

# NEMA standard motors



CC113B





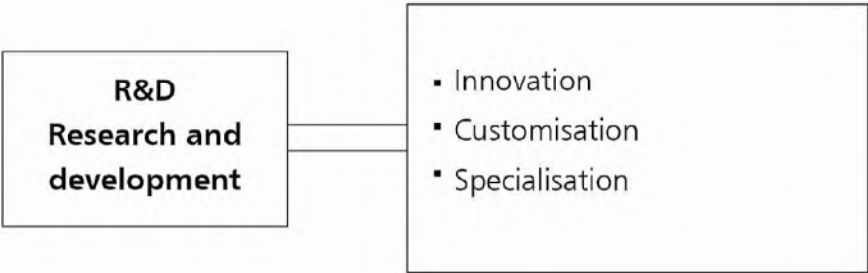
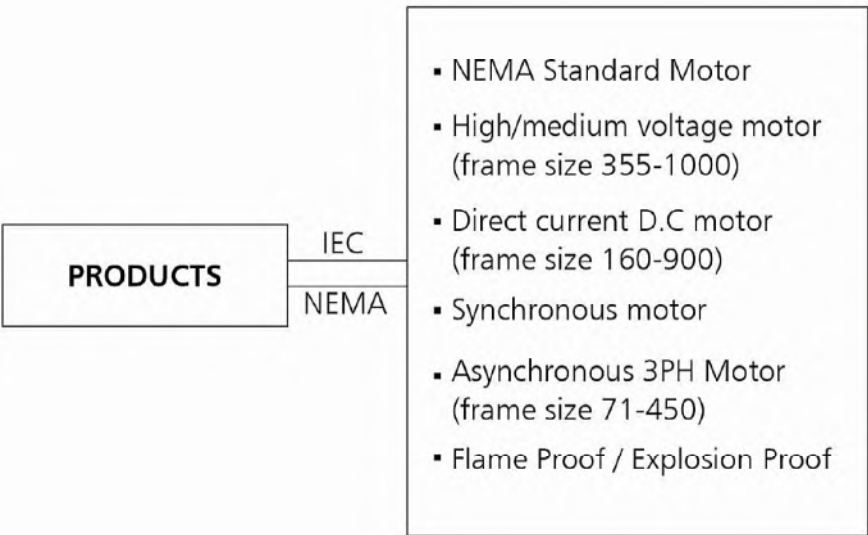
ABB product manufacturing area



High-voltage and DC motor manufacturing area



Casting products processing zone







**CERTIFICATIONS**

- ISO9001, ISO14000, ISO18000
- CE, CC / CSA, CCC
- UL, ATEX, IECex, SA, TUV, INTEX



**VISION**

- Globalisation
- High Efficiencies
- Energy Saving
- Commitment



# NEMA D Motor

## General Descriptions

NEMA D motors are totally enclosed self-fan-cooled ones designed and manufactured in accordance with the latest NEMA standards, suitable for Beam Pumping Units application with special high slip (5 to 13%), very high starting torque and very soft mechanical features. Because of these features, the equipment is able to be started easily. Motor speed can drop to protect the equipment from damaging when fluctuating loads are encountered. In addition the motors are designed for a large margin of safety in temperature rise, durability, quiet operation, reduced vibration, advanced construction, high safety and reliability in service, convenience for application and maintenance and etc.



## Rating

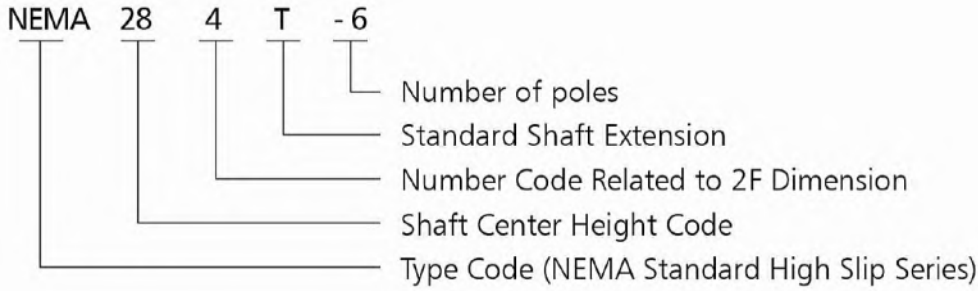
- Kind of motor: Squirrel-cage Induction Motor, NEMA D Design.
- Design Standard: NEMA MG1.
- Frame No.: 213T~449T.
- Output Range: 3-150HP.
- Synchronous Speed: 1200RPM(6 Poles 60Hz).
- Rated frequency: 60Hz.
- Rated voltage: 460V.
- Service Factor: 1.15.
- Protection Enclosure: TEFC, IP55.
- Cooling Method: Surface Cooling(IC411).

## Application

- Non-hazardous.
- Ambient Temperature: -20~+40 degrees C(+55 degrees is available on request).
- Altitude:  $\leq 1000\text{m}$ (3300feet).
- Direction of Rotation: Bi-directional.
- Starting Method: Direct-on-line starting or Y- $\Delta$  starting.
- Mounting arrangement and the relative position of conduit box are as follows.

Floor mounting	Wall-mounting				Ceiling mounting
 F-1	 W-1	 W-2	 W-3	 W-4	 C-1
 F-2	 W-5	 W-6	 W-7	 W-8	 C-2

## Type Designation



## Construction

### ■ Stator

The stator core is laminated with high quality electrical steel with high permeability and low losses allowing the motors to operate more efficiently.

The stator windings utilize Class F insulation (Class H insulation is available on request) with polyimide enamel round wire and VPI treated providing strong mechanical support, superior electrical insulation, moisture and contamination resistance, and uniform heat dissipation.

Thermistors(PTC) are embedded in windings (Thermostats are available on request), one each phase.

### ■ Rotor

The squirrel-cage rotors are of cast aluminum alloy. fixed on the shaft by means of hot fit. The rotor is dynamically balanced to reduce vibration.

### ■ Bearing and lubrication

The motors are fitted with low noise and low vibration bearing special for motors. For the motors in frame size 210, bilaterally shielded ball bearing are used without replenishing grease. For the motors in frame sizes 250 and above, the open bearing are equipped with attachments having the function to drain and replenish lubricating grease without stopping the motor. No. 3 Lithium Base grease is used unless specified otherwise. Bearing design life is at least 40000 hours at rated load. Bearing size, see table 1.

Frame size	Drive end bearing	Non-drive end bearing
NEMA21	6308-2Z	6308-2Z
NEMA25	6309	6309
NEMA28	6311	6311
NEMA32	6312	6312
NEMA36	6313	6313
NEMA40	NU317	6313
NEMA444~445	NU318	6313
NEMA447	NU319	6313
NEMA449	NU320	6320



### ■ Conduit Box

The conduit box is on the central libe of the enclosure.It can be F1/F2 convertible. The conduit box is made of cast iron and the opening utilizes Standard NPT threads (Metric threads and holes are available on request). There are grounding bolts and a connection diagram inside the conduit box.

Motor main leads and thermistor leads are loose keeping in conduit box (Therminal blocks are available on request).

### ■ Fan and Fan Cover

The fan is made of plastic or cast iron to different applications. The fan cover is made of steel sheet or cast iron depending on different operating conditions.

