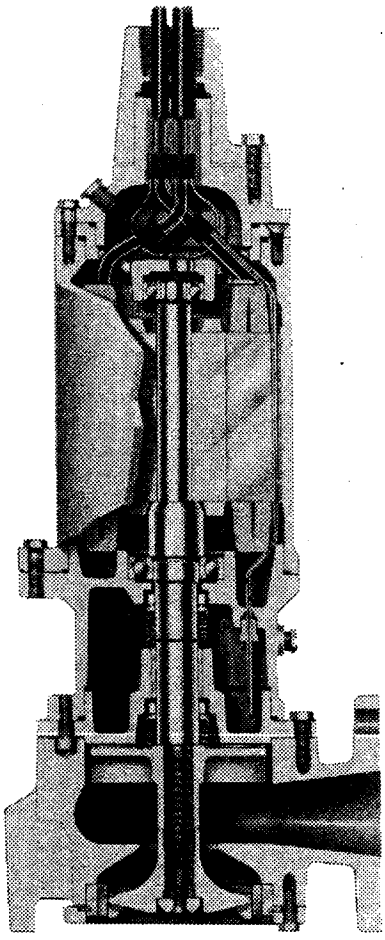
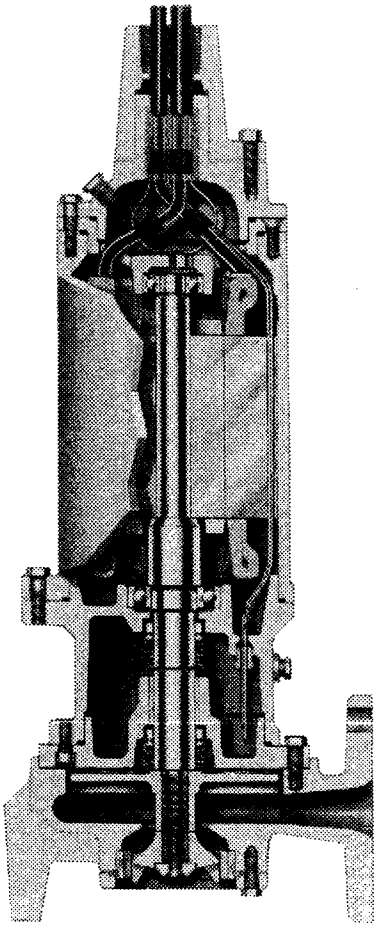
WG30 & WG30H
WG50 & WG50H
WG75H
Grinder Pumps

INSTALLATION AND SERVICING INSTRUCTIONS FOR MYERS WG75H,WG50, WG50H, WG30 AND WG30H GRINDER PUMPS 3, 5 AND 7½ HORSEPOWER 3450 RPM



HIGH CAPACITY GRINDER PUMP WG



HIGH HEAD GRINDER PUMP WGH

13800A876

PUMP MODELS—The 3, 5, and 7½ HP grinder pumps are made in two models. The WG50 and WG30-5 and 3 HP units are for high capacities at medium head conditions. (See curve sheets Page 304.) The WG75H, WG50H, and WG30H-7½, 5, and 3 HP units are for lower capacities at higher heads. (See curve sheet Page 304.) Both series are made for single phase 230 volts and three phase for 200, 230, 460 and 575 volts. (See Fig. 1 and Fig. 2 for pump construction.)

PACKAGING—Each pump with 25 ft. of power and control cable is packed in cardboard carton with wooden support base. Catalog number and engineering number are labeled on the carton.

INSTRUCTIONS—These instructions cover only the pump unit. Other instructions for lift out rail system and electrical controls are included with those items. Complete disassembly instructions are furnished only to authorized service stations.

CAUTION – PUMP IS NOT TO BE DISASSEMBLED IN THE FIELD EXCEPT AT CERTIFIED SERVICE STATIONS OR AT MYERS FACTORY. WARRANTY IS VOID IF PUMP IS TAKEN APART FOR ANY REASON EXCEPT TO REPLACE GRINDER IMPELLER AND GRINDER RING WHICH IS COVERED IN THESE INSTRUCTIONS.

DESCRIPTION OF PUMP – Fig. 1 and Fig. 2 are cut-away drawings of pump showing both high capacity and high head types. All motor components except shaft are the same on both series.

These pumps are designed for the rugged service of grinding and pumping commercial and industrial sewage. They are not intended for pumping *heavy slurries* or liquids containing *abrasives or corrosive* elements.

Three phase motors are generally used for commercial and industrial service but single phase motors are available where 3 phase

