ARIF
AL-NAHDI
CO.LTD.

ANC
UL-LISTED
CATALOG

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إعتماديةٌ عاليةٌ .. وخدماتٌ متميزة

ARIF AL-NAHDI CO.LTD.

INTRODUCTION

ARIF
AL-NAHDI
CO.LTD.

ANC (Arif al-Nahdi Co. LTD.)
is a Specialist company in supplying, assembling and manufacturing of safety systems with its Head Quarter at Riyadh, KSA, is one of the largest Fire Fighting Equipment facilities in the Region and has many branches over KSA.

and Prosper in Harmony, and continue to be the leader in the Fire Protection industry providing excellent services and superior products for many years to come.

SYSTEM TECHNOLOGY ANCUl Listed Fire Pump System Technology

With a new vision that aims to be a distinguished industrial and excellence service and a pioneer in the field of fire pumps and safety products of high quality and reliability, we were introduce international products bearing high specifications in accordance with international standards as new brand called ANCUL, which we seek to be the best way for protecting property and lives and to cover the needs and requirements of customers.

ANCUL devloped highly skilled team in assembly and pump packages testing .. succeeded fabricated fire pump skids, where this devloped technology assure providing handle, install & maintain, where all pumping elements, drivers, controllers are all skid mounted, pre-piped, wired & factory tested.

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This chapter contains all information related to pumps of all type Split-Case and End Suction.

CHAPTER 1
PUMPS

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INTRODUCTION

The fire pump sets are being mounted and aligned with electric motor, and/or diesel engine on a common base plate. The fire pump package includes all pump fittings such as manometers, casing relief valve, and automatic air release valve (for split-case models) to be supplied with approved electric and/or diesel fire pump controller. Our fire pump sets are being delivered as a package to be operated as for Plug&Play type.

ANCUL approved fire pumps are ideally developed and produced either for small flows or high flows through well-designed compact packages. ANCUL Fire pumps have back pull out design for easy maintenance, self-venting center line discharge, and low NPSH requirements. The pump construction is ductile iron body, bronze fitted with packing. The shaft and sleeves are in AISI316 Stainless steel and be supported by thrust ball bearings, and radial roller bearing.

Electric Pump

FLOW / GPM	BAR	TYPE PUMP	MODEL PUMP	POWER / HP	SIZE / In.	SPEED
500	8	END SUCTION	ANCEF 65/20	75	3” – 2.5”	3550
750	8-9.7	END SUCTION	ANCEF 80/20	100	4” – 3”	3550
750	10	SPLIT CASE	ANCSF5-3x10	100	5” – 3”	3550
1000	10	SPLIT CASE	ANCSF6-5x10	125	6” – 5”	3550
1250	10	SPLIT CASE	ANCSF8-6x10	175	8” – 6”	3550

Diesel Pump

FLOW / GPM	BAR	TYPE PUMP	MODEL PUMP	POWER / KW	SIZE / In.	SPEED
500	8	END SUCTION	ANCEF 65/26	62	3” – 2.5”	2980
750	8-9.7	END SUCTION	ANCEF 80/26	62	4” – 3”	2980
750	10	SPLIT CASE	ANCSF5-4x13	86	5” – 3”	2980
1000	10	SPLIT CASE	ANCSF6-5x10	86	6” – 5”	2980
1250	10	SPLIT CASE	ANCSF8-6x10	131	8” – 6”	2980

ARIF
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This section contains all information related to Split-Case pumps of all types electric and diesel.

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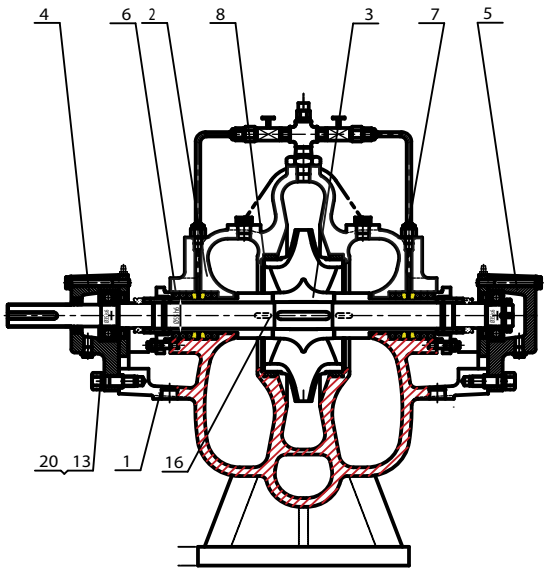
SECTION 1

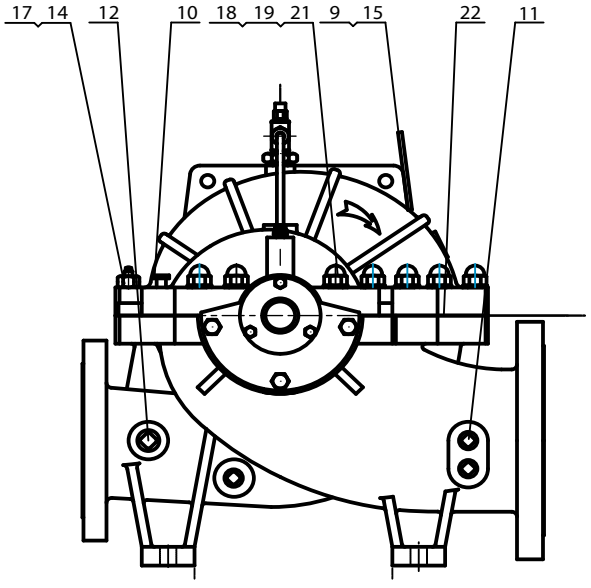
SPLIT-CASE PUMPS

INTRODUCTION

ANC UL LISTED series-Double Suction, split-casing pumps are in-line designed, space saving, easy maintenance horizontal type. Our split-case pumps are heavy-duty designed with replaceable wear rings and sleeves. Bearings are mounted and can be replaced without opening pump case. Each stuffing box is fitted with bronze gland and with a stuffing box extension to facilitate the packaging rings removal. The pump construction is ductile iron body, bronze fitted with packaging. The shaft and sleeves are in AISI316 stainless steel and be supported by heavy-duty ball bearings and roller bearing.

Matrial Details



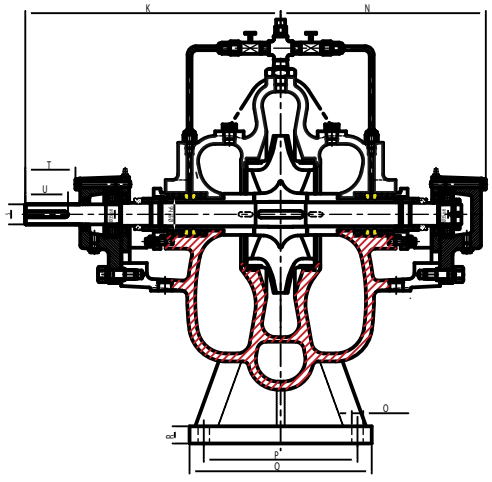


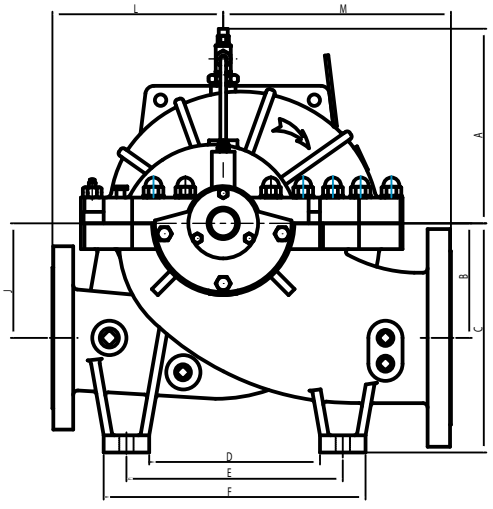
Matrial Details Cont.

Model	ANCSF 5-3x10		ANCSF 5-4x13		ANCSF 6-5x10	
NO.	Part No.	Part Name	Part No.	Part Name	Part No.	Part Name
1	ANCSF125-80-250-0001	Lower Casing	ANCSF125-100-300-0001	Lower Casing	ANCSF150-125-250-0001	Lower Casing
2	ANCSF125-80-250-0002	Upper Casing	ANCSF125-100-300-0002	Upper Casing	ANCSF150-125-250-0002	Upper Casing
3	ANCSF125-80-250-0100	Rotor Assembly	ANCSF125-100-300-0100	Rotor Assembly	ANCSF150-125-250-0100	Rotor Assembly
4	ANCSF-207.00-ZZ-6307	Bearing – DE	ANCSF-207.00-ZZ-6307	Bearing – DE	ANCSF-207.00-ZZ-6307A	Bearing – DE
5	ANCSF-307.00-ZZ-6307	Bearing – NDS	ANCSF-307.00-ZZ-6307	Bearing – NDS	ANCSF-307.00-ZZ-6307A	Bearing – NDS
6	ANCSF-401.00-50B	Packing Seal Assembly	ANCSF-401.00-50B	Packing Seal Assembly	ANCSF-401.00-50B	Packing Seal Assembly
7	ANCSF-700.00-AF	Flushing Pipe	ANCSF-700.00-AF	Flushing Pipe	ANCSF-700.00-AF	Flushing Pipe
8	B2106-72A-131x146x18	Casing Wear Ring	B2106-72A-131x146x25	Casing Wear Ring	B2106-72A-160x175x22	Casing Wear Ring
9	TB125-125	Supporting Plate	TB125-125	Supporting Plate	TB125-125	Supporting Plate
10	DS-00 - M12x60	Jackscrew	DS-00 - M12x60	Jackscrew	DS-00 - M12x60	Jackscrew
11	GB/T3287 T8-1/2-Zn-D	Plug NPT1/2 "	GB/T3287 T8-1/2-Zn-D	Plug NPT1/2 "	GB/T3287 T8-1/2-Zn-D	Plug NPT1/2 "
12	GB/T3287 T8-3/4-Zn-D	Plug NPT3/4 "	GB/T3287 T8-3/4-Zn-D	Plug NPT3/4 "	GB/T3287 T8-3/4-Zn-D	Plug NPT3/4 "
13	GB/T5783 - M16x55	Hex Head Bolt	GB/T5783 - M16x55	Hex Head Bolt	GB/T5783 - M16x55	Hex Head Bolt
14	GB/T6170 - M12	Hexagon Nut	GB/T6170 - M12	Hexagon Nut	GB/T6170 - M12	Hexagon Nut
15	GB/T70.3 - M8x20	Screws	GB/T70.3 - M8x20	Screws	GB/T70.3 - M8x20	Screws
16	GB/T879.1 - 8x16	Electric Cylindrical Pin	GB/T879.1 - 8x20	Electric Cylindrical Pin	GB/T879.1 - 8x20	Electric Cylindrical Pin
17	GB/T881 - 12x100	Screw Tail Taper Pin	GB/T881 - 12x100	Screw Tail Taper Pin	GB/T881 - 12x100	Screw Tail Taper Pin
18	GB/T898 – AM20x65	Studs	GB/T898 – AM20x65	Studs	GB/T898 – AM20x65	Studs
19	GB/T923 – AM20	Cover Nut	GB/T923 – AM20	Cover Nut	GB/T923 – M20	Cover Nut
20	GB/T93 – 16	Spring Washers	GB/T93 – 16	Spring Washers	GB/T93 – 16	Spring Washers
21	GB/T97.1 – 20	Flat Washers	GB/T97.1 – 20	Flat Washers	GB/T97.1 – 20	Flat Washers
22	0.3 mm	Split – Cases Gasket	-	Split – Cases Gasket	-	Split – Cases Gasket

Dimention

Split-Case Electric





Model	ANCSF 5-3x10	ANCSF 5-4x13	ANCSF 6-5x10	ANCSF 6-5x13	ANCSF 6-5x16	ANCSF 8-6x10	ANCSF 8-6x13
DN	5 / 3	5 / 4	6 / 5	6 / 5	6 / 5	8 / 6	8 / 6
A	280	310	320	340	380	340	360
B	160	170	200	220	285	200	230
C	315	315	400	400	455	400	455
D	120	260	260	320	420	300	320
E	160	340	340	400	500	380	400
F	200	420	420	480	580	460	480
J	170	170	200	220	220	200	230
L	250	290	300	350	350	300	350
M	330	330	350	400	500	400	415
N	345	350.4	350.4	350.4	400	360.4	400
O	4xø20	4xø20	4xø20	4xø20	4xø25	4xø20	4xø25
K	434	438.5	448.5	448.5	520	448.5	520
P	240	270	270	270	340	270	340
Q	290	320	320	320	390	320	390
R	30	30	30	30	30	30	30
Rotor	ø35h6	ø35h6	ø35h6	ø35h6	ø45h6	ø35h6	ø45h6
T	88	88	88	88	88	88	
U	75	75	75	75	75	75	

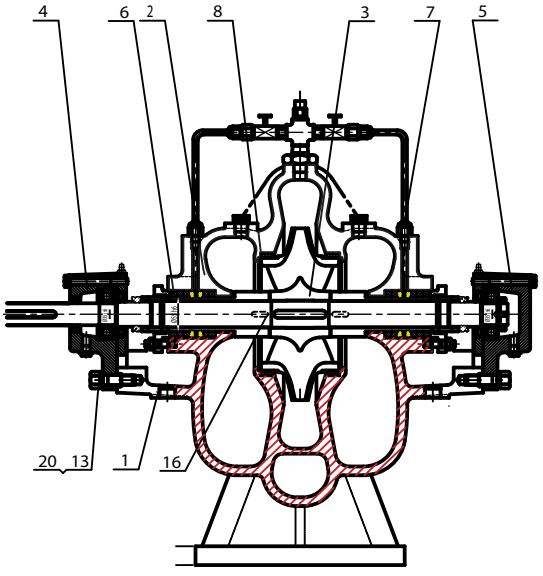
all sizes are in cm unit.

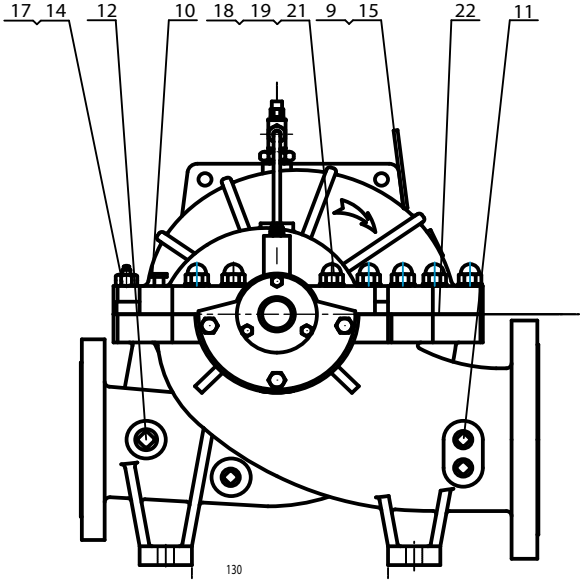
INTRODUCTION

Split-Case Diesel

ANCUL fire pumps are being directly connected through flexible coupling to the engines manufactured by Clarke or NM and Kirloskar. All our approved pumps are having UL Listed, FM Approved engines with granted and guaranteed continuous power ratings. The diesel engines conform to the requirements of NFPA 20 and specifically approved for fire pump application and service. Diesel engines operate at a rated speed not exceeding the above RPM and develop sufficient horsepower to drive the pump with reserve power.

Matrial Details



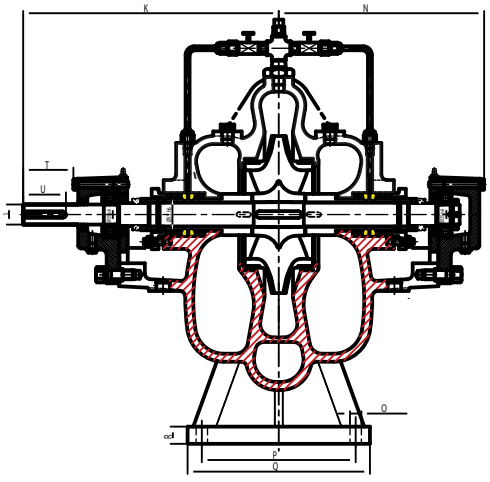


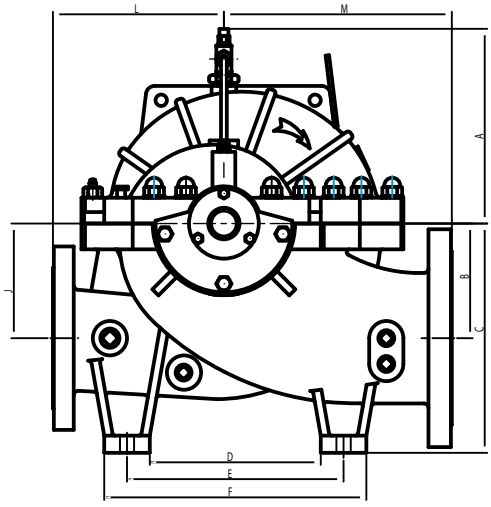
Matrial Details Cont.

Model	ANCSF 5-3x10		ANCSF 5-4x13		ANCSF 6-5x10	
NO.	Part No.	Part Name	Part No.	Part Name	Part No.	Part Name
1	ANCSF125-80-250-0001	Lower Casing	ANCSF125-100-300-0001	Lower Casing	ANCSF150-125-250-0001	Lower Casing
2	ANCSF125-80-250-0002	Upper Casing	ANCSF125-100-300-0002	Upper Casing	ANCSF150-125-250-0002	Upper Casing
3	ANCSF125-80-250-0100	Rotor Assembly	ANCSF125-100-300-0100	Rotor Assembly	ANCSF150-125-250-0100	Rotor Assembly
4	ANCSF-207.00-ZZ-6307	Bearing – DE	ANCSF-207.00-ZZ-6307	Bearing – DE	ANCSF-207.00-ZZ-6307A	Bearing – DE
5	ANCSF-307.00-ZZ-6307	Bearing – NDS	ANCSF-307.00-ZZ-6307	Bearing – NDS	ANCSF-307.00-ZZ-6307A	Bearing – NDS
6	ANCSF-401.00-50B	Packing Seal Assembly	ANCSF-401.00-50B	Packing Seal Assembly	ANCSF-401.00-50B	Packing Seal Assembly
7	ANCSF-700.00-AF	Flushing Pipe	ANCSF-700.00-AF	Flushing Pipe	ANCSF-700.00-AF	Flushing Pipe
8	B2106-72A-131x146x18	Casing Wear Ring	B2106-72A-131x146x25	Casing Wear Ring	B2106-72A-160x175x22	Casing Wear Ring
9	TB125-125	Supporting Plate	TB125-125	Supporting Plate	TB125-125	Supporting Plate
10	DS-00 - M12x60	Jackscrew	DS-00 - M12x60	Jackscrew	DS-00 - M12x60	Jackscrew
11	GB/T3287 T8-1/2-Zn-D	Plug NPT1/2 "	GB/T3287 T8-1/2-Zn-D	Plug NPT1/2 "	GB/T3287 T8-1/2-Zn-D	Plug NPT1/2 "
12	GB/T3287 T8-3/4-Zn-D	Plug NPT3/4 "	GB/T3287 T8-3/4-Zn-D	Plug NPT3/4 "	GB/T3287 T8-3/4-Zn-D	Plug NPT3/4 "
13	GB/T5783 - M16x55	Hex Head Bolt	GB/T5783 - M16x55	Hex Head Bolt	GB/T5783 - M16x55	Hex Head Bolt
14	GB/T6170 - M12	Hexagon Nut	GB/T6170 - M12	Hexagon Nut	GB/T6170 - M12	Hexagon Nut
15	GB/T70.3 - M8x20	Screws	GB/T70.3 - M8x20	Screws	GB/T70.3 - M8x20	Screws
16	GB/T879.1 - 8x16	Electric Cylindrical Pin	GB/T879.1 - 8x20	Electric Cylindrical Pin	GB/T879.1 - 8x20	Electric Cylindrical Pin
17	GB/T881 - 12x100	Screw Tail Taper Pin	GB/T881 - 12x100	Screw Tail Taper Pin	GB/T881 - 12x100	Screw Tail Taper Pin
18	GB/T898 – AM20x65	Studs	GB/T898 – AM20x65	Studs	GB/T898 – AM20x65	Studs
19	GB/T923 – AM20	Cover Nut	GB/T923 – AM20	Cover Nut	GB/T923 – M20	Cover Nut
20	GB/T93 – 16	Spring Washers	GB/T93 – 16	Spring Washers	GB/T93 – 16	Spring Washers
21	GB/T97.1 – 20	Flat Washers	GB/T97.1 – 20	Flat Washers	GB/T97.1 – 20	Flat Washers
22	0.3 mm	Split – Cases Gasket	-	Split – Cases Gasket	-	Split – Cases Gasket

Dimention

Split-Case Diesel





Model	ANCSF 5-3x10	ANCSF 5-4x13	ANCSF 6-5x10	ANCSF 6-5x13	ANCSF 6-5x16	ANCSF 8-6x10	ANCSF 8-6x13
DN	5 / 3	5 / 4	6 / 5	6 / 5	6 / 5	8 / 6	8 / 6
A	280	310	320	340	380	340	360
B	160	170	200	220	285	200	230
C	315	315	400	400	455	400	455
D	120	260	260	320	420	300	320
E	160	340	340	400	500	380	400
F	200	420	420	480	580	460	480
J	170	170	200	220	220	200	230
L	250	290	300	350	350	300	350
M	330	330	350	400	500	400	415
N	345	350.4	350.4	350.4	400	360.4	400
O	4xø20	4xø20	4xø20	4xø20	4xø25	4xø20	4xø25
K	434	438.5	448.5	448.5	520	448.5	520
P	240	270	270	270	340	270	340
Q	290	320	320	320	390	320	390
R	30	30	30	30	30	30	30
Rotor	ø35h6	ø35h6	ø35h6	ø35h6	ø45h6	ø35h6	ø45h6
T	88	88	88	88	88	88	
U	75	75	75	75	75	75	

all sizes are in cm unit.

