



*Proudly made in **Egypt***

[Www.patriot-eg.com](http://www.patriot-eg.com)



TECHNICAL SUBMITTAL FOR FIRE PUMP SET

ELECTRIC
DIESEL
JOCKEY



PATRIOT



TECHNICAL SUBMITTAL FOR
FIRE PUMP SET

ELECTRIC + DIESEL + JOCKEY

CAPACITY: 500 USGPM @ 8 BAR
TYP: END SUCTION PUMP

INDEX..

01.

GENERAL DESCRIPTION

*PATRIOT FIRE PUMPS
END SUCTION PUMP*



02.

ELECTRIC FIRE PUMP

*ELECTRIC PUMP
ELECTRIC MOTOR*

03.

GENERAL DESCRIPTION

*DIESEL PUMP
DIESEL ENGINE*

04.

JOCKEY FIRE PUMP

JOCKEY PUMP

05.

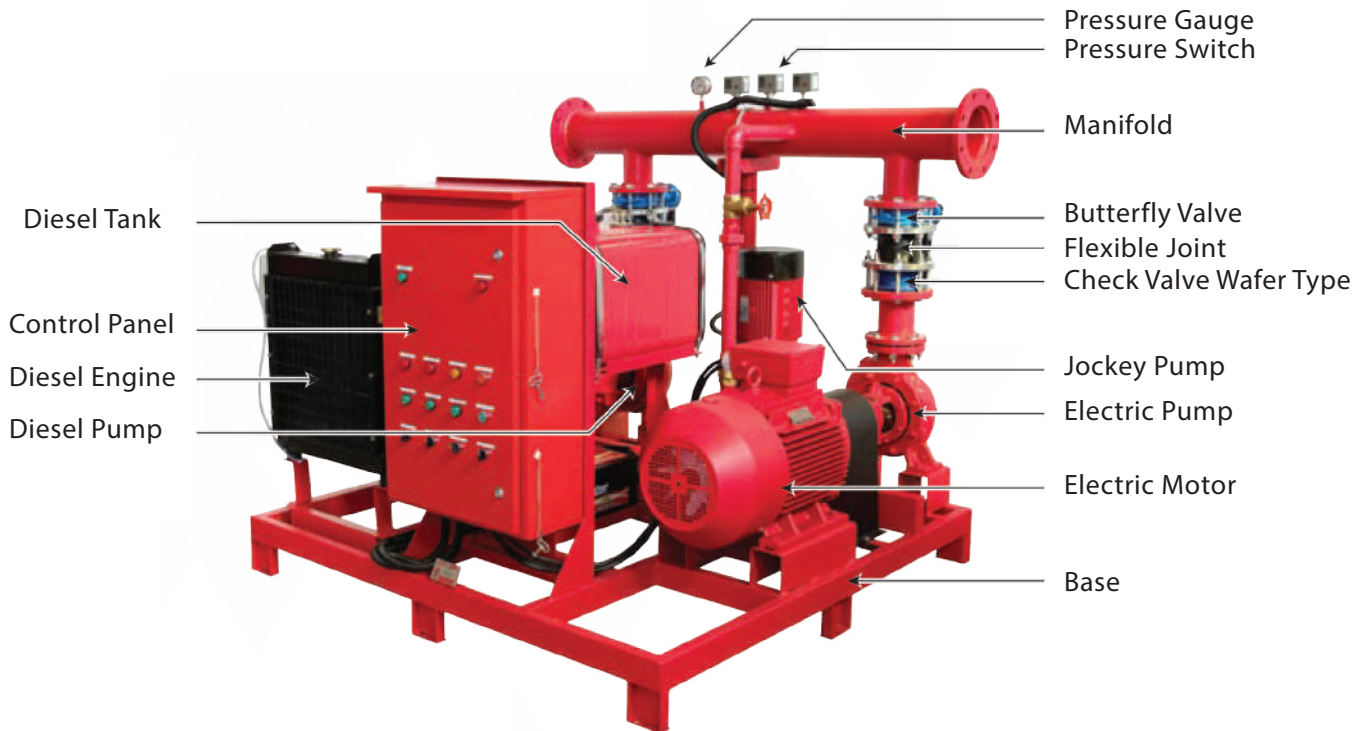
FIRE PUMP CONTROLLER



PATRIOT

Fire Pump

Fire Pump Components



General Features

Space Saving Design Efficiency:

Easy to Install & Handle:

Available in capacities from 100 GPM up to 1500 GPM and pressure range up to 12 BAR.

Pre-fabricated, pre-piped wired, factory tested unit.

In compliances with local civil defense requirement & NFPA 20 selection & operation procedure.

Pumps coupled with heavy duty trouble free electrical & diesel drivers.

Dynamic balanced pumps impellers.

Pump set piping is hydrostatically tested to ensure piping integrity.

The Standard Models EDJ, DJ and EJ.

Other specifications are also available as per customer request.

Offers Completed Skid Mounted Unit including High quality Horizontal End Suction Pumps that coupled with Heavy duty (Electrical/ Diesel) drivers that assembled with full discharge line control Gate & Check Valves along with flexible joints. Pressure Switches & Gauge fitted on well Supported Header, where all pre-piped, wired, & fabricated in Common Compact Skid is Fully Automatic Operated through latest Design Control Panel.



Standard Models

GPM

150 - 250 - 500 - 750 - 1000 - 1250 - 1500

Model: EDJ

Electrical + Diesel + Jockey

Consist of Main End Suction Pump driven by Electrical Motor, Stand by End Suction Diesel Pump driven by Diesel Engine, & Vertical multistage (Jockey) (Maintenance) Pump that all are assembled with discharge line accessories, as well as connected with Skid Mounted Control Panel.



Model: DJ

Diesel + Jockey

Consist of Main End Suction Diesel Pump driven by Diesel Engine, & Vertical Multistage Jockey (maintenance) Pump that all are assembled with discharge line accessories, as well as connected with Skid Mounted Control Panel.

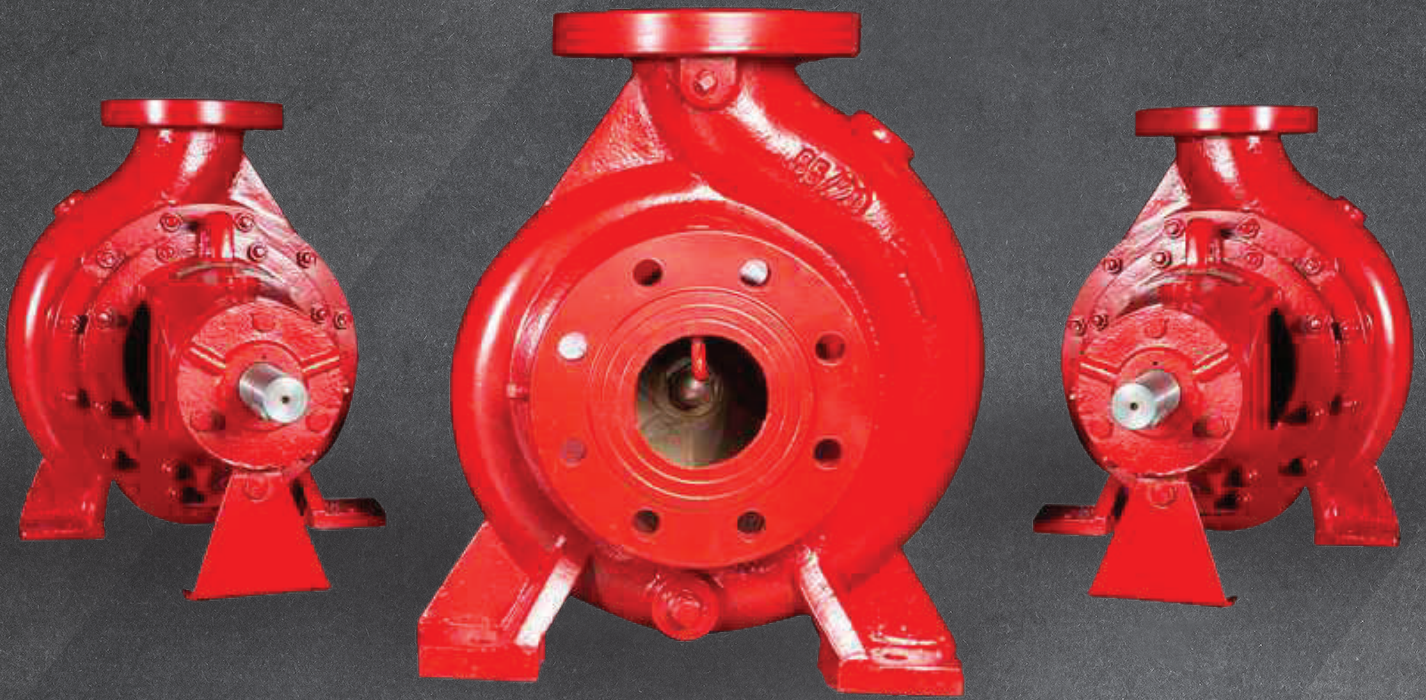


Model: EJ

Electrical + Jockey

Consist of Main End Suction Pump driven by Electrical Motor, & Vertical Multistage Jockey (maintenance) Pump that all are assembled with discharge line accessories, as well as connected with Skid Mounted Control Panel.





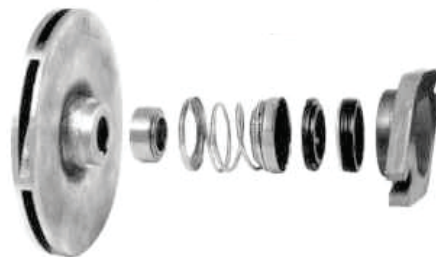
BACK PULL OUT
END SUCTION CENTRIFUGAL PUMP

PATRIOT
P U M P S

End Suction Fire Pump

Range from 32mm to 250mm
discharge

PATRIOT PUMPS RANGE COMPLIES TO BOTH PERFORMANCE AND DIMENSIONAL STANDARDS FOR THE INTERNATIONAL STANDARD DIN 24255



MECHANICAL SEAL

STUFFING BOX

flushing. External flush can be fitted and pump can be supplied with a mechanical seal. Conversion from packed box to mechanical seal and back to packing is easy. All pumps that can operate at 2 pole speed have a close tolerance stuffing box bush fitted.

BEARING HOUSING

Rugged cast iron construction with only three bearing housings covering complete range of pumps which gives many common interchangeable parts.

BEARINGS

Bearings on 33 sizes are grease lubricated - sealed for life. 4 sizes have oil lubricated bearings and for this arrangement the housing includes an oil level sight glass and vent.

IMPELLER

Double shrouded type is hydraulically balanced and positively driven by shaft key and axially locked between sleeve and impeller nut.

SHAFT

A domed type locking nut seats the stainless steel shaft at the impeller. Only 4 shafts are required to cover whole 37 sizes and reduces inventory to a minimum.

WEAR RINGS

Replaceable wear rings are fitted as standard to all casings and also to back covers on larger pumps which reduces maintenance time and cost.

