | 5 145° /s | 5 80° /s | 5 80° /s | 5 70° /s |
| 6 200° /s | 6 200° /s | 6 220° /s | 6 195° /s | 6 210° /s | 6 200° /s | 6 200° /s | 6 150° /s | 6 150° /s | 6 150° /s |

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| | ER15-1520-PR | ER60-2000-PL | ER120-2400-PL | ER180-3100-PL | ER45-2200-BD | ER80B-2565-BD | ER130-2865-BD |
|---|---|---|---|---|---|---|---|
| | 4-Axis | 4-Axis | 4-Axis | 4-Axis | 6-Axis | 6-Axis | 6-Axis |
| | Max. 15 kg load capacity | Max. 60 kg load capacity | Max. 120 kg load capacity | Max. 180 kg load capacity | Max. 45 kg load capacity | Max. 80 kg load capacity | Max. 130 kg load capacity |
| Arm range | 1520mm | 2000mm | 2400mm | 3100mm | 2200mm | 2565mm | 2865mm |
| Repeatability | ±0.03mm | ±0.03mm | ±0.04mm | ±0.04mm | ±0.03mm | ±0.04mm | ±0.04mm |
| |  |  |  |  |  |  |  |
| | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples |
| | Weight 160 kg; Installation Floor; IP54 | Weight 500 kg; Installation Floor; IP54 | Weight 1050 kg; Installation Floor; IP54 | Weight 1120 kg; Installation Floor; IP54 | Weight 520 kg; Installation Floor; IP54 | Weight 730 kg; Installation Floor; IP54 | Weight 950 kg; Installation Floor; IP54 |

## Working range

| | ER15-1520-PR | ER60-2000-PL | ER120-2400-PL | ER180-3100-PL | ER45-2200-BD | ER80B-2565-BD | ER130-2865-BD |
|---|---|---|---|---|---|---|---|
| 1 | ±180° | ±180° | ±180° | ±180° | ±190° | ±185° | ±180° |
| 2 | −40° ~+90° | −35° ~+90° | −40° ~+85° | −40° ~+90° | −70° ~+110° | −67° ~ +150° | −70° ~ +90° |
| 3 | −15° ~+105° | −10° ~+110° | −20° ~+110° | −17° ~+110° | −95° ~+62° | −190° ~ +66° | −200° ~ +68° |
| 4 | ±360° | ±360° | ±360° | ±300° | ±200° | ±200° | ±200° |
| 5 | | | | | ±130° | ±130° | ±125° |
| 6 | | | | | ±360° | ±360° | ±360° |

## Max. speed

| | ER15-1520-PR | ER60-2000-PL | ER120-2400-PL | ER180-3100-PL | ER45-2200-BD | ER80B-2565-BD | ER130-2865-BD |
|---|---|---|---|---|---|---|---|
| 1 | 250°/s | 170°/s | 114°/s | 114°/s | 172°/s | 114°/s | 112°/s |
| 2 | 215°/s | 148°/s | 120°/s | 108°/s | 119°/s | 108°/s | 106°/s |
| 3 | 285°/s | 185°/s | 149°/s | 118°/s | 193°/s | 133°/s | 106°/s |
| 4 | 450°/s | 285°/s | 295°/s | 295°/s | 296°/s | 255°/s | 204°/s |
| 5 | | | | | 247°/s | 197°/s | 198°/s |
| 6 | | | | | 355°/s | 285°/s | 212°/s |

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| | ER7-910-MI | ER8-720-MI | ER10-900-MI/HI | ER10B-900-MI/3 | ER10B-900-MI/4 | ER15-1430-MI | ER20-1200-MI | ER3-400-SR | ER3-500-SR |
|---|---|---|---|---|---|---|---|---|---|
| | 6-Axis | 6-Axis | 6-Axis | 3-Axis | 4-Axis | 6-Axis | 6-Axis | 4-Axis | 4-Axis |
| | Max. 7 kg load capacity | Max. 8 kg load capacity | Max. 10 kg load capacity | Max. 10 kg load capacity | Max. 10 kg load capacity | Max. 15 kg load capacity | Max. 20 kg load capacity | Max. 3 kg load capacity | Max. 3 kg load capacity |
| |  |  |  |  |  |  |  |  |  |
| Arm range | 910mm | 720mm | 900mm | 900mm | 900mm | 1430mm | 1200mm | 400mm | 500mm |
| Repeatability | ±0.03mm | ±0.02mm | ±0.03mm | ±0.03mm | ±0.03mm | ±0.03mm | ±0.03mm | J1+J2 ±0.02mm<br>J3 ±0.01mm<br>J4 ±0.01° | J1+J2 ±0.02mm<br>J3 ±0.01mm<br>J4 ±0.01° |
| | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples |
| | Weight 48 kg; Installation Floor/Ceiling; IP67 | Weight 46 kg; Installation Floor/Ceiling; IP67 | Weight 75 kg; Installation Floor/Ceiling; IP54 | Weight 50 kg; Installation Ceiling; IP54 | Weight 52 kg; Installation Ceiling; IP54 | Weight 155 kg; Installation Floor/Ceiling; IP67 | Weight 148 kg; Installation Floor/Ceiling; IP67 | Weight 13 kg; Installation Floor; IP20 | Weight 14 kg; Installation Floor; IP20 |
| **Working range** | | | | | | | | | |
| 1 | ±170° | ±170° | ±176° | ±140° | ±140° | ±170° | ±170° | ±132° | ±132° |
| 2 | −80° ~+135° | −80° ~+135° | ±140° | −200° ~+70° | −200° ~+70° | ± 140° | ± 140° | ±141° | ±141° |
| 3 | −190° ~+65° | −190° ~+65° | −200° ~+70° | ±115° | ±115° | −250° ~+70° | −250° ~+70° | 0~150mm | 0 ~150mm |
| 4 | ±190° | ±190° | ±173° | | ±360° | ±210° | ±210° | ±360° | ±360° |
| 5 | ±120° | ±120° | ±130° | | | ±130° | ±130° | | |
| 6 | ±360° | ±360° | ±360° | | | ±360° | ±360° | | |
| **Max. speed** | | | | | | | | | |
| 1 | 420°/s | 420° /s | 350° /s | 320° /s | 320° /s | 270°/s | 270°/s | 720°/s | 720° /s |
| 2 | 380°/s | 380° /s | 350° /s | 355° /s | 355° /s | 250°/s | 250°/s | 720°/s | 720° /s |
| 3 | 450°/s | 450° /s | 355° /s | 400° /s | 400° /s | 380°/s | 380°/s | 1120mm/s | 1120mm/s |
| 4 | 550°/s | 550° /s | 480° /s | | 500° /s | 520°/s | 520°/s | 3000° /s | 3000°/s |
| 5 | 500°/s | 500° /s | 400° /s | | | 450°/s | 450°/s | | |
| 6 | 850°/s | 850° /s | 500° /s | | | 700°/s | 700°/s | | |