UL Product iQ™

QXJY.EX28343 - Centrifugal Fire Pumps, Split Case

Centrifugal Fire Pumps, Split Case

See General Information for Centrifugal Fire Pumps, Split Case

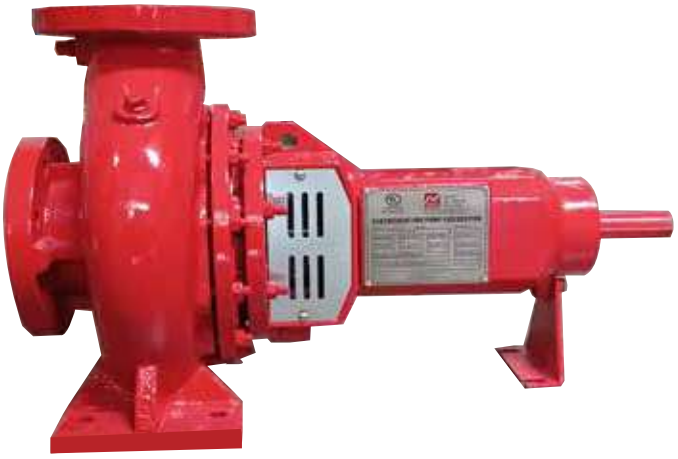
FIREGUARD GLOBAL LTD EX28343
3 CHURCH ST
KIDDERMINSTER
WORCESTERSHIRE, DY10 2AD UNITED KINGDOM
Fire pumps, single stage

Trademark and/or Tradename: , , "FIREGUARD GLOBAL"

Last Updated on 2020-05-21

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

for more details about each pumps certificate contact
info@anc.sa



This section contains all information related to End-Suction pumps of all types electric and diesel.

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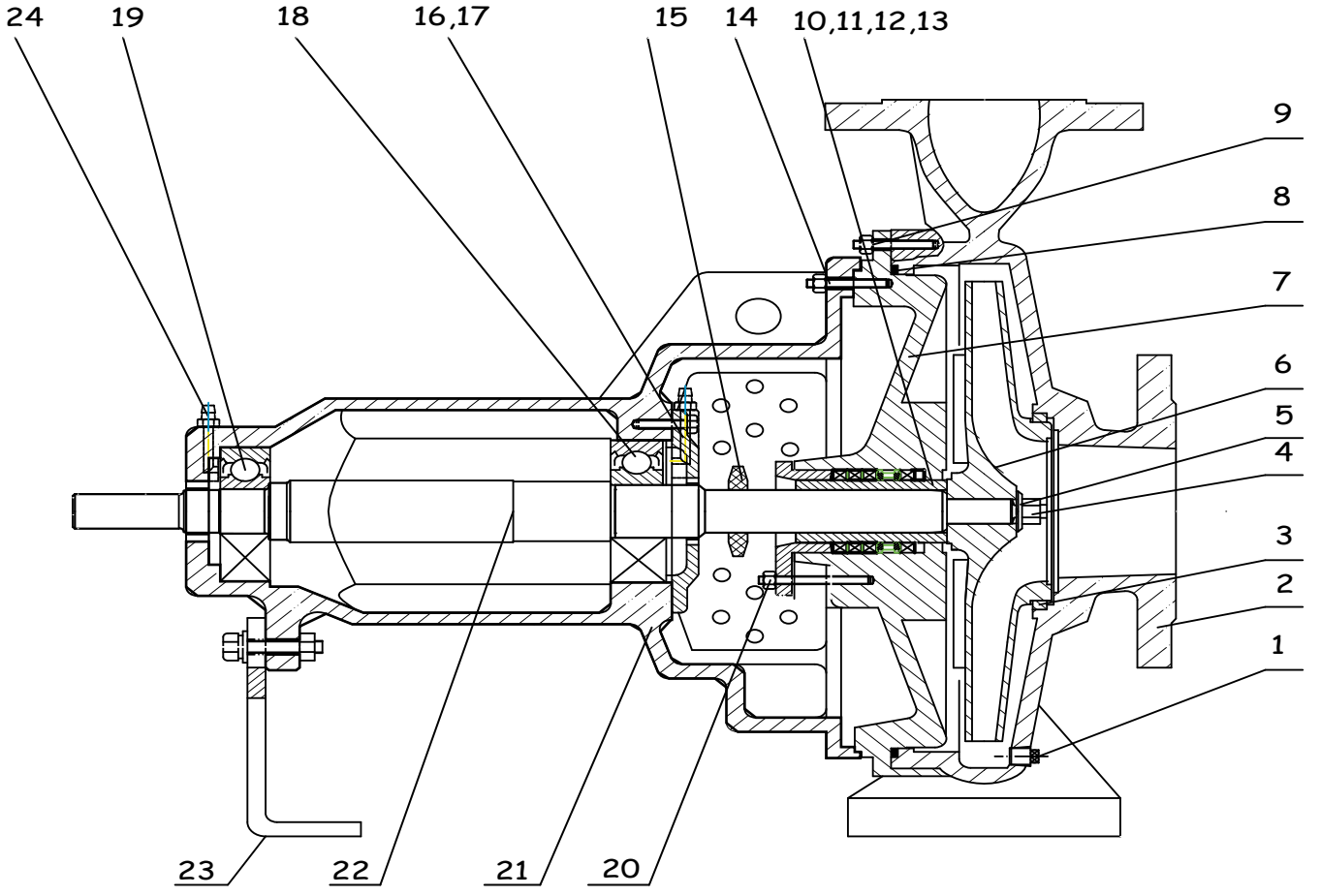
SECTION 2
END-SUCTION PUMPS

INTRODUCTION

ANCUL approved fire pumps are ideally developed and produced either for small flows or high flows through well-designed compact packages. ANCUL -N series-End-Suction Fire pumps have back pull out design for easy maintenance, self-venting center line discharge, and low NPSH requirements. The pump construction is ductile iron body, bronze fitted with packing. The shaft and sleeves are in AISI316 Stainless steel and be supported by thrust ball bearings, and radial roller bearing.

Matrial Details

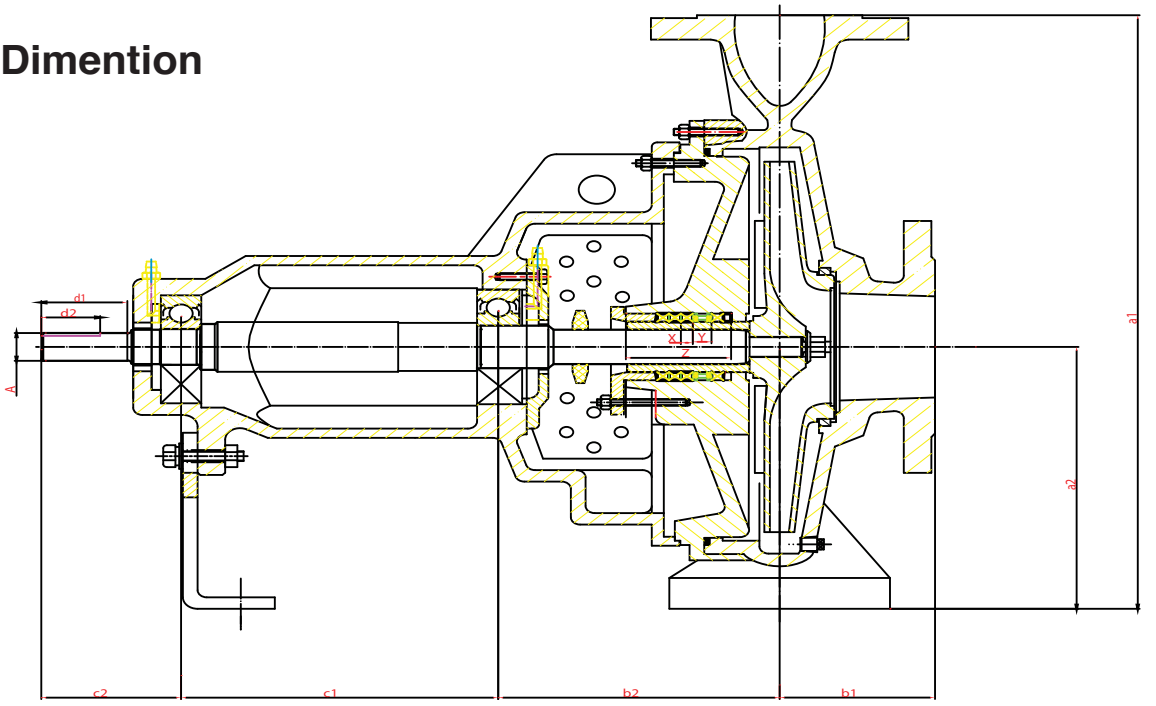


Matrial Details cont.

Electric End-Suction

Model	ANCEF 40/26	ANCEF 50/26	ANCEF 65/26	ANCEF 80/26
DN	2 - 1/2 * 1 - 1/2	2 - 1/2 * 2	3 * 2 - 1/2	4 * 3
1	Vent plug - GB/T3287 - G1/2	Vent plug - GB/T3287 - G1/2	Vent plug - GB/T3287 - G1/2	Vent plug - GB/T3287 - G1/2
2	Casing - EF 40/26-0001	Casing - EF 50/26-0001	Casing - EF 65/26-0001	Casing - EF 80/26-0001
3	Casing wear ring - EF 40/26-0007	Casing wear ring - EF 50/26-0007	Casing wear ring - EF 65/26-0007	Casing wear ring - EF 80/26-0007
4	Impeller Nut - EF 40/26-0005 - M16	Impeller Nut - EF 50/26-0005	Impeller Nut - EF 65/26-0005 - M24	Impeller Nut - EF 80/26-0005 - M24
5	Washer - GB/T93	Washer - GB/T93	Washer - GB/T93	Washer - GB/T93
6	Impeller EF 40/26-0006	Impeller EF 50/26-0006	Impeller EF 65/26-0006	Impeller EF 80/26-0006
7	Casing cover - EF 40/26-0002	Casing cover - EF 50/20-0002	Casing cover - EF 65/26-0002	Casing cover - EF 80/26-0002
8	O-ring - GB/T3452.1-2005	O-ring -GB/T3452.1-2005	O-ring - GB/T3452.1-2005	O-ring - GB/T3452.1-2005
9	Double end studs EF 40/26-0013	Double end studs EF 50/26-0013	Double end studs EF 65/26-0013	Double end studs EF 80/26-0013
10	Packing sleeve GB/T5780	Packing sleeve GB/T5780	Packing sleeve GB/T5780	Packing sleeve GB/T5780
11	Packing gland - EF 40/26-0008	Packing gland - EF 50/26-0008	Packing gland - EF 65/26-0008	Packing gland - EF 80/26-0008
12	Packing-GB/T16605-2008 - 7x7x150	Packing- GB/T16605-2008 - 6x6x200	Packing- GB/T16605-2008 - 7x7x250	Packing-GB/T16605-2008 - 7x7x250
13	Packing ring - EF 40/26-0009	Packing ring - EF 50/26-0009	Packing ring - EF 65/26-0009	Packing ring - EF 80/26-0009
14	Double end studs M10x55	Double end studs M10x35	Double end studs - GP/T70.3 M12x35	Double end studs - GP/T70.3 -M12x35
15	Water-proof ring DS-00	Water-proof ring DS-00	Water-proof ring DS-00	Water-proof ring DS-00
16	Bearing cover EF 40/26-0012	Bearing cover EF 50/26-0012	Bearing cover EF 65/26-0012	Bearing cover EF 80/26-0012
17	Oil Seal DS-00	Oil Seal DS-00	Oil Seal DS-00	Oil Seal DS-00
18	Bearing GB/T276-1994 SKF7307	Bearing GB/T276-1994 SKF7307	Bearing GB/T276-1994 SKF7308	Bearing GB/T276-1994 SKF7309
19	Bearing GB/T276-1994 SKF7306	Bearing GB/T276-1994 SKF7306	Bearing GB/T276-1994 SKF7307	Bearing GB/T276-1994 SKF7308
20	Double end studs-GB/T70.3- M10x60	Double end studs-GB/T70.3- M10x60	Double end studs-GB/T70.3- M10x75	Double end studs-GB/T70.3- M10x75
21	Bearing Housing EF 40/26-0010	Bearing Housing EF 50/26-0010	Bearing Housing EF 65/26-0010	Bearing Housing EF 80/26-0010
22	Shaft EF 40/26-0003	Shaft EF 50/26-0003	Shaft EF 65/26-0003	Shaft EF 80/26-0003
23	Bearing Bracket EF 40/26-0011	Bearing Bracket EF 50/26-0011	Bearing Bracket EF 65/26-0011	Bearing Bracket EF 80/26-0011
24	Grease nozzle-JB/T7940.1-1995-M6x1	Grease nozzle-JB/T7940.1-1995-M6x1	Grease nozzle-JB/T7940.1-1995-M6x1	Grease nozzle-JB/T7940.1-1995-M6x1

Dimention



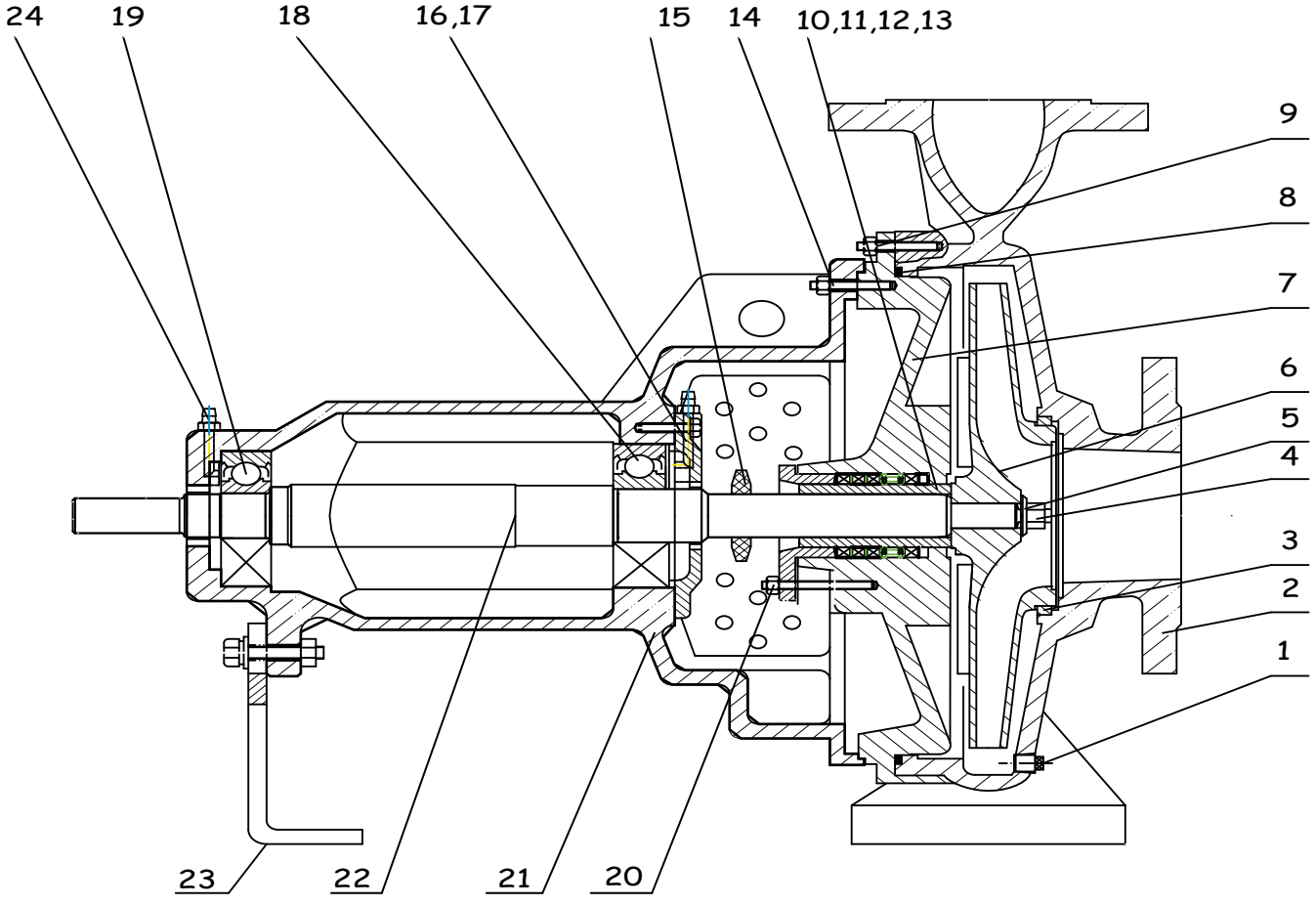
Model	ANCEF 40/20	ANCEF 50/20	ANCEF 65/20	ANCEF 80/20
DN	2 - 1/2 * 1 - 1/2	2 - 1/2 * 2	3 * 2 - 1/2	4 * 3
a1	34.00	36.00	40.50	43.00
a2	16.00	16.00	18.00	18.00
b1	10.00	10.00	10.00	12.50
b2	15.70	15.15	15.70	17.25
c1	18.30	18.30	18.30	22.30
c2	7.55	7.55	7.55	10.85
d1	5.00	5.00	5.00	8.00
d2	3.20	3.20	3.20	4.00
A	2.40 K6	2.40 K6	2.40 K6	3.20 K6
X	0.60	0.70	0.70	0.90
Y	1.10	1.10	1.10	1.10
Z	4.60	4.60	4.60	5.80

all sizes are in cm unit.