CASING

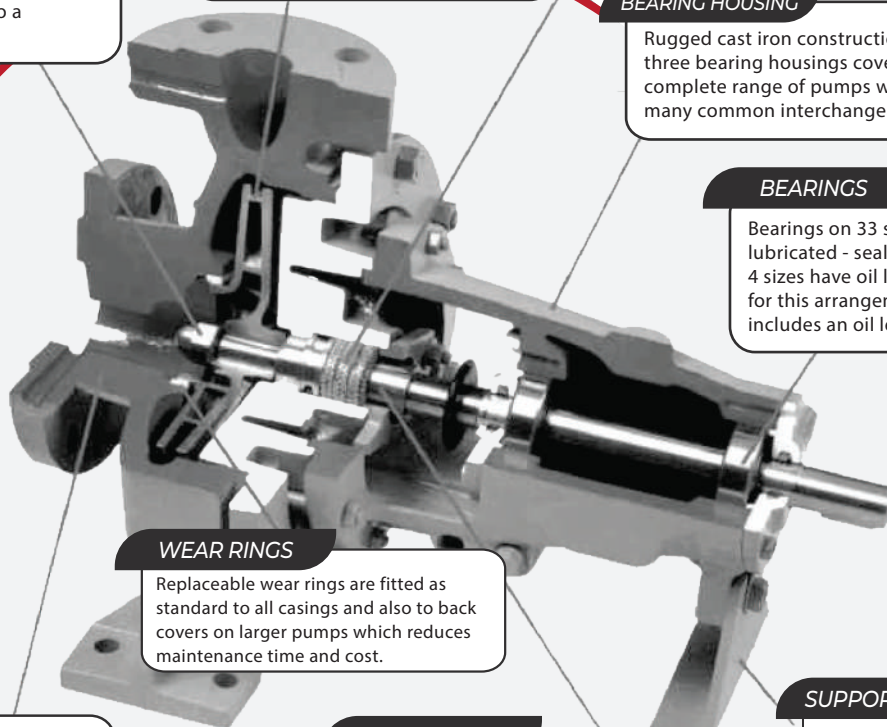
The cast iron volute casing is of robust design with integrally cast feet, vertical top centerline discharge with axial suction incorporating cast inlet vane to give best flow to impeller eye.

SHAFT SLEEVE

Fully machined hook type shaft sleeve prevents shaft damage under the gland packing which substantially reduces maintenance costs.

SUPPORT FOOT

Each has pump removable support foot fitted at drive end for greater rigidity.



Centrifugal

General

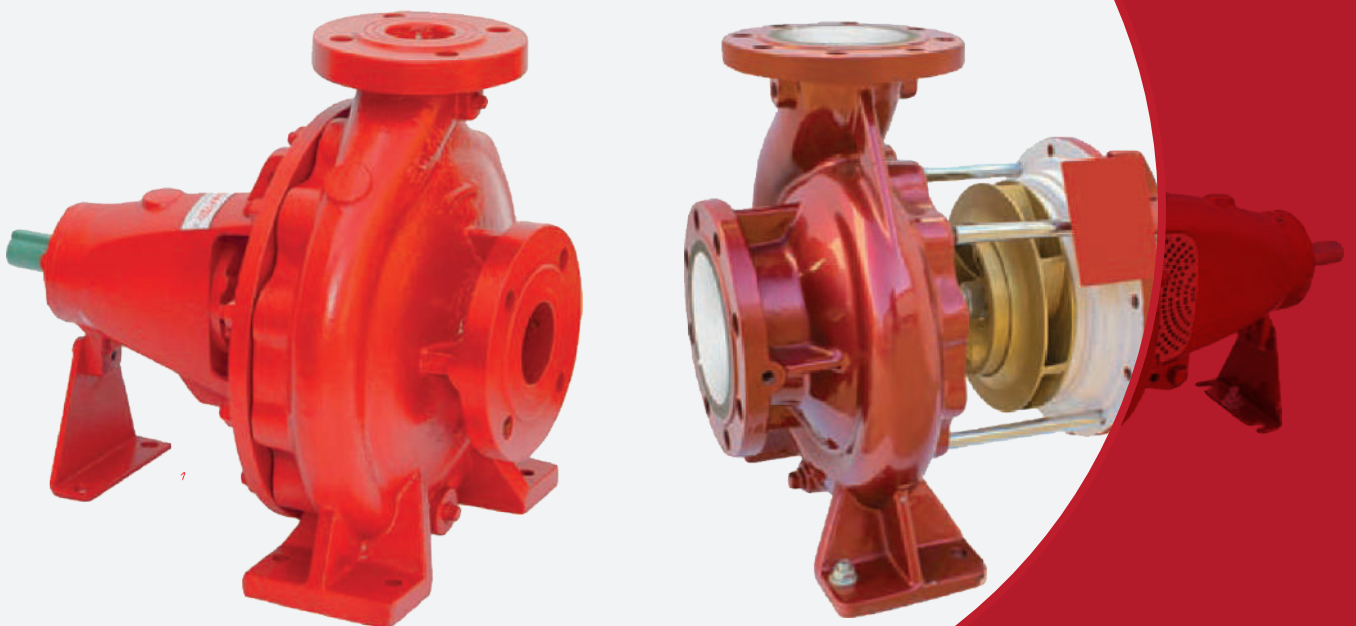
The casing is a heavy duty design. Back pull out design for fast and easy maintenance. Replaceable wear ring to assure optimum efficiency.

Removable and adjustable support foot provides added rigidity and ease of maintenance. Stainless steel shaft sleeve prevents damage to the shaft reduces the maintenance cost. Mechanical seal or soft packing on request.

Features

Capacity up to 1500 GPM.

- Rear pull out design supplied as standard with spacer coupling that allow removal of rotating elements without disturbing piping Connection.
- Hydraulically balanced Impeller, assure smooth operation& long bearing life limit
- Available in Electrical motor or Diesel Engine driven configuration.
- Suitable for Commercial, Residential & Industrial applications.
- Top centre line discharge with foot supported casing



End Suction Centrifugal



PATRIOT PUMPS BACK PULL - OUT FEATURES.

This design feature allows the complete rotating element to be removed for servicing without disconnecting pipework. If a spacer coupling is fitted then motor does not have to be moved. On re-assembly of pump coupling re-alignment problems are completely eliminated.

APPLICATIONS

- Air Conditioning
- Heating and Ventilating
- Refrigeration
- Fire Protection
- Plumbing
- Food & Drink Manufacture
- Circulating
- Water Pressure Boosting
- Transfer
- Water Treatment and Supply
- Irrigation
- Drainage
- Factory Pumping
- Process Industry
- Petroleum Products
- General Industry

MATERIALS OF CONSTRUCTION

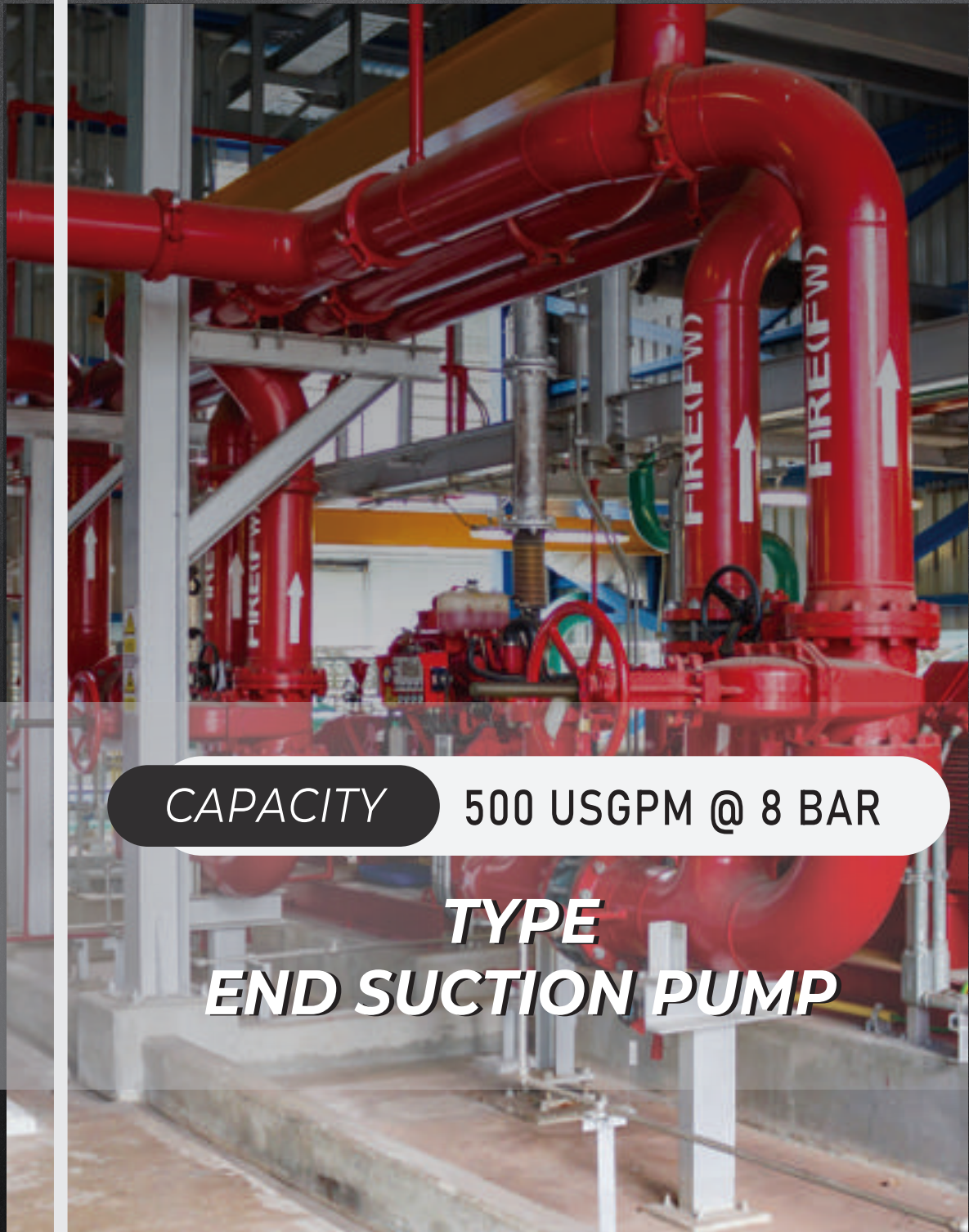
	BRONZE	CAST IRON	ALL IRON
Casing	Cast Iron	Cast Iron	Cast Iron
Impeller	BRONZE	Cast Iron	Cast Iron
Wear Ring	Cast Iron	Cast Iron	Cast Iron
Shaft	Stainless Steel	Stainless Steel	Stainless Steel
Shaft Nut	Stainless Steel	Stainless Steel	Cast Iron
Shaft Sleeve	Stainless Steel	Stainless Steel	Stainless Steel
Lantern Ring	Cast Iron	Cast Iron	Cast Iron
Gland	Cast Iron	Cast Iron	Cast Iron

MATERIALS SPECIFICATIONS

MATERIAL	NEAREST EQUIVALENT STANDARD			
	AUSTRALIAN	BRITISH	AMERICAN	DIN
Cast Iron	AS 1830/T200	BS 1452: GR 220	ASTM A48 Class 30	30 DIN 1691 GG 20
BRONZE	AS 1565/836B	BS 1400: LG 2	ASTM B145 CDA836	DIN 1705
Stainless Steel	AS 1444 GR 420	BS 970: 420/S37	AISI 420	DIN 17440



