

### Operation Manual

Thank you for purchasing our NITC HI Lever Hoist.

- **The hoist operator must receive this Operation Manual!**
- **The hoist operator must read this Operation Manual!**

This operation manual contains important information for operating, servicing and inspecting NITC HI Lever Hoists. Use the Lever Hoist correctly only after the operator has read this manual, and has fully understood all procedures. Also, carefully store this operation manual where it will be readily available for reference.

### SAFETY PRECAUTIONS:

The Lever Hoist must always be correctly used! Incorrect use of the Lever Hoist may cause dangerous conditions such as falling of the hoisted load. Thoroughly read this operation manual and be sure all procedures are fully understood before installing, operating, servicing and inspecting the Lever Hoist. In this operation manual, precautions are listed under two categories, "DANGER" and "WARNING".

⚠ **DANGER** Situations in which improper use can lead to death or serious injuries.

⚠ **WARNING** Situations in which improper use can cause property damage or light to intermediate injuries.

Some situations listed as ⚠ **WARNING** may lead to serious conditions. Precautions must be obeyed no matter which category they come under.

⊘ Mark indicating a procedure that is prohibited.

ⓘ Mark indicating a procedure that must be carried out by the operator.

※ For future reference, store this operation manual where it can be easily accessed by the operator.

**⚠ DANGER**

The contents of this operation manual and the Lever Hoist name plate must be fully understood by the operator!

- Never lift loads that exceed the rated load!
- Never walk under or near a suspended load, and never lift or transport loads over or near people!
- Never use a damaged Lever Hoist or a Lever Hoist generating abnormal sounds!
- Never use a Lever Hoist with a damaged Load chain! The Load chain must not be twisted, kinked, cracked, improperly meshing or elongated beyond the permissible limit!
- Never extend the Operating handle or operate the Operating handle by stepping on it!
- Never modify the Lever Hoist!
- Never drop or throw the Lever Hoist from high locations, doing so may cause damages that are visually unnoticeable!

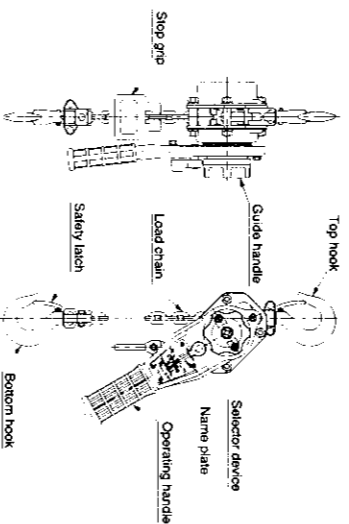


Figure 1.

### Check points & records to be taken when unpacking

- ① When you receive the Lever Hoist, confirm that the information on the carton box matches the product you have ordered.
- ② Next, check to see if the Lever Hoist was deformed or damaged during transportation.

### Standard specifications

Figure 2.

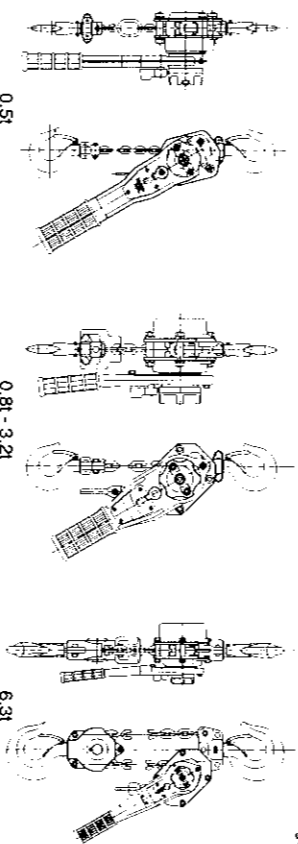


Table 1.