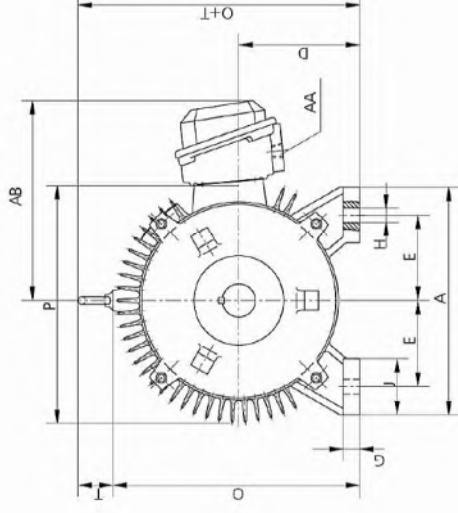
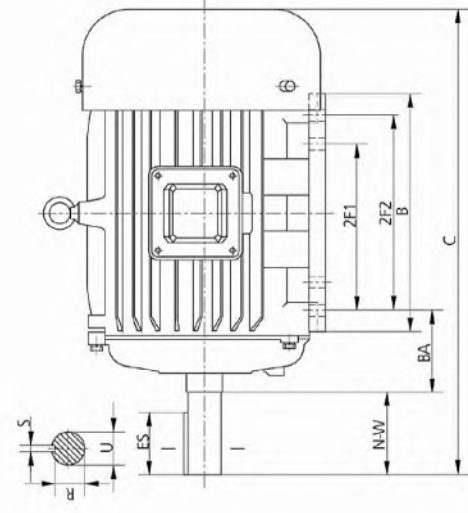
### ■ Sunshade

A sunshade is recommended when the motor is intended for outdoor installation in direct sunlight with an ambient temperature rating of over 40 degree C.

## Technical Data

### ■ Performance date see Table (460V,60HZ)

HP	Frame	At Full Load					Locked Current (460V)	Full Load Torque (Lb.Ft)	Locked Torque (%) FLT	Break -down Torque(%)	NEMA Code	Net Wgt (kgs)
		Slip(%)	Speed	AMPS (460V)	Power Factor	Effi.						
3	213T	5.76%	1130	5	0.76	81.84	32	14.1	289	285	H	68
5	215T	6.10%	1115	8.1	0.78	82.34	46	23.6	307	270	H	77
7.5	254T	6.22%	1120	11.8	0.75	86.52	63.5	35.2	290	273	H	152
10	256T	6.88%	1120	15.5	0.75	86.59	81	46.9	288	275	H	161
15	284T	6.91%	1120	20.5	0.78	87.69	116	70.3	299	349	G	209
20	286T	7.02%	1115	27.4	0.80	87.56	145	94.2	300	347	G	229
25	324T	6.59%	1120	32.8	0.81	88.36	182.5	117.2	321	360	G	293
30	326T	7.35%	1110	38.7	0.83	87.73	217.5	142.9	298	325	G	313
40	365T	6.35%	1120	52.4	0.85	88.88	290	187.5	320	364	G	371
50	404T	5.64%	1130	60.4	0.85	89.85	362.5	232.3	309	365	G	467
60	405T	6.04%	1120	74.4	0.87	89.74	435	281.3	295	347	G	516
75	444T	5.05%	1140	89.1	0.84	90.57	542.5	345.41	282	351	G	657
100	445T	5.07%	1140	120.6	0.85	91.03	725	460.6	299	367	H	818
125	447T	5.00%	1140	150.9	0.86	89.00	907.5	785.4	275	275	H	1073
150	449T	5.40%	1135	180.4	0.86	89.00	1085	946.6	275	275	H	1151



MODEL	(HP)	ES	S	R	U	N-W	BA	2F1	2F2	C	E	B	H	A	D	O	AB	AA	G	T	P	J
ME213T-6D	3	2.41	0.312	1.201	1.375	3.38	3.5	5.5	7.0	18.582	4.25	7.874	4-0.41	10.827	5.25	10.664	8.07	NPT1"-1	0.708	1.75	10.394	2.362
NE215T-6D	5	2.41	0.312	1.201	1.375	3.38	3.5	5.5	7.0	20.078	4.25	9.37	8-0.41	10.827	5.25	10.664	8.07	NPT1"-1	0.708	1.75	10.394	2.362
NE254T-6D	7.5	2.91	0.375	1.416	1.625	4.0	4.25	8.25	10.0	25.43	5.0	12.2	8-0.53	12.48	6.25	13.32	10.75	NPT1½"-1	0.787	2.063	12.992	2.756
NE256T-6D	10	2.91	0.375	1.416	1.625	4.0	4.25	8.25	10.0	25.43	5.0	12.2	8-0.53	12.48	6.25	13.32	10.75	NPT1½"-1	0.787	2.063	12.992	2.756
NE284T-6D	15	3.28	0.5	1.591	1.875	4.62	4.75	9.5	11.0	28.03	5.5	13.11	8-0.53	13.8	7.0	14.84	11.417	NPT1½"-1	0.866	2.063	14.49	2.756
NE286T-6D	20	3.28	0.5	1.591	1.875	4.62	4.75	9.5	11.0	28.03	5.5	13.11	8-0.53	13.8	7.0	14.84	11.417	NPT1½"-1	0.866	2.063	14.49	2.756
NE324T-6D	25	3.91	0.5	1.845	2.125	5.25	5.25	10.5	12.0	31.02	6.25	13.9	8-0.66	15.275	8.0	16.27	13.38	NPT2"-1	0.984	2.46	15.74	2.756
NE326T-6D	30	3.91	0.5	1.845	2.125	5.25	5.25	10.5	12.0	31.02	6.25	13.9	8-0.66	15.275	8.0	16.27	13.38	NPT2"-1	0.984	2.46	15.74	2.756
NE365T-6D	40	4.28	0.625	2.021	2.375	5.88	5.88	11.25	12.25	34.05	7.0	15.354	8-0.66	16.929	9.0	18.648	14.88	NPT3"-1	0.984	2.46	18.5	2.756
NE404T-6D	50	5.65	0.75	2.45	2.875	7.25	6.62	12.25	13.75	38.976	8.0	17.716	8-0.81	19.055	10.0	20.2	17.716	NPT3"-1	1.338	2.46	19.527	3.15
NE405T-6D	60	5.65	0.75	2.45	2.875	7.25	6.62	12.25	13.75	38.976	8.0	17.716	8-0.81	19.055	10.0	20.2	17.716	NPT3"-1	1.338	2.46	19.527	3.15
NE444T-6D	75	6.91	0.875	2.88	3.375	8.5	7.5	14.5	16.5	44.094	9.0	20.393	8-0.81	21.338	11.0	22.30	18.82	NPT3"-1	1.378	2.85	21.97	3.346
NE445T-6D	100	6.91	0.875	2.88	3.375	8.5	7.5	14.5	16.5	44.094	9.0	20.393	8-0.81	21.338	11.0	22.30	18.82	NPT3"-1	1.378	2.85	21.97	3.346
NE447T-6D	125	6.91	0.875	2.88	3.375	8.5	7.5	16.5	20	49.15	9.0	23.97	8-0.81	21.96	11.0	22.42	19.9	NPT3"-1	1.574	5.2	23.05	3.346
NE449T-6D	150	6.91	0.875	2.88	3.375	8.5	7.5	25	/	54.15	9.0	30.98	4-0.81	21.96	11.0	22.42	19.9	NPT3"-1	1.574	5.2	23.05	3.346



# NEPM Premium Efficiency Motor

## General Descriptions

NEPM Premium efficiency three phase induction motors are totally enclosed fan cooled squirrel cage motors that are manufactured with new material and technology.



