marathon® Motors



# Black Max® Vector Duty Motors

## Features

- Class F MAX GUARD® insulation system
- Constant torque operation from 0 to base speed on vector drive
- Constant horsepower operation to twice base RPM
- Continuous duty at 40° C ambient
- Optimized for operation with IGBT inverter (NEMA Design A)
- Class F N/C thermostats (one per phase)
- Utilizes double shielded ball bearings
- Exxon Polyrex® EM bearing grease
- C-Face with rigid base, except C-Face with removable rigid base as noted
- F1 standard conduit box location, field reversible to F2 (except as noted)
- Available with optional encoder installed on opposite drive end
- Electrically reversible
- UL Recognized, CSA Certified, and CE Mark
- Three year warranty (through Marathon Electric)

## Applications

- Designed for inverter or vector applications where up to a 1000:1 constant torque speed range is required.
- Typical uses include: material handling, machine tools, conveyors, crane and hoist, metal processing, test stands, pumps, compressors, textile processing, and other industrial machinery installed in dusty or dirty environments.

| Motor Shipping Schedule * | | |
|---|---|---|
| *Same or one day ** | *Up to 7 days* | *Up to 10 days* |

**Color indicates shipping lead time in business days. Check stock status online.**
*** Certain heavy and oversized items can be shipped only via LTL. Check our website for current shipping method constraints by part number.**

## 230/460V Motor Specifications

| Part Number * | Price | HP | Base RPM | Volts | Enclosure | NEMA Frame | Model No. | F.L. Amps | Weight (lb) * | Footnotes | Drawing Links |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Y541A | $1,594.00 | 3 | 1800 | 230/460 | TENV | 182TC | 182THTY7726 | 8.2 / 4.1 | 110 | T, AL | PDF |
| Y543A | $1,934.00 | 5 | 1800 | 230/460 | TENV | 184TC | 184THTY7726 | 13.4 / 6.7 | 125 | T, AL | PDF |
| Y545 | $2,467.00 | 7-1/2 | 1800 | 230/460 | TENV | 213TC | 213THTL7726 | 21.0 / 10.5 | 146 | T, AL | PDF |
| Y547 | $2,892.00 | 10 | 1800 | 230/460 | TENV | 215TC | 215THTL7726 | 27.0 / 13.5 | 159 | T, AL | PDF |
| Y549 | $3,405.00 | 15 | 1800 | 230/460 | TENV | 254TC | 254THTL5726 | 40 / 20 | 250 | T, AL, I | PDF |

*** Refer to the Motor Shipping Schedule table for shipping information.**

**Footnotes:**
**6 Bolt-on, removable base for footless mounting option**
**13 F1 Mounting Only, cannot modify to F2**
**AL Aluminum Frame Construction**

**Footnotes (continued):**
**CI Cast-iron Frame Construction**
**I Intermittent duty from 90-120 Hz operation**
**S Steel Frame Construction**

**Footnotes (continued):**
**T Thermostat overload**

**Note: Please review the AutomationDirect Terms & Conditions for warranty and service on his product. Warranty service can be arranged through numerous Marathon Electric service centers. See list of service centers on our Web site at www.AutomationDirect.com.**

## Motor Performance Data (460 Volt) *

| Part Number | HP | F.L. rpm | F.L. Amps @460V | N.L. Amps @460V | F.L. Torque (lb·ft) | B.D. Torque (lb·ft) | Max. C hp rpm * | Max. Safe rpm | F.L. Effic. (%) | F.L. Power Factor | Rotor Inertia (lb·ft2) | Ohms/Ph - Equiv. Wye Circuit (460 VAC) (at rated operating temp. in 40° C ambient) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | R1 | R2 | X1 | X2 | XM |
| Y541A | 3 | 1755 | 4.1 | 2.3 | 9.0 | 49.3 | 3515 | 5400 | 87.5 | 78.5 | 0.420 | 1.578 | 1.802 | 2.838 | 2.091 | 94.13 |
| Y543A | 5 | 1760 | 6.7 | 3.2 | 14.9 | 61.5 | 3520 | 5400 | 89.5 | 79 | 0.520 | 1.428 | 1.05 | 2.09 | 3.379 | 63.334 |
| Y545 | 7-1/2 | 1765 | 10.5 | 5.5 | 22.3 | 95.5 | 3525 | 4200 | 90.2 | 76.0 | 0.850 | 0.699 | 0.567 | 1.765 | 2.260 | 38.178 |
| Y547 | 10 | 1774 | 13.5 | 7.4 | 29.5 | 125.0 | 3540 | 4200 | 90.2 | 76.0 | 1.300 | 0.369 | 0.334 | 1.423 | 2.281 | 34.932 |
| Y549 | 15 | 1765 | 20 | 11.0 | 45.0 | 170.0 | 3550 | 4200 | 92.4 | 76.0 | 1.600 | 0.134 | 0.316 | 1.047 | 1.569 | 22.151 |

