



DIVERSIFIED STORAGE SYSTEMS
(888) SILO-SYS (888) 745-6797

PORTABLE Lo-Pro BATCHING SILO MANUAL



Legal 8'-6" Wide Legal 13'-6" Tall Overall Length is 26'



Portable Lo-Pro Batching Silo

- 800 CF. capacity (30 ton) **Cement
- Low-Profile design.
- 10" screw conveyor 12cu. ft. per minute discharge capacity.
- 10HP Electric Motor.
- Loss weight batching computer.
- Cone fluidizer system with distribution tank.
- 4- speed jacks.
- Overload protection with high level alarm.
- Other options available

***Cement can weigh between 88-94 lbs. per cubic foot depending on how aerated it is.*

1135 E. Wooley Rd. Ph # 805-247-0418
Oxnard CA, 93030 Fax # 805-247-0246

www.CementSilos.com

Portable Lo-Pro batching silo

The Standard DSS Low Profile Batching Silo is equipped with all the necessary equipment for operation. Electrical power to the panel and an air supply is all that is needed. The unique feature of this silo is it's low profile design. A crane is not required to set up this unit in the field.

Be sure to keep the silo as moisture free as possible. Foreign objects or hardened cement will cause the auger system to jam. Clean out holes are installed in the auger to free jammed material. If the silo is not to be used for an extended length of time it should be cleaned out completely, as not to have hardened material dislodge into the auger system upon resumption of use. The auger system is designed to start under a full load, if some problem occurs jam gates are installed at the auger inlet points so material can be shut off from the auger in emergency situations. Keep the bearings greased (do not over grease) and check the lubricant level in the gear box, as it is not to run dry. Running dry will cause major damage to power transmission unit. Keep the auger discharge free of cement build up. Remove the boot sock occasionally and free any hardened materials. Neglect causes the drive to be over worked and could cause the motor to burn out.

The silo is equipped with a belle style dust collector. Be sure to check the dust socks for excess build up of cement. . The socks need to be checked to make sure they stay on the holders and the cleanout compartment cleaned out properly. Neglect may cause damage to the dust socks or possible damage to the silo. Care of these units depends on how much they are used.

The silo is equipped with an emergency pop-off valve. If the socks or air transfer system would plug, the valve would lift up relieving the pressure. The valve is adjusted by DSS but may need further adjusting on site. **DO NOT OVERTIGHTEN.** Do not over fill the silo. Over filling of this unit could cause a hazardous situation. The air transfer system will plug and the pop-off valve may also be rendered unable to function, causing the dust collector to break loose or the top to be forced open or possibly off. **BE CAREFUL NOT TO OVERFILL**



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Collector Specifications

Total Filtration Area	150 Sq. Ft.
Air to Cloth Ratio (ACFM/Sq.')	2.5
Pressure Drop (in. H ₂ O)	6"
Air Capacity	375 C.F.M.
Outlet Area (Sq.')	.58
Cleaning Method	Shaker Plate
Vibrator (Air or Electric)	Rotary Style
Vibrator Air Consumption (High Press.)	8 CFM (Max)
Vibrator Power	120 V/ 1 ph
Duty Cycle	1.5 hours
Normal Operating Pressure	8 - 15 PSI *
Max Operating Pressure	20 PSI *
Over pressure relief settings	18 PSI *

Filter Bag Specifications

Filter Bag Count	18 hung style
Replacement Filter Bag Model #	DC150S
Dimensions	8" OD X 48" Height
Filter Area (Per)	8.33 Sq. '
Material Weight	9 oz. / Sq. Yd.
Fiber	100% Polyester
Construction	Spun/Spun
Permeability	25 c.f.m.
Mullen Burst Dry	500 PSI
Temperature Limit	275 Deg. F.
Efficiency (PM-10)	99.99%

Vibrator Specifications

Air Vibrator	Model V-190
VPM @ 60 PSI	4200
CFM @ 60 PSI	7.5 CFM
Noise @ 60 PSI	70 db
Control	Manual
Electric Vibrator	Model 2P-75
Voltage/amps	115v/0.5 amp
VPM	3600
Noise	60 db.
Control	Auto/Manual

Collector Performance (PM-Reg.)**

0.0 - 0.5 Micron	99.98% Passing
0.5- 1.0 Micron	0.02 % Passing
1.0 - 20.0 Micron	0.0% Passing

** Typical Portland Cement is 44 Micron

Mounting Options

Bin Vent Mount (Silo Top)
Base Mount (Optional Base Needed)
Trailer Mount (Portable Applications)

* This style unit does not use magnahelic gauge. Dust Collector performance is measured by back pressure at load line.

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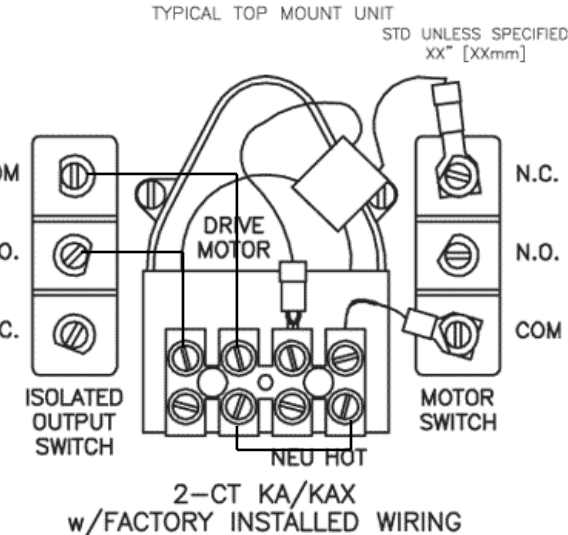
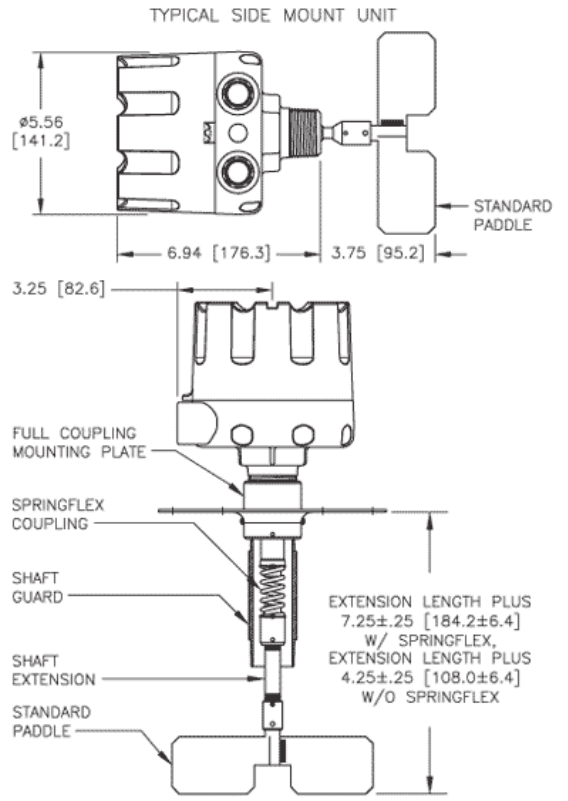
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Monitor's line of rotary paddle bin monitors consists of the most reliable, rugged and economical point level control sensors available for detection of dry bulk materials. These easy to install units are proven performers in a wide variety of bulk materials. Monitor's paddle units can be used to eliminate bin overflow, maintain a predetermined material level, indicate plugging of conveyors and pneumatic lines or provide any of a number of level control functions. Unlike many other available paddle units, Monitor's paddle level indicators incorporate a feature that automatically shuts off the motor of the unit when the paddle is in a stalled position, which both extends the life of the motor and minimizes maintenance.