TECHNICAL SUBMITTAL FOR ELECTREICAL FIRE PUMP



CAPACITY 500 USGPM @ 8 BAR

TYPE
END SUCTION PUMP



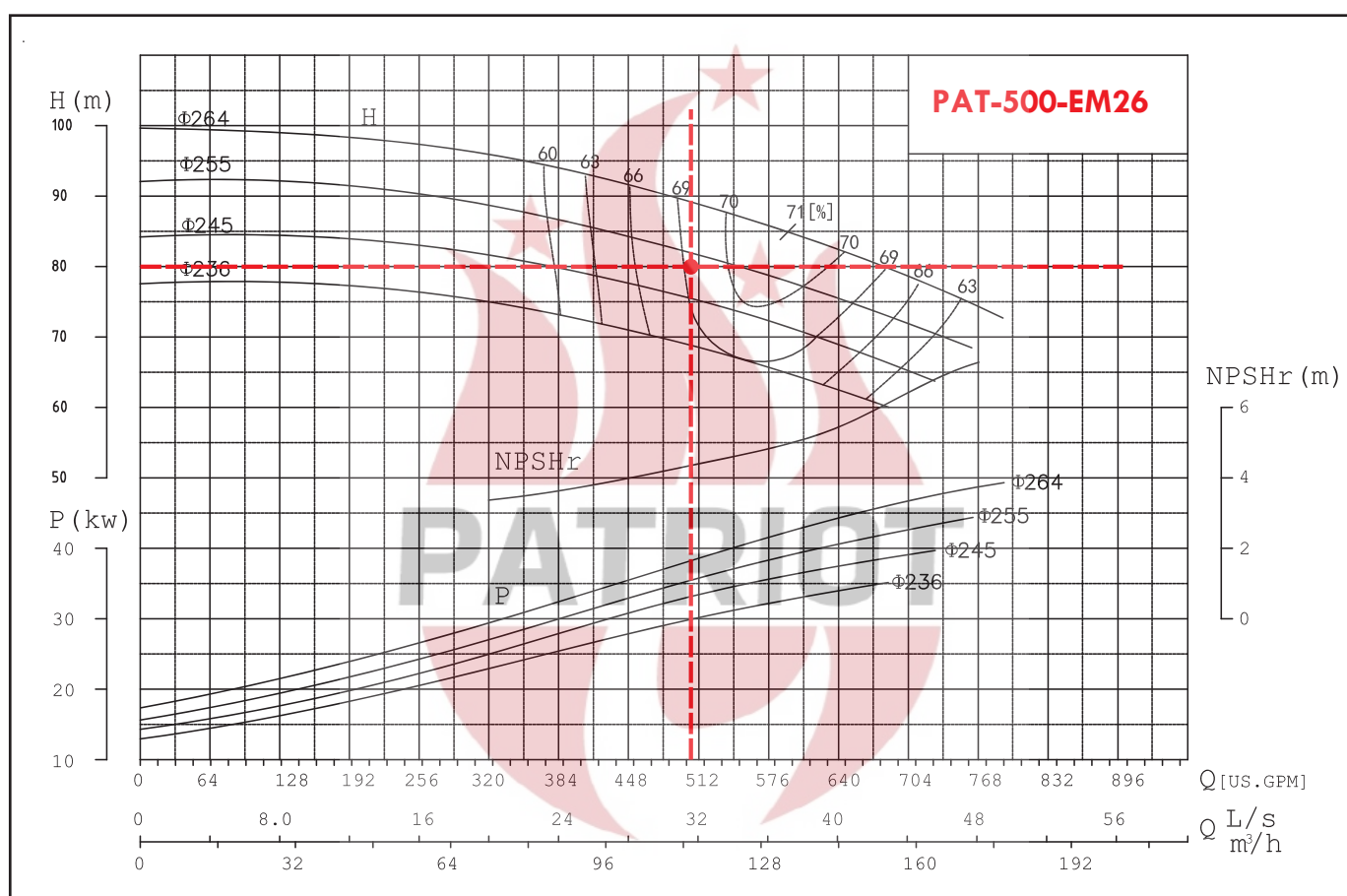
ELECTRIC PUMP

<i>MODEL</i>	<i>PAT-500-EM26</i>
TYPE	END SUCTION
RATED FLOW	500 USCPM
RATED HEAD	8 BAR
IMPELLER SIZE	Ø 255 mm
SUCTION / DISCHARGE	Ø 100 Ø 80
RATED SPEED	2900 RPM
CASING	CAST IRON
IMPELLER MATERIAL	BRONZE
SHAFT	STAINLESS STEEL



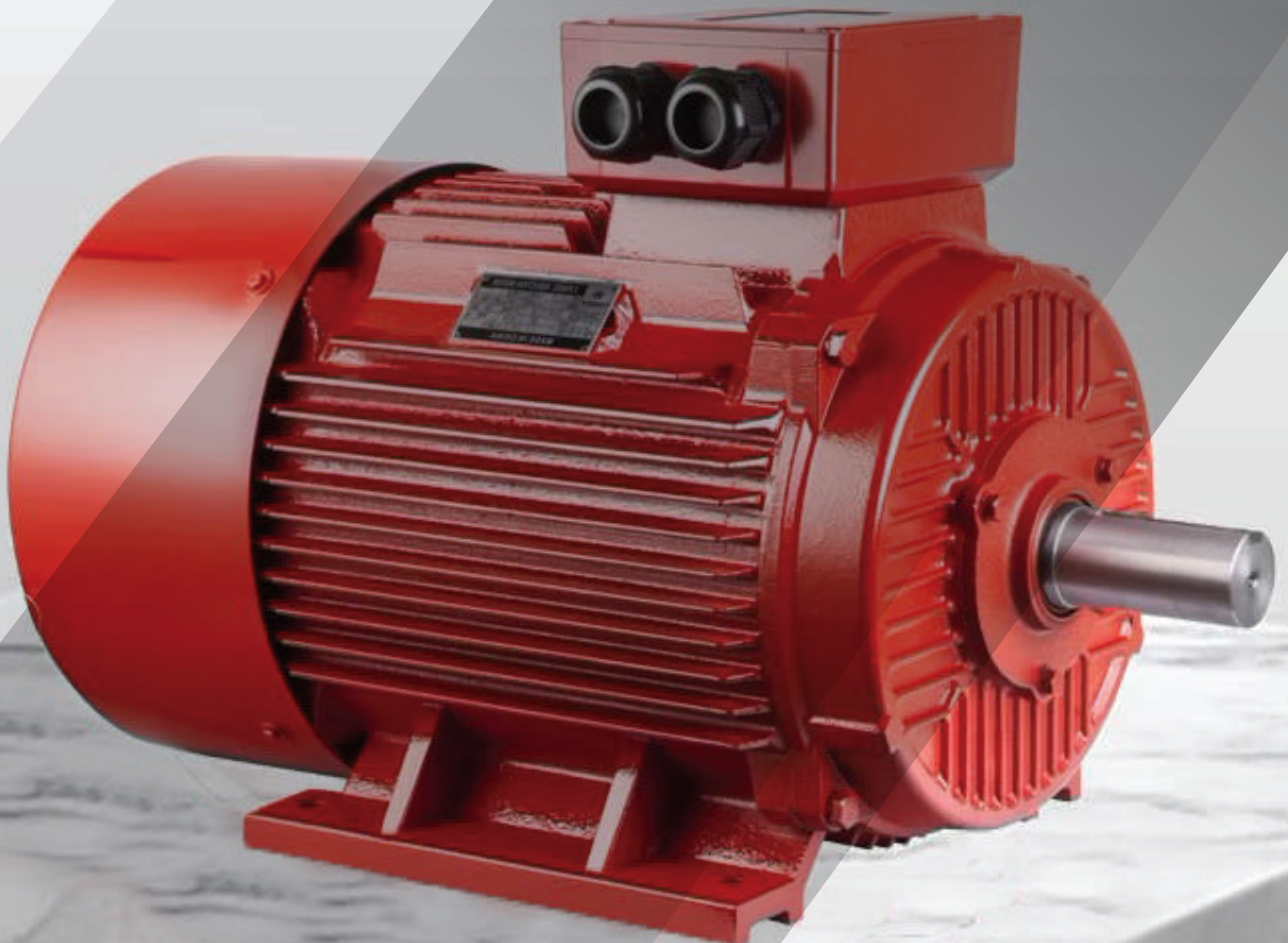
END SUCTION CENTRIFUGAL PUMP PERFORMANCE CURVE

DUTY POINT	MODEL	NOMINAL SPEED	INLET	OUTLET
500 US. GPM @ 8 Bar	PAT-500-EM26	2900 RPM	φ100mm	φ80mm





ELECTRIC Motor



Factory Choice :

<i>MAKE</i>	<i>BEM</i>
RATED POWER	75 HP
RATED SPEED	2970 RPM
POWER SUPPLY	380-415V, 50Hz, 3 Phase, 2 Pole
RATED CURRENT	101 Ω
EFFICIENCY	92.5 %
RATED TORQUE	2.3

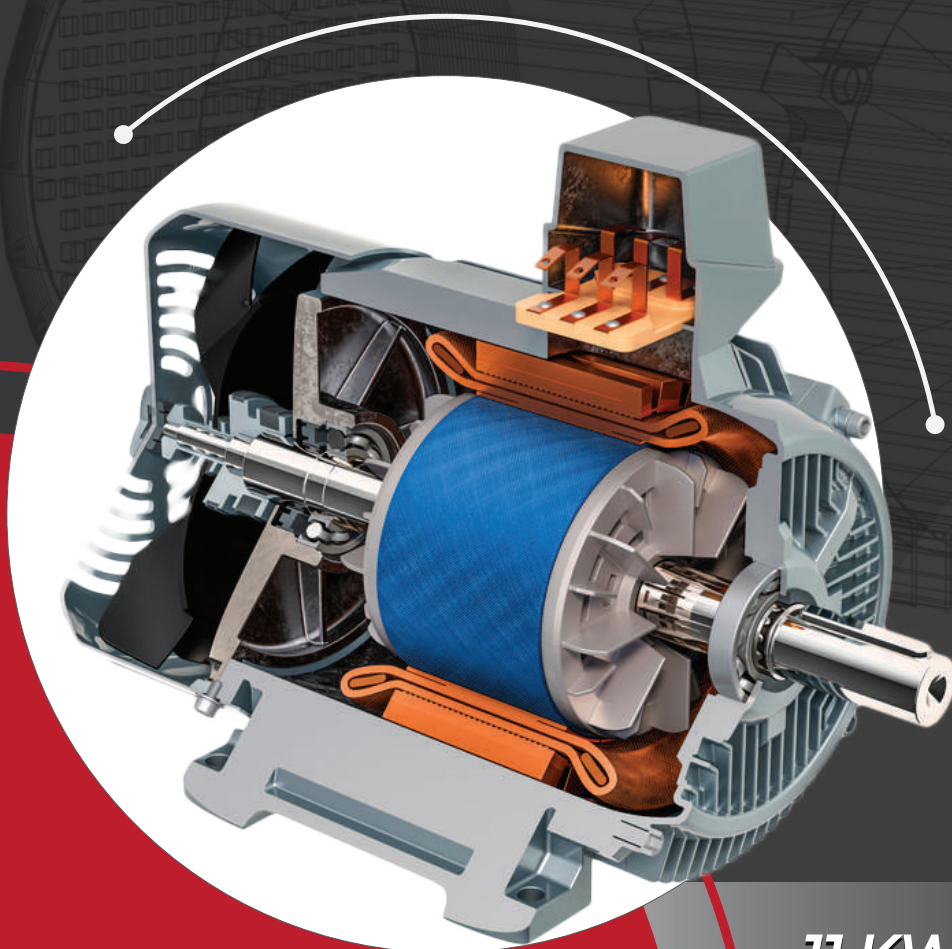
<i>MAKE</i>	<i>TECH TOP</i>
RATED POWER	75 HP
RATED SPEED	3000 RPM
POWER SUPPLY	380-415V, 50Hz, 3 Phase, 2 Pole
RATED CURRENT	95.5 A
EFFICIENCY	92.1%
RATED TORQUE	134



BEM



3-PHASE INDUCTION MOTORS



11 KW TO 200 KW



General Introduction

The Series BEM motors (Frame Size 80-400L.0.55-630KW) are totally enclosed fan cooled (TEFC) three-phase squirrel cage induction motors. This series is an entirely refreshed generation product aimed to replace the old series. It is up to the international standard in the third millennium.

Besides those of old series, the series BEM motors are characterized by such an outstanding features as:

- Protection degree: IP55 (IP56 on request)
- Insulation Class F
- Test Class B
- Low Noise (Tested at load)
- Better Structure Cooling Method (IC411)
- The Rated Output and The Mounting Dimensions are Conformed to the Standards IEC and DIN 42673
- The Motors Body and End Shield are Made from Cast Iron
- Heavy Duty S1 (Continuous Operation 24H/day)
- The Motors are provided with Thermistors (PTC) in the Windings from Frame Size: 180

Series BEM are general-purpose motors suitable for driving various kinds of machines or equipment.

Series BEM are rated at

- 380V, 50Hz (500V, 60Hz on request).
- Y-Connection for motors up to 7.5KW
- Δ -Connection for 11 KW and upwards
- Ambient temperature 45°C (50°C or more on request)
- R.H. 80%
- SKF Bearing

For series BEM motors, there is usually one shaft extension and terminal box on top of the frame.

Motors for special voltages, frequencies, for outdoor or humid tropic services or any other particular services are available on request.

