

marathon[®] Motors

1000:1 Constant Torque (TENV)



MAX+ AC Inverter-Duty Motors with Encoder

Features

- Integrated Dynapar HS20 1024 ppr encoder
- Optimized for operation with IGBT inverter
- Constant Torque operation from 0 to base speed on Vector Drive
- Constant Horsepower operation up to twice base RPM
- Class F insulation with CR200 corona resistant magnet wire
- Continuous duty at 40°C ambient
- C-Face with rigid base, except C-Face with removable rigid base as noted
- Service Factor: 1.0
- Ball bearings
- F1 mounting (except as noted)
- UL Recognized, CSA Certified, and CE Mark
- Three year warranty (through Marathon Electric)

Applications

- Replaces 90 volt and 180 volt PMDC motors (when used with AC variable frequency drives)
- Typical uses include: machine tools, conveyors, packaging machines, batching machines, printing equipment, pumps and fans.

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.

Prices & Specifications

Motor Specifications – MAX+ (with encoder)												
Part Number *	Price	HP	Base RPM	Volts	Encl.	NEMA Frame	Model No.	F.L. Amps	Weight (lb) *	Footnotes	Drawing Links	
Y280	\$1,166.00	1/2	1800	230/460	TENV	56C	56H17T15526A	1.6 / 0.8	25	6	PDF	
Y281	\$1,220.00	3/4					56H17T15528A	2.4 / 1.2	35	6	PDF	
Y282	\$1,291.00	1					56H17T15527A	3.0 / 1.5	42	6	PDF	
Y284	\$1,537.00	1-1/2				145TC	145THTR15540AA	4.8 / 2.4	45	6	PDF	
Y285	\$2,063.00	2					145THTN17034AA	6.0 / 3.0	68	13b	PDF	
Y286A	\$2,617.00	3					182TC	182THTY17041AA	8.2 / 4.1	110	13b	PDF
Y287A	\$2,831.00	5					184TC	184THTY17038AA	13.4 / 6.7	125	13b	PDF

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

Certain heavy and oversized items can be shipped only via LTL. Check our web site for current shipping method constraints by part number.

Footnotes: 6 = Bolt-on, removable base for footless mounting option 13b = Field reversible from F1 to F2 mounting

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.

MAX+ Motors Shaft-Mounted Encoder*

A Dynapar Model HS20 shaft-mounted encoder is supplied with the MAX+ motor. The 5/8-in hollow-shaft encoder requires a 5–26 VDC power source, provides a count of 1024 pulses per revolution (PPR), differential line driver output, and includes 10 screw-terminal wiring connections.

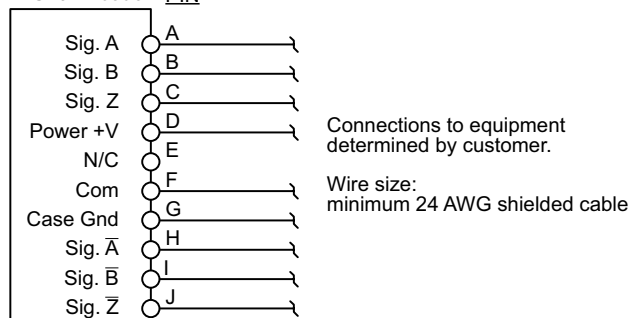
* The encoder cable gland accepts cable diameters from 0.187–0.30 in.

* There is no manufacturer's published tightening torque for the encoder screw terminals.

