BISON
LIFTING EQUIPMENT

OPERATING AND MAINTENANCE MANUAL

Introduction

This manual is provided by Bison Lifting Equipment covering the safe operation and maintenance procedures for the Manual Chain Lever Hoist. This manual contains instructions on installation, general operating procedures and maintenance instructions.

Contents

Set-Up

Pre-Operation Inspection

Ensure the hoist is securely supported on whatever method of suspension is chosen, making sure the capacity can be safely supported.

Before use, inspect the hoist's load chain for any damage, twists or kinks. Do don't operate the hoist if either the hoist or load chain show signs of damage.

Before using the hoist, apply oil to the chain for easier operation and to prolong the life span.

Do not attempt to lengthen the load chain in any way.

Proceed to inspect the hooks for signs of deformation and damage. Replace a hook immediately if:
- Safety latch no longer contacts the hook opening.
- The vertical angle of the hook is deformed.
- Signs of corrosion or excessive wear.

Do not attempt to repair the hooks as this could weaken them.

With the selector switch in the 'UP' position, while pulling down on the hook-end of the chain or with a load connected, ratchet the lever in the natural motion whilst listening for the clicking sounds. If the sounds are not present, or irregular, do not use the hoist. Have the hoist inspected and repaired by qualified personnel. Repeat the process with selector switched to the 'DOWN' position.

The brake mechanism must be kept clean and free from dirt and water. The brake should not slip while using the hoist. Before proceeding to hoist an application to a dangerous height, test the hoist brake to ensure the hoist can suspend and hold the weight from a safe height.

Operation

Below is the general procedure for operating the hoist:

1. Fasten the top hook securely, ensuring the safety latch contacts the hook.
2. Fasten the bottom hook securely, ensuring the safety latch contacts the hook. Center the load with the neck of the hook. (NOTE: incorrectly positioning a hook could damage the hook as well as the application being lifted.)
3. Place the selector switch in the center neutral position. This will allow free-wheel mode. (NOTE: Chain will only free-wheel when there is no load) Take up the slack by pulling on the loose or free end or by turning the handwheel.
4. Move the selector switch to the 'UP' position. Ratchet the lever to raise or pull the load.
5. To release or lower the load, turn selector switch to the 'DOWN' position and ratchet the handle.

Do NOT proceed to ratchet the hoist if the effort required is much harder than natural. This is a sign of overloading the hoist.

Precautions

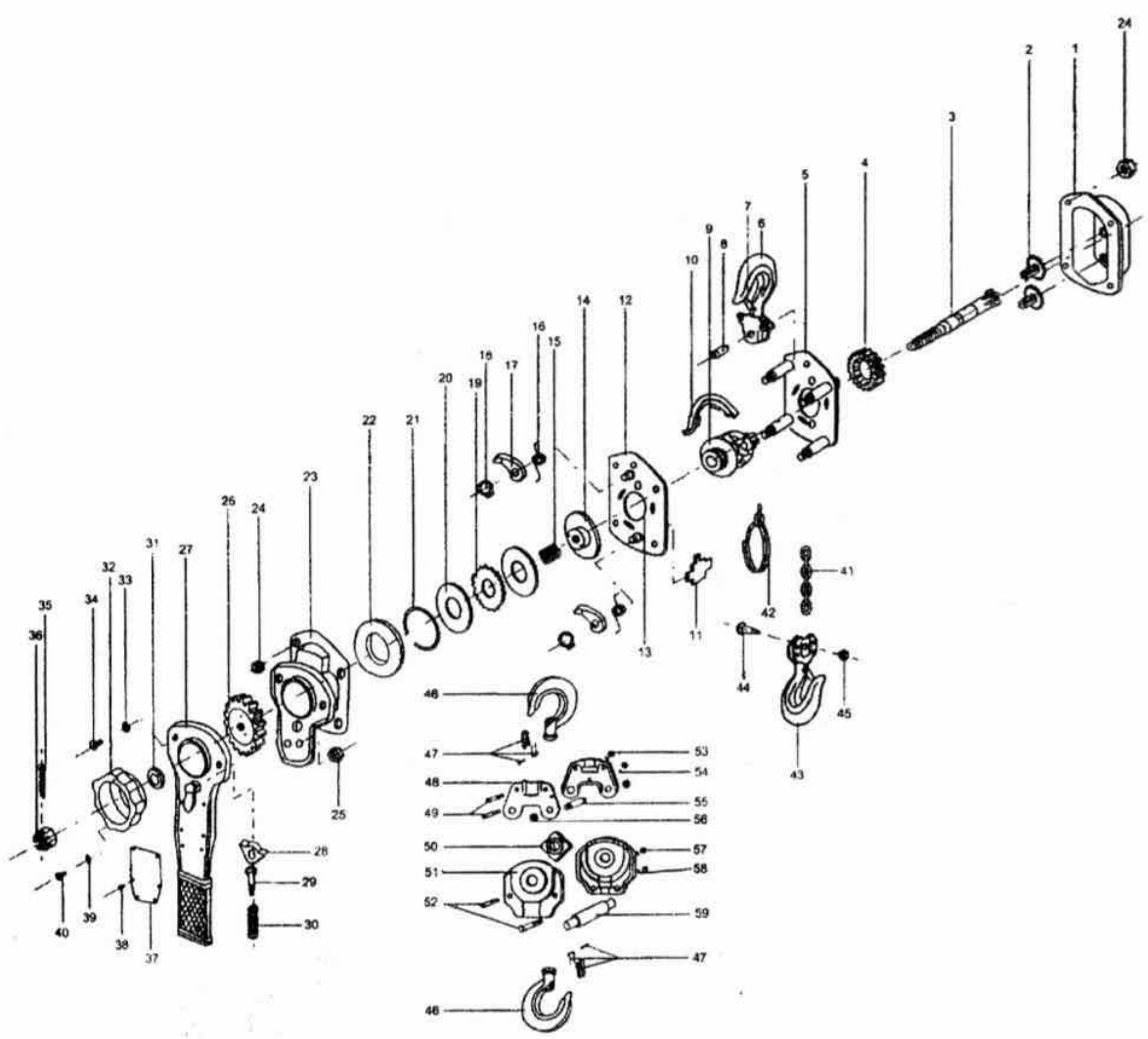
- During overhead lifting operations, personnel should NOT stand beneath the suspended load.
- Do NOT attempt to extent the lever of the hoist.
- Operator should NOT use their foot to force the lever.
- Prevent the load chain from dragging over sharp edges or corners.
- Do NOT leave a suspended load unattended.
- Do NOT attempt to lift people.
- Do NOT use the load chain to basket or choke a load.
- Be cautious of having fingers caught in the mechanisms.
- Do NOT drag or drop the hoist.