Options (on request) such as:

- PT 100 on the bearings
- PTC in the windings for the motors with frame size 160 and smaller
- Anti-Condensation heater
- With 2 Shaft Ends (2nd shaft extension)
- Humidity 90% & 95% are also available

BEM

ELECTRIC MOTORS AND EQUIPMENT

- ◎ **BEM** multi-purpose motors are the ideal choice of installation in arduous environmental conditions. The range offers a variety of induction motors with a power rating of 11 kW [15 H.P.) to high powered motor providing 200 kW (270 OH. P.). Motors for other voltages frequencies, specifications and non standard features are available on request.
- ◎ **BEM** series motors are highly Engineered to cope up with sudden load increase, longer thermal life, higher altitudes and voltage variations. All the motors are manufactured under strict quality control procedures (ISO 9001] and are fully tested against the applicable standard.

multi use uses

DESIGN FEATURES

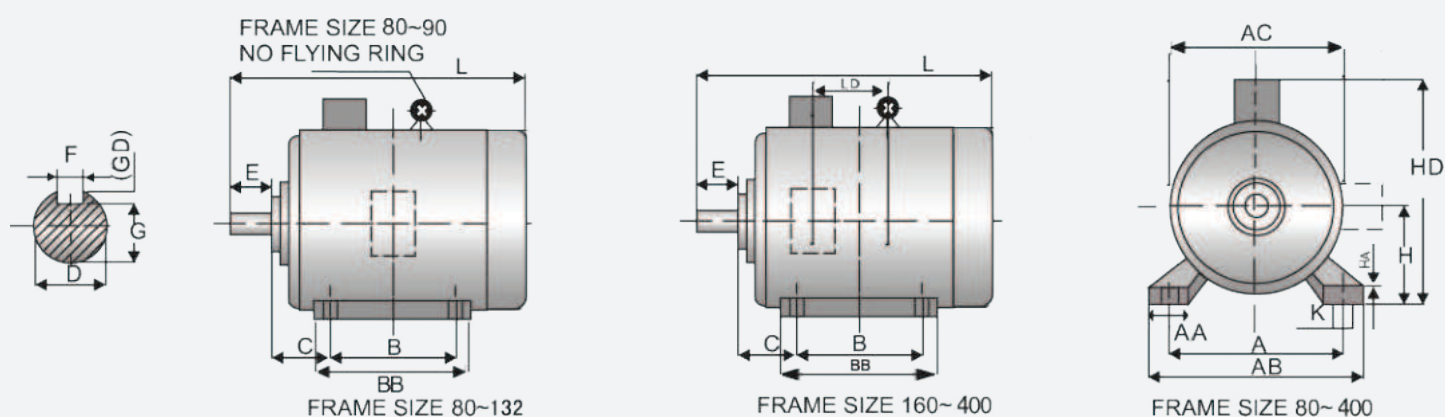
- ◎ High efficiency, thus saving energy.
 - ◎ Extended longevity of bearings.
 - ◎ Non-hydroscopic Class F insulation system with temperature rise limited to Class B.
 - ◎ Higher torque
 - ◎ High power density with increased kW to weight ratio.
 - ◎ Excellent thermal reserve.
 - ◎ Higher reliability and easy maintainability.
 - ◎ Good aesthetics.
-
- ◎ **BEM** uses integrated design management techniques for enhancing The efficiency and durability of Its products. Reliability, integrity. simplicity in desires and ease of maintenance, all endorse the product as a world leader in electric motors.
 - ◎ **BEM** motors can handle load and can continue working reliably for long hours. The balanced design and the precision of the motor ensure superb performance with minimum energy consumption.

The BEM logo is displayed in a stylized, italicized font with a red outline and white fill, set against a dark grey background. The logo is part of a larger graphic that includes a red and black chevron shape pointing downwards and to the right.

Technical Information

Type	Rated Output		Full Load				Ist/In Locked Current	Tst/Tn Locked Torque	Tm/Tn Locked Torque	Net Weight (B3) Kg
	KW	HP	Speed r/min	Current A	Eff %	Power Factor COSØ	Rated Current	Rated Torque	Rated Torque	
380 V 50Hz Synchronous Speed 3000 r/min (2 poles)										
BEM-160M1-2	11	15	2930	21.3	88	0.89	7.5	2.2	2.3	117
BEM-160M2-2	15	20	2930	28.8	89	0.89	7.5	2.2	2.3	125
BEM-160I-2	18.5	25	930	34.7	90	0.9	7.5	2	2.3	147
BEM-180M-2	22	30	2940	41	90	0.9	7.5	2	2.3	180
BEM-1200L1-2	30	40	2950	55.5	91.2	0.9	7.5	2	2.3	240
BEM-1200L2-2	37	50	2950	67.9	92	0.9	7.5	2	2.3	255
BEM-225M-2	45	60	2970	82.3	92.3	0.9	7.5	2	2.3	309
BEM-250M-2	55	75	2970	101	92.5	0.9	7.5	2	2.3	403
BEM-280S-2	75	100	2970	134	93	0.9	7.5	2	2.3	544
BEM-280M-2	90	125	2970	160	93	0.9	7.5	2	2.3	620
BEM-315S-2	110	150	2980	195	94	0.91	7.1	1.8	2.2	980
BEM-315M-2	132	180	2980	233	94.5	0.91	7.1	1.8	2.2	1080
BEM-315L1-2	160	220	2980	279	94.6	0.92	7.1	1.8	2.2	1160
BEM-315L2-2	200	270	2980	348	94.8	0.92	7.1	1.8	2.2	1190

DIMENSIONS FOR MOUNTING ARRANGEMENTS **B3**

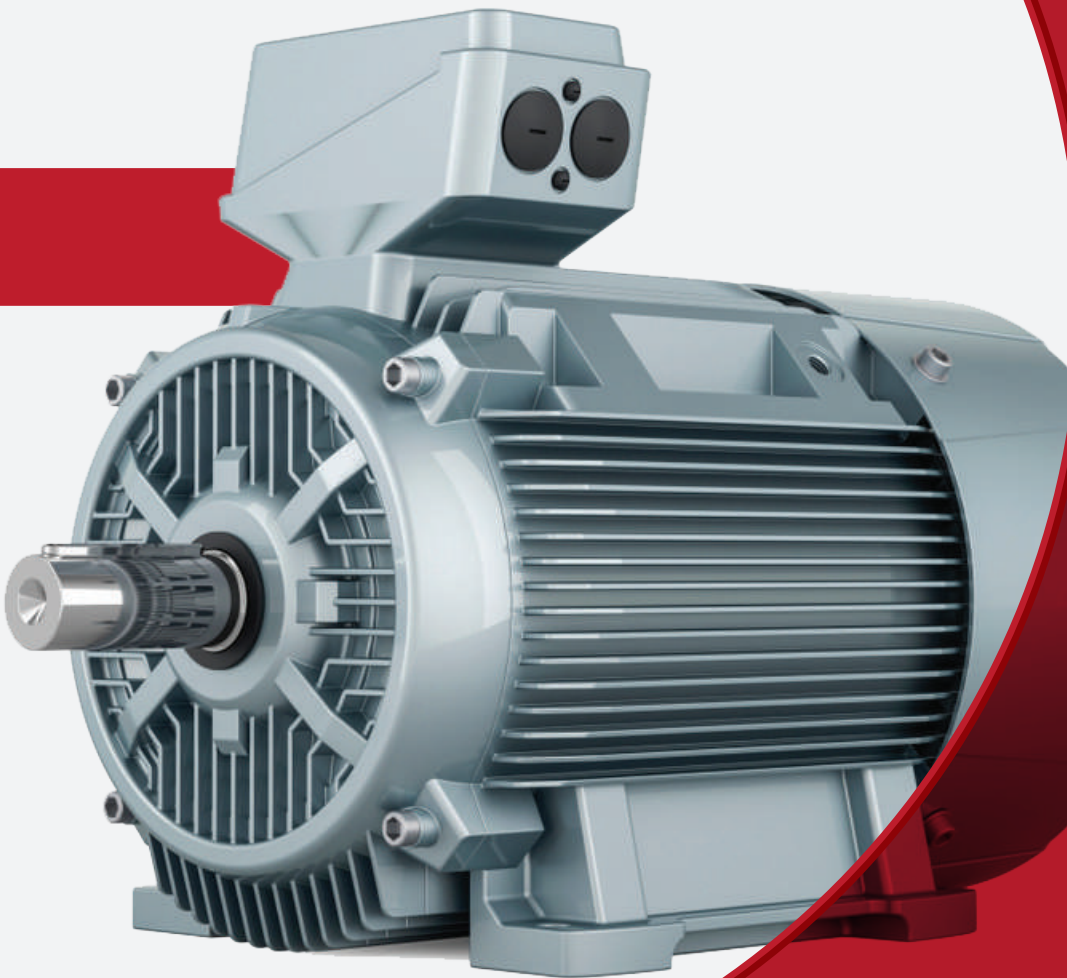


Frame	Dimensions (mm)													
	A	AA	AB	AC	B	BB	C	H	HA	HD	K	L		LD
												2P4,6,8P		
160M	254	73	320	330	210	275	108	160 ⁰ _{-0.5}	22	420	15	615		55
160	254	73	320	330	254	320	108	160 ⁰ _{-0.5}	22	420	15	670		55
180M	279	73	355	380	241	315	121	180 ⁰ _{-0.5}	24	455	15	700		86
180	279	73	355	380	279	345	121	180 ⁰ _{-0.5}	24	455	15	740		105
200	318	73	395	420	305	378	133	200 ⁰ _{-0.5}	27	505	19	770		102
225S	356	83	435	470	286	382	149	225 ⁰ _{-0.5}	27	560	19	—	815	103
225	356	83	435	470	311	407	149	225 ⁰ _{-0.5}	27	560	19	820	845	116
250M	406	88	490	510	34	458	168	250 ⁰ _{-0.5}	33	615	24	910		131
280S	457	93	550	580	36	535	190	280 ⁰ _{-1.0}	38	680	24	985		168
280M	457	93	550	580	419	586	190	280 ⁰ _{-1.0}	38	680	24	1035		194
315S	508	120	635	645	406	610	216	315 ⁰ _{-1.0}	45	800	28	1160	1270	205
315M	508	120	635	645	457	660	216	315 ⁰ _{-1.0}	45	800	28	1190	1300	240
315L	508	120	635	645	508	740	216	315 ⁰ _{-1.0}	45	800	28	1190	1300	240



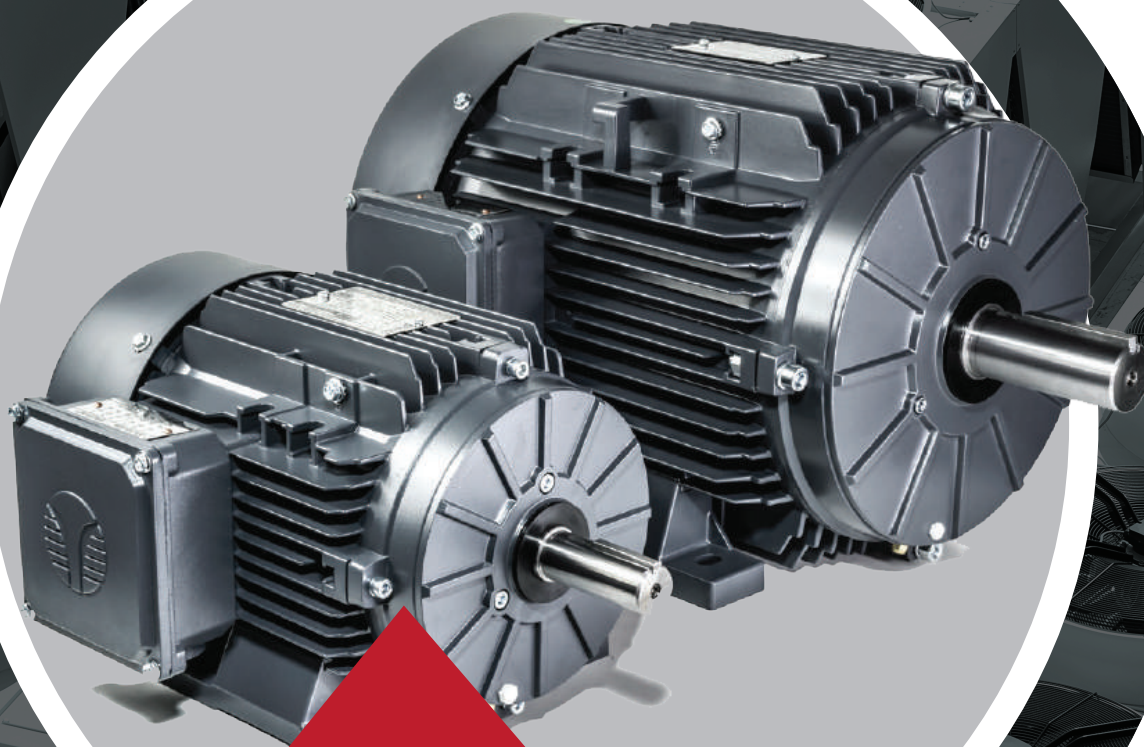
- **Economical**
- **Flexible**
- **Easy to Service**
- **Low Noise**

