

# OPERATION AND MAINTENANCE INSTRUCTIONS FOR THE T-400 AND CO-600 GORILLA CLIMBER

1. Carefully read and understand these instructions before operating the hoist.
2. Never remove the wire rope from the T-400 traction hoist unless it is damaged and/or you intend to change it. The wire rope is NOT self-threading and special instructions are necessary in order to install a wire rope in the machine.
3. Before using the machine test with the platform a few inches above ground to be sure the scaffold is installed properly and the machine is working properly.
4. Be sure platform is fastened to stirrup with adequate mechanical fastening device.
5. Keep the side faces of the nylon brake disc clean, and lubricate at least once a month or more often.

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## INSTALLATION

Attach the hoist to the scaffold platform so the operator faces the side with the instruction plate. NEVER ATTEMPT TO SUSPEND THE T-400 TRACTION HOIST FROM THE END OF THE WIRE ROPE THAT EXITS FROM THE SIDE OF THE HOIST OR YOU WILL DEFEAT BOTH BRAKES.

Carefully read the operating and instruction plate attached to the hoist. IF YOU DO NOT COMPLETELY UNDERSTAND THE INSTRUCTIONS ON THE PLATE OR IN THIS INSTRUCTION SHEET, DO NOT USE THE HOIST. An accident can result if the hoist is improperly operated or improperly maintained.

Before you install any scaffolding, be sure you are familiar with safe rigging procedures and that the scaffold is installed and used in compliance with all safety regulations, including OSHA.

# 1. BRAKES

Before using the scaffold, check the proper operation of both brakes.

The PRIMARY BRAKE is a pawl and ring ratchet directly attached to the winch drum INSIDE THE HOIST. It ratchets freely in the up direction. It must be released to come down. When lowering, keep a firm grip on the right handle so that you are supporting the load with the handle. Release the lever and allow the brake to immediately engage if you sense that the load is trying to turn the handle.

To descend, pull the brake lever on top of the T-400 hoist or lift up on the lever on the front of the CO-600 hoist. This releases the inner pawl so the drum is free to turn. Move the crank handle slightly in the UP direction before pulling the lever. This moves the pawl free of the teeth on the ratchet so that it can be released. This action is required so that the brake will not accidentally disengage without first raising the load. Test this brake before using and each day thereafter to be sure the pawl spring automatically engages the pawl when the lever is released and that it keeps the handle from turning downward.

To prevent injury, make certain the left handle is disengaged before descending. The brake lever must be continuously held while turning the crank handle downward. If it is released, the pawl should automatically engage, preventing further downward movement.

The SECONDARY BRAKE is located on the right crank handle shaft. A slight force in the downward direction should be necessary in order to descend. This brake should be adjusted so that it will hold the load securely (with the primary brake released) but so the load can be lowered with a slight force on the handle in the downward direction. The brake should be kept clean and lubricated for safe, smooth action. For this brake to be operative the steel pawl (06 0022), located on the outside of the hoist just above the right crank handle shaft, must never be disengaged from the nylon ratchet wheel on the crank handle shaft. NEVER, UNDER ANY CIRCUMSTANCES, ATTEMPT TO FORCE OR PULL THE PAWL OUT OF ENGAGEMENT WITH THE RATCHET WHEEL OR THE BRAKE WILL BE DEFEATED AND THE HOIST WILL FALL.

Before using the hoist, make sure the spring keeps the outside pawl engaged properly and that it stays engaged. The pawl must ratchet freely in the up direction. The pawl is located outside, in view of the operator, so that he can make certain that the pawl is properly engaged and working. NEVER USE THE HOIST IF THIS BRAKE IS NOT WORKING PROPERLY OR IF YOU ARE IN DOUBT. Once the top brake lever is pulled, this brake is the only brake which keeps the load from falling (other than the force you apply to the handle if you sense any downward pressure on the handle).

