

NEMA PREMIUM EFFICIENCY
HPET™ - HIGH PULSE ENDURANCE WIRE
FOR VFD APPLICATION



EPACT

Advantage Plus



MOTOR PRODUCTS

TECO  **Westinghouse**

MOTORS (CANADA) INC.

The Legacy Continues ...

All TECO-Westinghouse motors now feature **Mobil POLYREX® EM** polyurea grease.

Mobil's POLYREX® EM grease is specially formulated to protect against bearing failure - the #1 reason for motor failure.



Mobil POLYREX® EM grease provides the following features:

- Excellent shear stability; especially in roller bearing applications
- Specially formulated to resist washout and corrosion
- High temperature lubrication life
- Compatible with a number of Esso and ExxonMobil lithium greases (contact your local TWMI representative for additional info)

POLYREX® EM HAS OUTSTANDING HIGH-TEMPERATURE LUBRICATION LIFE

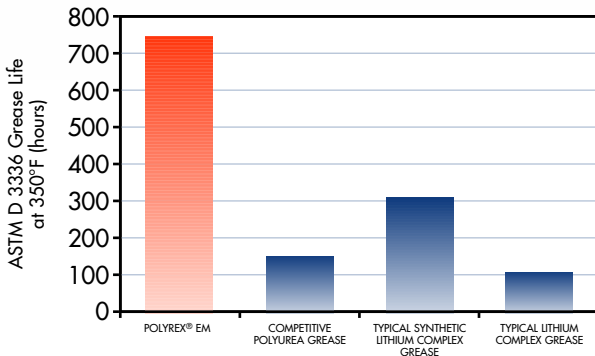


Fig. 1[©]

In the severe ASTM D 3336 High-Temperature Grease Life Test, POLYREX® EM dramatically outperformed a competitive polyurea grease and conventional lithium-complex greases.

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POLYREX® EM HAS OUTSTANDING HIGH-TEMPERATURE LUBRICATION LIFE

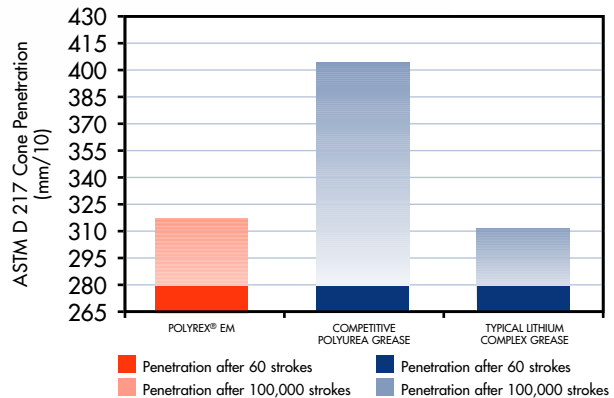


Fig. 2[©]

As illustrated here, POLYREX® EM delivers excellent lubrication life without compromising mechanical shear stability. Competitive polyurea greases can soften by three NLGI grades in the ASTM D 217 100,000-stroke cone penetration test. Under the same conditions, POLYREX® EM, formulated with proprietary shear-stable thickener technology, softens by less than one NLGI grade.

HPE™ WIRE OFFERS EXCEPTIONAL PERFORMANCE

The ADVANTAGE PLUS is designed for dependable operation and long life under the demanding stresses of IGBT technology. It is a well known fact that adjustable speed drives (ASD or inverters) with insulated gate bipolar transistors (IGBT) generate fast rise, repetitive surge voltages in motor windings, especially if the motors are connected with the ASD through a long power cable. These surge voltages can cause premature failures of motor insulation systems. The ADVANTAGE PLUS inverter duty installation system exceeds the requirements of NEMA MG-1 Part 31.

- Superior insulation life in comparison to the other magnet wire insulation systems when exposed to high temperature and harsh electrical environments typical to inverter driven motors
- Improved topcoat, modified to optimize scrape resistance and surface lubricity
- High quality partial discharge resistant magnet wire insulation (exceeds NEMA test standard)
- Multiple dips and baking processes for winding varnish treatment
- Phase insulation plus additional insulation paper between coil end-turns
- Exceeds voltage spike requirements per NEMA MG 1-2003, Paragraph 31.4.4.2.

IMPRESSIVE ADVANTAGE PLUS DESIGN FEATURES

- High Pulse Endurance wire
- Constant horsepower operation above synchronous speed
- Cast iron construction
- Oversized anti-friction ball bearings
- Constant torque operation down to 10:1
- Variable torque operation down to 20:1
- NEMA Design B or C
- Non-sparking external fan
- CSA certified and labeled
- Three year warranty

KWIKMOD MODIFICATIONS AND ACCESSORIES

The ADVANTAGE PLUS Motors can be modified to meet a variety of application requirements using our KWIKMOD System. Please contact the nearest TECO-Westinghouse office for further information concerning price and delivery.

