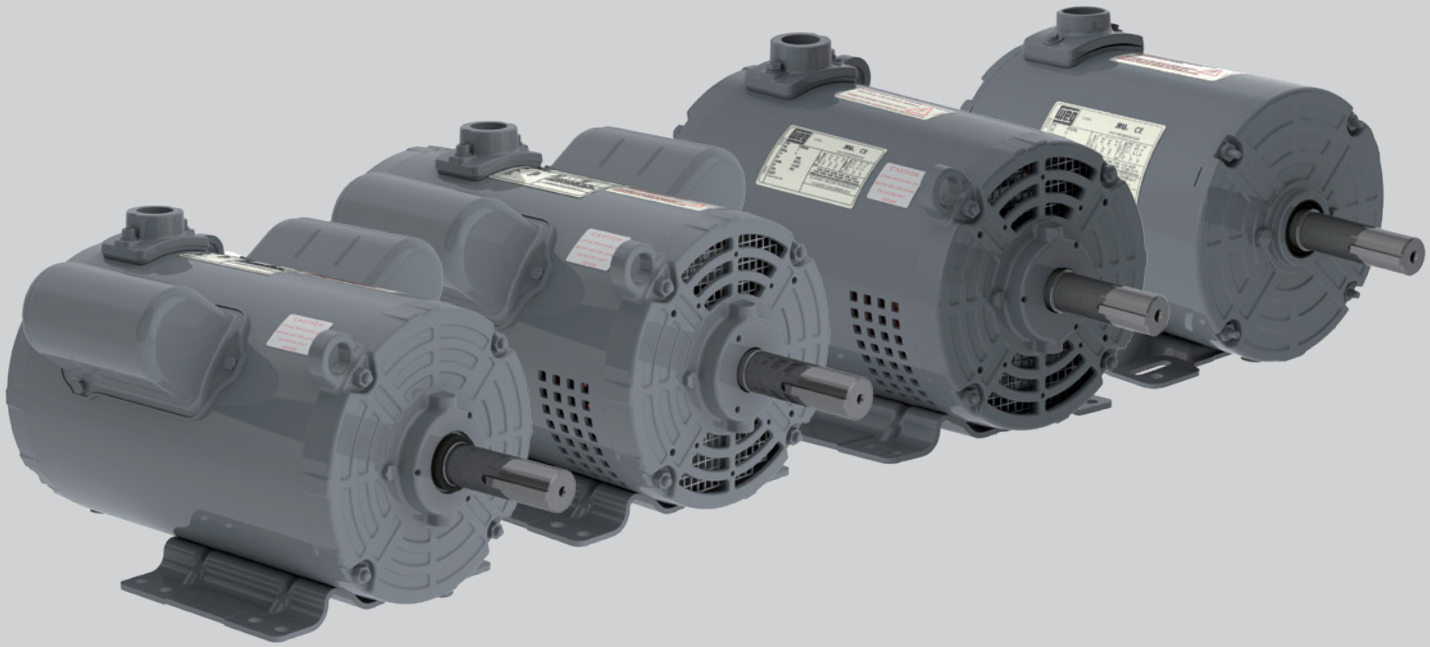
W01 Grain Dryer

Three and Single-phase Electric Motors



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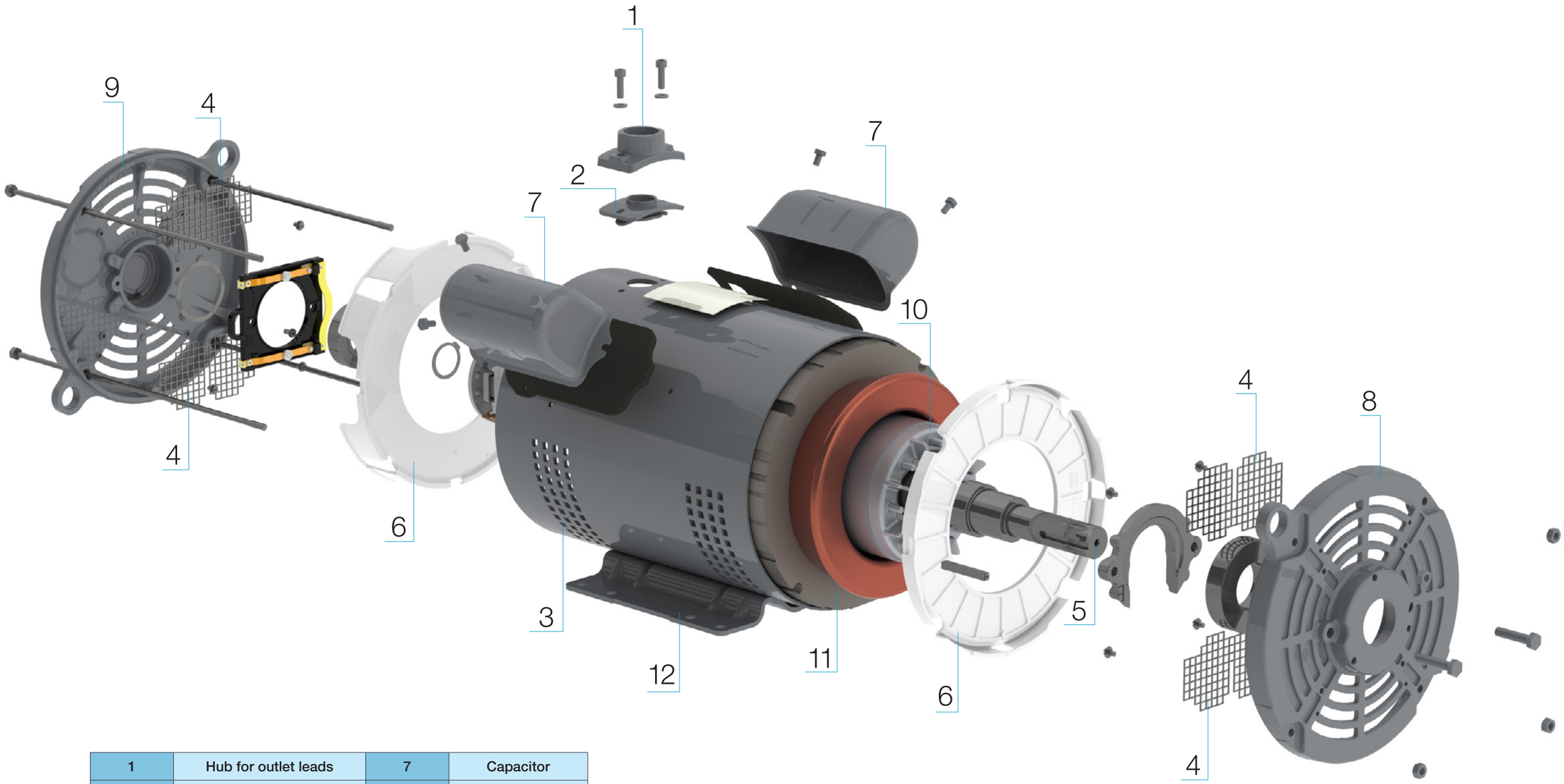
Motor Details



1	Hub for outlet leads	7	Capacitor
2	hub gasket for outlet leads	8	D-Endshield
3	Shell with small slots	9	ND-Endshield
4	Safe screen for end bells	10	Rotor
5	Shaft	11	Wound stator
6	Internal baffles	12	Foot

W01 Grain Dryer Motors

The Grain Dryer motor line was developed on the W01 platform. It helps to keep the crop with the right temperature, moisture and helps on cleaning, all this together increases the storage period.

The line was developed for air over direct coupling crop dryer axial fans, on TEAO and ODPAO enclosures and thought for environments full of dust and grain powder.

The line W01 is produced in steel plate as standard with all the necessary features to work under farm conditions, being safe and reliable for this job.

Due to end shields that include safety screens and shells with small slots, the WEG Grain Dryer motor keeps small animals, like snakes, rodents, or even trash around of the motor away from the inside.

