CENTAUR

HOT WALKER
SERVICE MANUAL
For Model 201, 200, 401, & 400

5761 RIDGEVIEW AVENUE
MIRA LOMA, CALIFORNIA 91752
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Unloading the Hot Walker:

Lift Hot Walker from the head only. If you must lift the Hot Walker from the base, make sure that your forks on your lift clear all drive assemblies inside the Walker. You can inspect this prior to lifting by opening up your small inspection door, which is mounted on one side of your Hot Walker.

Prior to installing your Hot Walker on your pad or postholes, refer to the enclosed diagrams for the proper layout of the bolts and your electrical source. Make sure that the walker is mounted on a fairly level surface.

Installing the Arms:

Unscrew the bolts from the top of each head arm assembly. Slide your arms into each head assembly with the holes in the arms pointing upward. Align the holes in the arms with the nut holes in each arms assembly. You can use a center punch or an old screwdriver to align the holes more easily. Grease the threads on each one of the bolts prior to rethreading, and thread the bolt down until it is snug against the welded nut.

Installing Your Safety Release Ropes and Animal Leads:

On the bottom side of each arms there is a steel rod with a curled end. Take the supplied rope and tie a non-slipping knot through its steel loop. Now take the free end of the rope and feed it through the two welded rings on the head assembly. At the free end of the rope attach it to the lowest ring on the support arm with a good knot.

Now take the ring end of your lead and have someone pull the safety rope which will pull the rod back and allow you to put the ring in the arm opening, now release the rope and the lead will stay attached to the Hot Walker Arm.

To release the animal all you need to do now is simply jerk the pull rope and the animal is released with the lead attached to its halter.

Be sure to grease each spring on each arm. This allows the quick release to work properly. You can use any WHITE GREASE. You should grease the springs at least every **60 days** to insure your animal's safety.

Folding Models Only:

Open Machine fully & drop pin through steel tabs & arm itself. All of the folding parts on the head assembly should be kept greased on a regular basis so that it will function safely and properly for you and your horse. (The solid head model walkers need no head assembly greasing).

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Installing the Variable Speed Control Handle (For Variable Speed Models ONLY)

If the factory has not already installed the handle, then start first by removing screws that hold the front cover pane (the one with the small door on it) to the cover. There is a steel shaft mounted to the left and to the rear of the electric motor. Put the handle (you will find the handle, taped to the left front steel supports) through the hole in the cover and slide it over the metal shaft. Align the hole in the handle with the hole in the metal shaft, and put the cotter key through the holes, be sure to bend the cotter key so it will not fall out. At this time, you can complete hooking up your electrical supply. When complete replace the front cover panel, and screw it in place.

Hot Walker Lubrication Schedule:

Inside the Hot Walker above the cover, the vertical shaft has 1 grease fitting it should be greased every **60 days.**

The truck rear end should have the oil drained from it every **6 months.** You can use any reclaimed oil 30, 40, or 50 weight. **Do not use gear oil in it**, since it turns at a low R.P.M. and it is not needed. Fill the oil through the vertical fill tube located on the topside of the rear end. When oil starts to come out of the breather cap (Located on the vertical rear end housing) then the Walker is filled. The Walker takes about 2 ¼ gallons to fill it completely.

The gear box should be checked every **90 to 120 days** and it should be drained and refilled with the proper "gear oil".

Adjusting the Proper Pulling Power of your Hot Walker:

To give your Hot Walker more pulling power you will notice 2 vertical all thread rods mounted in the front of the electric motor and the gear box. Loosen the lower jamb nuts under the slotted motor plates on each of the thread rods. Now tighten the upper nuts on the thread rods and this will cause the motor and gearbox plate assembly to tilt downward creating more tension on the double V-Belts. The 2 V-Belts should have about 1 1/16th inch give between the big pulley and the little pulley. Try to tighten each nut the same to keep the motor assembly plate parallel. The 2 vertical thread rods should be kept greased to stop rusting and allow the nuts to work smoothly.

NOTE: The Hot Walker Must be Turning While Tightening the V-Belts. Tighten the V-Belts after the first 5 days of usage. This is most important, to prevent the belts from slipping.

Replacement Parts:

Any parts that become worn or broken can be replaced by calling our Corporate Office at 1-800-962-8050 or (909) 685-7337. Most of the parts can be shipped the same day.

For belt replacement the sizes are listed on the backside of the belts themselves.

For motor, switch, controllers, and gearboxes all the model number are located on their I.D. plates, for ordering.

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Operating Instructions:

1. The Walker is designed to walk horses for conditioning and cooling. The variable speed control is provided to allow the option of adjustment speed for different horse needs.

2. Horses "DO" require training to walk and behave properly on a Hot Walker. It is not intended to be used to break wild horses or force them to walk.

3. Leads are furnished with the walker. They should be inspected once a month; they should be replaced immediately, if they show signs of weakness, or if they begin to fray.

4. A monthly check and tightening of all bolted parts is needed. A Walker that is in constant use requires this as a normal maintenance procedure.

5. If the V-Belts become loose, they can be tightened by adjusting the nuts on the 2 vertical thread rods mounted in front of the motor.

6. **Grease** – Grease zerk is located on the vertical shaft, above the cover. These will grease the moving parts of the drive tower. Greasing each month is recommended. **Note: Do Not** oil or grease the V-Belt assembly. **Important:** When greasing use Lithium grease only.

7. The Walker will not reverse without stopping completely first.

8. Any electrical service should be done by a licensed electrician. 110 Volt or 220 Volt wiring is required. **NEVER** adjust Walker speed or put hands near the V-Belt assembly unless the electrical switch is turned off.

9. Walkers are warranted for one year from the date of purchase as per attached warranty statement.

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"DO'S AND DON'TS"

DO NOT attempt to use Walker prior to being properly secured to the foundation pad.	DO grease your Walker at the grease fittings once a month, or more often if the unit is in constant use.
DO NOT operate Walker with the cabinet off.	DO have all electrical hook-ups done by a licensed electrician.
DO NOT leave the Walker unattended while in operation.	DO allow the Walker to stop completely before reversing direction.
DO NOT put hands near the V-Belts while Walker is in operation.	DO make sure when less than 4 horses are being walked, that they are opposite each other on the Walker.
DO NOT use a metal chain as a lead. Use rope or nylon rope with a snap at the bottom end.	
DO NOT ride or allow a child to ride a horse that is being walked.	
DO NOT oil the V-Belts.	
DO NOT allow the horse to rear or buck on the Walker.	
DO NOT allow wiring or motor to get wet.	
DO NOT open the cabinet to adjust speed or to turn the power. Turn the power off at the remote switch **before** opening the cabinet.	
DO NOT use your Walker as a merry-go-round for children or adults.	

As with all electrical driven equipment, the utmost caution must be taken with regard to exposure to electrical shock caused through a rupture of any electrical connections or wire. DO NOT allow water or moisture to accumulate around any wiring, switches, or the motor.

All moving parts of this equipment are of heavy gauge steel. DO NOT expose any portion of your body to this equipment while it is in motion.

Moving parts can be hazardous to a person wearing loosely fitting clothing or with long hair.

Use the utmost caution in operating this equipment.

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Centaur Hot Walker Limited Warranty

Centaur One-Year Limited Warranty

Horse Walker Models 200, 201, 400, 401, 600, Mini-Horse Walker Models 400, 401 and 600 and Hound Walker Models 400, 401 and 600 are warranted by **Centaur Horse Walkers, Inc.** to the original user against defects in workmanship or materials under normal use for one year after the date of purchase. Any part, which is determined by **Centaur** to be defective in material or workmanship and returned to our authorized service location, as **Centaur** designates, shipping costs prepaid by client, will be, as the exclusive remedy, repaired or replaced at **Centaur's** option. Shipping to be supplied by client on all returning items. For limited warranty claim procedures see PROMPT DISPOSITION below. This limited warranty gives purchasers specific legal rights, which vary, from state to state.

Limitation of Liability

To the extent allowable under applicable law, **Centaur's** liability for consequential and incidental damages is expressly disclaimed. **Centaur's** liability in all events is limited to, and shall not exceed, the purchase price paid.

Warranty Disclaimer

Centaur has made a diligent effort to illustrate and describe the products in this literature accurately; however such illustrations and description are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions.

Product Suitability

Many states and localities have codes and regulations governing sales, construction installation and/or use of products for certain purposes, which may vary from those in neighboring areas. While **Centaur** attempts to assure that its products comply with such codes it cannot guarantee compliance and cannot be responsible for how the product is installed or used. Before purchase and use of our products, please review the product application, and national & local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products; e.g., (A) some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or warranty lasts, consequently the limitations may not apply to you; (B) Also, some states do not allow limitations on how long an implied warranty lasts, consequently the above limitations may not apply to you; and (C) by law, during the period of the limited warranty any implied warranties of merchantability or fitness for a particular purpose applicable to consumer products purchased by consumer, may not be excluded or otherwise disclaimed.

