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## TECHNICAL DATA SHEET

# HIGH HEAD FLOW-MATE SERIES

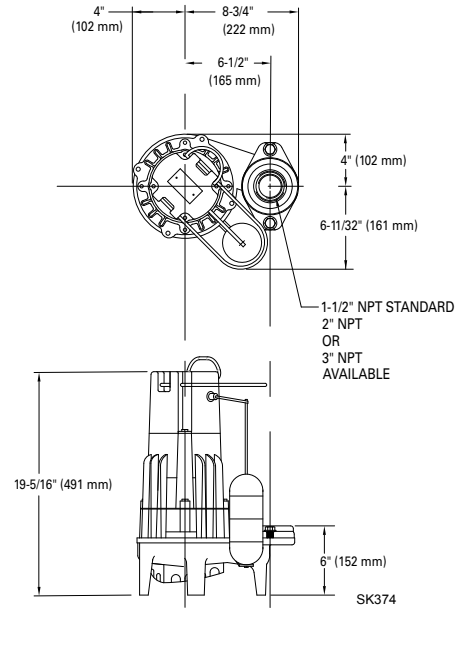
*Models 185/4185, 186/4186, 188/4188, 189/4189, 191*

### Submersible Effluent Pumps

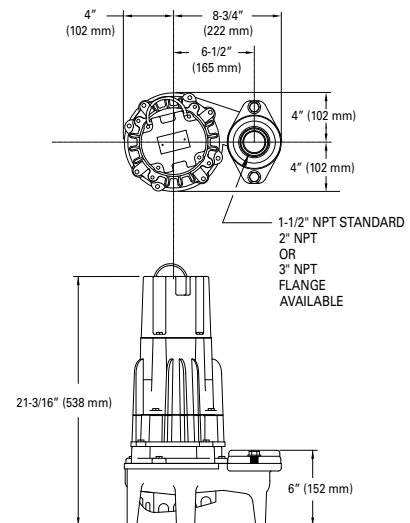
#### PRODUCT SPECIFICATIONS

<b>MOTOR</b>	Horse Power	1 - 2 HP
	Voltage	200 - 575
	Phase	1 or 3 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Permanent split capacitor or 3 Ph
	Insulation	Class B/185 & 4185 , Class F/186-191 & 4186-4189
	Amps	3.3 - 20.5
<b>PUMP</b>	Operation	Automatic or nonautomatic
	Auto On/Off Points	15-3/4" (400 mm) / 5-1/4" (133 mm)
	Discharge Size	1-1/2" NPT (optional 2" or 3" flange)
	Solids Handling	3/4", 5/8" (model 191) (19 mm 15 mm) spherical solids
	Cord Length	20' (6 m) standard
	Cord Type	1 Ph: UL listed 3-wire neoprene cord & plug or 3 Ph: 4-wire with no plug
	Max. Head	137' (42 m)
	Max. Flow Rate	145 GPM (549 LPM)
	Max. Operating Temp.	130 °F (54 °C) (model WD189 120 °F [49 °C])
	Cooling	Oil filled
	Motor Protection	Auto reset thermal overload (1 Ph)
<b>MATERIALS</b>	Upper Bearing	Ball bearing
	Lower Bearing	Ball bearing
	Mechanical Seals	Stainless steel, carbon and ceramic
	Impeller Type	Non-clogging vortex
	Impeller	Bronze
	Hardware	Stainless steel
	Motor Shaft	SAE 1117 carbon steel or 416 stainless steel*
Gasket	Neoprene square ring & gasket	

#### SINGLE SEAL



#### DOUBLE SEAL



\*Single seal models are built with a carbon steel motor shaft, and double seal models are built with a stainless steel motor shaft.

All Class 30 cast iron construction.

NOTE: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

NOTE: See model comparison chart for specific details.



