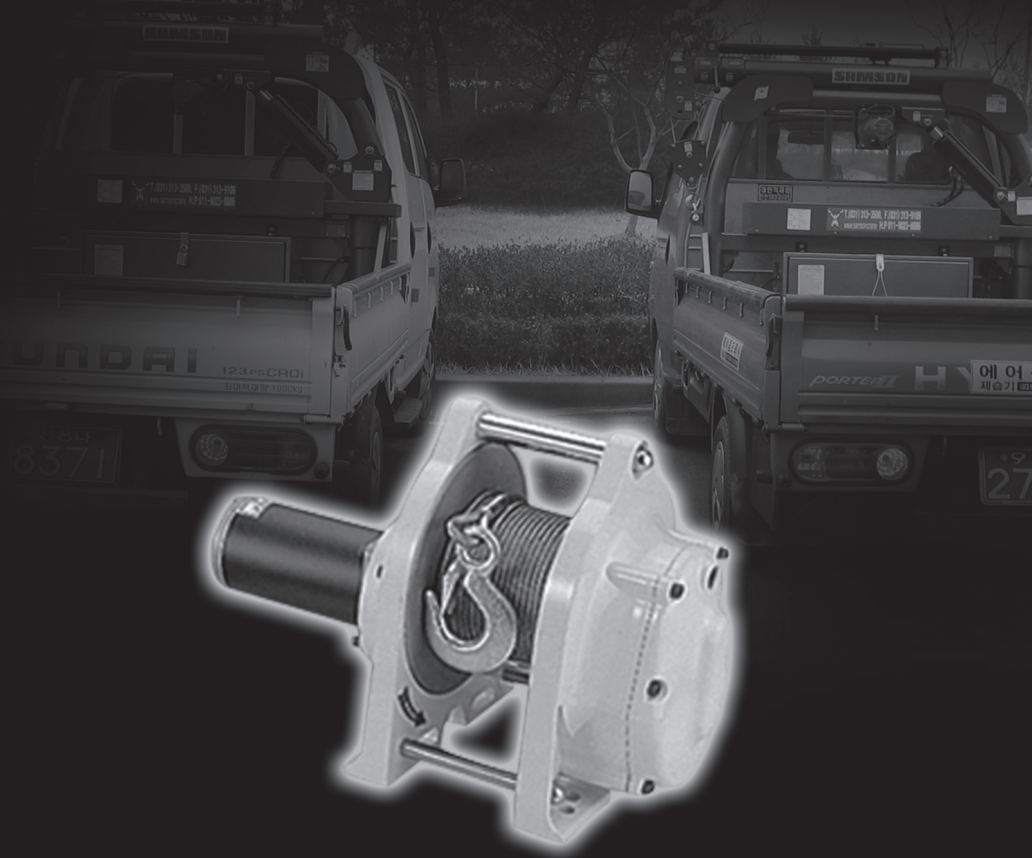


COMEUP

HEAVY DUTY DC HOIST



INSTRUCTION MANUAL



Thank you for purchasing a **COMEUP** Hoist. This manual covers operation and maintenance of the hoist. All information in this publication is based on the latest production information available at the time of printing. We reserve the right to make changes without notice because of continued product improvement.

It has been designed to give safe and dependable service if operated according to the instructions. Read and understand this manual before installation and operation of hoist. Careless hoist operation can result in serious injury or property damage.

When requesting information or ordering replacement parts, always give the following information:



1. Hoist model and voltage
2. Serial Number
3. Item. No. and Part Number
4. Part Description




















WARNING

1. The hoist is rated at its top layer of wire rope on the drum for S3 Intermittent duty.
2. A minimum of five (5) wraps of rope around the drum is necessary to support the rated load.
3. Keep clear of hoist, rope, and hook while operating.
4. Wire rope can break without warning. Always keep a safe distance from the hoist and rope while under a load.
5. Failure to adequately align, support, or attach hoist to a suitable mounting base could result in a loss of efficiency of performance or damage the hoist, rope and mounting channel.
6. The hoist is a very powerful machine. Treat with extreme care and observe all caution and warnings.

I. Safety Requirement

 WARNING	
	<ol style="list-style-type: none">1. The owner and/or the operator shall have an understanding of these operating instructions and the warning before operating the electrical hoist. Failure to follow these warnings may result in loss of load, damage to the hoist, property damage, personal, or fatal injury.2. The owner shall retain this manual for further reference to important warnings, installation, operating and maintenance instructions.