Prompt Disposition

Centaur will in good faith effort for prompt correction or other adjustment with respect to any product, which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom product was purchased. Dealer will be given additional directions. If unable to resolve satisfactorily write to **Centaur Horse Walkers, Inc.** below, giving dealer's name, address, date and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit you, file claim with freight carrier.

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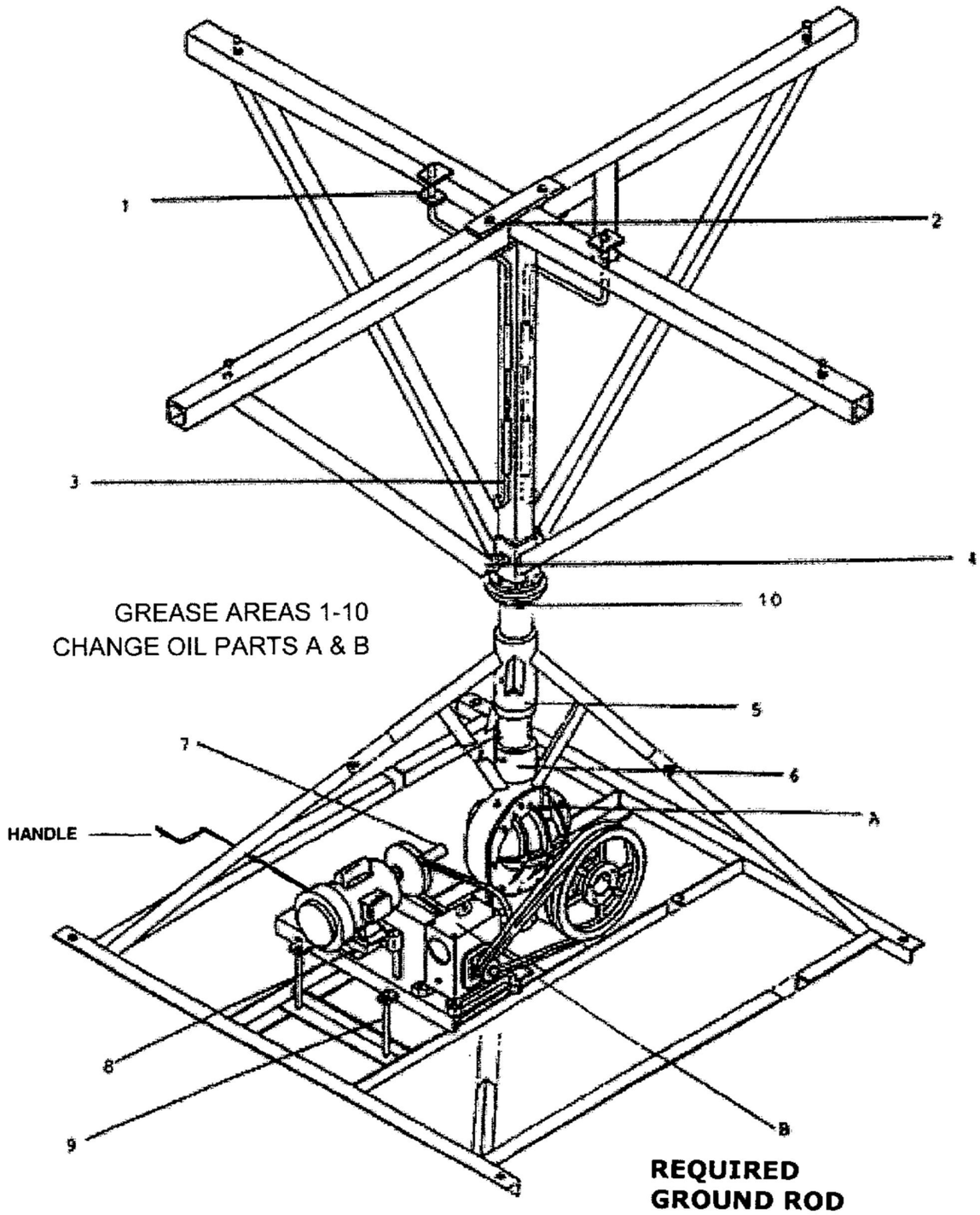
Lubrication Points For a Variable Speed Hot Walker with a Folding Head



GREASE AREAS 1-10
CHANGE OIL PARTS A & B

REQUIRED
GROUND ROD
8-10 FOOT COPPER ONLY
GROUND TO HOT WALKER
STEEL BASE/ GROUND CONTROL

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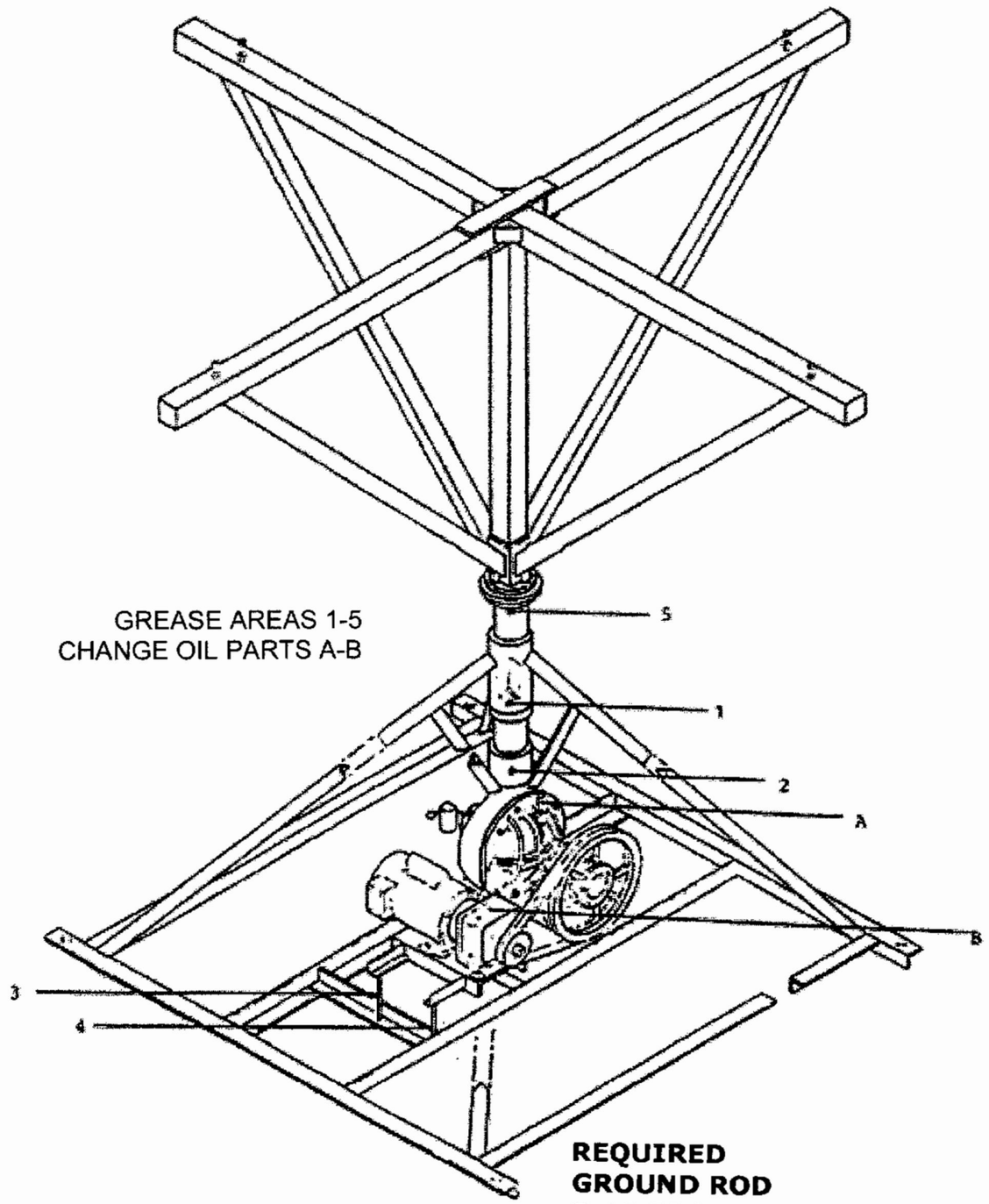
Lubrication Points For a Single Speed Hot Walker with a Solid Head



