# SF12

W-ROBOT®
威洛博工业机械手

## 马达安装方式 Motor direction

M

BC

BM

BR

BL

## 型号表示方式 Guide for Model Selection

**SF12 - L16 - S100 - M - ZP20B - A2P - 001**

| 本体样式 Base Style | |
|---|---|
| S | 精密级 Precision |
| P | 高精密级 High Precision |
| F | 半密封带框架 Semiclosed with Frame 丝杆驱动结构 Ball Screw Drive |
| 12 | 本体120mm宽 Body width120 |

| 丝杆导程 Ball Screw Lead | |
|---|---|
| L5 | 5mm |
| L10 | 10mm |
| L16 | 16mm |

| 行程(mm) Stroke(mm) |
|---|
| 100-1500 |

| 马达方式 Motor way | |
|---|---|
| M | 直联内置 Built-in |
| BC | 直联外置 External |
| BM | 马达下折 Bottom Side |
| BR | 马达右折 Right Side |
| BL | 马达左折 Left Side |

| 马达类型 Motor Type | | 马达功率 Motor power | |
|---|---|---|---|
| P | 松下 Panasonic | 20 | 200W |
| M | 三菱 Mitsubishi | 57 | 57 步进 Stepper |
| Y | 安川 Yaskawa | 刹车 Brakes | |
| T | 台达 Delta | 无 No | 无刹车 No brake |
| *为 Z :代表客户自配电机 *For Z: Motor is from clients. | | B | 带刹车 With brake |

| 原点开关位置 Original Sensor position | | 极限开关数量 Limit Sensor Qty | |
|---|---|---|---|
| 内藏式: Built-in | | 内藏式: Built-in | |
| A | 马达侧 Motor side | 1 | 1个 1pcs |
| B | 反马达侧 Oppsite motor side | 2 | 2个 1pcs |
| 外置式: External | | 外置式: External | |
| C | 马达侧 Motor side | 3 | 1个 1pcs |
| D | 反马达侧 Oppsite motor side | 4 | 2个 1pcs |
| E | 无 No | 5 | 无感应器 No sensor |

| 非标特注 Non-standard, d.c., | |
|---|---|
| 无 No | 无特注 No, d.c., |
| 001 | 特注序列号 Special order no. |

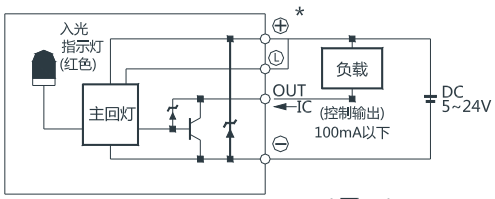
| 感应器类型 Sensor type | |
|---|---|
| 无 No | NPN |
| P | PNP |

## 基本规格 Specification

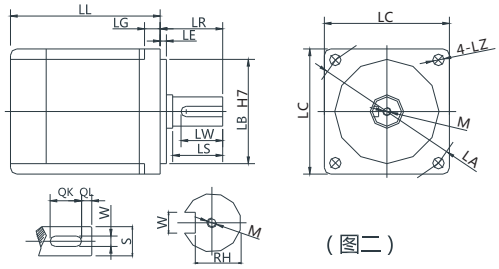
| | | | | |
|---|---|---|---|---|
| 马达功率 AC ( W ) Motor power AC(W) | | 200W/400W | | |
| 滚珠丝杆驱动-外径 BallScrewØ | | SF12 | 16(C7级) | |
| | | PF12 | 16(C5级) | |
| 重复定位精度 Repeatability | | SF12 | ±0.01 | |
| | | PF12 | ±0.005 | |
| 滚珠丝杆导程 BallScrew Lead(mm) | | 5 | 10 | 16 |
| 最快速度 MaximumSpeed(mm/sec)<br>马达转速 3000 Motor Speed3000(rpm/mim) | | 250 | 500 | 800 |
| 最大载重(kg)<br>Maximum Payload(kg) | 水平使用<br>Horizontal | 70/84 | 47/56 | 30/36 |
| | 垂直使用<br>Vertical | 17/20 | 12/14 | 6/7 |
| 额定推力 Rated Thrust(N) | | 625 | 312 | 200 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 直线导轨Linear Guide(mm) | | | 15x14 -2 | | | |
| 联轴器<br>Coupling(mm) | 11x10 | 14x10 | 14x10 | 16x10 | 19x10 | (Motor side)x(Ball Screw Side) |
| | 100W | | 200W | 400W | | 马达功率 Motor Output |
| 原点感应器 Home Sensor | 外挂 Outside | | | EE-SX672(NPN) | EE-SX672P(PNP) | |
| | 导轨安装 Outside Guide | | | EE-SX674(NPN) | EE-SX674P(PNP) | |

