OPERATION AND MAINTENANCE MANUAL
for the
LH LEVER CHAIN HOIST

MODEL LH 150
3/4 TON (US)

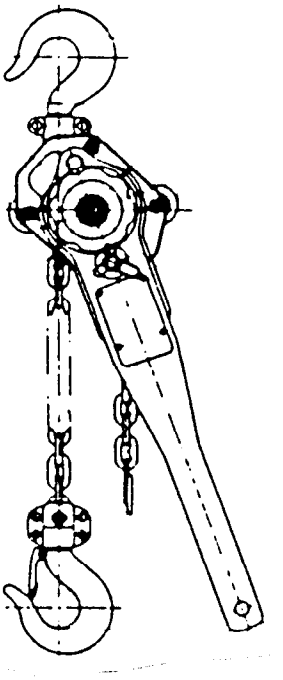
MODEL LH 300A
2 TON (US)

MODEL LH 600
3 TON (US)

MODEL LH 150A
1 TON (US)

MODEL LH 300
1 1/2 TON (US)

MODEL LH 1200
6 TON (US)



1 U.S. ton = 2,000 lbs
1 metric ton = 2,200 lbs

READ THIS MANUAL BEFORE USING THESE PRODUCTS. This manual contains important safety, installation, operation and maintenance information. Make this manual available to all persons responsible for the operation, installation and maintenance of these products.

⚠ WARNING

Do not use this hoist for lifting, supporting, or transporting people or lifting or supporting loads over people.

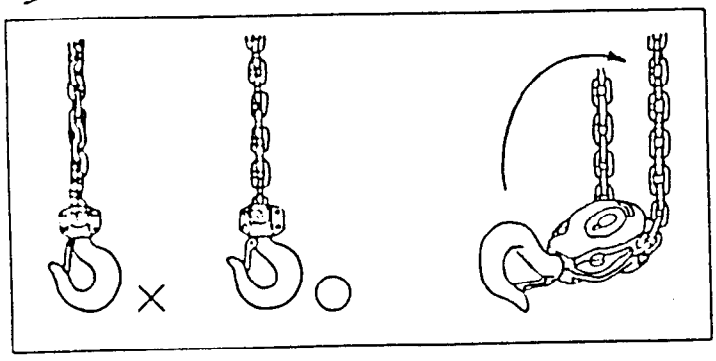
Always operate, inspect and maintain this Hoist in accordance with American National Standards Institute Safety Code (ANSI HST-3M and B30.21) and any other applicable safety codes and regulations. Refer all communications to the nearest Ingersoll-Rand Material Handling Products Office or Distributor.

Form MHD56021
Edition 3
April 1992
71044259

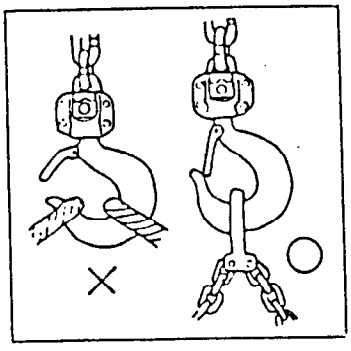
INGERSOLL-RAND®
MATERIAL HANDLING

WARNING

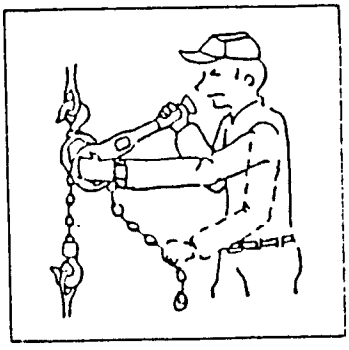
1 • *No twisting. No capsizing for double type chains.



2 • *Hang the load in the dead-center of the hook.

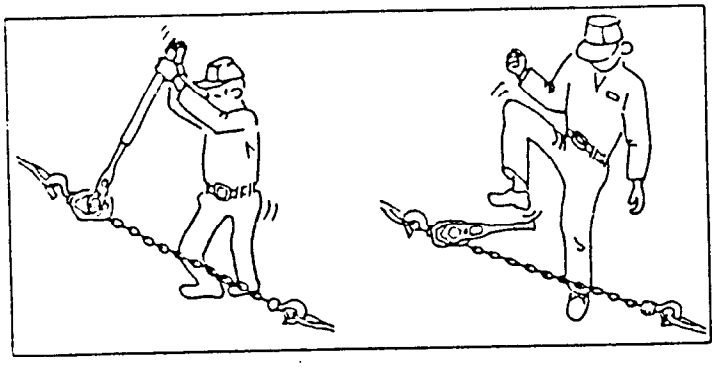


3 • *When hanging the load do not touch it with the load chain and free knob.

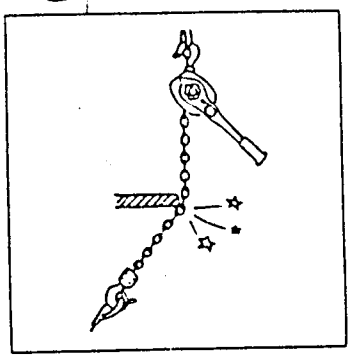


4 • *No overloading. Lengthening the lever will mean overloading.

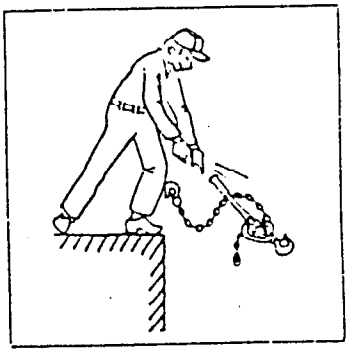
• *Do not step on the lever, as the shock will increase the load.



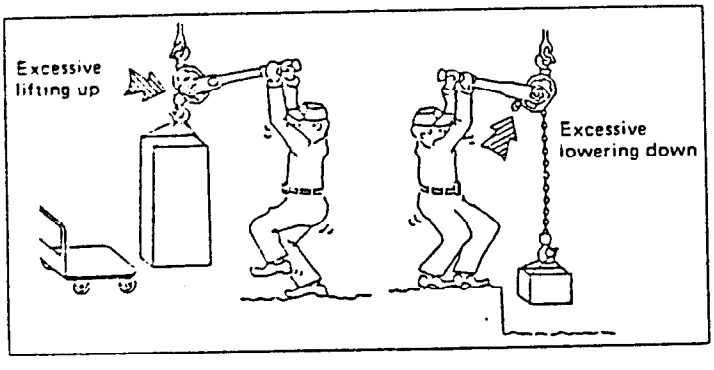
5 • *Do not hit the load chain with any corner of the good.



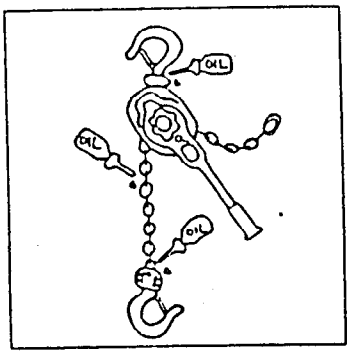
6 • *No rough handling.



7 • *Do not lift up or lower down excessively.

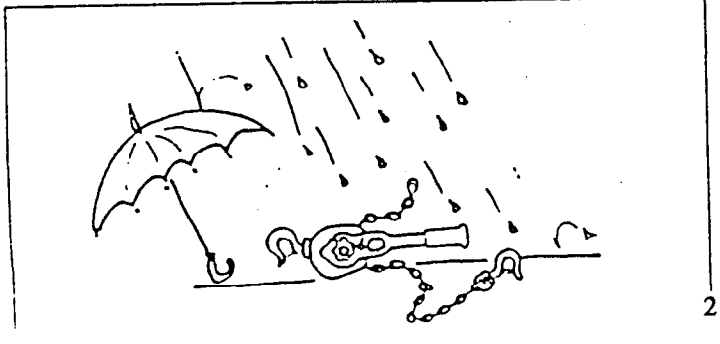


8 • *After use, oil the load chain, the hook joints and idle sheave shaft (6 & 9 ton) after removing any dirt and moisture. Then store the hoist into storage.



