

Crusher Duty

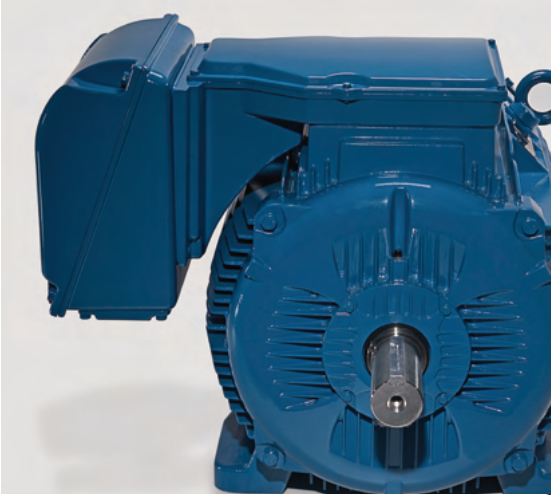
Three Phase Motor

- Rugged
- Energy saving
- Increased productivity
- Extended lifetime
- Lower maintenance



Crusher Duty 3-Phase Motor Efficiency and reliability for industry

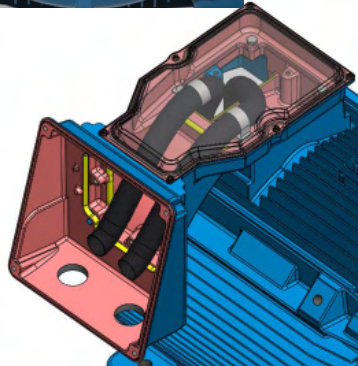
The WEG W22 Crusher Duty motor has been redesigned for even higher performance and energy efficiency, and increased locked rotor and breakdown torques for easier starting and greater overloads. Designed to meet the demanding requirements of the rock crushing industry, the Crusher Duty motor comes standard with 4140 high strength shafts and heavy duty roller bearings. This motor complies or exceeds EISA 2016 regulations. Compliment your WEG Crusher Duty motor with our TPH2 Starter to complete your solution!



Terminal box

Increased internal space making connections more accessible to the user resulting in an easier cable handling and connection.

Terminal box can be mounted on top, left or right side of the motor using the same frame on the 447T and larger motors. Top mounting is optional on smaller frames.



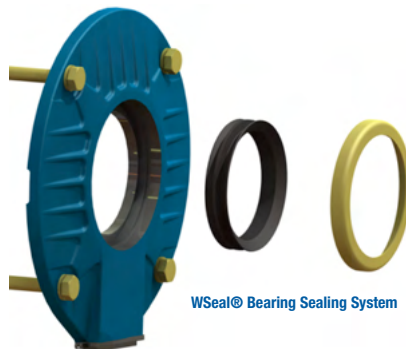
New internal lead sleeving protects leads in high vibration applications.

Oversized Roller Bearings

All WEG Crusher Duty Motors have oversized NU series roller bearings for long life under heavy belt loads.

Exclusive WSeal® bearing sealing system

Extends motor lifetime when operating in aggressive environments by protecting the motor against water and dust guaranteeing proper degree of protection. Frames 586/7 and larger utilize a brass labyrinth Taconite Seal.



Lower total operational costs

A product that can operate most of its designed lifetime consuming the minimum possible energy, with high levels of reliability, generating the maximum value to the user – this is what is behind the W22 design.

Energy saving

Costs of energy correspond to approximately 90% of total operational costs throughout a motors lifetime. Acquisition, installation and maintenance cost are the other 10%. W22 Crusher Duty motors now have the highest efficiencies in the industry guaranteeing energy savings and reduced payback time.



Frame

Motor feet are solid providing a more resistant structure against vibration. The frame design has points that can be used as provisions for vibration sensors as a standard feature.

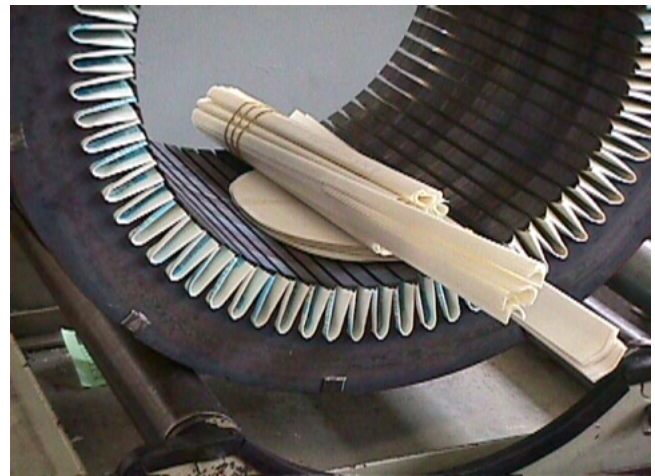
Benefits from the W22 frame design:

- Motor temperature reduction
- Eyebolts repositioned - easier handling in the application.
- Provision for vibration sensors - frame and endshields with provisions 90° displaced according to maintenance technical recommendations. Easier and more reliable vibration analysis.
- Solid feet - Enhanced reliability when operating on high vibration applications and also provide easier alignment on installation.

Built to last

W22 motors are built using high quality FC-200 cast iron from WEG's own foundries, assuring maximum durability and high performance in aggressive conditions. The new fan cover design provides great impact resistance. Additionally the endshields have been designed for a better bearing heat dissipation and structural rigidity. Protected by our WEG coatings high performance paint system capable of passing a 240hr ASTM 117B salt fog chamber test.

Stator core utilizing C4 coated Low loss Silicon Steel



Premium Electrical Steel for improved efficiency, reliability and reparability, C4 coated silicon steel can withstand burnout oven temperature of 500°C (932F) minimum, to insure motors can be rebuilt to original performance.

Inverter Duty applications Exceed NEMA MG1 Part 31

The exclusive WISE insulation system used on the W22 increases winding dielectric resistance, thus allowing VFD operation up to 575V without requiring further modification, resulting in flexibility and extended motor lifetime. Utilizing class H magnet wire and varnish the system exceeds class F requirements. Frame L449T-588/9 include insulated Opposite Drive end bearing hub as standard. Stock Mod option available on smaller frames.

** Voltages above 575 V, please contact our nearest sales office.*



Severe Duty – Three-Phase Motors – Crusher Duty TEFC - NEMA Premium

HP	RPM	NEMA Frame	NEMA Premium/EISA 2016 Compliant	Approx. Weight	FL. Eff	"C" Dim.	List Price
50	900	404/5T	05009ET3EKD404T-W22*	1483	93	39.73	\$17,648
60	900	404/5T	06009ET3EKD405T-W22*	1591	93	39.73	\$20,443
75	900	444/5T	07509ET3GKD444T-W22	2143	93.6	45.157	\$23,334
100	1800	404/5T	10018ET3ERB405T-W22*	1298	95.4	39.73	\$11,689
	1800		10018ET3GRB405T-W22²	1286	95.4	39.73	\$11,689
	1200	444/5T	10012ET3GRB444T-W22	1901	95	45.157	\$15,631
	900	444/5T	10009ET3GKD445T-W22	2566	94.1	45.157	\$26,988
125	1800	444/5T	12518ET3GRB444T-W22	1866	95.4	45.157	\$14,748
	1200	444/5T	12512ET3GRB445T-W22	2038	95	45.157	\$17,947
	900	445/7T	12509ET3GKD447T-W22	2644	94.5	48.701	\$28,175
150	1800	444/5T	15018ET3GRB445T-W22²	1935	95.8	45.157	\$17,420
	1200	445/7T	15012ET3GRB447T-W22	2502	95.8	48.701	\$20,639
	900	445/7T	15009ET3GKD447T-W22	2903	94.5	48.701	\$30,677
200	1800	445/7T	20018ET3GRB447T-W22²	2346	96.2	48.701	\$21,098
	1200	504/5Z	20012ET3GKD505Z-W22^{1,2}	3301	95.8	55.09	\$25,133
	1200	445/7T	20012ET3GRB447T-W22	2722	95.8	48.701	\$25,133
	900	447/9T	20009ET3GKD449T-W22	3628	95	56.338	\$49,899
250	1800	445/7T	25018ET3GKD447T-W22²	2993	96.2	56.338	\$26,716
	1800	504/5Z	25018ET3GKD505Z-W22¹	3242	96.2	55.09	\$26,716
	1200	447/9T	25012ET3GKD449T-W22	3684	95.8	56.338	\$35,555
	1200	586/7Z	25012ET3GKD580Z-W22^{1,2}	4670	95.8	61.902	\$39,631
	900	586/7	25009ET3GKD586/7-W22	5128	95.8	61.902	\$56,168
300	1800	447/9T	30018ET3GKD449T-W22	3600	96.2	56.338	\$31,384
	1800	586/7Z	30018ET3GKD580Z-W22^{1,2}	4348	96.2	61.902	\$39,112
	1200	447/9T	30012ET3GKD449T-W22	4433	95.8	56.338	\$38,437
	1200	586/7Z	30012ET3GKD580Z-W22^{1,2}	4936	95.8	61.902	\$44,301
	1200	586/7	30012ET3GKD586/7-W22	4925	95.8	61.902	\$44,301
	900	586/7	30009ET3GKD586/7-W22	5696	95.8	61.902	\$58,655
350	1800	447/9T	35018ET3GKD449T-W22	3811	96.2	56.338	\$36,517
	1800	586/7Z	35018ET3GKD580Z-W22¹	4567	96.2	61.902	\$41,230
	1200	586/7Z	35012ET3GKD580Z-W22¹	5240	95.8	61.902	\$50,250
	900	586/7	35009ET3GKD586/7-W22	5983	95.8	61.902	\$64,873
400	1800	586/7Z	40018ET3GKD580Z-W22^{1,2}	4799	96.2	61.902	\$45,805
	1200	586/7Z	40012ET3GKD580Z-W22^{1,2}	5533	96.2	61.902	\$58,210
	1200	586/7	40012ET3GKD586/7-W22	5605	96.2	61.902	\$56,201
450	1800	586/7Z	45018ET3GKD580Z-W22¹	5045	96.2	61.902	\$48,053
	1800	586/7	45018ET3GKD586/7-W22	5416	96.2	61.902	\$48,053
	1200	586/7Z	45012ET3GKD580Z-W22¹	5724	96.2	61.902	\$63,251
500	1800	586/7Z	50018ET3GKD580Z-W22¹	5388	96.2	61.902	\$51,611
	1200	586/7Z	50012ET3GKD580Z-W22¹	5894	96.2	61.902	\$65,962