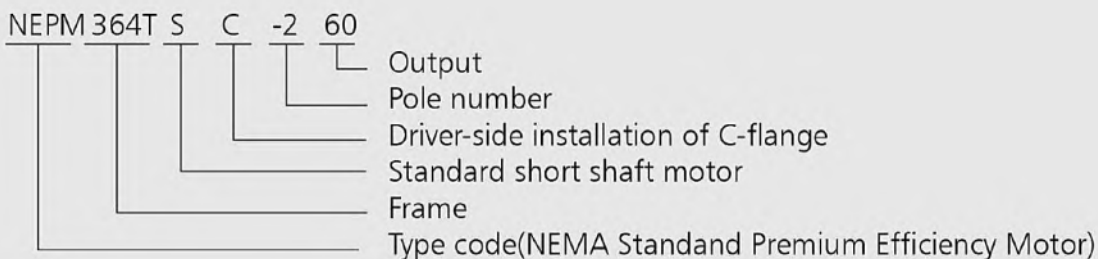
## Rating

- Kind of motor: Squirrel-cage Induction Motor, NEMA B Design.
- Design Standard: NEMA MG1.
- Frame No.: 213T~449T.
- Output Range: 1-300HP.
- Ambient temperature: 40 Cmax
- Altitude: 1000m
- Duty: Continuous(S1).
- Rated frequency: 60Hz(50Hz is available on request).
- Rated voltage: 460V(380V is available on request).
- Service Factor: 1.15 or 1.0.
- Protection Enclosure: TEFC, IP55.
- Cooling Method: Surface Cooling(IC411).

## Application

NEPM Premium efficiency motors have some notable advantages such as high efficiency, good starting performance, low noise, improved structure, improved cooling capabilities, this series motors are three phase induction motors which be used for general motors and can be used to drive all kinds of general purpose machines such as compressors, ventilators, pumps, ect. Other uses such as petrol chemical, medical, chemical industries and mining. For special requirements please contact our sales department.

### Type Designation





## Construction

### ■ Stator

The stator core is laminated with high quality electrical steel with high permeability and low losses allowing the motors to operate more efficiently.

The stator windings utilize Class F insulation (Class H insulation is available on request) with polyimide enamel round wire and VPI treated providing strong mechanical support, superior electrical insulation, moisture and contamination resistance, and uniform heat dissipation.

Thermistors(PTC) are embedded in windings (Thermostats are available on request), one each phase.

### ■ Rotor

The squirrel-cage rotors are of cast aluminum alloy. fixed on the shaft by means of hot fit. The rotor is dynamically balanced to reduce vibration.

### ■ Bearing and lubrication

The motors are fitted with low noise and low vibration bearing special for motors. For the motors in frame size 210, bilaterally shielded ball bearing are used without replenishing grease. For the motors in frame sizes 250 and above, the open bearing are equipped with attachments having the function to drain and replenish lubricating grease without stopping the motor. No. 3 Lithium Base grease is used unless specified otherwise. Bearing design life is at least 40000 hours at rated load. Bearing size, see table 1.

Frame size	Drive end bearing		Non-drive end bearing	
NEPM14	6206-2Z		6206-2Z	
NEPM18	6207-2Z		6207-2Z	
NEPM21	6208-2Z		6208-2Z	
NEPM25	6309		6309	
NEPM28	6311		6311	
NEPM32	6312		6312	
NEPM36	6313		6313	
NEPM40	2P: 6313	4,6P: 6318	2P: 6313	4,6P: 6317
NEPM444-445	2P: 6314	4,6P: NU319	2P: 6314	4,6P: 6318
NEPM447-449	2P: 6314	4,6P: NU319	2P: 6314	4,6P: 6318

### ■ Conduit Box

The conduit box is on the central side of the enclosure. It can be F1/F2 convertible. The conduit box is made of cast iron and the opening utilizes Standard NPT threads (Metric threads and holes are available on request). There are grounding bolts and a connection diagram inside the conduit box.

Motor main leads and thermistor leads are loose keeping in conduit box (Terminal blocks are available on request).



### ■ Fan and Fan Cover

The fan is made of plastic or cast iron to different applications. The fan cover is made of steel sheet or cast iron depending on different operating conditions.

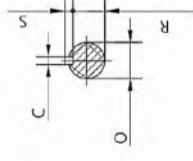
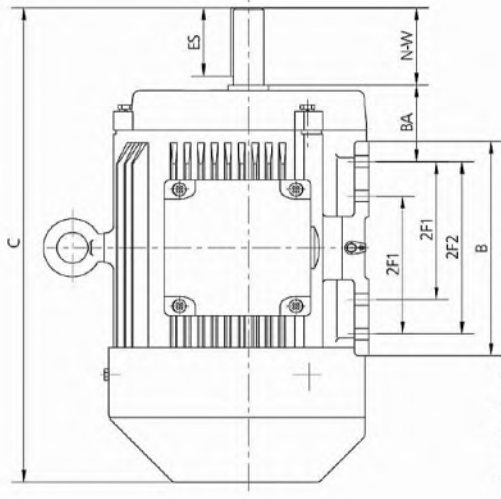
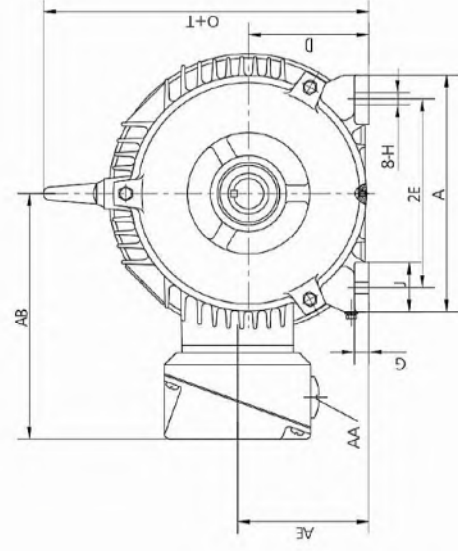
### ■ Sunshade

A sunshade is recommended when the motor is intended for outdoor installation in direct sunlight with an ambient temperature rating of over 40 degree C.