Item No.	Rated load (t)	Lift (m)	Test Load (t)	Load chain Type	Falls	Minimum distance between hooks (mm)	Pulling Efforts (N)	Net Weight (kg)
RB50050 (F)	0.5	1.0	0.75	T-4	1	280	416	3.5
RB50080 (F)	0.8	1.2	T-5.6			290	260	5.5
RB50160 (F)	1.6	2.4	V-7.1			330	305	9.6
RB50320 (F)	3.2	4.8	V-9			430	385	16.3
RB50630 (F)	6.3	7.9			2	580	390	30.5

N.B. 1. The designs and specifications are subject to change for improvements without notice.  
2. The (F) in the Item Nos. are for Lever Hoists with Overload protection.

### Operating Procedures

① Lifting and Lowering:

When lifting, turn the Selector device clockwise to the "UP" position. (Figure 3)

After connecting the Bottom hook to the load, turn the Guide handle clockwise and tension the Load chain till the Lever hoist is under a light force.

When lowering, turn the Selector device counterclockwise to the "DOWN" position. (Figure 4)

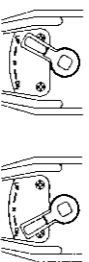


Figure 3. Lifting

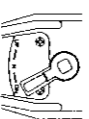


Figure 4. Lowering

**⚠ DANGER**

● Always lower extremely light loads (loads under 3% of the rated load) with extra care! In some cases with extremely light loads, the braking torque will be insufficient.

② Free-wheeling:

**⚠ DANGER**

● Never attempt to free-wheel when the Lever Hoist is under a load!

When the Lever Hoist is not under a load, the Load chain can be adjusted to the desired length, and the Bottom hook can be positioned to the most appropriate location for the materials handling operation with free-wheeling. To free-wheel, turn the Selector device to "N", and pull the Load chain out to the desired length. (Figure 5)

The following conditions will sometimes prevent the Lever Hoist from being free-wheeling:

- When the Guide handle or Selector device is in contact with something and not freely moving.
- When the Brake is jammed.
- When the Load chain has been strongly pulled.

(The lowering operation will unlock the brake and correct the above conditions.)

③ Disabling Free-wheeling  
A load of about 3% of the rated load or larger will disable Free-wheeling, and make it possible for the Lever Hoist to support a load.

The following are methods of disabling Free-wheeling:

- After connecting the Bottom hook to the load, pull the Stop grip and tension the Load chain. Next, turn the Guide handle till the Lever Hoist is under a light force.
- Turning the Selector device to "UP" or "Down" will disable Free-wheeling. "UP" is the normal position of the Selector device. Only turn the Selector device to "N" when Free-wheeling and to "Down" when lowering.

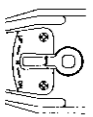


Figure 5.

### Precautions before use

**⚠ WARNING**

● Always inspect the Lever Hoist before use in accordance to the inspection standards!

**⚠ DANGER**

- The contents of this operation manual and the Lever Hoist name plate must be fully understood by the operator!
- Never use a Lever Hoist with an eligible name plate or with the name plate removed!
- Never use a Lever Hoist with a twisted, kinked, damaged or elongated Load chain!
- Never use a Lever Hoist with a deformed or damaged hook!
- Never use a Lever Hoist with a damaged or missing Safety latch
- Always test the brake before using the Lever Hoist, and never use a Lever Hoist with a malfunctioning brake!
- Never use a damaged or malfunctioning Lever Hoist!

● Always contact your NITC HI dealer before using the Lever Hoist in corrosive environments or environments with low or high temperatures!