INTRODUCTION

ANCUL fire pumps are being directly connected through flexible coupling to the engines manufactured by Clarke or NM and Kirloskar. All our approved pumps are having UL Listed, FM Approved engines with granted and guaranteed continuous power ratings. The diesel engines conform to the requirements of NFPA 20 and specifically approved for fire pump application and service. Diesel engines operate at a rated speed not exceeding the above RPM and develop sufficient horsepower to drive the pump with reserve power.

Matrial Details

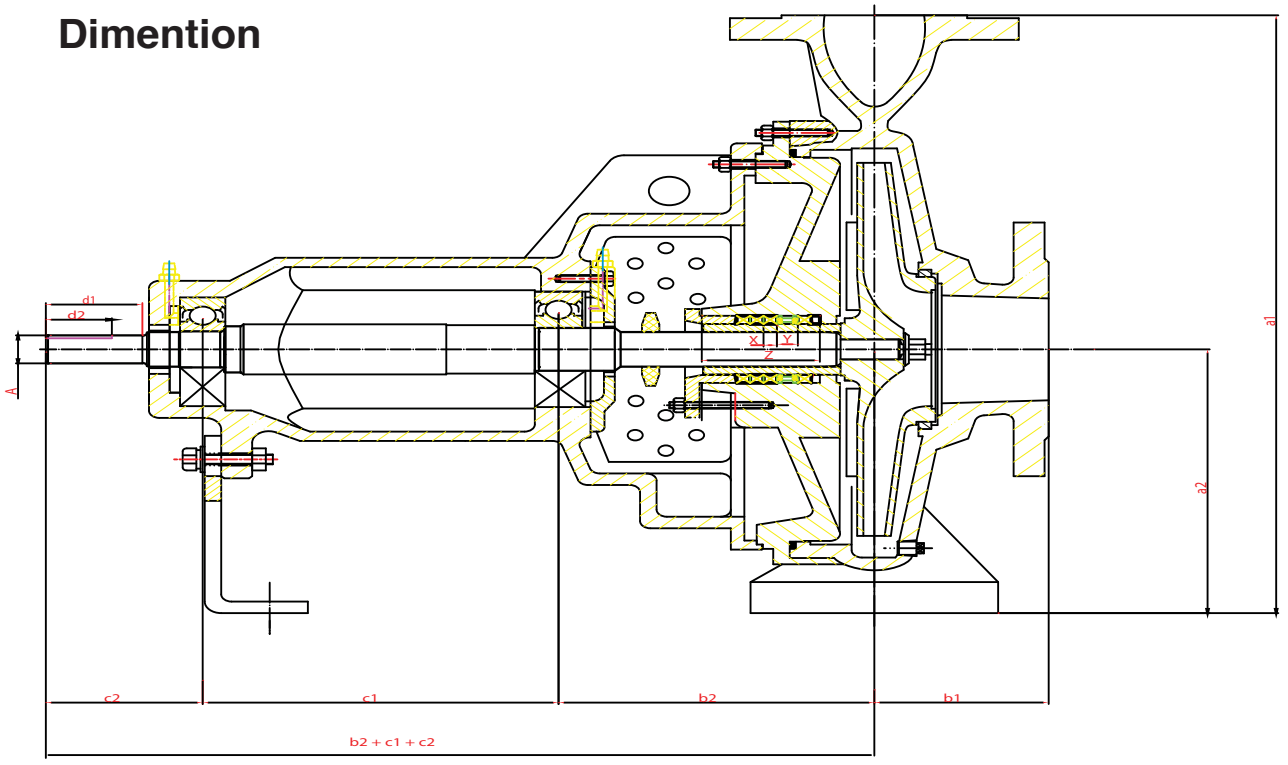


Matrial Details Cont.

Diesel End-Suction

Model	ANCEF 40/26	ANCEF 50/26	ANCEF 65/26	ANCEF 80/26
DN	2 - 1/2 * 1 - 1/2	2 - 1/2 * 2	3 * 2 - 1/2	4 * 3
1	Vent plug - GB/T3287 - G1/2	Vent plug - GB/T3287 - G1/2	Vent plug - GB/T3287 - G1/2	Vent plug - GB/T3287 - G1/2
2	Casing - EF 40/26-0001	Casing - EF 50/26-0001	Casing - EF 65/26-0001	Casing - EF 80/26-0001
3	Casing wear ring - EF 40/26-0007	Casing wear ring - EF 50/26-0007	Casing wear ring - EF 65/26-0007	Casing wear ring - EF 80/26-0007
4	Impeller Nut - EF 40/26-0005 - M16	Impeller Nut - EF 50/26-0005	Impeller Nut - EF 65/26-0005 - M24	Impeller Nut - EF 80/26-0005 - M24
5	Washer - GB/T93	Washer - GB/T93	Washer - GB/T93	Washer - GB/T93
6	Impeller EF 40/26-0006	Impeller EF 50/26-0006	Impeller EF 65/26-0006	Impeller EF 80/26-0006
7	Casing cover - EF 40/26-0002	Casing cover - EF 50/20-0002	Casing cover - EF 65/26-0002	Casing cover - EF 80/26-0002
8	O-ring - GB/T3452.1-2005	O-ring -GB/T3452.1-2005	O-ring - GB/T3452.1-2005	O-ring - GB/T3452.1-2005
9	Double end studs EF 40/26-0013	Double end studs EF 50/26-0013	Double end studs EF 65/26-0013	Double end studs EF 80/26-0013
10	Packing sleeve GB/T5780	Packing sleeve GB/T5780	Packing sleeve GB/T5780	Packing sleeve GB/T5780
11	Packing gland - EF 40/26-0008	Packing gland - EF 50/26-0008	Packing gland - EF 65/26-0008	Packing gland - EF 80/26-0008
12	Packing-GB/T16605-2008 - 7x7x150	Packing- GB/T16605-2008 - 6x6x200	Packing- GB/T16605-2008 - 7x7x250	Packing-GB/T16605-2008 - 7x7x250
13	Packing ring - EF 40/26-0009	Packing ring - EF 50/26-0009	Packing ring - EF 65/26-0009	Packing ring - EF 80/26-0009
14	Double end studs M10x55	Double end studs M10x35	Double end studs - GP/T70.3 M12x35	Double end studs - GP/T70.3 -M12x35
15	Water-proof ring DS-00	Water-proof ring DS-00	Water-proof ring DS-00	Water-proof ring DS-00
16	Bearing cover EF 40/26-0012	Bearing cover EF 50/26-0012	Bearing cover EF 65/26-0012	Bearing cover EF 80/26-0012
17	Oil Seal DS-00	Oil Seal DS-00	Oil Seal DS-00	Oil Seal DS-00
18	Bearing GB/T276-1994 SKF7307	Bearing GB/T276-1994 SKF7307	Bearing GB/T276-1994 SKF7308	Bearing GB/T276-1994 SKF7309
19	Bearing GB/T276-1994 SKF7306	Bearing GB/T276-1994 SKF7306	Bearing GB/T276-1994 SKF7307	Bearing GB/T276-1994 SKF7308
20	Double end studs-GB/T70.3- M10x60	Double end studs-GB/T70.3- M10x60	Double end studs-GB/T70.3- M10x75	Double end studs-GB/T70.3- M10x75
21	Bearing Housing EF 40/26-0010	Bearing Housing EF 50/26-0010	Bearing Housing EF 65/26-0010	Bearing Housing EF 80/26-0010
22	Shaft EF 40/26-0003	Shaft EF 50/26-0003	Shaft EF 65/26-0003	Shaft EF 80/26-0003
23	Bearing Bracket EF 40/26-0011	Bearing Bracket EF 50/26-0011	Bearing Bracket EF 65/26-0011	Bearing Bracket EF 80/26-0011
24	Grease nozzle-JB/T7940.1-1995-M6x1	Grease nozzle-JB/T7940.1-1995-M6x1	Grease nozzle-JB/T7940.1-1995-M6x1	Grease nozzle-JB/T7940.1-1995-M6x1

Dimention



Model	ANCEF 40/26	ANCEF 50/26	ANCEF 65/26	ANCEF 80/26
DN	2 - 1/2 * 1 - 1/2	2 - 1/2 * 2	3 * 2 - 1/2	4 * 3
a1	40.50	40.50	45.00	48.00
a2	18.00	18.00	20.00	20.00
b1	10.00	10.00	10.00	12.50
b2	15.15	15.10	50.40	50.50
c1	18.30	18.30		
c2	7.55	7.55		
d1	5.00	5.00	8.00	8.00
d2	3.20	3.20	4.00	4.00
A	2.40 K6	2.40 K6	3.20 K6	3.20 K6
X	0.60	0.70	1.42	1.42
Y	1.10	1.00	0.70	0.70
Z	4.40	4.40	5.30	5.30

all sizes are in cm unit.

UL Product iQ™

QWZU.EX28373 - Centrifugal Fire Pumps, End Suction

Centrifugal Fire Pumps, End Suction

See General Information for Centrifugal Fire Pumps, End Suction

FIREGUARD GLOBAL LTD
3 CHURCH ST
KIDDERMINSTER
WORCESTERSHIRE, DY10 2AD UNITED KINGDOM

EX28373

Trademark and/or Tradename: , "FIREGUARD" , "FIREGUARD GLOBAL" ,

Last Updated on 2020-05-21

for more details about each pumps certificate contact
info@anc.sa

ARIF
AL-NAHDI
CO.LTD.

This chapter contains all information related to inline jockey pump includes technical data, matrial description and dimentions.

info@anc.sa www.anc.sa

CHAPTER 2
JOCKEY PUMPS

PVS/PVT

S.S.304 vertical multistage pump

MODEL CODE/

For example/

PVS 32 - 30 - 2

- **2**=Small impeller number
- **30**=Stage/*Etapa*/*Étape* x10 (PVT32-PVT90)
- **32**=Rated flow(m^3/h)
- **PVS**=Pump with flow passage components in SS304

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.

DESCRIPTION/

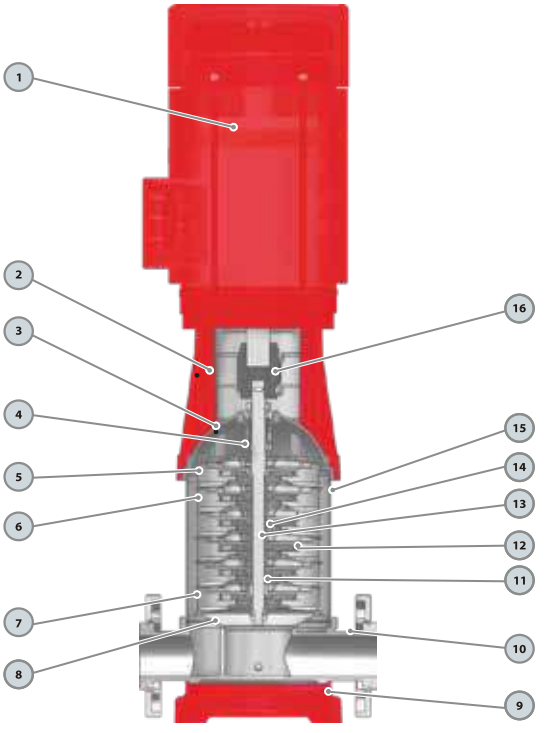
SS304 vertical, multistage centrifugal pump
he suction and discharge ports on the same level
PVT pump head and base are in cast iron
PVT pump impeller and shaft are in stainless steel
PVS pump all wetted parts are in stainless steel
E3 high efficient motor, with protection IP55 class F
Quality bearing, wear resistance mechanical seal
Liquid temperature between -10°C and +120°C

TECHNICAL DATA

60 Hz n=3500 1/min

MODEL	DN	Power		Q=DELIVERY/ H=Head (m)																	
				us gpm	2.6	3.5	4.4	5.3	6.2	6.6	7	7.9	8.8	11	13	15	18	20	22	26	31	35
				l/min	10	13	17	20	23	25	27	30	33	42	50	58	67	75	83	100	117	133
				m³/h	0.6	0.8	1	1.2	1.4	1.5	1.6	1.8	2	2.5	3	3.5	4	4.5	5	6	7	8
	mm	kw	hp																			
PVS 1-2	25x25	0.37	0.5	17.5	17	16.5	16	15.5	15.3	15	14	13	-	-	-	-	-	-	-	-	-
PVS 1-3	25x25	0.37	0.5	26.5	26	25	24	23	22.5	22	21	20	-	-	-	-	-	-	-	-	-
PVS 1-4	25x25	0.37	0.5	35	34	33	32	31	30.5	30	28	26	-	-	-	-	-	-	-	-	-
PVS 1-5	25x25	0.55	0.75	43	42	41	40	39	38.5	38	35	33	-	-	-	-	-	-	-	-	-
PVS 1-6	25x25	0.55	0.75	52	51	50	48	47	46	45	43	39	-	-	-	-	-	-	-	-	-
PVS 1-7	25x25	0.75	1	60	59	58	56	55	54	52	50	46	-	-	-	-	-	-	-	-	-
PVS 1-8	25x25	0.75	1	68	67	65	64	62	61	59	57	53	-	-	-	-	-	-	-	-	-
PVS 1-9	25x25	0.75	1	76	75	74	73	71	69	66	64	60	-	-	-	-	-	-	-	-	-
PVS 1-10	25x25	1.1	1.5	85	84	83	81	78	76	74	72	67	-	-	-	-	-	-	-	-	-
PVS 1-11	25x25	1.1	1.5	95	93	90	87	85	83	81	78	73	-	-	-	-	-	-	-	-	-
PVS 1-12	25x25	1.1	1.5	103	102	98	96	92	90	88	86	79	-	-	-	-	-	-	-	-	-
PVS 1-13	25x25	1.1	1.5	112	110	107	105	100	98	95	93	86	-	-	-	-	-	-	-	-	-
PVS 1-15	25x25	1.5	2	127	125	123	121	117	115	112	107	99	-	-	-	-	-	-	-	-	-
PVS 1-17	25x25	1.5	2	144	141	139	137	132	128	124	120	112	-	-	-	-	-	-	-	-	-
PVS 1-19	25x25	2.2	3	160	157	155	153	147	144	141	134	124	-	-	-	-	-	-	-	-	-
PVS 1-21	25x25	2.2	3	177	174	172	168	162	158	153	147	138	-	-	-	-	-	-	-	-	-
PVS 1-23	25x25	2.2	3	193	190	188	184	174	171	167	161	152	-	-	-	-	-	-	-	-	-
PVS 1-25	25x25	3	4	210	207	205	202	192	188	184	176	164	-	-	-	-	-	-	-	-	-
PVS 2-2	25x25	0.55	0.75	-	-	26	25	24	24	24	23	22	21	18	16	12	9	-	-	-	-
PVS 2-3	25x25	0.75	1	-	-	39	38	37	36	35	34	33	31	27	24	19	15	-	-	-	-
PVS 2-4	25x25	1.1	1.5	-	-	52	50	49	48	47	46	45	42	36	32	26	20	-	-	-	-
PVS 2-5	25x25	1.1	1.5	-	-	65	63	61	60	59	58	57	52	46	41	32	25	-	-	-	-
PVS 2-6	25x25	1.1	1.5	-	-	78	76	75	74	73	71	69	63	56	49	40	30	-	-	-	-
PVS 2-7	25x25	1.5	2	-	-	91	89	87	86	85	83	81	74	66	57	47	35	-	-	-	-
PVS 2-9	25x25	2.2	3	-	-	117	115	112	111	110	107	104	95	86	75	61	45	-	-	-	-
PVS 2-11	25x25	2.2	3	-	-	143	140	137	136	134	131	128	116	104	90	75	56	-	-	-	-
PVS 2-13	25x25	3	4	-	-	171	168	165	163	161	156	152	139	126	108	90	66	-	-	-	-
PVS 2-15	25x25	3	4	-	-	195	191	188	186	184	180	176	160	142	125	103	77	-	-	-	-
PVS 2-18	25x25	4	5.5	-	-	234	232	229	228	225	218	212	195	171	151	126	94	-	-	-	-
PVS 3-2	25x25	0.37	0.5	-	-	-	-	-	17.5	17	17	16	15	14	13	11	9	8	-	-	-
PVS 3-3	25x25	0.55	0.75	-	-	-	-	-	26.5	26	26	25	24	23	20	18	15	12	-	-	-
PVS 3-4	25x25	0.55	0.75	-	-	-	-	-	35	35	34	34	32	30	27	25	20	17	-	-	-
PVS 3-5	25x25	0.75	1	-	-	-	-	-	44	44	43	42	40	38	33	31	26	23	-	-	-
PVS 3-6	25x25	1.1	1.5	-	-	-	-	-	51	51	50	50	48	45	40	37	32	27	-	-	-
PVS 3-7	25x25	1.1	1.5	-	-	-	-	-	61	61	60	59	56	52	46	43	38	31	-	-	-
PVS 3-8	25x25	1.1	1.5	-	-	-	-	-	70	69	68	67	64	61	53	49	44	35	-	-	-
PVS 3-9	25x25	1.5	2	-	-	-	-	-	78	78	77	77	72	68	60	56	50	40	-	-	-
PVS 3-10	25x25	1.5	2	-	-	-	-	-	87	86	85	84	81	76	68	63	55	44	-	-	-
PVS 3-11	25x25	1.5	2	-	-	-	-	-	96	95	94	92	87	82	74	69	59	48	-	-	-
PVS 3-12	25x25	2.2	3	-	-	-	-	-	104	103	102	100	96	90	79	73	63	52	-	-	-
PVS 3-13	25x25	2.2	3	-	-	-	-	-	112	111	110	109	104	98	86	80	69	57	-	-	-
PVS 3-15	25x25	2.2	3	-	-	-	-	-	129	128	127	126	120	112	99	93	81	65	-	-	-
PVS 3-17	25x25	2.2	3	-	-	-	-	-	147	146	145	143	137	128	114	106	91	74	-	-	-
PVS 3-19	25x25	3	4	-	-	-	-	-	165	164	162	160	153	142	126	118	102	82	-	-	-
PVS 3-21	25x25	3	4	-	-	-	-	-	183	182	180	178	170	160	141	129	112	91	-	-	-
PVS 3-23	25x25	3	4	-	-	-	-	-	200	199	196	194	185	174	154	142	122	98	-	-	-
PVS 3-25	25x25	4	5.5	-	-	-	-	-	217	216	213	211	202	187	167	154	134	108	-	-	-
PVS 4-2	32x32	0.75	1	-	-	-	-	-	-	-	-	-	26	25	24	23	22	21	19	16	14
PVS 4-3	32x32	1.1	1.5	-	-	-	-	-	-	-	-	-	39	38	37	36	34	32	28	24	21
PVS 4-4	32x32	1.5	2	-	-	-	-	-	-	-	-	-	52	50	49	48	46	44	38	35	31
PVS 4-5	32x32	2.2	3	-	-	-	-	-	-	-	-	-	65	62	61	60	58	55	49	44	39
PVS 4-6	32x32	2.2	3	-	-	-	-	-	-	-	-	-	78	75	74	72	70	67	59	54	47
PVS 4-7	32x32	3	4	-	-	-	-	-	-	-	-	-	92	88	86	84	81	78	69	62	55
PVS 4-8	32x32	3	4	-	-	-	-	-	-	-	-	-	104	100	98	95	93	90	79	72	63
PVS 4-10	32x32	4	5.5	-	-	-	-	-	-	-	-	-	130	125	123	120	117	113	102	90	80
PVS 4-12	32x32	4	5.5	-	-	-	-	-	-	-	-	-	156	150	148	145	141	136	122	109	96
PVS 4-14	32x32	5.5	7.5	-	-	-	-	-	-	-	-	-	182	176	173	170	165	159	145	129	112
PVS 4-16	32x32	5.5	7.5	-	-	-	-	-	-	-	-	-	207	201	199	196	190	183	165	146	128