WEG SAFE AND RELIABLE FOR YOUR PROCESS

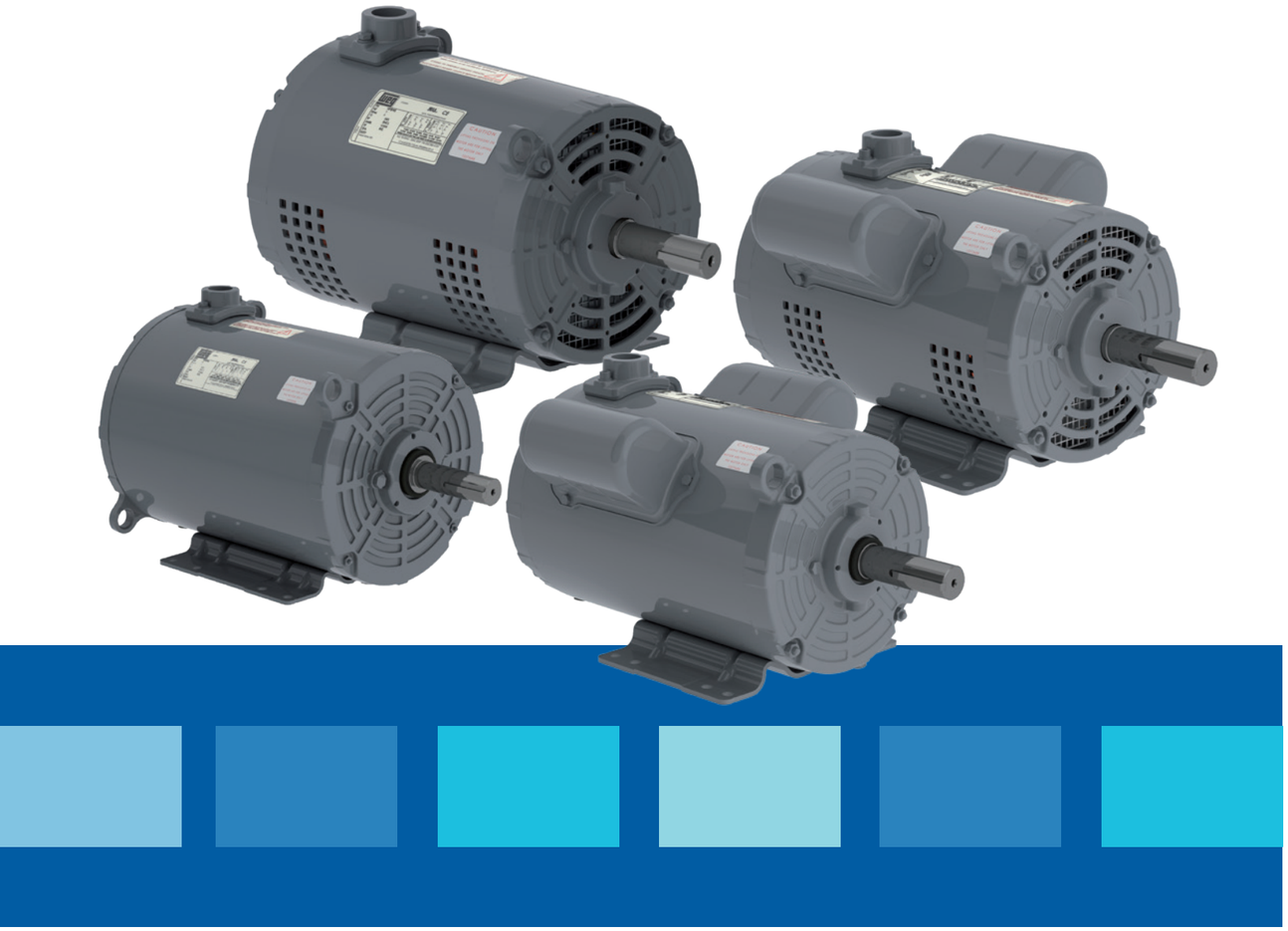
Features

Three-phase Motors

- Rated output: 1.5 - 3 HP to 10 - 15 HP
- Number of poles: 2
- Frame sizes 143/5T up to 213/5T
- Voltage: 208 - 230/460 V
- Frequency: 60 Hz
- Degree of protection: IP55 or IP21
- Painting plan: 207N
- Frame material: Rolled Steel
- Mounting: F-3
- Cooling method: TEAO or ODPAO
- Color: Gray (RAL 7031)
- Insulation class: F
- Service factor: 1.00
- Thermally protected: thermostat
- Cable gland

Single-phase Motors

- Rated output: 1.5 - 3 HP to 10 - 15 HP
- Number of poles: 2
- Frame sizes 143/5T up to 213/5T
- Voltage: 230 V
- Frequency: 60 Hz
- Degree of protection: IP55 or IP21
- Painting plan: 207N
- Frame material: Rolled Steel
- Mounting: F-3
- Cooling method: TEAO or ODPAO
- Color: Gray (RAL 7031)
- Insulation class: F
- Service factor: 1.00
- Thermally protected: thermostat



Airspeed

The airspeed on the Grain Dryer W01 frame (ODPAO and TEAO) meets with the power output motors according with the Table 1 and considering the minimum distance to the wall.

HP	Speed (m/s)
1.5	12.4
2	13.0
3	17.9
4.5	18.4
5	20.3
7.5	23.1
10	28.3
12	21.8
14 or 15	21.0

Table 1 - Airspeed on Grain Dryer frame

Identification Sticker

The nameplate supplies information determining motor construction and performance characteristics. The line name is given on the first line of the nameplate together with nominal efficiency levels as required by NEMA MG1. The stickers layout for the variant lines will be generated as Figure 3 and Figure 4:

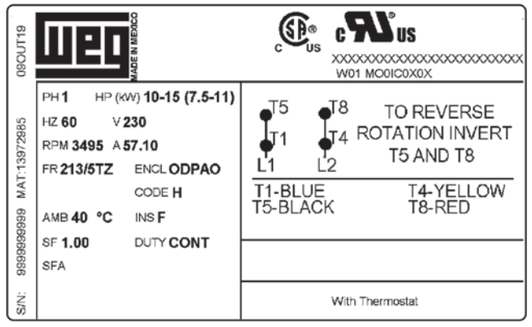


Figure 3 - Sticker layout for ODPAO Single-phase Grain Dryer motors

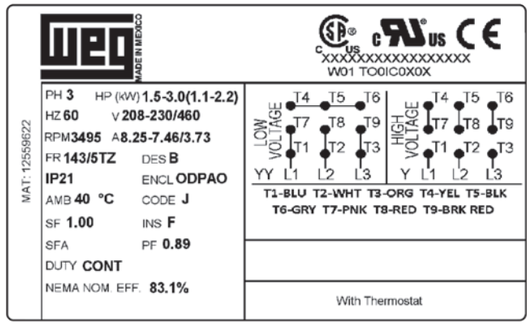


Figure 3 - Sticker layout for ODPAO Three-phase Grain Dryer motors

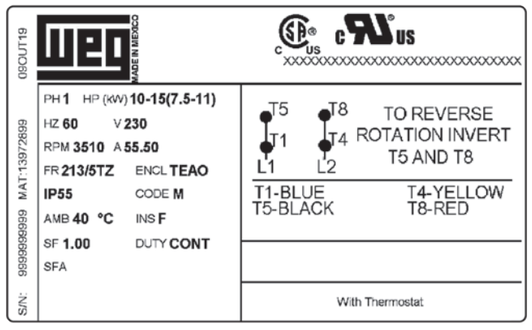


Figure 4 - Sticker layout for TEAO Single-phase Grain Dryer motors

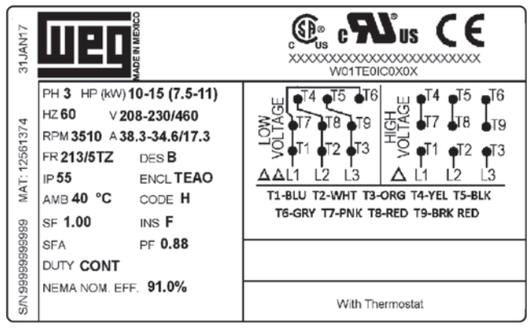


Figure 4 - Sticker layout for TEAO Three-phase Grain Dryer motors

Performance Data

TEAO - Grain Dryer – High Efficiency – Single Phase

Output HP	Output KW	Frame	Full Load Torque (ft.lb)	Locked Rotor Current Code	Locked Rotor Current II/In	Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (sq.ft.lb)	Allowable locked rotor time (s)	Weight (lb)	Sound dB(A)	Service Factor	230 V Rated speed (rpm)	% of full load Efficiency 50	Efficiency 75	Efficiency 100	Power Factor 50	Power Factor 75	Power Factor 100	Full load current In (A)	C (in)	FC (in)	Bearings DE	Bearings NDE
II Poles																								
1.5	1.1	143/5	2.17	R	12.2	5.1	2.5	0.0664	9	41.1	68	1.00	3550	57.6	67.1	73.2	0.72	0.80	0.87	7.51	13.555	8.267	6205	6203
3	2.2	143/5	4.48	H	7.4	2.5	2.5	0.0664	6	57.6	68	1.00	3476	72.2	78.5	80.6	0.87	0.94	0.96	12.4	19.720	10.236	6205	6203
3	2.2	143/5	4.41	M	11.6	2.5	4.2	0.1020	7	57.6	68	1.00	3535	71.6	78.9	82.4	0.93	0.96	0.98	11.8	19.720	10.236	6205	6203
4.5	3.3	143/5	6.73	H	7.7	1.6	2.4	0.1020	4	57.6	68	1.00	3475	78.3	82.5	83.2	0.97	0.98	0.99	17.4	19.720	10.236	6205	6203
5	3.7	182/4	7.31	M	11.3	3.0	4.1	0.2088	7	71.1	72	1.00	3547	73.4	79.9	82.9	0.95	0.97	0.98	19.8	17.070	10.236	6206	6205
7.5	5.5	182/4	11.07	H	7.7	2.0	2.6	0.2088	5	99.4	72	1.00	3508	79.3	83.2	83.9	0.97	0.98	0.98	29.1	17.858	11.023	6206	6205
7.5	5.5	182/4	10.99	J	8.9	2.1	3.45	0.2420	9	99.4	72	1.00	3530	82.1	86.3	87.8	1.00	1.00	1.00	27.2	17.858	11.023	6206	6205
10	7.5	182/4	14.83	F	6.5	1.5	2.45	0.2420	6	99.4	72	1.00	3490	85.2	87.5	87.2	1.00	1.00	0.99	37.8	17.858	11.023	6206	6205
10	7.5	213/5	14.61	M	11.8	2.1	4.4	0.8045	8	174.8	75	1.00	3550	82.2	86.4	88.0	0.97	0.98	0.98	37.8	19.720	12.992	6208	6206
15	11	213/5	22.13	H	7.9	1.4	2.87	0.8045	6	174.8	75	1.00	3510	86.0	88.0	88.0	0.98	0.98	0.98	55.5	19.720	12.992	6208	6206
Optional																								
3	2.2	182/4	4.51	K	9.5	2.9	3.4	0.1661	9	63.9	72	1.00	3445	70.0	77.0	80.5	0.95	0.97	0.98	12.1	15.889	9.055	6206	6205
4.5	3.3	182/4	6.66	G	6.5	1.9	2.1	0.1661	11	63.9	72	1.00	3500	77.5	82.0	83.0	0.97	0.98	0.99	17.5	15.889	9.055	6206	6205