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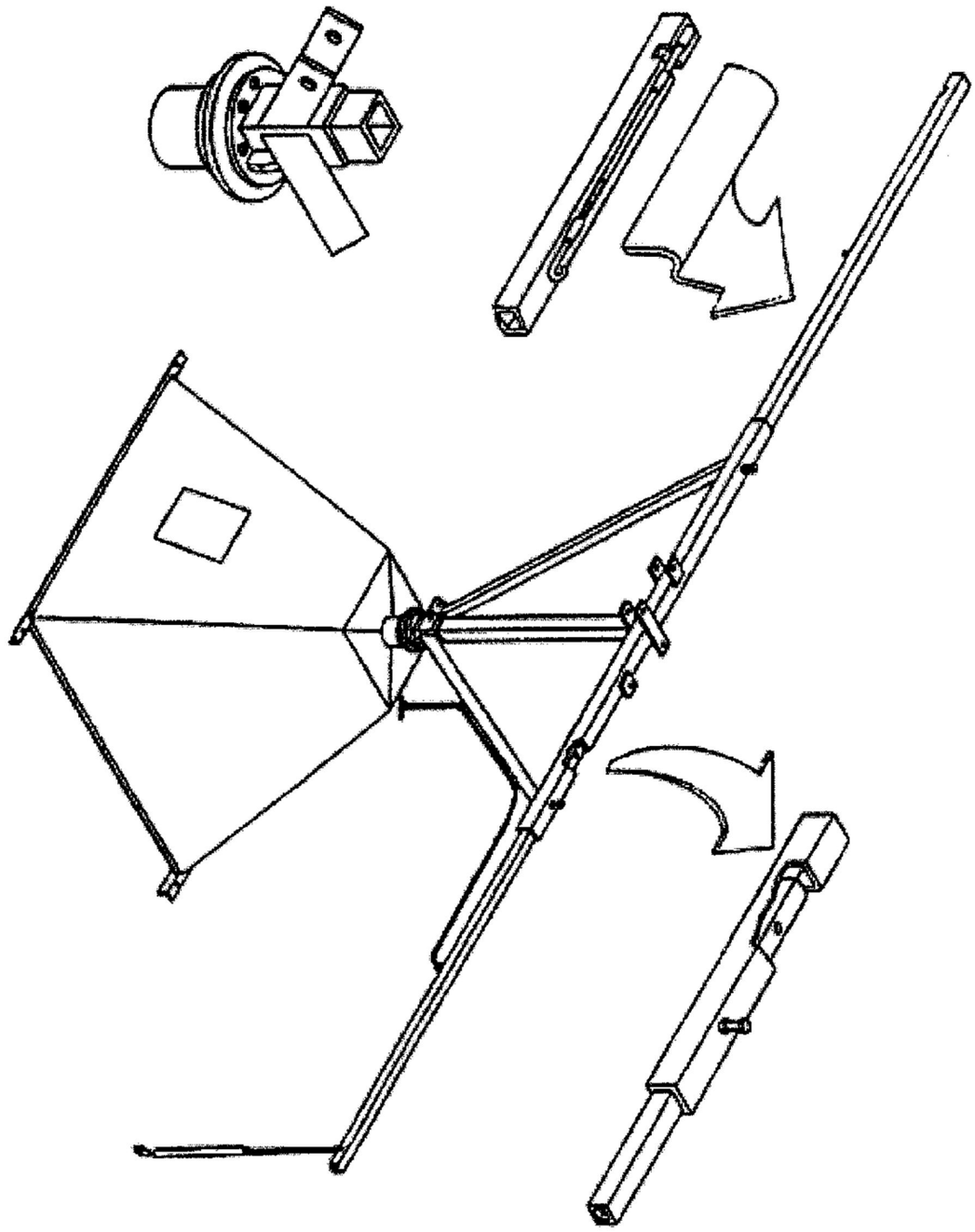
Hot Walker Diagram Showing Arm and Safety Rope Assembly



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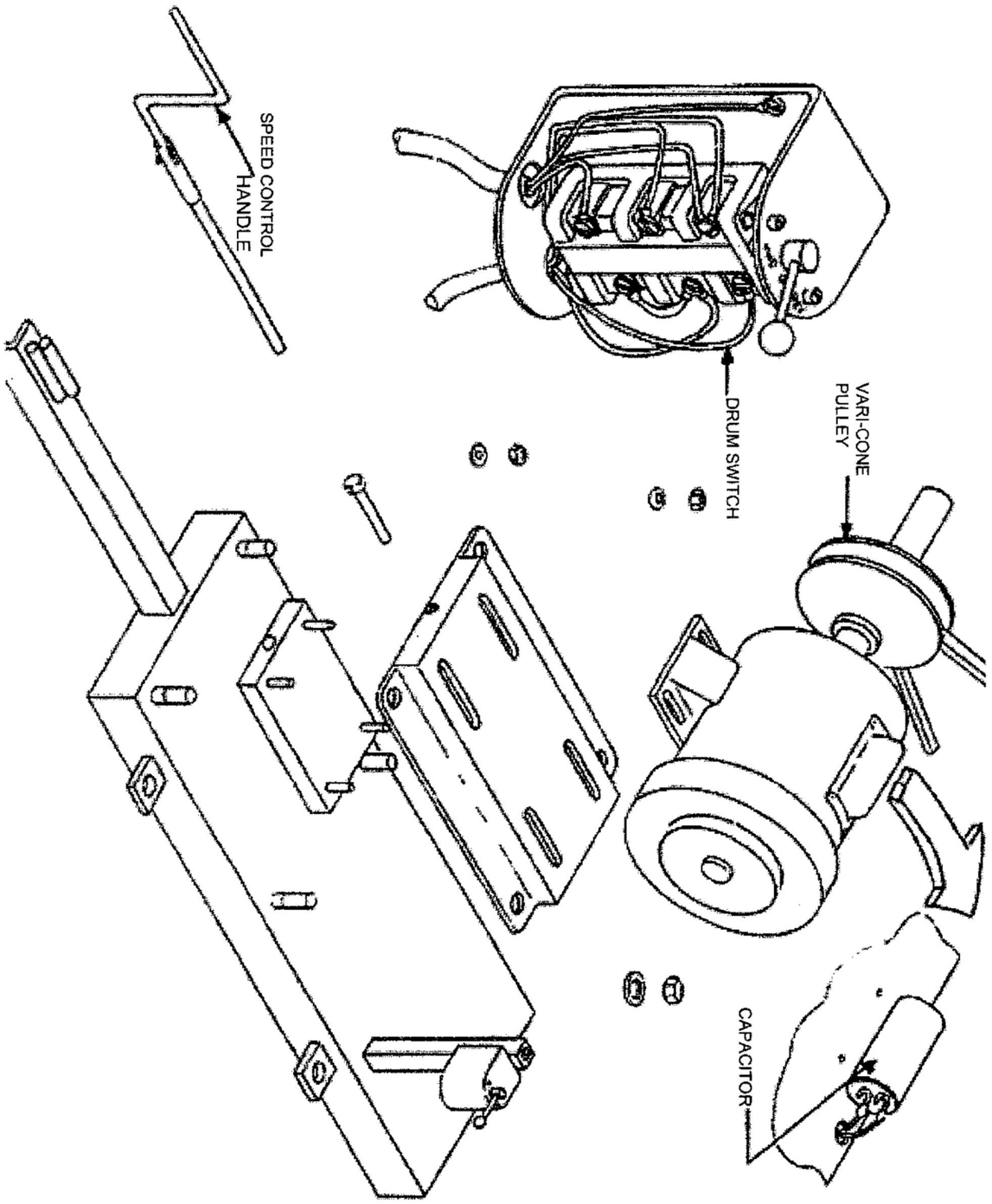
View of Drum Switch & Electric Motor showing capacitor and vari-cone sheeve on electric motor output shaft.



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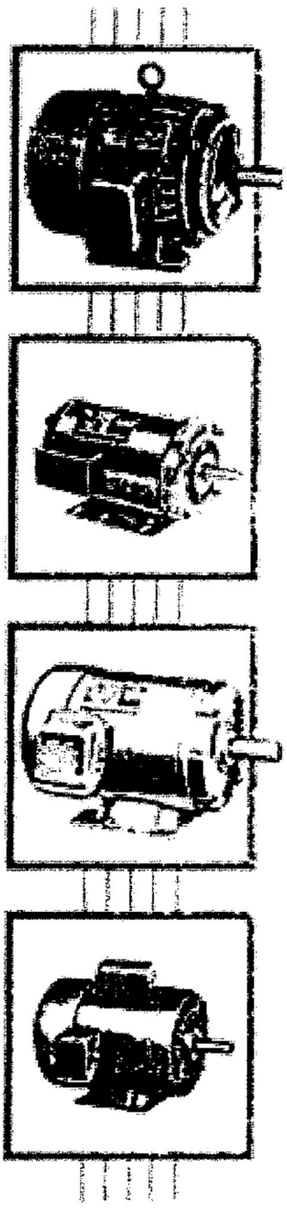
This Motor Information Applies only to the following models of Centaur Hot Walkers: 200, 201, 400, and 401



Dayton

MOTOR INSTALLATION and MAINTENANCE INFORMATION

Fractional HP Motors

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Power Source

- Voltage, frequency and phase of the power supply must correspond to that shown on the motor nameplate. Low voltage can reduce performance and cause overheating.
- On three – phase power, voltages on all three lines should be balanced within 1%. Unbalanced voltages cause motor overheating and poor performance.