HP	Frame Size	Speed	At Full Load(460V)				At Full Load(380V)				Locked Current (460V)	Locked Current (380V)	Full Load Torque (Lb.Ft)	Locked Torque (%) FLT	Break -down Torque (%)	Net Wgt (kgs)	
			AMPS (460V)	Power Factor	Effi.	NEMA Code	Speed	AMPS (380V)	Power Factor	Effi.							NEMA Code
1.5	NEPM143T-2	3500	2.0	0.85	84	M	2890	2.6	0.85	82.5	M	20	27	2.22	260	320	29
2	NEPM145T-2	3500	2.4	0.9	85.5	L	2890	3	0.9	84	M	25	34	3	260	280	30
3	NEPM182T-2	3510	3.7	0.89	86.5	K	2900	4.4	0.89	85.5	L	32	43	4.49	200	330	46
5	NEPM184T-2	3515	5.8	0.92	88.5	J	2900	6.7	0.92	87.5	K	46	61	7.46	180	320	55
7.5	NEPM213T-2	3525	8.8	0.91	89.5	H	2930	10.3	0.91	88.5	J	63	84	11.2	180	300	82
10	NEPM215T-2	3525	11.2	0.93	90.2	H	2930	13.9	0.93	89.5	H	81	107	14.9	180	290	86
15	NEPM254T-2	3515	17.2	0.91	91	G	2940	21	0.84	90.2	H	116	154	22.4	180	290	148
20	NEPM256T-2	3530	22.5	0.89	91	G	2940	28.1	0.89	90.2	H	145	194	29.8	170	250	158
25	NEPM284TS-2	3530	28.0	0.92	91.7	G	2945	34.6	0.92	91	H	182	243	37.2	180	270	198
30	NEPM286TS-2	3530	33.7	0.92	91.7	G	2945	40.5	0.92	91	H	217	289	44.5	180	280	206
40	NEPM324TS-2	3540	44.5	0.92	92.4	G	2950	55.2	0.92	91.7	H	290	387	59.2	180	280	277
50	NEPM326TS-2	3545	55.0	0.92	93	G	2950	67.8	0.92	92.4	H	362	482	73.9	175	260	284
60	NEPM364T-2	3560	66.0	0.92	93.6	G	2960	82.2	0.92	93	H	435	578	88.6	180	275	360
75	NEPM365TS-2	3560	82.5	0.92	93.6	G	2960	99.3	0.92	93	H	542	722	111	190	275	369
100	NEPM405TS-2	3560	109	0.92	94.1	G	2970	133.8	0.92	93.6	H	725	965	147	180	280	544
125	NEPM444TS-2	3570	135	0.92	95	G	2970	160.5	0.92	94.5	H	907	1207	184	195	245	760
150	NEPM445TS-2	3570	162	0.92	95	G	2970	195.7	0.92	94.5	H	1085	1441	220	185	210	800
200	NEPM447TS-2	3570	213	0.93	95.4	G	2970	264.1	0.93	95	H	1450	1927	294	180	210	1095
250	NEPM449TS-2	3570	266	0.93	95.8	G	2970	323.5	0.93	95.4	H	1825	2534	368	180	210	1100
300	NEPM449TS-2	1740	318	0.93	95.8	G	1440	383.7	0.93	95.8	H	2200	3026	441	300	310	1105



HP	Frame Size	At Full Load(460V)					At Full Load(380V)					Locked Current (460V)	Locked Current (380V)	Full Load Torque (Lb.Ft)	Locked Torque (%) FLT	Break -down Torque (%)	Net Wgt (kgs)
		Speed	AMPS (460V)	Power Factor	Effi.	NEMA Code	Speed	AMPS (380V)	Power Factor	Effi.	NEMA Code						
1	NEPM143T-4	1740	1.5	0.76	85.5	M	1440	1.7	0.76	84	P	15	20	3.02	320	330	30
1.5	NEPM145T-4	1740	2.2	0.76	86.5	M	1440	2.5	0.76	85.5	N	20	27	4.54	320	330	31
2	NEPM145T-4	1745	2.8	0.8	86.5	L	1450	3.1	0.8	85.5	M	25	34	6.05	250	320	30
3	NEPM182T-4	1745	4.0	0.82	89.5	K	1450	4.6	0.82	88.5	L	32	43	9	240	290	46
5	NEPM184T-4	1750	6.3	0.85	89.5	J	1460	7.5	0.85	88.5	H	46	61	15	195	260	51
7.5	NEPM213T-4	1750	9.0	0.85	91.7	H	1460	11	0.85	91	j	63	84	22.5	190	250	86
10	NEPM215T-4	1750	12.0	0.86	91.7	H	1470	14.9	0.86	91	H	81	107	30	185	230	89
15	NEPM254T-4	1750	18.0	0.86	92.4	G	1470	22.9	0.86	91.7	H	116	154	44.8	200	220	149
20	NEPM256T-4	1760	24.0	0.85	93	G	1470	29.6	0.85	92.4	H	145	194	59.8	180	260	159
25	NEPM286T-4	1760	28.5	0.9	93.6	G	1470	35.5	0.9	93	H	182	243	74.3	185	280	210
30	NEPM286T-4	1760	34.0	0.9	93.6	G	1480	41.8	0.9	93	H	217	289	89.1	180	260	220
40	NEPM324T-4	1765	45.0	0.89	94.1	G	1480	55.6	0.89	93.6	H	290	387	119	175	250	300
50	NEPM326T-4	1780	56.0	0.9	94.5	G	1480	67.7	0.9	94.1	H	362	482	148	195	280	305
60	NEPM364T-4	1780	67.0	0.9	95	G	1480	82.1	0.9	94.5	H	435	578	178	195	260	375
75	NEPM365T-4	1780	83.0	0.9	95.4	G	1480	99	0.9	95	H	542	722	222	185	220	382
100	NEPM405T-4	1780	110.0	0.9	95.4	G	2970	135.2	0.9	95	H	725	965	295	190	250	275
125	NEPM444T-4	1780	137	0.91	95.4	G	1480	160	0.91	95	H	907	1207	369	180	250	780
150	NEPM445T-4	1780	164	0.91	95.8	G	1480	194.4	0.91	95.4	H	1085	1441	443	190	250	910
200	NEPM447T-4	1780	216	0.91	96.2	G	1480	264.2	0.91	95.8	H	1450	1927	590	195	240	1105
250	NEPM449T-4	1785	270	0.91	96.2	G	1480	325.9	0.91	95.8	H	1825	2534	735.6	190	220	1130
300	NEPM449T-4	1780	325	0.91	96.2	G	1480	391.3	0.91	95.8	H	2200	3026	885	195	240	1235
1	NEPM145T-6	1140	1.7	0.69	82.5	M	950	1.9	0.69	81.5	S	15	20	4.6	260	330	31
1.5	NEPM182T-6	1165	2.3	0.71	87.5	M	970	2.6	0.71	86.5	N	20	27	6.8	240	340	45
2	NEPM184T-6	1165	2.9	0.74	88.5	L	970	3.6	0.74	87.5	M	25	34	9.1	230	300	51
3	NEPM213T-6	1170	4.2	0.75	89.5	K	970	4.9	0.75	88.5	L	32	43	13.5	200	300	78
5	NEPM215T-6	1170	6.7	0.79	89.5	J	970	8	0.79	88.5	K	46	61	22.5	200	250	85
7.5	NEPM254T-6	1175	9.8	0.79	91	H	980	12.3	0.79	90.2	J	63	84	33.7	200	240	141
10	NEPM256T-6	1170	13.2	0.79	91	H	980	15.9	0.79	90.2	H	81	107	44.9	200	230	152
15	NEPM284T-6	1175	18.5	0.84	91.7	G	980	22.7	0.84	91	H	116	154	67.1	200	255	197
20	NEPM286T-6	1175	24.5	0.85	91.7	G	980	30.4	0.85	91	H	145	194	89.4	210	250	203
25	NEPM324T-6	1175	29.5	0.86	93	G	980	35.5	0.86	92.4	H	182	243	111	200	250	266
30	NEPM326T-6	1180	35.5	0.85	93	G	980	41.9	0.85	92.4	H	217	289	134	200	235	281
40	NEPM364T-6	1180	46.5	0.86	94.1	G	980	55.2	0.86	93.6	H	290	387	178	200	235	305
50	NEPM365T-6	1180	58.0	0.87	94.1	G	980	67.8	0.87	93.6	H	362	482	223	200	220	390
60	NEPM404T-6	1180	68.0	0.88	94.5	G	985	83	0.88	94.1	H	435	578	268	190	210	533
75	NEPM405T-6	1180	85.0	0.88	94.5	G	985	100.6	0.88	94.1	H	542	722	335	190	210	549
100	NEPM444T-6	1180	113	0.89	95	F	980	136	0.89	94.5	H	725	965	445	195	210	786
125	NEPM445T-6	1185	140	0.89	95	G	980	162.6	0.89	94.5	H	907	1207	554	190	210	833
150	NEPM447T-6	1185	165	0.89	95.8	G	980	197.1	0.89	95.4	H	1085	1441	665	185	215	970
200	NEPM449T-6	1185	220	0.89	95.8	G	980	268.8	0.89	95.4	H	1450	1927	885	190	210	1145
250	NEPM449T-6	1190	292	0.84	95.8	G	980	357.6	0.835	95.4	H	1825	2534	1113	225	260	1178
300	NEPM449T-6	1190	349	0.84	95.8	G	980	427.4	0.835	95.8	H	2200	3026	1322	140	230	1277