ODPAO - Grain Dryer – High Efficiency – Single Phase

Output HP	Output KW	Frame	Full Load Torque (ft.lb)	Locked Rotor Current Code	Locked Rotor Current II/In	Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (sq.ft.lb)	Allowable locked rotor time (s)	Weight (lb)	Sound dB(A)	Service Factor	230 V Rated speed (rpm)	% of full load Efficiency 50	Efficiency 75	Efficiency 100	Power Factor 50	Power Factor 75	Power Factor 100	Full load current In (A)	C (in)	FC (in)	Bearings DE	Bearings NDE
II Poles																								
1.5	1.1	143/5	2.19	P	12.2	3.5	6.4	0.0712	9	42.7	68	1.00	3545	58.2	67.7	73.4	0.79	0.85	0.90	7.24	13.5	8.661	6205	6203
3	2.2	143/5	4.46	H	7.2	1.7	2.5	0.0712	8	42.7	68	1.00	3480	73.2	78.9	80.7	0.90	0.95	0.97	12.2	13.5	8.661	6205	6203
3	2.2	143/5	4.41	L	10.5	4.3	3.6	0.0949	6	49.6	68	1.00	3520	65.4	74.3	78.8	0.99	1.00	1.00	12.1	14.287	9.448	6205	6203
4.5	3.3	143/5	6.74	H	7.1	2.7	2.6	0.0949	5	49.6	68	1.00	3460	74.5	80.2	81.7	1.00	1.00	1.00	17.6	14.287	9.448	6205	6203
5	3.7	182/4	7.35	K	9.6	3.1	3.4	0.1661	6	74.1	72	1.00	3525	70.8	78.1	81.4	0.98	0.99	0.99	20.0	17.07	10.236	6206	6205
7.5	5.5	182/4	11.18	G	6.5	2.1	2.2	0.1661	5	74.1	72	1.00	3475	77.7	82.1	82.8	0.99	0.99	0.99	29.2	17.07	10.236	6206	6205
7.5	5.5	182/4	11.07	H	7.9	2.4	2.9	0.2136	6	90.4	72	1.00	3510	79.4	84.0	85.4	0.99	0.99	0.99	28.3	17.858	11.023	6206	6205
10	7.5	182/4	14.97	F	5.7	1.8	2.0	0.2136	4	90.4	72	1.00	3460	82.8	84.9	83.8	0.99	0.99	0.99	39.3	17.858	11.023	6206	6205
10	7.5	213/5	14.63	L	11.0	2.3	4.3	0.5933	7	143.8	75	1.00	3540	82.6	86.5	87.9	0.89	0.93	0.95	39.0	19.330	12.598	6208	6206
15	11	213/5	22.23	H	7.6	1.5	2.8	0.5933	5	143.8	75	1.00	3495	86.0	87.6	87.2	0.93	0.96	0.96	57.1	19.330	12.598	6208	6206
Optional																								
3	2.2	182/4	4.41	K	9.5	3.6	3.4	0.1424	9	61.2	72	1.00	3525	69.8	77.4	80.9	1.00	1.00	1.00	11.8	16.283	9.448	6206	6205
4.5	3.3	182/4	6.70	G	6.3	2.3	2.2	0.1424	11	61.2	72	1.00	3480	77.7	82.1	83.0	1.00	1.00	0.99	17.5	16.283	9.448	6206	6205
7.5	5.5	213/5	11.00	J	8.6	2.2	3.1	0.4746	6	118.8	75	1.00	3530	80.4	84.9	86.3	1.00	1.00	1.00	27.7	18.149	11.417	6208	6206
10	7.5	213/5	14.86	F	6.2	1.6	2.1	0.4746	4	118.8	75	1.00	3485	83.5	85.6	84.8	1.00	1.00	0.99	38.8	18.149	11.417	6208	6206