9 • Do . oil friction plates.

10 • *Do not expose rain water, damp or excessive humidity.



Use Hoists with Nickel Diffused anti-corrosion chains in environments which are likely to cause rust.

SAFE OPERATING INSTRUCTIONS

The following warnings and operating instructions have been adapted in part from American National (Safety) Standard ASME B30.21 and are intended to avoid unsafe operating practices which might lead to personal injury or property damage.
These recommendations apply to hoists used for material handling of freely suspended unguided loads.

INGERSOLL-RAND recognizes that most companies who use hoists have a safety program in force in their plants. In the event that some conflict exists between a rule set forth in this publication and a similar rule already set by an individual company, the more stringent of the two should take precedence.

Safe Operating Instructions are provided to make an operator aware of dangerous practices to avoid and are not necessarily limited to the following list. Refer to specific sections in the manual for additional safety information.

1. Only allow qualified people (trained in safety and operation) to operate the hoist.
2. Only operate a hoist if you are physically fit to do so.
3. When a "DO NOT OPERATE" sign is placed on the hoist, do not operate the hoist until the sign has been removed by designated personnel.
4. Before each shift, the operator should inspect the hoist for wear or damage.
5. Never use a hoist which inspection indicates is defective.
6. Periodically, inspect the hoist thoroughly and replace worn or damaged parts. (See "INSPECTION" Section)
7. Lubricate the hoist regularly. (See "LUBRICATION" Section)
8. Do not use hoist if hook latch on a hook has been sprung or broken.
9. Check that the hook latches are engaged before using.
10. Never splice a hoist chain by inserting a bolt between links.
11. Only lift loads less than or equal to the rated capacity of the hoist. See warning labels attached to the hoist.
12. Never use the hoist chain as a sling.
13. Never operate a hoist when the load chain is not centered under the hook. Do not "side pull" or "yard."
14. Never operate a hoist with twisted, kinked, "cap-sized" or damaged load chain.
15. Do not force a chain or hook into place by hammering.
16. Never insert the point of the hook into a chain link.
17. Be certain the load is properly seated in the saddle of the hook.
18. Do not support the load on the tip of the hook.
19. Never run the load chain over a sharp edge. Use a sheave.
20. When using two hoists to suspend one load, select two hoists both having rated capacities equal to or more than the load to be lifted. This provides adequate safety in the event of a sudden load shift or failure of one hoist.
21. Pay attention to the load at all times when operating the hoist.
22. Always ensure that you, and all other people, are clear of the path of the load. Do not lift a load over people.
23. Never use the hoist for lifting or lowering people, and never allow anyone to stand on a suspended load.
24. Ease the slack out of the chain and sling when starting a lift. Do not jerk the load.
25. Do not swing a suspended load.
26. Never suspend a load for an extended period of time.
27. Never leave a suspended load unattended.
28. Never weld or cut a load suspended by the hoist.
29. Never use the hoist chain as a welding electrode.
30. Do not operate hoist if chain jumping, excessive noise, jamming, overloading, or binding occurs.
31. Keep the load from hitting the load chain.
32. Do not use a cheater bar or extended handle.
33. After use, properly secure hoist and loads.

ROUSTABOUT LEVER HOIST MODELS: LH150, LH300, LH600, LH1200

IMPORTANT: Read these instructions before using

OPERATING INSTRUCTIONS:

1. Before each use - Check to see chain is not twisted or kinked. Apply light oil to chain. Examine for any visual signs of bending of the handle or hook openings which indicates an overload condition has occurred. The hoist should not be used further without having it checked at an authorized Beebe Bros. service station or at the Beebe Bros. factory. Check each time before using.

2. **To Operate:**
   A. Free chain - This product has a unique free chain system for fast chain adjustment.
   DO NOT FREE CHAIN WHEN UNIT IS LOADED.
   To Free Chain:
      1. Make sure lever hoist is not attached to load.
      2. Move selector to N.
      3. Pull free gearing wheel and turn counterclockwise until wheel disengages from drum - when disengaged, spline on shaft is visible behind wheel.
      4. Adjust chain.
      5. Rotate Wheel counterclockwise to engage - If not fully engaged, turn clockwise until achieved.
      6. Move selector lever to U or D.

   B. To raise or pull load:
      1. Engage free gearing wheel and move selector lever to U. Make sure selector lever rides over back flange of free gearing wheel.
      2. Take up chain slack by turning wheel to right.
      3. Ratchet handle to raise or pull load.

   C. To lower:
      1. Move selector lever to D.
      2. Ratchet or rotate handle to lower or release load.

   D. Never pull chain in or out to its maximum length.

3. **After use:**
   A. With selector on D, operate handle a few times to release brake.
   B. Clean and oil chain and guide rollers.
   C. Oil neck of hooks and check hooks for bending or opening.
   D. Store in protected dry area.

Beebe Roustabouts are designed for normal hoisting and pulling service. To assure a long life and safe use, please observe the following precautions:

1. Use only within a rated capacity.
2. Position load correctly. Place load on hook only in a straight line.
3. Use only with standard handle furnished on hoist.
4. Regularly inspect hooks for opening, handles for bending and chain for damage or wear.
5. Regularly check for proper lubrication.

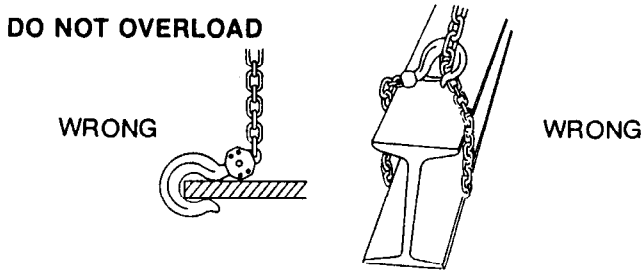
Inspection

Regular inspection is important. Before each use, always check the hoist for the following:

a. Braking mechanism for evidence of slippage under load.
b. Load chain for wear and twist, broken, cracked or otherwise damaged link. Daily check for deposits of foreign material which may be carried into the hoist mechanism.
c. Hooks for deformation, chemical damage or cracl Hooks damaged from chemicals, deformations or cracks or having more than 15% in excess of normal throat opening or more than 10% twist from the point of the unbent hook, indicates abuse or overloading of the unit. Other load bearing components of the hoist should be inspected as well.

Some common misapplications to avoid are as follows:

1. Never run chain over a sharp edge.
2. Do not reach around corners or load hooks in a manner as illustrated below. Such loading can cause damage to the hook assembly, the wire rope and the hoist body.



3. Do not use hoist or wire rope or chain as sling or hoist hook as choker on chain.
4. Do not use "cheater" or extended handle on lever hoist.
5. Do not use for lifting, lowering or moving persons. Never lift loads over people.

Units returned without handles or with bent handles; opened or twisted hooks; or without chain and hooks will not be repaired or replaced under warranty.

Caution: Purchaser and user are cautioned to examine specific, local or other regulations, including American National Standard Institute and/or OSHA Regulations, which may apply to a particular type of use of this product before installing or putting to use.

See inside for instructions on brake part replacements and for a trouble shooting guide.