## ADDITIONAL BRAKE OPERATION INSTRUCTIONS

1. Keep the side faces of the nylon brake disc clean and lubricate at least once a month or more often.
2. If down brake seizes when descending, raise the scaffold slightly to release it before descending again.
3. On long, continuous descents, the brake disc may overheat and tighten. If this occurs, stop long enough to allow the disc to cool.

## SUMMARY

### THERE ARE THREE THINGS THAT CAN PREVENT THE LOAD FROM FALLING:

- A. A ratchet wheel inside the hoist attached to the main drum. Before the load can be lowered, this brake must be disengaged by pulling on the top brake lever. This brake is not engaged during descent.
- B. A disc type, load actuated, pressure brake on the main crank handle. Properly adjusted and maintained, this brake should always be engaged while coming down. A slight downward pressure on the handle should be necessary in order to descend, but a firm grip should be kept on the handle to hold the load in the event this brake does not function properly.
- C. The operator's force against the handle will also keep the load from falling. For safety, when descending, maintain a good hold on the right handle and release the brake lever immediately if you sense any force from the load in the downward direction.

INSTRUCTIONS 1 THRU 5 APPLY TO  
BOTH MODELS T-400 AND CO-600

## 2. HANDLES

Your hoist is equipped with two large crank handles to make it easier to lift heavy loads. You can operate UPWARD with one or both handles, as you prefer.

THE LEFT CRANK HANDLE MUST BE DISENGAGED WHEN DESCENDING so that it will not rotate and strike the operator. To disengage the left handle, rotate the nylon washer on the end of the left crank handle shaft until its slot lines up with the pin in the shaft. Move the handle outward to disengage it. To reengage the left handle, position it approximately 180° from the right handle so that the square opening on the handle lines up with the square shank on the axle. Line up the washer slot with the pin on the axle. Push the handle and the washer inward and rotate the washer so that it locks the handle on the shaft.

## 3. OPERATION

TO GO UP: Move the right handle clockwise. When you have reached the desired position, reverse the direction until you are sure the brake has engaged. It is not necessary to move any levers or to disengage the brakes when going up. Both brakes ratchet freely in the UP direction.

TO GO DOWN: Disengage the left crank handle (as described before). Raise the hoist slightly. Pull the brake lever with your left hand. Turn the right crank handle downward (counterclockwise).

## 4. MAINTENANCE

Keep the wire rope and the machine clean. After each job and at least once each three months inspect, clean and lubricate the hoist. If you are working with sprayed materials or if the job conditions allow materials to get onto the wire rope or in the machine, it will be necessary to inspect and clean the winch more often.

Remove the side cover, clean all parts. Check to see if anything is worn or needs repair. Lubricate.

Use only 5/16 inch, 6x19 construction, improved plow steel wire rope (galvanized is recommended for longer life). ON THE T-400 DO NOT REMOVE THE WIRE ROPE FROM THE MACHINE UNLESS YOU INTEND TO REPLACE IT.

To install new wire rope it is necessary to remove the cover from the machine. Follow specific instructions which can be obtained from your dealer. Be sure you are familiar with the procedure before installing wire rope.

It is important to keep the wire rope clean and free of debris that might enter the winch. You can protect the wire rope by slitting a length of rubber hose and placing it over the wire rope wherever foreign materials are present.

Never do any welding or burning near the hoist or the wire rope. The cable may be seriously weakened or destroyed.

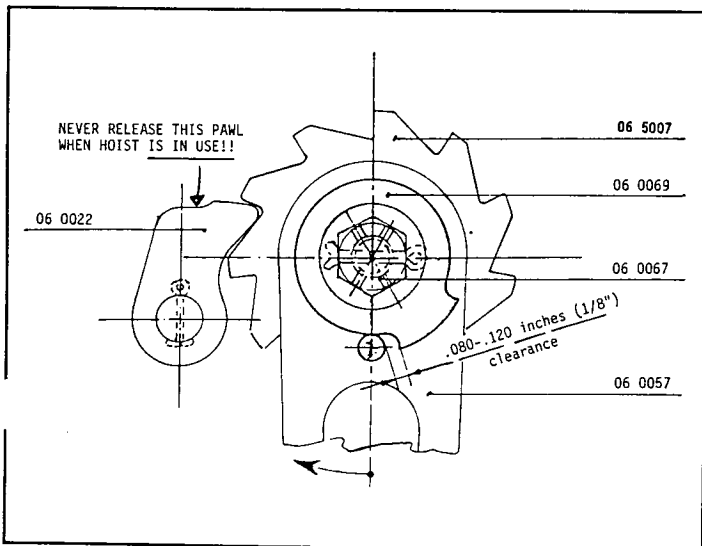
When replacing the wire rope in the machine allow for 10 feet of wire rope which remains in the machine. For example, if you want to lift a scaffold 140 feet you will need at least 150 feet of wire rope.