感应器接线图＜原点及端点＞




（图一）




（图二）

*以上重复定位精度是300行程范围内测量所得，如行程加长，则重复定位精度适当放大；行程超过600时，会产生丝杆偏摆，此时请将速度降低；更换不同电机时，请注意图二电机尺寸是否同表一尺寸相同，否则需更换联轴器和马达固定座。

*Above repeatability is within stroke 300mm，if logner travel needed，it will be lower.In case stroke over 600 will lead to swing of ball screw，please slow down the speed.Please note figure 2 motor size is same with table 1，or needed to replace coupler and motor holder.

## 搭配伺服马达一览表 Servo Motor Matches List

（表一）

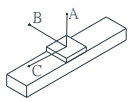
伺服电机外形尺寸

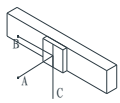
| 功率W | 品牌 | 型号 | | LL | LL(刹车)<br>LL(brake) | LA | LE | LZ | LC | LG | LW | RH | W | LR | S | LB | M | QK | QL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200W | 松下 Panasonic | MSMD022G1□ | V：带刹车 U:无刹车<br>V:With brake U:No brake | 79.5 | 115.5 | 70 | 3 | 4.5 | 60 | 6.5 | 20 | 8.5 | 4h9 | 30 | 11h6 | 50h7 | M4x8L | - | - |
| | 台达 Delta | ECMA-C20602□S | S：带刹车 R:无刹车<br>S:With brake R:No brake | 105.5 | 141.5 | 70 | 3 | 5.5 | 60 | 7.5 | 20 | 11 | 5 | 30 | 14h6 | 50h7 | M4x15L | - | - |
| | 三菱 Mitsubishi | HC-KFS23□K | B：带刹车□ ：无刹车<br>B:With brake□:No brake | 99.5 | 131.5 | 70 | 3 | 5.8 | 62 | 7 | - | - | - | 30 | 14h6 | 50h7 | - | - | - |
| 400W | 松下 Panasonic | MSMD042G1□ | V：带刹车 U:无刹车<br>V:With brake U:No brake | 99 | 135 | 70 | 3 | 4.5 | 60 | 6.5 | 20 | 11 | 5h9 | 30 | 14h6 | 50h7 | M5x10L | - | - |
| | 台达 Delta | ECMA-C20604□S | S：带刹车 R:无刹车<br>S:With brake R:No brake | 130.7 | 166.6 | 70 | 3 | 5.5 | 60 | 7.5 | 20 | 11 | 5 | 30 | 14h6 | 50h7 | M4x15L | - | - |
| | | ECMA-C20804□S | S：带刹车 R:无刹车<br>S:With brake R:No brake | 112.3 | 152.8 | 90 | 3 | 6.6 | 80 | 8 | 20 | 11 | 5 | 35 | 14h6 | 70h7 | M4x15L | - | - |
| | 三菱 Mitsubishi | HC-KFS43□K | B：带刹车□ ：无刹车<br>B:With brake□:No brake | 124.5 | 165.5 | 70 | 3 | 5.8 | 62 | 7 | - | - | - | 30 | 14h6 | 50h7 | - | - | - |
| 750W | 松下 Panasonic | MSMD082G1□ | V：带刹车 U:无刹车<br>V:With brake U:No brake | 122 | 149 | 90 | 3 | 6 | 80 | 8 | 25 | 15.5 | 6h9 | 35 | 19h6 | 70h7 | M5x10L | - | - |
| | 台达 Delta | ECMA-C20807□S | S：带刹车 R:无刹车<br>S:With brake R:No brake | 138.3 | 178 | 90 | 3 | 6.6 | 80 | 8 | 25 | 15.5 | 6 | 35 | 19h6 | 70h7 | M6x20L | - | - |
| | | ECMA-C20907□S | S：带刹车 R:无刹车<br>S:With brake R:No brake | 130.2 | 161.3 | 100 | 3 | 6.6 | 86 | 8 | 20 | 13 | 5 | 35 | 16h6 | 80h7 | M5x15L | - | - |
| | 三菱 Mitsubishi | HC-KFS73□K | B：带刹车□ ：无刹车<br>B:With brake□:No brake | 142 | 177.5 | 90 | 3 | 6.6 | 82 | 8 | - | - | - | 40 | 19h6 | 70h7 | - | - | - |