The operation of Monitor's paddle level control products is quite simple. The unit is installed through the wall of the vessel, so that the paddle protrudes inside the vessel. A small electric motor drives a paddle which rotates freely in the absence of material.

When the paddle is impeded by material, the motor rotates within the housing which triggers two switches. The first switch is a "dry" electrical contact closure that is available to control a process function or alarm circuit. The second switch cuts the power to the motor, preventing a locked rotor condition, thus extending motor life. This also activates the signaling device which is wired through that same motor switch. When the material level drops, the loaded stretched tension spring returns the motor to its original running position and the unit is reactivated.



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Maintenance

Motor:

See Page 6-9

Your silo may be equipped with a Baldor, Lesson or World Wide Motor. Maintenance is the same on all.

Gear Box:

See Page 10-13

Your silo may be equipped with a Baldor, Lesson or Hub City gear box. Maintenance is the same on all.

Dust Collector:

The dust collector socks should get a visual inspection once a month. Check for excessive build-up on the socks. Make sure the vibrator is working. If the socks are clogged they should be replaced. The overflow compartment below the dust collector should be checked on a weekly basis and cleaned out as needed. The compartment should be no more than half full of material.

Auger:

Bottom bearing and lube block needs greased every 40 hours of use.

Top bearing needs to be greased every 200 hours of use

Filling the Silo:

Truck filling should not exceed 10-12 PSI. **DO NOT OVERFILL!**



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Maintenance Motor

Table 3-2 Service Conditions

Severity of Service	Hours per day of Operation	Ambient Temperature Maximum	Atmospheric Contamination
Standard	8	40° C	Clean, Little Corrosion
Severe	16 Plus	50° C	Moderate dirt, Corrosion
Extreme	16 Plus	>50° C* or Class H Insulation	Severe dirt, Abrasive dust, Corrosion, Heavy Shock or Vibration
Low Temperature		<-30° C **	

* Special high temperature grease is recommended (Dow Corning DC44). Note that Dow Corning DC44 grease does not mix with other grease types. Thoroughly clean bearing & cavity before adding grease.

** Special low temperature grease is recommended (Aeroshell 7).

Table 3-3 Lubrication Interval Multiplier

Severity of Service	Multiplier
Standard	1.0
Severe	0.5
Extreme	0.1
Low Temperature	1.0

Table 3-4 Bearings Sizes and Types

Frame Size NEMA (IEC)	Bearing Description (These are the "Large" bearings (Shaft End) in each frame size)					
	Bearing	OD D mm	Width B mm	Weight of Grease to add * oz (Grams)	Volume of grease to be added	
					in ³	tea- spoon
56 to 180 incl. (63 to 112)	6206	62	16	0.19 (5.0)	0.3	1.0
210 incl. (132)	6307	80	21	0.30 (8.4)	0.6	2.0
Over 210 to 280 incl. (180)	6311	120	29	0.61 (17)	1.2	3.9
Over 280 to 360 incl. (225)	6313	140	33	0.81 (23)	1.5	5.2
Over 360 to 449 incl. (280)	6319	200	45	2.12 (60)	4.1	13.4
Over 5000 to 5800 incl. (355)	6328	300	62	4.70 (130)	9.2	30.0
Over 360 to 449 incl. (280)	NU319	200	45	2.12 (60)	4.1	13.4
Over 5000 to 5800 incl. (355)	NU328	300	62	4.70 (130)	9.2	30.0
Spindle Motors						
76 Frame	6207	72	17	0.22 (6.1)	0.44	1.4
77 Frame	6210	90	20	0.32 (9.0)	0.64	2.1
80 Frame	6213	120	23	0.49 (14.0)	0.99	3.3

* Weight in grams = .005 DB

Note: Not all bearing sizes are listed. For intermediate bearing sizes, use the grease volume for the next larger size bearing.

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Maintenance Motor

Lubrication Procedure

Be sure that the grease you are adding to the motor is compatible with the grease already in the motor. Consult your Baldor distributor or an authorized service center if a grease other than the recommended type is to be used.

Caution: To avoid damage to motor bearings, grease must be kept free of dirt. For an extremely dirty environment, contact your Baldor distributor or an authorized Baldor Service Center for additional information.

With Grease Outlet Plug

1. With the motor stopped, clean all grease fittings.
2. Remove grease outlet plug.

Caution: Overgreasing can cause excessive bearing temperatures, premature lubrication breakdown and bearing failure.

3. Add the recommended amount of grease.
4. Operate the motor for 15 minutes with grease plug removed. This allows excess grease to purge.
5. Re-install grease outlet plug.

Without Grease Provisions

Note: Only a Baldor authorized and UL or CSA certified service center can disassemble a UL/CSA listed explosion proof motor to maintain it's UL/CSA listing.

1. Disassemble the motor.
2. Add recommended amount of grease to bearing and bearing cavity. (Bearing should be about 1/3 full of grease and outboard bearing cavity should be about 1/2 full of grease.)
3. Assemble the motor.

Sample Lubrication Determination

Assume - NEMA 286T (IEC 180), 1750 RPM motor driving an exhaust fan in an ambient temperature of 43° C and the atmosphere is moderately corrosive.

1. Table 3-1 list 9500 hours for standard conditions.
2. Table 3-2 classifies severity of service as "Severe".
3. Table 3-3 lists a multiplier value of 0.5 for Severe conditions.
4. Table 3-4 shows that 1.2 in³ or 3.9 teaspoon of grease is to be added.

Note: Smaller bearings in size category may require reduced amounts of grease.

Maintenance Motor

Section 3 Maintenance & Troubleshooting

WARNING: UL rated motors must only be serviced by authorized Baldor Service Centers if these motors are to be returned to a flammable and/or explosive atmosphere.

General Inspection

Inspect the motor at regular intervals, approximately every 500 hours of operation or every 3 months, whichever occurs first. Keep the motor clean and the ventilation openings clear. The following steps should be performed at each inspection:

WARNING: Do not touch electrical connections before you first ensure that power has been disconnected. Electrical shock can cause serious or fatal injury. Only qualified personnel should attempt the installation, operation and maintenance of this equipment.

