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SECTION: 2.25.070

FM2799

1121

Supersedes

0721



TECHNICAL DATA SHEET

MODEL 840/841/842

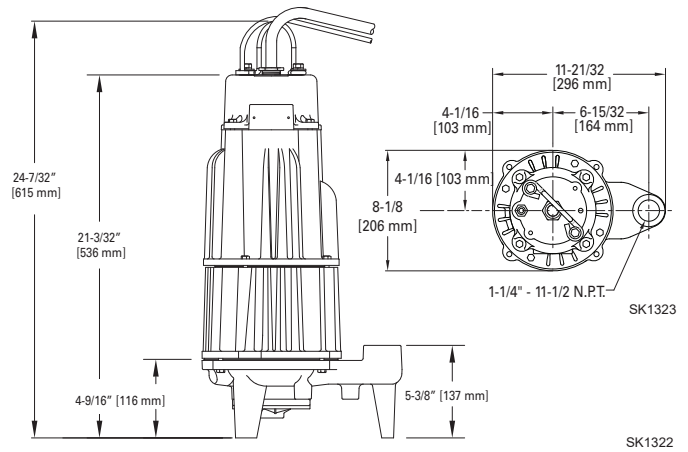
DUAL SEAL GRINDER PUMPS

Pump Systems And Controls

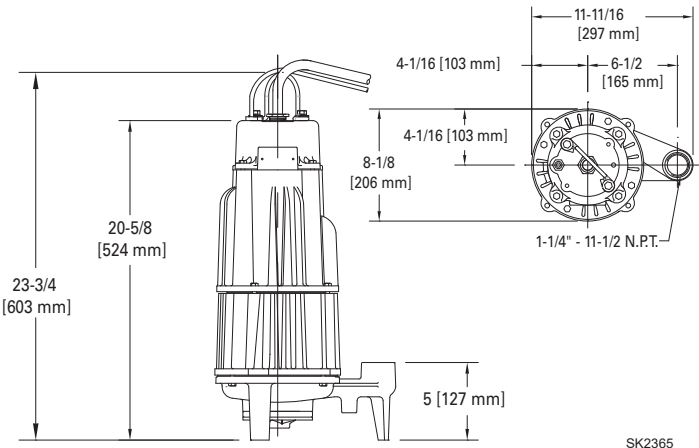
PRODUCT SPECIFICATIONS

MOTOR	Horse Power	2
	Voltage	200 - 575
	Phase	1 or 3 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Capacitor start / capacitor run or 3 Ph
	Insulation	Class F
	Amps	4.5 - 20.0
PUMP	Operation	Nonautomatic
	Discharge Size	1-1/4" NPT vertical
	Cord Length	20' (6 m) standard
	Cord Type	SOW or SOOW, multi-wire neoprene
	Max. Head	125' (38.1 m)
	Max. Flow Rate	59 GPM (223 LPM)
	Max. Operating Temp.	130 °F (54 °C)
	Cooling	Oil filled
	Motor Protection	Auto reset thermal overload (1 Ph), thermal sensor (3 Ph) Moisture Sensors
	MATERIALS	Cap
Motor Housing		Cast iron
Adapter		Cast iron
Pump Housing		Cast iron
Upper Bearing		Ball bearing
Lower Bearing		Ball bearing
Mechanical Seals		Carbon/ceramic
Impeller Type		Non-clogging vortex
Impeller		Ductile iron
Hardware		Stainless steel 304
Motor Shaft		Stainless steel 416
Square Rings		Neoprene
Cutter		Hardened stainless steel, Rockwell C55-60

Model 840 (Reversing Grinder Pump)



Models 841/842 (Single Direction Grinder Pumps)



Tested to Standard UL778 and Certified to CSA Standard C22.2 No. 108



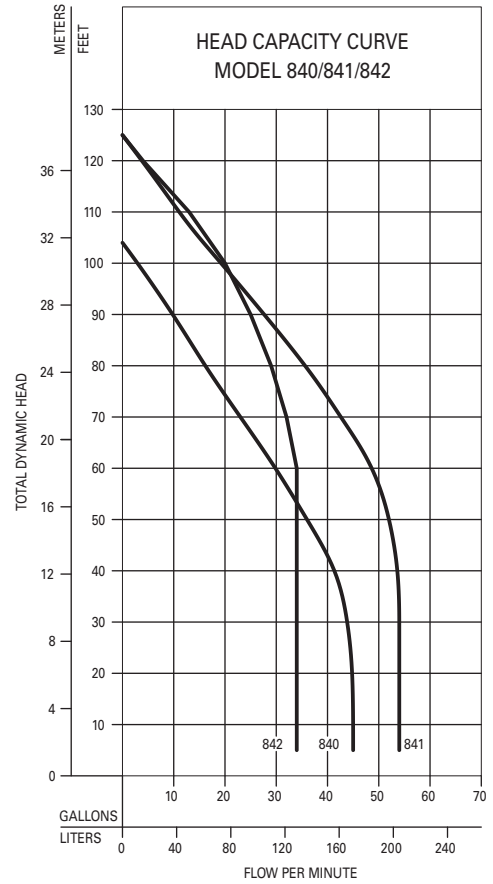
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TOTAL DYNAMIC HEAD FLOW PER MINUTE