IMPORTANT:

The National Safety Council, Accident Prevention Manual for Industrial Operations, Seventh Edition and other recognized safety sources make a common point: "All employees working with cranes or hoists or assisting in hooking or arranging a load should be instructed to keep out from under load. From a safety standpoint, one factor is paramount: conduct all lifting operations in such a manner that if there were an equipment failure, no personnel would be injured. This means keep out from under raised load and keep out of the line of force of any load."

DO NOT OVERLOAD

LITHO IN USA

"Do not use for raising or lowering people."

Form LH2 RST 8-84 20K

Brake Reassembly Instructions

REASSEMBLY INSTRUCTIONS

or replacing friction plate or overhauling a friction plate, reassemble as follows:

1. **STEP ONE**—Reassemble the component parts as illustrated in FIG. A. Be sure to replace the ratchet disc on the correct side for proper engagement with holding Pawl.

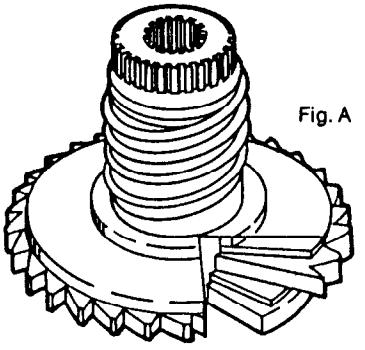


Fig. A

2. **STEP TWO**—With the selector lever set to "UP" put the male screw back into the assembly. (FIG. B)

When replacing the male screw, be careful that the friction plate is not out of alignment as shown in FIG. C. Then, tighten the screw as shown in FIGS. D and E.

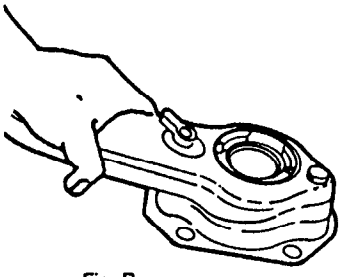


Fig. B

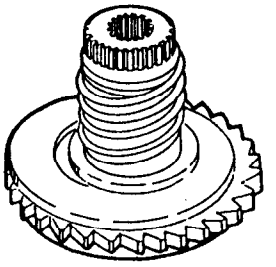
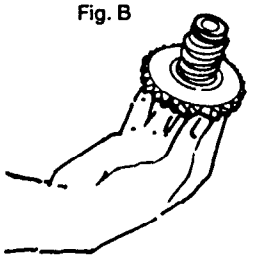


Fig. C



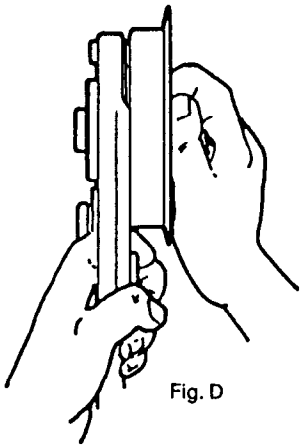


Fig. D

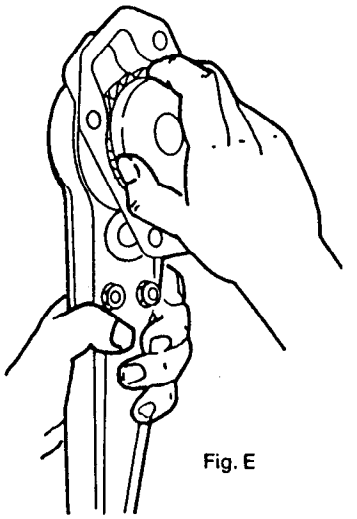


Fig. E

3. **STEP THREE**—Fit the cam guide in the change-over wheel with the clearance A kept slightly smaller than the clearance B as shown in FIG. F. The cam guide should properly fit in one of the three recess portions of the change-over wheel. When fitting the cam guide according to the above steps, keep the following in mind:

   A. Do not loosen the male screw already tightened in Step 2.
   B. Fit the circled portion of the cam guide brackets (FIG G) in the recess of the change-over wheel.
   C. Do not leave the clearance A (FIG F) extremely narrow. It makes the "DN" operation heavy.
   D. Do not leave the clearance B (FIG F) extremely narrow, because it may cause the brake to slip and is therefore dangerous.

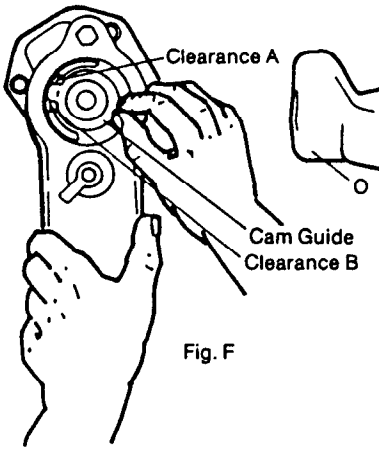


Fig. F

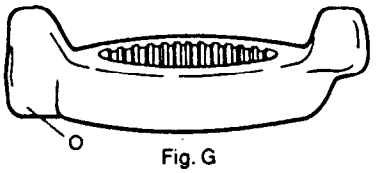


Fig. G

4. **STEP FOUR**—With the above steps completed, fit the brake mechanism back into the pinion shaft as shown in FIG H. Then, replace the free-gearing knob, etc.

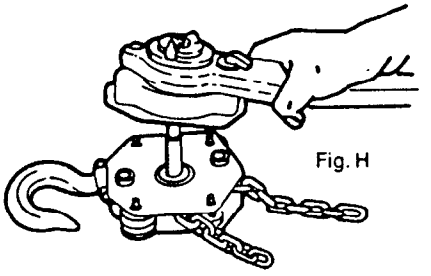


Fig. H

See trouble-shooting chart next page.

Trouble Shooting Chart

No.	Trouble	Probable Cause	Remedy
1	Free-gearing system does not function, because the free-gearing knob cannot properly fit into the cam guide.	The bottom of the free-gearing knob has been distorted, thus engagement of the pinion gear and the driving gears has become as shown in Fig. c. The free-gearing knob will be distorted if it is forcibly replaced by striking, etc. See Remedy 2.	Replace the free-gearing knob.
2	The free-gearing knob has been fit in the projected portion of the cam guide, but the driving gears will not become idle.	The pinion gear will not disengage from the driving gears properly (as shown in Fig. d) because the projected portion of the cam guide or the bottom of the free-gearing knob has been worn. Note: Fig. (a) shows the correct engagement of the gears, and Fig. (b) shows the free-gearing system at work.	Replace the free-gearing knob or the cam guide as required.