### Precautions during use

**⚠ DANGER**

- Never use the Lever Hoist for jiffing, supporting or transporting people!
- Never exceed the rated load of the Lever Hoist!  
※ A load larger than the rated load may deform or damage the drive section or construction of the Lever Hoist. Such damage can lead to unexpected accidents or trouble. Always be sure that the load is within the rated load.
- Never walk under or enter the work area of a suspended load!
- Never lift or transport loads over or near people!
- Never allow your attention to be diverted from the load when operating the Lever Hoist!
- Never arc weld a suspended load!
- Never use the Lever Hoist for turning over a suspended load!
- Never lower the load so that it comes into contact with an object!  
The brake may open and slip when the load comes into contact with an object when lowering!
- Never free-wheel when the Lever Hoist is under a load!
- Never over-hoist or over-lower the Lever Hoist!
- Always stop operation immediately when the pulling effort of the Lever Hoist increases largely!
- Never operate a Lever Hoist when the pulling efforts are unusually large, and when the Lever Hoist generates unusual sounds!
- Never extend the Operating handle of the Lever Hoist!
- Never operate the Lever Hoist by stepping on the Operating handle!
- Never drop the Lever Hoist from a high location!
- Always pay special attention to the Stop grip, and never run out the full length of Load chain!
- Always turn the Selector device to "UP" when binding or supporting a load with the Lever Hoist!
- Never directly wind the Load chain around the load!
- Never use the Load chain as an earth for arc welding!
- Never touch the Load chain with a live arc welding electrode!
- Never operate the Lever Hoist so that the Load chain comes into direct contact with a sharp edge!
- Always confirm that the Bottom hook is positively connected to the load!

**⚠ DANGER**

- Always confirm that the strength of the structure is sufficient for installing the Lever Hoist!
- Always use the Lever Hoist in an environment that will allow the operator to correctly operate the Lever Hoist!
- Always confirm that the Load chain is the correct length for the materials handling operation to be carried out!
- When lifting with two sets of Lever Hoists, always use Lever Hoists with capacities large enough to independently support the load! Also, always pay special attention to the lifting angle! The weight of the load changes in ratio to the lifting angle!
- Always confirm that the Load chain is free of twist with Lever Hoists that have 2-falls of Load chain! Twist can arise by accidentally turning the bottom hook through the 2-falls of Load chains.
- Always confirm that the Load chain of the Lever Hoist is free of twists. When twists are found, turn the holder to remove the twists.
- Always lubricate the Load chain before using the Lever Hoist!
- Always lubricate the Load chain with machine oil or gear oil.
- Always use lifting clamps and attachments that are the appropriate size for the Bottom hook, and always use lifting clamps and attachments correctly!
- Always confirm that the Bottom hook is correctly connected to the load, and the Safety latch is completely closed!

### Precautions after use

**⚠ WARNING**

- Always remove the mud and dirt, and lubricate the Lever Hoist after use!
- ※ Lubricate the Load chain and shanks of the hooks.
- Never lubricate the Brake linings!
- Always store the Lever Hoist in a dry environment away from rain, mist and moisture!

### Inspection

**⚠ DANGER**

- Never modify the Lever Hoist!
- Always use Genuine NITC HI Parts!
- Never cut or lengthen the Load chain!
- Never attempt to service or repair the Lever Hoist!
- Only qualified personnel can service or repair a Lever Hoist!
- Never service or inspect the Lever Hoist when it is under a load!
- When repairs are found to be necessary during servicing and inspection, always repair the Lever Hoist before putting it back into service!
- Never attempt to service or repair the Lever Hoist while it is installed high up!
- Always lower the Lever Hoist so it can be worked on from the floor!

**⚠ WARNING**

● Always attach a (Under Inspection) warning sign to clearly indicate the Lever Hoist is being serviced or repaired, to prevent the Lever Hoist from being accidentally used!

**⚠ DANGER**

1. Inspecting the Hooks:
  - The Top and Bottom hook must be replaced IMMEDIATELY when one of the following conditions are found:
    - When the hook opening is elongated.
    - When damage or deformation is found.
    - When wear from the attachments or lifting ancillaries is found.

Measure the hook opening and replace the hook when one of the following conditions are found:

- ① When Opening "A" exceeds the Standard dimension in Table 2.
- ② When Dimension "H" is worn beyond the Permissible limit in Table 2.



Figure 6.

Table 2. Dimension in mm

Rated load (t)	Standard dimension A	Permissible limit	Standard dimension H	Permissible limit
0.5	30	33	17	16.2
0.8	30	33	20	19.0
1.6	36	40	26.5	25.2
3.2	42	46	35	33.3
6.3	52	57	52	49.4

## 2. Inspecting the Load chain:



- The Load chain must be replaced **IMMEDIATELY** when one of the following conditions are found:
  - When the Link pitch (P) is elongated
  - When damage or deformation is found.
  - When rust is found.