*** Maximum Constant hp rpm is for direct coupled loads.**

# Black Max® Vector Duty Motors

| Motor Shipping Schedule * | | |
|---|---|---|
| *Same or one day **| *Up to 7 days* | *Up to 10 days* |

**Color indicates shipping lead time in business days. Check stock status online.**
*** Certain heavy and oversized items can be shipped only via LTL. Check our website for current shipping method constraints by part number.**

## Motor with Shaft-Mounted Encoder*

A Dynapar Model HS35 shaft-mounted encoder can be supplied pre-installed on the motors as shown in the price table below. The encoder requires a 5–26 VDC power source, provides a count of 1024 pulses per revolution (PPR) differential line driver output, and includes a 10-pin mating connector.

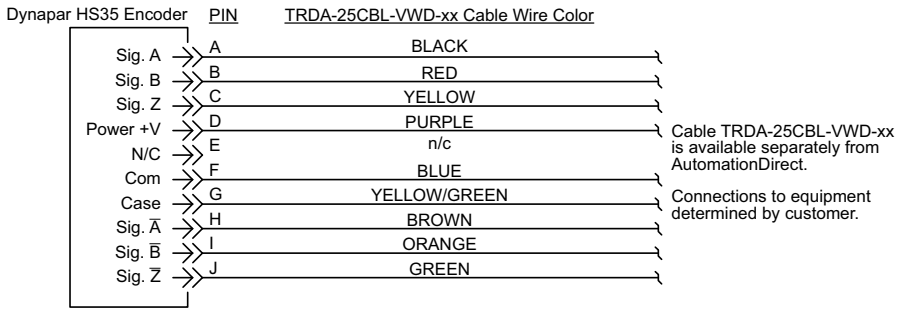
** If connecting the motor to a GS3 DURApulse AC drive, a GS3-FB Feedback Card is required for the drive.*

| Motor Accessories | | |
|---|---|---|
| *Part Number* | *Price* | *Description ** |
| *A772* | $1,224.00 | Encoder kit, replacement, for Black Max encoder motors. Dynapar HS35 encoder, 5–26 VDC input, Line Driver output, 1024 pulses per revolution, 5/8-in bore. |

*** Replacement/spare encoder kit for Black Max Yxxx-A772 motors; can also be field installed on Black Max Yxxx motors without encoders.**

## Encoder Connector Pinout

*Note: A mating connector is supplied with the encoder. Prewired cables TRDA-25CBL-VWD-xx (10, 20, & 30 ft) and replacement MS connectors TRDA-25CON-VWD are available from AutomationDirect.*



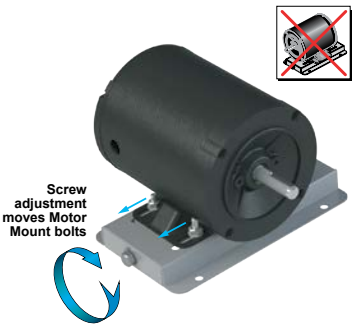

| Motor with Pre-installed Shaft-Mounted Encoder | | |
|---|---|---|
| *230/460V Motors* | | |
| *Part Number* | *Price* | *HP* |
| *Y541A-A772* | $2,972.00 | 3 |
| *Y543A-A772* | $3,312.00 | 5 |
| *Y545-A772* | $3,820.00 | 7 1/2 |
| *Y547-A772* | $4,246.00 | 10 |
| *Y549-A772* | $4,758.00 | 15 |

**Note: Please review the AutomationDirect Terms & Conditions for warranty and service on this product.**
**Warranty service can be arranged through numerous Marathon Electric service centers.**
**See list of service centers on our Web site at www.AutomationDirect.com.**