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

Encoder Wiring Connections

Dynapar HS20 Encoder PIN



MAX+ AC Inverter-Duty Motors with Encoder

Performance Data

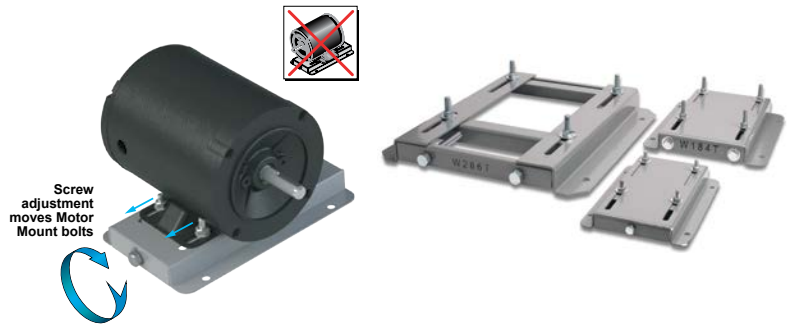
Performance Data (460 Volt) – MAX+													
Part Number	HP	NEMA Design	F.L. RPM	Min. RPM	F.L. AMPS @460V	N.L. AMPS @460V	F.L. Torque (lb-ft)	B.D. Torque (lb-ft)	Max. CHP RPM*	Max. Safe RPM	F.L. Effic.	F.L. Power Factor	Rotor Inertia (lb-ft ²)
Y280	1/2	A	1725	0	0.8	0.5	1.5	5.8	3510	5400	80.0	72.0	0.06
Y281	3/4	A	1725		1.2	0.8	2.3	10.2	3450		82.5	73.5	0.09
Y282	1	A	1725		1.5	1.0	3.0	15.0	3505		84.0	75.0	0.11
Y284	1-1/2	B	1755		2.4	1.6	4.5	29.0	3500		85.5	69.0	0.14
Y285	2	B	1750		3.0	1.7	6.0	28.5	3525		85.5	78.0	0.13
Y286A	3	B	1755		4.1	2.3	9.0	49.3	3510		87.5	78.5	0.42
Y287A	5	B	1760		6.7	3.2	14.9	61.5	3520		89.5	79.0	0.52

* Maximum Constant HP RPM is for direct coupled loads.

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®	WEG (Part number ending in...)	Marathon				
					WashGuard®		microMAX, Max +, Black Max, Blue Max, SyMAX	XRI GP & NEMA Premium, Jet Pump		Globetrotter	
W56	\$14.00	56*	2.8	MTPM-P3x-1x18							
				MTPM-P5x-1x18							
				MTPM-P7x-1x18							
				MTPM-0xx-1x18							
				MTPM-1xx-1x18							
				MTR(2)(P)-xxx-xxxxx*							
				MTRJ(P)-xxx-xxxxx							
				MTSN-P33-3BD18							
				MTSN-P33-3BD18R							
				MTSN-P33-3BD36	112427.00						
				MTSN-P33-3BD36R	112428.00						
				MTSP-P33-3BD18	112429.00						
				MTSP-P33-3BD18R	112430.00						
				MTSP-P33-3BD36	113019.00						
				MTSP-P33-3BD36R	113023.00						
				MTSN-P50-3BD18	113473.00						
				MTSN-P50-3BD18R	113586.00						E2000
				MTSN-P50-3BD36	113590.00						D390
				MTSP-P50-3BD12	113591.00						G580
				MTSP-P50-3BD18	113649.00						D391
				MTSP-P50-3BD18R	116644.00						G581
				MTSP-P50-3BD36	116645.00						K705
				MTSP-P50-3BD36R	119468.00						D392
				MTSN-P75-3BD18	119469.00						G582
				MTSN-P75-3BD18R	119471.00						K707
				MTSN-P75-3BD36	119475.00						D393A
				MTSP-P75-3BD12	119476.00			(...)56-S			K708A
				MTSP-P75-3BD18	119478.00			(...)56C-S			G583A
				MTSP-P75-3BD18R	119480.00						K709A
				MTSP-P75-3BD36	119482.00						D394A
				MTSP-P75-3BD36R	119483.00						K721A
				MTSN-001-3BD18	191202.00						G584A
				MTSN-001-3BD18R	191204.00						D395A
				MTSN-001-3BD36	191205.00						G585A
				MTSP-001-3BD18	191206.00						K724A
				MTSP-001-3BD18R	191207.00						D396A
				MTSP-001-3BD36	191208.00						K725A
				MTSP-001-3BD36R	191560.00						J066A
				MTSN-1P5-3BD18	191561.00						
				MTSN-1P5-3BD18R	191562.00						
MTSN-1P5-3BD36	191563.00										
MTSP-1P5-3BD18	191564.00										
MTSP-1P5-3BD18R	191569.00										
MTSP-1P5-3BD36											
MTSP-1P5-3BD36R											
MTSN-002-3BD18											
MTSN-002-3BD18R											
MTSN-002-3BD36											
MTSP-002-3BD18											
MTSP-002-3BD18R											
MTSP-002-3BD36											
MTSP-002-3BD36R											

