



埃夫特智能装备股份有限公司是国内产销规模靠前的工业机器人厂商之一，能为客户提供全系列工业机器人产品以及跨行业智能制造解决方案。

埃夫特公司自2007年8月成立以来，依托“自主创新”和“海外并购”双轮驱动，继成功收购意大利喷涂机器人企业CMA、意大利金属加工和表面处理领域系统集成商EVOLUT和投资意大利运动控制领域机器人核心部件生产商ROBOX之后，又成功收购意大利汽车装备和机器人系统集成商W.F.C集团。通过兼并引进和吸收国际工业自动化领域的先进技术和经验，埃夫特已经形成从机器人核心零部件到机器人整机再到机器人高端系统集成领域的全产业链协同发展格局。

埃夫特现有19家子公司，并在意大利设有智能喷涂机器人研发中心和智能机器人应用中心。

埃夫特先后牵头承担工信部、科技部、发改委等多个部委机器人项目，参与制定多项机器人行业国家标准。

埃夫特在自动化装备领域有多年的行业积累，尤其在汽车焊装工艺设备、自动化输送设备、涂装工艺设备、机器人集成应用等领域为合作伙伴提供交钥匙整体解决方案。在中国制造全面升级的背景下，埃夫特公司以“‘智’造智能化装备，解放人类生产力”为己任，致力于成为国际知名的智能化装备提供商。

Efort intelligent Equipment Co.,Ltd is one of the leading industrial and industrial manufacturers in China, providing customers with a full range of industrial robot products and cross-industry intelligent manufacturing solutions.

Since its establishment in August 2007, the company has been relying on "independent innovation" and "overseas mergers and acquisitions", following the successful acquisition of Italian spray robotic enterprise CMA, Italian metal processing and surface treatment systems integrator EVOLUT and investment in Italian sports Control field Robot core components manufacturer ROBOX, after the successful acquisition of the industry's leading Italian automotive equipment and robot system integrator WFC Group. Through mergers and acquisitions and absorption of international industrial automation in the field of advanced technology and experience, Evert has formed from the core components of the robot to the robot and then to the robot high-end system integration field of the whole industry chain collaborative development pattern.

Efort now has 19 subsidiaries.Furthermore , it has intelligent spraying robot research center and intelligent robot application center in Italy.

Efort has led the Ministry of Industry, Ministry of Science and Technology, Development and Reform Commission and other ministries and robot projects, to participate in the development of a number of national standards for the robot industry.

Moreover , Efort has amount of accumulation of automation equipment' s design and manufacture and provides overall solutions for our partners to provide turnkey in auto welding equipment processing ,automatic conveying equipment, coating equipment processing, robot integration application and other fields. With the comprehensive upgrade of Chinese manufacture industry , Efort takes it for its own task that "manufacturing intelligent equipment with wisdom ,liberating human productivity" and commits itself to the world-known international manufacturer of intelligent equipment.



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## 工业机器人 INDUSTRIAL ROBOT



### ■ 汽车及零部件行业 Automobile and parts industry



汽车车身焊装成线应用  
Application of spot welding line for automobile white body



汽车发动机缸盖机床上下料应用  
Application of loading and unloading for automobile engine cylinder head



汽车发动机缸体涂胶应用  
Application of glueing for automobile engine cylinder



汽车发动机缸套机床上下料应用  
Application of loading engine for cylinder liner of automobile engine

### ■ 卫陶行业 Sanitary ware and ceramic industry



卫浴喷釉应用  
Application of glaze spraying for sanitary ware



卫浴喷釉集成生产线  
Application of glaze spraying shop for sanitary ware industry



卫浴喷釉应用  
Application of glaze spraying for sanitary ware



钢结构焊接应用  
Welding application of steel structure

### ■ 3C行业 3C industry



3C电子装配应用  
3C electronics assembly application



洗衣机滚筒上下料应用  
Application of loading and unloading for washing machine



空调翻转搬运应用  
Application of reversing and transferring for air-conditioner



家电装箱码垛搬运应用  
Application of packing and palletizing for home appliance

### ■ 五金行业 Metals industry



三角阀打磨应用  
Application of triangular valve grinding

### ■ 冲压行业 Stamping industry



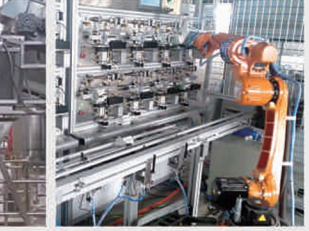
冲压上下料应用  
Application of loading and unloading for stamping shop