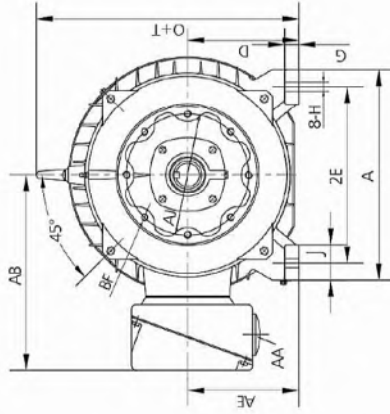
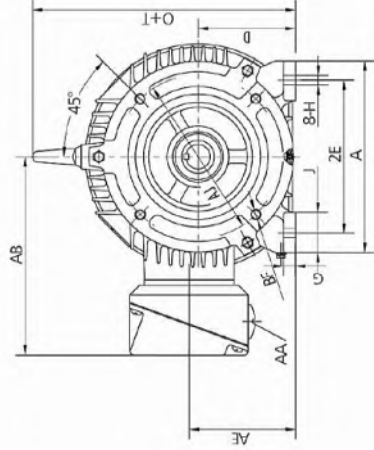
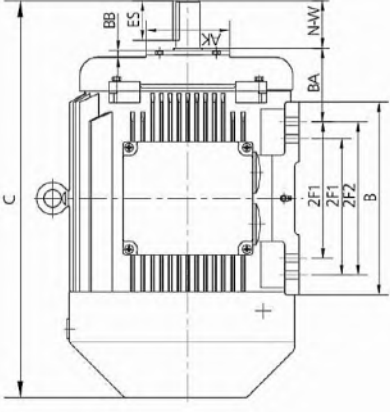
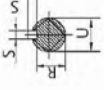


Dimensions in inch

Type	Poles	A+B	O+T	D	H	2E	A	Max	J	G	AA	AE	C	ES- Min	N-W Min	BA	2F1	2F2	B	S	U	R
NPM143T-145T	2, 4, 6	7.6	7.7	3.5	φ0.34	5.5	7	1.35	0.4	NPT3/4"	3.8	15.2	1.42	2.25	2.25	2.25	4	5	6.25	0.189	φ0.875	0.771
NPM182T-184T	2, 4, 6	8.9	10.58	4.5	φ0.41	7.5	9	1.75	0.55	2-NPT1"	4.97	18.1	1.78	2.75	2.75	2.75	4.5	5.5	6.89	0.25	φ1.125	0.986
NPM213T-215T	2, 4, 6	10.8	12.47	5.25	φ0.41	8.5	10.5	2.35	0.7	2-NPT1"	5.72	20.6	2.41	3.38	3.38	3.5	5.5	7	9.37	0.312	φ1.375	1.201
NPM254T-256T	2, 4, 6	12	15.15	6.25	φ0.53	10	12.5	2.75	0.8	2-NPT1-1/4"	6.72	24.8	2.91	4	4	4.25	8.25	10	11.7	0.375	φ1.625	1.416
NPM284TS-286TS	2	13.2	16.85	7	φ0.53	11	14	2.75	0.8	2-NPT1-1/4"	7	26.6	1.91	3.25	3.25	4.75	9.5	11	13.4	0.375	φ1.625	1.416
NPM284T-286T	4, 6	13.2	16.85	7	φ0.53	11	14	2.75	0.8	2-NPT1-1/4"	7	28.5	3.28	4.62	4.62	4.75	9.5	11	13.4	0.5	φ1.875	1.591
NPM324TS-326TS	2	14.8	18.5	8	φ0.66	12.5	16	2.75	1.11	2-NPT1-1/2"	8	30.3	2.03	3.75	3.75	5.25	10.5	12	14.6	0.5	φ1.875	1.591
NPM324T-326T	4, 6	14.8	18.5	8	φ0.66	12.5	16	2.75	1.11	2-NPT1-1/2"	8	31.8	3.91	5.25	5.25	5.25	10.5	12	14.6	0.5	φ2.125	1.854
NPM364TS-365TS	2	15.6	20.9	9	φ0.66	14	18	2.95	1.11	2-NPT1-1/2"	9	32	2.03	3.75	3.75	5.88	11.25	12.25	15.4	0.5	φ1.875	1.591
NPM364T-365T	4, 6	15.6	20.9	9	φ0.66	14	18	2.95	1.11	2-NPT1-1/2"	9	34.2	4.28	5.88	5.88	5.88	11.25	12.25	15.4	0.625	φ2.375	2.021
NPM405TS	2	18.5	23.11	10	φ0.81	16	20	3.15	1.18	2-NPT2"	10	35.5	2.78	4.25	4.25	6.62	12.25	13.75	17.3	0.5	φ2.125	1.845
NPM404T-405T	4, 6	18.5	23.11	10	φ0.81	16	20	3.15	1.18	2-NPT2"	10	38.5	5.65	7.25	7.25	6.62	12.25	13.75	17.3	0.75	φ2.875	2.45
NPM444TS-445TS	2	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2"	11	41	3.03	4.75	4.75	7.5	14.5	16.5	21.1	0.625	φ2.375	2.021
NPM444T-445T	4, 6	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2"	11	44.5	6.91	8.5	8.5	7.5	14.5	16.5	21.1	0.875	φ3.375	2.88
NPM447TS-449TS	2	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2-1/2"	11	49.5	3.03	4.75	4.75	7.5	20	25	29.3	0.625	φ2.375	2.021
NPM447T-449T	4, 6	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2-1/2"NP	11	53.3	6.91	8.5	8.5	7.5	20	25	29.3	0.875	φ3.375	2.88
*NPM449T	4, 6	20.68	28.54	11	φ0.81	18	21.3	3.35	1.32	T-3"	11	56.3	6.91	8.5	8.5	7.5	20	25	29.3	0.875	φ3.375	2.88

Note: "\*" is applicable to 2P-300HP, 4P-300HP, 6P-250HP, 6P-300HP motor.