- C-flange/D-flange
- Ground Lug on Motor Frame
- Thermistors
- Altitude Above 3,300 ft.
- Auxiliary Condulets
- 50Hz
- Special Paint
- Low or High Ambient Temperature
- Special Breather Drains
- Certified Test Reports
- Extended Leads
- Space Heaters
- F-2 Conduit Box Arrangement
- Special Shaft Extensions
- Special Nameplates
- Special Grease

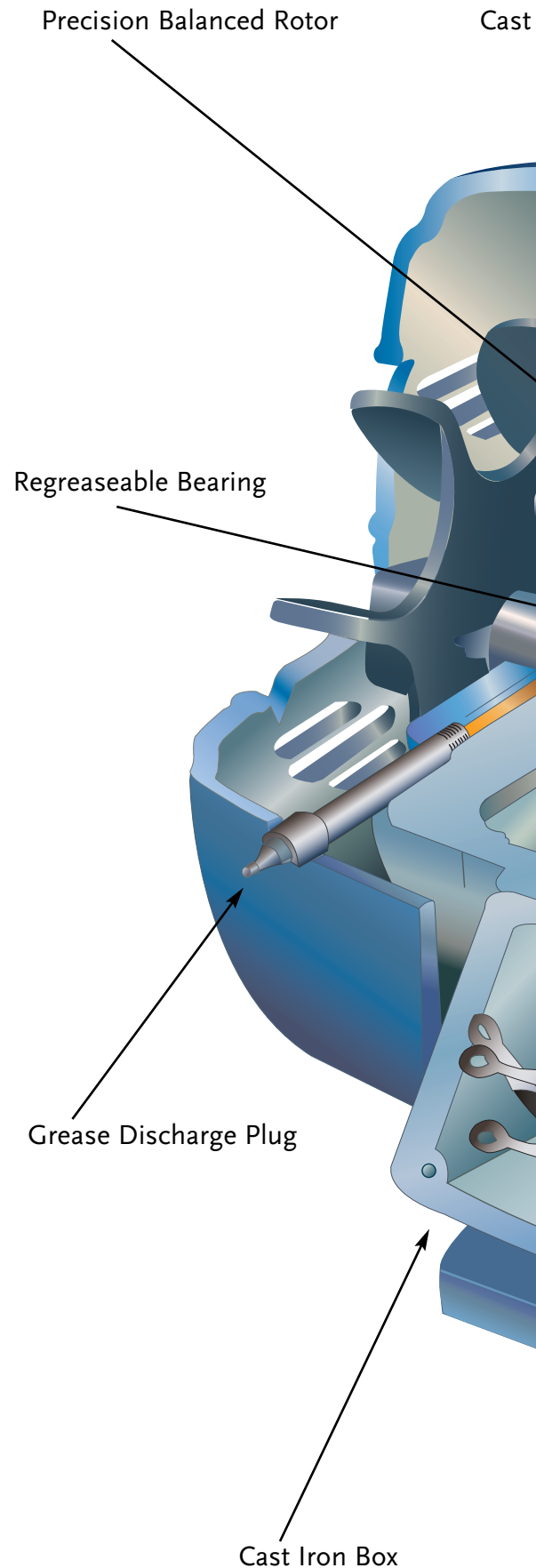
COMPARE THESE FEATURES

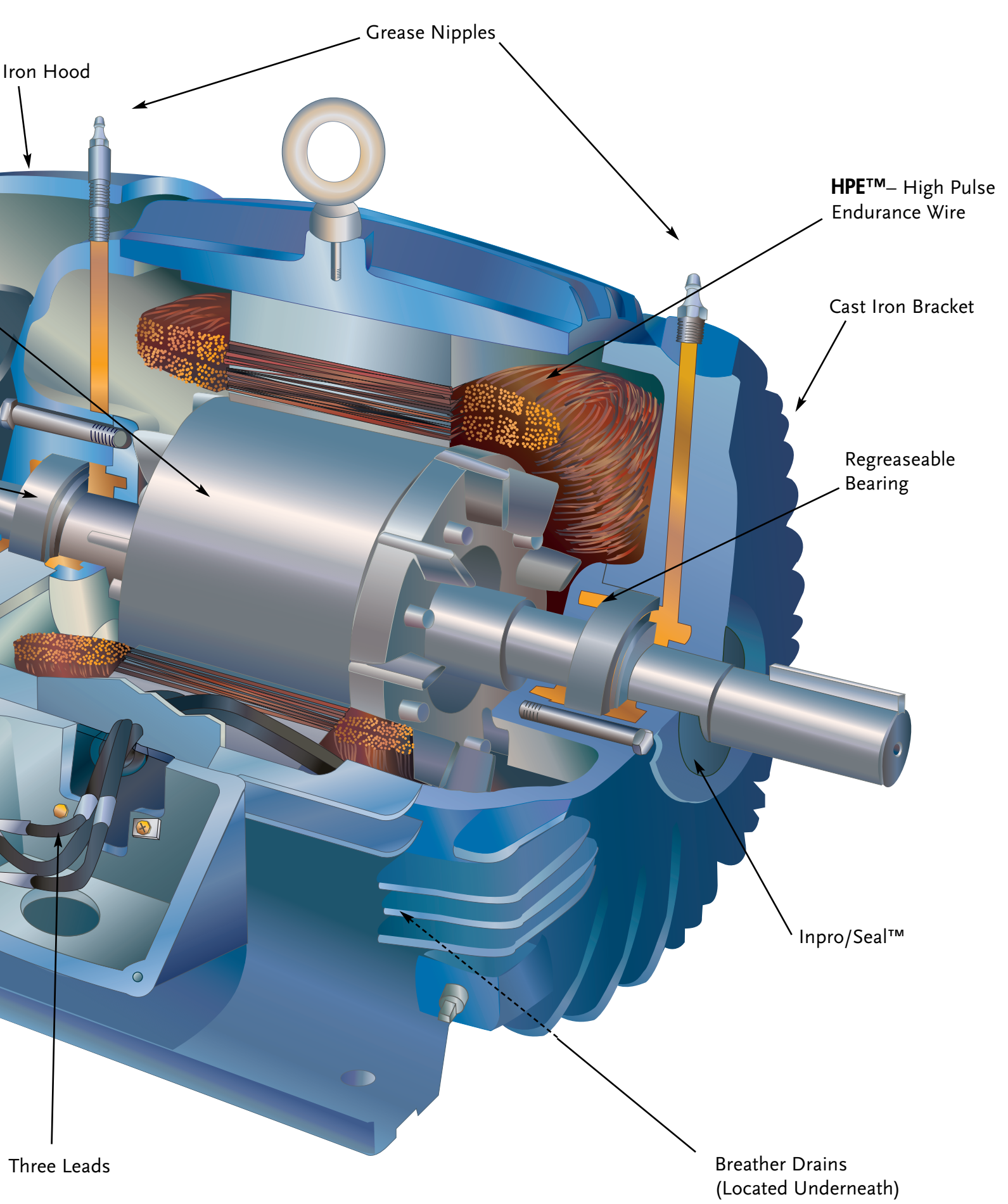
ELECTRICAL

- Designed to meet NEMA MG-1, MG-13 and IEEE 841
- Available in 200V, 230V, 460V and 575V up to and including 100HP (2 & 4 Pole) and 230V, 460V and 575V from 100HP (6 Pole) to 300HP (2 & 4) Pole)
- Stator winding made from pre-formed random wound **HPE™** (high pulse endurance) index, heavy heat resistance enameled copper wire for VFD application
- Class "F" Insulation
- 80°C rise by resistance method at 1.0 S.F. (90°C rise by resistance method at 1.15 S.F.)
- 1.15 Service Factor rating
- Rated for Ambient Temperature from -40°C to +40°C
- 3 Leads c/w solderless lug terminals

MECHANICAL

- IP54 rated enclosure
- IP55 rated main conduit box
- IP55 rated bearing protection (320T frame and larger)
- All ratings are designed for bi-directional rotation
- Cast iron frame, brackets and conduit box (fabricated steel main box on frame sizes 447T and larger)
- Frame provided with two (2) threaded drain holes c/w drain plugs and tapped hole on foot for ground lug
- Regreaseable bearings
- Exterior paint consists of one (1) coat zinc chromate epoxy primer and (1) coat of dark blue paint
- F-1/F-2 interchangeability
- Non-Sparking plastic or bronze fan
- Noise level not to exceed 90 dB"A" sound power level.
- Dynamically balanced rotor designed not to exceed 0.08 inches/second (2.03 mm/sec) on 2,4 and 6 Pole motors, and 0.06 inches/second (1.52 mm/sec) on 8 Pole motors
- Bearing temperature rise of 50°C for all 2 Pole motors and 45°C for all 4 and 6 Pole motors
- Dual mounting holes (250 - 440T frames only)



