POWER AUGER MIXING SYSTEMS
OPERATIONS & SAFETY MANUAL
ENGLISH EDITION

KEEP GOING. KEEP MOVING. KEEP WORKING.™

SPEC MIX®

PA1000 • PA4000

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The PA (Power Auger) systems are a low profile, gas or electric powered hydraulic auger dispensing material delivery system specifically engineered to increase a contractor's efficiency, flexibility and above all, safety. To ensure that a safe working environment is provided to all individuals who are operating or have contact with SPEC MIX equipment, please abide by the following safety and operation procedures for working with SPEC MIX PA systems and bulk bags.

Since safety is everyone's responsibility, we ask that you become familiar with these procedures yourself, and make sure that everyone operating or having any contact with SPEC MIX PA systems and bulk bags be familiar with and implement, the following procedures as well.

It is everyone's responsibility to be aware of the necessary precautions that must be taken to ensure that laborers are provided with a safe working environment; and that they implement safe handling and operating procedures for their own safety as well as others.

NOTE: These warnings do not constitute all possible safety hazards encountered in the use of such products on a construction site. All applicable OHSA regulations must be followed in the setup, relocation, cleaning, or use of the silo and product.

PA1000

FOOTPRINT	4 ft X 5 ft
CAPACITY	40 cubic feet
WEIGHT EMPTY	1,100 lb
WEIGHT FULL	UP TO 4,100 lb
SHIPPING SIZE	5 ft X 7 ft 6 in
SHIPPING HEIGHTS	4 ft 2 in COLLAPSED
HOPPER HEIGHTS	LOW SETTING: 4 ft 2 in
	HIGH SETTING: 5 ft 2 in
AUGER DISPENSING HEIGHTS	LOW SETTING: 5 ft
	HIGH SETTING: 6 ft

HYDRAULIC POWER PACK	2.8K7V
MOTOR OPTIONS	14 hp GAS MOTOR
	7.5 hp ELECTRIC MOTOR (220V, 30AMP, SINGLE PHASE)
HYDRAULIC OIL TANK	6 gallon CAPACITY
OIL OUTPUT	14 hp - 2,500 psi, 6 GPM
MIX OUTPUT	14 hp - 3,000 lb PER 7 MINUTES
FORKLIFT REQUIREMENTS	4,500 lb

PA4000

FOOTPRINT	7 ft 3 in X 6 ft 3 in
CAPACITY	150 cubic feet
WEIGHT EMPTY	2,000 lb
WEIGHT FULL	UP TO 17,000 lb
SHIPPING SIZE	7 ft 8 in X 8 ft 6 in
SHIPPING HEIGHTS	6 ft 3 in COLLAPSED
HOPPER HEIGHTS	LOW SETTING: 6 ft 3 in
	HIGH SETTING: 7 ft 7 in
AUGER DISPENSING HEIGHTS	LOW SETTING: 5 ft
	HIGH SETTING: 6 ft 4 in

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1. Inspect SPEC MIX PA system to make sure that it has been emptied.

WARNING: Do not enter the interior of the PA system hopper for any inspection or maintenance. If absolutely necessary, turn off the PA system and perform lockout procedures. All personnel must follow confined space entry procedures (OSHA).

2. Make sure the gas or electric power pack is securely locked or bolted into its place.

3. Secure top hatch handle with bolt and nut or lock-pin.

4. To lower the PA system (PA4000), slightly raise the system and remove leg pins & hitch pins from legs. Lower PA system then secure legs in collapsed position with leg pins.

5. Once lowered to the transportation mode, re-install leg pins and hitch pins to their original position to secure PA system's legs.

6. If the terrain the PA system is being transferred over is rough and uneven, secure a third contact point between PA unit and forklift using chain or strap with minimum tensile strength of 5,000 pounds live working load.

7. Slowly and carefully load the PA system onto the trailer following accepted U.S. DOT procedures.

8. Secure PA system to the trailer using DOT approved chains or straps and ratchets with a minimum of 5,000 pounds tensile strength per ratchet.

9. Remove any debris or material from PA system or trailer bed before traveling.

1. Select a position on the jobsite where the ground is dry, compacted, level and stable.

NOTE: To ensure the stability of the PA system, dry, compacted, level ground MUST be available for set up, or the unit should NOT be erected or used.

2. Softer soil will require the use of either footings or concrete pads of 24 x 24 x 6 inches of reinforced concrete with a minimum compressive strength of 3,500 psi.