- **Low Vibration**
- **Durable**
- **Reliable**
- **System Functional**



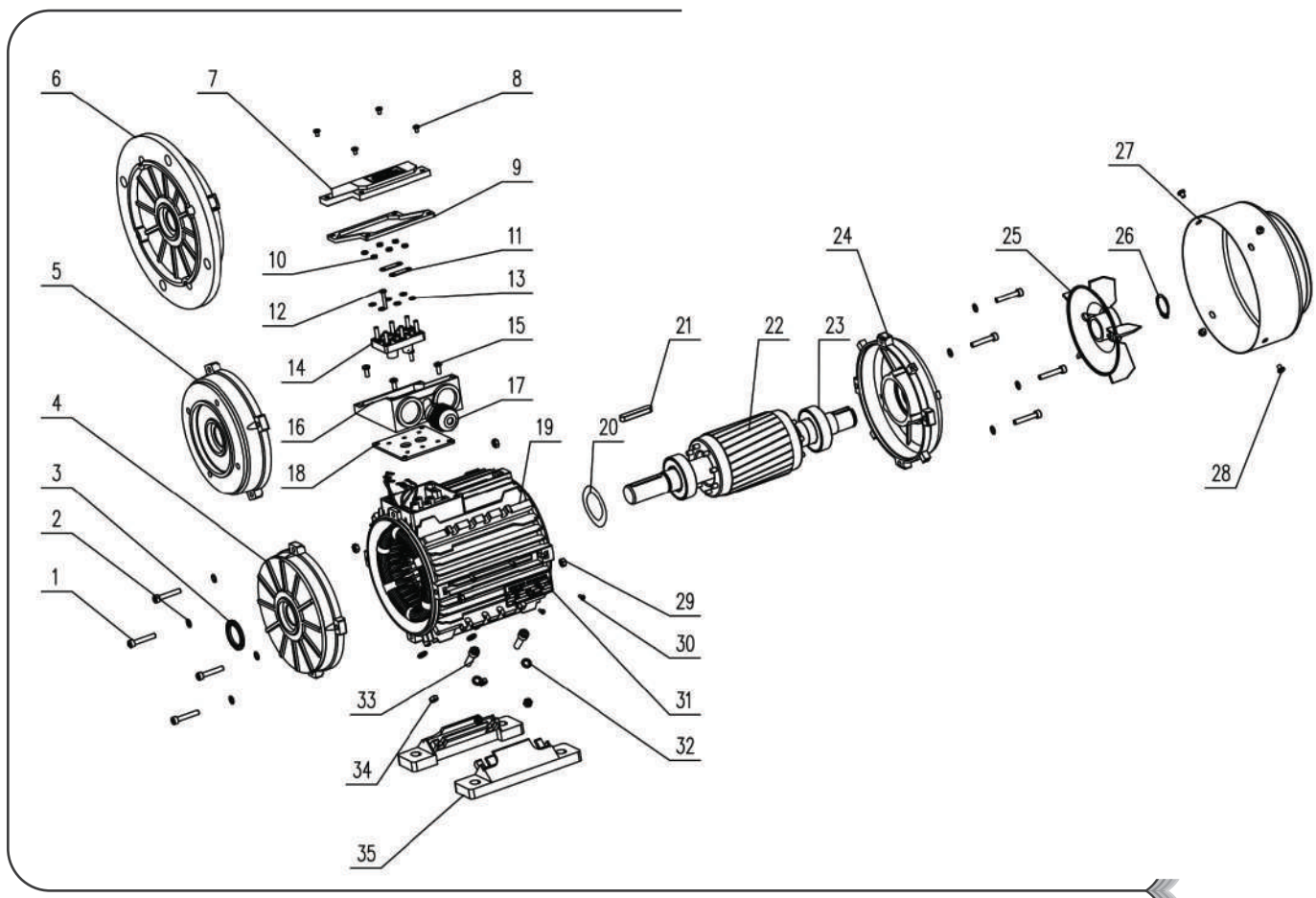


 **TECHTOP**
electric motors



Motor Spare Part List

"Exploded Drawing"



- 1.screw
- 2.Gasket
3. V-ring
- 4.Front endshield
- 5.B14 flange
- 6.B5 flange
- 7.TB cover
- 8.TB fixing screws
- 9.TB upper gasket
10. Terminal board fixing nut
11. Terminal bridge
12. Terminal pin

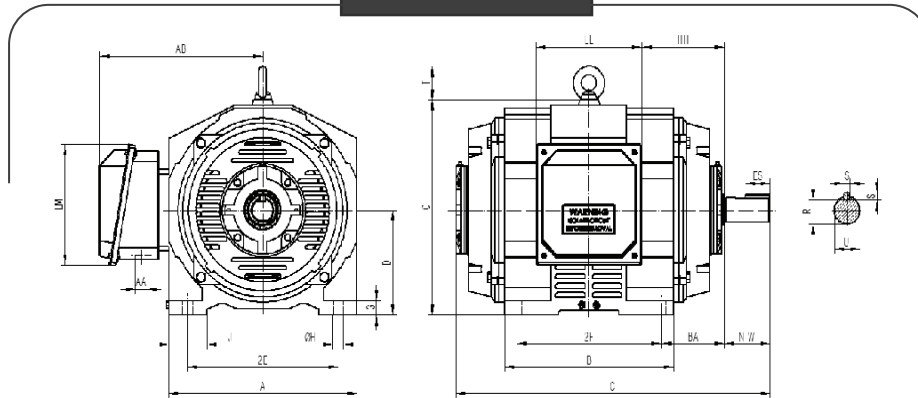
13. Terminal shim
14. Terminal board
15. TB fixing screws
- 16.TB base
- 17.Cable gland
- 18.TB bottomgasket
- 19.Frame
- 20.Preload washer
- 21.Key
- 22.Rotor
- 23.Bearing
- 24.NDE endshield

- 25.Cooling fan
- 26.Fan circlip
- 27.Fan cover
- 28.Fan cover fixing screws
- 29.Endshield fixing nut
- 30.Rivet
- 31.Rivet
- 32.Foot fixing gasket
- 33.Foot fixing screws
- 34.Foot fixing nut
- 35.Foot



TDC Series NEMA Motor

Foot Mounted



Installation Dimensions

NEMA Frames	MOUNTING				A	B	C	D	G	J	O	T
	2E	2F	H	BA								
254T	10.00	8.25	0.53	4.25	12.44	12.00	22.46	6.25	0.78	2.36	13.06	2.047
256T		10.00										
284T	11.00	9.50	0.53	4.75	14.17	13.03	24.85	7.00	0.90	3.15	14.87	2.441
286T		11.00					23.48					
284TS		9.50										
286TS		11.00										
324T	12.50	10.50	0.66	5.25	15.59	14.06	27.55	8.00	1.11	3.15	16.39	2.441
326T		12.00					26.05					
324TS		10.50										
326TS		12.00										
364T	14.00	11.25	0.66	5.88	18.03	14.92	29.42	9.00	1.26	3.54	19.00	2.835
365T		12.25					27.29					
364TS		11.25										
365TS		12.25										
404T	16.00	12.25	0.81	6.62	19.92	16.97	33.86	10.00	1.34	3.74	20.95	3.465
405T		13.75					30.86					
404TS		12.25										
405TS		13.75										
444T	18.00	14.50	0.81	7.50	22.05	20.08	39.47	11.00	1.43	4.33	23.09	3.465
445T		16.50					35.72					
444TS		14.50										
445TS		16.50										
447T	18.00	20.00	0.81	7.50	22.05	28.58	47.97	11.00	1.43	4.33	23.09	4.134
449T		25.00					44.22					
447TS		20.00										
449TS		25.00										

NEMA Frames	KEYWAY			SHAFT		TERMINAL BOX					BEARINGS	
	S	R	ES	N-W	U	AB	HH	LL	LM	AA	D.E	N.D.E
254T	0.375	1.416	2.91	4.0	1.625	10.83	5.77	6.97	7.31	1-1/4	6309 C3	
256T												
284T	0.5	1.591	3.28	4.62	1.875	11.62	6.77	6.97	7.31	1-1/2	6311 C3	
286T												
284TS	0.375	1.416	1.91	3.25	1.625	11.62	6.77	6.97	7.31	1-1/2	6311 C3	
286TS												
324T	0.5	1.845	3.91	5.25	2.125	13.62	6.86	8.78	9.23	2	6312 C3	
326T												
324TS	0.5	1.591	2.03	3.75	1.875	13.62	6.86	8.78	9.23	2	6312 C3	
326TS												
364T	0.625	2.021	4.28	5.88	2.375	15.23	6.83	10.36	9.23	3	6313 C3	
365T												
364TS	0.5	1.591	2.03	3.75	1.875	15.23	6.83	10.36	9.23	3	6313 C3	
365TS												
404T	0.75	2.45	5.65	7.25	2.875	16.72	8.28	10.44	11.56	3	6316C3	6314C3
405T											6314C3	
404TS	0.5	1.845	2.78	4.25	2.125	16.72	8.28	10.44	11.56	3	6316C3	6316C3
405TS											6316C3	
444T	0.875	2.88	6.91	8.5	3.375	18.31	9.39	12.72	14.58	3	6319C3	6316C3
445T											6316C3	
444TS	0.625	2.021	3.03	4.75	2.375	18.31	9.39	12.72	14.58	3	6319C3	6316C3
445TS											6316C3	
447T	0.875	2.88	6.91	8.5	3.375	18.31	3.9	12.72	14.58	3	6319C3	6316C3
449T											6316C3	
447TS	0.625	2.021	3.03	4.75	2.375	18.31	3.9	12.72	14.58	3	6319C3	6316C3
449TS											6316C3	

Dimensions in inches.