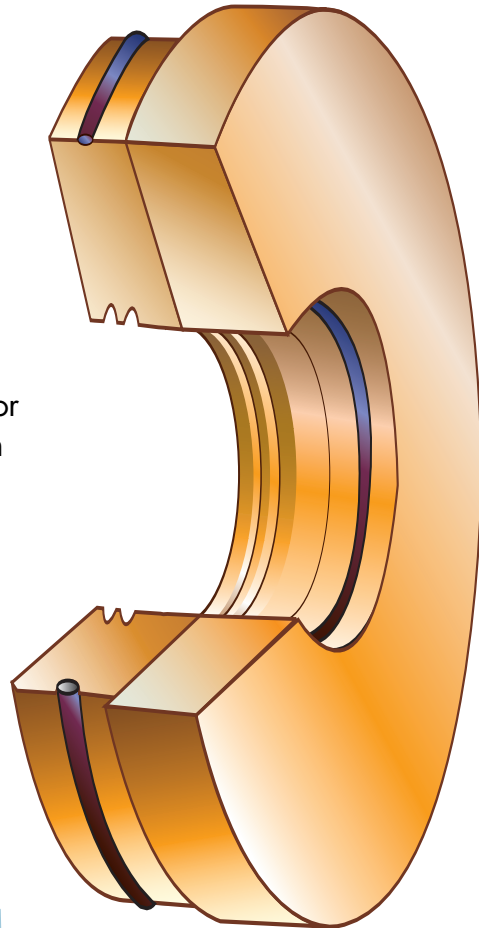


Designed with Your Industry in Mind

Advantage **Plus** IEEE 841

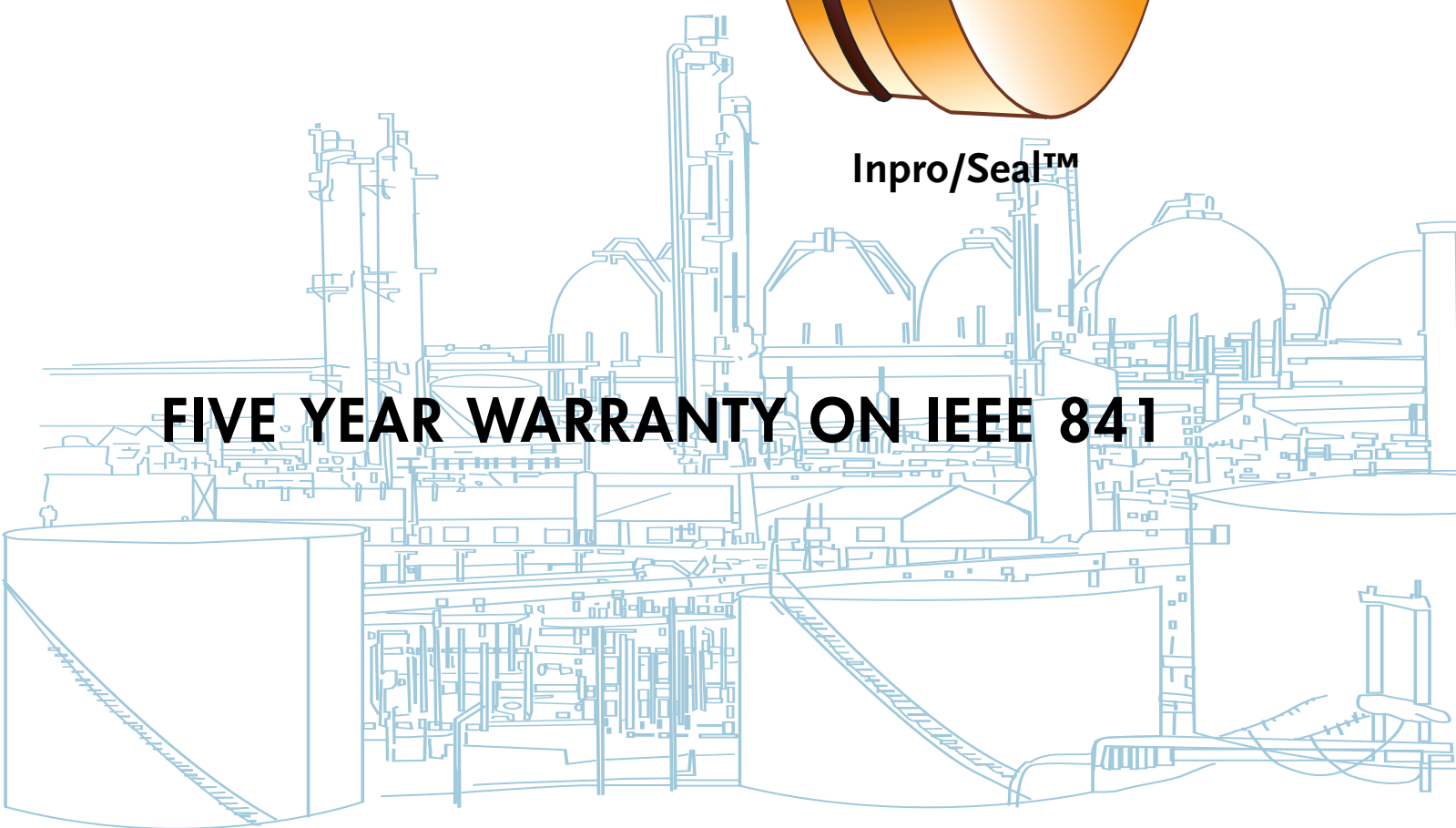
Inpro/Seal™

- The Inpro/Seal™ “VBX” bearing isolator installed on the drive-end for frame 320 and larger (optional for the non drive-end) and both ends for frame 444T-449T prevents bearing contamination from moisture, dust, dirt or other materials.
- Dynamically balanced rotor guaranteed to meet or exceed IEEE 841 vibration standards. A vibration test report is shipped with each motor.
- The foot flatness and shaft runout meet or exceed IEEE 841.
- All cast iron construction (fabricated steel main conduit box available on 447T/449T frames).