Resultant speed 7225mm/s

Resultant speed 8084mm/s

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| | ER6-500-SR | ER6-600SR | ER6-700-SR | ER8-620-SR | ER10-500-SR | ER10-600-SR | ER10-700-SR | ER10-800-SR |
|---|---|---|---|---|---|---|---|---|
| | 4-Axis | 4-Axis | 4-Axis | 4-Axis | 4-Axis | 4-Axis | 4-Axis | 4-Axis |
| | Max. 6 kg load capacity | Max. 6 kg load capacity | Max. 6 kg load capacity | Max. 8 kg load capacity | Max. 10 kg load capacity | Max. 10 kg load capacity | Max. 10 kg load capacity | Max. 10 kg load capacity |
| |  |  |  |  |  |  |  |  |
| Arm range | 500mm | 600mm | 700mm | 620mm | 500mm | 600mm | 700mm | 800mm |
| Repeatability | | | | | | | | |
| J1+J2 | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm |
| J3 | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm |
| J4 | ±0.01° | ±0.01° | ±0.01° | ±0.01° | ±0.01° | ±0.01° | ±0.01° | ±0.01° |
| | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples |
| | Weight 18 kg, Installation Floor, IP20 | Weight 18 kg, Installation Floor, IP20 | Weight 19 kg, Installation Floor, IP20 | Weight 50 kg, Installation Floor/hoisting, IP54 | Weight 22 kg, Installation Floor, IP20 | Weight 23 kg, Installation Floor, IP20 | Weight 24 kg, Installation Floor, IP20 | Weight 25 kg, Installation Floor, IP20 |

## Working range

| | ER6-500-SR | ER6-600SR | ER6-700-SR | ER8-620-SR | ER10-500-SR | ER10-600-SR | ER10-700-SR | ER10-800-SR |
|---|---|---|---|---|---|---|---|---|
| 1 | ±132° | ±132° | ±132° | ±150° | ±132° | ±132° | ±132° | ±132° |
| 2 | ±150° | ±150° | ±150° | ±150° | ±150° | ±150° | ±150° | ±150° |
| 3 | 0~200mm | 0~200mm | 0~200mm | 0~200mm | 0~200mm<br>0~300mm | 0~200mm<br>0~300mm | 0~200mm<br>0~300mm | 0~200mm<br>0~300mm |
| 4 | ±360° | ±360° | ±360° | ±360° | ±360° | ±360° | ±360° | ±360° |

## Max. speed

| | ER6-500-SR | ER6-600SR | ER6-700-SR | ER8-620-SR | ER10-500-SR | ER10-600-SR | ER10-700-SR | ER10-800-SR |
|---|---|---|---|---|---|---|---|---|
| 1 | 412° /s | 412° /s | 412° /s | 400° /s | 412° /s | 412° /s | 330° /s | 330° /s |
| 2 | 720° /s | 720° /s | 720° /s | 720° /s | 720° /s | 720° /s | 720° /s | 720° /s |
| Resultant speed | 7050mm/s | 7770mm/s | 8488mm/s | 7919mm/s | 7033mm/s | 7750mm/s | 7485mm/s | 8060mm/s |
| 3 | 1120mm/s | 1120mm/s | 1120mm/s | 2500mm/s | 1120mm/s | 1120mm/s | 1120mm/s | 1120mm/s |
| 4 | 2300°/s | 2300°/s | 2300°/s | 2700°/s | 705°/s | 705°/s | 705°/s | 705°/s |