3. Foot pads should be constructed of three separate pieces of 24 x 24 inch treated plywood that are ¾ inch thick and laminated together with screws or of 24 x 24 x 1 inch steel pads. Discard footpads when punctured. Each PA system requires four footpads.

NOTE: A proper capacity forklift must be utilized to lift the standard weights of the PA system and material being used. (See PA specifications on Page 3).

4. If the terrain the PA system is being transferred over is rough and uneven, secure a third contact point between PA unit and forklift using chain or strap with minimum tensile strength of 5,000 pounds live working load.

5. Slowly lift and recline forklift position while making sure no objects or people are in the way.

6. Place the PA system on the best suited location on the project site.

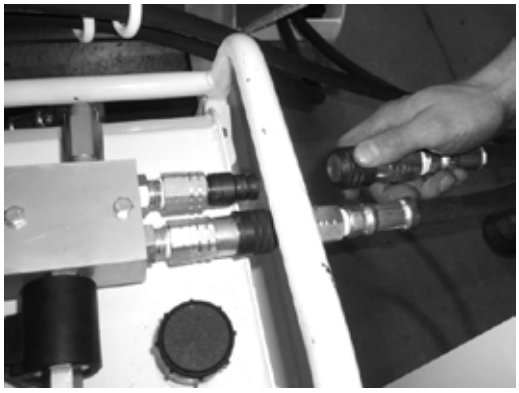
7. By slightly raising the PA system, remove all four leg pins allowing silo legs to telescope to full adjustment.

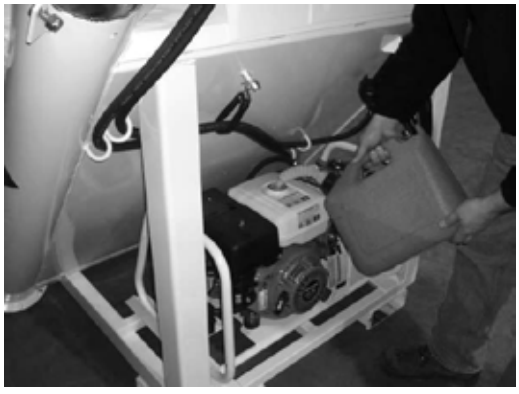
WARNING: Keep legs, feet and hands clear of PA system legs as they are lowered.

8. Raise tower to desired height until holes in PA system leg match holes in receiver tube assembly.

9. Secure PA system by inserting all four leg pins at the desired height, then insert the safety hitch pins in the holes of the four leg pins to lock the leg pins in place.

10. Re-insert leg pin through receiver tube and leg assembly while standing outside of the perimeter of PA system.





NOTE: It is very important to follow the proper start-up and inspection procedures for the SPEC MIX PA systems to ensure safe, reliable and efficient operation.

1. With the PA system turned off and locked out, check material flow basket and both augers for positioning, obstructions or defects.

2. Connect Hydraulic Hoses: Verify that the hydraulic hoses are coupled into position and connected properly to the valves on the power pack.

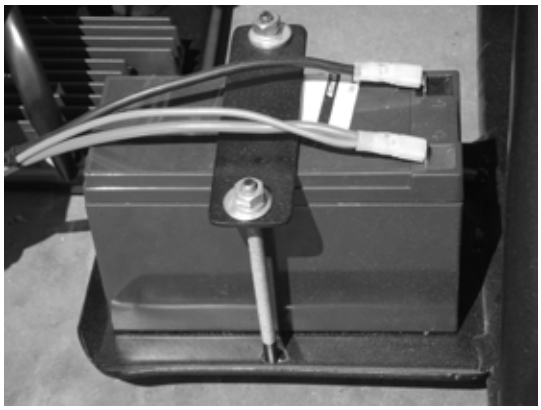
3. Filling the Hydraulic Oil Reservoir Tank: Open the cap on the hydraulic oil tank and ensure the tank is filled with 5 gallons of standard hydraulic oil. If not, add the appropriate amount of hydraulic oil. Close the cap on the tank, run the unit and check the oil level again. Top off hydraulic oil until a full reading is taken on the dipstick. Use heavy weight hydraulic oil in the summer (hot weather conditions) and light weight hydraulic oil in the winter (cold weather conditions). Change hydraulic oil every 500 hours of use or with the change in seasons. Always change the hydraulic oil filter when changing hydraulic oil.