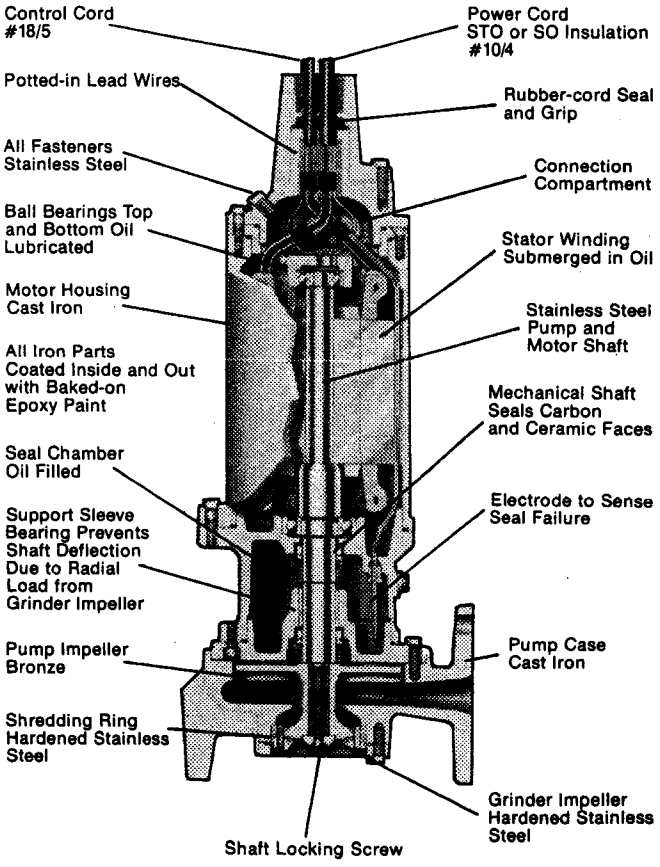


FIG. 1

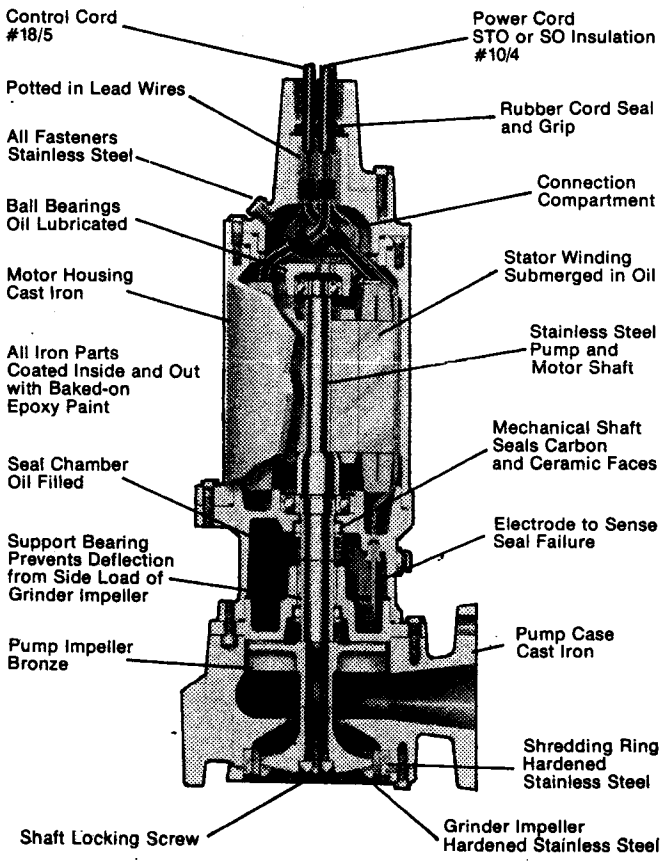


FIG. 2

cannot be obtained especially in rural areas. Transformers must be large enough to maintain full voltage for single phase. Low voltage on large single phase motors can cause considerable trouble and motors are not guaranteed to operate on low voltage. All single phase motors must have special electrical control box furnished by Myers.

INSTALLING SINGLE PHASE MOTORS WITH CONTROLS OTHER THAN MYERS VOIDS WARRANTY.

Pump motor chamber and seal chamber are oil filled for long life and best heat transfer.

The seal chamber is provided with an electrode to give signal to control panel if water enters the seal chamber due to worn or faulty lower seal.

Motor is provided with a heat sensor that automatically stops motor if overheating occurs for any reason. This sensor resets as soon as motor temperature drops to safe range. Heat sensor trips at 200°F. Additional overload heaters are used in the control box to trip under overload conditions.

MOTOR CORDS – Each pump motor has two cords, one large power cord and one small control cord.

Both cords are the same for single and three phase. The power cord is a 4 conductor type with ST or SO 600 volt insulation. The wires are color coded blue, black, red and green. For 3 phase the blue, black and red lines are power lines and the green is ground. For single phase the black and blue lines are power and the red is for start winding and the green is ground. All cords are CSA and UL approved.

Any three phase motor can be reversed by interchanging any two line leads. Single phase motor is single rotation only. Correct motor rotation is counterclockwise when looking at the grinder end of pump.

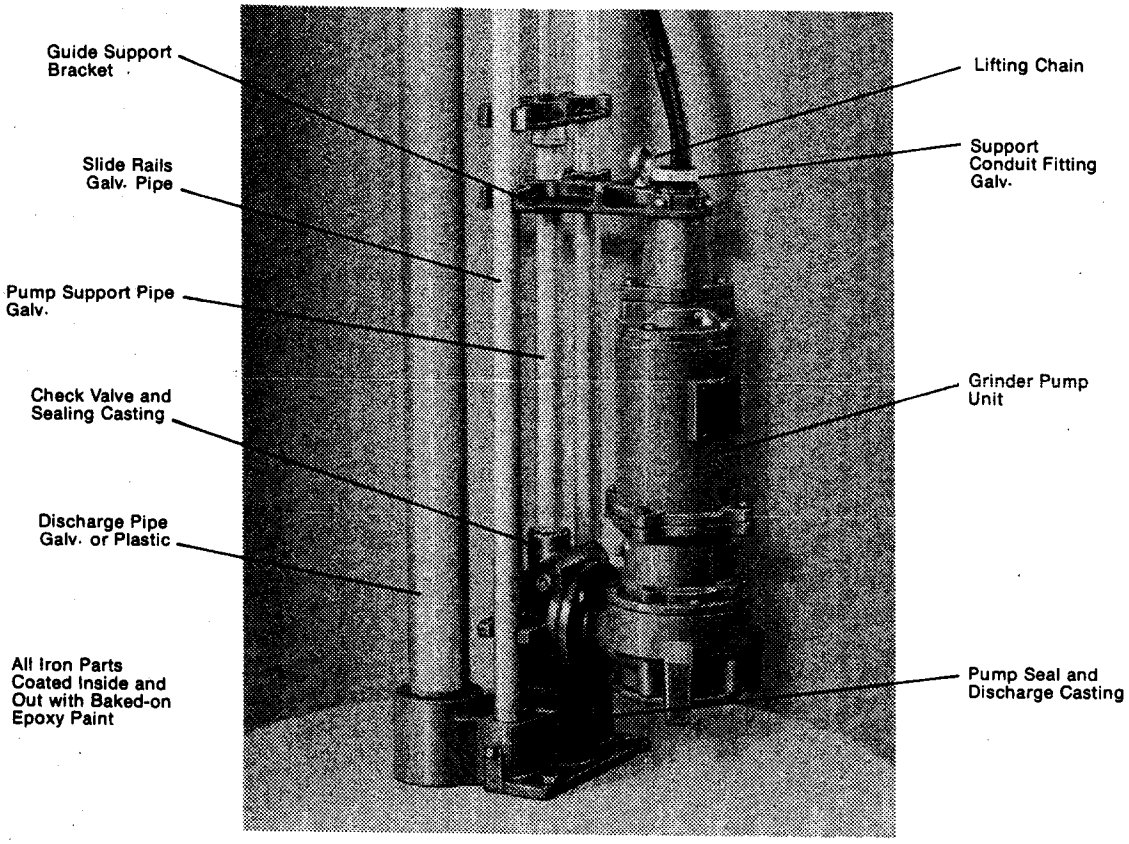


FIG. 3

The control cord is a 5 conductor type with ST or SO 600 volt insulation. The black and white leads connect to heat sensor and the red conductors connect to seal failure, green is ground.