MODEL		840		841		842	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	45	170	54	204	34	129
10	3.0	45	170	54	204	34	129
20	6.1	45	170	54	204	34	129
30	9.1	44	167	54	204	34	129
40	12.2	42	159	54	204	34	129
50	15.2	36	136	52	197	34	129
60	18.3	30	114	49	185	34	129
70	21.3	23	87	43	163	32	121
80	24.4	16	61	36	136	29	110
90	27.4	10	38	28	106	25	95
100	30.5	3	11	19	72	20	76
110	33.5	--	--	11	42	13	49
120	36.6	--	--	4	15	4	15
Shut-off Head:		104 ft (31.7 m)		125 ft (38.1 m)		125 ft (38.1 m)	

016532



ELECTRICAL DATA AND CONTROL PANEL SELECTION GUIDE					
A) Models	Weight	Volts / Phase	Amps	B) NEMA 4X Control Panels	
840 REVERSING GRINDER				SIMPLEX	DUPLEX
E840*	137 lbs (62.1 Kg)	230 / 1	17.2	10-0420	10-0512
I840*	137 lbs (62.1 Kg)	200 / 1	20.0	10-0420	10-0512
F840	132 lbs (59.8 Kg)	230 / 3	10.8	10-0634	10-0433
J840	132 lbs (59.8 Kg)	200 / 3	12.3	10-0634	10-0433
G840	132 lbs (59.8 Kg)	460 / 3	5.5	10-0599	10-0511
BA840	132 lbs (59.8 Kg)	575 / 3	4.5	Consult Factory	Consult Factory
841 SINGLE DIRECTION GRINDER				SIMPLEX	DUPLEX
E841*	137 lbs (62.1 Kg)	230 / 1	17.2	10-1650	10-1652
I841*	137 lbs (62.1 Kg)	200 / 1	20.0	10-1650	10-1652
F841	132 lbs (59.8 Kg)	230 / 3	10.8	10-1097	10-1125
J841	132 lbs (59.8 Kg)	200 / 3	12.3	10-1097	10-1125
G841	132 lbs (59.8 Kg)	460 / 3	5.5	10-1094	10-1122
BA841	132 lbs (59.8 Kg)	575 / 3	4.5	10-1146	10-1168
842 SINGLE DIRECTION GRINDER				SIMPLEX	DUPLEX
E842*	137 lbs (62.1 Kg)	230 / 1	17.2	10-1650	10-1652
I842*	137 lbs (62.1 Kg)	200 / 1	20.0	10-1650	10-1652
F842	132 lbs (59.8 Kg)	230 / 3	10.8	10-1097	10-1125
J842	132 lbs (59.8 Kg)	200 / 3	12.3	10-1097	10-1125
G842	132 lbs (59.8 Kg)	460 / 3	5.5	10-1094	10-1122
BA842	132 lbs (59.8 Kg)	575 / 3	4.5	10-1146	10-1168

B) CONTROL PANEL STANDARD FEATURES:

- NEMA 4X outdoor rating
- Automatic reversing circuit (840 model only)
- Audible and visual high water alarm
- Starting, control, and alarm circuits
- Thermal cut-out circuit (3 Ph only)
- Circuit breaker and rated motor contactor (1 Ph)
- Capacitors and motor starting relay on (1 PH)
- Motor protective switch (circuit breaker / phase adjustable overloads) and rated motor contactor (3 Ph)
- Alternating circuit (duplex)
- High water alarm light
- Internal seal leak light
- HOA switches and pilot light(s)
- Terminal strips
- Padlock hasp

OPTIONS:

- Flasher for high water alarm light
- Manual reset of high water alarm
- Intrinsically-safe relays
- Elapsed time meters
- Dry auxiliary contact
- For other options, consult factory

* Single phase units require a set of capacitors and relay starting components, included in panel



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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C) VARIABLE LEVEL FLOAT SWITCHES

INDOOR SYSTEM

- 3 Switches and weights
- P/N 10-0347 WGT. 9.5 lb (4.3 kg)
- 4 Switches and weights
- P/N 10-0348 WGT. 13 lb (5.9 kg)