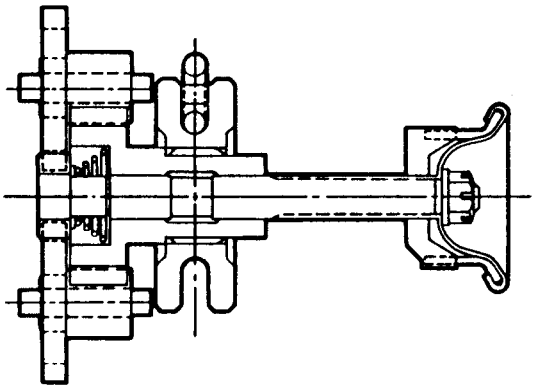


Fig. (a)

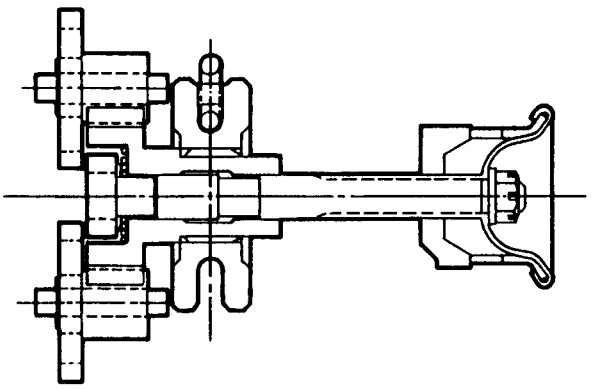


Fig. (b)

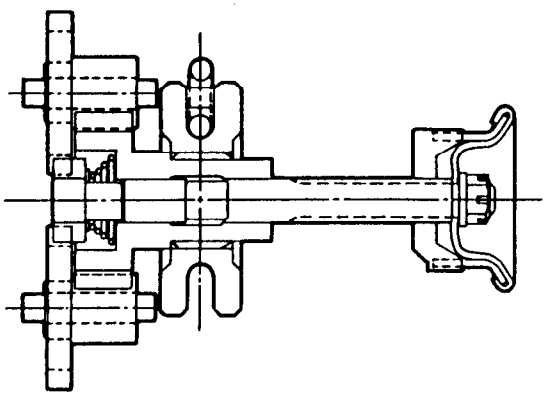


Fig. (c)

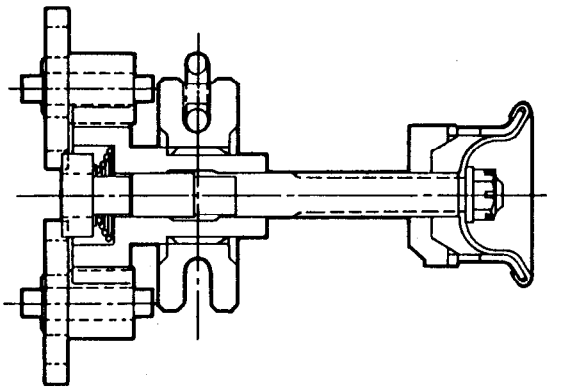
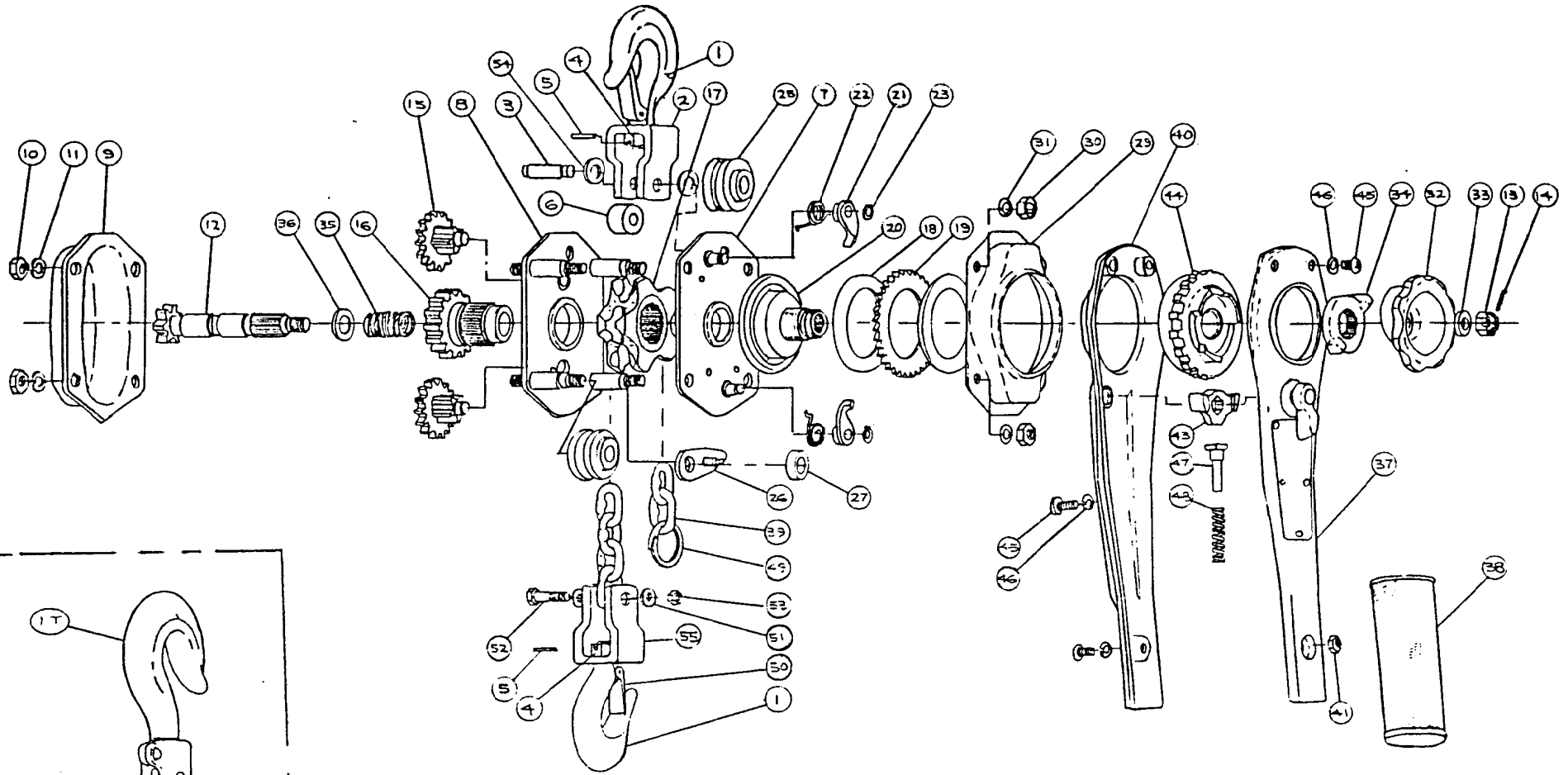
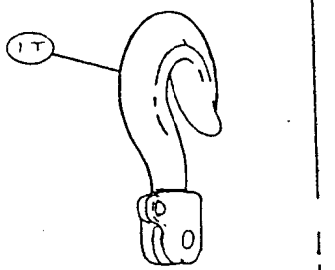
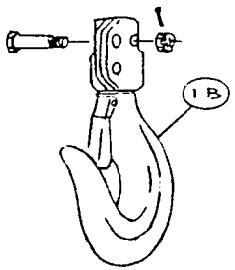


Fig. (d)