All green ground wires connect to screw terminal in motor connection housing and to grounding bar in electrical control box.

IMPORTANT - These ground wires must be connected in control box to grounding bar that is connected to a good outside ground. MOTOR IS NOT SAFE UNLESS GROUNDED.

INSTALLING PUMP IN SUMP - These pumps re usually installed in concrete or fiberglass basins with the lift-out rail system. Fig. 3 shows pump mounted on the rail system. Instructions for installing rail system is furnished with rail package.

If pump is not installed with lift-out rail system it must be properly supported to discharge pipe so that space is provided under pump for entrance of sewage. Pump inlet should not be closer than 5 inches from bottom of sump.

It is not generally desirable to install these pumps without the rail system except on special O.E.M. packaged systems.

STARTING PUMP AFTER INSTALLING IN SUMP BASIN - If pump is 3 phase pump rotation must be checked. Before lowering pump into basin connect power lines and start motor using H-O-A switch in the hand position. Grinder impeller should turn counterclockwise when looking at grinder impeller. If rotation is wrong interchange any two line leads at control box

CAUTION - keep hands completely away from grinder impeller when making this check.

Disconnect line leads from panel and mark wires so they can be reconnected in same manner as used for test.

THREE PHASE CONTROL BOX - Any suitable three phase control equipment can be used for simplex or duplex operation. These control boxes are also available from Myers. If other than Myers box is used overload heaters must be selected in accordance with full load amp ratings given in this instruction booklet.

SINGLE PHASE CONTROL BOX - Single phase pumps must use the Myers control box.

Warranty is void if other than Myers single phase control box is used.

MAXIMUM AMP & WINDING RESISTANCE VALUES

MODEL	HP	SPEED	VOLTS	PHASE	WINDING RESISTANCE IN OHMS			MAX. AMPS
					BLACK TO WHITE	BLACK TO RED	RED TO WHITE	
WG30-21	3	3450	230	1	.47	3.14	3.61	36
WG30-03	3	3450	200	3	.72	.72	.72	20.5
WG30-23	3	3450	230	3	.72	.72	.72	17.8
WG30-43	3	3450	460	3	2.9	2.9	2.9	8.9
WG30-53	3	3450	575	3	6.5	6.5	6.5	7
WG50-21	5	3450	230	1	.47	3.14	3.61	43
WG50-03	5	3450	200	3	.72	.72	.72	28.5
WG50-23	5	3450	230	3	.72	.72	.72	24.8
WG50-43	5	3450	460	3	2.9	2.9	2.9	12.4
WG50-53	5	3450	575	3	6.5	6.5	6.5	9.9
WG30H-21	3	3450	230	1	.76	5.15	5.91	21
WG30H-03	3	3450	200	3	1.48	1.48	1.48	15
WG30H-23	3	3450	230	3	.98	.98	.98	13
WG30H-43	3	3450	460	3	3.9	3.9	3.9	6.5
WG30H-53	3	3450	575	3	11.4	11.4	11.4	5.2
WG50H-21	5	3450	230	1	.47	3.14	3.61	32
WG50H-03	5	3450	200	3	.72	.72	.72	21.6
WG50H-23	5	3450	230	3	.72	.72	.72	18.8
WG50H-43	5	3450	460	3	2.9	2.9	2.9	9.4
WG50H-53	5	3450	575	3	6.5	6.5	6.5	7.5
WG75H-03	7½	3450	200	3	.72	.72	.72	25.8
WG75H-23	7½	3450	230	3	.72	.72	.72	22.4
WG75H-43	7½	3450	460	3	2.9	2.9	2.9	11.2
WG75H-53	7½	3450	575	3	6.5	6.5	6.5	9

If amp readings are higher than listed it indicates voltage may be higher or lower than normal or that pump grinder may be clogged with trash causing extra load on motor.

CHECK LIST IF PUMP DOES NOT OPERATE PROPERLY

CHECKING FOR MOISTURE IN MOTOR – Use ohmmeter and set on highest scale. Readings on the large power cord between any of the conductors red, black, white to green conductor or motor shell should be more than 500,000 ohms. Motor probably will run with a lower reading, but if pump is out of service and reading is below 500,000 ohms the motor housing and stator should be removed and baked in a drying oven at 220°F. To be serviced only at authorized service station.

Readings should be taken with line leads disconnected from terminal strip.

RESISTANCE OF WINDINGS – Every motor winding has a fixed resistance and winding must check close to the values given below to operate properly. This winding resistance also shows if motor is connected for voltage being used.

Use ohmmeter for this test and set on scale to read directly in ohms.

TROUBLE CHECK LIST – Troubles listed are generally caused by the pump. Other trouble can occur from faulty control box operation.

These will be listed with the control box instructions.

CONDITION	PROBABLE CAUSE
Pump runs but does not pump liquid from basin.	1. Pump impeller may be air locked, this occasionally occurs on a new installation. Start and stop pump several times to purge air. 2. Run additional water into basin so that pump will be submerged deeper to clear air. 3. If pump is three phase, rotation may be wrong. See instructions for checking proper rotation. 4. If air does not clear it may be necessary to lift pump out of sealing elbow and start motor to allow pump to pump for a few seconds. Airvent hole is provided in pump case, so some water will flow from this hole when pump is operating. If vent hole gets clogged clean out. 5. If pump has been installed for some time and does not pump, it may be clogged at grinder inlet. 6. Discharge gate valve may be closed. 7. Discharge check valve may be clogged or have a broken clapper. 8. Discharge head may be too high. Check elevation. Maximum pump head at zero flow is shown on pump curve sheet. 9. If above checks do not locate trouble, motor rotor may be loose on shaft which allows motor to run but will not turn impeller or only at low RPM.

TROUBLE CHECK LIST (Con't)

CONDITION	PROBABLE CAUSE
Red light comes on at control box.	This indicates some water has leaked past the lower seal and has entered the seal chamber and made contact with the electrode probe. Pump must be removed from basin within approximately two (2) weeks for replacement of lower seal. This preventative repair will save an expensive motor.
Overload trips at control box and alarm buzzer or flashing red light comes on due to high water level in basin.	1. Push in on red reset button to reset overload. If overload trips again after short run, pump has some damage and must be removed from basin for checking. 2. Trouble may be from clogged grinder causing motor to overload or could be from failed motor. 3. Trouble may be from faulty component in control box. Always check control box before removing pump.
Yellow run light stays on continuously.	1. Indicates H-O-A switch may be in the hand position. 2. Level control switch may have failed causing pump to continue to operate when water is below lower weight, or lower weight may have dropped off. 3. Grinder assembly may be partially clogged causing pump to operate at very reduced capacity. 4. Gate valve or check valve may be clogged causing low pump flow. 5. Pump may be air logged.