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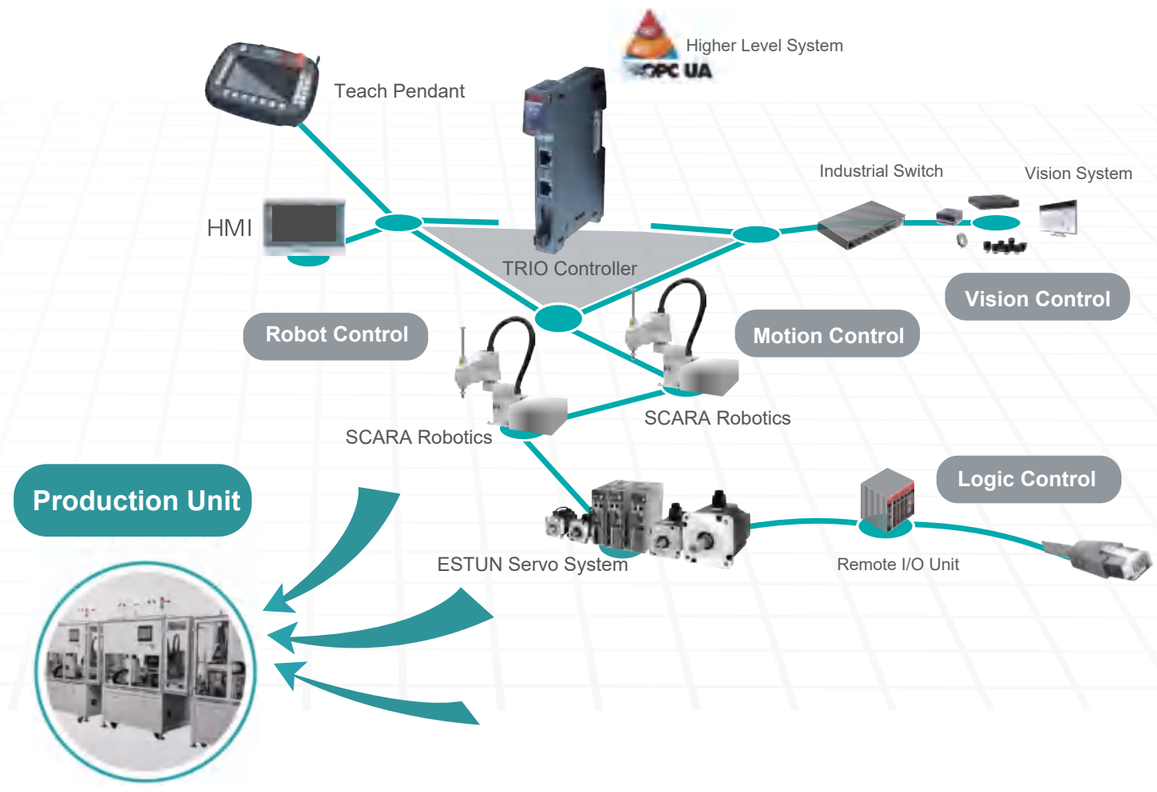
| | ER20-800-SR | ER20-800-SR/HI | ER20-1000-SR | ER20-1000-SR/HI | ER50-1200-SR |
|---|---|---|---|---|---|
| | 4-Axis | 4-Axis | 4-Axis | 4-Axis | 4-Axis |
| | Max. 20 kg load capacity | Max. 20 kg load capacity | Max. 20 kg load capacity | Max. 20 kg load capacity | Max. 50 kg load capacity |
| |  |  |  |  |  |
| Arm range | 800mm | 800mm | 1000mm | 1000mm | 1200mm |
| Repeatability | | | | | |
| J1+J2 | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm | ±0.02mm |
| J3 | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm | ±0.01mm |
| J4 | ±0.01° | ±0.01° | ±0.01° | ±0.01° | ±0.01° |
| | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples | Scan for application examples |
| Weight | 47 kg | 47 kg | 50 kg | 50 kg | 145 kg |
| Installation | Floor | Floor | Floor | Floor | Floor |
| | IP20 | IP20 | IP20 | IP20 | IP54 |
| **Working range** | | | | | |
| 1 | ±132° | ±132° | ±132° | ±132° | ±165° |
| 2 | ±150° | ±150° | ±150° | ±150° | ±150° |
| 3 | 0~420mm | 0~420mm | 0~420mm | 0~420mm | 0~400mm |
| 4 | ±360° | ±360° | ±360° | ±360° | ±360° |
| **Max. speed** | | | | | |
| 1 | 337° /s | 337° /s | 337° /s | 337° /s | 255° /s |
| 2 | 540° /s | 540° /s | 540° /s | 540° /s | 300° /s |
| Resultant speed | 8945mm/s | 8945mm/s | 10122mm/s | 10122mm/s | 8220mm/s |
| 3 | 1120mm/s | 1120mm/s | 1120mm/s | 1120mm/s | 1120mm/s |
| 4 | 1800°/s | 705°/s | 1800°/s | 705°/s | 645°/s |



# Complete solution of **Intelligent Control Unit**

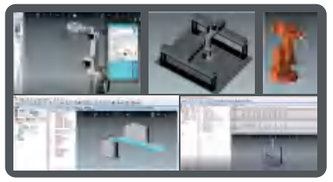



**The Intelligent Control Unit** is based on the full range of ESTUN products. With the powerful motion controller from TRIO as its core, it integrates ESTUN robots, servo systems, and vision systems. With just one TRIO controller, robot control, external axis control, and logic control can be achieved. Leveraging the TRIO Motion Perfect software platform, it enables informationization and digital interconnection. It allows you to quickly build a complete solution for intelligent automation, from standalone machines to production lines. It also meets the requirements of customer automation lines for flexibility, modularization and miniaturization of automation equipment.

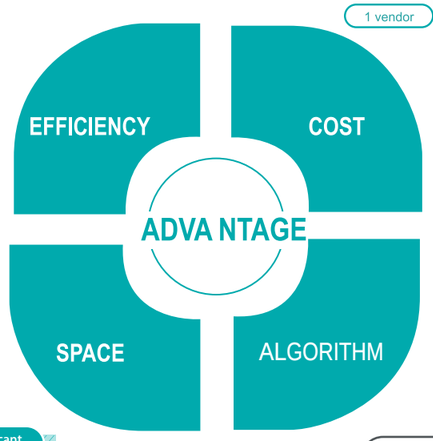
# PROGRAM ADVANTAGES

## Improvement of Efficiency

Motion Perfect software features advanced control technology that **supports 3D model simulation. Combined with the user-friendly TPS-E teaching interface, it saves project development and debugging time.** ESTUN vision guidance eliminates the need for data parsing, significantly reducing project startup and development time. The equipment and ro**bot use internal data** exchange for fast response and collaboration. With one TRIO controller, you **can simultaneously** control multiple robots, achieving multi-robot collaboration and facilitating collision prevention, thereby quickly improving cycle times; Furthermore, one TRIO controller enables collaborative control between robots and external axes, resulting in faster cycle times. This capability is particularly useful in dynamic gripping and multi-axis interpolation scenarios.