# STABLE™ Motor Slide Bases

## Mounting Slide Bases for 56 to 449T NEMA Motors Features

- Allows adjustment of motor mounting position
- Slide direction is perpendicular to motor shaft
- Double adjusting screws for frames 182T–449T
- Manufactured to precise dimensional standards
- Dimensionally interchangeable with existing major makes
- Heavy-duty steel construction
- Painted with oven-baked primer for better adhesion of customer's paint
- All "D" bolts (motor mounting bolts) are fixed to the exact motor foot pattern
- All "D" bolts are welded into position to prevent spinning and dropping from slots
- Nuts and washers are provided for securing the motor to the slide base



### STABLE Motor Slide Bases for 3-Phase Motors

| Part Number (MTA-BASE-xxx) | Price | Fits Frame Type | Product Wt. (lb) | Fits Motor | | | | | | Drawing Links |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | IronHorse | Leeson® WashGuard® | WEG (Part number ending in...) | Marathon microMAX, Max+, Black Max, Blue Max,SyMAX | Marathon XRI GP & NEMA Premium, Jet Pump | Marathon Globetrotter | |
| W56 | $18.50 | 56* | 2.8 | MTPM-P3x-1x18<br>MTPM-P5x-1x18<br>MTPM-P7x-1x18<br>MTPM-0xx-1x18<br>MTPM-1xx-1x18<br>MTR(2)(P)-xxx-xxxxx*<br>MTRJ(P)-xxx-xxxxxx<br>MTSN-P33-3BD18<br>MTSN-P33-3BD18R<br>MTSN-P33-3BD36<br>MTSP-P33-3BD18<br>MTSP-P33-3BD18R<br>MTSP-P33-3BD36<br>MTSP-P33-3BD36R<br>MTSN-P50-3BD18<br>MTSN-P50-3BD18R<br>MTSN-P50-3BD36<br>MTSP-P50-3BD12<br>MTSP-P50-3BD18<br>MTSP-P50-3BD18R<br>MTSP-P50-3BD36<br>MTSP-P50-3BD36R<br>MTSN-P75-3BD18<br>MTSN-P75-3BD18R<br>MTSN-P75-3BD36<br>MTSP-P75-3BD12<br>MTSP-P75-3BD18<br>MTSP-P75-3BD18R<br>MTSP-P75-3BD36<br>MTSN-001-3BD18<br>MTSN-001-3BD18R<br>MTSN-001-3BD36<br>MTSP-001-3BD18<br>MTSP-001-3BD18R<br>MTSP-001-3BD36<br>MTSP-001-3BD36R<br>MTSN-1P5-3BD18<br>MTSN-1P5-3BD18R<br>MTSN-1P5-3BD36<br>MTSP-1P5-3BD18<br>MTSP-1P5-3BD18R<br>MTSP-1P5-3BD36<br>MTSP-1P5-3BD36R<br>MTSN-002-3BD18<br>MTSN-002-3BD18R<br>MTSN-002-3BD36<br>MTSP-002-3BD18<br>MTSP-002-3BD18R<br>MTSP-002-3BD36<br>MTSP-002-3BD36R | 112427.00<br>112428.00<br>112429.00<br>112430.00<br>113019.00<br>113023.00<br>113473.00<br>113586.00<br>113590.00<br>113591.00<br>113649.00<br>116644.00<br>116645.00<br>119468.00<br>119469.00<br>119471.00<br>119475.00<br>119476.00<br>119478.00<br>119480.00<br>119482.00<br>119483.00<br>191206.00<br>191561.00<br>191562.00<br>191569.00 | (...)56-S<br>(...)56C-S | Y500<br>Y502<br>Y360<br>Y362<br>Y364<br>Y280<br>Y281<br>Y282<br>Y592(-A772)<br>Y534(-A772)<br>Y535(-A772) | G582 | – | PDF |