TEAO - Grain Dryer - High Efficiency - Three Phase

Output HP	Output kW	Frame	Full Load Torque (ft.lb)	Locked Rotor Current Code	Locked Rotor Current II/In	Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s) Hot	Allowable locked rotor time (s) Cold	Weight (lb)	Service Factor	460 V 1) Rated speed (rpm)	% of full load Efficiency 50	Efficiency 75	Efficiency 100	Power Factor 50	Power Factor 75	Power Factor 100	Full load current In (A)	C (in)	FC (in)	Bearings DE	Bearings NDE
II pole																								
1.5	1.1	143/5T	2.19	R	11.5	4.5	6.2	0.1092	15	33	35.9	1.00	3550	69.5	76.3	79.7	0.51	0.63	0.72	2.41	12.401	7.874	6205 ZZ	6203 ZZ
3	2.2	143/5T	4.47	J	7.2	2.2	2.9	0.1092	10	22	35.9	1.00	3480	79.3	81.7	81.7	0.73	0.84	0.89	3.80	12.401	7.874	6205 ZZ	6203 ZZ
3	2.22	143/5T	4.41	N	11.0	4.1	5.1	0.1478	8	18	43.6	1.00	3525	77.7	82.1	83.8	0.63	0.76	0.83	4.01	13.582	9.055	6205 ZZ	6203 ZZ
4.5	3.3	143/5T	6.69	J	8.0	2.7	3.3	0.1478	7	15	43.6	1.00	3485	82.1	84.1	83.9	0.76	0.86	0.90	5.49	13.582	9.055	6205 ZZ	6203 ZZ
5	3.7	182/4T	7.33	N	11.2	3.9	5.2	0.1913	10	22	71.0	1.00	3535	83.6	86.7	87.8	0.61	0.74	0.82	6.45	16.338	9.449	6206 ZZ	6205 ZZ
7.5	5.5	182/4T	11.1	J	8.1	2.6	3.5	0.1913	10	22	71.0	1.00	3495	86.7	87.9	87.5	0.74	0.84	0.89	8.86	16.338	9.449	6206 ZZ	6205 ZZ
7.5	5.5	182/4T	11.0	L	9.5	3.2	4.4	0.2174	10	22	88.8	1.00	3520	88.4	89.8	89.8	0.67	0.79	0.85	9.04	17.913	10.236	6206 ZZ	6205 ZZ
10	7.5	182/4T	14.9	H	7.3	2.3	3.2	0.2174	9	20	88.8	1.00	3480	89.3	89.4	88.3	0.76	0.86	0.90	11.8	17.913	10.236	6206 ZZ	6205 ZZ
10	7.5	213/5T	14.6	H	7.3	3.5	4.6	0.6787	7	15	128	1.00	3550	90.9	92.3	92.5	0.63	0.76	0.82	12.2	17.913	11.023	6208 ZZ	6206 ZZ
15	11	213/5T	22.1	H	7.0	2.3	2.9	0.6787	7	15	128	1.00	3510	91.8	91.8	91.0	0.76	0.85	0.88	17.3	17.913	11.023	6208 ZZ	6206 ZZ

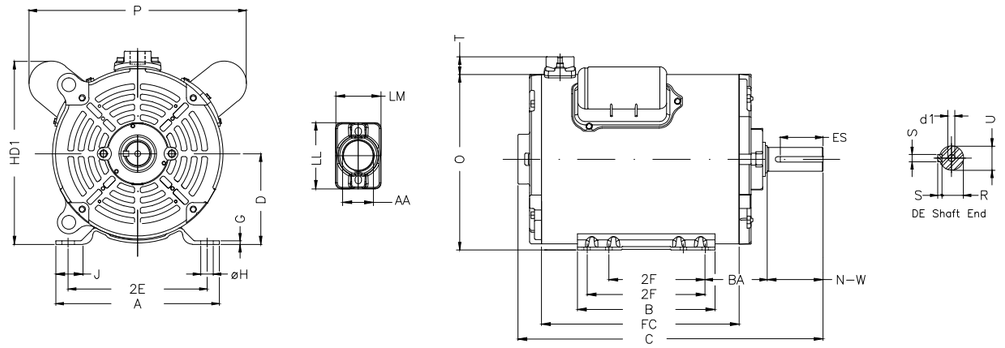
ODPAO - Grain Dryer - High Efficiency - Three Phase

Output HP	Output kW	Frame	Full Load Torque (ft.lb)	Locked Rotor Current Code	Locked Rotor Current II/In	Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s) Hot	Allowable locked rotor time (s) Cold	Weight (lb)	Service Factor	460 V 1) Rated speed (rpm)	% of full load Efficiency 50	Efficiency 75	Efficiency 100	Power Factor 50	Power Factor 75	Power Factor 100	Full load current In (A)	C (in)	FC (in)	Bearings DE	Bearings NDE
II pole																								
1.5	1.1	143/5T	2.19	R	11.3	4.3	6.2	0.1092	13	29	40.0	1.00	3550	71.1	77.5	80.7	0.50	0.63	0.72	2.38	12.401	7.874	6205 ZZ	6203 ZZ
3	2.2	143/5T	4.45	J	7.2	2.1	3.1	0.1092	10	22	40.0	1.00	3495	80.7	83.1	83.1	0.72	0.83	0.89	3.73	12.401	7.874	6205 ZZ	6203 ZZ
3	2.2	143/5T	4.40	L	9.5	3.1	4.4	0.1478	10	22	40.6	1.00	3530	79.0	82.9	84.2	0.64	0.77	0.84	3.90	13.188	8.661	6205 ZZ	6203 ZZ
4.5	3.3	143/5T	6.70	H	6.8	2.1	2.8	0.1478	8	18	40.6	1.00	3480	82.7	84.0	83.2	0.77	0.87	0.91	5.47	13.188	8.661	6205 ZZ	6203 ZZ
5	3.7	182/4T	7.32	K	9.0	2.3	4.0	0.1913	15	33	61.2	1.00	3540	85.2	87.6	88.2	0.67	0.79	0.85	6.19	15.551	8.661	6206 ZZ	6205 ZZ
7.5	5.5	182/4T	11.1	G	6.2	1.5	2.5	0.1913	10	22	61.2	1.00	3490	87.1	87.4	86.2	0.79	0.87	0.91	8.80	15.551	8.661	6206 ZZ	6205 ZZ
7.5	5.5	182/4T	11.0	K	9.2	2.6	4.0	0.2174	10	22	71.4	1.00	3530	85.7	87.8	88.1	0.68	0.80	0.86	9.11	16.338	9.449	6206 ZZ	6205 ZZ
10	7.5	182/4T	14.8	H	7.1	1.9	3.0	0.2174	9	20	71.4	1.00	3500	87.4	88.1	87.3	0.76	0.86	0.90	12.0	16.338	9.449	6206 ZZ	6205 ZZ
10	7.5	213/5T	14.6	J	7.7	2.2	3.3	0.6787	10	22	90.4	1.00	3545	85.7	87.8	88.1	0.68	0.80	0.86	12.4	17.519	10.630	6208 ZZ	6206 ZZ
15	11	213/5T	22.1	E	5.3	1.5	2.2	0.6787	8	18	90.4	1.00	3515	87.8	87.9	86.6	0.80	0.88	0.91	17.5	17.519	10.630	6208 ZZ	6206 ZZ

