



## Operating Instructions and Parts Manual BLVS Series Electric Hoists



**JET**  
427 New Sanford Road  
LaVergne, Tennessee 37086  
Ph.: 800-274-6848  
www.jettools.com

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## 1.0 IMPORTANT SAFETY INSTRUCTIONS

### WARNING: To avoid risk of injury:

1. Read and understand the entire owner's manual before attempting assembly or operation.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
3. Replace warning labels if they become obscured or removed.
4. This chain hoist is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a chain hoist, do not use until proper training and knowledge have been obtained.
5. Do not use this chain hoist for other than its intended use. If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Do not install this chain hoist where explosive hazards may exist.
7. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
8. Do not use to lift people, or loads over people. Warn others in the vicinity when lifting or transporting a load. Avoid swinging load and hook.
9. Do not exceed the rated lift capacity of the chain hoist.
10. Make sure limiter devices are operating properly. Do not use limit switches as routine operating stops; they are emergency devices only.
11. Verify that load chain is properly seated in load sheeve before operating hoist.
12. Do not use the load chain as a sling or wrap load chain around the load.
13. Do not use the load chain to side-pull a load.
14. Always inspect the chain hoist for damage prior to use. Do not use a chain hoist with twisted, kinked, worn or otherwise damaged chain. If the chain hoist is damaged, do not use until it has been repaired or replaced.
15. Do not use more than one chain hoist to lift or move a load. If this is unavoidable, *each* chain hoist must have the same capacity as the load to be moved.
16. Never allow the load chain to "set" over sharp edges. All lifts must be made with straight chain that is free of obstacles.
17. Do not use chain hoist unless load is centered between top and bottom hooks.
18. Protect load chain from weld splatter and other contaminants. Do not allow the hook or chain to be contacted by a live welding electrode.
19. Always take time to study the job to be performed and choose the safest method. Do not place yourself or other people in an unsafe position. Maintain constant awareness of the lifting environment.
20. Leave all internal maintenance to a qualified JET service center.
21. Disconnect hoist from power source before performing maintenance or opening the housing.
22. Do not leave a suspended load unattended.
23. Replace the chain with factory replacement chain only. Do not use any other type of chain.
24. Never use the chain hoist if either hook is stretched, deformed, or has a broken or missing safety latch. Always replace the safety latch and/or the hook before placing the chain hoist back into service.
25. Keep safety guards in place at all times when the hoist is in use.
26. Do not operate this hoist while tired or under the influence of drugs, alcohol or any medication.
27. This hoist is not designed for exposure to outdoor elements.
28. Understand and follow all procedures as set forth in American National Standards titled *Overhead Hoists (Underhung)*, ANSI/ASME B30.16. This standard is available through the American Society of Mechanical Engineers at [www.ASME.org](http://www.ASME.org).

**⚠ WARNING:** This product can expose you to chemicals including lead and cadmium which are known to the State of California to cause cancer and birth defects or other reproductive harm, and phthalates which are known to the State of California to cause birth defects or other reproductive harm. For more information go to <http://www.p65warnings.ca.gov>.

**Familiarize yourself with the following safety notices used in this manual:**

**⚠ CAUTION** This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

**⚠ WARNING** This means that if precautions are not heeded, it may result in serious injury or possibly even death.

## 2.0 Important notice

It is the responsibility of the owner/user to install, inspect, operate and maintain this hoist in accordance with OSHA regulations and ANSI/ASME B30.16, "Overhead Hoists (Underhung)", along with any state or local codes/ordinances as applicable. If hoist is installed as part of a total lifting system (trolley, crane, monorail, etc.), or if below-the-hook lifting devices will be used, it is the responsibility of the owner/user to comply with any standards or regulations involving those additional elements of the system.

## 3.0 About this manual

This manual is provided by JET covering the safe operation and maintenance procedures for the JET BLVS series hoists. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown for your hoist. It is not intended to be an exhaustive guide to the use of hoists or the broad subject of rigging, and cannot anticipate every system or lifting configuration in which this product may be used.

Retain all instructions and safety warnings for continued reference. If the hoist transfers ownership, the manual should accompany it.

If there are questions or comments, please contact either your local supplier or JET. JET can also be reached at our web site: [www.jettools.com](http://www.jettools.com).

**⚠ WARNING** Read and understand the entire contents of this manual before installing hoist or attempting operation, adjustment or maintenance. Failure to comply may cause serious injury.

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## 5.0 Product introduction

Your JET variable speed hoist is designed and constructed to provide consistent, long-term operation if used in accordance with the instructions set forth in this manual.

JET BLVS series hoists are variable speed, available in 120 volt, single-phase power, and varied chain lengths.

The mechanical load brake prevents slippage up to maximum load capacity. The hoist is also provided with overload protection and limit switches.

**This hoist complies with FEM standards.**

## 6.0 Glossary

Key terms the hoist operator should know:

**Creep speed:** Slow, constant, fixed rate of motion of a hoist.

**Duty cycle:** The amount of work a hoist can perform in a given period of time, generally measured by maximum run time and number of starts within that period. Duty cycle *ratings* are designated H1 through H5.

**Duty class:** Identifies the type of service for which a hoist is designed, designated A through F.

**Headroom:** Minimum distance between saddle of top hook to saddle of load hook, measured when load hook is at upper travel limit. Smaller headroom allows a hoist to fit in tighter work spaces.

**Hook saddle:** The inside arc of the hook which contacts the beam (top hook) or where the load sling is seated (load hook).

**Toggle or “bump fire”:** Rapid press and release of a control button to raise or lower load in intermittent steps. (A variable frequency drive in lowest speed range often eliminates the need for toggling.)

**Overtravel limit device:** A device for limiting upward or downward travel of the load hook at the extremities of its lift. (If activation of the device alters the electrical circuit within the machine, it is often called a “limit switch.”)

**Load block:** The assembly of hook or shackle, swivel, bearing, pins, sheaves and frame suspended by the chain.

**Overload limit device:** A mechanical or electrical device that prevents the hoist from lifting when excessive load is applied.

**Rated Load, or Capacity:** The maximum load weight, usually labeled as tonnage, which the hoist is designed to handle as designated by the manufacturer.

**Reeving:** The system in which a chain or rope travels around a running sheave.

**Running Sheave:** A sheave which engages the chain/rope and rotates as the load block is raised or lowered. Also called “load sheave” or “load sprocket.”

**Variable frequency drive (“inverter”):** A control system that converts fixed line voltage and frequency into a three-phase system with infinitely variable voltage and frequency, in order to regulate motor speed.

## 7.0 BLVS series hoist specifications

The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

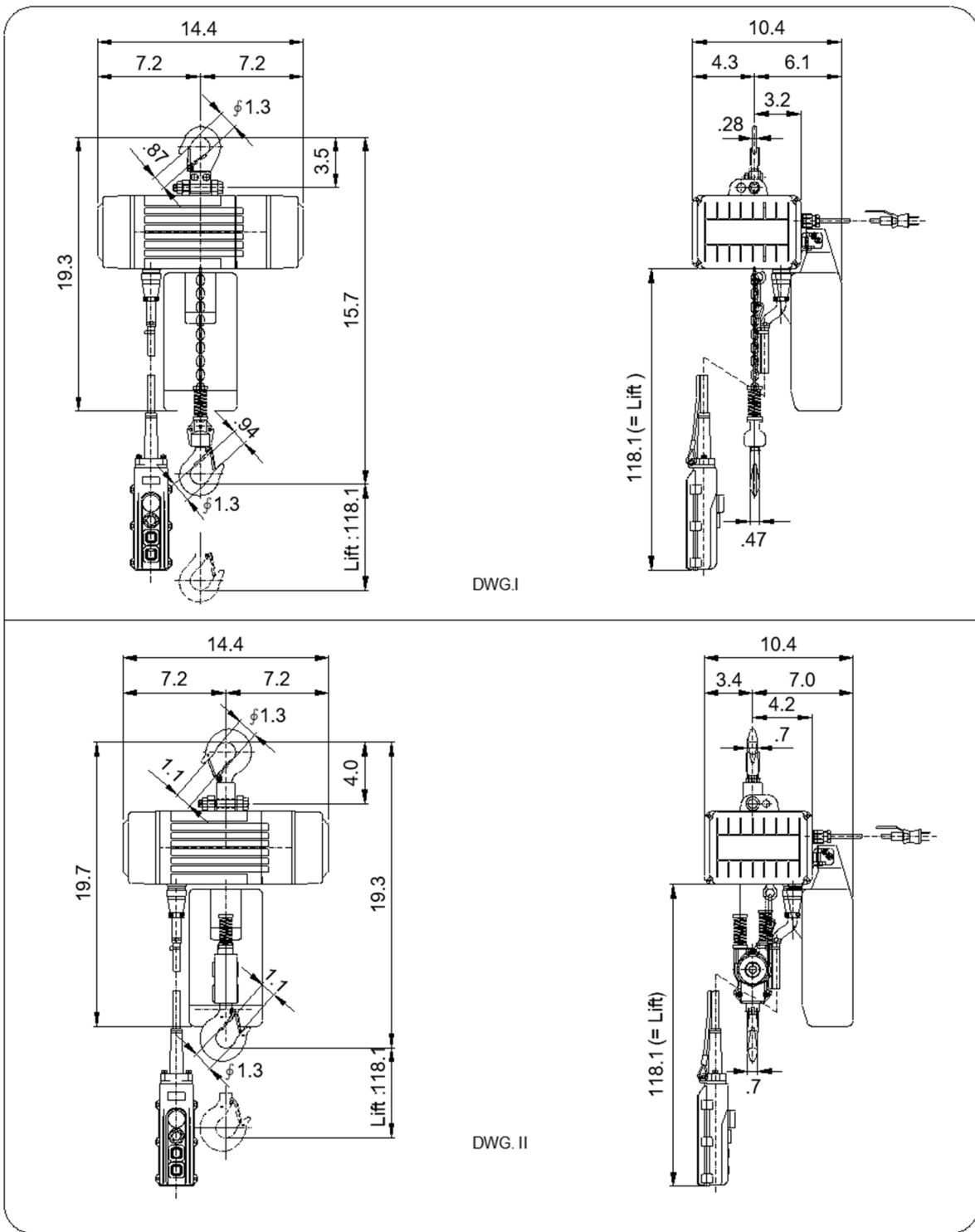


Figure 7-1: All dimensions in inches. Shows OPTIONAL wired pendant; wireless remote comes standard.

|                                |                      | BLVS018  | BLVS025                        | BLVS050                        |
|--------------------------------|----------------------|--|--------------------------------|--------------------------------|
| DWG. Figure 7-1                |                      | I  | I                              | II                             |
| Capacity                       |                      | 1/8 Ton<br>(120kg)   | 1/4 Ton<br>(240kg)             | 1/2 Ton<br>(480kg)             |
| Lift                           |                      | All models available in standard 10 or 20 ft. lifts. Custom lengths up to 100 ft. some models <sup>1</sup> |                                |                                |
| Load Chain<br>diameter x pitch | in.                  | Ø .157 x .47   |                                |                                |
|                                | mm                   | Ø 4.0 x 12   |                                |                                |
| Number of falls                |                      | 1  | 1                              | 2                              |
| Lifting speeds                 | Low speed            | 0~10.5 ft/min<br>(0~3.2 m/min)   | 0~10.5 ft/min<br>(0~3.2 m/min) | 0~5.25 ft/min<br>(0~1.6 m/min) |
|                                | High speed           | 41 ft/min<br>(12.5 m/min)  | 41 ft/min<br>(12.5 m/min)      | 20.67 ft/min<br>(6.3 m/min)    |
| Pendant controls               |                      | Wireless controller <sup>2</sup>   |                                |                                |
| Net weight                     | 10 ft. Lift          | 36.4 lb (16.5kg)   |                                | 42.8 lb (19.4kg)               |
|                                | 20 ft. Lift          | 38.6 lb (17.5kg)   |                                | 47.4 lb (21.5kg)               |
| Shipping weight                | 10 ft. Lift          | 43.0 lb (19.5kg)   |                                | 49.4 lb (22.4kg)               |
|                                | 20 ft. Lift          | 45.4 lb (20.6kg)   |                                | 54.0 lb (24.5kg)               |
| Duty<br>Cycle                  | Time Rating          | 15 min.  |                                |                                |
|                                | Intermittent Duty %  | 30%  |                                |                                |
|                                | Max. starts per hour | 180  |                                |                                |
| Motor                          | Horsepower           | 0.4 HP (300 W)   | 0.8 HP (600 W)                 | 0.8 HP (600 W)                 |
|                                | Pole                 | 8P   | 8P                             | 8P                             |
|                                | Cycle                | 60Hz   |                                |                                |
|                                | Phase                | single   |                                |                                |
|                                | Voltage              | 120 V  |                                |                                |
| Current Draw (amperage)        |                      | 6.0A   | 10.0 A                         | 10.0 A                         |
| Noise level <sup>3</sup>       |                      | 81 dB  |                                |                                |
| Gearbox capacity               |                      | 0.5L   |                                |                                |
| Enclosure<br>ratings           | Hoist                | IP54   |                                |                                |
|                                | Pushbutton control   | IP65   |                                |                                |

Table 1

<sup>1</sup> Stock numbers vary based upon chain length. Determine needs, then see JET website for stock numbers. Note: Some models are shipped in a plastic molded carrying case.