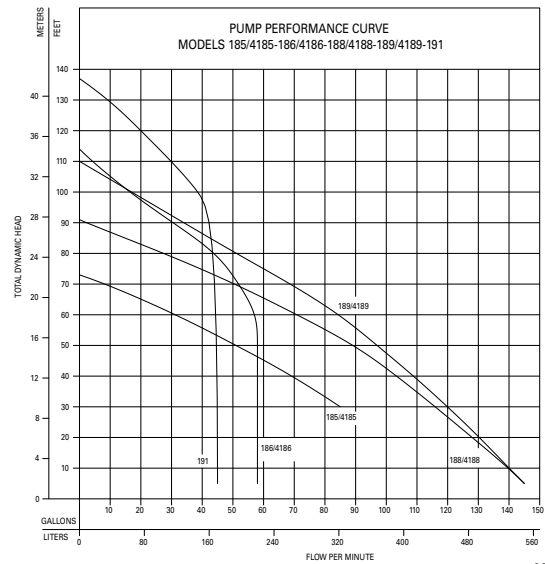
SK1413

# TOTAL DYNAMIC HEAD FLOW PER MINUTE

MODELS		185/4185		186/4186		188/4188		189/4189		191		
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	
5	1.5	--	--	58	220	145	549	145	549	45	170	
10	3.0	--	--	58	220	140	530	140	530	45	170	
20	6.1	--	--	58	220	128	484	130.5	494	45	170	
30	9.1	85	322	58	220	116	439	120	454	45	170	
40	12.2	70	265	58	220	103.5	392	109	413	45	170	
50	15.2	51	193	58	220	90	341	97	367	45	170	
60	18.3	32	121	58	220	71	269	85	322	45	170	
70	21.3	9	34	52	197	51	193	69	261	45	170	
80	24.4	--	--	45	170	28	106	51	193	45	170	
90	27.4	--	--	30.5	115	2	8	34	129	45	170	
100	30.5	--	--	16	60	--	--	17	64	40	151	
110	32	--	--	4	15	--	--	--	--	30	114	
120	36.6	--	--	--	--	--	--	--	--	20	76	
130	39.6	--	--	--	--	--	--	--	--	10	38	
Shut-off Head	73 ft. (22m)			114 ft. (35m)			91 ft. (28m)			110 ft. (34m)		137 ft. (42m)

NOTE: No UL listing for 200/208 single phase pumps, model 186 & 191, or double seal series.