Replace the Load chain when the Link pitch (P) or the Link diameter ( $\phi d$ ) exceeds the permissible limits in Table 3.

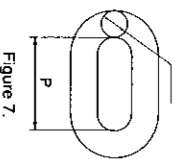


Figure 7

Rated load (t)	P		d	
	Standard dimension	Permissible limit	Standard dimension	Permissible limit
0.5	12.2	12.8	4.0	3.6
0.8	17.1	17.9	5.6	5.1
1.6	21.2	22.2	7.1	6.4
3.2	27.2	28.5	9.0	8.1
6.3	27.2	28.5	9.0	8.1

\* Also inspect the Load sheave, when the Load chain is excessively worn.

### 3. Inspection standards:

Table 4.

Frequency	Category	Testing method	Standard
Daily/Periodic	Marking (Name plate)	Inspect visually.	All marking must be legible.
Functions:	Lifting & Lowering	Lift and lower with a light load.	1. Confirm that you can hear the Pawl running over the teeth of the Ratchet wheel when lifting. 2. The Lever Hoist must lift and lower smoothly. 3. The brake must function properly when lowering.
	* Functions	Lift and lower twice the Test Load the Operating Length.	1. The Load chain and Load Sheave must mesh with each other properly, and the gears must mesh properly and smoothly. 2. The brake must function positively. 3. The Load chain must not be twisted or kinked when lifting or lowering. 4. The Load chain must not be twisted or kinked when lifting or lowering. 5. There must be no large changes of the pulling efforts when lifting or lowering a load.
	Selector device	Operate by hand.	The Selector device must move smoothly.
	Free-wheeling	Operate by hand.	The Lever Hoist must Free-wheel smoothly.

\* Carried out the "Periodical Function Tests" after each section of the Lever Hoist has been inspected with the Inspection categories.

#### Hooks:

<input type="checkbox"/>	Hook opening	Inspect visually during daily inspections. Measure the hook opening at periodical.	The hook must not be deformed, and the hook opening must be within the permissible limit of Table 2.
<input type="checkbox"/>	Deformation	Inspect visually.	The hook must not be bent or twisted. There must be no excessive space between the hook shank and the holder.
<input type="checkbox"/>	Shank section	Inspect visually.	There must be no excessive corrosion, and the wear must be within the permissible limit of Table 2.
<input type="checkbox"/>	Wear and corrosion	Inspect visually during daily inspections. Measure the mouth opening at periodical inspections.	The hook must be free of cracks and dangerous flaws.
<input type="checkbox"/>	Cracks and other dangerous flaws	Inspect visually.	The Safety latch must not be excessively worn or deformed, and it must function properly.
<input type="checkbox"/>	Safety latch	Inspect visually and check the movements by hand.	

#### Load chain:

<input type="checkbox"/>	Link pitch	Inspect visually during daily inspections. Measure the mouth opening at periodical inspections.	Replace the Load chain when deformation causes the Link pitch to elongate more than 5%.
<input type="checkbox"/>	Wear	Inspect visually during daily inspections. Measure the mouth opening at periodical inspections.	Replace the Load chain when wear exceeds 10% of the Link diameter.
<input type="checkbox"/>	Deformation	Inspect visually.	The Load chain must not be deformed.
<input type="checkbox"/>	Cracks and other dangerous flaws	Inspect visually.	The Load chain must be free of cracks and dangerous flaws.
<input type="checkbox"/>	Corrosion	Inspect visually.	There must be no excessive corrosion.