NOTE- On the T-400 the wire rope should never come in contact with silicon lubricants or other lubricants that materially reduce the coefficient of friction required to keep the wire rope from slipping on the traction sheaves. If in doubt, clean the wire rope and test the holding power before using.

## 5. BRAKE ADJUSTMENT

If the right crank handle is ever loosened or removed, it is essential to follow the correct procedure on reassembly to ensure proper adjustment and functioning of the outside, secondary brake.

- A. Thread the handle on the shaft until it is tight against the ratchet wheel (065007).
  - B. Install the stop washer (06 0069) as shown on drawing below so there is between .080 and .120 inches of clearance (about 1/8 inch) on the right side of the pin, between the arm on the stop washer and the pin attached to the crank handle.
  - C. Tighten the castellated nut (06 0067) and secure it with the cotter pin.
- Keep the brake clean and well lubricated.



## SPECIAL INSTRUCTIONS FOR THE CO-600 DRUM HOIST ONLY

CAUTION IS NECESSARY TO PROPERLY SPOOL WIRE ROPE

On any drum hoist, the wire rope must always be under tension while on the drum and while being spooled onto the drum. If it becomes loose, the upper wraps will be forced down between the lower wraps, damaging and entangling the wire rope.

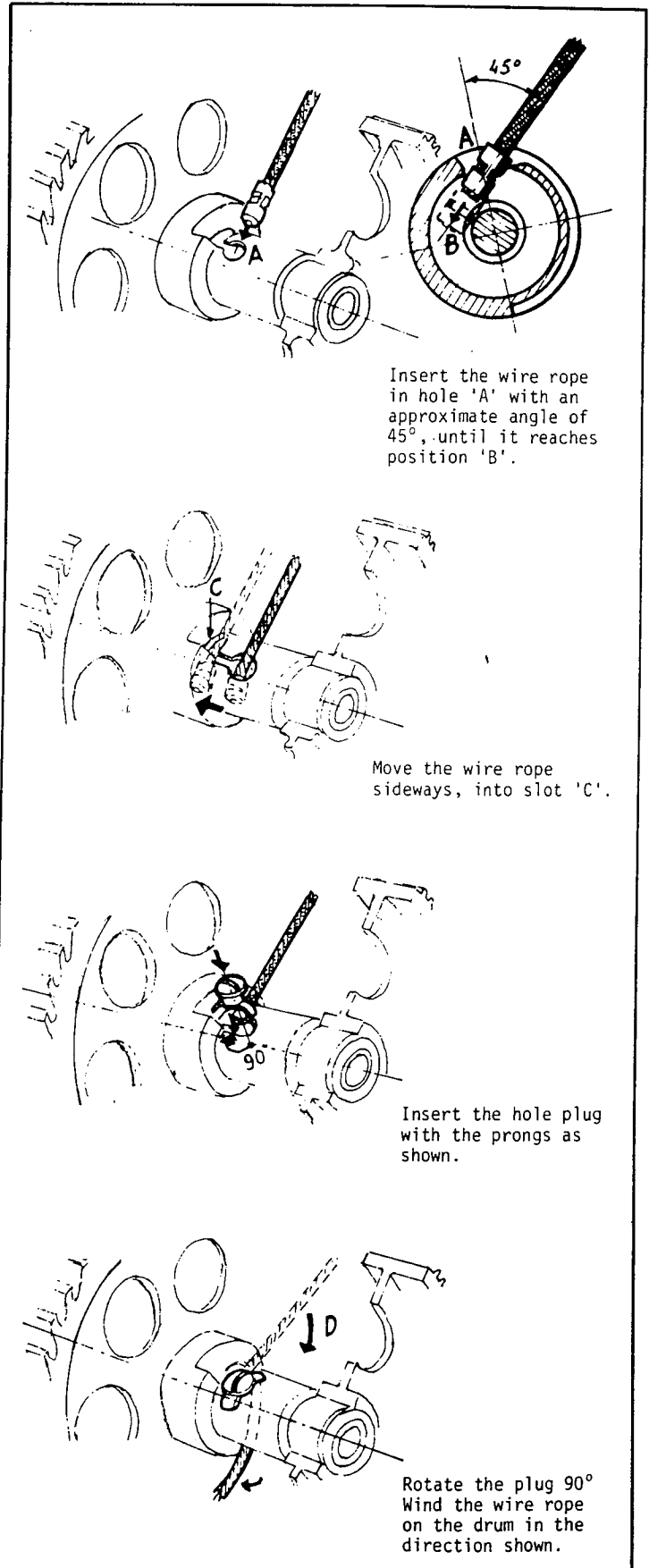
If the tension is released (such as the scaffold touching the ground or a ledge), it is necessary to respool the entire length of wire rope remaining on the drum, under tension.