MATERIAL DESCRIPTION

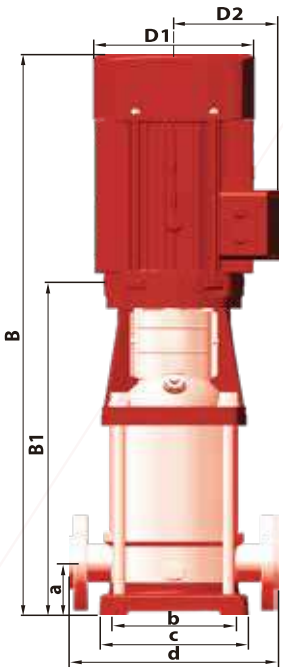


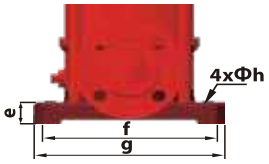
PVS

No.	Description	Material
1	Motor	IP55 Class F
2	Pump Case	Cast iron
3	Seal Base	SS304
4	Mechanical Seal	SS304
5	Top Diffuser	SS304
6	Diffuser	SS304
7	Support Diffuser	SS304
8	Inducer	SS304

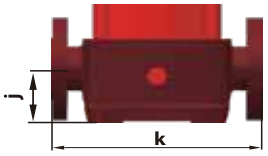
No	Description	Material
9	Base Plate	Cast iron
10	Inlet&Outlet Chamber	SS304
11	Bearing	Tungsten Carbide
12	Impeller	SS304
13	Shaft	SS304
14	Impeller Sleeve	SS304
15	Cylinder	SS304
16	Coupling	Carbon Steel

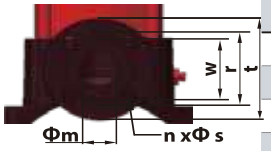
DIMENSIONS AND WEIGHT





PVS





MODEL	B1	B	D1	D2	COMMON	kg
4-2	286	531	170	142	DN=32 a=50 b=100 c=150 d=210 e=20 f=180 g=210 h=13 j=75 k=250 m=32 n=4 r=100 s=18 t=140 w=60	24
4-3	313	558	170	142		25
4-4	350	640	190	155		31
4-5	376	667	190	155		34
4-6	404	694	190	155		35
4-7	441	786	197	165		42
4-8	468	813	197	165		42
4-10	522	877	230	188		51
4-12	576	931	230	188		52
4-14	650	1040	260	208		64
4-16	704	1094	260	208		66
8-2-1	347	592	170	142		32
8-2	357	647	190	155		38
8-3	387	677	190	155		41
8-4	427	772	197	165		49
8-5	457	802	197	165		50
8-6	487	842	230	188		58
8-8	567	957	260	208		71
8-10	627	1017	260	208	DN=40 a=80 b=130 c=199 d=260 e=25 f=215 g=247 h=14 j=80 k=280 m=50 n=4 r=110 s=18 t=150 w=80	80
8-12	687	1077	260	208		82
8-14	835	1335	330	255		153
10-1	347	592	170	142		40
10-2	347	637	190	155		47
10-3	377	667	190	155		51
10-4	417	762	197	165		60
10-5	447	792	197	165		61
10-6	477	832	230	188		70
10-7	517	907	260	208		92
10-8	547	937	260	208		93
10-9	577	967	260	208		94
10-10	607	997	260	208		98
10-12	667	1057	260	208		100
10-14	747	1247	330	255		157
10-16	807	1307	330	255		159
10-17	837	1337	330	255		160
12-1	357	602	170	142	DN=50 a=90 b=130 c=199 d=260 e=35 f=215 g=247 h=14 j=90 k=300 m=50 n=4 r=125 s=18 t=165 w=80	32
12-2	367	657	190	155		41
12-3	407	762	230	188		56
12-4	457	847	260	208		69
12-5	487	877	260	208		71
12-6	517	907	260	208		77
12-7	547	937	260	208		78
12-8	665	1165	330	255		147
12-10	725	1225	330	255		151
12-12	785	1285	330	255		164
12-14	845	1345	330	255		167

MODEL	B1	B	D1	D2	COMMON	kg
16-2-1	397	687	190	155	DN=50 a=90 b=130 c=199 d=260 e=35 f=215 g=247 h=14 j=90 k=300 m=50 n=4 r=125 s=18 t=165 w=80	42
16-2	407	762	230	188		56
16-3	472	862	260	208		68
16-4	517	907	260	208		75
16-5	650	1150	330	255		148
16-6	695	1195	330	255		150
16-7	740	1240	330	255		161
16-8	785	1285	330	255		163
16-10	875	1425	330	255		186
20-1	397	687	190	155		41
20-2	407	762	230	188		56
20-3	472	862	260	208		69
20-4	517	907	260	208		79
20-5	650	1150	330	255		148
20-6	695	1195	330	255		150
20-7	740	1240	330	255		162
20-8	785	1285	330	255		163
20-10	875	1425	330	255		187
32-10-1	505	850	197	165	DN=65 a=105 b=170 c=225 d=320 e=30 f=240 g=298 h=14 j=105 k=320 m=74 n=8 r=145 s=18 t=185 w=107	73
32-10	505	860	230	188		81
32-20-2	575	965	260	208		95
32-20	575	965	260	208		101
32-30-2	645	1035	330	255		104
32-30	750	1250	330	255		172
32-40-2	820	1320	330	255		176
32-40	820	1320	330	255		186
32-50-2	890	1390	330	255		191
32-50	890	1440	330	255		211
32-60-2	960	1510	330	255		216
32-60	960	1510	330	255		216
32-70-2	1030	1605	360	285		255
32-70	1030	1605	360	285		255
32-80-2	1100	1675	400	310		259
32-80	1100	1750	400	310		315
32-90-2	1170	1820	400	310		319
32-90	1170	1820	400	310		319
32-100-2	1240	1890	400	310		324

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License Number: 20200178221 **رقم الترخيص:**

SASO certifies that it has granted the right to use (SASO) quality mark on the following products, after fulfilling the required requirements according to the related normative references:

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The Establishment:	شركة عارف النهدي المحدودة	المنشأة:
The Establishment's Address:	الرياض - الملز	عنوان المنشأة:
Production Line Location:	الرياض - حي السلي	موقع خط الإنتاج:
Normative References:	SASO NFPA 20/2010	المراجع القياسية:
The Trade Mark:	ANC	العلامة التجارية:
The Product:	المضخات الثابتة للحماية من الحريق	المنتج: (تفاصيل المنتج في الملحق)
Date of Granting:	2020/11/18	تاريخ المنح:
Date of Renwal:	-	تاريخ التجديد:
Date of Expiry:	2023/11/17	تاريخ الانتهاء:

نائب محافظ الهيئة للمطابقة والجودة
Vice Governor of Conformity and Quality Affairs

المهندس/ سعود بن راشد العسكر
Eng. Saud R. AlAskar

الأمانة العامة لمنح الشهادات
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Saudi Standards, Metrology and Quality Org.

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QMS-F-10-10
Issue # 5 Date 25/04/1441
Rev # 0 Date 25/04/1441

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ص.ب ٣٤٣٧ الرياض ١١٤٧١ المملكة العربية السعودية
هاتف: ٩٢٠٠٠٩٠٨٥ فاكس: ٠١١٤٥٢٠٠٨٦+

ARIF
AL-NAHDI
CO.LTD.

marathon Motors

TECHTOP

This chapter contains all information related to firepump motors of all types MARATHON and TECHTOP, including details and features.

CHAPTER3
MOTORS

info@anc.sa www.anc.sa

This section contains all information related to Marthon fire pump motor, including applcations, details and features.

SECTION 1

MARTHON MOTORS

info@anc.sa www.anc.sa

marathon® Motors

FIRE PUMP, THREE PHASE MOTORS

ODP, RIGID BASE, EPACT MOTORS

APPLICATIONS:

For use on pumps designed for fire pump duty and installed per NFPA-20. These dripproof motors are intended for installation in relatively clean and dry environments.
Fire Pump motors are not recommended for use with variable frequency drives.

FEATURES:

- UL file EX5190, CSA file LR2025 and CE mark
- 50° C ambient
- Ball bearings
- 1.15 service factor (except as noted)
- Red paint on 25 HP through 250 HP
- NEMA® design B, code G or less
- Dual voltage motors have 12 leads, suitable for wye-delta or across the line start on either voltage, or part winding start on low voltage
- Single voltage motors have 12 leads and are suitable for wye-delta, across the line, or part winding start
- Will accept C-Face kits (except as noted), see accessories section for kits
- 230/460 and 460 Volt models rated for 50 HZ at next lower HP, 1.15 SF, as noted

HP	RPM	VOLTS	FRAME	MODEL NO.	NOM. EFF.	F.L. AMPS	WT.	"C" DIM.	FOOT NOTES
25	3600	200/400	256T	256TTDX4020	91.0	66.5/33.5	126	22.32	
	3600	190/380-400	256T	256TTDBD4020	91.0	70.0/35.0-33.5	284	24.22	
	3600	230/460	256T	256TTDX4024	91.0	58.0/29.0	164	22.32	d, 68
	3600	230/460	256T	256TTDBD4024	91.0	58.0/29.0	274	24.22	68
	3600	575	256T	256TTDBD4008	91.0	23.2	274	24.22	
	1800	200/400	284T	284TTDP4047	91.7	70.0/35.0	412	23.49	
	1800	190/380-400	284T	284TTDBD4047	91.7	74.0/36.5-34.5	378	25.71	
	1800	230/460	284T	284TTDP4027	91.7	61.0/30.5	423	23.49	68
	1800	230/460	284T	284TTDBD4027	91.7	61.0/30.5	378	25.71	68
	1800	575	284T	284TTDBD4035	91.7	24.4	378	25.71	
30	3600	230/460	284TS	284TSTDP4002	91.0	72.0/36.0	432	22.06	d, 68
	3600	230/460	284TS	284TSTDBD4002	91.0	72.0/36.0	399	24.34	68
	3600	200/400	284TS	284TSTDP14007	91.0	83.0/41.5	324	22.06	68
	3600	190/380-400	284TS	284TSTDBD4007	91.0	87.0/43.5-41	374	24.34	
	3600	575	284TS	284TSTDBD4008	91.0	28.8	374	24.34	
	1800	200/400	286T	286TTDP14042	92.4	83.0/41.5	296	24.99	
	1800	190/380-400	286T	286TTDBD14042	92.4	87.0/43.0-41.0	426	27.09	
	1800	230/460	286T	286TTDP4041	92.4	72.0/36.0	331	24.99	68
	1800	230/460	286T	286TTDBD4041	92.4	72.0/36.0	424	27.09	68
	1800	575	286T	286TTDBD4035	92.4	28.8	424	27.09	
40	3600	200/400	286TS	286TSTDP4023	91.7	108/54.0	327	23.56	d
	3600	190/380-400	286TS	286TSTDBD4023	91.7	114/57.0-54.0	419	25.72	
	3600	230/460	286TS	286TSTDP4022	91.7	94.0/47.0	360	23.56	d, 68
	3600	230/460	286TS	286TSTDBD4022	91.7	94.0/47.0	421	25.72	68
	3600	575	286TS	286TSTDBD4008	91.7	37.5	421	25.72	
	1800	200/400	324T	324TTDP14049	93.0	155/77.5	431	26.00	d
	1800	190/380-400	324T	324TTDCD14049	93.0	114/56.5-53.5	272	28.55	
	1800	230/460	324T	324TTDP4038	93.0	97.0/48.5	465	26.00	d, 68
	1800	230/460	324T	324TTDCD4038	93.0	94.0/47.0	272	28.55	68
	1800	575	324T	324TTDCD4035	93.0	37.5	272	28.55	
50	3600	200/400	324TS	324TSTDP4007	92.4	135/67.5	401	24.50	d
	3600	190/380-400	324TS	324TSTDCD4007	92.4	138/69.0-67.0	633	27.05	
	3600	230/460	324TS	324TSTDP4010	92.4	117/58.5	414	24.50	d, 68
	3600	230/460	324TS	324TSTDCD4010	92.4	114/57.0	252	27.05	68
	3600	575	324TS	324TSTDCD4008	92.4	45.5	252	27.05	
	1800	200/400	326T	326TTDP4344	93.0	141/70.5	498	27.50	
	1800	190/380-400	326T	326TTDCD4344	93.0	145/72.0-68.5	324	29.73	
	1800	230/460	326T	326TTDP4345	93.0	123/61.5	515	27.50	68
	1800	230/460	326T	326TTDCD4345	93.0	120/60.0	324	29.73	68
	1800	575	326T	326TTDCD4035	93.0	48.0	324	29.73	

FIRE PUMP, THREE PHASE MOTORS

ODP, RIGID BASE, EPACT MOTORS

HP	RPM	VOLTS	FRAME	MODEL NO.	NOM. EFF.	F.L. AMPS	WT.	"C" DIM.	FOOT NOTES
60	3600	200/400	326TS	326TSTDP4022	93.0	155/77.5	480	26.00	d
	3600	190/380-400	326TS	326TSTDCD4022	93.0	165/82.5-77.5	694	28.23	
	3600	230/460	326TS	326TSTDP4024	93.0	135/67.5	378	26.00	d, 68
	3600	230/460	326TS	326TSTDCD4024	93.0	136/68.0	277	28.23	68
	3600	575	326TS	326TSTDCD4008	93.0	54.5	277	28.23	
	1800	200/400	326TS	326TSTDR14034	93.6	167/83.5	418	29.50	
	1800	200/400	364TS	364TSTDS4337	93.6	166/83.0	663	26.50	
	1800	190/380-400	364TS	364TSTDCD4337	93.6	167/83.5-80.0	839	29.57	
	1800	200/400	364T	364TTDS14329	93.6	166/83.0	686	28.62	
	1800	230/460	364T	364TTDS4328	93.6	144/72.0	716	28.62	68
	1800	230/460	364TS	364TSTDS4332	93.6	144/72.0	699	26.50	d, 68
	1800	230/460	364TS	364TSTDCD4332	93.6	138/69.0	846	29.57	68
	1800	575	364TS	364TSTDCD4035	93.6	55.0	846	29.57	
75	3600	200/400	364TS	364TSTDS4024	93.0	210/105	713	26.50	d
	3600	190/380-400	364TS	364TSTDCD4024	93.0	206/103-99.0	826	29.57	
	3600	230/460	364TS	364TSTDS4025	93.0	183/91.5	750	26.50	d, 68
	3600	230/460	364TS	364TSTDCD4025	93.0	170/85.0	807	29.57	68
	3600	575	364TS	364TSTDCD4008	93.0	68.0	807	29.57	
	1800	200/400	365TS	365TSTDS4347	94.1	204/102	766	27.50	
	1800	190/380-400	365TS	365TSTDCD4347	94.1	206/103-97.0	879	31.14	
	1800	230/460	365TS	365TSTDS4332	94.1	177/88.5	772	27.50	d, 68
	1800	230/460	365TS	365TSTDCD4332	94.1	170/85.0	416	31.14	68
	1800	575	365TS	365TSTDCD4035	94.1	68.0	416	31.14	
100	3600	200/400	365TS	365TSTDS4303	93.0	276/138	748	27.50	d
	3600	190/380-400	365TS	365TSTDCD4303	93.0	276/138-132	927	31.14	
	3600	230/460	365TS	365TSTDS4025	93.0	240/120	775	27.50	d, 68
	3600	230/460	365TS	365TSTDCD4025	93.0	228/114	919	31.14	68
	3600	575	365TS	365TSTDCD4008	93.0	91.0	919	31.14	
	1800	200/400	404TS	404TSTDS4333	94.1	271/136	1009	29.50	d
	1800	190/380-400	404TS	404TSTDCD4333	94.1	276/137-130	575	33.86	
	1800	230/460	404TS	404TSTDS4332	94.1	236/118	1002	29.50	d, 68
	1800	230/460	404TS	404TSTDCD4332	94.1	228/114	525	33.86	68
	1800	575	404TS	404TSTDCD4035	94.1	91.0	575	33.86	
125	3600	200/400	404TS	404TSTDS14008	93.6	327/163	949	29.50	d
	3600	380-400	404TS	404TSTDCD14008	93.6	167-159	1159	33.86	
	3600	230/460	404TS	404TSTDS4017	93.6	284/142	1005	29.50	68
	3600	460	404TS	404TSTDCD4017	93.6	139	1165	33.86	68
	3600	575	404TS	404TSTDCD4008	93.6	111	1165	33.86	
	1800	200/400	405TS	405TSTDS4333	94.5	336/168	1070	31.00	
	1800	380-400	405TS	405TSTDCD4333	94.5	170-162	651	35.44	
	1800	230/460	405TS	405TSTDS4332	94.5	288/144	1125	31.00	d, 68
	1800	460	405TS	405TSTDCD4332	94.5	142	605	35.44	68
	1800	575	405TS	405TSTDCD4035	94.5	114	605	35.44	
150	3600	460	405TS	405TSTDS4006	93.6	169	1004	31.00	d, 68
	3600	460	405TS	405TSTDCD4006	93.6	168	1244	35.44	68
	3600	575	405TS	405TSTDCD4008	93.6	134	1244	35.44	
	1800	460	444TS	444TSTDS4332	95.0	173	1286	34.00	d, 68
	1800	460	444TS	444TSTDCD4332	95.0	170	835	40.83	68
	1800	575	444TS	444TSTDCD4035	95.0	136	835	40.83	
200	3600	460	444TS	444TSTDS4010	94.5	225	1313	34.00	d, 68
	3600	460	444TS	444TSTDCD4010	94.5	220	750	40.83	68
	3600	575	444TS	444TSTDCD4008	94.5	176	750	40.83	
	1800	460	445TS	445TSTDS4332	95.0	233	1414	36.00	d, 68
	1800	460	445TS	445TSTDCD4332	95.0	225	900	40.83	68
	1800	575	445TS	445TSTDCD4035	95.0	180	1015	40.83	

FIRE PUMP, THREE PHASE MOTORS

ODP, RIGID BASE, EPACT MOTORS

HP	RPM	VOLTS	FRAME	MODEL NO.	NOM. EFF.	F.L. AMPS	WT.	"C" DIM.	FOOT NOTES
250	3600	460	445TS	445TSTDS14007	94.5	279	1456	36.00	d, 68
	3600	460	445TS	445TSTDCD4007	94.5	272	1900	40.83	68
	3600	575	445TS	445TSTDCD4008	94.5	218	1510	40.83	
	1800	460	445TS	445TSTDS14051	95.4	287	1510	36.00	d, 68
	1800	460	445TS	445TSTDCD14051	95.4	278	1090	40.83	68
	1800	575	447TS	445TSTDCD4036	95.4	222	1500	45.95	
300	3600	460	447TS	447TSTDN7001	95.0	332	1940	39.50	25, 68
	1800	460	447TS	447TSTDN7026	95.4	345	1994	39.50	25, 68
350	3600	460	447TS	447TSTDN7003	95.0	385	2013	39.50	25, 68
	1800	460	447TS	447TSTDN7027	95.4	405	2064	39.50	25, 68
400	3600	460	447TS	447TSTDN7005	95.4	435	2150	39.50	25, 68
	1800	460	447TS	447TSTDN7028	95.4	450	2220	39.50	25, 68
450	3600	460	449TS	449TSTDN7001	95.8	502	2544	44.50	25, 68
	1800	460	449TS	449TSTDN14033	95.8	505	2564	44.50	17, 25, 68
500	3600	460	449TS	449TSTDN14005	95.8	545	2620	44.50	25, 68
	1800	460	449TS	449TSTDN7027	95.8	560	2695	44.50	17, 25, 68

APPLICATIONS:

For use on pumps designed for fire pump duty and installed per NFPA-20.
Fire Pump motors are not recommended for use with variable frequency drives.