Dimensions in inch

Type	Poles	AB	O+T	D	H	2E	A	J	G	AA	AE	AJ	BF	C	BB	ES	-Min	BC	AK	Min	BA	N-W	2F1	2F2	B	S	U	R
NEPM143TC-145TC	2, 4, 6	7.6	7.7	3.5	φ0.34	5.5	7	1.35	0.4	NPT3/4"	3.8	φ5.875	3/8"	15.2	0.16	1.41	0.12	φ4.5	2.25	2.75	4.0	5	6.25	0.188	φ0.875	0.771		
NEPM182TC-184TC	2, 4, 6	8.9	10.58	4.5	φ0.41	7.5	9	1.75	0.55	2-NPT1"	4.97	φ7.25	1/2"	18.1	0.25	1.78	0.12	φ8.5	2.75	3.5	4.5	5.5	6.89	0.25	φ1.125	0.986		
NEPM213TC-215TC	2, 4, 6	10.8	12.47	5.3	φ0.41	8.5	11	2.35	0.7	2-NPT1"	5.72	φ7.25	1/2"	20.6	0.25	2.41	0.25	φ8.5	3.38	4.25	5.5	7	9.37	0.312	φ1.375	1.201		
NEPM254TC-256TC	2, 4, 6	12	15.15	6.3	φ0.53	10	13	2.75	0.8	2-NPT1-1/4"	6.72	φ7.25	1/2"	24.8	0.25	2.91	0.25	φ8.5	4	4.25	8.3	10	11.7	0.375	φ1.625	1.416		
NEPM284TC-286TC	2	13.2	16.85	7	φ0.53	11	14	2.75	0.8	2-NPT1-1/4"	7	φ9	1/2"	26.6	0.25	1.91	0.25	φ10.5	3.25	4.75	9.5	11	13.4	0.375	φ1.625	1.416		
NEPM284TC-286TC	4, 6	13.2	16.85	7	φ0.53	11	14	2.75	0.8	2-NPT1-1/4"	7	φ9	1/2"	28.5	0.25	3.28	0.25	φ10.5	4.62	4.75	9.5	11	13.4	0.5	φ1.875	1.991		
NEPM324TC-326TC	2	14.8	18.5	8	φ0.66	13	16	2.75	1.11	2-NPT1-1/2"	8	φ11	5/8"	30.3	0.25	2.03	0.25	φ12.5	3.75	5.25	10.5	12	14.6	0.5	φ1.875	1.991		
NEPM324TC-326TC	4, 6	14.8	18.5	8	φ0.66	13	16	2.75	1.11	2-NPT1-1/2"	8	φ11	5/8"	31.8	0.25	3.91	0.25	φ12.5	5.25	5.25	10.5	12	14.6	0.5	φ2.215	1.845		
NEPM364TC-365TC	2	15.6	20.9	9	φ0.66	14	18	2.95	1.11	2-NPT1-1/2"	9	φ11	5/8"	32	0.25	2.03	0.25	φ12.5	3.75	5.88	11.25	12.25	15.4	0.5	φ1.875	1.991		
NEPM364TC-365TC	4, 6	15.6	20.9	9	φ0.66	14	18	2.95	1.11	2-NPT1-1/2"	9	φ11	5/8"	34.2	0.25	4.28	0.25	φ12.5	5.88	5.88	11.25	12.25	15.4	0.625	φ2.375	2.021		
NEPM405TC	2	18.5	23.11	10	φ0.81	16	20	3.15	1.18	2-NPT2"	10	φ11	5/8"	35.5	0.25	2.78	0.25	φ12.5	4.25	6.62	12.25	13.75	17.3	0.5	φ2.215	1.845		
NEPM404TC-405TC	4, 6	18.5	23.11	10	φ0.81	16	20	3.15	1.18	2-NPT2"	10	φ11	5/8"	38.5	0.25	5.65	0.25	φ12.5	7.25	6.62	12.25	13.75	17.3	0.75	φ2.875	2.45		
NEPM444TC-445TC	2	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2"	11	φ14	5/8"	41	0.25	3.03	0.25	φ16	4.75	7.5	14.5	16.5	21.1	0.625	φ2.375	2.021		
NEPM444TC-445TC	4, 6	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2"	11	φ14	5/8"	44.5	0.25	6.91	0.25	φ16	8.5	7.5	14.5	16.5	21.1	0.875	φ3.375	2.88		
NEPM447TC-449TC	2	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2-1/2"	11	φ14	5/8"	49.5	0.25	3.03	0.25	φ16	4.75	7.5	20.0	25	29.3	0.625	φ2.375	2.021		
NEPM447TC-449TC	4, 6	19.5	26.05	11	φ0.81	18	22	3.35	1.38	2-NPT2-1/2"	11	φ14	5/8"	53.3	0.25	6.91	0.25	φ16	8.5	7.5	20.0	25	29.3	0.875	φ3.375	2.88		
*NEPM449TC	4, 6	20.68	28.54	11	φ0.81	18	21.3	3.35	1.32	NPT-3"	11	φ14	5/8"	56.3	0.25	6.91	0.25	φ16	8.5	7.5	20.0	25	29.3	0.875	φ3.375	2.88		

Note: "\*" is applicable to 2P-300HP, 4P-300HP, 6P-250HP, 6P-300HP motor.

# NEPX Explosion-proof Premium Efficiency Motor

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## General Descriptions

NEPX series explosion - proof Premium Efficiency three phase induction motors (Frame143 - 449) are developed by Jiangsu Dazhong Electric Motor Co., Ltd in line with NEMA Standards, which ratings, mounting dimensions and electrical performances meet the requirements of latest NEMA Standards. These motors possess many remarkable features such as premium efficiency, low noise, little vibration, large margin of safety intemperature rise, popular shape, safe and reliable operation.



## Application

a) One thermistor is embedded in per phase of the stator winding which will trip at 145°C to protect the winding from over heating.

b) Explosionproof features:

Class1 Division 1, Group C and D

Class II DivisionI, Group E, F and G

Temperature Code: T3C

## Rating

1HP to 250HP

143T - 449T

3600, 1800 or 1200rpm@60Hz, 3000, 1500 or 1000rpm@50HZ

NEMA Design B

Class F insulation with Brise @1.0SF

Service factor is 1.15

3 phase, 208 - 230/460V and 575V@60Hz, 380V@50Hz

NEMA Premium efficiency standards NEMA

IP55 Protection

Continuous Duty

Maximum ambient 40°C

Altitude up to 3300 ft( 1000m )



## Construction

### ■ Stator

High quality steel laminations and magnetic wires adopted  
 Vacuum-pressure-impregnated (VPI) treatment  
 Excellent electrical and mechanical properties  
 High moisture resistance  
 Better thermal stability

### ■ Rotor

The cast aluminum rotor is hot shrunk on the shaft. The rotor is dynamically balanced to achieve little vibration.

### ■ Bearings

Shield ball bearings are adopted for frame 143T - 215T motors. And bearings open with covers are adopted for frame 254T - 449T motors. Such motors are fitted with re - greasing nipples.

Frame size	Drive end bearing		Non-drive end bearing	
NEPM14	6206-2Z		6206-2Z	
NEPM18	6207-2Z		6207-2Z	
NEPM21	6208-2Z		6208-2Z	
NEPM25	6309		6309	
NEPM28	6311		6311	
NEPM32	6312		6312	
NEPM36	6313		6313	
NEPM40	2P: 6313	4, 6P: 6318	2P: 6313	4, 6P: 6317
NEPM444-445	2P: 6314	4, 6P: NU319	2P: 6314	4, 6P: 6318
NEPM447-449	2P: 6314	4, 6P: NU319	2P: 6314	4, 6P: 6318

### ■ Conduit Box

CastIron Conduit Box centrally located  
 F1/F2 Convertible  
 NPT Threaded  
 Grounding bolts fitted  
 Connection Diagram available