### ■ 炊具行业 Cookerware industry



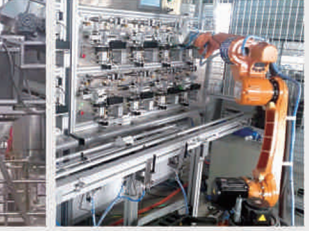
炊具喷涂应用  
Application of spraying for cookerware industry

### ■ 食品饮料行业 Food and beverage industry



酿酒行业装瓶应用  
Application of steamer-filling for brewing industry

### ■ 电子电器行业 Electronic and electric industry



断路器检测上下料应用  
Application of loading and unloading for breaker detection





| 产品型号 Robot Model                                   | ER3- 600                                         | ER6-4-1200                                                   | ER6-1400                                             | ER6-2000                                                               | ER7-700                                        | ER7-900                                                                    | ER10-3-900              | ER10-1600                                                           | ER10-2000                                                           | ER12-4-1600                                                               | ER16-3200                                                    | ER20-1700                                                        | ER50- 2100                                                                  | ER130-4-2800                            | ER180-4-3200                                | ER210-2700                                                           |            |
|----------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------|----------------------------------------------------------------------|------------|
| 轴数 Number of axes                                  | 6 axes                                           | 4 axes                                                       | 6 axes                                               | 6 axes                                                                 | 6 axes                                         | 6 axes                                                                     | 3 axes                  | 6 axes                                                              | 6 axes                                                              | 4 axes                                                                    | 6 axes                                                       | 6 axes                                                           | 6 axes                                                                      | 4 axes                                  | 4 axes                                      | 6 axes                                                               |            |
| 有效载荷 Payload                                       | 3kg                                              | 6kg                                                          | 6kg                                                  | 6kg                                                                    | 7kg                                            | 7kg                                                                        | 10kg                    | 10kg                                                                | 10kg                                                                | 12kg                                                                      | 16kg                                                         | 20kg                                                             | 50kg                                                                        | 130kg                                   | 180kg                                       | 210kg                                                                |            |
| 重复定位精度 Position Repeat Accuracy                    | ± 0.02mm                                         | ± 0.05mm                                                     | ± 0.05mm                                             | ± 0.06mm                                                               | ± 0.03mm                                       | ± 0.03mm                                                                   | ± 0.05mm                | ± 0.05mm                                                            | ± 0.06mm                                                            | ± 0.15mm                                                                  | ± 0.15mm                                                     | ± 0.06mm                                                         | ± 0.08mm                                                                    | ± 0.2mm                                 | ± 0.2mm                                     | ± 0.3mm                                                              |            |
| 最大单轴速度<br>Max.speed                                | J1轴 axisJ1                                       | 400° /sec                                                    | 240° /sec                                            | 175° /sec                                                              | 170° /sec                                      | 380° /sec                                                                  | 300° /sec               | /                                                                   | 170° /sec                                                           | 170° /sec                                                                 | 175° /sec                                                    | 140° /sec                                                        | 170° /sec                                                                   | 160° /sec                               | 110° /sec                                   | 104° /sec                                                            | 100° /sec  |
|                                                    | J2轴 axisJ2                                       | 300° /sec                                                    | 160° /sec                                            | 175° /sec                                                              | 170° /sec                                      | 350° /sec                                                                  | 255° /sec               | 160° /sec                                                           | 160° /sec                                                           | 165° /sec                                                                 | 165° /sec                                                    | 140° /sec                                                        | 165° /sec                                                                   | 150° /sec                               | 110° /sec                                   | 104° /sec                                                            | 90° /sec   |
|                                                    | J3轴 axisJ3                                       | 520° /sec                                                    | 240° /sec                                            | 185° /sec                                                              | 190° /sec                                      | 400° /sec                                                                  | 320° /sec               | 240° /sec                                                           | 180° /sec                                                           | 170° /sec                                                                 | 155° /sec                                                    | 165° /sec                                                        | 170° /sec                                                                   | 130° /sec                               | 105° /sec                                   | 104° /sec                                                            | 85° /sec   |