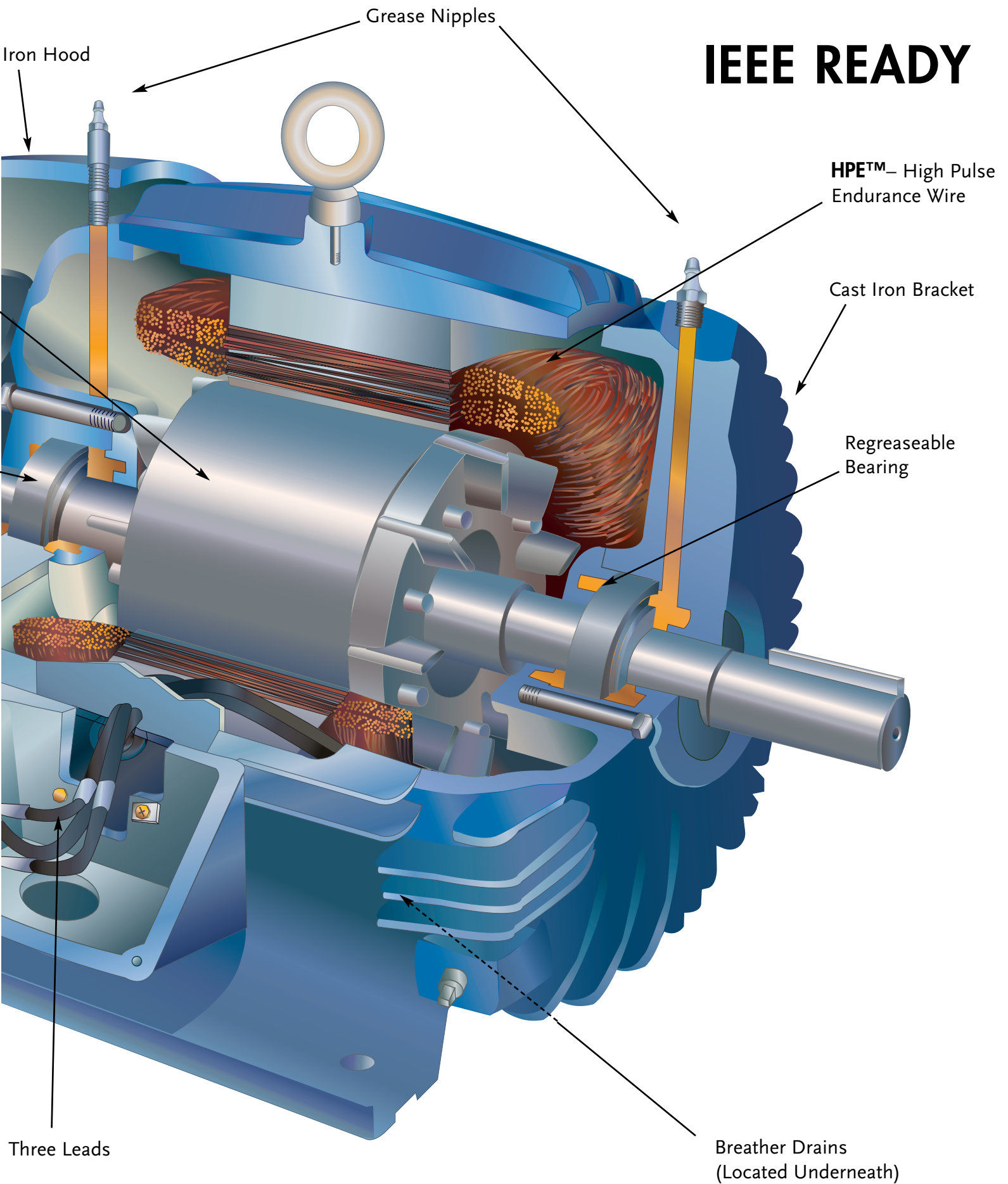


Inpro/Seal™

FIVE YEAR WARRANTY ON IEEE 841



IEEE READY





IEEE NEMA PREMIUM READY

PERFORMANCE DATA (575V)