1. Check that the motor is clean. Check that the interior and exterior of the motor is free of dirt, oil, grease, water, etc. Oily vapor, paper pulp, textile lint, etc. can accumulate and block motor ventilation. If the motor is not properly ventilated, overheating can occur and cause early motor failure.
2. Use a "Megger" periodically to ensure that the integrity of the winding insulation has been maintained. Record the Megger readings. Immediately investigate any significant drop in insulation resistance.
3. Check all electrical connectors to be sure that they are tight.

Lubrication & Bearings

Bearing grease will lose its lubricating ability over time, not suddenly. The lubricating ability of a grease (over time) depends primarily on the type of grease, the size of the bearing, the speed at which the bearing operates and the severity of the operating conditions. Good results can be obtained if the following recommendations are used in your maintenance program.

Type of Grease

A high grade ball or roller bearing grease should be used. Recommended grease for standard service conditions is Polyrex EM (Exxon Mobil).

Equivalent and compatible greases include:

Texaco Polystar, Rykon Premium #2, Pennzoil Pen 2 Lube and Chevron SRI.

- Maximum operating temperature for standard motors = 110° C.
- Shut-down temperature in case of a malfunction = 115° C.

Lubrication Intervals

Recommended lubrication intervals are shown in Table 3-1. It is important to realize that the recommended intervals of Table 3-1 are based on average use.

Refer to additional information contained in Tables 3-2 and 3-3.

Table 3-1 Lubrication Intervals *

NEMA / (IEC) Frame Size	Rated Speed - RPM					
	10000	6000	3600	1800	1200	900
Up to 210 incl. (132)	**	2700 Hrs.	5500 Hrs.	12000 Hrs.	18000 Hrs.	22000 Hrs.
Over 210 to 280 incl. (180)		**	3600 Hrs.	9500 Hrs.	15000 Hrs.	18000 Hrs.
Over 280 to 360 incl. (225)			* 2200 Hrs.	7400 Hrs.	12000 Hrs.	15000 Hrs.
Over 360 to 5800 incl. (300)			*2200 Hrs.	3500 Hrs.	7400 Hrs.	10500 Hrs.

* Lubrication intervals are for ball bearings. For vertically mounted motors and roller bearings, divide the lubrication interval by 2.

** For motors operating in this speed range, contact Baldor for lubrication recommendations based on specific motor and application.

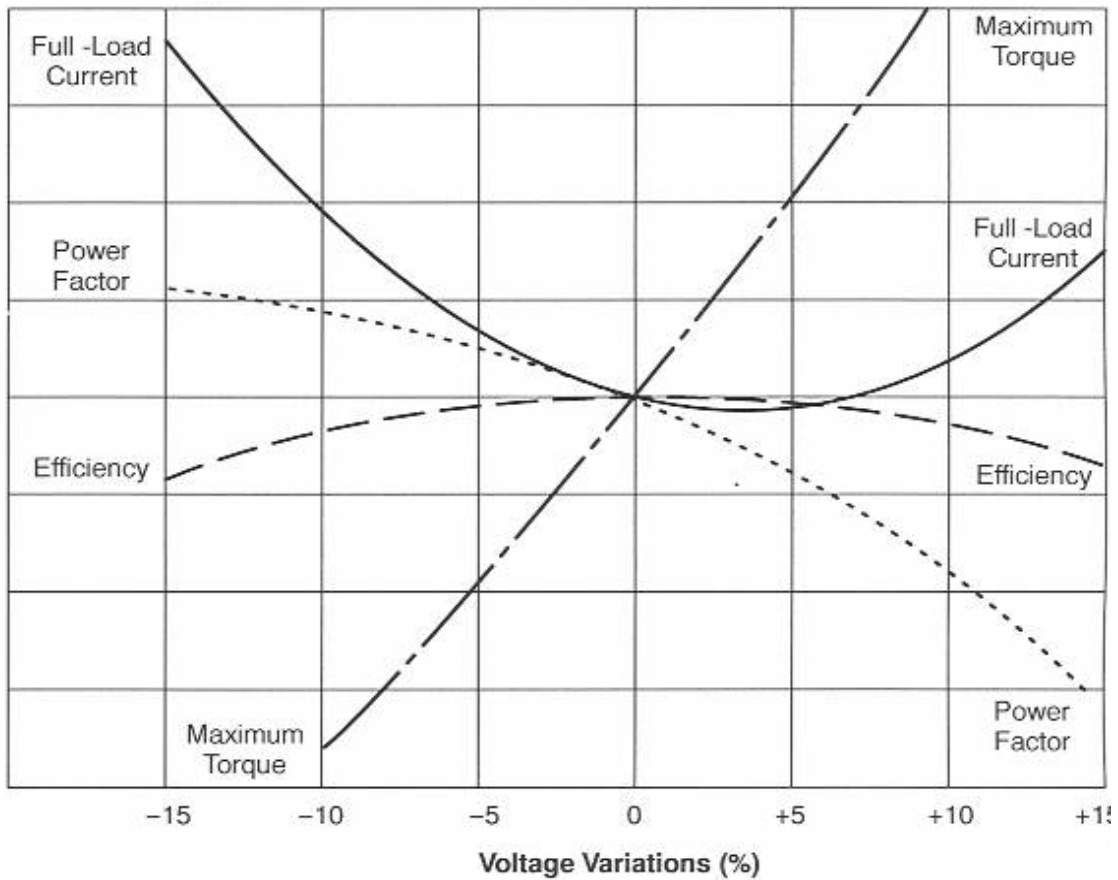


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Maintenance Motor

Figure 2-1 Typical Motor Performance VS Voltage Variations





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Maintenance Gear Box

APPROVED LUBRICANTS

HUB CITY GEAR LUBRICANT GL-90

(MOBILGEAR 630)

Part No. 8580001009

HUB CITY LUBRICANT	AGMA NUMBER	ISO-ASTM VISCOSITY GRADE
GL-90	5 EP	220

For Helical In-Line Gear Drives with ambient temperatures of 30-125° F (0-52° C) and operating temperatures to 185° F (85° C).

HUB CITY GL-90 LUBRICANT is a heavy duty industrial gear lubricant containing sulfur phosphorous antiwear additives. Lubricants of this general type and meeting the above specifications may be substituted where HUB CITY LUBRICANTS are recommended. Lubricant must be compatible with nitrile rubber seals. For ambient temperatures above 185° F (85° C) consult the factory.