TROUBLE CHECK LIST (Con't)

CONDITION	PROBABLE CAUSE
Circuit breaker trips.	1. Reset breaker by pushing clear down on handle then back to on position. If breaker trips again in few seconds it indicates excessive load probably caused by a short in the motor or control box. Check out instructions given with control box before pulling pump. 2. If this condition happens after an electrical storm, motor or control box may be damaged by lightning. 3. Resistance reading of the motor with lead wires disconnected from the control box can determine if trouble is in motor or control box.
Pump is noisy and pump rate is low.	1. Grinder assembly may be partially clogged with some foreign objects causing noise and overload on the motor. 2. Grinder impeller may be rubbing on grinder ring due to bent shaft or misalignment.
Grease and solids have accumulated around pump and will not pump out of basin.	1. Lower weight of level switch may be set too high. Set bottom of lower weight even with bottom of inlet flange to grinder. 2. Run pump on hand operation for several minutes with small amount of water running into basin to clean out solids and grease. This allows pump to break suction and surge which will break up the solids. If level switch lower weight is set properly this condition generally will not occur. 3. Trash may have accumulated around lower weight causing pump to turn off too soon. Clean trash from weight and suspension cable.

REPLACING GRINDER IMPELLER AND GRINDER SHREDDING RING

This is the only disassembly operation allowed in the field. All other repair must be done at factory or at authorized service station.

STANDARD TOOLS REQUIRED:

1. Allen head socket set.
2. Standard socket wrench set.
3. Set of open end wrenches.
4. Plastic hammer.
5. Vise Grip pliers.
6. Large screwdriver 5/8" wide blade. Heavy handle.
7. Wire brush.
8. Three cornered file.
9. Several smaller screwdrivers.

IMPORTANT – Pump should be thoroughly cleaned of trash and deposits before starting disassembly operations.

CAUTION – DISCONNECT ALL POWER AND CONTROL WIRES TO MOTOR AT CONTROL PANEL BEFORE STARTING DISASSEMBLY OPERATIONS. NEVER RELY ON OPENING CIRCUIT BREAKER ONLY.

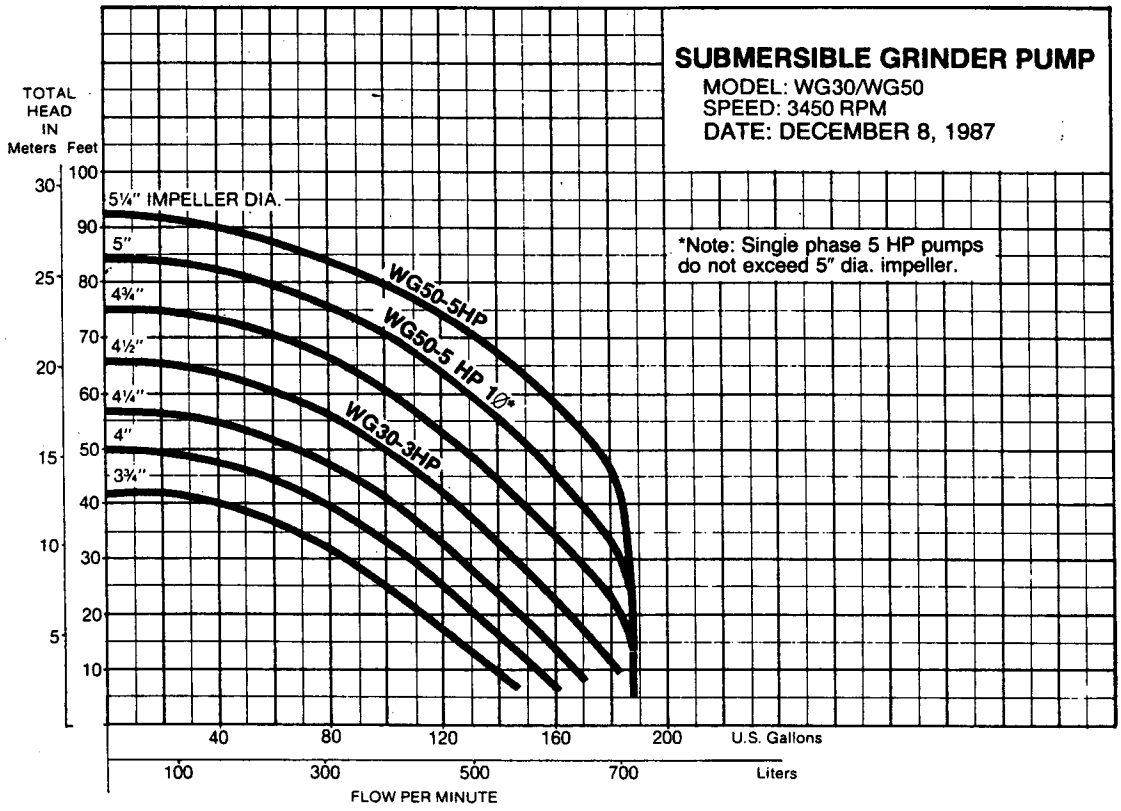
DISASSEMBLY OF SHREDDING RING AND IMPELLER

1. Remove screws from holding ring and remove ring.
2. Use two screwdrivers, one each on opposite side of ring and pry on snap ring that holds shredding ring in place. Remove shredding ring.
3. Hold impeller by prying against impeller cutting bar and remove cap screw from end of shaft.
4. Use large screwdriver in slot in end of shaft and bump on cutter vane with plastic hammer. Bump in counterclockwise direction as thread is right hand. It may take several bumps to loosen impeller.