HP	FULL LOAD RPM	FRAME SIZE	EFFICIENCY (%)			POWER FACTOR (%)			CURRENT (A)		TORQUE				ROTOR WK ² lb-ft ²	NEMA CODE LETTER
			FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD	LOCKED ROTOR	FULL LOAD lb-ft	LOCKED ROTOR %FLT	PULL UP %FLT	BREAK DOWN %FLT		
1	3465	143T	82.5	81.5	78.5	85	79.5	68.5	1.07	12	1.515	350	365	400	0.046	N
1	1745	143T	85.5	84	81.5	73	64.5	51.5	1.22	12	3.009	310	280	410	0.086	N
1	1150	145T	82.5	82.5	80	65.5	57	44.5	1.38	12	4.566	250	220	300	0.122	N
1.5	3465	143T	84	84	81.5	83.5	77	65	1.63	16	2.273	340	280	350	0.052	M
1.5	1730	145T	86.5	86.5	85.5	78	70	57	1.66	16	4.552	300	260	360	0.093	M
1.5	1170	182T	87.5	85.5	82.5	63.5	55	42.5	2.02	16	6.731	210	190	350	0.313	M
2	3465	145T	86.5	86.5	85.5	86	80.5	70	2.02	20	3.031	350	315	390	0.064	L
2	1740	145T	86.5	86.5	84	78	70	57	2.22	20	6.035	270	220	330	0.108	L
2	1170	184T	88.5	88.5	86.5	70.5	63	50.5	2.4	20	8.975	180	150	270	0.423	L
3	3490	182T	88.5	90.2	89.5	90	87	79.5	2.82	26	4.513	280	250	380	0.190	K
3	1755	182T	89.5	89.5	87.5	81.5	77	66.5	2.99	26	8.975	225	175	345	0.367	K
3	1175	213T	89.5	89.5	87.5	78	70.5	58.5	3.26	26	13.41	210	180	340	0.918	K
5	3480	184T	88.5	89.5	89.5	92.5	91	85.5	4.62	37	7.544	290	230	320	0.272	J
5	1745	184T	89.5	88.5	88.5	85.5	81.5	71.5	4.9	37	15.04	185	140	285	0.422	J
5	1170	215T	91	91	89.5	82.5	77	65.5	4.99	37	22.44	190	160	300	1.224	J
7.5	3510	213T	91	91	90.2	89	87	80	6.94	51	11.22	200	175	275	0.448	H
7.5	1755	213T	91.7	91	89.5	86.5	82	72	7.08	51	22.44	200	155	270	0.848	H
7.5	1170	254T	91	91	89.5	80.5	75	64	7.74	51	33.66	240	215	270	2.158	H
10	3510	215T	91	91.7	91	89.5	88.5	82.5	9.28	65	14.96	220	180	260	0.573	H
10	1755	215T	91.7	91	91	88	84	75.5	9.28	65	29.92	200	145	260	1.082	H
10	1170	256T	91	91.7	90.2	80.5	75	64	10.24	65	44.87	215	185	250	2.872	H
15	3525	254T	92.4	92.4	91.7	91.5	90.5	86	13.28	93	22.34	210	180	270	1.088	G
15	1765	254T	92.4	93	92.4	88	85	77	13.92	93	44.62	245	180	270	2.179	G
15	1175	284T	92.4	93	93	83.5	79.5	70.5	14.56	93	67.03	215	180	230	6.823	G
20	3520	256T	92.4	93	93.6	92.5	91.5	88	17.52	116	29.83	210	180	260	1.407	G
20	1760	256T	93	92.4	92.4	87.5	84.5	78.5	18.4	116	59.66	185	145	240	2.871	G
20	1170	286T	91.7	92.4	92.4	84	81	73	19.6	116	89.75	210	160	225	8.340	G
25	3545	284TS	92.4	93	92.4	91	90.5	86.5	22.48	146	37.03	175	135	250	2.507	G
25	1765	284T	93.6	93.6	93.6	86	83	77	23.28	146	74.37	205	165	240	4.586	G
25	1170	324T	93	93.6	93.6	83	80	71.5	24.24	146	112.2	190	155	205	11.877	G
30	3545	286TS	93	93.6	93	91	90.5	87.5	26.96	174	44.43	175	140	240	2.831	G