HUB CITY ALL TEMPERATURE SYNTHETIC 75W-90 LUBRICANT (MOBILUBE SHC 75W-90)

Part No. 8580001031

HUB CITY SYNTHETIC 75W-90 LUBRICANT is a premium gear lubricant which is recommended for Helical In-Line Gear Drives in most applications, especially those subject to a low start up temperature and/or high operating temperature. This lubricant

is a synthesized hydrocarbon based material and a sulfur phosphorous gear lubricant additive which provides longer lubrication intervals because of its increased resistance to thermal and oxidative degradation. This decreases maintenance costs. Further economy is realized because of the increased efficiency of units lubricated with HUB CITY SYNTHETIC LUBRICANT. This lubricant can be operated at temperatures considerably above 185° F (85° C). However, the factory should always be contacted prior to operating at high temperatures as damage may occur to seals or other components. Lubricant manufacturer and HUB CITY should be contacted when substituting a premium lubricant where HUB CITY SYNTHETIC is recommended.

CAUTION

Do not mix nonsynthetic and synthetic oil in the unit.

CAUTION

If unit is used in the food or drug industry (including animal food) consult the petroleum supplier or HUB CITY for recommendation of lubricants which meet the specifications of FDA, USDA and/or other authoritative bodies having jurisdiction.

Standard lubricants are not suitable for these applications or these industries.

Approximate Oil Capacity (Pints) Double and Triple Reduction

Model Type	Mounting Position	UNIT SIZE (Foot or Flange Mount)									
		2032	2042	2043	2062	2063	2072	2073	2082	2083	2092
C-Frame or Gearmotor Models (HI20XXE) (HI220XXG)	B3, B5 Floor	Permanently Grease Lubed	1	2	1.6	4.1	5.1	8.1	7.6	13.7	16.9
	B8 Ceiling		1.8	2	3	4.2	7.4	7.6	11.4	11.8	20.1
	B6, B7 Wall		1.5	1.7	2.3	3	6.1	5.5	10.1	10.1	19.6
	V5, V1 Vertical		1.4	2.8	2.3	4.7	5.5	9.5	10	15.8	26.4
Shaft Input Models (HI20XXA) (HI20XXC)	B3, B5 Floor		1.9	2.6	3	4.9	7.5	9.1	11.8	15.4	26.2
	B8 Ceiling		2.2	2.2	3.1	4.3	7.8	8.6	13.2	12.9	23.3
	B6, B7 Wall		1.6	1.9	2.4	3.1	6.1	7.1	11	10.8	21.6
	V5, V1 Vertical		2.5	2.8	3.6	4.7	7.9	9.5	13.7	15.8	36.2

Approximate Oil Capacity (Pints) Quad Reduction

Quad reduction units are compound units, and the primary and secondary units are filled separately. Refer to the model table below and use the oil capacities in the table above.

Unit Size	2064	2074	2084
Primary Unit Size	2042	2062	2072
Secondary Unit Size	2062	2072	2082

(use primary oil capacities for desired Input type)
(use secondary oil capacities for C-Frame Input)

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 MANUAL**

Maintenance Gear Box

Mounting Positions, Fill, Level and Drain Locations.

FOOT MOUNT DOUBLE REDUCTION	
GEARMOTOR & MOTORIZED REDUCER	SHAFT INPUT
2042-2072 2082 B3 - Standard Floor	2082 2042-2072 B3 - Standard Floor
 B6 - LH Wall	 B6 - LH Wall
 B7 - RH Wall	 B7 - RH Wall
 B8 - Ceiling	 B8 - Ceiling
 V5 - Vertical Down	 V5 - Vertical Down

FOOT MOUNT TRIPLE REDUCTION	
GEARMOTOR & MOTORIZED REDUCER	SHAFT INPUT
2043-2073 2083 B3 - Standard Floor	2083 2043-2073 B3 - Standard Floor
 B6 - LH Wall	 B6 - LH Wall
 B7 - RH Wall	 B7 - RH Wall
 B8 - Ceiling	 B8 - Ceiling
 V5 - Vertical Down	 V5 - Vertical Down

BREATHERO

FILLER ▽

FILLER/BREATHER ▽

LEVEL ●

DRAIN ●

GREASE ZERK □

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Maintenance Gear Box

INSTALLATION INSTRUCTIONS FOR ELECTRIC MOTORS AND HYDRAULIC MOTORS AND PUMPS

Be sure all the paint and masking have been removed from the face and pilot of the flange. Check the input bore to be sure it contains an adequate amount of anti-seize compound which is normally installed at the factory. This compound will inhibit fretting corrosion between the motor or pump shaft and the unit bore.

Install the key (if round bore) to the maximum depth of the keyway provided in the bore.

Align keyways or splines of motor or pump and bore of unit and install motor or pump into flange. Do not use excessive force or pounding to install motor or pump into flange, as this may damage shafts or bearings.

CAUTION

HUB CITY "C" Flange Reducers and Hydraulic Flange Reducers are designed to accept motors with shaft lengths that do not exceed the maximum specified by the N.E.M.A. or SAE standards. If the motor or pump shaft bottoms out before the flange seats against the reducer flange face, the motor or pump shaft length must be adjusted to N.E.M.A. or SAE standards.

Secure the motor or pump to the unit. Capscrews and lockwashers are provided with "C" flange units.

Tightening torques for mounting bolts are provided in the chart below.

CAPSCREW TIGHTENING TORQUE

Grade 5 Capscrews (dry, without lubricant)

**Capscrew Size Tightening Torque
(Ft.-Lbs.)**

1/4 NC	8
5/16 NC	16
3/8 NC	29
1/2 NC	71
5/8 NC	143
3/4 NC	251



WARNING

Make certain that all tools and other items are clear from rotating parts before starting machine. Stand clear, and start machine slowly to be sure all components are secure and operating properly.

CAUTION

Test run unit to verify operation. If the unit being tested is a prototype, that unit must be of current production configuration.

PREVENTATIVE MAINTENANCE – Keep shafts and vent plug clean to prevent foreign particles from entering seals or gear case. Inspect periodically for oil leaks.

CAUTION

Mounting bolts, coupling fasteners, and other power transmitting devices should be routinely checked to ensure that all parts of the unit are firmly anchored to provide proper operation. (Loose fasteners can cause alignment problems and excessive wear). Check end play in shafts. Noticeable movement might indicate service or parts replacement.

IMPORTANT INFORMATION

In the event of the resale of any of the goods, in whatever form, resellers/buyers will include the following language in a conspicuous place and in a conspicuous manner in a written agreement covering such sale:

The manufacturer makes no warranty or representations, express or implied, by operation of law or otherwise, as to the merchantability or fitness for a particular purpose of the goods sold hereunder. Buyer acknowledges that it alone has determined that the goods purchased hereunder will suitably meet the requirements of their intended use. In no event will manufacturer be liable for consequential, incidental, or other damages.

Resellers/buyers agree to include this entire document, including the warnings and cautions listed herein, in a conspicuous place and in a conspicuous manner to instruct users on the safe usage of the product.

HUB CITY has Sales Offices and a network of Industrial Power Transmission Distributors that can serve your needs world wide. Check the Yellow Pages for one near you or contact the factory sales office.