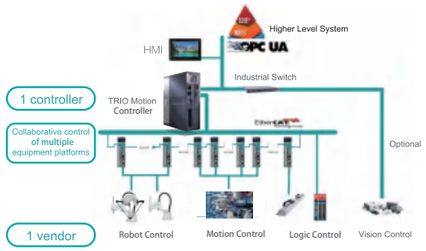


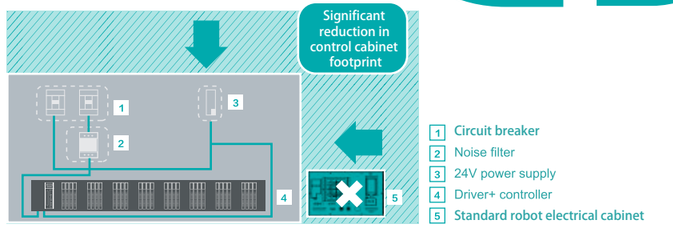
Automation simulation software--Motion Perfect



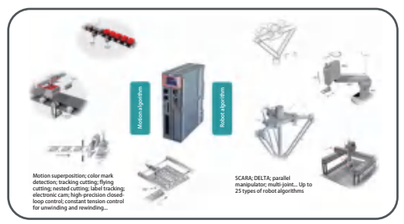

## Single TRIO Controller

A single TRIO controller **can integrate control for** multiple SCARA robots, motion control servo axis, vision and logic control, which effectively replaces PLC **and robot controllers.The electrical cabinet features** dynamic gripping functionality, eliminating the need for **separate tracking modules.**




1 Circuit breaker
2 Noise filter
3 24V power supply
4 Driver+ controller
5 Standard robot electrical cabinet




## Space-saving

- Eliminates the need for a standard robot electrical cabinet, **allowing for**a smaller overall equipment footprint and a more **compact structure**
- Supports distributed wiring, enabling more flexibility in electrical **cabinet design.**
- Supports EtherCAT I/O, allowing for easier expansion.

## Rich algorithm

The intelligent control unit combines Trio's 30 years of expertise in motion control, enabling the realization of complex, efficient, and high-precision motion control functions. It achieves the perfect **integration of robot control and motion control.**




# NEW ENERGY INDUSTRY

## Complete Solution for the Photovoltaic Industry

ESTUN Automation has been deeply involved in the photovoltaic industry for many years. Through exploration of industry processes and leveraging the advantages of its complete product portfolio, ESTUN has accumulated various solutions for the photovoltaic industry value chain. These solutions include single crystal furnaces, guillotine shears, squarers, grinders, automated equipment for feeding/discharging solar cells, module series welding machines, stitch welding machines, and sorting machines, among others.






# Complete Solution for the Lithium Battery Industry

As a leading company in the automation industry, ESTUN Automation has the experience in providing complete solutions for the lithium battery industry. We offer a range of products including Trio controllers, servo motors, intelligent units, vision systems and digital solutions, as well as a rare offering of a full series of 4/6-axis industrial robots for lithium battery production lines. Our solutions cover various processes in the industry, such as electrode film production, cell assembly, testing lines, module and pack assembly lines. These processes include coating, winding, stacking, baking, formation, capacity grading, busbar welding, and cell/module handling, among others.












# Solution for the Electronics Industry

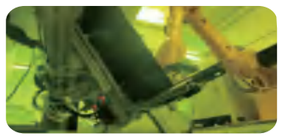
ESTUN's self-developed four-axis SCARA robots and desktop MINI six-axis robots are widely used in the 3C electronics industry and have quickly gained customer recognition. They fulfill various process applications such as material handling, spraying, polishing, inspection and assembly, offering mature application solutions.

Our self-developed ER10-900-MI series and ER20-1780-H robots possess high inertia and high-speed capabilities, making them extensively applied in the PCB industry for tasks such as PCB handling, printing and exposure. These robots can also be equipped with ESTUN vision systems to achieve high-speed and high-precision visual positioning, to greatly enhance the production efficiency.








# Solution for the **Automotive Industry**

ESTUN Robotics provides comprehensive solutions for global automotive manufacturers and parts suppliers, covering the four major processes of stamping, welding, painting and final assembly. These solutions are applied in various automation scenarios such as automotive body, powertrain, interior and exterior components, new energy systems, and wheels/tires/glass. ESTUN Robotics can offer application solutions for spot welding, arc welding, stamping, adhesive coating, material handling and assembly throughout the entire process. With a full range of robot products ranging from 3kg to 600kg payload capacity, ESTUN Robotics meets diverse customer requirements. Equipped with specialized application software packages for spot welding, adhesive coating, arc welding, and stamping, these robots provide higher flexibility and response speed. The software and process are deeply integrated, making robot operation simple, easy to integrate, and convenient to maintain.