* 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®	WEG (Part number ending in...)	Marathon			
					WashGuard®		microMAX, Max+, Black Max, Blue Max, SyMAX	XRI GP & NEMA Premium, Jet Pump	Globetrotter	
W143T	\$26.00	143T/TC	4.6	MTCP2-001-3BD18(C) MTCP2-1P5-3BD36 MTSN-1P5-3BD36-14 MTSP-1P5-3BD36-14 MTSP-1P5-3BD36R-14	191487.00 191565.00		Y536(-A772)	E2001A E2003	-	PDF
W145T	\$26.00	145T/TC	5.1	MTCP2-001-3BD12 MTCP2-1P5-3BD18(C) MTCP2-002-3BD18(C) MTCP2-002-3BD36 MTSP-001-3BD12 MTSN-1P5-3BD18-14 MTSN-1P5-3BD18R-14 MTSP-1P5-3BD18-14 MTSP-1P5-3BD18R-14 MTSN-002-3BD18-14 MTSN-002-3BD18R-14 MTSN-002-3BD36-14 MTSP-002-3BD18-14 MTSP-002-3BD18R-14 MTSP-002-3BD36-14 MTSP-002-3BD36R-14	121866.00 121868.00 121870.00 122182.00 122184.00 122185.00 191490.00 191491.00 191570.00	(...)145T-S (...)145TC-S	Y366 Y368 Y284 Y285 Y537 Y538(-A772) Y551(-A772)	E2002 E2004A E2007A	-	PDF
W182T	\$35.50	182T/TC	9.2	MTCP2-1P5-3BD12 MTCP2-003-3BD18(C) MTCP2-003-3BD36 MTSP-1P5-3BD12 MTSN-003-3BD18-18 MTSN-003-3BD36-18 MTSP-003-3BD18-18 MTSP-003-3BD36-18	132196.00 132198.00		Y1999 Y286A Y541A(-A772) SY036 SY066	E2009 E2010	GT0010A GT1010A	PDF
W184T	\$35.50	184T/TC	10	MTCP2-002-3BD12 MTCP2-005-3BD18(C) MTCP2-005-3BD36 MTF-00x-1C18 MTSP-002-3BD12 MTSP-005-3BD18 MTSP-005-3BD36	132197.00 132200.00 132201.00 132440.00		Y1372 Y287A Y540(-A772) Y543A(-A772) E2012 E2013 SY007A SY067	-	GT0013A GT1013A GT1210A GT1212A GT1213A	PDF
W213T	\$52.00	213T/TC	13	MTCP2-003-3BD12 MTCP2-7P5-3BD18(C) MTCP2-7P5-3BD36 MTSP-003-3BD12 MTSP-7P5-3BD18	140819.00 140822.00 141266.00		Y994 Y542(-A772) Y545(-A772) E2011 E2016A E2011A E2016B SY068	-	GT0016A GT1016A GT1216A	PDF
W215T	\$52.00	215T/TC	15	MTCP2-005-3BD12 MTCP2-010-3BD18(C) MTCP2-010-3BD36 MTSP-005-3BD12 MTSP-010-3BD18	140820.00 140821.00		Y996 Y544(-A772) Y547(-A772) E2018 E2014A E2018A SY069	-	GT0019A GT1019A GT1218A GT1219A	PDF
W254T	\$71.00	254T/TC	18	MTCP2-7P5-3BD12 MTCP2-015-3BD18(C) MTCP2-015-3BD36 MTSP-015-3BD18	-		Y546(-A772) Y549(-A772)	-	GT0059 GT1022A GT1222A	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®	WEG (Part number ending in...)	Marathon			
					WashGuard®		microMAX, Max+, Black Max, Blue Max, SyMAX	XRI GP & NEMA Premium, Jet Pump	Globetrotter	