## ■ Fan and Fan Cover

Standard fan of plastics or cast iron according to different usage

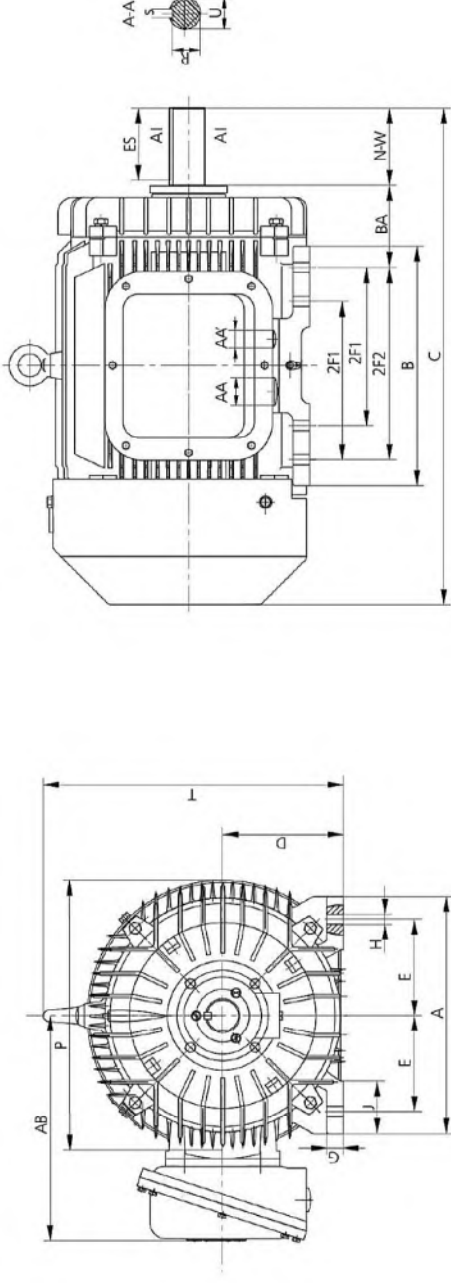
Fabricated fan cover as standard

Cast iron fan cover for Severe Duty

HP	Frame Size	Speed	At Full Load(460V)				At Full Load(380V)				Locked Current (460V)	Locked Current (380V)	Full Load Torque (Lb.Ft)	Locked Torque (%) FLT	Break -down Torque (%)	
			AMPS (460V)	Power Factor	Effi.	NEMA Code	Speed	AMPS (380V)	Power Factor	Effi.						NEMA Code
1.5	NEPM143T-2	3500	2.0	0.85	84	M	2890	2.6	0.85	82.5	M	20	27	2.22	260	320
2	NEPM145T-2	3500	2.4	0.9	85.5	L	2890	3	0.9	84	M	25	34	3	260	280
3	NEPM182T-2	3510	3.7	0.89	86.5	K	2900	4.4	0.89	85.5	L	32	43	4.49	200	330
5	NEPM184T-2	3515	5.8	0.92	88.5	J	2900	6.7	0.92	87.5	K	46	61	7.46	180	320
7.5	NEPM213T-2	3525	8.8	0.91	89.5	H	2930	10.3	0.91	88.5	J	63	84	11.2	180	300
10	NEPM215T-2	3525	11.2	0.93	90.2	H	2930	13.9	0.93	89.5	H	81	107	14.9	180	290
15	NEPM254T-2	3515	17.2	0.91	91	G	2940	21	0.84	90.2	H	116	154	22.4	180	290
20	NEPM256T-2	3530	22.5	0.89	91	G	2940	28.1	0.89	90.2	H	145	194	29.8	170	250
25	NEPM284TS-2	3530	28.0	0.92	91.7	G	2945	34.6	0.92	91	H	182	243	37.2	180	270
30	NEPM286TS-2	3530	33.7	0.92	91.7	G	2945	40.5	0.92	91	H	217	289	44.5	180	280
40	NEPM324TS-2	3540	44.5	0.92	92.4	G	2950	55.2	0.92	91.7	H	290	387	59.2	180	280
50	NEPM326TS-2	3545	55.0	0.92	93	G	2950	67.8	0.92	92.4	H	362	482	73.9	175	260
60	NEPM364T-2	3560	66.0	0.92	93.6	G	2960	82.2	0.92	93	H	435	578	88.6	180	275
75	NEPM365TS-2	3560	82.5	0.92	93.6	G	2960	99.3	0.92	93	H	542	722	111	190	275
100	NEPM405TS-2	3560	109.0	0.92	94.1	G	2970	133.8	0.92	93.6	H	725	965	147	180	280
125	NEPM444TS-2	3570	135	0.92	95	G	2970	160.5	0.92	94.5	H	907	1207	184	195	245
150	NEPM445TS-2	3570	162	0.92	95	G	2970	195.7	0.92	94.5	H	1085	1441	220	185	210
200	NEPM447TS-2	3570	213	0.93	95.4	G	2970	264.1	0.93	95	H	1450	1927	294	180	210
250	NEPM449TS-2	3570	266	0.93	95.8	G	2970	323.5	0.93	95.4	H	1825	2534	368	180	210
300	NEPM449TS-2	1740	318	0.93	95.8	G	1440	383.7	0.93	95.8	H	2200	3026	441	300	310



