

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.

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.

230/460V Motor Specifications

Part Number *	Price	HP	Base RPM	Volts	Enclosure	NEMA Frame	Model No.	F.L. Amps	Weight (lb) *	Footnotes	Drawing Links
Y592	\$494.00	1/4	1800	230/460	TENV	56C	56H17T2001	1.2 / 0.6	19	T, S, 13	PDF
Y534	\$624.00	1/2	1800	230/460	TENV	56C	56H17T5301	1.6 / 0.8	28	T, S, 6, 13	PDF
Y535	\$744.00	1	1800	230/460	TENV	56C	56H17T5302	3.0 / 1.5	41	T, S, 6, 13	PDF
Y536	\$765.00	1	1800	230/460	TENV	143TC	143THTR5326	3.0 / 1.5	43	T, S, 6, 13	PDF
Y537	\$885.00	1	1200	230/460	TENV	145TC	145THTR5376	3.8 / 1.9	49	T, S, 6, 13	PDF
Y538	\$929.00	1-1/2	1800	230/460	TENV	145TC	145THTR5326	4.8 / 2.4	50	T, S, 6, 13	PDF
Y551	\$1,282.00	2	1800	230/460	TENV	145TC	145HTN6046	6.0 / 3.0	72	T, CI	PDF
Y540	Retired	2	1200	230/460	TENV	184TC	184HTL7776	6.6 / 3.3	88	T, AL	PDF
Y541A	\$1,490.00	3	1800	230/460	TENV	182TC	182HTY7726	8.2 / 4.1	110	T, AL	PDF
Y542	Retired	3	1200	230/460	TENV	213TC	213HTL7776	9.4 / 4.7	118	T, AL	PDF
Y543A	\$1,715.00	5	1800	230/460	TENV	184TC	184HTY7726	13.4 / 6.7	125	T, AL	PDF
Y544	Retired	5	1200	230/460	TENV	215TC	215HTL7776	15.4 / 7.7	138	T, AL	PDF
Y545	\$2,249.00	7-1/2	1800	230/460	TENV	213TC	213HTL7726	21.0 / 10.5	146	T, AL	PDF
Y546	Retired	7-1/2	1200	230/460	TENV	254TC	254HTL5776	22.0 / 11.0	209	T, AL	PDF
Y547	\$2,692.00	10	1800	230/460	TENV	215TC	215HTL7726	27.0 / 13.5	159	T, AL	PDF
Y548	\$3,779.00	10	1200	230/460	TENV	256TC	256HTL5776	28 / 14	203	T, AL	PDF
Y549	\$3,203.00	15	1800	230/460	TENV	254TC	254HTL5726	40 / 20	250	T, AL, I	PDF
Y552	\$4,727.00	20	1800	230/460	TENV	256TC	256HTNA7026	52 / 26	300	T, I, CI	PDF
Y553	Retired	25	1800	230/460	TENV	284TC	284HTNA7026	62 / 31	495	T, I, CI	PDF
Y393	Retired	30	1800	230/460	TENV	286TC	286HTNA7026	74 / 37	575	T, I, CI	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.

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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	\$1,176.00	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.

Motor with Pre-installed Shaft-Mounted Encoder

230/460V Motors					
Part Number	Price	HP	Part Number	Price	HP
Y592-A772	\$1,605.00	1/4	Y544-A772	Retired	5
Y534-A772	\$1,833.00	1/2	Y545-A772	\$3,445.00	7 1/2
Y535-A772	\$1,936.00	1	Y546-A772	Retired	7 1/2
Y536-A772	\$1,953.00	1	Y547-A772	\$3,889.00	10
Y538-A772	\$2,189.00	1 1/2	Y548-A772	Retired	10
Y551-A772	\$2,395.00	2	Y549-A772	\$4,399.00	15
Y540-A772	Retired	2			
Y541A-A772	\$2,686.00	3			
Y542-A772	Retired	3			
Y543A-A772	\$2,911.00	5			

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Black Max® Vector Duty Motors

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.

Dynapar HS35 Encoder PIN TRDA-25CBL-VWD-xx Cable Wire Color



Cable TRDA-25CBL-VWD-xx
is available separately from
AutomationDirect.

Connections to equipment
determined by customer.