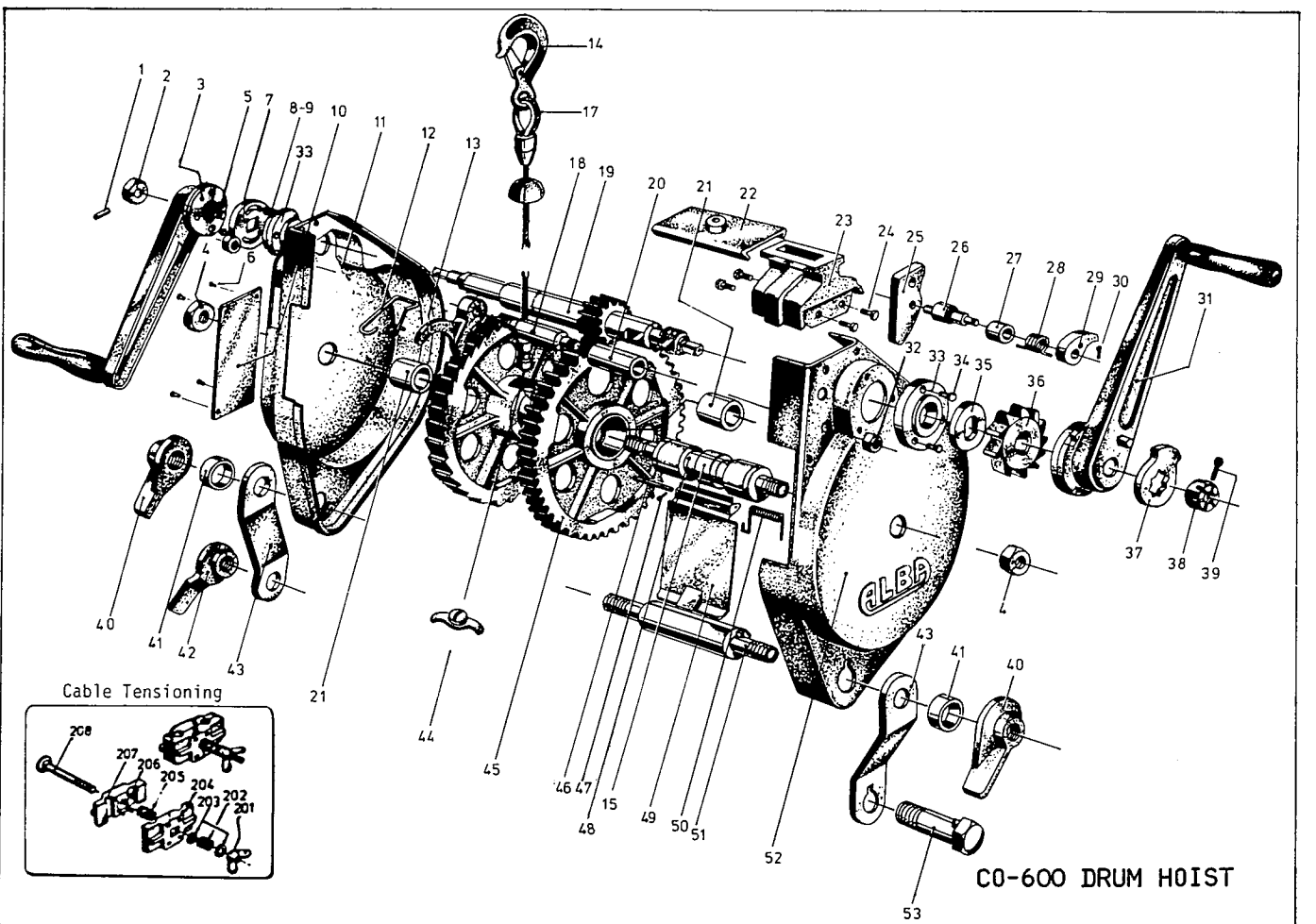
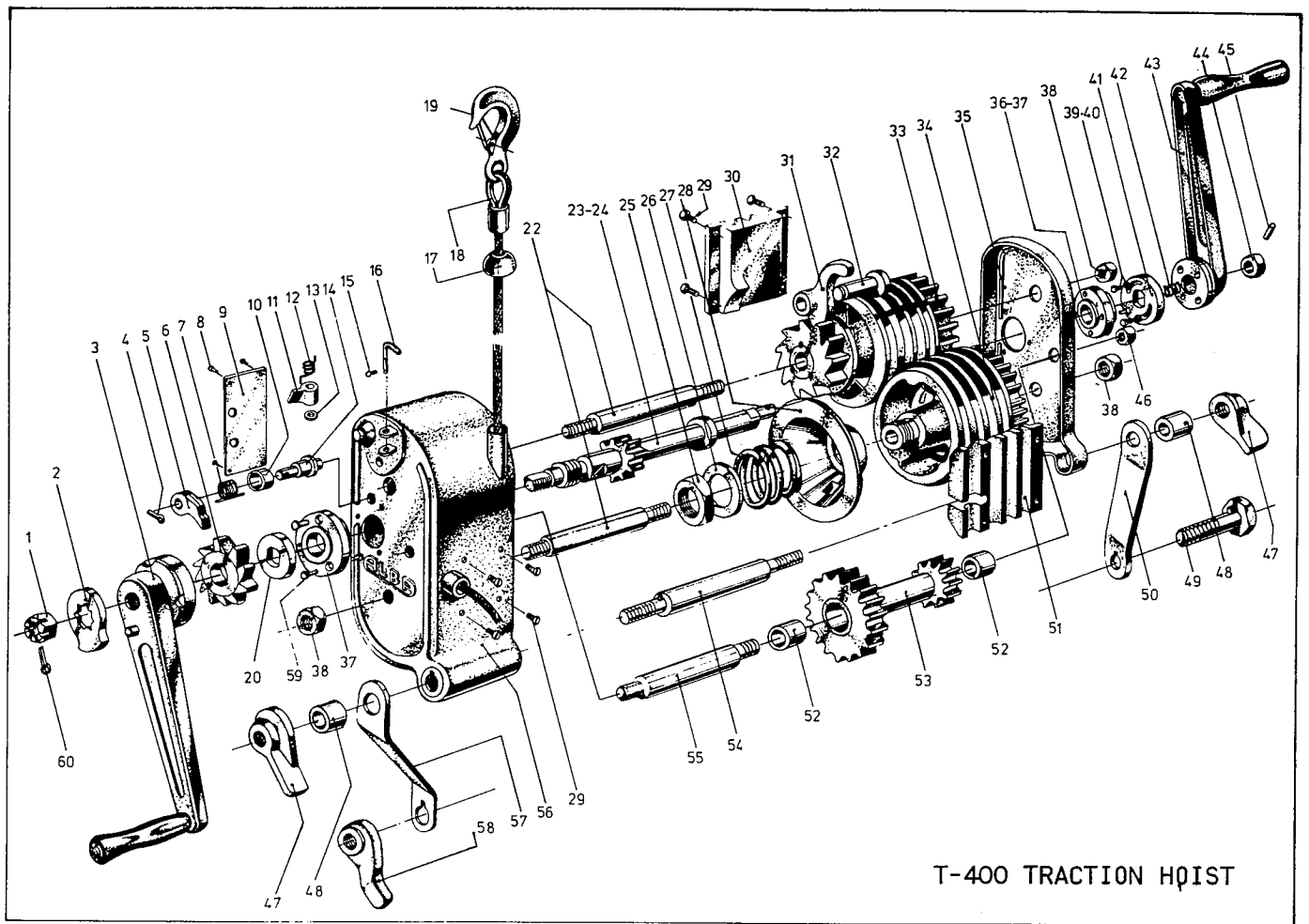
During use, continuously watch through the inspection door to be sure the rope is winding evenly back and forth on the drum.