<sup>2</sup> Optional wired pendants also available. See sect. 20.0.

<sup>3</sup> Measured at 1m horizontally from hoist during normal operation. The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

## 7.1 Operating environment

Working temperature range: -5 to +40 °C (23 to 104 °F)

Working humidity range: 85% or less

Electric power supply: Single phase, 100V~240V(+/-10%), 60Hz

## 7.2 Wireless controller specifications

|                               |                   |                            |                               |
|-------------------------------|-------------------|----------------------------|-------------------------------|
| Frequency range               | 902.5 ~ 927.5 MHz | Average power consumption  | 16mA@DC3V (default setting)   |
| Modulation method             | 2 GFSK            | Radio-frequency power      | <10dBm (default setting)      |
| Operating range               | 328 ft. (100 m)   | Operating temperature      | -4° ~ +131°F (-20° ~ +55°C)   |
| Control system                | PLL               | Storage temperature        | -40° ~ +149°F (-40° ~ +65°C)  |
| Antenna impedance             | 50 Ω              | Enclosure rating           | IP65                          |
| Typical command response time | 50mS~100mS        | Dimensions                 | 7.6x2.24x2 in. (193x57x51 mm) |
| Power supply                  | LR6(AA)1.5Vx2     | Weight (including battery) | 0.72 lb (325 g) approx.       |
| Antenna                       | internal          | Housing material           | PA6 (30%GF)                   |

Table 2

## **⚠WARNING**

Read and understand the entire contents of this manual before installing hoist or attempting operation. Failure to comply may cause serious injury.

## 8.0 Unpacking

Remove hoist from its crate or case and carefully inspect its components for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until hoist is installed and running properly.

### 8.1 Shipping contents

- 1 Electric chain hoist
- 1 Chain container with fasteners
- 1 Power supply cord
- 1 Wireless controller
- 1 Wrist strap (for controller)
- 1 Receiving antenna
- 1 Top hook assembly
- 1 Bottom hook assembly with chain
- 1 Hoist instructions & parts manual
- 1 Remote controller manual
- 1 Product registration card
- 1 Test certificate

## 9.0 Installation

### **⚠WARNING**

Hoist must remain disconnected from electrical supply during assembly and installation unless instructed otherwise.

Support for the hoist may be hook, clevis pin, trolley, or beam clamp. Whatever method of suspension is chosen, the support components **must** be rated equal to, or greater than the capacity of the chain hoist. Supporting structures (such as I-Beams) should be installed by properly licensed professional installers.

If you are using the hoist with a trolley, refer to the trolley manual for instructions on securing the control cord and maintaining proper slack in the cord during operation. Optional pendant cords for use with a trolley system are shown in *section 20.0*.

TIP: If suspending from a trolley, do not mount the top hook but install the hoist directly to the trolley if possible.

Make sure the suspension system used is properly grounded, in addition to the grounding of the hoist.

### 9.1 Mounting top hook

Attach the top hook with the provided lock bolt, hex nut and cotter pin (Figure 9-1).

## 9.2 Lubrication

### 9.2.1 Gear oil

Your hoist has been shipped with oil included in the gearbox. Before operating, verify the oil level by removing the fill plug on top of the hoist, shown in Figure 9-1. The oil level should be just below the edge of the hole.

Check the level again after the first 100 hours of operation, then check every 3 months. See *sect. 16.1* for oil specifications.

**IMPORTANT:** Before operating hoist, pull out the rubber breather plug from the top fill plug (Figure 9-1). Reinsert this plug if hoist is to be transported or placed in storage.

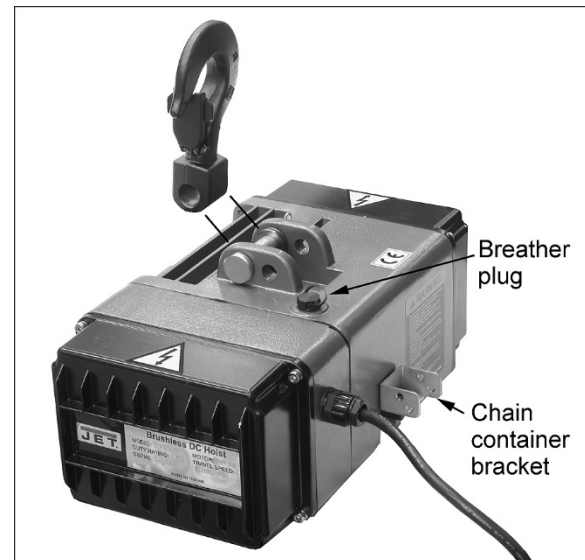


Figure 9-1 (BLVS050 shown)

### 9.2.2 Chain lubrication

Periodically apply a light coat of 30W oil to the chain. This will create easier operation and prolong the chain's life. For optimum results, clean chain with an acid-free solution before oiling.

## 9.3 Power cable

### **⚠WARNING**

All electrical connections must be made by qualified personnel. Read *sect. 10.0* before connecting this unit to power.

Connect the power cable leads to an extension and run the line to the electrical panel, or install a UL/CSA approved plug to draw from a receptacle.

**IMPORTANT:** The power cable should be directed so that it is safely out of the way of loads. If a trolley is used, power cable must not interfere with, or be pinched by, trolley travel. See Figure 9-2 for a recommended solution.



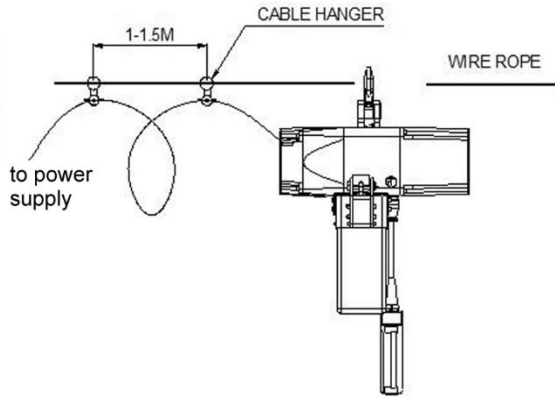


Figure 9-2

## 9.4 Controller setup

Screw the receiving antenna onto the bottom of the hoist. See Figure 9-3. The wrist strap can be placed on the wireless controller.

The wireless controller (transmitter) has been synchronized to your specific hoist by the manufacturer. If replacing a transmitter, see *sect. 14.0* for instructions.

If using a *wired pendant* controller (optional accessory), the antenna is not needed. Connect the 12-pin male plug on the controller cable to the receptacle beneath the hoist, and clip the carabiner to the eye bolt to relieve stress on the plug connection.

See *sect. 12.1* for controller operation.



Figure 9-3: remote controller setup

## 9.5 Chain container

Your hoist is supplied with a chain container designed to fit the particular length of chain. If a different length chain is ever installed on this hoist, the chain container must be replaced by one of proper size. See chart in *sect. 19.0*.

The chain container should be installed *after* the power supply is connected to hoist.

**⚠ WARNING** Do not overfill chain container. If chain should overfill and begin to fall, entire chain container may empty without warning,

resulting in serious personal injury or property damage.

To assemble chain container to hoist:

1. Hang hoist in position on the I-Beam or trolley. Do not install chain container yet. Allow slack side and load side of chain to hang freely from hoist.
2. Apply power to hoist and press DOWN button until limit switch is tripped.
3. Mount chain container to bracket on side of hoist (Figures 9-1 and 9-4), using the two socket head bolts and lock washers.
4. Place chain stop into container, and operate hoist to bring load hook up until upper limit switch is tripped.
5. Inspect chain to ensure that all non-loaded chain is completely in container.

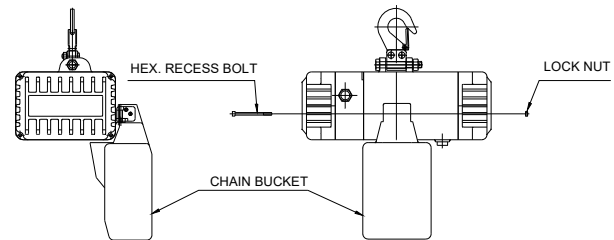


Figure 9-4

**⚠ CAUTION** Do not dump chain by hand into the chain container. By not following the above steps, the chain can become twisted or kinked and can damage the hoist.

## 10.0 Electrical connections

**⚠ WARNING** Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.

The BLVS series hoist is pre-wired for 120V, single-phase power only.

The hoist should be connected to a circuit with current overload protection, rated at minimum 120% of the full load amperage listed on the hoist's nameplate. If fuses are used, they must be time-delay fuses rated "D". **Local codes take precedence over recommendations.**

## 10.1 GROUNDING INSTRUCTIONS

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This hoist is not supplied with a power plug. Power supply cables may either be fitted with a UL/CSA-

listed plug rated for the appropriate phase and voltage, or “hard-wired” directly to a control panel. If hard-wired, make sure a disconnect is available for the operator.

If a plug is installed, it must have an equipment-grounding conductor and a grounding prong. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding connector.

If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Repair or replace damaged or worn cord immediately.

## 10.2 Inspecting hoist motion

1. Allow 15 seconds for start-up after connecting power supply.
2. Before closing circuit breaker and testing hoist, check that wiring has been complete. If hoist cannot be observed when circuit breaker is closed, station an observer within sight of hoist to report any movement when power is applied. Be prepared to disconnect power if hoist motor starts when power is applied – the hoist must remain motionless when power is applied. Find and correct any problems before continuing.
3. With no load on load hook, press UP button very briefly and observe hoist action. The hook should move upward.
4. Run hoist to maximum lifting height, then to maximum lowering point to ensure that limiter devices are operating properly.

## 11.0 Pre-operation inspection

### 11.1 Inspecting load chain

Clean chain with non-acidic solution, and carefully inspect entire load chain. Replace damaged chain before using hoist. Use provided chain gauge and refer to *sect. 18.2*. Replace worn chain.

Also replace the load chain if any of the following are identified:

1. Seriously rusted or cracked.

2. Marks on the chain surface are deeper than 5% of the link's diameter.
3. Links are twisted or deformed.
4. Links are stretched too long or considerably worn on the surface, especially at points where links contact each other.