All voltages 460V unless indicated by *

* = 230/460V

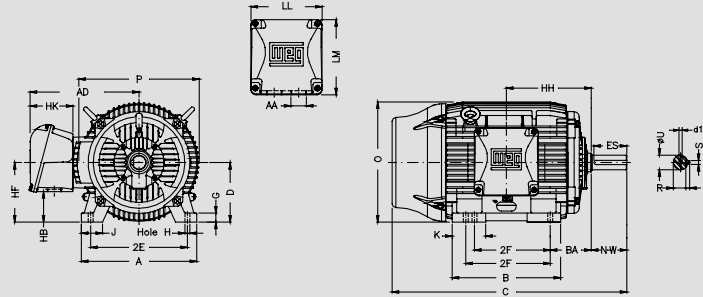
1) Z indicates oversized shaft and bearings

2) Model also available in 575V

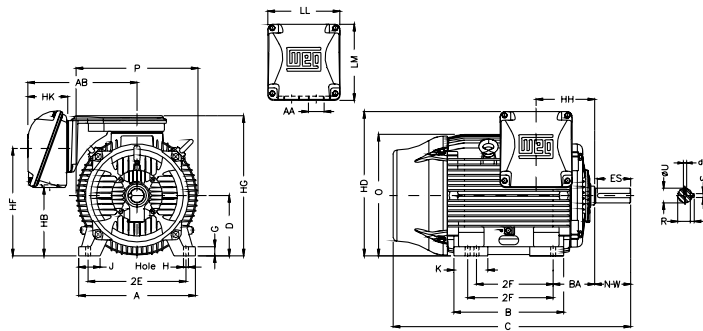


15. Mechanical data

Frames 364 to 444/5T



Frames 445/7T to 586/7T



Frame	Mounting				A	B	C	D	G	J	O	K	P	T	Keyway			Shaft Extension	
	2E	2F	H	BA											S	R	ES	N-W	U
-															-	-	-	-	-
364/5T	14.016	11.260/12.244	0.660	5.875	17.165	16.220	-	9.000	1.480	3.150	17.957	4.921	17.914	-	0.625	2.019	4.330	5.874	2.375
-															-	-	-	-	-
404/5T	15.984	12.244/13.740		6.625	19.921	18.386	39.730	10.000	1.811		19.566	5.669	19.134	-	0.750	2.449	5.512	7.250	2.875
-															-	-	-	-	-
444/5T		14.500/16.500				20.315	-		1.630	3.937					0.875	2.880	7.087	8.500	3.375
445/7TZ							44.950					5.866			1.000	3.312	8.661	11.625	3.875
445/7T		16.500/20.000	0.810		23.897		48.701		1.654		22.795		23.583		0.875	2.880	7.087	8.500	3.375
447/9TZ							56.338					6.692			1.000	3.312	8.661	11.625	3.875
447/9T		20.000/25.000					59.463			4.331					0.875	2.880	7.087	8.500	3.375
L447/9TZ						31.535	60.306		1.630						1.000	3.312	8.661	11.625	3.875
L447/9T		20.000/25.000					57.181			3.937	23.874	8.780			0.875	2.880	7.087	8.500	3.375
504/5TZ							55.09	12.500	2.146	4.724	25.425	7.228	25.866		1.000	3.312	8.661	11.625	3.875
504/5T	20.000	16.000/18.000	1.250	8.500	24.724	24.449	54.095							4.880	0.875	3.134	8.661	10.630	3.625
586/7TZ							61.902	14.500	2.492	5.512	28.985	9.055	28.977	5.590	1.000	3.312	8.661	11.625	4.375
586/7T	23.000	22.000/25.000	1.181	10.000	29.528	29.921	61.902								1.000	3.312	8.661	11.625	3.875

Frame	Terminal Box									d1	Bearings					
	AB	HB	HF	HG	HH	HK	LL	LM	AA		D.E.	N.D.E.				
-																
364/5T	16.378	4.055			12.362	6.378	9.646	10.119	NPT 3"	UNC 3/4"-10	NU314 C3	6314 C3				
-		5.040	-	-	14.213						NU316 C3					
404/5T																
-	18.386	5.394			15.748	5.787	11.811	11.890			-					
444/5T									2xNPT 3"		UNC 3/4"-10	NU319 C3	6316 C3			
445/7TZ											NU322 C3	6314 C3				
445/7T											NU319 C3	6316 C3				
447/9TZ	20.670	12.598	20.724	26.850	11.803	6.968	14.646	15.040			NU322 C3	6314 C3				
447/9T											NU322 C3	6319 C3				
L447/9TZ											NU322 C3	6314 C3				
L447/9T	23.071	11.417	20.551	28.236	11.500	8.464	15.906	17.244		NU322 C3	6319 C3					
504/5TZ										NU322 C3	6314 C3					