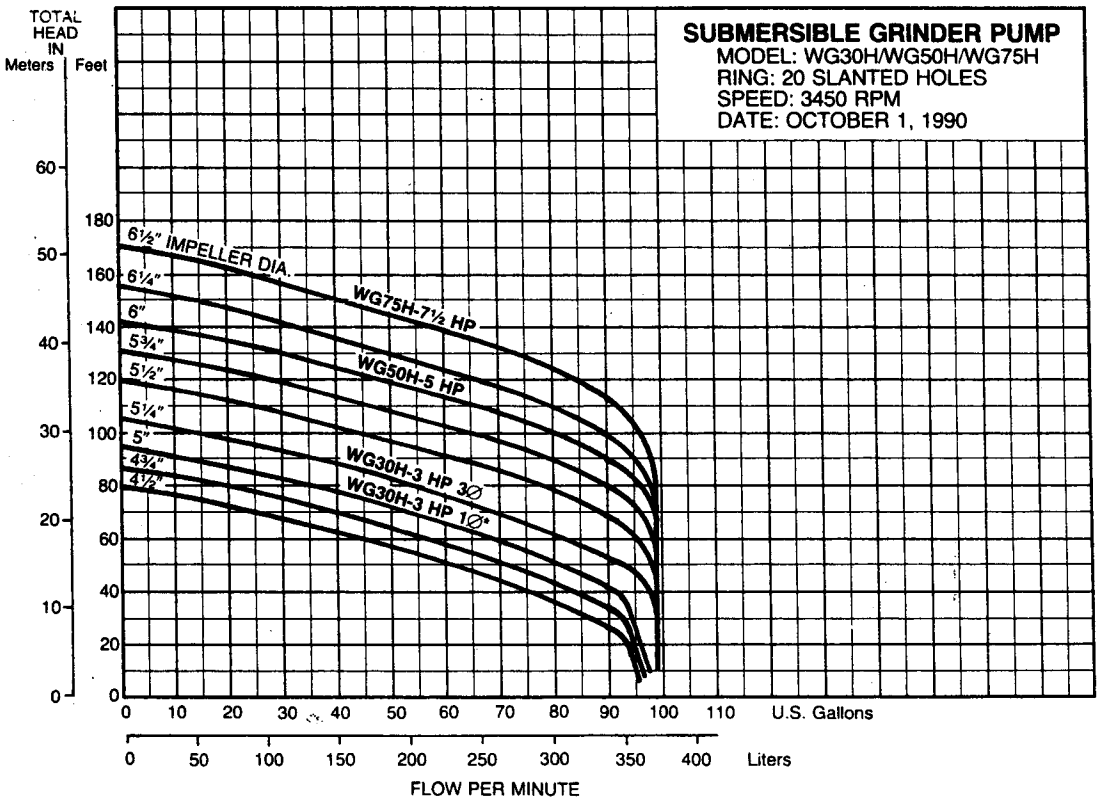
   If impeller cannot be loosened it will be necessary to take unit to service station for service. DON'T CONTINUE TO POUND ON IMPELLER AS IMPELLER AND SHAFT CAN BE DAMAGED.
5. If impeller comes off easily clean up and replace if worn.
6. Be sure pump impeller has not loosened when grinder impeller is removed. This can be checked on reassembly of grinder impeller and shredding ring. Tips of impeller cutter vanes should extend about 1/8" below bottom of shredding ring. If more than 1/8" extends below ring it means pump impeller has loosened. See sectional drawing Fig. 1 or Fig. 2.

   Remove grinder impeller and ring as described above and remove bolts from pump case and remove case. Use back off screws in motor mounting plate to pry loose from pump case.
7. After case is removed wrap emery paper around shaft and hold with vise grip pliers. Use cloth on impeller and screw up against shoulder. Now pump can be re-assembled.
8. Clean all threads with wire brush and file smooth any threads that may be nicked.
9. Use Never-Seeze or other graphite compound on threads before replacing grinder impeller.
10. Be sure cap screw in bottom of shaft is tight. Hold impeller with screwdriver between cutter bar and teeth of shredding ring while tightening cap screw.
11. Be sure impeller turns free by hand after reassembly. Some drag will occur due to seals but there should be no binding or tight spots when turning the grinder impeller.
12. ALWAYS use a rag on the impellers when turning to prevent cutting hands on the sharp corners of shredding ring.