**Never** extend load chain by welding a second piece to the original.

**⚠ WARNING** Do not operate hoist with twisted, kinked or damaged load chain. Do not splice load chain.

Check that chain does not twist along its length from hoist to hook (Figure 11-1). If twist is present on units with multiple falls, the hook has been capsized; it must be passed back through the chain loop to remove all twist in the chain. See Figure 11-2.

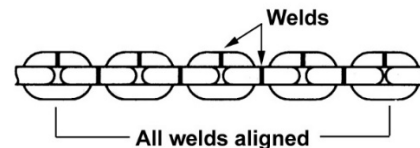


Figure 11-1

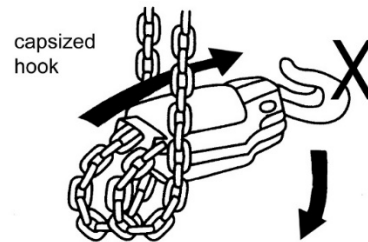


Figure 11-2

**⚠ WARNING** The load chain supplied with your JET chain hoist is designed, manufactured, and tested for proper fit and durability. Over a period of time, the chain may need to be replaced. For your own safety, use factory replacement chain only. Use of other than factory replacement chain may cause serious injury and/or damage to hoist.

A light coat of 30W oil applied periodically to the chain will create easier operation and prolong chain life.

### 11.2 Inspecting hooks

It is important to check top and bottom hooks for proper opening and other signs of deformation or damage. Replace a hook immediately if any of the following problems are identified:

1. The safety latch is damaged or bent, or no longer has sufficient spring pressure to contact the hook tip.

- The vertical angle at neck of the hook reaches 10° (see Figure 11-3).

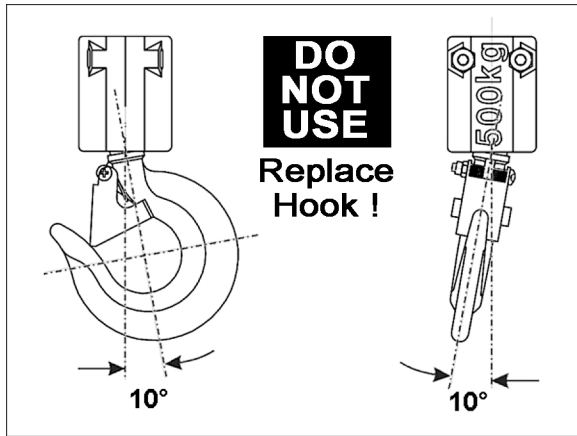


Figure 11-3

- Chemical corrosion or cracks on the hook.
- Excessive wear on the inside surface.
- The throat opening has enlarged. (See sect. 18.1 for maximum allowable limits for the throat opening.)

**NOTE:** Excessive hook throat opening or twist indicates abuse or overloading of the hoist. If such deformation is discovered, inspect hoist, chain and all supporting members very carefully for additional indications of excessive hoist loading.

**⚠ WARNING** Do not attempt repair of a hook by heat treating, bending or attaching anything by welding. Such procedures will weaken and may cause failure of the hook.

## 12.0 Operation

Read all safety instructions in sect. 1.0 before operating this hoist.

### 12.1 Controls

Refer to Figure 12-1.

**⚠ CAUTION** Allow hoist to come to a full stop before changing direction. Rapidly reversing or catching a falling load can overload the hoist system and cause failure in hoist and/or chain, resulting in injury or property damage.

The wireless controller is provided with the hoist. An optional wired pendant controller is available. See sect. 20.0.

Press START on wireless controller. To lift a load, press and hold the UP button. To lower, press and hold the DOWN button. Adjust speed using the dial.

Pressing START button during operation will sound the horn.

Press and hold a button firmly; avoid excessive inching. Allow at least one second before switching between UP and DOWN buttons; hoist will not move if the transition is too quick.

The UP and DOWN buttons are two-step. Press lightly for slower speed, press fully for faster speed.

Press the red emergency stop button (“E-stop”) to shut off power; the button remains locked and prevents any movement of the hoist. To restart, rotate stop button clockwise until it disengages.



Figure 12-1

The wireless controller has a “zero-G” sensor: If the unit is dropped, thrown, or receives a sudden impact, commands will be disabled, to prevent accidental hoist movement.

The wireless controller is powered by (2) AA batteries, which may require occasional replacement.

### 12.2 General procedure

If hoist is connected to a manual trolley, move hoist by pushing on the suspended load. Move an unloaded hoist by pulling on the empty hook. Do **NOT** move hoist by pulling on control cord.

Always keep hoist clean, and store in a clean, dry location.

Avoid lifting one load with two hoists. If this is unavoidable, apply equal weight to both hoists and use hoists with proper lift capacity. **Capacity of each hoist must be equal to the total load to be lifted.**

Follow this general procedure for hoisting loads:

1. Secure upper hook to the supporting structure.
2. Place load sling or chain in center of bottom hook, making sure the safety latch is secure. **Never load the hook in front of the safety latch.** See Figure 12-2.

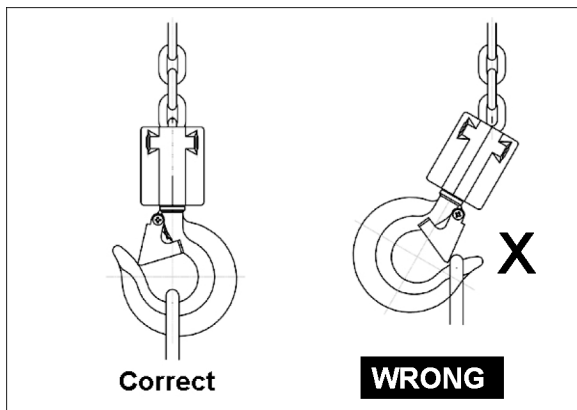


Figure 12-2

3. Press UP button (slow speed) and remove all slack in load chain. Increase tension in load chain until hoist is about to raise the load.
4. Check again that load is properly slung, is directly under hoist, and will not suddenly swing or twist.
5. Raise load an inch or two above ground and stop. Observe load for a few moments, looking for signs that load or hoist system is unstable, or other indications of a problem.
6. Check that chain is not twisted at bottom hook. All welds should face same direction (see Figure 11-1). For hoists with two or more falls of chain, make sure bottom hook is not capsized. This may cause the chain to twist.
7. Raise load to traveling height. Raise only to height necessary to safely clear all obstacles.
8. Lower load at destination. If both UP and DOWN commands must be used during lowering, pause for a moment between each reversal of load direction.
9. Slowly allow weight to shift from hoist to ground or new support. Do not approach load until all tension is out of chain and load is stable.
10. Press red stop button to lock out hoist movement until load has been unhooked.
11. Always leave bottom hook and pendant controls in a vertical, static position, never in a position that can produce swing or slip.

### 12.3 Load brake function

The mechanical load brake holds a full capacity load independent of the motor brake, and prevents load from accelerating during lowering process.

## 13.0 Adjustments

### 13.1 Replacing load chain

Over time, the load chain will wear or elongate. This can cause damage to hoist, breakage, or non-engagement of the load sheave. The following procedures describe replacing the load chain for single and multiple fall hoists. **These procedures must be performed by qualified persons only.**

It is recommended that after installing new chain, the first few lifts be limited to no more than 25-50% of rated load capacity. Thoroughly inspect new chain for twist before placing hoist into routine service.

**IMPORTANT:** Due to the internal space of hoist, additional length must be added to the nominal chain length, as shown in Table 2. For example, model BLVS018 with 10 ft. lift requires 10.66 ft. of chain.

| Model   | Additional length of chain |
|---------|----------------------------|
| BLVS018 | 0.66 ft.                   |
| BLVS025 | 0.66 ft.                   |
| BLVS050 | 1.32 ft.                   |
| BLVS100 | 1.65 ft.                   |
| BLVS200 | 3.3 ft.                    |

Table 3

#### 13.1.1 Cutting chain

**⚠WARNING** Use eye/face protection when cutting chain.

Use a bolt cutter with special cutter jaws for cutting hardened chain. Cut only one side of the link at a time. When making the second cut, place a mat over the chain to catch the flying chain section.

(Note that the following Figures may or may not show your particular hoist model, but the procedure is identical.)

#### 13.1.2 Single fall chain hoist

1. Locate the flexible chain puller that was provided with your hoist.
2. Lower the load hook until only 1 to 2 feet of slack chain remains in the chain container.
3. Remove chain container.
4. On the slack side of the chain, remove the chain stop, spring, and plates (Figure 13-1). Keep these handy for later re-installing.

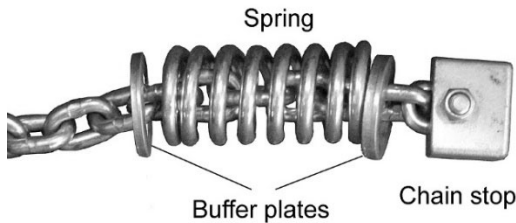


Figure 13-1

5. Keep tension on chain and press DOWN on controller until slack end of old chain comes free of the hoist.
6. Insert chain puller through hoist as shown in Figure 13-2.
7. Connect hook of chain puller to the link on new chain (Figure 13-3), and pull chain through until it engages the sprocket. **Do not let the chain twist or bind as it is being pulled through the hoist.**

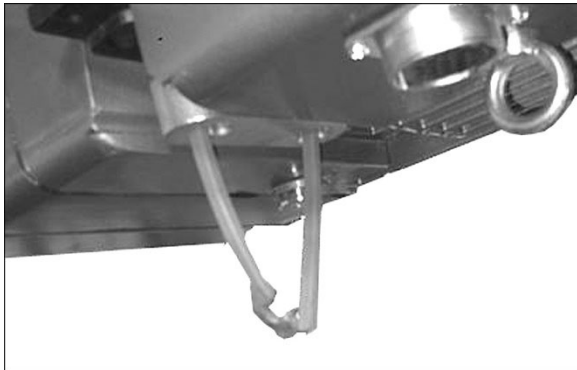


Figure 13-2

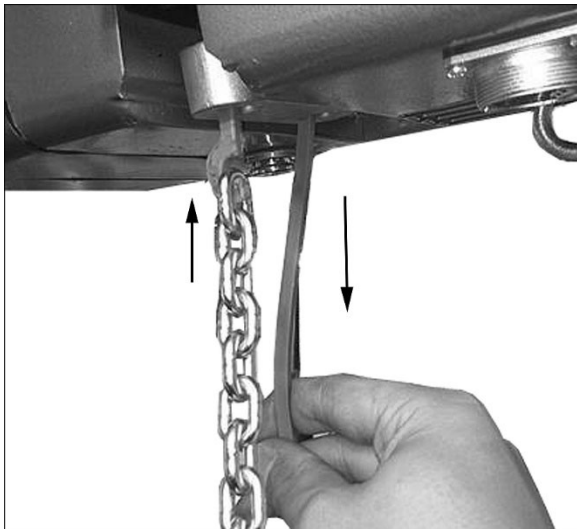


Figure 13-3

8. Keep tension on the end of the new chain and press the DOWN button on the controller, until chain clears the hoist. Stop hoist when 1 to 2 feet of new chain remains on the slack side.
9. Install the chain stop, spring and plates (Figure 13-1) on the slack end of the chain.

10. Install chain container, making sure to install the self-locking nut on the screw. *Do not fill chain container by hand.*
11. Remove load hook from old chain and install on new chain end.
12. Test limit switches by raising and lowering hook. Inspect chain for any signs of twist or binding, and correct before continuing.
13. Lubricate new chain with light coat of oil.

### 13.1.3 Vertical and horizontal links

Vertical and horizontal are determined by the relationship to the load chain sheave. Vertical links will be guided by the center slit in the sheave. Horizontal links will engage the oval pockets on the sheave. See Figure 13-4.