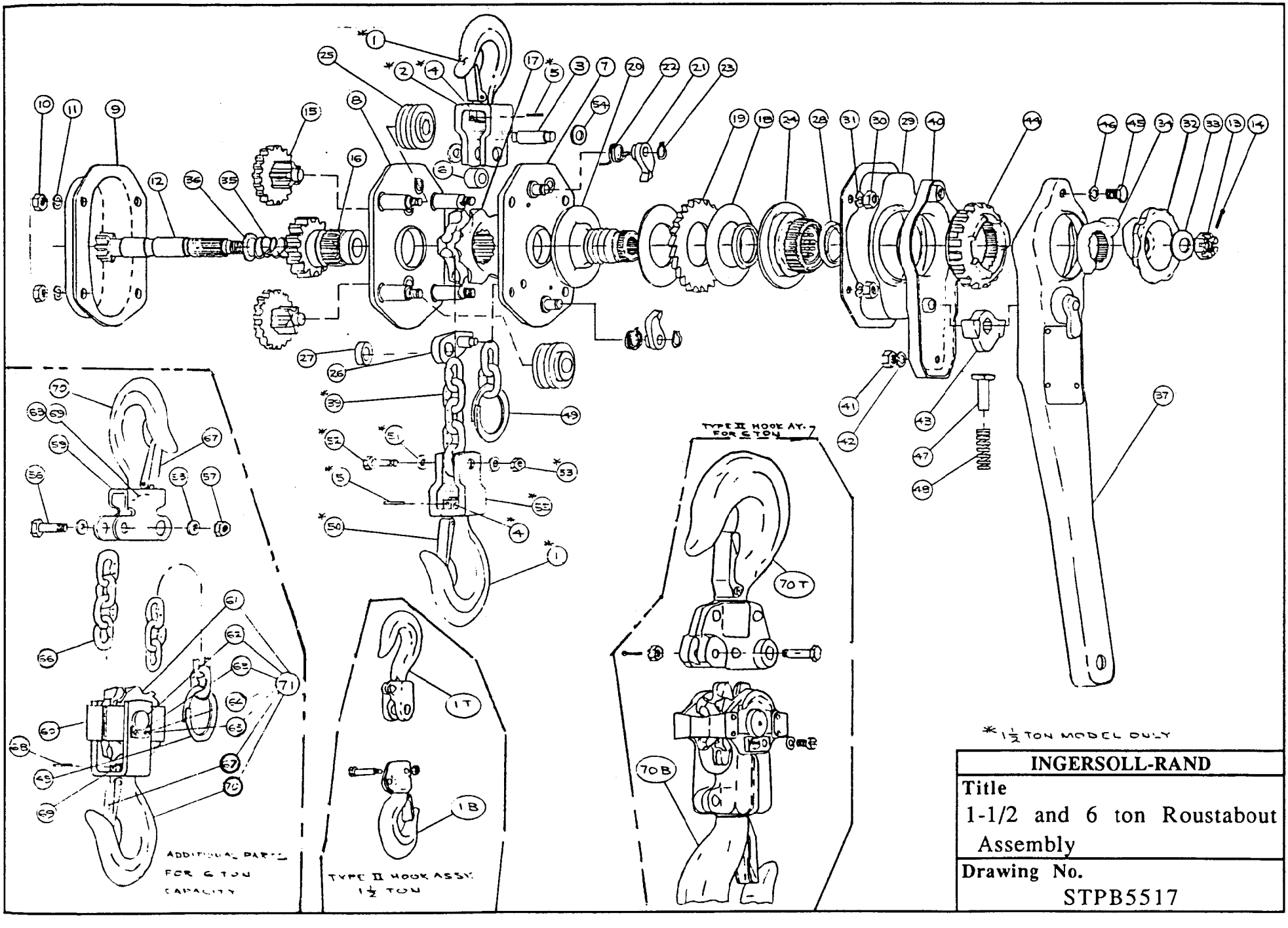
No.	Trouble	Probable Cause	Remedy
3	When setting the LEVER HOIST from "free-gearing" condition to an operating condition, the pinion will not engage with driving gears smoothly.	1) The spline of the pinion shaft is rusted, or dust has accumulated on it. 2) The coil spring is damaged, See Fig. (a)	Clean the spline thoroughly. Replace the coil spring.
4	The LEVER HOIST does not operate at all, even if the operation lever is manipulated.	When the brake mechanism was reassembled, 1) the ratchet disc was assembled on the wrong side. 2) the cam guide was put back without tightening the male screw sufficiently.	Disassemble the brake mechanism, and reassemble it in the following four steps described in Reassembly Instructions this form Page 2.
5	The load has dropped suddenly during a lowering operation.	1) The friction plate has broken. 2) Dust has entered the brake mechanism. 3) Chain not properly installed (Backwards and/or outside guide rollers.) 4) Brake not adjusted properly during repair operation.	1) Replace the friction plate. 2) Clean the brake mechanism thoroughly. 3) Reinstall Load Chain correctly inside guide rollers and in the proper direction 4) See Remedy 4
6	Brake does not work correctly.	1) The friction plate is too worn. 2) Dust adheres to the friction plate or on the ratchet disc. 3) The brake mechanism has been oiled too much. 4) The brake mechanism is not assembled correctly.	1) Replace the friction plate or the ratchet disc. 2) Clean the friction plate. 3) Clean & oil lightly. 4) SEE 4 Remedy
7	The operating lever cannot be pulled at all.	The brake is engaged too tightly.	SEE 4 Remedy
8	When pulling the operating lever, the load feels heavy.	The cam guide is not fitted in a proper recess of the change-over wheel.	SEE 4 Remedy
9	The operating lever cannot be pushed.	1) Dust and mud adhere to the load chain or the sprocket. 2) The load chain is too worn and does not engage the sprocket properly.	1) Remove the dust and mud. 2) Replace the load chain.
10	Clicks can be heard in the body every time the operating lever is pulled.	The load chain is extremely worn or the sprocket is damaged, preventing the chain from engaging with the sheave properly.	Replace the load chain or the sprocket as required.
11	The load suddenly becomes heavier during the operation.	1) The load chain has been pulled in or out to its maximum length. 2) The twisted chain has stuck between the sprocket and the guide roller.	1) Stop operation immediately and check to see if extended to full length. 2) Check to see and correct if chain is twisted or kinked. If 6 ton unit the bottom hook may be capsized. Restore to normal position.Never operate when chain is twisted.