#### Nuts and bolts:

<input type="checkbox"/>	Nuts and bolts of each section.	Inspect visually.	1. During daily inspections, confirm that the bolts, nuts and rivets are secure and tightly fastened. There must be no missing bolts, nuts and rivets. 2. During periodical inspections, confirm that the bolts, nuts and rivets within the Lever Hoist are secure and tightly fastened.
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#### Test load (t):

Rated load	0.5	0.8	1.6	3.2	6.3
Test load	0.75	1.2	2.4	4.8	7.9

#### Test working distance: Table 6

Number of Load chain falls	Test working distance
1-fall	30cm
2-falls	15cm

### Model RBSF (Lever Hoists with Overload protection)

#### Features:

When the Lever Hoist is overloaded during lifting or load binding, the Overload protection device will cause the Operating handle to slip, and will prevent further force from being transferred to the Load chain. The Overload protection device only functions in the hoisting direction, lowering will be possible even when the Lever Hoist is overloaded.

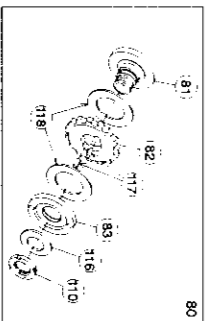
\* The Overload protection device requires adjusting when it slips with the rated load or lighter loads. Consult your nearest NITCHEE dealer or agent when the Overload protection requires adjusting.



- Do not disassemble the Lever Hoist unless you have the necessary knowledge and experience!
- Never modify the Lever Hoist!

#### Structural drawing:

A standard Model RBS Lever Hoist can be modified to Model RBSF (Lever Hoist with Overload protection) by replacing part No.23 Disc nut with part No.80 Overload protection device.

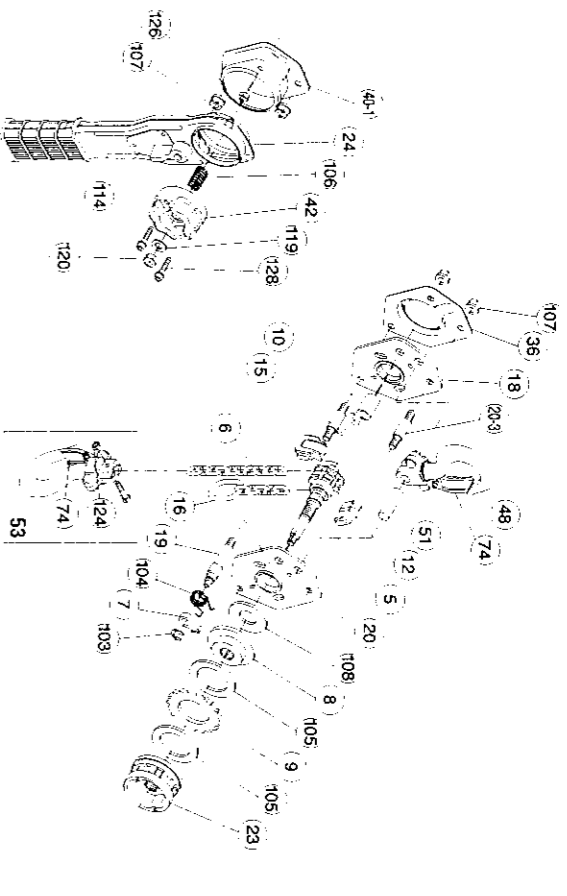


Overload protection device

Part No.	Part name	Qty	0.5t	0.8t	1.6t	3.2t	6.3t
80	Overload protection device	1	GRBS080U	IRBS080U	KRBS080U	NRBS080U	QRBS080U
81	Disc nut for OLP	1	GRBS081	IRBS081	KRBS081	NRBS081	QRBS081
82	Fricion gear	1	GRBS082	IRBS082	KRBS082	NRBS082	QRBS082
83	Fricion hub	1	GRBS083		IRBS083		
110	Lock nut	1			GRBS110		
116	Coned disc spring	1			GRBS116		
117	Cylindrical roller	2	GRBS117		IRBS117		
118	Fricion disc	2	GRBS118		IRBS118		