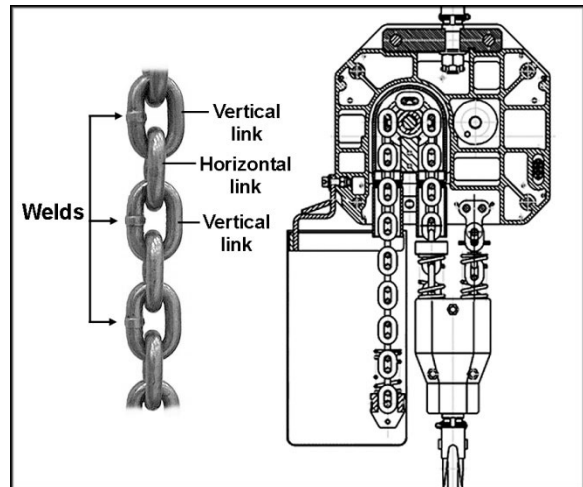


Figure 13-4

### 13.1.4 Double fall chain hoists

**CAUTION** The link on the load side end must be a vertical link. If it is a horizontal link, the chain will have a twist in it.

1. Locate the flexible chain puller that was provided with your hoist.
2. Lower the load hook until only 1 to 2 feet of slack chain remains in the chain container.
3. Remove chain container.
4. On the slack end of the chain, remove the chain stop, spring, and plates (Figure 13-1). Keep these handy for later re-installing.
5. Keep tension on chain and press DOWN on controller until slack end of old chain comes free of the hoist.
6. Insert chain puller through hoist as shown in Figure 13-2.
7. Connect hook of chain puller to the link on new chain (Figure 13-3) and move chain through until sprockets are engaged.

**CAUTION** The link on the load side end must be a vertical link, as shown in Figure 13-3. If it is a horizontal link, the chain will have a twist in it.

8. Press DOWN on controller while pulling chain through until it completely engages the sprocket and emerges from other side. Do not let the chain twist or bind as it is being pulled through the hoist.
9. Keep tension on the end of the new chain and press DOWN on the controller, until 1 to 2 feet of new chain remains on the slack side.
10. Install the chain stop, spring, and plates (Figure 13-1) on the slack end of the chain.
11. Install chain container, making sure to install the self-locking nut on the screw. *Do not fill chain container by hand.*
12. Press UP button to further lower some of the slack end of chain into container, while keeping light tension on the load end of chain.
13. Attach the load hook using the chain puller, as shown in Figure 13-5.
14. Attach the load end of chain to the connecting pin on the hoist. Make sure the chain does not twist to accommodate the pin.
15. Test limit switches by raising and lowering hook. Inspect chain for any signs of twist or binding, and correct before continuing.



Figure 13-5

# 14.0 Transmitter/receiver synchronization

## Copy from original Transmitter to new Transmitter

1. Turn OFF both transmitters *at the same time* by pushing the E-stops.
2. On original transmitter, Press UP button then press DOWN button. Repeat this 3 more times.
3. Status light will blink red and green.
4. Press and hold UP button until the “1” and “2” lights are blinking rapidly.
5. Release UP button.



ORIGINAL

6. On new transmitter, Press UP then press DOWN. Repeat this 3 more times.
7. Status light will blink red and green.
8. Press and hold DOWN button until the “1” and “2” lights blink and then go dark.
9. Process complete.

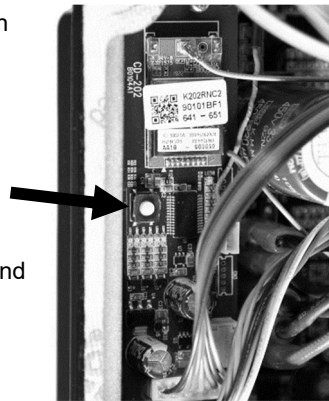


NEW

Note: 2 controllers may share the same signal but only one can turn on to control the hoist.

## Copy from Receiver to new Transmitter

1. Remove hoist cover which has the antenna.
2. Connect power to hoist. **WARNING: Electrical voltage.**
3. Press and hold SYNC button until status light on the PC board blinks red and green.



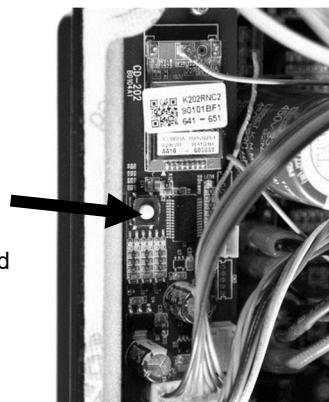
4. Press E-stop button.
5. Press UP button then DOWN button. Repeat this 3 more times.
6. Status light will blink green and red.
7. Press and hold DOWN button until the “1” and “2” lights blink. Release DOWN button.
8. Wait until all lights “1” thru “4” blink in sequence.
9. Process complete.



NEW

## Copy from Transmitter to new Receiver

1. Remove hoist cover which has the antenna.
2. Connect power to hoist. **WARNING: Electrical voltage.**
3. Press and hold SYNC button until status light on the PC board blinks red and green.



NEW

4. Press E-stop button.
5. Press UP button then DOWN button. Repeat this 3 more times.
6. Status light will blink red and green.
7. Press and hold DOWN button until the “1” and “2” lights blink. Release DOWN button.
8. Wait until all lights “1” thru “4” blink in sequence.
9. Process complete.



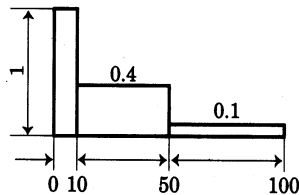
## 15.0 Mechanical classification (grade)

The JET BLVS-series hoists have been designed for **grade 1Am** in the FEM regulations (FEM 9.5.11). See Table 4.

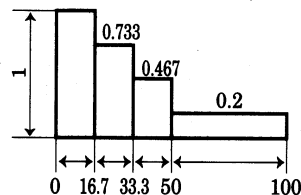
The life and safety of the electric hoist can only be guaranteed when the equipment is operated within its prescribed grade.

Average daily operating time and total operating time are determined by load distribution.

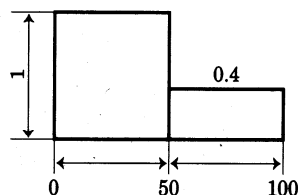
| Load Spectrum<br>(Load distribution) | Definitions  | Cubic mean value     | Average daily Operation time (hours) | Total operating time (hours) |
|--------------------------------------|--|----------------------|--------------------------------------|------------------------------|
| 1<br>(light)                         | Mechanisms or parts thereof, usually subject to very small loads and in exceptional cases only to maximum loads. | $k \leq 0.50$        | 2-4                                  | 6300                         |
| 2<br>(medium)                        | Mechanisms or parts thereof, usually subject to small loads but rather often to maximum loads.                   | $0.50 < k \leq 0.63$ | 1-2                                  | 3200                         |
| 3<br>(heavy)                         | Mechanisms or parts thereof, usually subject to medium loads but frequently to maximum loads.                    | $0.63 < k \leq 0.80$ | 0.5-1                                | 1600                         |
| 4<br>(very heavy)                    | Mechanisms or parts thereof, usually subject to maximum or almost maximum loads.                                 | $0.80 < k \leq 1.00$ | 0.25-0.5                             | 800                          |



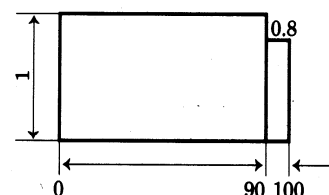
% operating time  
Load spectrum 1



% operating time  
Load spectrum 2



% operating time  
Load spectrum 3



% operating time  
Load spectrum 4

Table 4



## 16.0 Inspection and maintenance

**⚠WARNING** All repairs and adjustments are to be performed by qualified persons using procedures that are approved for the hoist system being serviced. All safety-related deficiencies discovered in the inspection are to be corrected before hoist is placed back into service. Check for internal damage whenever external damage has occurred.

Appropriate LOCK OUT/TAG OUT procedures must be followed when performing maintenance.

Read and follow all relevant ANSI Inspection and Maintenance standards, particularly ANSI/ASME B30.16 *Overhead Hoists (Underhung)*. Know the meaning of Frequent Inspection, Periodic Inspection, Normal Service, Heavy Service, and Severe Service. It is the customer's responsibility to understand and follow all ANSI and JET inspection and maintenance instructions.

The following definitions are based upon ANSI/ASME B30.16.

**Normal Service:** Operation with randomly distributed loads within the rated load limit or uniform loads less than 65% of rated load for not more than 25% of the time.

**Heavy Service:** Operation within rated load limit, which exceeds normal service.

**Severe Service:** Normal or heavy service with abnormal operating conditions.

**Designated Person:** A person selected or assigned as being competent to perform the specific duties to which he/she is assigned.

**Qualified Person:** A person who, by a recognized degree or certificate of professional standing, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter and work.

### 16.1 Gearbox oil

The oil in the gearbox should be changed annually, or more frequently under severe service, as follows.

Use either of these recommended oil brands, or their equivalent:

Mobilgear 634  
Shell Omala S4 WE460

To drain and refill gearbox:

1. Open fill plug on top of hoist.
2. Open drain plug underneath hoist and drain reservoir. Reinstall drain plug.
3. Check gearbox oil capacity for your model hoist, according to *sect. 7.0*.
4. Pour oil into fill hole.
5. Reinstall top plug.
6. Dispose of used oil according to local regulations.

## 17.0 Inspection schedules

The TS series Hoist should be given an **initial inspection** upon installation and prior to use (see also *Pre-Operation Inspection* in this manual). Following that, it must be inspected by a designated person at the time interval noted below. Dated inspection and repair reports must be maintained. Copies of all reports must be available to service personnel.

Visual inspections are divided into two general classifications based upon frequency, then further categorized by type of service, as shown below.

More detailed information may be found in ANSI/ASME B30.16 standards publication.

### FREQUENT Inspection Schedule

Service Interval:

**Normal Service:** Monthly

**Heavy Service:** Weekly

**Severe Service:** Daily

1. Check oil level in gearbox.
2. Check braking system for slippage.
3. Check that pushbutton controls and emergency stop operate properly.
4. Check that limit switches function properly. Without load, operate UP button control while observing limit spring. If limit spring becomes compressed and motor does not stop, STOP operation immediately. Limit switch is not operating properly. Repeat test with DOWN button control.
5. Check top hook and load hook for deformation, chemical damage, and cracks.
6. Check hook latch operation.
7. Check that load chain is clean and lightly lubricated, free of excessive wear or deformation at the contact points between links and link and hook (see *section 17.0* in this manual). This hoist uses special alloy hoisting chain and does not interchange with any other manufacturer. All replacement chain must be purchased from your JET distributor or from JET directly by calling 800-274-6848.
8. Check that the chain passes smoothly through all sprockets while under load.
9. Check entire hoist system for signs of damage and loss of integrity. Listen for any abnormal sounds.

### PERIODIC Inspection Schedule

Service Interval:

**Normal Service:** Yearly

**Heavy Service:** Semi-Annually

**Severe Service:** Quarterly

1. Perform all of the Frequent Inspection items.
2. Drain and refill gearbox. (See *section 10.2.1* for details and capacities.)
3. Check entire unit for loose screws, bolts, nuts, rivets and pins.
4. Check for evidence of excessive wear, corrosion, cracks, or distortion in the following parts: hook parts, chain attachments, suspension bolts and shafts, housings, gears, bearings, pins, rollers, and locking and clamping devices.
5. Check for evidence of damage to hook parts including hook retaining nuts and collars and pins, and hook holding frame and parts used to secure the frame.
6. Check for evidence of damage or excessive wear of load gear, sheave and sprocket wheel. If the pockets are too deep, the chain may jam with corresponding failure of engagement between chain and sprocket or sheave.
7. Check for evidence of excessive load brake wear. Inspect clearance between brake components, and adjust if needed.
8. Check for evidence of pitting or other deterioration of visible controller contacts.
9. Check for evidence of deterioration of supporting structures and trolleys.
10. Check for visible deformation of limit switch coil springs.
11. Check that all warning labels are present and legible.