Motor Control Devices

- Use a suitable motor starting device is advisable and usually required by local electrical codes.
- Power supply must have fuses or circuit breakers to provide short circuit protection for the motor and controller.
- Where a motor starter is used, follow the control manufacturer's recommendations on heater selection or setting. If an existing controller is to be used with a replacement motor, new heaters may be required.
- Any switching device used to control a monitor must have a horsepower rating equal to or greater than the motor.
- An electronic adjustable speed control **must not be used** unless the motor has been specifically designed for such applications.

Motor Mounting:

- Motor must be securely fastened to prevent vibration and minimize noise. For secure mounting use high quality bolts of the largest possible diameter.
- Where possible, sleeve-bearing motors should be mounted with oil ports up and accessible.
- Belt-drive sheaves must be in-line. Use a straight edge to check. Do not over tighten belts.
- Direct-coupled installations require a careful check of shaft and coupling alignment. Shim motor base as necessary. Do not depend on a flexible coupling to compensate for misalignment.

Connecting Power to Motor:

- To connect motor for proper voltage and rotation, refer to the connection diagram on the nameplate or inside the terminal/conduit box.

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Mechanical – Guard all moving parts. Remove the shaft key before running the motor without a connected load. Be careful when touching the exterior of an operating motor! Motor may be hot enough to be painful or cause injury. This condition is normal for most motors when operated at rated load and voltage.

Do not use the motor in a hazardous location as defined by Article 500 of the National Electric Code (NEC).

Location:

- **Open, Dripproof Motor** – Clean, dry locations with access to an adequate supply of cooling air.
- **Totally Enclosed Motor** – Harsher environments where damp and dirty conditions may exist. Totally enclosed motors are not water-proof.
- Use only UL listed **Hazardous Location** motors for service in **Hazardous Locations** as defined in Article 500 of the NEC.
- Temperature around the motor should not exceed 104° F (40° C). Minimum temperature is -20° F (-29° C).
- If the motor nameplate indicates "Air-Over, Cont. A.O.," etc, the motor must be mounted in the air stream of an air moving device.

Table B: - Minimum Wire Sizes For Single-Phase Motors

Motor	25 Feet		50 Feet		100 Feet		150 Feet		200 Feet	
HP	115 V	230 V	115 V	230 V	115 V	230 V	115 V	230 V	115 V	230 V
1/8	14(18)*	14(18)*	14	14(18)*	12	14(18)*	10	14(16)*	8	14
1/6	14(16)*	14(18)*	12	14(18)*	10	14(16)*	6	14	6	12
¼	14	14(18)*	10	14(16)*	8	14	6	12	4	10
1/3	14	14(18)*	10	14(16)*	8	14	6	12	4	10
½	12	14(18)*	8	14	6	12	4	10	3	8
¾	10	14(16)*	6	12	4	10	2	8	1	6
1	10	14(16)*	6	12	4	10	2	8	1	6
1 ½	8	14	6	12	3	8	1	6	1/0	6
2	8	12	4	10	2	8	1/0	6	2/0	4
3	6	12	3	8	1/0	6	2/0	4	4/0	3

NOTE:

- NEC Article 310-5 – Minimum conductor size for general wiring at 115-440VAC is No. 14AWG
- Above wire sizes based on approximate 5% voltage drop during starting; copper conductors; and 75°C type THHW, THW, THWN, RH, RHW, etc. insulation. For aluminum wire, increase two wire size steps minimum. See NEC Article 310 for ampacities of aluminum conductors.
- Type S, SO, SJ, SJO, etc. flexible cable wire sizes. See NEC Article 400 for ampacity.

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WARNING

All aspects of the installation must conform to the requirements of the NEC, including Article 430 (Motor Circuits and Controllers), and all local codes. Wherever possible, each motor should be powered from a separate circuit of adequate capacity to keep voltage drop to a minimum during starting and running. Increase wire size where motor is located a distance from the power source. Wire size must be adequate to minimize voltage drop during starting and running. Refer to Tables A and B for suggested wire sizes. Distances shown are one-way between source and motor. Portable cords, if used, should be as short as possible to minimize voltage drop. Long or inadequately sized cords, especially on hard starting loads, can cause motor failure. All electrical connections in system must be secure to prevent voltage drop and localized heating.

- Determine direction of rotation before connecting driven equipment to prevent damage.
- To prevent bearing damage, do not strike shaft with hammer or other tool.
- If the motor has been damp or wet, then have motor serviced by a qualified motor repair shop before operating.

Starting Motor
Be Sure motor is properly grounded.

Connect motor to load and run briefly. Check for unusual noises and vibration (see troubleshooting). Check motor current; it should be close to nameplate.

Visually re-inspect the installation. Make sure that the guards and other protective devices are securely in place. All covers and gaskets must be re-installed to minimize the entry of dirt and moisture.

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Troubleshooting

This chart suggests common answers to electric motor problems. The information is not all-inclusive and does not necessarily apply in all cases. When unusual operating conditions, repetitive failures, or other problems occur, consult an electric motor service firm for assistance.

Trouble	Cause	What To Do
Motor Fails To Start	Blown Fuses	Replace with time-delay fuses. Check for grounded winding.
	Tight Shaft	Occasionally during shipment a sleeve bearing motor may be received with a shaft, which does not rotate freely. It may be necessary to strike the motor, at the shell/endshield rabbet, with a rawhide or plastic mallet to align the bearings.
	Voltage to low at motor terminals due to line drop.	Consult local power company. Increase wire size (refer to Tables A & B). Check for poor connections.
	Overload in motor starter tripped.	Check and reset overload relay in starter. Check heater rating against motor nameplate current rating.
	Overload (internal thermal protector) tripped.	Check motor load. If motor has an automatic or manual reset thermal protector, check if tripped.
	Improper line connections.	Check connections against diagram supplied with motor.
	Motor May be overloaded.	Check motor load. If motor has an automatic or manual reset thermal protector, check if tripped.
	Defective motor or starter.	Repair or replace.
Motor Does Not Come up To speed Or Takes too Long to Accelerate.	Not applied properly.	Consult motor service firm for proper type. Use larger motor.
	Voltage too low at motor terminals.	Increase wire size (refer to Tables A & B). Check for poor connections. Check for voltage unbalance (3-phase).
	Starting load too high.	Check load motor is carrying at start.
	Excess loading; tight belts.	Reduce load; increase motor size. Adjust belts.
	Defective motor.	Repair or replace.
	Inadequate starting torque. High inertia load.	Replace with larger motor.
Motor Stalls During Operation.	Overloaded motor.	Reduce load or increase motor size.
	Low motor voltage.	Verify that nameplate voltage is maintained.
Motor Vibrates or is Excessively Noisy.	Motor shaft misaligned.	Realign.
	Three-phase motor running single phase.	Check for open circuit, blown fuses or unbalanced voltages.
	High or unbalanced voltages.	Check wiring connections. Consult local power company.
	Worn, damaged, dirty or overloaded bearings.	Repair or replace motor; check loading and alignment.
	Defective winding. Bent or bowed shaft.	Repair or replace.
	Loose sheave or misaligned coupling.	Tighten setscrew(s); realign coupling.

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Motor Overheats While Running Under Load	Overloaded	Reduce load; increase motor size; belts may be too tight.
	Dirt blocking ventilation openings.	Clean motor.
	If three-phase, one phase may be open.	Check lines for open phase. Check voltage with motor disconnected, one fuse may be blown.
	Unbalanced supply voltage.	Check for faulty connections. Voltage on all three lines should be balanced within 1%. Excessive single phase loads.
	Faulty connection.	Clean, tighten or replace.
	High or low voltage.	Check voltage at motor, should not be more than 10% above or below rated.
	Defective motor.	Repair or replace.

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Lubrication (Variable Speed Hot Walkers **ONLY**).

Normal operating temperature of a worm gear reducer is less than 200°F but during initial break-in the temperature may exceed 200°F. After break-in is completed the temperature will fall below 200°F. If temperature exceeds 200°F for greater than 100 hours consult the factory.