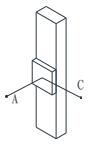
□表示为空

## 容许负载力矩表 Allow Load Torque Table

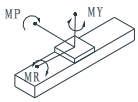
(单位: mm ) ( Unit: mm)




(单位: N.m )(Unit : N.m )




| 水平安装<br>Horizontal installation | | A | B | C |
|---|---|---|---|---|
| 导程 5<br>Lead 5 | 40kg | 2448 | 316 | 322 |
| | 55kg | 2197 | 247 | 257 |
| | 70kg | 2005 | 207 | 219 |
| 导程 10<br>Lead 10 | 25kg | 1958 | 370 | 490 |
| | 35kg | 1660 | 370 | 330 |
| | 47kg | 1725 | 247 | 243 |
| 导程 16<br>Lead 16 | 10kg | 1800 | 1400 | 311 |
| | 20kg | 1100 | 1100 | 139 |
| | 30kg | 1047 | 445 | 324 |

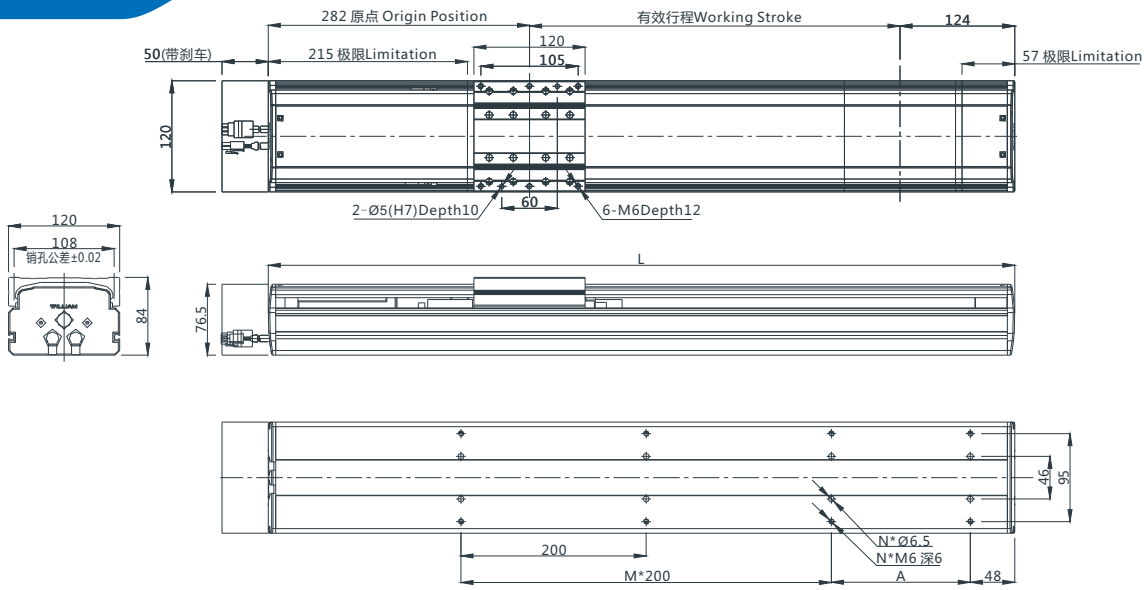
| 墙面安装<br>Wall installation | | A | B | C |
|---|---|---|---|---|
| 导程 5<br>Lead 5 | 40kg | 204 | 112 | 1394 |
| | 55kg | 130 | 57 | 1115 |
| | 70kg | 85 | 24 | 895 |
| 导程 10<br>Lead 10 | 25kg | 414 | 333 | 1277 |
| | 35kg | 235 | 157 | 929 |
| | 47kg | 129 | 57 | 751 |
| 导程 16<br>Lead 16 | 10kg | 461 | 372 | 1410 |
| | 20kg | 264 | 178 | 1027 |
| | 30kg | 148 | 69 | 832 |