# 18.0 Allowable limits

## 18.1 Hook wear limits (top and bottom)

Replace a hook if wear or deformation exceeds 5% of the measurements in table 5. Never heat-treat the hook or attach anything to the hook by welding.

**NOTE:** Excessive hook throat opening or twist indicates abuse or overloading of the hoist. If such deformation is discovered, inspect the hoist, chain and all supporting members very carefully for additional indications of excessive hoist loading.

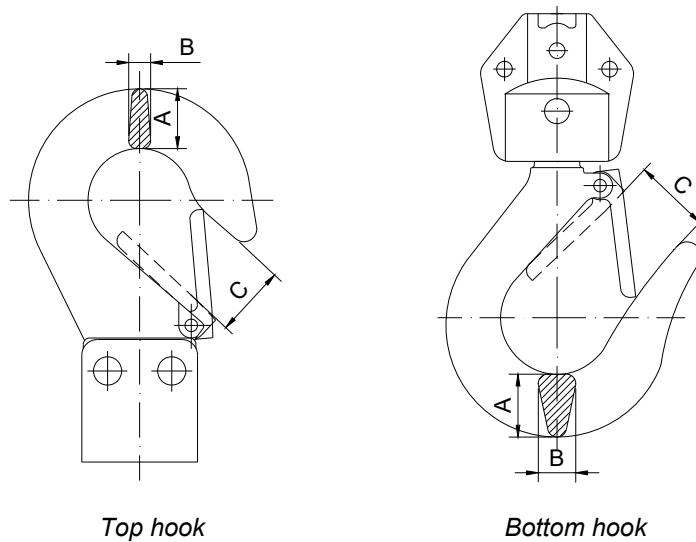
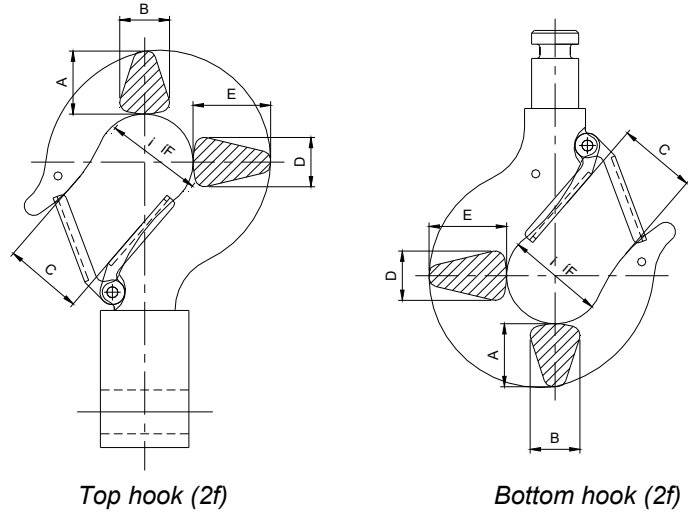


Figure 16-1

| Fall | Hook        | Dimensions (mm) |    |    |    |    |    |
|------|-------------|-----------------|----|----|----|----|----|
|      |             | A               | B  | C  | D  | E  | F  |
| 1f   | Top hook    | 19              | 7  | 22 |    |    |    |
|      | Bottom hook | 20              | 12 | 24 |    |    |    |
| 2f   | Top hook    | 23              | 18 | 28 | 18 | 28 | 34 |
|      | Bottom hook | 23              | 18 | 28 | 18 | 28 | 34 |

T = top hook; B = bottom hook

Table 5

## 18.2 Chain wear limits

Carefully inspect the entire load chain each month. Measure each link with the provided chain gauge. See Figures 16-4 and 16-5. Any load chain that shows noticeable deformation or heat influence must be replaced with a new one. Never extend load chain by welding a second piece to the original.

The load sheave and chain regulator must also be inspected, as any wear or damage to the chain will be transmitted to these parts also.

**Any replacement of chain and sheave elements must be done by qualified persons only.**

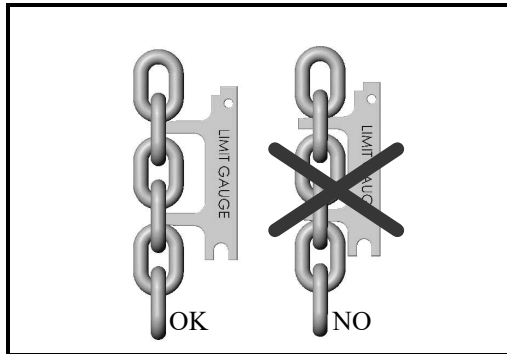


Figure 16-4: pitch

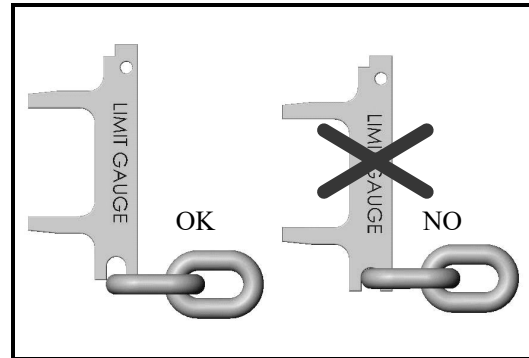
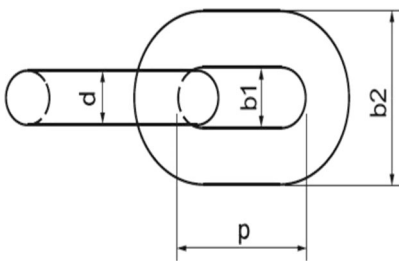


Figure 16-5: diameter



| Model              | Diameter (mm) (d) | Inside Length (mm) (p) | Inside Width (mm) (b1) | Outside Width (mm) (b2) | Breaking Load (kN) |
|--------------------|-------------------|------------------------|------------------------|-------------------------|--------------------|
| BLVS (018.025.050) | 4                 | 12                     | 5                      | 13.6                    | 20.1               |

Figure 16-6

## 19.0 Chain container selection for BLVS series hoist

If chain length is ever increased, make sure proper chain container is installed.

| Hoist tonnage | Model   | Lift (feet) |      |      |      |      |      |      |      |      |      |
|---------------|---------|-------------|------|------|------|------|------|------|------|------|------|
|               |         | 10          | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  |
| 1/8T          | BLVS018 | CC-1        | CC-1 |      |      |      |      |      |      |      |      |
| 1/4T          | BLVS025 | CC-1        | CC-1 | CC-2 | CC-2 | CC-3 | CC-3 | CC-3 | CC-4 | CC-4 | CC-4 |
| 1/2T          | BLVS050 | CC-1        | CC-1 | CC-2 | CC-2 | CC-3 | CC-3 | CC-3 | CC-4 | CC-4 | CC-4 |

Table 6

Container part numbers:

**BLVS-CC-1** (polyethylene)

**BLVS-CC-2** (polyethylene)

**BLVS-CC-3** (canvas)

**BLVS-CC-4** (canvas)

## 20.0 Controllers for BLVS hoists

| Part no. | Description   |
|----------|---|
| 140192   | Wireless Controller, BLVS, all models (provided with hoist) |
| 104063   | Wired Pendant, BLVS, for 10ft Hoist                         |
| 104064   | Wired Pendant, BLVS, for 15ft Hoist                         |
| 104065   | Wired Pendant, BLVS, for 20ft Hoist                         |

Table 7

## 21.0 Troubleshooting BLVS series Hoist

Table 8

**Important:** Any servicing performed on the brake or other electrical components must be done by qualified persons only. Further information on the remote controller may be found in its accompanying manual.

| Trouble   | Probable Cause   | Suggested Remedy   |
|---|--|--|
| Hoist will not respond to controls.                             | Limit switch is tripped.   | Move hook in opposite direction. If limit switches need adjustment, have qualified person inspect them.  |
|   | Hoist overloaded.  | Reduce load to within rated capacity.  |
|   | No incoming power, or low voltage.                                     | Check hoist connections to power source. If low voltage, have certified electrician check incoming power.  |
|   | Fuse blown or circuit breaker tripped.                                 | Replace fuse/re-set circuit breaker.   |
|   | Broken wire to control pendant.  | Locate and repair.   |
|   | Incorrect phasing.   | Switch any two of the three supply wires.  |
|   | Brake won't release; or rectifier damaged in the phase protector.      | Inspect continuity in brake; replace phase protector.  |
|   | Control contacts not opening/closing properly.                         | Check electrical continuity; replace any defective parts.  |
|   | Faulty contactor.  | Operate hoist manually; if successful, then control circuit is faulty – locate and repair. If hoist still does not run check main supply. If input supply is correct but output supply is faulty, replace contactor. |
| Hoist operates only intermittently.                             | Motor malfunction.   | Have motor inspected by a qualified service technician; repair or replace as needed.   |
|   | Loose connectors; poor contacts; arcing.                               | Inspect all wiring and contacts.   |
| Hoist refuses to stop.  | Broken conductor in control cord                                       | Test continuity of each conductor. Replace cable if needed.  |
|   | Welded contacts in contactor.  | Replace contactor.   |
| Hoist lifts but will not lower.                                 | Broken conductor in control cord.                                      | Test continuity of each conductor. Replace cable if needed.  |
|   | Up/down switch malfunctioning.   | Repair or replace switch.  |
| Hoist lowers but will not lift.                                 | Hoist overloaded.  | Reduce load to within rated capacity.  |
|   | Up/down switch malfunction.  | Repair or replace switch.  |
| Load continues drifting down excessively when hoist is stopped. | Hoist overloaded.  | Reduce load to within rated capacity.  |
|   | Brake out of adjustment.   | Adjust brake air gap. Replace brake lining if worn.  |
|   | Grease or oil on the lining.   | Open hoist, disassemble brake and clean the lining (qualified persons only).   |
| Hoist moves in wrong direction.                                 | Brake springs are damaged.   | Replace brake springs.   |
|   | Incorrect phasing (230V model).  | Switch any two of the three supply wires   |
| Motor overheats.  | Excessive load or too frequent use; or affected by ambient temperature | Operate within rated load and according to duty cycle rating. Limit use of hoist in ambient temperatures over 104°.  |
| Poor engagement of chain with sprocket/sheave.                  | Load chain is considerably worn.                                       | Replace load chain.  |
|   | Sprocket wheel, sheave or chain guide is considerably worn.            | Replace parts as needed.   |
| Limit switch failure.   | Bad connection of limit switch leads.                                  | Inspect contacts of leads and limit switches.  |
|   | Limit switch damaged.  | Replace.   |
| Abnormal sounds.  | Brake out of adjustment.   | Inspect and adjust/repair as needed.   |
|   | Dry chain or worn sprocket   | Lubricate or replace as needed.  |