30	1770	286T	93.6	93.6	93.6	87.5	85.5	79.5	27.44	174	88.99	200	160	235	5.274	G
30	1175	326T	93	93.6	93.6	80.5	78.5	71	29.84	174	134.1	210	180	230	12.372	G
40	3550	324TS	94.1	94.5	94.1	90	89	84.5	35.36	232	59.16	150	130	240	3.590	G
40	1770	324T	94.1	94.5	94.5	86	84.5	78.5	37.04	232	118.7	205	170	220	8.624	G
40	1180	364T	94.1	94.5	94.1	86.5	84.5	78	36.8	232	178	200	150	220	17.937	G
50	3550	326TS	94.1	94.5	94.5	91	90	86.5	43.76	290	73.95	150	130	240	4.488	G
50	1770	326T	94.5	95	95	87	86	80.5	45.52	290	148.3	210	170	220	10.124	G
50	1180	365T	94.1	94.5	93.6	86	83	75.5	46.24	290	222.5	225	170	240	21.386	G
60	3550	364TS	94.1	94.5	94.1	93	92	88.5	51.6	348	88.74	145	130	240	7.379	G
60	1775	364T	95	95	94.5	86.5	83	75.5	54.72	348	177.5	185	155	240	12.229	G
60	1180	404T	94.5	94.5	94.1	87	86.5	80.5	54.88	348	267	200	185	245	33.535	G
75	3555	365TS	94.5	95	95	93	92.5	89	64.16	434	110.8	145	130	250	9.056	G
75	1775	365T	95.4	95.4	95	86.5	83.5	75.5	68.08	434	221.8	185	165	250	14.674	G
75	1180	405T	94.5	94.5	94.5	86.5	84.5	79	69.04	434	333.7	180	175	225	37.862	G
100	3560	405TS	95.4	95.8	95.4	92	91.5	88.5	85.6	580	147.5	140	125	270	10.773	G
100	1775	405T	95.4	95.4	95	87.5	85.5	80	89.6	580	295.8	215	140	215	26.637	G
100	1182	444T	94.5	94.1	93	83	80	73	95.2	580	444	140	110	230	56.00	G
125	3564	444TS	95	94.5	93.6	86.5	84	77.5	113.6	726	184	110	88	220	16.60	G
125	1780	444T	95	94.5	93.6	84	82	77	116	726	368	130	100	220	44.00	G
125	1185	445T	95	94.5	93.6	83	80.5	74	117.6	726	554	140	110	230	68.00	G
150	3570	445TS	95	94.5	93.6	87	84.5	81	135.2	868	220	110	88	220	20.00	G
150	1782	445T	95	94.5	93.6	84	82	78	139	868	442	130	100	220	52.00	G
150	1186	447T	95.4	95	94.1	83.5	81	74	140	868	664	135	105	220	103.00	G
200	3575	447TS	95.4	95	94.1	87	84.5	81	177.6	1160	293	104	83	210	32.00	G
200	1784	447T	95.4	95	94.1	84.5	82.5	78.5	184	1160	588	120	95	210	73.50	G
200	1186	449T	95.4	94	94.1	84	81	74	187.2	1160	885	135	105	210	125.00	G
250	3580	449TS	95.4	95	94.1	88	85.5	82	219.2	1460	366	103	83	210	40.00	G
250	1784	449T	95.4	95	94.1	85.5	83.5	80	225.6	1460	734	110	90	210	83.00	G
250	1188	449T	95.4	95	94.1	84.5	82	74.5	230.4	1460	1104	110	90	210	140.00	G
300	3580	449TS	95.4	95	94.1	88	85.5	82.5	263.2	1736	439	102	81	210	45.00	G
300	1788	449T	95.8	95.4	94.5	85.5	83.5	80	269.6	1736	880	100	85	210	99.00	G



As a partner in the NEMA Premium™ Electric Motor Program, TECO-Westinghouse Motors has determined that this product meets the NEMA Premium™ Efficiency specifications for premium energy efficiency.