|                                                    | J4轴 axisJ4                                       | 500° /sec                                                    | 400° /sec                                            | 330° /sec                                                              | 340° /sec                                      | 450° /sec                                                                  | 450° /sec               | 320° /sec                                                           | 330° /sec                                                           | 360° /sec                                                                 | 330° /sec                                                    | 500° /sec                                                        | 360° /sec                                                                   | 200° /sec                               | 330° /sec                                   | 250° /sec                                                            | 110° /sec  |
|                                                    | J5轴 axisJ5                                       | 530° /sec                                                    | /                                                    | 360° /sec                                                              | 420° /sec                                      | 450° /sec                                                                  | 450° /sec               | /                                                                   | 360° /sec                                                           | 360° /sec                                                                 | /                                                            | 350° /sec                                                        | 360° /sec                                                                   | 200° /sec                               | /                                           | /                                                                    | 105° /sec  |
|                                                    | J6轴 axisJ6                                       | 840° /sec                                                    | /                                                    | 600° /sec                                                              | 680° /sec                                      | 800° /sec                                                                  | 720° /sec               | /                                                                   | 600° /sec                                                           | 600° /sec                                                                 | /                                                            | 900° /sec                                                        | 600° /sec                                                                   | 285° /sec                               | /                                           | /                                                                    | 200° /sec  |
| 最大运动范围<br>Max.operating Area                       | J1轴 axisJ1                                       | ± 170°                                                       | ± 170°                                               | ± 165°                                                                 | ± 165°                                         | ± 170°                                                                     | ± 170°                  | /                                                                   | ± 165°                                                              | ± 175°                                                                    | ± 165°                                                       | ± 180°                                                           | ± 175°                                                                      | ± 180°                                  | ± 178°                                      | ± 175°                                                               | ± 180°     |
|                                                    | J2轴 axisJ2                                       | +85° /-135°                                                  | ± 130°                                               | +75° /-135°                                                            | +80° /-135°                                    | +66° /-140°                                                                | +100° /-135°            | ± 130°                                                              | +80° /-135°                                                         | +64° /-142°                                                               | -85° /+40°                                                   | +70° /-130°                                                      | +64° /-142°                                                                 | +70° /-130°                             | +42° /-85°                                  | +40° /-86°                                                           | -80° /+60° |
|                                                    | J3轴 axisJ3                                       | +185° /-65°                                                  | +255° /-75°                                          | +170° /-83°                                                            | +155° /-75°                                    | +185° /-70°                                                                | +200° /-75°             | +253° /-72°                                                         | +163° /-75°                                                         | +165° /-81°                                                               | -70° /+15°                                                   | +175° /-80°                                                      | +165° /-73°                                                                 | +175° /-80°                             | +85° /-55°                                  | +60° /-52°                                                           | +90° /-83° |
|                                                    | J4轴 axisJ4                                       | ± 190°                                                       | ± 130°                                               | ± 180°                                                                 | ± 180°                                         | ± 190°                                                                     | ± 190°                  | ± 130°                                                              | ± 180°                                                              | ± 178°                                                                    | ± 360°                                                       | ± 360°                                                           | ± 178°                                                                      | ± 360°                                  | ± 360°                                      | ± 360°                                                               | ± 360°     |
|                                                    | J5轴 axisJ5                                       | ± 130°                                                       | /                                                    | ± 130°                                                                 | ± 130°                                         | ± 120°                                                                     | ± 120°                  | /                                                                   | ± 130°                                                              | ± 132°                                                                    | -90° ≤J <sub>2</sub> +J <sub>3</sub> ≤+15°                   | ± 120°                                                           | ± 132°                                                                      | ± 115°                                  | -115° < ( 2轴+3轴 ) <+20°                     | ( 2轴+3轴 ) <+23°                                                      | ± 120°     |