## 22.0 Replacement Parts

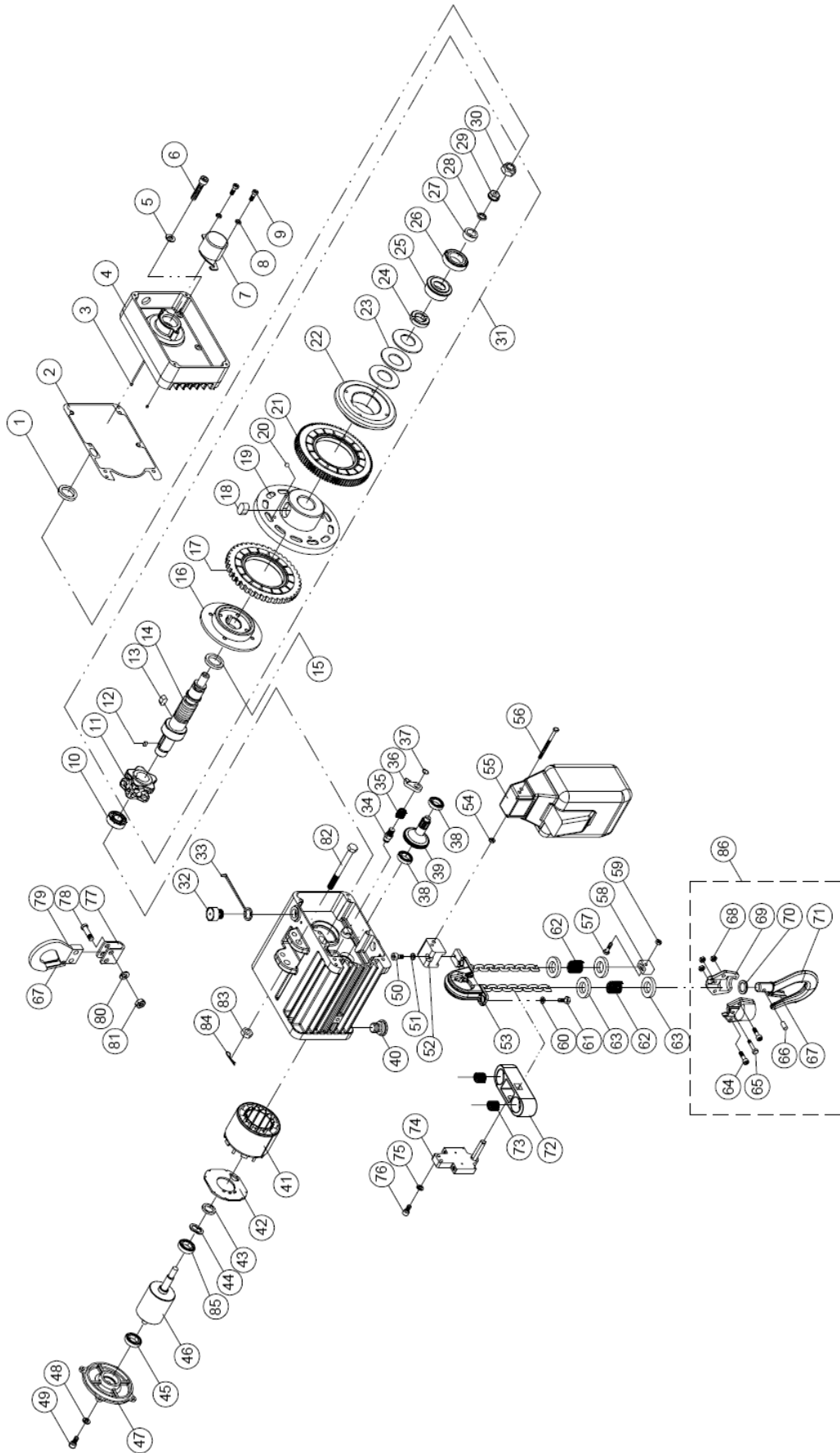
Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 Monday through Friday, 8:00 a.m. to 5:00 p.m. CST. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

Non-proprietary parts, such as fasteners, can be found at local hardware stores, or may be ordered from JET.

Some parts are shown for reference only, and may not be available individually.

NOTE: If an item shows two part numbers, the hoist model on which it is used can be identified by the part number.

## 22.1.1 BLVS018 and BLVS025 Hoists – Exploded View



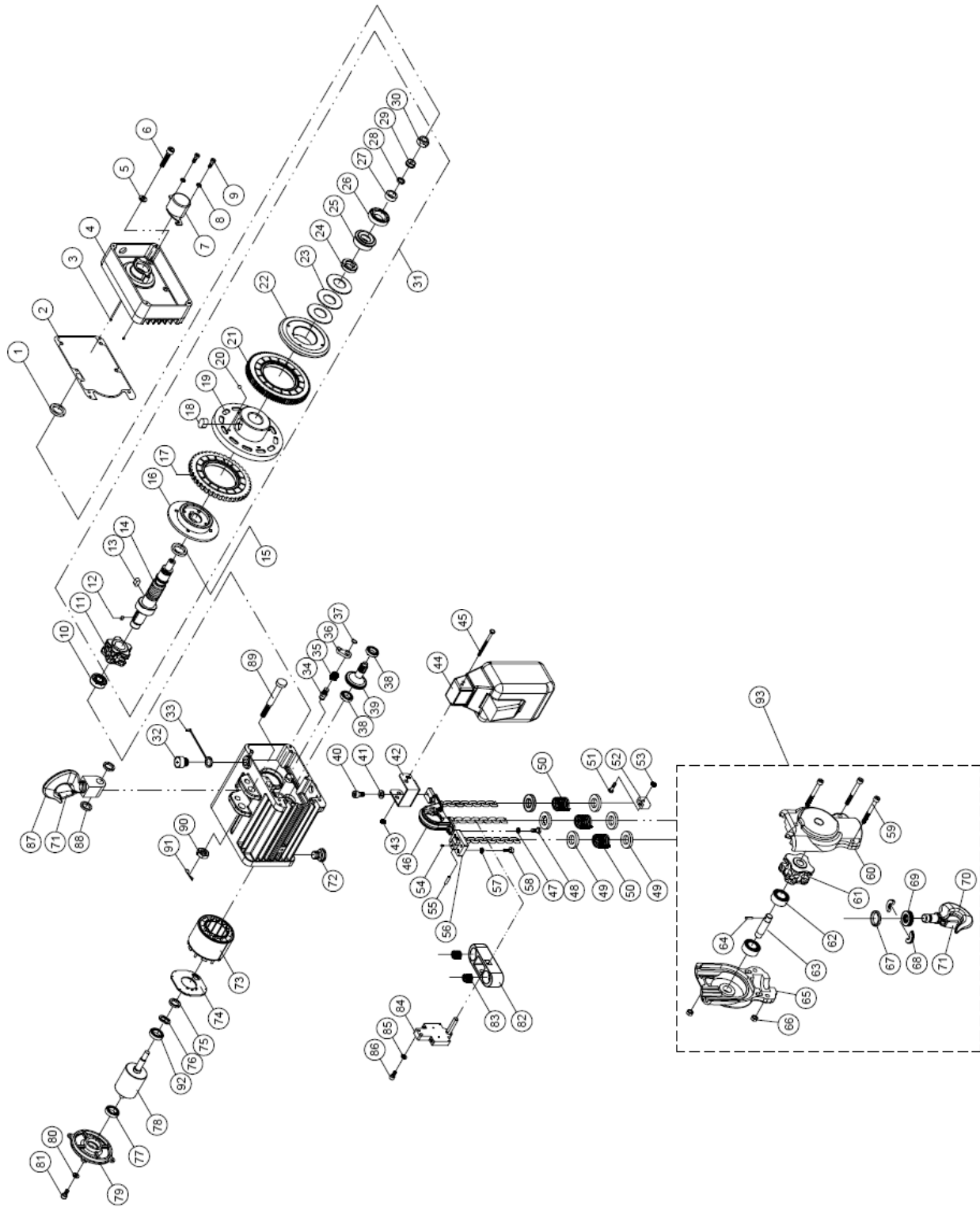


## 22.1.2 BLVS018 and BLVS025 – Parts List

| Index No. | Part No.    | Description                | Size          | Qty     |
|-----------|-------------|----------------------------|---------------|---------|
| 1         | BLVS018-A01 | Oil Seal                   | Ø25×Ø35×5t    | 1       |
| 2         | BLVS018-A02 | Gasket                     | #40           | 1       |
| 3         | BLVS018-A03 | Parallel Pin               | Ø5×12L        | 2       |
| 4         | BLVS018-A04 | Gearbox                    |               | 1       |
| 5         | TS-2361061  | Spring Washer              | M6            | 6       |
| 6         | TS-1503071  | Socket Hd Cap Screw        | M6×1.0×30L    | 6       |
| 7         | BLVS018-A07 | Cover                      |               | 1       |
| 8         | TS-1550021  | Flat Washer                | M4            | 2       |
| 9         | TS-2171012  | Phillips Pan Hd Mach Screw | M4×0.7×6L     | 2       |
| 10        | BB-6202ZZ   | Bearing                    | 6202 ZZ       | 1       |
| 11        | BLVS018-A11 | Load Sheave                |               | 1       |
| 12        | BLVS018-A12 | Key                        | t5×5×20L      | 1       |
| 13        | BLVS018-A13 | Key                        | t6×6×12L      | 1       |
| 14        | BLVS018-A14 | Sheave Spindle             | Ø30×145L      | 1       |
| 15        | BLVS018-A15 | Oil Seal                   | Ø30×Ø50×8t    | 1       |
| 16        | BLVS018-A16 | Brake Body                 | Ø83×Ø20×17.5L | 1       |
| 17        | BLVS018-A17 | Ratchet Assembly           |               | 1       |
| 18        | BLVS018-A18 | Key                        | t10×8×16L     | 1       |
| 19        | BLVS018-A19 | Brake Bushing              | Ø105×27.75L   | 1       |
| 20        | SB-6M       | Steel Ball                 | Ø6            | 3       |
| 21        | BLVS018-A21 | 4th Gear Assembly          | M1.25×89T     | 1       |
| 22        | BLVS018-A22 | Brake Flange               | Ø87×19.1L     | 1       |
| 23        | BLVS018-A23 | Disc Spring                |               | 3       |
|           | BLVS025-A23 |                            |               | -       |
| 24        | BLVS018-A24 | Load Brake Gear Spacer     |               | 2       |
| 25        | BLVS018-A25 | Bushing                    | Ø34×10L       | 1       |
| 26        | BB-6003     | Bearing                    | 6003          | 1       |
| 27        | BLVS018-A27 | Oil Bushing                | Ø25×Ø17×9L    | 1       |
| 28        | BLVS018-A28 | O-Ring                     | Ø12×Ø17×2.5   | 1       |
| 29        | BLVS018-A29 | Flange Nut                 | M10×1.5×8L    | 1       |
| 30        | TS-2361101  | Lock Nut                   | M10×1.5       | 1       |
| 31        | BLVS018-A31 | Over Load Assembly         |               | 1       |
|           | BLVS025-A31 |                            |               |         |
| 32        | BLVS018-A32 | Hex. Oil Plug              |               | 1       |
| 33        | BLVS018-A33 | Breather Plug              |               | 1       |
| 34        | BLVS018-A34 | Ratchet Pawl Pin           | d14×26L       | 2       |
| 35        | BLVS018-A35 | Ratchet Pawl Spring        |               | 2       |
| 36        | BLVS018-A36 | Ratchet Pawl               |               | 2       |
| 37        | F006098     | C-Retaining Ring, Ext      | S-11          | 2       |
| 38        | BB-6000     | Bearing                    | 6000          | 2       |
| 39        | BLVS018-A39 | 2nd & 3rd Gear Set         |               | 1       |
| 40        | BLVS018-A40 | Oil plug                   |               | 1       |
| 41        | BLVS018-A41 | Stator Assembly            | 300W          | 1       |
|           | BLVS025-A41 | Stator Assembly            | 600W          | 1       |
| 42        | BLVS018-A42 | Hall Sensor Plate          |               | 1       |
| 43        | BLVS018-A43 | Oil Seal                   | Ø12×Ø25×7t    | 1       |
| 44        | BLVS018-A44 | Wave Washer                | 31×23.2×0.3t  | 1       |
| 45        | BB-6201ZZ   | Bearing                    | 6201ZZ        | 1       |
| 46        | BLVS018-A46 | Rotor                      | 300W          | 1       |
|           | BLVS025-A46 | Rotor                      | 600W          | 1       |
| 47        | BLVS018-A47 | Motor End Cover            |               | 1       |
| 48        | TS-2361051  | Spring Washer              | M5            | 4       |
| 49        | TS-1502041  | Socket Hd Cap Screw        | M5×0.8×16L    | 4       |
| 50        | TS-1502021  | Socket Hd Cap Screw        | M5×0.8×10L    | 1       |
| 51        | TS-2361051  | Spring Washer              | M5            | 1       |
| 52        | BLVS018-A52 | Chain Bucket Connector     |               | 1       |
| 53        | BLVS018-A53 | Chain Guide                |               | 1       |
|           | LCHAIN-4x12 | Load Chain                 | 4.0x12mm      | per ft. |
|           | BLVS018-A54 | Chain Puller (not shown)   | 4.0x12mm      | 1       |