Maintenance

Make frequent and careful inspections of the hoist. Make sure the hoist and chain are sufficiently oiled, and that they are free of any sand, dirt, dust or other obstruction or abnormality.
Any hoists used out-doors should be covered up or stored in a clean dry environment when not in use.

Troubleshooting

Trouble	Probable Cause	Remedy
Chain will not move in either direction.	Insufficient lubrication.	Oil the hoist and chain.
	Hoist is dirty.	Disassemble and clean out dust, dirt or other foreign matter. Oil the hoist after reassembly.
	Selector switch is not in proper position.	Toggle the selector switch to the desired action and attempt ratcheting.
Load chain will not advance during normal operation, or advances with great difficulty.	Selector switch is not in proper position.	Toggle the selector switch to the desired action and attempt ratcheting.
	Pawls are not lubricated.	Oil the pawl linkages properly.
	Load is beyond hoists capacity.	Decrease load or use a larger hoist.
	There is an obstruction within the chains path.	Operate the hoist in the reverse action to loosen; clean and oil the hoist and the load chain.
Selector switch will not engage properly.	The levers springs are stretched.	Replace the springs.



1. Gear Case Assembly	17. Pawl	33. Lock Washer	49. Screws
2. Spur Gears	18. Snap Ring	34. Screw	50. Idle Sheave
3. Drive Shaft	19. Ratchet Disk	35. Split Pin	51. Bottom Hook Body
4. Splined Gear	20. Friction Disk	36. Castle Nut	52. Screws
5. Geared Side Plate Assembly	21. Wire Snap Ring	37. Name Plate	53. Nut
6. Top Hook	22. Female Disk	38. Rivet	54. Lock Washer
7. Safety Latch Assembly	23. Brake Cover Assembly	39. Lock Washer	55. Bottom Hook Assembly Pin
8. Top Hook Shalf	24. Nut	40. Screw	56. Nut
9. Load Sheave	25. Nut	41. Load Chain	57. Nut
10. Guide Plate	26. Load Gear	42. Chain Ring	58. Lock Washer
11. Stripper	27. Lever Handle Assembly	43. Bottom Hook Assembly	59. Idle Sheave Pin
12. Lever Side Plate Assembly	28. Change Over Pawl	44. Bolt	
13. Bearing Race	29. Spring Shaft	45. Nut	
14. Disk Hub	30. Change Over Spring	46. Hook	
15. Free Spring	31. Bushing	47. Safety Latch Assembly	
16. Pawl Spring	32. Hand Wheel	48. Hook	