| 垂直安装<br>Vertical installation | | A | C |
|---|---|---|---|
| 导程 5<br>Lead 5 | 8kg | 762 | 614 |
| | 13kg | 607 | 489 |
| | 17kg | 498 | 493 |
| 导程 10<br>Lead 10 | 5kg | 1365 | 1101 |
| | 8kg | 901 | 727 |
| | 12kg | 674 | 543 |
| 导程 16<br>Lead 16 | 2kg | 1087 | 1217 |
| | 4kg | 997 | 805 |
| | 6kg | 747 | 603 |

| | |
|---|---|
| MY | 280 |
| MP | 95 |
| MR | 280 |

## M:直联内置(Buil-in)

单位（mm）



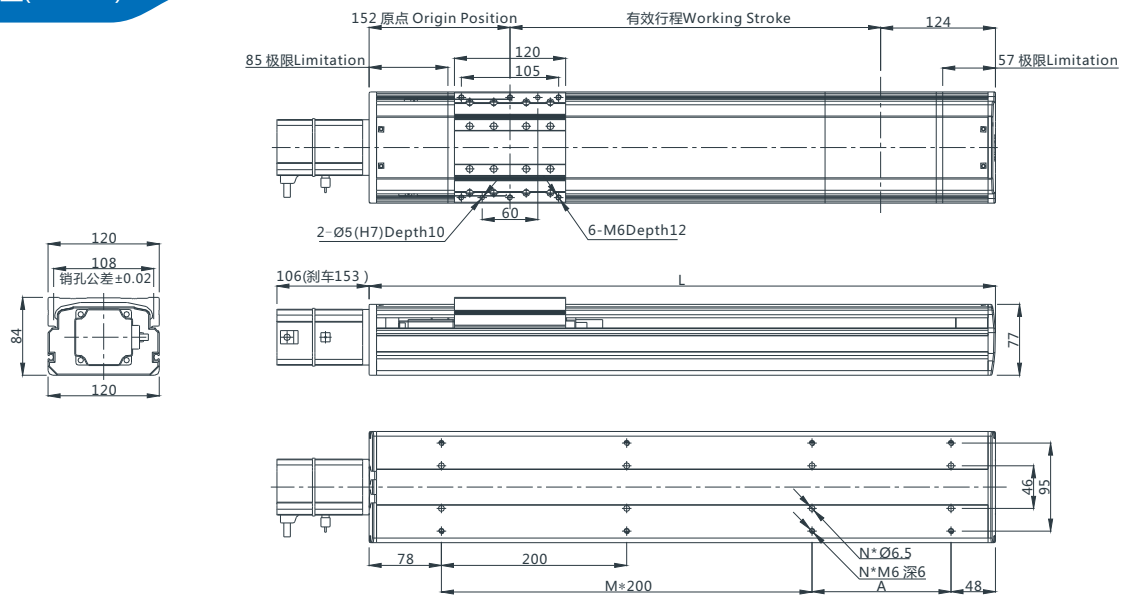

注:以下不含电机重量。Note: Not including motor weight.