## Spare parts table & Spare parts code table

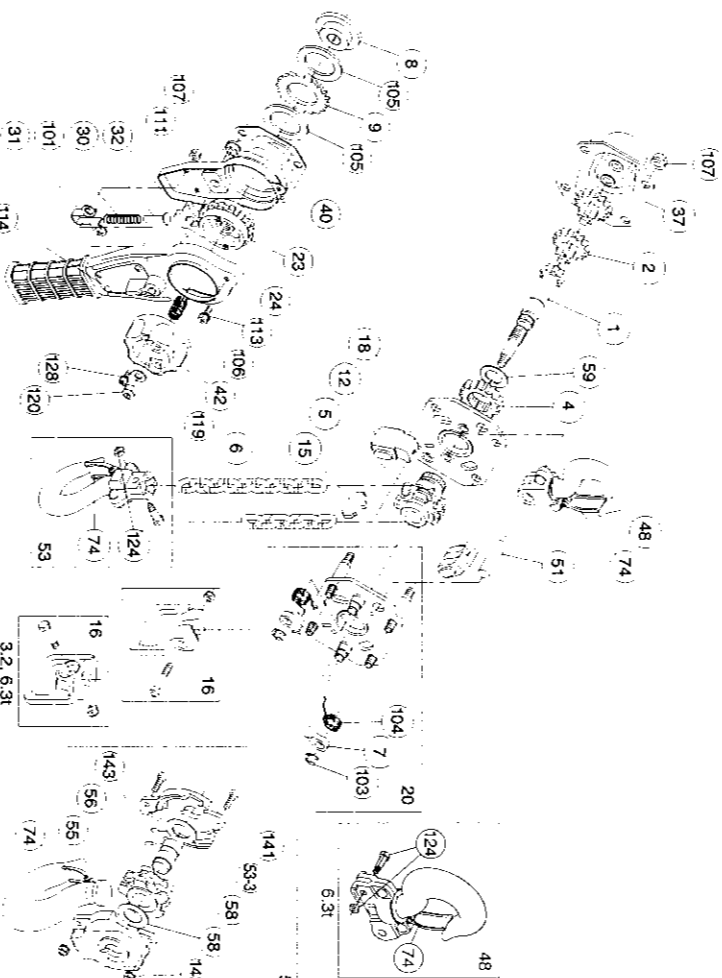
\* Specify the lift when placing an order for Load chain.  
\* When ordering spare parts, please advise of the Model, Capacity, Product number, Code Number and Quantity.



#### Parts List: 0.5t

Part No.	Part name	Qty	0.5t	Part No.	Part name	Qty	0.5t
5	Load sheave	1	GRBS005	42	Guide handle	1	GRBS042
*6	Load chain	1	T-4XP	48	Top hook assembly	1	GRBS048U
7	Pawl	1	IRBS007	51	Yoke pin	1	GRBS051
8	Disc hub	1	IRBS008	53	Bottom hook assembly	1	GRBS053U
9	Ratchet wheel	1	IRBS009	74	Safety latch assembly	2	GRBS074T
10	Stay pipe	1	GRBS010	103	Retaining Ring-Etype	1	SRE8
12	Chain guide	2	GRBS012	104	Pawl spring	1	IRBS104
15	Shopper	1	GRBS015	105	Brake lining	2	GRBS105
16	Stop grip	1	DRP1021	106	Free-wheeling spring	1	NRBS106
18	Plain-side plate assembly	1	GRBS018T	107	Spring nut	5	HSN1M8
19	Stay bolt for pawl	1	GRBS019	108	Coned disc spring	1	GRBS108
20	Handle-side plate assembly	1	GRBS020T	114	Name plate	1	GRBS114
20-3	Stay bolt	2	GRBS0203	119	Plain washer	1	PWM8M
23	Disc nut	1	GRBS023	120	Nylon nut	1	HNN1M8
24	Operating handle	1	GRBS024U	124	Chain fastening bolt	1	GRBS124T
36	Body cover	1	GRBS036	126	Lock nut	1	HUN1M6L
40-1	Ratchet cover	1	GRBS0401	128	Hex socket head cap screw	2	CBM5 X25B3

Table 8.