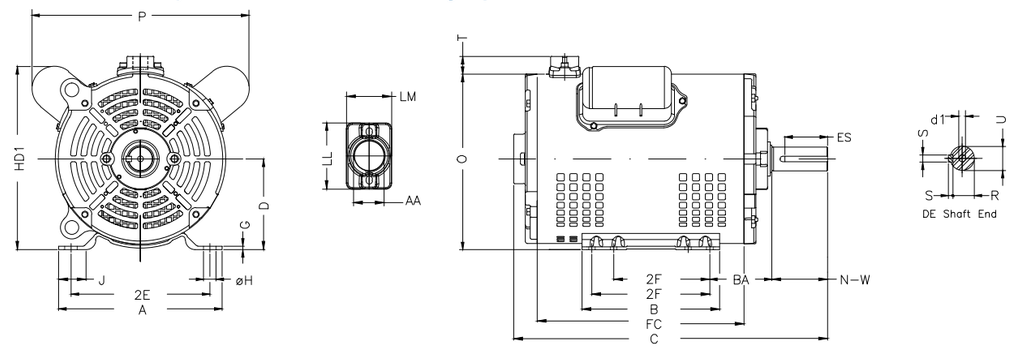
1) To obtain nominal current (In) in 230 V, just multiply the current value by 2 .

Mechanical Data

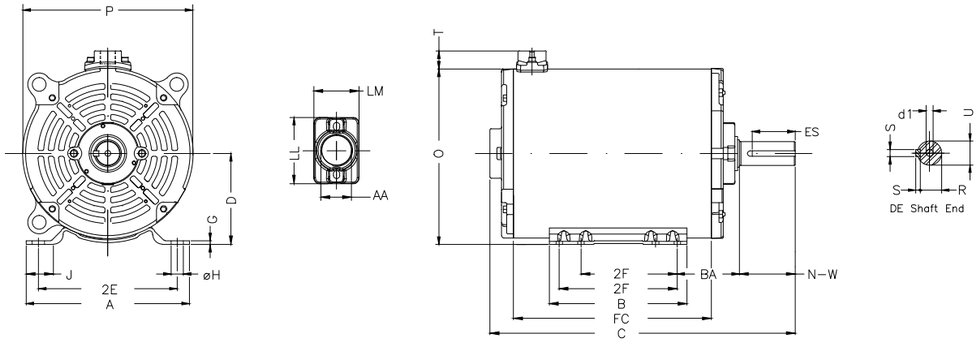
TEAO - Grain Dryer – Frames 143 to 213 - Single-phase



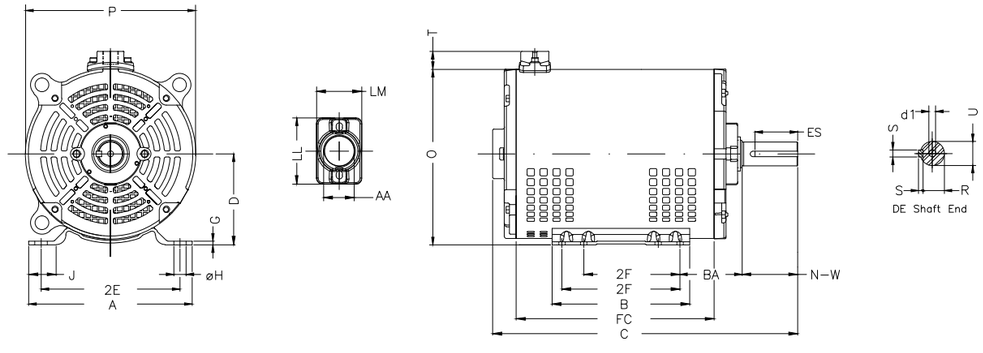
ODPAO - Grain Dryer – Frames 143 to 213 - Single-phase