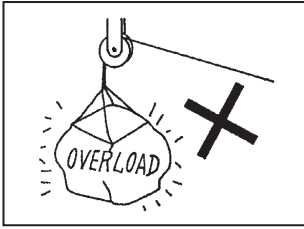
► **General Rules**

-  The operator of a hoist in some cases is required to have qualifications according to applicable laws and ordinances.
-  Check all safety and environmental conditions prior to and during use.
-  Don't use unsuitable rope in construction, strength or having any defects.
-  Don't use an unsuitable hook and snatch block for rope.
-  The operator must remain with the hoist when it is being operated.
-  The hoist is rated at S3 25% Intermittent duty only.
-  Do not use the hoist as moving people.
-  Ensure that the hoist is connected to the correct voltage. 12V DC or 24V DC only.
-  Do not exceed maximum lifting load shown in tables. Shock load must not exceed these ratings.
-  A rope should be replaced if it shows signs of excessive wear, broken strands, corrosion or any other defects.
-  If the hoist fails to lift a load under normal conditions, stop the operation within 30 seconds otherwise motor damage may occur.
-  Remove the switch from the hoist when not in use.
-  Keep hands and clothes away from the hoist and rope.
-  Never unplug the remote control when hoisting a load.
-  To avoid insufficient power when hoisting a load, the vehicle should be running and in neutral.
-  If noise or vibration occurs when running, stop the hoist immediately and return it for repair.
-  The rope shall be wound in according to drum rotation sticker or refer to owners manual.

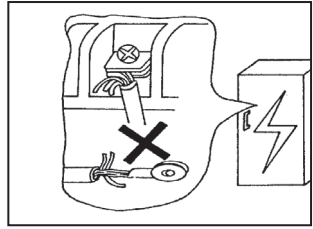
II. Handling Precautions

► Operation Precaution

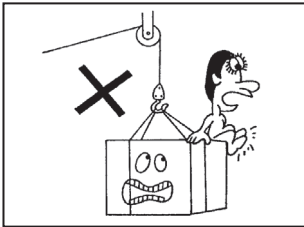
- * To prevent the risk of electric shock, the power plug must be plugged into a matching outlet and grounded in good condition.
- * Never try to lift a load higher than the rated cap.
- * Never hitch a ride on the hook, sling or load being moving.
- * Hoists are not to be used for lifting or lowering people.
- * Don't work, walk or stand under an operating hoist.
- * Always remain in control. Never neglect the hoist while actually hosting a load.
- * While working, never stand under a lifting load or within the conveying area.
- * Always look up when working around hoist, there is potential danger overhead.
- * Never gravitate a load free.
- * Be sure to lift a load vertically. Slack may allow wires to be caught in the drum.
- * Prior to starting of use, carry out the daily checking without fail, and after confirming the safety of function.
- * If having a counter rotation incurred, make sure to correct its rotation direction.
- * Prior to lift, make sure to have a precise performance of brake. If any malfunction of brake happened, stop the operation immediately.
- * When load suspended in air, it will not allow to be welding.
- * Wire rope with any defects of kink, distortion , corrosion and excessive wear shall be removed or replaced immediately.
- * Stop the operation if there is any queer noise or vibration in the gear box to be happened.
- * Do not connect the wire rope with the grounding of welding machine.
- * While welding, do not have any contact with the welding objects because of having spark.
- * Do not pull the switch.
- * Never plugging (instant reverse-wind) or inching.
- * Do not over duty cycle ratings.
- * In order to prevent the layer down due to over loosening of rope irregular winding, etc., operate according to the suitable operating method.
- * Use a hoist by fixing so securely that the rope around the drum is even.
- * Be sure to fix a rope in the centre of swivel hook.
- * Be sure to stop operation immediately when the wire rope becomes fully slackened.
- * Avoid catching the hook or lifting a load on a fixed obstruction.
- * Always leave the remote switch positioned immediately after use.
- * Make sure that the load being lifting are well balanced and secured before starting.
- * Avoid water splashes on the remote switch.
- * Never wrap the load with the wire rope.



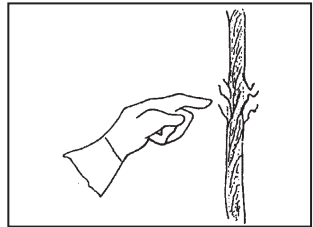
- It is forbidden to lift loads above the rated capacity of the hoist



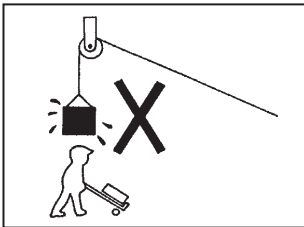
- Do not connect the power lead on the main power source directly and fasten them



- Ban on transporting persons



- Don't ignore fault accessories



- Don't stand under hoisting operation



- Don't operate hoist in rain or snow

III. Environment Precautions

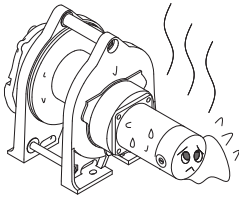


DANGER



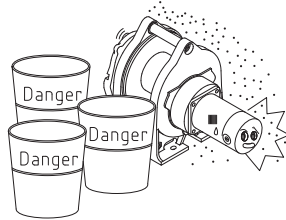
The following environmental conditions may result in the possible causes of hoist trouble.