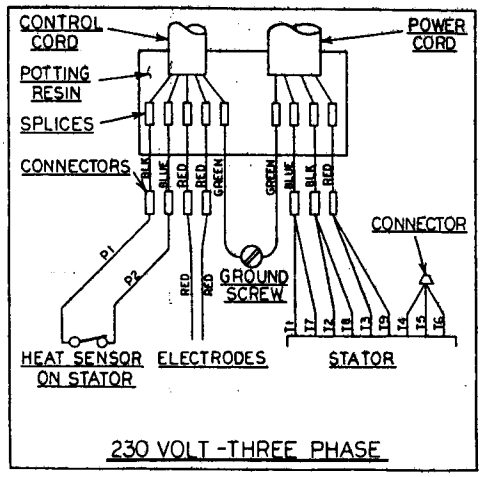
Myers pump performance curves



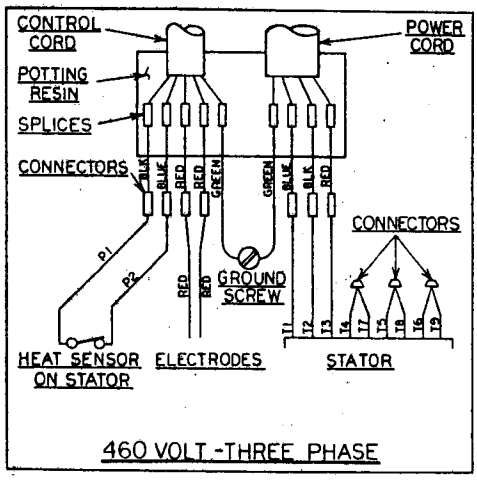
Myers pump performance curves



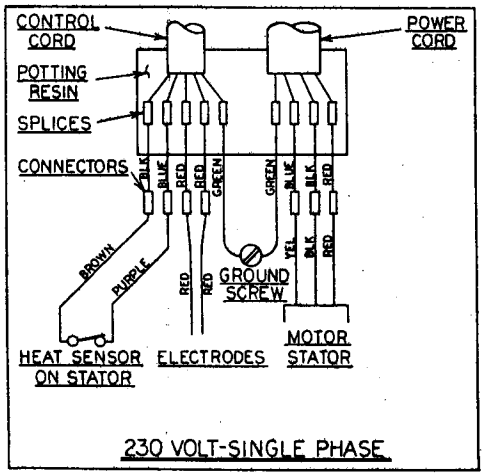
WIRING DIAGRAMS



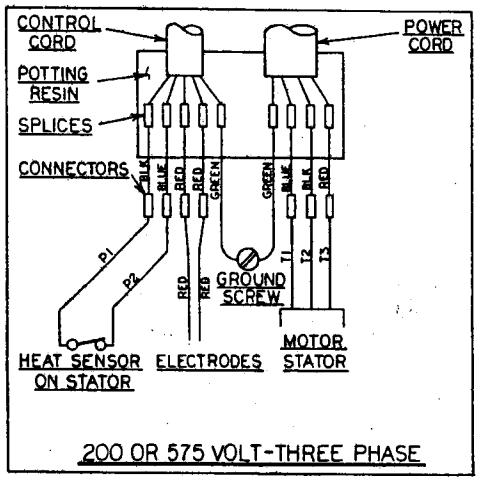
230 VOLT - THREE PHASE



460 VOLT - THREE PHASE

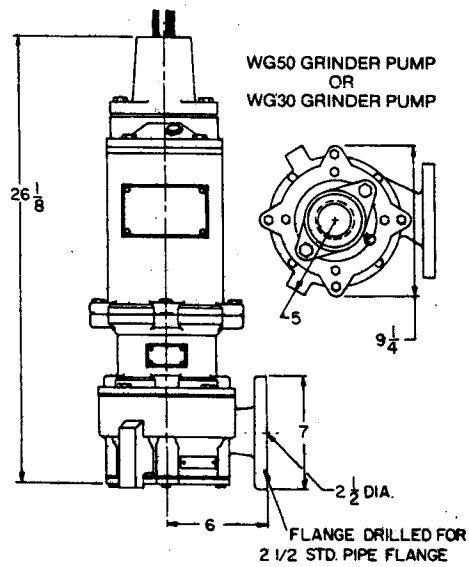


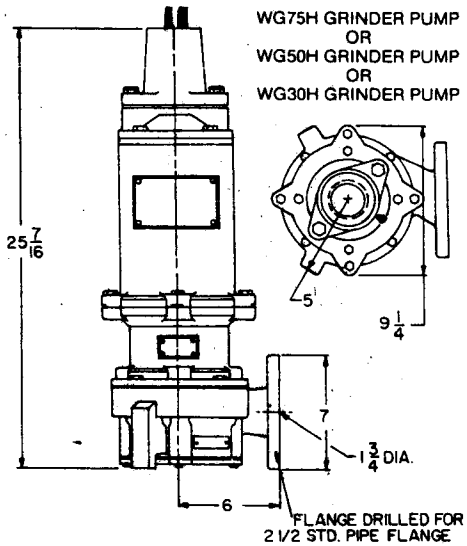