1. Change initial oil fill after 500 hours of service or 5 weeks.
2. Change oil every 2500 hours service or 6 months. If severe operating conditions exist, change the oil every 1 to 3 months.
3. 90 Weight oil and EP Oil are NOT recommended.
4. For ambient temperatures -40° F to 15° use Mobil SHC634.
5. Units running at slow speeds (less than 100 RPM input) should carry high oil level and in ambient temperatures of 15° to 125° F use an AGMA #8C lubricant.
6. See Table 3 for list of recommended lubrication manufacturers.

Lubrication Manufacturers

The companies and oil shown are typical. Any other make of oil meeting American Gear Manufacturers Association (AGMA) standards #7C and #8C will be satisfactory.

Table 3

Ambient Temperature	15 to 60° F	50 to 125° F
Viscosity Range MM/S at 40° C	414 -506	612 -- 748
ISO Grade	460	680
SAE Gear Lubricant (approx.)	#140	#250
Oil Company Name	AGMA #7C	AGMA #8C
Amoco Oil Co.	Amoco Worm Gear Oil	Amoco Cyl. Oil 680
Atlantic Richfield (ARCO)		Modoc 175
Chevron Oil Co.	Cylinder Oil 460X	Cylinder Oil 680X
Conoco Oil Co.	Inca Oil	
Exxon Oil Co.	Cylesstic TK460	Cylesstic TK680
Fiske Brothers	SPO 277	SPO 288
Gulf Oil Co.	Senate 460	Senate 680
Gulf-Canada	Senate 460	Senate 680
Keystone-Penwalt	Keygear K-600	
Mobile Oil Corp.	Mobil 600W. Cyl. Oil	Mobil 600W Super Cyl. Oil
Pennzoil	Cyl. Oil #8	Cyl. Oil No. 6
Phillips Petroleum Co.	Hector 460S	Hector 630S
Shell Oil Co.	Valvata Oil J460	Valvata Oil J680
Shohio	Energol DC-600C	Energol DC-600C
Texaco Inc.	Vanguard 460	Honor 680
Union Oil Co. of Ca.	Steaval B110	Steaval V165

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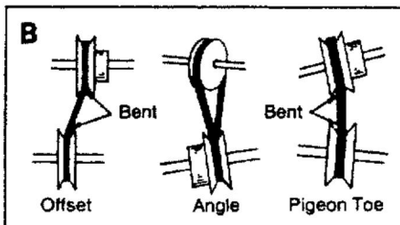
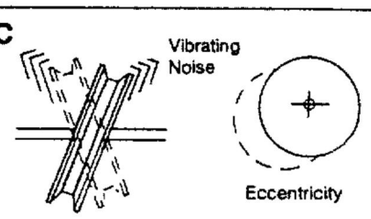
Table 4

OIL CAPACITY (OZ.)				
CENTER DISTANCE	WORM TOP	WORM BOTTOM	WORM VERTICAL	OUTPUT VERTICAL
1.33	4	8	8	4
1.54	6	18	18	14
1.75	8	20	20	12
2.06	12	22	28	18
2.37	16	30	36	26
2.62	26	46	60	40
3.00	46	78	82	72
3.25	56	65	101	66

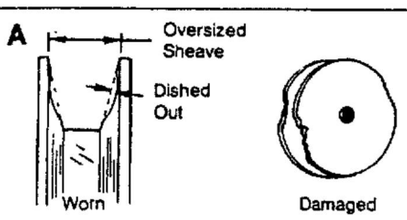
Lovejoy's Variable Speed Pulley-Belt Drive Trouble-Shooting Guide



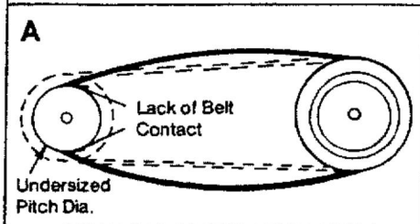
MISALIGNED SHEAVES



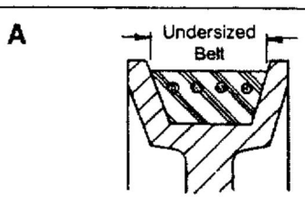
SHEAVE WOBBLE



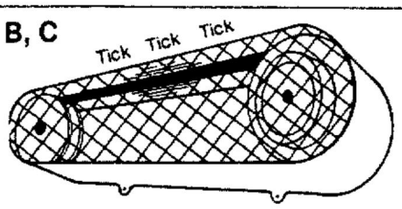
SHEAVE PROBLEMS



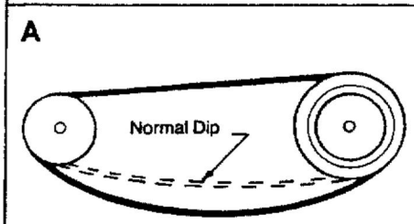
IMPROPER SHEAVE SIZE



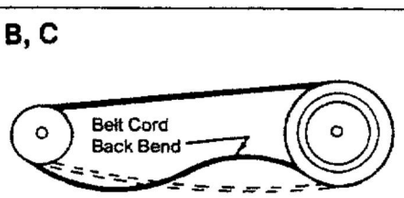
BELT BOTTOMING



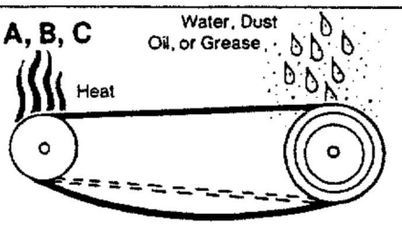
MECHANICAL INTERFERENCE



OVERLOADED DRIVE



EXCESSIVE BELT TENSION



BELT HOP AND SLIP

PROBLEM	PROBABLE CAUSE	SUGGESTED CORRECTION
A **BELT SLIPPAGE** • Rule of thumb very audible belt squeal = 5% or more belt slippage	1. Overloaded drive 2. Worn sheaves 3. Excessive dust, oil, or grease 4. Lack of flange support (weak VSP spring tension or broken spring) 5. Improper companion sheave size 6. Undersized P.D. (Belt Riding on bottom of sheave)	• Check motor ampere load to max. speed range of pulley drive to insure proper size drive package selected. • Replace worn sheaves • Provide better shielding • Replace weak or broken spring; Consult factory; consult catalog for pulley rating • Consult catalog specifications and factory • 1/32" min. belt clearance when belt at pulley's specified minimum pitch diameter
B **RAPID BELT WEAR** • Heavy rubber dust deposit • Belt side "wear" pattern irregular • Heat build-up beyond 160°F max. limit	1. Misaligned sheaves 2. Loose motorbase supports 3. Damaged or worn sheaves 4. Excessive temperatures 5. Mechanical interference 6. Overloaded drive 7. Broken belt cords (excessive spring tension) 8. Dirt and grit entering drive	• Realign sheaves — remove "bends" • Replace undersize screws or broken base • Replace sheaves • Ventilate belt guard— determine cause • Remove interference — move pulley over • Increase pitch diameter • Reduce pulley HP rating — reduce spring tension • Air ventilate belt guard
C **VIBRATION** • Pulley sheave lacks dynamic smoothness common to belt drive arrangement	1. Sheave wobble 2. Pulleys or sheaves out of balance 3. Mechanical interference 4. Pulsating loads belt hop and skip 5. Undersized motorshaft 6. Bent shaft 7. Worn — Undersize motorbase — Improper installation 8. Excessive pulley spring tension	• Replaced distorted sheave rim; replace worn "QD" bushing • Determine cause, return to factory for correction • Enlarge belt guard, and avoid pulley housing contact • Belt's side surfaces glazed - replace; remove oil from pulley's flange surfaces • Correct or resize shaft diameter per NEMA specifications • Replace shaft • Replace, consult catalog for HP rating • Install lighter HP rated pulley consult factory.

Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Dayton® Speed Reducers

NOTE: THIS INFORMATION APPLIES ONLY TO CENTAUR HOT WALKER MODELS 201 & 401 ONLY!

Description

These Dayton speed reducers are in-line drive type units suitable for general purpose applications involving shop equipment, conveyors, etc. Each unit is equipped with heavy duty steel helical gears, tapered roller bearing, lip-type seals and cast iron housing.

NOTE: The speed reducer is built for direct drive with a 1/4, 1/3 or 1/2 HP NEMA 56C face, 1725 RPM (maximum) motor, purchased separately.

For additional information pertaining to a specific model in this series refer to Specifications.