IEEE NEMA PREMIUM READY

INVERTER DUTY DIVISION II

HP	SYNCHRONOUS SPEED	FRAME	VARIABLE TORQUE SPEED RANGE	CONSTANT TORQUE SPEED RANGE	CONSTANT HP SPEED RANGE	TEMPERATURE CODE
1	1800	143T	88-1800	178-1800	1800-3600	T3C
1	1200	145T	58-1200	118-1200	1200-2400	T3C
1.5	3600	143T	175-3600	355-3600	3600-7200	T3C
1.5	1800	145T	88-1800	178-1800	1800-3600	T3C
1.5	1200	182T	58-1200	118-1200	1200-2400	T3C
2	3600	145T	175-3600	355-3600	3600-7200	T3C
2	1800	145T	88-1800	178-1800	1800-3600	T3C
2	1200	184T	58-1200	118-1200	1200-2400	T3C
3	3600	182T	175-3600	355-3600	3600-7200	T3C
3	1800	182T	88-1800	178-1800	1800-3600	T3C
3	1200	213T	58-1200	118-1200	1200-2400	T3C
5	3600	184T	175-3600	355-3600	3600-7200	T3C
5	1800	184T	88-1800	178-1800	1800-3600	T3C
5	1200	215T	58-1200	118-1200	1200-2400	T4
7.5	3600	213T	175-3600	355-3600	3600-7200	T3B
7.5	1800	213T	88-1800	178-1800	1800-2700	T3B
7.5	1200	254T	58-1200	118-1200	1200-2400	T3B
10	3600	215T	175-3600	355-3600	3600-7200	T3B
10	1800	215T	88-1800	178-1800	1800-2700	T3B
10	1200	256T	58-1200	118-1200	1200-2400	T3B
15	3600	254T	175-3600	355-3600	3600-7200	T3B
15	1800	254T	88-1800	178-1800	1800-2700	T3B
15	1200	284T	58-1200	118-1200	1200-2400	T3B
20	3600	256T	175-3600	355-3600	3600-7200	T3B
20	1800	256T	88-1800	178-1800	1800-2700	T3B
20	1200	286T	58-1200	118-1200	1200-2400	T3B
25	3600	284TS	175-3600	355-3600	3600-7200	T3B
25	1800	284T	88-1800	178-1800	1800-2700	T3B
25	1200	324T	58-1200	118-1200	1200-2400	T3B
30	3600	286TS	175-3600	355-3600	3600-7200	T3B
30	1800	286T	88-1800	178-1800	1800-2700	T3B
30	1200	326T	58-1200	118-1200	1200-2400	T3B
40	3600	324TS	175-3600	355-3600	3600-7200	T3B
40	1800	324T	88-1800	178-1800	1800-2700	T3B
40	1200	364T	58-1200	118-1200	1200-2400	T3B
50	3600	326TS	175-3600	355-3600	3600-7200	T3
50	1800	326T	88-1800	178-1800	1800-2700	T3
50	1200	365T	58-1200	118-1200	1200-2400	T3
60	3600	364TS	175-3600	355-3600	3600	T3
60	1800	364T	88-1800	178-1800	1800-2700	T3
60	1200	404T	58-1200	118-1200	1200-2400	T3
75	3600	365TS	175-3600	355-3600	3600	T3
75	1800	365T	88-1800	178-1800	1800-2700	T3
75	1200	405T	58-1200	118-1200	1200-2400	T3
100	3600	405TS	175-3600	355-3600	3600	T3
100	1800	405T	88-1800	178-1800	1800-2700	T3
100	1200	444T	58-1200	118-1200	1200-2400	T3
125	3600	444TS	175-3600	355-3600	3600	T2D
125	1800	444T	88-1800	178-1800	1800-2700	T2D
125	1200	445T	58-1200	118-1200	1200-2400	T2D
150	3600	445TS	175-3600	355-3600	3600	T2D
150	1800	445T	88-1800	178-1800	1800-2700	T2D
150	1200	447T	58-1200	118-1200	1200-2400	T2D
200	3600	447TS	175-3600	355-3600	3600	T2D
200	1800	447T	88-1800	178-1800	1800-2250	T2D
200	1200	449T	58-1200	118-1200	1200-2400	T2D
250	3600	449TS	175-3600	355-3600	3600	T2D
250	1800	449T	88-1800	178-1800	1800-2700	T2D
250	1200	449T	58-1200	118-1200	1200-2400	T2D
300	3600	449TS	175-3600	355-3600	3600	T2D
300	1800	449T	88-1800	178-1800	1800-2700	T2D

D I S T R I B U T E D B Y :

TECO  **Westinghouse**

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