FEATURES:

- UL file EX5190, CSA file LR2025 and CE mark
- Ball bearings
- 1.15 service factor
- Red paint exterior
- NEMA® Design B, Code G or less
- Dual voltage motors have 12 leads, suitable for wye-delta or across the line start on either voltage, or part winding start on low voltage
- Single voltage motors have 12 leads and are suitable for wye-delta, across the line, or part winding start
- Will accept C- Face kits, see accessories section
- 230/460 and 460 volt models rated for 50 HZ at next lower HP, 1.15 SF
- For special designs, contact district sales office near you

UL Product iQ™

QXZF.EX5190 - Fire Pump Motors

Fire Pump Motors

See General Information for Fire Pump Motors

REGAL BELOIT AMERICA INC EX5190
1946 W Cook Rd
Fort Wayne, IN 46818 USA

Trademark and/or Tradename: "2GREEN" , "Century" , "Century Electric" , "EX5190" , "EconoMaster" , "Fasco" , "Genteq" , "HeatMaster" , "LEESON" , "LEESON ELECTRIC" , "LEESON Electric" , "Lincoln Motors" , "Marathon" , "Marathon Electric" , "Marathon Generators" , "Marathon Motors" , "Morrill Motors" , "Regal" , "Sinya Motor" , "Source 1" , "Uppco" , "York" ,

Last Updated on 2020-03-11

for more details about each motor certificate contact
info@anc.sa

This section contains all information related to TECHTOP fire pump motor, including applcations, details and features.

SECTION 2
TECHTOP MOTORS

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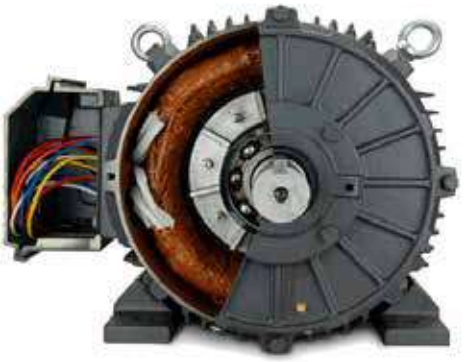
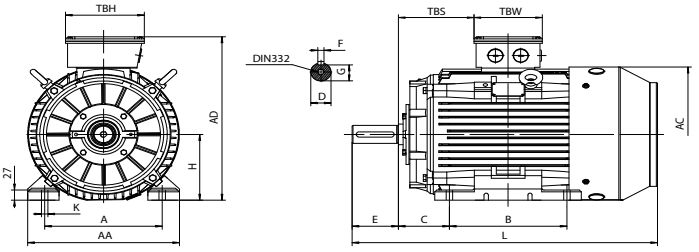
Motor Details

STANDARD FEATURES

- ODP TYPE or TEFC TYPE
- Service Factor: 1.15
- Class ‘F’ insulation for all frames, Class B rise
- Continuous Duty (S1)
- 50℃ ambient temperature



Series Motors Dimensional Drawings

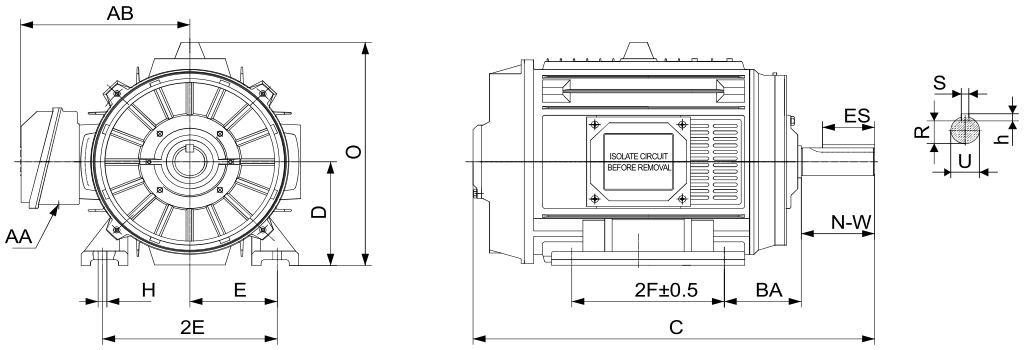


IM B3

Overall & Installation Dimensions

Frame		Foot Mounting				Shaft					General							
		H	A	B	C	D	E	F	G	K	AA	AD	HD	AC	L	TBS	TBW	TBH
80		80	125	100	50	φ19	40	6	15.5	φ9	154	214	134	φ158	290	43	114	114
90S/L		90	140	100/125	56	φ24	50	8	20	φ10	178	231	141	φ176	320/345	49/61.5	114	114
100L		100	160	140	63	φ28	60	8	24	φ12	203	251	151	φ199	385	76	114	114
112M		112	190	140	70	φ28	60	8	24	φ12	231	292	180	φ220	405	73	134	134
132S/M		132	216	140/178	89	φ38	80	10	33	φ12	263	332	200	φ259	467/505	61.5	134	134
160M/L		160	254	210/254	108	φ42	110	12	37	φ15	316	404	244	φ313	605/650	91	162	187
180M/L		180	279	241/279	121	φ48	110	14	42.5	φ15	354	445	265	φ360	687/725	160/180	162	187
200L		200	318	305	133	φ55	110	16	49	φ19	393	500	300	φ399	768.5	192	186	233
225S	4,6,8	225	356	286	149	φ60	140	18	53	φ19	440	558	333	φ459	810	199	186	233
225M	2	225	356	311	149	φ55	110	16	49	φ19	440	558	333	φ459	805	211.5	186	233
	4,6,8	225	356	311	149	φ60	140	18	53	φ19	440	558	333	φ459	835	211.5	186	233
250M	2	250	406	349	168	φ60	140	18	53	φ24	484	616	366	φ506	915	233	218	260
	4,6,8	250	406	349	168	φ65	140	18	58	φ24	484	616	366	φ506	915	233	218	260
280S/M	2	280	457	368/419	190	φ65	140	18	58	φ24	560	675	395	φ559	984/1035	265/277	218/245	260/280
	4,6,8	280	457	368/419	190	φ75	140	20	67.5	φ24	560	675	395	φ559	984/1035	265/277	218/245	260/280
315S	2	315	508	406	216	φ65	140	18	58	φ28	628	825	510	φ680	1205	200	290	350
	4,6,8	315	508	406	216	φ80	170	22	71	φ28	628	825	510	φ680	1235	200	290	350
315M/L	2	315	508	457/508	216	φ65	140	18	58	φ28	628	825	510	φ680	1355	200	290	350
	4,6,8	315	508	457/508	216	φ80	170	22	71	φ28	628	825	510	φ680	1385	200	290	350
355M/L	2	355	610	560/630	254	φ75	140	20	67.5	φ28	740	1010	655	φ820	1495	140	330	380
	4,6,8	355	610	560/630	254	φ95	170	25	86	φ28	740	1010	655	φ820	1525	140	330	380
	4,6,8	355	610	560/630	254	φ100	210	28	90	φ28	740	1010	655	φ820	1565	140	330	380

DC Series Motors Dimensional Drawings



Foot Mounted

Overall & Installation Dimensions

Frame	Foot Mounting				Shaft						General				
	2E	2F	H	BA	N-W	U	S	hj	R	ES	C	D	O	AA	AB
254T	10	8.25	0.53	4.25	4	1.625	0.375	0.375	1.416	2.91	25.2	6.25	13.81	1-1/4	10.1
256T		10													
254TC		8.25		4.75											
256TC		10													
284T	11	9.5	0.53	4.75	4.62	1.875	0.5	0.5	1.591	3.28	27.1	7.0	15.47	1-1/2	10.81
286T		11													
284TS		9.5			3.25	1.625	0.375	0.375	1.416	1.91	25.7				
286TS		11													
324T	12.5	10.5	0.66	5.25	5.25	2.125	0.5	0.5	1.845	3.91	29.1	8.0	16.34	2	12.89
326T		12													
324TS		10.5			3.75	1.875	0.5	0.5	1.591	2.03	27.6				
326TS		12													
364T	14	11.25	0.66	5.88	5.88	2.375	0.625	0.625	2.021	4.28	31.9	9.0	19.35	3	14.1
365T		12.25													
364TS		11.25			3.75	1.875	0.5	0.5	1.591	2.03	29.8				
365TS		12.25													
404T	16	12.25	0.81	6.62	7.25	2.875	0.75	0.75	2.45	5.65	36.5	10.0	21.54	3	15.16
405T		13.75													
404TS		12.25			4.25	2.125	0.5	0.5	1.845	2.78	33.5				
405TS		13.75													
444T	18	14.5	0.81	7.5	8.5	3.375	0.875	0.875	2.88	6.91	43.3	11.0	23.66	3	13.65
445T		16.5													
444TS		14.5			4.75	2.375	0.625	0.625	2.021	3.03	39.6				
445TS		16.5													
447T		20			8.5	3.375	0.875	0.875	2.88	6.91	51.8				
449T		25													
447TS		20			4.75	2.375	0.625	0.625	2.021	3.03	48.1				
449TS		25													

UL Product iQ™

QXZF.EX26635 - Fire Pump Motors

Fire Pump Motors

See General Information for Fire Pump Motors

SHANGHAI TOP MOTOR CO LTD EX26635
303 KANGLIU RD
KANGQIAO TOWN
NANHUI
201315 SHANGHAI, CHINA

Trademark and/or Tradename:

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

for more details about each pumps certificate contact
info@anc.sa

ARIF
AL-NAHDI
CO.LTD.

This chapter contains all information related to diesel engines of all types CLARK and NM engines.

CHAPTER 4
DIESEL ENGINES

info@anc.sa www.anc.sa

This section contains all information related to CLARKE engine, including details, technical data and equipments .

SECTION 1
CLARKE ENGINES

info@anc.sa www.anc.sa

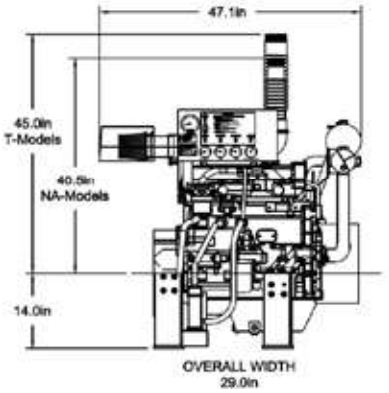
CLARKE®
FIRE PUMP ENGINES

MODELS

JU4H-UF10 JU4H-UF12 JU4H-UF14 JU4H-UF20 JU4H-UF22 JU4H-UFAB26 JU4H-UF24 JU4H-UF30 JU4H-UF32 JU4H-UF34 JU4H-UFH8 JU4H-UFH0 JU4H-UFH2 JU4H-UF40 JU4H-UF42 JU4H-UF58 JU4H-UF50 JU4H-UF52 JU4H-UF54

FM-UL-cUL APPROVED RATINGS BHP/*KW*

JU4H MODEL ♦	RATED SPEED 1470		1760		2100		2350		2600		2800		3000		US-EPA (NSPS) Available Until ●
UF10			41	*31*	51	*38*	55	*41*							*12/31/10*
UF12							55	*41*	59	*44*					*12/31/10*
UF14											70	*52*	71	*53*	*12/31/13 +*
UF20			60	*45*	67	*50*	72	*54*							*12/31/10*
UF22							72	*54*	75	*56*					*12/31/10*
UFAB26											80	*60*			*12/31/13 +*
UF24											80	*60*	83	*62*	*12/31/13 +*
UF30			64	*48*	79	*59*	85	*63*							*12/31/10*
UF32							85	*63*	85	*63*					*12/31/10*
UF34											104	*78*	115	*86*	*12/31/12 +*
UFH8	63	*47*	73	*54*											*12/31/10*
UFH0			73	*54*	88	*66*	98	*73*							*12/31/10*
UFH2							98	*73*	99	*74*					*12/31/10*
UF40			94	*70*	105	*78*	106	*79*							*12/31/10 ▼ 12/31/09 ▲*
UF42							106	*79*	106	*79*					*12/31/09*
UF58	79	*59*	110	*82*											*12/31/09*
UF50			110	*82*	130	*97*	127	*95*							*12/31/09*
UF52							127	*95*	127	*95*					*12/31/09*
UF54											145	*108*	145	*108*	*12/31/12 +*



● USA EPA (NSPS) Emissions Compliant. Applies to John Deere model year per Table 4 of 40 CFR Part 60 Sub Part IIII.

♦ All Models are available for Export

\+ Not Available in California

▼ Less than 100HP

▲ Greater than 99HP

SPECIFICATIONS

ITEM	JU4H MODELS UF10/12/14	UF20/22/AB26/24	UF30/32/34	UFH8/H0/H2	UF40/42	UF58/50/52/54
Number of Cylinders	4					
Aspiration	NA		T			
Rotation*	CW					
Weight – lb (kg)	910 (413)		935 (424)			
Compression Ratio	17.6:1		17.0:1			
Displacement – cu. in. (L)	275 (4.5)					
Engine Type	4 Stroke Cycle – Inline Construction					
Bore & Stroke – in. (mm)	4.19 x 5.00 (106 x 127)					
Installation Drawing	D534					
Wiring Diagram AC	C07591					
Wiring Diagram DC	C071590					
Engine Series	John Deere 4045 Series					
Speed Interpolation	OPT.					

Abbreviations: CW – Clockwise NA – Naturally Aspirated T – Turbocharged
*Rotation viewed from Heat Exchanger / Front of engine

CERTIFIED POWER RATING

- Each engine is factory tested to verify power and performance.
- Although FM-UL ratings are shown at specific speeds, Clarke engines with optional speed interpolation can be applied at any intermediate speed. To determine the intermediate speed power; make a linear interpolation from the Clarke FM-UL power curve. Contact Clarke or your Pump OEM Representative to obtain details.

ENGINE RATINGS BASELINES

- Engines are to be used for stationary emergency standby fire pump service only. Engines are to be tested in accordance with NFPA 25.
- Engines are rated at standard SAE conditions of 29.61 in. (752.1 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).
- A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m)
- A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

CLARKE®

FIRE PUMP ENGINES

MODELS

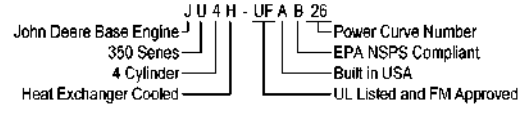
JU4H-UF10 JU4H-UF12 JU4H-UF14 JU4H-UF20 JU4H-UF22 JU4H-UFAB26 JU4H-UF24 JU4H-UF30 JU4H-UF32 JU4H-UF34 JU4H-UFH8 JU4H-UFH0 JU4H-UFH2 JU4H-UF40 JU4H-UF42 JU4H-UF58 JU4H-UF50 JU4H-UF52 JU4H-UF54

ENGINE EQUIPMENT

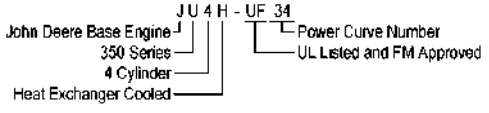
EQUIPMENT	STANDARD	OPTIONAL
Air Cleaner	Direct Mounted, Washable, Indoor Service with Drip Shield	Disposable, Drip Proof, Indoor Service Outdoor Type, Single or Two Stage
Alternator	12V-DC, 42 Amps with Poly-Vee Belt and Guard	24V-DC, 40 Amps with Poly-Vee Belt and Guard
Exhaust Protection	Blankets on UF10/12/14/20/22/AB26/24; Metal Guards on Manifolds and Turbocharger on UF30/32/34/H8/H0/H2/40/42/58/50/52/54	
Coupling	Bare Flywheel	Listed Driveshaft and Guard, UF10/12/14, UF20/22/AB26/24 – CDS10-SC; UF30/32/34, UFH8/H0/H2, UF40/42 – CDS20-SC; UF58/50/52/54 – CDS30-S1
Exhaust Flex Connection	For NA Engines - Stainless Steel Flex, NPT(M) Connection, 3" For T Engines – Stainless Steel Flex, NPT(M) Connection, 4"	For NA Engines – Stainless Steel Flex, NPT(M) Connection, 4" For T Engines - Stainless Steel Flex, 150# ANSI Flanged Connection, 5"
Flywheel Housing	SAE #3	
Flywheel Power Take Off	11.5" SAE Industrial Flywheel Connection	
Fuel Connections	Fire Resistant, Flexible, USA Coast Guard Approved, Supply and Return Lines	Stainless Steel, Braided, cUL Listed, Supply and Return Lines
Fuel Filter	Primary Filter with Priming Pump	
Fuel Injection System	Stanadyne Direct Injection	
Engine Heater	115V-AC, 1000 Watt	230V-AC, 1000 Watt
Governor, Speed	Constant Speed, Mechanical	
Heat Exchanger	Tube and Shell Type, 60 PSI (4 BAR), NPT(F) Connections – Sea/Salt Water Compatible	
Instrument Panel	English and Metric, Tachometer, Hourmeter, Water Temperature, Oil Pressure and Two (2) Voltmeters	
Junction Box	Integral with Instrument Panel; For DC Wiring Interconnection to Engine Controller	
Lube Oil Cooler	Engine Water Cooled, Plate Type	
Lube Oil Filter	Full Flow with By-Pass Valve	
Lube Oil Pump	Gear Driven, Gear Type	
Manual Start Control	On Instrument Panel with Control Position Warning Light	
Overspeed Control	Electronic with Reset and Test on Instrument Panel	
Raw Water Solenoid Operation	Automatic from Fire Pump Controller and from Engine Instrument Panel	
Run – Stop Control	On Instrument Panel with Control Position Warning Light	
Run Solenoid	12V-DC Energized to Run	12V-DC Energized to Stop; 24V-DC Energized to Run; 24V-DC Energized to Stop
Starters	Two (2) 12V-DC	Two (2) 24V-DC
Throttle Control	Adjustable Speed Control, Tamper Proof	
Water Pump	Centrifugal Type, Poly-Vee Belt Drive with Guard	

Abbreviations: DC –Direct Current, AC – Alternating Current, SAE – Society of Automotive Engineers, NPT(F) – National Pipe Tapered Thread (Female), NPT(M) – National Pipe Tapered Thread (Male), NA – Naturally Aspirated, T- Turbocharged, ANSI – American National Standards Institute

MODEL NOMENCLATURE (10 Digit Models)



MODEL NOMENCLATURE (8 Digit Models)