|                                                    | J6轴 axisJ6                                       | ± 360°                                                       | /                                                    | ± 360°                                                                 | ± 360°                                         | ± 360°                                                                     | ± 360°                  | /                                                                   | ± 360°                                                              | ± 720°                                                                    | /                                                            | ± 360°                                                           | ± 720°                                                                      | ± 450°                                  | /                                           | /                                                                    | ± 360°     |
| 最大臂展 Maximum Reach                                 | 593mm                                            | 1200mm                                                       | 1433mm                                               | 2010mm                                                                 | 716mm                                          | 910mm                                                                      | 850mm                   | 1640mm                                                              | 2022mm                                                              | 1625mm                                                                    | 3240mm                                                       | 1722mm                                                           | 2146mm                                                                      | 2800mm                                  | 3150mm                                      | 2674mm                                                               |            |
| 手腕允许扭矩<br>Allowable Load Torque                    | J4轴 axisJ4                                       | 4.45N.m                                                      | 10N.m                                                | 12N.m                                                                  | 12N.m                                          | 16N.m                                                                      | 16N.m                   | /                                                                   | 20N.m                                                               | 22N.m                                                                     | 27.5N.m                                                      | 41N.m                                                            | 42N.m                                                                       | 182N.m                                  | 36.25N.m                                    | 80N.m                                                                | 1337N.m    |
|                                                    | J5轴 axisJ5                                       | 4.45N.m                                                      | /                                                    | 12N.m                                                                  | 12N.m                                          | 16N.m                                                                      | 16N.m                   | /                                                                   | 20N.m                                                               | 22N.m                                                                     | /                                                            | 41N.m                                                            | 42N.m                                                                       | 182N.m                                  | /                                           | /                                                                    | 1337N.m    |
|                                                    | J6轴 axisJ6                                       | 2.2N.m                                                       | /                                                    | 6N.m                                                                   | 6N.m                                           | 9N.m                                                                       | 9N.m                    | /                                                                   | 10N.m                                                               | 10N.m                                                                     | /                                                            | 23N.m                                                            | 20N.m                                                                       | 120N.m                                  | /                                           | /                                                                    | 720N.m     |
| 手腕允许惯性力矩<br>Allowable Inertia Moment               | J4轴 axisJ4                                       | 0.27kg.m²                                                    | 0.23kg.m²                                            | 0.4kg.m²                                                               | 0.4kg.m²                                       | 0.45kg.m²                                                                  | 0.45kg.m²               | /                                                                   | 0.625kg.m²                                                          | 1kg.m²                                                                    | 0.48kg.m²                                                    | 1.6kg.m²                                                         | 1.18kg.m²                                                                   | 300kg.m²                                | /                                           | /                                                                    | 141.1kg.m² |
|                                                    | J5轴 axisJ5                                       | 0.27kg.m²                                                    | /                                                    | 0.4kg.m²                                                               | 0.4kg.m²                                       | 0.45kg.m²                                                                  | 0.45kg.m²               | /                                                                   | 0.625kg.m²                                                          | 1kg.m²                                                                    | /                                                            | 1.6kg.m²                                                         | 1.18kg.m²                                                                   | 12.68kg.m²                              | /                                           | /                                                                    | 141.1kg.m² |