Tension can be applied during spooling by applying a load to the hook, by pulling back on the rope or by clamping a tension block around the rope where it enters the top of hoist.

The maximum length of rope that can be wound on the drum is 165 ft.. AT LEAST FIVE (5) TURNS OF ROPE MUST REMAIN ON THE DRUM AT ALL TIMES TO BE CERTAIN THE LOAD IS NOT DIRECTLY APPLIED TO THE CONNECTION OF THE ROPE TO THE DRUM. The last five feet of rope should be painted red as a warning to the operator.

## INSTRUCTIONS FOR INSTALLING THE WIRE ROPE ON THE CO-600





## PARTS LIST: T-400 (TRACTION HOIST)

1. Nut, castellated	06-0067	31. Pawl, interior	06-0029
2. Washer, (stop)	06-0069	32. Bolt	06-0030
3. Crankhandle, (complete)	06-0057	33. Pulley, large (complete)	06-0053
4. Pin, cotter	05-0001	34. Pulley, small (complete)	06-0054
5. Pawl, exterior	06-0022	35. Cover	06-5004
6. Ratchet, brake	06-5007	37. Bushing (double handle)	06-0026
7. Spring, exterior pawl	06-0019	38. Nut	05-0006
8. Screw	05-0002	39. Screw	05-0007
9. Plate, instruction	06-5006	40. Washer	05-0008
10. Protector, spring	06-0047	41. Washer	06-2003
11. Stop	06-0044	42. Spring	06-2006
12. Spring	06-0032	43. Handle, removable (complete)	06-2008
13. Washer	05-0003	44. Positioner	06-2004
14. Bolt, exterior pawl	06-0025	45. Pin, spring	05-0009
15. Pin, cotter	05-0004	46. Nut	05-0010
16. Axle (pin), right angle	06-0045	47. Nut, butterfly	06-5001
17. Shield, water	06-0020	48. Bushing, support	06-5002
18. Rope (wire), with hook	06-0052	49. Bolt, load support	06-0042
19. Lock, hook assy	06-0015	50. Support, load (left)	06-0035
20. Disc, brake	06-0064	51. Guide, four channel	06-0033
22. Axle (bolt)	06-0011	52. Bearing, sleeve	06-0024
24. Axle, drive (double crank)	06-2001	53. Gear, intermediate (complete)	06-0055
25. Nut, auxiliary pulley	06-0040	54. Axle, load support	06-5003
26. Washer	06-0008	55. Axle, (bolt)	06-0014
27. Spring	06-0027	56. Case (complete)	06-0056
28. Plate, conical	06-0007	57. Support, load (right)	06-0036
29. Screw	05-0005	58. Nut, butterfly	06-0043
30. Guide, three channels	06-0034	59. Rivet	05-0011
		60. Pin, cotter	05-0012