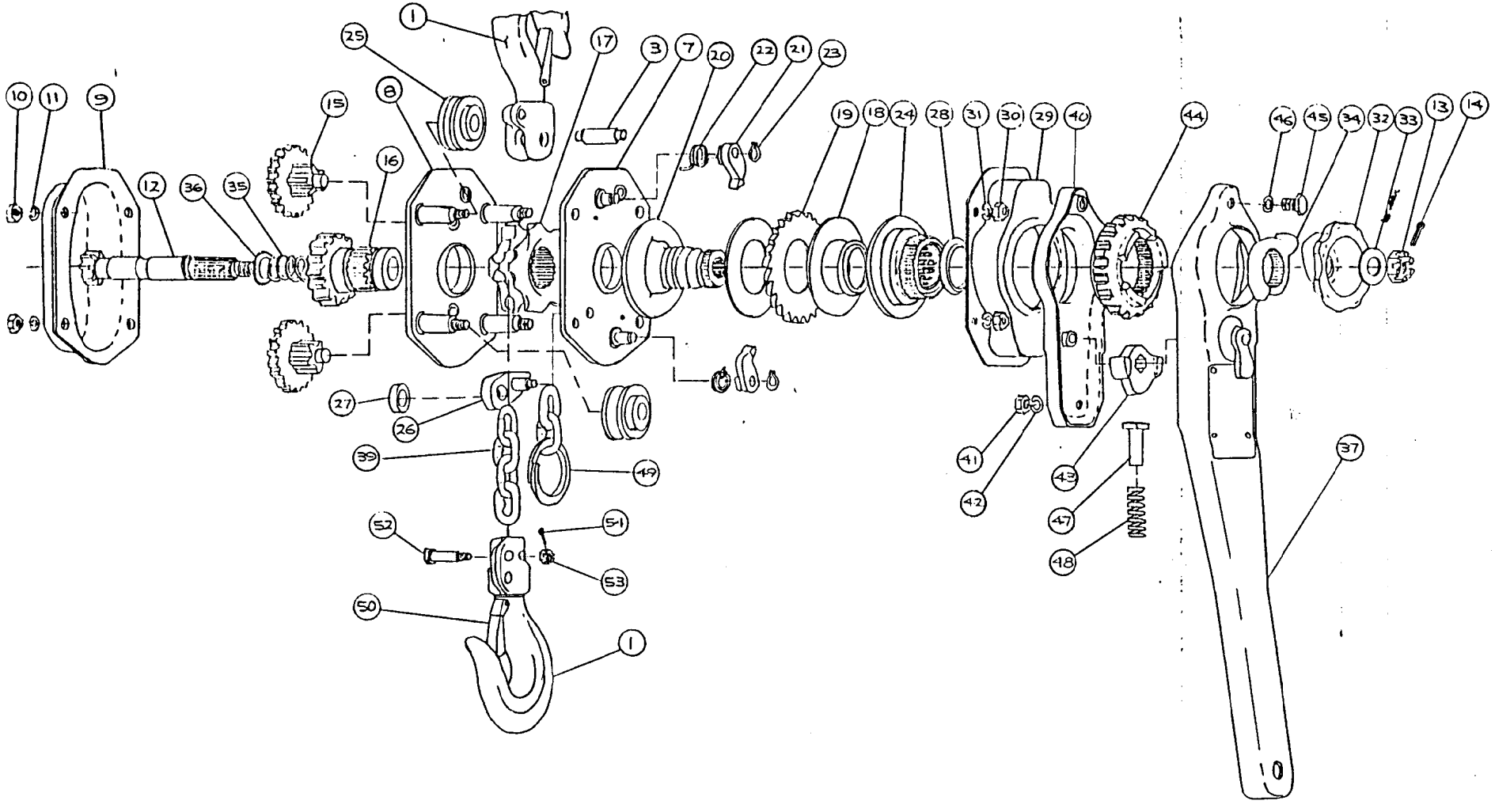




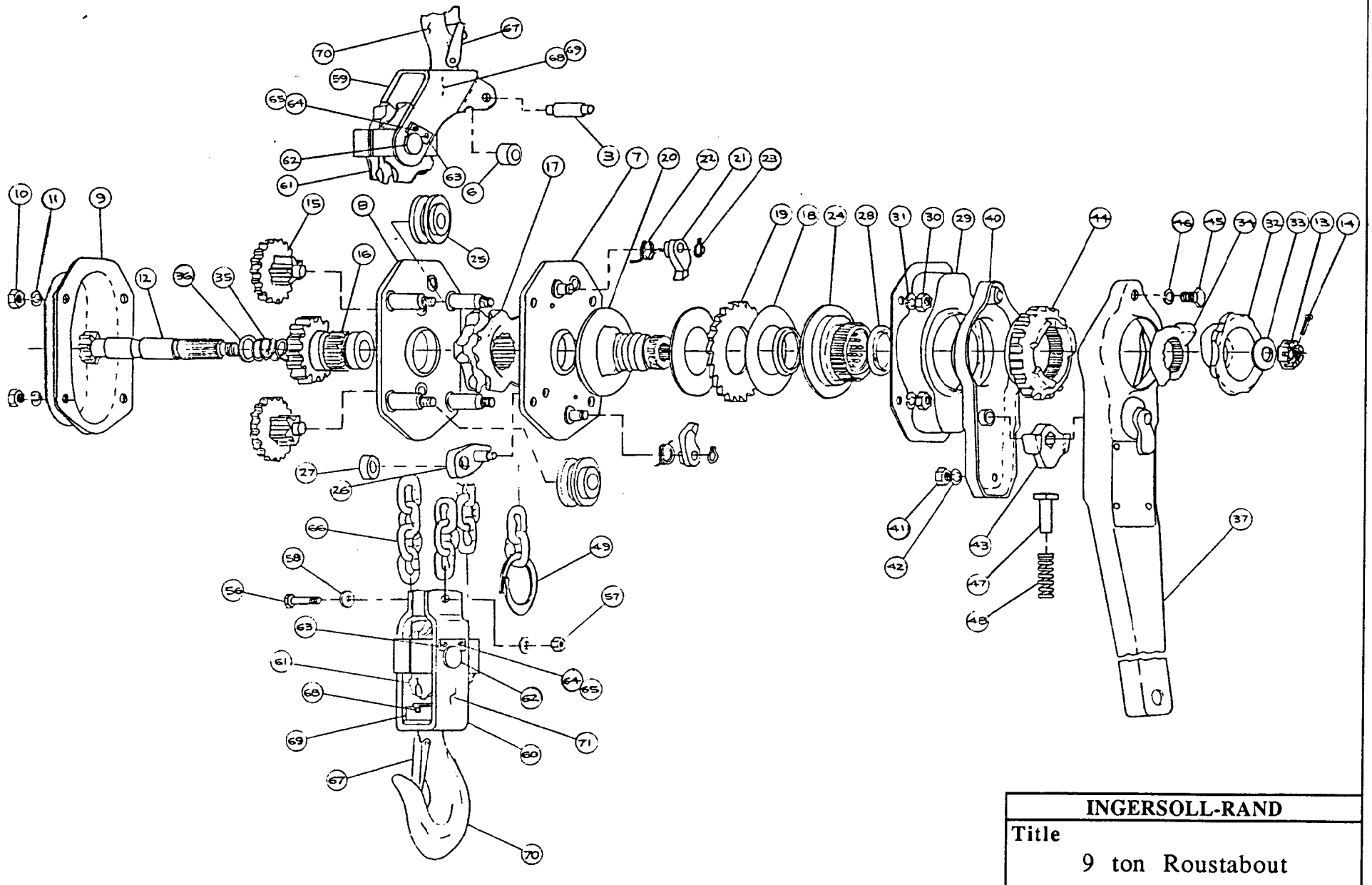
INGERSOLL-RAND
Title 3/4 and 1 ton Roustabout Assembly
Drawing No. STPB5515



INGERSOLL-RAND
Title 1-1/2 and 6 ton Roustabout Assembly
Drawing No. STPB5517



INGERSOLL-RAND
Title 2 and 3 ton Roustabout Assembly
Drawing No. STPB5614



INGERSOLL-RAND	
Title	9 ton Roustabout Assembly
Drawing No.	STPB5630

ROUSTABOUT®

PARTS (LH SERIES)

ITEM NO.	DESCRIPTION	QTY	CAPACITY PART NO. 3/4 & 1 TON	1-1/2 & 2 TON	3 TON	6 TON	9 TON
1	TOP HOOK ASSY	1	71212	71214	71216	---	---
1	BOT HOOK ASSY	1	71213	71215	71217	---	---
2(B)	CLEVIS	--	---	---	---	---	---
3	TOP PIN	1	70901	71143	71181		
3(A)	TOP PIN	1	7120	7119	---	---	---
4(B)	SLOTTED NUT	--	---	---	---	---	---
5(B)	ROLL PIN	--	---	---	---	---	---
6(A)	SPACER	1	7324	7324	---	7338	7338
7	SIDEPLATE A	1	70928	71151	71189		
8	SIDEPLATE B	1	70944	71152	71190		
9	GEAR CASE	1	71119	71158	71196		
10	NUT	4	71139	71159	71197		
11	SPRING WASHER	4	71140	71160	71198		
12	PINION	1	71118	71157	71195		
13	SLOTTED NUT	1	71008	71055			
14	SPLIT PIN	1	71142	71100			
15	GEAR #2/3	2	70984	71153	71191		
16	LOAD GEAR	1	70985	71154	71192		
17	LOAD SHEAVE	1	70916	71147	71185		
18	FRICTION LINING	2	71124	71165	71203		
19	RATCHET DISC	1	71125	71166	71204		
20	PRESSURE PLATE	1	71123	71164	71202		
21	PAWL	2	71121	71162	71200		
22	PAWL SPRING	2	71120	71161	71199		
23	SNAP RING	2	71122	71163	71201		
24	INTERNAL THREAD ASSEMBLY	1	---	71167	71205		
25	GUIDE ROLLER	2	70917	71148	71186		
26	STRIPPER	1	70926	71149	71187		
27	SPACER	2	70927	---	---	---	---
27	SPACER	1	---	71150	71188		
28	SEAL A	1	---	71168			
28	SEAL B	1	---	71169			
29	BRAKE COVER	1	71126	71170	71206		
30	NUT	4	71139	71159	71197		
31	SPRING WASHER	4	71140	71160	71198		
32	FREE KNOB ASSY	1	71137	71179			
33	WASHER	1	71141	71180			
34	CAM LUG	1	71136	71178	71207		
35	COIL SPRING	1	71009	71155	71193		
36	SPRING SEAT	1	71117	71156	71194		
37	LEVER ASSY	1	71127		71176		
38	LEVER COVER	1	71128	---	---		---
39	LOAD CHAIN	1	LCCB005	LCCB010	LCCB020		
40	CHANGE OVER COVER	1	---		71171		
41	NUT	1	71130	---	---	---	---
41	NUT	2	---		71159		