4. Filling & Checking Engine Oil: Fill the motor oil reservoir with 5W-30 motor oil until a full reading is achieved on the motor oil dipstick. Change the motor oil after the first 20 hours of operation and then after every hundred hours of operation. The run time on the motor can be located in the run time timer.

5. Filling Gas Engine: Fill the gas reservoir on the motor with UNLEADED gasoline only.

6. Greasing Auger Zerts: There are two grease zerts on each PA unit. One is at the lower bearing of the discharge auger opposite the hydraulic motor and the other is on the end of the bottom auger opposite the hydraulic motor. Grease before use and then grease on a weekly basis.

7. Connecting Battery: Connect the red wire to the positive connection and the black wire to the negative connection on the battery. If the unit does not turn over when turning the key, replace the battery.



8. Adjusting the Hydraulic Pressure: The hydraulic pressure comes preset; however, the pressure may be adjusted up or down on the unit. To adjust the pressure, locate the valve mounted on the hydraulic oil tank of the power pack. Using an Allen wrench, remove the cap at the rear of the valve. Then insert an Allen wrench into the cap and turn clockwise to increase pressure or counterclockwise to decrease pressure.

IMPORTANT NOTE: The hydraulic pressure should rarely, if ever, need adjustment. Contact your local representative prior to adjustment. Adjustment should be done by a qualified mechanic only. If the PA System is not dispensing material or appears to be jammed up, contact your local supplier.

9. Prior to loading the PA system, turn it on to ensure proper function while it is empty. Make sure the fuel switch is in the “On” position. Open the choke, if necessary. Position the throttle to a low/medium position. Turn the electric ignition key to start the motor. Close the choke upon ignition. Slowly increase the throttle to an operating level.

10. Use the corded auger switch to engage the augers. Make sure the augers are turning the appropriate direction to dispense material. Turn off the motor by turning the key to the off position prior to loading the PA system.

1. While standing on the ground, slide the outer plastic cover down to the pallet level of the material bulk bag. At this time, inspect the overall condition of the bulk bag giving special attention to the bag's lifting loops. Check for fraying on both sides. If the strap appears stressed, set the bag and pallet aside for replacement and recover to protect the material inside.

2. Save the product identification card or batch ticket located inside the plastic cover. This will verify the product delivered matches the product ordered, which may be useful during the construction process.

3. Once the bag has passed the visual inspection, insert the forklift forks through the four lifting loops. The forks should easily slide to a position where all four loops are on the forks as far as possible. It is important the loops do not leave this position before lift tension is applied.

4. To improve flow, open the top spout of bag.

5. From an area opposite the side of the silo safety rail platform or wherever the silo loading operator is stationed, carefully raise the bag to the silo hatch. At no time should personnel be under the suspended bulk bag. The forks should be at a reclined position while raising the bag to a distance of 3-4 feet above the loading hatch. The bag can now be slowly lowered to a point where the bottom of the drop spout is 4-6 inches above the PA flow basket. Hand communication signals should be used to indicate when the bag has been lowered the appropriate distance.

WARNING: Do not allow the bag to rest on the top of the PA system.

6. The laborer/operator can now climb the ladder to the safety railed platform once the bag is in this position.

WARNING: The person on the platform must securely attach both safety chains across the entry point when on the safety railed platform.

7. The design of the PA system and bags is such that the material charging of the silo can be done without accessing the PA system top.

WARNING: Stay off the top of the PA system. All PA system loading is to be done from the safety platform or ground only.

8. After the bag is positioned over the hatch, slide the silo hatch open.

9. Using the SPEC MIX Safety Hook grasp and pull the hitch pin closure or plastic closure pin located on the outer tie on the bottom of the bag. This will open the protective outer flap encompassing the bag's discharge chute.

10. With the same SPEC MIX hook, pull the tagline on the inner chute tie downward allowing it to unravel into the open PA hatch and dispense material down into the unit. There will be two separate bag ties to unlock with the safety hook.

WARNING: Product dust may be hazardous. SPEC MIX contains Portland cement and lime, masonry cement, mortar cement, additives, sand and/or color pigment that may cause eye and/or skin irritation. We advise anyone using our product to wear a NIOSH-approved dust protection mask, eye protection, gloves, and appropriate clothing to help protect from possible injury. Wash hands thoroughly after handling. In case of eye contact, immediately flush with plenty of water for at least 15 minutes. Contact a physician immediately. Keep out of the reach of children.