CLARKE®

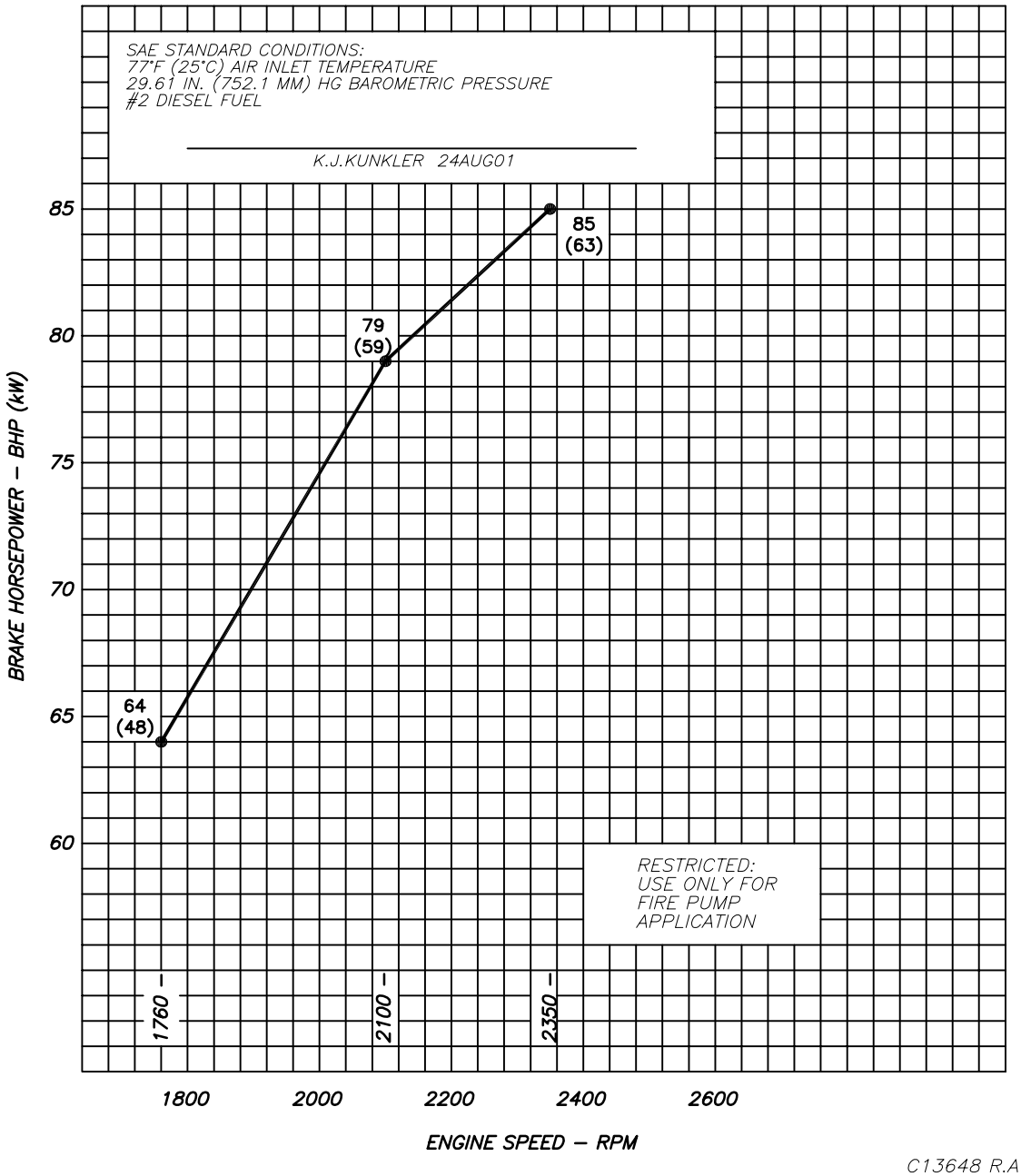
CLARKE Fire Protection Products, Inc.
3133 E. Kemper Rd., Cincinnati, Ohio 45241
United States of America
Tel +1-513-475-FIRE (3473) Fax +1-513-771-0726
www.clarkefire.com

CLARKE UK, Ltd.
Grange Works, Lomond Rd., Coatbridge, ML5-2NN
United Kingdom
Tel +44-1236-429946 Fax +44-1236-427274
www.clarkefire.com

C13600 revQ
06DEC12

CLARKE

FIRE PUMP MODEL JU4H-UF30
HEAT EXCHANGER
TURBOCHARGED
4.5L 4 CYLINDER



C13648 R.A
24AUG01

UL Product iQ™

QYLU.EX6155 - Internal-combustion Engines for Driving Stationary Fire Pumps

Internal-combustion Engines for Driving Stationary Fire Pumps

See General Information for Internal-combustion Engines for Driving Stationary Fire Pumps

CLARKE FIRE PROTECTION PRODUCTS LTD EX6155
GRANGE WORKS
LOMOND RD
COATBRIDGE. ML5 2NN UNITED KINGDOM

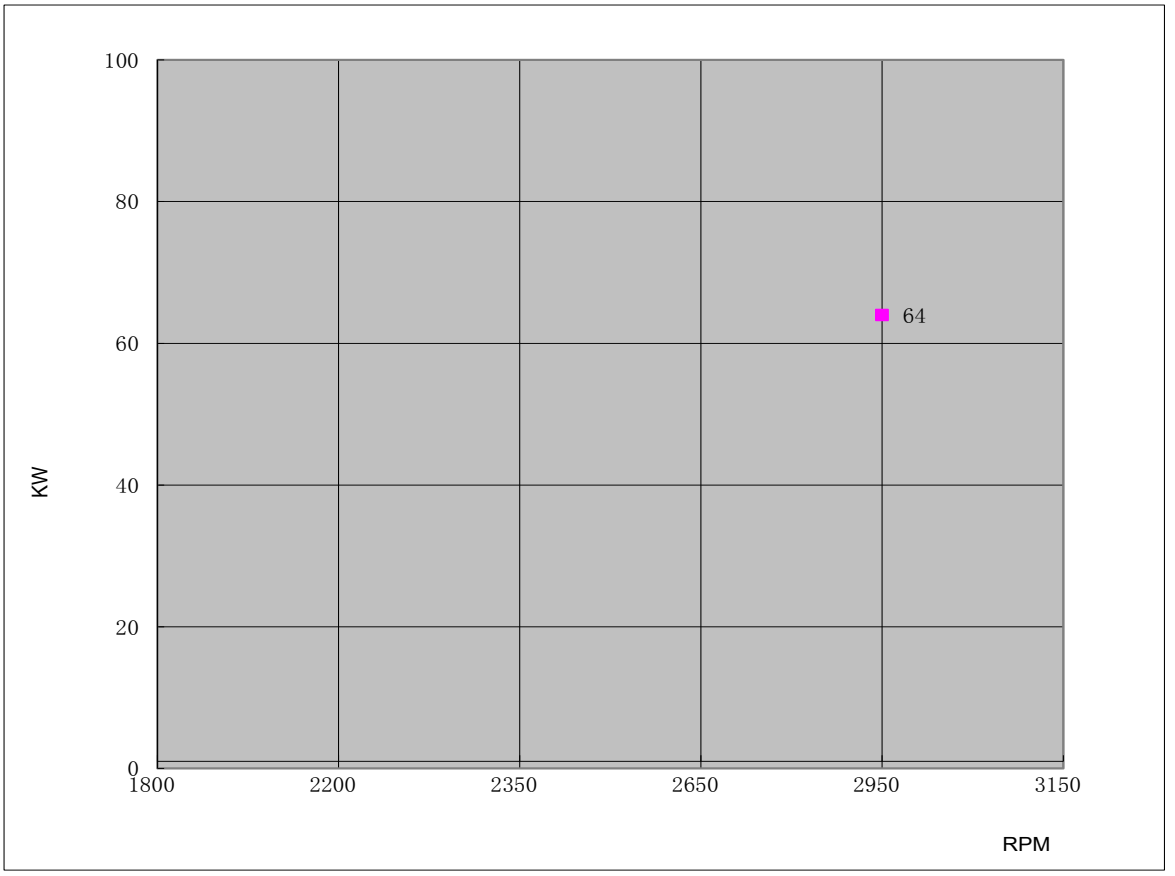
This section contains all information related to NMFIRE engine, including technical data and mechanical drawings.

SECTION 2
NMFIRE ENGINES

info@anc.sa www.anc.sa

DIESEL ENGINE

Engine Model	NM4-105	Curve No.	C04105	Date	2017/7/20
Displacement	4.09 L	Aspiration	Naturally	Power Standard	UL/FM
Bore	105 mm	Cylinder Qty.	4	64 KW @ 2950 r/min	
Stroke	118 mm	Fuel System	In-Line; Mechanical	86 HP @ 2950 r/min	



Torque

Speed RPM	Torque N-m	lb-ft.
1800		
2200		
2350		0
2650		0
2950	232	171
3150		0

Output Power

Speed RPM	Output Power KW	HP
1800		
2200		
2350		
2650		
2950	64	86
3150		

Fuel Consumption

Speed RPM	Consumption g/KW-HR	lb/BHP-HR
1800		
2200		
2350		
2650		
2950	242	0.398
3150		

REV: A

Engine Data Sheet

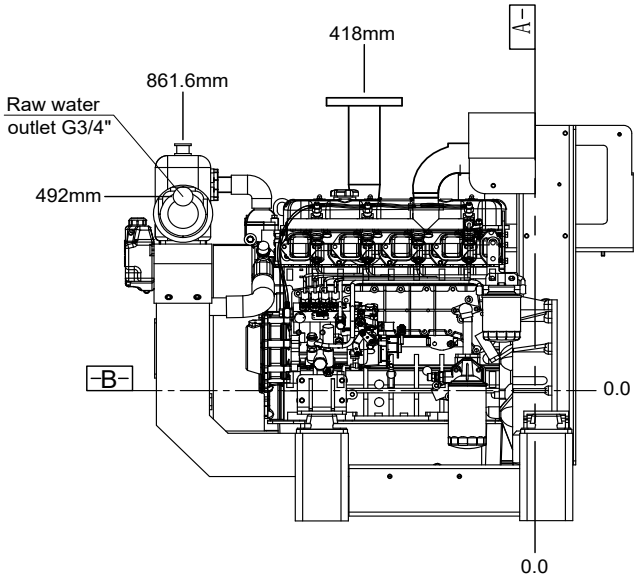
Engine Modle	**NM4-105**	**Date**	**2017/7/20**
Drawing No.	**NM4-105.00**	**Performance Curve No.**	**C04105**
Rated Power	**86 bhp @ 2950 rpm**	**Reference No.**	**16DS001E**
	64 kw @2950 rpm	**Version**	**A**

GENERAL ENGINE DATA			
Type		4 Cycle; In-line; water cooled; 4 Cylinder	
Aspiration		Naturally	
Bore and Stroke		mm×mm	105×118
Cylinder Liner Type		☐ Wet	☑ Dry
Displacement		L	4.09
Compression Ratio		17:01	
Firing Order		1-3-4-2	
Combustion System		Direct Injection	
Rotation Viewed from flywheel		Counter Clockwise	
Valves Per Cylinder		Intake :1 Exhuast :1	
Valves lashes at cold	Intake	mm	0.35～0.40
	Exhaust	mm	0.40～0.45
Ignition Type		Compression(Diesel)	
Charge Air Cooling Type		N/A	
Weight (Fuel Pump Configuration)		kg	510
Dimension (L*W*H)(Fuel Pump Configuration)		mm	1245x900x1075
Flywheel/ Flywheel House Dimension		10"/ SAE 3	
Torque at rated RPM		N.m	232
EXHAUST SYSTEM			
Exhaust Gas Temp. at max rating/power		℃	≤630
Exhaust Gas Flow at max output		kg/h	410
Max. Allowable Back Pressure		kpa	10
Minimum Exhaust Pipe Diameter		DN	65
AIR INTAKE SYSTEM			
Air Cleaner Type		Dry Type, Disposable	
Air Flow		m^3/h	400
Air Inlet Restriction Dirty		kpa	≤5
Air Inlet Restriction Clean		kpa	≤2.5
LUBRICATION SYSTEM			
Oil Capacity (Only Engine)		L	12
Max. Sump Oil Temp.		℃	120
Normal Operating Oil Pressure Range		bars	2.5-4.5
Oil Pressure at Idle		bar	≥1.2
COOLING SYSTEM			
Coolant Capacity - Engine + Heat Exchanger		L	15
Thermostat Range	Start Open	℃	72
	Full Open	℃	82
Coolant Pressure Cap		bar	0.9
Max. Engine Coolant Temp.		℃	≤95

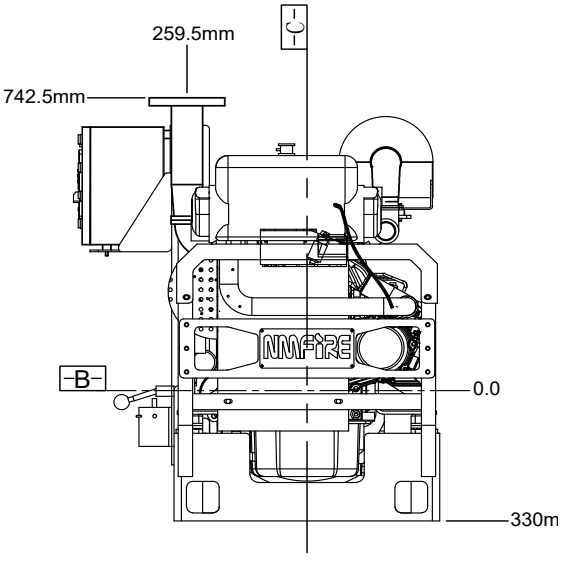
Engine Data Sheet

Engine Coolant Flow at Full Load		m^3/h	7
Min./Max. Raw Water Cooling Capacity		m^3/h	2.3~4.2
Min. /Max. Raw Water Pressure		bar	1~3
Min.Raw Water Temp.		℃	15.6
Raw Water Pipe Size	Raw Water Inlet	G1/2″	
	Raw Water Outlet	G3/4″	
HEATER SYSTEM			
Wattage		W	1190
Voltage AC		V	240
ELECTRICAL SYSTEM-DC			
System Voltage(Nominal)		V	24
Starter motor		Kw	4.5
Recommended Battery Capacity		AH	120
Cold Cranking Amperes @ -18℃ (0^0F)		CCA	638
Reserve Capacity (RC)		Min	224
Charging Alternator Output		Amps	27
Starter Cranking Amps, Rolling-@4.5℃（0°F）		Amps	290
Min. Cranking Speed Required for Unaided Cold Start		rpm	380
FUEL SYSTEM			
Injection Pump		In-line, Plunger type	
Injection Advance Angle		°	18±1
Minimum Supply line Size		mm	10
Minimum Return line Size		mm	10
Fuel Management Control		Mechanical	
Fuel Consumption @2950rpm		g/kw.h	242
Idle Speed		rpm	800
Max. Governed Speed		rpm	3300
Maximum allowable fuel height above fuel pump		m	2
Governed Speed Rate		%	⩽10
Engine Performance Data			
Estimated free field soud pressure level at 1 meter with full-load governed speed(Includes Noise from: exhaust; Cooling System and Driven Components)		dBa	108
All data is based on the engine operating with fuel system, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment, and driven components.;Data is based on operation at SAE standard J1394 conditions of 300ft (91,4m) altitude, 29.61 in.(752mm) Hg dry barometer, and 77^{0}F (25^{0}C) intake air temperature, using 0# diesel fuel follow the standard GB 252-2011.			
Altitude above which output should be Limited		m (ft.)	91 (300)
Correction Factor per 305m.(1,000ft.) above Altitude Limit		3%	
Temperature above which output should be Limited		^{0}C (^{0}F)	25 (77)
Correction Factor per 5.6^{0}C (10^{0}F) above Temperature Limit		1%	

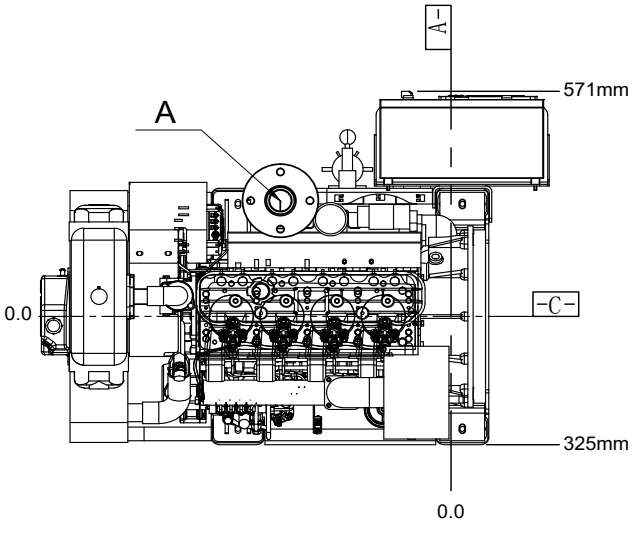
Remark:
1.All daa certified within 5%;
2.TBD - To Be Determined;
3.N/A - Not Applicable;



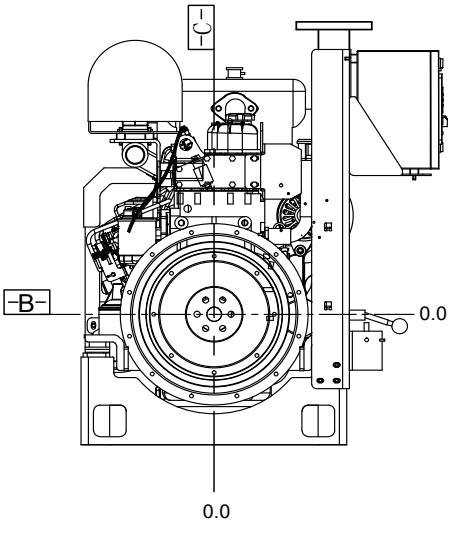
Left Side View



Front View

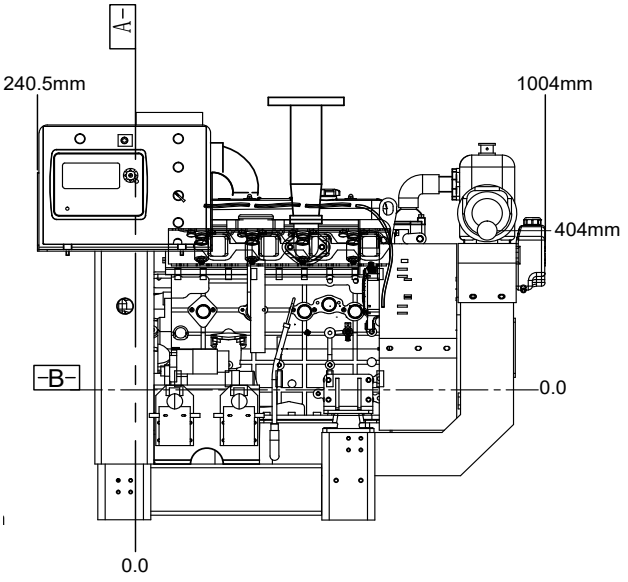


Top View



Rear View

					CNP NM FIRE FIGHTING SYSTEM CO.,LTD			REV A
								UNITS MM
					DR BY: QW	DATE 04/15/2017	NAME INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL NM4-105	PROJECTION:
A	CREATION	QW	PM	04/15/2017	CK BY: LM	DATE		PROJECT
REV	DESCRIPTION	DWN	APVD	DATE	APPROVED: PL	DATE	PART No NM4-105-00	SCALE NTS / PAGE 1 OF 1
							MATERIAL:	



Right Side View

Datums:

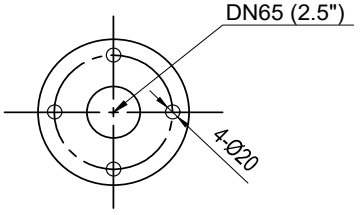
A — Dimension face of flywheel
B — Engine horizontal center(crankshaft)
C — Engine vertical center(crankshaft)

Notes:

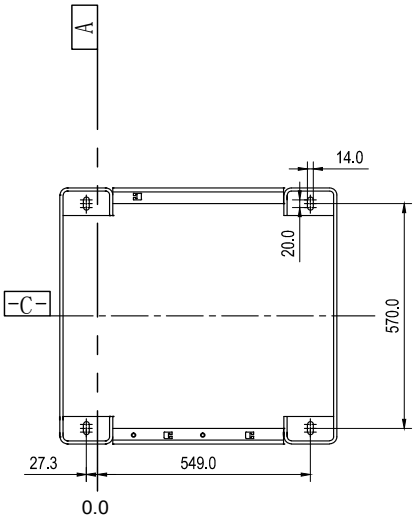
1)Fuel supply piping minimum diameter inside from tank to engine must be ≥Ø10 .
2)Fuel return piping minimum diameter inside from tank to engine must be ≥Ø10 .

Drawing subject to change without notice.