OUTDOOR SYSTEM

- Switches with pipe clamps, 3 required
- P/N 10-0744 20' WGT. 2 lb (kg)
- P/N 10-1878 35' WGT. 3 lb (kg)
- P/N 10-1879 50' WGT. 4.0 lb (kg)

D) JUNCTION BOXES - TYPE 4X

SIMPLEX

- 5 holes with seals for (1) power cord, (1) sensor cord, (3) float switch cords.
- P/N 10-0331 WGT. 2.5 lb (1.1 kg) 3-float system
- P/N 10-4508 Simplex J-box

DUPLEX

- 8 holes with seals for (2) power cords, (2) sensor cords, (3 or 4) float switch cords.
- P/N 10-0332 WGT. 2.5 lb (1.1 kg) 3-float system
- P/N 10-0421 WGT. 2.5 lb (1.1 kg) 4-float system
- P/N 10-4509 Duplex J-box

**F) OUTDOOR BASIN, COVER, AND RAIL SYSTEM
BASIN - STANDARD EQUIPMENT**

- Fiberglass basin with anti-flotation ring
- 1.25" X 2" Z-Rail® disconnect system w/ 3/4" galvanized rail pipes
- 2" SCH. 80 PVC discharge pipe from disconnect
- 2" Flex boot discharge fitting
- Stainless steel lifting cable
- 2" PVC ball valve(s)
- 2" cast iron check valve(s)
- (1)-4" rubber inlet pipe seal (field-installed)
- Float tree
- Blank fiberglass cover with Zoeller imprint

SIMPLEX

- 24" x 48" (61 x 122 cm) P/N 33-2054 WGT. 180 lb (93.4 kg)15"
- 24" x 60" (61 x 152 cm) P/N 33-2057 WGT. 187 lb (99.3 kg)24"
- 24" x 72" (61 x 183 cm) P/N 33-2060 WGT. 192 lb (105.7 kg)30"
- 24" x 84" (61 x 213 cm) P/N 33-2063 WGT. 213 lb (119.7 kg)36"
- 24" x 96" (61 x 244 cm) P/N 33-2069 WGT. 230 lb (125.6 kg)36"
- 24" x 108" (61 x 244 cm) P/N 33-2075 WGT. 248 lb (125.6 kg)48"
- 24" x 120" (61 x 244 cm) P/N 33-2078 WGT. 260 lb (125.6 kg)48"

DUPLEX

- 36" x 48" (91 x 122 cm) P/N 33-2108 WGT. 258 lb (166.5 kg)19"
- 36" x 60" (91 x 152 cm) P/N 33-2111 WGT. 272 lb (176.4 kg)24"
- 36" x 72" (91 x 183 cm) P/N 33-2114 WGT. 285 lb (214.1 kg)30"
- 36" x 84" (91 x 213 cm) P/N 33-2117 WGT. 304 lb (226.3 kg)36"
- 36" x 96" (91 x 244 cm) P/N 33-2123 WGT. 332 lb (238.1 kg)36"
- 36" x 108" (91 x 244 cm) P/N 33-2129 WGT. 359 lb (163 kg)48"
- 36" x 120" (91 x 244 cm) P/N 33-2132 WGT. 379 lb (172 kg)48"

Note: 30" diameter simplex and 48" diameter duplex system also available

**E) INDOOR BASIN, COVER, AND HARDWARE
PREPACKAGED STANDARD EQUIPMENT**

- Fiberglass basin
- Rust-resistant steel cover (epoxy coated only)
- Inspection plate
- Individual pump covers
- 3" adaptaflex vent seal
- 1-1/4" adaptaflex discharge pipe seal(s)
- Cord seal(s)
- 1-4" rubber inlet pipe seal (field-installed)
- Pump support hardware
- 1-1/4" check valve(s)
- Ball valve(s)

SIMPLEX

- 24" x 36" (61 x 91 cm) P/N 32-0005 WGT. 107 lb (48.5 kg)

DUPLEX

- 30" x 36" (76 x 91 cm) P/N 32-0006 WGT. 154 lb (69.9 kg) 3-float system
- 30" x 36" (76 x 91 cm) P/N 32-0007 WGT. 154 lb (69.9 kg) 4-float system

**G) STAINLESS STEEL LIFTING CABLE
(Field-Installed Systems)**

- 8' (2.4 m)
 - P/N 39-0031 WGT. 1 lb (0.5 kg)
- 12' (3.7 m)
 - P/N 39-0032 WGT. 1 lb (0.5 kg)
- 16' (4.9 m)
 - P/N 39-0033 WGT. 1 lb (0.5 kg)