A Parts List and Print for your Drive is available upon request. To obtain the proper Parts List and Print, you must accurately furnish the Assembly Number, Model Number, Ratio, Style and Shipping Code as shown on the metal tag attached to the Gear Drive. For assistance, phone or write your Industrial Power Transmission Distributor, or the Factory Sales Office.

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Maintenance Gear Box

CONGRATULATIONS...Your decision to purchase a Poweratio 2000 Helical In-line Gear Drive from HUB CITY will provide you with many years of trouble free service if the following lubrication and installation instructions are adhered to.

IMPORTANT

Read **ALL** instructions and safety precautions prior to operating unit. Injury to personnel or unit failure may be caused by improper installation, maintenance, or operation.

IMPORTANT SELECTION INFORMATION – Check to verify that the application does not exceed the capacities published in the current Helical In-line catalog, and printed on the gear unit name plate. All capacity ratings are based on proper application of AGMA Service Factors listed in the current catalog.

Written authorization from HUB CITY is required to operate or use gear units in man lift or people moving devices.

The system of connected rotating parts must be free from critical speed, torsional or other type vibration, regardless of how induced. The responsibility for this system analysis lies with the purchaser of the gear unit.

Buyer shall be solely responsible for determining the adequacy of the product for any and all uses to which the buyer shall apply the product. The application by buyer shall not be subject to any implied warranties of merchantability or fitness for a particular purpose.

LUBRICATION – All HUB CITY Helical In-line gearmotors and gear reducers are supplied with the correct quantity of lubricating oil for the mounting position specified at time of order.

CAUTION

BEFORE INSTALLATION – Review the approved mounting positions and lubrication levels identified on Pages 5-6. Do not deviate from the mounting positions or lubrication levels shown without contacting the factory.

For transportation the units are supplied as sealed gearcases. In place of the breather plug, a pipe plug is installed. The breather plug accompanies the unit in the lubrication instructions and hardware envelope.

BEFORE OPERATING – Install the breather plug in the location specified on Pages 5-6 for the appropriate mounting position.

QUAD REDUCTION UNITS – The primary and secondary units are independent units, with separate fill, vent, level and drain holes. Use the double reduction drawings on Pages 5-6 for the mounting positions and lube hole locations. The mounting position designation is based on the secondary unit, which can be foot mount or flange mount. The primary unit is always flange mount type.

CAUTION

Do not operate the unit without making sure it contains the correct amount of oil. The clear sight glass plug should be installed in

the proper oil level hole. The oil level is correct when the surface of the oil is at the center of the plug. When a solid plug is provided for the oil level, the oil level is correct when the surface of the oil is level with the lowest point of the level plug, shown on Pages 5-6, for the appropriate mounting position.

Do not overfill or underfill with oil, or injury to personnel, unit, or other equipment may result.

After installation, the actual mounting position should be confirmed against the mounting position shown on the gear reducer nameplate. Adequate lubrication is only guaranteed if the unit is mounted in the specific nameplated mounting position.

If the mounting position is changed, the oil quantity must be adjusted to obtain the specified oil level.

VARIATIONS FROM NORMAL CONDITIONS – Input speeds that exceed the maximum speeds recommended for a given ratio, which are listed in the general catalog specifications, may require an adjustment in the oil level. Consult HUB CITY for special lubricant recommendations when operating at higher speeds.

CHANGING LUBRICANT – After the first 100 hours of operation, drain out initial oil, flush out the gear case with an approved nonflammable, non-toxic solvent and refill. Thereafter, oil should be changed at least every 7500 operating hours (15,000 for synthetic oil lubricant) or every 18 months (24 months for synthetic oil lubricant) - whichever occurs first.

INPUT BEARING GREASE – The outer bearing on shaft input models is grease lubricated at the factory and sealed with a Nilos Ring for operation in all mounting positions. Pump 3 pumps of grease into the grease zerk after every 3,000 hours of operation, to lubricate the bearing and input seal.

CAUTION

Oil should be changed with greater frequency if unit is used in a severe environment such as dusty or humid.

CAUTION

If the unit cannot be located in a clear and dry area with an adequate cooling air supply, precautions must be taken to avoid ingestion of contaminants such as water, and to avoid a reduction of cooling ability due to exterior contaminants.



WARNING

Oil, housings, and other components can reach high temperatures during operation, and can cause severe burns. Use extreme care when removing lubrication plugs and vents while servicing the unit.

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INTERMATIC® MODEL SS7 SERIES INSTALLATION AND OPERATING INSTRUCTIONS

Features

- Automatic or manual operation. Push the clear cover/switch to switch On or Off at any time.
- Program up to 6 ON/OFF setting pairs (12 automatic switch settings).
- Each setting time can be once a week, every day, every weekday, or only on weekends.
- LCD Digital clock and readout.
- Random feature automatically varies switching times for a "Nights" lock.
- One AAA Alkaline battery keeps time, operates timer, and keeps the program for up to 1 1/2 years, even without utility power.
- Can be used for Flood (FMR) and compact fluorescent lamps and dimmers.
- Unique "hard contact" output switch allows timer to control most 120VAC loads.
- Also controls many loads 12 to 277 VAC and 12 to 28 Volts DC.
- Refer to product label for maximum ratings for various voltages and load types.

Introduction

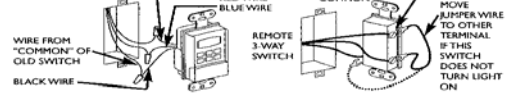
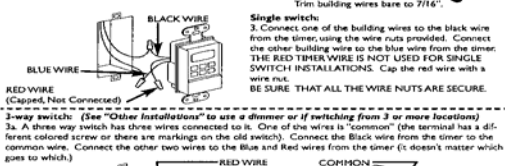
The timer can replace your regular or 3-way light switch (where two switches control the same light) to control lights for security, or can control an outlet to switch most 120VAC loads up to the maximum rating on the timer label. The timer can control incandescent lights, fluorescent lights, flood lights (PAR lamps), stereos, or appliances such as an air conditioner. The timer can also control many loads 12 to 277 VAC and 12 to 28 Volts DC. Timer may not be used with lighted switches.

You will need to use a Decorator style wall plate with this timer (not supplied).

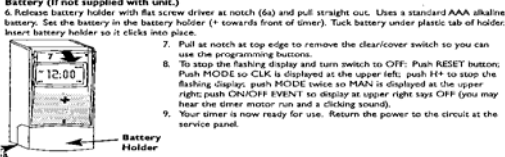
The installation instructions on this page are for replacing a light switch (or 3-way light switch) with the timer. See "Other Installations" on the next page for wiring diagrams for new construction, switching from 3 or more locations, or using the timer with a dimmer.