A:Exhaust Flange

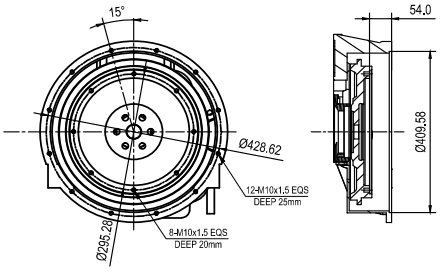


Scale 2:1

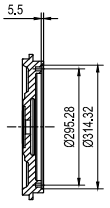


Foot Mounting

Flywheel housing SAE 3



Flywheel 10"



					CNP NM FIRE FIGHTING SYSTEM CO.,LTD		REV A
							UNITS MM
					DR BY: QW DATE 04/15/2017	NAME INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL NM4-105	PROJECTION:
A	CREATION	QW	PM	04/15/2017	CK BY: LM DATE		PROJECT
REV	DESCRIPTION	DWN	APVD	DATE	APPROVED: PL DATE	PART No NM4-105-00	SCALE NTS / PAGE 1 OF 1
						MATERIAL:	

UL Product iQ™

QYLU.EX26721 - Internal-combustion Engines for Driving Stationary Fire Pumps

Internal-combustion Engines for Driving Stationary Fire Pumps

See General Information for Internal-combustion Engines for Driving Stationary Fire Pumps

CNP NM FIRE FIGHTING SYSTEM CO LTD EX26721
Factory Area of CNP Changsha Co Ltd
No.45 Xi Chong Road
Quan Tang Street, Changsha ETDZ
Changsha, Hunan 410100 CHINA

DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES

		Minimum		Maximum	
Model	No. of Cylinders	Rated Speed (rpm)	Rated HP	Rated Speed (rpm)	Rated HP
NM6-114	6	1500	219	1760	255
		1760	255	1900	268
		1900	268	2100	280
NM6-128	6	1500	400	1760	457
		1760	457	1900	460
		1900	460	2020	426
NM6-102B	6	1760	101	2100	123
		2100	123	2350	134
		2350	134	2650	148
		2650	148	2980	153
NM6-114B	6	1470	244	1760	280
		1760	280	2100	305
NM12-159	12	1540	1036	1760	1207
NM6-114C	6	1470	194	1760	221
		1760	221	2100	248
NM6-128B	6	1470	346	1760	396
		1760	396	2100	412
NM8-128	8	1470	447	1760	483

		1760	483	2100	496
NM12-128	12	1470	688	1760	744
		1760	744	2100	759

.

Model	No. of Cylinders	Rated HP	Rated Speed (rpm)
NM4-90	4	51	2950
NM4-105	4	86	2950
NM6-102	6	126	2950
NM4-108	4	94	2950
NM6-110D	6	268	2900
NM4-108B	4	121	2950
NM6-110B	6	153	2950

Trademark and/or Tradename: "NM FIRE", NMFIRE, 南方安美

Last Updated on 2020-03-31

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This chapter contains all information related to control panels of all types electric, jockey and diesel control panels.

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CHAPTER 4
CONTROL PANELS

This section contains all information related to electric control panel including technical data and drawings.

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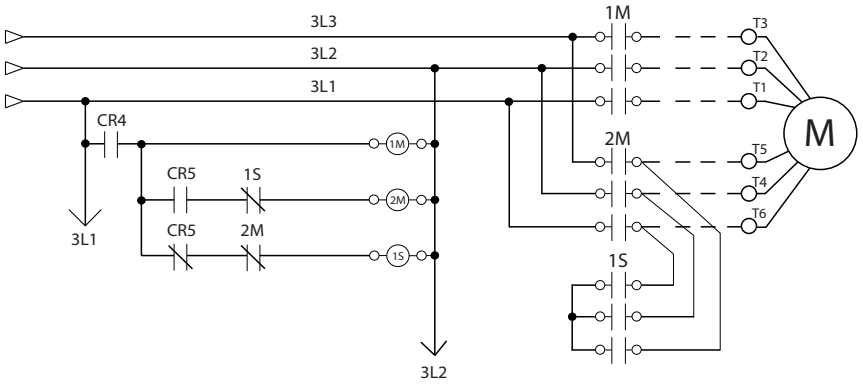
SECTION 1
ELECTRIC CONTROL PANEL

TORNATECH

Technical Data

Model GPY Electric Fire Pump Controller

From normal incoming power through Disconnecting Means (IS/CB)*



Standard, Listings, Approvals and Certifications	Built to NFPA 20 (latest edition)	
	Underwriters Laboratory (UL)	• UL218 - Fire Pump Controllers • CSA C22.2 No. 14 Industrial Control Equipment
	FM Global	Class 1321/1323
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Seismic Certification	See page 7 for details
	Optional	
	☐ CE Mark	Various EN, IEC & CEE directives and standards

Enclosure

Protection Rating

☐ Standard: NEMA 2 (IP31)

Optional

☐ NEMA 12	☐ NEMA 4X-304 sst painted	☐ IP54
☐ NEMA 3	☐ NEMA 4X-304 sst brushed finish	☐ IP55
☐ NEMA 3R	☐ NEMA 4X-316 sst painted	☐ IP65
☐ NEMA 4	☐ NEMA 4X-316 sst brushed finish	☐ IP66

Accessories
- Bottom entry gland plate
- Lifting Lugs
- Keylock handle

Paint Specifications
- Red RAL3002
- Powder coating
- Glossy textured finish

Shortcircuit Withstand Rating	200V to 208V 60Hz	220V to 240V 60Hz	380V to 416V 50 Hz / 60Hz	440V to 480V 60Hz	575V to 600V 60Hz
	HP (kw)				
☐ Standard 100kA	5-150 (3.7 - 110)	5-200 (3.7 - 147)	5-300 (3.7 - 220)	5-450 (3.7 - 335)	n/a
☐ Optional 150kA					
☐ Standard 50kA	200 (147)	250 (184)	350 - 450 (257-335)	500 (373)	5-500 (3.7- 373)
☐ Optional 100kA	n/a	n/a	n/a	n/a	

*Please see Disconnecting Means details on page 3

TORNATECH

Technical Data

Model GPY Electric Fire Pump Controller

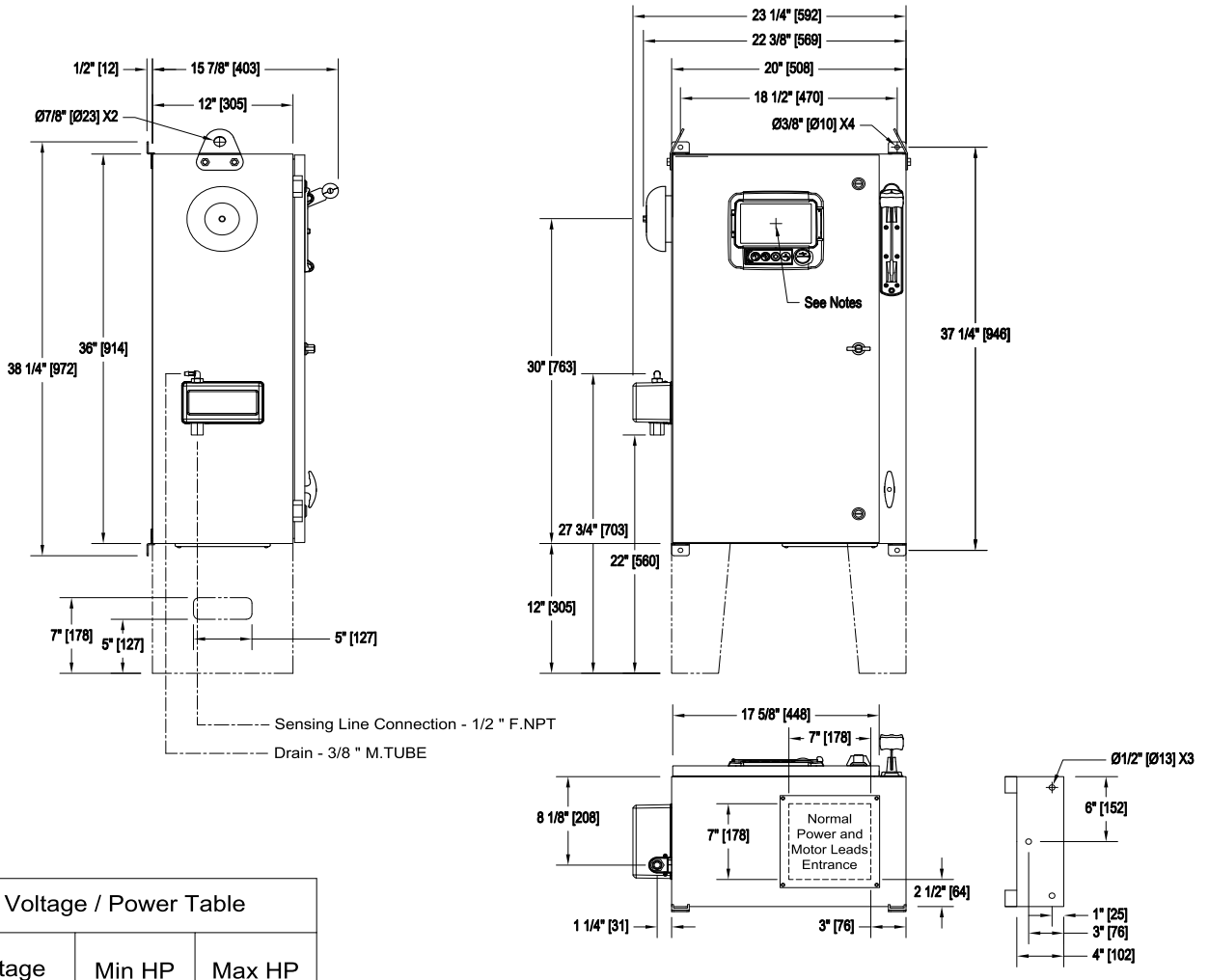
Ambient Temperature Rating	**Standard**: ☐ 4°C to 40°C / 39°F to 104°F **Optional**: ☐ 4°C to 55°C / 39°F to 131°F Controllers built in Dubai, UAE (Tornatech FZE) are supplied standard with 55°C rating.
Surge Suppression	Surge arrestor rated to suppress surges above line voltage
Disconnecting Means	• Isolating switch and circuit breaker assembly: - Door interlocked in the ON position - Isolating switch rated not less than 115% of motor full load current - Circuit breaker continuous rating not less than 115% of motor full load current - Overcurrent sensing non-thermal type, magnetic only - Instantaneous trip setting of not more than 20 times the motor full load current • Common flange mounted operating handle
Service Entrance Rating	Suitable as service entrance equipment
Emergency Start Handle	• Flange mounted • Pull and latch activation • Integrated limit switch • Across the line start (direct on line)
Locked Rotor Protector	• Operate shunt trip to open circuit breaker • Factory set at 600% of motor full load current • Trip between 8 and 20 seconds
Electrical Readings	• Voltage phase to phase (normal power) • Amperage of each phase when motor is running
Pressure Readings	• Continuous system pressure display • Cut-in and Cut-out pressure settings
Pressure and Event recorder	• Pressure readings with date stamp • Event recording with date stamp • Under regular maintained operation, events are stored in memory for the life of the controller. • Data viewable on operator interface display screen • Downloadable by USB port to external memory device
Pressure Sensing	• Pressure transducer and run test solenoid valve assembly for fresh water application • Pressure sensing line connection 1/2” Female NPT • Drain connection 3/8” • Rated for 0-500PSI working pressure (standard display at 0-300PSI) • Externally mounted with protective cover

Electric Fire Pump Controller

Model: GPA/GPP/GPY

Dimensions

Built to the latest edition of the NFPA 20 standard



Voltage / Power Table		
Voltage	Min HP	Max HP
208	5	30
220 - 240	5	30
380 - 400 - 415	5	60
440 - 480	5	60
600	5	75

Notes:

- Standard NEMA: NEMA 2
- Standard paint : textured red RAL 3002.
- All dimensions are in inches [millimeters].
- Center of ViZiTouch screen: 29-5/8" [751] from bottom (no feet).
- Bottom conduit entrance through removable gland plate recommended.
- Use watertight conduit and connector only.
- Protect equipment against drilling chips.
- Door swing equal to door width.
- Seismic mounting to be rigid wall and base only.

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

Projection

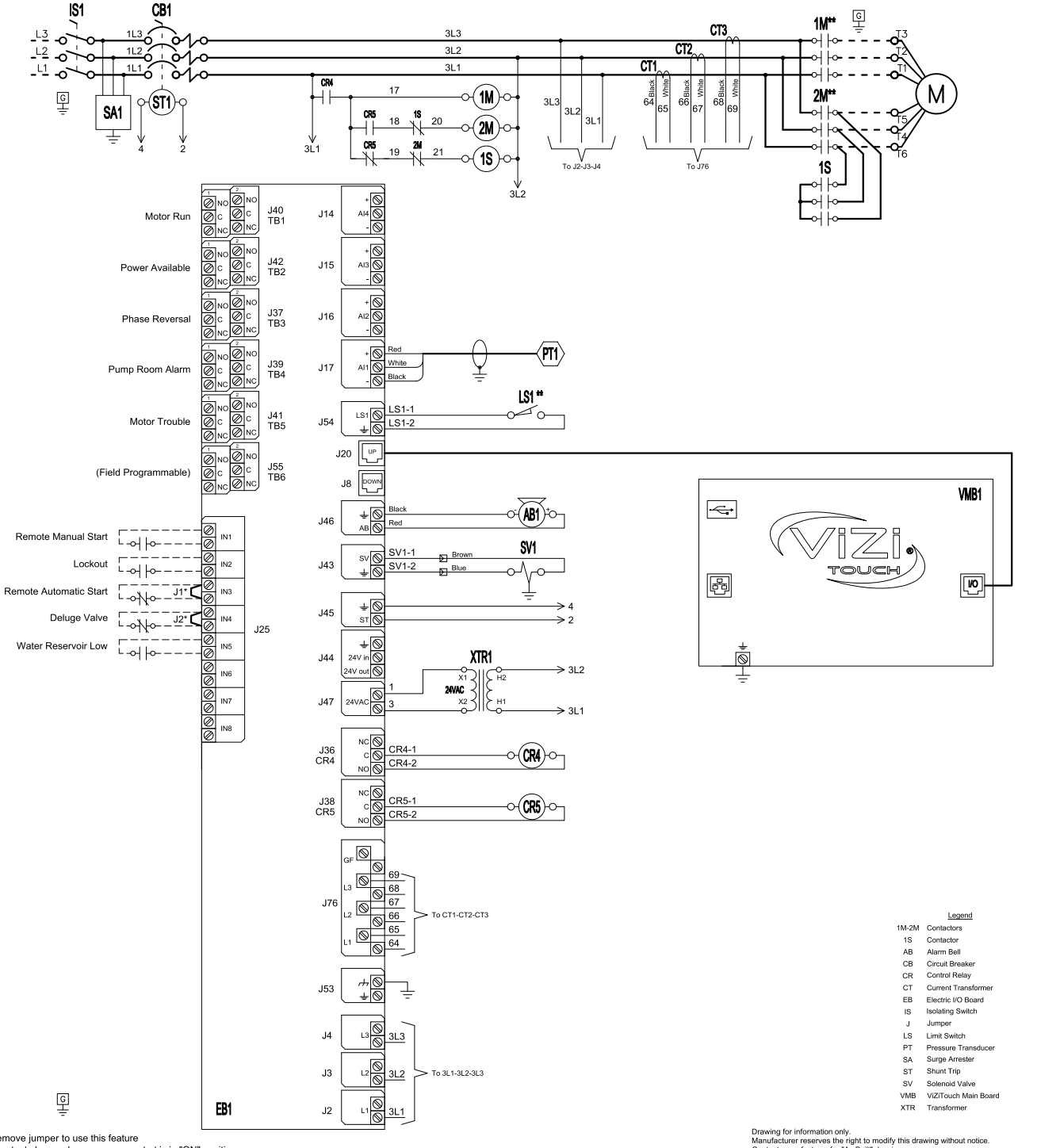
REV.	DESCRIPTION	DD/MM/YY	Drawing number
2.	Revised logo	18/06/18	GPX-DI161 /E
1.	Valve Change	21/11/17	
0.	First issue	16/11/16	

Electric Fire Pump Controller
Reduced Voltage / Wye-Delta (Open Transition)

Model: GPY

Wiring schematic

Built to the latest edition of the NFPA 20 standard



Legend

1M-2M	Contactors
1S	Contactor
AB	Alarm Bell
CB	Circuit Breaker
CR	Control Relay
CT	Current Transformer
EB	Electric I/O Board
IS	Isolating Switch
J	Jumper
LS	Limit Switch
PT	Pressure Transducer
SA	Surge Arrester
ST	Shunt Trip
SV	Solenoid Valve
VMB	ViZiTouch Main Board
XTR	Transformer

* Remove jumper to use this feature
** Contact closes when emergency start is in "ON" position

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

SEISMIC COMPLIANT
c UL us
FM APPROVED
NYC Dpt of Building Approved

REV.	DESCRIPTION	DD/MM/YY	Drawing number
2	Update Logo	23/04/18	GPY-WS600 /E
1	Removed (fail safe) text from Power Available relay	20/02/17	
0	First issue	10/11/16	CDL

CERTIFICATE OF COMPLIANCE

Certificate Number	20140708-EX3971
Report Reference	EX3971-20061111
Issue Date	2014-JULY-08
Issued to:	TORNATECH INC 132 7075 PLACE ROBERT-JONCAS ST LAURENT QC H4M 2Z2 CANADA
This is to certify that representative samples of	PUMP CONTROLLERS, FIRE Fire Pump Controllers, Models GPL, GPA, GPP, GPR, GPS, GPV, GPY, and GPW. Transfer Switches, Models GLU and GPU Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	See Addendum Page
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.
The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers: c UL us the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William R. Carney, Director, North American Certification Programs

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This section contains all information related to jockey control panel including technical data and drawings.