PARTS (LH SERIES)

ITEM NO.	DESCRIPTION	QTY	CAPACITY PART NO. 3/4 & 1 TON	1-1/2 & 2 TON	3 TON	6 TON	9 TON
42	SPRING WASHER	2	---	71160			
43	CHANGE OVER PAWL	1	71133	71173			
44	CHANGE OVER WHEEL	1	71132	71172			
45	MACHINE SCREW	4	71129	---	---	---	---
45	MACHINE SCREW	1	---	71177			
46	SPRING WASHER	4	71131	---	---	---	---
46	SPRING WASHER	1	---	71160			
47	SPRING SHAFT	1	71134	71174			
48	CHANGEOVER SPRING	1	71135	71175			
49 *	CHAIN STOP LINK	1	3472479	3472480	3472481		
50	HOOK LATCH	2	71209	71101	71208	---	---
50(A)	HOOK LATCH	2	7328	7329	---	---	---
51	SPLIT PIN	2	70915	71146	71184	---	---
51(A)	WASHER	2	6851E	6854E	---	---	---
52	CHAIN BOLT	1	70902	71144	71182	---	---
52(A)	CHAIN BOLT	1	6851C	6854C	---	---	---
53	SLOTTED NUT	1	70903	71145	71183	---	---
53(A)	JAM NUT	1	6851F	6854F	---	---	---
54(A)	WASHER	2	7335E	7327E	---	---	---
55(B)	BOTTOM CLEVIS	---	---	---	---	---	---
56	CHAIN PIN	1	---	---	---	7090C	
57	JAM NUT	1	---	---	---	7090F	
58	WASHER	2	---	---	---	7090I	
59(B)	CLEVIS TOP	---	---	---	---	---	---
60(B)	SHEAVE BLOCK	---	---	---	---	---	---
61	IDLE SHEAVE	1	---	---	---	71210	
62	BOTTOM SHAFT	1	---	---	---	71211	---
62	BOTTOM SHAFT	2	---	---	---	---	71211
63	SHAFT STOPPER PLATE	1	---	---	---	7088	---
63	SHAFT STOPPER PLATE	2	---	---	---	---	7088
64	MACHINE SCREW	2	---	---	---	7085G	---
64	MACHINE SCREW	4	---	---	---	---	7085G
65	SPRING WASHER	2	---	---	---	7085H	---
65	SPRING WASHER	4	---	---	---	---	7085H
66	LOAD CHAIN	1	---	---	---	LCCB020	
67	SAFETY LATCH	2	---	---	---	7330	7768
68	ROLL PIN	---	---	---	---	51382	52727
69	SLOTTED NUT	---	---	---	---	7155-4	7744
70	TOP HOOK COMPLETE	1	---	---	---	THALH1200	THALH1800
71	BOT HOOK COMPLETE	1	---	---	---	BHALH1200	BHALH1800

* Install chain stop link through 2nd chain link

Note: (A) Items used on obsolete Crosby hook 3/4 & 1-1/2 Ton, verify hook type.
(B) Not sold separately.

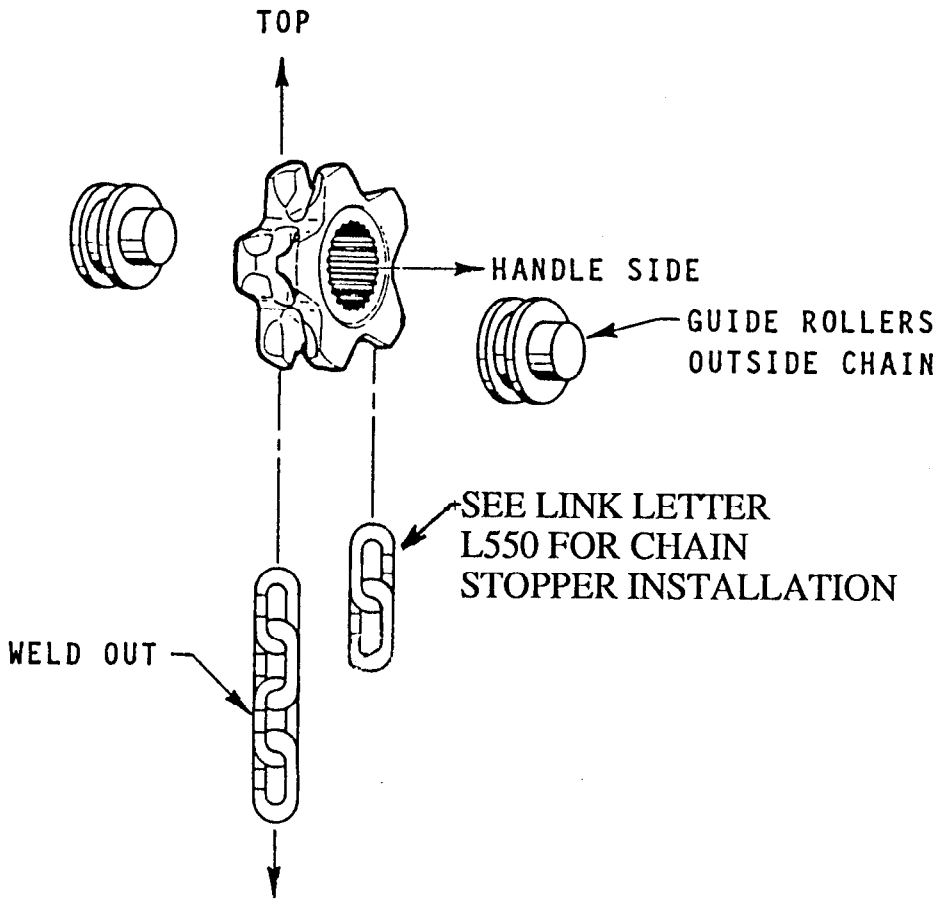
ROUSTABOUT®

Parts (LH Series)

OPTIONAL PARTS NOT SHOWN

	DESCRIPTION	QTY	CAPACITY PART NO. 3/4 & 1 TON	1-1/2 & 2 TON	3 TON	6 TON	9 TON
	SIGNAL LEVER ASSY	1	---	71218			
	BOT HOOK ASSY,SYH	1	---	BHALH300SYH	BHALH600SYH	---	---
	TOP HOOK ASSY,SYH	1	---	THALH300SYH	THALH600SYH	---	---
	TOP PIN, SYH	1	---	71143	71181	---	---
	CHAIN PIN, SYH	1	---	72133	72134	---	---
	SLOTTED NUT, SYH	1	---	72148	72149	---	---
	SPLIT PIN, SYH	1	---	70915	71146	---	---
	SAFETY LATCH,SYH	2	---	7331	7330-1	---	---
	LATCH SPRING,SYH	2	---	7333	7332	---	---
	LATCH RIVET, SYH	2	---	7331R	7330R	---	---

Note: SYH designates, for shipyard hook application.