*** IronHorse MTR2 56HC motors have double-punched bases to fit on slide base MTA-BASE-W56.**

# STABLE™ Motor Slide Bases

## STABLE Motor Slide Bases for 3-Phase Motors

| Part Number (MTA-BASE-xxx) | Price | Fits Frame Type | Product Wt. (lb) | Fits Motor | | | | | | Drawing Links |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | IronHorse | Leeson® WashGuard® | WEG (Part number ending in...) | Marathon microMAX, Max+, Black Max, Blue Max,SyMAX | Marathon XRI GP & NEMA Premium, Jet Pump | Marathon Globetrotter | |
| W143T | $32.50 | 143T/TC | 4.6 | MTCP2-001-3BD18(C)<br>MTCP2-1P5-3BD36<br>MTSN-1P5-3BD36-14<br>MTSP-1P5-3BD36-14<br>MTSP-1P5-3BD36R-14 | – | (...)145T-S<br>(...)145TC-S | Y536(-A772) | E2001A | – | PDF |
| W145T | $32.50 | 145T/TC | 5.1 | MTCP2-001-3BD12<br>MTCP2-1P5-3BD18(C)<br>MTCP2-002-3BD18(C)<br>MTCP2-002-3BD36<br>MTSP-001-3BD12<br>MTSN-1P5-3BD18-14<br>MTSN-1P5-3BD18R-14<br>MTSP-1P5-3BD18-14<br>MTSP-1P5-3BD18R-14<br>MTSN-002-3BD18-14<br>MTSN-002-3BD36-14<br>MTSP-002-3BD18-14<br>MTSP-002-3BD18R-14<br>MTSP-002-3BD36-14 | 121866.00<br>121868.00<br>121870.00<br>122182.00<br>122184.00<br>122185.00<br>191570.00 | | Y366<br>Y368<br>Y284<br>Y285<br>Y537<br>Y538(-A772)<br>Y551(-A772) | E2002<br>E2004A<br>E2007A | – | PDF |
| W182T | $44.00 | 182T/TC | 9.2 | MTCP2-1P5-3BD12<br>MTCP2-003-3BD18(C)<br>MTCP2-003-3BD36<br>MTSP-1P5-3BD12<br>MTSN-003-3BD36-18<br>MTSP-003-3BD18-18<br>MTSP-003-3BD36-18 | | | Y1999<br>Y286A<br>Y541A(-A772) | – | GT0010A<br>GT1010A | PDF |
| W184T | $44.00 | 184T/TC | 10 | MTCP2-002-3BD12<br>MTCP2-005-3BD18(C)<br>MTCP2-005-3BD36<br>MTF-00x-1C18<br>MTSP-002-3BD12<br>MTSP-005-3BD18<br>MTSP-005-3BD36 | | | Y1372<br>Y540(-A772)<br>Y543A(-A772) | – | GT0013A<br>GT1013A<br>GT1210A<br>GT1212A<br>GT1213A | PDF |
| W213T | $64.00 | 213T/TC | 13 | MTCP2-003-3BD12<br>MTCP2-7P5-3BD18(C)<br>MTCP2-7P5-3BD36<br>MTSP-003-3BD12<br>MTSP-7P5-3BD18 | 140822.00<br>141266.00 | | Y994<br>Y542(-A772)<br>Y545(-A772) | – | GT0016A<br>GT1016A<br>GT1216A | PDF |
| W215T | $64.00 | 215T/TC | 15 | MTCP2-005-3BD12<br>MTCP2-010-3BD18(C)<br>MTCP2-010-3BD36<br>MTSP-005-3BD12<br>MTSP-010-3BD18 | 140820.00<br>140821.00 | | Y996<br>Y544(-A772)<br>Y547(-A772) | – | GT0019A<br>GT1019A<br>GT1218A<br>GT1219A | PDF |
| W254T | $86.00 | 254T/TC | 18 | MTCP2-7P5-3BD12<br>MTCP2-015-3BD18(C)<br>MTCP2-015-3BD36<br>MTSP-015-3BD18 | – | | Y546(-A772)<br>Y549(-A772) | – | GT0059<br>GT1022A<br>GT1222A | PDF |
| W256T | $86.00 | 256T/TC | 19 | MTCP2-010-3BD12<br>MTCP2-020-3BD18(C)<br>MTCP2-020-3BD36<br>MTSP-020-3BD18 | – | | Y548(-A772) | – | GT0062<br>GT1025A<br>GT1225A | PDF |
| W284T | $96.00 | 284T/TC | 20 | MTCP2-015-3BD12<br>MTCP2-025-3BD18(C) | – | | – | – | GT0065<br>GT1028A | PDF |
| W286T | $96.00 | 286T/TC | 21 | MTCP2-020-3BD12<br>MTCP2-030-3BD18(C) | – | | – | – | GT0067<br>GT1031A | PDF |
| W324T | $140.00 | 324T/TC | 30 | MTCP2-040-3BD18(C) | – | | Y571(-A774)<br>Y513(-A775) | – | GT0073<br>GT1034A | PDF |