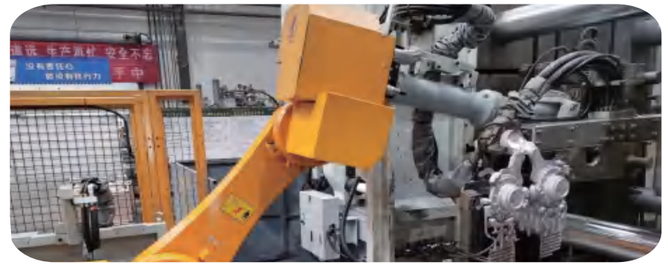


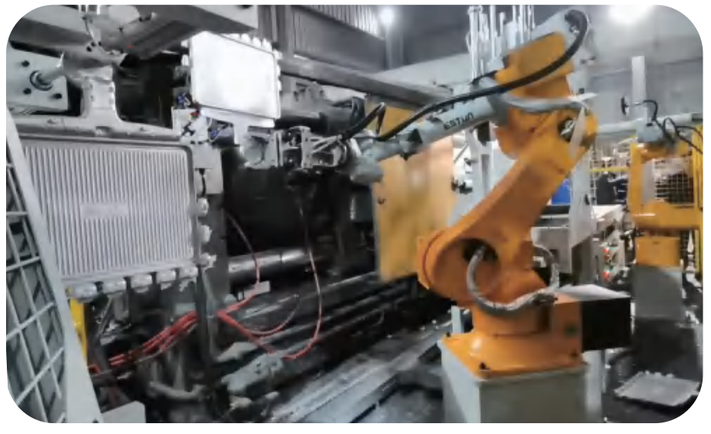





# Automation Solution for the **Metal Industry**

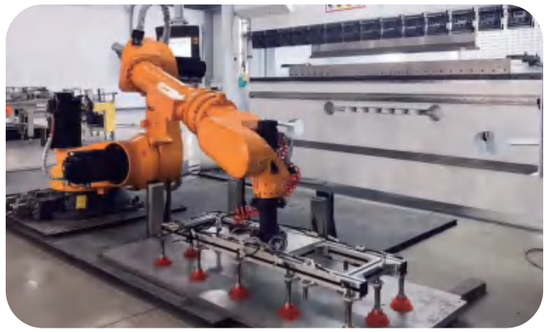
ESTUN Robotics has extensive experience in the metal industry and offers optimal products and comprehensive automation solutions for various complex processes such as die casting, forging, cutting, feeding/discharging, machining, deburring, polishing, and more. Even in challenging environments with high dust, heavy water vapor, and high temperatures, such as die casting spraying, pouring, milling, drilling, deburring and cleaning applications, ESTUN Robotics robots can confidently replace manual labor, reducing labor intensity, improving production efficiency, enhancing product quality, and increasing factory profitability.

# Automation Solution for the **Bending Industry**

ESTUN Robotics has been specializing in the sheet metal industry for over 30 years and offers a range of proprietary solutions for bending applications. These include dedicated bending robots, the "Smart Robot Bending" software package, and the offline programming software "Auto List". Our solutions are characterized by high precision, fast efficiency, easy operation and low personnel requirements. We have already developed mature and complete solutions for various sectors in the sheet metal industry, such as electrical cabinets, kitchenware, elevators, new energy enclosures, transformers, steel home furnishings and aluminum panel curtain walls. Our offerings include robotic bending units, intelligent sheet metal production lines, and digitally integrated sheet metal factories.





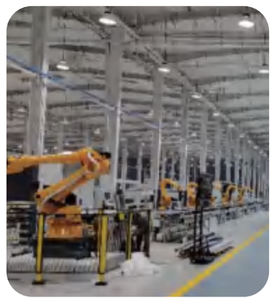

SHEET METAL AUTOMATION INDUSTRY

# Automation Solution for the **Stamping Industry**

ESTUN Automation has been dedicated to the development of the stamping industry for 30 years. Based on our extensive experience in the industry, we have introduced a wide range of automation products specifically designed for stamping applications. Our offerings include high-speed stamping robots, specialized software packages for stamping applications, vision systems, and digital solutions. ESTUN Automation has accumulated advanced and comprehensive production solutions in industries such as cup & kettle hardware, cookware, automotive components, home appliances and electronics. We not only provide customers with high-speed and high-precision specialized robots but also offer complete solutions for integrating stamping robots with production lines.

## Building Materials Furniture



- ESTUN's range of high-load robots finds extensive application in ceramic-slab production lines, catering to various specifications and handling heavy loads. Among them, the ER500 robot is capable of handling rock slabs with a maximum size of 1,600*3,600mm. ESTUN Automation has independently developed a ceramic palletizer software package that is efficient, convenient, and compatible with various palletizing methods.
- While ESTUN has been expanding the application of its general-purpose products in the building materials and home furnishings industry, it is also committed to developing customized solutions for specific industries. For instance, we offer a 5-axis drilling robot equipped with user-friendly professional drilling software packages and easily installable modular design workstations. These robots deliver high efficiency, fast operation, improved production quality, reduced labor costs, and increased automation levels. Additionally, we provide the industry's only dedicated robot for sorting workstations, featuring large load capacity, long reach, high precision, high speed, high torque, and a design that accommodates substantial inertia. This robot is suitable for various layout configurations of sorting workstations.

## Logistics Packaging

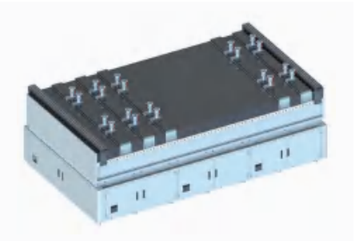

- ESTUN possesses an independently developed stacking software package that eliminates the need for robot programming. This software package supports complex stacking patterns and custom stacking configurations, empowering industries such as food, chemical, and logistics with advanced capabilities. ESTUN Automation has a wealth of application cases in the field of palletizing, depalletizing and sorting.



GENERAL INDUSTRIES

## Aeronautics And Astronautics





- By retrofitting industrial robotic systems, the robots achieve enhanced motion control systems, improving the absolute and repetitive positioning accuracy of robots. This meets the demanding requirements of high-precision drilling, milling and polishing manufacturing applications in various industries, including aerospace, aviation and maritime.
- Precision measurement systems can be utilized for precise testing of robots, as well as for scanning and inspecting components of large-scale products such as automobiles, aircraft and ships. These systems enable dimension measurements of any desired features, greatly enhancing processing and inspection efficiency.
- Through flexible work systems, the robots can transport oversized and heavyweight components in the aerospace industry to designated locations. These systems are capable of long-term fixation and elevation, effectively addressing issues like product orientation jitter, and providing valuable support for installation and processing tasks.