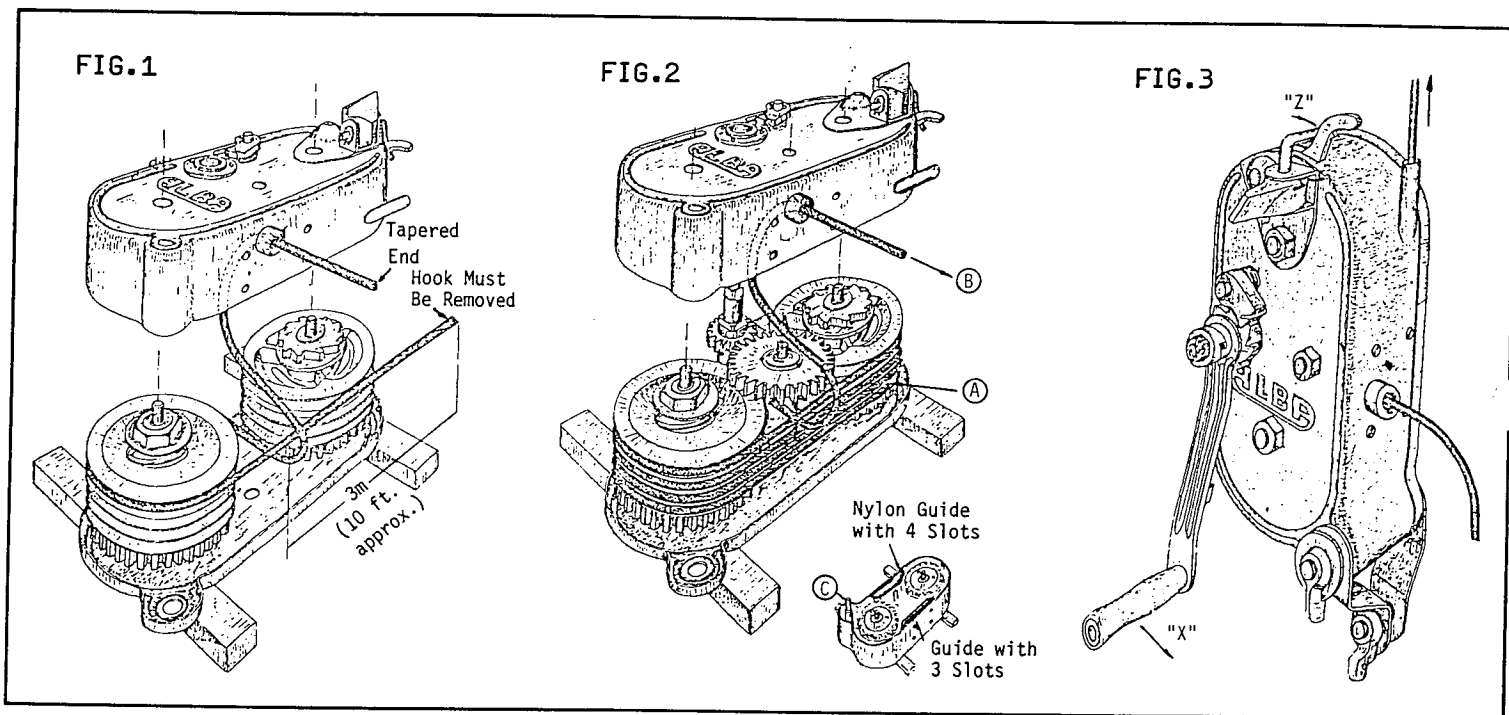
## PARTS LIST: C0-600 (DRUM HOIST)