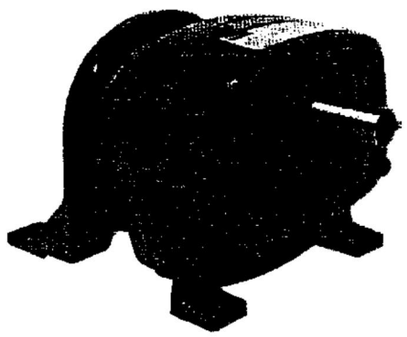


Figure 1

General Safety Information

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
2. Motor (not included with this unit) must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system, by using a separate ground wire connected to the bare metal of the motor frame, or by other suitable means. Refer to NEC Article 250 (Grounding) for additional information.
3. Always disconnect power source before working on or near a motor or its connected load. If the power disconnect point is out-of-sight, lock it in the open position and tag it to prevent unexpected application of power.
4. Make sure all moving parts are guarded.
5. Be carful when touching the exterior of an operating motor – it may be hot enough to be painful or cause injury. Modern-design motors normally run hot at full-rated load.
6. Protect the power cable from coming in contact with sharp objects.
7. Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
8. Make certain that the power source conforms to the requirements of your equipment.
9. Before energizing the motor which drives the speed reducer, be sure that the reducer output shaft key is either fully captive, or is removed.
10. When cleaning electrical or electronic equipment, always use an approved cleaning agent such as dry cleaning solvent.

Specifications

Model	Nominal Output Rpm*	Nominal Ratio	1/4HP Torque In-Lbs*	1/3 HP Torque In-Lbs*	1/2 HP Torque In-Lbs*	Finish
2Z932A	30	57.5:1	470	638	955	Gray
2Z933A	44	39:1	320	435	651	Gray
2Z934A	60	29:1	235	318	478	Gray
2Z935A	91	19:1	160	217	326	Gray

(*) At 1725 RPM (maximum) motor input speed.

Dayton® Speed Reducers

NOTE: THIS INFORMATION APPLIES ONLY TO CENTAUR HOT WALKER MODELS 201 & 401, ONLY!

Installation

⚠WARNING ***When an installation involves a holding or overhauling application (such as a hoist or conveyor), a separate magnetic brake or other locking device should be used. Do not depend on gear friction to hold the load.***

1. Locate the speed reducer in a clean and dry area with access to adequate motor cooling air supply. If installation is outdoors, make certain that the unit is protected from the weather.
2. Mount unit to a rigid surface, preferably metallic, using largest bolts that will fit through the base holes.

NOTE: The speed reducer is intended for horizontal floor, wall, or ceiling mounting only. (The output shaft must be horizontal.)

3. For shipment, 4 pipe plugs (Ref. No. 18 in Figure 3) are installed in the unit, and a vent plug (Ref. No. 19 in Figure 3) is packed separately. After mounting unit in position as instructed in step 2, remove pipe plug located in highest position, and install vent plug in its place. (Correct oil level for mounted unit is just below pipe plug in side position.)
4. Attach motor to speed reducer. (See Fig. 2.):

⚠ CAUTION ***Do not exceed motor HP and torque rating indicated on nameplate in Specifications.***

a. Speed reducer is to be used with any NEMA Frame 56C face-mounted, 1725 RPM electric motor (max. ½ HP) without feet. Make sure motor shaft is clean and free of dirt. Lubricate input shaft bore with heavy grease or anti-seize compound provided with reducer.

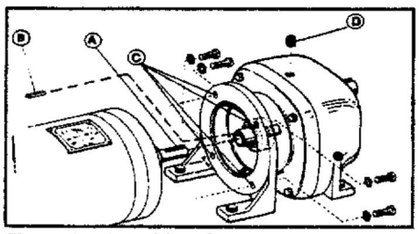


Figure 2 – Attaching the Motor

⚠ CAUTION ***Do not use key supplied with motor. Use short key supplied with reducer. (Failure to use short key makes assembly impossible.)***

b. Insert short key (B in Figure 2) into reducer shaft sleeve. Line up keyway in ⅝" diameter motor shaft (A in Figure 2) with keyway in reducer shaft sleeve. Carefully insert motor shaft until C face of motor fits into place against reducer, with four mounting holes in reducer (C in Figure 2) lined up with tapped holes in motor C face.

⚠ CAUTION ***Do not force shaft into coupling.***

c. Four screws with lock washers to fit the tapped holes in the motor face are supplied for mounting. Insert two screws in the two upper holes, but do not tighten completely. Insert lower two screws finger-tight and then back off 3/4 turn. Tighten upper two screws. Then tighten lower two screws.

d. Run motor momentarily and then turn off. Motor should coast freely to indicate no binding in motor shaft.

e. To reverse direction of reducer rotation, reverse motor leads.

5. Attaching (coupling) the load:

NOTE: To determine output torque capacity for operating conditions other than a normal 8 hour day and shock free operation, multiply the rated output torque (see Specifications) by the applicable load factor listed below. Shock loads should be avoided.

LOAD FACTOR CHART

Type of Load	Load Factor
8 to 10 Hour Day Service With Moderate Shock Loads	0.85
24 Hour Day Service With No Shock Load Involved	0.93
24 Hour Service With Moderate Shock Loads	0.81

⚠ CAUTION ***Maximum momentary or starting torque is not to exceed 375% of 1/2 HP @ 1725 RPM for applications involving four or fewer starts per hour.***

a. When connecting a load to the speed reducer output shaft, care should be taken to avoid excessive tension when either belt or chains with chain sprocket are used. Overhung load should not exceed limits shown in chart (page 3), at 1" from the oil seal. See Detailed Overhung Load Calculations for additional information.

DETAILED OVERHUNG LOAD CALCULATIONS

$$\frac{\text{Full Load Torque of Speed Reducer} \times 2}{\text{Pitch Diameter}} = \text{Pounds of Load on Center of Speed Reducer Output Shaft}$$

Multiply pounds of load (obtained from above formula) by the correct factor listed below to determine actual overhung load in "pounds" on center of speed reducer output shaft.

Models 2Z932A thru 2Z935A

NOTE: THIS INFORMATION APPLIES ONLY TO CENTAUR HOT WALKER MODELS 201 & 401 ONLY!

Installation (Continued)

DRIVE FACTORS

Sprocket 1.0

Pulley 1.5

Gear 1.25

OVERHUNG LOAD CHART

Model	Max. Overhung Load
2Z932A	660 Lbs
9Z933A	660
2Z934A	660
2Z935A	660

Locate the center line of the sprocket, pulley or gear as close to the oil seal as practical to minimize overhung load and increase bearing life.

If the center line of the sprocket, pulley or gear is located more than 1" away from the oil seal, consult Dayton Electric Mfg. Co. Engineering Dept. to help determine the overhung load.

b. On direct-coupled installations, carefully check shaft and coupling alignment as motor is being bolted down. Shim as required. Do not depend on a flexible coupling to compensate for misalignment.

THRUST CAPACITY CHART

Model	Thrust Capacity
2Z932A	399 Lbs
9Z933A	382
2Z934A	295
2Z935A	247

c. Maximum axial thrust: see chart, above.

NOTE: Chart ratings are calculated at Full Catalog Output Torque for 1/2 HP input at 1725 RPM input. These ratings are in addition to Full Catalog Overhung Load assuming all worst conditions of loading.

6. Make wiring connection. (Consult nameplate on motor.)

Maintenance

⚠WARNING ***Make certain that the power supply is disconnected before attempting to service or remove any components! If the power disconnect point is out-of-sight, lock it in the open position and tag it to prevent unexpected application of power.***

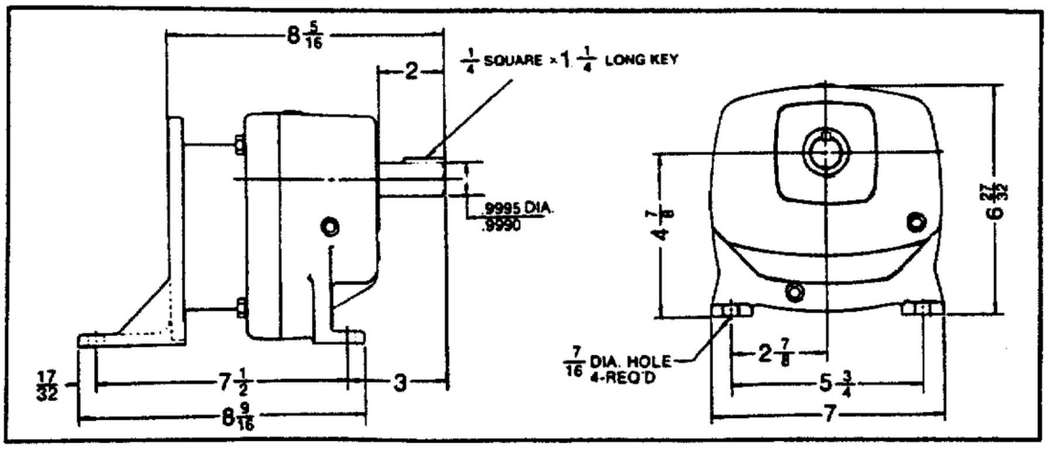
CLEANING

Properly selected and installed electric motors are capable of operating for long periods with minimal maintenance. Periodically clean dirt accumulations from open-type motors, especially in and around vent openings, preferably by vacuuming (avoids embedding dirt in windings). At the same time, check that electrical connections are tight.