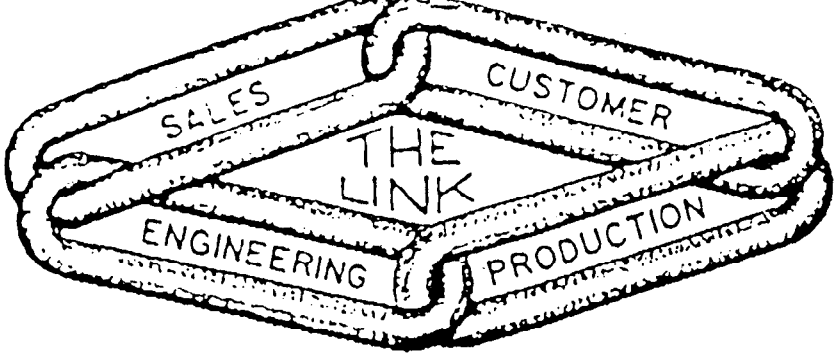
MODEL	CHAIN SIZE
LH150	1/4
LH300	9/32
LH600	3/8
LH1200	3/8
LH1800	3/8

NOTE: CHAIN MAY BE INSTALLED WITHOUT DISASSEMBLY. HANG UNIT UP WITH HANDLE TO THE RIGHT. INSTALL PROPER SIZE AND LENGTH OF CHAIN AS SHOWN WITH WELDS FACING OUT.
ATTACH CHAIN STOPPER RING.

NOTE: MAKE SURE CHAIN IS NOT TWISTED WHEN FEEDING THROUGH HOOK BLOCKS.

NOTE: ODD NUMBER OF LINKS REQUIRED ON LH1200 AND LH1800 TO ELIMINATE TWISTING.

INGERSOLL-RAND
Title Chain Installation
Drawing No. STPA7801



L-550

May 1991

SUBJECT: CHAIN STOPPER

TOOLS INVOLVED: All LH and L4H Series Lever Hoists

This is to advise that the older "ring style" chain stopper is now obsolete and is replaced by the newer "link style" stopper on all LH and L4H Series Hoists.

OBSOLETE PART:

71138	Chain Stop Link	All Capacities

REPLACEMENT PART:

3472479	Chain Stopper	3/4 ton
3472480	Chain Stopper	1-1/2 ton
3472481	Chain Stopper	3, 6, 9 ton

NOTE PART ORIENTATION: See Fig. A.

A. Install stopper through 2nd chain link.
B. Stopper must be in the "standing link" position.

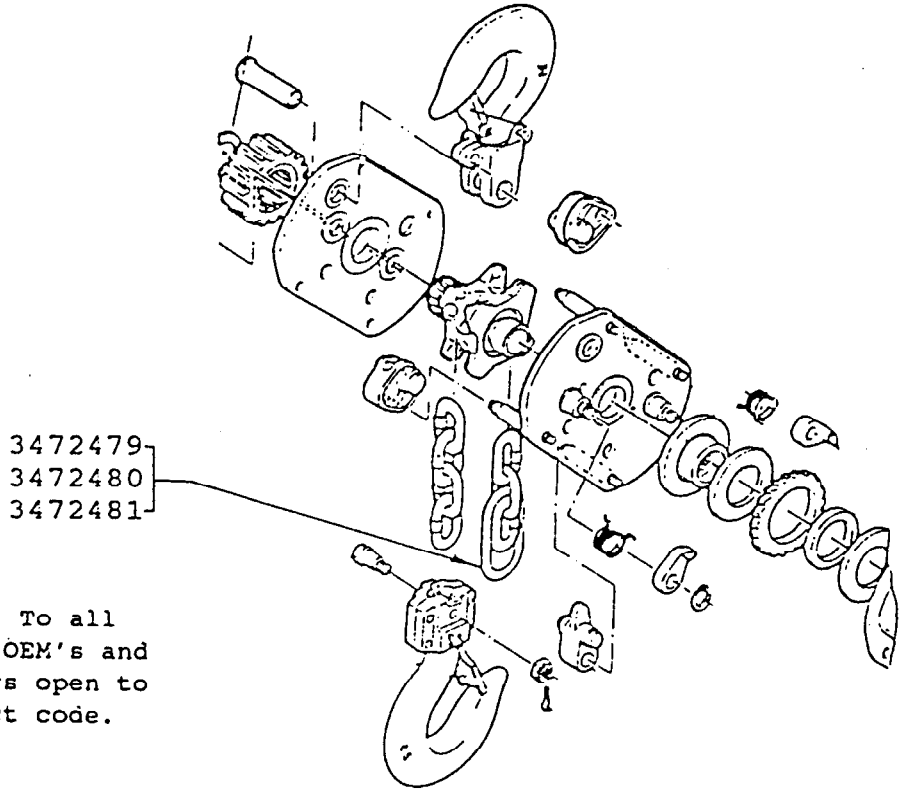


Fig. A.

DISTRIBUTION: To all Distributors, OEM's and Service Centers open to buy 890 product code.

SERVICE NOTES

HOIST AND WINCH LIMITED WARRANTY

Ingersoll-Rand Company (I-R) warrants to the original user its Hoists and Winches (Products) to be free of defects in material and workmanship for a period of one year from the date of purchase. I-R will repair, without cost, any Product found to be defective, including parts and labor charges, or at its option, will replace such Products or refund the purchase price less a reasonable allowance for depreciation, in exchange for the Product. Repairs or replacements are warranted for the remainder of the original warranty period.

If any Product proves defective within its original one year warranty period, it should be returned to any Authorized Hoist and Winch Service Distributor, transportation prepaid with proof of purchase or warranty card.

This warranty does not apply to Products which I-R has determined to have been misused or abused, improperly maintained by the user, or where the malfunction or defect can be attributed to the use of non-genuine I-R parts.

I-R makes no other warranty, and all implied warranties including any warranty of merchantability or fitness for a particular purpose are limited to the duration of the expressed warranty period as set forth above. I-R's maximum liability is limited to the purchase price of the Product and in no event shall I-R be liable for any consequential, indirect, incidental, or special damages of any nature rising from the sale or use of the Product, whether based on contract, tort, or otherwise.

Note: Some states do not allow limitations on incidental or consequential damages or how long an implied warranty lasts so that the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

IMPORTANT NOTICE

It is our policy to promote safe delivery of all orders.
This shipment has been thoroughly checked, packed and inspected before leaving our plant and receipt for it in good condition has been received from the carrier. Any loss or damage which occurs to this shipment while enroute is not due to any action or conduct of the manufacturer.

VISIBLE LOSS OR DAMAGE
If any of the goods called for on the bill of lading or express receipt are damaged or the quantity is short, do not accept them until the freight or express agent makes an appropriate notation on your freight bill or express receipt.

CONCEALED LOSS OR DAMAGE
When a shipment has been delivered to you in apparent good condition, but upon opening the crate or container, loss or damage has taken place while in transit, notify the carrier's agent immediately.

DAMAGE CLAIMS
You must file claims for damage with the carrier. It is the transportation company's responsibility to reimburse you for repair or replacement of goods damaged in shipment. Claims for loss or damage in shipment must not be deducted from the Ingersoll-Rand invoice, nor should payment of Ingersoll-Rand invoice be withheld awaiting adjustment of such claims as the carrier guarantees safe delivery. You may return products damaged in shipment to us for repair, which services will be for your account and form your basis for claim against the carrier.

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