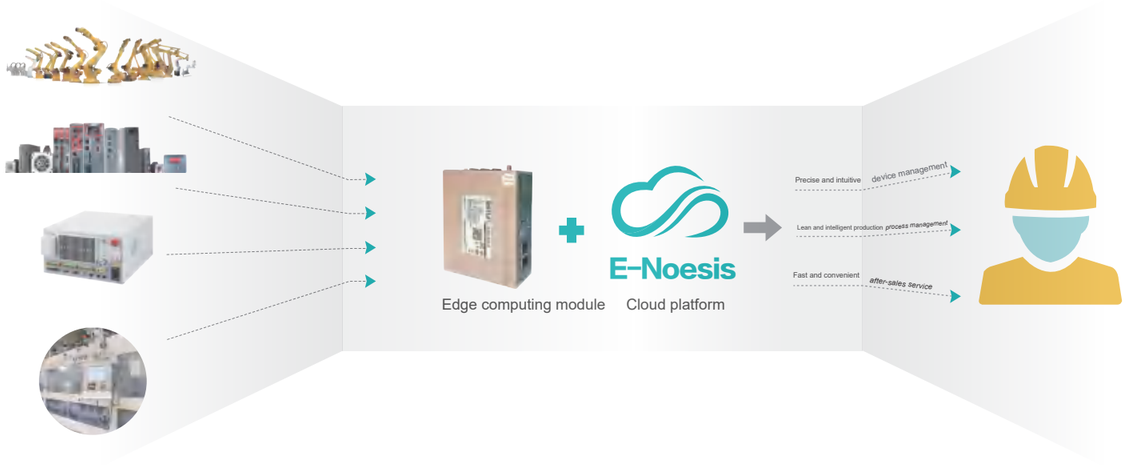
## Other Fields



- ESTUN robots are widely utilized in industries such as food, tobacco, beverages, ceramic handling, slaughter and spray painting. These robots are equipped with specialized custom software that facilitates user operations. They contribute to enhancing the level of automation in production, improving work efficiency, and ensuring product quality.

# ESTUN MAINTENANCE ELF

Establish a seamless data channel between devices and management, thoroughly explore the value of operational data from devices, and achieve cost reduction and efficiency improvement for enterprises.




**Device** | **Maintenance ELF** | **Client**

## Equipment Management

- Device performance visualization
- Data-driven investment decision-making
- Integration with Manufacturing Execution System (MES)

**Improve** production efficiency
**Enhance** product quality
**Elevate** management standards

**Cost reduction and efficiency improvement**

**Lower** maintenance costs
**Reduce** production waste
**Mitigate** delivery risks

## Production Process Management

- Online quality determination

By utilizing edge data collection gateways, real-time data is collected to monitor the machining quality of devices. The results of process quality determination are uploaded to the cloud, allowing users to remotely access quality assessment reports and historical processing records.

- Online quality prediction

Based on the standard Statistical Process Control (SPC) algorithm, real-time collection and analysis of critical process data are performed. This allows for a scientific differentiation between random fluctuations and abnormal fluctuations in product process quality. It also enables the detection of abnormal trends during the production process and provides early warnings. Furthermore, dynamic adjustments are made to the factors contributing to abnormal fluctuations.



## After-sales Service

### • Alert notifications

Based on in-depth research across various industries and extensive application throughout the industry, ESTUN has developed an exclusive industry knowledge base. Leveraging ESTUN's competitive advantage across the entire industry chain, it can achieve 100% identification of robot failures and precise localization, resulting in more specific and accurate alarm descriptions.

### • Remote services

Remote VNC service
24/7 personal concierge service
Reduce the involvement of device maintenance personnel

## Selection of Maintenance ELF Products

**Standard Edition**

Remote after-sales service for robots
- Robot equipment maintenance reminders
- Robot alarm notifications
- Remote diagnosis of robot failures
- Remote upgrade of robot systems

Device performance visualization
- Equipment uptime
- Equipment operational efficiency
- Value-added operational efficiency of equipment

**Professional Edition**

Online quality determination
- Determination rules based on process settings
- Visualization of determination results
- Traceability of determination results
- Standardization of quality reports

SPC online quality prediction
- Customizable prediction models
- Customizable prediction rules

**Smart Edition**

Integration with MES, EMS, WMS
- Standard data model
- Customized interfaces based on specific needs

Personalized customization
- Customization of calculation models
- Customization of visualizations

## ERC-S Series Control Cabinets

- Brand new industrial design, which is more convenient and comfortable, while the appearance and aesthetics are improved
- Volume is reduced by 45%, and the installation is more flexible
- A new generation of robot controllers and vibration suppression algorithms, which greatly improve accuracy and speed
- Supports for TCP/IP communication as well as mainstream bus communications such as Profinet, EtherNet/IP, Ethercat and ModbusTCP
- Integrated servo drive system to achieve high performance and high reliability
- Double-circulation design inside and outside, IP54
- Easy to disassemble, allowing easy product maintenance
- Dedicated electronic control system for robots, covering those under 8-220kg


## ERC-C Series Control Cabinets

- Integrated servo drive system to achieve high performance and high reliability
- Incorporate industrial design principles, safety, convenience, and comfort, while enhancing the overall appearance and aesthetic appeal
- Supports for both vertical and horizontal installation, providing flexible mounting options
- Abundant external interfaces utilizing spring-loaded terminal blocks, facilitating easy customer wiring
- Integration of advanced motion planning and vibration suppression algorithms, resulting in significant improvements in accuracy and speed
- Supports for TCP/IP communication as well as mainstream bus communications such as Profinet, EtherNet/IP, Ethercat and ModbusTCP
- Easy-to-disassemble structure, facilitating product maintenance
- Dedicated control system for robotics, covering SCARA robots in the 3-50kg range and MINI robots in the 7-10kg range