11. Repeat these exact procedures for each bag emptied into the silo for charging.

REQUIRED EQUIPMENT

Hard Hat
Gloves
Safety Harness
Safety Goggles
Dust Mask Recommended

1. Position mixer under the flexible boot on the end of the discharge auger to facilitate dumping of mixed product into mud box or tub.

2. Place discharge chute as close as possible to mixer protective grate or orifice. The height of the PA system can be raised or lowered to accommodate most any mixer. See instructions “Assembling PA systems”.

3. Start the mechanical mixer or mixer-pump.

4. Introduce 2/3 of needed mixing water into mixer. Start the PA system (see starting instructions in “Starting up” section. Next, locate the corded auger switch that controls the flow of SPEC MIX preblended material into the mixer. This is on a cord that extends from the power pack.

5. To start the flow of material, push the switch forward or backward to allow a steady stream of material to flow into the mixer.

NOTE: Do not leave the switch unattended while charging the mixer.

6. Adjust mix as needed by adding either more water or SPEC MIX in order to obtain a workable or optimal consistency.

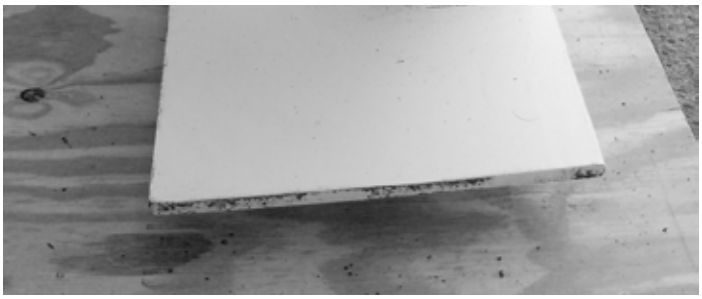
7. Mixing times are 4-5 minutes per batch unless otherwise specified in the Product Data Sheet’s mixing instruction section. Mix each batch fully according to standards.

WARNING: Injurious to eyes, lungs. Causes skin irritation. SPEC MIX contains portland cement and lime, masonry cement, mortar cement, additives, sand and/or color pigment.

8. Avoid eye contact, prolonged breathing of dust or contact with skin. Recommended are appropriate eye protection, gloves and the proper clothing to protect from prolonged exposure.

9. Wash hands thoroughly after handling. In case of eye contact, immediately flush with plenty of water for at least 15 minutes and consult a physician. Protect from prolonged exposure.

10. When finished using the PA system on the project or before relocation, follow clean-out procedures. See “Cleaning out the SPEC MIX PA system” in Relocating PA system.

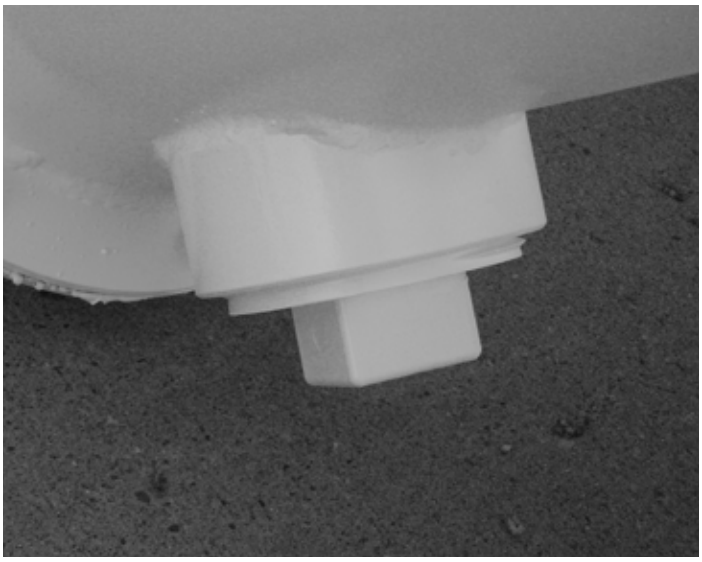


1. One of the many advantages of the SPEC MIX PA system is the easy relocation of the equipment. The ability to move the PA system around the jobsite enables the forklift operator to deliver mortar quickly and efficiently.

2. Select a position on the jobsite where ground is dry, compacted, level and stable. (See additional requirements in "ASSEMBLING SPEC MIX PA systems.")

3. Empty PA system as much as feasible or as much as possible. (Material may be re-loaded into an empty bag if necessary.)