- Low temperature below -10°C , high temperature above 40°C or humidity above 90% conditions.



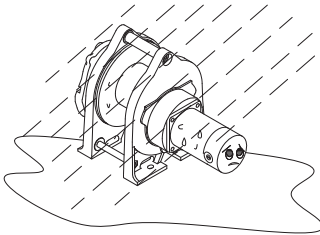
※ Cause malfunction of spare parts

- In an organic chemistry or explosive powder conditions.



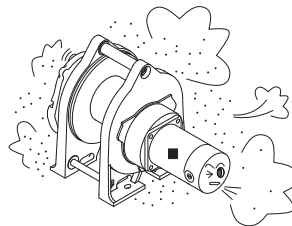
※ Cause explosion

- In heavy acid or salty conditions.
- In rain or snow conditions.



※ Cause malfunction of spare parts
※ Cause rust or short circuit

- In a heavy general powder.



※ Cause malfunction of performances

IV. Specifications

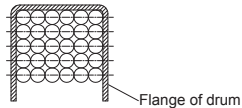
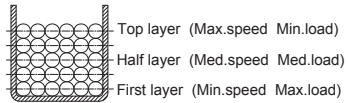
Model		DH-120	DH-120A	DH-300	DH-300A	DH-500	DH-500A
Lifting Load	kg / lb	120 / 265		300 / 661		500 / 1,102	
Speed	mpm / fpm	5 / 16.4				3 / 9.8	4 / 13
Voltage (V)		DC12V	DC24V	DC12V	DC24V	DC12V	DC24V
Motor Output (W)		100W / 0.14hp		300W / 0.41hp			
Circuit Breaker (A)		20A	10A	30A	15A	50A	30A
Gear Ratio		56:1		240:1		276:1	
Short-Time Rating (min)		10					
Wire Rope	Type	Galvanized 6 x 19		Galvanized 7 x 19			
	Size	Ø4mm x 5m 5/32" x 16'		Ø4.8mm x 12m 3/16" x 39'		Ø6.2mm x 12m 1/4" x 39'	
Controls	Type	Direct		Indirect	Direct	Indirect	
	Power Cord	5.5mm ² x 2c x 4.2m		5.5mm ² x 2c x 2.9m	5.5mm ² x 2c x 4.2m	5.5mm ² x 2c x 2.9m	
	Switch Cord	5.5mm ² x 2c x 2.9m		0.75mm ² x 3c x 4.4m	5.5mm ² x 2c x 2.9m	0.75mm ² x 3c x 4.4m	
	Pendant Switch	CPB-271		CPB-161	CPB-271	CPB-161	
	Control Box	No		Yes	No	Yes	
Weight	Hoist Weight (kg / lb)	17 / 37.4		27 / 59.5		27 / 59.5	
	Gross Weight (kg / lb)	19 / 41.9		34 / 75.0		33 / 72.8	

- Remarks:
1. A control box for indirect control device for DH-300 and DH-500 is standard accessory upon delivery.
 2. A control box for indirect control device for DH-120/120A/300A/500A will be available upon request.
 3. A pendant switch with an emergency stop button will be available upon request

V. Hoisting Principles

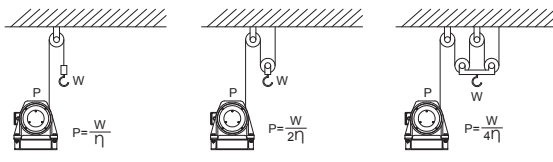
► Load Rated

Load and speed varies according to how much wire rope is on the drum. The first layer of rope on the drum delivers the slowest speed and the maximum load. The top layer of rope on the drum delivers the maximum speed and the minimum load. For this reason, all hoists are rated at their top layer capacities.

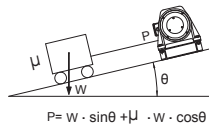
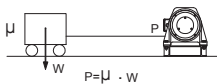


The flanged drum end plates shall protrude beyond the rope wound on the drum at the top layer by at least 1.5 x the nominal rope diameter.