Installation Instructions - Single Switch or 3-way - to replace an existing switch:

1. TURN OFF POWER by REMOVING FUSE or turning the CIRCUIT BREAKER OFF.
2. Remove the existing wall switch.
3. Prepare the ends of the building wiring as shown.



6. Release battery holder with flat screw driver at notch (6a) and pull straight out. Uses a standard AAA alkaline battery. Set the battery in the battery holder (+ towards front of timer). Tuck battery under plastic tab of holder. Insert battery holder so it clicks into place.
7. Pull at notch at top edge to remove the clear/cover switch so you can use the programming buttons.
8. To stop the flashing display and turn switch to OFF: Push RESET button; Push MODE so CLK is displayed at the upper left; push H+ to stop the flashing display; push MODE twice so MAN is displayed at the upper right; push ON/OFF EVENT to display at upper right; tap OFF (you may hear the timer motor run and a clicking sound).
9. Your timer is now ready for use. Return the power to the circuit at the service panel.



Programming and Operating Instructions

Introduction to Operation and Programming:
The timer is a programmable switch. At any time you can push the clear cover/switch to manually turn the switch ON or OFF, unless selected mode is CLK or PGM.

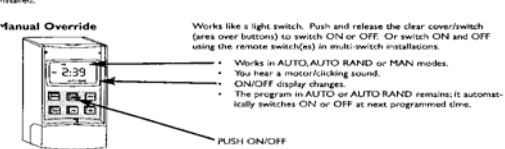
You can program up to 12 ON/OFF EVENTS; times when the timer automatically switches the connected lights or other electrical device(s) ON or OFF (up to 6 ON events and 6 OFF events). An EVENT can be set to switch at:

- any specific time, and day of the week,
- a specific time every day,
- a specific time on weekdays, or
- a specific time on weekends.

See Installation Instructions first if your timer is not already installed, or if the AA Alkaline battery is not installed.

Manual Override
Works like a light switch. Push and release the clear cover/switch (area over buttons) to switch ON or OFF. Or switch ON and OFF using the remote switch(es) in multi-switch installations.

- Works in AUTO, AUTO RAND or MAN modes.
- You hear a motor/clicking sound.
- ON/OFF display changes.
- The program in AUTO or AUTO RAND remains; it automatically switches ON or OFF at next programmed time.



Controls and Displays

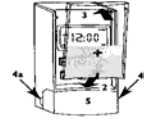
Cover/switch
The clear cover/switch is the manual ON/OFF control.

1. Pull at notch at top edge to remove cover so you can use the programming buttons.



2. Set bottom in first.
3. Click in the top.

4. Grasp holder at side bumps (6a, 6b) and pull straight out.



5. Place battery in holder with "+" end towards front of timer. Insert battery and holder into timer. Push at (5) to click it into place.

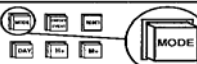
Battery Holder

Push Buttons:



RESET button

- Accessed so you don't push it accidentally. Push and release to reset.
- When you press RESET:
- The mode switches to MAN.
 - The switch is set to ON.
 - The clock is set to MO 12:00 AM and flashes.
 - All programmed ON or OFF times are set to null (set null, no switching occurs, clock display ---).
 - (After pushing RESET, you must set the clock then set the ON/OFF times.)
 - If PGM appears in display, push battery cover in until you hear a click. Push reset button to clear display. Proceed with programming.



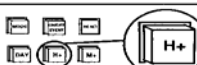
MODE button

- Push and release to change the mode (upper line of the display). CLK mode - To set or change the time. PGM mode - To set, review or change programmed ON/OFF times. AUTO mode - Programmed ON/OFF times work. Manual switching works. AUTO RAND mode - Programmed ON/OFF times work and timer effects 15 minutes. Manual switching works. MAN mode - Only manual switching works. Programmed ON/OFF times remain in memory. The Mode buttons skip the AUTO modes if the time of day and/or the ON/OFF times have not been set.



DAY button

- Function depends on the mode:
- CLK mode - Push and release to cycle through the days of the week: MO, TU, WE, TH, FR, SA, SU. Push and hold to cycle quickly.
 - PGM mode - Push and release to cycle through all week, weekdays, weekend, individual days of the week and null: MO, TU, WE, TH, FR, SA, SU (all displayed at once is all week); MO, TU, WE, TH, FR (all displayed at once is weekdays); SA, SU (displayed is weekend).
 - --- (on clock display is the null setting)
- Use null to cancel an unwanted ON or OFF setting. The DAY button does nothing in AUTO, AUTO RAND or MAN modes.



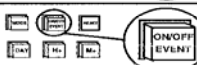
H+ (hour) button

- Works in CLK and PGM modes. Push and release to cycle forward through the hours of the day. Push and hold to cycle quickly. AM and PM automatically switch at 12. If you pass the correct hour, push and hold to cycle around again.



M+ (minute) button

- Works in CLK and PGM modes. Push and release to cycle forward through the minutes. Push and hold to cycle quickly. If you pass the correct minute, push and hold to cycle around again.

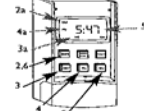


ON/OFF EVENT button

- Function depends on the mode:
- CLK mode - ON/OFF EVENT button does nothing.
 - PGM mode - Switches in order through the 12 programmable events: 1 ON, 1 OFF, 2 ON, 2 OFF, 3 ON, 3 OFF, 4 ON, 3 ON, 5 ON, 5 OFF, 6 ON, and 6 OFF.
 - AUTO mode - Manually turns switch on or off.
 - AUTO RAND mode - Manually turns switch on or off.
 - MAN mode - Manually turns switch on or off.

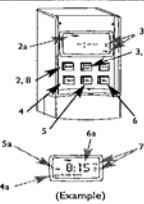
How to set or change the clock

1. Remove the clear cover/switch.
2. Push and release MODE button until CLK is displayed (2a).
3. Push and release DAY button until correct day of week is displayed (2b).
4. Push and release H+ button until hour and AM/PM are correct (4a).
5. Push and release M+ button until minutes are correct (5a).
6. Push and release MODE button to choose AUTO, AUTO RAND or MAN.
7. Replace clear cover/switch.
8. Push and release clear cover/switch to switch load ON or OFF if necessary.



How to set, change, or review ON/OFF times

1. Remove clear cover/switch.
2. Push and release MODE button until PGM is displayed (2a). [at events 1 ON]
3. If necessary, push and release ON/OFF EVENT button until event to set/change is displayed (2a), or push the ON/OFF EVENT pushbutton repeatedly to review all the ON/OFF times.
4. Push and release DAY button until desired day or group of days is displayed (4a), or push and release the DAY button until "---" is displayed, if you would like to cancel this ON or OFF time.
5. Push and release H+ button until desired event hour and AM/PM are displayed (5a).
6. Push and release M+ button until desired minutes are displayed (5a).
7. Push and release ON/OFF EVENT button to choose the next event to set or change (7a).
8. Push and release MODE button to choose AUTO, AUTO RAND, or MAN.
9. Replace clear cover/switch.
10. Push and release clear cover/switch to switch load ON or OFF if necessary.