Motor Performance Data (460 Volt) *

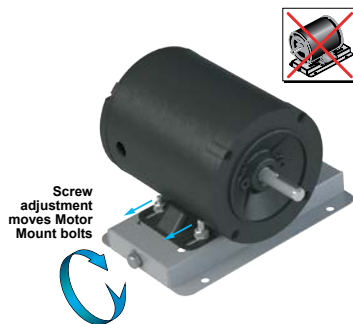
Part Number	HP	F.L. rpm	F.L. Amps @460V	N.L. Amps @460V	F.L. Torque (lb-ft)	B.D. Torque (lb-ft)	Max. C hp rpm *	Max. Safe rpm	F.L. Effic. (%)	F.L. Power Factor	Rotor Inertia (lb-ft²)	Ohms/Ph - Equiv. Wye Circuit (460 VAC) (at rated operating temp. in 40° C ambient)				
												R1	R2	X1	X2	XM
Y592	1/4	1755	0.6	0.45	0.75	4.5	3540	5400	70.0	58.0	0.045	26.300	23.000	30.240	14.700	572.000
Y534	1/2	1735	0.8	0.52	1.5	5.8	3510	5400	80.0	72.0	0.056	22.307	17.028	24.123	18.163	532.976
Y535	1	1750	1.5	1.0	3.0	15.0	3505	5400	84.0	75.0	0.110	8.378	5.623	10.707	9.912	278.036
Y536	1	1750	1.5	1.0	3.0	15.0	3505	5400	84.0	75.0	0.110	8.378	5.623	10.707	9.912	278.036
Y537	1	1145	1.9	1.3	4.5	16.0	2260	5400	80.0	62.5	0.140	10.302	8.372	13.793	15.325	193.835
Y538	1-1/2	1755	2.4	1.6	4.5	29.0	3518	5400	85.5	69.0	0.140	4.257	3.538	5.998	5.884	161.009
Y551	2	1750	3.0	1.7	6.0	28.5	3525	5400	85.5	78.0	0.130	3.834	2.897	5.950	5.637	154.800
Y540	2	1160	3.3	2.1	9.0	34.0	2315	5400	82.5	67.5	0.380	3.948	3.436	7.725	12.113	116.900
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
Y542	3	1158	4.7	3.0	13.6	49.0	2300	4200	82.5	72.5	0.600	2.469	2.318	6.508	4.125	83.910
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
Y544	5	1165	7.7	4.8	22.5	87.0	2320	4200	84.0	71.0	0.900	1.130	1.250	3.709	2.573	51.972
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
Y546	7-1/2	1170	11.0	6.0	34.0	118.0	2325	4200	87.5	73.0	1.200	0.510	0.680	2.846	3.247	42.714
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
Y548	10	1160	14	7.0	45.5	135.0	2320	4200	89.5	75.5	1.500	0.534	0.693	2.258	2.323	30.530
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
Y552	20	1768	26	13.5	59.5	290.0	3560	5400	93.6	80.0	3.100	0.234	0.213	0.746	0.689	18.204