TDC Serie Fire Pump Motor Main Performance Parameters(NEMA 50HZ)

NO.	Model	Output (HP)	Hz	Current (A)			EFF (%)	Power factor (COSΦ)	RPM (r/min)	Locked current(A)		Locked rotor torque %	Breakdown torque %	Pull-Up Torque %	Design	IC	KVA Code	IP	End	S.F	AMB. ()	Ins Class	W.T (lbs)
				380V	400V	415V				380V	415V												
1	F-TDC254T15U2B	15	50	22.4	21.3	20.5	87.6	0.87	2925	154	141	130	200	100	B	01	H	23	ODP	1.15	50	F	236
2	F-TDC256T20U2B	20	50	29.5	28.0	27.0	88.7	0.87	2925	194	177	130	200	100	B	01	H	23	ODP	1.15	50	F	251
3	F-TDC284TS25U2B	25	50	36.7	34.9	33.6	89.3	0.87	2935	243	222	130	200	100	B	01	H	23	ODP	1.15	50	F	315
4	F-TDC286TS30U2B	30	50	43.2	41.1	39.6	89.9	0.88	2935	289	264	130	200	100	B	01	H	23	ODP	1.15	50	F	344
5	F-TDC286TS40U2B	40	50	57.1	54.3	52.3	90.7	0.88	2935	387	354	125	200	100	B	01	H	23	ODP	1.15	50	F	366
6	F-TDC324TS40U2B	40	50	56.5	53.6	51.7	90.7	0.89	2937	387	354	125	200	100	B	01	H	23	ODP	1.15	50	F	429
7	F-TDC324TS50U2B	50	50	70.2	66.7	64.3	91.2	0.89	2935	482	441	120	200	100	B	01	H	23	ODP	1.15	50	F	460
8	F-TDC326TS50U2B	50	50	70.2	66.7	64.3	91.2	0.89	2935	482	441	120	200	100	B	01	H	23	ODP	1.15	50	F	460
9	F-TDC326TS60U2B	60	50	84.7	80.5	77.6	91.7	0.88	2940	578	529	120	200	100	B	01	H	23	ODP	1.15	50	F	509
10	F-TDC364TS60U2B	60	50	83.8	79.6	76.7	91.7	0.89	2942	578	529	120	200	100	B	01	H	23	ODP	1.15	50	F	595
11	F-TDC364TS75U2B	75	50	104.3	99.1	95.5	92.1	0.89	2940	722	661	105	200	95	B	01	H	23	ODP	1.15	50	F	658
12	F-TDC365TS75U2B	75	50	104.3	99.1	95.5	92.1	0.89	2940	722	661	105	200	95	B	01	H	23	ODP	1.15	50	F	658
13	F-TDC365TS100U2B	100	50	139.7	132.7	127.9	92.7	0.88	2940	965	883	105	200	95	B	01	H	23	ODP	1.15	50	F	716
14	F-TDC405TS100U2B	100	50	138.2	131.2	126.5	92.7	0.89	2942	965	883	105	200	95	B	01	H	23	ODP	1.15	50	F	819
15	F-TDC404TS125U2B	125	50	176.0	167.2	161.2	93	0.87	2943	1207	1105	100	200	90	B	01	H	23	ODP	1.15	50	F	934
16	F-TDC444TS125U2B	125	50	174.1	165.4	159.4	93	0.88	2945	1207	1105	100	200	90	B	01	H	23	ODP	1.15	50	F	1196
17	F-TDC405TS150U2B	150	50	205.9	195.6	188.5	93.3	0.89	2944	1441	1319	100	200	90	B	01	H	23	ODP	1.15	50	F	993
18	F-TDC445TS150U2B	150	50	203.6	193.4	186.4	93.3	0.90	2950	1441	1319	100	200	90	B	01	H	23	ODP	1.15	50	F	1277
19	F-TDC444TS200U2B	200	50	289.3	274.8	264.9	93.8	0.84	2955	1927	1764	70	175	65	B	01	H	23	ODP	1.15	50	F	1354
20	F-TDC447TS200U2B	200	50	289.3	274.8	264.9	93.8	0.84	2955	1927	1764	70	175	65	B	01	H	23	ODP	1.15	50	F	1541
21	F-TDC449TS250U2B	250	50	336.7	319.9	308.3	94	0.90	2960	2534	2320	70	175	65	B	01	H	23	ODP	1.15	50	F	1718
22	F-TDC447TS300U2B	300	50	399.6	379.6	365.9	94	0.91	2960	3026	2770	70	175	65	B	01	H	23	ODP	1.15	50	F	1894
23	F-TDC449TS300U2B	300	50	399.6	379.6	365.9	94	0.91	2970	3026	2770	70	175	65	B	01	H	23	ODP	1.15	50	F	1894
24	F-TDC447TS350U2B	350	50	466.2	442.9	426.9	94	0.91	2965	3542	3243	70	175	65	B	01	H	23	ODP	1.15	50	F	2114
25	F-TDC449TS350U2B	350	50	466.2	442.9	426.9	94	0.91	2970	3542	3243	70	175	65	B	01	H	23	ODP	1.15	50	F	2114
26	F-TDC449TS400U2B	400	50	532.8	506.2	487.9	94	0.91	2970	4046	3704	70	175	65	B	01	H	23	ODP	1.15	50	F	2301
27	F-TDC449TS450U2B	400	50	596.0	566.2	546.0	94	0.91	2985	4539	4156	70	175	65	B	01	H	23	ODP	1.15	50	F	2532
28	F-TDC254T15U4B	15	50	22.4	21.3	20.5	87.6	0.87	1440	154	141	160	200	110	B	01	H	23	ODP	1.15	50	F	247
29	F-TDC254T20U4B	20	50	29.5	28.0	27.0	88.7	0.87	1445	194	177	150	200	105	B	01	H	23	ODP	1.15	50	F	275
30	F-TDC284T25U4B	25	50	36.7	34.9	33.6	89.3	0.87	1450	243	222	150	200	105	B	01	H	23	ODP	1.15	50	F	324
31	F-TDC286T30U4B	30	50	43.7	41.5	40.0	89.9	0.87	1460	289	264	150	200	105	B	01	H	23	ODP	1.15	50	F	348
32	F-TDC324T40U4B	40	50	57.8	54.9	52.9	90.7	0.87	1460	387	354	140	200	100	B	01	H	23	ODP	1.15	50	F	484
33	F-TDC326T50U4B	50	50	71.9	68.3	65.8	91.2	0.87	1470	482	441	140	200	100	B	01	H	23	ODP	1.15	50	F	531
34	F-TDC364T60U4B	60	50	85.7	81.4	78.5	91.7	0.87	1480	578	529	140	200	100	B	01	H	23	ODP	1.15	50	F	654
35	F-TDC365T75U4B	75	50	105.5	100.2	96.6	92.1	0.88	1480	722	661	140	200	100	B	01	H	23	ODP	1.15	50	F	711
36	F-TDC405T100U4B	100	50	139.7	132.7	127.9	92.7	0.88	1480	965	883	125	200	100	B	01	H	23	ODP	1.15	50	F	927
37	F-TDC405T125U4B	125	50	174.1	165.4	159.4	93	0.88	1480	1207	1105	110	200	100	B	01	H	23	ODP	1.15	50	F	1070
38	F-TDC444T125U4B	125	50	174.1	165.4	159.4	93	0.88	1480	1207	1105	110	200	100	B	01	H	23	ODP	1.15	50	F	1271
39	F-TDC444T150U4B	150	50	208.2	197.7	190.6	93.3	0.88	1480	1441	1319	110	200	100	B	01	H	23	ODP	1.15	50	F	1389
40	F-TDC445T150U4B	150	50	208.2	197.7	190.6	93.3	0.88	1480	1441	1319	110	200	100	B	01	H	23	ODP	1.15	50	F	1389
41	F-TDC445T200U4B	200	50	273.0	259.4	250.0	93.8	0.89	1480	1927	1764	100	200	90	B	01	H	23	ODP	1.15	50	F	1568
42	F-TDC447T200U4B	200	50	273.0	259.4	250.0	93.8	0.89	1480	1917	1764	100	200	90	B	01	H	23	ODP	1.15	50	F	1731
43	F-TDC447T250U4B	250	50	340.5	323.5	311.8	94	0.89	1480	2534	2320	80	175	75	B	01	H	23	ODP	1.15	50	F	1938
44	F-TDC449T250U4B	250	50	340.5	323.5	311.8	94	0.89	1480	2534	2320	80	175	75	B	01	H	23	ODP	1.15	50	F	1938
45	F-TDC449T300U4B	300	50	408.7	388.2	374.2	94	0.89	1480	3026	2770	80	175	75	B	01	H	23	ODP	1.15	50	F	2176
46	F-TDC449T350U4B	350	50	476.7	452.9	436.5	94	0.89	1480	3542	3243	80	175	75	B	01	H	23	ODP	1.15	50	F	2325
47	F-TDC449T400U4B	400	50	545.0	517.8	500.0	94	0.88	1485	4046	3704	80	175	75	B	01	H	23	ODP	1.15	50	F	2473

TECHNICAL SUBMITTAL FOR DIESEL FIRE PUMP



CAPACITY

500 USGPM @ 8 BAR

TYPE
END SUCTION PUMP



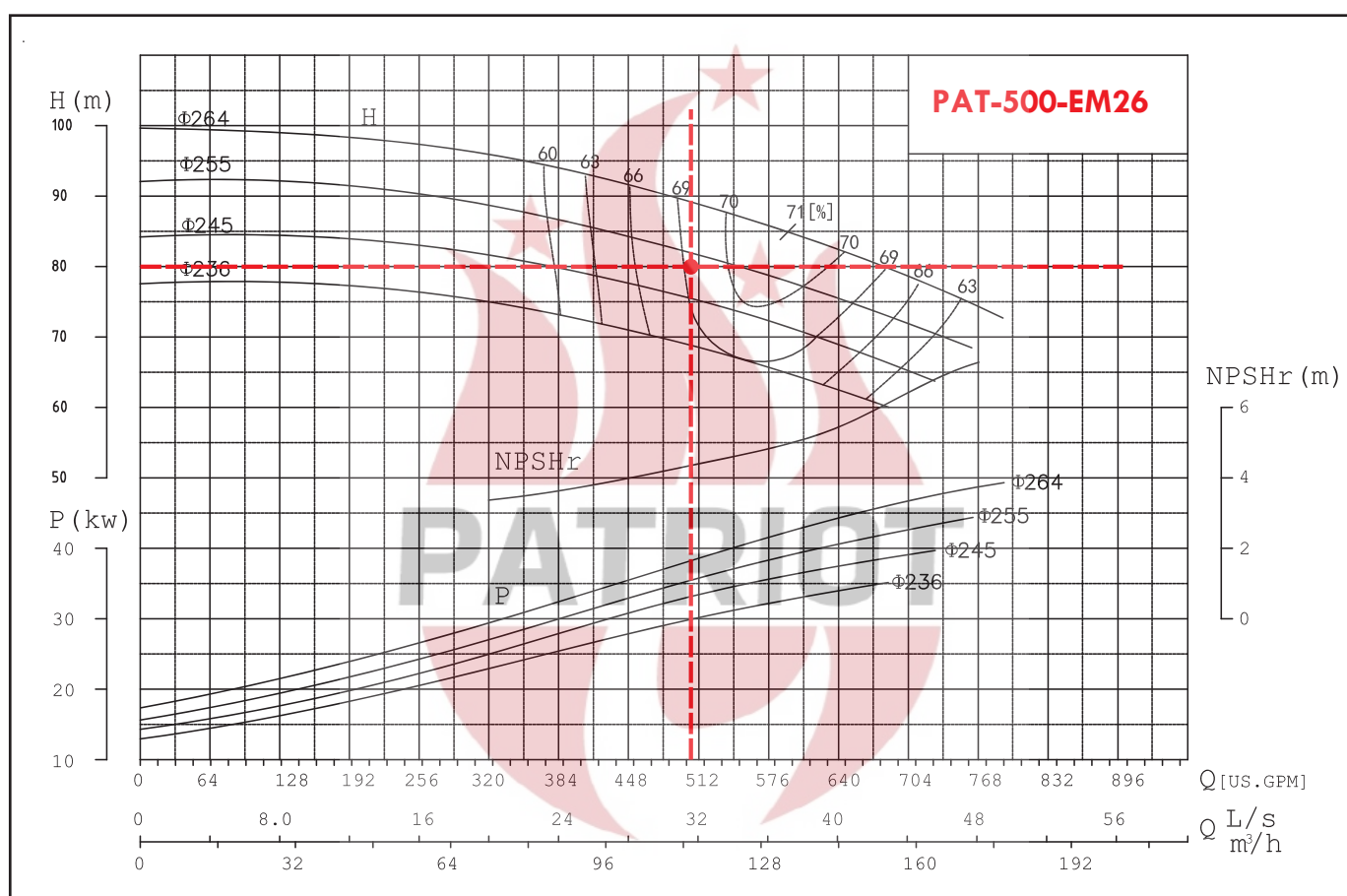
DIESEL PUMP

<i>MODEL</i>	<i>PAT-500-EM26</i>
TYPE	END SUCTION
RATED FLOW	500 US5PM
RATED HEAD	8 BAR
IMPELLER SIZE	Ø 255 mm
SUCTION / DISCHARGE	Ø 100 Ø 80
RATED SPEED	2900 RPM
CASING	CAST IRON
IMPELLER MATERIAL	BRONZE
SHAFT	STAINLESS STEEL