LOAD MAINTENANCE

WARNING! DO NOT USE THE TIMER TO TURN OFF POWER FOR MAINTENANCE (repairs, removing broken bulbs, etc.). ALWAYS TURN POWER OFF AT THE SERVICE PANEL BY REMOVING A FUSE OR SWITCHING OFF A CIRCUIT BREAKER BEFORE DOING ANY CIRCUIT REPAIRS.

Error Messages

The 'LoBa!' message means the battery is low and needs to be replaced. Uses one standard AAA alkaline battery. The display is 'noOp!' (Meaning no Operation) if the timer fails to operate. This can happen in very cold temperatures. Normal timer operation should resume at normal temperatures. Press any button to clear one message). If the 'noOp!' remains at normal temperatures with a fresh battery, timer needs to be replaced.

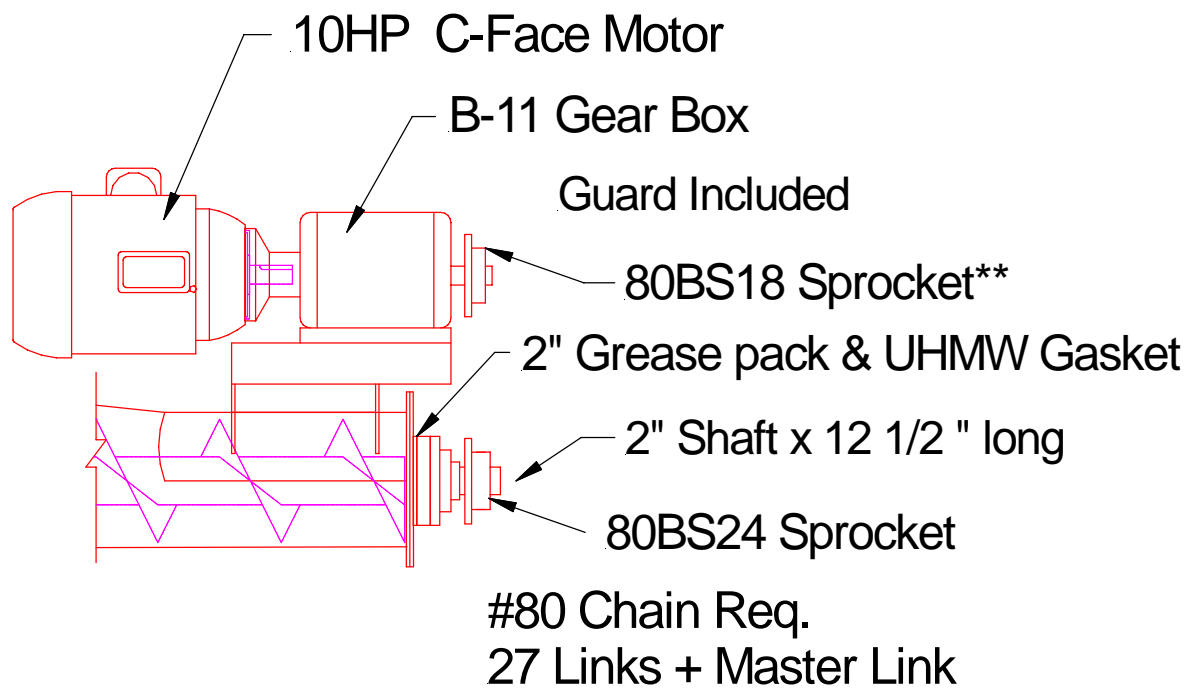


DIVERSIFIED STORAGE SYSTEMS

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*PORTABLE Lo-Pro BATCHING SILO
MANUAL*

Auger Details



**Sprocket sizes vary depending on application.



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Low Pro Silo 200-S

("Low Pro Silo 200-S" has 800 c.f. capacity)

Operating Instructions for silo with GSE 465

To Run Discharge Auger Manually:

Turn **Hand/Off/Auto** (HOA) switch on panel to **Hand** position.

Checking Gross Weight in Hopper:

Press **SELECT** button on scale until the weight is displayed "**Gross Mode**".
("Gross" is the weight of the product in the hopper.)

Setting Batch Weight:

When keying in the batch weight the scale must be in the "**Gross Mode**" (press **SELECT** if needed).
Press **TARGET** button, (displays previous weight).
Press **ENTER** button to keep weight, or
Key in new batch weight (i.e. 400), then press **ENTER**, (displays new batch weight)

Starting Batch Cycle:

Auto Mode:

Turn **Hand/Off/Auto** (HOA) switch on panel to **Auto** position.

At the Scale:

Start Batch Cycle - Press **F1** (Batch Control: Start / Pause button)

(**Note:** there must be product in the hopper to start batch)

Pause Batch Cycle - Press **F1** (Batch Control: Start / Pause button)

(To restart and finish batch cycle press **F1** again, auger will stop at the end of the batch)

Abort Batch Cycle - Press **ENTER** while auger is in the "**Stop Mode**"

(The scale will go back to the "**Gross Mode**")

Silo High Level Alarm:

Silo will hold approximately 63,000 lbs. gross weight of cement. (Lighter weight materials, the silo gross weight capacity will be less.)

If the silo becomes full, the **RED HIGH LEVEL LIGHT** and horn will turn on. If high level horn goes on, press the **GREEN HIGH LEVEL RESET BUTTON** on silo panel. This will shut off the horn. Have the truck driver stop until there is enough room to hold the rest of the load. If silo is full the **RED HIGH LEVEL LIGHT** will stay on.

Note: Check baghouse often to prevent overfilling and damage to filters. Replacement filters can be purchased from DSS (805) 247-0418 ex 25.

1135 E. Wooley Rd. Ph # 805-247-0418
Oxnard CA, 93030 Fax # 805-247-0246

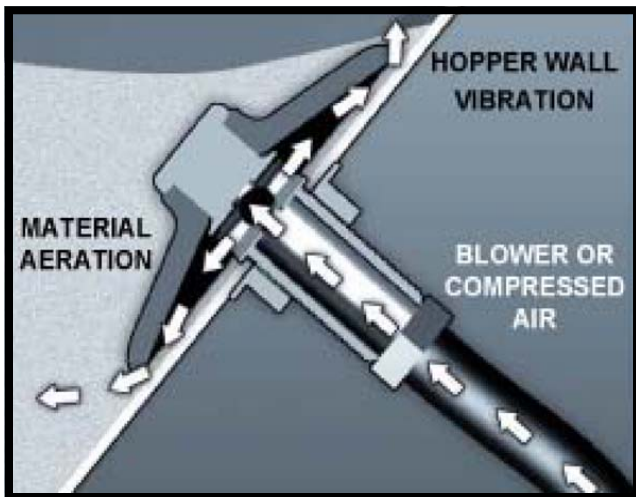
www.CementSilos.com



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PORTABLE Lo-Pro BATCHING SILO MANUAL



Aeration—loosens product allowing it to flow – minimum back pressure puts energy where it is needed the most – in the silo.