| 有效行程 Working Stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | 506 | 556 | 606 | 656 | 706 | 756 | 806 | 856 | 906 | 956 | 1006 | 1056 | 1106 | 1156 | 1206 | 1256 | 1306 | 1356 | 1406 | 1456 | 1506 | 1556 | 1606 | 1656 | 1706 | 1756 | 1806 | 1856 | 1906 |
| M | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 |
| N | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 | 14 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 20 |
| A | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 |
| 重量 KG Weight KG | 10.26 | 10.83 | 11.4 | 11.97 | 12.54 | 13.11 | 13.68 | 14.25 | 14.82 | 15.39 | 15.96 | 16.53 | 17.1 | 17.67 | 18.24 | 18.81 | 19.38 | 19.95 | 20.52 | 21.09 | 21.66 | 22.23 | 22.8 | 23.37 | 23.94 | 24.51 | 25.08 | 25.65 | 27.22 |

*如有特殊行程请先与技术人员联系。*In case special stroke please contact technical services.

## BC:直联外置(External)

单位（mm）




注:以下不含电机重量。Note: Not including motor weight.

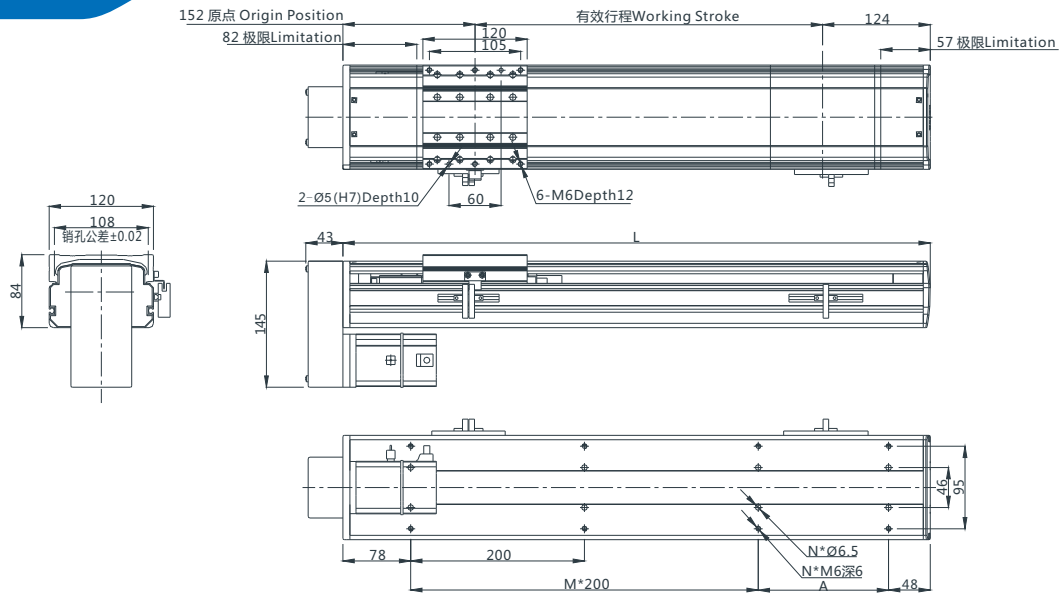
| 有效行程 Working Stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | 376 | 426 | 476 | 526 | 576 | 626 | 676 | 726 | 776 | 826 | 876 | 926 | 976 | 1026 | 1076 | 1126 | 1176 | 1226 | 1276 | 1326 | 1376 | 1426 | 1476 | 1526 | 1576 | 1626 | 1676 | 1726 | 1776 |
| M | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 |
| N | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 | 14 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 20 |
| A | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 |
| 重量KG Weight KG | 9.39 | 9.96 | 10.53 | 11.1 | 11.67 | 12.24 | 12.81 | 13.38 | 13.95 | 14.52 | 15.09 | 15.66 | 16.23 | 16.8 | 17.37 | 17.94 | 18.51 | 19.08 | 19.65 | 20.22 | 20.79 | 21.36 | 21.93 | 22.5 | 23.07 | 23.64 | 24.21 | 24.78 | 25.35 |

*如有特殊行程请先与技术人员联系。*In case special stroke please contact technical services.