*** IronHorse MTR2 56HC motors have double-punched bases to fit on slide base MTA-BASE-W56.**

# STABLE™ Motor Slide Bases

## STABLE Motor Slide Bases for 3-Phase Motors

| Part Number (MTA-BASE-xxx) | Price | Fits Frame Type | Product Wt. (lb) | Fits Motor | | | | | | Drawing Links |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | IronHorse | Leeson® WashGuard® | WEG (Part number ending in...) | Marathon microMAX, Max+, Black Max, Blue Max,SyMAX | Marathon XRI GP & NEMA Premium, Jet Pump | Marathon Globetrotter | |
| W326T | $140.00 | 326T/TC | 31 | MTCP2-050-3BD18(C) | – | | Y572(-A774) Y514(-A775) | – | GT0077 GT1037A | PDF |
| W364T | $190.00 | 364T/TC | 43 | MTCP2-060-3BD18(C) | – | | Y573(-A774) Y515(-A775) | – | – | PDF |
| W365T | $190.00 | 365T/TC | 43 | MTCP2-075-3BD18(C) | – | | Y574(-A774) Y516(-A775) | – | – | PDF |
| W404T | $232.00 | 404T/TC | 58 | – | – | | – | – | – | PDF |
| W405T | $232.00 | 405T/TC | 60 | MTCP2-100-3BD18(C) | – | | Y575(-A774) Y517(-A775) | – | – | PDF |
| W444T | $264.00 | 444T | 63 | MTCP2-125-3BD18 | – | | – | – | – | PDF |
| W445T | $264.00 | 445T | 65 | MTCP2-150-3BD18 | – | | – | – | – | PDF |
| W447T | $347.00 | 447T | 89 | MTCP2-200-3BD18 | – | | – | – | – | PDF |
| W449T | $347.00 | 449T | 94 | MTCP2-250-3D18 MTCP2-300-3D18 | – | | – | – | – | PDF |

*** IronHorse MTR2 56HC motors have double-punched bases to fit on slide base MTA-BASE-W56.**

# STABLE™ Motor Slide Bases

## Mounting Slide Bases for 56 to 215T NEMA Motors Features

| STABLE Motor Slide Bases for 1-phase Motors | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Part Number | Price | Fits Frame Type | Product Wt. (lb) | Fits Motor | | | | | |
| | | | | IronHorse | Leeson® | Marathon | | | |
| | | | | | Washguard® | Marathon DP GP (NEMA Service Factor) | Marathon DP Air Compressor | Fan & Blower | Marathon TE GP 4-in-1 |
| MTA-BASE-W56 | $18.50 | 56* | 2.8 | MTR2-xxx-1AB18<br>MTR2-xxx-1AB36<br>MTPM-xxx-1L18<br>MTPM-xxx-1M18 | 112431.00<br>112527.00<br>112528.00<br>112529.00<br>113583.00<br>114311.00<br>114313.00<br>191477.00 | G915A<br>C167A<br>C187A<br>E261A<br>E268A | D010 | C216<br>C1153<br>C1155<br>B319<br>D118<br>C1158<br>C235<br>D115<br>C1160<br>C1161<br>B352 | G570<br>D311<br>G571<br>D312<br>G572<br>D313<br>G573<br>D314<br>G574<br>D315<br>G575 |
| MTA-BASE-W143T | $32.50 | 143T / TC | 4.6 | – | – | C188A | – | – | – |
| MTA-BASE-W145T | $32.50 | 145TC / TC | 5.1 | – | – | I127 | – | – | – |
| MTA-BASE-W182T | $44.00 | 182T / TC | 9.2 | – | – | – | – | – | – |
| MTA-BASE-W184T | $44.00 | 184 / TC | 10 | MTF-00x-1C18 | – | – | – | – | – |
| MTA-BASE-W213T | $64.00 | 213T / TC | 13 | – | – | – | – | – | – |
| MTA-BASE-W215T | $64.00 | 215T T TC | 15 | – | – | – | – | – | – |

*** IronHorse MTR2 56HC motors have double-punched bases to fit on slide base MTA-BASE-W56.**