► Calculating Head Loads



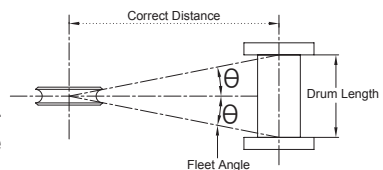
P: Rope tension
 η : Sheave efficient
 θ : Angle
 W: Load
 μ : Friction factor



No. of sheaves	1	2
Roller bearing	0.98	0.96
Sleeve bearing	0.96	0.92

► Calculating Fleet Angle

- The hoist should be mounted as close to centre and as perpendicular as possible to the direction of the line pull. This will keep the wire rope fleet angle centred on the drum as small as possible.
- If the proper fleet angle is not maintained, the wire rope could wind onto one side of the drum.



This could cause failure of the hoist or wire rope, resulting in damage, injury or death.

- Experience has shown that the best wire rope service is obtained when the maximum fleet angle is not more than 1.5° for smooth drums.
- Therefore the correct distance between centre of drum and of should be derived as a fleet angle of 1.5° is the equivalent of approximately 19 cm of lead for each centimetre of overall drum length.

► Percentage Duty Cycle

	WARNING
	Never hoist over the rated percentage duty cycle.

The life of the hoist is depending on the conditions of the load and working frequency. In the long time operation, make sure to use the machine within its %ED ratings. Continuous ratings means the percentage duty cycle (%ED) is subject to the rated voltage and a 63% of rated load.

$$\text{Percentage duty cycle (\%ED)} = \frac{T_b}{T_b + T_s} \times 100 (\%)$$

T_b: total sum of overall loadings operating hours.

T_s: total sum of stopping hours.

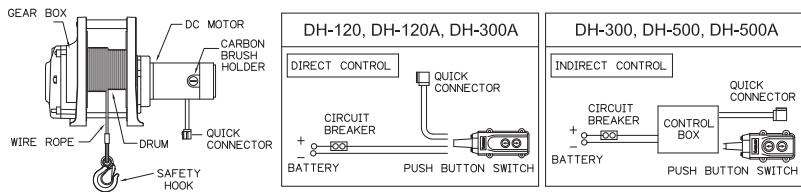
T_b + T_s = approximately 1 to 10 minutes.

The percentage duty cycle %ED of heavy duty hoist is rated at their top layer of wire rope on the drum and rated at a 25% percentage duty cycle (%ED)

VI. Operation

► Electrical Wiring Diagram

Before using the hoist, make sure all electrical components have no corrosion or damaged; the environment should be clean and dry. The voltage drop from the battery connections to the hoist must not exceed 10% of the nominal voltage under normal operating condition.

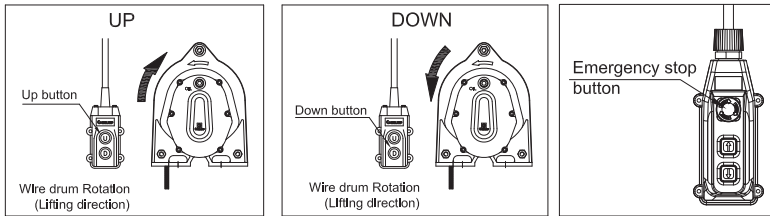


► Battery Recommendations

A fully charged battery and good connections are essential for the proper operation of your hoist. The minimum requirement for battery is 650 cold cranking amp.

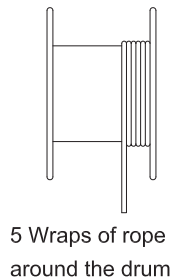
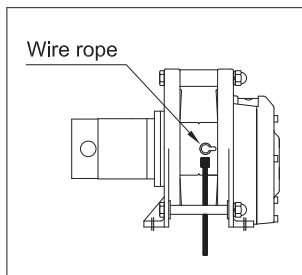
► Up and Down Switching

- To lift a load, press ↑ button and drum will rotate as shown below operation.
- To lower a load, press ↓ button and drum will rotate as shown below.
- To stop hoisting, release ↑ or ↓ button.
- To have an emergency stop function, press the emergency stop button (option). Rotate the button clockwise for returning.



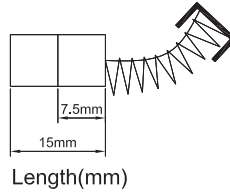
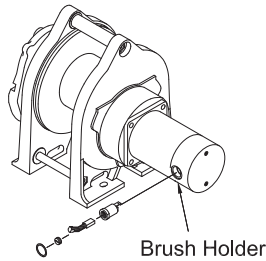
► Wire Rope Replacement

- A minimum of five (5) wraps of rope around the drum is necessary to support the load rated.
- Perform the daily inspection of the wire rope.
- Replace the wire rope immediately if it is kinked, rusty, deformed, or having broken wires or burrs.
- Replace only with new rope of correct size, length and strength to safely handle the load.
- Insert the wire rope into the hole of drum and fix it with a P.T. screw
- Press ↑ button to wind the drum.