| Index No. | Part No.         | Description            | Size             | Qty |
|-----------|------------------|------------------------|------------------|-----|
| 54        | TS-1541011       | Lock Nut               | M5               | 2   |
| 55        | (see sect. 18.0) | Chain Container        |                  | 1   |
| 56        | BLVS018-A56      | Socket Hd Cap Screw    | M5×0.8×70L       | 2   |
| 57        | BLVS018-A57      | Lock Pin               | Ø10×25.5L        | 1   |
| 58        | BLVS018-A58      | Chain Stopper          | 24×19×13.5       | 1   |
| 59        | TS-1541011       | Lock Nut               | M5               | 1   |
| 60        | TS-2361061       | Spring Washer          | M6               | 2   |
| 61        | TS-1503041       | Socket Hd Cap Screw    | M6×1.0×16L       | 2   |
| 62        | BLVS018-A62      | Spring                 |                  | 2   |
| 63        | BLVS018-A63      | Buffer Steel Plate     | Ø25.5×Ø14×t4     | 4   |
| 64        | TS-1502051       | Socket Hd Cap Screw    | M5×0.8×20L       | 2   |
| 65        | BLVS018-A65      | Lock Pin               | Ø10×25.5L        | 1   |
| 66        | BLVS018-A66      | Parallel Pin           | Ø8×25L           | 1   |
| 67        | BLVS018-A67      | Safety Latch Assembly  |                  | 2   |
| 68        | TS-1541011       | Lock Nut               | M5               | 3   |
| 69        | BLVS018-A69      | Bottom Hook Cover Set  |                  | 2   |
| 70        | BLVS018-A70      | Thrust Bearing         |                  | 1   |
| 71        | BLVS018-A71      | Bottom Hook            |                  | 1   |
| 72        | BLVS018-A72      | Collision Block        |                  | 1   |
| 73        | BLVS018-A73      | Collision Block Spring |                  | 2   |
| 74        | BLVS018-A74      | Limit Switch Assembly  |                  | 1   |
| 75        | TS-2361051       | Spring Washer          | M5               | 2   |
| 76        | TS-1502051       | Socket Hd Cap Screw    | M5×0.8×20L       | 2   |
| 77        | BLVS018-A77      | Top Hook Suspension    | t20×37×39L       | 1   |
| 78        | BLVS018-A78      | Top Hook Lock Bolt     | Ø12×29.5L        | 2   |
| 79        | BLVS018-A79      | Top Hook               |                  | 1   |
| 80        | TS-2361081       | Spring Washer          | M8               | 2   |
| 81        | TS-1541031       | Lock Nut               | M8×1.25          | 2   |
| 82        | BLVS018-A82      | Lock Bolt              | Ø12/M12×1.75×85L | 1   |
| 83        | TS-2342121       | Hex. Nut               | M12×1.75         | 1   |
| 84        | BLVS018-A84      | Cotter Pin             | Ø3×30L           | 1   |
| 85        | BLVS018-A85      | Bearing                | 62012RS          | 1   |
| 86        | BLVS018-A86      | Bottom Hook Assembly   |                  | 1   |

## 22.2.1 BLVS050 Hoist – Parts List

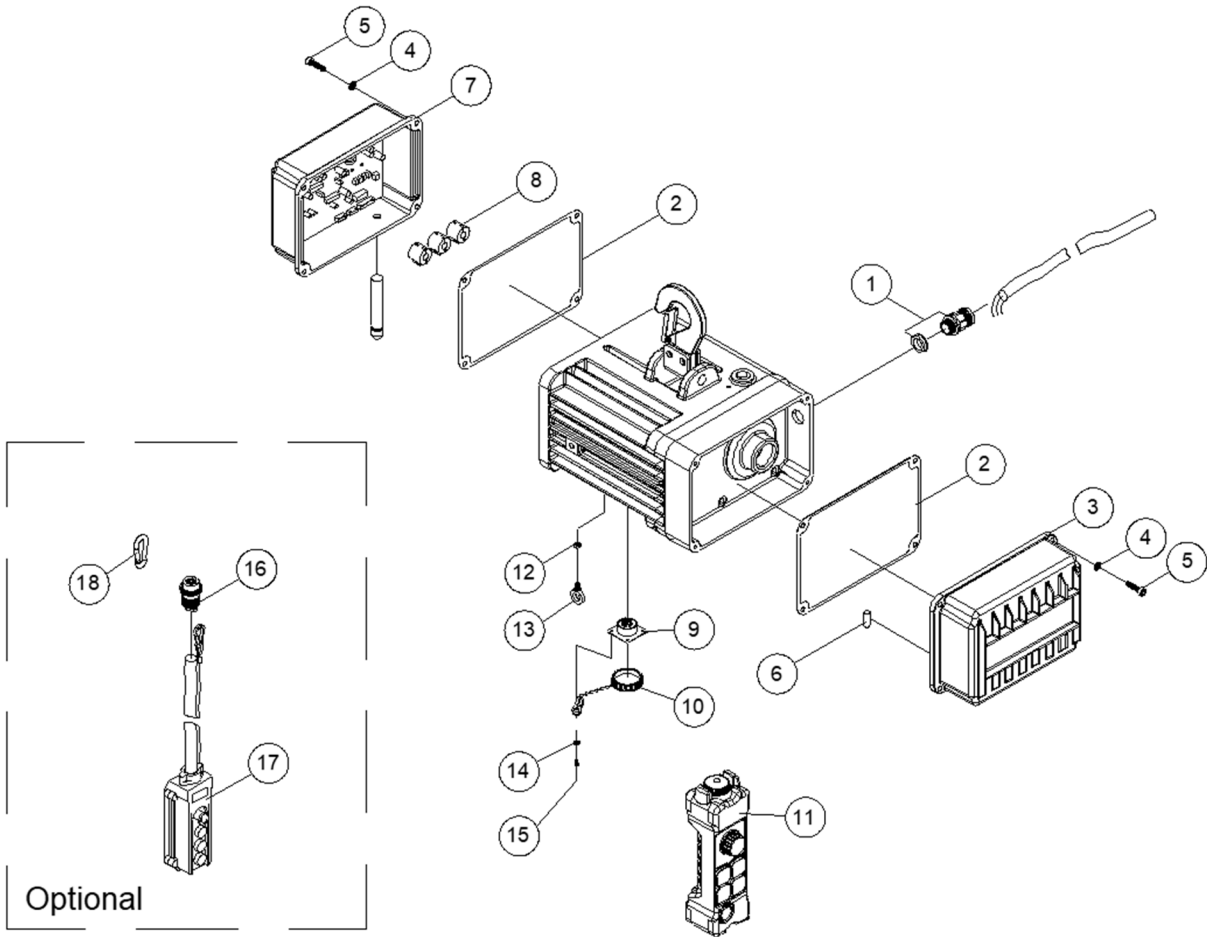


## 22.2.2 BLVS050 Hoist – Parts List

| Index No. | Part No.         | Description                | Size          | Qty     |
|-----------|------------------|----------------------------|---------------|---------|
| 1         | BLVS018-A01      | Oil Seal                   | Ø25×Ø35×5t    | 1       |
| 2         | BLVS018-A02      | Gasket                     | #40           | 1       |
| 3         | BLVS018-A03      | Parallel Pin               | Ø5×12         | 2       |
| 4         | BLVS018-A04      | Gearbox                    |               | 1       |
| 5         | TS-2361061       | Spring Washer              | M6            | 6       |
| 6         | TS-1503071       | Socket Hd Cap Screw        | M6×1.0×30L    | 6       |
| 7         | BLVS018-A07      | Cover                      |               | 1       |
| 8         | TS-1550021       | Flat Washer                | M4            | 2       |
| 9         | TS-2171012       | Phillips Pan Hd Mach Screw | M4×0.7×6L     | 2       |
| 10        | BB-6202ZZ        | Bearing                    | 6202ZZ        | 1       |
| 11        | BLVS018-A11      | Load Sheave                |               | 1       |
| 12        | BLVS018-A12      | Key                        | t5×5×20L      | 1       |
| 13        | BLVS018-A13      | Key                        | t6×6×12L      | 1       |
| 14        | BLVS018-A14      | Sheave Spindle             | Ø30×145L      | 1       |
| 15        | BLVS018-A15      | Oil Seal                   | Ø30×Ø50×8t    | 1       |
| 16        | BLVS018-A16      | Brake Body                 | Ø83×Ø20×17.5L | 1       |
| 17        | BLVS018-A17      | Ratchet Assembly           |               | 1       |
| 18        | BLVS018-A18      | Key                        | t10×8×16L     | 1       |
| 19        | BLVS018-A19      | Brake Bushing              | Ø105×27.75L   | 1       |
| 20        | SB-6MM           | Steel Ball                 | Ø6            | 3       |
| 21        | BLVS018-A21      | 4th Gear Assembly          | M1.25×89T     | 1       |
| 22        | BLVS018-A22      | Brake Flange               | Ø87×19.1L     | 1       |
| 23        | BLVS050-A23      | Disc Spring                |               | 3       |
| 24        | BLVS050-A24      | Load Brake Gear Spacer     |               | 2       |
| 25        | BLVS050-A25      | Bushing                    | Ø34×10L       | 1       |
| 26        | BB-6003          | Bearing                    | 6003          | 1       |
| 27        | BLVS018-A27      | Oil Bushing                | Ø25×Ø 17×9L   | 1       |
| 28        | BLVS018-A28      | O-Ring                     | Ø12×Ø17×2.5   | 1       |
| 29        | BLVS018-A29      | Flange Nut                 | M10×1.5×8L    | 1       |
| 30        | TS-2342101       | Lock Nut                   | M10×1.5       | 1       |
| 31        | BLVS018-A31      | Over Load Assembly         |               | 1       |
| 32        | BLVS018-A32      | Hex. Oil Plug              |               | 1       |
| 33        | BLVS018-A33      | Breather Plug              |               | 1       |
| 34        | BLVS018-A34      | Ratchet Pawl Pin           | d14×26L       | 2       |
| 35        | BLVS018-A35      | Ratchet Pawl Spring        |               | 2       |
| 36        | BLVS018-A36      | Ratchet Pawl               |               | 2       |
| 37        | F006098          | C-Retaining Ring, Ext      | S-11          | 2       |
| 38        | BB-6000          | Bearing                    | 6000          | 2       |
| 39        | BLVS018-A39      | 2nd & 3rd Gear Set         |               | 1       |
| 40        | TS-1502021       | Socket Hd Cap Screw        | M5×0.8×10L    | 1       |
| 41        | TS-2361051       | Spring Washer              | M5            | 1       |
| 42        | BLVS018-A52      | Chain Bucket Connector     |               | 1       |
| 43        | TS-1541011       | Lock Nut                   | M5            | 2       |
| 44        | (see sect. 18.0) | Chain Container            |               | 1       |
|           | LCHAIN-4x12      | Load Chain                 | 4.0x12mm      | per ft. |
|           | BLVS018-A54      | Chain Puller (not shown)   | 4.0x12mm      | 1       |
| 45        | BLVS018-A56      | Socket Hd Cap Screw        | M5×0.8×70L    | 2       |
| 46        | BLVS018-A53      | Chain Guide                |               | 1       |
| 47        | TS-2361061       | Spring Washer              | M6            | 2       |
| 48        | TS-1503041       | Hex. Recess Bolt           | M6×1.0×16L    | 2       |
| 49        | BLVS018-A63      | Buffer Steel Plate         | Ø25.5×Ø 14×t4 | 6       |
| 50        | BLVS018-A62      | Spring                     |               | 3       |
| 51        | BLVS018-A65      | Lock Pin                   | Ø10×25.5L     | 1       |
| 52        | BLVS018-A58      | Chain Stopper              | 24×19×13.5    | 1       |
| 53        | TS-1541011       | Lock Nut                   | M5            | 1       |
| 54        | BLVS050-A54      | Threaded Stud              | M4×0.7×4L     | 1       |
| 55        | BLVS050-A55      | Parallel Pin               | Ø5×25L        | 1       |
| 56        | BLVS050-A56      | Load Bracket               |               | 1       |
| 57        | TS-2361051       | Spring Washer              | M5            | 4       |
| 58        | TS-1502041       | Socket Hd Cap Screw        | M5×0.8×15L    | 4       |