LUBRICATION

The Dayton speed reducer was filled with oil at the factory to operate within +25° to +125° F ambient temperature. After 2000 hours of operation, drain and refill with AGMA #4 gear oil. If AGMA #4 gear oil is not available, use multi-purpose gear oil SAE #90 for ambient temperatures from +40° F to +120° F. For temperatures below +40° F, use SAE #80 multipurpose gear oil.

Dimensions



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Models 2Z932A thru 2Z935A

NOTE: THIS INFORMATION APPLIES ONLY TO CENTAUR HOT WALKER MODELS 201 & 401 ONLY!

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Unit fails to operate	1. Blown fuse or open circuit breaker 2. No power 3. Defective motor 4. Excessive load	1. Replace fuse or reset circuit breaker 2. Contact power company 3. Repair or replace 4. Reduce load
Motor runs but no output	1. No input key 2. Defective gear(s)	1. Install key (see Installation) 2. Check and replace if necessary
Intermittent rotation of output shaft	1. Poor electrical connection 2. Damaged gear assembly possibly caused by shock load	1. Check connection 2. Replace gear and if possible, avoid shock load
Excessive noise	1. Bearings worn 2. Belt too tight 3. Overhung load – exceeds rating and causes bearing wear 4. Insufficient lubrication	1. Replace 2. Adjust tension 3. Correct load and/or replace bearing 4. Check oil level
Oil leak	1. Vent plug not installed 2. Gasket broken or not seated 3. Damaged or worn seal 4. Too much oil	1. Install vent plug 2. Replace or reseat gasket 3. Replace seal 4. Check oil level

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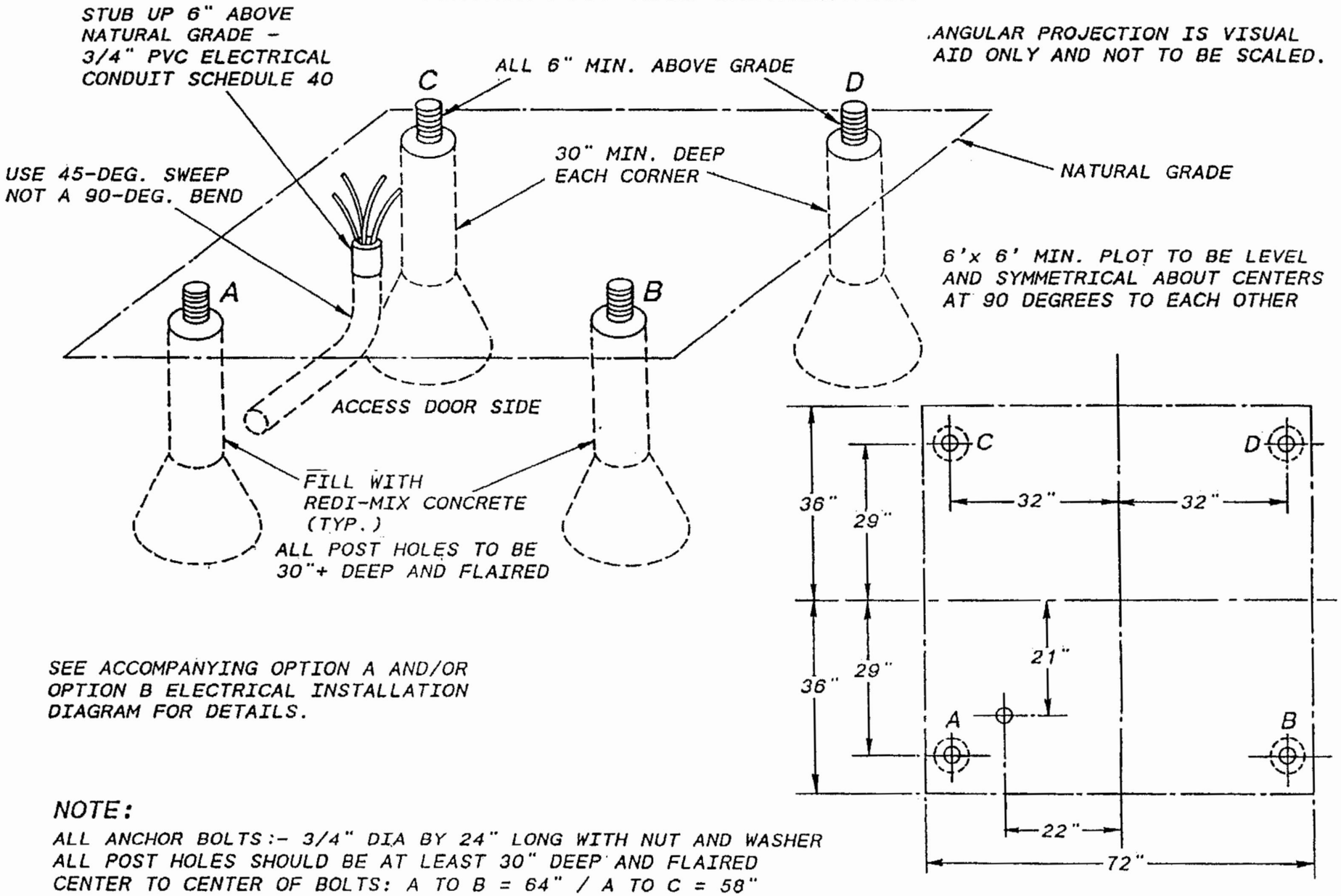
CENTAUR POST HOLE INSTALLATION

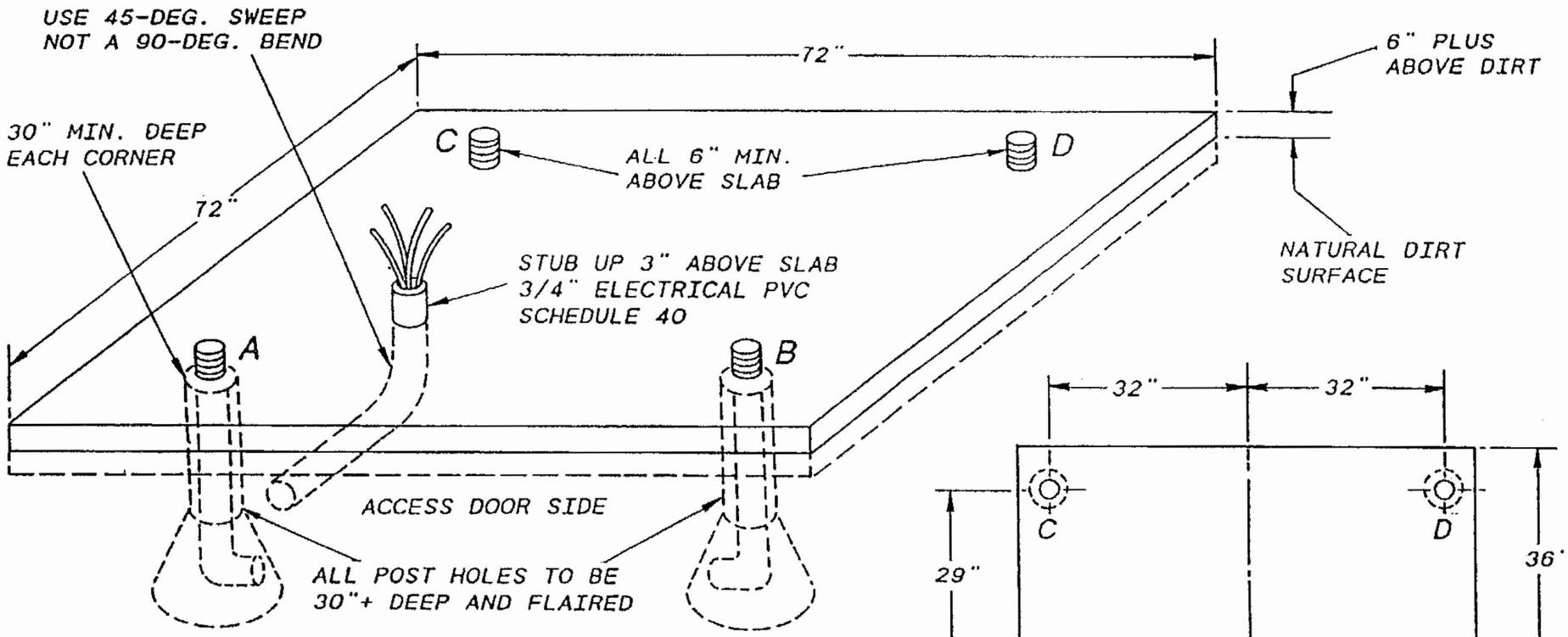


SEE ACCOMPANYING OPTION A AND/OR OPTION B ELECTRICAL INSTALLATION DIAGRAM FOR DETAILS.