|                                                    | J6轴 axisJ6                                       | 0.03kg.m²                                                    | /                                                    | 0.2kg.m²                                                               | 0.2kg.m²                                       | 0.14kg.m²                                                                  | 0.14kg.m²               | /                                                                   | 0.2kg.m²                                                            | 0.2kg.m²                                                                  | /                                                            | 0.3kg.m²                                                         | 0.5kg.m²                                                                    | 10kg.m²                                 | /                                           | /                                                                    | 79kg.m²    |
| 本体防护等级 Robot Inbreaking Protection                 | IP40                                             | IP65                                                         | IP65( 手腕 IP67 )                                      | IP65 ( 手腕 IP67 )                                                       | IP67                                           | IP67                                                                       | IP65                    | IP65 ( 手腕 IP67 )                                                    | IP65                                                                | IP54                                                                      | IP65                                                         | IP65                                                             | IP65                                                                        | IP65                                    | IP65                                        | IP65                                                                 |            |
| 电柜防护等级<br>Electrical Cabinet Inbreaking Protection | IP20                                             | IP43                                                         | IP43                                                 | IP43                                                                   | IP43                                           | IP43                                                                       | IP43                    | IP43                                                                | IP43                                                                | IP43                                                                      | IP43                                                         | IP43                                                             | IP43                                                                        | IP43                                    | IP43                                        | IP43                                                                 |            |
| 环境温度 Ambient Temperature                           | 0 ~ 45° C                                        | 0~45℃                                                        | 0~45℃                                                | 0~45℃                                                                  | 0~45℃                                          | 0~45℃                                                                      | 0 ~ 45° C               | 0~45℃                                                               | 0 ~ 45° C                                                           | 0 ~ 45° C                                                                 | 0 ~ 45° C                                                    | 0 ~ 45° C                                                        | 0 ~ 45° C                                                                   | 0 ~ 45° C                               | 0 ~ 45° C                                   | 0 ~ 45° C                                                            |            |
| 安装方式 Mounting                                      | 任意角度<br>Arbitrary angle                          | 任意角度<br>Arbitrary angle                                      | 任意角度<br>Arbitrary angle                              | 任意角度<br>Arbitrary angle                                                | 地面安装、悬吊安装<br>Floor mounted,<br>Ceiling mounted | 地面安装、悬吊安装<br>Floor mounted,<br>Ceiling mounted                             | 任意角度<br>Arbitrary angle | 地面安装、支架安装、倒置安装<br>Floor mounted,Rail mounted,<br>Ceiling mounted    | 地面安装、支架安装、倒置安装<br>Floor mounted,Rail mounted,<br>Ceiling mounted    | 地面安装、支架安装<br>Floor mounte,Rail mounted                                    | 地面安装、支架安装<br>Floor mounted,Rail mounted                      | 地面安装、支架安装、倒置安装<br>Floor mounted,Rail mounted,<br>Ceiling mounted | 地面安装、支架安装、倒置安装<br>Floor mounted,Rail mounted,<br>Ceiling mounted            | 地面安装、支架安装<br>Floor mounted,Rail mounted | 地面安装、支架安装<br>Floor mounted,<br>Rail mounted | 地面安装<br>Floor mounted                                                |            |
| 本体质量 Robot Mass                                    | 27kg                                             | 45kg                                                         | 145kg                                                | 195kg                                                                  | 36kg                                           | 38kg                                                                       | 27kg                    | 185kg                                                               | 221kg                                                               | 180kg                                                                     | 600kg                                                        | 220kg                                                            | 550kg                                                                       | 1100kg                                  | 1500kg                                      | 1110kg                                                               |            |
| 功能 Function                                        | 装配、物料搬运等<br>Assembly,<br>Material handling, etc. | 上下料、物料搬运等<br>Up and down material,<br>Material handling,etc. | 弧焊、上下料等<br>Arc welding,<br>Up and down material,etc. | 弧焊、上下料、喷釉等<br>Arc welding,Up and down material,<br>Glaze-spraying,etc. | 装配、物料搬运等<br>Assembly,<br>Mareial handling,etc. | 装配、物料搬运、机床上下料等<br>Assembly,Material handling,<br>Up and down material,etc. | 搬运等<br>Handling,etc.    | 上下料、搬运、喷釉等<br>Up and down material,<br>Handling,Glaze-spraying,etc. | 上下料、搬运、喷釉等<br>Up and down material,<br>Handling,Glaze-spraying,etc. | 码垛、上下料、搬运等<br>Palletizing,Up and down material,<br>Material handling,etc. | 喷涂、切割、上下料等<br>Spraying,Cutting,<br>Up and down material,etc. | 切割、打磨、上下料等<br>Cutting,Polishing,<br>Up and down material,etc.    | 搬运、上下料、码垛、切割等<br>Handling,Up and down material,<br>Palletizing,Cutting,etc. | 搬运、码垛等<br>Handling,Palletizing,etc.     | 搬运、码垛等<br>Handling,Palletizing,etc.         | 点焊、打磨、搬运、码垛等<br>Spot welding,Polishing,<br>Handling,Palletizing,etc. |            |
| 能耗 Energy Consumption                              | 1kw                                              | 0.75kw                                                       | 2.5kw                                                | 3kw                                                                    | 1.5kw                                          | 1.5kw                                                                      | 0.75kw                  | 3kw                                                                 | 3.5kw                                                               | 1.5kw                                                                     | 5.5kw                                                        | 3.5kw                                                            | 5.5kw                                                                       | 8kw                                     | 8kw                                         | 8kw                                                                  |            |