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SECTION 2
JOCKEY CONTROL PANEL

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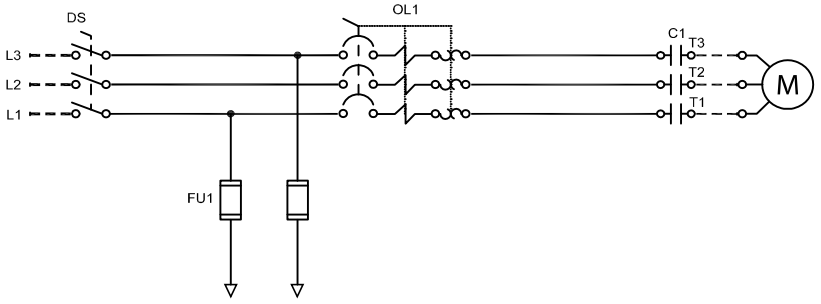
Technical Data

Model JP3 Jockey Pump Controller



N.Y.C.
APPROVED

OPTIONAL

SEISMIC
COMPLIANT

Listing	Underwriters Laboratory (UL)	UL508A - Industrial Pump Controllers
	CSA	CSA C22.2 No. 14 Industrial Control Equipment
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Seismic Certification	See page 4 for details
	Optional	
	☐ CE Mark	Various EN, IEC & CEE directives and standards

Enclosure

Protection Rating

☑ Standard: NEMA 2 (IP31)

Optional

☐ NEMA 12	☐ NEMA 4X-304 sst painted
☐ NEMA 3	☐ NEMA 4X-304 sst brushed finish
☐ NEMA 3R	☐ NEMA 4X-316 sst painted
☐ NEMA 4	☐ NEMA 4X-316 sst brushed finish

Accessories
- Wall mounting lugs (x4)

Paint Specifications
- Red RAL3002
- Powder coating
- Glossy textured finish

TORNATECH

Technical Data

Model JP3 Jockey Pump Controller

Fuseless Motor Starter	• Main disconnect – padlockable – rotary type handle – door interlocked • Thermo-magnetic motor protector • Contactor		
Control Circuit	• 24V.AC		
iPD+ Operator **Interface**	• Solid state controls • All adjustments on door front • Navigation pushbuttons		
Pressure Sensing	• Pressure transducer for fresh water application 316 stainless steel construction • Rated for 0-600psi working pressure • Pressure sensing line connection ¼" Male NPT		

Visual Indications	• Manual motor start/run LED
	• Automatic motor start/run LED
	• Motor overload
	• Pressure reading
	  • Start pressure
	  • Stop pressure
	  • System pressure
	• System pressure diagnostic LED's
	  • Green: system pressure at or above stop pressure
	  • Yellow: system pressure between start and stop pressure
	  • Red: system pressure at or below start pressure
	• AUTO mode
	• OFF mode		

Timers	• Minimum run timer (off delay) • Delay start timer (on delay) • Visual countdown		
Counters	• Pump start counter • Elapsed timer meter (hours / non-resettable)		
Operators	• OFF-AUTO pushbutton • Start and Stop pushbutton		
Operation	Automatic Start	Start on pressure drop	
	Manual Start	Start pushbutton	
	Stopping	Stop pushbutton	
	Timers	Field adjustable & visual countdown	• Minimum run timer (off delay) • Delay start timer (on delay)

CERTIFICATE OF COMPLIANCE

Certificate Number	20190612-E158750
Report Reference	E158750-19940223
Issue Date	2019-JUNE-12
Issued to:	TORNATECH INC 4100 Desserte Sud, (A-440 Ouest) Laval QC H7T 0H3 CANADA
This certificate confirms that representative samples of	INDUSTRIAL CONTROL PANELS Includes Jockey Pump Controller Models JP1, JP2, JP3, JPY, JPD, DJP, and DJD; Remote Alarm Panel Models APE, APEE, APD, APDD, and APED; Low Level Lockout Panel Model LPL; and Low Suction Pressure Shutdown Panel Model LPS. These models are not exhaustive. Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 508A, Industrial Control Equipment CSA C22.2 No. 14-13, Industrial Control Equipment
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

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Bruce Mahrenholz, Director North American Certification Program

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This section contains all information related to diesel engine control panel including data sheets, dimensional data, wiring schematics, and field connection.

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SECTION 3

DIESEL ENGINE CONTROL PANEL

TORNATECH

Technical Data

Model GPD Diesel Fire Pump Controller

Standard, Listings, Approvals and Certifications	Built to NFPA 20 (latest edition)	
	Underwriters Laboratory (UL)	• UL218 - Fire Pump Controllers • CSA C22.2 No. 14 Industrial Control Equipment
	FM Global	Class 1321/1323
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Seismic Certification	See page 5 for details
	Optional	
	☐ CE Mark	Various EN, IEC & CEE directives and standards
Enclosure	**Protection Rating** ☐ Standard: NEMA 2 (IP31) **Optional** ☐ NEMA 12 ☐ NEMA 3 ☐ NEMA 3R ☐ NEMA 4 ☐ NEMA 4X-304 sst painted ☐ NEMA 4X-304 sst brushed finish ☐ NEMA 4X-316 sst painted ☐ NEMA 4X-316 sst brushed finish ☐ IP54 ☐ IP55 ☐ IP65 ☐ IP66	
	Accessories • Bottom entry gland plate • Lifting Lugs • Keylock handle	**Paint Specifications** • Red RAL3002 • Powder coating • Glossy textured finish

Ambient Temperature Rating	**Standard** ☐ 4°C to 40°C / 39°F to 104°F **Optional** ☐ 4°C to 55°C / 39°F to 131°F Controllers built in Dubai, UAE (Tornatech FZE) are supplied standard with 55°C rating.

General	AC	☐ 120V / 1ph / 60hz ☐ 208V to 240V / 1ph / 50-60hz
	DC	☐ 12VDC ☐ 24VDC
	Grounding system	• Negative
	Battery chargers	• Two independent fully automatic • 10A continuous charge • 500mA trickle charge
Electrical Reading	• Battery 1 & Battery 2 voltage • Battery 1 & Battery 2 charging amperage • Charging mode	
Pressure Reading	• Continuous system pressure display • Cut-in and cut-out pressure setting	
Pressure and Event Recorder	• Pressure readings with date stamp • Event recording with date stamp • Under regular maintained operation, events are stored in memory for the life of the controller. • Data viewable on operator interface display screen • Downloadable by USB port to external memory device	

TORNATECH

Technical Data

Model GPD Diesel Fire Pump Controller

Pressure sensing	• Pressure transducer and run test solenoid valve assembly for fresh water application • Pressure sensing connection 1/2" Female NPT • Drain connection 3/8" • Rated and calibrated for 0-500psi working pressure • Externally mounted with protective cover
Audible Alarm	4" alarm bell - 85 dB at 10ft. (3m)
Visual Indications	• Engine run • Main switch AUTO • Main switch in OFF • Main switch in HAND • Periodic test • Cranking Cycle • AC Power available • Pump room temperature (ºF or ºC)
Visual & Audible Alarms	Visual only • Pump room trouble • Pump on demand • AC Failure • Charger 1 Failure • Charger 2 Failure • Weak battery 1 • Weak battery 2 • Battery 1 overvoltage • Battery 2 overvoltage • Loss of continuity 1 • Loss of continuity 2 • High fuel level • Fuel tank leak • PLD low suction pressure • High raw water temperature • Low pump room temperature • High pump room temperature • ECM warning • Weekly test cut-in not reached • Check weekly test solenoid • Pressure transducer fault • Invalid Cut-In • Service required Visual and Audible • Engine trouble • Controller trouble • Engine low oil pressure • Engine high temperature • Engine low temperature • Engine overspeed • DC Failure • Battery 1 Failure • Battery 2 Failure • Engine fail to start • Low fuel level • ECM fault • ECM SS in Alternate Position • Fuel injection malfunction
Remote Alarm Contacts	DPDT-8A-250V.AC • Engine run • Common controller trouble • Charger #1 & Charger #2 failure • Pressure transducer fault • Common engine trouble • High engine temperature • Fail to start • Fuel injection malfunction** • ECM selector switch in alternate position*** • Battery #1 & battery #2 failure • DC failure • Loss of continuity (starter) #1 and/or #2 • Overspeed • Fail when running • Low oil pressure • PLD low suction pressure • Common pump room trouble (field re-assignable)* • Low fuel level • High fuel level • Fuel tank leak • Low pump room temperature • High pump room temperature • AC Failure • H-O-A selector switch in OFF or HAND • Free (field programmable)*

*Except if option C13 is ordered. Tornatech reserves the right to use any of these four alarm points for special specific application requirements
**Applicable to electronic engines only.
*** Applicable to electronic engines only. Alarms when ECM selector switch on the engine is in alternate mode.

TORNATECH

Technical Data

Model GPD Diesel Fire Pump Controller

Terminals for Field Connections for External Devices	• Low fuel level • Remote AUTOMATIC start • Deluge valve start (re-assignable) • Fuel tank leak (re-assignable) • High fuel level (re-assignable)		
ViZiTouch V2 Operator Interface	• Embedded microcomputer with software PLC logic • 7.0" color touch screen (HMI technology) • Upgradable software • Multi-language		
Operation	**Selector Switch**	• Hand-Off-Auto • Behind lockable and breakable cover	
	Automatic Start	• Start on pressure drop • Remote start signal from automatic device	
	Manual Start	• Crank 1 and Crank 2 start pushbuttons • Run test pushbutton • Deluge valve start • Remote start from manual device	
	Crank Cycle	• 6 consecutive cycle attempts • 3 X 15s crank from battery 1 or 2 alternatively • 15s rest in between each crank attempt	
	Stopping	• Manual with Stop pushbutton • Automatic after expiration of minimum run timer ****	
	Timers	**Field Adjustable & Visual Countdown**	• Minimum run timer ****(off delay) • Sequential start timer (on delay) • Periodic test timer
	Actuation	**Visual Indication**	• Pressure • Non-pressure
	Mode		• Automatic • Non-automatic
Communication Protocol Capability	• Protocol: Modbus • Connection type: Shielded female connector RJ45 • Frame Format: TCP/IP • Addresses: See bulletin MOD-GPD		

Alarm and shutdown schedule		Automatic Start	Manual or Remote Start	Run Test or Periodic Test
	High Coolant	Alarm only	Alarm only	Shutdown
	Low Oil Pressure	Alarm only	Alarm only	Shutdown
	Overspeed	Shutdown	Shutdown	Shutdown

	Wall Mount		**Floor Mount**	
Starting Voltage	Approx. shipping dimensions in inches (mm)	Approx. Shipping Weight in Lbs (kg)	Approx. shipping dimensions in inches (mm)	Approx. Shipping Weight in Lbs (kg)
12V.DC	32" l x 29" w x 16" h (813 x 737 x 407)	85 (39)	32" l x 29" w x 26" h (813 x 737 x 661)	115 (52)
24V.DC				

**** Automatic shutdown shall be approved by the AHJ.

CERTIFICATE OF COMPLIANCE

Certificate Number	20140708-EX3971
Report Reference	EX3971-20030507
Issue Date	2014-JULY-08
Issued to:	TORNATECH INC 132 7075 PLACE ROBERT-JONCAS ST LAURENT QC H4M 2Z2 CANADA
This is to certify that representative samples of	PUMP CONTROLLERS, FIRE GPD Series controller for engine-driven centrifugal fire pumps
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL218, Fire Pump Controllers UL508, Industrial Control Equipment CSA C22.2 No. 263-09, Fire Pump Controllers CAN/CSA C22.2 No. 14-13, Industrial Control Equipment NFPA20 (2010), Installation of Stationary Pumps for Fire Protection
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

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Look for the UL Listing Mark on the product.

William R. Carney, Director, North American Certification Programs

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This chapter contains all information related to accessories of all types electric, air release valve, pressure guage and diesel tank.

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CHAPTER 6
ACCESSORIES

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This section contains all information related to Air Release Valve , including specification, material, sheets, capacity , technical data and certificate.

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SECTION 1
AIR RELEASE VALVE

Series 34
Fire Protection System Air Release Valve

- **Ductile Iron Body**
- **Stainless Steel Trim and Float**
- **Easily serviced without removal from pipeline**
- **Available Pressure Ratings: 175 and 300**
- **Engineered for drip tight seal at low pressures**

Cla-Val Series 34 Fire Protection System Air Release Valves are designed to vent entrained air that collects at high points in a pipeline. This valve continuously eliminates air from a system by releasing small quantities of air before large air pockets can occur. In many installations, continuing accumulations of air in the pipeline (lacking air release valves); cause flow capacity to slowly decrease; power consumption slowly increases; un-noticeable at first, until flow drops dramatically, even stopping due to air blocks in the piping.

Another problem resulting from excessive air accumulation is unexplained pipeline rupture. These ruptures are passed off as the result of ground settling or defective pipe, Where as in reality its large air pockets that greatly increase pressure surges (normally occurring) when flow stops and starts causing the rupture. During normal pipeline operation, air accumulation at the high point will displace the liquid within the air valve and lower the water level in relation to the float. As level of the liquid lowers, where the float is no longer buoyant, the float drops and opens the valve orifice seat and permitting accumulated air to be exhausted to atmosphere. After air is released, the liquid level in the air valve rises and closes the valve orifice seat. This cycle automatically repeats as air accumulates inside the air release valve, thereby preventing the formation of air pockets.

Installation

Series 34 Fire Protection System Air Release Valves are typically installed at high-points in pipelines and at regular intervals, of approximate 1/2 mile, along uniform grade line pipe.

Mount the unit in the vertical position on top of the pipeline with an isolation valve installed below each valve in the event servicing is required. A vault with adequate air venting and drainage is recommended.

Note:

Vacuum check valves can be supplied on the discharge of all size air release valves to prevent air re-entering the system; during negative pressure conditions

Purchase Specifications

The fire protection system air release valve shall be of the float operated, simple lever or compound lever design, and capable of automatically releasing accumulated air from a fluid system while the system is pressurized and operating.

An adjustable designed orifice button shall be used to seal the valve discharge port with drip-tight shut-off. The orifice diameter must be sized for use within a given operating pressure range to insure maximum air venting capacity.

The float shall be of all stainless steel construction and guaranteed to withstand the designed system surge pressure without failure. The body and the cover shall be ductile iron and valve internal parts shall be stainless steel and Viton™ or Buna-N® (standard)for water tight shut-off.

The air release valve shall be manufactured per ANSI/AWWA C512-04 Series 34 from Cla-Val in Newport Beach, CA, USA.

Product Specifications

Sizes
1/2", 3/4", 1"

Pressure Ratings (see note)
175 UL/FM
300 UL/FM

Temperature Range
Water to 180°F

Note: Specify when operating pressure below 10 PSI

Materials
Body and Cover:
Ductile Iron ASTM 536 65-45-12

Float:
Stainless Steel

Internal Parts:
Stainless Steel

Seal:
Viton™ or Buna-N® (Standard)

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This section contains all information related to pressure gauge , including features, typical use, ordering code , dimensions and certificate.

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SECTION 2
PRESSURE GAUGE

1005P XUL Fire Protection Sprinkler Service Gauge

FEATURES

- Power Flex™ movement provides superior resistance to shock, vibration and pulsation
- TrueZero ™ reduces reading errors by using a "zero box" instead of convential dial pins
- Water or Air gauges available for wet/dry
- Heat-resistant polycarbonate push-in window
- Custom dials available

TYPICAL USES

- Fire Sprinklers for water or air systems

1005P XUL
3½″ dial size

SPECIFICATIONS	
Accuracy:	±3-2-3% of span (ASME B40.100 Grade B)
Sizes:	3½″
Ranges:	Single, dual or triple scale 0-300 psi (water) 0-80 psi retard to 250 psi (air) 0-600 psi
Process Connection Location:	Lower
Process Connection Size:	¼ NPT
Dial:	Black figures on white background
Pointer:	Black, aluminum
Weather Protection:	Weather resistant
Movement:	PoweFlex™ with Brass/polyester segment
Approvals:	UL 393 listed for fire protection sprinkler service UL Canada listed FM approved

WETTED COMPONENTS	
Bourdon Tube	Process Connection
Bronze	Brass

NON-WETTED COMPONENTS	
Case	Window
ABS (Polycarbonate blend)	Polycarbonate

KEY BENEFITS

- Single scale, dual scale and triple scale dials available (bar, kPa, psi)
- Corrosion resistant ABS case
- Custom Dials available

MIN/MAX TEMPERATURE LIMITS			
Version	Ambient	Process	Storage
1005P XUL	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)

This section contains all information related to Fuel Tank , including specification, material, capacity and components.

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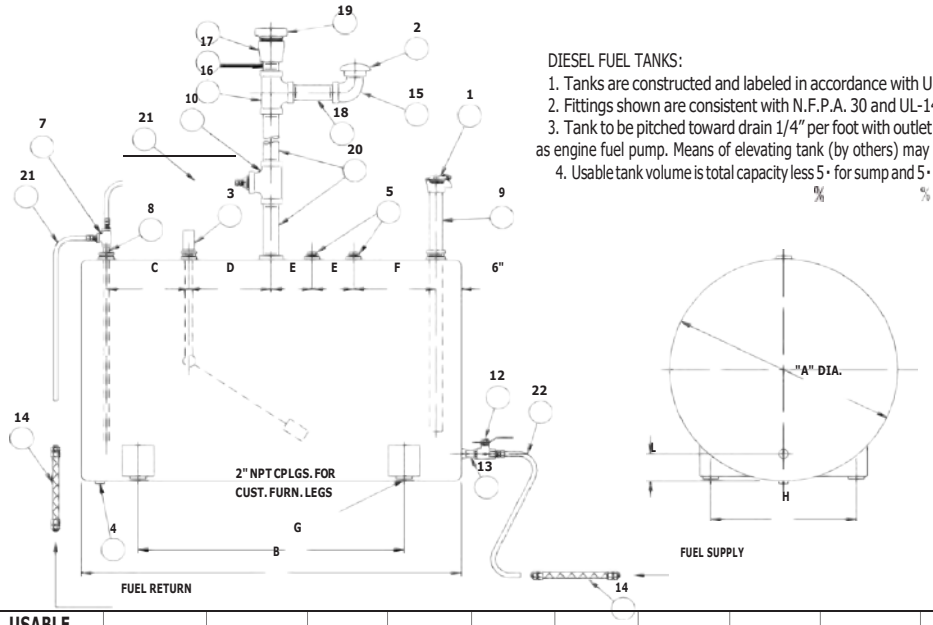
SECTION 3
FUEL TANK



DIESEL FUEL TANKS:

1. Tanks are constructed and labeled in accordance with UL-142.
2. Fittings shown are consistent with N.F.P.A. 30 and UL-142.
3. Tank to be pitched toward drain 1/4" per foot with outlet on the same elevation as engine fuel pump. Means of elevating tank (by others) may be required.
4. Usable tank volume is total capacity less 5 % for sump and 5 % for expansion.

NOMINAL TANK SIZE IN GALLONS	USABLE VOLUME IN GALLONS	A	B	C	D	E	F	G	H	L	Z
119	105	24 (609)	61 (1548)	6 (152)	6 (152)	6 (152)	12 (304)	37 (939)	14 (355)	3 (76)	4
187	165	30 (761)	61 (1548)	6 (152)	6 (152)	6 (152)	12 (304)	37 (939)	16 (406)	3 (76)	4
300	270	38 (964)	61 (1548)	6 (152)	6 (152)	6 (152)	13 (330)	37 (939)	23 (584)	3-3/4 (95)	4
359	320	36 (914)	73 (1853)	6 (152)	6 (152)	6 (152)	18 (457)	44 (1117)	23 (584)	3-3/4 (95)	4
572	515	48 (1218)	73 (1853)	6 (152)	6 (152)	6 (152)	19 (483)	44 (1117)	30 (761)	4-3/4 (121)	4
849	766	64 (1626)	61 (1548)	6 (152)	6 (152)	6 (152)	24 (610)	44 (1117)	30 (761)	4-3/4 (121)	4
1100	993	64 (1626)	79 (2007)	6 (152)	6 (152)	6 (152)	31 (787)	44 (1117)	30 (761)	4-3/4 (121)	4

COMPONENTS FURNISHED BY OTHERS		
ITEM NO.	QTY. REQ'D	DESCRIPTION
20	1	"Z" Diameter Piping for Vent
21	1	1/2" Tubing and Fittings or 1/2" Black Pipe
22	1	3/4" Tubing and Fittings or 3/4" Black Pipe

NOTES

1. All dimensions are in inches and may vary ± 1/4".
2. Components shown are shipped loose for field assembly.
3. Illustration is for component identification only. Actual installation must meet local codes and all applicable standards.
4. Item 10 may consist of a combination of fittings.
5. Refer to Section 916 page 259 for details of Fire Guard-furnished components.
6. Items 11 & 17 not required for 515 gallon tanks.

COMPONENTS FURNISHED BY Fire Guard		
ITEM NO.	QTY. REQ'D	DESCRIPTION
1	1	2" NPT Lockable Fuel Cap
2	1	2" Screened Tank Vent
3	1	Fuel Gauge 1-1/2" NPT
4	1	1" NPT Drain Plug
5	1	2" NPT Pipe Plug
7	1	1/2" Tee
8	1	1/2" Close Nipple
9	1	2" Fuel Fill Pipe
10	1	"Z" x "Z" x 2" Tee
11	1	"Z" Coupling
12	1	3/4" NPT Lockable Fuel Valve
13	1	3/4" Close Nipple
14	2	Fuel Hoses for Supply & Return (Furnished by Engine Mfr.)
15	1	2" Street Elbow
16	1	"Z" x "Z" x 2" Tee
17	1	"Z" Close Nipple
18	1	2" x 6" Nipple
19	1	"Z" Emergency Vent

ARIF AL-NAHDI CO.LTD.

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