TEAO - Grain Dryer - Frame 143 to 213 - Three-phase



ODPAO - Grain Dryer - Frame 143 to 213 - Three-phase



TEAO - Grain Dryer – Frames 143 to 213 - Single-phase

Frame	2E	J	A	P	2F	B	BA	Shaft End					
								U	d1	N-W	ES	R	S
143/5T	5.500	1.732	6.535	10.665	4.000/5.000	6.496	2.250	0.875	EUNC 1/4" - 20	3.000	1.417	0.771	0.187
182/4T	7.500	1.299	8.661	11.706	4.500/5.500	6.299	2.750	1.125	EUNC 1/4" - 20	3.500	1.969	0.984	0.250
213/5T	8.500	1.575	9.449	13.291	5.500/7.000	7.953	3.500	1.375	EUNC 1/4" - 20	3.750	1.969	0.984	0.250

Frame	D	G	O	Hole H	HD1	LL	LM	AA	T
143/5T	3.500	0.120	6.724	0.343	7.228	2.699	1.890	NPT 3/4"	0.883
182/4T	4.500	0.167	8.557	0.406	8.976	2.699	1.890		0.883
213/5T	5.250	0.167	10.144	0.406	10.236	2.699	1.890	NPT 1"	0.883

ODPAO - Grain Dryer – Frames 143 to 213 - Single-phase

Frame	2E	J	A	P	2F	B	BA	Shaft End					
								U	d1	N-W	ES	R	S
143/5T	5.500	1.732	6.535	8.877	4.000/5.000	6.496	2.250	0.875	EUNC 1/4" - 20	3.000	1.417	0.771	0.187
182/4T	7.500	1.299	8.661	11.706	4.500/5.500	6.299	2.750	1.125	EUNC 1/4" - 20	3.500	1.969	0.984	0.250
213/5T	8.500	1.575	9.449	13.074	5.500/7.000	7.953	3.500	1.375	EUNC 1/4" - 20	3.750	1.969	0.984	0.250

Frame	D	G	O	Hole H	HD1	LL	LM	AA	T
143/5T	3.500	0.120	6.724	0.343	6.897	2.699	1.890	NPT 3/4"	0.883
182/4T	4.500	0.167	8.557	0.406	8.976	2.699	1.890		0.883
213/5T	5.250	0.167	10.144	0.406	10.196	2.699	1.890	NPT 1"	0.883

TEAO - Grain Dryer - Frame 143 to 213 - Three-phase

Frame	2E	J	A	P	2F	B	BA	Shaft end					
								U	d1	N-W	ES	R	S
143/5T	5.500	1.732	6.535	6.456	4.000/5.000	6.496	2.250	0.875	EUNC 1/4"-20	3.000	1.417	0.771	0.187
182/4T	7.500	1.299	8.661	8.114	4.500/5.500	6.299	2.750	1.125	EUNC 1/4"-20	3.500	1.969	0.984	0.250
213/5T	8.500	1.575	9.449	9.846	5.500/7.000	7.953	3.500	1.125	EUNC 1/4"-20	3.750	1.969	0.984	0.250

Frame	D	G	O	Hole H	LL	LM	AA	T
143/5T	3.500	0.120	6.724	0.343	2.669	1.890	NPT 3/4"	0,883
182/4T	4.500	0.167	8.557	0.406	2.699	1.890	NPT 3/4"	0,883
213/5T	5.250	0.167	10.144	0.406	2.699	1.890	NPT 1"	0,883

ODPAO - Grain Dryer - Frame 143 to 213 - Three-phase

Frame	2E	J	A	P	2F	B	BA	Shaft end					
								U	d1	N-W	ES	R	S
143/5T	5.500	1.732	6.535	6.456	4.000/5.000	6.496	2.250	0.875	EUNC 1/4"-20	3.000	1.417	0.771	0.187
182/4T	7.500	1.299	8.661	8.114	4.500/5.500	6.299	2.750	1.125	EUNC 1/4"-20	3.500	1.969	0.984	0.250
213/5T	8.500	1.575	9.449	9.846	5.500/7.000	7.953	3.500	1.125	EUNC 1/4"-20	3.750	1.969	0.984	0.250

Frame	D	G	O	Hole H	LL	LM	AA	T
143/5T	3.500	0.120	6.724	0.343	2.669	1.890	NPT 3/4"	0,883
182/4T	4.500	0.167	8.557	0.406	2.699	1.890	NPT 3/4"	0,883
213/5T	5.250	0.167	10.144	0.406	2.699	1.890	NPT 1"	0,883

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