1. Pin, spring	05-0009	35. Disc, brake	06-0064
2. Positioner	06-2004	36. Ratchet, brake	06-5007
3. Handle, removable (complete)	06-2008	37. Washer (stop)	06-0069
4. Nut	05-0013	38. Nut, castellated	06-0067
5. Spring	06-2006	39. Pin, cotter	05-0012
6. Rivet	05-0002	40. Nut, butterfly	06-5001
7. Washer	06-2003	41. Bushing, support	06-5002
8. Screw	05-0007	42. Nut, butterfly	06-0043
9. Washer	05-0008	43. Support, (load)	06-0035
10. Plate, instruction	07-5009	44. Plug, complete	07-5011
11. Cover	07-0001	45. Drum, complete	07-5014
12. Spring	07-0012	46. Axle, inspection plate	07-0007
13. Pawl, interior	07-0004	47. Pin, cotter	05-0015
14. Lock, hook assy	06-0015	48. Axle, drum	07-5003
15. Bearing, axle drive	07-0005	49. Plate, inspection	07-0006
17. Rope (wire), with hook	07-5013	50. Spring, inspection plate	07-0008
18. Axle, interior pawl	07-0003	51. Axle, load supports	07-5004
19. Axle, drive	07-0014	52. Cover (right)	07-5001
20. Bearing, axle interior pawl	07-5010	53. Bolt, load	06-0042
21. Bearing	07-5005		
22. Slide (complete)	07-0015		
23. Guide, cable exit	07-0009		
24. Screw	05-0014		
25. Support, exterior pawl	07-0013	CABLE TENSION DEVICE: 07-9001 (OPTIONAL)	
26. Bolt, exterior pawl	07-0011	-----	
27. Cover, exterior pawl spring	06-0047	201. Wing nut	05-0030
28. Spring, exterior pawl	06-0019	202. Spring	07-9013
29. Pawl, exterior	06-0022	203. Washer	05-0031
30. Pin, cotter	05-0001	204. Jaw half	07-9011
31. Handle, (complete)	06-0057	205. Spring	07-9014
32. Nut	05-0006	206. Pin, spring	05-0032
33. Bearing	06-0026	207. Jaw half	07-9012
34. Rivet	05-0011	208. Bolt, carriage	05-0033

# INSTRUCTIONS FOR INSTALLING THE WIRE ROPE ON THE T-400 (TRACTION WINCH)

(This method can not be used if the hook is installed on the end of the rope.)

1. The wire rope should never be removed unless it is damaged or a longer rope is required. It takes from 10-60 minutes to install a new wire rope, depending upon familiarity and dexterity.
2. Assemble the drive axle and its gear. Grease the gears at this time. Install the wire rope as shown on the drawing, making certain the end of the rope is exactly at point A, Fig. 2.
3. Install the large half of the cover. Turn the winch over and remove the smaller half of the cover. Install the nylon wire rope guides inside the cover as indicated on Fig. 2. Install Bolt 'C'.
4. Move the top ratchet lever to the lowering position. Turn the drive axle in the lowering direction (counter-clockwise) until the end of the cable exits from the winch. Use a small rod to help guide the cable end into the exit tube, if necessary. Install the hook on the end of the cable.



## AN ALTERNATE METHOD OF INSTALLING THE WIRE ROPE

This method can be used with the hook already installed. It is 'semi self-reeving'.

The end of the rope must be guided through the hoist.

1. Remove both handles. Remove the smaller side of the cover and place the winch on a support higher than the axle bolt. Loosen the four bolts that hold each of the nylon cable guides enough so that they can be moved around but do not remove guides. (Some people find it easier not to loosen the Nylon block. Use whichever method seems easier for you).
2. Be sure you have a tapered point on the lower end of the cable. Feed the pointed end into the top exit tube, through the top channel of the nylon guide, around the sheave, through the guide on the other side, and progressively

around the lower grooves of the two sheaves. By turning the drive axle (with a wrench) the rope will move forward. If it becomes blocked in its travel, back off slightly. Use a wire hook or other pry tool to help guide the rope progressively into each groove of the sheaves and through the channels in the nylon guides. Never try to force the rope or it may jam. As the wire rope exits from the lowest groove in the sheave, guide it into the side exit. Tighten the nylon guide blocks and install the top cover. Do not 'over-tighten' the guide block screws or you may strip the threads in the Nylon block.