HP	Frame Size	Speed	At Full Load(460V)				At Full Load(380V)					Locked Current (460V)	Locked Current (380V)	Full Load Torque (Lb.Ft)	Locked Torque (%) FLT	Break-down Torque (%)
			AMPS (460V)	Power Factor	Effi.	NEMA Code	Speed	AMPS (380V)	Power Factor	Effi.	NEMA Code					
1	NEPM143T-4	1740	1.5	0.76	85.5	M	1440	1.7	0.76	84	P	15	20	3.02	320	330
1.5	NEPM145T-4	1740	2.2	0.76	86.5	M	1440	2.5	0.76	85.5	N	20	27	4.54	320	330
2	NEPM145T-4	1745	2.8	0.8	86.5	L	1450	3.1	0.8	85.5	M	25	34	6.05	250	320
3	NEPM182T-4	1745	4.0	0.82	89.5	K	1450	4.6	0.82	88.5	L	32	43	9	240	290
5	NEPM184T-4	1750	6.3	0.85	89.5	J	1460	7.5	0.85	88.5	H	46	61	15	195	260
7.5	NEPM213T-4	1750	9.0	0.85	91.7	H	1460	11	0.85	91	j	63	84	22.5	190	250
10	NEPM215T-4	1750	12.0	0.86	91.7	H	1470	14.9	0.86	91	H	81	107	30	185	230
15	NEPM254T-4	1750	18.0	0.86	92.4	G	1470	22.9	0.86	91.7	H	116	154	44.8	200	220
20	NEPM256T-4	1760	24.0	0.85	93	G	1470	29.6	0.85	92.4	H	145	194	59.8	180	260
25	NEPM286T-4	1760	28.5	0.9	93.6	G	1470	35.5	0.9	93	H	182	243	74.3	185	280
30	NEPM286T-4	1760	34.0	0.9	93.6	G	1480	41.8	0.9	93	H	217	289	89.1	180	260
40	NEPM324T-4	1765	45.0	0.89	94.1	G	1480	55.6	0.89	93.6	H	290	387	119	175	250
50	NEPM326T-4	1780	56.0	0.9	94.5	G	1480	67.7	0.9	94.1	H	362	482	148	195	280
60	NEPM364T-4	1780	67.0	0.9	95	G	1480	82.1	0.9	94.5	H	435	578	178	195	260
75	NEPM365T-4	1780	83.0	0.9	95.4	G	1480	99	0.9	95	H	542	722	222	185	220
100	NEPM405T-4	1780	110.0	0.9	95.4	G	2970	135.2	0.9	95	H	725	965	295	190	250
125	NEPM444T-4	1780	137	0.91	95.4	G	1480	160	0.91	95	H	907	1207	369	180	250
150	NEPM445T-4	1780	164	0.91	95.8	G	1480	194.4	0.91	95.4	H	1085	1441	443	190	250
200	NEPM447T-4	1780	216	0.91	96.2	G	1480	264.2	0.91	95.8	H	1450	1927	590	195	240
250	NEPM449T-4	1785	270	0.91	96.2	G	1480	325.9	0.91	95.8	H	1825	2534	735.6	190	220
300	NEPM449T-4	1780	325	0.91	96.2	G	1480	391.3	0.91	95.8	H	2200	3026	885	195	240
1	NEPM145T-6	1140	1.7	0.69	82.5	M	950	1.9	0.69	81.5	S	15	20	4.6	260	330
1.5	NEPM182T-6	1165	2.3	0.71	87.5	M	970	2.6	0.71	86.5	N	20	27	6.8	240	340
2	NEPM184T-6	1165	2.9	0.74	88.5	L	970	3.6	0.74	87.5	M	25	34	9.1	230	300
3	NEPM213T-6	1170	4.2	0.75	89.5	K	970	4.9	0.75	88.5	L	32	43	13.5	200	300
5	NEPM215T-6	1170	6.7	0.79	89.5	J	970	8	0.79	88.5	K	46	61	22.5	200	250
7.5	NEPM254T-6	1175	9.8	0.79	91	H	980	12.3	0.79	90.2	J	63	84	33.7	200	240
10	NEPM256T-6	1170	13.2	0.79	91	H	980	15.9	0.79	90.2	H	81	107	44.9	200	230
15	NEPM284T-6	1175	18.5	0.84	91.7	G	980	22.7	0.84	91	H	116	154	67.1	200	255
20	NEPM286T-6	1175	24.5	0.85	91.7	G	980	30.4	0.85	91	H	145	194	89.4	210	250
25	NEPM324T-6	1175	29.5	0.86	93	G	980	35.5	0.86	92.4	H	182	243	111	200	250
30	NEPM326T-6	1180	35.5	0.85	93	G	980	41.9	0.85	92.4	H	217	289	134	200	235
40	NEPM364T-6	1180	46.5	0.86	94.1	G	980	55.2	0.86	93.6	H	290	387	178	200	235
50	NEPM365T-6	1180	58.0	0.87	94.1	G	980	67.8	0.87	93.6	H	362	482	223	200	220
60	NEPM404T-6	1180	68.0	0.88	94.5	G	985	83	0.88	94.1	H	435	578	268	190	210
75	NEPM405T-6	1180	85.0	0.88	94.5	G	985	100.6	0.88	94.1	H	542	722	335	190	210
100	NEPM444T-6	1180	113	0.89	95	F	980	136	0.89	94.5	H	725	965	445	195	210
125	NEPM445T-6	1185	140	0.89	95	G	980	162.6	0.89	94.5	H	907	1207	554	190	210
150	NEPM447T-6	1185	165	0.89	95.8	G	980	197.1	0.89	95.4	H	1085	1441	665	185	215
200	NEPM449T-6	1185	220	0.89	95.8	G	980	268.8	0.89	95.4	H	1450	1927	885	190	210
250	NEPM449T-6	1190	292	0.84	95.8	G	980	357.6	0.835	95.4	H	1825	2534	1113	225	260
300	NEPM449T-6	1190	349	0.84	95.8	G	980	427.4	0.835	95.8	H	2200	3026	1322	140	230



Type	ES	S	R	U	N-W	BA	2F1	2F2	C	E	B	H	A	D	T	AB	AA	AA'	G	P	J
NEPX 143~145T	1.575	0.189	0.772	0.874	2.24	2.24	4	5	13.583	2.75	6.102	8-0.34	6.889	3.5	9.45	8.661	3/4"-14NPT	1/2"-14NPT	0.551	8.386	1.417
NEPX 182~184T	1.890	0.248	0.984	1.126	2.76	2.76	4.5	5.5	16.124	3.75	7.480	8-0.41	8.976	4.5	11.61	9.448	3/4"-14NPT	1/2"-14NPT	0.590	10.472	1.771
NEPX 213~215T	2.409	0.311	1.20	1.378	3.38	3.5	5.5	7	20.078	4.25	9.055	8-0.41	10.433	5.25	13.98	9.646	1"-11.5NPT	1/2"-14NPT	0.787	12.008	2.362
NEPX 254~256T	2.953	0.374	1.413	1.626	4	4.25	8.25	10	25.591	5	12.204	8-0.53	12.326	6.25	15.70	13.583	11/4"-11.5NPT	1/2"-14NPT	0.866	14.409	2.756
NEPX 284~286TS-2	2.244	0.374	1.413	1.626	3.25	4.76	9.5	11	27.559	5.5	13.582	8-0.53	13.779	7	17.24	14.370	11/2"-11.5NPT	1/2"-14NPT	0.866	16.181	2.756
NEPX 284~286T-4.6	3.346	0.5	1.591	1.874	4.62	4.76	9.5	11	28.937	5.5	13.582	8-0.53	13.779	7	17.24	14.370	11/2"-11.5NPT	1/2"-14NPT	0.866	16.181	2.756
NEPX 324~326TS-2	2.638	0.5	1.591	1.874	3.75	5.25	10.5	12	30.709	6.25	14.764	8-0.66	15.354	8	19.81	15.354	2"-11.5NPT	1/2"-14NPT	1.024	17.638	2.756
NEPX 324~326T-4.6	3.937	0.5	1.843	2.126	5.25	5.25	10.5	12	32.283	6.25	14.764	8-0.66	15.354	8	19.81	15.354	2"-11.5NPT	1/2"-14NPT	1.024	17.638	2.756
NEPX 364~365TS-2	2.441	0.5	1.591	1.874	3.75	5.88	11.25	12.25	32.48	7	15.433	8-0.66	17.126	9	21.20	16.929	3"-8NPT	1/2"-14NPT	1.181	18.976	2.953
NEPX 364~365T-4.6	4.528	0.626	2.020	2.374	5.88	5.88	11.25	12.25	34.449	7	15.433	8-0.66	17.126	9	21.20	16.929	3"-8NPT	1/2"-14NPT	1.181	18.976	2.953
NEPX 405TS-2	3.228	0.5	1.846	2.126	4.250	6.62	12.248	13.748	35.629	8	17.323	8-0.81	19.055	10	24.80	18.307	3"-8NPT	1/2"-14NPT	1.181	19.133	3.150
NEPX 404~405T-4.6	5.787	0.748	2.448	2.874	7.251	6.62	12.248	13.748	38.583	8	17.323	8-0.81	19.055	10	24.80	18.307	3"-8NPT	1/2"-14NPT	1.181	19.133	3.150
NEPX 444~445TS-2	3.228	0.626	2.020	2.374	4.752	7.5	14.5	16.5	41.339	9	21.654	8-0.81	21.338	11	27.95	21.063	3"-8NPT	1/2"-14NPT	1.378	24.213	3.346
NEPX 444~445T-4.6	7.283	0.874	2.878	3.374	8.5	7.5	14.5	16.5	45.276	9	21.654	8-0.81	21.338	11	27.95	21.063	3"-8NPT	1/2"-14NPT	1.378	24.213	3.346
NEPX 447~449TS-2	3.228	0.626	2.020	2.374	4.752	7.5	20	25	50.787	9	29.764	8-0.81	21.338	11	27.95	21.063	3"-8NPT	1/2"-14NPT	1.378	24.213	3.346
NEPX 447~449T-4.6	7.283	0.874	2.878	3.374	8.5	7.5	20	25	54.528	9	29.764	8-0.81	21.338	11	27.95	21.063	3"-8NPT	1/2"-14NPT	1.378	24.213	3.346







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