* 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	\$16.00	56*	2.8	MTPM-P3x-1x18	112427.00	(...)56-S (...)56C-S				PDF
				MTPM-P5x-1x18						
				MTPM-P7x-1x18						
				MTPM-0xx-1x18						
				MTPM-1xx-1x18						
				MTR(2)(P)-xxx-xxxxx*						
				MTRJ(P)-xxx-xxxxxx						
				MTSN-P33-3BD18						
				MTSN-P33-3BD18R						
				MTSN-P33-3BD36						
				MTSP-P33-3BD18						
				MTSP-P33-3BD18R						
				MTSP-P33-3BD36						
				MTSP-P33-3BD36R						
				MTSN-P50-3BD18						
				MTSN-P50-3BD18R						
				MTSN-P50-3BD36						
				MTSP-P50-3BD12						
				MTSP-P50-3BD18						
				MTSP-P50-3BD18R						
				MTSP-P50-3BD36						
				MTSP-P50-3BD36R						
				MTSN-P75-3BD18						
				MTSN-P75-3BD18R						
				MTSN-P75-3BD36						
				MTSP-P75-3BD12						
				MTSP-P75-3BD18						
				MTSP-P75-3BD18R						
				MTSP-P75-3BD36						
				MTSP-P75-3BD36R						
				MTSN-001-3BD18						
				MTSN-001-3BD18R						
				MTSN-001-3BD36						
				MTSP-001-3BD18						
				MTSP-001-3BD18R						
				MTSP-001-3BD36						
				MTSP-001-3BD36R						
				MTSN-1P5-3BD18						
				MTSN-1P5-3BD18R						
				MTSN-1P5-3BD36						
				MTSP-1P5-3BD18						
				MTSP-1P5-3BD18R						
				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	\$29.00	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	(…) 145T-S (…) 145TC-S	Y536(-A772)	E2001A E2003	-	PDF
W145T	\$29.00	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		Y366 Y368 Y284 Y285 Y537 Y538(-A772) Y551(-A772)	E2002 E2004A E2007A	-	PDF
W182T	\$39.00	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	\$39.00	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	\$57.00	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	\$57.00	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	\$77.00	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	\$77.00	256T/ TC	19	MTCP2-010-3BD12 MTCP2-020-3BD18(C) MTCP2-020-3BD36 MTSP-020-3BD18	–		Y548(-A772) Y552	–	GT0062 GT1025A GT1225A	PDF
W284T	\$86.00	284T/ TC	20	MTCP2-015-3BD12 MTCP2-025-3BD18(C)	–		–	–	GT0065 GT1028A	PDF
W286T	\$86.00	286T/ TC	21	MTCP2-020-3BD12 MTCP2-030-3BD18(C)	–		–	–	GT0067 GT1031A	PDF
W324T	\$126.00	324T/ TC	30	MTCP2-040-3BD18(C)	–		Y571(-A774) Y513(-A775)	–	GT0073 GT1034A	PDF
W326T	\$126.00	326T/ TC	31	MTCP2-050-3BD18(C)	–		Y572(-A774) Y514(-A775)	–	GT0077 GT1037A	PDF
W364T	\$171.00	364T/ TC	43	MTCP2-060-3BD18(C)	–		Y573(-A774) Y515(-A775)	–	GT1040A	PDF
W365T	\$171.00	365T/ TC	43	MTCP2-075-3BD18(C)	–		Y574(-A774) Y516(-A775)	–	GT1043A	PDF
W404T	\$209.00	404T/ TC	58	–	–		–	–	–	PDF
W405T	\$209.00	405T/ TC	60	MTCP2-100-3BD18(C)	–		Y575(-A774) Y517(-A775)	–	GT1046A	PDF
W444T	\$237.00	444T	63	MTCP2-125-3BD18	–		–	–	GT1049A	PDF
W445T	\$237.00	445T	65	MTCP2-150-3BD18	–		–	–	GT1052A	PDF
W447T	\$312.00	447T	89	MTCP2-200-3BD18	–		–	–	GT1055A	PDF
W449T	\$312.00	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>	\$16.00	56*	2.8	MTR2-xxx-1AB18 MTR2-xxx-1AB36 MTPM-xxx-1L18 MTPM-xxx-1M18	112431.00 112527.00 112528.00 112529.00 113583.00 114311.00 114313.00 114317.00 191475.00 191477.00 191479.00	<u>C158A</u> <u>G915A</u> <u>C175A</u> <u>C167A</u> <u>C179A</u> <u>G937A</u> <u>C185A</u> <u>C187A</u> <u>C193A</u> <u>E261A</u> <u>E268A</u> <u>EG277A</u>	<u>D010</u> <u>C169</u> <u>C704</u> <u>D017</u>	<u>C216</u> <u>C1153</u> <u>C1155</u> <u>B319</u> <u>D118</u> <u>C1158</u> <u>C235</u> <u>D115</u> <u>C1160</u> <u>C1161</u> <u>B352</u>	<u>G570</u> <u>D311</u> <u>G571</u> <u>D312</u> <u>G572</u> <u>D313</u> <u>G573</u> <u>D314</u> <u>G574</u> <u>D315</u> <u>G575</u> <u>D316</u>
<u>MTA-BASE-W143T</u>	\$29.00	143T / TC	4.6	–	–	<u>C188A</u>	–	–	–
<u>MTA-BASE-W145T</u>	\$29.00	145TC / TC	5.1	–	–	<u>C191</u> <u>I127</u> <u>C194</u>	–	–	–
<u>MTA-BASE-W182T</u>	\$39.00	182T / TC	9.2	–	–	–	–	–	–
<u>MTA-BASE-W184T</u>	\$39.00	184 / TC	10	MTF-00x-1C18	–	–	<u>Z502</u>	–	–
<u>MTA-BASE-W213T</u>	\$57.00	213T / TC	13	–	–	–	–	–	–
<u>MTA-BASE-W215T</u>	\$57.00	215T T TC	15	–	–	–	–	–	–

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