END SUCTION CENTRIFUGAL PUMP PERFORMANCE CURVE

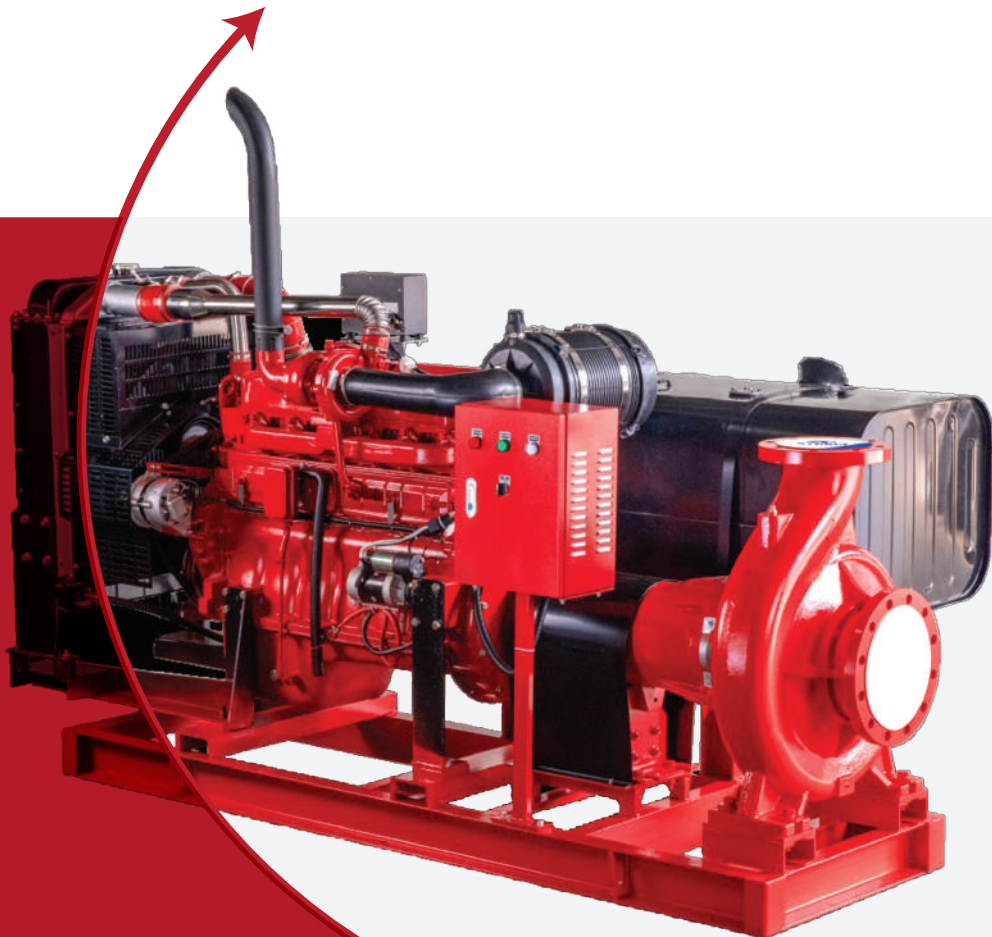
DUTY POINT	MODEL	NOMINAL SPEED	INLET	OUTLET
500 US. GPM @ 8 Bar	PAT-500-EM26	2900 RPM	φ100mm	φ80mm





MAKE	PVATO
RATED POWER	61 HP
RATED SPEED	3000 RPM
NO. OF CYLINERS	4

DIESEL ENGINE



PVATO

PD

Diesel Engine For pump



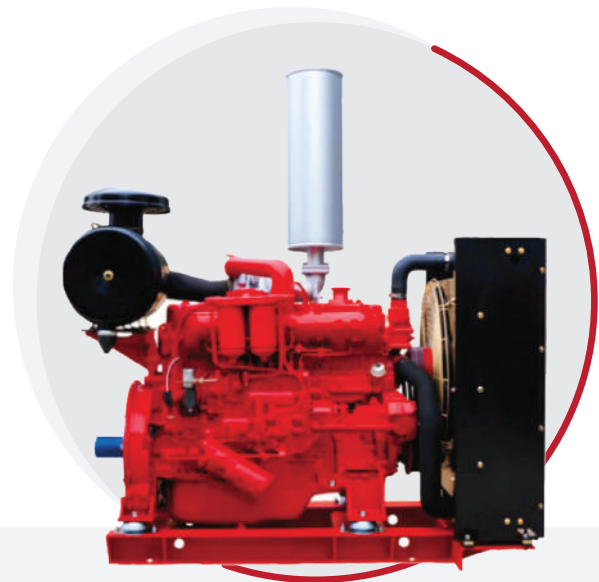
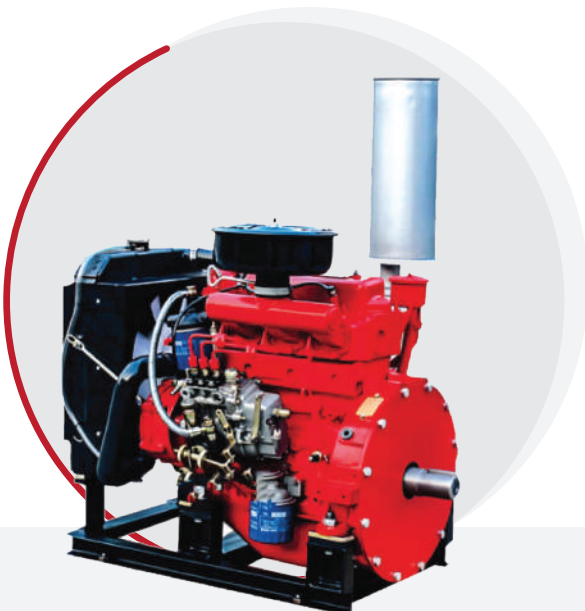
Fire



Civil



Industry

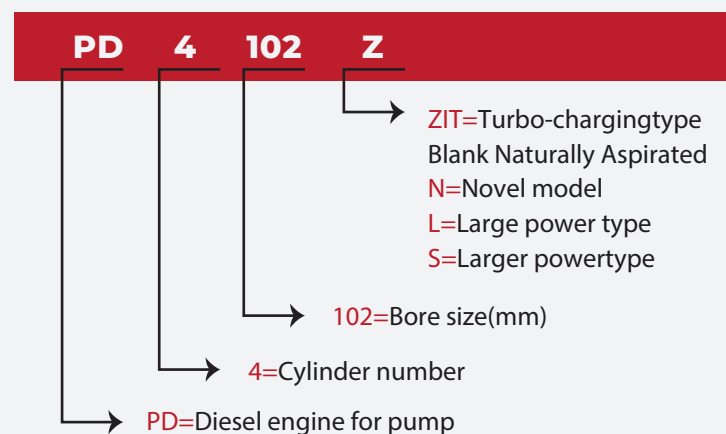


NEW DESCRIPTION

- Air-cooled 1-cylinder in-line naturally aspirated engines
- Water-cooling 3-to 6-cylinder naturally and turbo engines
- Advanced direct injection and combustion system
- Extremely compact dimensions, easy to assemble
- Noise-optimized technology, stronger power
- Meeting China III emission standard
- Low fuel consumption, environmental protective

MODEL CODE

⦿ For example





Model	178	186	188	192	380	385	480	485	490N	490	495	498	4102	4105	4108
type	4 strokes, Air cooling				Direct Injection,4 strokes, Water-cooling										
Intake type	Naturally Aspirated														
Bore*Stroke(mm)	78*62	86*72	88*75	92*75	80*90	85*90	80*90	85*100	90*100	90*105	95*105	98*105	102*118	105*118	108*118
cylindre No.	1	1	1	1	3	3	4	4	4	4	4	4	4	4	4
Displacement	0.296L	0.418L	0.456L	0.499L	l.357L	1.532L	l.8L	2.27L	2.54L	2.67L	2.977L	3.168L	3.857L	4.087L	4.324L
r/min	3000 3000 3600 3600	3000 3000 3600 3600	3000 3000 3600 3600	3000 3000 3600 3600	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Rated HP	3.7kW 4.0kW	5.7kW 6.3kW	6.6kW 7.2kW	7.5kW 8.2kW	20kW	24kW	28kW	36kW	42kW	45kW	50kW	54kW	62kW	67kW	73kW
Rated HP	5.0HP 5.5HP	7.8HP 8.6HP	9HP 10HP	10.2HP 12HP	27HP	32HP	38HP	49HP	58HP	61HP	68HP	73HP	85HP	91HP	99HP
Fuel Consumption(g/kw,h)	280.3 282.5	273.5 285.7	273.5 285.7	275 281	228	228	215	228	228	228	228	228	228	238	238
Start voltage	12V	12V	12V	12V	12V	12V	12V	12V	12V	12V	12V	12V	12V	24V	24V
Speed regulation type	Mechanical														
Including	Radiator, Fan, Starter, charge alternator, Air filter, Muffler, Stop Solenoid, PTO shaft, Fuel Tank, Meter Panel														
Model	485Z	490NZ	498Z	4102Z	4105Z	4108Z	490T	4108T	4108TL	6102NT	6102T	6102TL	6126T	6126TL	6126TS
type	Direct Injection,4 strokes, Water-cooling														
Intake type	Turbo-charging									Naturally Turbo-charging					
Bore*Stroke(mm)	85*100	90*100	98*105	102*118	105*118	108*118	90*102	108*125	108*125	102*118	102*118	102*118	126*130	126*130	126*155
cylindre No.	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6
Displacement	2.27L	2.54L	3.168L	3.857L	4.087L	4.324L	2.6L	3.8L	3.8L	5.78L	5.78L	5.78L	9.726L	9.726L	9.726L
r/min	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Rated HP	44KW	50KW	60KW	73KW	75KW	83KW	55KW	75KW	90KW	110KW	125KW	150KW	225KW	340KW	410KW
Rated HP	60HP	68HP	81HP	99HP	102HP	113HP	75HP	100HP	125HP	150HP	170HP	225HP	270HP	340HP	410HP
Fuel Consumption(g/kw,h)	228	228	228	238	238	238	238	218	218	229	229	229	250	250	250
Start voltage	12V	12V	12V	24V	24V	24V	12V	24V	24V	24V	24V	24V	24V	24V	24V
Speed regulation type	Mechanical												Electronic		
Including	Radiator, Fan, Starter, charge alternator, Air filter, Muffler, Stop Solenoid, PTO shaft, Fuel Tank, Meter Panel														

TECHNICAL SUBMITTAL FOR

*Jockey fire
pump*





Jockey pump

MAKE	PVT
TYPE	VERTICAL MULTI STAGE
RATED FLOW	22 USGPM
RATED HEAD	8.5 BAR
SUCTION / DISCHARGE	Ø32/ Ø32
RATED SPEED	2900 RPM, 50 Hz

MOTOR

	TEFC MOTOR
	380-415V, 50 Hz, 3 Phase, 2 Pole
	3 HP
	2900 RPM

PVT

PVT/PVTS

S.S.304 vertical multistage pump



Home



Civil



Industry



Fire

NEW DESCRIPTION

- SS304 vertical, multistage centrifugal pump
- The suction and discharge ports on the same level
- PVT pump head and base are in cast iron
- PVT pump impeller and shaft are in stainless steel
- PVTS pump all wetted parts are in stainless steel
- YE3 high efficient motor, with protection IP55 class F
- Quality bearing, wear resistance mechanical seal
- Liquid temperature between -10°C and +120°C

APPLICATIONS

- The stainless steel multistage pumps are suitable for industrial processing systems, washing and cleaning systems, pumping of acids and alkalis, filtration systems, water pressure boosting, water Treatment, HVAC, irrigation, fire protection systems etc.