## ERC3-C1 Series Control Cabinets

**Next-generation robot electrical control system**

- A next-generation integrated motion control system with comprehensive performance improvements
- Board connections reduce internal wiring harnesses by over 80%, ensuring more reliable operation
- Featuring a completely new industrial design, the product is easier to install and maintain
- The volume has been reduced by over 50% compared to the previous generation, providing greater installation flexibility.
- Supports for various module expansions, offering enhanced flexibility of selection
- Integration of advanced motion planning and vibration suppression algorithms, resulting in a significant boost in precision and speed
- Supports for TCP/IP communication as well as mainstream bus communications such as Profinet, EtherNet/IP, Ethercat and ModbusTCP





## ERT76-A Teach Pendant

- Incorporates ergonomic design for comfortable and lightweight operation
- Utilizes a fully Chinese display for a user-friendly interface
- Equipped with dual-channel safety switches to ensure personnel safety during operation
- Features USB interfaces to support the import and export of teaching programs
- Meets IP54 protection rating to adapt to harsh operating environments


## Additional axis electrical control products

- Versatile applications: Single axis, gantry axis, and positioning units, among others
- Flexible configuration: 1 to 3 drives can be placed within the same cabinet
- Wide range of power options: Includes a complete range of custom ESTUN robot servo drives and motors ranging from 1kW to 7.5kW
- Selectable cable lengths: Flexible interconnect cables ranging from 5m to 30m
- Convenient cabinet placement: Allows installation on top of the robot electrical cabinet, without occupying additional space


# Selection of **intelligent unit** integrated electrical cabinet

| Product category | Material description | Remark |
|---|---|---|
|  Robot electric cabinet | ERC-C-ENA4A | No controller, not compatible with teach pendant, suitable for 10/6/3kg SCARA, IO-PNP |
| | ERC-C-E7A4A | Controller available, not compatible with teach pendant, suitable for 10/6/3kg SCARA, IO-PNP |
| | ERC-C-E7B4A | Controller available, not compatible with teach pendant, suitable for 20kg SCARA, IO-PNP |
| | ERC-C-ENA4A-N | No controller, not compatible with teach pendant, suitable for 10/6/3kg SCARA, IO-NPN |
| | ERC-C-E7A4A-N | Controller available, not compatible with teach pendant, suitable for 10/6/3kg SCARA, IO-NPN |
| | ERC-C-E7B4A-N | Controller available, not compatible with teach pendant, suitable for 20kg SCARA, IO-NPN |
| | ERC-C-E7A4A-T | Controller available, compatible with teach pendant, suitable for 10/6/3kg SCARA, IO-PNP |
| | ERC-C-E7B4A-T | Controller available, compatible with teach pendant, suitable for 20kg SCARA, IO-PNP |
| | ERC-C-E7A4A-N-T | Controller available, compatible with teach pendant, suitable for 10/6/3kg SCARA, IO-NPN |
| | ERC-C-E7B4A-N-T | Controller available, compatible with teach pendant, suitable for 20kg SCARA, IO-NPN |
| | ERC-C-E7D6A-T | Controller available, compatible with teach pendant, suitable for 50kg SCARA, IO-PNP |
| | ERC-C-E7D6A-N-T | Controller available, compatible with teach pendant, suitable for 50kg SCARA, IO-NPN |

# APPLICATION SOFTWARE

## Offline programming software for PC--EstunEditor

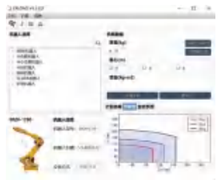
- ESTUN Robotics programming software adopts a modular design aimed at enhancing user-friendliness. The software offers two programming modes (text/graphical) to cater to different preferences. It provides abundant command prompts and allows users to conveniently write project programs using drag-and-drop graphical interfaces. The software also offers a user-friendly interface for controlling the robot and IO. Additionally, it features a simulation model that demonstrates the current posture of the robot. The software integrates Editor's proprietary visual software, script tools, virtual teaching pendant, and other tools. It includes multiple modules such as zero calibration, tool coordinate calibration, and user coordinate calibration to streamline the debugging process.

## Application programming interface—ESTUN API

- ESTUN API offers a comprehensive set of interface calling libraries for users to engage in secondary development and achieve control over robots. It provides support for multiple programming languages, including C++, C# and VB, catering to the diverse development needs of users.


## Load assessment software—ERLOAD

- It supports the evaluation of the load capacity for ESTUN's full range of robots. By inputting parameters such as mass, center of gravity and inertia, users can determine whether the selected robot model is suitable and achieve efficient selection.



## PC-based teach pendant software—ERTEACH

- ERTEACH is a PC-based teach pendant software that facilitates user-friendly programming and program viewing.


# APPLICATION SOFTWARE

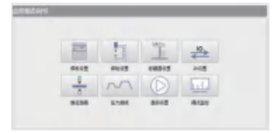
- Area Monitor
- Vibration Suppression
- Line SoftFloat
- Payload Online Identification
- Collision Detection
- Automatic Disable Excitation
- Conveyer Tracking



# PROCESS SOFTWARE

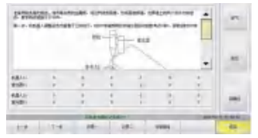
## ESTUN Spot Welding Software Package--ESTUN Spot Welding

- Supports Profinet, Ethernet/IP, and I/O communication protocols, compatible with various brands of ESTUN controllers.
- Dedicated spot-welding process interface and commands, simplifying user operations.
- Features electrode cap loss calculation and TCP automatic compensation, weld gun deflection compensation, workpiece thickness detection, and pressure curve control, enhancing welding quality.
- Supports servo weld gun, pneumatic weld gun, fixture, and servo weld gun quick change control, improving system flexibility.
- High-performance dynamic control and path planning algorithms, increasing cycle time, reducing jitter, and enhancing accuracy.