230 VOLT-SINGLE PHASE



200 OR 575 VOLT-THREE PHASE

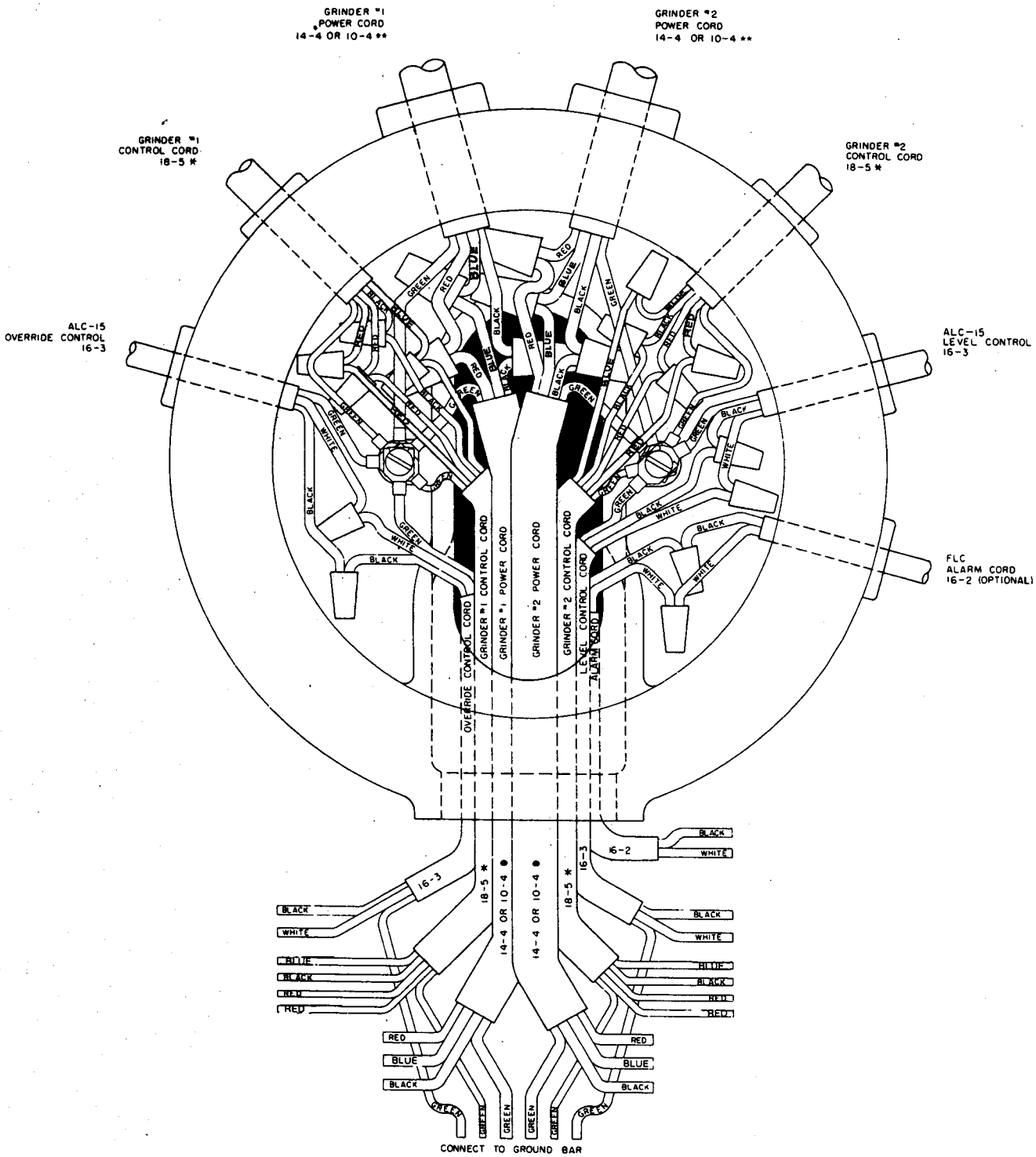
DIMENSIONAL DIAGRAMS





BOX CONNECTION, DUPLEX GRINDER SYSTEM ALC SWITCH AND FLC ALARM CONTROLS

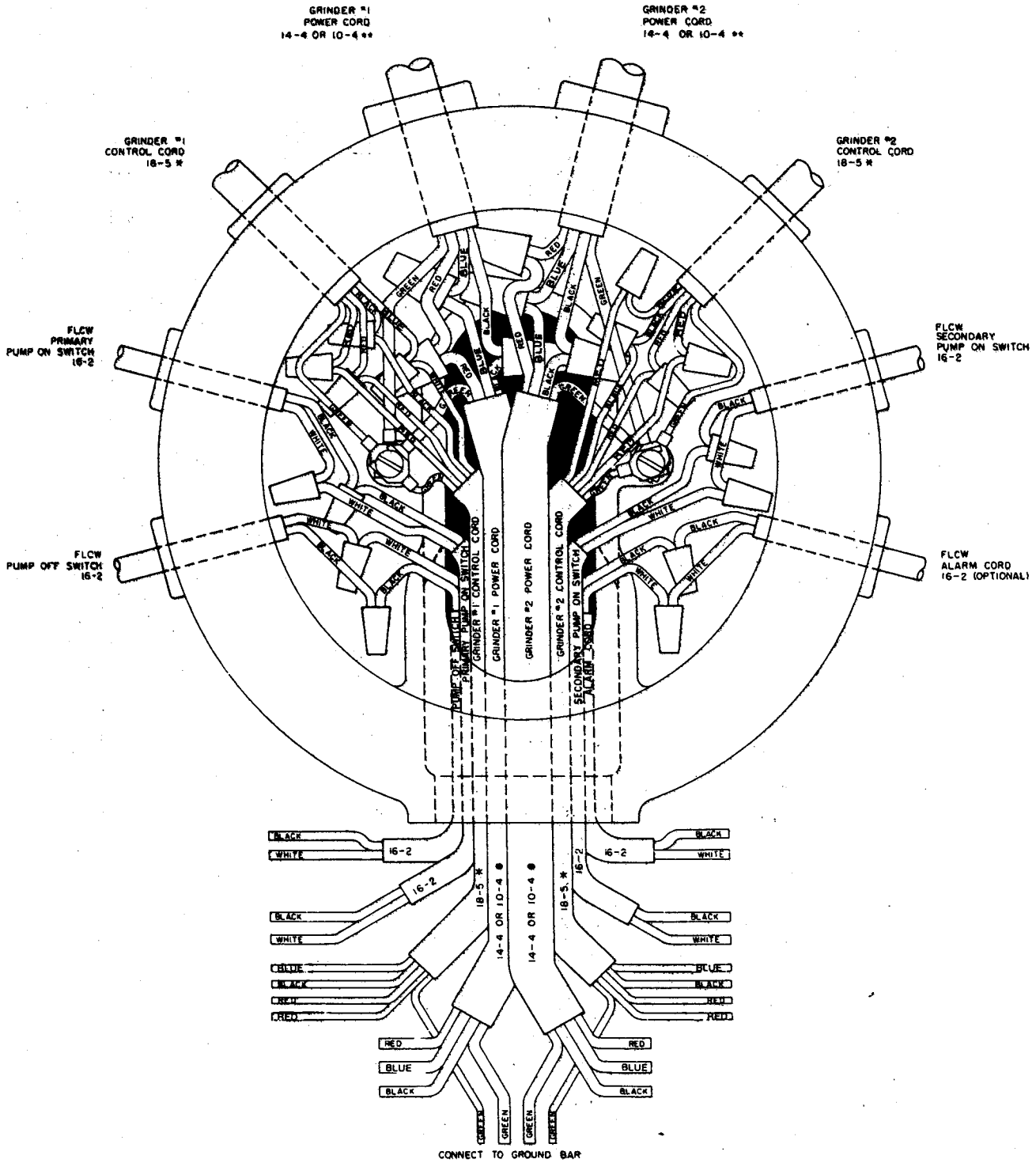
FIG. 8



**GAGE DEPENDS ON HORSEPOWER OF PUMP.

CONNECTION BOX, DUPLEX GRINDER SYSTEM, FLCW 4 BALL CONTROL

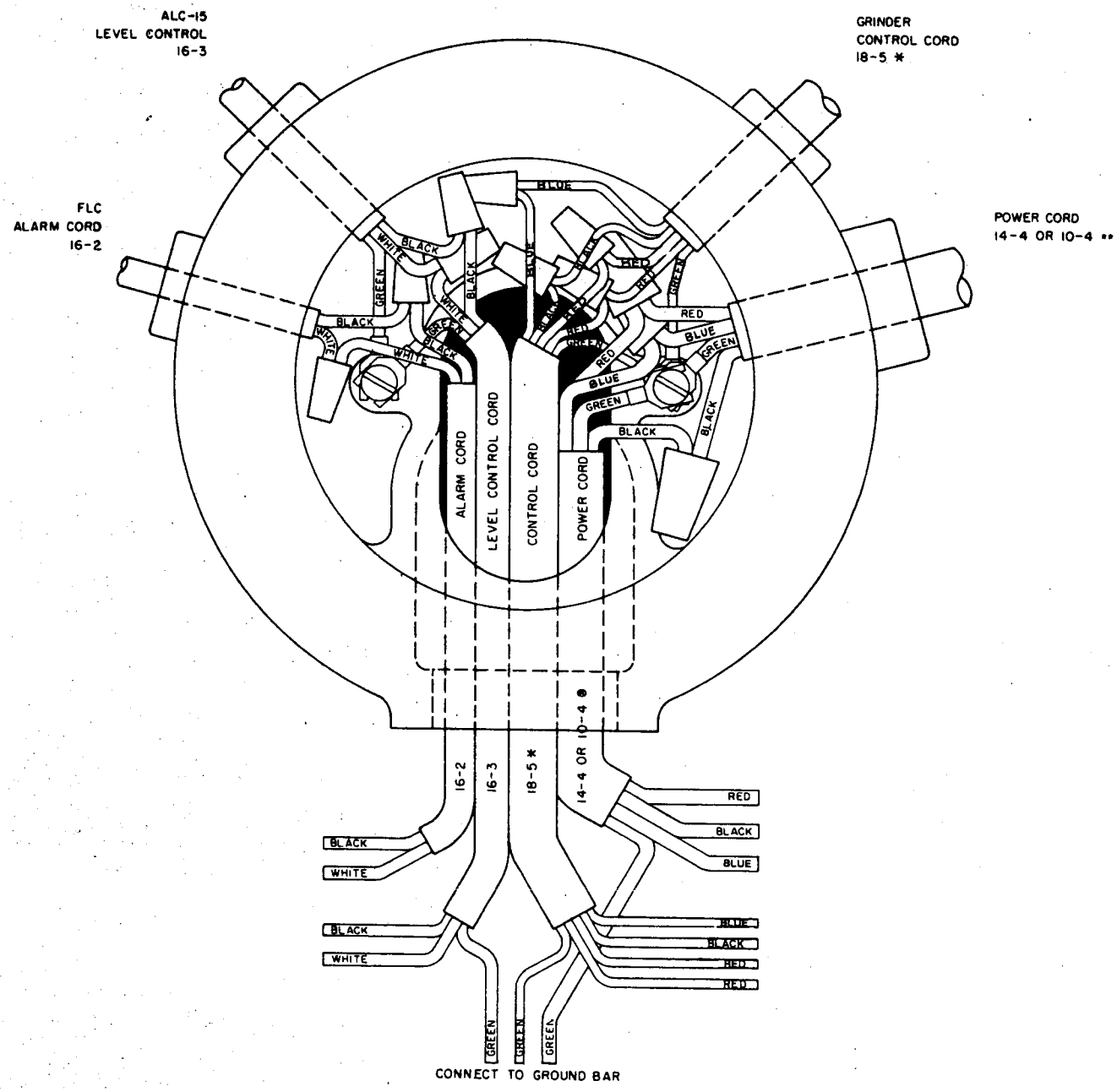