MODEL CODE

⊙ For example

PVT(S)

32

30

2

2=Small impeller number

30=Stage x10 (PVT32-PVT90)

32=Rated flow(m³/h)

PVT= Common type vertical multistage pump

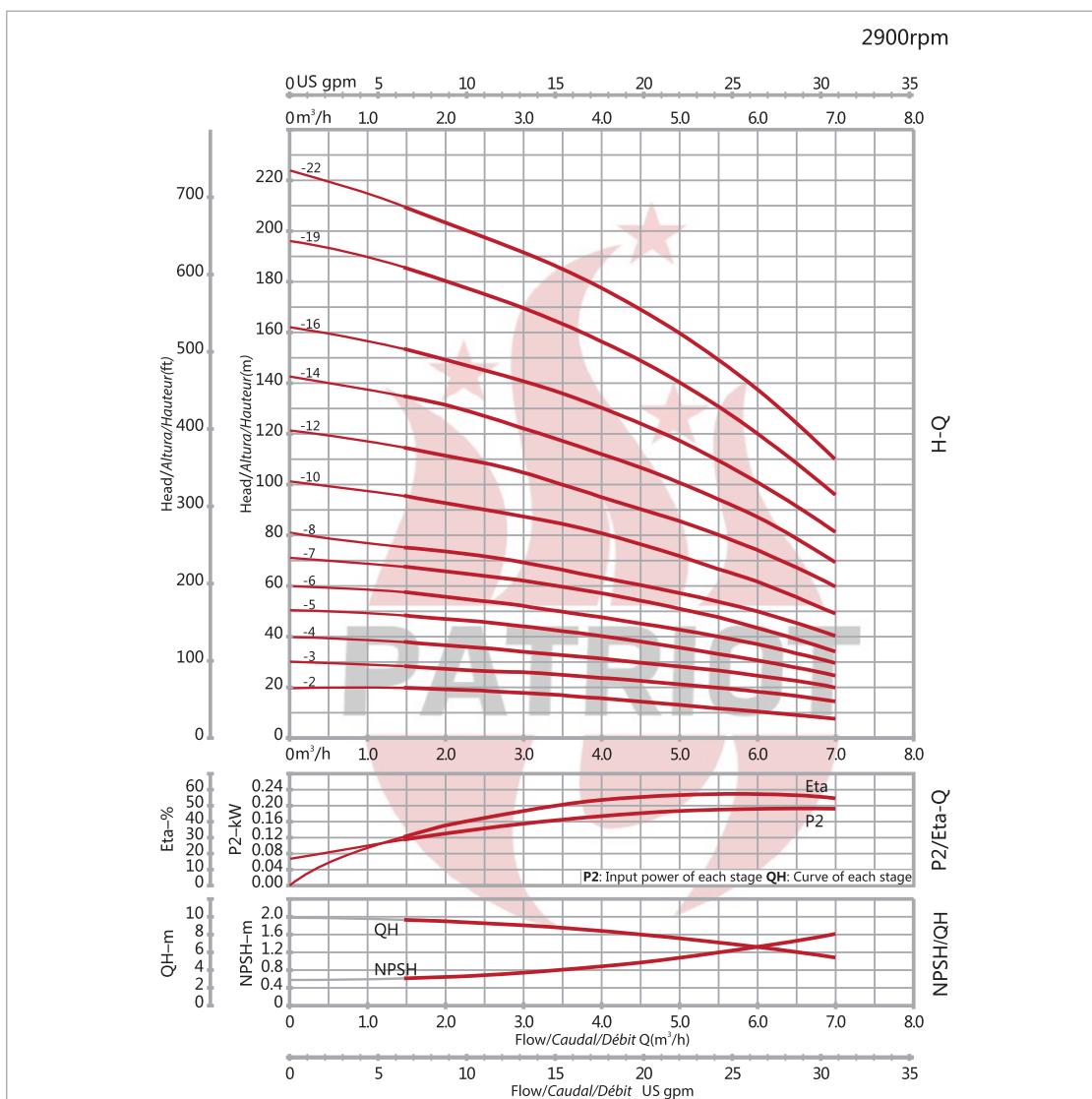
PVT(S)= Pump with flow passage components in SS304



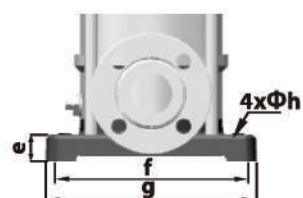
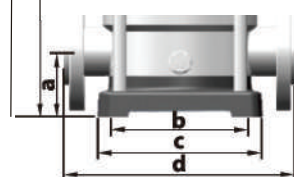
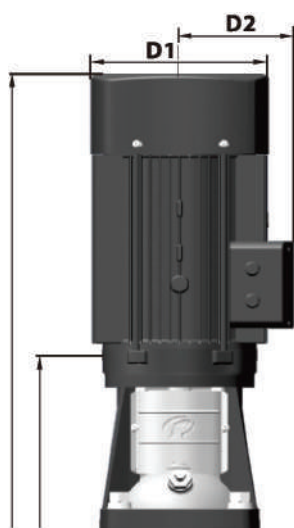


50Hz n=2900r/min

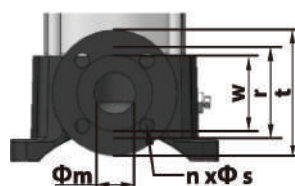
MODEL	DN	Power		Q=DELIVERY																
				us	6.6	8.8	13.2	17.6	22	26.4	30.8	35.2	39.6	44.1	48.5	52.9	57.3	61.7	66.1	70.5
				l/min	25	33	50	67	83	100	117	133	150	167	183	200	217	233	250	267
				m³/h	1.5	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	mm	kw	hp	H=Head/																
PVT 4-2	32x32	0.37	0.5	19	18	17	15	13	10	8	-	-	-	-	-	-	-	-	-	
PVT 4-3	32x32	0.55	0.75	28	27	26	24	20	18	13	-	-	-	-	-	-	-	-	-	
PVT 4-4	32x32	0.75	1	38	36	34	32	27	24	19	-	-	-	-	-	-	-	-	-	
PVT 4-5	32x32	1.1	1.5	47	45	43	40	34	31	23	-	-	-	-	-	-	-	-	-	
PVT 4-6	32x32	1.1	1.5	56	54	52	48	41	37	28	-	-	-	-	-	-	-	-	-	
PVT 4-7	32x32	1.5	2	66	63	61	56	48	43	33	-	-	-	-	-	-	-	-	-	
PVT 4-8	32x32	1.5	2	74	72	70	64	55	50	38	-	-	-	-	-	-	-	-	-	
PVT 4-10	32x32	2.2	3	96	90	87	81	71	62	48	-	-	-	-	-	-	-	-	-	
PVT 4-12	32x32	2.2	3	114	108	104	95	85	75	58	-	-	-	-	-	-	-	-	-	
PVT 4-14	32x32	3	4	136	126	122	112	101	89	68	-	-	-	-	-	-	-	-	-	
PVT 4-16	32x32	3	4	152	144	140	129	115	101	78	-	-	-	-	-	-	-	-	-	
PVT 4-19	32x32	4	5.5	183	171	168	153	137	122	93	-	-	-	-	-	-	-	-	-	
PVT 4-22	32x32	4	5.5	211	200	192	178	160	138	108	-	-	-	-	-	-	-	-	-	



PVT/PVS



PVS

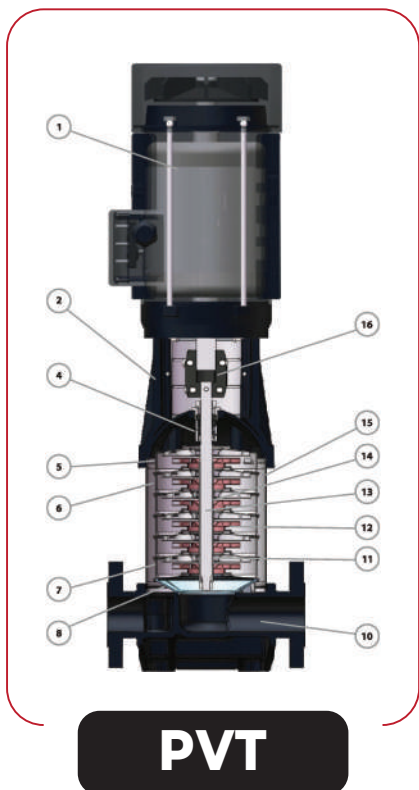


PVT

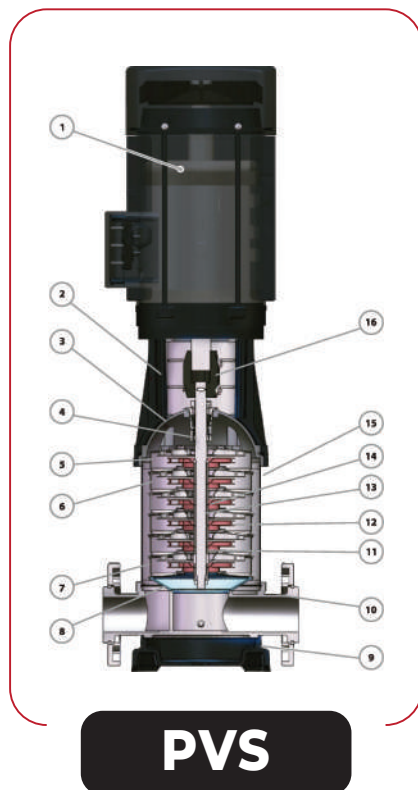
MODEL	B1	B	D1	D2	COMMON	kg
4-2	276	501	148	117	DN=32	21
4-3	303	528	148	117	a=50	22
4-4	340	585	170	142	b=100	25
4-5	367	612	170	142	c=150	27
4-6	394	639	170	142	d=210	27
4-7	431	721	190	155	e=20	33
4-8	458	748	190	155	f=180	33
4-10	512	802	190	155	g=210	37
4-12	566	856	190	155	h=13	38
4-14	630	975	197	165	j=75	46
4-16	684	1029	197	165	k=250	48
4-19	765	1120	230	188	m=32	57
4-22					n=4	59
					r=100	
					s=18	
					t=140	
					w=60	



MATERIAL DESCRIPTION



PVT



PVS

No.	Description	Material
1	Motor	IP55 Class F
2	Pump Case	Cast iron
3	Seal Base	55304
4	Mechanical Seal	55304
5	Top Diffuser	55304
6	Diffuser	55304
7	Support Diffuser	55304
8	Inducer	55304

No.	Description	Material
9	Base Plate	Cast iron
10	Inlet & Outlet Chamber	PVT : Cast iron PVS : SS304
11	Bearing	Tungsten Carbide
12	Impeller	55304
13	Shaft	55304
14	Impeller	55304
15	Cylinder	55304
16	Coupling	Carbon Steel

TECHNICAL SUBMITTAL FOR FIRE PUMP CONTROLLER





FIRE PUMP CONTROLLER (EDJ)

MAKE	PATRIOT
MOUNTING	WALL Mounted
POWER SUPPLY	380-415 V, 50 Hz, 3 Phase
STARTER CIRCUIT	Star Delta - DOL
OPERATION	Combined Automatic & Manual
PROTECTION	Dry Run
ENCLOSURE	NFPA / IP Standard
MEANS OF ACTIVATION	Isolating Switch, Pressure Switch, Selector Switch

Controller

The fire pump control panels performs the following functions:

A) Input :

- Receives signals from alarm devices such as pressure operated switches.

B) Output:

- Provides electrical power to actuate the motor.
- Send signal to actuate the diesel engine

- All controllers are completely assembled, wired and tested before shipment from factory.
- The pump Set consists of three separate controllers; electric, diesel and jockey controllers.
- Electrical components such as circuit breaker, switches, relays and other devices dedicated to the operation of fire pumps are LS/SCHNEIDER products.

Controller

- DOL, Star Delta based on load or client requirement.
- All controllers are completely assembled, wired and tested.
- Self-acting to start, run and protect the driver.
- Automatic or manual operation options.

Wall Mounted/Base Mounted, (DOL)-(Star Delta)
Electrical, Engine, Jockey
(Separate)