STARTER KITS*

P/N	Pump Model	Type
10-0380	840, 841 & 842	Shipped Loose
013736	840, 841 & 843	Bracket Mounted
*Starter kits needed if using existing panels and single phase (E or I model) grinder pumps		

SIMPLEX REVERSING CONTROL BOXES*

AUTOMATIC			MANUAL		
MODEL	P/N	WGT.	P/N	WGT.	
E840	<input type="checkbox"/> 10-0352	8 lb (3.6 kg)	<input type="checkbox"/> 10-0360	7 lb (3.2 kg)	
I840	<input type="checkbox"/> 10-0352	8 lb (3.6 kg)	<input type="checkbox"/> 10-0360	7 lb (3.2 kg)	
F840	<input type="checkbox"/> 10-0353	6 lb (2.7 kg)	<input type="checkbox"/> 10-0361	5 lb (2.3 kg)	
J840	<input type="checkbox"/> 10-0353	6 lb (2.7 kg)	<input type="checkbox"/> 10-0361	5 lb (2.3 kg)	
G840	<input type="checkbox"/> 10-0353	12 lb (5.4 kg)	<input type="checkbox"/>	Not available	

*These control boxes consist of the reversing mechanisms and capacitors (1Ph units) only. They will not control pumps. Refer to Section B for complete system controls. For duplex applications use two simplex reversing control boxes.

H) RAIL SYSTEMS - (FIELD-INSTALLED)

Z-Rail® disconnect system for 1-1/4" pump discharges
(Rail System discharge is 2" NPT male thread)

Ductile Iron Constructions

- P/N 39-0134 WGT. 43 lb (19.5 kg)

With Stainless Steel Upper Rail Support

- P/N 39-0135 WGT. 43 lb (19.5 kg)

Intermediate stabilizer bracket for every 12' (3.7 m) of depth.

Stainless Steel

- P/N 39-0139 WGT. 6 lb (2.7 kg)

I) CHECK VALVES

1-1/4" Cast iron NPT female

- P/N 30-0163
WGT. 7.5 lb (3.4 kg)

1-1/2" Cast iron NPT female

- P/N 30-0164
WGT. 7.5 lb (3.4kg)

2" Cast iron NPT female

- P/N 30-0152
WGT. 10 lb (4.5 kg)

J) BALL VALVE

1-1/4" IPS

- P/N 30-0165
WGT. 2 lb (0.9 kg)

1-1/2" IPS

- P/N 30-0166
WGT. 2 lb (0.9 kg)

2" IPS

- P/N 30-0167
WGT. 2.5 lb (1.1 kg)

FIELD-MOUNT SYSTEMS CHECKLIST

SIMPLEX		DUPLEX	
REQUIRED.	REQ.	REQUIRED.	REQ.
1 grinder pump	P/N ____ (A)	2 grinders pumps	P/N ____ (A)
1 simplex control panel	P/N ____ (B)	1 duplex control panel	P/N ____ (B)
3 float switches	P/N ____ (C)	3 or 4 float switches	P/N ____ (C)
1 junction box (optional)	P/N ____ (D)	1 junction box (optional)	P/N ____ (D)
1 rail system	P/N ____ (H)	2 rail systems	P/N ____ (H)
1 stainless steel lifting cable	P/N ____ (G)	2 stainless steel lifting cables	P/N ____ (G)
1 check valve	P/N ____ (I)	2 check valves	P/N ____ (I)
1 ball valve	P/N ____ (J)	2 ball valves	P/N ____ (J)

PREPACKAGED AND JOB READY SYSTEMS CHECKLIST

INDOOR			
SIMPLEX		DUPLEX	
REQ.	REQ.	REQ.	REQ.
1 grinder pump	P/N _____ (A)	2 grinders pumps	P/N _____ (A)
1 simplex control panel	P/N _____ (B)	1 duplex control panel	P/N _____ (B)
1 float switch asm.	P/N _____ (C)	1 float switch asm.	P/N _____ (C)
1 basin, cover and hardware	P/N _____ (E)	1 basin, cover and hardware	P/N _____ (E)
OUTDOOR			
SIMPLEX		DUPLEX	
REQ.	REQ.	REQ.	REQ.
1 grinder pump	P/N _____ (A)	2 grinders pumps	P/N _____ (A)
1 simplex control panel	P/N _____ (B)	1 duplex control panel	P/N _____ (B)
3 float switches	P/N _____ (C)	3 or 4 float switches	P/N _____ (C)
1 j-box (optional)	P/N _____ (D)	1 j-box (optional)	P/N _____ (D)
1 basin, cover and hardware	P/N _____ (F)	1 basin, cover and hardware	P/N _____ (F)