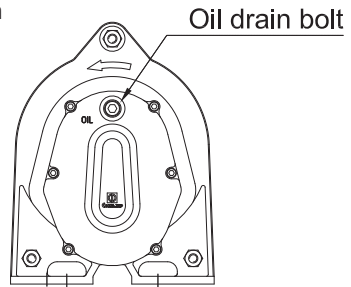
► Carbon Brush Replacement

- Always replace the brushes in pairs.
- Brushes worn left below 7.5mm in length shall be replaced immediately.
- Any negligence of replacement of it may cause damage to motor.
- Avoid water splashes on the motor.
- Remove the brush cap and replace it accordingly.



► Oil Replacement

- Before running a new hoist , or a hoist which has been out of action for a long time , it is important to make sure that the gear-box has been filled with the correct amount and quality of oil.
- First time change
After about 350 hours of effective service.
- Subsequent changes
Every one year , depending on service.
- Correct amount and grade of oil.



Model	Amount	Grade
DH-120/120A	200CC	30W
DH-300/300A	300CC	30W
DH-500/500A	300CC	40W
Meropa Lubricant Caltex 460		

► Brake Adjustment

- Your hoist is equipped with a mechanical brake.
- Prior to starting , carry out daily checking without fail and use after confirming the safety of the functions.
- The rope speed on no load is 1.5~1.8 times of the rated speed on rated load , therefore the brake distance on no load will be longer , but still within 1.5% of rope length.

VII. Checking Reference

1. Ensure that a responsible person carries out all inspections as per schedule.
2. Inspections are divided into Daily, Monthly and Quarterly.
3. Keep the hoist and accessories free of dirt, oil, grease, water and other substances.

Classification of checks				Checking item	Checking method	Checking reference	
Daily	Periodical						
	One month	Three month	One year				
○				Installation	Loosing and center run-out foundation	Checking of in stalling bolts	Existence of abnormalities
○				Pendant switch	Working	Manual	Reasonable actuation
		○			Wearing of contact point	Decomposition checking	To be free from remarkable wearing and damage
		○			Outer damage of cable	Visual	To be free from exposure of conductive wire
			○	Motor	Condition of insulation	Measure with resistance tester	1mΩ
			○		Staining damage	Decomposition checking	Clean carbon powder
		○			Carbon brush worn out	Decomposition checking	Change it at fixed periods
			○	Brake	Wearing of disc, ratchet and click	Decomposition checking	Free from remarkable wear and damage
○					Performance	Visual	Distance within 1.5% of rope length in 1 minute
			○	Gear	Damage, wearing	Decomposition check	Free from remarkable wear and damage
		○			Condition of oil feeding	Measuring	Existence of suitability of amount and deterioration
○				Wire rope	Breaking of base wire	Visual	Less than 10%
○					Decreasing of diameter	Visual	7% of normal diameter max
○					Kink phenomena	Visual	To be free from kink phenomena
○					Condition of rope winding-in	Visual	To be free from irregular winding

VIII. Trouble Shootings

Checking the hoist for smooth operation by pressing ↑ and ↓ buttons of pushbutton switch .

When hoist fails to start after several attempts , or if any defective operation to be happened , check followings .

Observed anomaly	Possible cause	Solution
No reaction	No power	Check power source
	Disconnection of plug, power cord or switch cord	Replace or repair
	Burnt or communicated motor	Replace
	Burnt diode assembly	Replace, clean motor
	Considerable voltage down	Ascertain the corrective input power source
Lifting speed to be slow	Overload	Reduce load
	Considerable voltage down	Check voltage
		Check the section of power cord
Electricity leakage or shock	Burnt motor resulting from overload	Replace motor
	Carbon brush worn down	Replace it and clean powder left in motor
	Water invaded in motor or pendant switch	Dry
Replace		
Breaking distance more than 1.5%	Brake disc worn down	Replace
	Burnt D type resistor	Replace
	Voltage too high	Check power source
Hoist vibrates badly or is noisy	Insufficient oil resulting from oil leakage	Replace oil seal
		Fill with sufficient oil
	Damaged brake	Replace or repair brake
	Mounting surface is not flat	Make sure mounting surface is flat
	Tie bar is bent	Replace tie bar
Crack on the motor and gearbox support racks	Replace racks	

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