504/5T	20.670	15.275	24.291	29.409	10.394	6.968	14.646	15.040		NU319 C3	6316 C3					
586/7TZ										UNC 7/8"-9	NU324 C3	6314 C3				
586/7T	23.977	17.322	26.182	33.346	13.386	8.464	15.906	17.244	NU322 C3		6319 C3					

Crusher Duty® Soft Starters TPH2 Series



The WEG TPH2 Series of Crusher Duty® soft starters are designed to conquer the most demanding AC motor starting applications. While surpassing the highest starting torque requirements, the protective NEMA 4/12 enclosure makes the TPH2 Crusher Duty® soft starters ideal for the harsh industrial environments, even in wash down locations. Including as standard an AC3 full HP rated bypass contactor and motor overload relay, emergency direct-on-line starting is available at the flip of a switch while still providing full motor protection. Power lugs make motor connections safe and easy. The WEG TPH2 starters are built to complement the ruggedness and reliability of WEG motors, providing a complete and cost effective AC motor starting and protection solution.

Standard Features

- Rated 500% for Crusher Duty® applications.
- NEMA 4/12 WEG Blue enclosure. Suitable for dusty, wet or outdoor applications.
- Narrow design requires less space. Legs eliminate difficult wall mounting.
- Protective barriers over 460V and 120V terminals.
- Circuit breaker with door mounted operator provides built-in short circuit protection and power disconnect.
- Full HP rated bypass contactor (AC3) with thermal overload relay and emergency start switch inside the enclosure (Softstart-Off-Across the Line) can be used in the event of Soft starter failure.
- Full soft starter protection during both start and bypass provides full protection from over/under current, supply and motor phase fault, phase unbalance, overtemp and over current.
- Keypad and full sized operator controls on cover with steel frame NEMA-4 window and cover over keypad. All parameter changes are through the cover-mounted keypad. Dust and water stay out of the enclosure. Monitoring of current, voltage, kVA and kW can be done from the outside.
- Terminations for remote start-stop furnished - no need to trace control circuit for additional power lines.
- 250VA 120V service receptacle - Power up meters, lights, and small tools without additional power lines.
- Modular multiple subpanel design. Ease of field modification or component replacement.