4. **Cleaning Out the SPEC MIX PA systems:** Run the PA system until material stops flowing from the discharge auger and the interior of the PA system appears to be reasonably free of material. To completely clean the PA system out, remove the threaded cap at the lower end of the discharge auger. Allow the material to drain until it stops, then engage the motor and run the augers keeping hands out of the cleanout hole. Place a container underneath the cleanout to catch the material as it flows out. Use or discard appropriately.



WARNING: Do not enter interior of the PA system hopper for any inspection or maintenance. If absolutely necessary, turn of the PA system and perform lockout procedures. All personnel must follow confined space entry procedures (OSHA).

NOTE: The PA1000 and PA4000 weigh approximately 1,200 to 2,200 pounds, respectively. See PA System specifications on page 3 above for more specifics.

5. Remove mixer and any obstructions that may hinder the freedom of movement, including any hardened material around base of silo legs and foot pads.

6. With the PA system empty and turned off, insert the forklift forks into the PA unit's fork tubes to their full depth.

NOTE: A proper capacity forklift must be utilized to lift the standard weights of the PA system and material being used. See PA system specifications above.

7. Slightly raise PA system and remove hitch pins and leg pins from legs. Lower PA system while manually raising ladder to avoid damage, if the model is equipped with a ladder.

8. Once lowered to the transportation mode re-install leg pins and hitch pins to their original position.

9. If the terrain the PA system is being transferred over is rough and uneven, secure a third contact point between PA unit and forklift using chain or strap with minimum tensile strength of 5,000 pounds live working load.

NOTE: The third contact point is necessary for preventing the PA system from sliding off the forklift forks during any jobsite transportation.

10. Slowly transport PA system to new location.

11. Follow same guidelines for initial erection of PA system paying note to soil conditions as before.

12. Re-charge PA system following the instructions for Loading SPEC MIX Power Auger Systems.

1. Maintenance begins on the day the silo is delivered.
   a. PA system should be coated with release agent as supplied by Arrow/Mag-nolin, ZEP, or other manufacturer.
   b. Make sure all warning signs and decals are in appropriate locations on PA system and work platform. If not, contact your local rep.
   c. Check power pack, ladders, legs, augers, discharge boots for all parts, alignment, and ease of operation.
   d. Check all leg pins, hitch pins, cables, stabilizer nuts and bolts, hatches, and safety chains for ease of operation and proper locations.
   e. Upon silo erection at jobsite, cover legs with poly, form release agent or utilize another method to protect leg assemblies, and foot pads from material collection.

2. Daily maintenance to be performed by contractor:
   a. Keep top hatch free of excess material in order to facilitate ease of opening and closing.
   b. Check safety chains for stress.
   c. Check discharge chute for proper height rips or tears. Replace as needed.
   d. Check to make sure all warning signs are visible and in their proper location.
   e. Check to ensure that all non-skid tapes are in place.
   f. Check to make sure that all handles, chains, leg pins, hitch pins, and cables are in place and not bent, cut or damaged. If so, replace immediately.
   g. Inspect PA legs for alignment, dents or bending. Replace PA system immediately if necessary.
   h. Check PA system for plumb and level.
   i. Check position of all four 24 x 24 inch foot pads.

3. Power Pack Daily/Weekly Maintenance:
   a. Inspect and Clean air filter on motor after every day of use. Install new air filter if it is excessively dirty or damaged.
   b. Check hydraulic oil for proper level. Adjust as needed.
   c. Check Motor oil on gas power pack for proper level. Adjust as needed.
   d. Check grease zerts weekly and add grease as necessary.

4. Upon return to Distributor or SPEC MIX Licensee, check the following and correct or replace as needed.
   a. All signs are clean and visible.
   b. All safety chains and clasp are operational.
   c. PA unit is clean and empty.
   d. Discharge chute is not cut, torn or weathered.
   e. Material flow basket is intact, clean and operational.
   f. Legs are free of mortar build-up.
   g. Top of PA unit is free of excessive mortar build-up.
   h. Top hatch integrity is sound and free of defects, broken welds or supports and free of mortar build up.

NOTE: Damaged PA legs affecting the integrity of the PA system must be replaced immediately before PA set up or any continued use.

NOTE: There is no replacement schedule for the hitch pins unless a manufacture defect is evident.

WARNING: Do not enter the interior of the PA system hopper for any inspection or maintenance. If absolutely necessary, personnel must follow confined space entry procedures as outlined by OSHA.

SPEC MIX PA systems have undergone constant improvement since their inception. Some retrofit actions are necessary to maintain the highest safety standards.

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