**CAUTION**: Model 185 should not be subjected to heads less than 30' (9 m) TDH.



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Model	MODEL COMPARISON											CERTIFICATIONS
	Seal	Mode	Volts	Ph	Amps	HP	Hz	Lbs	Kg	Simplex	Duplex	
D185 / * H185	Single	Auto	230 / 200	1	9.8 / 11.5	1	60	85 / 86	38 / 39	1	---	UL and cCSAus (4)
E185 / E4185	Single / Dbl	Non	230	1	9.8	1	60	85 / 92	38 / 41	2 or 3	4	CSA
* I185 / * I4185	Single / Dbl	Non	200	1	11.5	1	60	85 / 92	38 / 41	2 or 3	4	cCSAus
* F185 / * F4185	Single / Dbl	Non	230	3	7.4	1	60	85 / 92	38 / 41	3 & 5	4 & 5	UL and cCSAus
* J185 / * J4185	Single / Dbl	Non	200	3	7.5	1	60	85 / 92	38 / 41	3 & 5	4 & 5	UL and cCSAus
BE185	Single	Auto	230	1	9.5	1	60	87	39	---	---	UL and cCSAus
* G185 / * G4185	Single / Dbl	Non	460	3	3.7	1	60	85 / 92	38 / 41	3 & 5	4 & 5	UL and cCSAus
* BA185 / *BA4185	Single	Non	575	3	3.3	1	60	85	38	3 & 5	4 & 5	cCSAus
D186 / * H186	Single	Auto	230 / 200	1	13.7 / 17.2	1-1/2	60	91	41	1	---	cCSAus (4)
E186 / E4186	Single / Dbl	Non	230	1	13.7	1-1/2	60	90 / 97	40 / 43	2 or 3	4	CSA
* I186 / * I4186	Single / Dbl	Non	200	1	17.2	1-1/2	60	90 / 97	40 / 43	2 or 3	4	cCSAus
* F186 / * F4186	Single / Dbl	Non	230	3	9.2	1-1/2	60	90 / 97	40 / 43	3 & 5	4 & 5	cCSAus
* J186 / * J4186	Single / Dbl	Non	200	3	10.3	1-1/2	60	90 / 97	40 / 43	3 & 5	4 & 5	cCSAus
BE186	Single	Auto	230	1	13.7	1	60	92	42	---	---	CSA
* G186 / * G4186	Single / Dbl	Non	460	3	4.6	1-1/2	60	90 / 97	40 / 43	3 & 5	4 & 5	cCSAus
* BA186 / * BA4186	Single / Dbl	Non	575	3	3.6	1-1/2	60	90 / 97	40 / 43	3 & 5	4 & 5	cCSAus
*D188 / H188	Single	Auto	230 / 200	1	14.0 / 16.8	1-1/2	60	91	41	1	---	CSA
E188 / E4188	Single / Dbl	Non	230	1	14.0	1-1/2	60	90 / 97	40 / 43	2 or 3	4	CSA
* I188 / * I4188	Single / Dbl	Non	200	1	16.8	1-1/2	60	90 / 97	40 / 43	2 or 3	4	cCSAus
* F188 / * F4188	Single / Dbl	Non	230	3	8.9	1-1/2	60	90 / 97	40 / 43	3 & 5	4 & 5	UL and cCSAus
* J188 / * J4188	Single / Dbl	Non	200	3	10.3	1-1/2	60	90	40 / 43	3 & 5	4 & 5	UL and cCSAus
BE188	Single	Auto	230	1	14.0	1-1/2	60	92	42	---	---	CSA
* G188 / * G4188	Single / Dbl	Non	460	3	4.6	1-1/2	60	95 / 97	43 / 43	3 & 5	4 & 5	UL and cCSAus
* BA188 / *BA4188	Single	Non	575	3	3.5	1-1/2	60	90	40	3 & 5	4 & 5	cCSAus
D189 / * H189	Single	Auto	230 / 200	1	17.1 / 20.5	2	60	91	41	1	---	UL and cCSAus (1,2,4)
E189 / E4189	Single / Dbl	Non	230	1	17.1	2	60	90 / 97	40 / 43	2 or 3	4	CSA
* I189 / * I4189	Single / Dbl	Non	200	1	20.5	2	60	90 / 97	40 / 43	2 or 3	4	cCSAus
* F189 / * F4189	Single / Dbl	Non	230	3	11.2	2	60	90 / 97	40 / 43	3 & 5	4 & 5	UL and cCSAus
* J189 / * J4189	Single / Dbl	Non	200	3	13.2	2	60	90 / 97	40 / 43	3 & 5	4 & 5	UL and cCSAus
* G189 / * G4189	Single / Dbl	Non	460	3	6.0	2	60	90 / 97	40 / 43	3 & 5	4 & 5	UL and cCSAus
* BA189 / *BA4189	Single	Non	575	3	5.8	2	60	90	40	3 & 5	4 & 5	cCSAus
* WD189 / WD4189	Single / Dbl	Auto	230	1	17.1	2	60	93 / 100	42 / 45	1	4	---
E191	Single	Non	230	1	14.5	2	60	87	39	2 or 3	4	cCSAus

\* no molded plug (1) UL listed unit available with 20 Amp plug. (2) CSA approval with 20 Amp plug. (3) 20 Amp outlet, P/N 10-0060 must be used. (4) H models are not UL listed.

NOTE: WD models are controlled by an integral variable level pump switch. H, I, J, F, G and BA models do not have a molded plug. Additional cord lengths are available in 25' (8 m) 35' (11 m) and 50' (15 m).

## SELECTION GUIDE

1. Integral float operated mechanical switch, no external control required.
2. For automatic use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
3. See FM1228 for correct model of simplex control panel.
4. See FM0712 for correct model of duplex control panel.
5. Variable level control switch 10-0743 used as a control activator, specify simplex (3) float or duplex (4) float system. Refer to FM0526.

**CAUTION** All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

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