| Index No. | Part No.    | Description            | Size             | Qty |
|-----------|-------------|------------------------|------------------|-----|
| 59        | TS-1502051  | Socket Hd Cap Screw    | M5×0.8×20L       | 3   |
| 60        | BLVS050-A60 | Bottom Block Cover A   |                  | 1   |
| 61        | BLVS050-A61 | Sprocket               |                  | 1   |
| 62        | BLVS050-A62 | Needle Bearing         | HK1412           | 2   |
| 63        | BLVS050-A63 | Sprocket Axle          |                  | 1   |
| 64        | BLVS050-A64 | Spring Pin             | Ø3×10L           | 1   |
| 65        | BLVS050-A65 | Bottom Block Cover B   |                  | 1   |
| 66        | TS-1541011  | Nylon Nut              | M5               | 3   |
| 67        | BLVS050-A67 | End Spacer             |                  | 1   |
| 68        | BLVS050-A68 | Half Spacer            |                  | 2   |
| 69        | BB-51103    | Thrust Bearing         | 51103            | 1   |
| 70        | BLVS050-A70 | Bottom Hook            |                  | 1   |
| 71        | BLVS050-A71 | Safety Latch Assembly  |                  | 2   |
| 72        | BLVS018-A40 | Oil plug               |                  | 1   |
| 73        | BLVS025-A41 | Stator Assembly        | 600W             | 1   |
| 74        | BLVS018-A42 | Hall Sensor Plate      |                  | 1   |
| 75        | BLVS018-A43 | Oil Seal               | Ø12×Ø25×7t       | 1   |
| 76        | BLVS018-A44 | Wave Washer            | 31×23.2×0.3t     | 1   |
| 77        | BB-6201ZZ   | Bearing                | 6201ZZ           | 1   |
| 78        | BLVS025-A46 | Rotor                  | 600W             | 1   |
| 79        | BLVS018-A47 | Motor End Cover        |                  | 1   |
| 80        | TS-2361051  | Spring Washer          | M5               | 4   |
| 81        | TS-1502041  | Socket Hd Cap Screw    | M5×0.8×16L       | 4   |
| 82        | BLVS018-A72 | Collision Block        |                  | 1   |
| 83        | BLVS018-A73 | Collision Block Spring |                  | 2   |
| 84        | BLVS018-A74 | Limit Switch Assembly  |                  | 1   |
| 85        | TS-2361051  | Spring Washer          | M5               | 2   |
| 86        | TS-1502051  | Socket Hd Cap Screw    | M5×0.8×20L       | 2   |
| 87        | BLVS050-A87 | Top Hook Assembly      |                  | 1   |
| 88        | BLVS050-A88 | Washer                 |                  | 2   |
| 89        | BLVS050-A89 | Lock Bolt              | Ø15/M12×1.75x85L | 1   |
| 90        | TS-1540081  | Hex. Nut               | M12×1.75         | 1   |
| 91        | BLVS018-A84 | Cotter Pin             | Ø3×30L           | 1   |
| 92        | BB-62012RS  | Bearing                | 6201 2RS         | 1   |
| 93        | BLVS050-A93 | Bottom Hook Assembly   |                  | 1   |

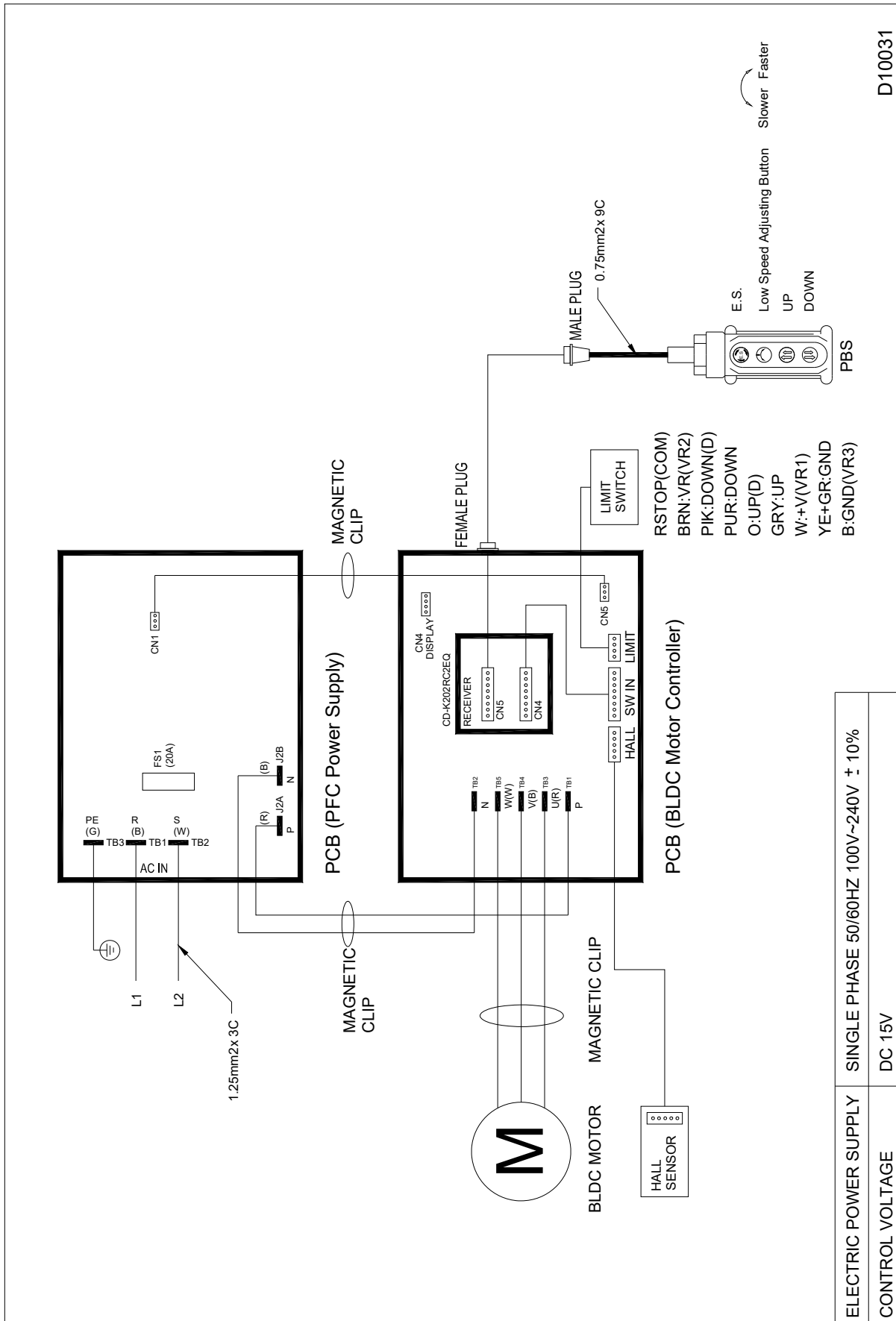
### 22.3.1 BLVS018, 025, 050 Hoist – Exploded View



### 22.3.2 BLVS018, 025, 050 Hoist – Parts List

| Index No. | Part No.         | Description                      | Size       | Qty |
|-----------|------------------|----------------------------------|------------|-----|
| 1         | BLVS018-B01      | Cable Gland                      | M16        | 1   |
| 2         | BLVS018-B02      | Gasket                           | #41        | 2   |
| 3         | BLVS018-B03      | PFC Power Supply Assembly        |            | 1   |
| 4         | TS-2361051       | Spring Washer                    | M5         | 8   |
| 5         | TS-1502041       | Socket Hd Cap Screw              | M5×0.8×16L | 8   |
| 6         | BLVS018-B06      | Fuse                             | 6×30-20A   | 1   |
| 7         | BLVS018-B07      | DC Motor Controller Assembly     |            | 1   |
| 8         | BLVS018-B08      | Magnetic Clip                    |            | 3   |
| 9         | BLVS018-B09      | Female Receptacle                |            | 1   |
| 10        | BLVS018-B10      | Metal Dust Cap                   |            | 1   |
| 11        | 140192           | Wireless Controller              |            | 1   |
| 12        | TS-1540041       | Nut                              | M6x1.0     | 1   |
| 13        | BLVS018-B13      | Eye Bolt                         | M6x1.0     | 1   |
| 14        | BLVS018-B14      | Flat Washer                      | M3         | 1   |
| 15        | TS-2283102       | Phillips Pan Hd Mach Screw       | M3×0.5×10L | 4   |
| 16        | BLVS018-B16      | Male Receptacle (Optional)       |            | 1   |
| 17        | (see sect. 18.0) | Wired Pendant Control (Optional) |            | 1   |
| 18        | BLVS018-B18      | Carabiner (Optional)             |            | 1   |

## 23.0 Electrical connections for BLVS series hoist



## 24.0 Warranty and Service

JET warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

### Warranty Period

The general warranty lasts for the time period specified in the literature included with your product or on the official JET branded website.

- JET products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90 day limited warranty against manufacturer's defects.

### Who is Covered

This warranty covers only the initial purchaser of the product from the date of delivery.

### What is Covered

This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance. JET woodworking machinery is designed to be used with Wood. Use of these machines in the processing of metal, plastics, or other materials outside recommended guidelines may void the warranty. The exceptions are acrylics and other natural items that are made specifically for wood turning.

### Warranty Limitations

Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

### How to Get Technical Support

Please contact Technical Service by calling 1-800-274-6846. **Please note that you will be asked to provide proof of initial purchase when calling.** If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. JET has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the JET website.

### More Information

JET is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the JET website.

### How State Law Applies

This warranty gives you specific legal rights, subject to applicable state law.

### Limitations on This Warranty

JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. JET SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

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### Product Listing with Warranty Period

|   |
|---|
| 90 Days – Parts; Consumable items   |
| 1 Year – Motors; Machine Accessories  |
| 2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories; Woodworking Machinery used for industrial or commercial purposes; Air Tools       |
| 5 Year – Woodworking Machinery  |
| Limited Lifetime – JET Parallel clamps; VOLT Series Electric Hoists; Manual Hoists; Manual Hoist Accessories; Shop Tools; Warehouse & Dock products; Hand Tools |

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