# SF12

## BM:马达下折(Bottom Side)

单位（mm）



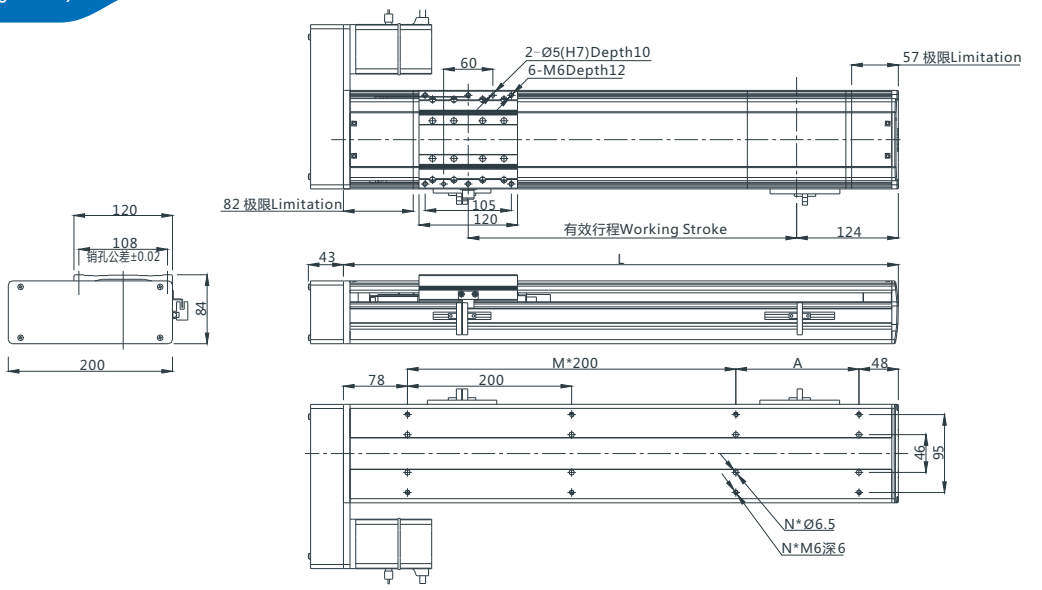

注:以下不含电机重量。Note: Not including motor weight.

| 有效行程 Working Stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | 376 | 426 | 476 | 526 | 576 | 626 | 676 | 726 | 776 | 826 | 876 | 926 | 976 | 1026 | 1076 | 1126 | 1176 | 1226 | 1276 | 1326 | 1376 | 1426 | 1476 | 1526 | 1576 | 1626 | 1676 | 1726 | 1776 |
| M | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 |
| N | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 | 14 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 20 |
| A | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 |
| 重量KG Weight KG | 9.39 | 9.96 | 10.53 | 11.1 | 11.67 | 12.24 | 12.81 | 13.38 | 13.95 | 14.52 | 15.09 | 15.66 | 16.23 | 16.8 | 17.37 | 17.94 | 18.51 | 19.08 | 19.65 | 20.22 | 20.79 | 21.36 | 21.93 | 22.5 | 23.07 | 23.64 | 24.21 | 24.78 | 25.35 |

*如有特殊行程请先与技术人员联系。*In case special stroke please contact technical services.