Crusher Duty® Soft Starters

TPH2 - NEMA 4/12 Enclosure

Motor Volts	Motor HP	Starter AMPS	Catalog Number	Application Dimensions (in.) H x W x D	App. Shpg. Wt. (lbs.)	List Price
460V	INPUT POWER SUPPLY: THREE PHASE					
	100	130	TPH2100KD0000	54 x 36 x 18	442	\$14,605
	150	205	TPH2150KD0000	54 x 36 x 18	470	\$17,014
	200	255	TPH2200KD0000	66 x 36 x 18	608	\$20,938
	250	312	TPH2250KD0000	66 x 36 x 18	628	\$22,300
	300	365	TPH2300KD0000	78 x 36 x 18	770	\$27,946
	350	412	TPH2350KD0000	78 x 36 x 18	855	\$30,293
	400	480	TPH2400KD0000	78 x 36 x 18	855	\$34,357
	500	604	TPH2500KD0000	78 x 36 x 18	875	\$43,756

** Includes 6" Legs

Note: 1) For other technical data please refer to WEG product manual.
2) Contact WEG for 230V, 380V, 575V and any other non-standard voltage





WEG Electric Corp. offers the following products, and more! With a full range of IEC/NEMA Global Certifications and a full line of products, WEG can supply the right solution for your needs anywhere in the world. To learn more about WEG's products and solutions or to locate a Distributor near you, please call **1-800-ASK-4WEG** or visit **www.weg.net/us**.

**Low Voltage Motors,
Single and 3-Phase, 1/8 – 700HP**

- General Purpose Motors
- Explosion Proof Motors
- Crusher Duty Motors
- IEC Tru-Metric Motors
- Pump Motors including JP/JM
- P-Base Pump Motors
- Oil Well Pumping Motors
- Pool & Spa Motors
- Brake Motors
- Compressor Duty Motors
- Farm Duty Motors
- Poultry Fan Motors
- Auger Drive Motors
- IEEE 841 Motors
- Stainless Steel Wash Down Motors
- Saw Arbor Motors
- Cooling Tower Motors
- Commercial HVAC Motors
- Pad Mounted Motors
- Vector Duty Motors

Large Electric Motors

- Low Voltage 3-phase motors up to 2,500HP
- Motors up to 70,000HP and 13,200V
- Wound Rotor Systems (including starters) up to 70,000HP and 13,200V
- Synchronous Motors up to 70,000HP and 13,200V
- Explosion proof motors (Ex-d) up to 1,500kW and 11kV
- Ex-n, Ex-e, Ex-p motors

Variable Frequency Drives

- Low Voltage 1/4 to 2500HP, 230V – 480V
- Medium Voltage 500-8000HP
- Multi-pump systems
- NEMA 4X
- Dynamic braking resistors
- Line and load reactors
- Plug and play technology
- Network communications: Profibus-DP, DeviceNet, Modbus-RTU
- PLC functions integrated
- Complete line of options and accessories

Soft Starters

- 3-1500HP
- Oriented start-up
- Built-in bypass contactor
- Universal source voltage (230-575V, 50/60Hz)
- Network communications: Profibus-DP, DeviceNet, Modbus-RTU
- Complete Line of options and accessories
- MV Soft-starter 3.3kV, 4.16kV: up to 3500HP, Withdrawable Power Stacks, & 8x PT100 Temperature monitoring

Controls

- Mini – Contactors
- IEC Contactors
- Thermal Overload Relays
- Manual Motor Protectors
- Molded Case Circuit Breakers
- Smart Relays
- Enclosed Starters: combination & non-combination,
- Pushbuttons & Pilot Lights
- Timing & Motor Protection Relays
- Terminal Blocks

Custom Panels

- Custom configured to your specification.
- NEMA 1, 12, 3R, 4 and 4X cabinets
- Quick delivery of preconfigured drives and soft starters
- UL 508 certified
- Low Voltage (230-460)
- Made in the U.S.A.

Generators

- Brushless Synchronous Generators for diesel gen-sets up to 4,200kVA
- Hydro-generators up to 25,000kVA
- Turbo-generators up to 62,500kVA

Power Transformers

- Built and engineered in North America
- Voltages < 500kV
- Ratings 5-300MVA
- Station class, oil filled, round core, copper windings
- Special configurations and designs available!
- Ask your WEG Sales Representative for details.
- Designed, built, and engineered to ANSI standards.

Custom Solution Package Sales

- WEG can package any of its products for ease of sale! Enjoy a single point of contact for the entire package of products and assistance from quote through after-sales support. Ask your WEG Sales Representative for details.



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