W256T	\$71.00	256T/ TC	19	MTCP2-010-3BD12 MTCP2-020-3BD18(C) MTCP2-020-3BD36 MTSP-020-3BD18	-		Y548(-A774) Y552	-	GT0062 GT1025A GT1225A	PDF
W284T	\$79.00	284T/ TC	20	MTCP2-015-3BD12 MTCP2-025-3BD18(C)	-		-	-	GT0065 GT1028A	PDF
W286T	\$79.00	286T/ TC	21	MTCP2-020-3BD12 MTCP2-030-3BD18(C)	-		-	-	GT0067 GT1031A	PDF
W324T	\$116.00	324T/ TC	30	MTCP2-040-3BD18(C)	-		Y571(-A774) Y513(-A775)	-	GT0073 GT1034A	PDF
W326T	\$116.00	326T/ TC	31	MTCP2-050-3BD18(C)	-		Y572(-A774) Y514(-A775)	-	GT0077 GT1037A	PDF
W364T	\$158.00	364T/ TC	43	MTCP2-060-3BD18(C)	-		Y573(-A774) Y515(-A775)	-	GT1040A	PDF
W365T	\$158.00	365T/ TC	43	MTCP2-075-3BD18(C)	-		Y574(-A774) Y516(-A775)	-	GT1043A	PDF
W404T	\$193.00	404T/ TC	58	-	-		-	-	-	PDF
W405T	\$193.00	405T/ TC	60	MTCP2-100-3BD18(C)	-		Y575(-A774) Y517(-A775)	-	GT1046A	PDF
W444T	\$219.00	444T	63	MTCP2-125-3BD18	-		-	-	GT1049A	PDF
W445T	\$219.00	445T	65	MTCP2-150-3BD18	-		-	-	GT1052A	PDF
W447T	\$288.00	447T	89	MTCP2-200-3BD18	-		-	-	GT1055A	PDF
W449T	\$288.00	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
<u>MTA-BASE-W56</u>	\$14.00	56*	2.8	MTR2-xxx-1AB18 MTR2-xxx-1AB36 MTPM-xxx-1L18 MTPM-xxx-1M18	112431.00	<u>C158A</u>	D010 C169 C704 D017	<u>C216</u>	<u>G570</u>
					112527.00	<u>G915A</u>		<u>D311</u>	
					112528.00	<u>C175A</u>		<u>C1153</u>	<u>G571</u>
					112529.00	<u>C167A</u>		<u>C1155</u>	<u>D312</u>
					113583.00	<u>C179A</u>		<u>B319</u>	<u>G572</u>
					114311.00	<u>G937A</u>		<u>D118</u>	<u>D313</u>
					114313.00	<u>C185A</u>		<u>C1158</u>	<u>G573</u>
					114317.00	<u>C187A</u>		<u>C235</u>	<u>D314</u>
					191475.00	<u>C193A</u>		<u>D115</u>	<u>G574</u>
					191477.00	<u>E261A</u>		<u>C1160</u>	<u>D315</u>
					191479.00	<u>E268A</u>		<u>C1161</u>	<u>G575</u>
						<u>EG277A</u>		<u>B352</u>	<u>D316</u>
					<u>MTA-BASE-W143T</u>	\$26.00		143T / TC	4.6
<u>MTA-BASE-W145T</u>	\$26.00	145TC / TC	5.1	-	-	<u>C191</u> <u>I127</u> <u>C194</u>	-	-	-
<u>MTA-BASE-W182T</u>	\$35.50	182T / TC	9.2	-	-	-	-	-	-
<u>MTA-BASE-W184T</u>	\$35.50	184 / TC	10	MTF-00x-1C18	-	-	<u>Z502</u>	-	-
<u>MTA-BASE-W213T</u>	\$52.00	213T / TC	13	-	-	-	-	-	-
<u>MTA-BASE-W215T</u>	\$52.00	215T T TC	15	-	-	-	-	-	-

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