#### Parts List: 0.8t ~ 6.3t

Table 9.

Part No.	Part name	Qty	0.8t	1.6t	3.2t	6.3t
1	Pinion shaft	1	IRBS001	KRBS001	NRBS001	QRBS001
2	Pinion with pinion gear	2	IRB4002T	KRB4002T	NRB4002T	QRB4002T
4	Load gear	1	IRB4004	KRB5004	NRB5004	QRB5004
5	Load sheave	1	IRBS005	KRBS005	NRBS005	QRBS005
*6	Load chain	1	T-5.6XP	V-7.1XP	V-9XP	V-9XP
7	Pawl	2	IRBS007	KRBS007	NRBS007	QRBS007
8	Disc hub	1	IRBS008	KRBS008	NRBS008	QRBS008
9	Ratchet wheel	1	IRBS009	KRBS009	NRBS009	QRBS009
12	Chain guide	2	IRBS012	KRBS012	NRBS012	QRBS012
15	Stripper	1	IRBS015	KRBS015	NRBS015	QRBS015
16	Stop grip assembly	1	IRB40062T	KRB40062T	NRB40062T	QRB40062T
18	Gear-side plate assembly	1	IRBS018T	KRBS018T	NRBS018T	QRBS018T
20	Handle-side plate assembly	1	IRBS020U	KRBS020U	NRBS020U	QRBS020U
23	Disc nut	1	IRBS023	KRBS023	NRBS023	QRBS023
24	Operating handle	1	IRBS024T	KRBS024T	NRBS024T	QRBS024T
30	Spring shaft	1	IRB4030	IRB3030	IRB3030	IRB3030
31	Shaft base	1	IRB4031	IRB3031	IRB3031	IRB3031
32	Handle pawl	1	GRBS032	KRBS032	NRBS032	QRBS032
37	Gear cover	1	IRBS037	KRBS037	NRBS037	QRBS037
40	Ratchet cover assembly	1	IRBS040	KRBS040	NRBS040	QRBS040
42	Guide handle	1	IRBS042	KRBS042	NRBS042	QRBS042
48	Top hook assembly	1	IRBS048U	KRBS048U	NRBS048U	QRBS048U
51	Yoke pin	1	IRBS051	KRBS051	NRBS051	QRBS051
53	Bottom hook assembly	1	IRBS053U	KRBS053U	NRBS053U	QRBS053U
53-3	Tail holder	2				
55	Idle sheave	1				
56	Wheel pin	1				
58	Collar for idle sheave	2				
59	Pinion shaft washer	1				
74	Safety latch assembly	2	GRBS074T	KRBS074T	NRBS074T	QRBS074T
101	Change-over spring	1	IRB4101	IRB3116	IRB3116	IRB3116
103	Retaining Ring-Etype	2	SRE8	KRBS104	SRE9	NRBS104
104	Pawl spring	2	IRBS104	KRBS104	KRBS105	NRBS105
105	Brake lining	2	IRBS105	KRBS106	KRBS106	NRBS106
106	Free-wheeling spring	1	IRBS106	KRBS106	KRBS106	NRBS106
107	Spring nut	8		HSN1M8	HSN1M8	HSN1M10
111	Spring nut	2	HSN1M6	HSN1M6	HSN1M8	HSN1M8
113	Upset head bolt	1	CUSM6X10S2	CUSM8X12S2	CUSM8X12S2	CUSM8X12S2
114	Name plate	1	IRBS114	KRBS114	NRBS114	QRBS114
119	Nylon washer	1		PWM8M	HNN1M8	HNN1M8
120	Nylon nut	1			HNN1M8	HNN1M8
124	Chain fastening bolt	1	IRB4124T	KHH5048T	HNN1M8	NRB4124T
128	Hex socket head cap screw	2		CBM5 X25B3		CBM10 X35
141	Hex socket head cap screw	3				QRBS056
142	Spring nut	3				HSNM10
143	Knock pin	1				NP6 X10