## BR:马达右折(Right Side)

单位（mm）



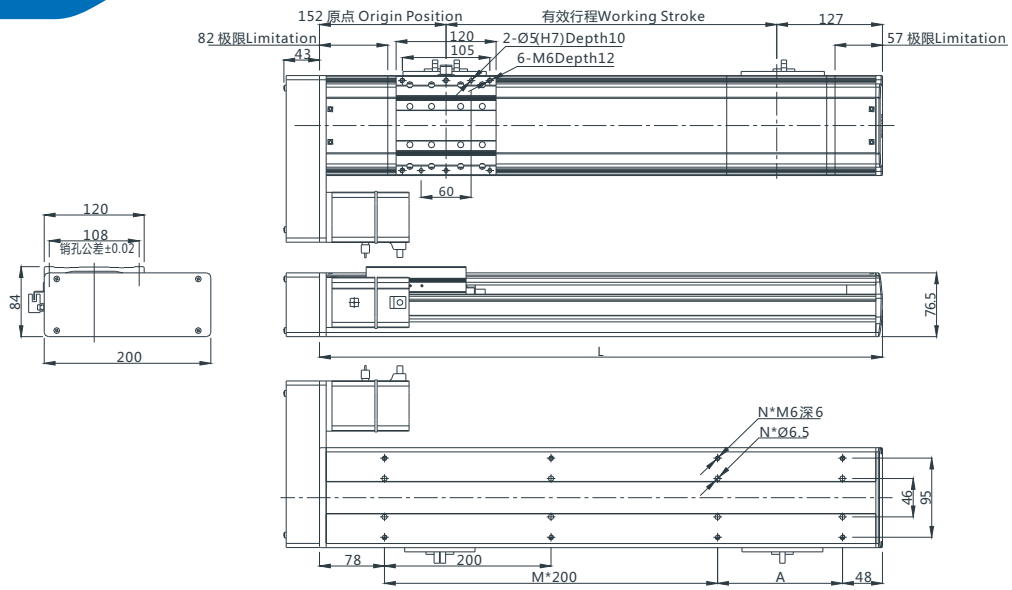

注:以下不含电机重量。Note: Not including motor weight.

| 有效行程 Working Stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | 376 | 426 | 476 | 526 | 576 | 626 | 676 | 726 | 776 | 826 | 876 | 926 | 976 | 1026 | 1076 | 1126 | 1176 | 1226 | 1276 | 1326 | 1376 | 1426 | 1476 | 1526 | 1576 | 1626 | 1676 | 1726 | 1776 |
| M | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 |
| N | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 | 14 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 20 |
| A | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 |
| 重量 KG Weight KG | 9.39 | 9.96 | 10.53 | 11.1 | 11.67 | 12.24 | 12.81 | 13.38 | 13.95 | 14.52 | 15.09 | 15.66 | 16.23 | 16.8 | 17.37 | 17.94 | 18.51 | 19.08 | 19.65 | 20.22 | 20.79 | 21.36 | 21.93 | 22.5 | 23.07 | 23.64 | 24.21 | 24.78 | 25.35 |

*如有特殊行程请先与技术人员联系。*In case special stroke please contact technical services.

## BL:马达左折( Left Side)

单位 ( mm )




注:以下不含电机重量。Note: Not including motor weight.

| 有效行程 Working Stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | 376 | 426 | 476 | 526 | 576 | 626 | 676 | 726 | 776 | 826 | 876 | 926 | 976 | 1026 | 1076 | 1126 | 1176 | 1226 | 1276 | 1326 | 1376 | 1426 | 1476 | 1526 | 1576 | 1626 | 1676 | 1726 | 1776 |
| M | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 |
| N | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 | 14 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 20 |
| A | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 |
| 重量 KG Weight KG | 9.39 | 9.96 | 10.53 | 11.1 | 11.67 | 12.24 | 12.81 | 13.38 | 13.95 | 14.52 | 15.09 | 15.66 | 16.23 | 16.8 | 17.37 | 17.94 | 18.51 | 19.08 | 19.65 | 20.22 | 20.79 | 21.36 | 21.93 | 22.5 | 23.07 | 23.64 | 24.21 | 24.78 | 25.35 |

*如有特殊行程请先与技术人员联系。*In case special stroke please contact technical services.

# MEMO