FIG. 9



**GAGE DEPENDS ON HORSEPOWER OF PUMP.

CONNECTION BOX, SIMPLEX GRINDER SYSTEM, ALC SWITCH AND FLC ALARM CONTROLS

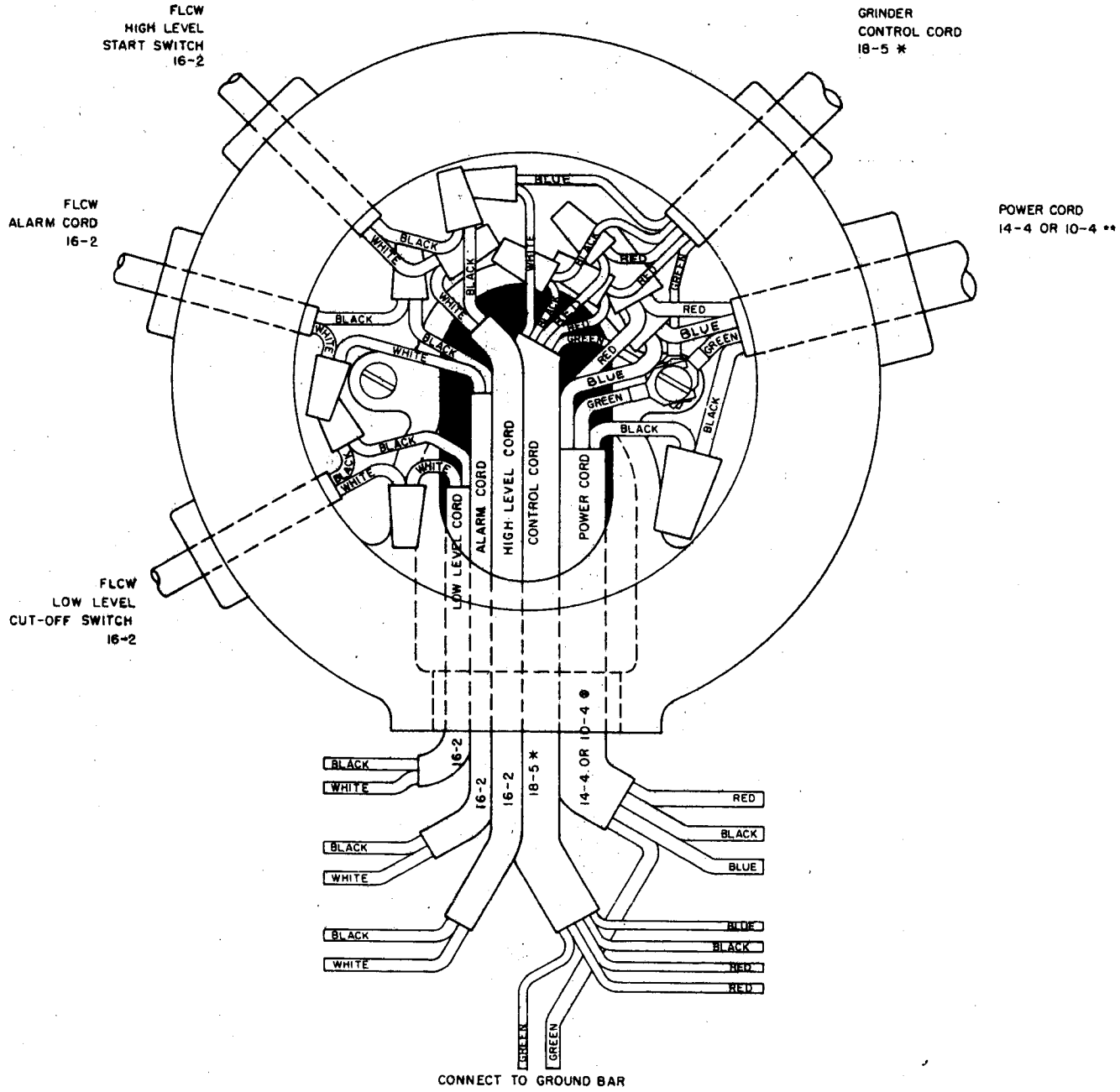
FIG. 10



**GAGE DEPENDS ON HORSEPOWER OF PUMP.

CONNECTION BOX, SIMPLEX GRINDER SYSTEM, FLCW 3 BALL CONTROL

FIG. 11



**GAGE DEPENDS ON HORSEPOWER OF PUMP.

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