Directional Air Flow – forces air to move along the bin wall, freeing product, assuring good clean-out.

Gentle Vibration – keeps product flowing, without allowing it to compact or plug.

No Airline plugging— Disk seals tightly against the silo wall and prevents airline plugging.

Robust Design — Will not tear if cut, pick up moisture and is unaffected by temperatures up to 350° F (170° C) and up to 120 psi.

Material Compatible— Silicone rubber standard in blue or white (both food grade/FDA approved), or black or white EPDM.

BinFlow Specifications

Disk	4" Silicone Rubber
Stem	Mild Steel
Air Feed Fittings	1/4" or 1/2" NPT
Installation Hole	7/8"
Length of Stem	1 5/8"
Airline Options	3/8" - 1/2"
Capacity	10—20 CFM @ 20—30 PSI

BinFlo Applications

Silos, Bins, Hoppers, Rail Cars, Bulk Trailers

BinFlow Performance

Spacing Influence @ 20 PSI	24" from Each
Spacing Influence @ 30 PSI	36" from Each
Max PSI	120 PSI

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PORTABLE Lo-Pro BATCHING SILO MANUAL

Parts List

Standard Electric Drive

10hp 3ph Electric Motor, C-face

Gear Box B-11

80BS24- x 1 1/2" Sprocket

80BS18 x 2 or 80BS24 x 2 Sprocket

#80 Chain

9" x 17' -0 RH Auger Flighting

2" x 12 1/2" Tail Shaft

Bearing pack 1 1/2" & 2"

UHMW Block

Grease block 1 1/2" & 2"

150sq. ft Dust Collector

Electric Vibrator 2p75

8" x 48" Polyester Sock (18) D-741-s

250sq. ft Dust Collector

Electric Vibrator 2p75

8" x 72" Polyester Sock (18) D-742-s

Additional Parts

Solimar Binflo Fluidizer 4300 (9)

10 3/4" Vinyl Boot Sock

Electric Vibrator on cone B3-500-1A-2

Monitor High Level Indicator KA 115

Foam Seal on 20" manway (top)

Foam Seal on Pressure relief valve

Electrical Parts

Heaters (3)

600v 20A Mini Fuse

Midget TD Fuse 250v

Transformer 350VA

IEC Starter with overload relay

Programmable Automatic timer

Silo Serial # _____

Your parts may vary from above, Please have silo serial # available when ordering parts

Parts can be ordered through DSS at (888) 745-6797

1135 E. Wooley Rd. Ph # 805-247-0418
Oxnard CA, 93030 Fax # 805-247-0246

www.CementSilos.com

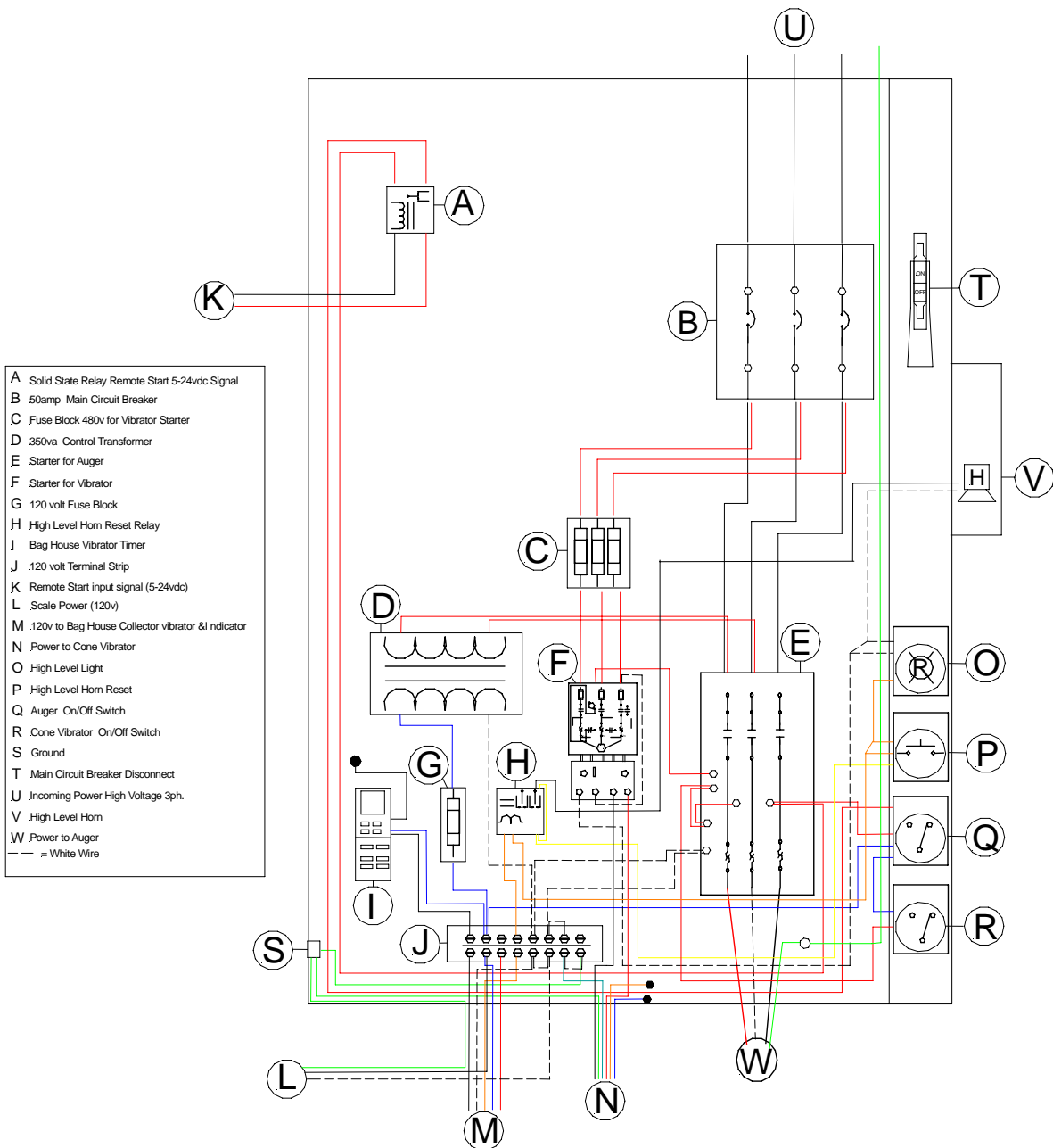


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PORTABLE Lo-Pro BATCHING SILO MANUAL

ELECTRICAL PANEL



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