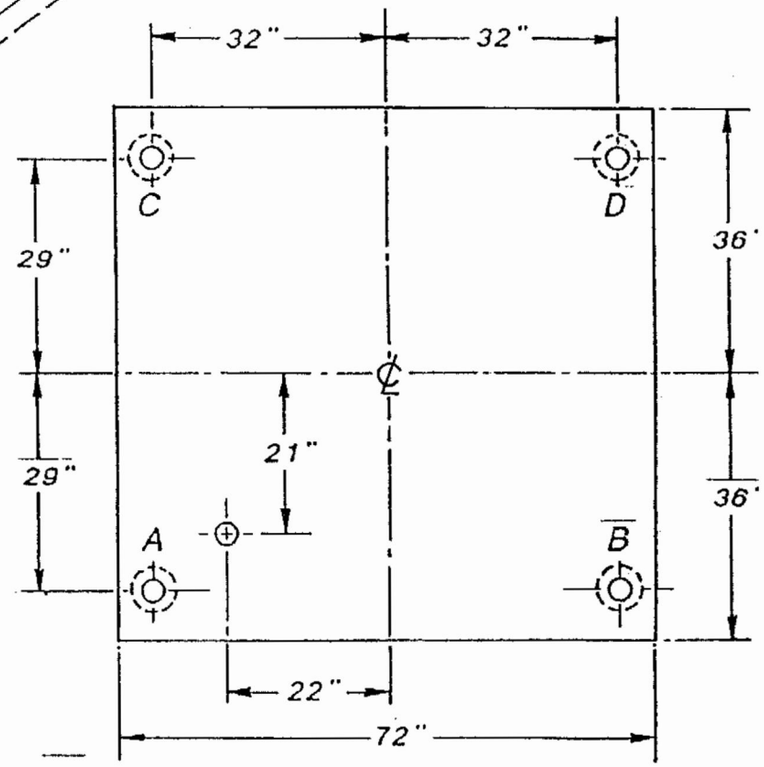
NOTE:

ALL ANCHOR BOLTS:- 3/4" DIA BY 24" LONG WITH NUT AND WASHER
ALL POST HOLES SHOULD BE AT LEAST 30" DEEP AND FLAIRED
CENTER TO CENTER OF BOLTS: A TO B = 64" / A TO C = 58"
CENTER TO CENTER OF BOLTS: C TO D = 64" / B TO D = 58"
CENTER TO CENTER DIAGONALLY OF BOLTS A TO D AND B TO C = 86 3/4"
ACCESS DOOR SIDE - A TO B

CENTAUR CONCRETE PAD INSTALLATION



ANGULAR PROJECTION IS VISUAL
AID ONLY AND NOT TO BE SCALED.



6'x 6' MIN. PLOT TO BE LEVEL
AND SYMMETRICAL ABOUT CENTERS
AT 90 DEGREES TO EACH OTHER

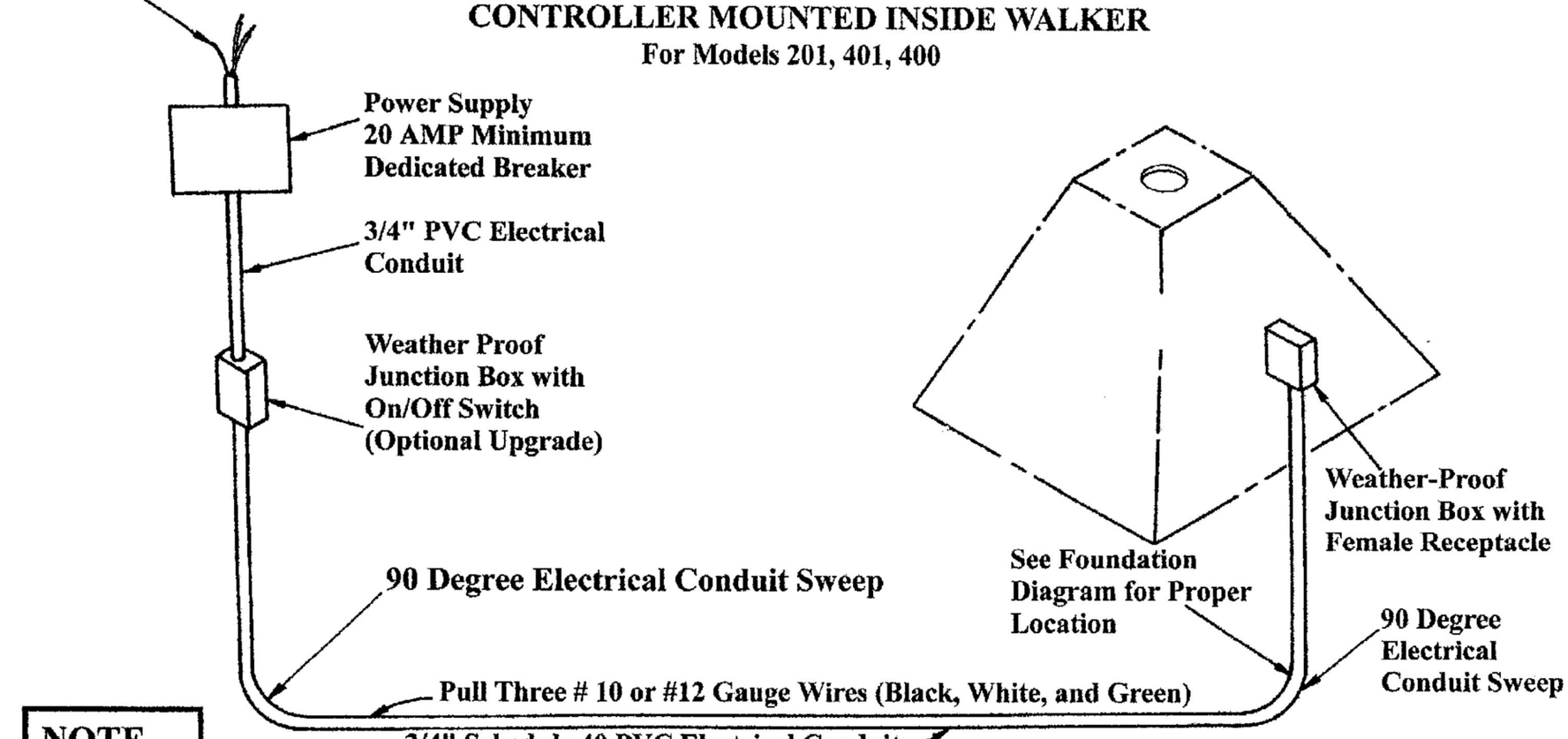
SEE ACCOMPANYING OPTION A AND/OR
OPTION B ELECTRICAL INSTALLATION
DIAGRAM FOR DETAILS.

NOTE:

ALL ANCHOR BOLTS:- 3/4" DIA BY 24" LONG WITH NUT AND WASHER
ALL POST HOLES SHOULD BE AT LEAST 30" DEEP AND FLAIRED
CENTER TO CENTER OF BOLTS: A TO B = 64" / A TO C = 58"
CENTER TO CENTER OF BOLTS: C TO D = 64" / B TO D = 58"
CENTER TO CENTER DIAGONALLY OF BOLTS A TO D AND B TO C = 86 3/4"
ACCESS DOOR SIDE - A TO B

CENTAUR 4 HORSE HOT WALKER
ELECTRICAL INSTALLATION
OPTION A 110/120V
CONTROLLER MOUNTED INSIDE WALKER

For Models 201, 401, 400



NOTE

Use #8 Wire for Runs Exceeding 150 Feet (46 M).
Maximum Run of Electrical Wire to be 250 Feet (76.2 M).
Maximum Run to be 250 Feet from 20 AMP Dedicated Breaker.
Minimum Depth of 3/4" PVC Schedule 40 Electrical Conduit to be TWO FEET DEEP WHERE HORSES WALK.

Electrical Installation by Licensed Contractor In Compliance with State and Local Building Code is Standard Procedure Recommended by Centaur Horse Walkers, Inc.

REQUIRED
GROUND ROD
8-10 FOOT COPPER ONLY
GROUND TO HOT WALKER
STEEL BASE/ GROUND CONTROL