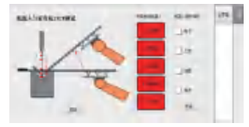
## ESTUN ARC Welding Software Package-- ESTUN ARC Welding

- Supports various communication protocols such as CanOpen, CAN and I/O.
- Supports registration activation, current-voltage monitoring, wire sticking detection and self-release, weld machine interlock, arc re-striking, restart, weaving, contact seeking, intermittent welding, positioner control, multi-station scheduling, intermittent welding, and weaving, among other advanced functions.
- Offers laser positioning and tracking capabilities, enabling precise positioning and real-time tracking of weld seams by robots. This enhances welding quality while reducing the requirements for workpiece consistency and the complexity of fixture design.



## ESTUN Bending Software Package-- ESTUN Bending

- Supports two communication methods: I/O and Ethernet.
- The network communication mode is simple, eliminating the need for complex wiring.
- Enables real-time monitoring of bending machine signals, die parameters, bending speed, etc., allowing for accurate tracking of bending motion.
- Offers flexible layout, allowing for convenient operation without the need for recalibration when changing dies.
- Incorporates high-precision displacement sensors to achieve automatic feeding, ensuring bending accuracy.



## ESTUN Gluing Software Package-- ESTUN Gluing

- Compatible with popular gluing systems such as SCA and INTEC.
- User-friendly interface with flexible process configuration to meet various application requirements.
- Supports matching of gluing parameters with robot motion speed, allowing for real-time adjustment of gluing parameters to meet quality requirements.
- Provides real-time monitoring through communication, allowing for the inspection of gluing status, flow rate, gas curves, etc.
- The first domestically developed gluing software package, catering to gluing applications in industries such as automotive and lithium batteries.

## ESTUN Palletizing Software Package--ESTUN Palletizing

- Utilizes a graphical interface design for simple and efficient operation.
- Includes commonly used pallet patterns for easy debugging and supports configuration for complex and custom pallet patterns.
- Provides built-in palletizing program templates, allowing users to run palletizing directly from the software package interface, facilitating system status understanding.

## ESTUN Pressing Software Package--ESTUN Pressing

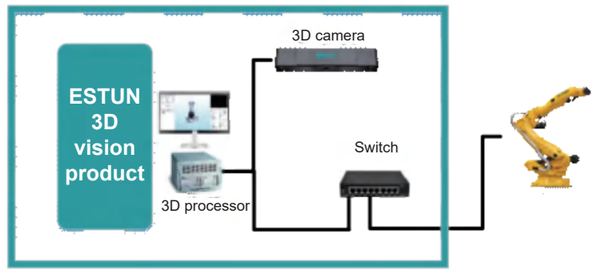
- Based on industrial fieldbus, enables communication between multiple robots, and reduces equipment wiring.
- User-friendly interface with flexible process configuration to meet various application requirements.
- Incorporates safety detection mechanisms to ensure safe interaction between robots and equipment.
- Equipped with high-performance dynamic models, new speed planning, and vibration suppression algorithms, significantly improving operation cycle time and increasing user productivity.

# VISION PRODUCT SERIES

## Vision Software--ESTUN Vision

ESVision is a powerful 2D machine vision software that integrates various algorithm components for machine vision applications. It can be quickly configured to perform tasks such as object detection, measurement, and defect detection on workpieces or objects under test. Leveraging ESTUN's years of expertise in algorithm technology, the platform boasts a robust library of vision analysis tools, enabling the easy and flexible development of machine vision applications. It can fulfill various requirements in material recognition, locating and sorting, conveyor tracking, measurement, QR code/barcode/character recognition, and inspection in the field of machine vision. It offers abundant features, stable performance and a user-friendly interface. Communication protocols such as TCP/IP, I/O and serial ports are supported, facilitating seamless data interaction with robots, PLCs, and peripheral devices.

## ESTUN 3D VISION--3D VISION




ESTUN 3D Vision System Components:

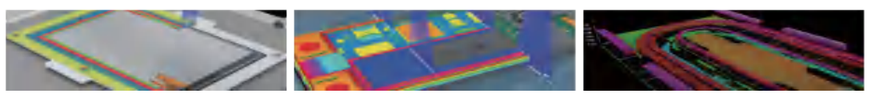
Hardware: 3D industrial camera, 3D vision processor, switch and compatible cables

Software: ESTUN 3D Vision System Software

- 3D Vision Randomized Grasping

- 3D Vision Online Quality Inspection

- 3D Vision Path Guidance



## Complete Vision Solution of ESTUN

Recognition and Grasping of Condenser Tubes

3D Bin-Picking

Photovoltaic Panel Layout Application

Vision-Guided Gluing

QR Code Recognition

Number Recognition

Barcode Recognition

Deformed Character Recognition

Dimension Measurement and Determination

PCB Inspection

Tobacco Visual Inspection

Mobile Phone Positioning and Localization

Precise Positioning of Photovoltaic Panels

Material Identification and Grasping

## Integrated Solution for Visual Control

By integrating the vision software with the robot control system, the system adopts a Client-Server (CS) architecture. The server-side is deployed on the robot controller to handle vision algorithm processing and robot data exchange. The client-side is deployed on the user's computer, allowing the user to configure projects, monitor the server's runtime status, and view image processing results in real-time.

Integrated system

Switch

Camera

- Cost reduction for the entire vision and robot solution.
- Improved stability in communication between vision and robot systems.
- 20% reduction in communication latency between vision and robot systems.
- Simplified overall system architecture.